



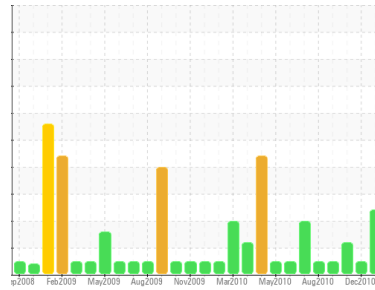
# OIL ANALYSIS REPORT

Sample Rating Trend

SOOT



Machine Id  
**MACK 3259**  
Component  
**Diesel Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (52 GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The filter change at the time of sampling has been noted. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

### Wear

All component wear rates are normal.

### Contamination

There is an abnormal amount of solids and carbon present in the oil.

### Fluid Condition

The oil viscosity is higher than normal.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WCMF896623</b>	WCMF867309	WCMF893759
Sample Date	Client Info		<b>11 Feb 2011</b>	29 Dec 2010	18 Nov 2010
Machine Age	hrs	Client Info	<b>233391</b>	228452	224129
Oil Age	hrs	Client Info	<b>19565</b>	14626	10303
Oil Changed	Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Sample Status			<b>SEVERE</b>	MARGINAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method		<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	<b>32</b>	9	22
Chromium	ppm	ASTM D5185m	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	<b>1</b>	1	<1
Titanium	ppm	ASTM D5185m	<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	<b>3</b>	3	4
Lead	ppm	ASTM D5185m	<b>3</b>	0	<1
Copper	ppm	ASTM D5185m	<b>4</b>	2	5
Tin	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Antimony	ppm	ASTM D5185m	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>218</b>	421	277
Barium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>85</b>	86	78
Manganese	ppm	ASTM D5185m	<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>387</b>	392	311
Calcium	ppm	ASTM D5185m	<b>1554</b>	1693	1316
Phosphorus	ppm	ASTM D5185m	<b>973</b>	1183	914
Zinc	ppm	ASTM D5185m	<b>1095</b>	1295	1059
Sulfur	ppm	ASTM D5185m	<b>2202</b>	3465	2409

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<b>2</b>	5	4
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	7	<1
Potassium	ppm	ASTM D5185m	<b>2</b>	5	1

## INFRA-RED

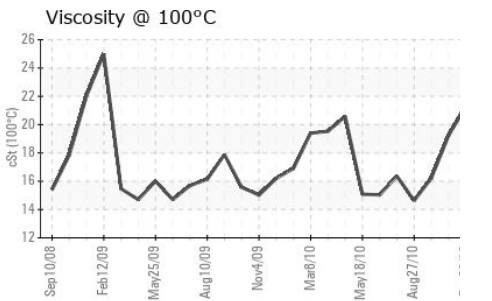
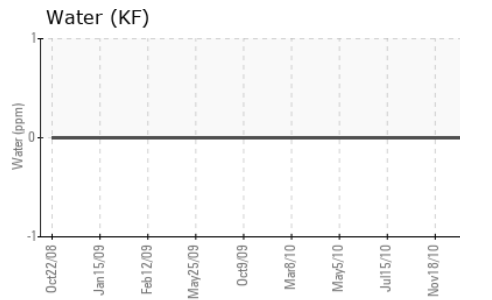
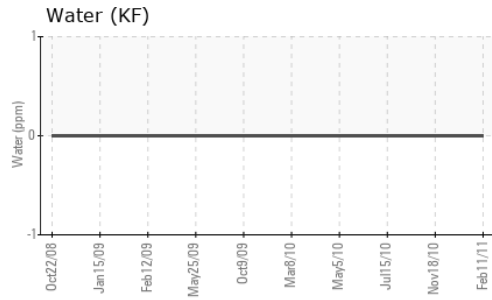
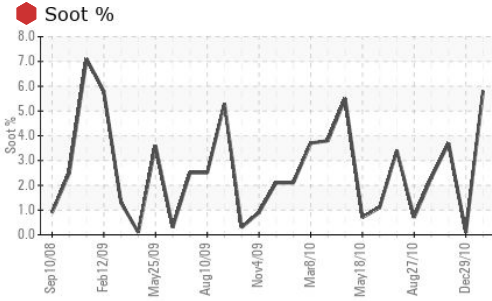
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>5.8</b>	0.1	3.7
Nitration	Abs/cm	*ASTM D7624	<b>13.</b>	7.	8.
Sulfation	Abs/.1mm	*ASTM D7415	<b>31.</b>	20.	24.

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	<b>21.</b>	15.	13.
Base Number (BN)	mg KOH/g	ASTM D2896	<b>16.05</b>	8.10	8.24



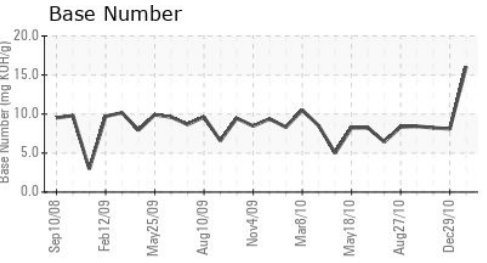
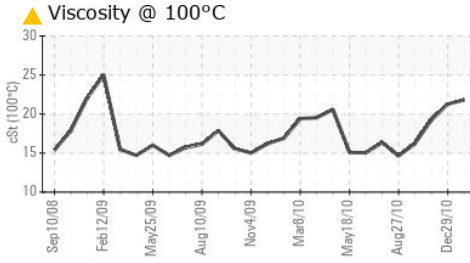
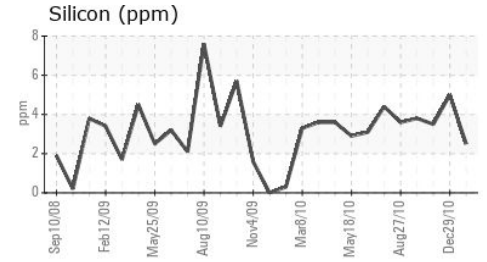
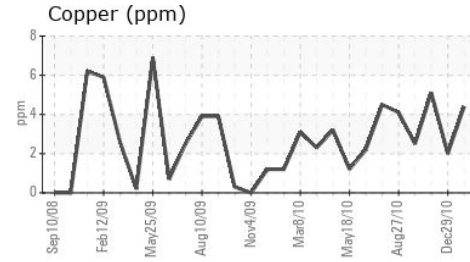
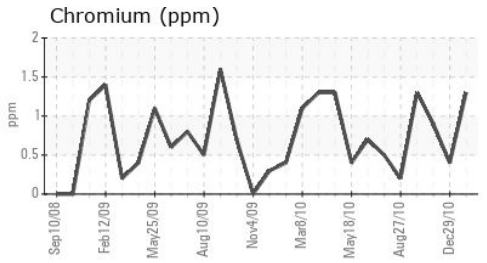
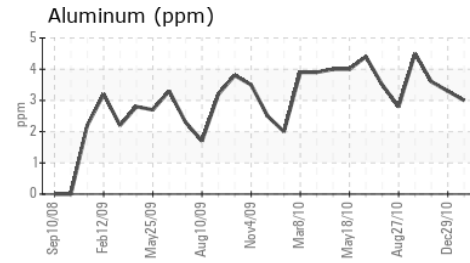
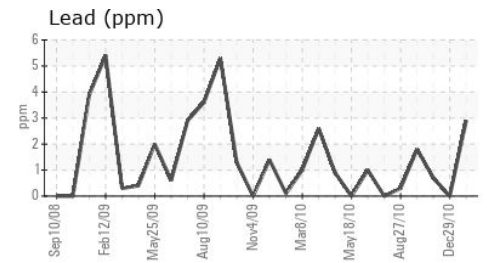
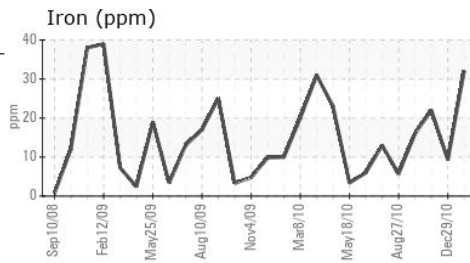
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 21.8	▲ 21.27	▲ 19.24

## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WCMF896623  
 Lab Number : 02806177  
 Unique Number : 5482630  
 Test Package : MOB 2 ( Additional Tests: KF )

GFL Environmental - 9999 - Moved No Longer Used Units

Received : 17 Feb 2011  
 Diagnosed : 18 Feb 2011  
 Diagnostician : Don Baldrige

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

US  
 Contact:

T:  
 F: