



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 110910

Component
Front Diesel Engine

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (10 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KLMFA13378	KLMFA13292	KLMFA13360
Sample Date		Client Info		04 Nov 2014	08 Sep 2014	21 Dec 2013
Machine Age	mls	Client Info		1359301	1328983	1260249
Oil Age	mls	Client Info		151696	121378	52644
Filter Age	mls	Client Info		151696	121378	52644
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

The iron level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>125	▲ 131	104	44
Chromium	ppm	ASTM D5185m	>10	5	5	2
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>20	6	8	7
Lead	ppm	ASTM D5185m	>30	26	25	11
Copper	ppm	ASTM D5185m	>65	18	16	5
Tin	ppm	ASTM D5185m	>4	0	2	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the component.

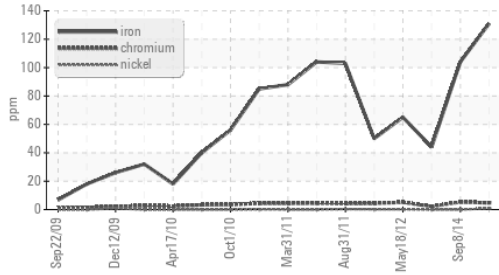
Silicon	ppm	ASTM D5185m	>25	12	11	4
Potassium	ppm	ASTM D5185m	>20	5	0	<1
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	▲ 3.6	1.1
Nitration	Abs/cm	*ASTM D7624		3.	11.	7.
Sulfation	Abs/.1mm	*ASTM D7415		12.	29.	21.
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

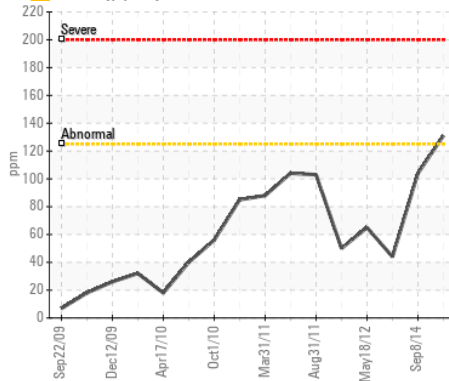
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		5	5	3
Boron	ppm	ASTM D5185m	151	69	106	216
Barium	ppm	ASTM D5185m	0.4	0	<1	0
Molybdenum	ppm	ASTM D5185m	250	78	95	67
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m	0	392	372	298
Calcium	ppm	ASTM D5185m	2046	1810	1769	1610
Phosphorus	ppm	ASTM D5185m	1043	1035	1122	1045
Zinc	ppm	ASTM D5185m	943	1294	1293	1191
Sulfur	ppm	ASTM D5185m	5012	3309	1471	1568
Oxidation	Abs/.1mm	*ASTM D7414		5.	19.	15.
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	12.39	5.57	8.08
Visc @ 100°C	cSt	ASTM D445	14.4	14.61	14.36	12.66

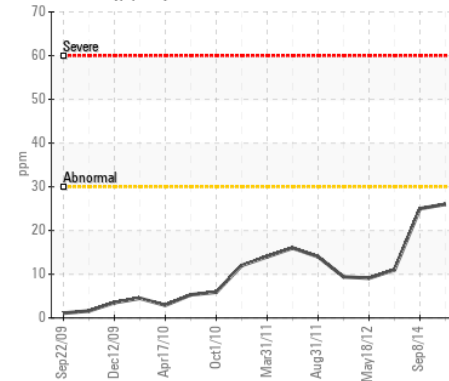
▲ Ferrous Alloys



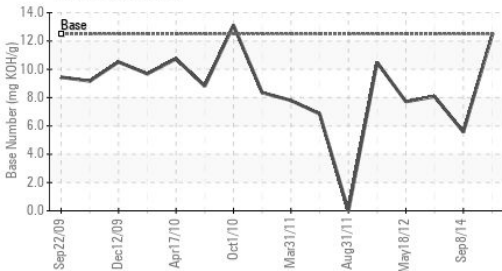
▲ Iron (ppm)



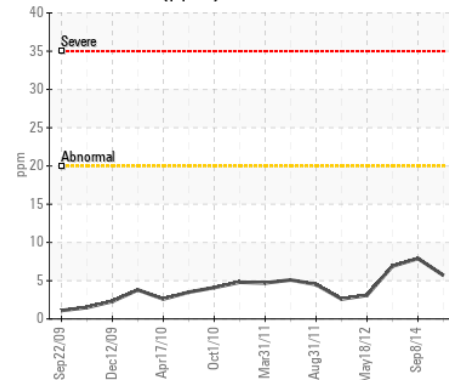
Lead (ppm)



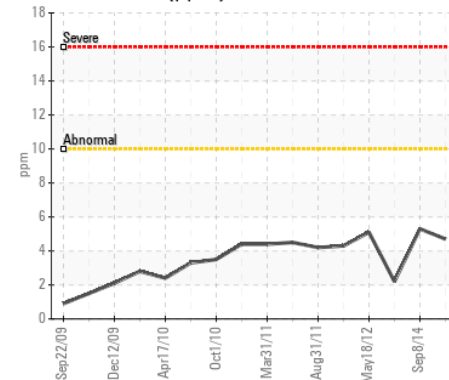
Base Number



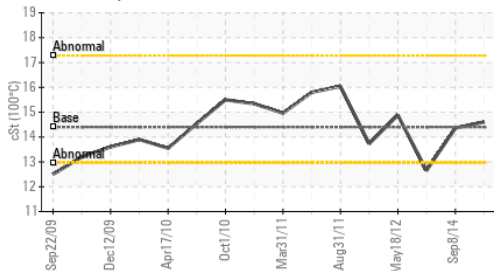
Aluminum (ppm)



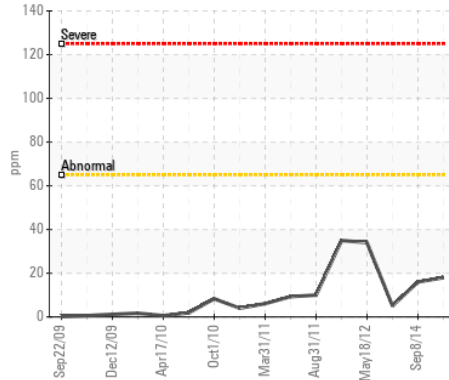
Chromium (ppm)



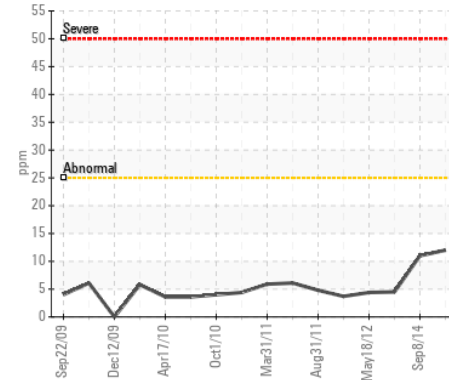
Viscosity @ 100°C



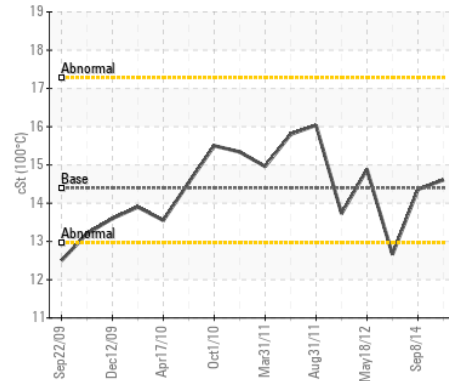
Copper (ppm)



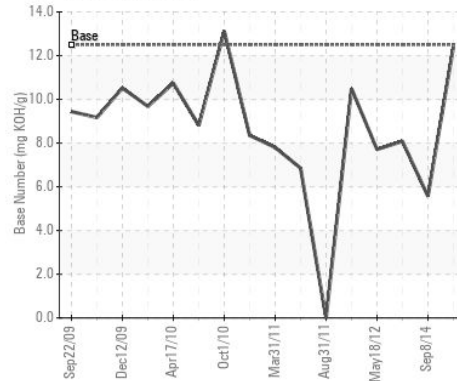
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLMFA13378 **Received** : 10 Nov 2014
Lab Number : 03621903 **Diagnosed** : 11 Nov 2014
Unique Number : 6809880 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: PQ)

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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)