



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**2016 FREIGHTLINER 3833**  
 Component  
**Diesel Engine**  
 Fluid  
**CHEVRON DELO 400 XLE 10W30 (40 QTS)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. 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		<b>WC0625659</b>	WC0625621	WC0462915
Sample Date		Client Info		<b>29 Feb 2024</b>	30 Nov 2022	18 Jun 2021
Machine Age	mls	Client Info		<b>0</b>	324389	285790
Oil Age	mls	Client Info		<b>36788</b>	50000	31944
Filter Age	mls	Client Info		<b>36788</b>	50000	31944
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>65	<b>▲ 94</b>	36	28
Chromium	ppm	ASTM D5185m	>5	<b>3</b>	2	1
Nickel	ppm	ASTM D5185m	>3	<b>1</b>	0	<1
Titanium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>35	<b>21</b>	11	8
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m	>180	<b>22</b>	7	6
Tin	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

There is no indication of any contamination in the oil.

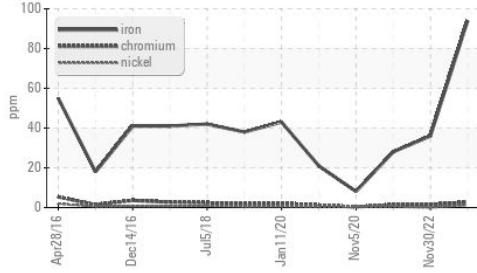
Silicon	ppm	ASTM D5185m	>15	<b>8</b>	4	6
Potassium	ppm	ASTM D5185m	>20	<b>11</b>	10	8
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2.3</b>	1.6	1
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.9</b>	11.5	10.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>28.5</b>	27.5	23.4
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

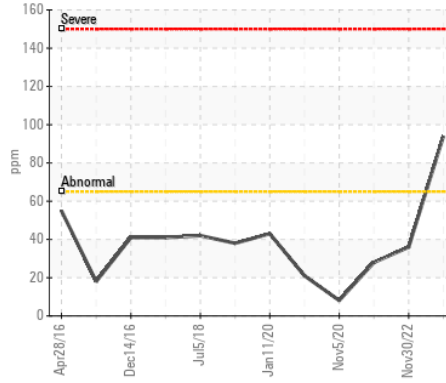
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>4</b>	2	3
Boron	ppm	ASTM D5185m		<b>20</b>	21	45
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>8</b>	20	15
Manganese	ppm	ASTM D5185m		<b>2</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>717</b>	644	632
Calcium	ppm	ASTM D5185m	2900	<b>1429</b>	1527	1451
Phosphorus	ppm	ASTM D5185m	1100	<b>736</b>	741	702
Zinc	ppm	ASTM D5185m	1200	<b>882</b>	891	823
Sulfur	ppm	ASTM D5185m	4000	<b>3146</b>	3772	2366
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>22.3</b>	20.1	18
Base Number (BN)	mg KOH/g	ASTM D2896	10.3	<b>4.9</b>	5.7	6.3
Visc @ 100°C	cSt	ASTM D445	11.9	<b>13.3</b>	12.3	12.1

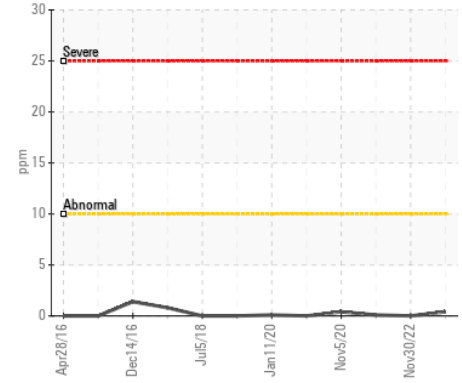
▲ Ferrous Alloys



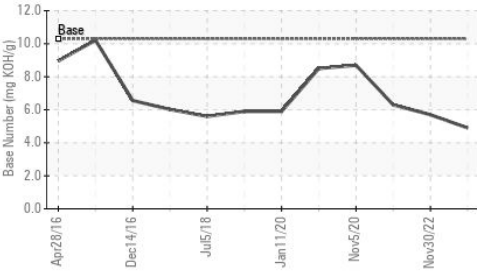
▲ Iron (ppm)



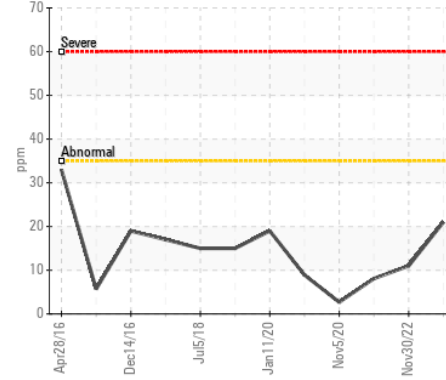
Lead (ppm)



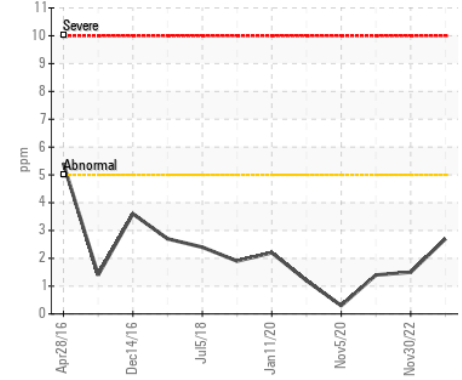
Base Number



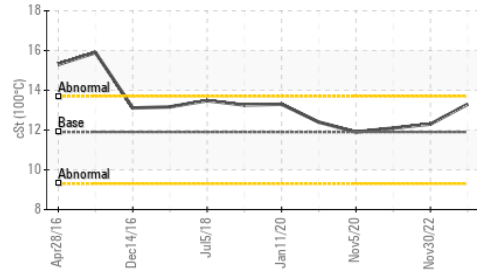
Aluminum (ppm)



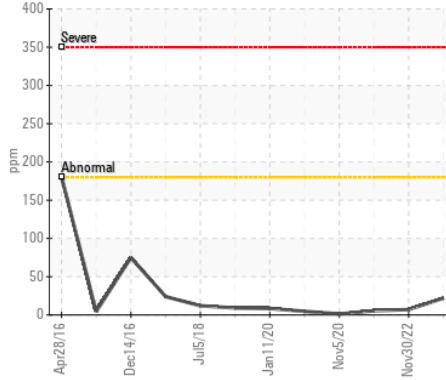
Chromium (ppm)



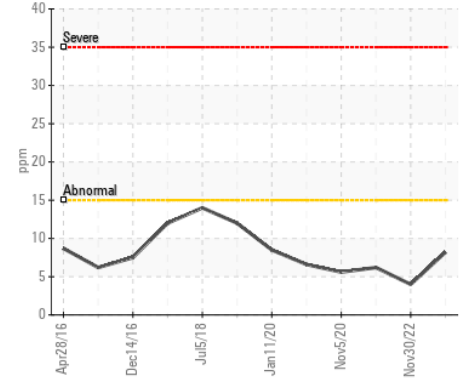
Viscosity @ 100°C



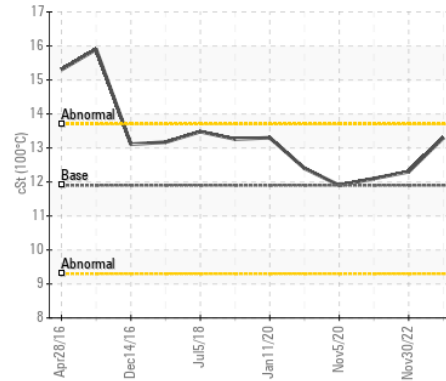
Copper (ppm)



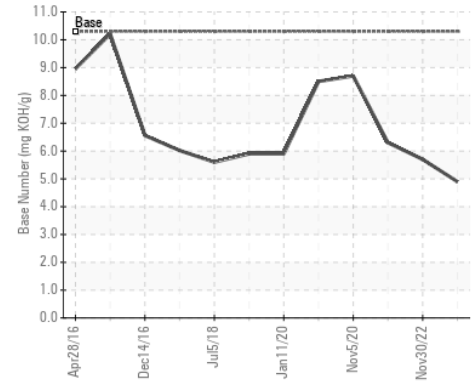
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0625659

Lab Number : 06123473

Unique Number : 10937624

Test Package : MOB1+

Received : 20 Mar 2024

Tested : 21 Mar 2024

Diagnosed : 22 Mar 2024 - Don Baldrige

LTI/MILKY WAY - MOUNT VERNON

3814 OLD HWY 99 S RD

MOUNT VERNON, WA

US 98273

Contact: JOHN VAN WINGERDEN

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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)