

Machine Id  
**FREIGHTLINER 11181**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA 10W40 (21 LTR)**

**DIAGNOSIS**

**Recommendation**

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

**Wear**

All component wear rates are normal.

**Contamination**

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring.

**Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PC0069550</b>	PC	PC406468
Sample Date	Client Info			<b>09 May 2024</b>	30 Mar 2022	23 Nov 2019
Machine Age	hrs	Client Info		<b>0</b>	5934	72236
Oil Age	hrs	Client Info		<b>600</b>	620	0
Oil Changed	Client Info			<b>Changed</b>	Changed	N/A
Sample Status				<b>ABNORMAL</b>	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method			<b>NEG</b>	NEG	0.0

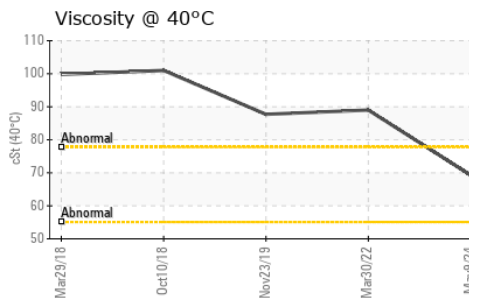
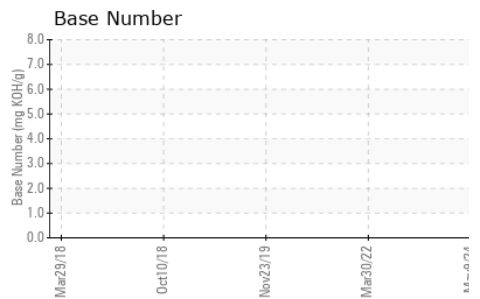
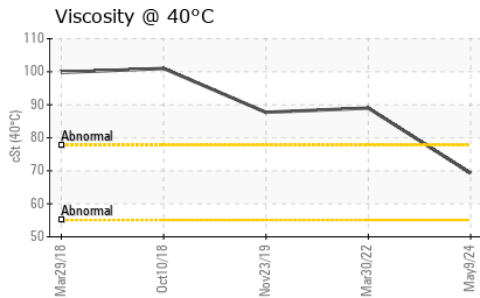
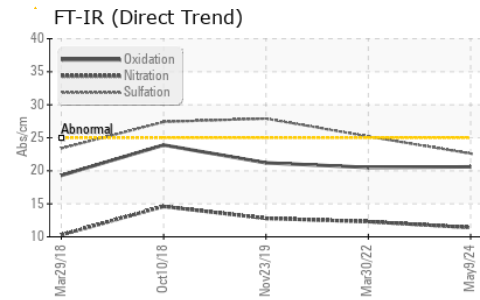
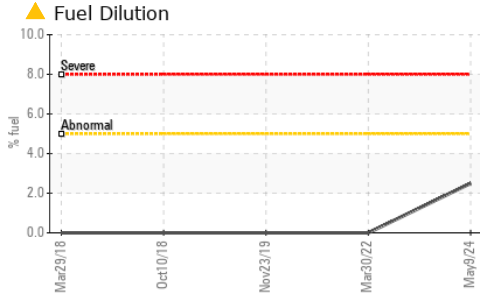
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>80	<b>23</b>	41	61
Chromium	ppm	ASTM D5185(m)	>5	<b>&lt;1</b>	2	2
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185(m)	>30	<b>6</b>	13	<b>32</b>
Lead	ppm	ASTM D5185(m)	>30	<b>0</b>	0	<1
Copper	ppm	ASTM D5185(m)	>150	<b>2</b>	4	39
Tin	ppm	ASTM D5185(m)	>5	<b>0</b>	<1	<1
Antimony	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<b>&lt;1</b>	1	1
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)		<b>62</b>	61	65
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185(m)		<b>986</b>	1031	1019
Calcium	ppm	ASTM D5185(m)		<b>1037</b>	1122	1119
Phosphorus	ppm	ASTM D5185(m)		<b>1015</b>	1066	945
Zinc	ppm	ASTM D5185(m)		<b>1214</b>	1270	1255
Sulfur	ppm	ASTM D5185(m)		<b>2460</b>	2536	2274
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	<b>5</b>	5	9
Sodium	ppm	ASTM D5185(m)	>20	<b>2</b>	2	2
Potassium	ppm	ASTM D5185(m)	>20	<b>7</b>	20	<b>81</b>
Fuel	%	ASTM D7593*	>5	<b>2.5</b>	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	<b>0.6</b>	1	0.9
Nitration	Abs/cm	ASTM D7624*	>20	<b>11.4</b>	12.3	12.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>22.6</b>	25.2	27.9

# OIL ANALYSIS REPORT

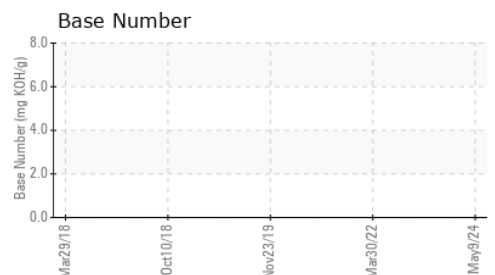
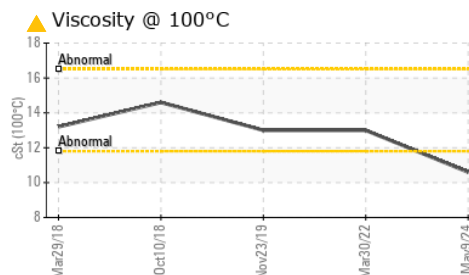
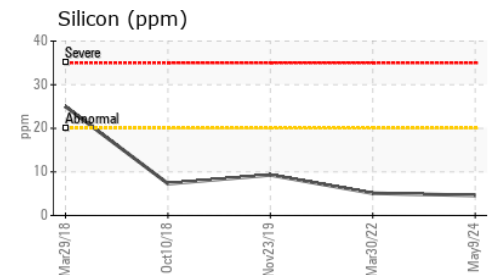
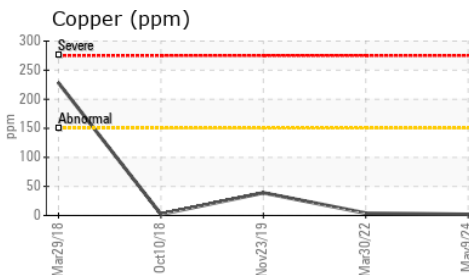
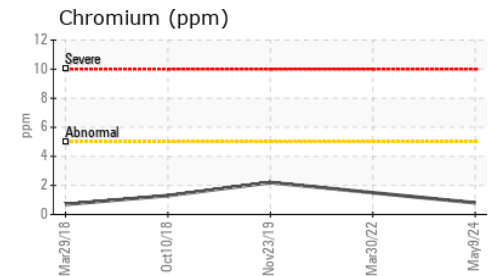
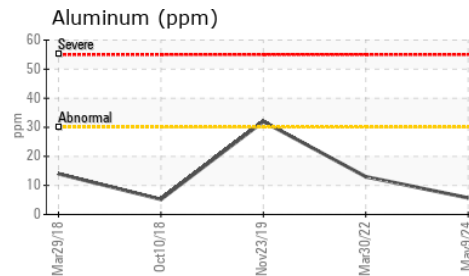
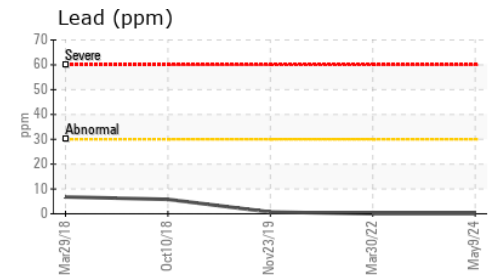
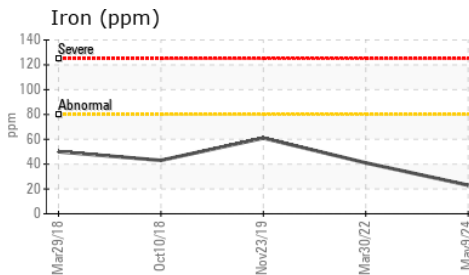


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	<b>20.6</b>	20.5	21.2
Base Number (BN)	mg KOH/g	ASTM D2896*		<b>7.63</b>	---	---

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		<b>69.3</b>	89	87.7
Visc @ 100°C	cSt	ASTM D7279(m)		<b>▲ 10.6</b>	13.0	13.0
Viscosity Index (VI)	Scale	ASTM D2270*		<b>140</b>	145	147

## GRAPHS



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0069550  
**Lab Number** : 02635262  
**Unique Number** : 5776415  
**Test Package** : MOB 2 ( Additional Tests: FuelDilution, KV40, PercentFuel, VI )

**Received** : 14 May 2024  
**Tested** : 15 May 2024  
**Diagnosed** : 15 May 2024 - Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

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