

Machine Id  
**FREIGHTLINER R718**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON HP 15W40 (--- LTR)**

**RECOMMENDATION**

The oil change at the time of sampling has been noted.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PC0081828</b>	PC0082823	PC0082860
Sample Date		Client Info		<b>27 Mar 2024</b>	13 Jan 2024	29 Sep 2023
Machine Age	kms	Client Info		<b>946751</b>	967246	935731
Oil Age	kms	Client Info		<b>29505</b>	58967	27452
Filter Age	kms	Client Info		<b>29505</b>	58967	27452
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**

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>200	<b>21</b>	21	22
Chromium	ppm	ASTM D5185(m)	>20	<b>2</b>	2	2
Nickel	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>30	<b>5</b>	4	4
Lead	ppm	ASTM D5185(m)	>30	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>30	<b>4</b>	5	4
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---

**CONTAMINATION**

Light concentration of carbon/soot present in the oil. Tests indicate that there is no fuel present in the oil.

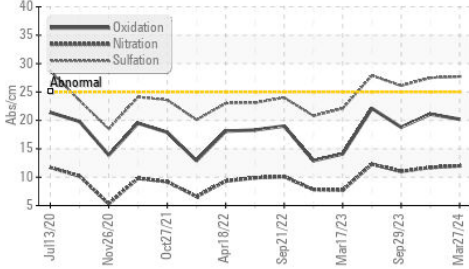
Silicon	ppm	ASTM D5185(m)	>30	<b>4</b>	5	5
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	2	17
Fuel	%	ASTM D7593*	>3.0	<b>0.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	0.0
Soot %	%	ASTM D7844*	>3	<b>▲ 3</b>	2.5	2.4
Nitration	Abs/cm	ASTM D7624*	>20	<b>12.0</b>	11.7	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>27.7</b>	27.5	26.1
Silt	scalar	Visual*	NONE	<b>VLITE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

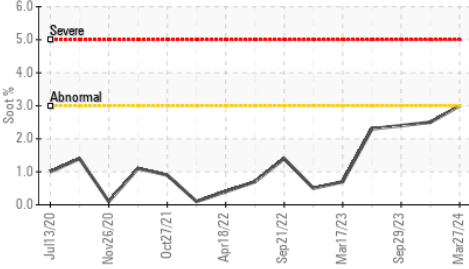
The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)		<b>2</b>	2	2
Boron	ppm	ASTM D5185(m)	0	<b>1</b>	2	3
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)	60	<b>63</b>	65	64
Manganese	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)	1010	<b>1002</b>	1000	1007
Calcium	ppm	ASTM D5185(m)	1070	<b>1113</b>	1132	1113
Phosphorus	ppm	ASTM D5185(m)	1150	<b>1005</b>	1029	1032
Zinc	ppm	ASTM D5185(m)	1270	<b>1235</b>	1275	1258
Sulfur	ppm	ASTM D5185(m)	2060	<b>2020</b>	2245	2153
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>20.2</b>	21.1	18.8
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	<b>118</b>	112	115
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>15.4</b>	14.7	15.0
Viscosity Index (VI)	Scale	ASTM D2270*	139	<b>136</b>	134	135

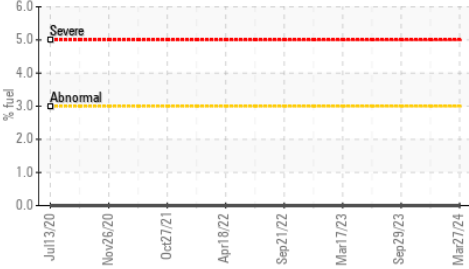
▲ FT-IR (Direct Trend)



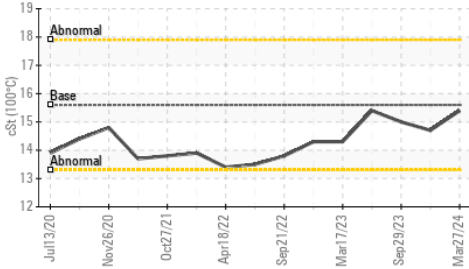
▲ Soot %



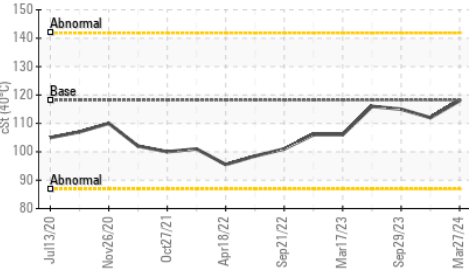
Fuel Dilution



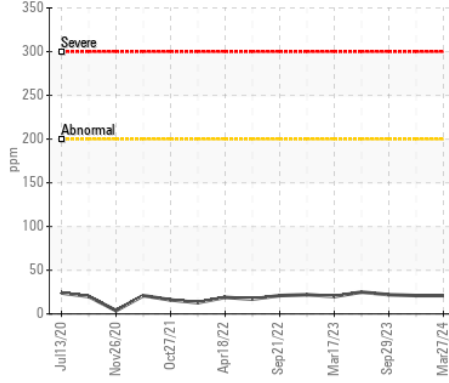
Viscosity @ 100°C



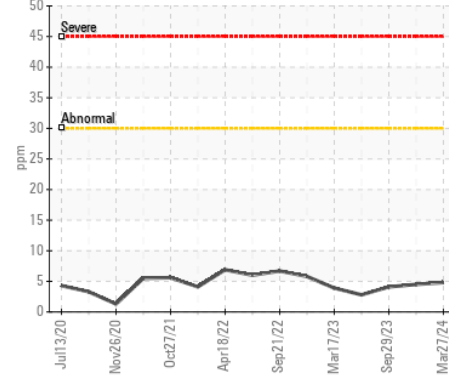
Viscosity @ 40°C



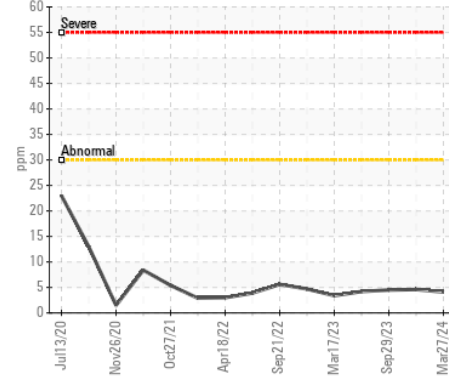
Iron (ppm)



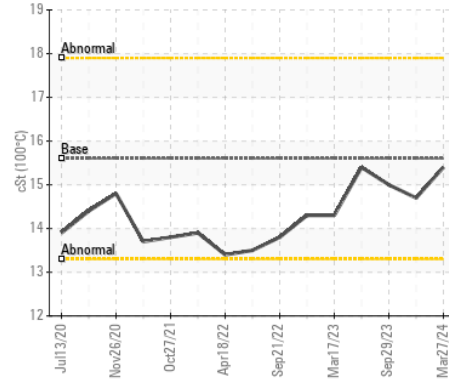
Aluminum (ppm)



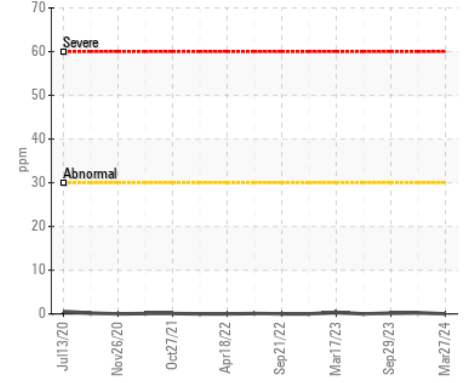
Copper (ppm)



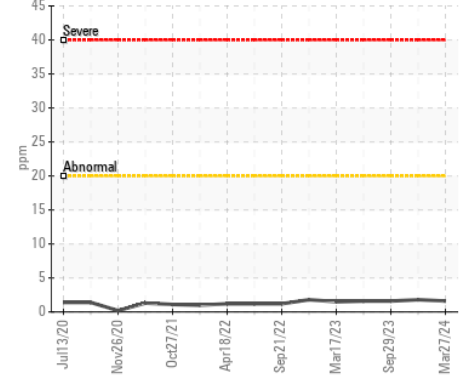
Viscosity @ 100°C



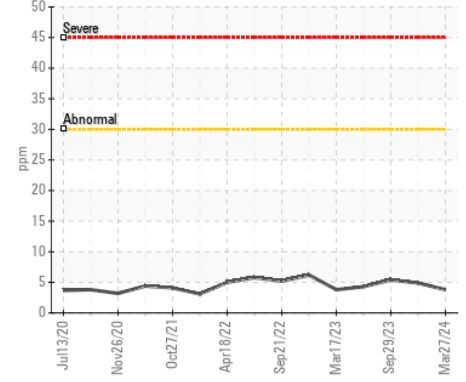
Lead (ppm)



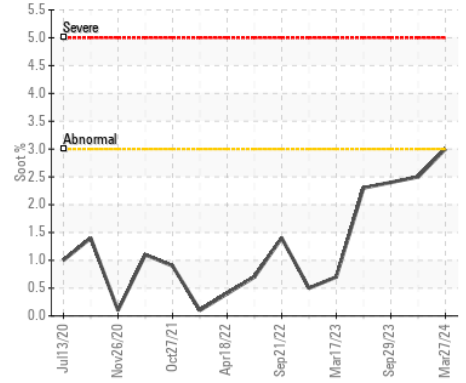
Chromium (ppm)



Silicon (ppm)



▲ Soot %



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0081828  
**Lab Number** : 02636280  
**Unique Number** : 5785442  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, KV40, PercentFuel, VI, Visual )

**RENEWABLE FOREST PRODUCTS**  
 59 TWIN CITY CROSS RD  
 ROSSLYN, ON  
 CA P7C 5M9  
 Contact: Service Manager  
 purchasing@renewablefp.com

*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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