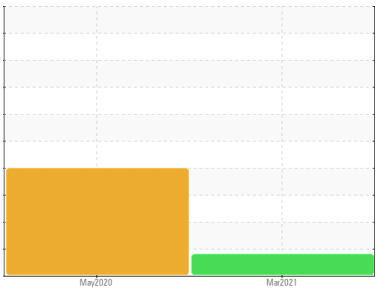
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
4476
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0014439**	GFL0002533	---
Sample Date		Client Info		**18 Mar 2021**	14 May 2020	---
Machine Age	hrs	Client Info		**33224**	31174	---
Oil Age	hrs	Client Info		**500**	500	---
Oil Changed		Client Info		**Changed**	Changed	---
Sample Status				**ABNORMAL**	SEVERE	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**23**	67	---
Chromium	ppm	ASTM D5185(m)	>20	**1**	2	---
Nickel	ppm	ASTM D5185(m)	>5	**0**	<1	---
Titanium	ppm	ASTM D5185(m)	>2	**<1**	<1	---
Silver	ppm	ASTM D5185(m)	>2	**0**	0	---
Aluminum	ppm	ASTM D5185(m)	>20	**1**	1	---
Lead	ppm	ASTM D5185(m)	>40	**1**	16	---
Copper	ppm	ASTM D5185(m)	>330	**4**	5	---
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	---
Antimony	ppm	ASTM D5185(m)		**0**	<1	---
Vanadium	ppm	ASTM D5185(m)		**0**	0	---
Beryllium	ppm	ASTM D5185(m)		**0**	0	---
Cadmium	ppm	ASTM D5185(m)		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**2**	3	---
Barium	ppm	ASTM D5185(m)	0	**0**	0	---
Molybdenum	ppm	ASTM D5185(m)	60	**54**	52	---
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	---
Magnesium	ppm	ASTM D5185(m)	1010	**909**	853	---
Calcium	ppm	ASTM D5185(m)	1070	**998**	995	---
Phosphorus	ppm	ASTM D5185(m)	1150	**919**	842	---
Zinc	ppm	ASTM D5185(m)	1270	**1153**	1075	---
Sulfur	ppm	ASTM D5185(m)	2060	**2527**	2046	---
Lithium	ppm	ASTM D5185(m)		**<1**	<1	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**3**	3	---
Sodium	ppm	ASTM D5185(m)		**2**	<1	---
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	---
Fuel	%	ASTM D7593*	>3.0	▲ **3.3**	⬢ 14.5	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	**2.1**	⬢ 6.9	---
Nitration	Abs/cm	ASTM D7624*	>20	**7.9**	20.5	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**22.0**	66.6	---

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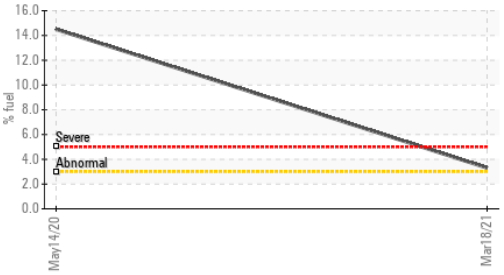
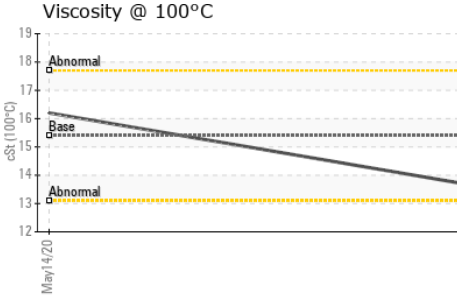
Fuel Dilution



Viscosity @ 100°C



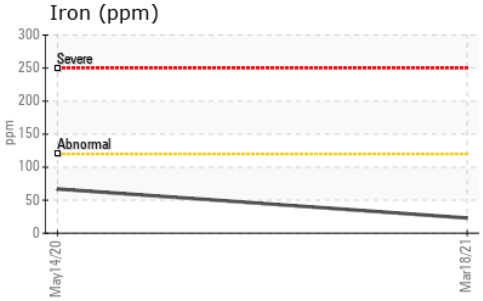
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**13.9**	30.4	---

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

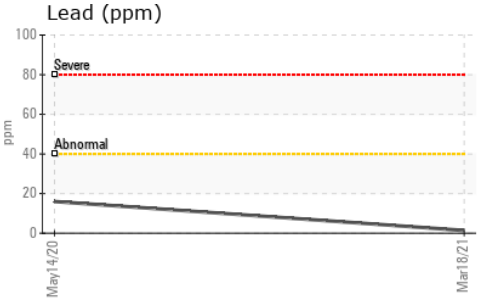
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.6**	16.2	---

GRAPHS

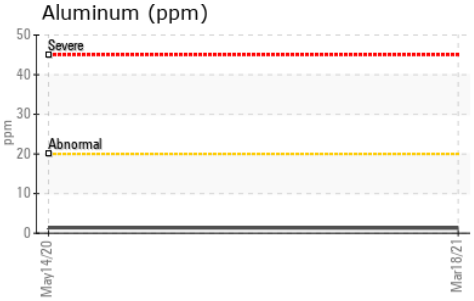
Iron (ppm)



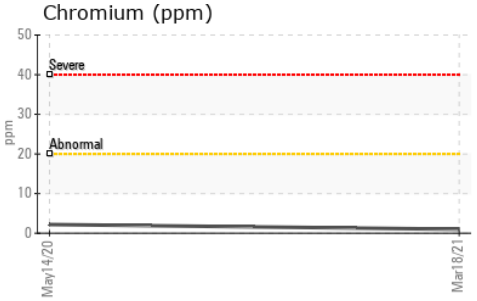
Lead (ppm)



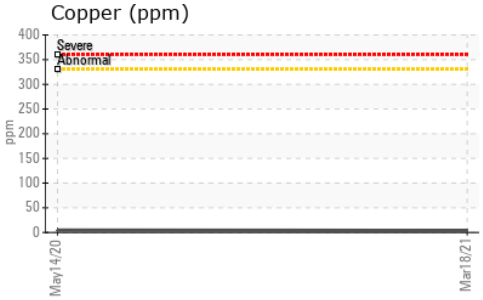
Aluminum (ppm)



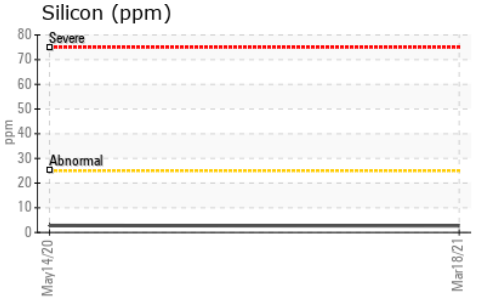
Chromium (ppm)



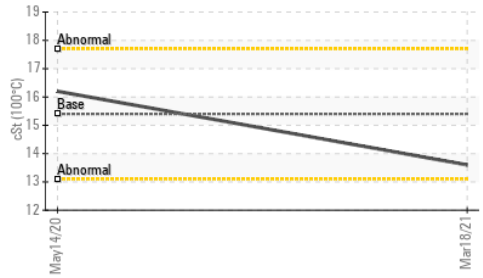
Copper (ppm)



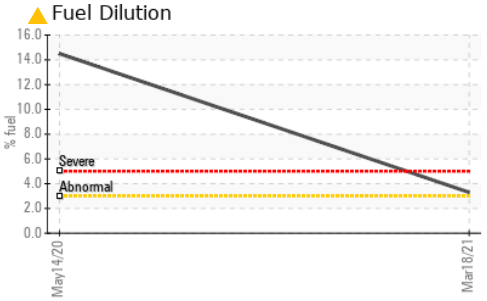
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 9998 - Moved No Longer Used Units**
Sample No. : GFL0014439 **Recieved** : 23 Mar 2021 CANADIAN UNITS
Lab Number : 02410686 **Diagnosed** : 24 Mar 2021 ,
Unique Number : 5190163 **Diagnostician** : Wes Davis CA
Test Package : MOB 1 (Additional Tests: PercentFuel) Contact: Service Manager

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. T:
Validity of results and interpretation are based on the sample and information as supplied. F: