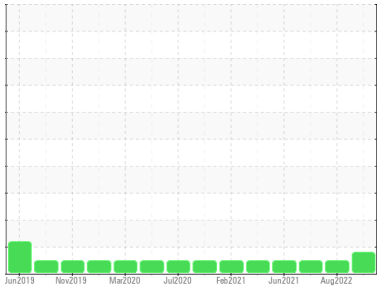
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
GFL216SW [984879]
Machine Id
401227
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
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. 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	history 1	history 2
Sample Number		Client Info		**GFL0054852**	GFL0054817	GFL0037731
Sample Date		Client Info		**11 Oct 2022**	09 Aug 2022	29 Oct 2021
Machine Age	hrs	Client Info		**26309**	25673	25273
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION	method	limit/base	current	history 1	history 2
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185(m)	>120	**9**	19	11
Chromium	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**<1**	<1	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**4**	4	1
Lead	ppm	ASTM D5185(m)	>40	**<1**	3	3
Copper	ppm	ASTM D5185(m)	>330	**<1**	1	1
Tin	ppm	ASTM D5185(m)	>15	**0**	0	<1
Antimony	ppm	ASTM D5185(m)		**0**	<1	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185(m)	0	**3**	2	2
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**57**	58	56
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**922**	961	955
Calcium	ppm	ASTM D5185(m)	1070	**1042**	1070	994
Phosphorus	ppm	ASTM D5185(m)	1150	**1042**	1020	997
Zinc	ppm	ASTM D5185(m)	1270	**1142**	1188	1163
Sulfur	ppm	ASTM D5185(m)	2060	**2595**	2645	2449
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185(m)	>25	**6**	4	3
Sodium	ppm	ASTM D5185(m)		**4**	4	4
Potassium	ppm	ASTM D5185(m)	>20	**11**	10	<1
Fuel	%	ASTM D7593*	>3.0	▲ **3**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	ASTM D7844*	>4	**0.2**	0.3	0
Nitration	Abs/cm	ASTM D7624*	>20	**8.8**	7.6	6.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**20.2**	19.4	17.0

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**17.4**	15.6	11.2

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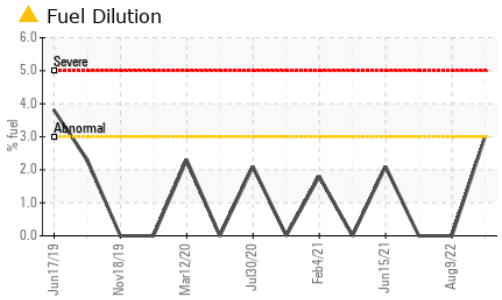
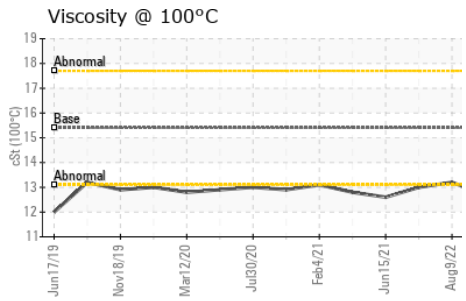
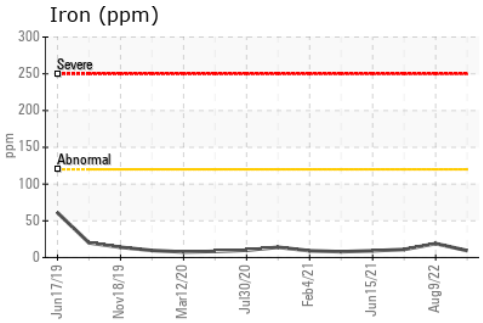


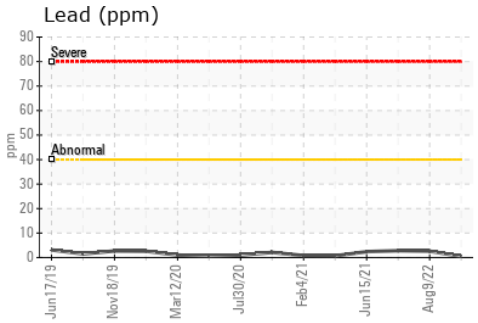


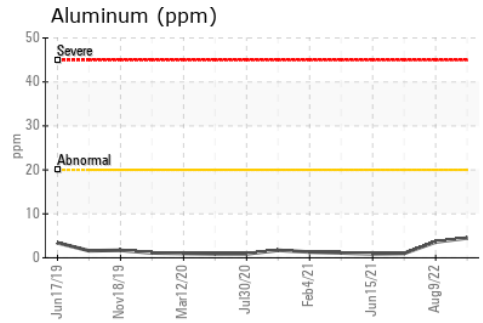
VISUAL		method	limit/base	current	history 1	history 2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

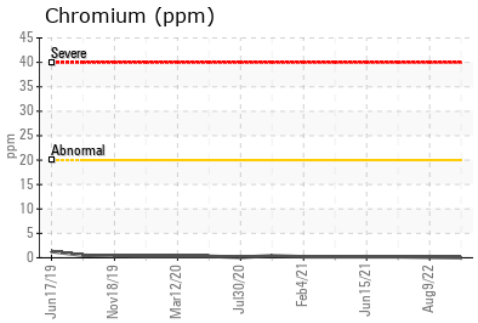
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**12.7**	13.2	13.0

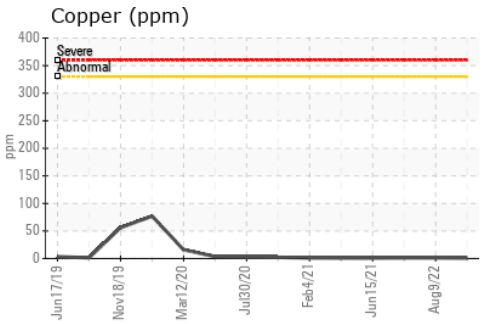
GRAPHS

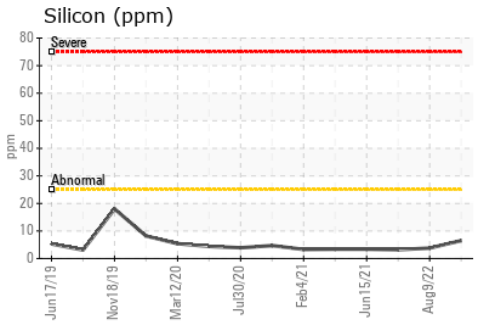


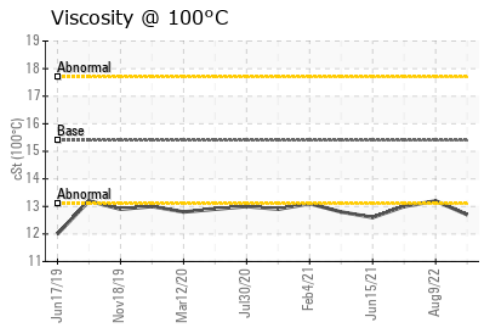


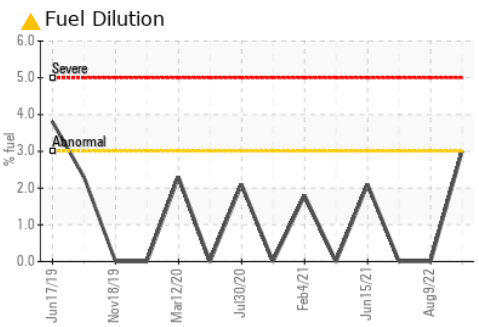












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 207 - Pickering SW**
Sample No. : GFL0054852 **Received** : 13 Oct 2022 1034 TOY AVENUE, PICKERING YARD
Lab Number : 02515862 **Diagnosed** : 14 Oct 2022 PICKERING, ON
Unique Number : 5472842 **Diagnostician** : Kevin Marson CA L1W 3P1
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel) Contact: Ian Patton
To discuss this sample report, contact Customer Service at 1-800-268-2131. ipatton@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (905)831-6297
Validity of results and interpretation are based on the sample and information as supplied. F: (905)426-3577