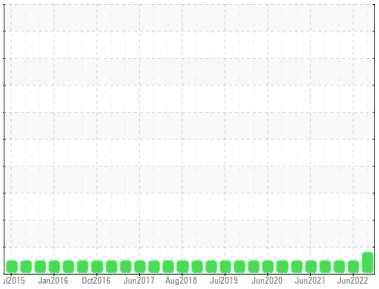
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
GFL216SW [1048969]
Machine Id
4605
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Confirm the source of the lubricant being utilized for top-up/fill. 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. No other contaminants were detected in the oil.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0072996**	GFL0050693	GFL0037715
Sample Date		Client Info		**06 Mar 2023**	16 Jun 2022	14 Apr 2022
Machine Age	hrs	Client Info		**21652**	19840	19481
Oil Age	hrs	Client Info		**0**	19840	19481
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**MARGINAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**43**	6	16
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**<1**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**9**	3	5
Lead	ppm	ASTM D5185(m)	>40	**4**	<1	2
Copper	ppm	ASTM D5185(m)	>330	**4**	1	3
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	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	history1	history2
Boron	ppm	ASTM D5185(m)	0	**6**	4	3
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**76**	58	61
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**141**	1000	1008
Calcium	ppm	ASTM D5185(m)	1070	**1951**	1037	1068
Phosphorus	ppm	ASTM D5185(m)	1150	**934**	1057	1065
Zinc	ppm	ASTM D5185(m)	1270	**1036**	1201	1261
Sulfur	ppm	ASTM D5185(m)	2060	**2735**	2523	2320
Lithium	ppm	ASTM D5185(m)		**<1**	0	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**6**	3	4
Sodium	ppm	ASTM D5185(m)		**7**	2	5
Potassium	ppm	ASTM D5185(m)	>20	**19**	4	10
Fuel	%	ASTM D7593*	>5	**2.2**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	**0.7**	0	0.3
Nitration	Abs/cm	ASTM D7624*	>20	**14.6**	7.6	9.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	**33.6**	21.0	23.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**26.8**	15.3	18.0

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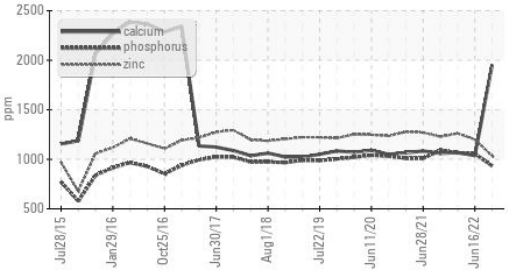
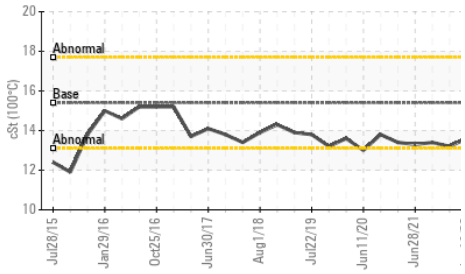
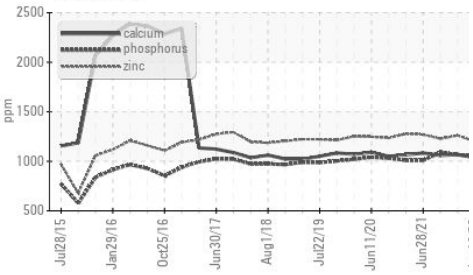
Additives



Viscosity @ 100°C



Additives

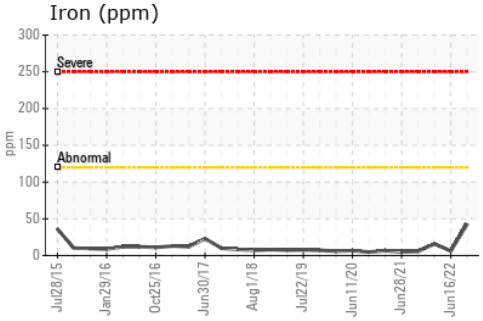


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

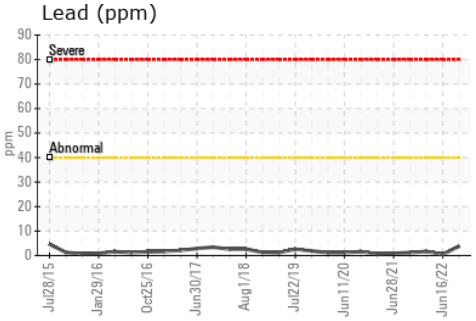
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**12.6**	13.6	13.2

GRAPHS

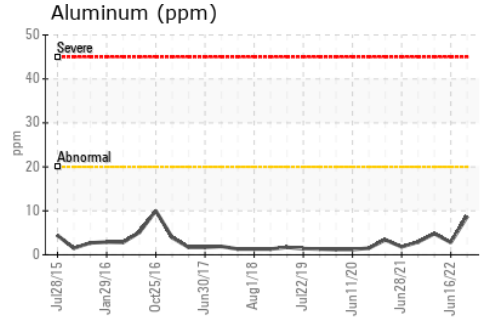
Iron (ppm)



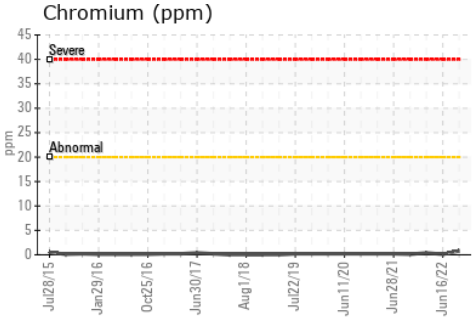
Lead (ppm)



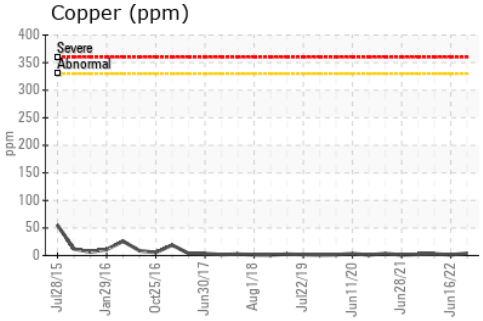
Aluminum (ppm)



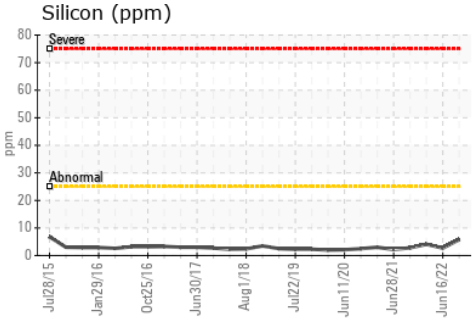
Chromium (ppm)



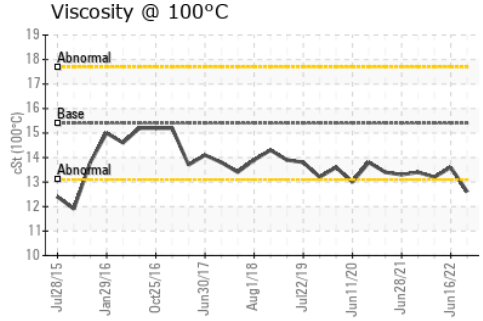
Copper (ppm)



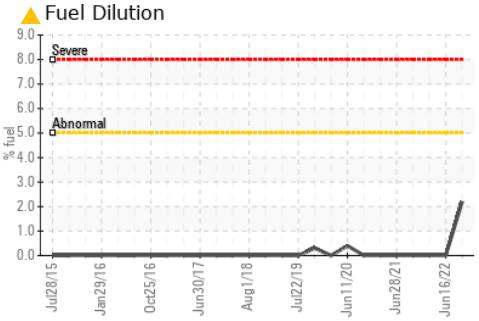
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 207 - Pickering SW**
Sample No. : GFL0072996 **Received** : 15 Mar 2023 1034 TOY AVENUE, PICKERING YARD
Lab Number : 02545316 **Diagnosed** : 16 Mar 2023 PICKERING, ON
Unique Number : 5542321 **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