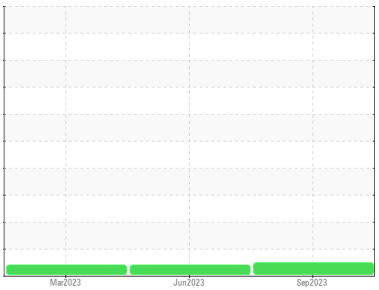
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
429014
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
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
There is no indication of any contamination 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		**GFL0035518**	GFL0035514	GFL0035519
Sample Date		Client Info		**19 Sep 2023**	22 Jun 2023	29 Mar 2023
Machine Age	hrs	Client Info		**9953**	9630	9044
Oil Age	hrs	Client Info		**600**	9630	600
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	1	1

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**13**	18	15
Chromium	ppm	ASTM D5185(m)	>20	**0**	<1	0
Nickel	ppm	ASTM D5185(m)	>5	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	**2**	2	3
Lead	ppm	ASTM D5185(m)	>40	**<1**	2	<1
Copper	ppm	ASTM D5185(m)	>330	**4**	6	5
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
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	**103**	29	50
Barium	ppm	ASTM D5185(m)	0	**0**	<1	0
Molybdenum	ppm	ASTM D5185(m)	60	**14**	86	85
Manganese	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**42**	31	35
Calcium	ppm	ASTM D5185(m)	1070	**2100**	2084	2226
Phosphorus	ppm	ASTM D5185(m)	1150	**971**	1035	1063
Zinc	ppm	ASTM D5185(m)	1270	**1104**	1146	1183
Sulfur	ppm	ASTM D5185(m)	2060	**2824**	2945	3218
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**4**	4	4
Sodium	ppm	ASTM D5185(m)		**6**	7	6
Potassium	ppm	ASTM D5185(m)	>20	**7**	2	2
Glycol	%	ASTM D7922*		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	**0**	0.2	0
Nitration	Abs/cm	ASTM D7624*	>20	**7.3**	9.6	9.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	**19.9**	19.8	21.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**15.5**	15.2	14.0

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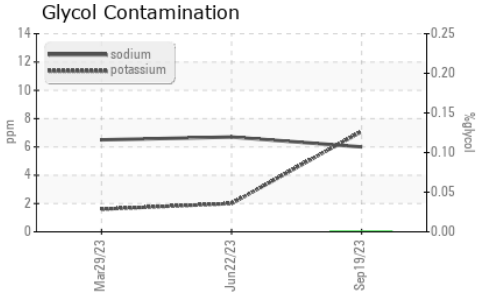
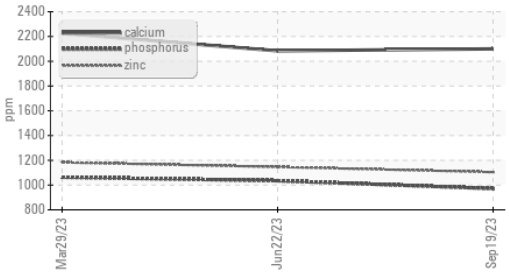
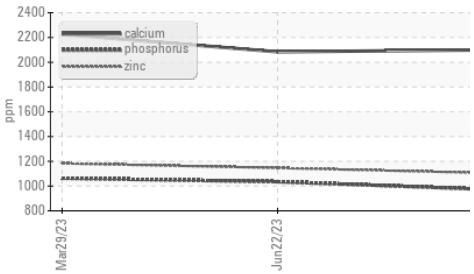
Glycol Contamination



Additives



Additives

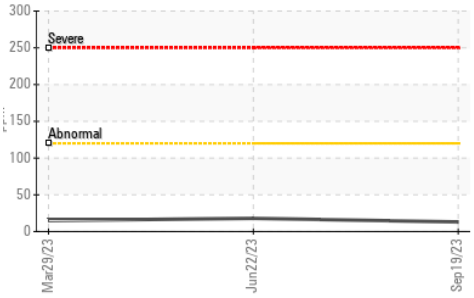


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

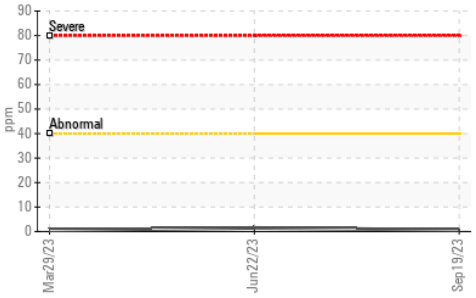
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**14.0**	▲ 11.1	▲ 10.8

GRAPHS

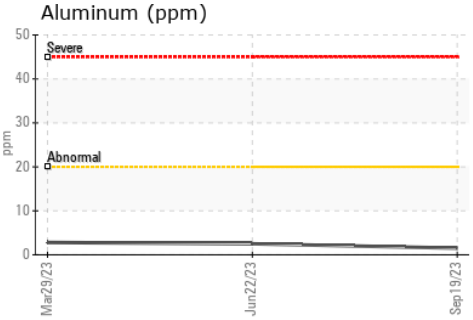
Iron (ppm)



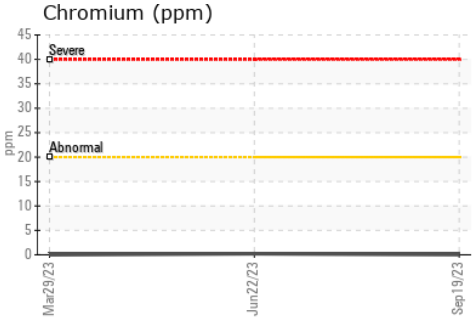
Lead (ppm)



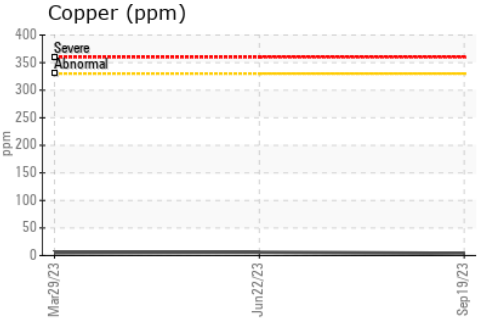
Aluminum (ppm)



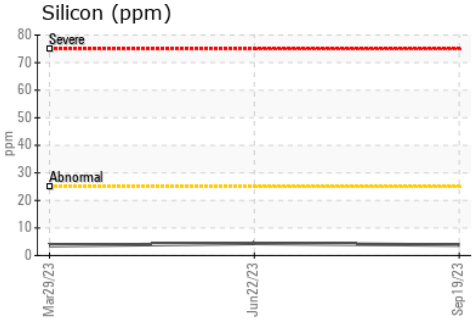
Chromium (ppm)



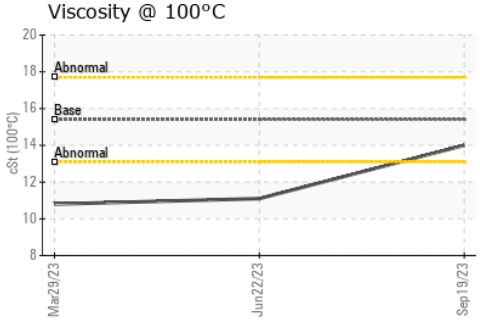
Copper (ppm)



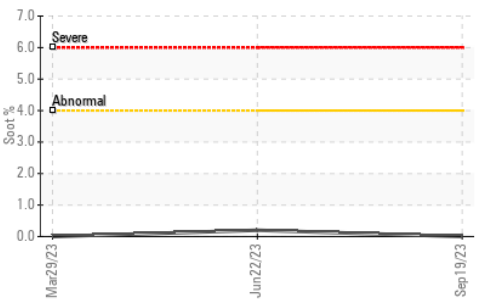
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 213 - Kitchener**
Sample No. : GFL0035518 **Received** : 20 Sep 2023 16 Centennial Road, Kitchener Yard
Lab Number : 02583747 **Diagnosed** : 20 Sep 2023 Kitchener, ON
Unique Number : 5644812 **Diagnostician** : Wes Davis CA N2B 3G1
Test Package : MOB 1 (Additional Tests: Glycol) Contact: Keith Zehr

To discuss this sample report, contact Customer Service at 1-800-268-2131. kzehr@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (226)751-4416
Validity of results and interpretation are based on the sample and information as supplied. F: x: