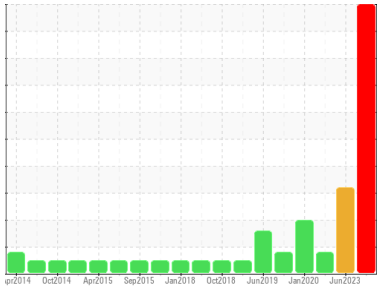
OIL ANALYSIS REPORT

Machine Id
7817
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (21 LTR)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Chromium and iron ppm levels are severe. Nickel ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Ring wear is indicated. Exhaust valve wear is indicated. A cylinder ring may be cracked or broken.

Contamination
There is a high amount of fuel present in the oil. Light concentration of carbon/soot present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0099471**	GFL0085868	GFL0050346
Sample Date		Client Info		**09 Nov 2023**	22 Jun 2023	04 May 2022
Machine Age	hrs	Client Info		**342381**	21894	21894
Oil Age	hrs	Client Info		**0**	21894	150
Oil Changed		Client Info		**Changed**	N/A	Not Changd
Sample Status				**SEVERE**	SEVERE	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*	>65	**0**	0	---
Iron	ppm	ASTM D5185(m)	>80	**217**	129	66
Chromium	ppm	ASTM D5185(m)	>5	**10**	6	2
Nickel	ppm	ASTM D5185(m)	>2	**2**	1	<1
Titanium	ppm	ASTM D5185(m)		**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>3	**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>30	**13**	13	5
Lead	ppm	ASTM D5185(m)	>30	**<1**	<1	<1
Copper	ppm	ASTM D5185(m)	>150	**5**	3	2
Tin	ppm	ASTM D5185(m)	>5	**0**	<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	**15**	19	36
Barium	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	60	**58**	61	65
Manganese	ppm	ASTM D5185(m)	0	**2**	1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**109**	115	120
Calcium	ppm	ASTM D5185(m)	1070	**1763**	1832	1951
Phosphorus	ppm	ASTM D5185(m)	1150	**782**	905	988
Zinc	ppm	ASTM D5185(m)	1270	**953**	1007	1109
Sulfur	ppm	ASTM D5185(m)	2060	**2234**	2584	2986
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**21**	22	20
Sodium	ppm	ASTM D5185(m)		**21**	19	15
Potassium	ppm	ASTM D5185(m)	>20	**6**	7	3
Fuel	%	ASTM D7593*	>5	**10.3**	9.4	5.3
Glycol	%	ASTM D7922*		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**3.4**	1.7	0.5
Nitration	Abs/cm	ASTM D7624*	>20	**18.9**	14.0	8.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	**40.8**	26.8	20.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**41.8**	21.8	12.6

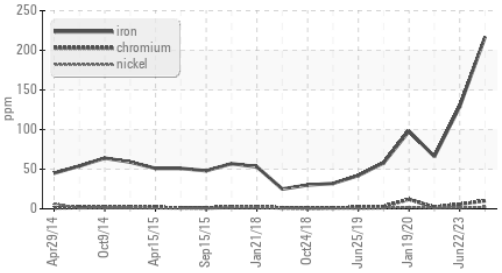
OIL ANALYSIS REPORT

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

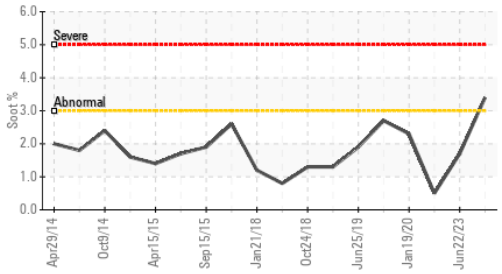
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ **12.3**	▲ 12.1	12.8

GRAPHS

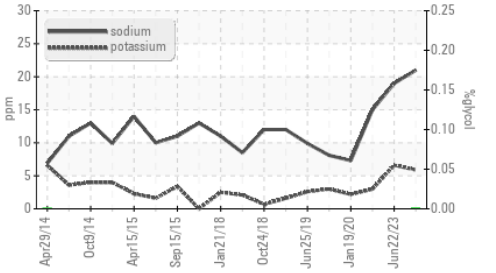
Ferrous Alloys



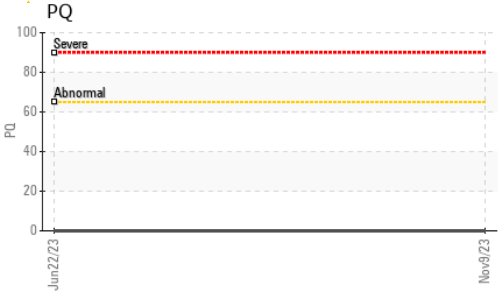
Soot %



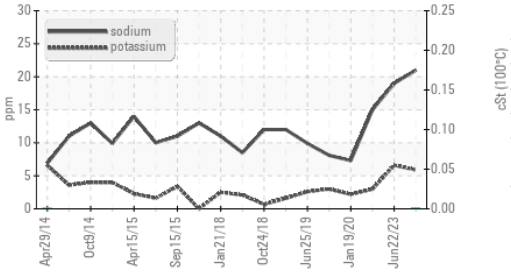
Glycol Contamination



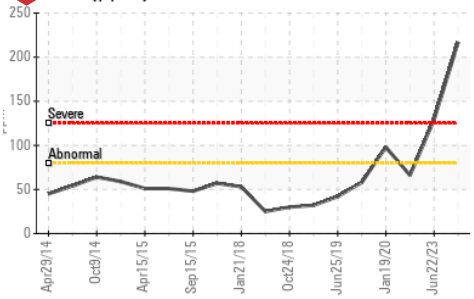
PQ



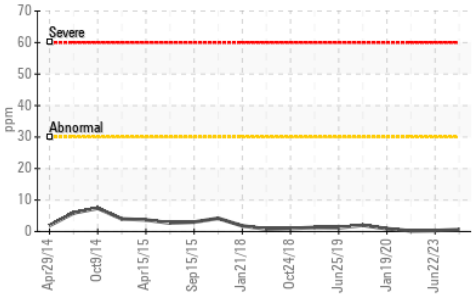
Glycol Contamination



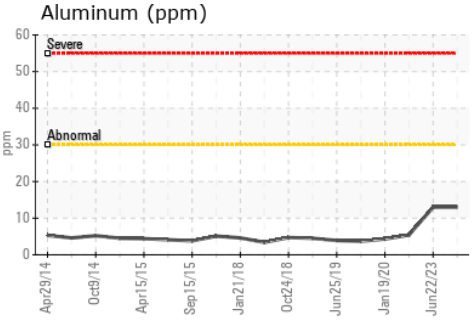
Iron (ppm)



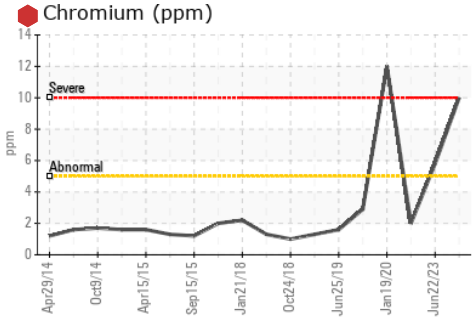
Lead (ppm)



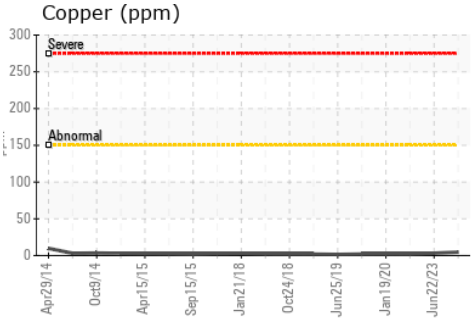
Aluminum (ppm)



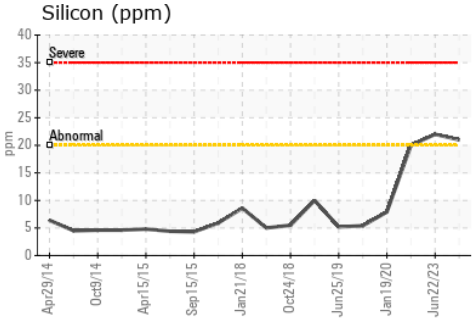
Chromium (ppm)



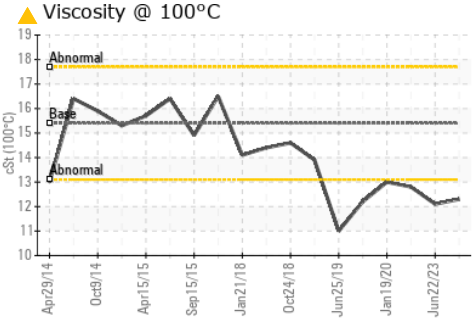
Copper (ppm)



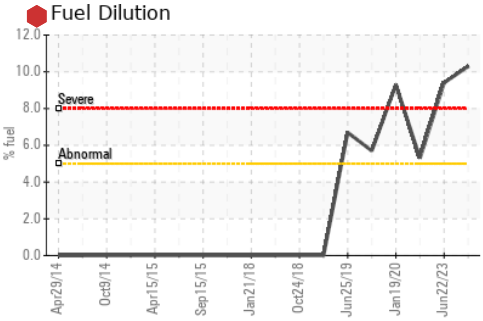
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0099471
Lab Number : 02595560
Unique Number : 5672639
Test Package : MOB 1 (Additional Tests: Glycol, PercentFuel, PQ)

Received : 10 Nov 2023
Diagnosed : 13 Nov 2023
Diagnostician : Kevin Marson

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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Report Id: GFL225 [WCAMIS] 02595560 (Generated: 11/16/2023 11:18:54) Rev: 1

Submitted By: Kim McCall