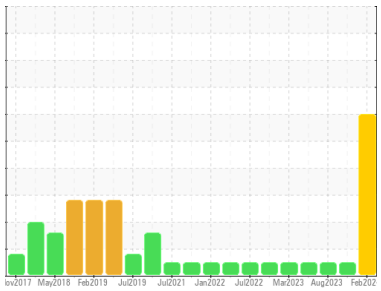
OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
9975
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Wear

Copper ppm levels are abnormal. Bearing wear is indicated.

Contamination

Test for glycol is positive. There is a moderate concentration of glycol present in the oil. There is a moderate concentration of water present in the oil.

Fluid Condition

Viscosity of sample indicates oil is within SAE 40 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. 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		**GFL0102600**	GFL0101715	GFL0090611
Sample Date		Client Info		**22 Feb 2024**	21 Nov 2023	15 Aug 2023
Machine Age	kms	Client Info		**0**	541584	525817
Oil Age	kms	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Changed	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>110	**12**	18	5
Chromium	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	<1	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>25	**2**	3	2
Lead	ppm	ASTM D5185(m)	>45	**6**	<1	1
Copper	ppm	ASTM D5185(m)	>85	▲ **182**	2	<1
Tin	ppm	ASTM D5185(m)	>4	**<1**	0	0
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)	2	**8**	2	18
Barium	ppm	ASTM D5185(m)	0	**0**	<1	0
Molybdenum	ppm	ASTM D5185(m)	50	**72**	59	60
Manganese	ppm	ASTM D5185(m)	0	**<1**	0	<1
Magnesium	ppm	ASTM D5185(m)	950	**517**	952	919
Calcium	ppm	ASTM D5185(m)	1050	**1434**	1038	1046
Phosphorus	ppm	ASTM D5185(m)	995	**723**	960	1027
Zinc	ppm	ASTM D5185(m)	1180	**835**	1193	1121
Sulfur	ppm	ASTM D5185(m)	2600	**1980**	2424	2639
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>30	**11**	7	4
Sodium	ppm	ASTM D5185(m)		▲ **692**	6	3
Potassium	ppm	ASTM D5185(m)	>20	▲ **21**	1	<1
Water	%	ASTM D6304*	>0.2	**NEG**	NEG	NEG
Glycol	%	ASTM D7922*		▲ **0.096**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0**	0.7	0.1
Nitration	Abs/cm	ASTM D7624*	>20	**10.6**	9.5	5.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	**19.9**	21.4	19.3

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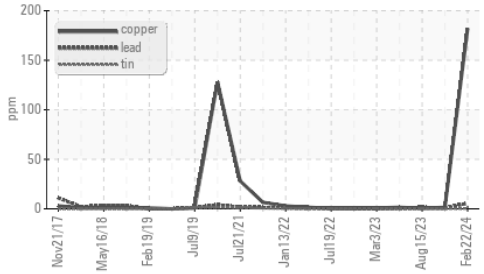
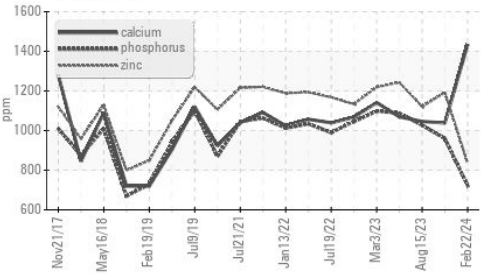
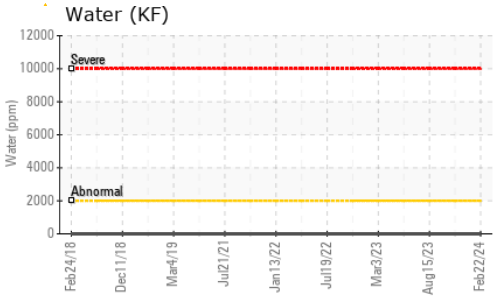
▲ Non-ferrous Metals



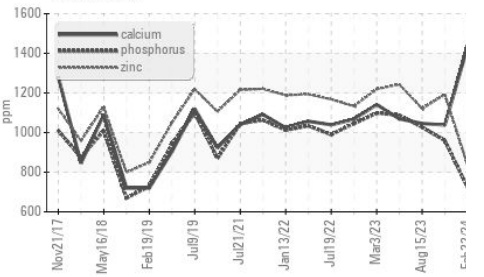
Additives



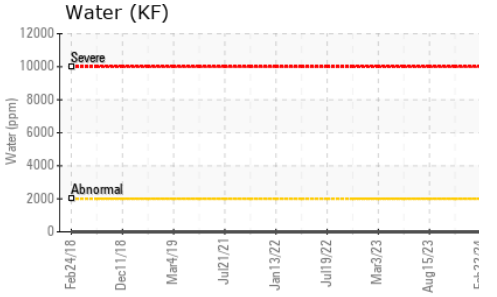
Water (KF)



Additives



Water (KF)



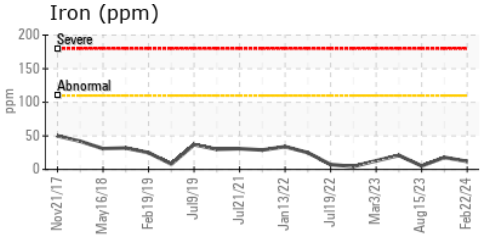
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**16.9**	17.8	13.6

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	▲ **.2%**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

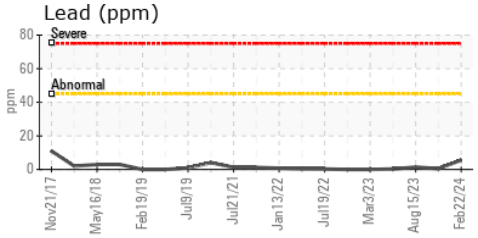
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	▲ **14.8**	11.0	10.8

GRAPHS

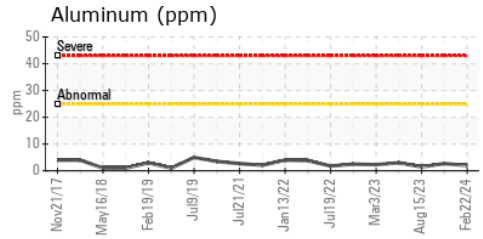
Iron (ppm)



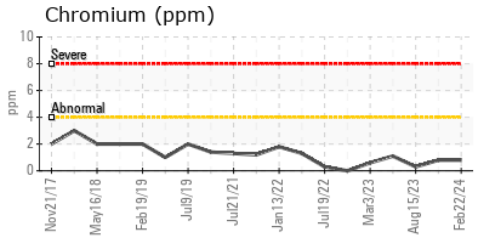
Lead (ppm)



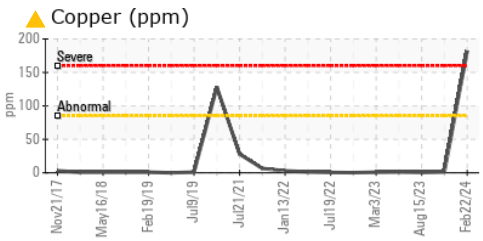
Aluminum (ppm)



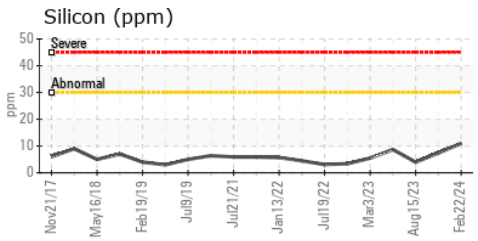
Chromium (ppm)



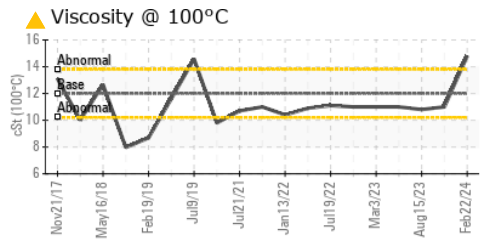
▲ Copper (ppm)



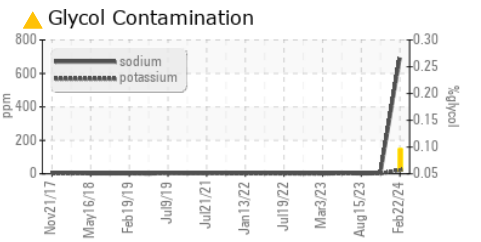
Silicon (ppm)



▲ Viscosity @ 100°C



▲ Glycol Contamination



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0102600
Lab Number : 02617608
Unique Number : 5734718
Test Package : MOB 1 (Additional Tests: Glycol, KF, Visual)

Received : 23 Feb 2024
Tested : 23 Feb 2024
Diagnosed : 26 Feb 2024 - 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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