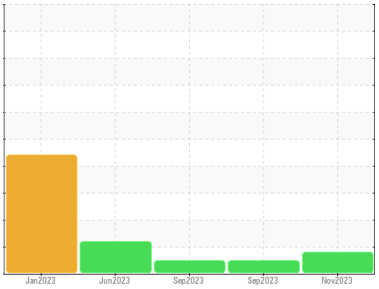
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
712055
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

▲ Wear

Nickel ppm levels are abnormal. Exhaust valve wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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		**GFL0097324**	GFL0090848	GFL0090861
Sample Date		Client Info		**16 Nov 2023**	12 Sep 2023	05 Sep 2023
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**2378**	1902	1839
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**17**	11	19
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	▲ **6**	<1	3
Titanium	ppm	ASTM D5185(m)	>2	**0**	<1	0
Silver	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	**1**	<1	1
Lead	ppm	ASTM D5185(m)	>40	**2**	<1	3
Copper	ppm	ASTM D5185(m)	>330	**56**	1	107
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	**7**	3	51
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**55**	59	5
Manganese	ppm	ASTM D5185(m)	0	**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**852**	972	62
Calcium	ppm	ASTM D5185(m)	1070	**1160**	1035	2154
Phosphorus	ppm	ASTM D5185(m)	1150	**913**	1034	915
Zinc	ppm	ASTM D5185(m)	1270	**1159**	1186	1133
Sulfur	ppm	ASTM D5185(m)	2060	**2058**	2388	2392
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**3**	3	5
Sodium	ppm	ASTM D5185(m)		**4**	4	5
Potassium	ppm	ASTM D5185(m)	>20	**3**	1	6

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	**0.9**	0.5	1
Nitration	Abs/cm	ASTM D7624*	>20	**8.6**	7.4	9.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**21.8**	19.8	25.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**16.2**	14.7	18.8

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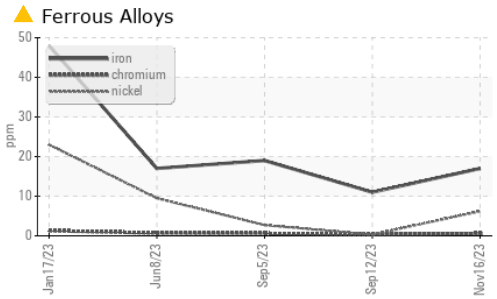
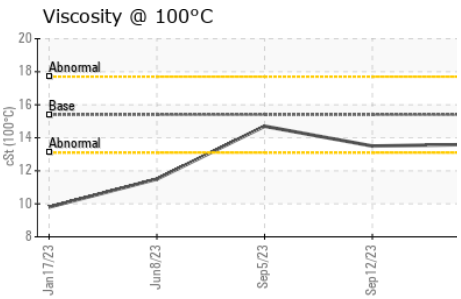
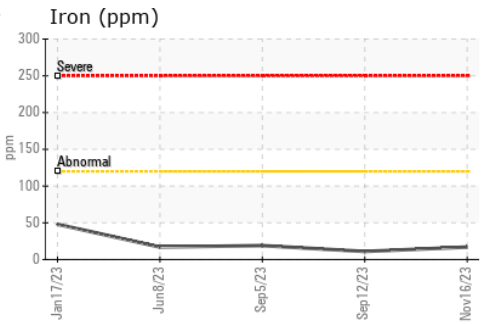


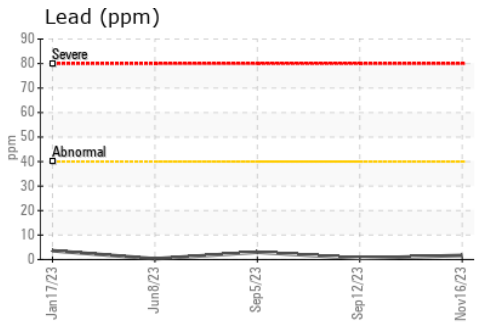


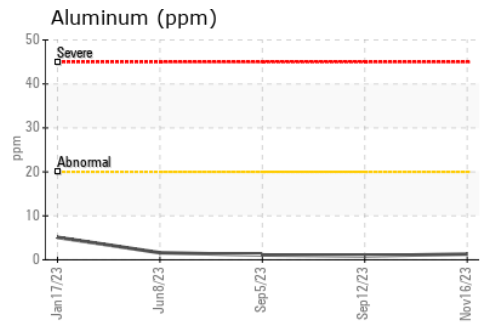
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

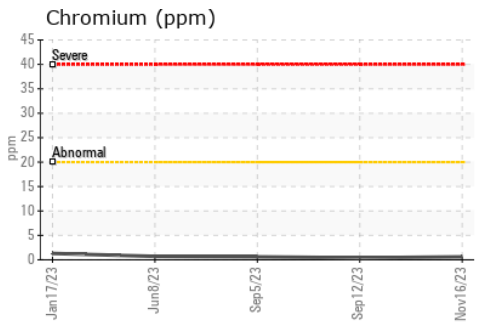
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**13.6**	13.5	14.7

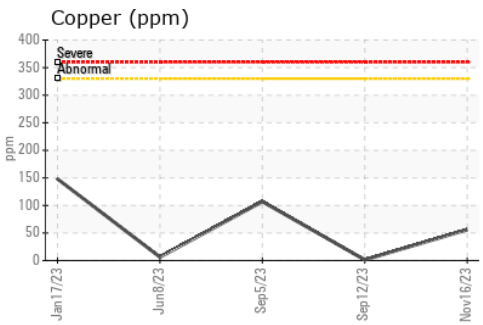
GRAPHS

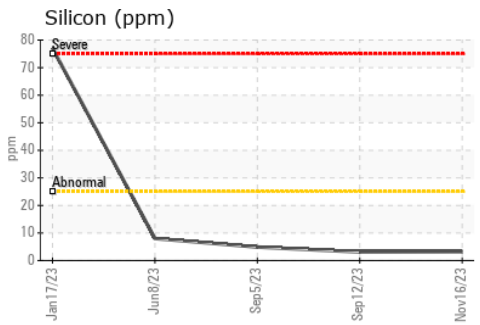


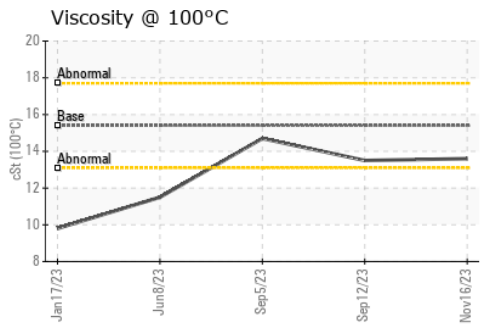


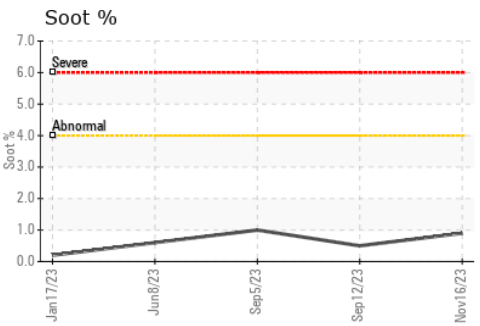












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0097324
Lab Number : 02597021
Unique Number : 5682101
Test Package : MOB 1

Received : 17 Nov 2023
Diagnosed : 17 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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