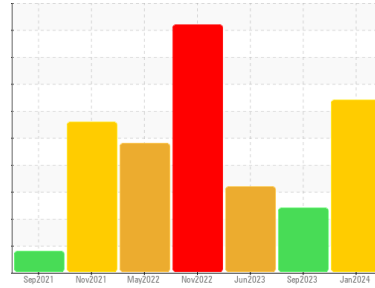




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
801185

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- 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. We recommend an early resample to monitor this condition.

▲ Wear

Aluminum ppm levels are abnormal. Piston wear is indicated.

▲ Contamination

Test for glycol is positive. Light fuel dilution occurring. There is a moderate concentration of glycol present in the oil. No other contaminants were detected 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	GFL0100586	GFL0077008	GFL0077031
Sample Date	Client Info	26 Jan 2024	19 Sep 2023	28 Jun 2023
Machine Age	kms	375652	22695	22351
Oil Age	kms	0	344	729
Oil Changed	Client Info	N/A	Changed	Changed
Sample Status		ABNORMAL	ABNORMAL	SEVERE

CONTAMINATION

method	limit/base	current	history1	history2	
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185(m)	>100	78	68	75
Chromium	ppm	ASTM D5185(m)	>20	4	4	4
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>3	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	▲ 28	12	16
Lead	ppm	ASTM D5185(m)	>40	2	2	2
Copper	ppm	ASTM D5185(m)	>330	2	2	2
Tin	ppm	ASTM D5185(m)	>15	0	0	<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	36	6	7
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	124	66	68
Manganese	ppm	ASTM D5185(m)	0	<1	0	<1
Magnesium	ppm	ASTM D5185(m)	1010	931	877	903
Calcium	ppm	ASTM D5185(m)	1070	1062	969	1013
Phosphorus	ppm	ASTM D5185(m)	1150	987	884	970
Zinc	ppm	ASTM D5185(m)	1270	1176	1075	1122
Sulfur	ppm	ASTM D5185(m)	2060	2652	2251	2196
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185(m)	>25	26	8	8
Sodium	ppm	ASTM D5185(m)		▲ 1816	▲ 287	▲ 316
Potassium	ppm	ASTM D5185(m)	>20	▲ 48	14	24
Fuel	%	ASTM D7593*	>5	▲ 2.3	▲ 7.8	■ 8.3
Glycol	%	ASTM D7922*		▲ 0.096	0.0	0.0

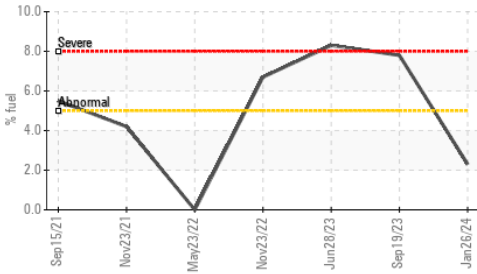
INFRA-RED

method	limit/base	current	history1	history2		
Soot %	%	ASTM D7844*	>3	1.1	1.1	1.7
Nitration	Abs/cm	ASTM D7624*	>20	17.4	13.2	17.3
Sulfation	Abs./1mm	ASTM D7415*	>30	29.7	25.9	33.5

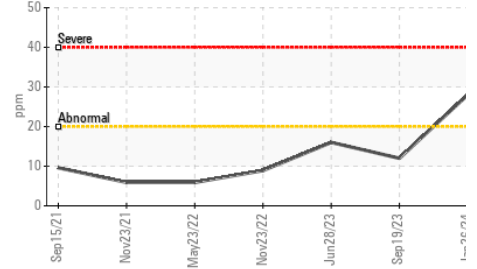


OIL ANALYSIS REPORT

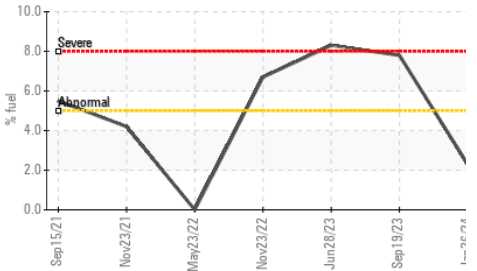
Fuel Dilution



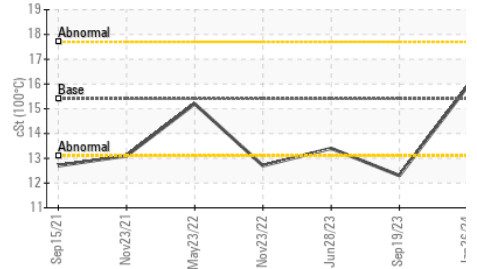
Aluminum (ppm)



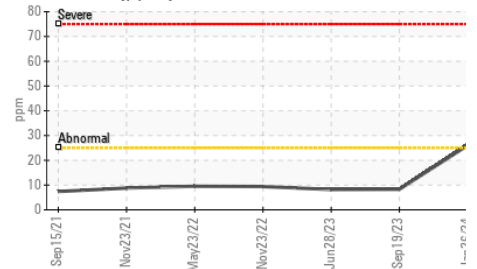
Fuel Dilution



Viscosity @ 100°C



Silicon (ppm)



FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs./1mm ASTM D7414*	>25	28.7	26.8	38.2

VISUAL

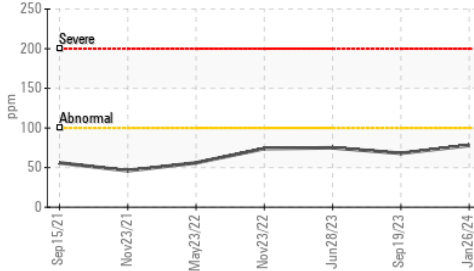
method	limit/base	current	history1	history2	
Emulsified Water	scalar Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar Visual*	NEG	NEG	NEG	NEG

FLUID PROPERTIES

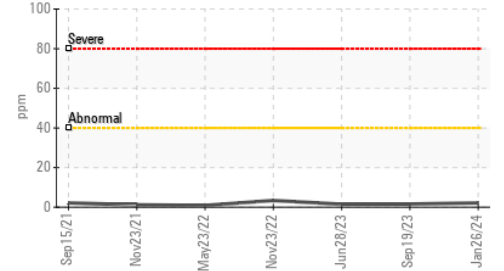
method	limit/base	current	history1	history2	
Visc @ 100°C	cSt ASTM D7279(m)	15.4	15.9	▲ 12.3	13.4

GRAPHS

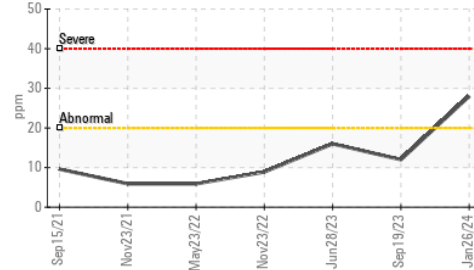
Iron (ppm)



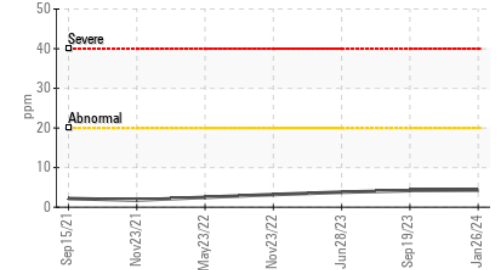
Lead (ppm)



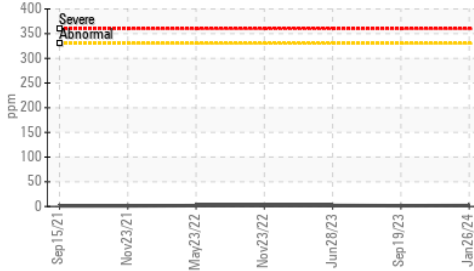
Aluminum (ppm)



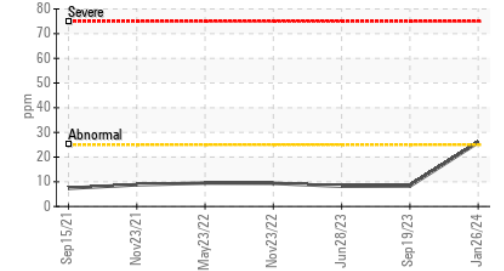
Chromium (ppm)



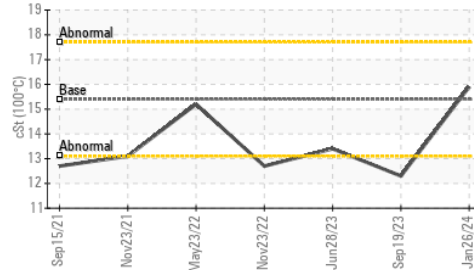
Copper (ppm)



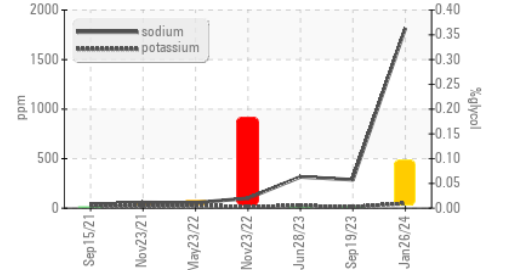
Silicon (ppm)



Viscosity @ 100°C



Glycol Contamination



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0100586
Lab Number : 02613643
Unique Number : 5722738
Test Package : MOB 1 (Additional Tests: Glycol, PercentFuel)

Received : 06 Feb 2024
Tested : 07 Feb 2024
Diagnosed : 07 Feb 2024 - Kevin Marson
GFL Environmental - 575 - Squamish Hauling
38950 Queens Way,
Squamish, BC
CA V8B 0K8
Contact: Dean Imbeau
dimbeau@gflenv.com
T: (604)892-5604
F: (604)892-5238

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.