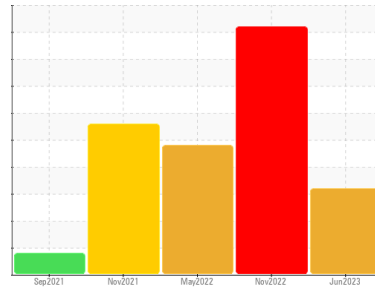




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
801185

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. Tests confirm the presence of fuel in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants. The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	GFL0077031	GFL0054613	GFL0024423
Sample Date	Client Info	28 Jun 2023	23 Nov 2022	23 May 2022
Machine Age	hrs	22351	21122	20113
Oil Age	hrs	729	0	947
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		SEVERE	SEVERE	ABNORMAL

WEAR METALS

method	limit/base	current	history 1	history 2	
Iron	ppm	ASTM D5185(m) >100	75	74	56
Chromium	ppm	ASTM D5185(m) >20	4	3	2
Nickel	ppm	ASTM D5185(m) >4	1	1	1
Titanium	ppm	ASTM D5185(m)	<1	<1	0
Silver	ppm	ASTM D5185(m) >3	0	0	0
Aluminum	ppm	ASTM D5185(m) >20	16	9	6
Lead	ppm	ASTM D5185(m) >40	2	3	<1
Copper	ppm	ASTM D5185(m) >330	2	3	2
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	history 1	history 2	
Boron	ppm	ASTM D5185(m) 0	7	20	4
Barium	ppm	ASTM D5185(m) 0	0	0	0
Molybdenum	ppm	ASTM D5185(m) 60	68	63	66
Manganese	ppm	ASTM D5185(m) 0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	903	684	1048
Calcium	ppm	ASTM D5185(m) 1070	1013	1248	1105
Phosphorus	ppm	ASTM D5185(m) 1150	970	982	1106
Zinc	ppm	ASTM D5185(m) 1270	1122	1096	1302
Sulfur	ppm	ASTM D5185(m) 2060	2196	2313	2491
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185(m) >25	8	9	10
Sodium	ppm	ASTM D5185(m)	316	101	55
Potassium	ppm	ASTM D5185(m) >20	24	16	25
Fuel	%	ASTM D7593* >5	8.3	6.7	<1.0
Glycol	%	ASTM D7922*	0.0	0.182	0.015

INFRA-RED

method	limit/base	current	history 1	history 2	
Soot %	%	ASTM D7844* >3	1.7	1	0.8
Nitration	Abs/cm	ASTM D7624* >20	17.3	18.5	13.4
Sulfation	Abs/.1mm	ASTM D7415* >30	33.5	35.0	28.0

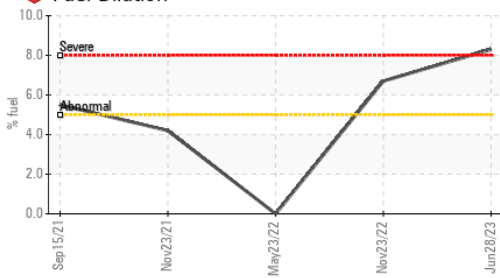
FLUID DEGRADATION

method	limit/base	current	history 1	history 2	
Oxidation	Abs/.1mm	ASTM D7414* >25	38.2	40.3	24.8



OIL ANALYSIS REPORT

Fuel Dilution

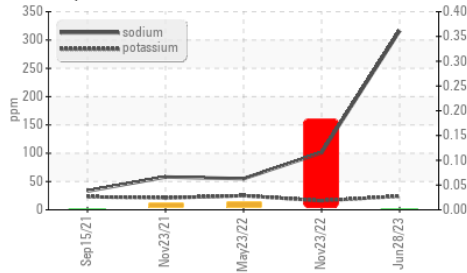


VISUAL	method	limit/base	current	history 1	history 2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

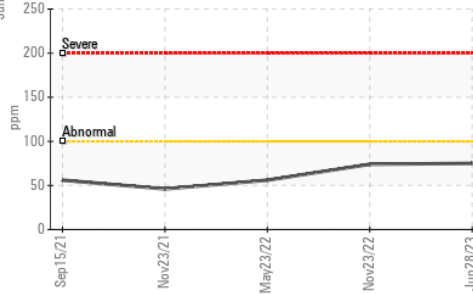
FLUID PROPERTIES	method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.4	12.7

GRAPHS

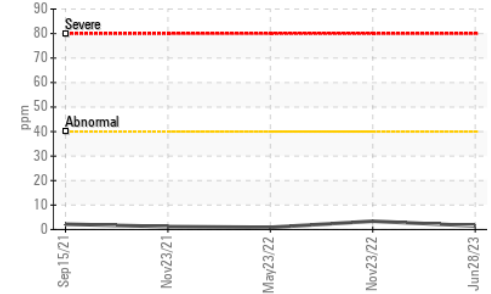
Glycol Contamination



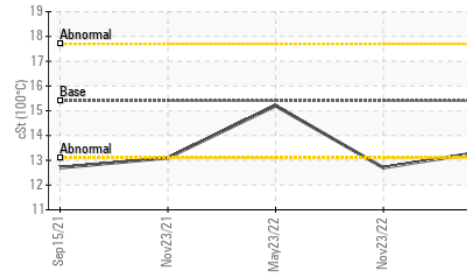
Iron (ppm)



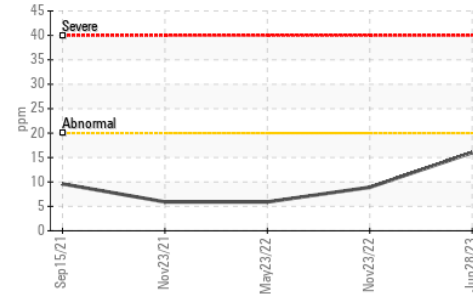
Lead (ppm)



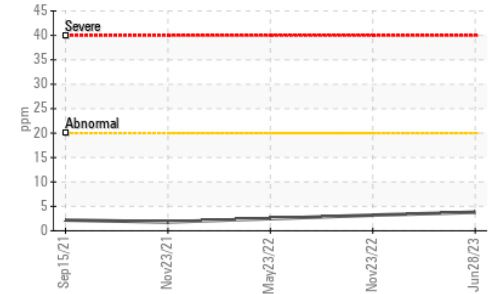
Viscosity @ 100°C



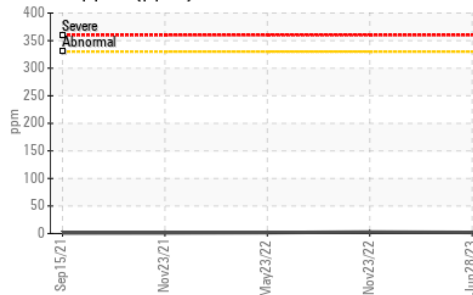
Aluminum (ppm)



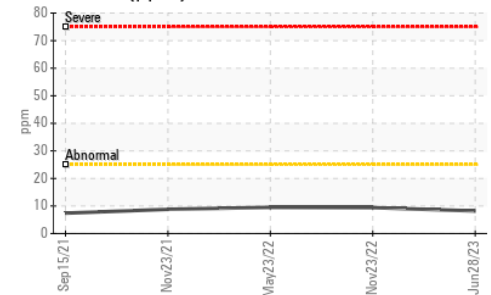
Chromium (ppm)



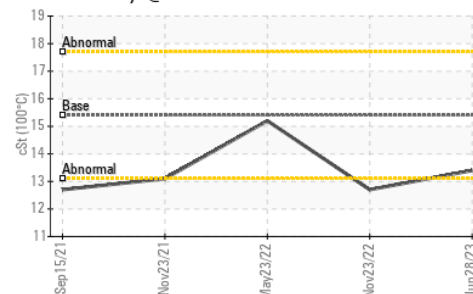
Copper (ppm)



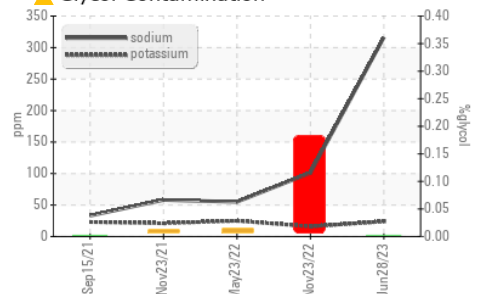
Silicon (ppm)



Viscosity @ 100°C



Glycol Contamination



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 575 - Squamish Hauling
Sample No. : GFL0077031 **Received** : 06 Jul 2023 38950 Queens Way,
Lab Number : 02568155 **Diagnosed** : 10 Jul 2023 Squamish, BC
Unique Number : 5605201 **Diagnostician** : Kevin Marson CA V8B 0K8
Test Package : MOB 1 (Additional Tests: PercentFuel)

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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