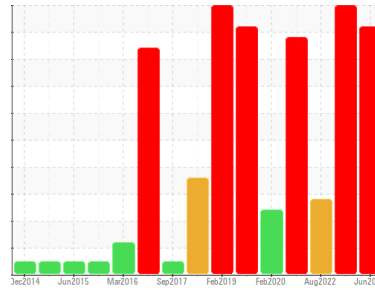




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
7933
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (22 LTR)

DIAGNOSIS

Recommendation

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

Iron ppm levels are severe. Chromium ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Ring wear is indicated.

Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0061151	GFL0097579	GFL0054499
Sample Date	Client Info	09 Jun 2024	27 Dec 2023	10 Aug 2022
Machine Age	hrs	22865	21710	19589
Oil Age	hrs	2170	1015	1145
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		SEVERE	SEVERE	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.1	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
PQ	ASTM D8184*	>45	21	0	3
Iron	ppm	ASTM D5185(m) >50	▲ 135	▲ 162	▲ 79
Chromium	ppm	ASTM D5185(m) >5	▲ 7	▲ 17	▲ 8
Nickel	ppm	ASTM D5185(m) >4	2	3	1
Titanium	ppm	ASTM D5185(m) >5	0	0	<1
Silver	ppm	ASTM D5185(m) >3	0	0	0
Aluminum	ppm	ASTM D5185(m) >25	11	11	8
Lead	ppm	ASTM D5185(m) >40	10	19	16
Copper	ppm	ASTM D5185(m) >150	3	4	5
Tin	ppm	ASTM D5185(m) >4	<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) 50	10	16	8
Barium	ppm	ASTM D5185(m) 5	<1	1	0
Molybdenum	ppm	ASTM D5185(m) 50	91	69	67
Manganese	ppm	ASTM D5185(m) 0	2	3	2
Magnesium	ppm	ASTM D5185(m) 560	629	625	681
Calcium	ppm	ASTM D5185(m) 1510	1974	1834	1756
Phosphorus	ppm	ASTM D5185(m) 780	784	854	800
Zinc	ppm	ASTM D5185(m) 870	1109	1061	1076
Sulfur	ppm	ASTM D5185(m) 2040	2389	2364	2296
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >25	11	11	7
Sodium	ppm	ASTM D5185(m)	● 2109	● 460	● 235
Potassium	ppm	ASTM D5185(m) >20	▲ 234	44	12
Glycol	%	ASTM D7922*	0.0	0.0	0.0

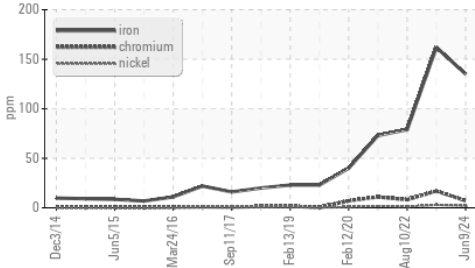
INFRA-RED

method	limit/base	current	history1	history2		
Soot %	%	ASTM D7844*	0	0	0	
Nitration	Abs/cm	ASTM D7624*	>20	16.8	13.2	12.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	27.9	25.0	26.5



OIL ANALYSIS REPORT

▲ Ferrous Alloys



FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs./1mm ASTM D7414*	>25	21.5	20.1

VISUAL

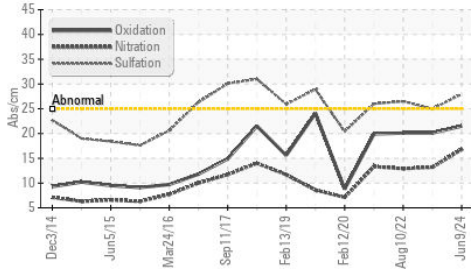
method	limit/base	current	history1	history2
Emulsified Water	scalar Visual*	>0.1	NEG	NEG
Free Water	scalar Visual*	NEG	NEG	NEG

FLUID PROPERTIES

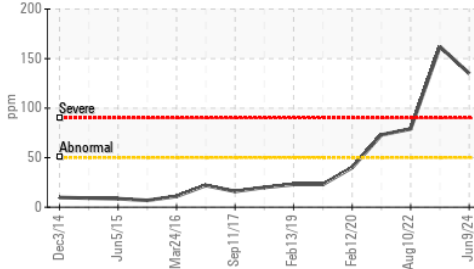
method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D7279(m)	15.1	16.1	15.4

GRAPHS

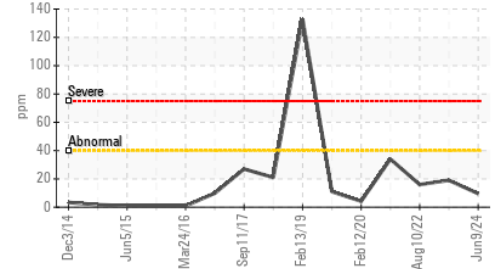
FT-IR (Direct Trend)



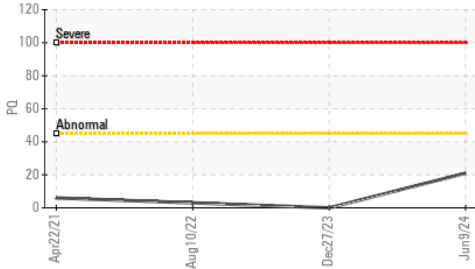
▲ Iron (ppm)



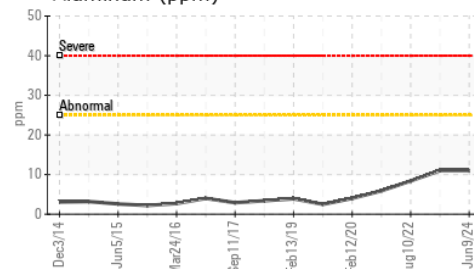
Lead (ppm)



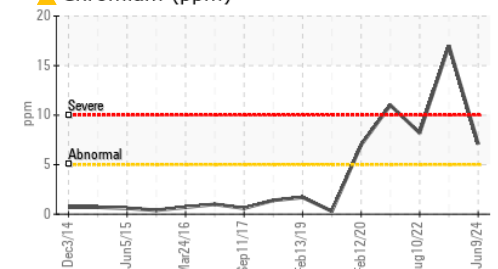
PQ



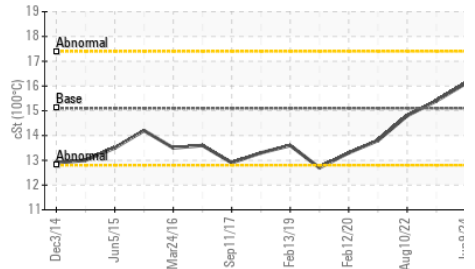
Aluminum (ppm)



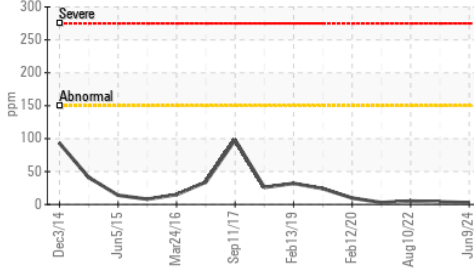
▲ Chromium (ppm)



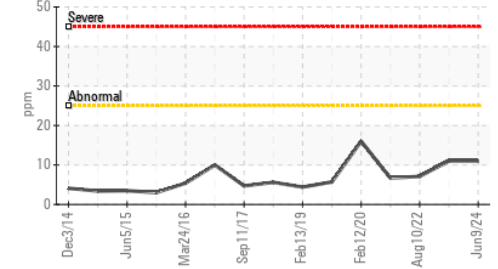
Viscosity @ 100°C



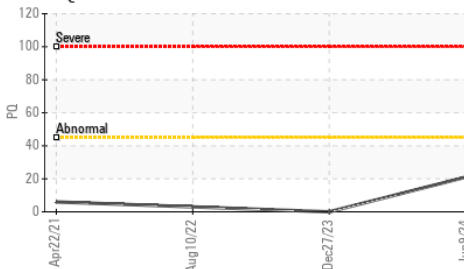
Copper (ppm)



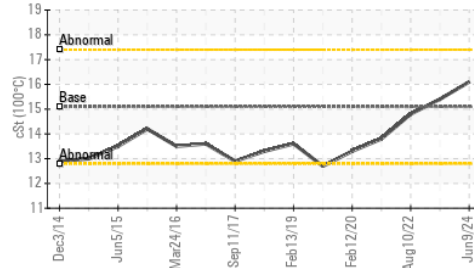
Silicon (ppm)



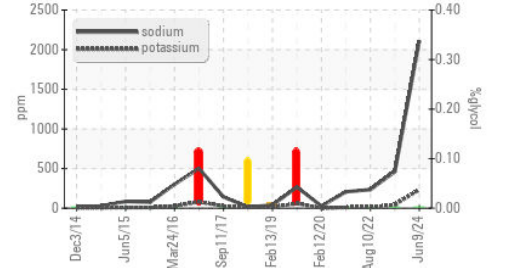
PQ



Viscosity @ 100°C



▲ Glycol Contamination



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0061151 **Received** : 11 Jun 2024
Lab Number : 02641101 **Tested** : 12 Jun 2024
Unique Number : 5798640 **Diagnosed** : 12 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol, PQ)

GFL Environmental - 216
 15 Bermondsey Road
 Toronto, ON
 CA M4B 1Y9
 Contact: Tom Hatzioannidis
 thatzioannidis@gflenv.com
 T: (416)678-9340
 F:

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.