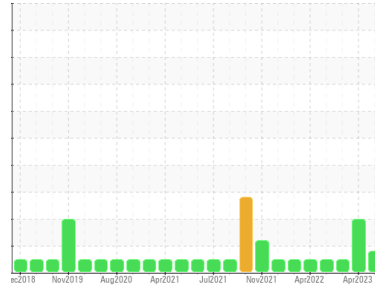




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
(YA144032)

Machine Id
3797C

Component
Natural Gas Engine

Fluid
PETRO CANADA DURON GEO LD 15W40 (46 GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0066847	GFL0074416	GFL0055838
Sample Date	Client Info	21 Jun 2023	07 Apr 2023	22 Jul 2022
Machine Age	hrs	9734	9734	9734
Oil Age	hrs	9734	9734	608
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ATTENTION	NORMAL

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >50	32	28	8
Chromium	ppm ASTM D5185m >4	1	0	<1
Nickel	ppm ASTM D5185m >2	1	0	0
Titanium	ppm ASTM D5185m	3	0	0
Silver	ppm ASTM D5185m >3	0	0	<1
Aluminum	ppm ASTM D5185m >9	4	8	2
Lead	ppm ASTM D5185m >30	3	16	<1
Copper	ppm ASTM D5185m >35	▲ 183	14	<1
Tin	ppm ASTM D5185m >4	2	<1	<1
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	<1

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 50	5	40	31
Barium	ppm ASTM D5185m 5	0	0	0
Molybdenum	ppm ASTM D5185m 50	104	22	49
Manganese	ppm ASTM D5185m 0	10	1	<1
Magnesium	ppm ASTM D5185m 560	325	● 226	567
Calcium	ppm ASTM D5185m 1510	1972	● 792	1554
Phosphorus	ppm ASTM D5185m 780	756	● 448	761
Zinc	ppm ASTM D5185m 870	972	● 405	958
Sulfur	ppm ASTM D5185m 2040	2995	2315	2851

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >+100	21	22	4
Sodium	ppm ASTM D5185m	1	25	5
Potassium	ppm ASTM D5185m >20	3	2	1

INFRA-RED

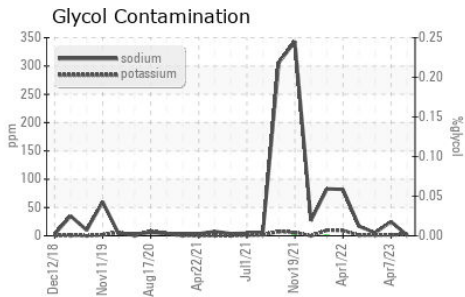
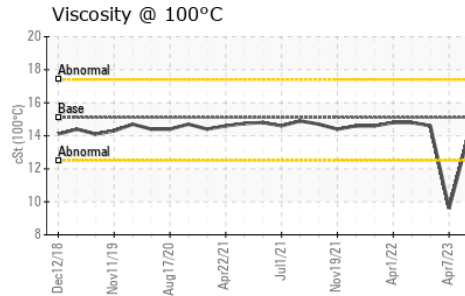
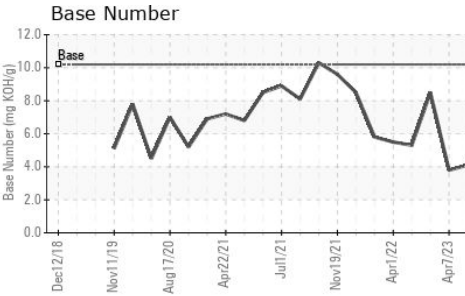
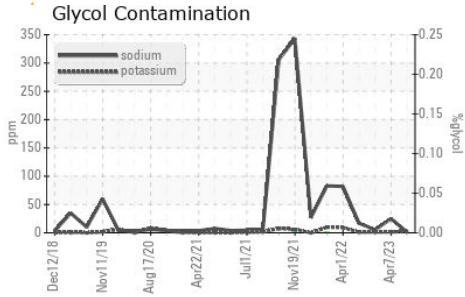
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0	0.1	0
Nitration	Abs/cm *ASTM D7624 >20	10.0	8.4	8.4
Sulfation	Abs/.1mm *ASTM D7415 >30	23.5	26.1	20.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.8	27.5	16.9
Base Number (BN)	mg KOH/g ASTM D2896 10.2	4.1	3.8	8.5



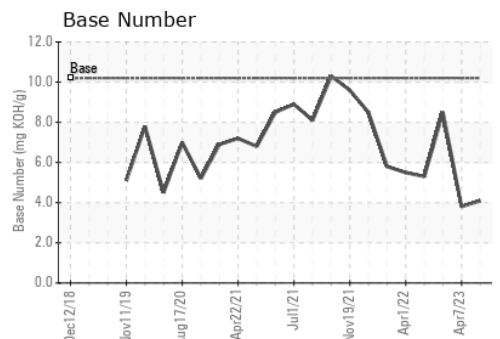
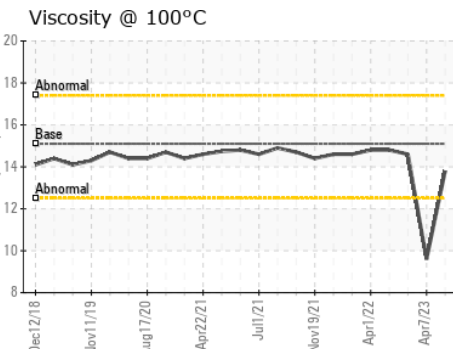
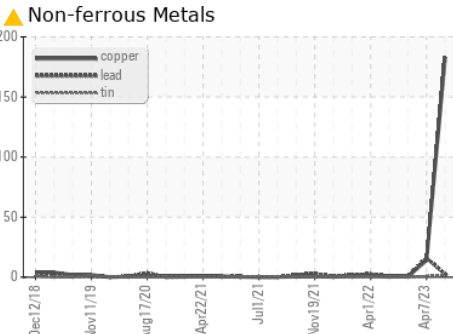
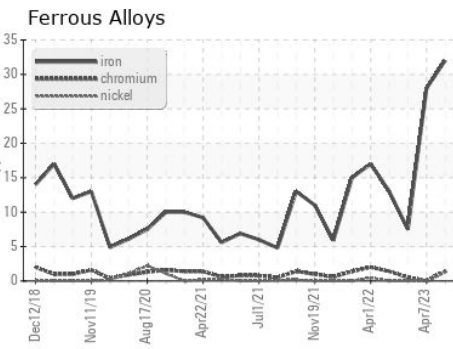
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	13.8	9.6

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0066847 Received : 22 Jun 2023
 Lab Number : 05880689 Tested : 25 Jun 2023
 Unique Number : 10525792 Diagnosed : 25 Jun 2023 - Don Baldrige

GFL Environmental - 018 - Fayetteville
 4621 Marracco Drive
 Hope Mills, NC
 US 28348
 Contact: Robert Carter
 robert.carter@gflenv.com
 T: (910)596-1170
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)