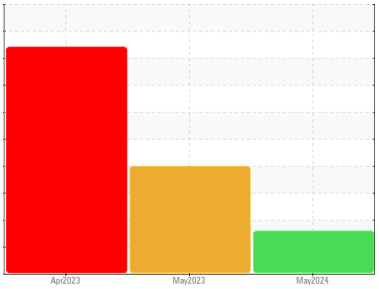
OIL ANALYSIS REPORT

Machine Id
931006
Component
Natural Gas Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Chromium and iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Ring wear is indicated.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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		**GFL0112691**	GFL0079546	GFL0079555
Sample Date		Client Info		**03 May 2024**	10 May 2023	24 Apr 2023
Machine Age	hrs	Client Info		**0**	1302	1195
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Not Changd	N/A
Sample Status				**ABNORMAL**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**---**	0.0	0.0

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*	>45	**2**	---	0
Iron	ppm	ASTM D5185(m)	>50	▲ **68**	17	▲ 114
Chromium	ppm	ASTM D5185(m)	>5	▲ **8**	<1	3
Nickel	ppm	ASTM D5185(m)	>4	**2**	<1	2
Titanium	ppm	ASTM D5185(m)	>5	**1**	2	19
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>25	**8**	3	● 13
Lead	ppm	ASTM D5185(m)	>40	**5**	1	5
Copper	ppm	ASTM D5185(m)	>150	**4**	3	22
Tin	ppm	ASTM D5185(m)	>4	**1**	<1	3
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

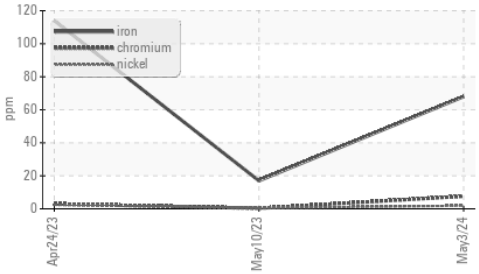
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**11**	29	6
Barium	ppm	ASTM D5185(m)	10	**3**	0	4
Molybdenum	ppm	ASTM D5185(m)	100	**100**	49	60
Manganese	ppm	ASTM D5185(m)		**2**	1	10
Magnesium	ppm	ASTM D5185(m)	450	**701**	599	590
Calcium	ppm	ASTM D5185(m)	3000	**1832**	1518	1426
Phosphorus	ppm	ASTM D5185(m)	1150	**776**	827	803
Zinc	ppm	ASTM D5185(m)	1350	**1005**	910	938
Sulfur	ppm	ASTM D5185(m)	4250	**2203**	2191	1991
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**10**	8	▲ 29
Sodium	ppm	ASTM D5185(m)	>158	**9**	7	11
Potassium	ppm	ASTM D5185(m)	>20	**30**	10	31

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**11.6**	11.5	11.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	**24.8**	14.4	28.8

OIL ANALYSIS REPORT

Ferrous Alloys



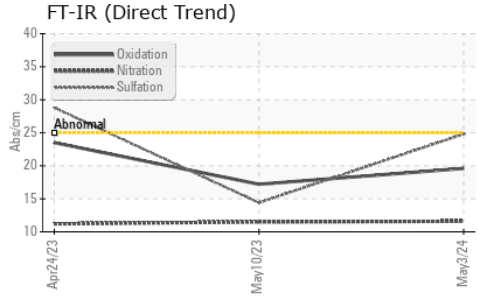
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**19.6**	17.2	23.5

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.1	**NEG**	▲ .5%	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

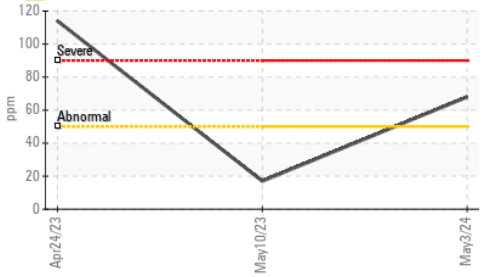
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	**14.7**	---	13.3

GRAPHS

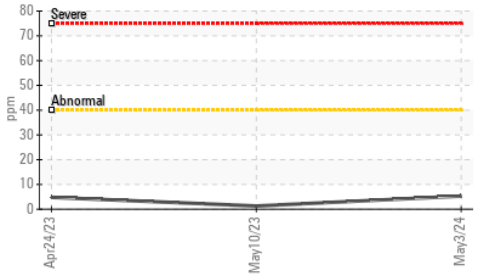
FT-IR (Direct Trend)



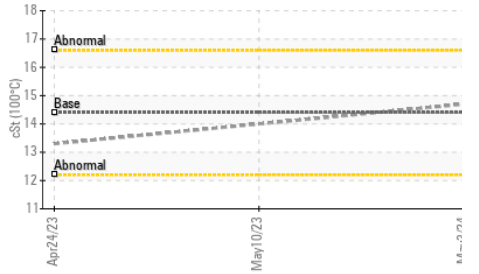
Iron (ppm)



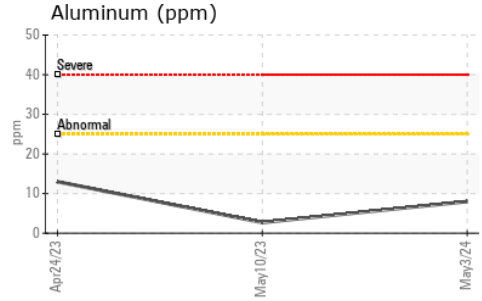
Lead (ppm)



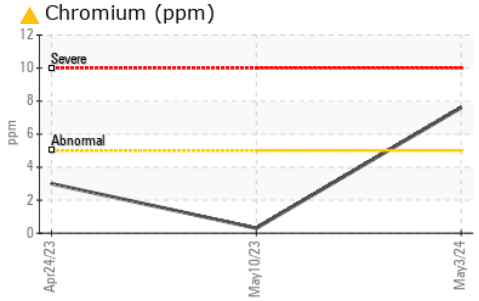
Viscosity @ 100°C



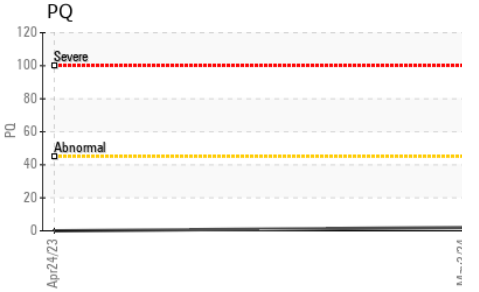
Aluminum (ppm)



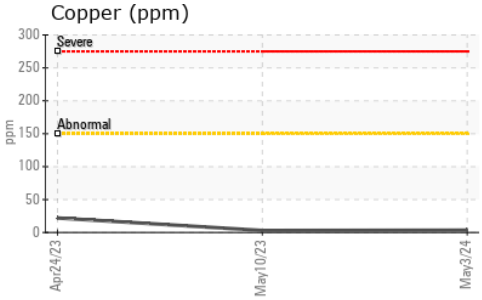
Chromium (ppm)



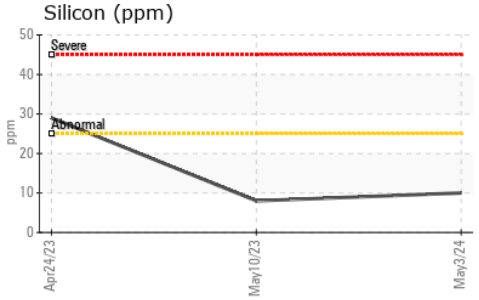
PQ



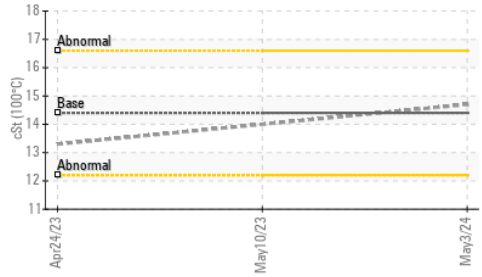
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



PQ

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0112691
Lab Number : 02633994
Unique Number : 5775147
Test Package : MOB 1 (Additional Tests: PQ)

Received : 08 May 2024
Tested : 08 May 2024
Diagnosed : 09 May 2024 - 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.

GFL Environmental - 253 - TOR APT
15 Bermondsey Road - Building B
Toronto, ON
CA M4B 1Y9
Contact: Natalia Stalynska
nstalynska@gflenv.com
T:
F: