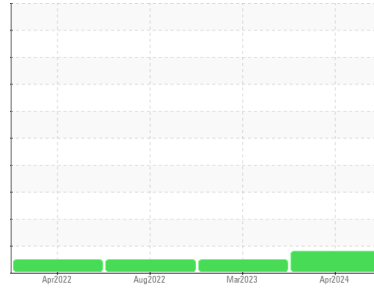




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
731111
 Component
Natural Gas Engine
 Fluid
RDL-3647 (--- GAL)

DIAGNOSIS

Recommendation

Please note that all wear metal and contaminant levels are being considered accumulative. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes BN to determine the suitability of the oil for continued use.

Wear

Chromium ppm levels are abnormal. Ring wear is indicated.

Contamination

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			GFL0117130	GFL0071082	GFL0054864
Sample Date	Client Info			24 Apr 2024	09 Mar 2023	03 Aug 2022
Machine Age	hrs	Client Info		4468	2910	20227
Oil Age	hrs	Client Info		1200	1200	0
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	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 D5185(m)	>50	35	13	12
Chromium	ppm	ASTM D5185(m)	>4	▲ 8	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	1	<1	<1
Titanium	ppm	ASTM D5185(m)		<1	<1	<1
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>9	2	2	2
Lead	ppm	ASTM D5185(m)	>30	9	<1	<1
Copper	ppm	ASTM D5185(m)	>35	3	2	2
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	8	9	12
Barium	ppm	ASTM D5185(m)	5	4	0	0
Molybdenum	ppm	ASTM D5185(m)	50	59	55	51
Manganese	ppm	ASTM D5185(m)	0	2	<1	1
Magnesium	ppm	ASTM D5185(m)	560	624	603	558
Calcium	ppm	ASTM D5185(m)	1510	1619	1746	1588
Phosphorus	ppm	ASTM D5185(m)	780	711	773	700
Zinc	ppm	ASTM D5185(m)	870	959	960	910
Sulfur	ppm	ASTM D5185(m)	2040	2039	2178	2075
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>+100	3	4	6
Sodium	ppm	ASTM D5185(m)		8	9	7
Potassium	ppm	ASTM D5185(m)	>20	1	2	1

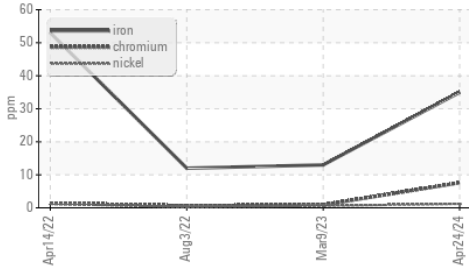
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	11.9	6.9	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	26.1	18.2	20.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	20.1	10.1	17.4

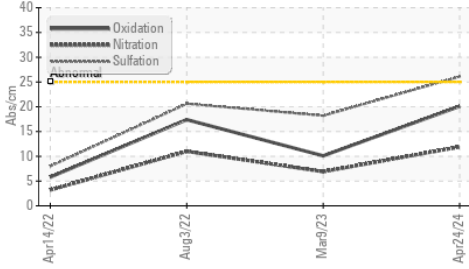


OIL ANALYSIS REPORT

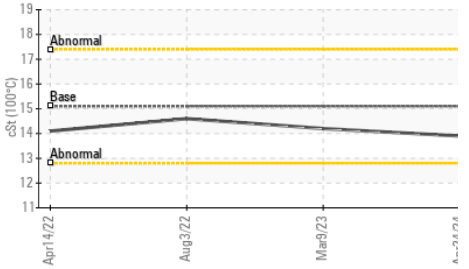
▲ Ferrous Alloys



FT-IR (Direct Trend)



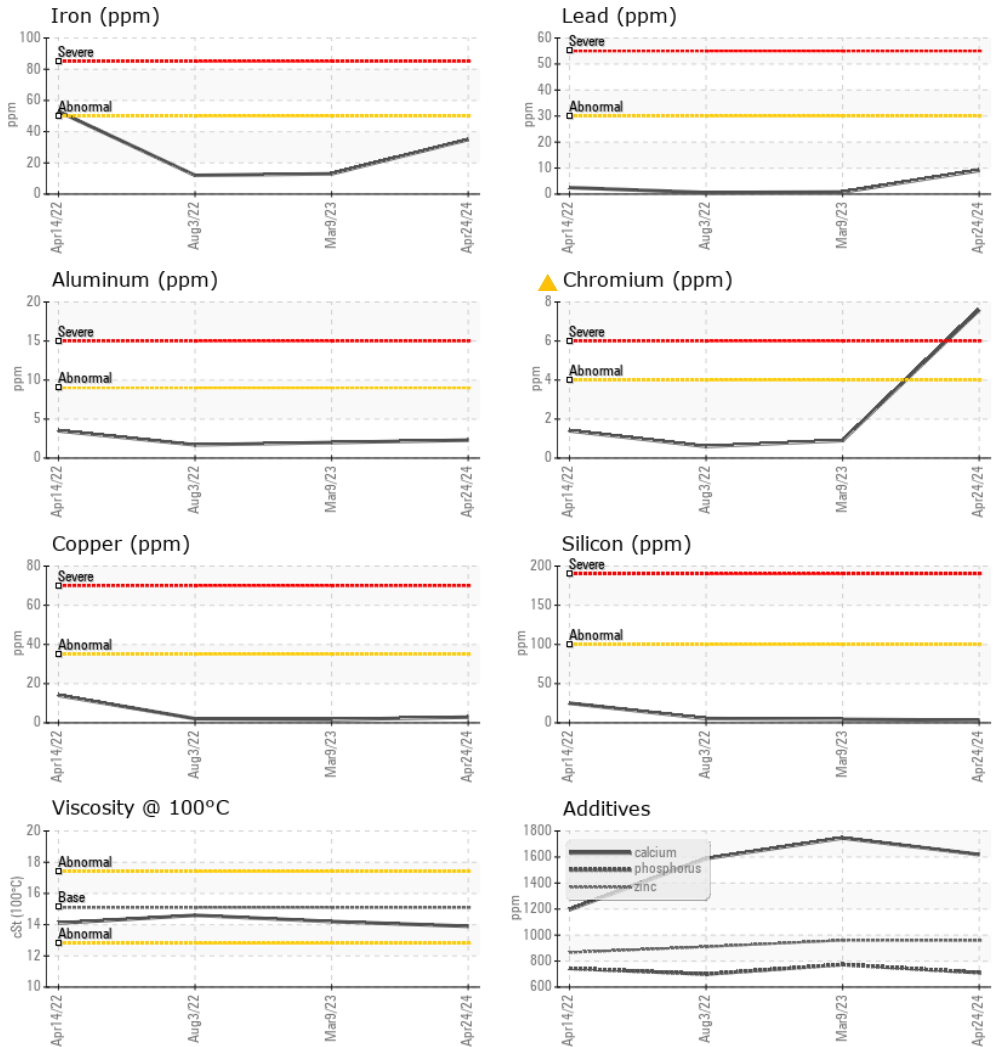
Viscosity @ 100°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---
Appearance	scalar	Visual*	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 D7279(m)	15.1	13.9	14.2

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0117130
Lab Number : 02631498
Unique Number : 5772651
Test Package : MOB 1 (Additional Tests: Visual)
Received : 26 Apr 2024
Tested : 26 Apr 2024
Diagnosed : 26 Apr 2024 - Kevin Marson

GFL Environmental - 209 - Hamilton
 560 Seaman Street
 Stoney Creek, ON
 CA L8E 3X7
 Contact: Fred Carleton
 fred.carleton@gflenv.com
 T: (289)925-6693
 F: (905)664-9008

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.