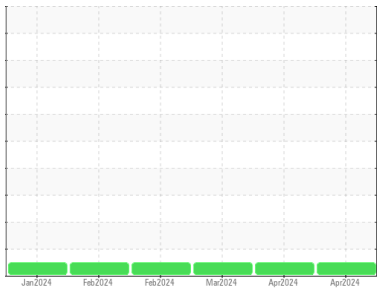
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
834101
Component
Natural Gas Engine
Fluid
{not provided} (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear
Metal levels are typical for a new component breaking in.

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 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		**GFL0116619**	GFL0116560	GFL0111854
Sample Date		Client Info		**23 Apr 2024**	02 Apr 2024	05 Mar 2024
Machine Age	hrs	Client Info		**943**	716	584
Oil Age	hrs	Client Info		**227**	716	584
Oil Changed		Client Info		**Not Changd**	Changed	Not Changd
Sample Status				**NORMAL**	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 D5185m	>50	**61**	58	56
Chromium	ppm	ASTM D5185m	>4	**4**	4	3
Nickel	ppm	ASTM D5185m	>2	**2**	3	3
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**85**	73	60
Lead	ppm	ASTM D5185m	>30	**0**	0	0
Copper	ppm	ASTM D5185m	>35	**17**	15	17
Tin	ppm	ASTM D5185m	>4	**1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**10**	16	13
Barium	ppm	ASTM D5185m		**2**	2	2
Molybdenum	ppm	ASTM D5185m		**71**	65	65
Manganese	ppm	ASTM D5185m		**14**	14	14
Magnesium	ppm	ASTM D5185m		**829**	803	760
Calcium	ppm	ASTM D5185m		**1380**	1394	1269
Phosphorus	ppm	ASTM D5185m		**749**	705	636
Zinc	ppm	ASTM D5185m		**966**	977	865
Sulfur	ppm	ASTM D5185m		**2591**	2903	2261

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**28**	26	33
Sodium	ppm	ASTM D5185m		**6**	7	7
Potassium	ppm	ASTM D5185m	>20	**212**	165	157

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**12.5**	12.0	12.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**25.8**	24.7	23.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**23.1**	21.6	20.7
Base Number (BN)	mg KOH/g	ASTM D2896		**3.0**	3.8	3.8

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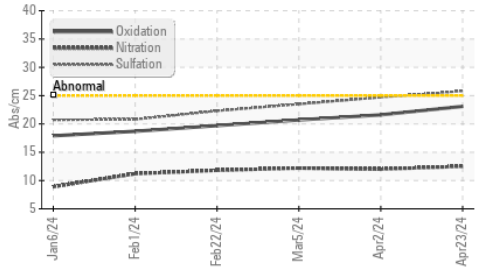
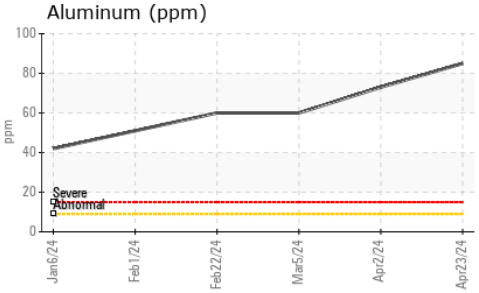
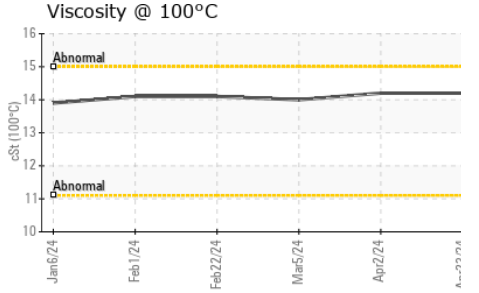
FT-IR (Direct Trend)



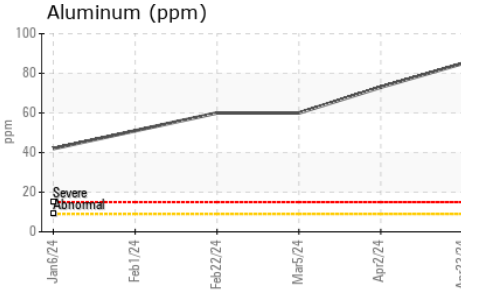
Aluminum (ppm)



Viscosity @ 100°C



Aluminum (ppm)

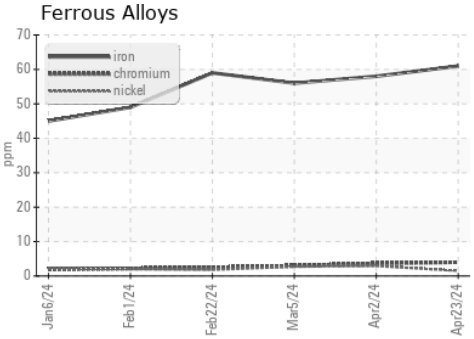


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

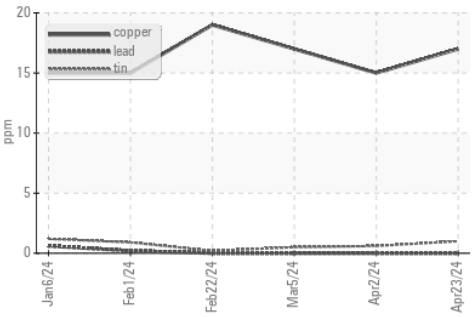
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.2**	14.2	14.0

GRAPHS

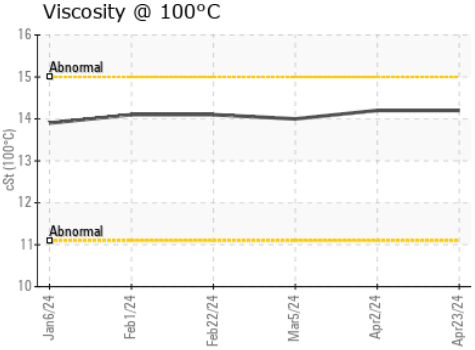
Ferrous Alloys



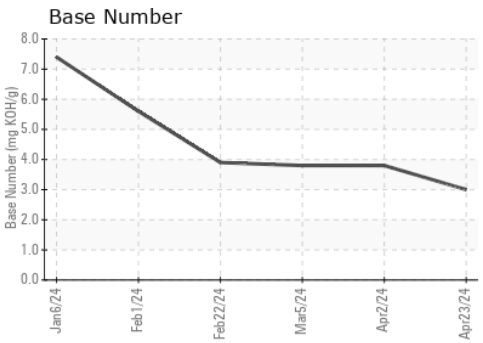
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0116619
Lab Number : 06158944
Unique Number : 10994367
Test Package : FLEET

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Wes Davis

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)

GFL Environmental - 652 - Fredericksburg Hauling
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Contact: WILLIAM MILO
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Report Id: GFL652 [WUSCAR] 06158944 (Generated: 04/25/2024 11:14:40) Rev: 1

Submitted By: TECHNICIAN ACCOUNT