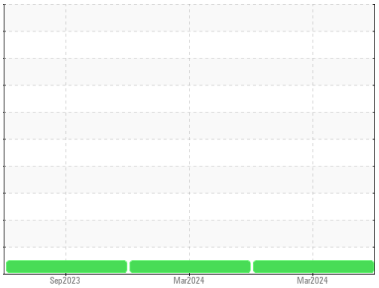
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
934054
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

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		**GFL0114403**	GFL0114477	GFL0093235
Sample Date		Client Info		**21 Mar 2024**	12 Mar 2024	13 Sep 2023
Machine Age	mls	Client Info		**30225**	1689	600
Oil Age	mls	Client Info		**600**	1689	600
Oil Changed		Client Info		**Changed**	Not Changd	Changed
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	**19**	17	35
Chromium	ppm	ASTM D5185m	>4	**2**	2	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**24**	21	25
Lead	ppm	ASTM D5185m	>30	**1**	<1	2
Copper	ppm	ASTM D5185m	>35	**2**	2	14
Tin	ppm	ASTM D5185m	>4	**<1**	0	2
Vanadium	ppm	ASTM D5185m		**<1**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	**9**	10	13
Barium	ppm	ASTM D5185m	5	**0**	0	0
Molybdenum	ppm	ASTM D5185m	50	**61**	56	56
Manganese	ppm	ASTM D5185m	0	**1**	<1	9
Magnesium	ppm	ASTM D5185m	560	**687**	615	839
Calcium	ppm	ASTM D5185m	1510	**2010**	1750	1407
Phosphorus	ppm	ASTM D5185m	780	**842**	755	749
Zinc	ppm	ASTM D5185m	870	**1135**	1014	995
Sulfur	ppm	ASTM D5185m	2040	**3314**	3079	2767

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**5**	5	26
Sodium	ppm	ASTM D5185m		**7**	11	5
Potassium	ppm	ASTM D5185m	>20	**80**	73	104

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**11.9**	11.6	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.9**	23.1	20.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.9**	19.3	18.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	**4.4**	5.3	5.4

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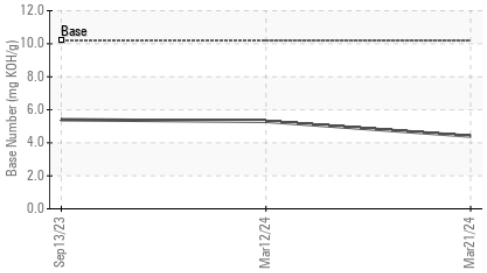
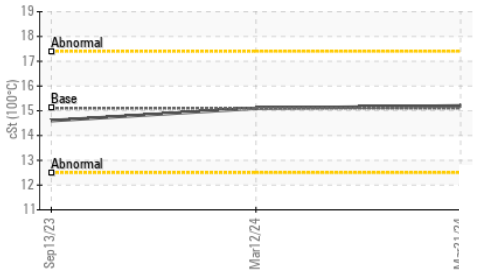


Viscosity @ 100°C

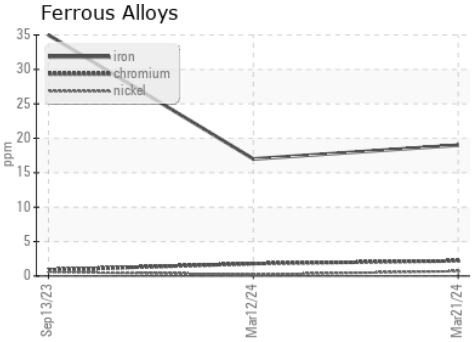


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

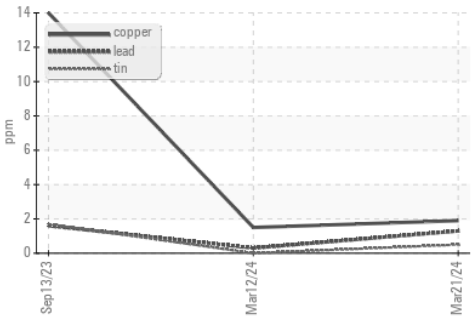
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	**15.2**	15.1	14.6

GRAPHS

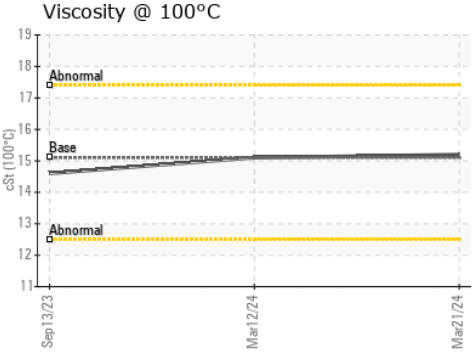
Ferrous Alloys



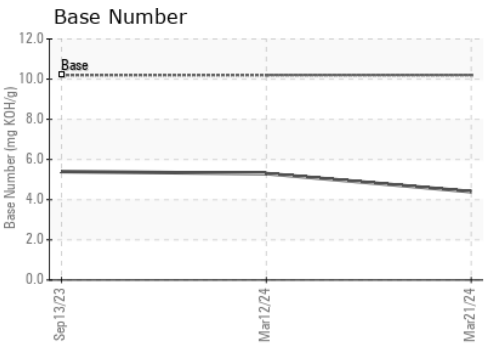
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0114403
Lab Number : 06129806
Unique Number : 10949271
Test Package : FLEET

Received : 26 Mar 2024
Tested : 27 Mar 2024
Diagnosed : 27 Mar 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 - 865 - East Mount Hauling
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F:

Report Id: GFL865 [WUSCAR] 06129806 (Generated: 03/27/2024 16:08:06) Rev: 1

Submitted By: TECHNICIAN ACCOUNT