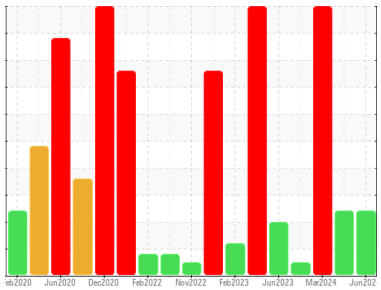
OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
723025-305163
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels remain elevated. Test for glycol is negative.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0121749**	GFL0106856	GFL0106763
Sample Date		Client Info		**24 Jun 2024**	15 Apr 2024	27 Mar 2024
Machine Age	mls	Client Info		**323731**	4242	4130
Oil Age	mls	Client Info		**600**	3157	600
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ATTENTION**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	**64**	33	▲ 270
Chromium	ppm	ASTM D5185m	>5	**3**	3	▲ 19
Nickel	ppm	ASTM D5185m	>2	**<1**	0	6
Titanium	ppm	ASTM D5185m		**0**	<1	1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**4**	5	20
Lead	ppm	ASTM D5185m	>30	**2**	5	31
Copper	ppm	ASTM D5185m	>150	**27**	18	122
Tin	ppm	ASTM D5185m	>5	**<1**	2	6
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	0	**<1**	0	0
Barium	ppm	ASTM D5185m	0	**0**	0	1
Molybdenum	ppm	ASTM D5185m	60	**69**	111	456
Manganese	ppm	ASTM D5185m	0	**0**	<1	4
Magnesium	ppm	ASTM D5185m	1010	**907**	962	748
Calcium	ppm	ASTM D5185m	1070	**1029**	1049	812
Phosphorus	ppm	ASTM D5185m	1150	**856**	1036	766
Zinc	ppm	ASTM D5185m	1270	**1235**	1206	996
Sulfur	ppm	ASTM D5185m	2060	**2591**	3569	2930

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**13**	10	53
Sodium	ppm	ASTM D5185m		● **67**	▲ 140	▲ 931
Potassium	ppm	ASTM D5185m	>20	● **57**	▲ 114	▲ 831
Glycol	%	*ASTM D2982		**NEG**	NEG	▲ 0.20

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**2.6**	0.6	0.8
Nitration	Abs/cm	*ASTM D7624	>20	**14.3**	7.3	16.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.2**	19.0	24.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.8**	14.4	27.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**6.9**	8.8	8.0

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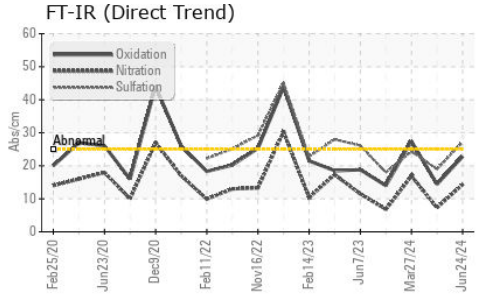
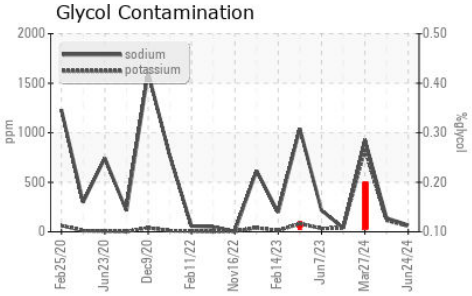
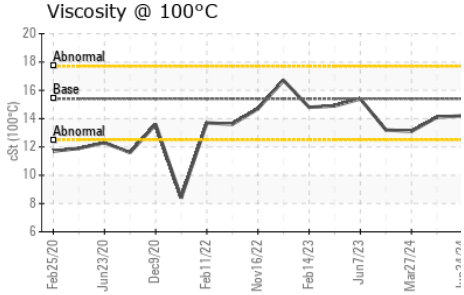
FT-IR (Direct Trend)



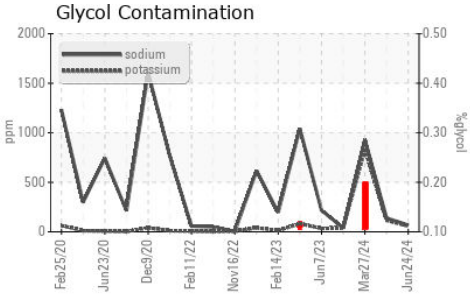
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

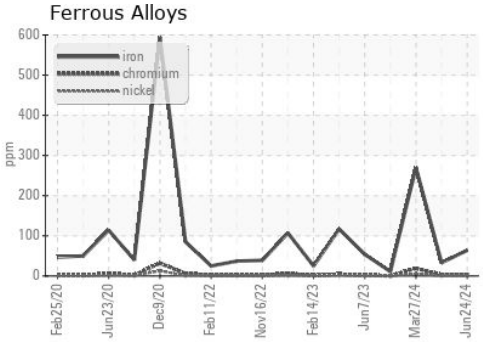


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

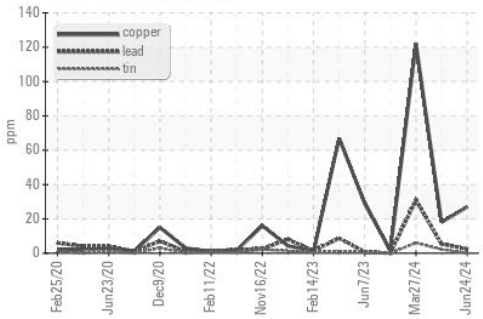
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.2**	14.1	13.1

GRAPHS

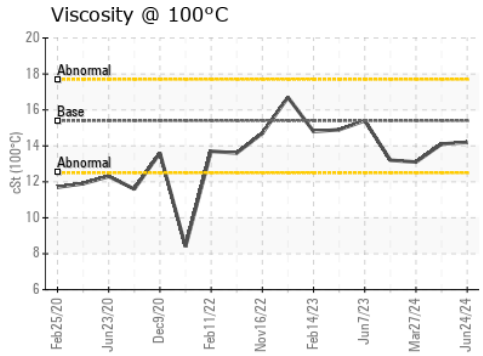
Ferrous Alloys



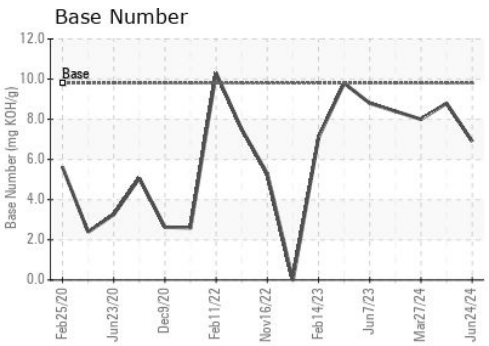
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0121749
Lab Number : 06220996
Unique Number : 11099193
Test Package : FLEET (Additional Tests: Glycol)

Received : 26 Jun 2024
Tested : 28 Jun 2024
Diagnosed : 28 Jun 2024 - Jonathan Hester

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 - 856 - Houston South
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Houston, TX
US 77083
Contact: Apolinar Zacarias
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T:
F:

Report Id: GFL856 [WUSCAR] 06220996 (Generated: 06/30/2024 18:21:44) Rev: 1

Submitted By: Apolinar Zacarias