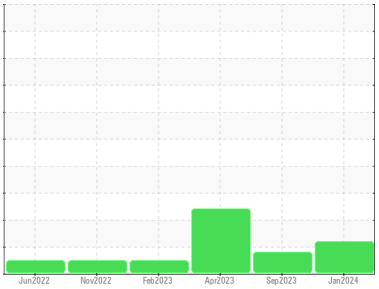
OIL ANALYSIS REPORT

Machine Id
4657M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (5 GAL)

Sample Rating Trend



GLYCOL

DIAGNOSIS

Recommendation
We advise that you check for possible coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0106673**	GFL0087256	GFL0072886
Sample Date		Client Info		**31 Jan 2024**	19 Sep 2023	20 Apr 2023
Machine Age	hrs	Client Info		**16529**	15334	14009
Oil Age	hrs	Client Info		**597**	628	580
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	MARGINAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	▲ 2.1	⬢ 8.2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	**21**	43	9
Chromium	ppm	ASTM D5185m	>20	**<1**	1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	0
Titanium	ppm	ASTM D5185m	>2	**<1**	0	0
Silver	ppm	ASTM D5185m	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**3**	3	1
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**0**	1	0
Tin	ppm	ASTM D5185m	>15	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**15**	<1	4
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**65**	58	54
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**868**	893	857
Calcium	ppm	ASTM D5185m	1070	**995**	1041	1002
Phosphorus	ppm	ASTM D5185m	1150	**1024**	994	856
Zinc	ppm	ASTM D5185m	1270	**1245**	1211	1144
Sulfur	ppm	ASTM D5185m	2060	**2922**	2855	2859

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**8**	8	3
Sodium	ppm	ASTM D5185m		▲ **195**	7	4
Potassium	ppm	ASTM D5185m	>20	**4**	2	0
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	**0.9**	1.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**10.5**	11.8	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.9**	22.4	17.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.9**	18.8	16.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**7.5**	7.6	7.3

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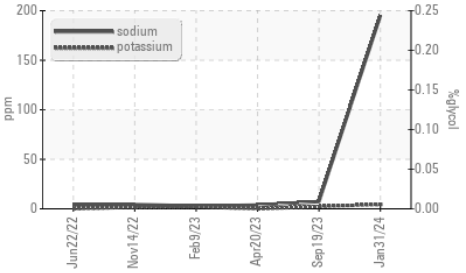
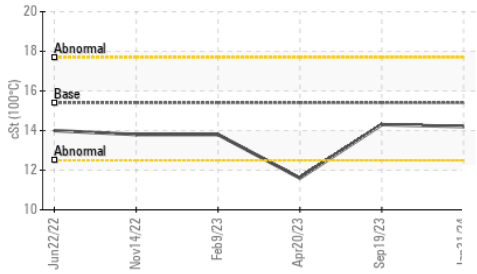
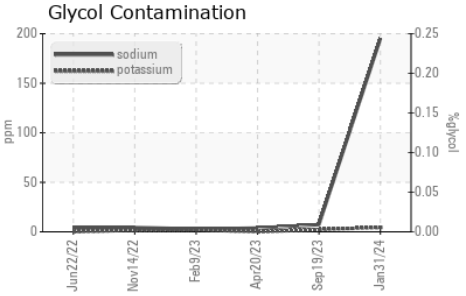
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

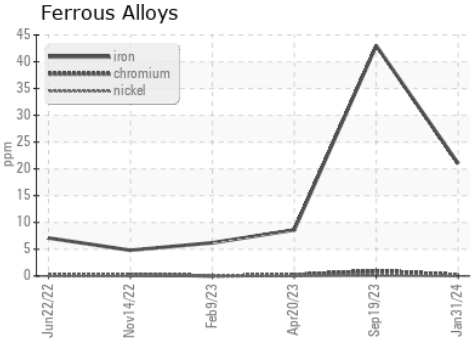


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

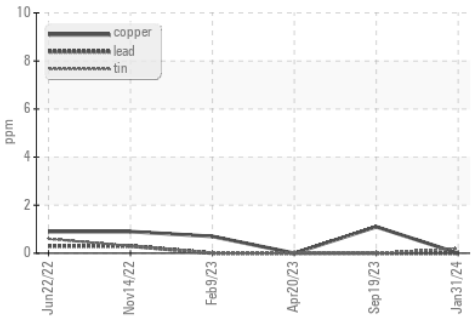
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.2**	14.3	▲ 11.6

GRAPHS

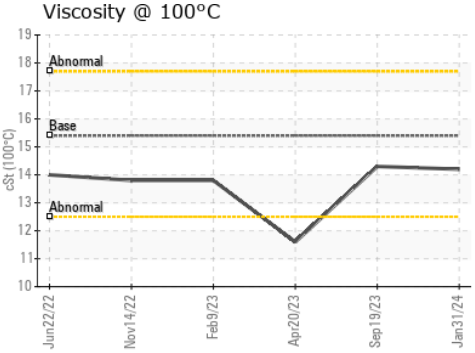
Ferrous Alloys



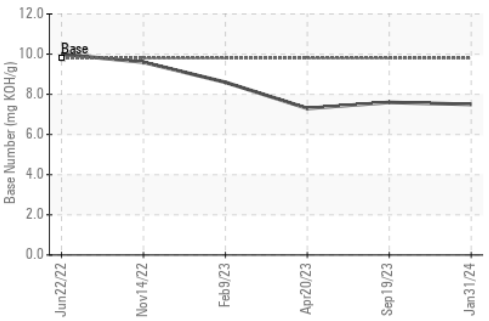
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0106673
Lab Number : 06082282
Unique Number : 10869727
Test Package : FLEET (Additional Tests: Glycol)

Received : 07 Feb 2024
Tested : 09 Feb 2024
Diagnosed : 09 Feb 2024 - Jonathan Hester

GFL Environmental - 405 - Arbor Hills
7400 Napier Rd
NORTHVILLE, MI
US 48168
Contact: John Nahal
jnahal@gflenv.com
T:
F:

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)