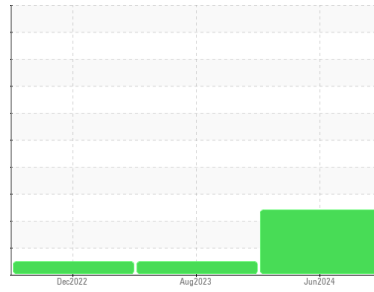




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
222049-603235

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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	GFL0106039	GFL0082049	GFL0065673
Sample Date	Client Info	17 Jun 2024	03 Aug 2023	06 Dec 2022
Machine Age	mls	344330	303716	0
Oil Age	mls	3000	6700	450
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >4.0	<1.0	<1.0	<1.0
Water	WC Method >0.1	NEG	NEG	NEG
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >120	47	20	99
Chromium	ppm ASTM D5185m >10	4	<1	3
Nickel	ppm ASTM D5185m >5	<1	0	2
Titanium	ppm ASTM D5185m	<1	0	<1
Silver	ppm ASTM D5185m >5	2	<1	0
Aluminum	ppm ASTM D5185m >20	12	3	42
Lead	ppm ASTM D5185m >40	3	0	1
Copper	ppm ASTM D5185m >300	103	<1	6
Tin	ppm ASTM D5185m >10	2	0	1
Vanadium	ppm ASTM D5185m	0	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	33	14	21
Barium	ppm ASTM D5185m 0	22	0	<1
Molybdenum	ppm ASTM D5185m 60	74	65	85
Manganese	ppm ASTM D5185m 0	4	<1	<1
Magnesium	ppm ASTM D5185m 1010	80	916	657
Calcium	ppm ASTM D5185m 1070	2566	1110	1832
Phosphorus	ppm ASTM D5185m 1150	987	1036	1048
Zinc	ppm ASTM D5185m 1270	1282	1210	1329
Sulfur	ppm ASTM D5185m 2060	3268	3231	3752

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	38	4	11
Sodium	ppm ASTM D5185m	6	0	5
Potassium	ppm ASTM D5185m >20	33	5	71

INFRA-RED

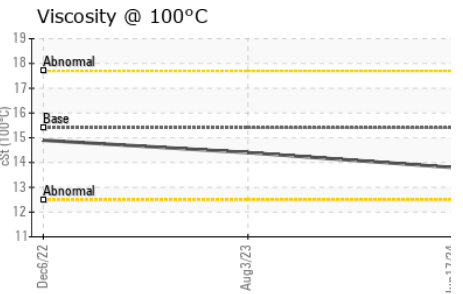
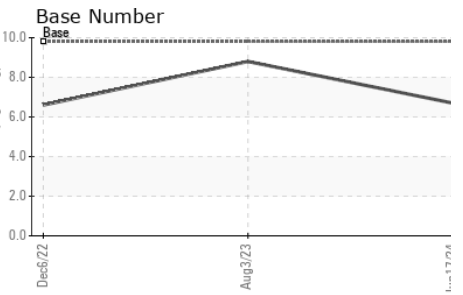
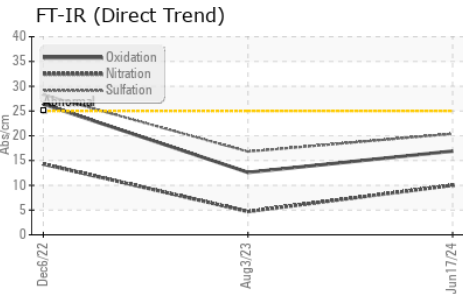
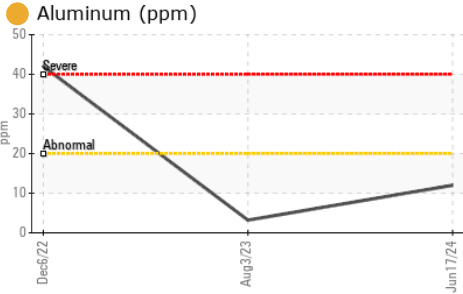
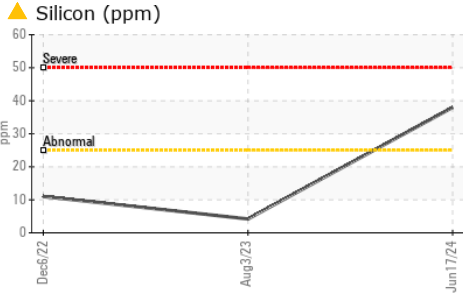
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0.1	0.1	0.3
Nitration	Abs/cm *ASTM D7624 >20	10.0	4.7	14.3
Sulfation	Abs/.1mm *ASTM D7415 >30	20.4	16.8	28.3

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.9	12.6	26.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.7	8.8	6.6



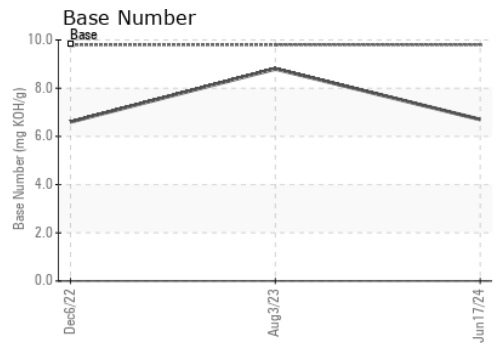
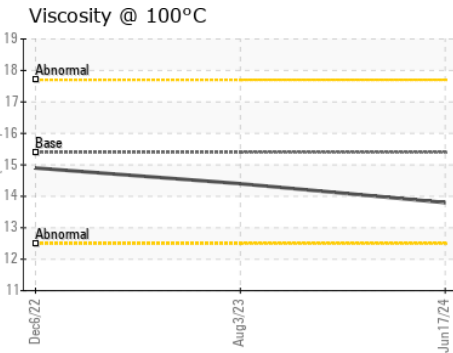
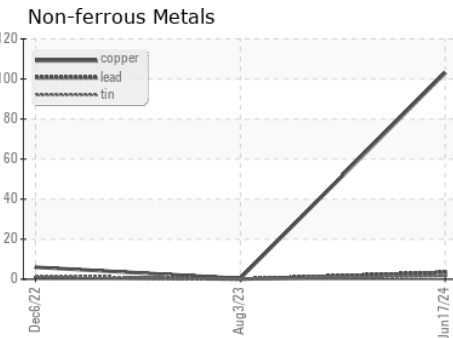
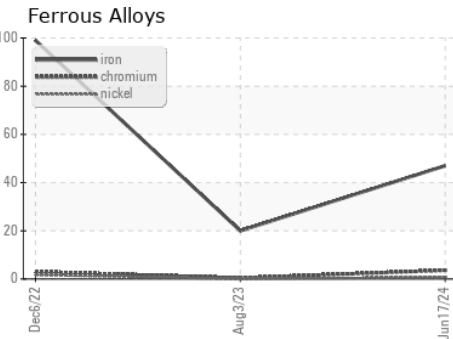
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	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 D445	15.4	13.8	14.4	14.9

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0106039
Lab Number : **06216495**
Unique Number : 11089359
Test Package : FLEET

GFL Environmental - 152 - Jacksonville
 7580 PHILIPS HWY
 Jacksonville, FL
 US 32256
 Contact: Chris Smith
 chris.smith@gflenv.com
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 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)