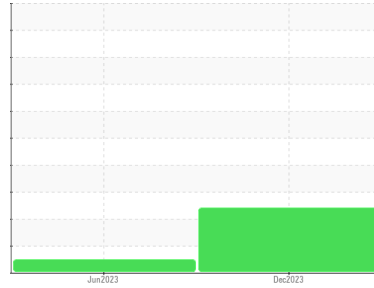




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
221009-203

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

We advise that you check for the source of the 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	GFL0103825	GFL0067946	---
Sample Date	Client Info	06 Dec 2023	15 Jun 2023	---
Machine Age	hrs	0	0	---
Oil Age	hrs	0	0	---
Oil Changed	Client Info	Changed	N/A	---
Sample Status		ABNORMAL	NORMAL	---

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	16	18	---
Chromium	ppm ASTM D5185m >20	<1	1	---
Nickel	ppm ASTM D5185m >4	0	<1	---
Titanium	ppm ASTM D5185m	<1	0	---
Silver	ppm ASTM D5185m >3	<1	<1	---
Aluminum	ppm ASTM D5185m >20	3	<1	---
Lead	ppm ASTM D5185m >40	13	3	---
Copper	ppm ASTM D5185m >330	2	1	---
Tin	ppm ASTM D5185m >15	<1	<1	---
Vanadium	ppm ASTM D5185m	0	<1	---
Cadmium	ppm ASTM D5185m	0	<1	---

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	7	5	---
Barium	ppm ASTM D5185m 0	9	<1	---
Molybdenum	ppm ASTM D5185m 60	127	67	---
Manganese	ppm ASTM D5185m 0	<1	<1	---
Magnesium	ppm ASTM D5185m 1010	1028	1053	---
Calcium	ppm ASTM D5185m 1070	1211	1234	---
Phosphorus	ppm ASTM D5185m 1150	1075	1119	---
Zinc	ppm ASTM D5185m 1270	1346	1387	---
Sulfur	ppm ASTM D5185m 2060	3343	3780	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	10	4	---
Sodium	ppm ASTM D5185m	▲ 65	4	---
Potassium	ppm ASTM D5185m >20	▲ 532	1	---
Glycol	% *ASTM D2982	NEG	NEG	---

INFRA-RED

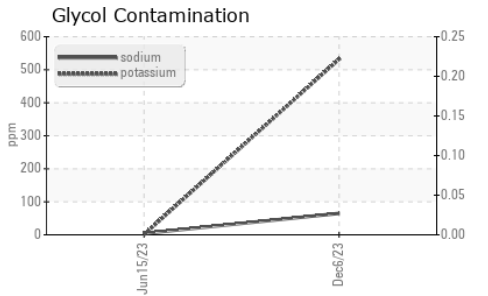
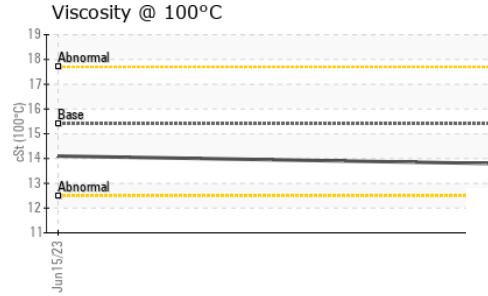
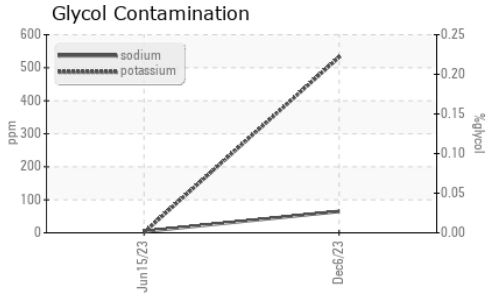
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.4	1.2	---
Nitration	Abs/cm *ASTM D7624 >20	11.5	9.3	---
Sulfation	Abs/.1mm *ASTM D7415 >30	24.1	21.9	---

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	20.7	16.4	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.7	9.1	---



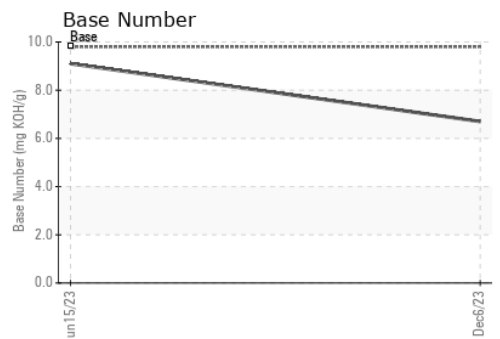
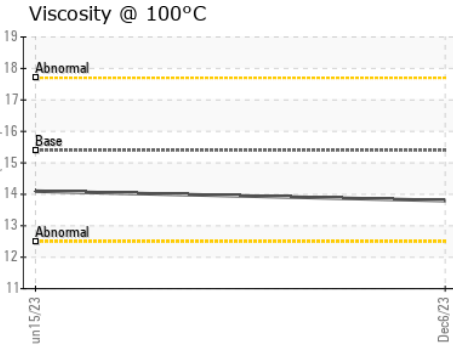
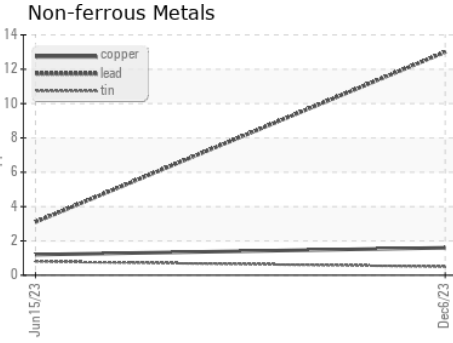
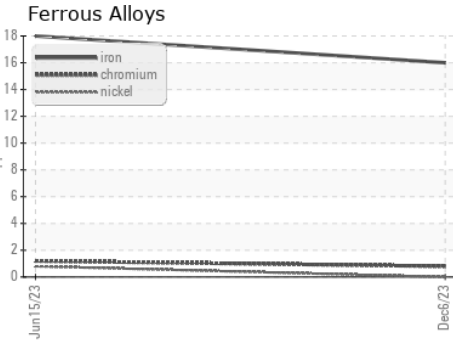
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	14.1	---

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0103825 **Received** : 26 Dec 2023
Lab Number : **06045475** **Diagnosed** : 28 Dec 2023
Unique Number : 10806083 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 654S - Midlothian
 12230 Deergrove Road
 Midlothian, VA
 US 23112
 Contact: Corbin Umphlet
 cumphlet@gflenv.com

Certificate L2367
 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)