



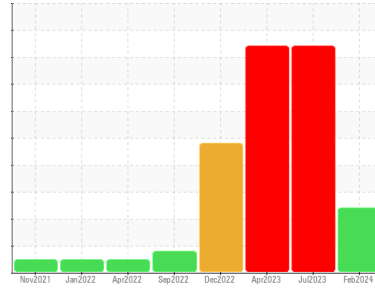
OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL



Area
(43344HA)
Machine Id
811011
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



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 remain 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	GFL0110189	GFL0060493	GFL0060476
Sample Date	Client Info	19 Feb 2024	27 Jul 2023	11 Apr 2023
Machine Age	hrs	7087	5744	5179
Oil Age	hrs	600	600	600
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	SEVERE	SEVERE

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<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 >120	19	24	19
Chromium	ppm ASTM D5185m >20	<1	1	<1
Nickel	ppm ASTM D5185m >5	2	3	3
Titanium	ppm ASTM D5185m >2	0	0	0
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >20	4	<1	2
Lead	ppm ASTM D5185m >40	2	2	1
Copper	ppm ASTM D5185m >330	3	3	5
Tin	ppm ASTM D5185m >15	<1	<1	<1
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	12	3	13
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	85	143	113
Manganese	ppm ASTM D5185m 0	<1	1	2
Magnesium	ppm ASTM D5185m 1010	951	820	812
Calcium	ppm ASTM D5185m 1070	1108	916	975
Phosphorus	ppm ASTM D5185m 1150	991	801	883
Zinc	ppm ASTM D5185m 1270	1301	1082	1147
Sulfur	ppm ASTM D5185m 2060	2970	2979	3334

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	8	14	13
Sodium	ppm ASTM D5185m	▲ 464	▲ 1984	● 1452
Potassium	ppm ASTM D5185m >20	▲ 246	▲ 1145	▲ 743
Glycol	% *ASTM D2982	NEG	▲ 0.20	▲ 0.20

INFRA-RED

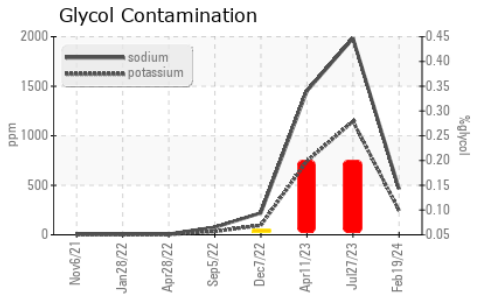
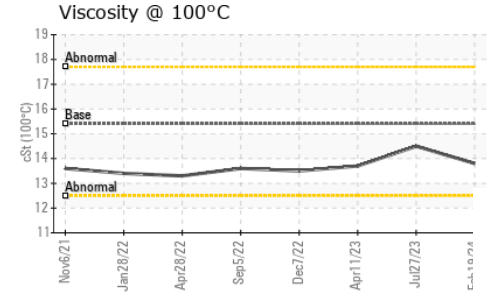
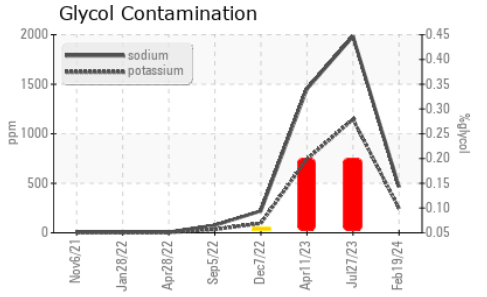
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	1.3	1.6	0.9
Nitration	Abs/cm *ASTM D7624 >20	10.4	14.7	13.1
Sulfation	Abs/.1mm *ASTM D7415 >30	22.6	25.9	20.9

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	15.3	14.8	14.1
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.7	11.6	8.3



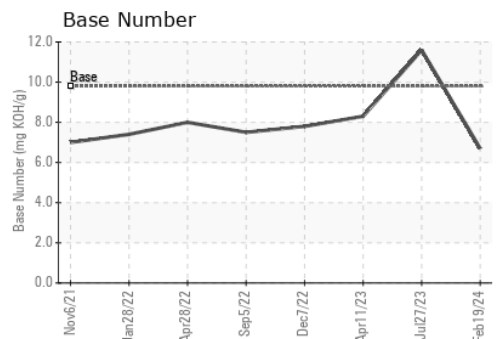
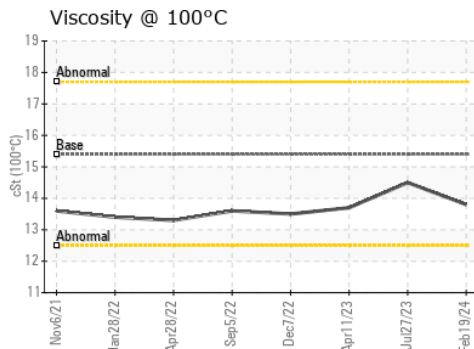
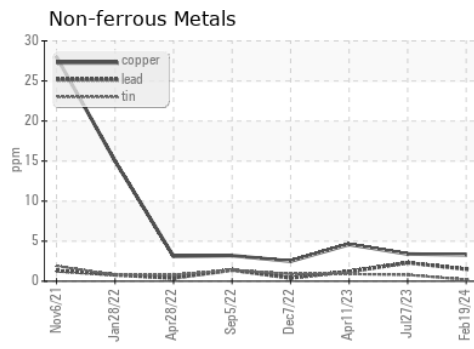
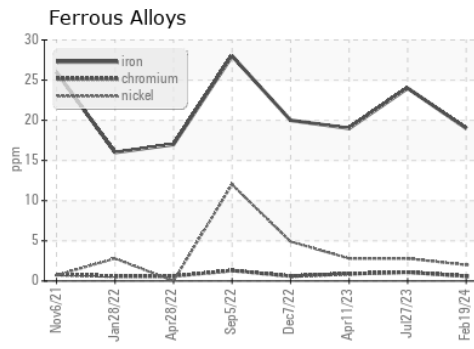
OIL ANALYSIS REPORT



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	>0.2	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	14.5	13.7

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0110189 **Received** : 26 Feb 2024
Lab Number : **06100775** **Tested** : 28 Feb 2024
Unique Number : 10899005 **Diagnosed** : 28 Feb 2024 - Jonathan Hester
Test Package : FLEET

GFL Environmental - 660 - Lynchburg Hauling
 2410 Mayflower Drive
 Lynchburg, VA
 US 24501
 Contact: Delbert Beasley
 dbeasley@countyrecycling.net
 T: (434)665-5998
 F:

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)