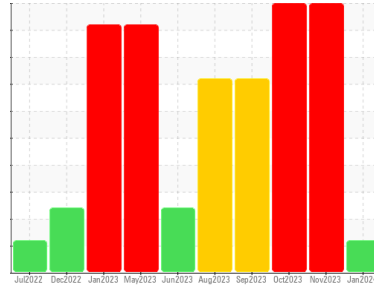




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
422101
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

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 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	GFL0100907	GFL0086853	GFL0086856
Sample Date	Client Info	02 Jan 2024	06 Nov 2023	06 Oct 2023
Machine Age	hrs	20913	20913	20913
Oil Age	hrs	1200	20913	20913
Oil Changed	Client Info	Changed	Changed	N/A
Sample Status		ABNORMAL	SEVERE	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	4	25	30
Chromium	ppm ASTM D5185m >5	<1	4	5
Nickel	ppm ASTM D5185m >2	0	<1	<1
Titanium	ppm ASTM D5185m	<1	0	0
Silver	ppm ASTM D5185m >3	0	<1	0
Aluminum	ppm ASTM D5185m >30	5	4	2
Lead	ppm ASTM D5185m >30	0	<1	0
Copper	ppm ASTM D5185m >150	14	79	107
Tin	ppm ASTM D5185m >5	<1	<1	<1
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	11	32	30
Barium	ppm ASTM D5185m 0	0	0	1
Molybdenum	ppm ASTM D5185m 60	71	145	185
Manganese	ppm ASTM D5185m 0	<1	1	1
Magnesium	ppm ASTM D5185m 1010	870	890	980
Calcium	ppm ASTM D5185m 1070	994	1050	1213
Phosphorus	ppm ASTM D5185m 1150	955	793	920
Zinc	ppm ASTM D5185m 1270	1179	1288	1404
Sulfur	ppm ASTM D5185m 2060	2943	3067	3734

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >20	15	37	48
Sodium	ppm ASTM D5185m	394	2246	3156
Potassium	ppm ASTM D5185m >20	11	70	97
Glycol	% *ASTM D2982	NEG	0.10	0.12

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.3	1.4	1.3
Nitration	Abs/cm *ASTM D7624 >20	5.9	15.4	14.4
Sulfation	Abs/.1mm *ASTM D7415 >30	18.3	26.6	25.3

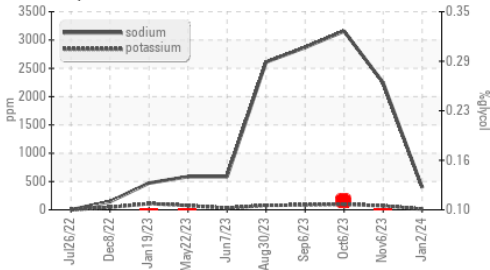
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.0	17.6	16.3
Base Number (BN)	mg KOH/g ASTM D2896 9.8	9.6	12.3	11.9

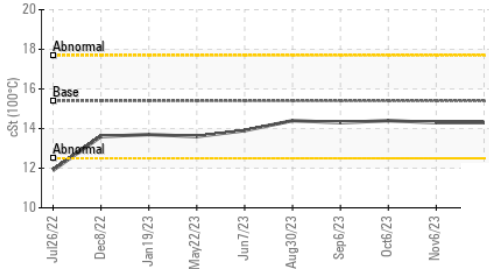


OIL ANALYSIS REPORT

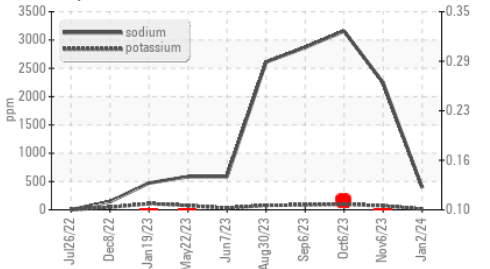
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

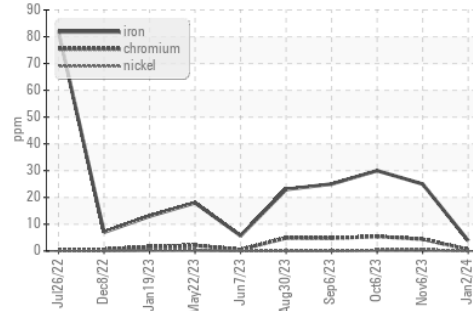


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

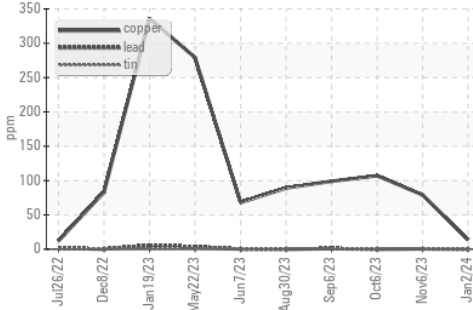
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	14.4

GRAPHS

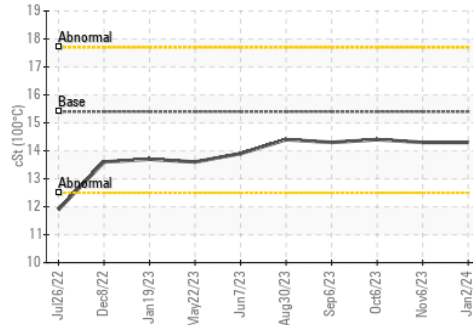
Ferrous Alloys



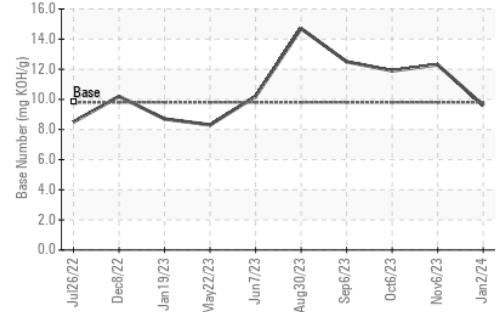
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0100907
 Lab Number : 06051340
 Unique Number : 10817289
 Test Package : FLEET

GFL Environmental - 419 - Metro Saginaw
 6950 N Michigan
 Saginaw, MI
 US 48604

Contact: Jeremy Hines
 jhines@gflenv.com
 T: (800)684-1277
 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)