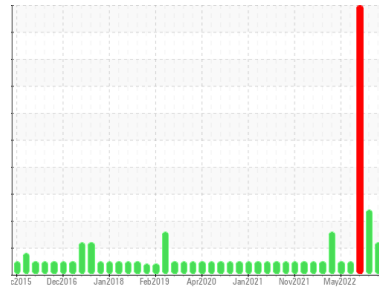




OIL ANALYSIS REPORT

Sample Rating Trend



COOL CHEMICALS



Area
(YA163198)

Machine Id
10369C

Component
Natural Gas Engine

Fluid
PETRO CANADA DURON GEO LD 15W40 (30 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels remain elevated. Test for glycol is negative.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0123387	GFL0082483	GFL0082401
Sample Date	Client Info	20 Jun 2024	14 Nov 2023	14 Jun 2023
Machine Age	hrs	Client Info	79446	0
Oil Age	hrs	Client Info	79446	0
Oil Changed	Client Info	N/A	Changed	N/A
Sample Status		ATTENTION	ABNORMAL	SEVERE

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.1	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >50	36	13	▲ 51
Chromium	ppm ASTM D5185m >4	2	1	▲ 12
Nickel	ppm ASTM D5185m >2	<1	<1	2
Titanium	ppm ASTM D5185m	<1	0	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >9	4	2	8
Lead	ppm ASTM D5185m >30	18	2	16
Copper	ppm ASTM D5185m >35	13	15	6
Tin	ppm ASTM D5185m >4	0	<1	2
Vanadium	ppm ASTM D5185m	<1	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 50	2	<1	11
Barium	ppm ASTM D5185m 5	0	<1	0
Molybdenum	ppm ASTM D5185m 50	57	55	72
Manganese	ppm ASTM D5185m 0	1	<1	2
Magnesium	ppm ASTM D5185m 560	588	519	550
Calcium	ppm ASTM D5185m 1510	1823	1481	1695
Phosphorus	ppm ASTM D5185m 780	756	651	737
Zinc	ppm ASTM D5185m 870	1030	912	1055
Sulfur	ppm ASTM D5185m 2040	3029	2310	3153

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >+100	6	2	16
Sodium	ppm ASTM D5185m	18	▲ 51	▲ 459
Potassium	ppm ASTM D5185m >20	● 62	▲ 233	▲ 2309
Glycol	% *ASTM D2982	---	---	▲ 0.20

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0	0	0.1
Nitration	Abs/cm *ASTM D7624 >20	13.1	11.8	14.5
Sulfation	Abs/.1mm *ASTM D7415 >30	28.3	23.8	24.9

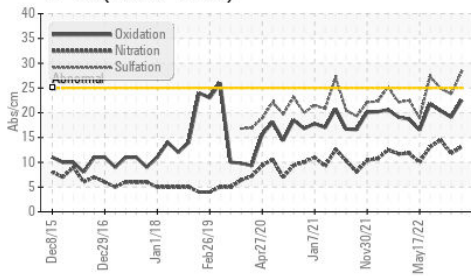
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	22.5	19.1	20.4
Base Number (BN)	mg KOH/g ASTM D2896 10.2	2.5	3.2	6.5

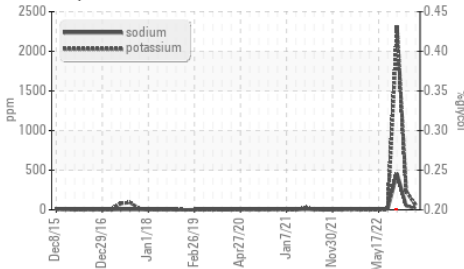


OIL ANALYSIS REPORT

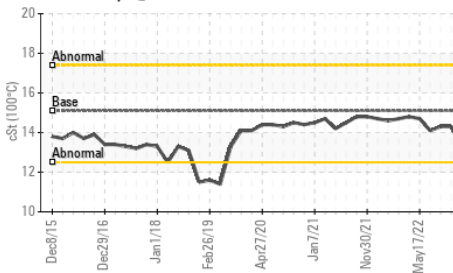
FT-IR (Direct Trend)



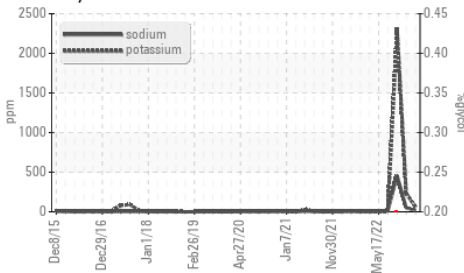
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

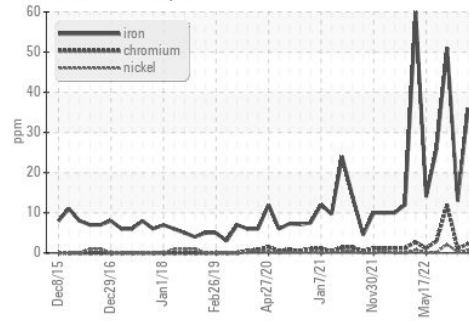


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

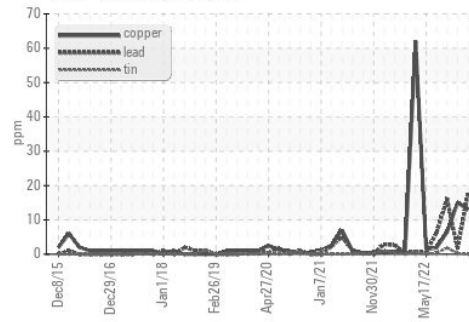
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	13.4	14.3

GRAPHS

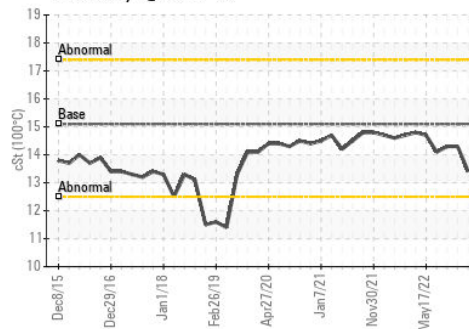
Ferrous Alloys



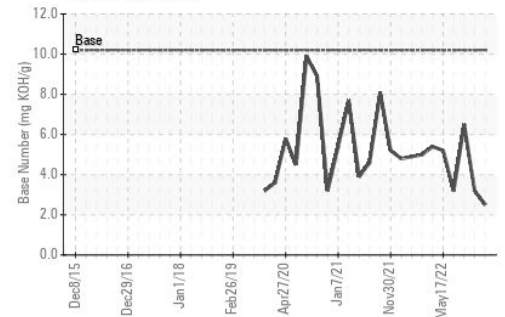
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0123387

Lab Number : 06223348

Unique Number : 11101545

Test Package : FLEET (Additional Tests: Glycol)

Received : 28 Jun 2024

Tested : 01 Jul 2024

Diagnosed : 01 Jul 2024 - Jonathan Hester

GFL Environmental - 007 - Brunswick

2809 Galloway Road

Bolivia, NC

US 28422

Contact: DONALD CRAVEN

dcraven@gflenv.com

T:

F: (910)253-4179

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)