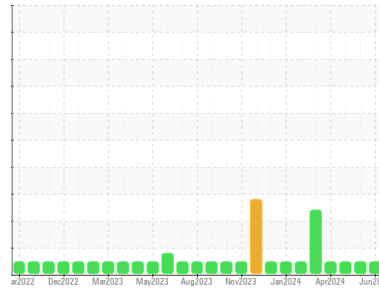




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
731114
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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	GFL0120211	GFL0120177	GFL0117247
Sample Date	Client Info	06 Jun 2024	16 May 2024	03 May 2024
Machine Age	hrs	7634	7511	7123
Oil Age	hrs	0	1200	0
Oil Changed	Client Info	Not Changed	Changed	Not Changed
Sample Status		NORMAL	NORMAL	NORMAL

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	8	12	12
Chromium	ppm	ASTM D5185m >4	<1	<1	2
Nickel	ppm	ASTM D5185m >2	0	<1	1
Titanium	ppm	ASTM D5185m	0	<1	<1
Silver	ppm	ASTM D5185m >3	0	<1	<1
Aluminum	ppm	ASTM D5185m >9	2	4	2
Lead	ppm	ASTM D5185m >30	2	3	4
Copper	ppm	ASTM D5185m >35	2	2	<1
Tin	ppm	ASTM D5185m >4	<1	<1	2
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	0	2

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 50	33	4	10
Barium	ppm	ASTM D5185m 5	0	0	0
Molybdenum	ppm	ASTM D5185m 50	50	55	51
Manganese	ppm	ASTM D5185m 0	<1	<1	1
Magnesium	ppm	ASTM D5185m 560	563	525	596
Calcium	ppm	ASTM D5185m 1510	1573	1680	1885
Phosphorus	ppm	ASTM D5185m 780	789	812	862
Zinc	ppm	ASTM D5185m 870	942	1008	1101
Sulfur	ppm	ASTM D5185m 2040	2840	2793	3280

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >+100	5	5	4
Sodium	ppm	ASTM D5185m	7	9	8
Potassium	ppm	ASTM D5185m >20	<1	3	2

INFRA-RED

method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	0	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	8.0	11.5	10.8
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.5	24.9	22.2

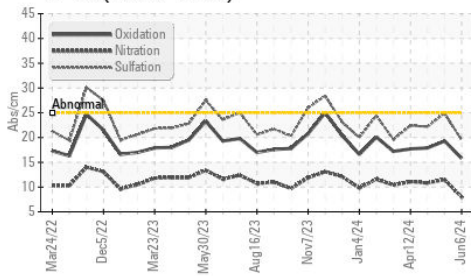
FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	15.8	19.3	17.9
Base Number (BN)	mg KOH/g	ASTM D2896 10.2	7.2	3.0	4.4

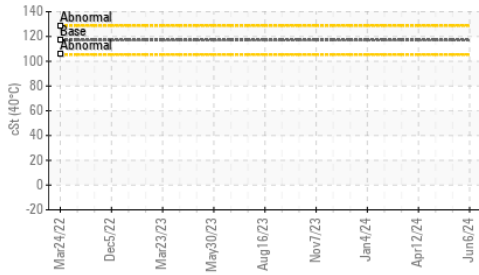


OIL ANALYSIS REPORT

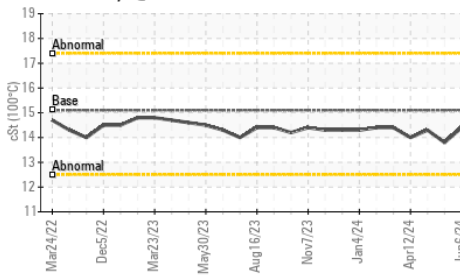
FT-IR (Direct Trend)



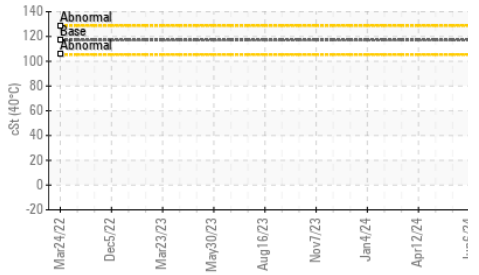
Viscosity @ 40°C



Viscosity @ 100°C



Viscosity @ 40°C

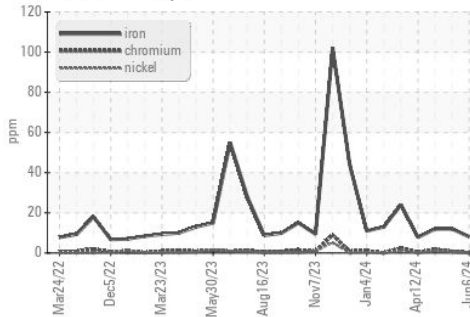


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

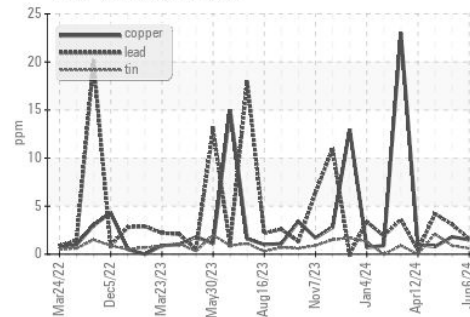
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.4	13.8

GRAPHS

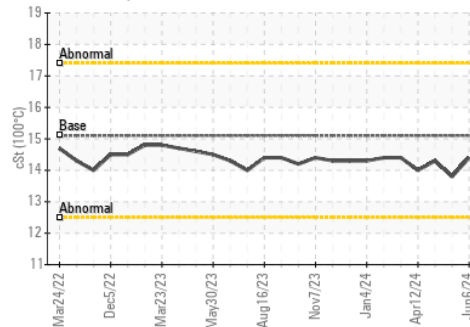
Ferrous Alloys



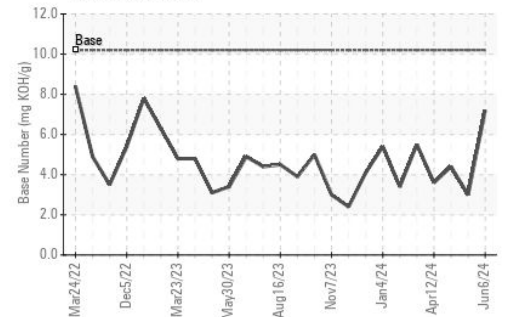
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : GFL0120211

Lab Number : 06209771

Unique Number : 11082635

Test Package : FLEET (Additional Tests: KV40)

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)

Received : 14 Jun 2024

Tested : 17 Jun 2024

Diagnosed : 17 Jun 2024 - Don Baldrige

GFL Environmental - 836 - Kansas City Hauling

7801 East Truman Road

Kansas City, MO

US 64126

Contact: Loyce Stewart

loyce.stewart@gflenv.com

T:

F: