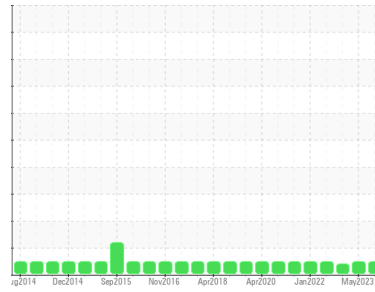




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
(YA117739)

Machine Id
10476

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 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		GFL0123389	GFL0050789	GFL0050813
Sample Date	Client Info		27 Jun 2024	11 May 2023	06 Jan 2023
Machine Age	hrs	Client Info	0	0	7326
Oil Age	hrs	Client Info	0	0	544
Oil Changed	Client Info		N/A	N/A	Changed
Sample Status			NORMAL	NORMAL	ATTENTION

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	<1.0	1.3
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >130	25	14	25
Chromium	ppm	ASTM D5185m >10	<1	<1	<1
Nickel	ppm	ASTM D5185m >4	0	2	0
Titanium	ppm	ASTM D5185m >2	<1	0	0
Silver	ppm	ASTM D5185m >2	0	<1	0
Aluminum	ppm	ASTM D5185m >20	6	6	6
Lead	ppm	ASTM D5185m >20	0	<1	0
Copper	ppm	ASTM D5185m >125	<1	<1	2
Tin	ppm	ASTM D5185m >4	0	1	<1
Antimony	ppm	ASTM D5185m	---	---	---
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	1	1	7
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	57	59	46
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	987	1049	596
Calcium	ppm	ASTM D5185m 1070	1117	1064	881
Phosphorus	ppm	ASTM D5185m 1150	1077	1103	833
Zinc	ppm	ASTM D5185m 1270	1345	1378	992
Sulfur	ppm	ASTM D5185m 2060	3747	4081	2870

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	4	5
Sodium	ppm	ASTM D5185m	1	1	4
Potassium	ppm	ASTM D5185m >20	2	3	<1

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	0.3	0.2	0.3
Nitration	Abs/cm	*ASTM D7624 >20	6.9	5.9	7.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.4	17.9	16.8

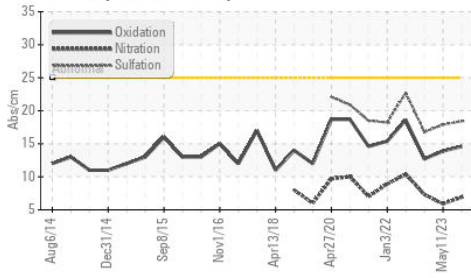
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	14.6	13.9	12.7
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	9.2	9.3	5.9

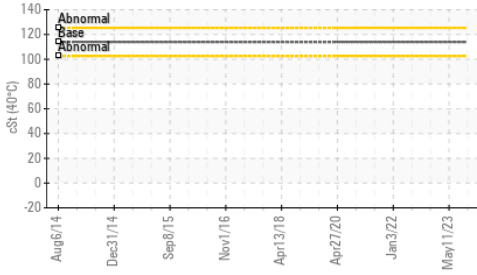


OIL ANALYSIS REPORT

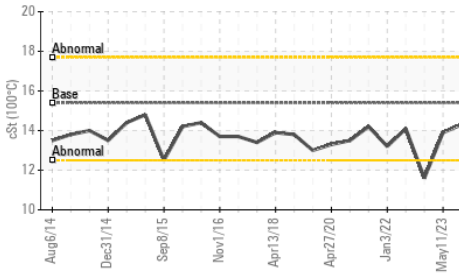
FT-IR (Direct Trend)



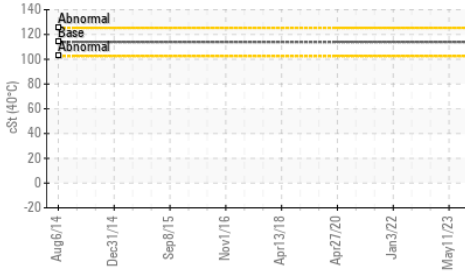
Viscosity @ 40°C



Viscosity @ 100°C



Viscosity @ 40°C

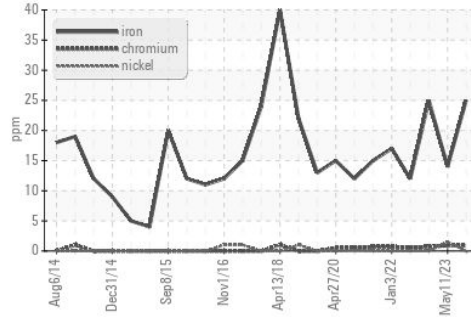


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

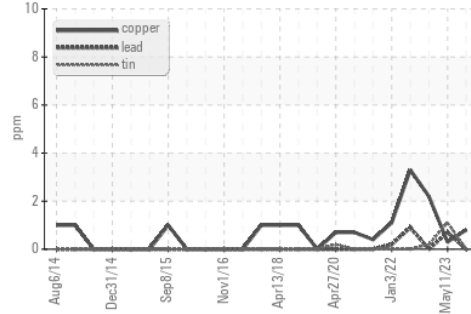
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.9

GRAPHS

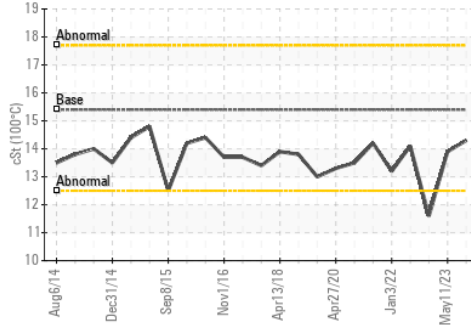
Ferrous Alloys



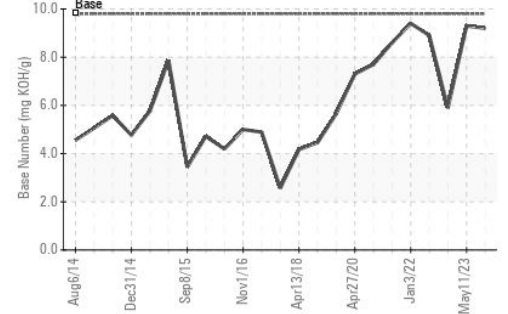
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : GFL0123389

Lab Number : 06223336

Unique Number : 11101533

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 : 28 Jun 2024

Tested : 01 Jul 2024

Diagnosed : 01 Jul 2024 - Don Baldrige

GFL Environmental - 007 - Brunswick

2809 Galloway Road

Bolivia, NC

US 28422

Contact: DONALD CRAVEN

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