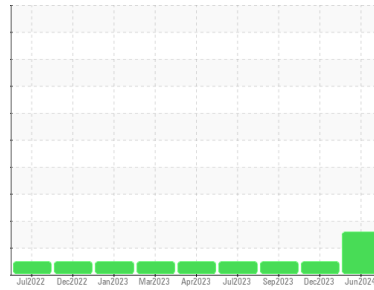




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
4572M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (5 QTS)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material.

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		GFL0124751	GFL0097735	GFL0087262
Sample Date	Client Info		17 Jun 2024	17 Dec 2023	18 Sep 2023
Machine Age	hrs	Client Info	3457	3004	2511
Oil Age	hrs	Client Info	453	493	598
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

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
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >90	18	9	19
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	0	0
Titanium	ppm	ASTM D5185m >2	<1	0	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >20	3	2	3
Lead	ppm	ASTM D5185m >40	<1	<1	<1
Copper	ppm	ASTM D5185m >330	<1	<1	<1
Tin	ppm	ASTM D5185m >15	<1	0	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	5	3	<1
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	60	56	63
Manganese	ppm	ASTM D5185m 0	<1	0	<1
Magnesium	ppm	ASTM D5185m 1010	1084	910	908
Calcium	ppm	ASTM D5185m 1070	1242	1058	1091
Phosphorus	ppm	ASTM D5185m 1150	1183	1066	1046
Zinc	ppm	ASTM D5185m 1270	1453	1257	1279
Sulfur	ppm	ASTM D5185m 2060	4310	3107	3296

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	▲ 38	5	5
Sodium	ppm	ASTM D5185m	3	2	6
Potassium	ppm	ASTM D5185m >20	6	0	3

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	0.2	0.3	0.5
Nitration	Abs/cm	*ASTM D7624 >20	6.5	6.8	8.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.7	18.9	20.8

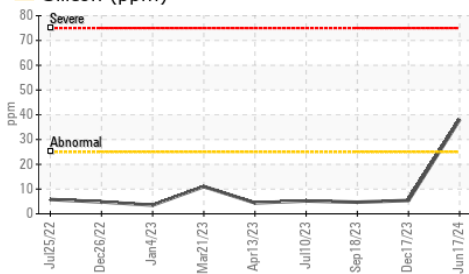
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	14.9	14.5	17.4
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	9.4	8.6	8.2

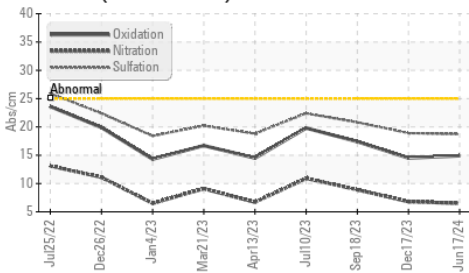


OIL ANALYSIS REPORT

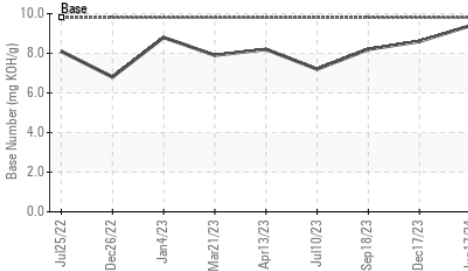
▲ Silicon (ppm)



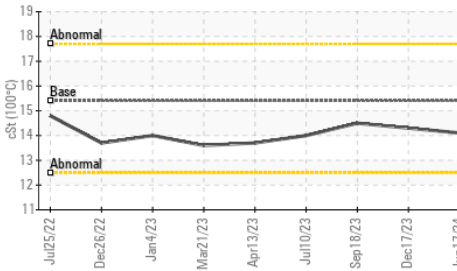
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

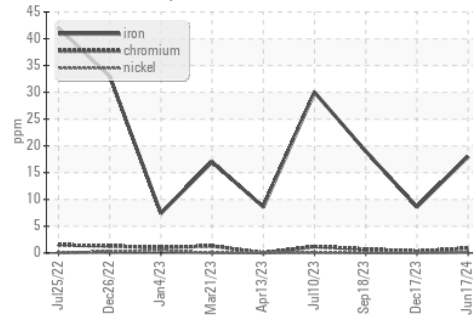


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

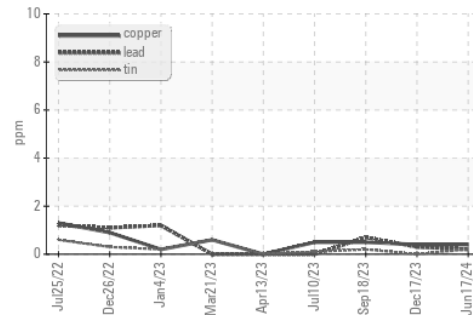
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.3

GRAPHS

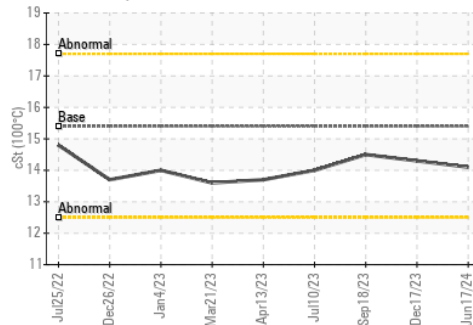
Ferrous Alloys



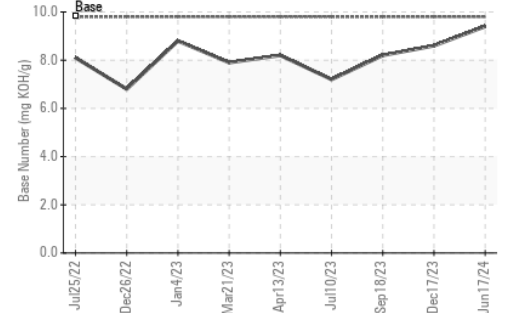
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : GFL0124751

Lab Number : 06224368

Unique Number : 11102565

Test Package : FLEET

Received : 01 Jul 2024

Tested : 02 Jul 2024

Diagnosed : 02 Jul 2024 - Jonathan Hester

GFL Environmental - 405 - Arbor Hills

7811 Chubb Rd

NORTHVILLE, MI

US 48168

Contact: John Nahal

jnahal@gflenv.com

T:

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)