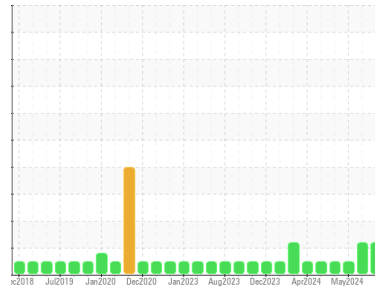




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
927074-260325

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. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are 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		GFL0122885	GFL0122801	GFL0118773
Sample Date	Client Info		11 Jun 2024	23 May 2024	03 May 2024
Machine Age	hrs	Client Info	19324	1783	19033
Oil Age	hrs	Client Info	19033	0	339
Oil Changed	Client Info		Not Changd	Not Changd	Changed
Sample Status			ABNORMAL	ABNORMAL	NORMAL

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 >100	9	6	8
Chromium	ppm	ASTM D5185m >20	<1	<1	1
Nickel	ppm	ASTM D5185m >4	<1	0	<1
Titanium	ppm	ASTM D5185m	<1	0	<1
Silver	ppm	ASTM D5185m >3	<1	0	0
Aluminum	ppm	ASTM D5185m >20	2	3	2
Lead	ppm	ASTM D5185m >40	<1	<1	1
Copper	ppm	ASTM D5185m >330	1	0	1
Tin	ppm	ASTM D5185m >15	<1	<1	1
Vanadium	ppm	ASTM D5185m	<1	0	<1
Cadmium	ppm	ASTM D5185m	<1	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	6	5	2
Barium	ppm	ASTM D5185m 0	<1	0	0
Molybdenum	ppm	ASTM D5185m 60	60	59	60
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	914	907	893
Calcium	ppm	ASTM D5185m 1070	1051	1016	1047
Phosphorus	ppm	ASTM D5185m 1150	1087	1041	949
Zinc	ppm	ASTM D5185m 1270	1203	1195	1153
Sulfur	ppm	ASTM D5185m 2060	3247	3451	2931

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	7	6	6
Sodium	ppm	ASTM D5185m	▲ 141	▲ 155	42
Potassium	ppm	ASTM D5185m >20	3	3	3
Glycol	%	*ASTM D2982	NEG	NEG	NEG

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.4	0.5	0.4
Nitration	Abs/cm	*ASTM D7624 >20	7.1	7.6	7.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.3	19.4	19.0

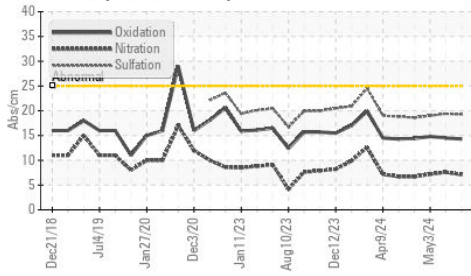
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	14.3	14.5	14.8
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.8	8.6	8.3

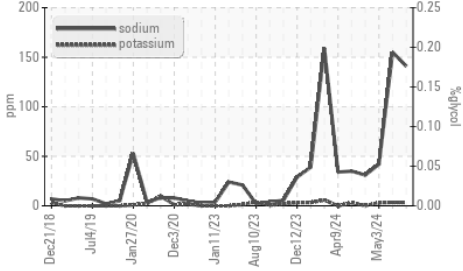


OIL ANALYSIS REPORT

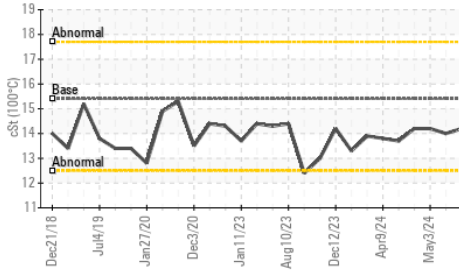
FT-IR (Direct Trend)



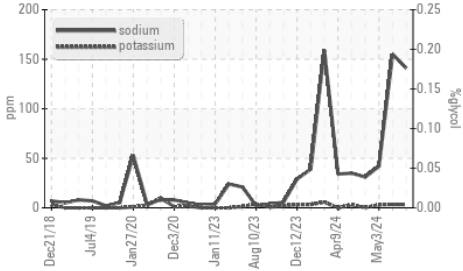
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

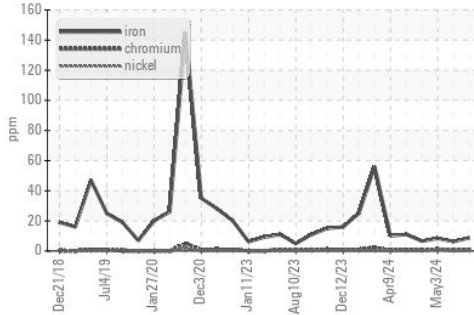


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

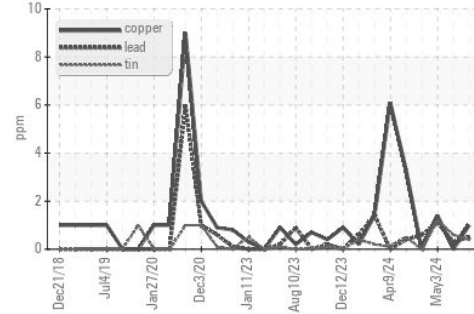
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.0

GRAPHS

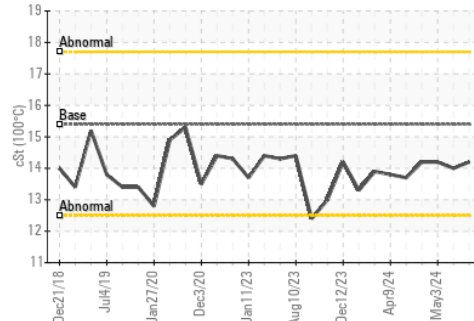
Ferrous Alloys



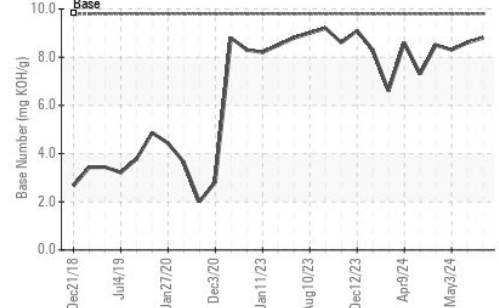
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : GFL0122885

Lab Number : 06212973

Unique Number : 11085837

Test Package : FLEET (Additional Tests: Glycol)

Received : 17 Jun 2024

Tested : 20 Jun 2024

Diagnosed : 20 Jun 2024 - Sean Felton

GFL Environmental - 837 - Harrison TS

2820 S State Route 291

Harrisonville, MO

US 64701

Contact: SARA PATRICK

spatrack@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)