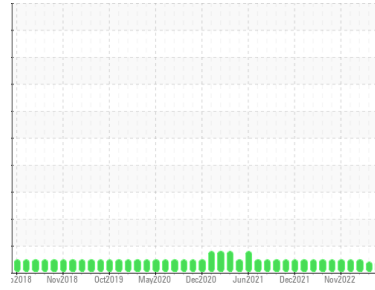




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Machine Id
2587

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0099758	GFL0073277	GFL0045990
Sample Date	Client Info		27 Feb 2024	02 Jun 2023	28 Mar 2023
Machine Age	hrs	Client Info	600	600	600
Oil Age	hrs	Client Info	600	600	600
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ATTENTION	ATTENTION	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	0.4	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	0.0

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >90	27	44	90
Chromium	ppm	ASTM D5185m >20	2	2	3
Nickel	ppm	ASTM D5185m >2	<1	<1	<1
Titanium	ppm	ASTM D5185m >2	<1	<1	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >20	5	10	33
Lead	ppm	ASTM D5185m >40	2	5	16
Copper	ppm	ASTM D5185m >330	1	3	10
Tin	ppm	ASTM D5185m >15	<1	<1	1
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	10	16	15
Barium	ppm	ASTM D5185m 0	0	2	0
Molybdenum	ppm	ASTM D5185m 60	79	110	73
Manganese	ppm	ASTM D5185m 0	<1	<1	1
Magnesium	ppm	ASTM D5185m 1010	809	712	890
Calcium	ppm	ASTM D5185m 1070	1008	1349	1269
Phosphorus	ppm	ASTM D5185m 1150	943	985	1053
Zinc	ppm	ASTM D5185m 1270	1165	1173	1296
Sulfur	ppm	ASTM D5185m 2060	3025	3478	2881

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	9	10	14
Sodium	ppm	ASTM D5185m	4	5	12
Potassium	ppm	ASTM D5185m >20	6	24	79

INFRA-RED

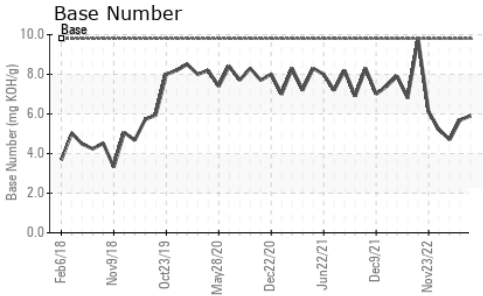
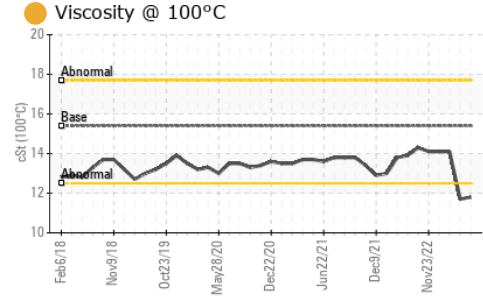
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	0.6	0.7	1.1
Nitration	Abs/cm	*ASTM D7624 >20	9.8	11.7	15.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	20.3	23.9	30.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.9	20.9	30.1
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	5.9	5.7	4.7



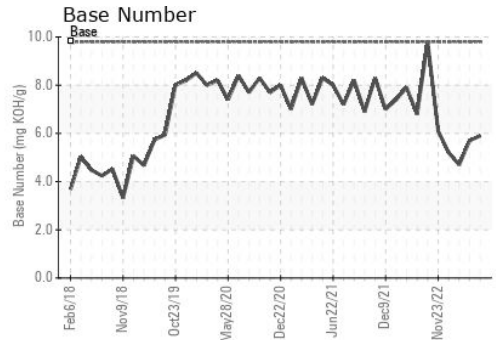
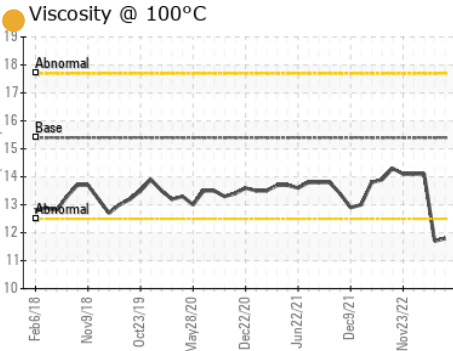
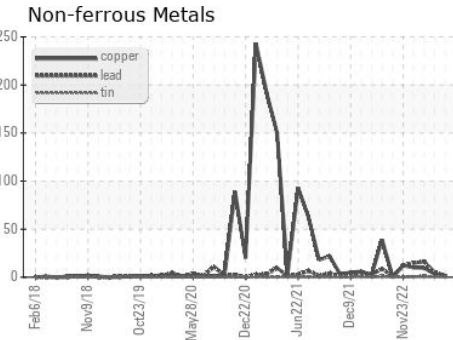
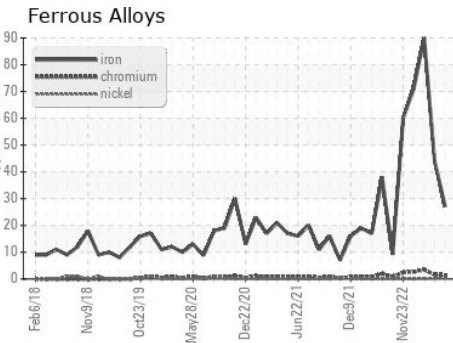
OIL ANALYSIS REPORT



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	11.8	11.7	14.1

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0099758
Lab Number : 06104029
Unique Number : 10902259
Test Package : FLEET

Received : 29 Feb 2024
Tested : 29 Feb 2024
Diagnosed : 02 Mar 2024 - Don Baldrige

GFL Environmental - 102 - Morristown TN
 415 Ryder Lane, PO Box 1894
 Morristown, TN
 US 37813

Contact: Ricky Dunlap
 ricky.dunlap@gflenv.com
 T: (800)207-6618

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)

F: