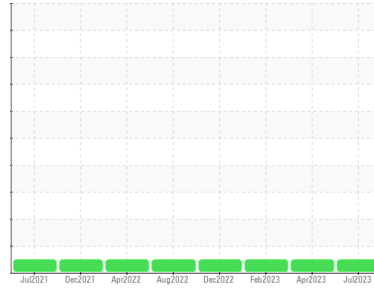




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
529016-1205

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	GFL0083985	GFL0078714	GFL0044298
Sample Date	Client Info	10 Jul 2023	25 Apr 2023	18 Feb 2023
Machine Age	hrs	18883	10376	10070
Oil Age	hrs	590	600	282
Oil Changed	Client Info	Changed	Changed	Not Changed
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	17	23	15
Chromium	ppm ASTM D5185m >20	2	2	<1
Nickel	ppm ASTM D5185m >4	<1	0	0
Titanium	ppm ASTM D5185m	0	0	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	11	15	9
Lead	ppm ASTM D5185m >40	0	0	0
Copper	ppm ASTM D5185m >330	8	6	3
Tin	ppm ASTM D5185m >15	<1	0	0
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	4	<1	<1
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	73	68	60
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	1090	1060	882
Calcium	ppm ASTM D5185m 1070	1257	1219	1102
Phosphorus	ppm ASTM D5185m 1150	1154	1036	871
Zinc	ppm ASTM D5185m 1270	1444	1390	1121
Sulfur	ppm ASTM D5185m 2060	3638	3087	2819

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	6	5	6
Sodium	ppm ASTM D5185m	2	1	<1
Potassium	ppm ASTM D5185m >20	10	16	11

INFRA-RED

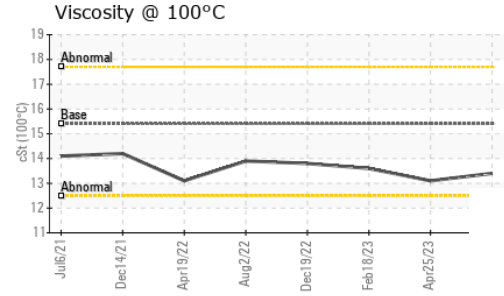
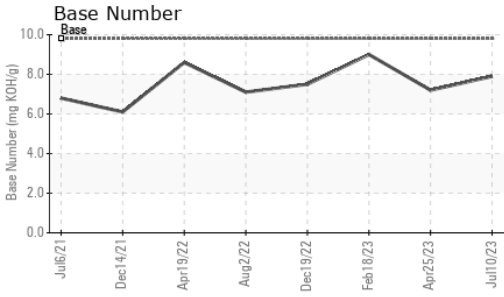
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.5	0.5	0.3
Nitration	Abs/cm *ASTM D7624 >20	9.4	8.7	7.3
Sulfation	Abs/.1mm *ASTM D7415 >30	21.0	20.5	19.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.6	17.2	14.8
Base Number (BN)	mg KOH/g ASTM D2896 9.8	7.9	7.2	9.0



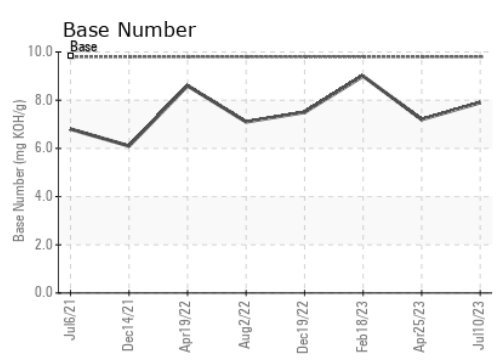
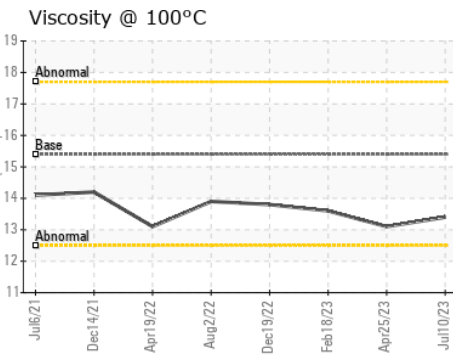
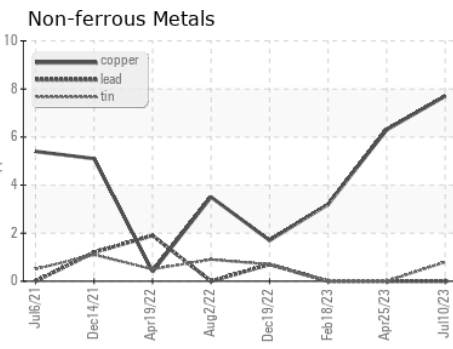
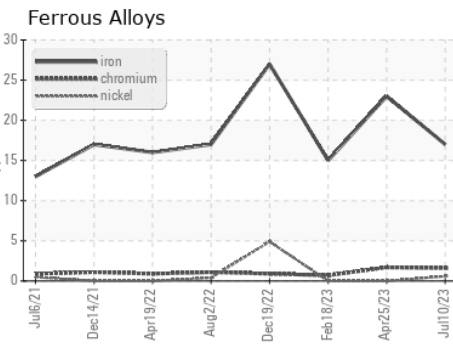
OIL ANALYSIS REPORT



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	13.4	13.1	13.6

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0083985 **Received** : 17 Jul 2023
Lab Number : **05899547** **Diagnosed** : 18 Jul 2023
Unique Number : 10560903 **Diagnostician** : Don Baldrige
Test Package : FLEET

GFL Environmental - 622 - Traverse City Hauling
 160 Hughes Dr
 Traverse City, MI
 US 49686
 Contact: GARY BREWER

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)

T:
F: