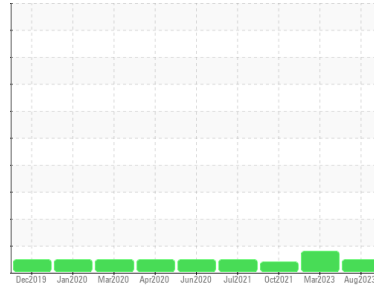




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
525055-651129

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

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

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 acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0087029	GFL0074999	GFL0028563
Sample Date	Client Info	31 Aug 2023	15 Mar 2023	13 Oct 2021
Machine Age	hrs	0	0	0
Oil Age	hrs	450	0	450
Oil Changed	Client Info	Changed	Not Changd	Changed
Sample Status		NORMAL	ABNORMAL	ATTENTION

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	0.3
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >110	71	41	20
Chromium	ppm ASTM D5185m >4	2	▲ 3	<1
Nickel	ppm ASTM D5185m >2	<1	0	<1
Titanium	ppm ASTM D5185m	<1	<1	0
Silver	ppm ASTM D5185m >2	0	0	<1
Aluminum	ppm ASTM D5185m >25	3	7	<1
Lead	ppm ASTM D5185m >45	<1	0	<1
Copper	ppm ASTM D5185m >85	6	8	2
Tin	ppm ASTM D5185m >4	<1	<1	<1
Antimony	ppm ASTM D5185m	---	---	0
Vanadium	ppm ASTM D5185m	<1	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	0	2	3
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	65	54	55
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	1031	812	844
Calcium	ppm ASTM D5185m 1070	1290	1066	1306
Phosphorus	ppm ASTM D5185m 1150	1087	888	1059
Zinc	ppm ASTM D5185m 1270	1312	1023	1133
Sulfur	ppm ASTM D5185m 2060	3160	3099	2822

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >30	8	16	5
Sodium	ppm ASTM D5185m	2	4	0
Potassium	ppm ASTM D5185m >20	0	2	1

INFRA-RED

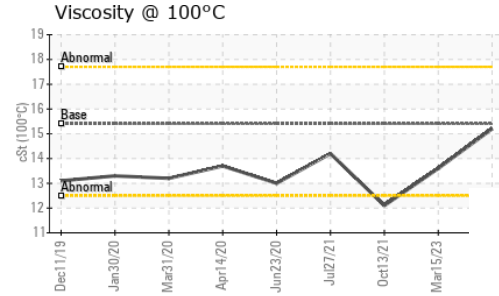
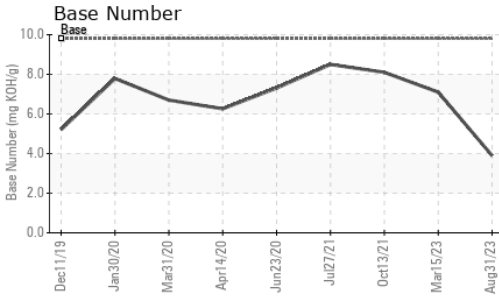
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.4	0.4	0.2
Nitration	Abs/cm *ASTM D7624 >20	13.5	10.5	8
Sulfation	Abs/.1mm *ASTM D7415 >30	25.7	20.4	18.4

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	26.9	17.5	14.3
Base Number (BN)	mg KOH/g ASTM D2896 9.8	3.9	7.1	8.1



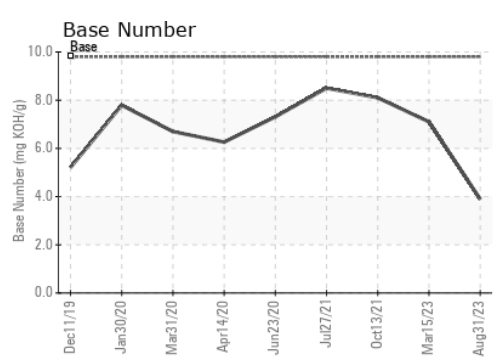
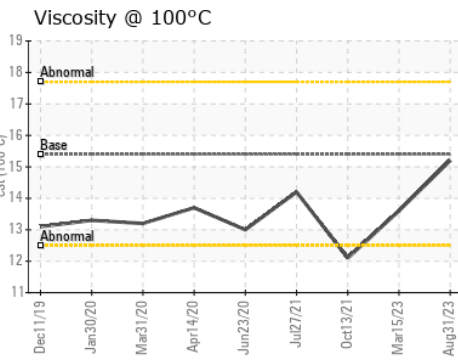
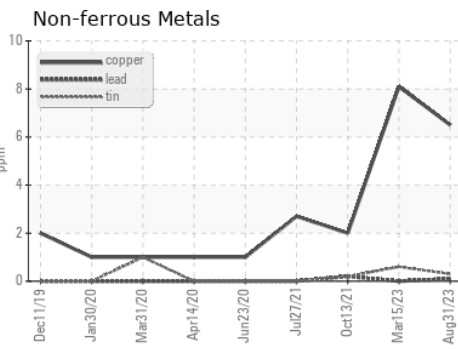
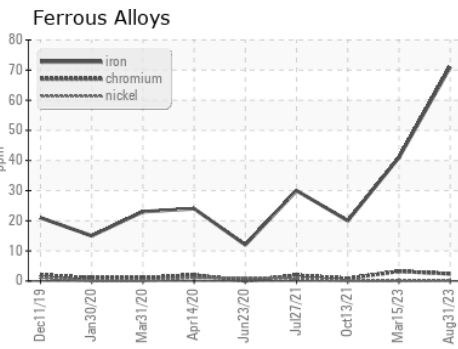
OIL ANALYSIS REPORT



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	15.2	13.6 ▲ 12.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0087029 **Received** : 05 Sep 2023
Lab Number : **05941783** **Diagnosed** : 06 Sep 2023
Unique Number : 10632395 **Diagnostician** : Don Baldrige
Test Package : FLEET

GFL Environmental - 846 - Mayfield Hauling
 3426 State Route 45
 Mayfield, KY
 US 42066
 Contact: Jack Lindsey
 jack.lindsey@gflenv.com
 T: (270)970-3690
 F:

Certificate L2367
 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)