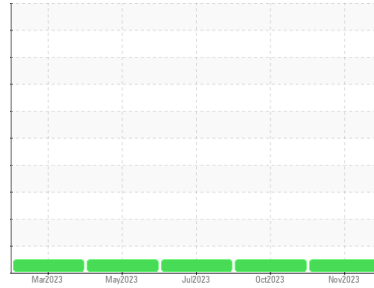




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
912088

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Sampled oil)

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	GFL0090488	GFL0090529	GFL0090492
Sample Date	Client Info	21 Nov 2023	09 Oct 2023	26 Jul 2023
Machine Age	hrs	2624	2326	1711
Oil Age	hrs	298	615	596
Oil Changed	Client Info	Not Changed	Changed	Changed
Sample Status		NORMAL	NORMAL	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
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	7	17	17
Chromium	ppm ASTM D5185m >20	<1	2	1
Nickel	ppm ASTM D5185m >4	<1	<1	<1
Titanium	ppm ASTM D5185m	0	<1	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	6	17	12
Lead	ppm ASTM D5185m >40	<1	0	0
Copper	ppm ASTM D5185m >330	0	1	<1
Tin	ppm ASTM D5185m >15	<1	<1	0
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	6	<1	3
Barium	ppm ASTM D5185m 0	0	3	1
Molybdenum	ppm ASTM D5185m 60	55	57	63
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	830	855	926
Calcium	ppm ASTM D5185m 1070	995	1003	1097
Phosphorus	ppm ASTM D5185m 1150	1027	897	1005
Zinc	ppm ASTM D5185m 1270	1147	1099	1228
Sulfur	ppm ASTM D5185m 2060	2970	2674	3142

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	2	3	3
Sodium	ppm ASTM D5185m	4	4	2
Potassium	ppm ASTM D5185m >20	17	43	31

INFRA-RED

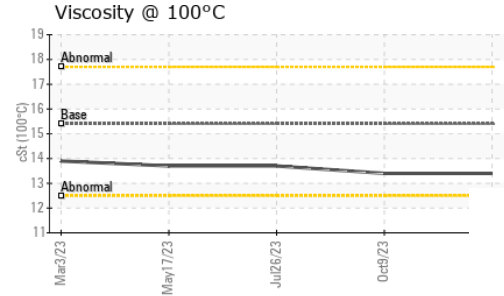
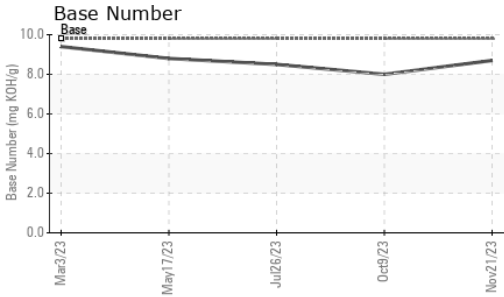
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.4	0.4	0.5
Nitration	Abs/cm *ASTM D7624 >20	6.3	7.3	7.7
Sulfation	Abs/.1mm *ASTM D7415 >30	18.2	18.5	19.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.4	13.7	14.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.7	8.0	8.5



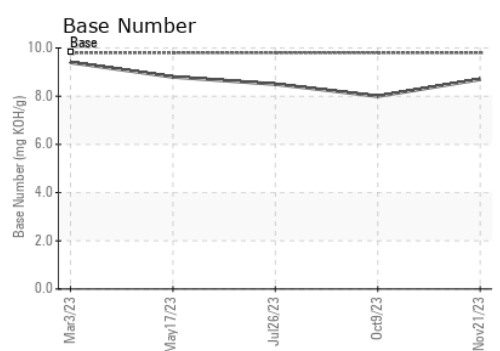
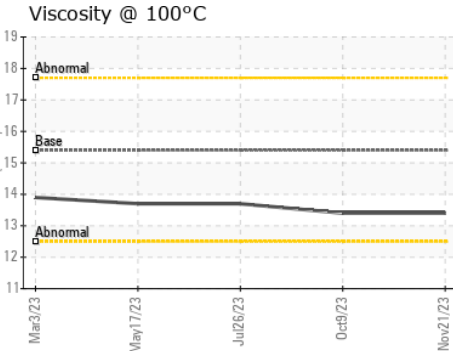
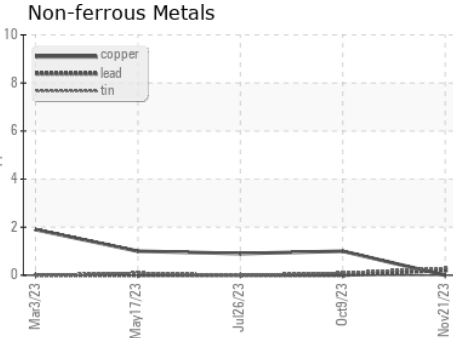
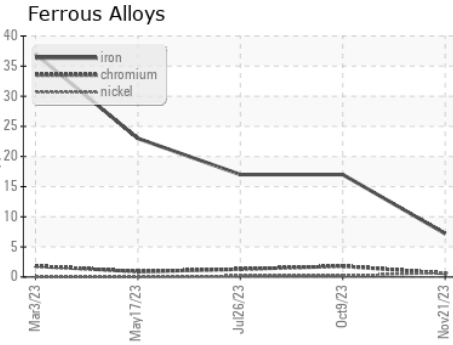
OIL ANALYSIS REPORT



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	13.4	13.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0090488 **Received** : 24 Nov 2023
Lab Number : **06017129** **Diagnosed** : 28 Nov 2023
Unique Number : 10756273 **Diagnostician** : Sean Felton
Test Package : FLEET

GFL Environmental - 622 - Traverse City Hauling
 160 Hughes Dr
 Traverse City, MI
 US 49686
 Contact: TECHNICIAN ACCOUNT
 aw.tc.maint@gflenv.com

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)