



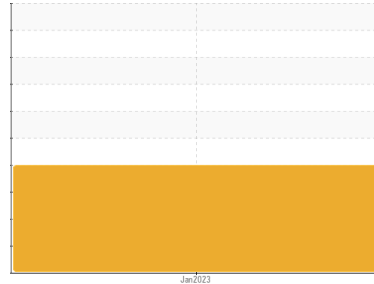
OIL ANALYSIS REPORT

Sample Rating Trend

DIRT



Machine Id
927026
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Aluminum, iron and nickel ppm levels are abnormal.

Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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		GFL0055997	---	---
Sample Date	Client Info		11 Jan 2023	---	---
Machine Age	hrs	Client Info	24213	---	---
Oil Age	hrs	Client Info	600	---	---
Oil Changed	Client Info		Changed	---	---
Sample Status			ABNORMAL	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	---	---
Water	WC Method	>0.2	NEG	---	---
Glycol	WC Method		NEG	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >120	▲ 358	---	---
Chromium	ppm	ASTM D5185m >20	13	---	---
Nickel	ppm	ASTM D5185m >5	▲ 15	---	---
Titanium	ppm	ASTM D5185m >2	2	---	---
Silver	ppm	ASTM D5185m >2	0	---	---
Aluminum	ppm	ASTM D5185m >20	▲ 42	---	---
Lead	ppm	ASTM D5185m >40	32	---	---
Copper	ppm	ASTM D5185m >330	14	---	---
Tin	ppm	ASTM D5185m >15	2	---	---
Vanadium	ppm	ASTM D5185m	<1	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	20	---	---
Barium	ppm	ASTM D5185m 0	0	---	---
Molybdenum	ppm	ASTM D5185m 60	74	---	---
Manganese	ppm	ASTM D5185m 0	3	---	---
Magnesium	ppm	ASTM D5185m 1010	999	---	---
Calcium	ppm	ASTM D5185m 1070	1284	---	---
Phosphorus	ppm	ASTM D5185m 1150	1083	---	---
Zinc	ppm	ASTM D5185m 1270	1300	---	---
Sulfur	ppm	ASTM D5185m 2060	3077	---	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	▲ 34	---	---
Sodium	ppm	ASTM D5185m	7	---	---
Potassium	ppm	ASTM D5185m >20	4	---	---

INFRA-RED

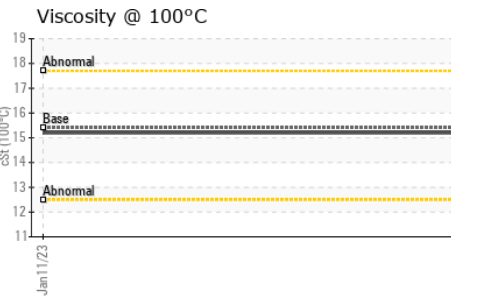
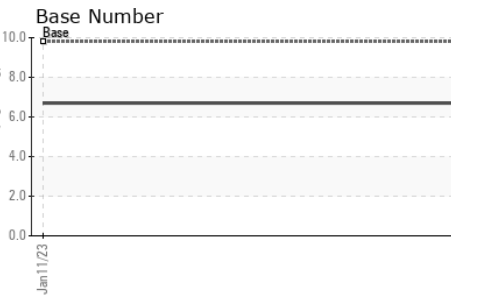
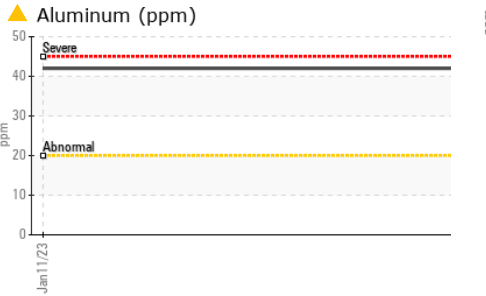
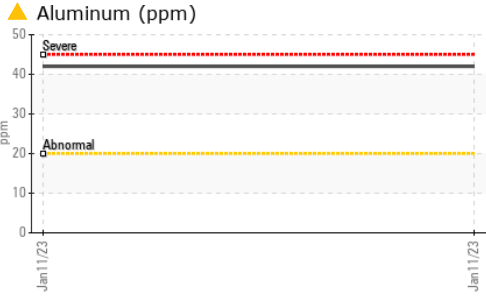
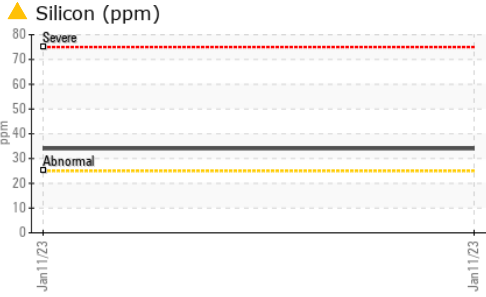
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >4	0.6	---	---
Nitration	Abs/cm	*ASTM D7624 >20	8.4	---	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	20.3	---	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	6.7	---	---



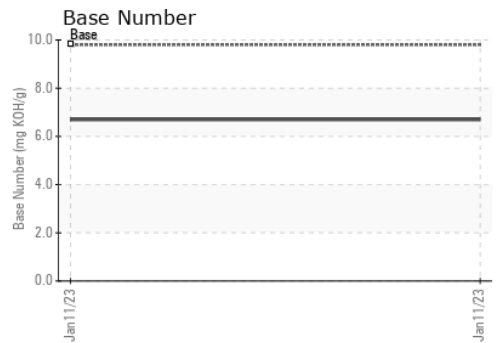
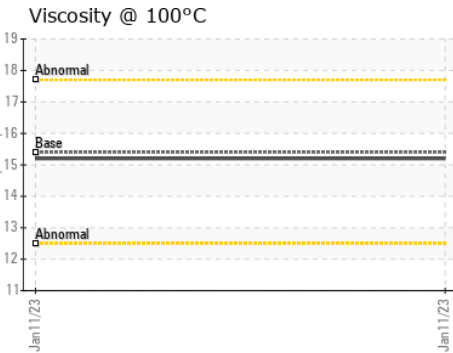
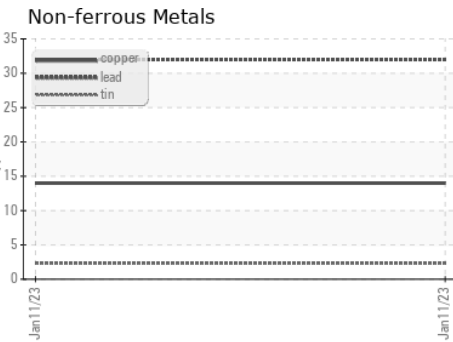
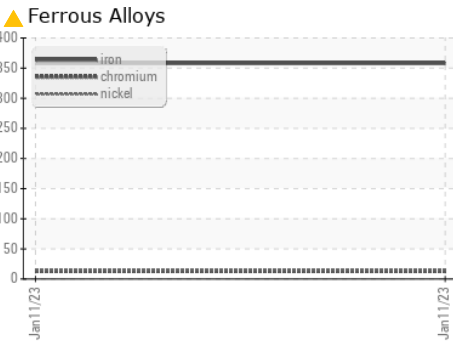
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	15.2	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0055997 **Received** : 06 Feb 2023
Lab Number : 05759015 **Diagnosed** : 07 Feb 2023
Unique Number : 10323622 **Diagnostician** : Angela Borella
Test Package : FLEET

GFL Environmental - 912 - Fort Atkinson HC
 1215 Klement St.
 Fort Atkinson, WI
 US 53538
 Contact: LEONARD KOZLEUCHAR
 leonard.kozleuchar@gflenv.com
 T: (262)210-6528
 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)