



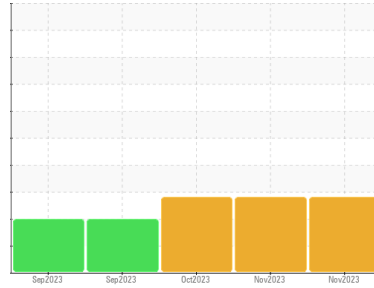
PROBLEM SUMMARY

Sample Rating Trend

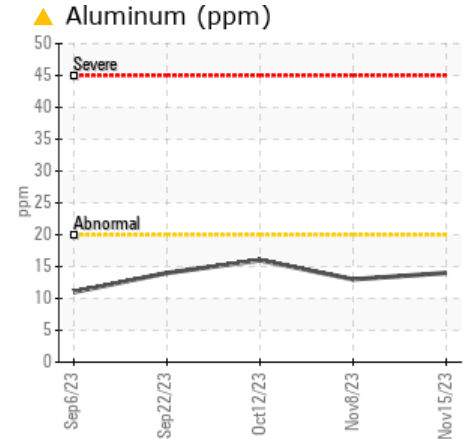
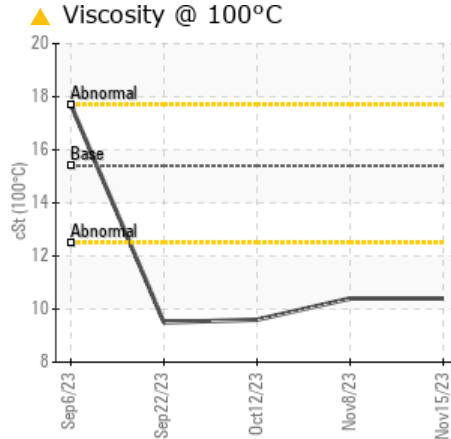
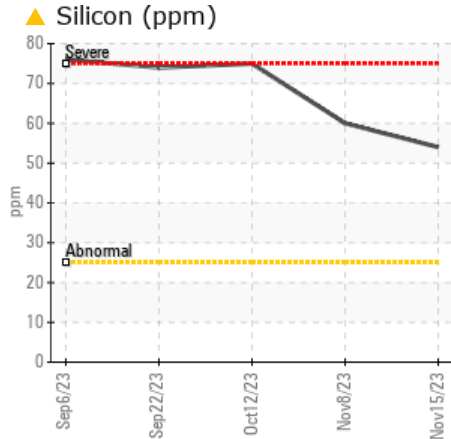
DIRT



Area
166
 Machine Id
414062
 Component
1 Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



COMPONENT CONDITION SUMMARY



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. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Aluminum	ppm	ASTM D5185m	>20	▲ 14	▲ 13	▲ 16
Silicon	ppm	ASTM D5185m	>25	▲ 54	▲ 60	▲ 75
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.4	▲ 10.4	▲ 9.6

Customer Id: GFL166
 Sample No.: GFL0100231
 Lab Number: 06013708
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

08 Nov 2023 Diag: Don Baldrige

DIRT



We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor. All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

[view report](#)



12 Oct 2023 Diag: Don Baldrige

DIRT



We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor. All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

[view report](#)



22 Sep 2023 Diag: Jonathan Hester

DIRT



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

[view report](#)

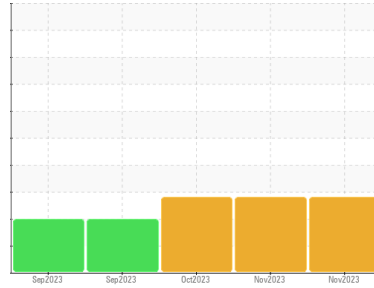




OIL ANALYSIS REPORT

Area
166
Machine Id
414062
Component
1 Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



DIRT



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. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

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	GFL0100231	GFL0100234	GFL0081214
Sample Date	Client Info	15 Nov 2023	08 Nov 2023	12 Oct 2023
Machine Age	hrs	10133	10133	7810
Oil Age	hrs	613	600	600
Oil Changed	Client Info	Changed	Not Changd	Not Changd
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<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 >120	26	28	30
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	<1	1	<1
Titanium	ppm ASTM D5185m >2	<1	<1	<1
Silver	ppm ASTM D5185m >2	1	2	<1
Aluminum	ppm ASTM D5185m >20	▲ 14	▲ 13	▲ 16
Lead	ppm ASTM D5185m >40	<1	<1	<1
Copper	ppm ASTM D5185m >330	195	186	140
Tin	ppm ASTM D5185m >15	3	3	3
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	0	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	175	199	285
Barium	ppm ASTM D5185m 0	<1	1	0
Molybdenum	ppm ASTM D5185m 60	107	111	127
Manganese	ppm ASTM D5185m 0	4	4	4
Magnesium	ppm ASTM D5185m 1010	765	731	696
Calcium	ppm ASTM D5185m 1070	1317	1322	1409
Phosphorus	ppm ASTM D5185m 1150	678	747	683
Zinc	ppm ASTM D5185m 1270	872	853	818
Sulfur	ppm ASTM D5185m 2060	2291	2376	2613

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 54	▲ 60	▲ 75
Sodium	ppm ASTM D5185m	2	<1	4
Potassium	ppm ASTM D5185m >20	35	38	42

INFRA-RED

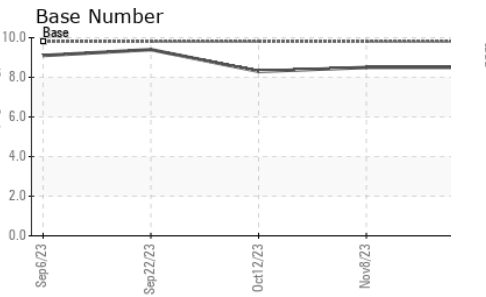
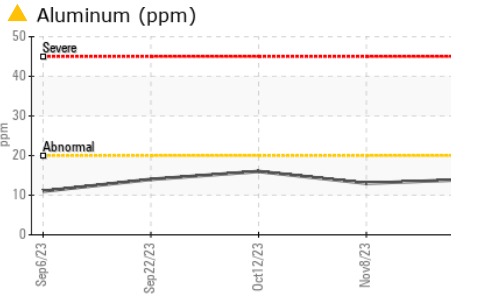
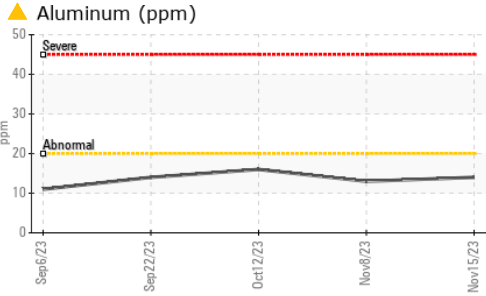
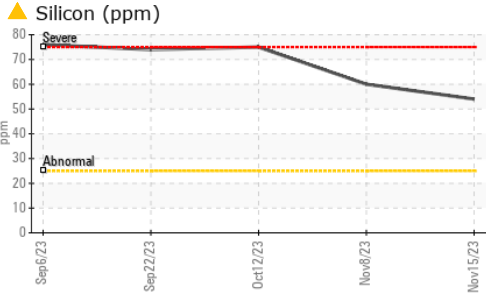
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.2	0.2	0.2
Nitration	Abs/cm *ASTM D7624 >20	8.8	8.2	8.0
Sulfation	Abs/.1mm *ASTM D7415 >30	23.8	24.1	24.6

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	21.0	20.9	21.5
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.5	8.5	8.3



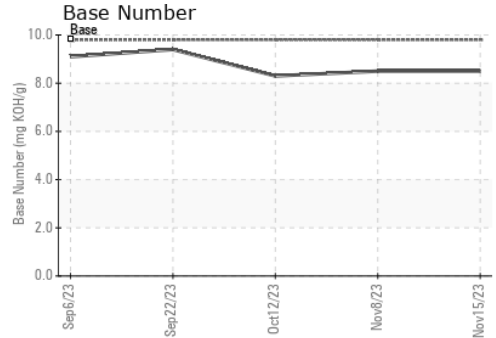
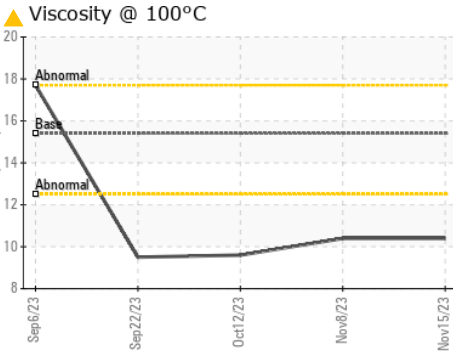
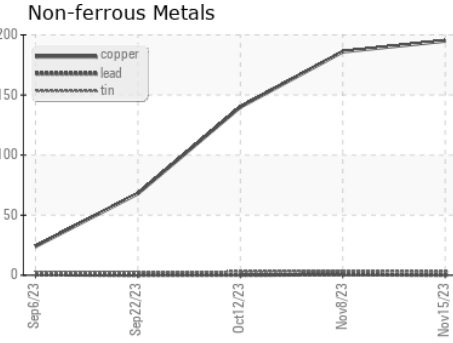
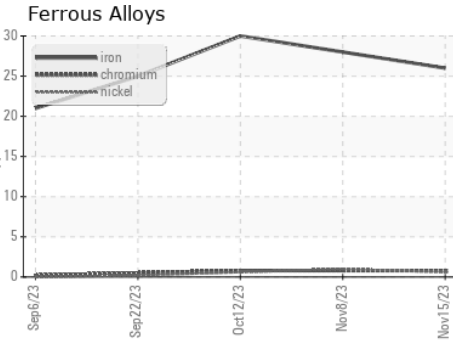
OIL ANALYSIS REPORT



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	▲ 10.4	▲ 10.4

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0100231 **Received** : 21 Nov 2023
Lab Number : 06013708 **Diagnosed** : 23 Nov 2023
Unique Number : 10752852 **Diagnostician** : Don Baldrige
Test Package : FLEET

GFL Environmental - 166 - Phenix City
 18 Old Brickyard Rd
 Phenix City, AL
 US 36869
 Contact: EDWARD CASHMAN
 ecashman@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)