



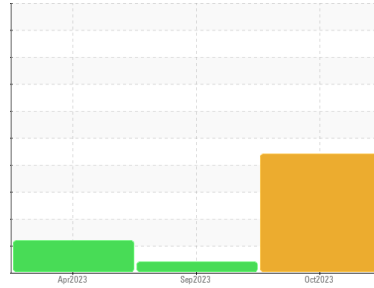
PROBLEM SUMMARY

Sample Rating Trend

DIRT

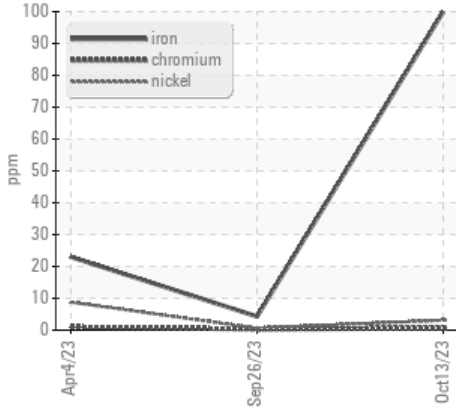


Machine Id
913146
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

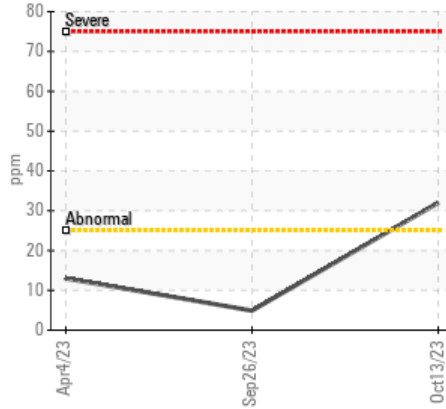


COMPONENT CONDITION SUMMARY

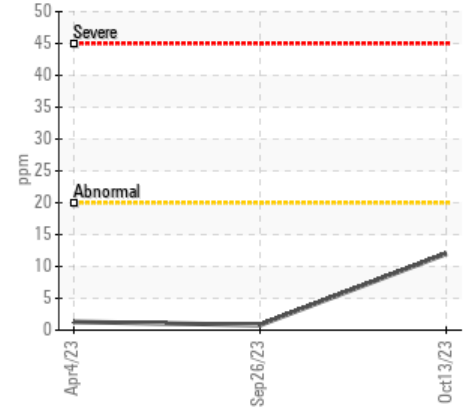
▲ Ferrous Alloys



▲ Silicon (ppm)



▲ Aluminum (ppm)



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. Note that there appears to be a discrepancy in the total time on this component, when compared to the historical data.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ATTENTION	ABNORMAL
Iron	ppm	ASTM D5185m	>120	▲ 100	4	23
Aluminum	ppm	ASTM D5185m	>20	▲ 12	<1	1
Silicon	ppm	ASTM D5185m	>25	▲ 32	5	13
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 3.4	8.8	6.5

Customer Id: GFL836
Sample No.: GFL0093696
Lab Number: 05981795
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.
Alert	---	---	?	Note that there appears to be a discrepancy in the total time on this component, when compared to the historical data.
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

26 Sep 2023 Diag: Don Baldrige

VISCOSITY



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. 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



04 Apr 2023 Diag: Jonathan Hester

WEAR



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Valve wear is indicated. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

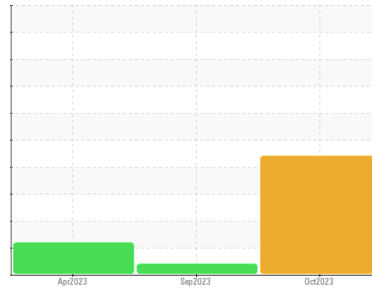
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OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
913146
 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. Resample at the next service interval to monitor. Note that there appears to be a discrepancy in the total time on this component, when compared to the historical data.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

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

Fluid Condition

The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0093696	GFL0087707	GFL0078572
Sample Date	Client Info	13 Oct 2023	26 Sep 2023	04 Apr 2023
Machine Age	hrs	1015	2415	1203
Oil Age	hrs	0	0	0
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ATTENTION	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<1.0	<1.0	0.3
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >120	▲ 100	4	23
Chromium	ppm ASTM D5185m >20	<1	<1	1
Nickel	ppm ASTM D5185m >5	3	<1	▲ 9
Titanium	ppm ASTM D5185m >2	<1	0	<1
Silver	ppm ASTM D5185m >2	<1	0	0
Aluminum	ppm ASTM D5185m >20	▲ 12	<1	1
Lead	ppm ASTM D5185m >40	2	0	<1
Copper	ppm ASTM D5185m >330	19	1	216
Tin	ppm ASTM D5185m >15	2	<1	2
Vanadium	ppm ASTM D5185m	<1	0	<1
Cadmium	ppm ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	4	48	79
Barium	ppm ASTM D5185m 0	13	0	0
Molybdenum	ppm ASTM D5185m 60	71	59	12
Manganese	ppm ASTM D5185m 0	15	<1	2
Magnesium	ppm ASTM D5185m 1010	790	1080	694
Calcium	ppm ASTM D5185m 1070	1234	833	1258
Phosphorus	ppm ASTM D5185m 1150	733	1061	659
Zinc	ppm ASTM D5185m 1270	921	1267	796
Sulfur	ppm ASTM D5185m 2060	2402	3490	2253

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 32	5	13
Sodium	ppm ASTM D5185m	4	8	4
Potassium	ppm ASTM D5185m >20	11	1	2

INFRA-RED

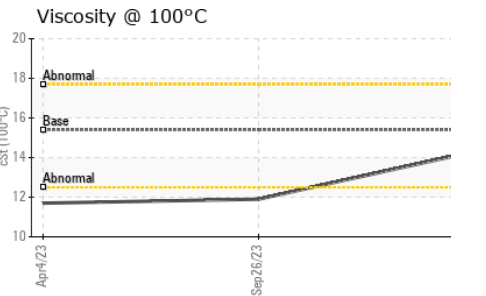
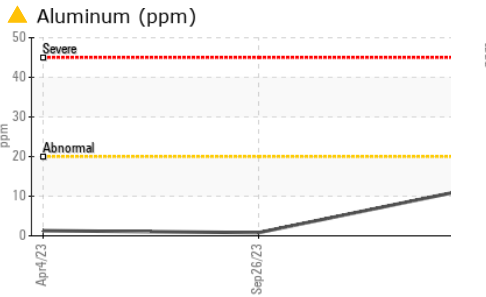
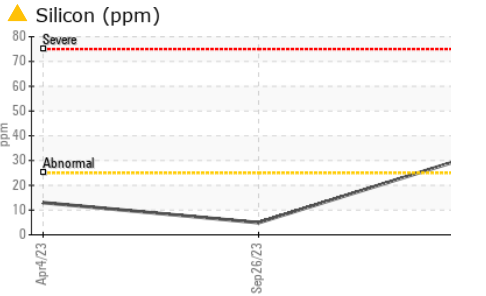
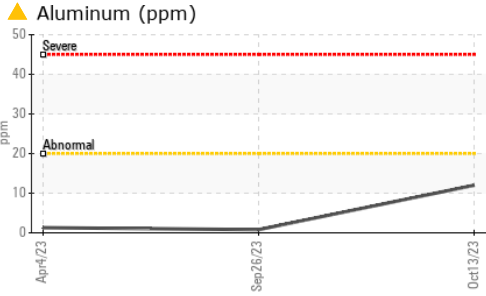
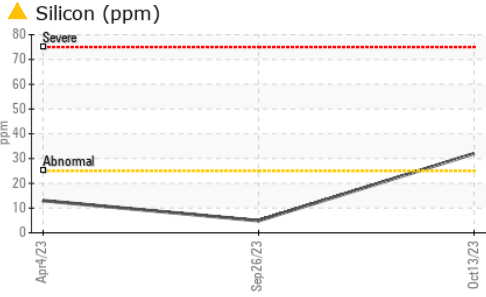
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0	0.1	0.5
Nitration	Abs/cm *ASTM D7624 >20	13.2	6.4	10.1
Sulfation	Abs/.1mm *ASTM D7415 >30	25.9	18.5	22.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	24.4	16.1	18.7
Base Number (BN)	mg KOH/g ASTM D2896 9.8	▲ 3.4	8.8	6.5



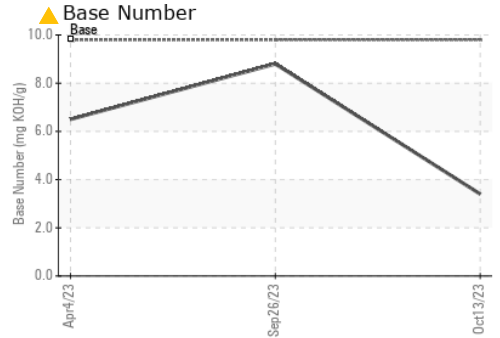
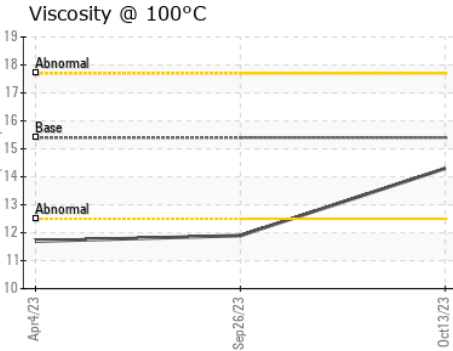
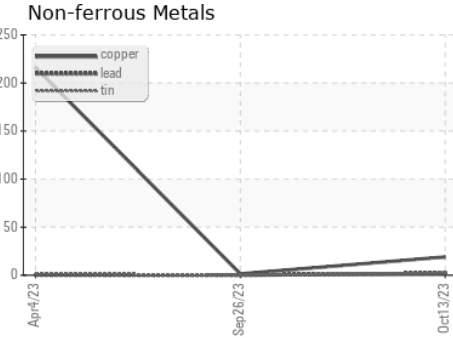
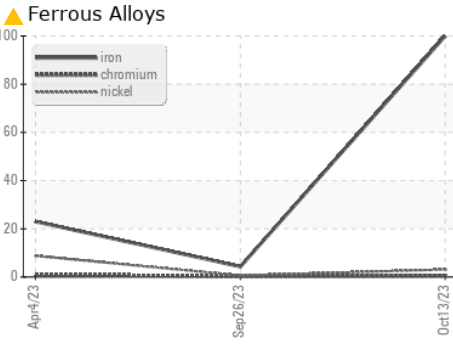
OIL ANALYSIS REPORT



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	14.3	▲ 11.9 ▲ 11.7

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0093696 **Received** : 17 Oct 2023
Lab Number : **05981795** **Diagnosed** : 19 Oct 2023
Unique Number : 10699090 **Diagnostician** : Don Baldrige
Test Package : FLEET

GFL Environmental - 836 - Kansas City Hauling
 7801 East Truman Road
 Kansas City, MO
 US 64126
 Contact: Robert Hart
 rhart@gflenv.com
 T: (580)461-1509
 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)