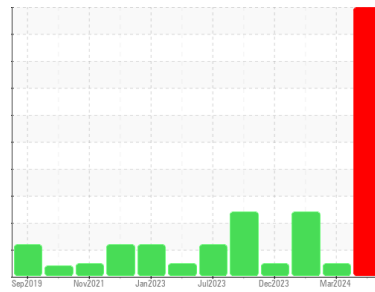




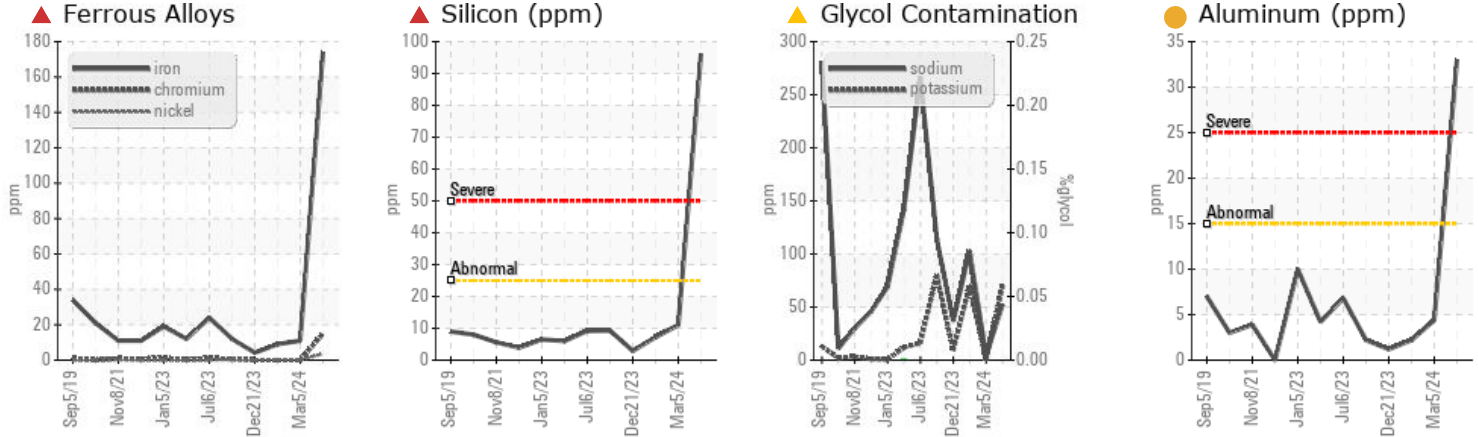
PROBLEM SUMMARY

Area
(V16586)
 Machine Id
924024-260242
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m >75	▲ 174	11	9
Chromium	ppm	ASTM D5185m >5	▲ 15	0	0
Silicon	ppm	ASTM D5185m >25	▲ 96	11	7
Sodium	ppm	ASTM D5185m	▲ 52	4	▲ 103
Potassium	ppm	ASTM D5185m >20	▲ 70	<1	▲ 70

Customer Id: GFL893
 Sample No.: GFL0118469
 Lab Number: 06202314
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
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

NORMAL



05 Mar 2024 Diag: Wes Davis

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



GLYCOL



09 Jan 2024 Diag: Jonathan Hester

We advise that you check for possible coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report



NORMAL



21 Dec 2023 Diag: Wes Davis

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

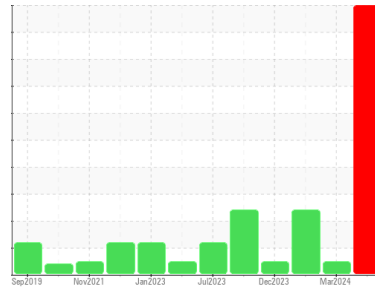
view report





OIL ANALYSIS REPORT

Sample Rating Trend



Area
(V16586)
 Machine Id
924024-260242
 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. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear
 Piston, ring and cylinder wear is indicated.

▲ Contamination
 Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Test for glycol is negative.

▲ Fluid Condition
 The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0118469	GFL0104987	GFL0104997
Sample Date	Client Info	04 Jun 2024	05 Mar 2024	09 Jan 2024
Machine Age	hrs	0	4242	4087
Oil Age	hrs	0	0	650
Oil Changed	Client Info	Not Chngd	Not Chngd	Changed
Sample Status		SEVERE	NORMAL	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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >75	▲ 174	11	9
Chromium	ppm ASTM D5185m >5	▲ 15	0	0
Nickel	ppm ASTM D5185m >4	4	0	0
Titanium	ppm ASTM D5185m >2	2	<1	0
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >15	● 33	4	2
Lead	ppm ASTM D5185m >25	<1	<1	<1
Copper	ppm ASTM D5185m >100	10	2	2
Tin	ppm ASTM D5185m >4	1	<1	0
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<1	<1	1
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	74	61	66
Manganese	ppm ASTM D5185m 0	2	<1	0
Magnesium	ppm ASTM D5185m 1010	941	958	942
Calcium	ppm ASTM D5185m 1070	1131	1070	1006
Phosphorus	ppm ASTM D5185m 1150	1102	941	962
Zinc	ppm ASTM D5185m 1270	1261	1169	1249
Sulfur	ppm ASTM D5185m 2060	3178	2789	2982

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 96	11	7
Sodium	ppm ASTM D5185m	▲ 52	4	▲ 103
Potassium	ppm ASTM D5185m >20	▲ 70	<1	▲ 70
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

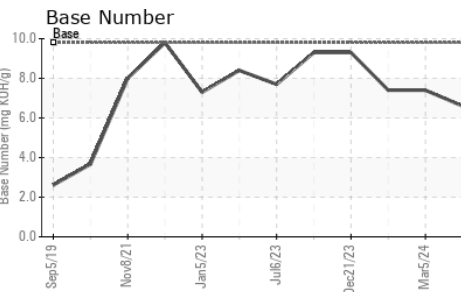
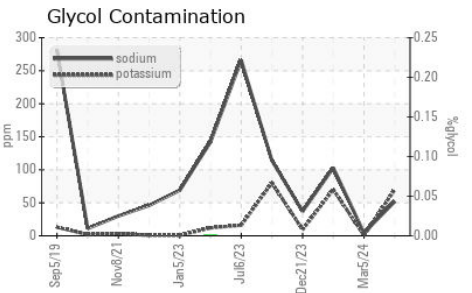
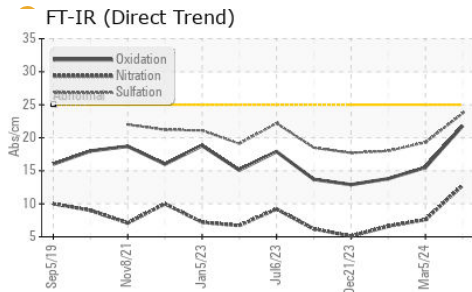
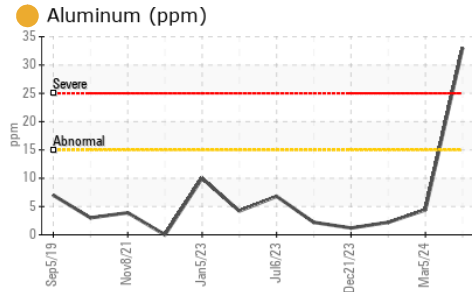
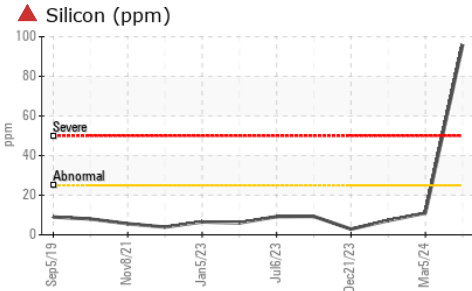
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	0.7	0.3	0.3
Nitration	Abs/cm *ASTM D7624 >20	12.8	7.6	6.6
Sulfation	Abs/.1mm *ASTM D7415 >30	23.7	19.3	18.0

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	21.8	15.5	13.8
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.6	7.4	7.4



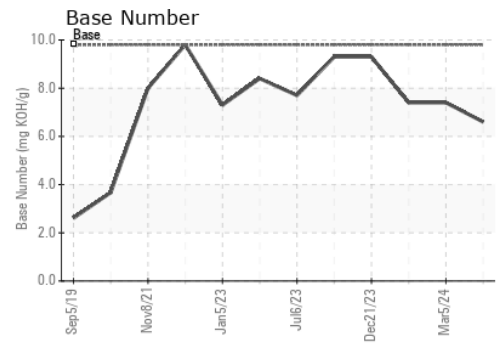
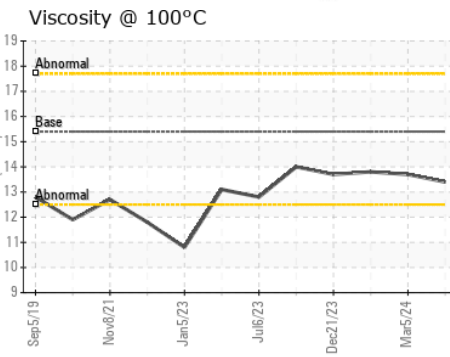
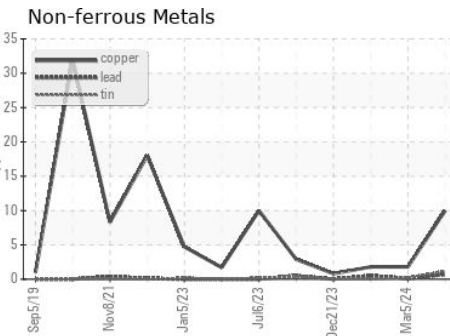
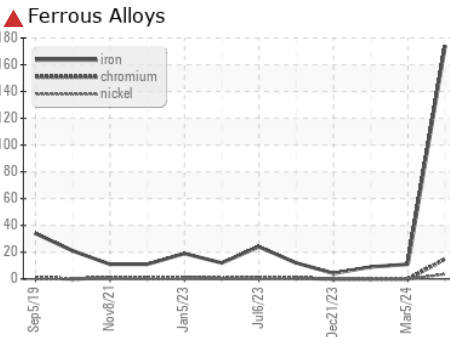
OIL ANALYSIS REPORT



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	13.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0118469
Lab Number : 06202314
Unique Number : 11069775
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 893 - OK East Hauling
 2100 Lilly Street
 Seminole, OK
 US 74868

Contact: Roger Barlow
 rbarlow@gflenv.com
 T: (405)204-6183

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)