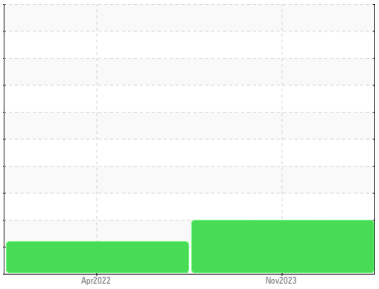
PROBLEM SUMMARY

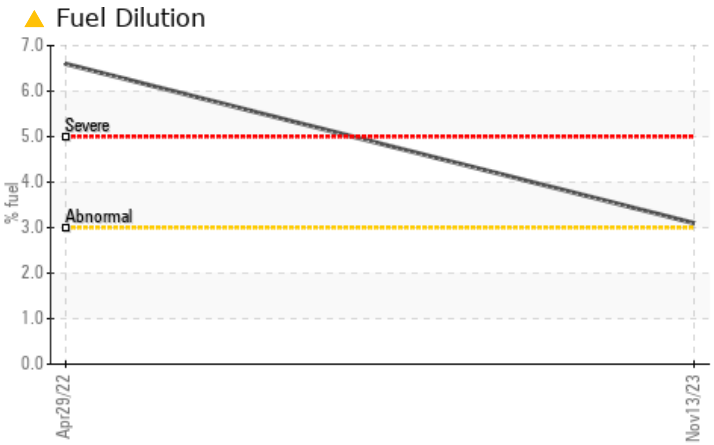
Machine Id
346M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (36 GAL)

Sample Rating Trend



DEGRADATION

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend that you drain the oil and perform a filter service on this component if not already done. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	---
Fuel	%	ASTM D3524	>3.0	▲ **3.1**	▲ 6.6	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.2**	5.8	---

Customer Id: GFL410
Sample No.: GFL0059244
Lab Number: 06010567
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Doug Bogart +1 (800)237-1369 x4016
dougb@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
Change Fluid	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Change Filter	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

HISTORICAL DIAGNOSIS

29 Apr 2022 Diag: Don Baldridge

FUEL

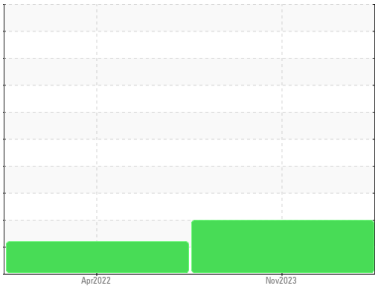
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL ANALYSIS REPORT

Machine Id
346M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (36 GAL)

Sample Rating Trend



DEGRADATION

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend that you drain the oil and perform a filter service on this component if not already done. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear
Metal levels are typical for a new component breaking in.

Contamination
There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0059244**	GFL0049296	---
Sample Date		Client Info		**13 Nov 2023**	29 Apr 2022	---
Machine Age	hrs	Client Info		**22721**	22938	---
Oil Age	hrs	Client Info		**22721**	600	---
Oil Changed		Client Info		**Not Changd**	Changed	---
Sample Status				**ABNORMAL**	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**89**	22	---
Chromium	ppm	ASTM D5185m	>20	**5**	<1	---
Nickel	ppm	ASTM D5185m	>5	**<1**	1	---
Titanium	ppm	ASTM D5185m	>2	**<1**	0	---
Silver	ppm	ASTM D5185m	>2	**<1**	0	---
Aluminum	ppm	ASTM D5185m	>20	**9**	7	---
Lead	ppm	ASTM D5185m	>40	**2**	1	---
Copper	ppm	ASTM D5185m	>330	**3**	4	---
Tin	ppm	ASTM D5185m	>15	**2**	<1	---
Vanadium	ppm	ASTM D5185m		**0**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**4**	4	---
Barium	ppm	ASTM D5185m	0	**0**	0	---
Molybdenum	ppm	ASTM D5185m	60	**65**	52	---
Manganese	ppm	ASTM D5185m	0	**1**	<1	---
Magnesium	ppm	ASTM D5185m	1010	**979**	846	---
Calcium	ppm	ASTM D5185m	1070	**1120**	1025	---
Phosphorus	ppm	ASTM D5185m	1150	**1083**	912	---
Zinc	ppm	ASTM D5185m	1270	**1338**	1081	---
Sulfur	ppm	ASTM D5185m	2060	**2684**	2139	---

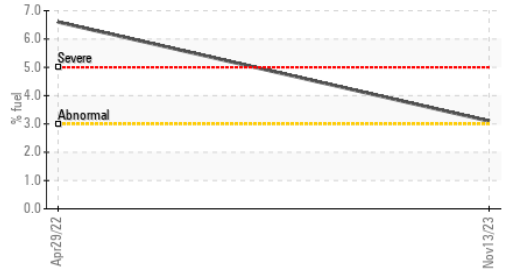
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**15**	4	---
Sodium	ppm	ASTM D5185m		**11**	6	---
Potassium	ppm	ASTM D5185m	>20	**<1**	9	---
Fuel	%	ASTM D3524	>3.0	▲ **3.1**	▲ 6.6	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**1.5**	0.9	---
Nitration	Abs/cm	*ASTM D7624	>20	**13.4**	11.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.8**	25.3	---

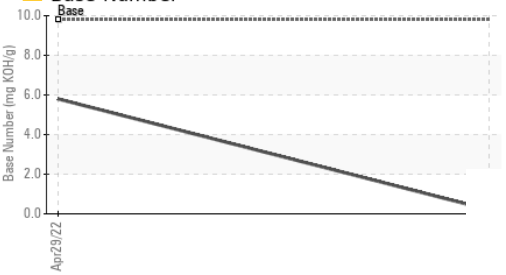
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**25.0**	21.6	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.2**	5.8	---

OIL ANALYSIS REPORT

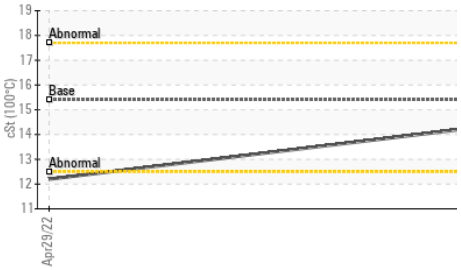
Fuel Dilution



Base Number



Viscosity @ 100°C

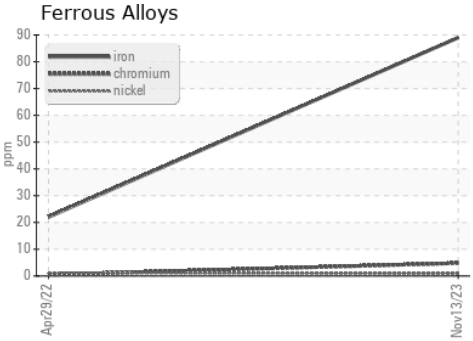


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	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	---

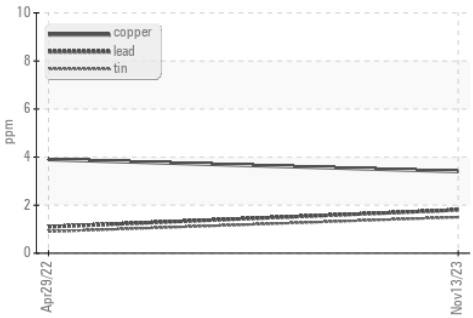
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.3**	▲ 12.2	---

GRAPHS

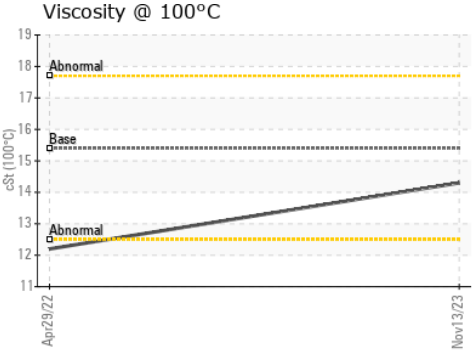
Ferrous Alloys



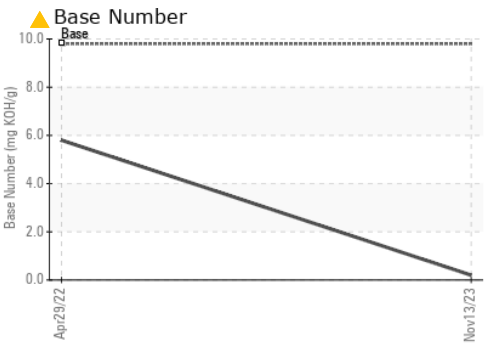
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0059244 **Received** : 17 Nov 2023
Lab Number : 06010567 **Diagnosed** : 05 Dec 2023
Unique Number : 10749711 **Diagnostician** : Doug Bogart
Test Package : FLEET (Additional Tests: PercentFuel)

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)

GFL Environmental - 410 - Michigan West
39000 Van Born Rd
Wayne, MI
US 48184
Contact: Belal Dgheish
bdgheish@gflenv.com
T: (734)714-2340
F: