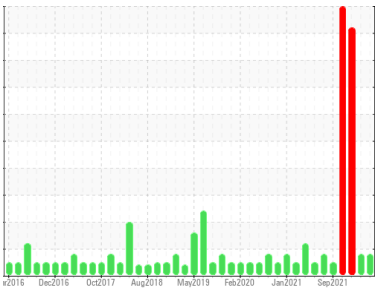
PROBLEM SUMMARY

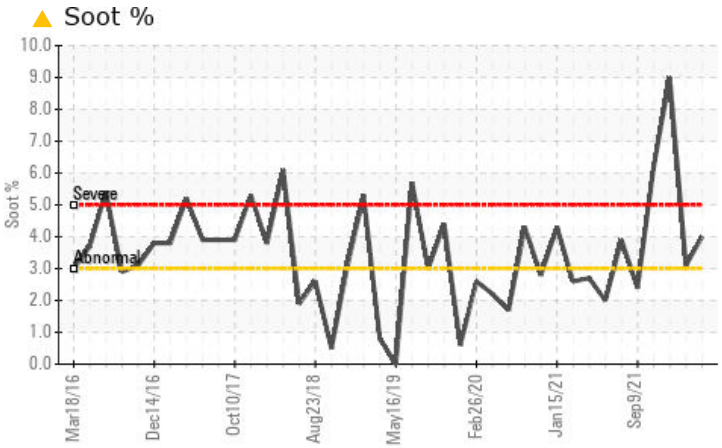
Sample Rating Trend



SOOT

Machine Id
2449
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (48 QTS)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The oil change at the time of sampling has been noted.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	SEVERE
Soot %	%	*ASTM D7844	>3	▲ **4**	▲ 3.1	⬢ 9

Customer Id: GFL001
Sample No.: GFL0056712
Lab Number: 05833748
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

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

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

18 Nov 2022 Diag: Jonathan Hester

SOOT

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 an abnormal amount of solids and carbon present 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

20 Oct 2022 Diag: Don Baldridge

GLYCOL

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check for the source of the coolant leak. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.Cylinder, crank, or cam shaft wear is indicated. Sodium and/or potassium levels are high. Test for glycol is positive. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

24 Jun 2022 Diag: Jonathan Hester

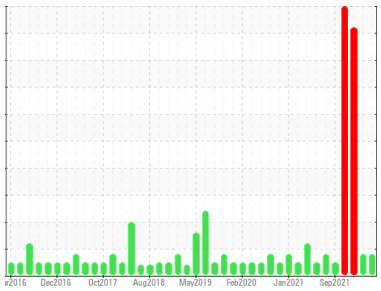
GLYCOL

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. There is an abnormal amount of solids and carbon present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
2449
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (48 QTS)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted.

Wear
All component wear rates are normal.

Contamination
Light concentration of carbon/soot present in the oil.

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	history 1	history 2
Sample Number		Client Info		**GFL0056712**	GFL0056489	GFL0056485
Sample Date		Client Info		**26 Apr 2023**	18 Nov 2022	20 Oct 2022
Machine Age	hrs	Client Info		**41098**	1341	39689
Oil Age	hrs	Client Info		**538**	744	652
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history 1	history 2
Glycol		WC Method		**NEG**	NEG	▲ 0.06

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	**53**	54	▲ 166
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	2
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**1**	1	4
Lead	ppm	ASTM D5185m	>40	**0**	1	9
Copper	ppm	ASTM D5185m	>330	**9**	12	91
Tin	ppm	ASTM D5185m	>15	**<1**	<1	4
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	**2**	9	8
Barium	ppm	ASTM D5185m	0	**0**	0	2
Molybdenum	ppm	ASTM D5185m	60	**58**	62	82
Manganese	ppm	ASTM D5185m	0	**1**	<1	2
Magnesium	ppm	ASTM D5185m	1010	**919**	820	615
Calcium	ppm	ASTM D5185m	1070	**1054**	1087	1436
Phosphorus	ppm	ASTM D5185m	1150	**992**	945	886
Zinc	ppm	ASTM D5185m	1270	**1221**	1133	1160
Sulfur	ppm	ASTM D5185m	2060	**3516**	3560	3263

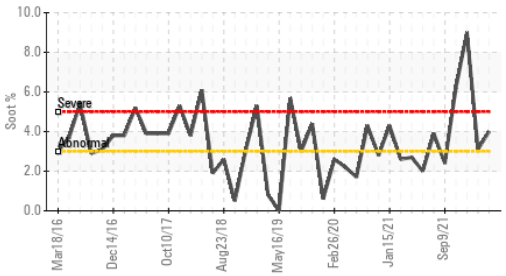
CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	**2**	3	9
Sodium	ppm	ASTM D5185m		**4**	12	▲ 206
Potassium	ppm	ASTM D5185m	>20	**<1**	8	▲ 116
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	▲ **4**	▲ 3.1	⬢ 9
Nitration	Abs/cm	*ASTM D7624	>20	**9.2**	8.5	30.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.0**	24.5	53.4

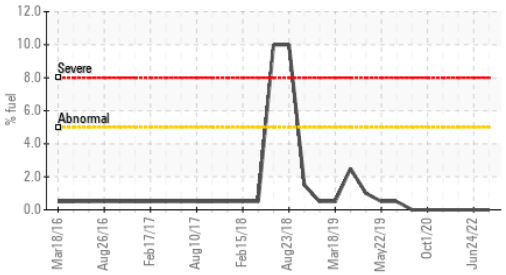
FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.1**	14.2	62.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**3.6**	9.7	▲ 0.0

OIL ANALYSIS REPORT

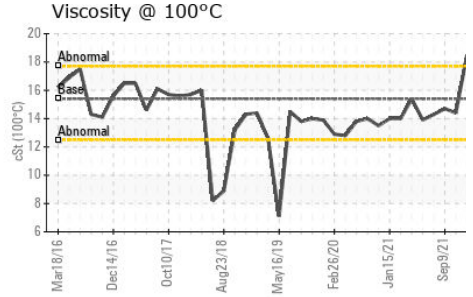
Soot %



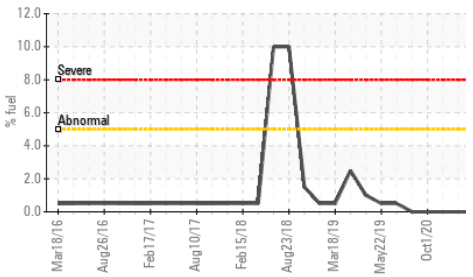
Fuel Dilution



Viscosity @ 100°C



Fuel Dilution

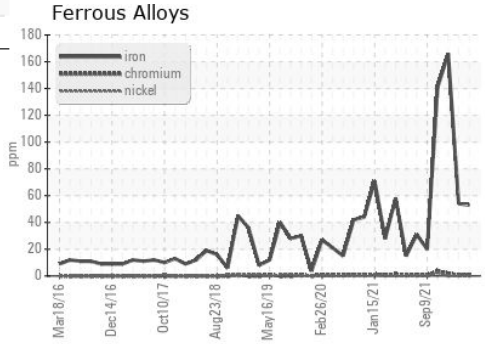


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

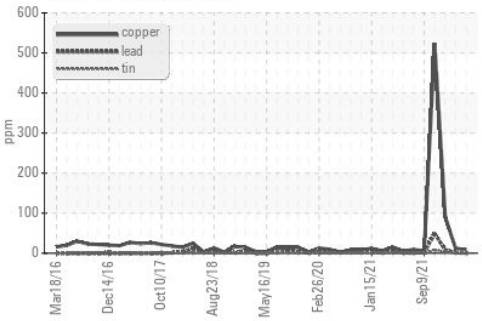
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.8**	14.2	▲ 18.5

GRAPHS

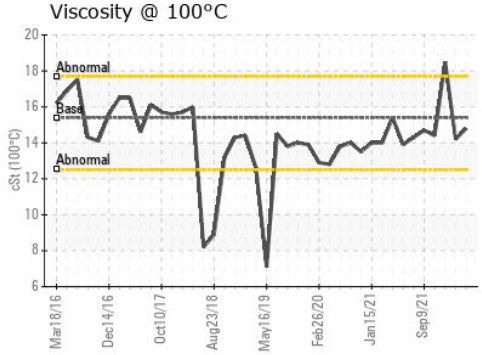
Ferrous Alloys



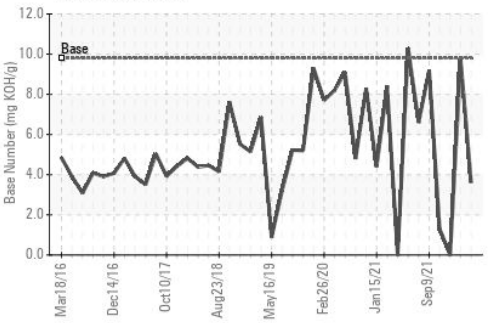
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0056712 **Received** : 01 May 2023
Lab Number : 05833748 **Diagnosed** : 02 May 2023
Unique Number : 10452551 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution)

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)

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