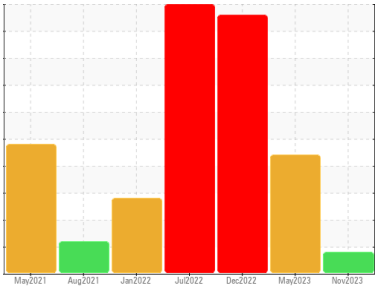
PROBLEM SUMMARY

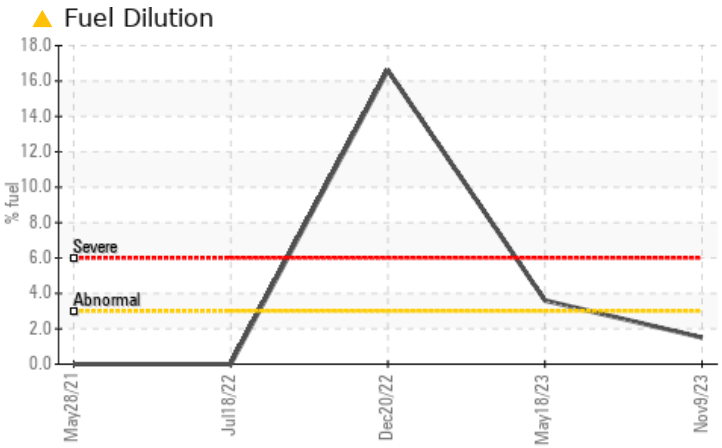
Machine Id
4602M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



FUEL

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

PROBLEMATIC TEST RESULTS

Sample Status				MARGINAL	ABNORMAL	SEVERE
Fuel	%	ASTM D3524	>3.0	▲ **1.5**	▲ 3.6	⬢ 16.6

Customer Id: GFL415
Sample No.: GFL0101584
Lab Number: 06005228
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 May 2023 Diag: Jonathan Hester

DIRT

We advise that you check for the source of the coolant leak. Check for low coolant level. 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. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Light fuel dilution occurring. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

20 Dec 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 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. Sodium and/or potassium levels remain high. 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. The oil is no longer serviceable due to the presence of contaminants.

view report

18 Jul 2022 Diag: Don Baldridge

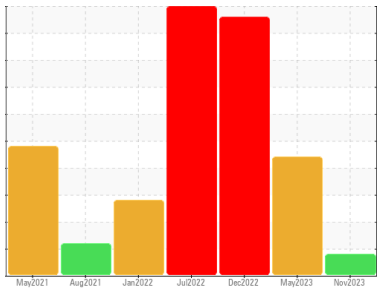
GLYCOL

We advise that you check for the source of the coolant leak. 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. We recommend an early resample to monitor this condition. NOTE: High glycol in the sample has limited the accuracy Total Base Number (TBN) value.All component wear rates are normal. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
4602M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0101584**	GFL0081373	GFL0064022
Sample Date		Client Info		**09 Nov 2023**	18 May 2023	20 Dec 2022
Machine Age	hrs	Client Info		**8369**	7238	6449
Oil Age	hrs	Client Info		**7238**	6449	5390
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**MARGINAL**	ABNORMAL	SEVERE

CONTAMINATION	method	limit/base	current	history1	history2
Glycol	WC Method		**NEG**	NEG	⬢ 0.10

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	**18**	97	20
Chromium	ppm	ASTM D5185m	>20	**<1**	6	2
Nickel	ppm	ASTM D5185m	>2	**<1**	1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**<1**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**2**	▲ 12	3
Lead	ppm	ASTM D5185m	>40	**1**	25	<1
Copper	ppm	ASTM D5185m	>330	**1**	18	2
Tin	ppm	ASTM D5185m	>15	**<1**	3	1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**1**	43	15
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**63**	209	71
Manganese	ppm	ASTM D5185m	0	**<1**	2	<1
Magnesium	ppm	ASTM D5185m	1010	**914**	903	774
Calcium	ppm	ASTM D5185m	1070	**1118**	1033	845
Phosphorus	ppm	ASTM D5185m	1150	**1023**	868	985
Zinc	ppm	ASTM D5185m	1270	**1239**	1267	1033
Sulfur	ppm	ASTM D5185m	2060	**3305**	3557	2712

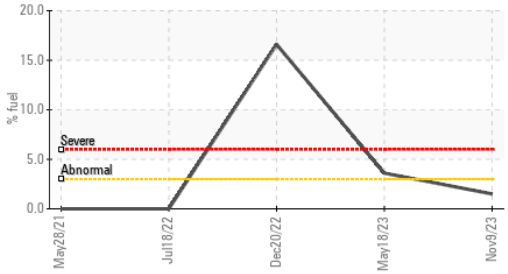
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	▲ 48	15
Sodium	ppm	ASTM D5185m		**70**	▲ 2499	▲ 665
Potassium	ppm	ASTM D5185m	>20	**3**	26	8
Fuel	%	ASTM D3524	>3.0	▲ **1.5**	▲ 3.6	⬢ 16.6

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	**0.5**	1.8	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**7.3**	22.0	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.9**	31.6	21.5

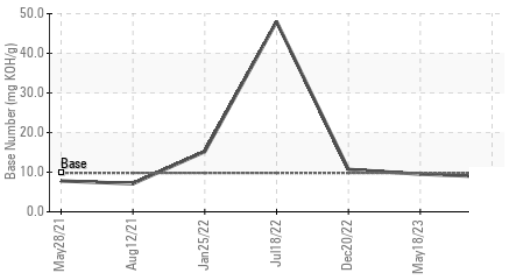
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.3**	34.4	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.8**	9.5	10.7

OIL ANALYSIS REPORT

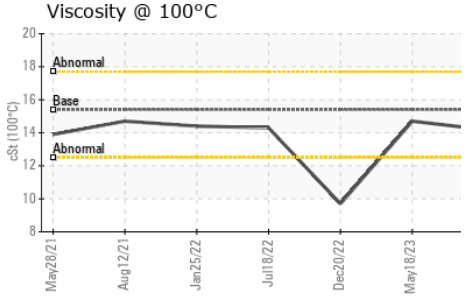
Fuel Dilution



Base Number



Viscosity @ 100°C

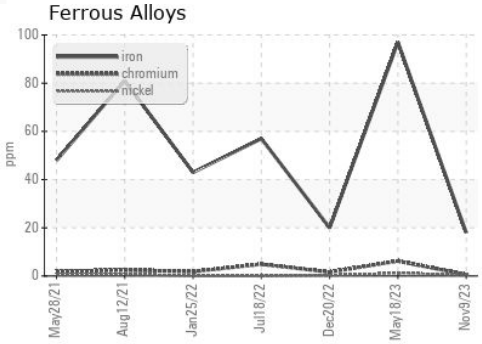


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

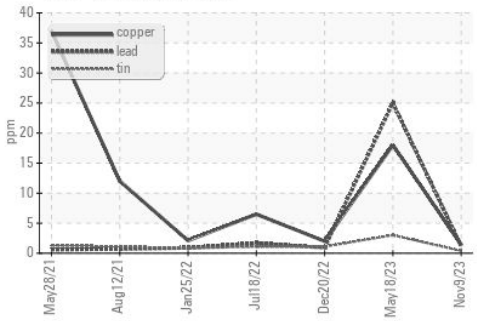
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.2**	14.7	▲ 9.7

GRAPHS

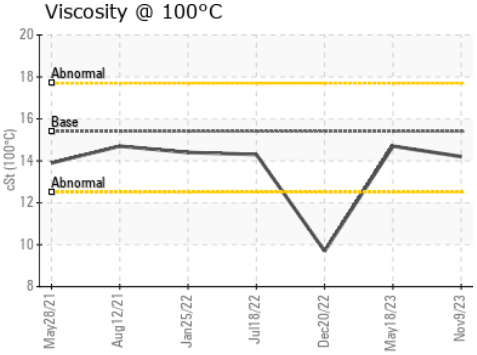
Ferrous Alloys



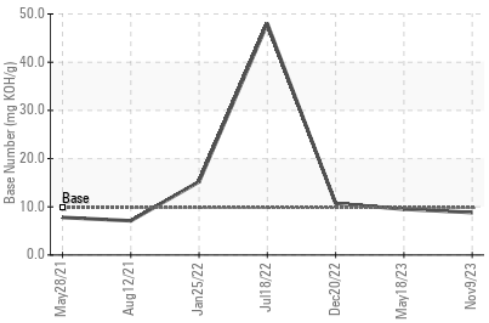
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0101584 **Received** : 13 Nov 2023
Lab Number : 06005228 **Diagnosed** : 15 Nov 2023
Unique Number : 10738990 **Diagnostician** : Wes Davis
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 - 415 - Michigan East
6200 Elmridge
Sterling Heights, MI
US 48313
Contact: Frank Wolak
fwolak@gflenv.com
T: (586)825-9514
F: