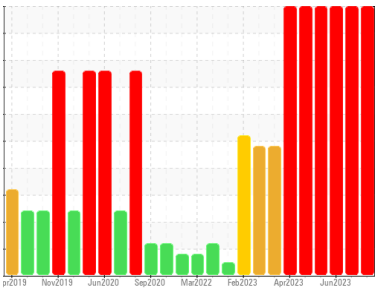
PROBLEM SUMMARY

Machine Id
723026-305165
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

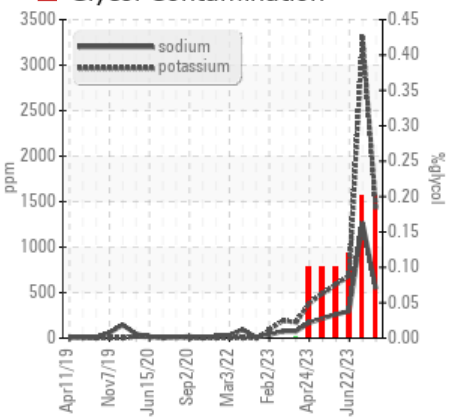
Sample Rating Trend



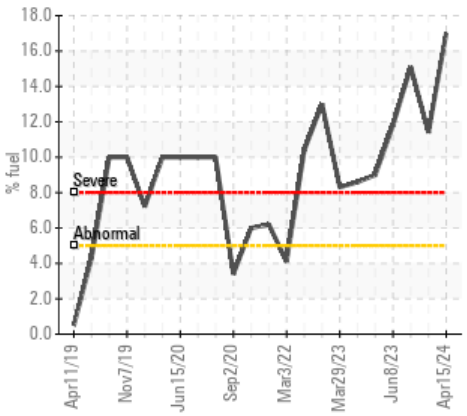
GLYCOL

COMPONENT CONDITION SUMMARY

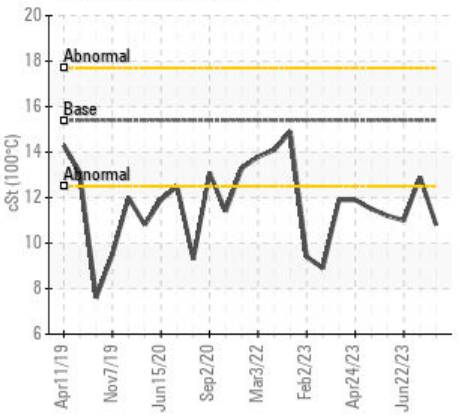
Glycol Contamination



Fuel Dilution



Viscosity @ 100°C



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Sodium	ppm	ASTM D5185m		**543**	1269	296
Potassium	ppm	ASTM D5185m	>20	**1433**	3318	685
Fuel	%	ASTM D3524	>5	**17.0**	11.4	15.1
Glycol	%	*ASTM D2982		**0.20**	0.20	0.12
Visc @ 100°C	cSt	ASTM D445	15.4	**10.8**	12.9	11.0

Customer Id: GFL856
Sample No.: GFL0106902
Lab Number: 06154058
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
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.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

GLYCOL

27 Feb 2024 Diag: Jonathan Hester

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. 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.All component wear rates are normal. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. There is a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon 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

GLYCOL

22 Jun 2023 Diag: Jonathan Hester

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. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are 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

GLYCOL

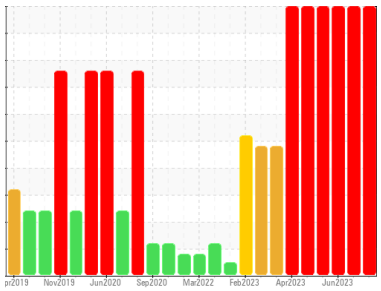
08 Jun 2023 Diag: Wes Davis

We advise that you check the fuel injection system. We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.All component wear rates are normal. Test for glycol is positive. There is a high amount of fuel present in the oil. There is a high concentration of glycol present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
723026-305165
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
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.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Test for glycol is positive. There is a high amount of fuel present in the oil.

Fluid Condition
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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0106902**	GFL0087916	GFL0084709
Sample Date		Client Info		**15 Apr 2024**	27 Feb 2024	22 Jun 2023
Machine Age	hrs	Client Info		**646**	600	323200
Oil Age	hrs	Client Info		**600**	600	0
Oil Changed		Client Info		**Changed**	Changed	Not Changd
Sample Status				**SEVERE**	SEVERE	SEVERE

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	**74**	158	74
Chromium	ppm	ASTM D5185m	>5	**4**	8	4
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>30	**12**	40	6
Lead	ppm	ASTM D5185m	>30	**2**	4	2
Copper	ppm	ASTM D5185m	>150	**16**	32	55
Tin	ppm	ASTM D5185m	>5	**2**	5	2
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**4**	<1	4
Barium	ppm	ASTM D5185m	0	**0**	<1	<1
Molybdenum	ppm	ASTM D5185m	60	**174**	340	104
Manganese	ppm	ASTM D5185m	0	**<1**	2	2
Magnesium	ppm	ASTM D5185m	1010	**716**	834	745
Calcium	ppm	ASTM D5185m	1070	**856**	1004	938
Phosphorus	ppm	ASTM D5185m	1150	**804**	879	762
Zinc	ppm	ASTM D5185m	1270	**964**	1217	1037
Sulfur	ppm	ASTM D5185m	2060	**2696**	3188	2995

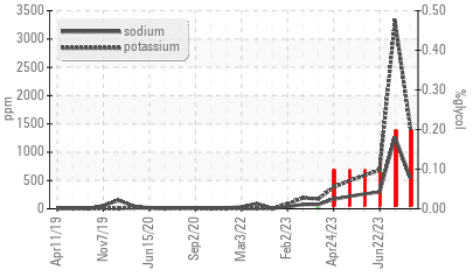
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**23**	44	15
Sodium	ppm	ASTM D5185m		▲ **543**	▲ 1269	▲ 296
Potassium	ppm	ASTM D5185m	>20	▲ **1433**	▲ 3318	▲ 685
Fuel	%	ASTM D3524	>5	▲ **17.0**	▲ 11.4	▲ 15.1
Glycol	%	*ASTM D2982		▲ **0.20**	▲ 0.20	▲ 0.12

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.3**	▲ 4.5	2.1
Nitration	Abs/cm	*ASTM D7624	>20	**13.1**	21.8	16.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.7**	32.2	28.4

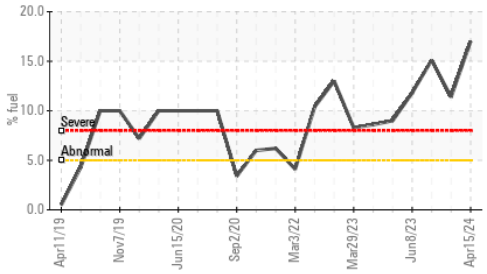
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.1**	22.0	25.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**11.9**	6.9	6.7

OIL ANALYSIS REPORT

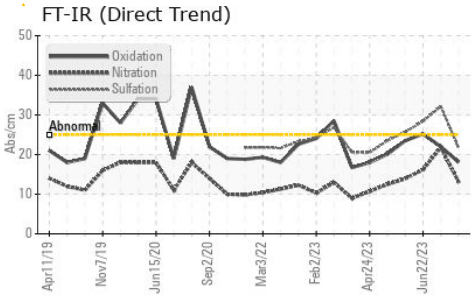
Glycol Contamination



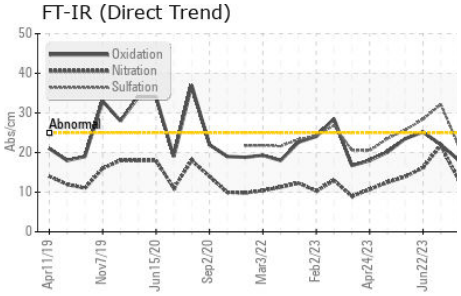
Fuel Dilution



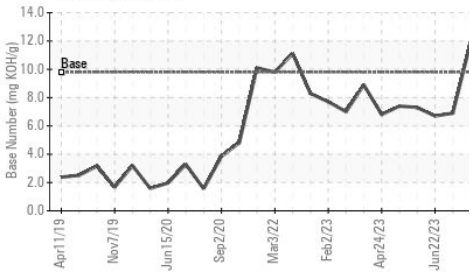
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

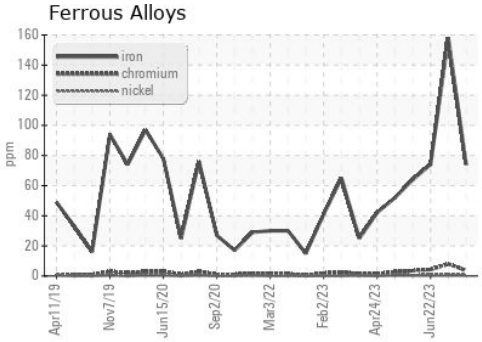


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

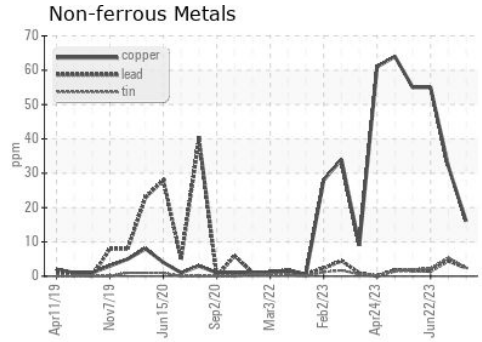
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.8**	▲ 12.9	▲ 11.0

GRAPHS

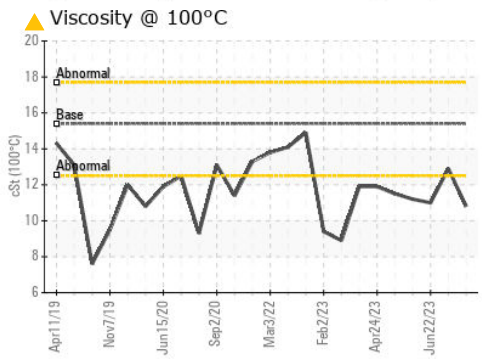
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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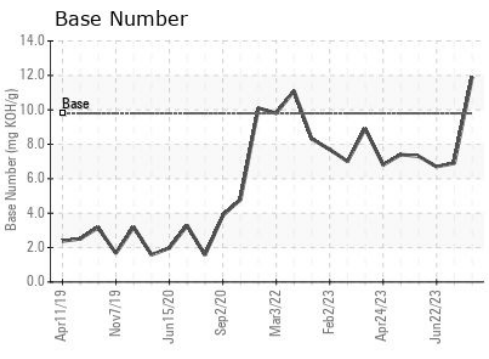

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0106902
Lab Number : 06154058
Unique Number : 10989481
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 19 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Jonathan Hester

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 - 856 - Houston South
8515 Highway 6 South
Houston, TX
US 77083
Contact: Jose Gonzalez
jgonzalez2@gflenv.com
T:
F:

Report Id: GFL856 [WUSCAR] 06154058 (Generated: 04/23/2024 17:21:01) Rev: 1

Submitted By: Apolinar Zacarias