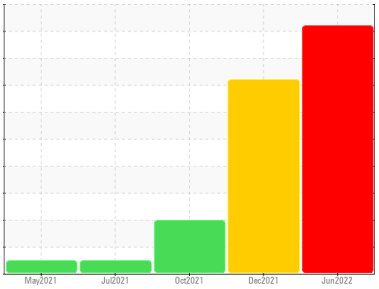
PROBLEM SUMMARY

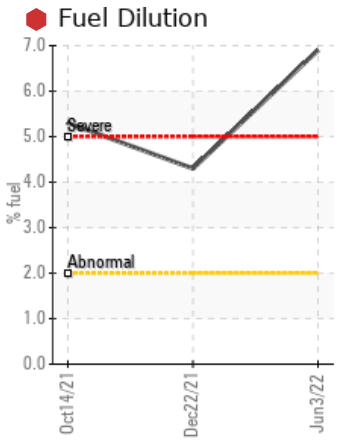
Sample Rating Trend

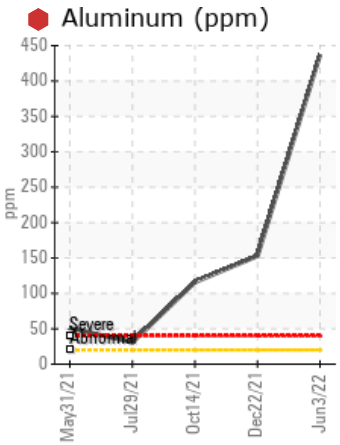


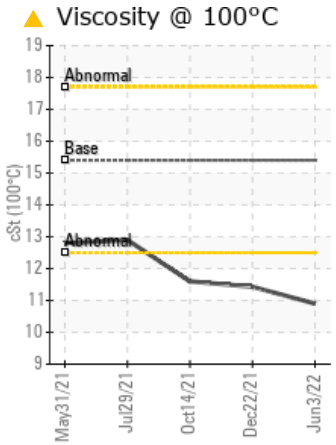
WEAR

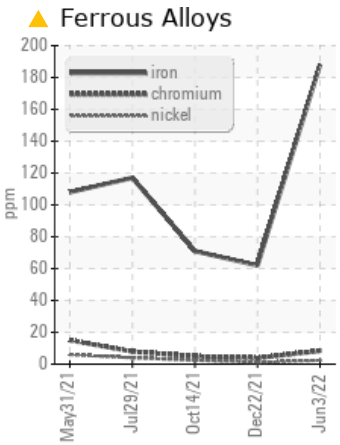
Machine Id
221017
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. 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**	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>100	▲ **188**	62	71
Aluminum	ppm	ASTM D5185m	>20	⬢ **437**	⬢ 153	▲ 116
Fuel	%	ASTM D3524	>2.0	⬢ **6.9**	▲ 4.3	▲ 5.3
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.9**	▲ 11.43	▲ 11.6

Customer Id: GFL882
Sample No.: GFL0053505
Lab Number: 05565339
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

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	---	---	?	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.

HISTORICAL DIAGNOSIS

22 Dec 2021 Diag: Jonathan Hester

WEAR

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.The aluminum level is severe. Piston wear is indicated. There is a moderate 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

14 Oct 2021 Diag: Jonathan Hester

WEAR

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.The aluminum level is abnormal. All other component wear rates are normal. There is a moderate 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

29 Jul 2021 Diag: Wes Davis

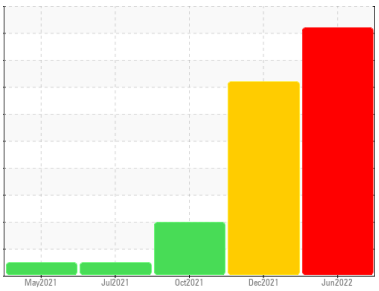
NORMAL

Resample at the next service interval to monitor.Metal levels are typical for a new component breaking in. 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



WEAR

Machine Id
221017
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear
The aluminum level is severe. Piston, ring and cylinder wear is indicated.

Contamination
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 oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0053505**	GFL0041084	GFL0037656
Sample Date		Client Info		**03 Jun 2022**	22 Dec 2021	14 Oct 2021
Machine Age	hrs	Client Info		**21808**	21282	21008
Oil Age	hrs	Client Info		**526**	274	291
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	ABNORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **188**	62	71
Chromium	ppm	ASTM D5185m	>20	**8**	4	5
Nickel	ppm	ASTM D5185m	>4	**2**	1	2
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	● **437**	● 153	▲ 116
Lead	ppm	ASTM D5185m	>40	**14**	1	<1
Copper	ppm	ASTM D5185m	>330	**15**	6	4
Tin	ppm	ASTM D5185m	>15	**2**	<1	0
Antimony	ppm	ASTM D5185m		**---**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**6**	10	8
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**56**	55	55
Manganese	ppm	ASTM D5185m	0	**2**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**816**	849	886
Calcium	ppm	ASTM D5185m	1070	**1048**	1043	1223
Phosphorus	ppm	ASTM D5185m	1150	**855**	1006	999
Zinc	ppm	ASTM D5185m	1270	**1096**	1110	1149
Sulfur	ppm	ASTM D5185m	2060	**2744**	2298	4557

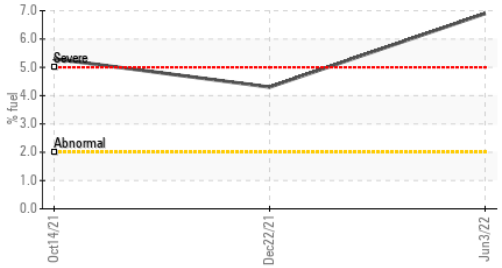
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**20**	11	14
Sodium	ppm	ASTM D5185m		**8**	3	2
Potassium	ppm	ASTM D5185m	>20	**0**	<1	<1
Fuel	%	ASTM D3524	>2.0	● **6.9**	▲ 4.3	▲ 5.3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	0.4	1
Nitration	Abs/cm	*ASTM D7624	>20	**11.0**	7.9	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.1**	18.8	19

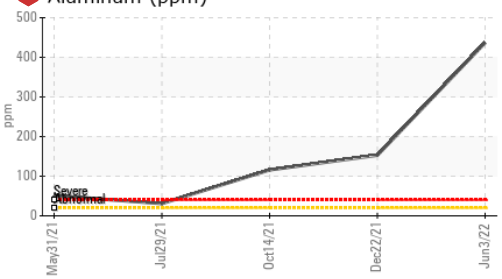
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**21.1**	14.8	13.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**6.7**	8.7	9

OIL ANALYSIS REPORT

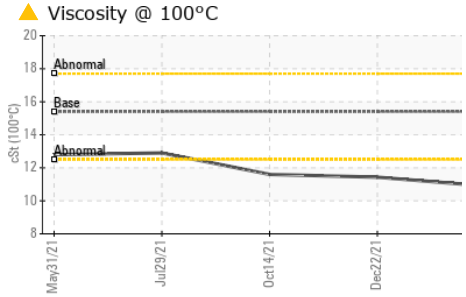
Fuel Dilution



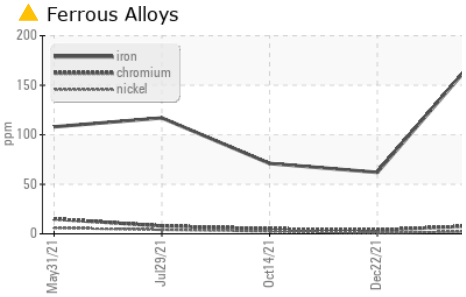
Aluminum (ppm)



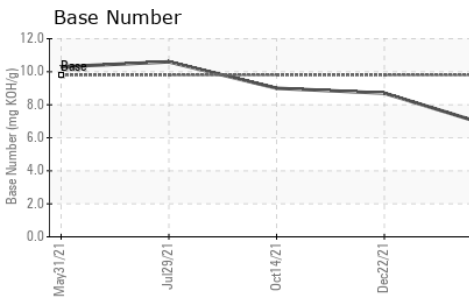
Viscosity @ 100°C



Ferrous Alloys



Base Number

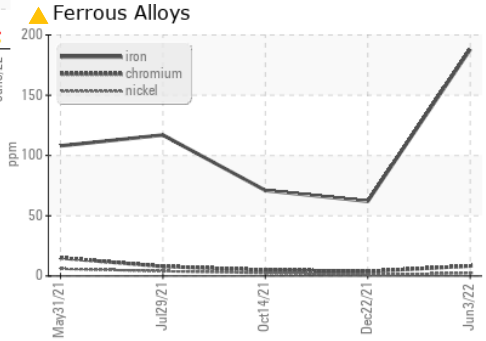


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

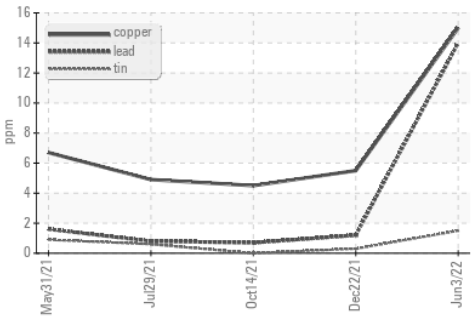
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.9**	▲ 11.43	▲ 11.6

GRAPHS

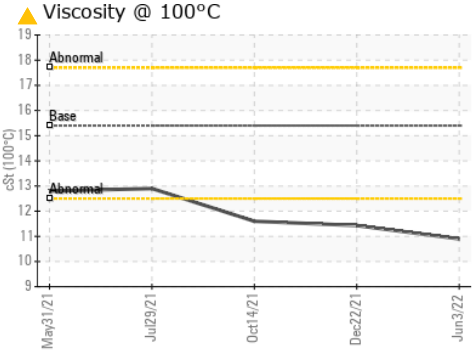
▲ Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



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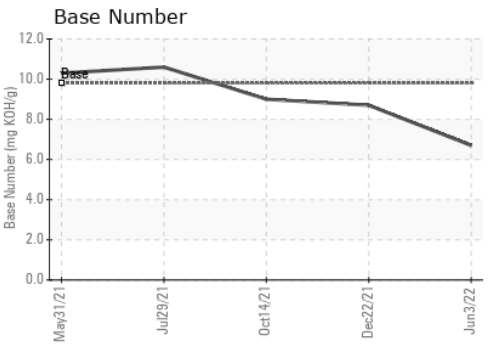

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0053505
Lab Number : 05565339
Unique Number : 10009739
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 10 Jun 2022
Diagnosed : 13 Jun 2022
Diagnostician : Don Baldridge

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 - 882 - Gainesville
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Gainesville, FL
US 32608
Contact: ROBERT CLARK
robert.clark@gflenv.com
T:
F:

Report Id: GFL882 [WUSCAR] 05565339 (Generated: 08/04/2023 14:49:29) Rev: 1

Submitted By: ?