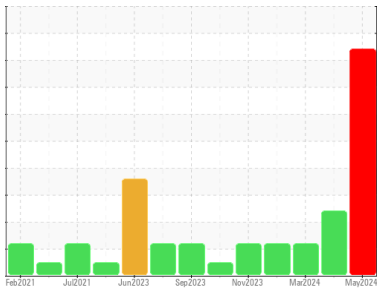
PROBLEM SUMMARY

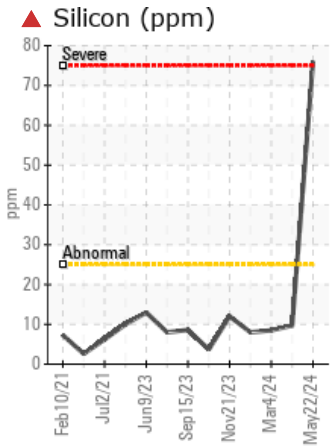
Sample Rating Trend

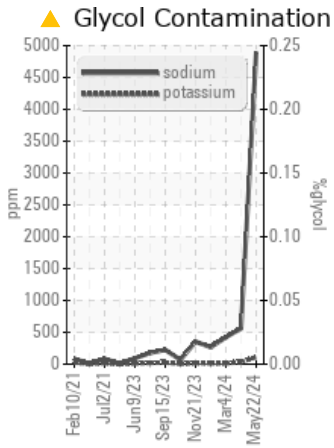


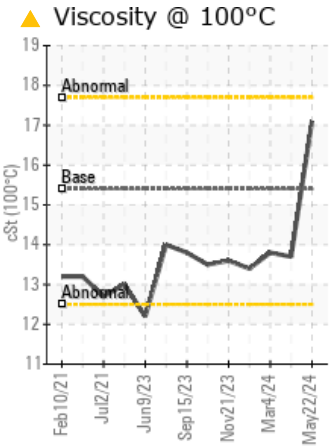
DIRT

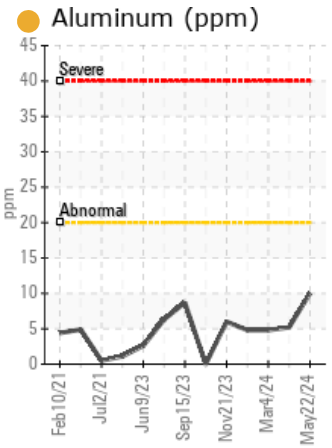
Machine Id
923013-566
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (27 QTS)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	ABNORMAL	ABNORMAL
Silicon	ppm	ASTM D5185m	>25	▲ **76**	10	8
Sodium	ppm	ASTM D5185m		▲ **4890**	▲ 562	▲ 423
Potassium	ppm	ASTM D5185m	>20	▲ **111**	▲ 34	12
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **17.1**	13.7	13.8

Customer Id: GFL622
Sample No.: GFL0103057
Lab Number: 06193260
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 Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

GLYCOL

11 Apr 2024 Diag: Jonathan Hester

We advise that you check for the source of the coolant leak. Check for low coolant level. 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. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

GLYCOL

04 Mar 2024 Diag: Jonathan Hester

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

GLYCOL

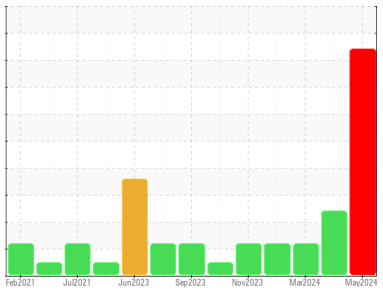
21 Nov 2023 Diag: Jonathan Hester

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
923013-566
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (27 QTS)

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 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.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The oil viscosity is higher than normal. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0103057**	GFL0110326	GFL0110284
Sample Date		Client Info		**22 May 2024**	11 Apr 2024	04 Mar 2024
Machine Age	hrs	Client Info		**23614**	23399	23244
Oil Age	hrs	Client Info		**580**	580	416
Oil Changed		Client Info		**Changed**	Changed	Not Changd
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**50**	46	34
Chromium	ppm	ASTM D5185m	>20	**2**	2	1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**1**	<1	0
Silver	ppm	ASTM D5185m	>3	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**10**	5	5
Lead	ppm	ASTM D5185m	>40	**2**	<1	0
Copper	ppm	ASTM D5185m	>330	**26**	<1	<1
Tin	ppm	ASTM D5185m	>15	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**267**	14	5
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**272**	82	81
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**944**	921	943
Calcium	ppm	ASTM D5185m	1070	**1135**	1147	1149
Phosphorus	ppm	ASTM D5185m	1150	**1149**	997	973
Zinc	ppm	ASTM D5185m	1270	**1363**	1193	1211
Sulfur	ppm	ASTM D5185m	2060	**4255**	3369	2976

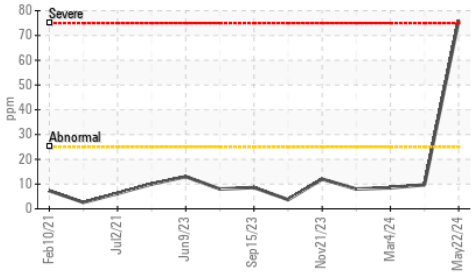
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**76**	10	8
Sodium	ppm	ASTM D5185m		**4890**	562	423
Potassium	ppm	ASTM D5185m	>20	**111**	34	12
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.1**	1.6	1.2
Nitration	Abs/cm	*ASTM D7624	>20	**17.6**	12.3	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.2**	24.3	22.3

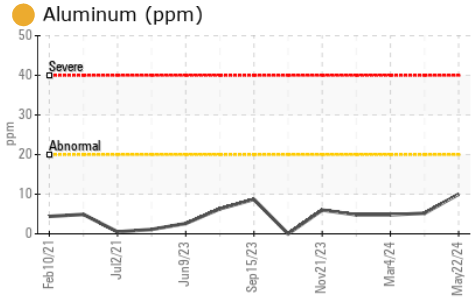
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.2**	18.3	16.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**32.6**	8.3	8.5

OIL ANALYSIS REPORT

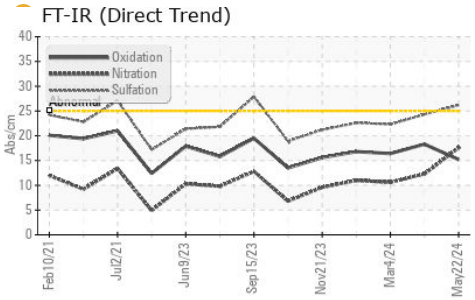
Silicon (ppm)



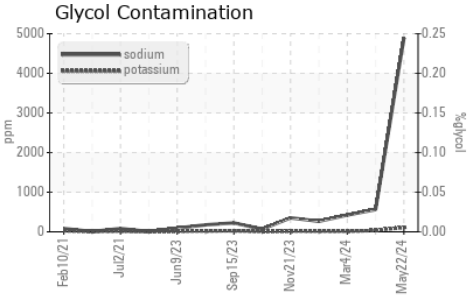
Aluminum (ppm)



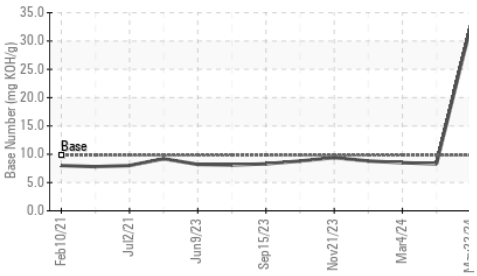
FT-IR (Direct Trend)



Glycol Contamination



Base Number

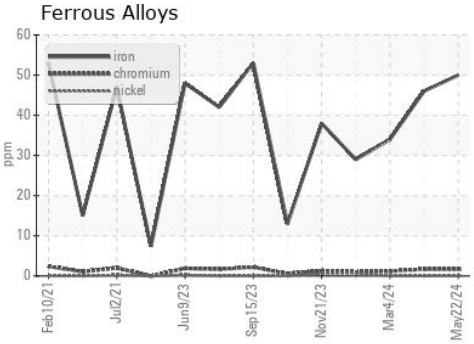


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

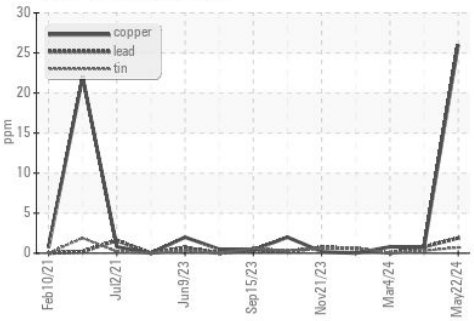
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **17.1**	13.7	13.8

GRAPHS

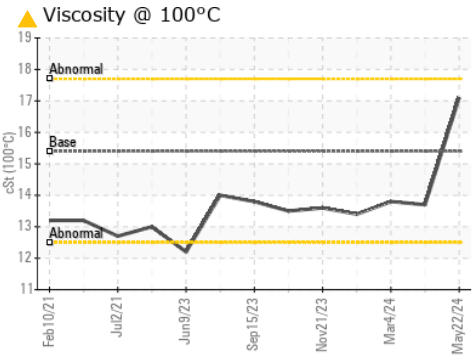
Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



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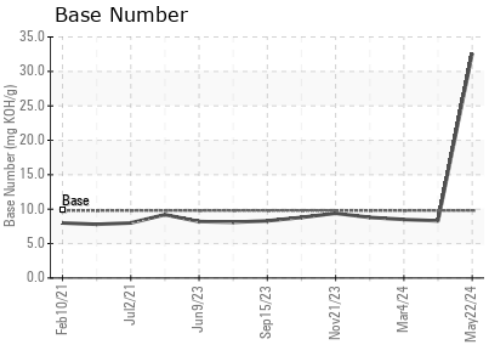

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0103057
Lab Number : 06193260
Unique Number : 11050012
Test Package : FLEET (Additional Tests: Glycol)

Received : 28 May 2024
Tested : 31 May 2024
Diagnosed : 31 May 2024 - Jonathan Hester

GFL Environmental - 622 - Traverse City Hauling
160 Hughes Dr
Traverse City, MI
US 49686
Contact: GARY BREWER
T:
F:

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)