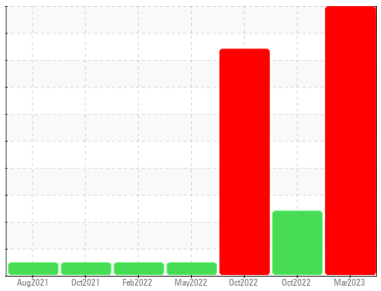
PROBLEM SUMMARY

Sample Rating Trend

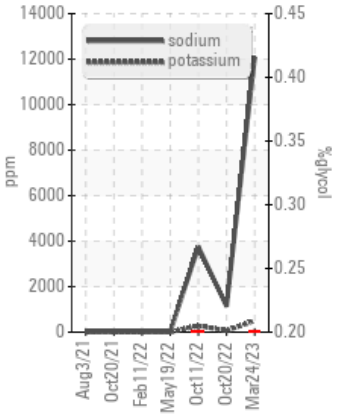


GLYCOL

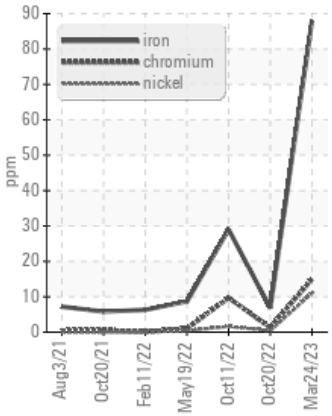
Machine Id
344002
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- LTR)

COMPONENT CONDITION SUMMARY

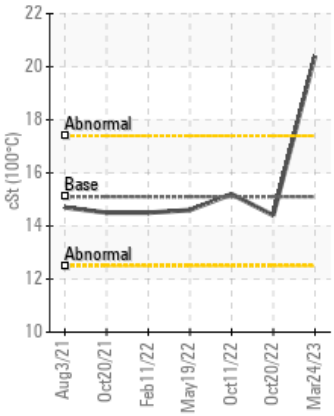
Glycol Contamination



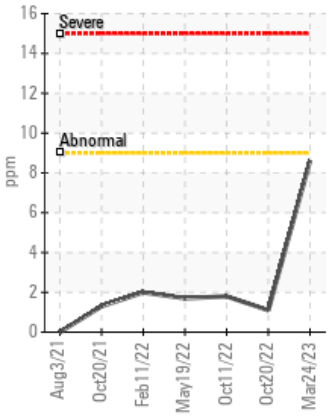
Ferrous Alloys



Viscosity @ 100°C



Aluminum (ppm)



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	SEVERE
Iron	ppm	ASTM D5185m	>50	**88**	7	29
Chromium	ppm	ASTM D5185m	>4	**15**	1	10
Nickel	ppm	ASTM D5185m	>2	**11**	<1	2
Aluminum	ppm	ASTM D5185m	>9	**9**	1	2
Sodium	ppm	ASTM D5185m		**12083**	1142	3752
Potassium	ppm	ASTM D5185m	>20	**504**	59	280
Glycol	%	*ASTM D2982		**0.20**	---	0.20
Visc @ 100°C	cSt	ASTM D445	15.1	**20.4**	14.4	15.2

Customer Id: GFL882
Sample No.: GFL0077328
Lab Number: 05803703
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 Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

20 Oct 2022 Diag: Jonathan Hester

GLYCOL

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 remain high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

11 Oct 2022 Diag: Don Baldridge

GLYCOL

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.All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is positive. There is a high concentration of glycol present in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

19 May 2022 Diag: Don Baldridge

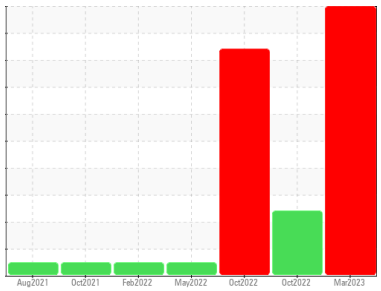
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. 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



GLYCOL

Machine Id
344002
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- LTR)

DIAGNOSIS

Recommendation
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.

Wear
Piston, ring and cylinder wear is indicated. Valve wear is indicated.

Contamination
Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil.

Fluid Condition
The oil viscosity is higher than normal. 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		**GFL0077328**	GFL0057070	GFL0057080
Sample Date		Client Info		**24 Mar 2023**	20 Oct 2022	11 Oct 2022
Machine Age	hrs	Client Info		**22175**	21130	21065
Oil Age	hrs	Client Info		**1045**	1670	1605
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	ABNORMAL	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	⬢ **88**	7	29
Chromium	ppm	ASTM D5185m	>4	⬢ **15**	1	10
Nickel	ppm	ASTM D5185m	>2	⬢ **11**	<1	2
Titanium	ppm	ASTM D5185m		**1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>9	▲ **9**	1	2
Lead	ppm	ASTM D5185m	>30	**5**	<1	<1
Copper	ppm	ASTM D5185m	>35	**7**	<1	2
Tin	ppm	ASTM D5185m	>4	**2**	<1	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	**4**	25	5
Barium	ppm	ASTM D5185m	5	**6**	0	0
Molybdenum	ppm	ASTM D5185m	50	**885**	86	198
Manganese	ppm	ASTM D5185m	0	**4**	<1	2
Magnesium	ppm	ASTM D5185m	560	**611**	521	539
Calcium	ppm	ASTM D5185m	1510	**1842**	1456	1681
Phosphorus	ppm	ASTM D5185m	780	**990**	730	719
Zinc	ppm	ASTM D5185m	870	**1081**	900	1052
Sulfur	ppm	ASTM D5185m	2040	**3311**	2701	2976

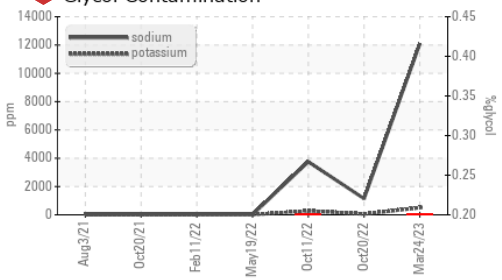
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**32**	5	16
Sodium	ppm	ASTM D5185m		▲ **12083**	▲ 1142	▲ 3752
Potassium	ppm	ASTM D5185m	>20	▲ **504**	▲ 59	▲ 280
Glycol	%	*ASTM D2982		⬢ **0.20**	---	⬢ 0.20

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**32.1**	9	17.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**35.3**	20.5	27.2

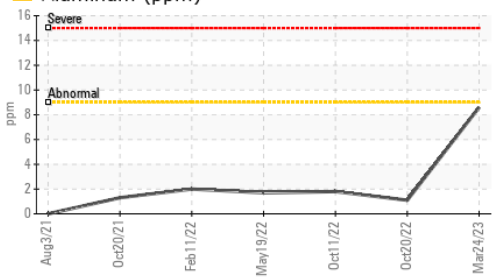
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.7**	16.3	19.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	**77.1**	14.6	20.5

OIL ANALYSIS REPORT

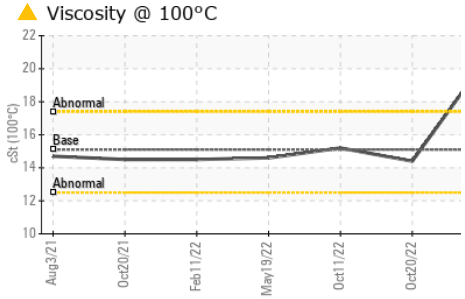
Glycol Contamination



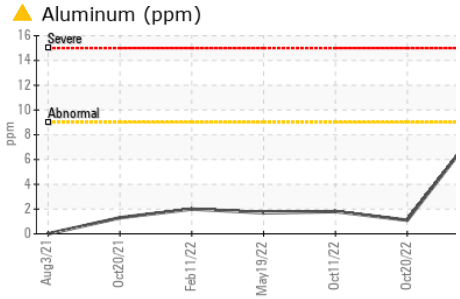
Aluminum (ppm)



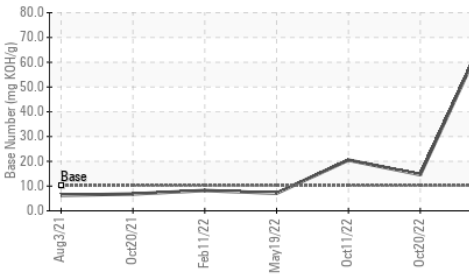
Viscosity @ 100°C



Aluminum (ppm)



Base Number

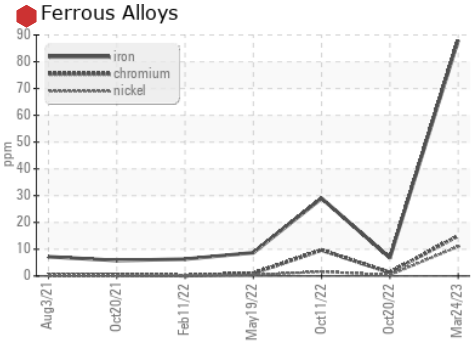


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

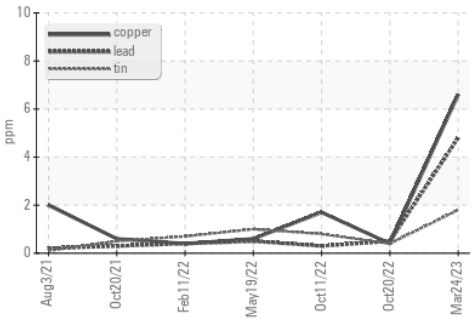
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	▲ **20.4**	14.4	15.2

GRAPHS

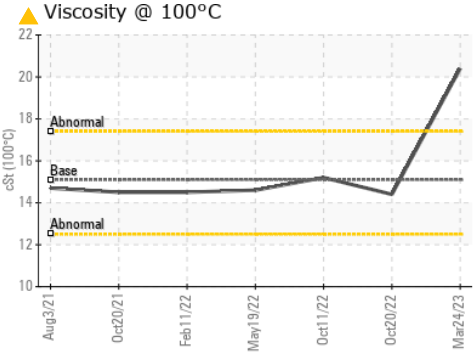
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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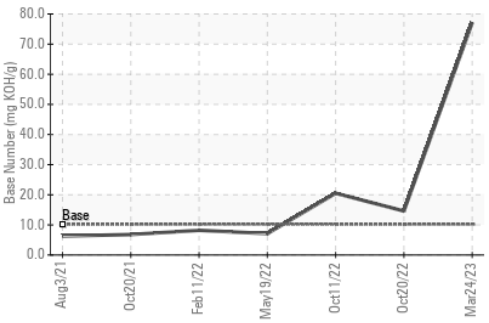

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0077328 **Received** : 28 Mar 2023
Lab Number : 05803703 **Diagnosed** : 31 Mar 2023
Unique Number : 10401232 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

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
5002 SW 41st Blvd
Gainesville, FL
US 32608
Contact: ROBERT CLARK
robert.clark@gflenv.com
T:
F:

Report Id: GFL882 [WUSCAR] 05803703 (Generated: 09/15/2023 08:57:50) Rev: 1

Submitted By: STEPHEN WEIL