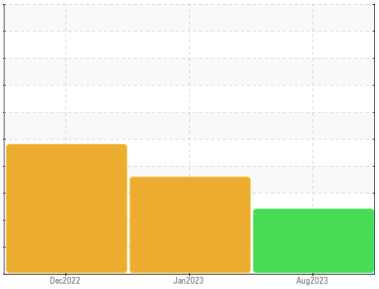
PROBLEM SUMMARY

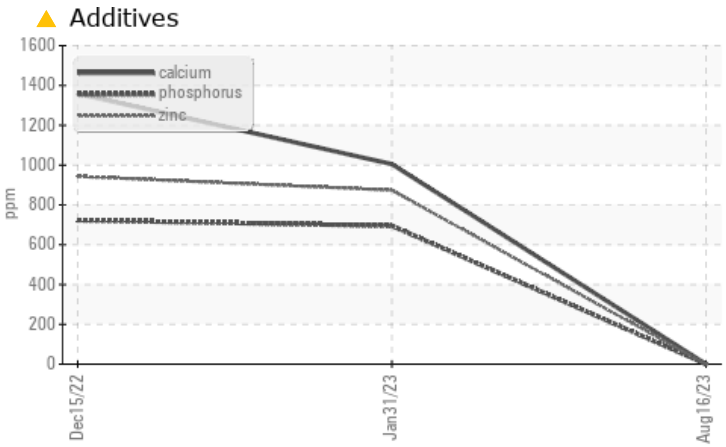
Machine Id
827061-252
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

Sample Rating Trend



ADDITIVES

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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. Please note that the oil was too thick to perform some of the normal laboratory tests.

PROBLEMATIC TEST RESULTS

Sample Status				ATTENTION	SEVERE	SEVERE
Molybdenum	ppm	ASTM D5185m	60	▲ 0	50	56
Magnesium	ppm	ASTM D5185m	1010	▲ 0	511	375
Calcium	ppm	ASTM D5185m	1070	▲ 0	1005	1359
Phosphorus	ppm	ASTM D5185m	1150	▲ 0	695	723
Zinc	ppm	ASTM D5185m	1270	▲ 0	874	943
Sulfur	ppm	ASTM D5185m	2060	▲ 5	2197	3086

Customer Id: GFL904
Sample No.: GFL0066040
Lab Number: 05929310
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	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Change Filter	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	Please note that the oil was too thick to perform some of the normal laboratory tests.

HISTORICAL DIAGNOSIS

31 Jan 2023 Diag: Don Baldridge

SOOT

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. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

view report

15 Dec 2022 Diag: Jonathan Hester

SOOT

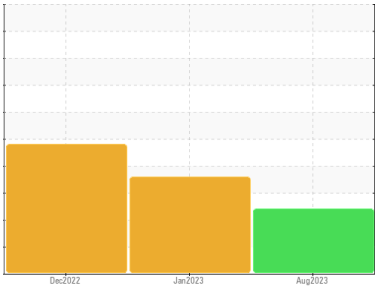
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

view report

OIL ANALYSIS REPORT

Machine Id
827061-252
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

Sample Rating Trend



ADDITIVES

DIAGNOSIS

Recommendation
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. Please note that the oil was too thick to perform some of the normal laboratory tests.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil is oxidized and beyond the limit of serviceability. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0066040**	GFL0060344	GFL0055742
Sample Date		Client Info		**16 Aug 2023**	31 Jan 2023	15 Dec 2022
Machine Age	hrs	Client Info		**0**	11267	10305
Oil Age	hrs	Client Info		**0**	500	500
Oil Changed		Client Info		**N/A**	Changed	Changed
Sample Status				**ATTENTION**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**0**	38	98
Chromium	ppm	ASTM D5185m	>20	**0**	2	3
Nickel	ppm	ASTM D5185m	>5	**0**	0	<1
Titanium	ppm	ASTM D5185m	>2	**0**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**1**	2	10
Lead	ppm	ASTM D5185m	>40	**0**	6	14
Copper	ppm	ASTM D5185m	>330	**0**	5	11
Tin	ppm	ASTM D5185m	>15	**0**	<1	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	20	39
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	▲ **0**	50	56
Manganese	ppm	ASTM D5185m	0	**0**	<1	1
Magnesium	ppm	ASTM D5185m	1010	▲ **0**	511	375
Calcium	ppm	ASTM D5185m	1070	▲ **0**	1005	1359
Phosphorus	ppm	ASTM D5185m	1150	▲ **0**	695	723
Zinc	ppm	ASTM D5185m	1270	▲ **0**	874	943
Sulfur	ppm	ASTM D5185m	2060	▲ **5**	2197	3086

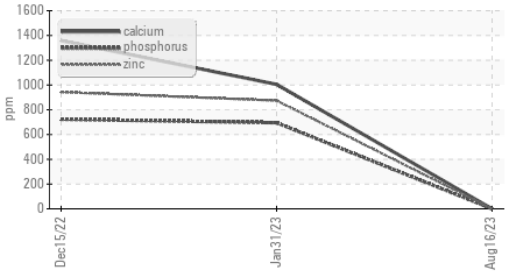
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**0**	4	23
Sodium	ppm	ASTM D5185m		**0**	3	33
Potassium	ppm	ASTM D5185m	>20	**0**	2	▲ 50

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	---	⬢ 8.4	⬢ 8.5
Nitration	Abs/cm	*ASTM D7624	>20	---	30.1	45.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	---	54.8	66.5

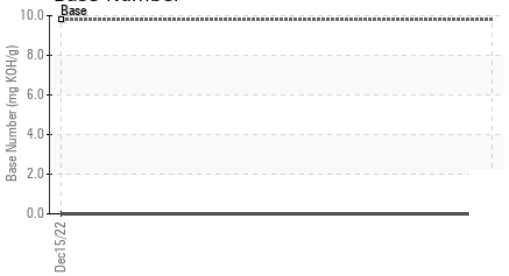
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	---	77.8	121.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	---	▲ 0.0	▲ 0.0

OIL ANALYSIS REPORT

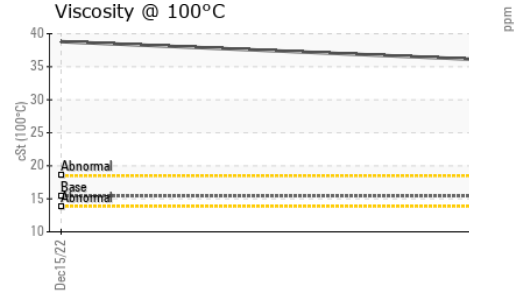
Additives



Base Number



Viscosity @ 100°C

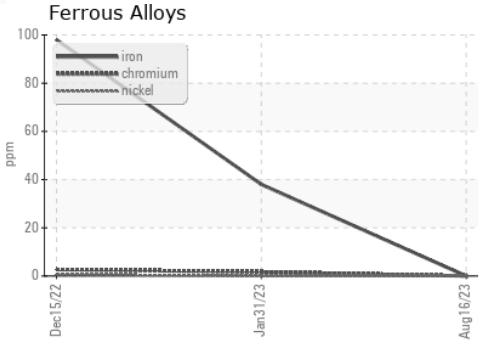


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

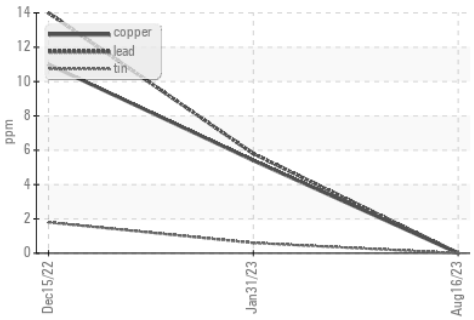
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	---	▲ 36.0	▲ 38.8

GRAPHS

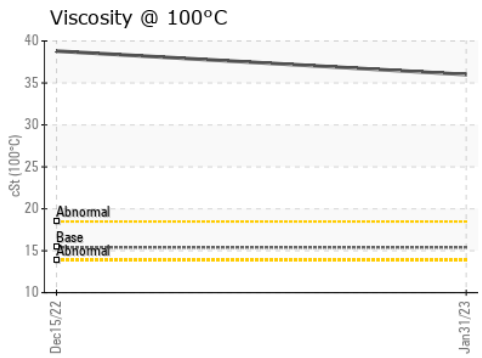
Ferrous Alloys



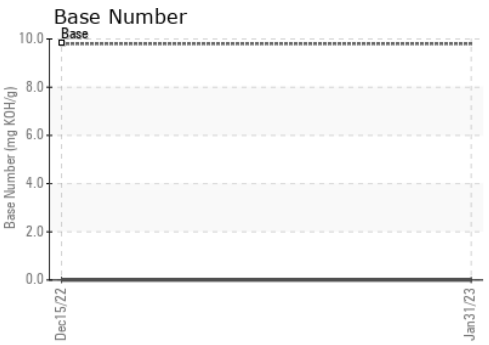
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0066040
Lab Number : 05929310
Unique Number : 10609257
Test Package : FLEET

Received : 21 Aug 2023
Diagnosed : 24 Aug 2023
Diagnostician : Jonathan Hester

GFL Environmental - 904 - Chippewa Falls HC
11888 & 11863 30th Avenue
Chippewa Falls, WI
US 54729
Contact: Andy Kane
T: (715)202-3420
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)