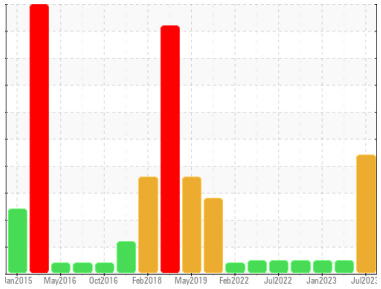
PROBLEM SUMMARY

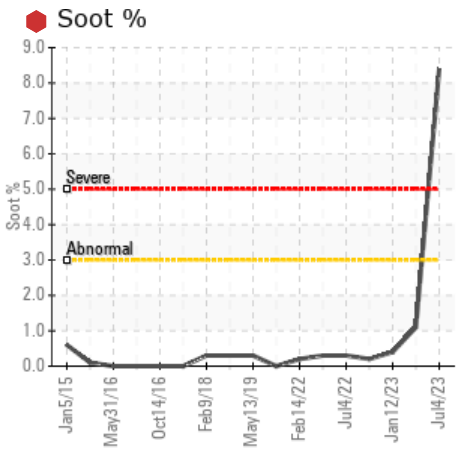
Sample Rating Trend

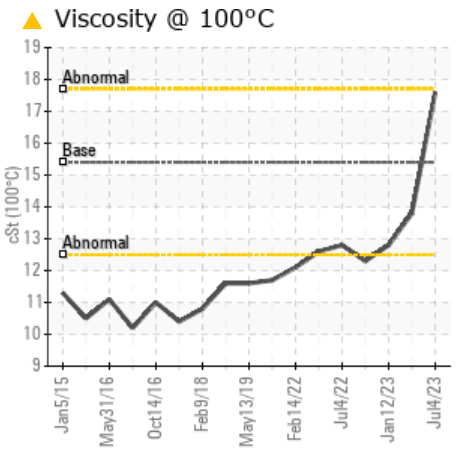


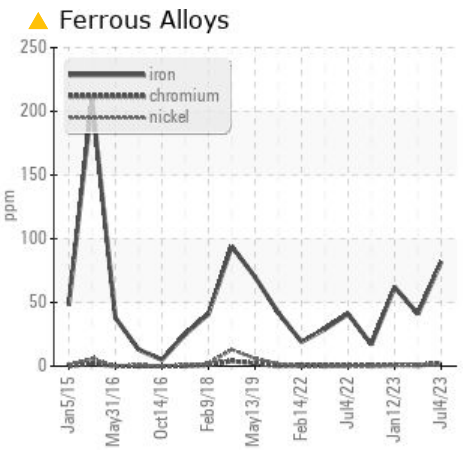
SOOT

Machine Id
11178
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (42 GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>80	▲ **82**	41	62
Soot %	%	*ASTM D7844	>3	⬢ **8.4**	1.1	0.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	8.0	6.8
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **17.6**	13.8	12.8

Customer Id: GFL005
Sample No.: GFL0086426
Lab Number: 05891047
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
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.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

HISTORICAL DIAGNOSIS

09 May 2023 Diag: Wes Davis

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

12 Jan 2023 Diag: Jonathan Hester

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

14 Sep 2022 Diag: Doug Bogart

NORMAL

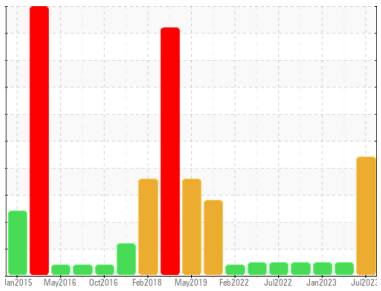
Resample at the next service interval to monitor.All component wear rates are normal. Fuel content negligible. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Machine Id
11178
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (42 GAL)

Sample Rating Trend



SOOT

DIAGNOSIS

Recommendation
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.

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition
The oil viscosity is higher than normal. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**GFL0086426**	GFL0070487	GFL0058560
Sample Date		Client Info		**04 Jul 2023**	09 May 2023	12 Jan 2023
Machine Age	hrs	Client Info		**0**	226401	16409
Oil Age	hrs	Client Info		**653**	226401	593
Oil Changed		Client Info		**Changed**	N/A	Changed
Sample Status				**SEVERE**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>80	▲ **82**	41	62
Chromium	ppm	ASTM D5185m	>5	**2**	<1	1
Nickel	ppm	ASTM D5185m	>2	**<1**	1	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**<1**	2	3
Lead	ppm	ASTM D5185m	>30	**3**	10	10
Copper	ppm	ASTM D5185m	>150	**14**	3	4
Tin	ppm	ASTM D5185m	>5	**2**	1	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	**2**	5	11
Barium	ppm	ASTM D5185m	0	**<1**	2	1
Molybdenum	ppm	ASTM D5185m	60	**60**	72	77
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**927**	990	955
Calcium	ppm	ASTM D5185m	1070	**1112**	1216	1217
Phosphorus	ppm	ASTM D5185m	1150	**917**	1065	1015
Zinc	ppm	ASTM D5185m	1270	**1186**	1283	1260
Sulfur	ppm	ASTM D5185m	2060	**2935**	3035	2893

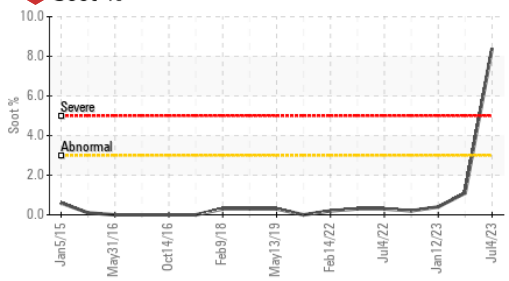
CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>20	**4**	4	4
Sodium	ppm	ASTM D5185m		**2**	14	31
Potassium	ppm	ASTM D5185m	>20	**3**	4	8

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	⬢ **8.4**	1.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**50.4**	10.7	12.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**77.3**	23.7	24.3

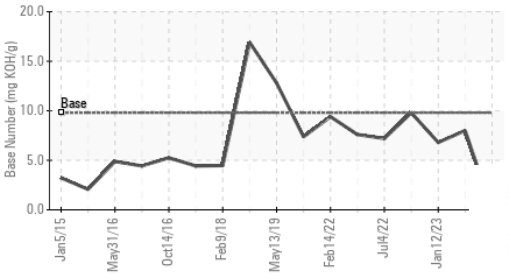
FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**116.8**	21.6	24.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	8.0	6.8

OIL ANALYSIS REPORT

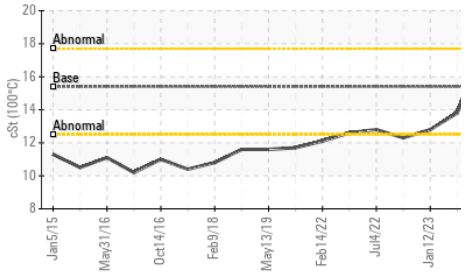
Soot %



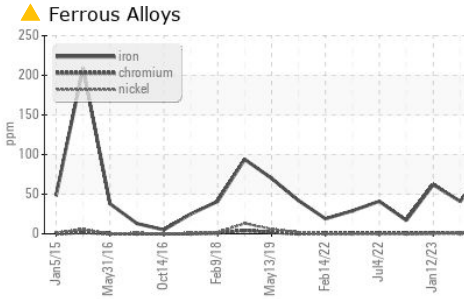
Base Number



Viscosity @ 100°C



Ferrous Alloys

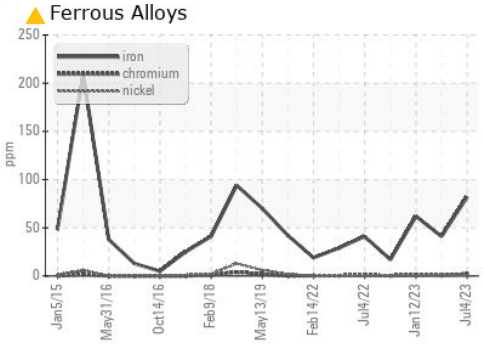


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

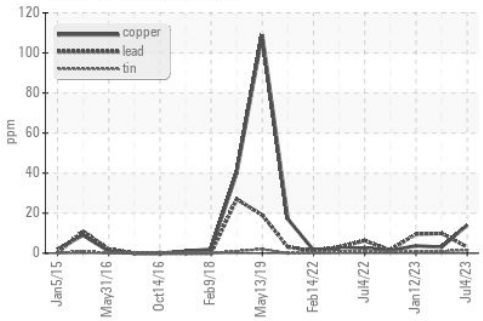
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **17.6**	13.8	12.8

GRAPHS

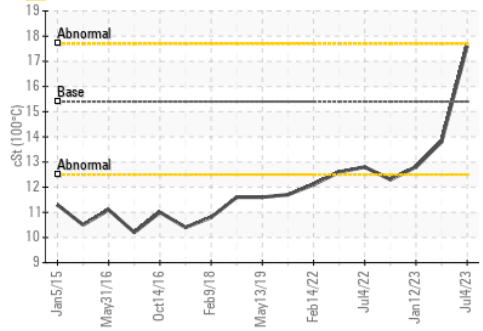
Ferrous Alloys



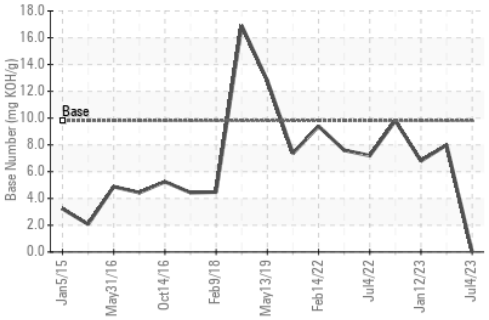
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0086426
Lab Number : 05891047
Unique Number : 10546857
Test Package : FLEET

Received : 06 Jul 2023
Diagnosed : 07 Jul 2023
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 - 005 - Wilson/Tri-East(CNG)
2810 Contentnea Road S
Wilson, NC
US 27893-8501
Contact: SPENCER LIGGON
spencer.liggon@gflenv.com
T: (800)207-6618
F:

Report Id: GFL005 [WUSCAR] 05891047 (Generated: 07/07/2023 15:16:10) Rev: 1

Submitted By: WALTER SKOKOWSKI