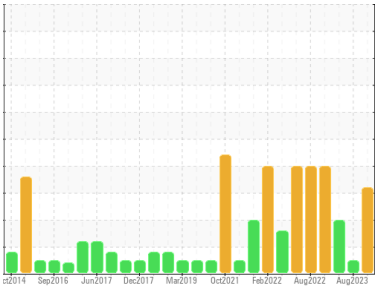
PROBLEM SUMMARY

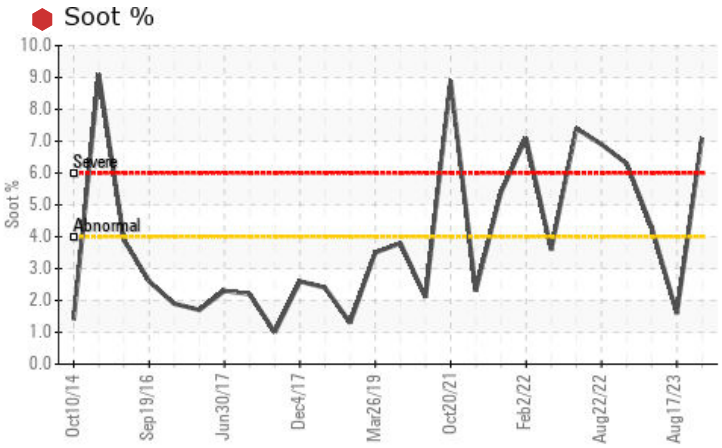
Machine Id
2557
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (42 GAL)

Sample Rating Trend



SOOT

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. 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	ABNORMAL
Soot %	%	*ASTM D7844	>4	**7.1**	1.6	4.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**0.0**	8.5	2.5

Customer Id: GFL19DR
Sample No.: GFL0098785
Lab Number: 05998815
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 Filter	---	---	?	We recommend you service the filters on this component.
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

17 Aug 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

09 May 2023 Diag: Don Baldridge

DEGRADATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. Resample at the next service interval to monitor. 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 BN level is low.

view report

11 Jan 2023 Diag: Jonathan Hester

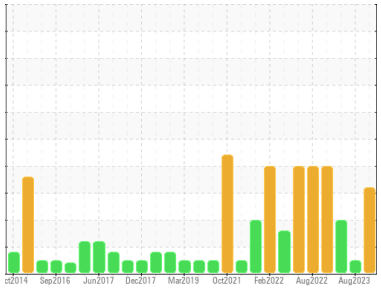
SOOT

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check the fuel injection system. 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. There is an abnormal amount of solids and carbon present in the oil. 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

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
2557
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (42 GAL)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. 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
All component wear rates are normal.

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

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0098785**	GFL0092506	GFL0056475
Sample Date		Client Info		**31 Oct 2023**	17 Aug 2023	09 May 2023
Machine Age	hrs	Client Info		**493498**	0	493498
Oil Age	hrs	Client Info		**493498**	321	493498
Oil Changed		Client Info		**N/A**	Not Changd	N/A
Sample Status				**SEVERE**	NORMAL	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	>120	**59**	26	50
Chromium	ppm	ASTM D5185m	>20	**1**	<1	2
Nickel	ppm	ASTM D5185m	>5	**<1**	0	<1
Titanium	ppm	ASTM D5185m	>2	**0**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	2
Lead	ppm	ASTM D5185m	>40	**<1**	6	<1
Copper	ppm	ASTM D5185m	>330	**6**	3	8
Tin	ppm	ASTM D5185m	>15	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**5**	4	4
Barium	ppm	ASTM D5185m	0	**0**	0	2
Molybdenum	ppm	ASTM D5185m	60	**56**	57	65
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**904**	877	927
Calcium	ppm	ASTM D5185m	1070	**1209**	1223	1141
Phosphorus	ppm	ASTM D5185m	1150	**974**	979	1012
Zinc	ppm	ASTM D5185m	1270	**1291**	1199	1215
Sulfur	ppm	ASTM D5185m	2060	**2861**	3536	2924

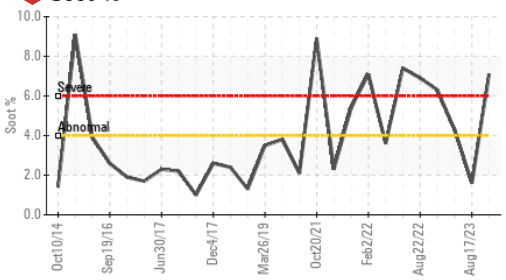
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	4	4
Sodium	ppm	ASTM D5185m		**<1**	3	2
Potassium	ppm	ASTM D5185m	>20	**0**	2	1
Fuel	%	ASTM D3524	>3.0	**<1.0**	<1.0	0.6

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**7.1**	1.6	4.3
Nitration	Abs/cm	*ASTM D7624	>20	**15.7**	7.0	12.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**35.0**	20.0	30.8

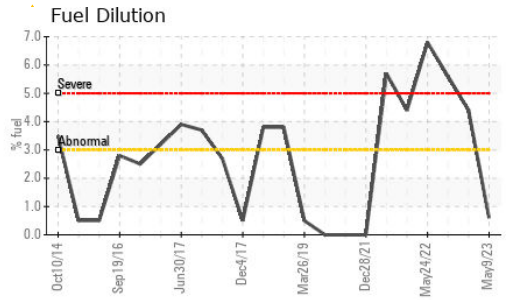
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**25.3**	13.2	22.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**0.0**	8.5	2.5

OIL ANALYSIS REPORT

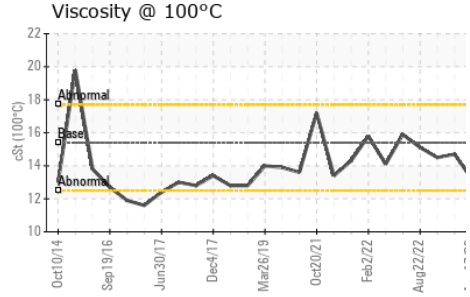
Soot %



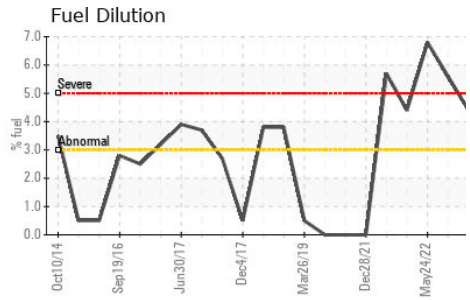
Fuel Dilution



Viscosity @ 100°C



Fuel Dilution

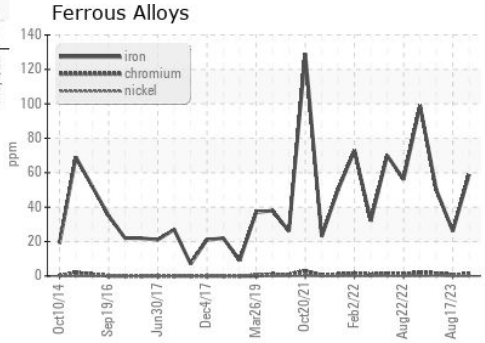


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

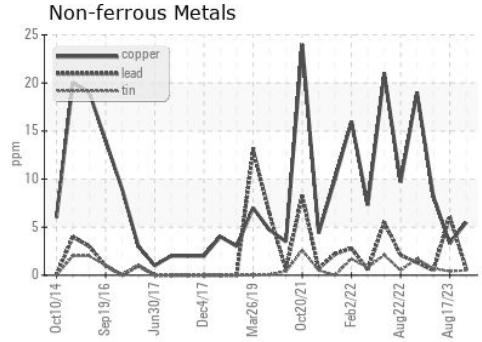
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**16.0**	13.2	14.7

GRAPHS

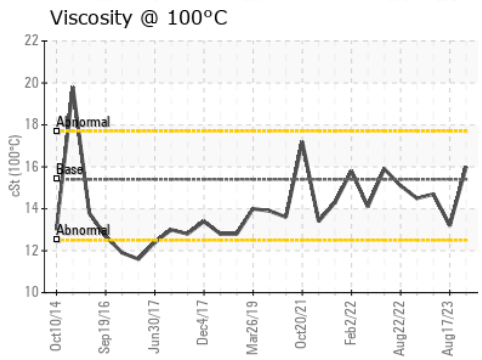
Ferrous Alloys



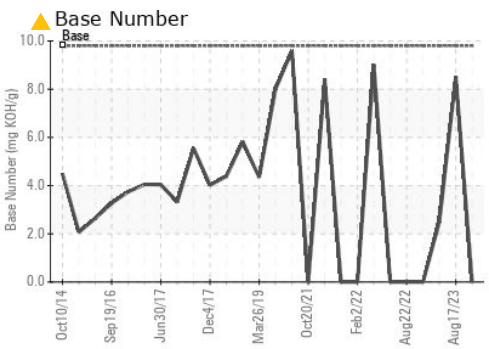
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0098785 **Received** : 06 Nov 2023
Lab Number : 05998815 **Diagnosed** : 07 Nov 2023
Unique Number : 10727175 **Diagnostician** : Don Baldridge
Test Package : FLEET (Additional Tests: FUELDILUTION)

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 - 19DR - Deep Run/TriEast
2287 Leslie R Stroud Road
Kinston, NC
US 28504-9477
Contact: Spencer Liggon
spencer.liggon@gflenv.com
T: (800)207-6618
F: