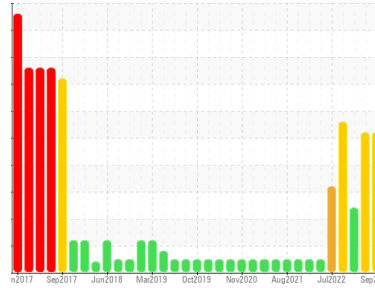




PROBLEM SUMMARY

Sample Rating Trend

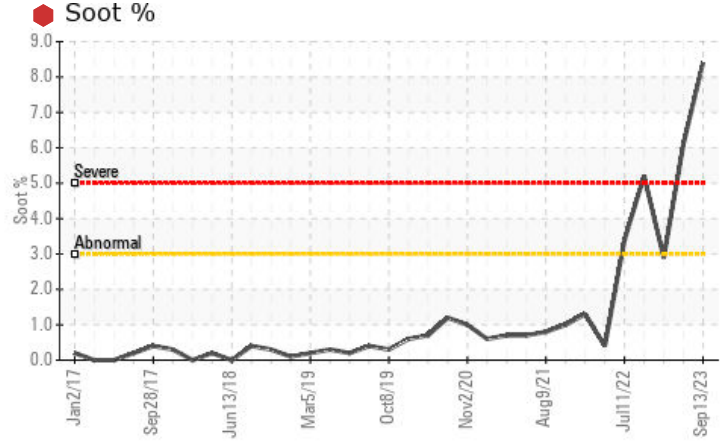
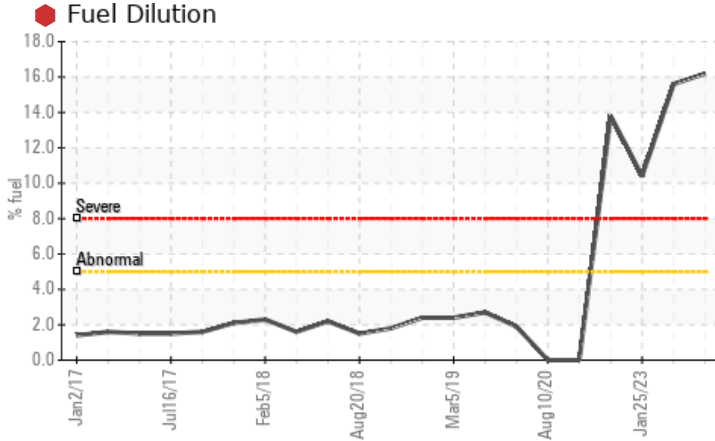


SOOT



Machine Id
11268
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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. 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	SEVERE	SEVERE
Fuel	%	ASTM D3524	>5	● 16.2	● 15.6	● 10.4
Soot %	%	*ASTM D7844	>3	● 8.4	● 6.1	● 2.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 0.0	▲ 0.0	▲ 9.0

Customer Id: GFL005
 Sample No.: GFL0092693
 Lab Number: 05952530
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Sean Felton +1 919-379-4092
sfelton@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	---	---	?	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.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

31 May 2023 Diag: Don Baldrige

SOOT



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

[view report](#)



25 Jan 2023 Diag: Wes Davis

FUEL



We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. 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.

[view report](#)



14 Dec 2022 Diag: Jonathan Hester

SOOT



We advise that you check the fuel injection system. 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 a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN level is low.

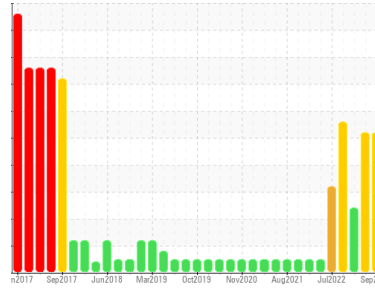
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



SOOT



Machine Id
11268

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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. 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 a high amount of fuel present in the oil. 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		GFL0092693	GFL0072428	GFL0072359
Sample Date	Client Info		13 Sep 2023	31 May 2023	25 Jan 2023
Machine Age	hrs	Client Info	14296	0	10080
Oil Age	hrs	Client Info	352	180	14166
Oil Changed	Client Info		Not Changed	Not Changed	Not Changed
Sample Status			SEVERE	SEVERE	SEVERE

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 >100	41	27	15
Chromium	ppm	ASTM D5185m >20	3	2	1
Nickel	ppm	ASTM D5185m >4	1	<1	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	4	3	2
Lead	ppm	ASTM D5185m >40	6	2	<1
Copper	ppm	ASTM D5185m >330	74	66	<1
Tin	ppm	ASTM D5185m >15	2	0	<1
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	10	12	7
Barium	ppm	ASTM D5185m 0	45	0	0
Molybdenum	ppm	ASTM D5185m 60	43	46	50
Manganese	ppm	ASTM D5185m 0	2	<1	<1
Magnesium	ppm	ASTM D5185m 1010	565	665	778
Calcium	ppm	ASTM D5185m 1070	897	1018	900
Phosphorus	ppm	ASTM D5185m 1150	680	780	834
Zinc	ppm	ASTM D5185m 1270	871	982	991
Sulfur	ppm	ASTM D5185m 2060	2210	2833	2965

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	10	7	4
Sodium	ppm	ASTM D5185m	16	15	7
Potassium	ppm	ASTM D5185m >20	5	2	1
Fuel	%	ASTM D3524 >5	16.2	15.6	10.4

INFRA-RED

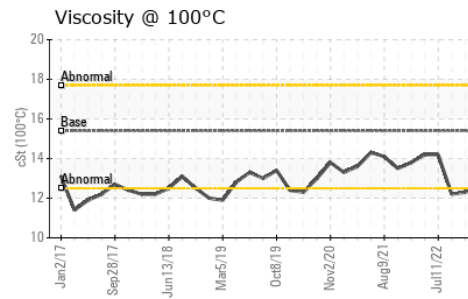
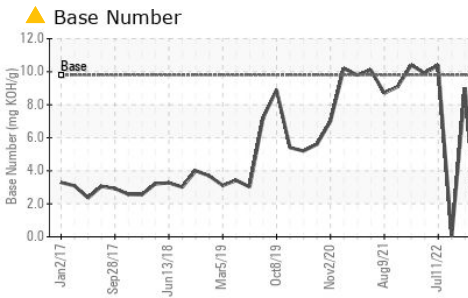
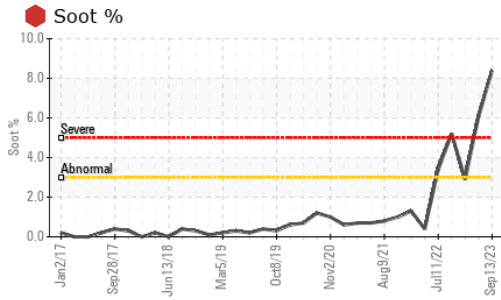
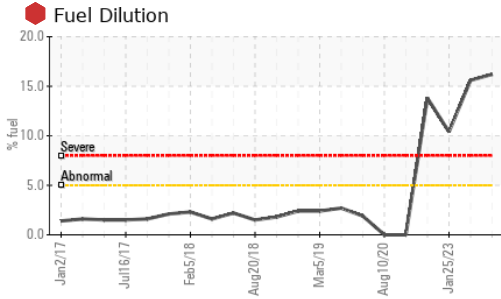
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	8.4	6.1	2.9
Nitration	Abs/cm	*ASTM D7624 >20	34.3	20.8	12.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	64.9	38.2	25.9

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	96.4	33.1	21.7
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	0.0	0.0	9.0



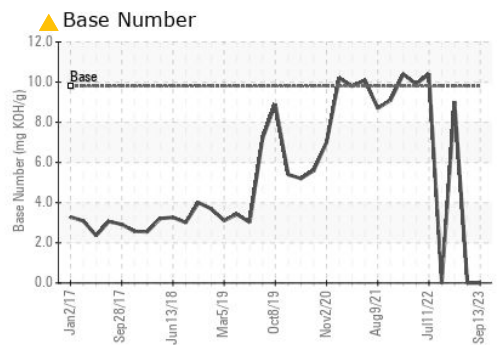
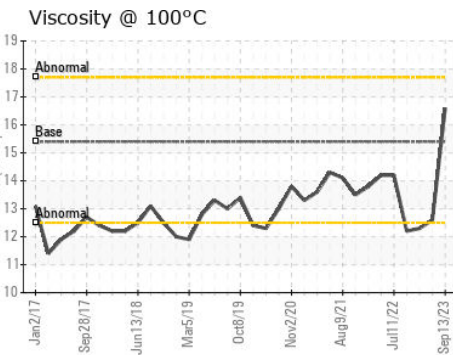
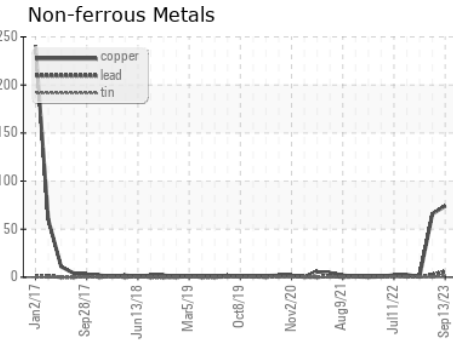
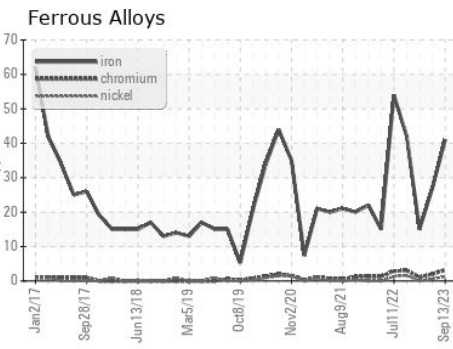
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	16.6	12.6 ▲ 12.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0092693 **Received** : 15 Sep 2023
Lab Number : 05952530 **Diagnosed** : 19 Sep 2023
Unique Number : 10648489 **Diagnostician** : Sean Felton
Test Package : FLEET (Additional Tests: PercentFuel)

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:

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)