



PROBLEM SUMMARY

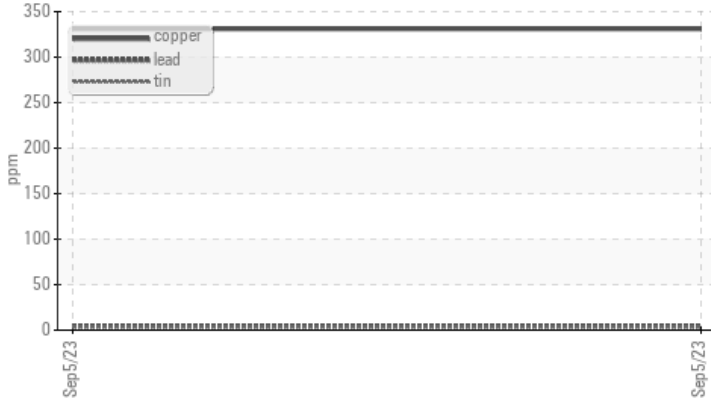
Area
S0916A-Suamico
 Machine Id
WESTERN STAR 514030
 Component
Front Center Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (44 QTS)

Sample Rating Trend



COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



▲ Viscosity @ 100°C



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	---	---
Copper	ppm	ASTM D5185m	>30	▲ 331	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.3	---	---

Customer Id: GFL916A
 Sample No.: GFL0074841
 Lab Number: 05952485
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Sean Felton +1 919-379-4092
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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.

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Area
S0916A-Suamico
 Machine Id
WESTERN STAR 514030
 Component
Front Center Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (44 QTS)



DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

Contamination

Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0074841	---	---
Sample Date	Client Info	05 Sep 2023	---	---
Machine Age	hrs	Client Info	599	---
Oil Age	hrs	Client Info	599	---
Oil Changed	Client Info	Changed	---	---
Sample Status		ABNORMAL	---	---

CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	NEG	---	---

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>200	23	---	---
Chromium	ppm	ASTM D5185m	>20	2	---	---
Nickel	ppm	ASTM D5185m	>2	<1	---	---
Titanium	ppm	ASTM D5185m	>2	<1	---	---
Silver	ppm	ASTM D5185m	>2	<1	---	---
Aluminum	ppm	ASTM D5185m	>30	9	---	---
Lead	ppm	ASTM D5185m	>30	4	---	---
Copper	ppm	ASTM D5185m	>30	▲ 331	---	---
Tin	ppm	ASTM D5185m	>15	4	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
Cadmium	ppm	ASTM D5185m		<1	---	---

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	0	30	---	---
Barium	ppm	ASTM D5185m	0	45	---	---
Molybdenum	ppm	ASTM D5185m	60	43	---	---
Manganese	ppm	ASTM D5185m	0	3	---	---
Magnesium	ppm	ASTM D5185m	1010	440	---	---
Calcium	ppm	ASTM D5185m	1070	1572	---	---
Phosphorus	ppm	ASTM D5185m	1150	639	---	---
Zinc	ppm	ASTM D5185m	1270	821	---	---
Sulfur	ppm	ASTM D5185m	2060	2001	---	---

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>30	10	---	---
Sodium	ppm	ASTM D5185m		5	---	---
Potassium	ppm	ASTM D5185m	>20	29	---	---
Fuel	%	ASTM D3524	>3.0	0.4	---	---

INFRA-RED

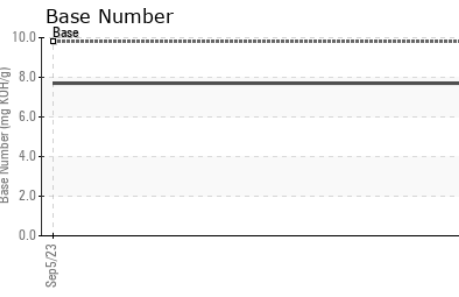
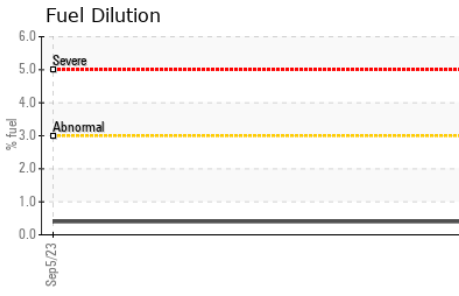
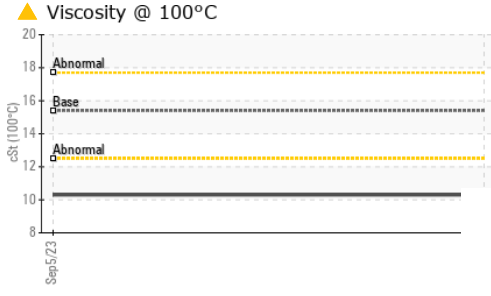
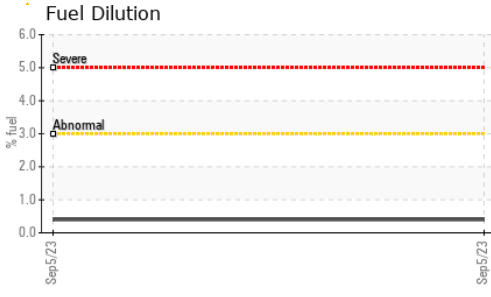
method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844	>3	0.3	---	---
Nitration	Abs/cm	*ASTM D7624	>20	9.6	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.4	---	---

FLUID DEGRADATION

method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.6	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.7	---	---



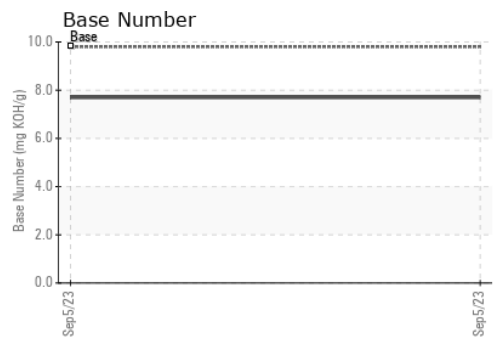
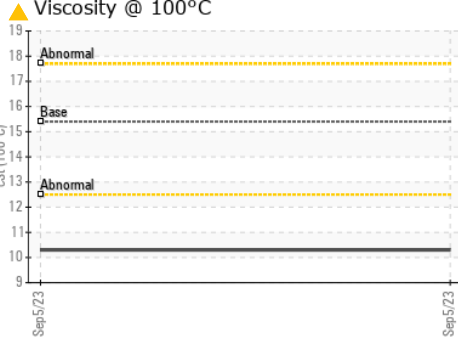
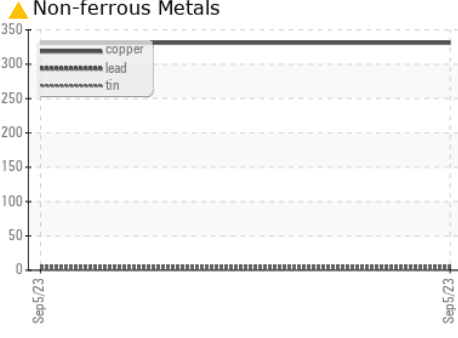
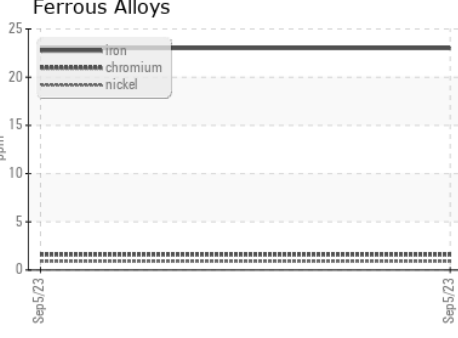
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4 ▲ 10.3	---	---

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0074841 **Received** : 15 Sep 2023
Lab Number : 05952485 **Diagnosed** : 19 Sep 2023
Unique Number : 10648444 **Diagnostician** : Sean Felton
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 916A - Suamico
 2300 Deerfield Ave E
 Suamico, WI
 US 54313
 Contact: NICHOLAS WEIDNER
 nweidner@gflenv.com

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)