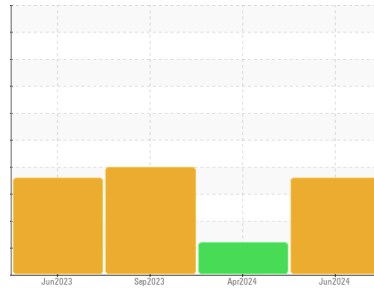


PROBLEM SUMMARY

Sample Rating Trend

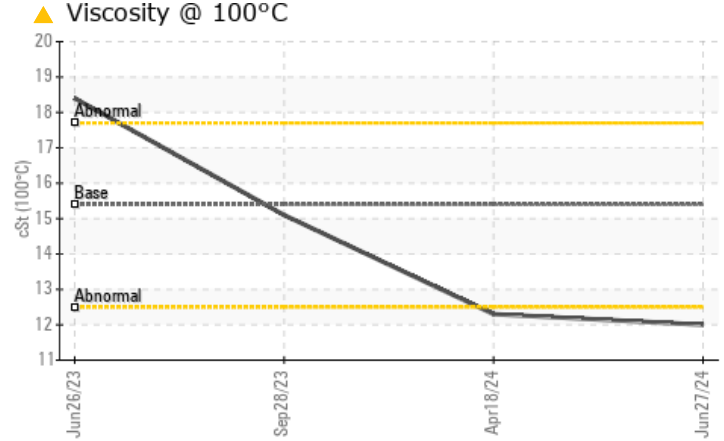
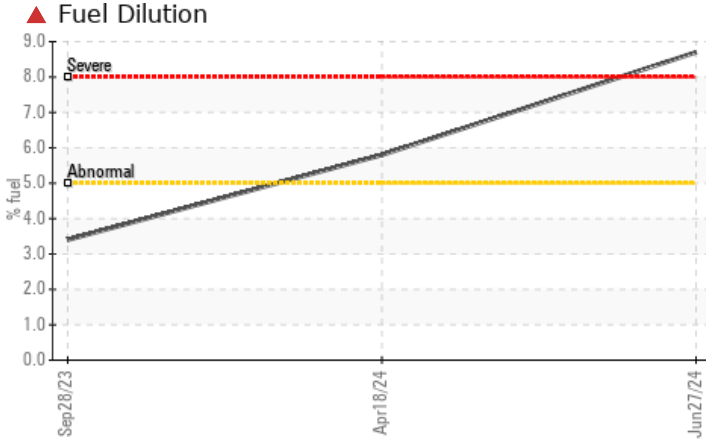


FUEL



Machine Id
FREIGHTLINER 89
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (13 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	SEVERE
Fuel	%	ASTM D3524	>5	▲ 8.7	▲ 5.8	▲ 3.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 2.5	6.3	▲ 0.0
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 12.0	▲ 12.3	15.1

Customer Id: ATRPIN
 Sample No.: PCA0117381
 Lab Number: 06239979
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +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.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

FUEL



18 Apr 2024 Diag: Wes Davis

The oil 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 a moderate 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. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

[view report](#)



SOOT



28 Sep 2023 Diag: Don Baldrige

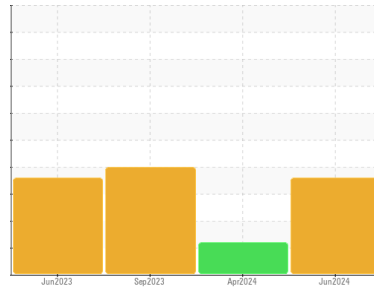
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value. All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. Light fuel dilution occurring. The BN level is low.

[view report](#)



OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
FREIGHTLINER 89

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (13 LTR)

DIAGNOSIS

▲ Recommendation

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.

Wear

All component wear rates are normal.

▲ Contamination

There is a high amount of fuel present in the oil.

▲ Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0117381	PCA0115403	PCA0105007
Sample Date	Client Info		27 Jun 2024	18 Apr 2024	28 Sep 2023
Machine Age	mls	Client Info	542975	515162	437944
Oil Age	mls	Client Info	25000	25000	30000
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			SEVERE	ABNORMAL	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >80	50	47	55
Chromium	ppm	ASTM D5185m >5	2	2	3
Nickel	ppm	ASTM D5185m >2	<1	0	<1
Titanium	ppm	ASTM D5185m	0	0	<1
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >30	4	<1	1
Lead	ppm	ASTM D5185m >30	24	2	21
Copper	ppm	ASTM D5185m >150	4	12	8
Tin	ppm	ASTM D5185m >5	2	0	2
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	7	11	7
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	66	58	59
Manganese	ppm	ASTM D5185m 0	1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	214	978	818
Calcium	ppm	ASTM D5185m 1070	1809	1116	1258
Phosphorus	ppm	ASTM D5185m 1150	859	1016	936
Zinc	ppm	ASTM D5185m 1270	937	1220	1228
Sulfur	ppm	ASTM D5185m 2060	3670	3244	3043

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	13	12	8
Sodium	ppm	ASTM D5185m	6	2	<1
Potassium	ppm	ASTM D5185m >20	5	<1	3
Fuel	%	ASTM D3524 >5	▲ 8.7	▲ 5.8	▲ 3.4

INFRA-RED

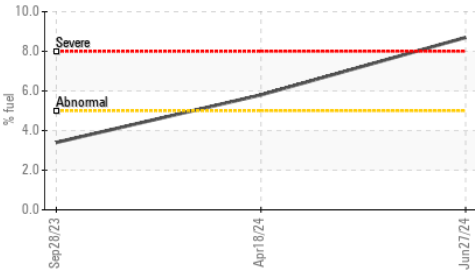
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	2.4	2.1	▲ 5.3
Nitration	Abs/cm	*ASTM D7624 >20	12.3	9.4	14.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	31.9	24.3	32.4

FLUID DEGRADATION

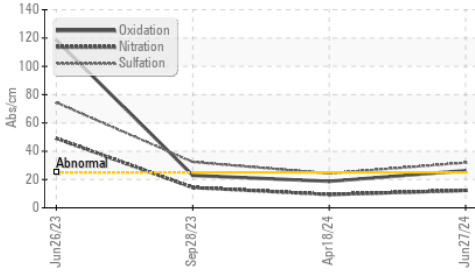
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	26.3	18.7	22.9
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	▲ 2.5	6.3	▲ 0.0

OIL ANALYSIS REPORT

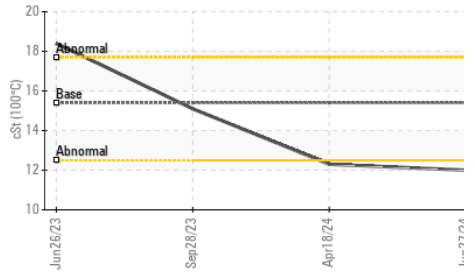
▲ Fuel Dilution



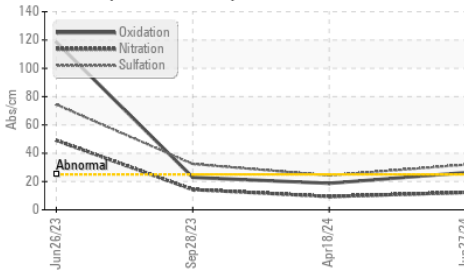
● FT-IR (Direct Trend)



▲ Viscosity @ 100°C



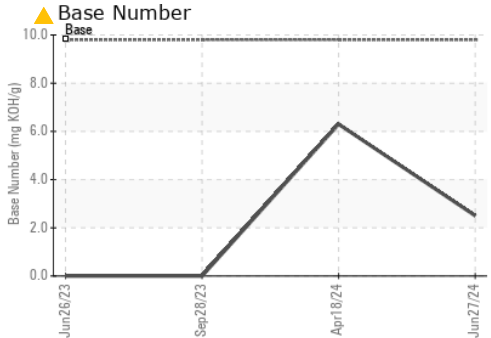
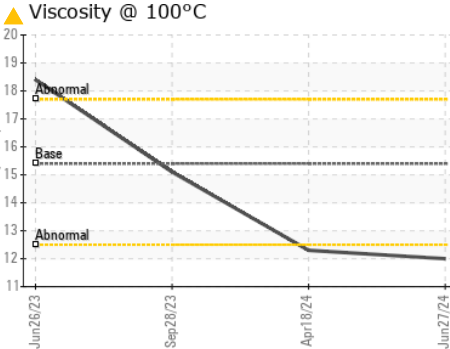
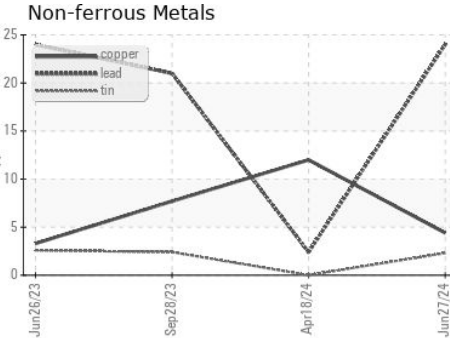
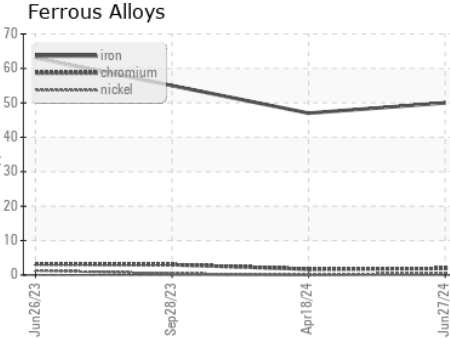
● FT-IR (Direct Trend)



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 ▲ 12.0	▲ 12.3	15.1

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0117381 **Received** : 18 Jul 2024
Lab Number : 06239979 **Tested** : 19 Jul 2024
Unique Number : 11128813 **Diagnosed** : 19 Jul 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: PercentFuel)

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)

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