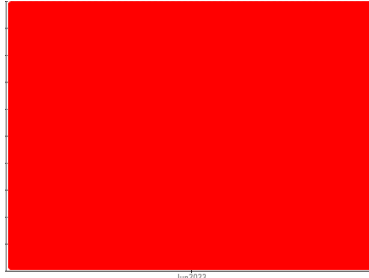


PROBLEM SUMMARY

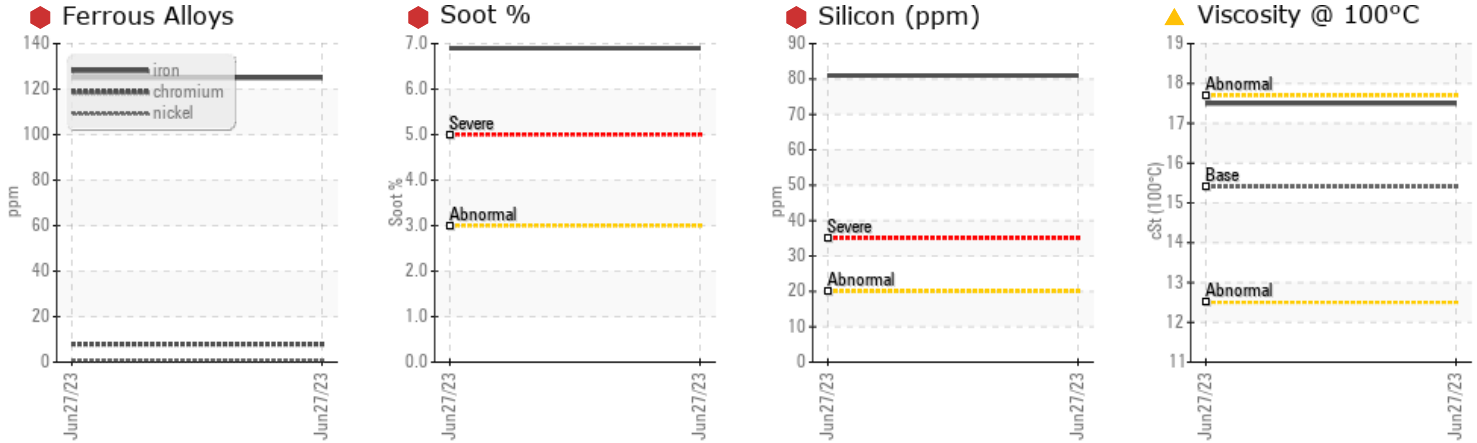
Sample Rating Trend

WEAR



Machine Id
FREIGHTLINER 108
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (13 LTR)

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 advise that you inspect for the source(s) of wear. 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	---	---
Iron ppm ASTM D5185m >80	125	---	---
Chromium ppm ASTM D5185m >5	8	---	---
Silicon ppm ASTM D5185m >20	81	---	---
Soot % *ASTM D7844 >3	6.9	---	---
Base Number (BN) mg KOH/g ASTM D2896 9.8	0.0	---	---
Visc @ 100°C cSt ASTM D445 15.4	17.5	---	---

Customer Id: ATRPIN
 Sample No.: PCA0100628
 Lab Number: 05889882
 Test Package: FLEET



To manage this report scan the QR code

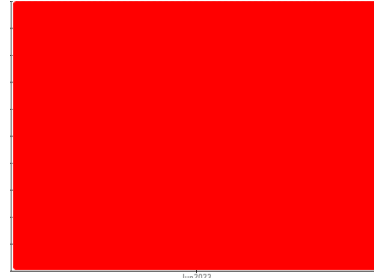
To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
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



Machine Id
FREIGHTLINER 108
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (13 LTR)

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 advise that you inspect for the source(s) of wear. 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

Ring and cylinder wear is indicated.

Contamination

There is an abnormal amount of solids and carbon present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

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		PCA0100628	---	---
Sample Date	Client Info		27 Jun 2023	---	---
Machine Age	mls	Client Info	363062	---	---
Oil Age	mls	Client Info	32563	---	---
Oil Changed	Client Info		Changed	---	---
Sample Status			SEVERE	---	---

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >80	125	---	---
Chromium	ppm	ASTM D5185m >5	8	---	---
Nickel	ppm	ASTM D5185m >2	<1	---	---
Titanium	ppm	ASTM D5185m	0	---	---
Silver	ppm	ASTM D5185m >3	0	---	---
Aluminum	ppm	ASTM D5185m >30	3	---	---
Lead	ppm	ASTM D5185m >30	6	---	---
Copper	ppm	ASTM D5185m >150	7	---	---
Tin	ppm	ASTM D5185m >5	8	---	---
Vanadium	ppm	ASTM D5185m	0	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m 0	<1	---	---
Barium	ppm	ASTM D5185m 0	0	---	---
Molybdenum	ppm	ASTM D5185m 60	58	---	---
Manganese	ppm	ASTM D5185m 0	3	---	---
Magnesium	ppm	ASTM D5185m 1010	851	---	---
Calcium	ppm	ASTM D5185m 1070	1182	---	---
Phosphorus	ppm	ASTM D5185m 1150	955	---	---
Zinc	ppm	ASTM D5185m 1270	1187	---	---
Sulfur	ppm	ASTM D5185m 2060	2790	---	---

CONTAMINANTS

	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >20	81	---	---
Sodium	ppm	ASTM D5185m	13	---	---
Potassium	ppm	ASTM D5185m >20	8	---	---

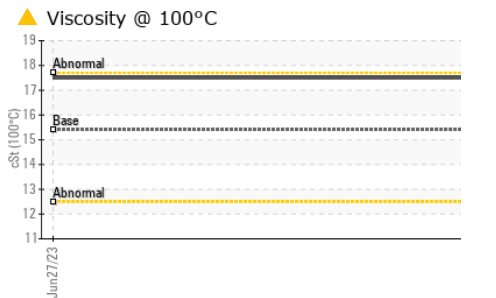
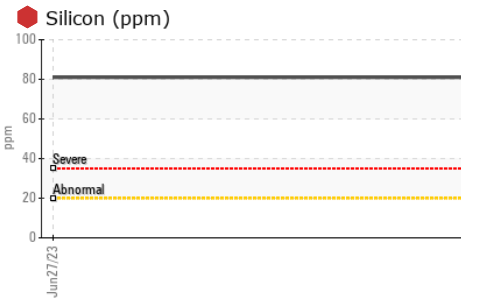
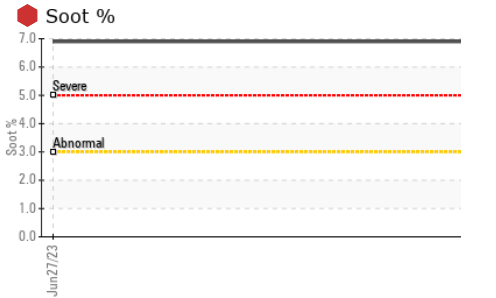
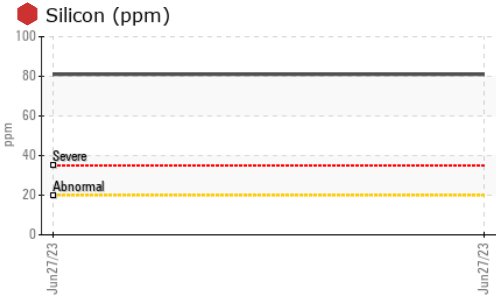
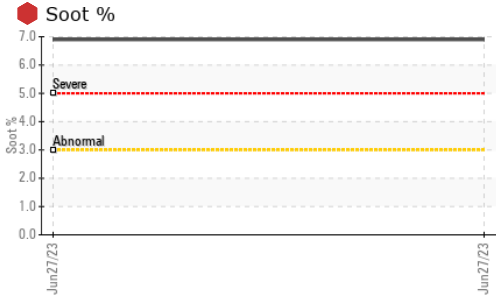
INFRA-RED

	method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844 >3	6.9	---	---
Nitration	Abs/cm	*ASTM D7624 >20	21.5	---	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	44.4	---	---

FLUID DEGRADATION

	method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414 >25	33.1	---	---
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	0.0	---	---

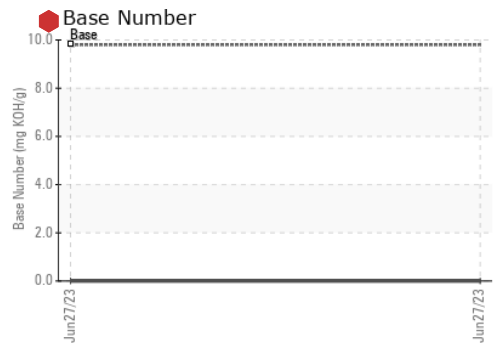
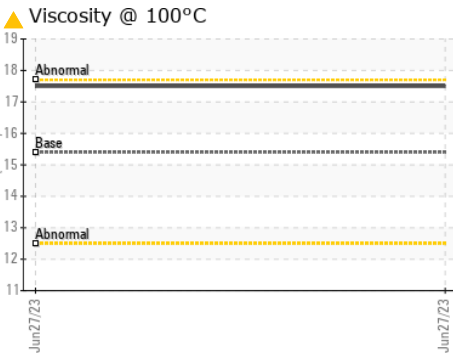
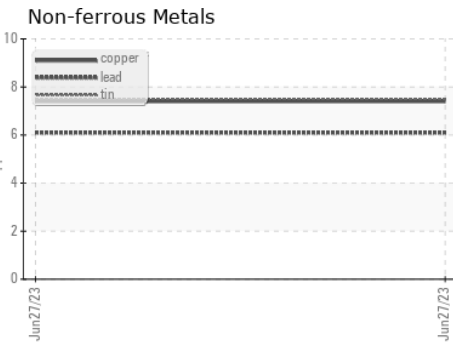
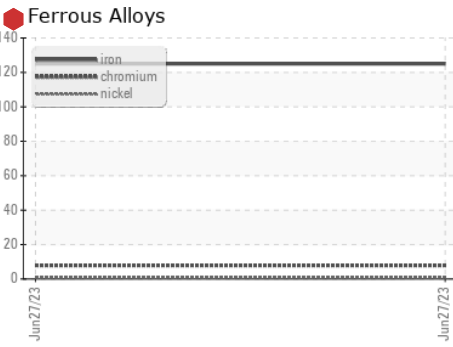
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2	
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	history 1	history 2	
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 17.5	---	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0100628 **Received** : 05 Jul 2023
Lab Number : 05889882 **Diagnosed** : 07 Jul 2023
Unique Number : 10545692 **Diagnostician** : Jonathan Hester
Test Package : FLEET

A Truck Repair
 9349 China Grove Church Road
 Pineville, NC
 US 28134
 Contact: Vlad Melnichuk
 shop@migway.com
 T: (980)255-3200
 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)