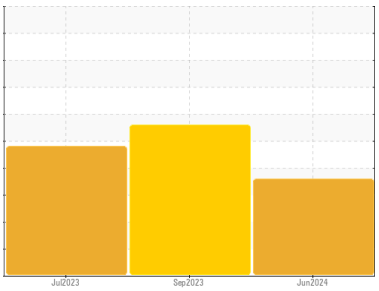
OIL DIAGNOSTICS

PROBLEM SUMMARY

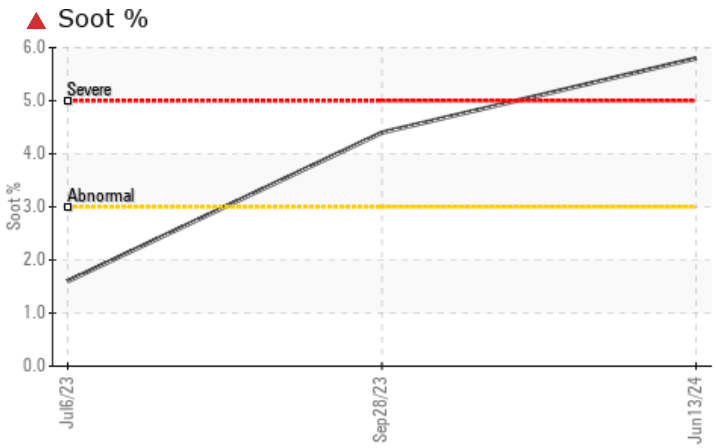
Sample Rating Trend

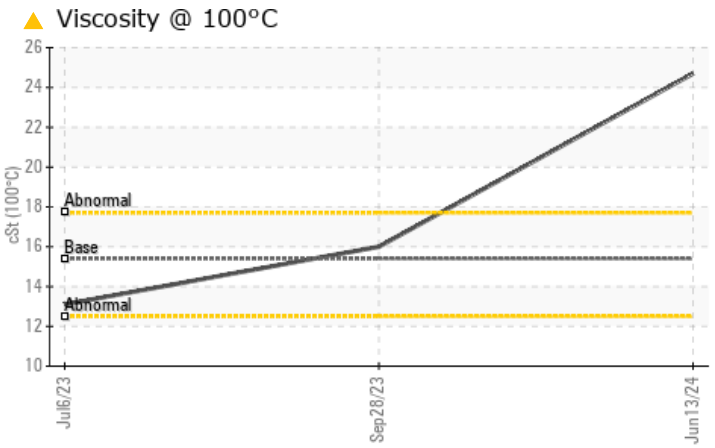


SOOT

Machine Id
FREIGHTLINER 25
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 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
Soot %	%	*ASTM D7844	>3	▲ **5.8**	▲ 4.4	1.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	3.7	8.7
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **24.7**	16.0	13.1

Customer Id: ATRPIN
Sample No.: PCA0115429
Lab Number: 06240078
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
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

DIRT

28 Sep 2023 Diag: Don Baldridge

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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.All component wear rates are normal. Elemental level of silicon (Si) above normal. There is an abnormal amount of solids and carbon present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

DIRT

06 Jul 2023 Diag: Don Baldridge

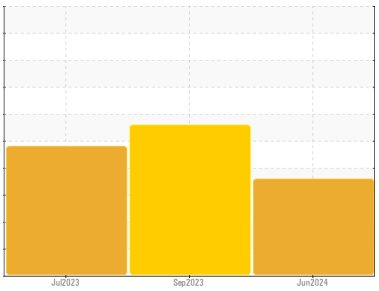
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Elemental level of silicon (Si) above normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
FREIGHTLINER 25
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 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 oil viscosity is higher than normal. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0115429**	PCA0102579	PCA0100618
Sample Date		Client Info		**13 Jun 2024**	28 Sep 2023	06 Jul 2023
Machine Age	mls	Client Info		**522289**	405884	385330
Oil Age	mls	Client Info		**25000**	25635	27983
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	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	**44**	66	32
Chromium	ppm	ASTM D5185m	>5	**1**	3	1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>30	**1**	1	2
Lead	ppm	ASTM D5185m	>30	**3**	3	1
Copper	ppm	ASTM D5185m	>150	**1**	4	1
Tin	ppm	ASTM D5185m	>5	**1**	4	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**2**	1	3
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**48**	60	59
Manganese	ppm	ASTM D5185m	0	**0**	1	3
Magnesium	ppm	ASTM D5185m	1010	**780**	885	830
Calcium	ppm	ASTM D5185m	1070	**1055**	1088	1123
Phosphorus	ppm	ASTM D5185m	1150	**913**	853	1001
Zinc	ppm	ASTM D5185m	1270	**1087**	1131	1172
Sulfur	ppm	ASTM D5185m	2060	**3271**	2771	3277

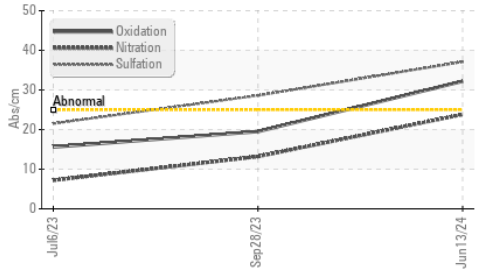
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**7**	▲ 53	▲ 56
Sodium	ppm	ASTM D5185m		**1**	<1	0
Potassium	ppm	ASTM D5185m	>20	**2**	3	2
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	▲ **5.8**	▲ 4.4	1.6
Nitration	Abs/cm	*ASTM D7624	>20	**23.8**	13.2	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**37.1**	28.6	21.5

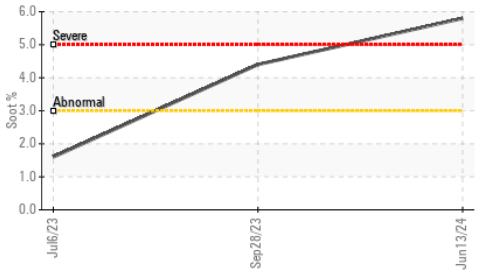
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**32.2**	19.5	15.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	3.7	8.7

OIL ANALYSIS REPORT

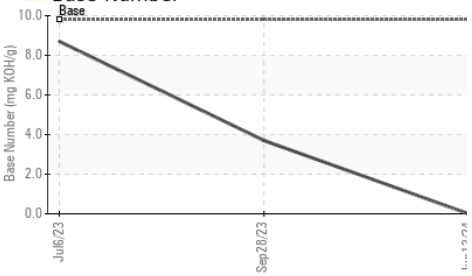
FT-IR (Direct Trend)



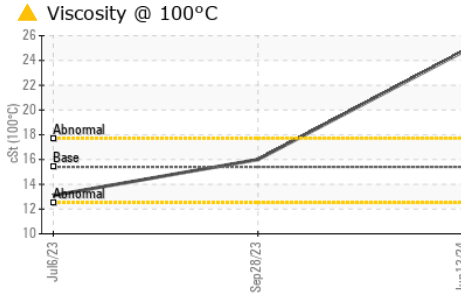
Soot %



Base Number



Viscosity @ 100°C

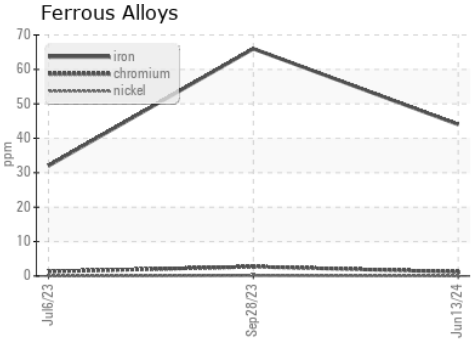


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

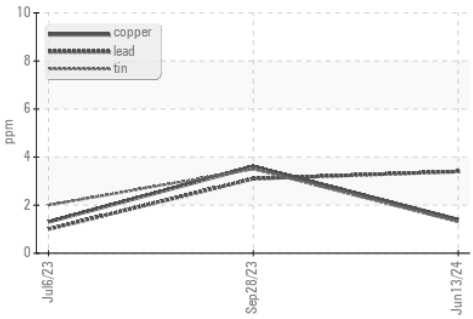
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **24.7**	16.0	13.1

GRAPHS

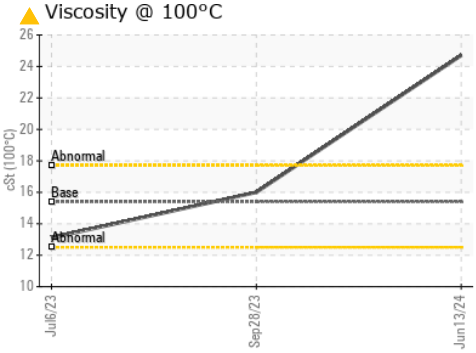
Ferrous Alloys



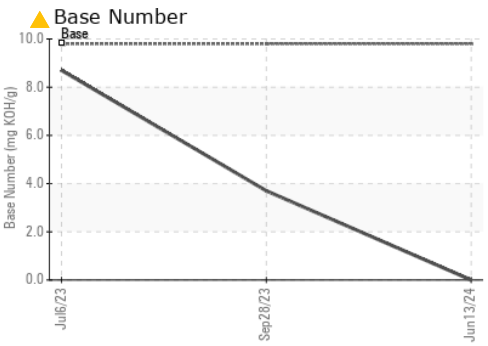
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0115429 **Received** : 18 Jul 2024
Lab Number : 06240078 **Tested** : 19 Jul 2024
Unique Number : 11128912 **Diagnosed** : 19 Jul 2024 - Jonathan Hester
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)

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

Report Id: ATRPIN [WUSCAR] 06240078 (Generated: 07/21/2024 13:55:40) Rev: 1

Submitted By: Vlad Melnichuk