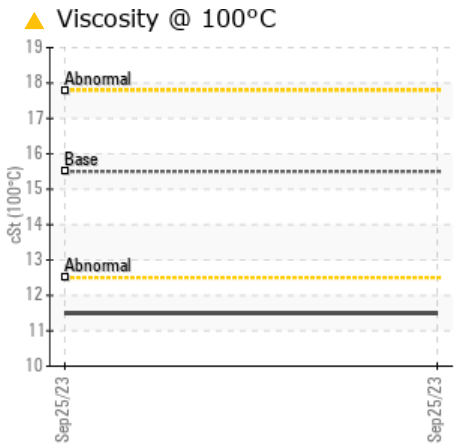
PROBLEM SUMMARY

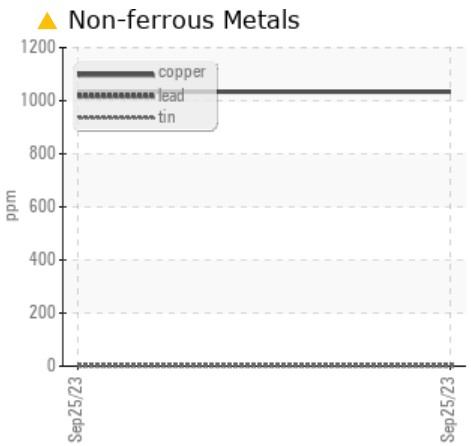
Machine Id
CATERPILLAR 745D 13401 (S/N 3T60609)
Component
Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

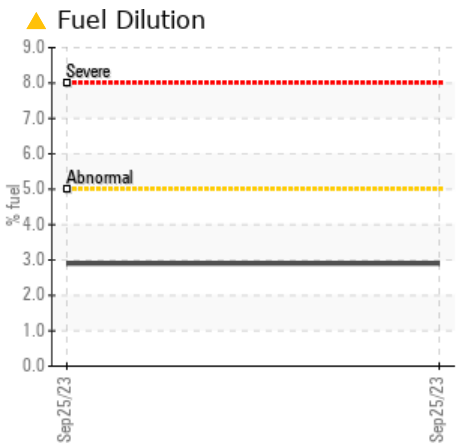
Sample Rating Trend

WEAR

COMPONENT CONDITION SUMMARY







RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	---	---
Copper	ppm	ASTM D5185m	>330	▲ **1034**	---	---
Fuel	%	ASTM D3524	>5	▲ **2.9**	---	---
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **11.5**	---	---

Customer Id: TRANEW
Sample No.: WC0831358
Lab Number: 05965051
Test Package: CONST

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	---	---	?	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

Machine Id
CATERPILLAR 745D 13401 (S/N 3T60609)
Component
Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. 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
Light fuel dilution occurring.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0831358**	---	---
Sample Date		Client Info		**25 Sep 2023**	---	---
Machine Age	hrs	Client Info		**586**	---	---
Oil Age	hrs	Client Info		**586**	---	---
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	>100	**48**	---	---
Chromium	ppm	ASTM D5185m	>20	**1**	---	---
Nickel	ppm	ASTM D5185m	>2	**<1**	---	---
Titanium	ppm	ASTM D5185m	>2	**<1**	---	---
Silver	ppm	ASTM D5185m	>2	**0**	---	---
Aluminum	ppm	ASTM D5185m	>25	**4**	---	---
Lead	ppm	ASTM D5185m	>40	**3**	---	---
Copper	ppm	ASTM D5185m	>330	▲ **1034**	---	---
Tin	ppm	ASTM D5185m	>15	**3**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	1	**18**	---	---
Barium	ppm	ASTM D5185m	1	**0**	---	---
Molybdenum	ppm	ASTM D5185m	60	**47**	---	---
Manganese	ppm	ASTM D5185m	1	**2**	---	---
Magnesium	ppm	ASTM D5185m	1010	**561**	---	---
Calcium	ppm	ASTM D5185m	1070	**1476**	---	---
Phosphorus	ppm	ASTM D5185m	1150	**934**	---	---
Zinc	ppm	ASTM D5185m	1270	**1140**	---	---
Sulfur	ppm	ASTM D5185m	2060	**2997**	---	---

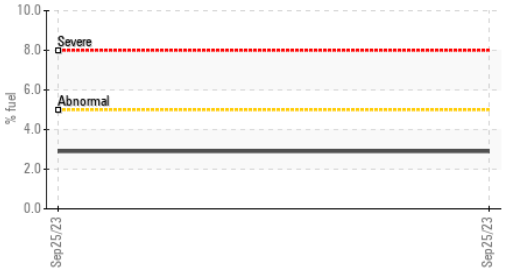
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**15**	---	---
Sodium	ppm	ASTM D5185m		**2**	---	---
Potassium	ppm	ASTM D5185m	>20	**2**	---	---
Fuel	%	ASTM D3524	>5	▲ **2.9**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**10.2**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.5**	---	---

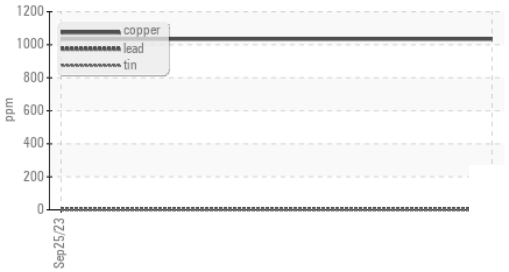
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.7**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	**7.7**	---	---

OIL ANALYSIS REPORT

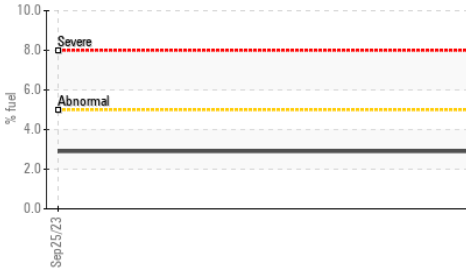
Fuel Dilution



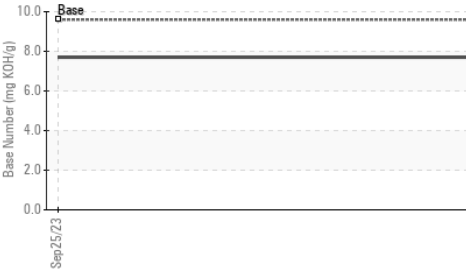
Non-ferrous Metals



Fuel Dilution



Base Number

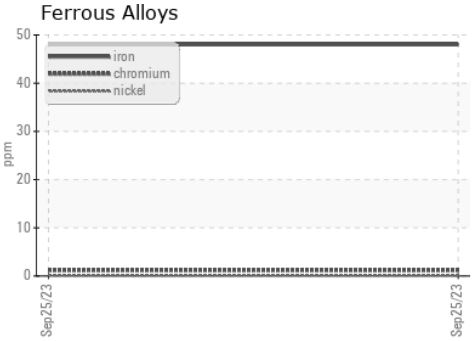


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar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

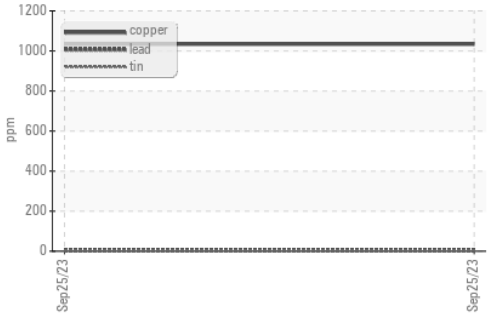
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **11.5**	---	---

GRAPHS

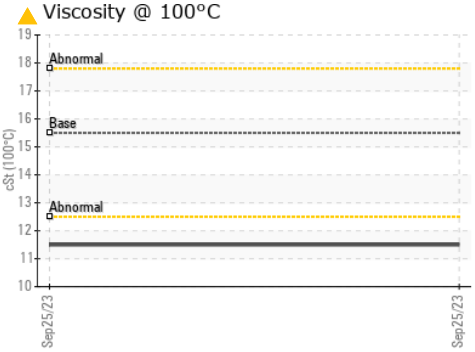
Ferrous Alloys



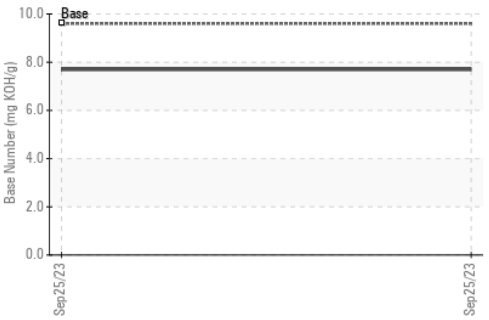
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0831358 **Received** : 29 Sep 2023
Lab Number : 05965051 **Diagnosed** : 03 Oct 2023
Unique Number : 10671602 **Diagnostician** : Sean Felton
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

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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