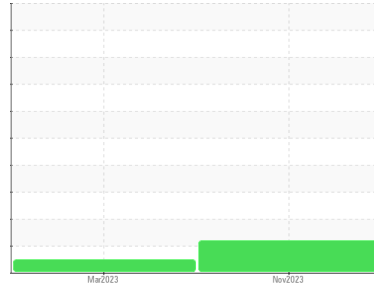




PROBLEM SUMMARY

Sample Rating Trend



DEGRADATION



Area
TRUCK - URBAN
 Machine Id
WESTERN STAR M140
 Component
Diesel Engine
 Fluid
SHELL Rotella T5 15W-40 (8 GAL)

COMPONENT CONDITION SUMMARY

No relevant graphs to display

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	NORMAL	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	▲ 3.6	4.1	---

Customer Id: PETABE
Sample No.: PE0002389
Lab Number: 06015689
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

01 Mar 2023 Diag: Jonathan Hester

NORMAL

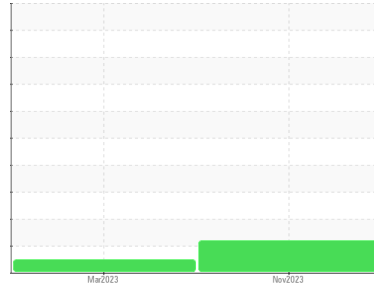


Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



Area
TRUCK - URBAN
 Machine Id
WESTERN STAR M140
 Component
Diesel Engine
 Fluid
SHELL Rotella T5 15W-40 (8 GAL)



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
 All component wear rates are normal.

Contamination
 There is no indication of any contamination in the oil.

Fluid Condition
 The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PE0002389	PE0001187	---
Sample Date	Client Info			09 Nov 2023	01 Mar 2023	---
Machine Age	hrs	Client Info		5930	4498	---
Oil Age	hrs	Client Info		804	4498	---
Oil Changed	Client Info			Changed	Changed	---
Sample Status				ABNORMAL	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	<1.0	---
Water	WC Method	>0.2		NEG	NEG	---
Glycol	WC Method			NEG	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	49	62	---
Chromium	ppm	ASTM D5185m	>20	2	2	---
Nickel	ppm	ASTM D5185m	>4	0	0	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m	>3	<1	<1	---
Aluminum	ppm	ASTM D5185m	>20	7	5	---
Lead	ppm	ASTM D5185m	>40	0	0	---
Copper	ppm	ASTM D5185m	>330	4	3	---
Tin	ppm	ASTM D5185m	>15	<1	1	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

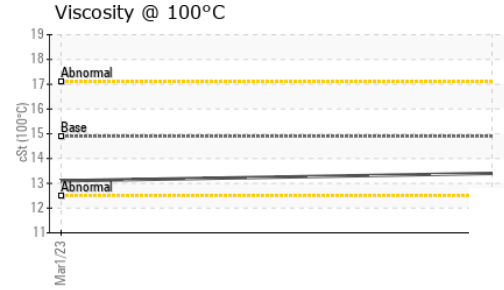
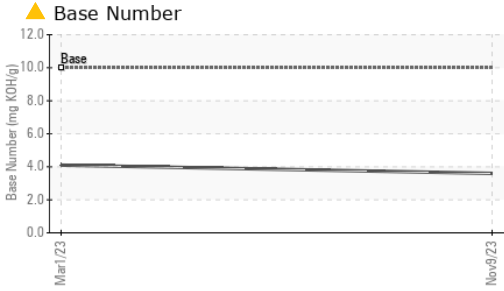
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		17	20	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		81	59	---
Manganese	ppm	ASTM D5185m		1	1	---
Magnesium	ppm	ASTM D5185m		39	138	---
Calcium	ppm	ASTM D5185m		2136	2001	---
Phosphorus	ppm	ASTM D5185m		893	870	---
Zinc	ppm	ASTM D5185m		1093	1096	---
Sulfur	ppm	ASTM D5185m		3399	3645	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	10	8	---
Sodium	ppm	ASTM D5185m		9	8	---
Potassium	ppm	ASTM D5185m	>20	14	7	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1	1.1	---
Nitration	Abs/cm	*ASTM D7624	>20	13.6	14.2	---
Sulfation	Abs.1mm	*ASTM D7415	>30	29.6	30.3	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs.1mm	*ASTM D7414	>25	24.9	25.1	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	▲ 3.6	4.1	---

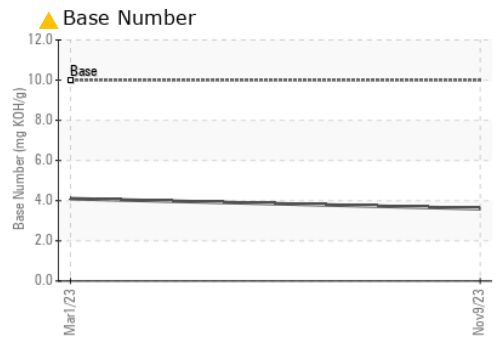
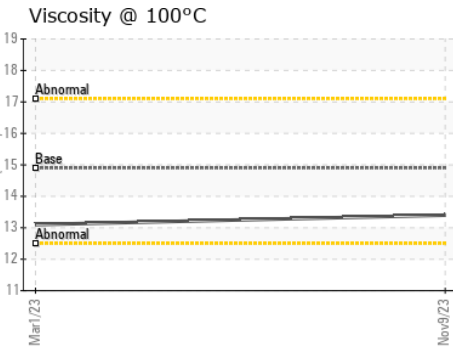
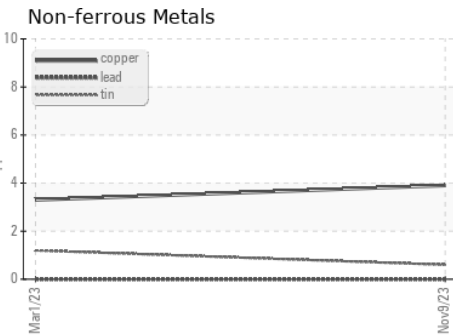
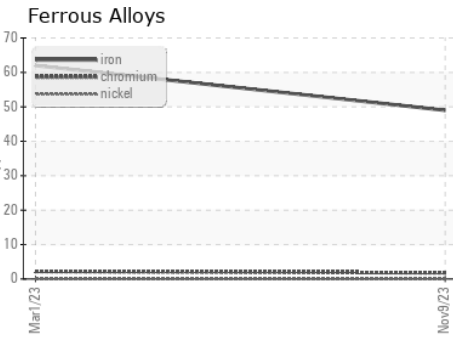
OIL ANALYSIS REPORT



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	14.9	13.4	13.1	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0002389 **Received** : 22 Nov 2023
Lab Number : **06015689** **Diagnosed** : 27 Nov 2023
Unique Number : 10754833 **Diagnostician** : Sean Felton
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

PetroCard - Aberdeen
 110 Commerce St
 Aberdeen, WA
 US 98520
 Contact: Sean McNealley
 smcnealley@petrocard.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)

T:
F: