



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR M146
Component
Diesel Engine
Fluid
SHELL Rotella T5 15W-40 (7 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0003280	PE0001184	---
Sample Date		Client Info		06 Mar 2024	21 Mar 2023	---
Machine Age	hrs	Client Info		3532	802	---
Oil Age	hrs	Client Info		417	802	---
Filter Age	hrs	Client Info		417	802	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	ATTENTION	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	11	67	---
Chromium	ppm	ASTM D5185m	>5	<1	2	---
Nickel	ppm	ASTM D5185m	>4	<1	<1	---
Titanium	ppm	ASTM D5185m	>2	<1	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>15	8	16	---
Lead	ppm	ASTM D5185m	>25	0	<1	---
Copper	ppm	ASTM D5185m	>100	1	14	---
Tin	ppm	ASTM D5185m	>4	<1	1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

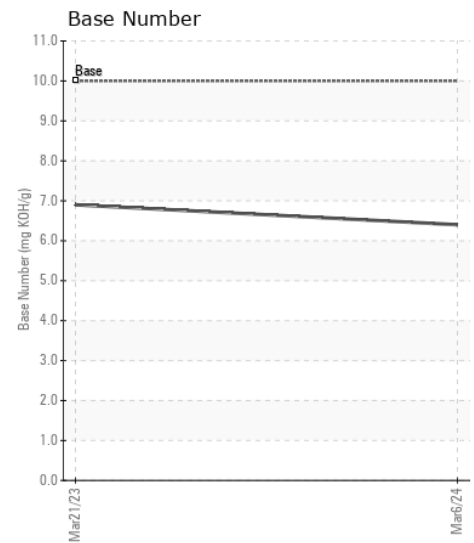
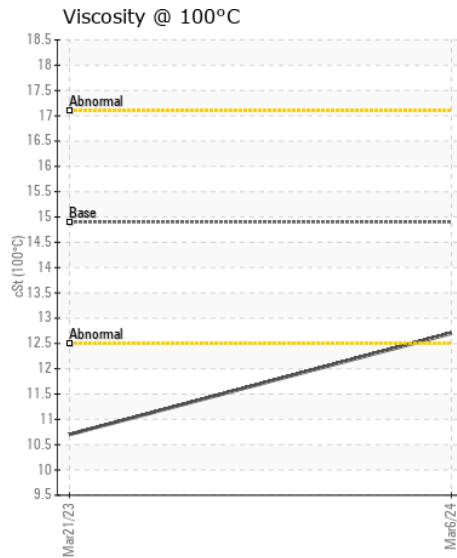
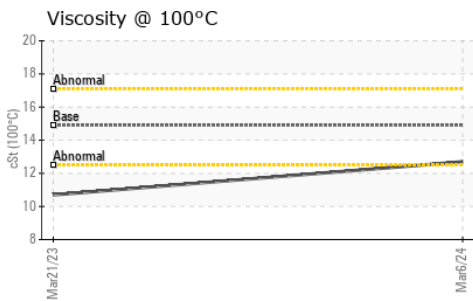
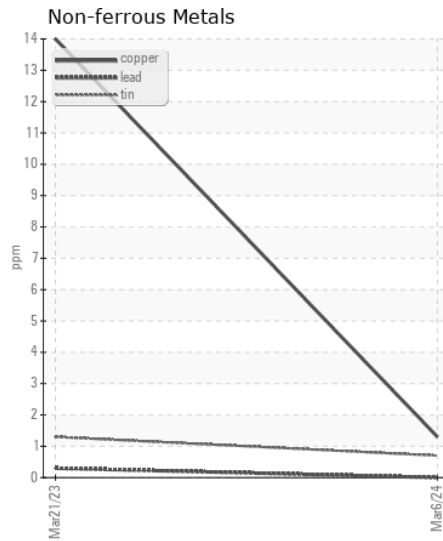
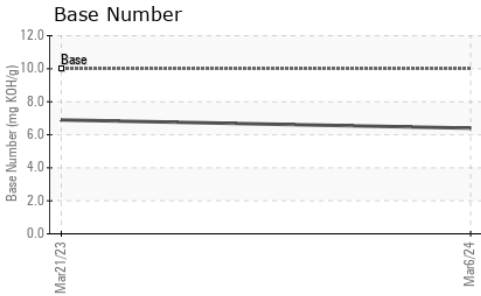
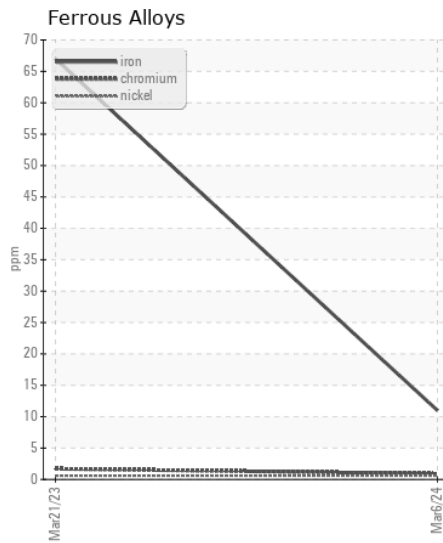
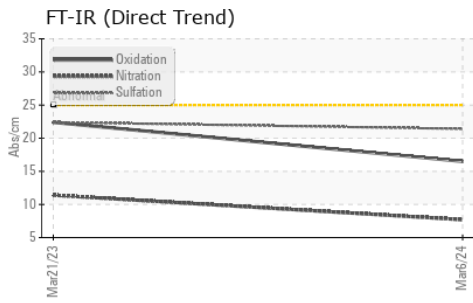
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	7	21	---
Potassium	ppm	ASTM D5185m	>20	10	41	---
Fuel		WC Method	>3.0	<1.0	2.8	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>6	0.2	0.5	---
Nitration	Abs/cm	*ASTM D7624	>20	7.7	11.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.4	22.4	---
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	---

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	4	---
Boron	ppm	ASTM D5185m		497	32	---
Barium	ppm	ASTM D5185m		<1	4	---
Molybdenum	ppm	ASTM D5185m		123	48	---
Manganese	ppm	ASTM D5185m		<1	8	---
Magnesium	ppm	ASTM D5185m		540	447	---
Calcium	ppm	ASTM D5185m		1930	1614	---
Phosphorus	ppm	ASTM D5185m		1458	724	---
Zinc	ppm	ASTM D5185m		1814	918	---
Sulfur	ppm	ASTM D5185m		4699	2303	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.5	22.4	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	6.4	6.9	---
Visc @ 100°C	cSt	ASTM D445	14.9	12.7	10.7	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003280 **Received** : 22 Apr 2024
Lab Number : 06156613 **Tested** : 23 Apr 2024
Unique Number : 10992036 **Diagnosed** : 24 Apr 2024 - Sean Felton
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, 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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