



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**WESTERN STAR Transport**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL Rotella T5 15W-40 (10 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PE0004130</b>	PE0001938	---
Sample Date		Client Info		<b>03 Jul 2024</b>	12 Oct 2023	---
Machine Age	hrs	Client Info		<b>1341</b>	0	---
Oil Age	hrs	Client Info		<b>562</b>	16714	---
Filter Age	hrs	Client Info		<b>4562</b>	16714	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>NORMAL</b>	ABNORMAL	---

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>165	<b>14</b>	55	---
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	2	---
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	1	---
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	---
Aluminum	ppm	ASTM D5185m	>20	<b>6</b>	▲ 44	---
Lead	ppm	ASTM D5185m	>150	<b>4</b>	4	---
Copper	ppm	ASTM D5185m	>90	<b>2</b>	30	---
Tin	ppm	ASTM D5185m	>5	<b>2</b>	4	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

## CONTAMINATION

There is no indication of any contamination in the oil.

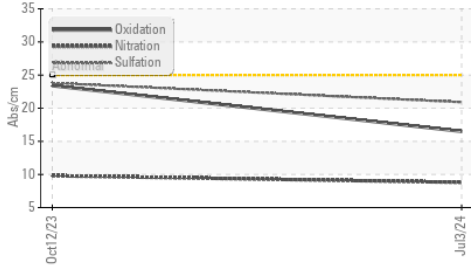
Silicon	ppm	ASTM D5185m	>35	<b>7</b>	▲ 46	---
Potassium	ppm	ASTM D5185m	>20	<b>11</b>	139	---
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	0.6	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>7.5	<b>0.5</b>	0.4	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.8</b>	9.8	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.9</b>	23.8	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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		<b>2</b>	6	---
Boron	ppm	ASTM D5185m		<b>7</b>	37	---
Barium	ppm	ASTM D5185m		<b>0</b>	4	---
Molybdenum	ppm	ASTM D5185m		<b>59</b>	47	---
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	6	---
Magnesium	ppm	ASTM D5185m		<b>858</b>	539	---
Calcium	ppm	ASTM D5185m		<b>1119</b>	1533	---
Phosphorus	ppm	ASTM D5185m		<b>981</b>	788	---
Zinc	ppm	ASTM D5185m		<b>1180</b>	922	---
Sulfur	ppm	ASTM D5185m		<b>2679</b>	2598	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.5</b>	23.4	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>7.9</b>	8.0	---
Visc @ 100°C	cSt	ASTM D445	14.9	<b>12.5</b>	● 10.2	---

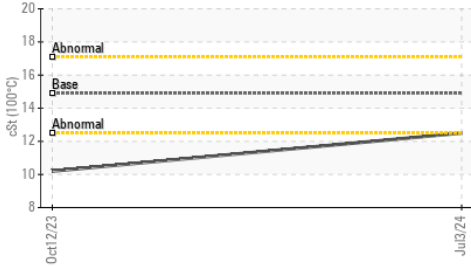
FT-IR (Direct Trend)



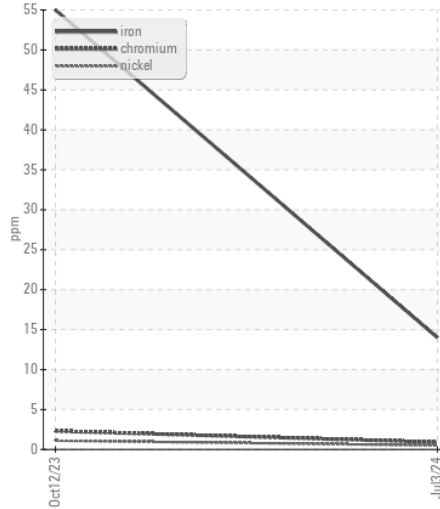
Base Number



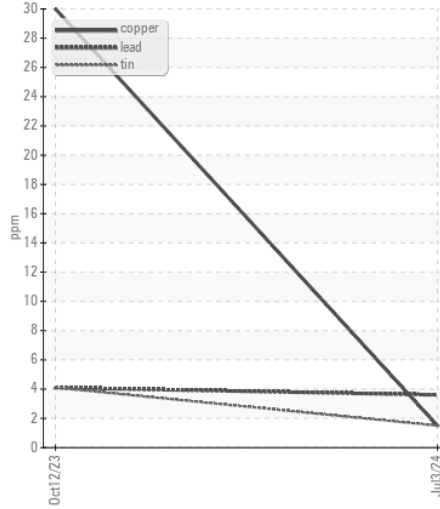
Viscosity @ 100°C



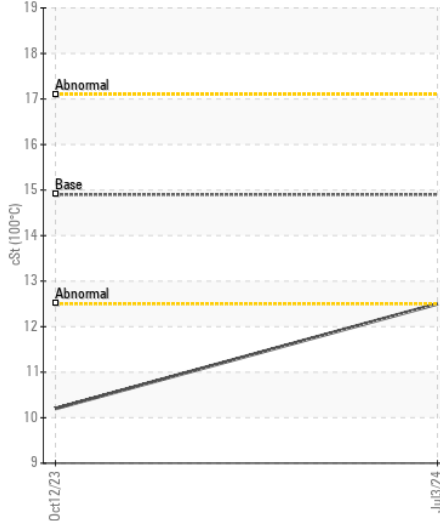
Ferrous Alloys



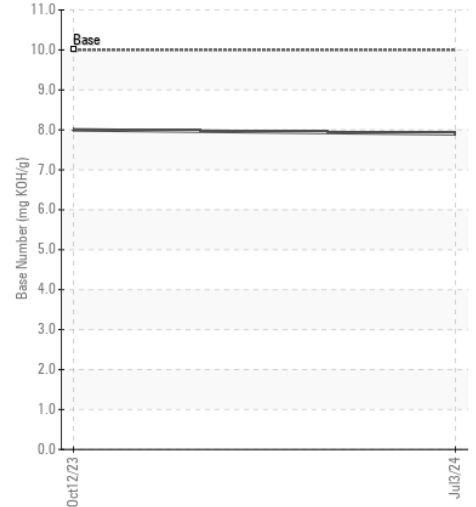
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0004130 **Received** : 16 Jul 2024  
**Lab Number** : 06238675 **Tested** : 17 Jul 2024  
**Unique Number** : 11127509 **Diagnosed** : 18 Jul 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)

PetroCard - Aberdeen

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

T:  
F: