



# OIL ANALYSIS REPORT

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

Area  
**TRUCK - URBAN**  
Machine Id  
**WESTERN STAR M129**  
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		<b>PE0004041</b>	PE0003278	PE0002375
Sample Date		Client Info		<b>07 Jun 2024</b>	14 Mar 2024	16 Nov 2023
Machine Age	hrs	Client Info		<b>26355</b>	25640	24610
Oil Age	hrs	Client Info		<b>715</b>	589	582
Filter Age	hrs	Client Info		<b>715</b>	589	582
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>8</b>	8	10
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	6	6
Lead	ppm	ASTM D5185m	>40	<b>0</b>	1	<1
Copper	ppm	ASTM D5185m	>330	<b>1</b>	2	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

There is no indication of any contamination in the oil.

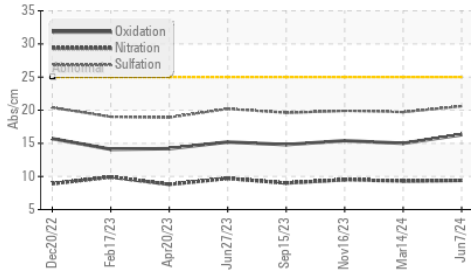
Silicon	ppm	ASTM D5185m	>25	<b>5</b>	6	7
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	4	5
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.5</b>	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.4</b>	9.3	9.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.6</b>	19.7	19.9
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

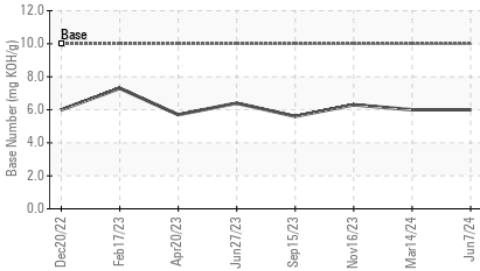
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	3	<1
Boron	ppm	ASTM D5185m		<b>42</b>	46	55
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>85</b>	90	125
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m		<b>26</b>	15	27
Calcium	ppm	ASTM D5185m		<b>2307</b>	2278	3214
Phosphorus	ppm	ASTM D5185m		<b>1067</b>	1148	1350
Zinc	ppm	ASTM D5185m		<b>1285</b>	1270	1739
Sulfur	ppm	ASTM D5185m		<b>4318</b>	4300	5522
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.3</b>	15.0	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>6.0</b>	6.0	6.3
Visc @ 100°C	cSt	ASTM D445	14.9	<b>15.1</b>	14.8	14.8

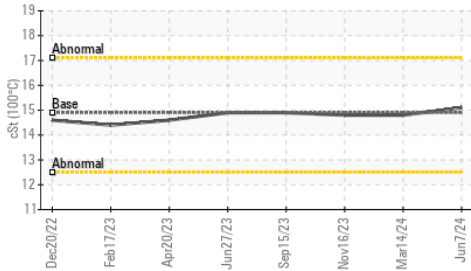
**FT-IR (Direct Trend)**



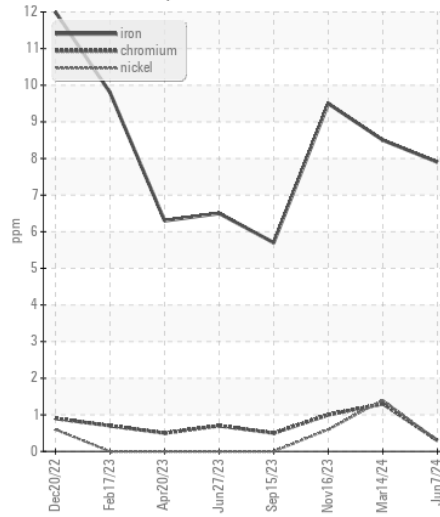
**Base Number**



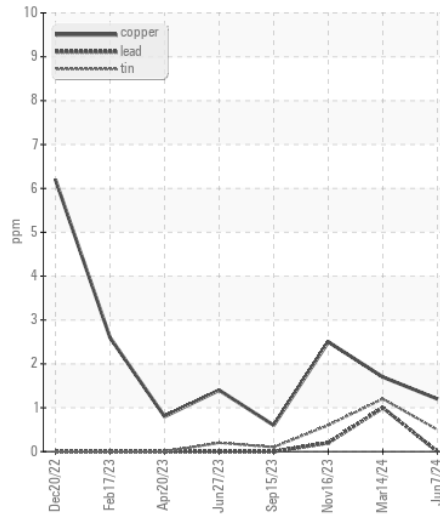
**Viscosity @ 100°C**



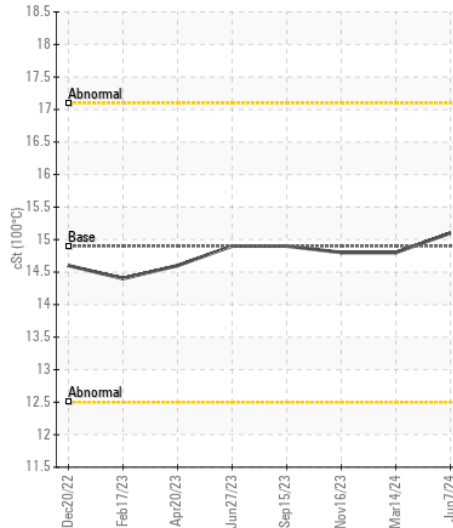
**Ferrous Alloys**



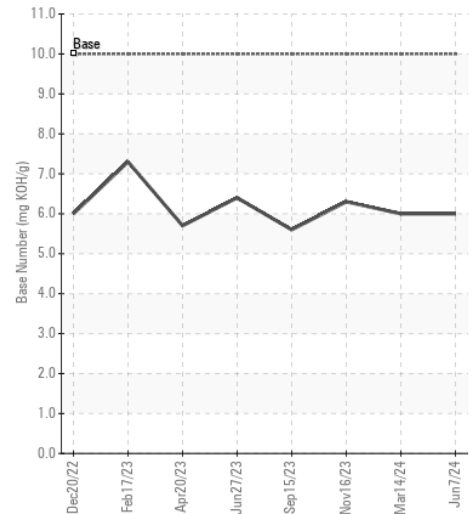
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0004041  
**Lab Number** : 06217593  
**Unique Number** : 11090457  
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

**Received** : 21 Jun 2024  
**Tested** : 25 Jun 2024  
**Diagnosed** : 25 Jun 2024 - Don Baldrige

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: