



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

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		PE0003278	PE0002375	PE0002384
Sample Date		Client Info		14 Mar 2024	16 Nov 2023	15 Sep 2023
Machine Age	hrs	Client Info		25640	24610	24028
Oil Age	hrs	Client Info		589	582	677
Filter Age	hrs	Client Info		589	582	677
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

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

CONTAMINATION

There is no indication of any contamination in the oil.

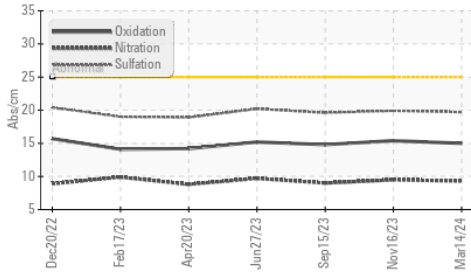
Silicon	ppm	ASTM D5185m	>25	6	7	5
Potassium	ppm	ASTM D5185m	>20	4	5	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.4	0.5
Nitration	Abs/cm	*ASTM D7624	>20	9.3	9.5	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.7	19.9	19.6
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

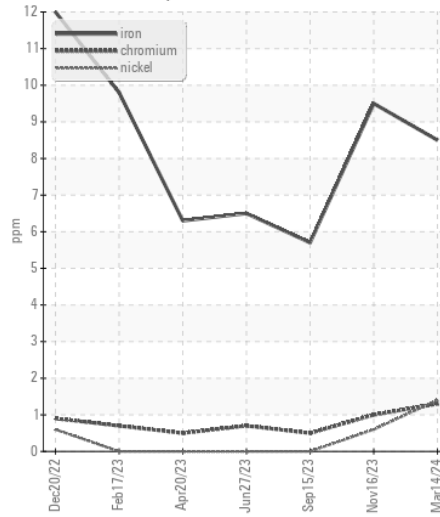
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		3	<1	2
Boron	ppm	ASTM D5185m		46	55	35
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		90	125	82
Manganese	ppm	ASTM D5185m		1	<1	0
Magnesium	ppm	ASTM D5185m		15	27	41
Calcium	ppm	ASTM D5185m		2278	3214	2037
Phosphorus	ppm	ASTM D5185m		1148	1350	977
Zinc	ppm	ASTM D5185m		1270	1739	1185
Sulfur	ppm	ASTM D5185m		4300	5522	3398
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	15.4	14.8
Base Number (BN)	mg KOH/g	ASTM D2896	10	6.0	6.3	5.6
Visc @ 100°C	cSt	ASTM D445	14.9	14.8	14.8	14.9

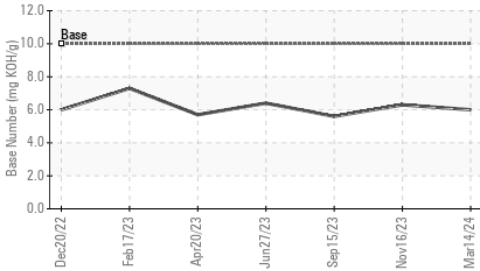
FT-IR (Direct Trend)



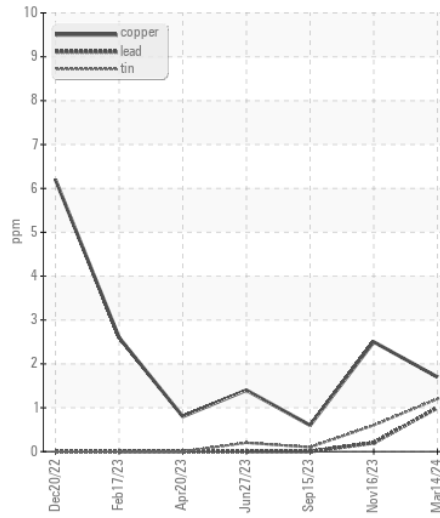
Ferrous Alloys



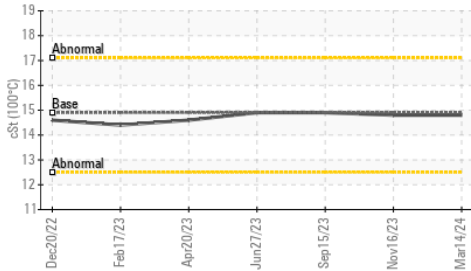
Base Number



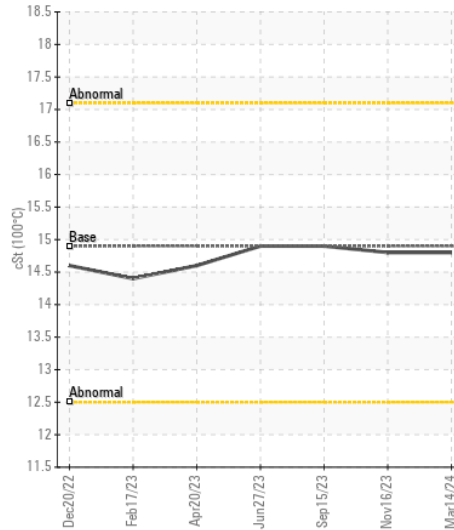
Non-ferrous Metals



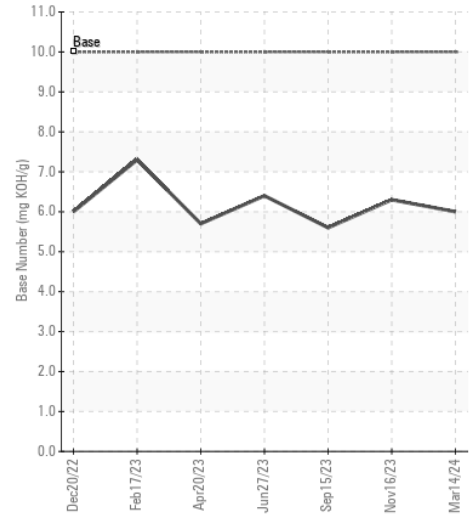
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003278
Lab Number : 06152520
Unique Number : 10982598
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

Received : 17 Apr 2024
Tested : 18 Apr 2024
Diagnosed : 22 Apr 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)

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