



# OIL ANALYSIS REPORT

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

Machine Id  
**54396**

Component  
**Diesel Engine**

Fluid  
**SHELL ROTELLA T 15W40 (--- QTS)**

## 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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0883248</b>	WC0796043	WC0722751
Sample Date		Client Info		<b>11 Jan 2024</b>	03 Aug 2023	28 Nov 2022
Machine Age	mls	Client Info		<b>309770</b>	280108	243075
Oil Age	mls	Client Info		<b>18000</b>	25000	0
Filter Age	mls	Client Info		<b>18000</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	NORMAL

## WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>24</b>	19	10
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	3	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>6</b>	6	4
Lead	ppm	ASTM D5185m	>40	<b>4</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>▲ 330</b>	<b>▲ 260</b>	6
Tin	ppm	ASTM D5185m	>15	<b>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

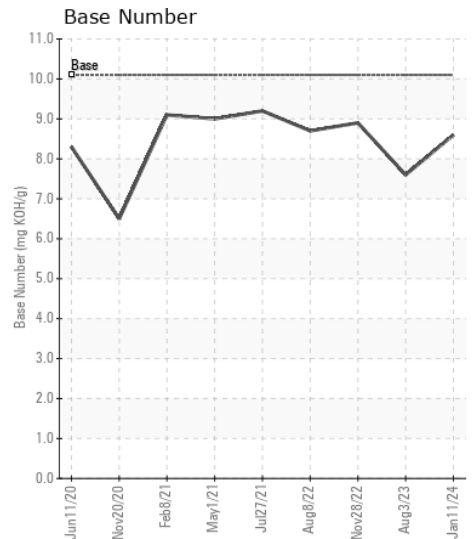
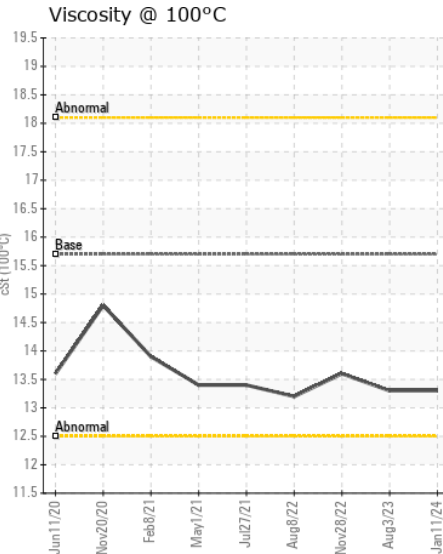
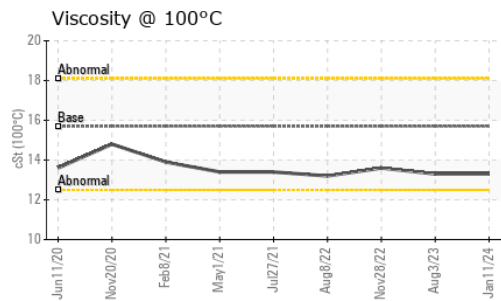
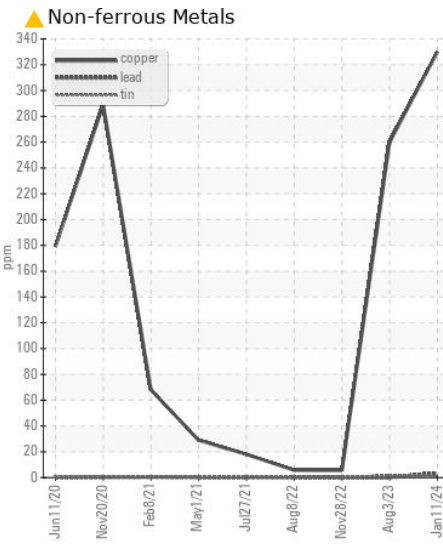
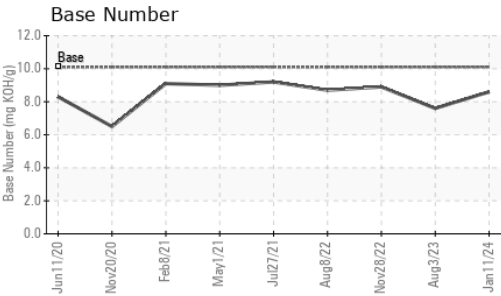
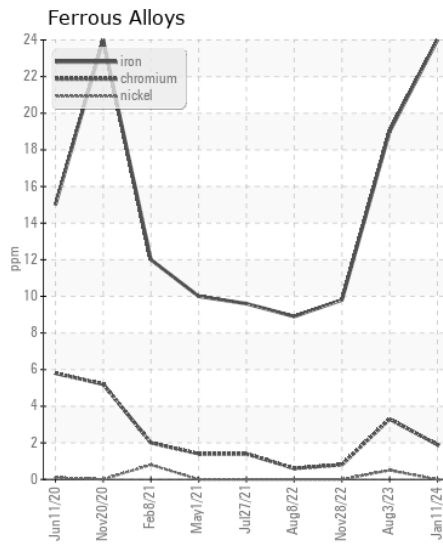
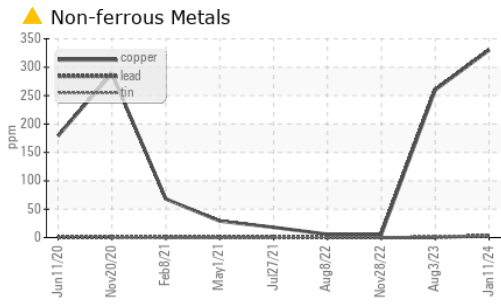
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	28	2
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>0.3</b>	0.5	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.1</b>	8.5	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.4</b>	20.0	22.8
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 acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	7	1
Boron	ppm	ASTM D5185m	316	<b>37</b>	3	7
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>66</b>	63	69
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	2	<1
Magnesium	ppm	ASTM D5185m	24	<b>874</b>	923	957
Calcium	ppm	ASTM D5185m	2292	<b>1218</b>	1102	1121
Phosphorus	ppm	ASTM D5185m	1064	<b>1018</b>	944	1005
Zinc	ppm	ASTM D5185m	1160	<b>1277</b>	1159	1257
Sulfur	ppm	ASTM D5185m	4996	<b>3078</b>	2730	3523
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.9</b>	16.0	17.9
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>8.6</b>	7.6	8.9
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.3</b>	13.3	13.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0883248 **Received** : 30 Jan 2024  
**Lab Number** : 06074568 **Diagnosed** : 01 Feb 2024  
**Unique Number** : 10856659 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET

**SALEM NATIONALEASE CORPORATION**  
 198 PARK PLAZA DRIVE  
 WINSTON SALEM, NC  
 US 27105  
 Contact: Audrey Hopkins  
 Audrey.Hopkins@salemcorp.com  
 T: (336)767-9642  
 F: x:

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)