



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



Machine Id  
**5032**  
Component  
**Diesel Engine**  
Fluid  
**SHELL ROTELLA T 15W40 (--- QTS)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0195271</b>	JR0195232	JR0169781
Sample Date		Client Info		<b>06 Feb 2024</b>	13 Nov 2023	17 Jul 2023
Machine Age	hrs	Client Info		<b>8755</b>	8351	7708
Oil Age	hrs	Client Info		<b>500</b>	500	2000
Filter Age	hrs	Client Info		<b>500</b>	500	2000
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>18</b>	14	11
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>12</b>	7	8
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>3</b>	3	2
Tin	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

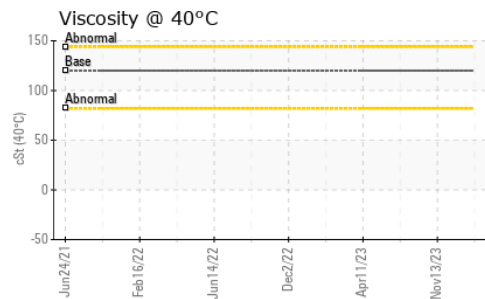
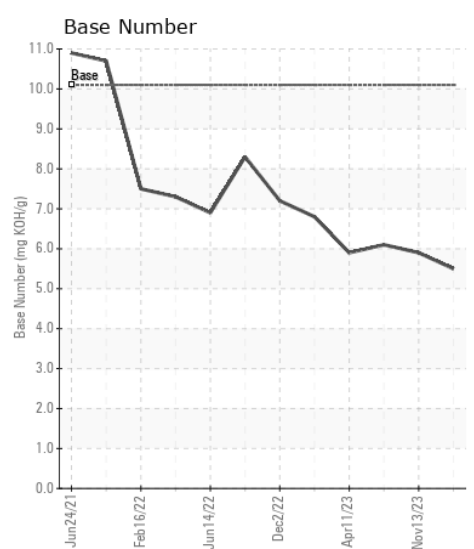
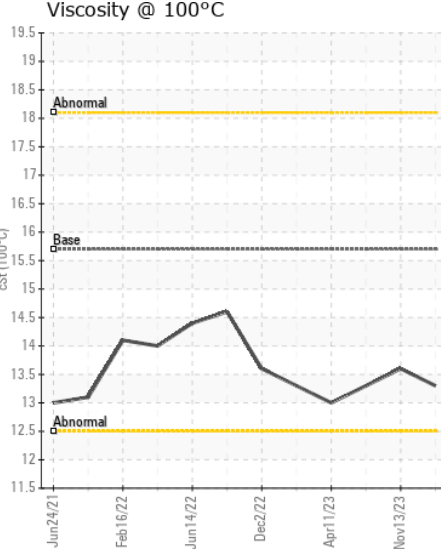
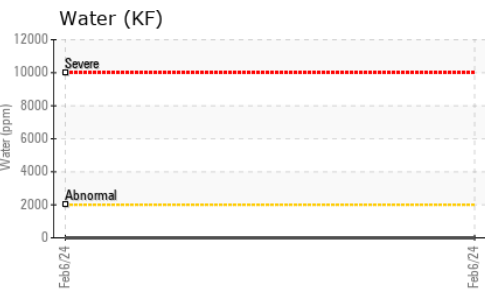
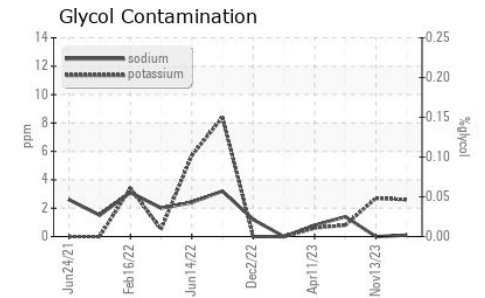
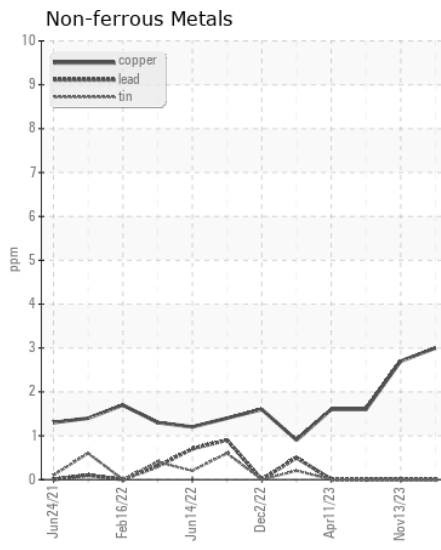
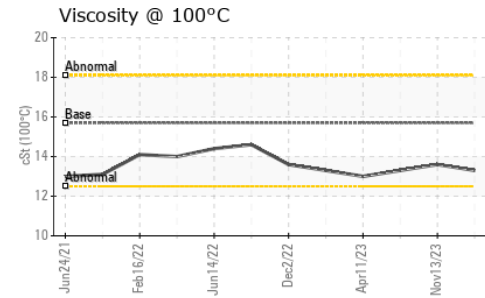
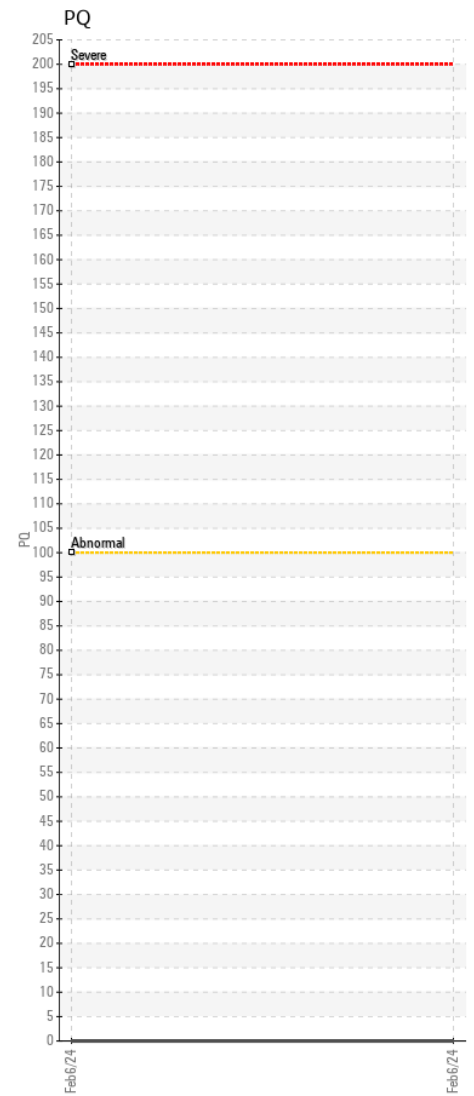
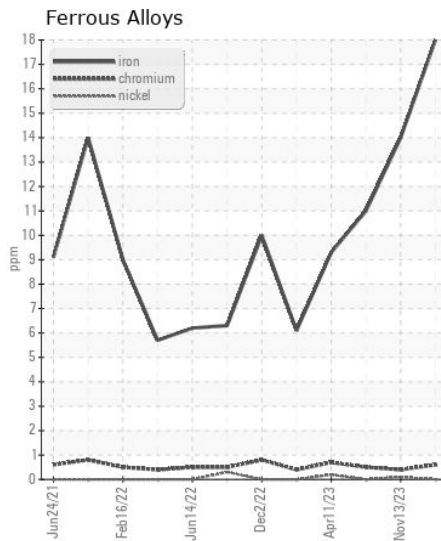
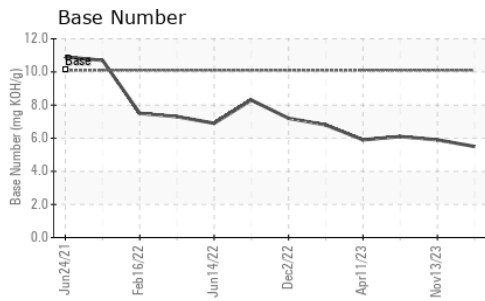
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	3	<1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water	%	ASTM D6304	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.8</b>	8.1	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.6</b>	20.6	19.6
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>0.2%</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>&lt;1</b>	0	1
Boron	ppm	ASTM D5185m	316	<b>2</b>	1	7
Barium	ppm	ASTM D5185m	0.0	<b>10</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>2</b>	3	3
Manganese	ppm	ASTM D5185m		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m	24	<b>38</b>	43	40
Calcium	ppm	ASTM D5185m	2292	<b>2096</b>	2321	2455
Phosphorus	ppm	ASTM D5185m	1064	<b>846</b>	906	921
Zinc	ppm	ASTM D5185m	1160	<b>990</b>	1083	1164
Sulfur	ppm	ASTM D5185m	4996	<b>3796</b>	3625	4619
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.2</b>	12.2	11.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>5.5</b>	5.9	6.1
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.3</b>	13.6	13.3



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0195271 **Received** : 14 Feb 2024  
**Lab Number** : 06089678 **Tested** : 19 Feb 2024  
**Unique Number** : 10877123 **Diagnosed** : 19 Feb 2024 - Jonathan Hester  
**Test Package** : CONST ( Additional Tests: Glycol, KF, KV40, PQ, 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)

**PATRIOT DEVELOPMENT CORP**  
 22721 LADBROOK DRIVE STE 120  
 STERLING, VA  
 US 20166  
 Contact: ROBERT MOSS  
 robert.moss@patriotdev.net  
 T:  
 F: