



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



Machine Id  
**5031**  
Component  
**Diesel Engine**  
Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0195136</b>	JR0184970	JR0169419
Sample Date		Client Info		<b>09 Jan 2024</b>	20 Sep 2023	01 Aug 2023
Machine Age	hrs	Client Info		<b>9834</b>	9221	8901
Oil Age	hrs	Client Info		<b>500</b>	250	1000
Filter Age	hrs	Client Info		<b>500</b>	250	1000
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>16</b>	17	27
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>8</b>	10	9
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	0
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>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

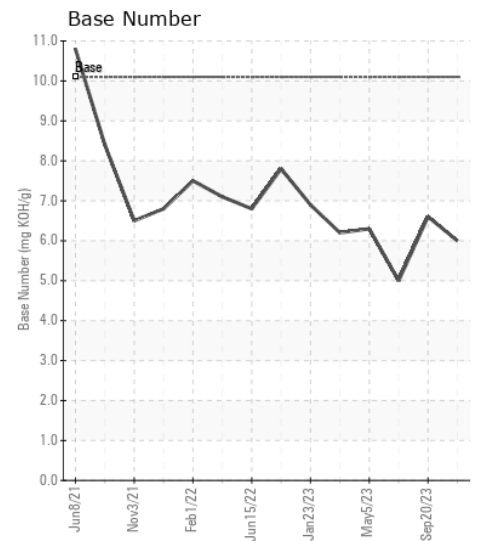
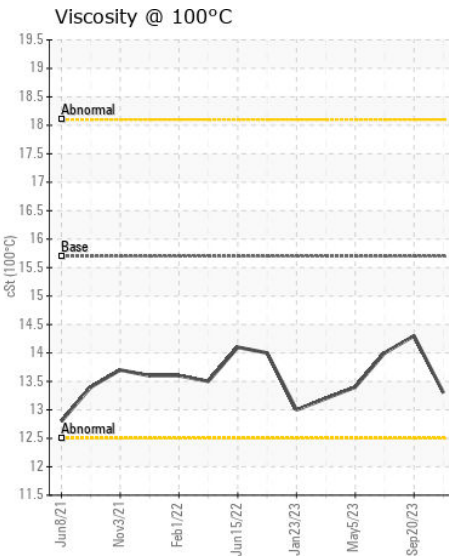
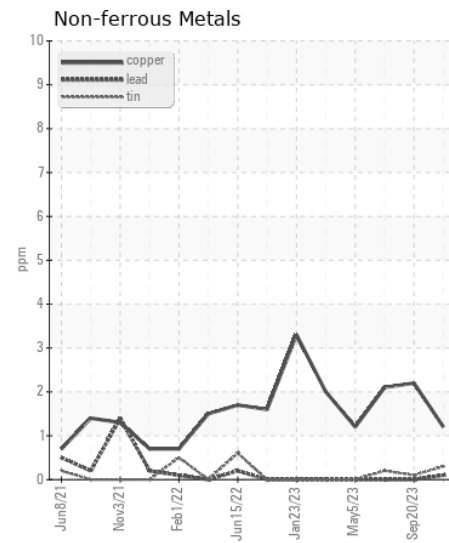
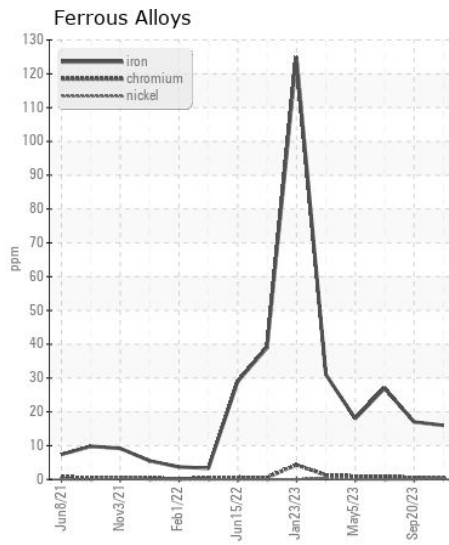
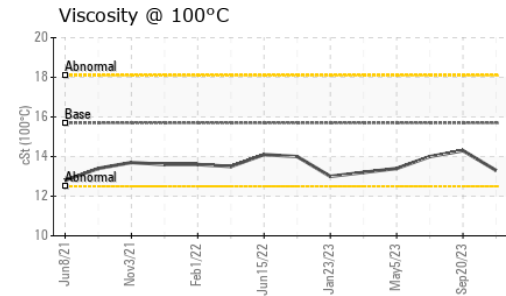
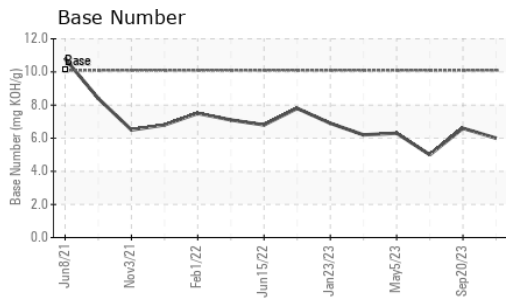
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>4</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	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>0.7</b>	1.3	0.9
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.5</b>	8.9	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.3</b>	22.2	25.0
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>1</b>	1	1
Boron	ppm	ASTM D5185m	316	<b>15</b>	<1	<1
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>2</b>	4	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>72</b>	45	46
Calcium	ppm	ASTM D5185m	2292	<b>2170</b>	2395	2719
Phosphorus	ppm	ASTM D5185m	1064	<b>963</b>	891	1027
Zinc	ppm	ASTM D5185m	1160	<b>1121</b>	1127	1325
Sulfur	ppm	ASTM D5185m	4996	<b>3595</b>	4277	5060
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.2</b>	12.7	15.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>6.0</b>	6.6	5.0
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.3</b>	14.3	14.0



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0195136 **Received** : 17 Jan 2024  
**Lab Number** : 06063322 **Diagnosed** : 19 Jan 2024  
**Unique Number** : 10834704 **Diagnostician** : Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

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

Certificate L2367  
 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)