



Machine Id  
**4032**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

### RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0210382</b>	JR0210676	JR0169426
Sample Date		Client Info		<b>02 Jul 2024</b>	03 Apr 2024	31 Jul 2023
Machine Age	hrs	Client Info		<b>6924</b>	6365	5056
Oil Age	hrs	Client Info		<b>2000</b>	500	1000
Filter Age	hrs	Client Info		<b>2000</b>	500	1000
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	SEVERE	ATTENTION

### WEAR

Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>51	<b>33</b>	▲ 85	21
Chromium	ppm	ASTM D5185m	>11	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>3</b>	3	2
Lead	ppm	ASTM D5185m	>26	▲ <b>39</b>	▲ 179	14
Copper	ppm	ASTM D5185m	>26	<b>17</b>	▲ 25	10
Tin	ppm	ASTM D5185m	>4	<b>2</b>	▲ 4	2
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

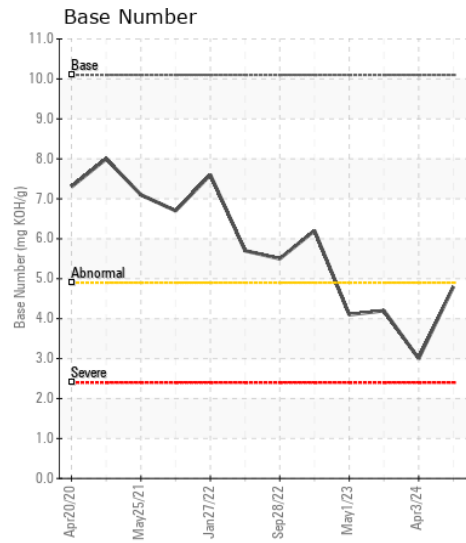
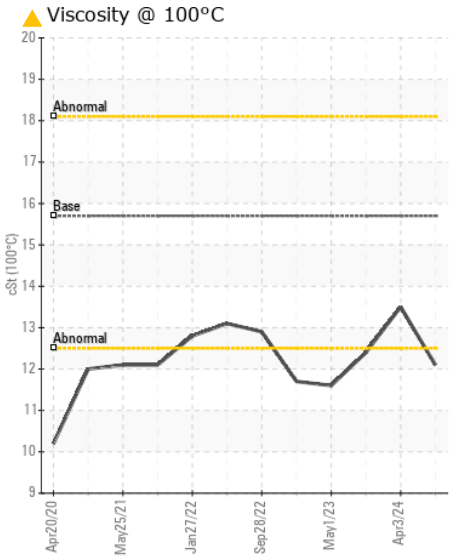
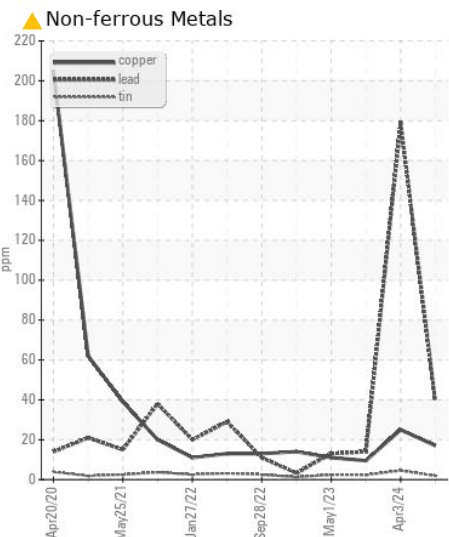
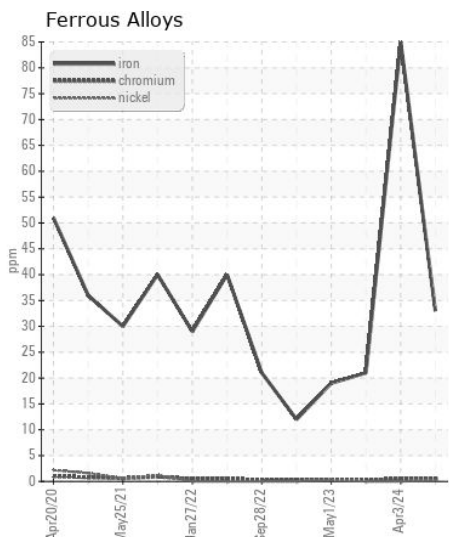
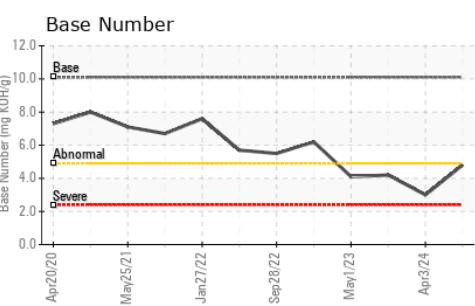
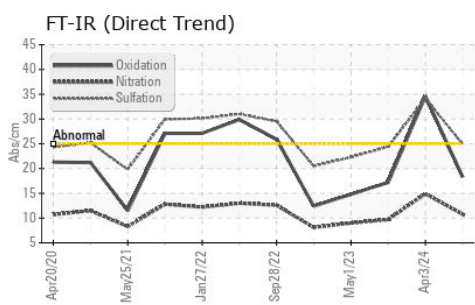
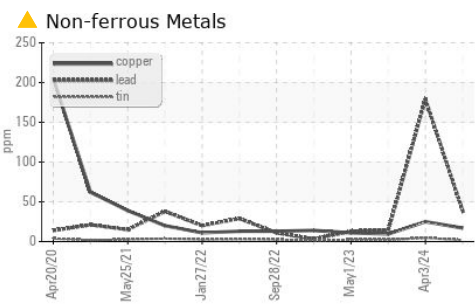
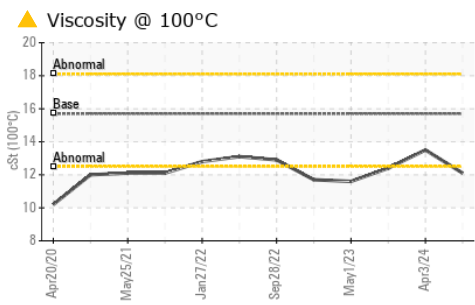
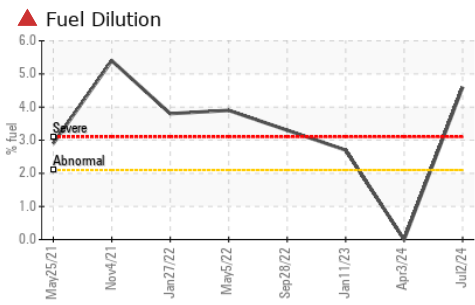
There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>22	<b>10</b>	12	6
Potassium	ppm	ASTM D5185m	>20	<b>31</b>	▲ 43	3
Fuel	%	ASTM D3524	>2.1	▲ <b>4.6</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	0.0	NEG
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.8</b>	14.9	9.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.9</b>	34.2	24.4
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	>0.21	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>31	<b>21</b>	▲ 41	4
Boron	ppm	ASTM D5185m	316	<b>19</b>	18	<1
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>19</b>	16	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m	24	<b>105</b>	99	53
Calcium	ppm	ASTM D5185m	2292	<b>2575</b>	2566	2584
Phosphorus	ppm	ASTM D5185m	1064	<b>992</b>	1017	997
Zinc	ppm	ASTM D5185m	1160	<b>1200</b>	1233	1263
Sulfur	ppm	ASTM D5185m	4996	<b>4339</b>	3886	4844
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.3</b>	34.6	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>4.8</b>	▲ 3.0	4.2
Visc @ 100°C	cSt	ASTM D445	15.7	▲ <b>12.1</b>	13.5	● 12.4



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0210382 **Received** : 18 Jul 2024  
**Lab Number** : 06240152 **Tested** : 22 Jul 2024  
**Unique Number** : 11128986 **Diagnosed** : 22 Jul 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: FuelDilution, PercentFuel, TBN )

**PATRIOT DEVELOPMENT CORP**  
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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)