



# WEAR CHECK

## OIL ANALYSIS REPORT

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

Machine Id  
**AL-290**  
Component  
**Diesel Engine**  
Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

### RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0011692</b>	KL0007298	KL0007305
Sample Date		Client Info		<b>13 Apr 2024</b>	06 Jan 2024	13 Sep 2023
Machine Age	mls	Client Info		<b>254581</b>	242310	228429
Oil Age	mls	Client Info		<b>26152</b>	13881	32893
Filter Age	mls	Client Info		<b>26152</b>	13881	32893
Oil Changed		Client Info		<b>N/A</b>	Not Changd	Changed
Filter Changed		Client Info		<b>N/A</b>	Not Changd	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

### WEAR

Iron ppm levels are abnormal. Aluminum ppm levels are noted. Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>100	<b>▲ 261</b>	11	49
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	2
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>● 11</b>	3	0
Lead	ppm	ASTM D5185m	>40	<b>4</b>	8	14
Copper	ppm	ASTM D5185m	>330	<b>1</b>	<1	6
Tin	ppm	ASTM D5185m	>15	<b>1</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

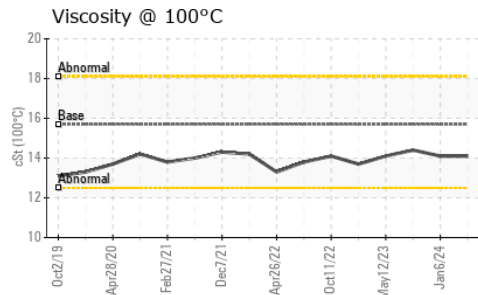
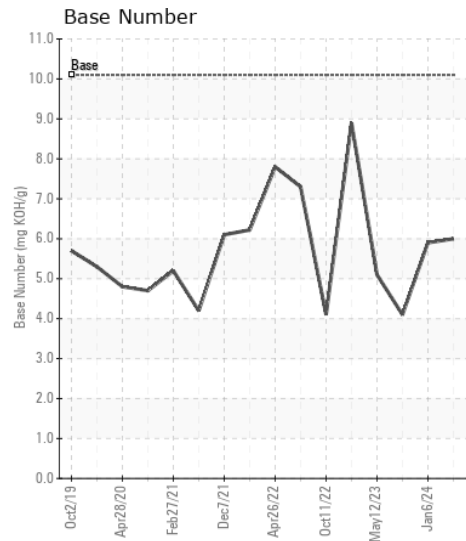
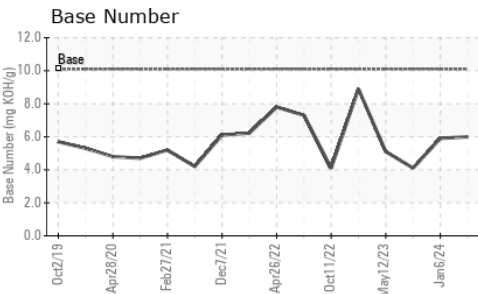
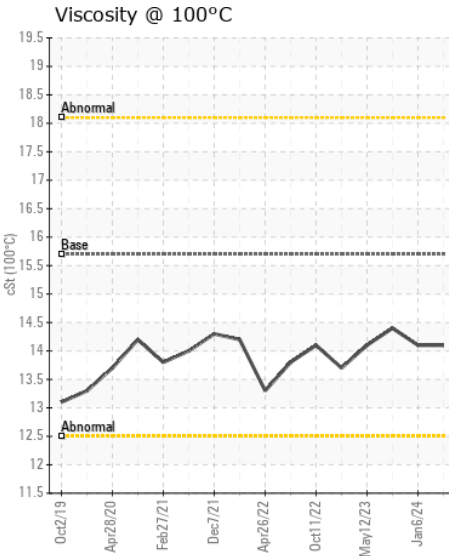
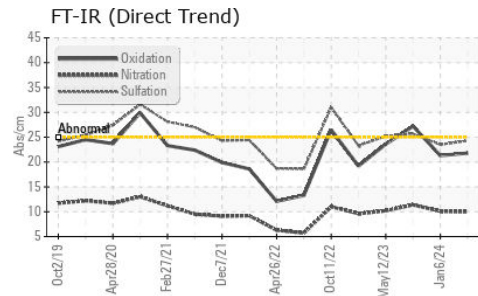
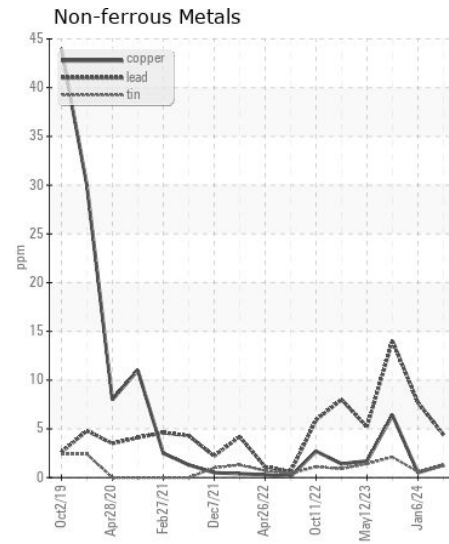
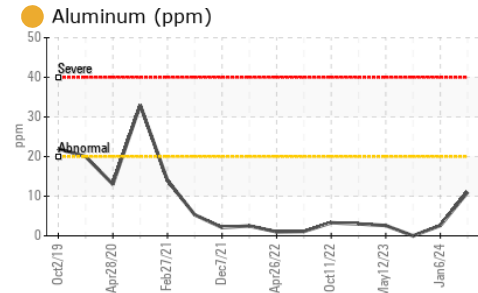
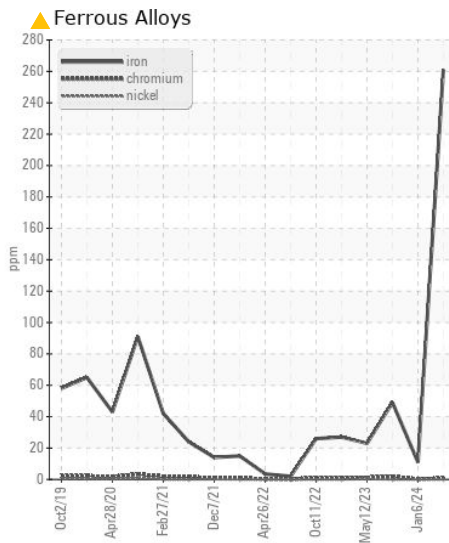
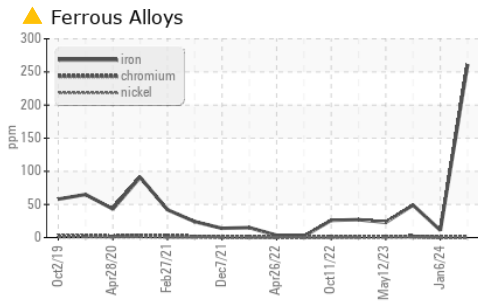
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>18</b>	5	9
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	<1	23
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>	0.3	0.6
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.0</b>	10.1	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.3</b>	23.5	25.7
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.

Sodium	ppm	ASTM D5185m		<b>5</b>	2	26
Boron	ppm	ASTM D5185m	316	<b>32</b>	29	37
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>81</b>	62	208
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m	24	<b>518</b>	545	857
Calcium	ppm	ASTM D5185m	2292	<b>1718</b>	1605	1615
Phosphorus	ppm	ASTM D5185m	1064	<b>1045</b>	1054	1240
Zinc	ppm	ASTM D5185m	1160	<b>1202</b>	1280	1402
Sulfur	ppm	ASTM D5185m	4996	<b>3296</b>	2796	3520
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.8</b>	21.3	27.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>6.0</b>	5.9	4.1
Visc @ 100°C	cSt	ASTM D445	15.7	<b>14.1</b>	14.1	14.4



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0011692  
**Lab Number** : 06153906  
**Unique Number** : 10989329  
**Test Package** : FLEET  
**Received** : 19 Apr 2024  
**Tested** : 23 Apr 2024  
**Diagnosed** : 23 Apr 2024 - Angela Borella

**FTL LTD**  
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 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)