



# OIL ANALYSIS REPORT

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

Area  
**Store 9 - Marietta**

Machine Id  
**1064**

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>LEC0050623</b>	LEC0049212	LEC0046475
Sample Date		Client Info		<b>14 May 2024</b>	29 Mar 2024	14 Jan 2024
Machine Age	hrs	Client Info		<b>31566</b>	31107	30424
Oil Age	hrs	Client Info		<b>400</b>	400	400
Filter Age	hrs	Client Info		<b>400</b>	400	400
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>19</b>	29	27
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	2	1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	1
Titanium	ppm	ASTM D5185m		<b>2</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>1</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	4	3
Lead	ppm	ASTM D5185m	>40	<b>14</b>	▲ 69	5
Copper	ppm	ASTM D5185m	>330	<b>2</b>	2	2
Tin	ppm	ASTM D5185m	>15	<b>2</b>	4	3
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

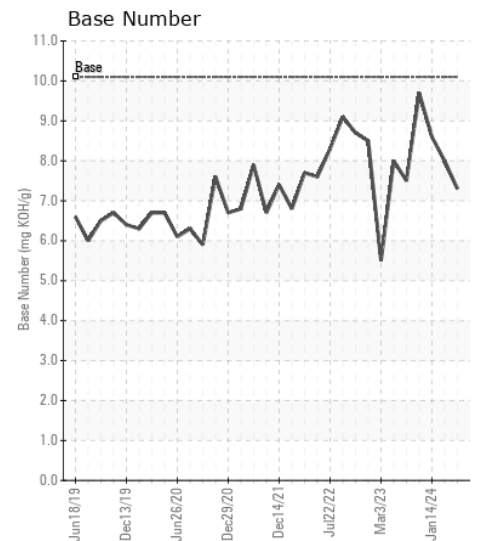
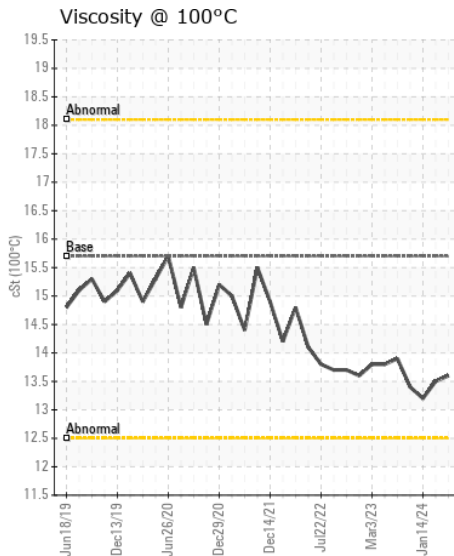
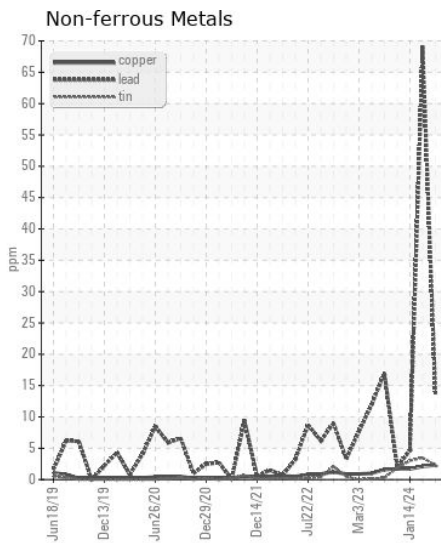
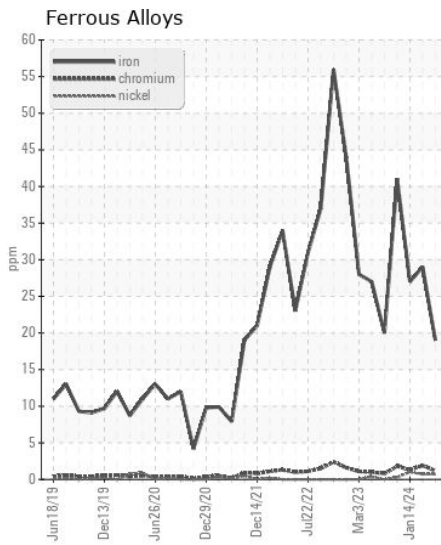
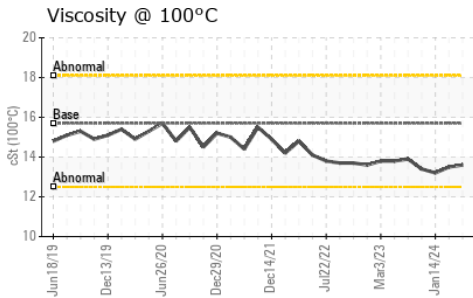
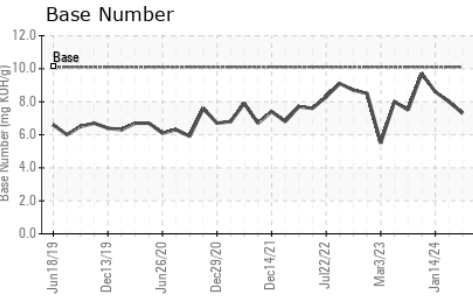
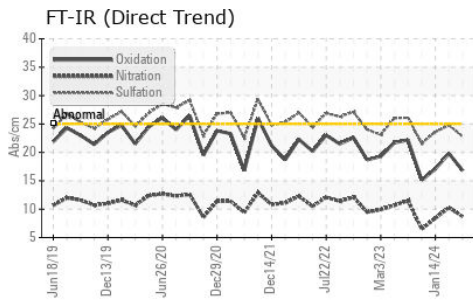
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	<b>9</b>	14	14
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	4	4
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>0.6</b>	0.6	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.7</b>	10.3	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.8</b>	24.8	23.6
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>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	0
Boron	ppm	ASTM D5185m	316	<b>322</b>	275	276
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	<1	2
Molybdenum	ppm	ASTM D5185m	1.2	<b>96</b>	140	125
Manganese	ppm	ASTM D5185m		<b>1</b>	2	2
Magnesium	ppm	ASTM D5185m	24	<b>484</b>	715	650
Calcium	ppm	ASTM D5185m	2292	<b>1467</b>	1646	1492
Phosphorus	ppm	ASTM D5185m	1064	<b>1002</b>	760	734
Zinc	ppm	ASTM D5185m	1160	<b>1157</b>	917	874
Sulfur	ppm	ASTM D5185m	4996	<b>3745</b>	2751	2735
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.8</b>	19.8	17.1
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>7.3</b>	8.0	8.6
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.6</b>	13.5	13.2



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0050623  
**Lab Number** : 06193631  
**Unique Number** : 11050383  
**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 29 May 2024  
**Tested** : 30 May 2024  
**Diagnosed** : 30 May 2024 - Sean Felton

**HALL DRILLING LLC**  
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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)