



# OIL ANALYSIS REPORT

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

Area  
**Store 9 - Marietta**

Machine Id  
**1107**

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>LEC0050212</b>	LEC0047238	LEC0047084
Sample Date		Client Info		<b>09 Jun 2024</b>	23 Apr 2024	04 Mar 2024
Machine Age	hrs	Client Info		<b>8986</b>	8572	8151
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>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>17</b>	13	15
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>2</b>	2	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	4	7
Lead	ppm	ASTM D5185m	>40	<b>2</b>	2	5
Copper	ppm	ASTM D5185m	>330	<b>1</b>	<1	0
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	1
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

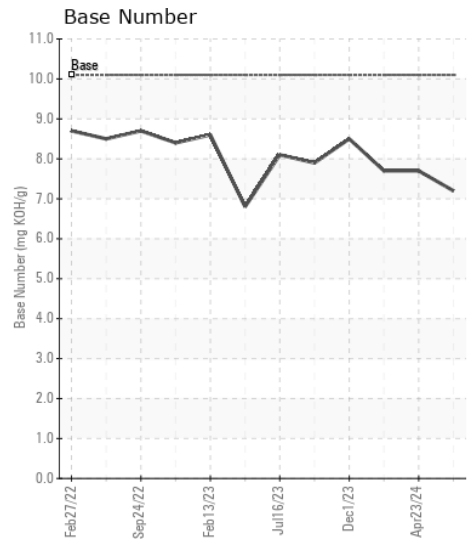
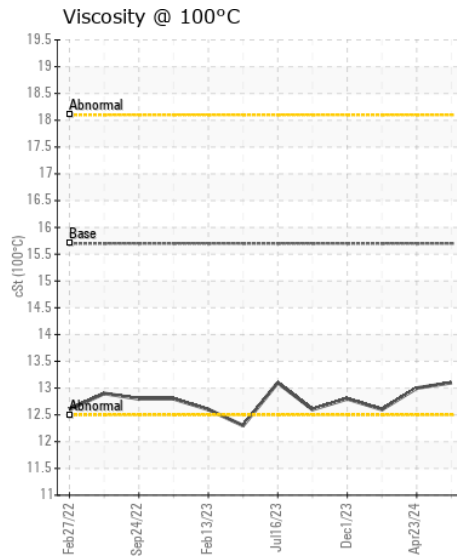
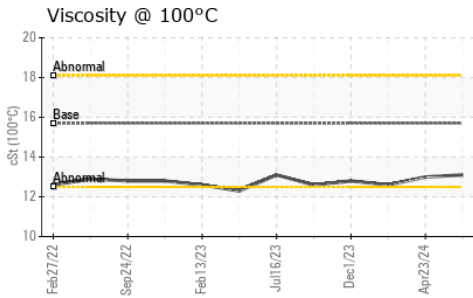
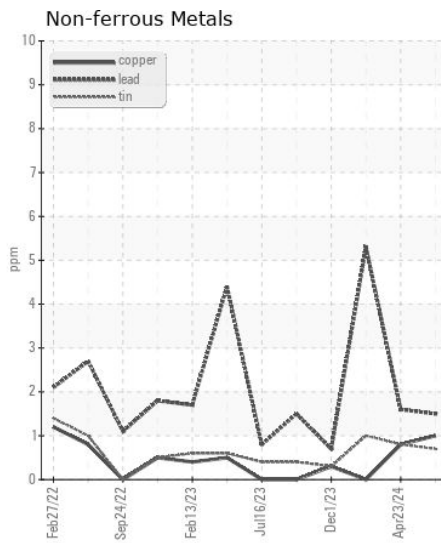
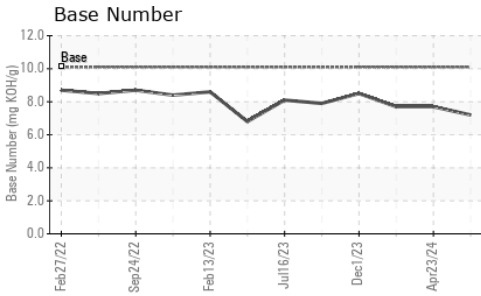
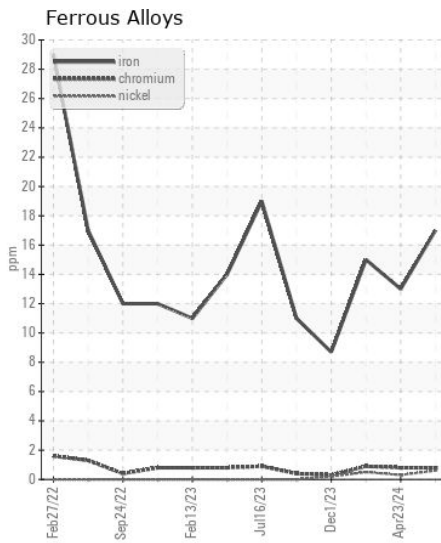
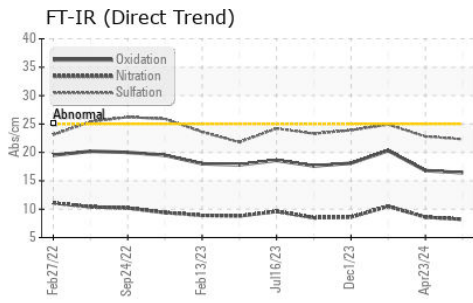
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	<b>5</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>7</b>	4	5
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>0.4</b>	0.4	0.6
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.2</b>	8.6	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.3</b>	22.8	24.9
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>&lt;1</b>	1	2
Boron	ppm	ASTM D5185m	316	<b>296</b>	360	224
Barium	ppm	ASTM D5185m	0.0	<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>88</b>	98	129
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>432</b>	520	679
Calcium	ppm	ASTM D5185m	2292	<b>1389</b>	1411	1515
Phosphorus	ppm	ASTM D5185m	1064	<b>850</b>	864	722
Zinc	ppm	ASTM D5185m	1160	<b>1137</b>	1014	896
Sulfur	ppm	ASTM D5185m	4996	<b>2888</b>	3107	2481
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.4</b>	16.8	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>7.2</b>	7.7	7.7
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.1</b>	13.0	12.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0050212 **Received** : 25 Jun 2024  
**Lab Number** : 06219523 **Tested** : 26 Jun 2024  
**Unique Number** : 11097720 **Diagnosed** : 26 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**HALL DRILLING LLC**  
 PO BOX 249  
 ELLENBORO, WV  
 US 26346

Contact: CHRIS PETROVICH  
 chrispetrovich@halldrilling.com  
 T: (304)869-3404  
 F: (304)869-3408

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)