



# OIL ANALYSIS REPORT

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

Area  
**Store 9 - Marietta**

Machine Id  
**PETERBILT 90**

Component  
**Diesel Engine**

Fluid  
**SHELL ROTELLA T 15W40 (10 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LEC0051476</b>	LEC0048058	LEC0044839
Sample Date		Client Info		<b>09 Jul 2024</b>	31 Jan 2024	28 Nov 2023
Machine Age	hrs	Client Info		<b>50363</b>	49506	49097
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>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>110	<b>8</b>	10	10
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>2</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>4</b>	4	3
Lead	ppm	ASTM D5185m	>45	<b>2</b>	5	11
Copper	ppm	ASTM D5185m	>85	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185m	>4	<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

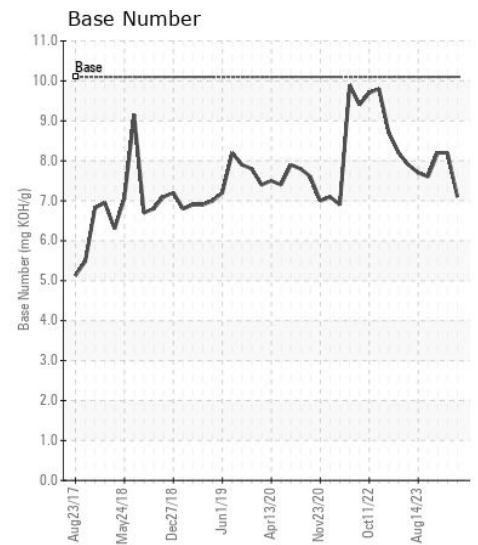
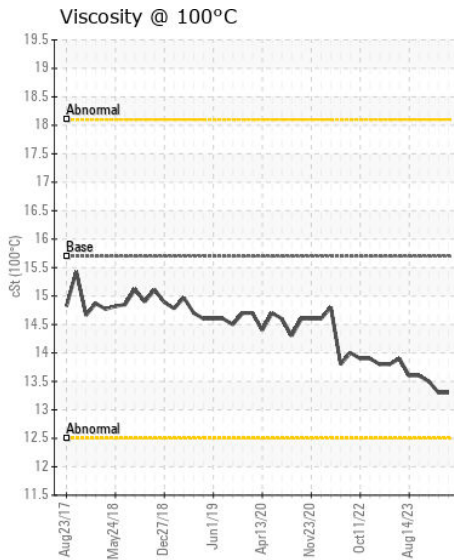
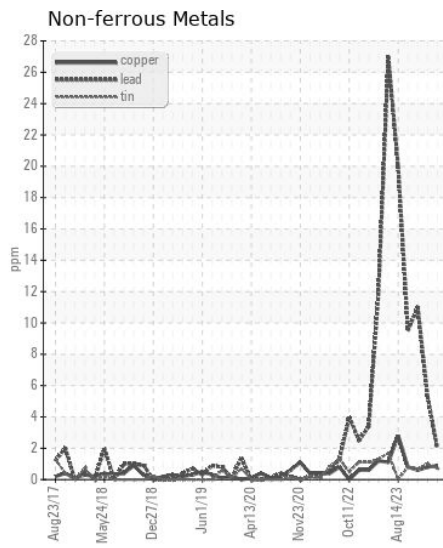
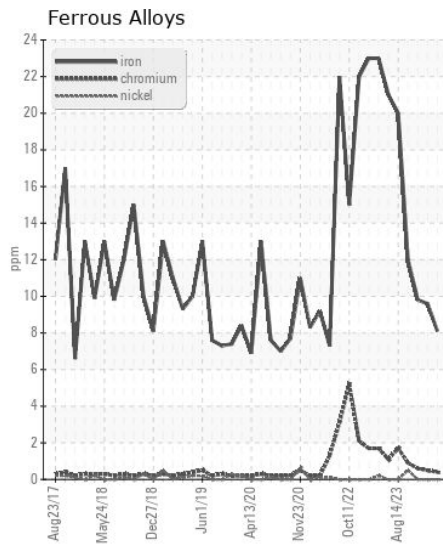
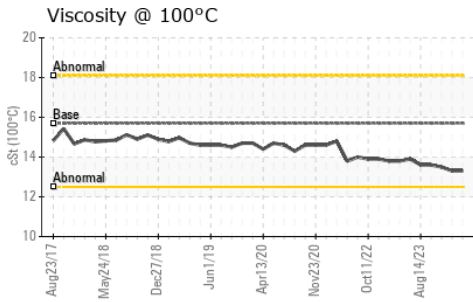
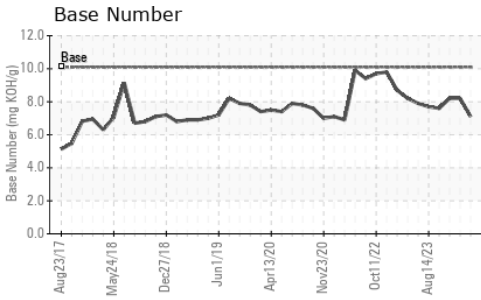
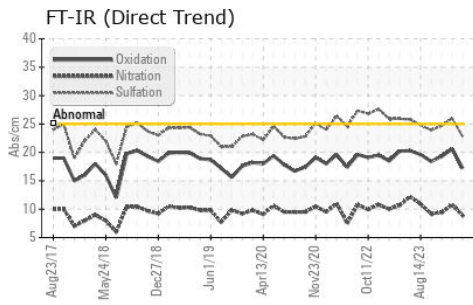
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	<b>4</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	6	6
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>	0.9	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.9</b>	10.8	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.8</b>	26.0	24.7
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. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>0</b>	4	6
Boron	ppm	ASTM D5185m	316	<b>292</b>	264	257
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>88</b>	136	129
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>452</b>	699	699
Calcium	ppm	ASTM D5185m	2292	<b>1465</b>	1576	1641
Phosphorus	ppm	ASTM D5185m	1064	<b>979</b>	753	778
Zinc	ppm	ASTM D5185m	1160	<b>1188</b>	935	914
Sulfur	ppm	ASTM D5185m	4996	<b>3167</b>	2586	2583
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.2</b>	20.6	19.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>7.1</b>	8.2	8.2
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.3</b>	13.3	13.5



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0051476  
**Lab Number** : 06239908  
**Unique Number** : 11128742  
**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 18 Jul 2024  
**Tested** : 18 Jul 2024  
**Diagnosed** : 19 Jul 2024 - Don Baldridge

**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)