

**DIRT**



Machine Id

**PETERBILT 2403**

Component

**Diesel Engine**

Fluid

**DIESEL ENGINE OIL SAE 5W30 (44 QTS)**

**DIAGNOSIS**

**▲ Recommendation**

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

**▲ Wear**

Cylinder, crank, or cam shaft wear is indicated.

**▲ Contamination**

Elemental level of silicon (Si) above normal indicating ingress of seal material. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components.

**● Fluid Condition**

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>HRE0000223</b>	HRE0000207	WC0814857
Sample Date	Client Info			<b>27 May 2024</b>	14 May 2024	24 Jun 2023
Machine Age	mls	Client Info		<b>116492</b>	228849	102286
Oil Age	mls	Client Info		<b>50000</b>	50000	50000
Oil Changed	Client Info			<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.2		<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	<b>▲ 130</b>	▲ 127	▲ 113
Chromium	ppm	ASTM D5185m	>20	<b>6</b>	4	4
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	2	1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	1	<1
Aluminum	ppm	ASTM D5185m	>25	<b>38</b>	12	● 19
Lead	ppm	ASTM D5185m	>40	<b>11</b>	13	10
Copper	ppm	ASTM D5185m	>330	<b>30</b>	7	23
Tin	ppm	ASTM D5185m	>15	<b>4</b>	4	5
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	0

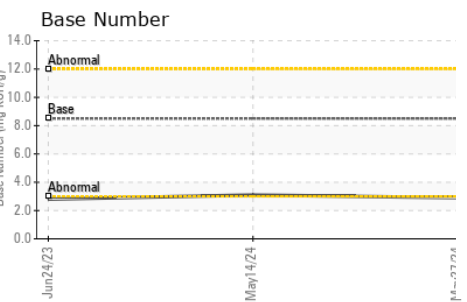
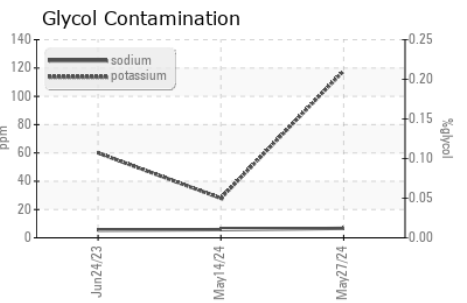
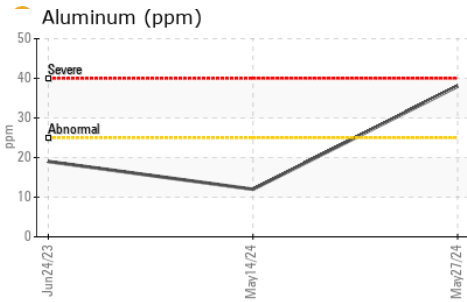
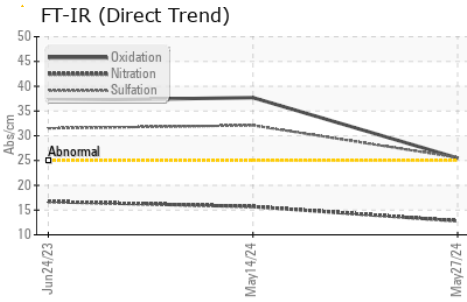
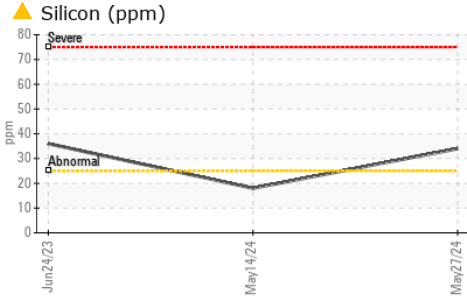
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	<b>14</b>	13	16
Barium	ppm	ASTM D5185m	10	<b>5</b>	0	<1
Molybdenum	ppm	ASTM D5185m	100	<b>64</b>	78	66
Manganese	ppm	ASTM D5185m		<b>6</b>	2	6
Magnesium	ppm	ASTM D5185m	450	<b>482</b>	1123	533
Calcium	ppm	ASTM D5185m	3000	<b>1757</b>	1045	1683
Phosphorus	ppm	ASTM D5185m	1150	<b>965</b>	1020	978
Zinc	ppm	ASTM D5185m	1350	<b>1213</b>	1386	1294
Sulfur	ppm	ASTM D5185m	4250	<b>2727</b>	3016	2844

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>▲ 34</b>	18	▲ 36
Sodium	ppm	ASTM D5185m		<b>7</b>	6	5
Potassium	ppm	ASTM D5185m	>20	<b>118</b>	28	60
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>1.3</b>	1.2	0.9
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.8</b>	15.7	16.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>25.6</b>	32.1	31.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>25.5</b>	37.7	37.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>2.9</b>	3.1	▲ 2.8

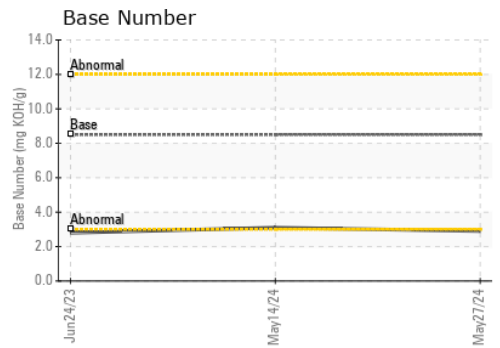
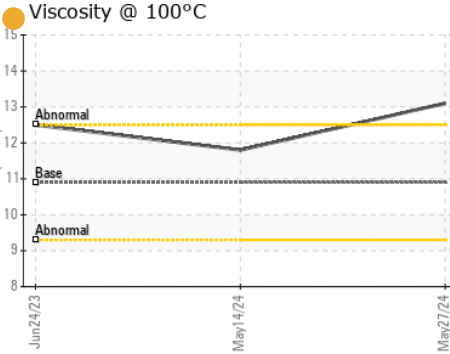
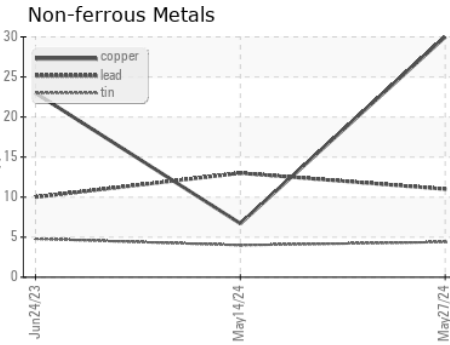
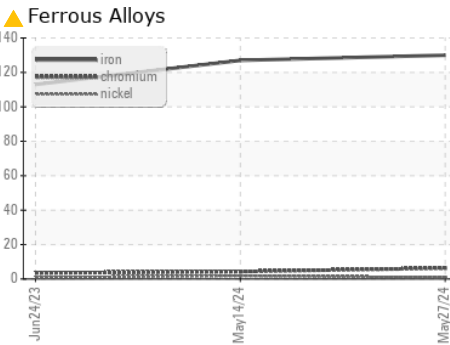
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	13.1	11.8

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : HRE0000223

**Lab Number** : 06198943

**Unique Number** : 11061066

**Test Package** : FLEET ( Additional Tests: GLYCOL )

**Received** : 04 Jun 2024

**Tested** : 06 Jun 2024

**Diagnosed** : 06 Jun 2024 - Jonathan Hester

**MABE TRUCKING**

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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)