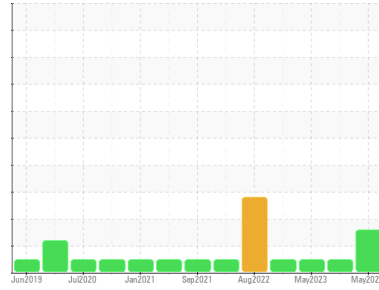




# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Area

[20833]

Machine Id

**KENWORTH TLL 33**

Component

**Diesel Engine**

Fluid

**VALVOLINE PREMIUM BLUE (48 LTR)**

## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Elemental level of silicon (Si) above normal.

### 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC06237334</b>	WC06047325	WC05892617
Sample Date	Client Info		<b>27 May 2024</b>	06 Dec 2023	23 May 2023
Machine Age	kms	Client Info	<b>840799</b>	779153	717257
Oil Age	kms	Client Info	<b>61646</b>	61896	56047
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<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

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>90	<b>14</b>	18	16
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	3	6
Lead	ppm	ASTM D5185m	>40	<b>2</b>	2	<1
Copper	ppm	ASTM D5185m	>330	<b>4</b>	1	1
Tin	ppm	ASTM D5185m	>15	<b>2</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	2.9	<b>0</b>	3	8
Barium	ppm	ASTM D5185m	0.1	<b>2</b>	10	0
Molybdenum	ppm	ASTM D5185m	0.0	<b>0</b>	3	5
Manganese	ppm	ASTM D5185m		<b>2</b>	<1	<1
Magnesium	ppm	ASTM D5185m	18	<b>39</b>	19	38
Calcium	ppm	ASTM D5185m	2936	<b>2417</b>	2562	2579
Phosphorus	ppm	ASTM D5185m	998	<b>953</b>	907	979
Zinc	ppm	ASTM D5185m	1095	<b>1086</b>	1165	1207
Sulfur	ppm	ASTM D5185m	5469	<b>4317</b>	3568	4457

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>▲ 37</b>	5	5
Sodium	ppm	ASTM D5185m		<b>11</b>	<1	2
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	8	10

## INFRA-RED

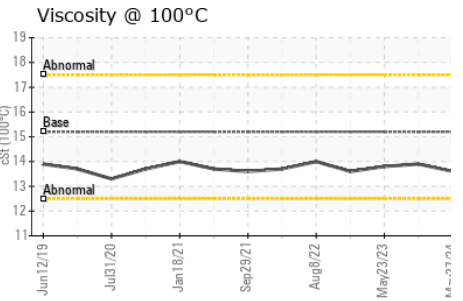
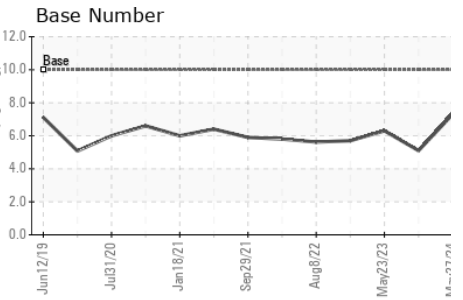
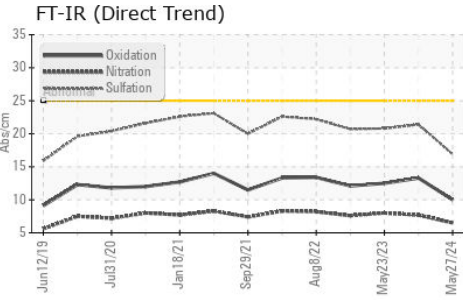
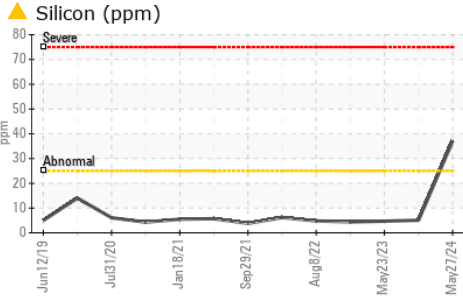
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>6	<b>0.2</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.5</b>	7.7	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.9</b>	21.4	20.8

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>10.0</b>	13.3	12.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.0	<b>7.3</b>	5.1	6.3



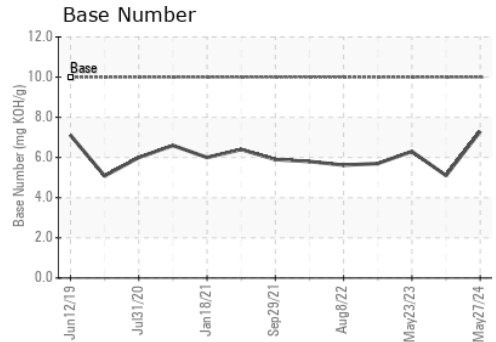
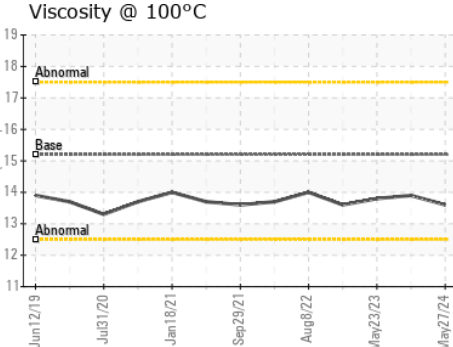
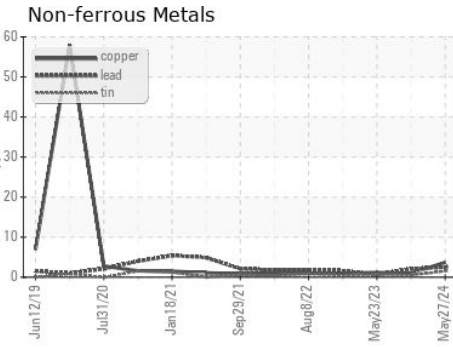
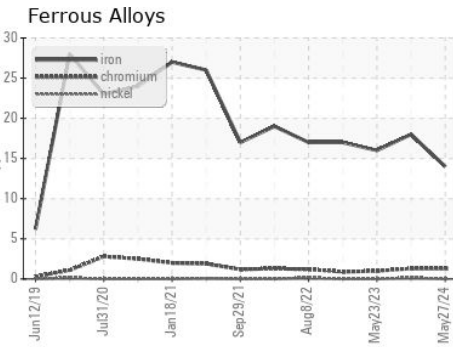
# OIL ANALYSIS REPORT



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	15.2	<b>13.6</b>	13.9	13.8

## GRAPHS



Certificate L2367

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

**Sample No.** : WC06237334

**Lab Number** : 06237334

**Unique Number** : 11126168

**Test Package** : FLEET

**Received** : 15 Jul 2024

**Tested** : 17 Jul 2024

**Diagnosed** : 17 Jul 2024 - Don Baldrige

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)

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