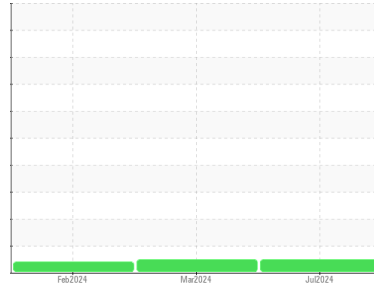




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**KENWORTH T880 5764 (S/N 1XKZDP9X4RJ361022)**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**  
 Resample at the next service interval to monitor.

**Wear**  
 Metal levels are typical for a new component breaking in.

**Contamination**  
 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. There is no indication of any contamination in the oil.

**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>WC0917119</b>	WC0878966	WC0878914
Sample Date	Client Info			<b>17 Jul 2024</b>	05 Mar 2024	06 Feb 2024
Machine Age	mls Client Info			<b>35981</b>	14504	11223
Oil Age	mls Client Info			<b>0</b>	0	0
Oil Changed	Client Info			<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	ATTENTION

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<b>&lt;1.0</b>	<1.0	0.5
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	>100	<b>22</b>	13	39
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>31</b>	13	41
Lead	ppm	ASTM D5185m	>40	<b>0</b>	2	0
Copper	ppm	ASTM D5185m	>330	<b>2</b>	3	12
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	316	<b>9</b>	19	36
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	1
Molybdenum	ppm	ASTM D5185m	1.2	<b>18</b>	16	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	2
Magnesium	ppm	ASTM D5185m	24	<b>186</b>	300	766
Calcium	ppm	ASTM D5185m	2292	<b>2064</b>	2087	1332
Phosphorus	ppm	ASTM D5185m	1064	<b>940</b>	942	735
Zinc	ppm	ASTM D5185m	1160	<b>1114</b>	1133	859
Sulfur	ppm	ASTM D5185m	4996	<b>3937</b>	4370	3091

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>9</b>	6	12
Sodium	ppm	ASTM D5185m		<b>2</b>	1	3
Potassium	ppm	ASTM D5185m	>20	<b>87</b>	35	127

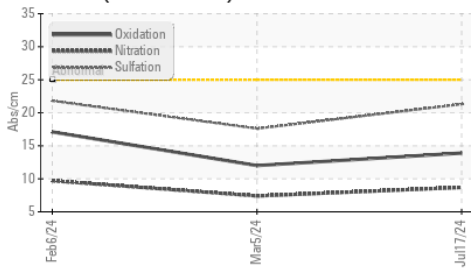
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.7</b>	7.4	9.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.3</b>	17.6	21.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.9</b>	12.0	17.1
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>5.7</b>	7.5	5.5

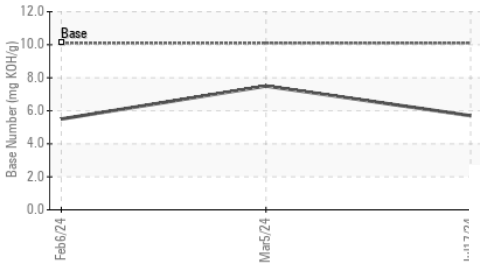


# OIL ANALYSIS REPORT

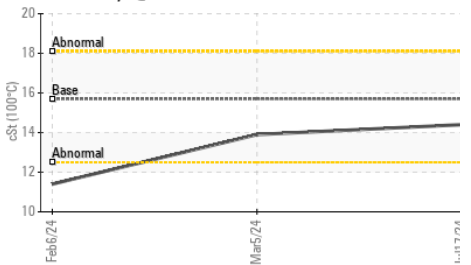
FT-IR (Direct Trend)



Base Number



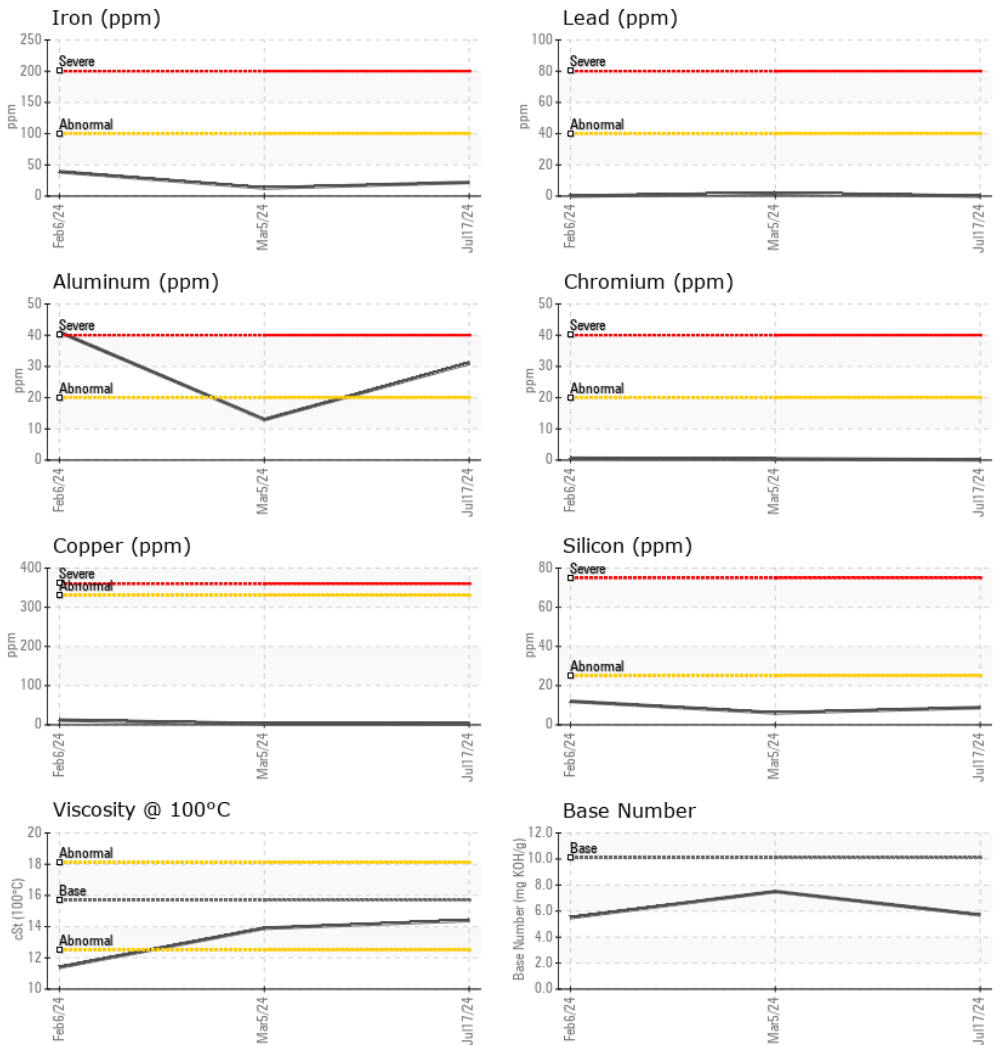
Viscosity @ 100°C



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	15.7	14.4	13.9

GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0917119 **Received** : 17 Jul 2024  
**Lab Number** : 06239681 **Tested** : 18 Jul 2024  
**Unique Number** : 11128515 **Diagnosed** : 19 Jul 2024 - Sean Felton  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**JOHNSON BREEDERS**  
 3425 HWY 117N  
 ROSE HILL, NC  
 US 28458  
 Contact: GREG JONES  
 gregory.jones@houseofraeford.com  
 T: (910)289-6884  
 F:

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)