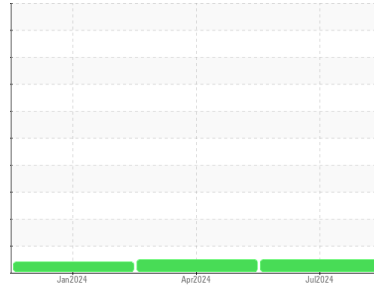




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**KENWORTH T880 5689 (S/N 1XKZBP9X3RJ361013)**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

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>WC0917309</b>	WC0878962	WC0878894
Sample Date	Client Info			<b>10 Jul 2024</b>	11 Apr 2024	29 Jan 2024
Machine Age	mls	Client Info		<b>46431</b>	35733	0
Oil Age	mls	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>Changed</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	MARGINAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<b>&lt;1.0</b>	<1.0	0.4
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>14</b>	19	49
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	2
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	10	43
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>3</b>	5	17
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	316	<b>8</b>	13	16
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>18</b>	29	11
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	2
Magnesium	ppm	ASTM D5185m	24	<b>214</b>	434	799
Calcium	ppm	ASTM D5185m	2292	<b>2163</b>	2065	1224
Phosphorus	ppm	ASTM D5185m	1064	<b>995</b>	1091	747
Zinc	ppm	ASTM D5185m	1160	<b>1193</b>	1286	847
Sulfur	ppm	ASTM D5185m	4996	<b>4147</b>	4267	2601

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>7</b>	8	14
Sodium	ppm	ASTM D5185m		<b>1</b>	1	4
Potassium	ppm	ASTM D5185m	>20	<b>11</b>	27	126

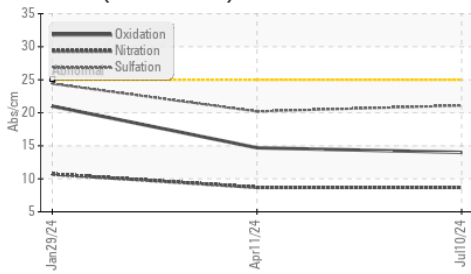
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.7</b>	8.7	10.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.1</b>	20.2	24.4

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.0</b>	14.7	21.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>5.6</b>	6.3	4.8

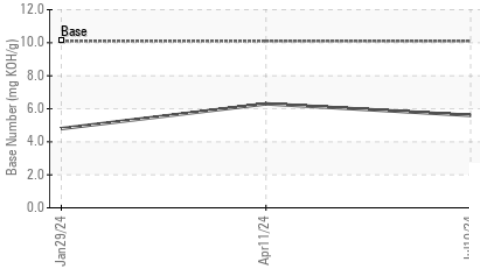


# OIL ANALYSIS REPORT

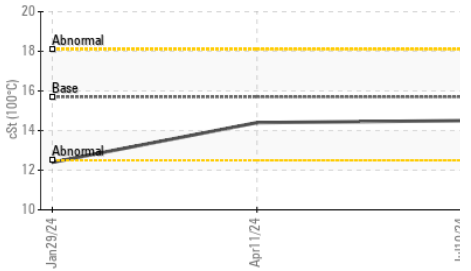
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

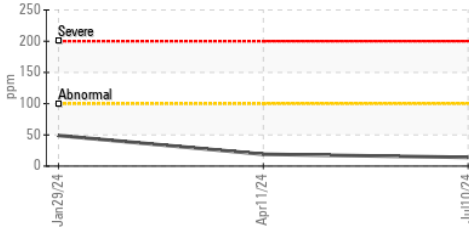


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

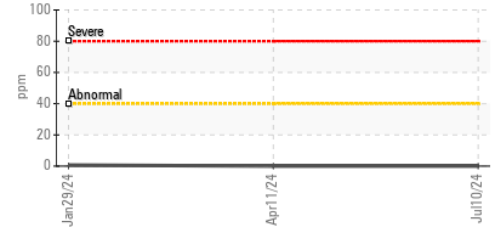
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	14.5	14.4 ▲ 12.4

## GRAPHS

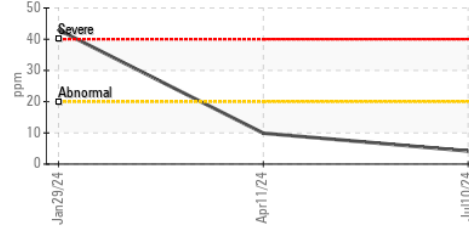
Iron (ppm)



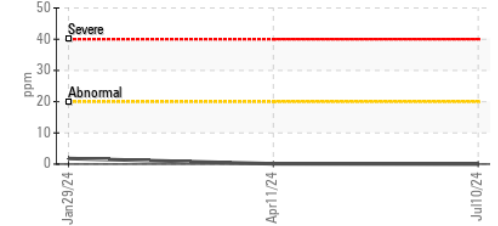
Lead (ppm)



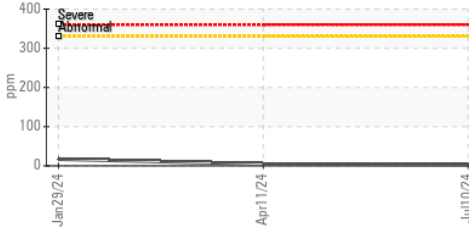
Aluminum (ppm)



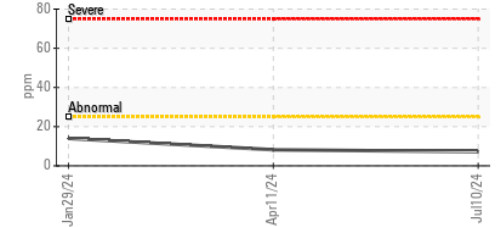
Chromium (ppm)



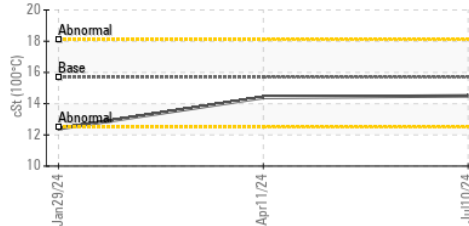
Copper (ppm)



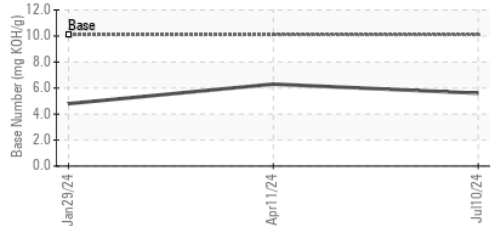
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0917309 **Received** : 17 Jul 2024  
**Lab Number** : 06239683 **Tested** : 18 Jul 2024  
**Unique Number** : 11128517 **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)