

# **OIL ANALYSIS REPORT**

Sample Rating Trend



**NORMAL** 



Machine Id

# KENWORTH T800 351 (S/N BXS21911)

Component

Diesel Engine

SHELL ROTELLA T 15W40 (--- GAL)

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

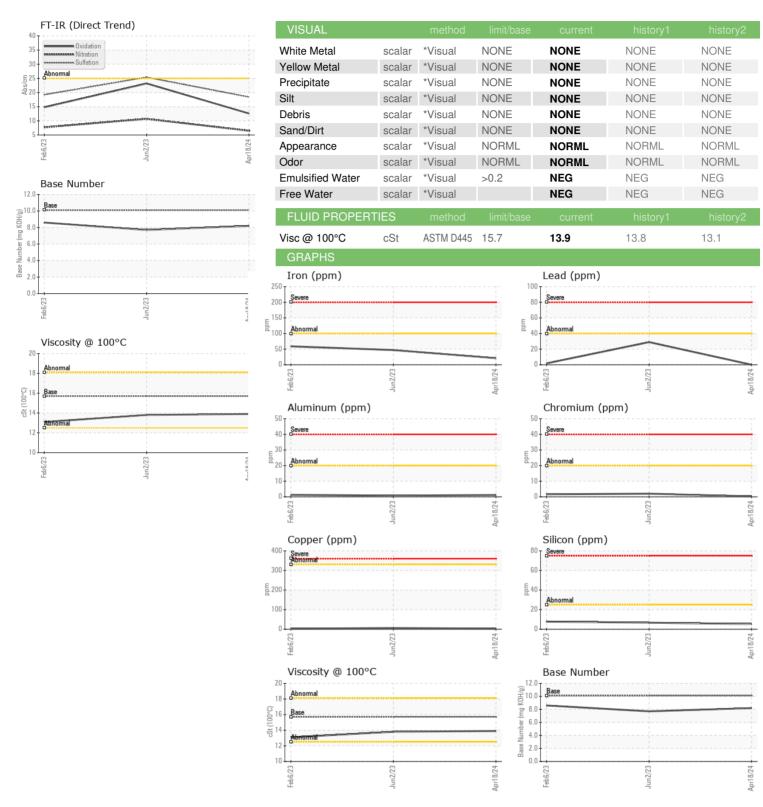
### **Fluid Condition**

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			100	2023	ountage Paper	1	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         mls         Client Info         97352         81219         0           Oil Age         mls         Client Info         12000         0         0           Oil Changed         Client Info         Changed         Changed         Changed         Changed           Sample Status         Description         NoRMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0         <1.0           WEAR METALS         Wc Method         NEG         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history2         history2           Iron         ppm         ASTM D5185m         >100         21         47         59           Chromium         ppm         ASTM D5185m         >20         <1         2         2           Chromium         ppm         ASTM D5185m         >20         <1         <1         1           Iron         pm         ASTM D5185m         >20         <0	Sample Number		Client Info		WC0878955	WC0613618	WC0613714
Oil Age         mls         Client Info         12000         0         O           Oil Changed         Client Info         Changed         NORMAL			Client Info		18 Apr 2024	02 Jun 2023	06 Feb 2023
Oil Changed Sample Status         Client Info         Changed NORMAL         Change And NoRMAL </th <th>Machine Age</th> <th>mls</th> <th>Client Info</th> <th></th> <th>-</th> <th>81219</th> <th>0</th>	Machine Age	mls	Client Info		-	81219	0
Sample Status	Oil Age	mls	Client Info		12000	0	0
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         21         47         59           Chromium         ppm         ASTM D5185m         >20         <1         2         2           Nickel         ppm         ASTM D5185m         >4         0         <1         <1           Silver         ppm         ASTM D5185m         >3         0         0         0         <1           Silver         ppm         ASTM D5185m         >20         1         <1         1         1         1         <1         21         <1         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th>Changed</th>	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol         WC Method WC Method         >0.2         NEG NEG         NEG NEG         NEG NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         21         47         59           Chromium         ppm         ASTM D5185m         >20         <1	CONTAMINATIO	N	method	limit/base	current	history1	history2
Silycol   WC Method   NEG   NEG   NEG	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >20         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	21	47	59
Titanium         ppm         ASTM D5185m         0         0         <1	Chromium	ppm	ASTM D5185m	>20	<1	2	2
Silver	Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	0	<1
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper         ppm         ASTM D5185m         >330         4         6         3           Tin         ppm         ASTM D5185m         >15         <1         2         <1           Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         316         33         23         18           Barium         ppm         ASTM D5185m         0.0         0         0         0           Molybdenum         ppm         ASTM D5185m         1.2         36         79         60           Manganese         ppm         ASTM D5185m         1.2         36         79         60           Magnesium         ppm         ASTM D5185m         24         372         944         793           Calcium         ppm         ASTM D5185m         2992         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1160         1192         1584 <t< th=""><th>Aluminum</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;20</th><th>1</th><th>&lt;1</th><th>1</th></t<>	Aluminum	ppm	ASTM D5185m	>20	1	<1	1
Tin         ppm         ASTM D5185m         >15         <1	Lead	ppm	ASTM D5185m	>40	0	29	2
Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         316         33         23         18           Barium         ppm         ASTM D5185m         0.0         0         0         0           Molybdenum         ppm         ASTM D5185m         0.0         0         0         0           Manganese         ppm         ASTM D5185m         1.2         36         79         60           Magnesium         ppm         ASTM D5185m         24         372         944         793           Calcium         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1	Copper	ppm	ASTM D5185m	>330	4	6	3
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         316         33         23         18           Barium         ppm         ASTM D5185m         0.0         0         0         0           Molybdenum         ppm         ASTM D5185m         1.2         36         79         60           Manganese         ppm         ASTM D5185m         1.2         36         79         60           Magnesium         ppm         ASTM D5185m         24         372         944         793           Calcium         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current	Tin	ppm	ASTM D5185m	>15	<1	2	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron         ppm         ASTM D5185m         316         33         23         18           Barium         ppm         ASTM D5185m         0.0         0         0         0           Molybdenum         ppm         ASTM D5185m         1.2         36         79         60           Manganese         ppm         ASTM D5185m         1.2         36         79         60           Magnesium         ppm         ASTM D5185m         1.2         372         944         793           Calcium         ppm         ASTM D5185m         24         372         944         793           Calcium         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         1160         1192         1584         1132           Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Sodium         ppm         ASTM D5185m	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0.0         0         0         0           Molybdenum         ppm         ASTM D5185m         1.2         36         79         60           Manganese         ppm         ASTM D5185m         -         -         -         -           Magnesium         ppm         ASTM D5185m         24         372         944         793           Calcium         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         1160         1192         1584         1132           Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         20	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         1.2         36         79         60           Manganese         ppm         ASTM D5185m          <1	Boron	ppm	ASTM D5185m	316	33	23	18
Manganese         ppm         ASTM D5185m         <1	Barium	ppm	ASTM D5185m	0.0	0	0	0
Magnesium         ppm         ASTM D5185m         24         372         944         793           Calcium         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         1160         1192         1584         1132           Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         22         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1	Molybdenum	ppm	ASTM D5185m	1.2	36	79	60
Calcium         ppm         ASTM D5185m         2292         1921         1637         1124           Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         1160         1192         1584         1132           Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.5         0.5           Nitration         Abs/.1mm         *ASTM D7415         >30         18.4         25.4         19.2           FLUID DEGRADATION         method         li	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus         ppm         ASTM D5185m         1064         1012         1282         961           Zinc         ppm         ASTM D5185m         1160         1192         1584         1132           Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.5         0.5           Nitration         Abs/.1mm         *ASTM D7624         >20         6.5         10.7         7.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.4         25.4         19.2           FLUID DEGRADATION         method <t< th=""><th>Magnesium</th><th>ppm</th><th></th><th>24</th><th>372</th><th>944</th><th>793</th></t<>	Magnesium	ppm		24	372	944	793
Zinc         ppm         ASTM D5185m         1160         1192         1584         1132           Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.5         0.5           Nitration         Abs/cm         *ASTM D7624         >20         6.5         10.7         7.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.4         25.4         19.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D	Calcium	ppm	ASTM D5185m	2292	1921	1637	
Sulfur         ppm         ASTM D5185m         4996         3977         4352         3052           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1         5           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4         0.5         0.5           Nitration         Abs/cm         *ASTM D7624         >20         6.5         10.7         7.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.4         25.4         19.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.6         23.2         14.8		ppm		1064	1012		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         22         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1	Zinc	ppm	ASTM D5185m	1160	1192	1584	1132
Silicon         ppm         ASTM D5185m         >25         5         7         8           Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1	Sulfur	ppm	ASTM D5185m	4996	3977	4352	3052
Sodium         ppm         ASTM D5185m         2         4         4           Potassium         ppm         ASTM D5185m         >20         0         <1	CONTAMINANTS	;	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0         <1		ppm		>25			
INFRA-RED	Sodium	ppm	ASTM D5185m			4	
Soot %         %         *ASTM D7844 >3         0.4         0.5         0.5           Nitration         Abs/cm         *ASTM D7624 >20         6.5         10.7         7.7           Sulfation         Abs/.1mm         *ASTM D7415 >30         18.4         25.4         19.2           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         12.6         23.2         14.8	Potassium	ppm	ASTM D5185m	>20	0	<1	5
Nitration         Abs/cm         *ASTM D7624         >20         6.5         10.7         7.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.4         25.4         19.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.6         23.2         14.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.4         25.4         19.2           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.6         23.2         14.8	Soot %	%	*ASTM D7844	>3	0.4	0.5	0.5
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 12.6 23.2 14.8	Nitration	Abs/cm	*ASTM D7624	>20	6.5	10.7	7.7
Oxidation Abs/.1mm *ASTM D7414 >25 <b>12.6</b> 23.2 14.8	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.4	25.4	19.2
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Base Number (BN)         mg KOH/g         ASTM D2896         10.1         8.2         7.7         8.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.6	23.2	14.8
	Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.2	7.7	8.6



## **OIL ANALYSIS REPORT**







Laboratory

Sample No.

: WC0878955 Lab Number : 06158311 Unique Number : 10993734

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 23 Apr 2024 **Tested** 

Diagnosed

: 24 Apr 2024 : 24 Apr 2024 - Wes Davis

3425 HWY 117N ROSE HILL, NC Contact: GREG JONES

gregory.jones@houseofraeford.com T: (910)289-6884

**JOHNSON BREEDERS** 

Test Package : MOB 1 ( Additional Tests: TBN ) Certificate 12367 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) US 28458