



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**HITACHI ZX470LC-5 682 (S/N HCMJAA70L00030608)**

Component  
**Diesel Engine**

Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>R006157114</b>	RO05744285	RO05488026
Sample Date		Client Info		<b>06 Apr 2024</b>	19 Jan 2023	26 Feb 2022
Machine Age	hrs	Client Info		<b>14330</b>	972	12886
Oil Age	hrs	Client Info		<b>698</b>	78	92
Filter Age	hrs	Client Info		<b>698</b>	78	92
Oil Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>11</b>	74	14
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	9	1
Lead	ppm	ASTM D5185m	>40	<b>0</b>	3	2
Copper	ppm	ASTM D5185m	>330	<b>0</b>	29	9
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	3	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

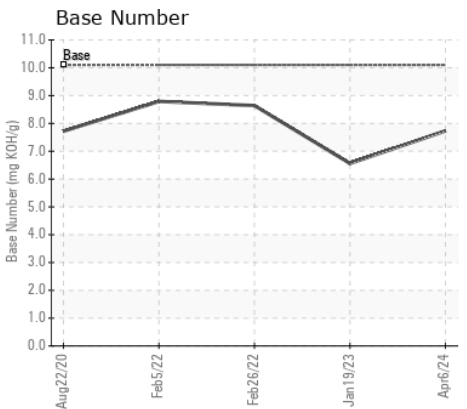
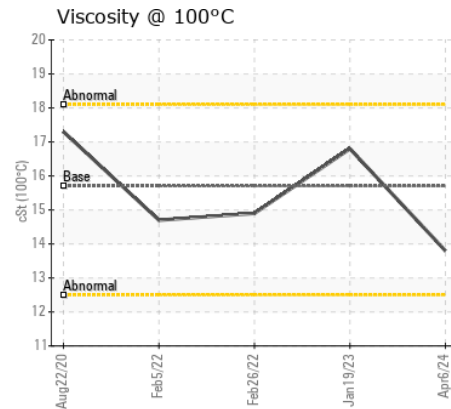
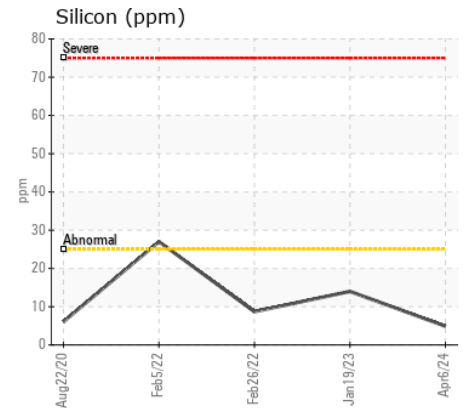
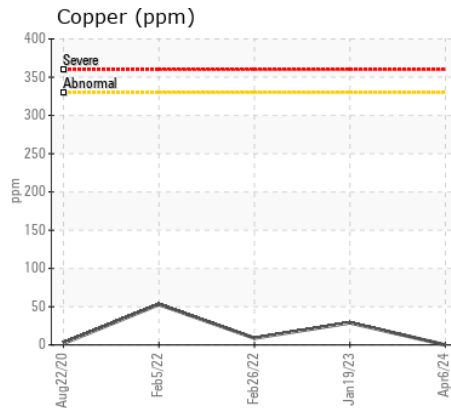
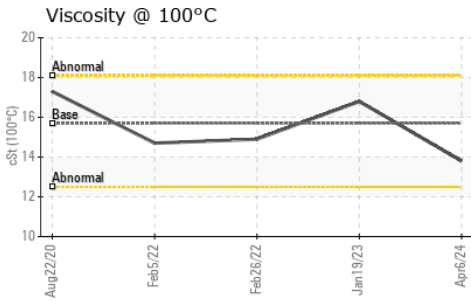
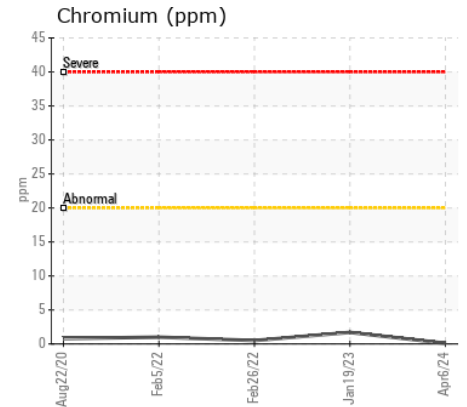
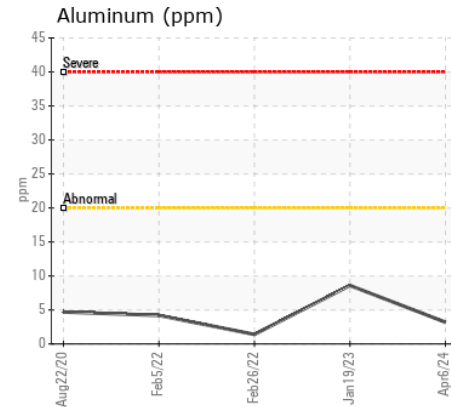
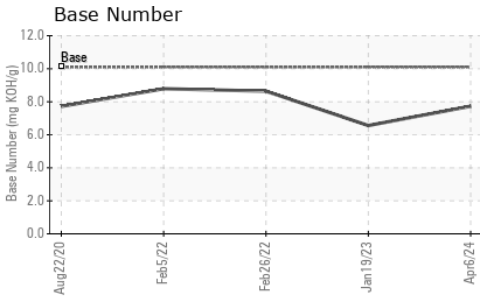
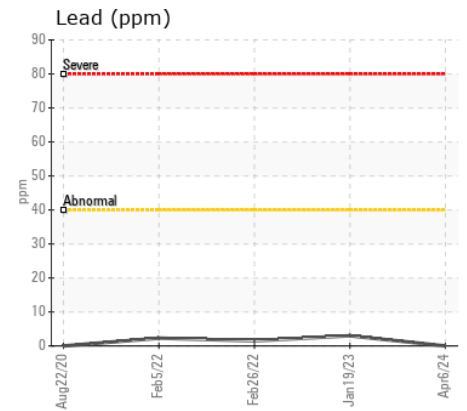
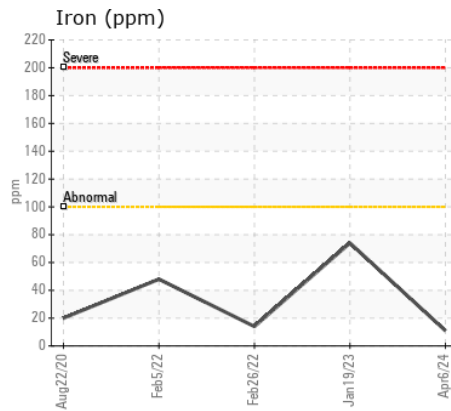
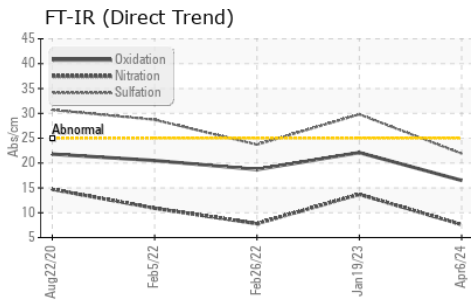
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	14	9
Potassium	ppm	ASTM D5185m	>20	<b>7</b>	8	9
Fuel		WC Method	>5	<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
Soot %	%	*ASTM D7844	>3	<b>1.1</b>	▲ 3.1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.6</b>	13.7	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.9</b>	29.8	23.7
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## 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.

Sodium	ppm	ASTM D5185m		<b>2</b>	6	5
Boron	ppm	ASTM D5185m	316	<b>167</b>	70	161
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>0</b>	24	11
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	4	1
Magnesium	ppm	ASTM D5185m	24	<b>16</b>	60	73
Calcium	ppm	ASTM D5185m	2292	<b>2211</b>	2606	2198
Phosphorus	ppm	ASTM D5185m	1064	<b>969</b>	1023	967
Zinc	ppm	ASTM D5185m	1160	<b>1137</b>	1383	1059
Sulfur	ppm	ASTM D5185m	4996	<b>3755</b>	3690	2838
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.5</b>	22.1	18.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>7.73</b>	6.56	8.64
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.8</b>	16.8	14.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RO06157114  
**Lab Number** : 06157114  
**Unique Number** : 10992537  
**Test Package** : MOB 2

**Received** : 22 Apr 2024  
**Tested** : 23 Apr 2024  
**Diagnosed** : 23 Apr 2024 - Wes Davis

**BIG 4 INC**  
 301 WORTH ST  
 HEMPHILL, TX  
 US 75948

Contact: JODIE MCGEE  
 jodie.mcgee@big4inc.com  
 T: (936)275-7532  
 F: (409)787-2071

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)