



# OIL ANALYSIS REPORT

Sample Rating Trend

**WATER**



Machine Id  
**LIEBHERR LR 1600/2 CR6604 - WI (S/N 074564)**

Component  
**Winch**

Fluid  
**GEAR OIL ISO 220 (--- GAL)**

## DIAGNOSIS

### ▲ Recommendation

We advise that you check for the source of water entry. We recommend an early resample to monitor this condition.

### ▲ Wear

Gear wear is indicated.

### ▲ Contamination

There is a moderate concentration of water present in the oil.

### ▲ Fluid Condition

The oil viscosity is higher than normal. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0867408</b>	---	---
Sample Date	Client Info		<b>21 Dec 2023</b>	---	---
Machine Age	hrs	Client Info	<b>14914</b>	---	---
Oil Age	hrs	Client Info	<b>0</b>	---	---
Oil Changed	Client Info		<b>N/A</b>	---	---
Sample Status			<b>ABNORMAL</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	<b>▲ 269</b>	---	---
Chromium	ppm	ASTM D5185m >10	<b>1</b>	---	---
Nickel	ppm	ASTM D5185m >10	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185m	<b>0</b>	---	---
Silver	ppm	ASTM D5185m	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m >5	<b>5</b>	---	---
Lead	ppm	ASTM D5185m >15	<b>2</b>	---	---
Copper	ppm	ASTM D5185m >80	<b>2</b>	---	---
Tin	ppm	ASTM D5185m	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185m	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	<b>20</b>	---	---
Barium	ppm	ASTM D5185m 15	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m 15	<b>0</b>	---	---
Manganese	ppm	ASTM D5185m	<b>2</b>	---	---
Magnesium	ppm	ASTM D5185m 50	<b>3</b>	---	---
Calcium	ppm	ASTM D5185m 50	<b>10</b>	---	---
Phosphorus	ppm	ASTM D5185m 350	<b>582</b>	---	---
Zinc	ppm	ASTM D5185m 100	<b>127</b>	---	---
Sulfur	ppm	ASTM D5185m 12500	<b>14215</b>	---	---

## CONTAMINANTS

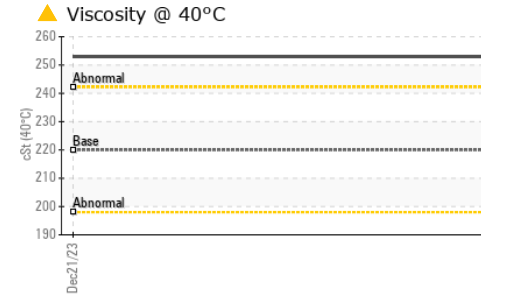
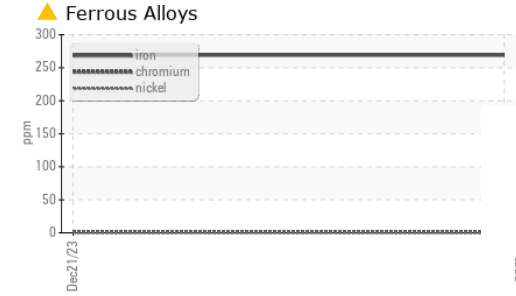
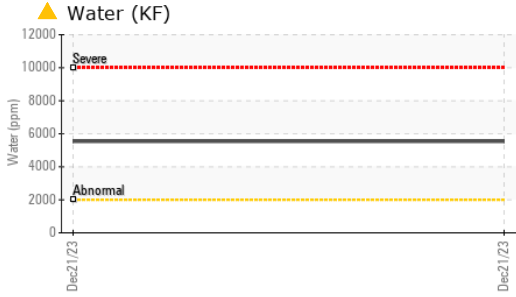
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>21</b>	---	---
Sodium	ppm	ASTM D5185m	<b>0</b>	---	---
Potassium	ppm	ASTM D5185m >20	<b>4</b>	---	---
Water	%	ASTM D6304 >0.2	<b>▲ 0.554</b>	---	---
ppm Water	ppm	ASTM D6304 >2000	<b>▲ 5540</b>	---	---

## VISUAL

	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	*Visual NONE	<b>NONE</b>	---	---
Precipitate	scalar	*Visual NONE	<b>NONE</b>	---	---
Silt	scalar	*Visual NONE	<b>NONE</b>	---	---
Debris	scalar	*Visual NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	*Visual NONE	<b>NONE</b>	---	---
Appearance	scalar	*Visual NORML	<b>NORML</b>	---	---
Odor	scalar	*Visual NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	*Visual >0.2	<b>0.2%</b>	---	---
Free Water	scalar	*Visual	<b>NEG</b>	---	---



# OIL ANALYSIS REPORT



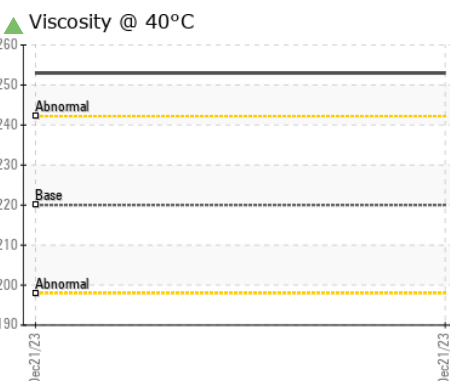
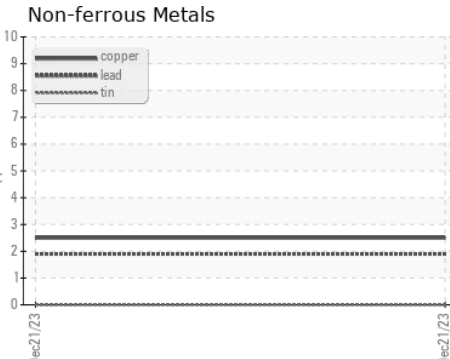
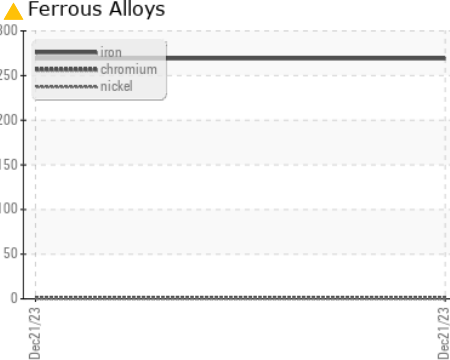
### FLUID PROPERTIES

method	limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM D445 220	▲ 253	---	---

### SAMPLE IMAGES

method	limit/base	current	history1	history2
Color			no image	no image
Bottom			no image	no image

### GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0867408 **Recieved** : 10 Jan 2024  
**Lab Number** : 06057508 **Diagnosed** : 12 Jan 2024  
**Unique Number** : 10823457 **Diagnostician** : Sean Felton  
**Test Package** : CONST ( Additional Tests: KF )

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)

### BUCKNER HEAVY LIFT

4732 NC 54 EAST  
 GRAHAM, NC  
 US 27253-9215

Contact: MICHAEL LAWSON  
 michael@bucknercompanies.com

T: (336)376-8888

F: (336)376-4090