



# OIL ANALYSIS REPORT

|                 |                 |
|-----------------|-----------------|
| WEAR            | <b>ABNORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b>   |
| FLUID CONDITION | <b>NORMAL</b>   |

Machine Id  
**HC2229**  
Component  
**1 Winch**  
Fluid  
**GEAR OIL ISO 220 (--- GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>WC0935962</b>   | WC0810423   | WC0720447   |
| Sample Date    |     | Client Info |           | <b>03 May 2024</b> | 29 Jul 2023 | 17 Nov 2022 |
| Machine Age    | hrs | Client Info |           | <b>7376</b>        | 6455        | 5125        |
| Oil Age        | hrs | Client Info |           | <b>921</b>         | 0           | 717         |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 717         |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Not Changed</b> | Changed     | Changed     |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ABNORMAL    | ABNORMAL    |

## WEAR

The lead level is abnormal. All other component wear rates are normal.

|              |        |             |      |              |       |      |
|--------------|--------|-------------|------|--------------|-------|------|
| Iron         | ppm    | ASTM D5185m | >150 | <b>51</b>    | ▲ 310 | 53   |
| Chromium     | ppm    | ASTM D5185m | >10  | <b>&lt;1</b> | 5     | <1   |
| Nickel       | ppm    | ASTM D5185m | >10  | <b>0</b>     | 1     | 3    |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1    | 0    |
| Silver       | ppm    | ASTM D5185m |      | <b>0</b>     | 0     | 1    |
| Aluminum     | ppm    | ASTM D5185m | >5   | <b>&lt;1</b> | 1     | 1    |
| Lead         | ppm    | ASTM D5185m | >15  | ▲ <b>16</b>  | 4     | <1   |
| Copper       | ppm    | ASTM D5185m | >80  | <b>2</b>     | 5     | 6    |
| Tin          | ppm    | ASTM D5185m |      | <b>0</b>     | 0     | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1    | <1   |
| 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.

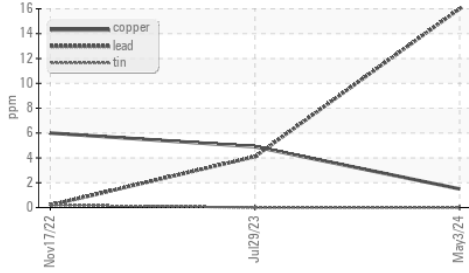
|                  |        |             |       |              |       |        |
|------------------|--------|-------------|-------|--------------|-------|--------|
| Silicon          | ppm    | ASTM D5185m | >25   | <b>7</b>     | ▲ 29  | 23     |
| Potassium        | ppm    | ASTM D5185m | >20   | <b>2</b>     | 4     | 1      |
| Water            |        | WC Method   | >0.2  | <b>NEG</b>   | NEG   | NEG    |
| Silt             | scalar | *Visual     | NONE  | <b>MODER</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   | ▲ 0.2% |

## FLUID CONDITION

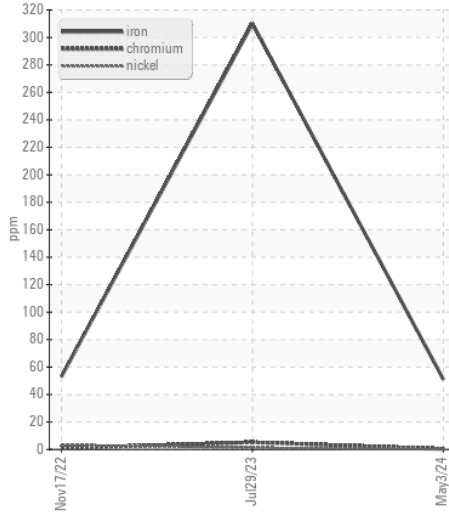
The condition of the oil is acceptable for the time in service.

|             |     |             |       |             |      |      |
|-------------|-----|-------------|-------|-------------|------|------|
| Sodium      | ppm | ASTM D5185m |       | <b>2</b>    | 4    | 4    |
| Boron       | ppm | ASTM D5185m | 50    | <b>2</b>    | 0    | 6    |
| Barium      | ppm | ASTM D5185m | 15    | <b>0</b>    | 0    | 0    |
| Molybdenum  | ppm | ASTM D5185m | 15    | <b>0</b>    | <1   | <1   |
| Manganese   | ppm | ASTM D5185m |       | <b>1</b>    | 5    | <1   |
| Magnesium   | ppm | ASTM D5185m | 50    | <b>0</b>    | 2    | 2    |
| Calcium     | ppm | ASTM D5185m | 50    | <b>0</b>    | 10   | 43   |
| Phosphorus  | ppm | ASTM D5185m | 350   | <b>360</b>  | 234  | 473  |
| Zinc        | ppm | ASTM D5185m | 100   | <b>4</b>    | 53   | 43   |
| Sulfur      | ppm | ASTM D5185m | 12500 | <b>6425</b> | 1348 | 1727 |
| Visc @ 40°C | cSt | ASTM D445   | 220   | <b>211</b>  | 200  | 212  |

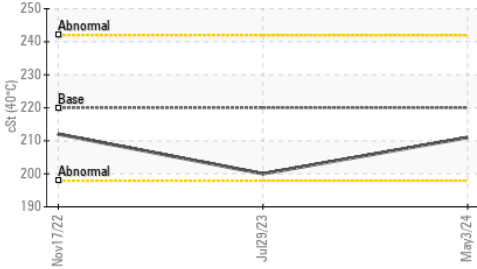
▲ Non-ferrous Metals



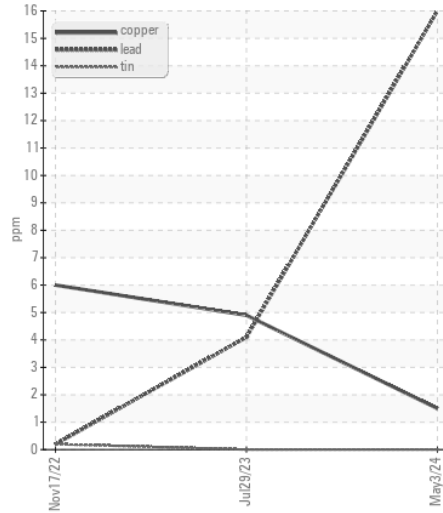
Ferrous Alloys



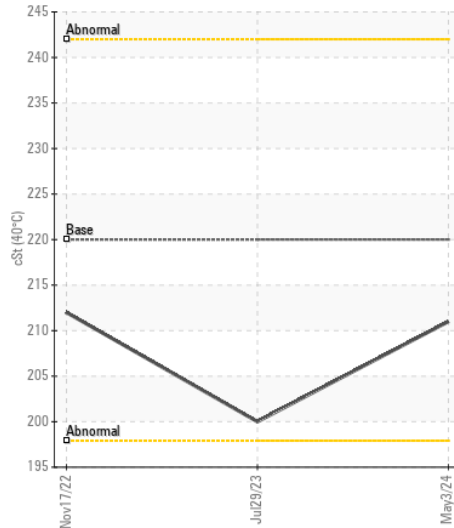
Viscosity @ 40°C



▲ Non-ferrous Metals



Viscosity @ 40°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0935962

Lab Number : 06176303

Unique Number : 11022356

Test Package : CONST

Received : 10 May 2024

Tested : 13 May 2024

Diagnosed : 14 May 2024 - Sean Felton

BUCKNER HEAVY LIFT

4732 NC 54 EAST

GRAHAM, NC

US 27253-9215

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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)