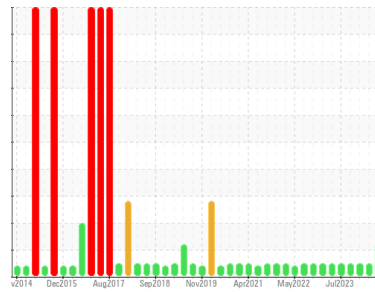




# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**FIBER**  
 Machine Id  
**FIBER BROKE CENTER PULPER 2**  
 Component  
**Gearbox**  
 Fluid  
**GEAR OIL ISO 220 (--- GAL)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>RP0037922</b>   | RP0030313   | RP0030549   |
| Sample Date   | Client Info |             | <b>05 Jun 2024</b> | 13 Mar 2024 | 27 Dec 2023 |
| Machine Age   | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             |             | <b>ATTENTION</b>   | NORMAL      | NORMAL      |

## WEAR METALS

|          | method     | limit/base       | current      | history1 | history2 |
|----------|------------|------------------|--------------|----------|----------|
| PQ       | ASTM D8184 |                  | <b>20</b>    | 21       | ---      |
| Iron     | ppm        | ASTM D5185m >200 | <b>47</b>    | 42       | 47       |
| Chromium | ppm        | ASTM D5185m >15  | <b>&lt;1</b> | <1       | <1       |
| Nickel   | ppm        | ASTM D5185m >15  | <b>&lt;1</b> | 0        | <1       |
| Titanium | ppm        | ASTM D5185m      | <b>&lt;1</b> | <1       | 0        |
| Silver   | ppm        | ASTM D5185m      | <b>0</b>     | <1       | 0        |
| Aluminum | ppm        | ASTM D5185m >25  | <b>2</b>     | <1       | 2        |
| Lead     | ppm        | ASTM D5185m >100 | <b>0</b>     | 1        | 0        |
| Copper   | ppm        | ASTM D5185m >200 | <b>&lt;1</b> | 0        | 0        |
| Tin      | ppm        | ASTM D5185m >25  | <b>&lt;1</b> | <1       | 0        |
| Vanadium | ppm        | ASTM D5185m      | <b>0</b>     | <1       | 0        |
| Cadmium  | ppm        | ASTM D5185m      | <b>&lt;1</b> | 0        | 0        |

## ADDITIVES

|            | method | limit/base      | current      | history1 | history2 |
|------------|--------|-----------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 50  | <b>22</b>    | 16       | 18       |
| Barium     | ppm    | ASTM D5185m 15  | <b>&lt;1</b> | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 15  | <b>0</b>     | 0        | 0        |
| Manganese  | ppm    | ASTM D5185m     | <b>&lt;1</b> | <1       | 0        |
| Magnesium  | ppm    | ASTM D5185m 50  | <b>1</b>     | 0        | 1        |
| Calcium    | ppm    | ASTM D5185m 50  | <b>4</b>     | 4        | 5        |
| Phosphorus | ppm    | ASTM D5185m 350 | <b>348</b>   | 356      | 374      |
| Zinc       | ppm    | ASTM D5185m 100 | <b>77</b>    | 67       | 59       |

## CONTAMINANTS

|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >50  | <b>2</b>     | 2        | 2        |
| Sodium    | ppm    | ASTM D5185m      | <b>2</b>     | 2        | <1       |
| Potassium | ppm    | ASTM D5185m >20  | <b>1</b>     | 2        | 2        |
| Water     | %      | ASTM D6304 >0.2  | <b>0.024</b> | 0.016    | 0.019    |
| ppm Water | ppm    | ASTM D6304 >2000 | <b>247</b>   | 169      | 198      |

## FLUID CLEANLINESS

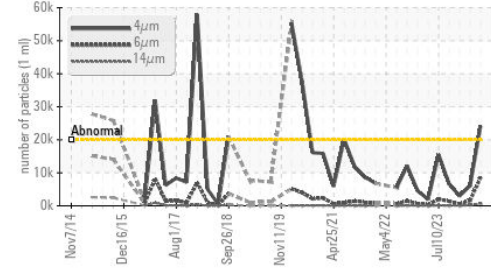
|                 | method       | limit/base | current         | history1 | history2 |
|-----------------|--------------|------------|-----------------|----------|----------|
| Particles >4µm  | ASTM D7647   | >20000     | <b>24090</b>    | 6075     | 2967     |
| Particles >6µm  | ASTM D7647   | >5000      | <b>8543</b>     | 1615     | 586      |
| Particles >14µm | ASTM D7647   | >640       | <b>628</b>      | 210      | 56       |
| Particles >21µm | ASTM D7647   | >160       | <b>113</b>      | 77       | 22       |
| Particles >38µm | ASTM D7647   | >40        | <b>7</b>        | 7        | 2        |
| Particles >71µm | ASTM D7647   | >10        | <b>2</b>        | 0        | 0        |
| Oil Cleanliness | ISO 4406 (c) | >21/19/16  | <b>22/20/16</b> | 20/18/15 | 19/16/13 |

## FLUID DEGRADATION

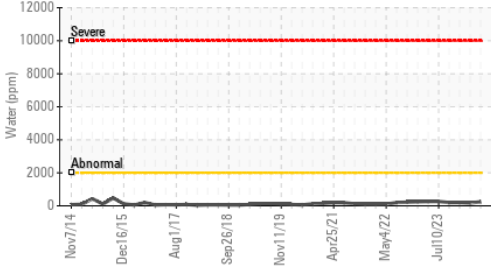
|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 0.85 | <b>1.38</b> | 1.36     | 1.34     |

# OIL ANALYSIS REPORT

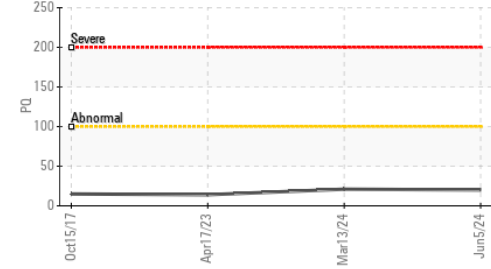
## Particle Trend



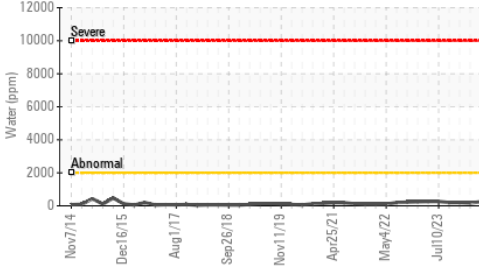
## Water (KF)



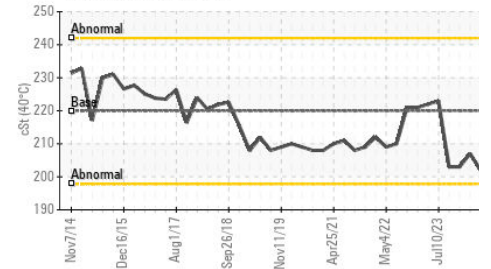
## PQ



## Water (KF)



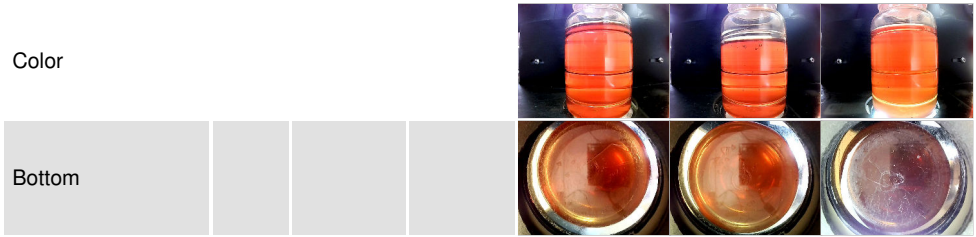
## Viscosity @ 40°C



| 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     | LIGHT    |
| 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      |

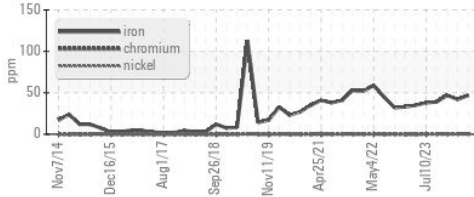
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 220     | 202      | 207      |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|

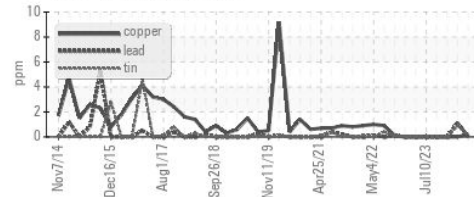


## GRAPHS

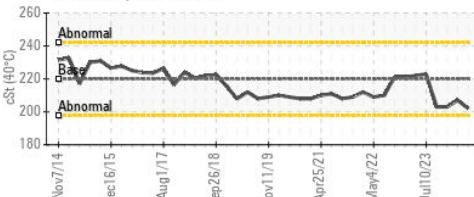
### Ferrous Alloys



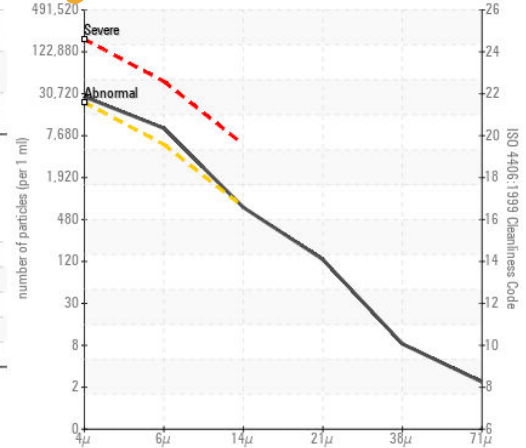
### Non-ferrous Metals



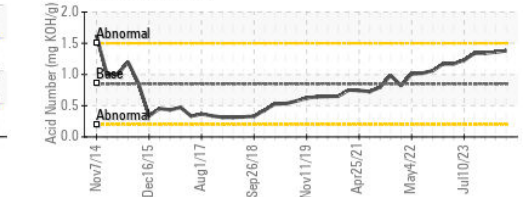
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

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

**Sample No.** : RP0037922

**Lab Number** : 06201512

**Unique Number** : 11063635

**Test Package** : IND 2 ( Additional Tests: PQ, PrtCount )

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)

**Received** : 06 Jun 2024

**Tested** : 07 Jun 2024

**Diagnosed** : 09 Jun 2024 - Don Baldrige

**Kimberly-Clark - Mobile - Fiber - BC UNITS**

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