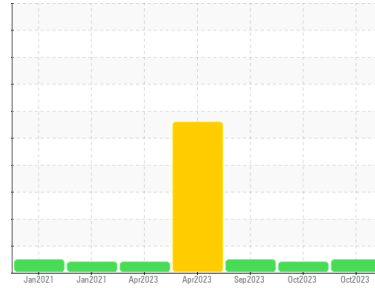




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**34THK102**

Component  
**Gearbox**

Fluid  
**SHELL OMALA S2 G 320 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.  
NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. 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>WC0837968</b>   | WC0837969   | WC0820697   |
| Sample Date   | Client Info |             | <b>11 Oct 2023</b> | 11 Oct 2023 | 27 Sep 2023 |
| Machine Age   | days        | Client Info | <b>0</b>           | 60          | 60          |
| Oil Age       | days        | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>N/A</b>         | N/A         | Not Changd  |
| Sample Status |             |             | <b>NORMAL</b>      | ABNORMAL    | NORMAL      |

## WEAR METALS

|           | method      | limit/base         | current      | history1 | history2 |
|-----------|-------------|--------------------|--------------|----------|----------|
| PQ        | ASTM D8184* |                    | <b>0</b>     | 0        | 0        |
| Iron      | ppm         | ASTM D5185(m) >200 | <b>14</b>    | 5        | 4        |
| Chromium  | ppm         | ASTM D5185(m) >15  | <b>0</b>     | 0        | 0        |
| Nickel    | ppm         | ASTM D5185(m) >15  | <b>&lt;1</b> | <1       | <1       |
| Titanium  | ppm         | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |
| Silver    | ppm         | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |
| Aluminum  | ppm         | ASTM D5185(m) >25  | <b>&lt;1</b> | 0        | 0        |
| Lead      | ppm         | ASTM D5185(m) >100 | <b>&lt;1</b> | 0        | 0        |
| Copper    | ppm         | ASTM D5185(m) >200 | <b>4</b>     | <1       | <1       |
| Tin       | ppm         | ASTM D5185(m) >25  | <b>0</b>     | 0        | 0        |
| Antimony  | ppm         | ASTM D5185(m) >5   | <b>0</b>     | 0        | 0        |
| Vanadium  | ppm         | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |
| Beryllium | ppm         | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |
| Cadmium   | ppm         | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base         | current      | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185(m) 5.5  | <b>2</b>     | 5        | <1       |
| Barium     | ppm    | ASTM D5185(m) 0.4  | <b>&lt;1</b> | <1       | <1       |
| Molybdenum | ppm    | ASTM D5185(m) 0.5  | <b>0</b>     | 0        | 0        |
| Manganese  | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | 0        |
| Magnesium  | ppm    | ASTM D5185(m) 23   | <b>0</b>     | 0        | 0        |
| Calcium    | ppm    | ASTM D5185(m) 13   | <b>4</b>     | 1        | 1        |
| Phosphorus | ppm    | ASTM D5185(m) 450  | <b>245</b>   | 297      | 283      |
| Zinc       | ppm    | ASTM D5185(m) 9.9  | <b>6</b>     | 2        | <1       |
| Sulfur     | ppm    | ASTM D5185(m) 8181 | <b>8595</b>  | 7880     | 8352     |
| Lithium    | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |

## CONTAMINANTS

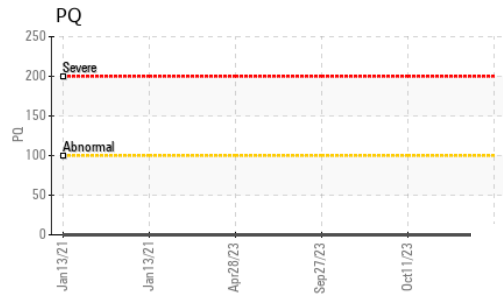
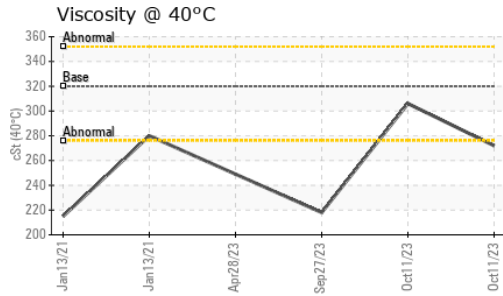
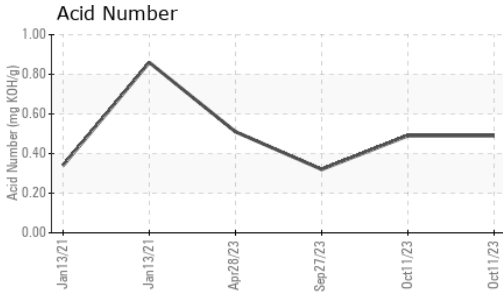
|           | method | limit/base        | current      | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) >50 | <b>2</b>     | 2        | <1       |
| Sodium    | ppm    | ASTM D5185(m)     | <b>&lt;1</b> | <1       | <1       |
| Potassium | ppm    | ASTM D5185(m) >20 | <b>0</b>     | 0        | 0        |

## FLUID DEGRADATION

|                  | method   | limit/base | current     | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | <b>0.49</b> | 0.49     | 0.32     |



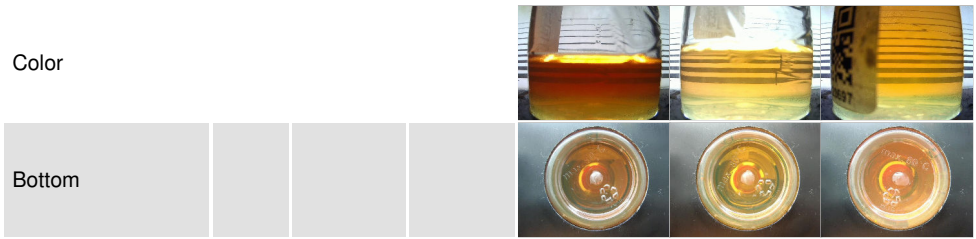
# OIL ANALYSIS REPORT



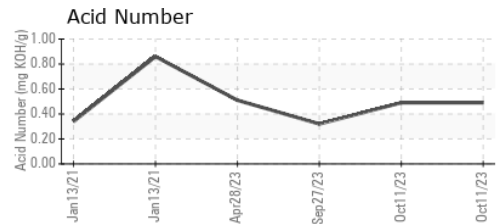
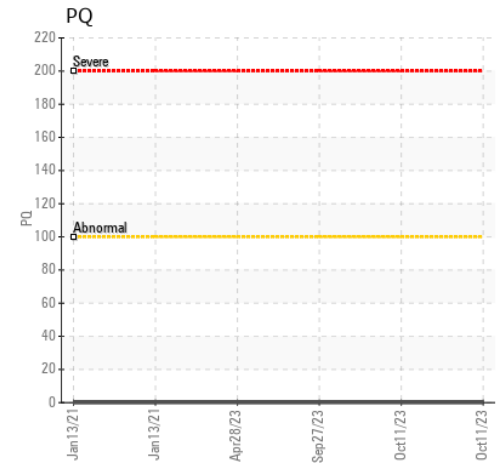
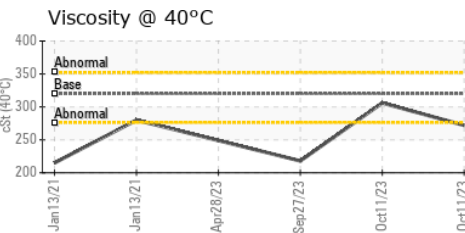
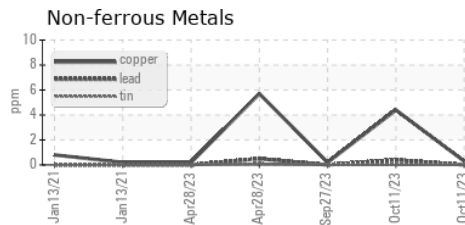
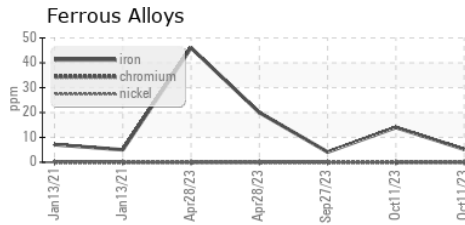
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | Visual*    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | Visual*    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | Visual*    | NONE    | NONE     | NONE     |
| Silt             | scalar | Visual*    | NONE    | NONE     | NONE     |
| Debris           | scalar | Visual*    | NONE    | NONE     | VLITE    |
| 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 D7279(m) | 320     | 272      | ▲ 306    |

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



## GRAPHS



ISO 17025:2017  
Accredited  
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
 Sample No. : WC0837968 Received : 19 Oct 2023  
 Lab Number : 02590414 Diagnosed : 23 Oct 2023  
 Unique Number : 5659480 Diagnostician : Kevin Marson  
 Test Package : IND 2 ( Additional Tests: TAN Man )

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

Vale - Clarabelle Mill  
 MTW (Mill, Tailings & Water)  
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 CA P0M 1N0  
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