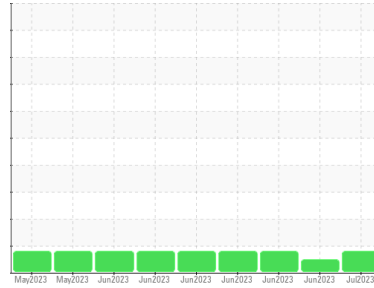




# PROBLEM SUMMARY

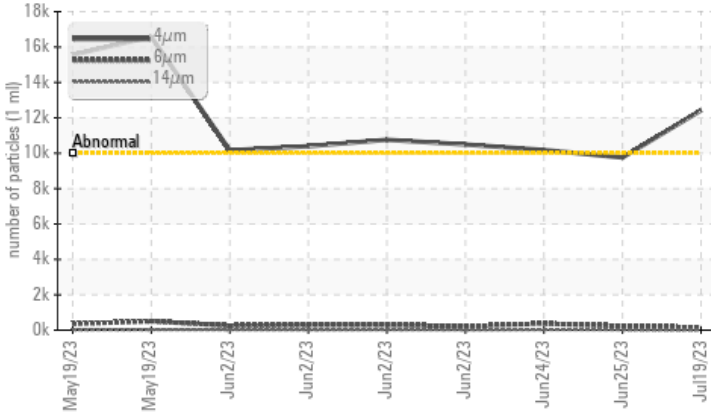
Sample Rating Trend



Area  
**Paper Machine**  
 Machine Id  
**Dry End Lubrication System**  
 Component  
**Bearing Lube**  
 Fluid  
**MOBIL DTE PM 220 (20000 LTR)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

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

## PROBLEMATIC TEST RESULTS

| Sample Status   |                        | ATTENTION  | NORMAL   | ATTENTION  |
|-----------------|------------------------|------------|----------|------------|
| Particles >4µm  | ASTM D7647 >10000      | ▲ 12423    | 9755     | ▲ 10182    |
| Oil Cleanliness | ISO 4406 (c) >20/18/14 | ▲ 21/14/10 | 20/15/11 | ▲ 21/16/12 |

Customer Id: CASASH  
 Sample No.: WC0776628  
 Lab Number: 05903740  
 Test Package: PLANT



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Doug Bogart +1 (800)237-1369 x4016  
[dougb@wearcheckusa.com](mailto:dougb@wearcheckusa.com)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

There are no recommended actions for this sample.

## HISTORICAL DIAGNOSIS

### 25 Jun 2023 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 24 Jun 2023 Diag: Doug Bogart

ISO



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of silt (particulates < 6 microns in size) present in the oil. The water content is negligible. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 02 Jun 2023 Diag: Angela Borella

ISO



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of silt (particulates < 6 microns in size) present in the oil. The water content is negligible. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

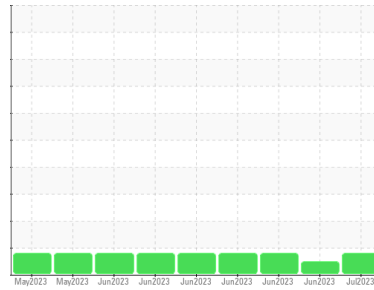
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**Paper Machine**  
 Machine Id  
**Dry End Lubrication System**  
 Component  
**Bearing Lube**  
 Fluid  
**MOBIL DTE PM 220 (20000 LTR)**

## 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 < 6 microns in size) present in the oil. The water content is negligible.

### 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>WC0776628</b>   | WC0776625   | WC0776626   |
| Sample Date   | Client Info |             | <b>19 Jul 2023</b> | 25 Jun 2023 | 24 Jun 2023 |
| Machine Age   | mths        | Client Info | <b>0</b>           | 0           | 0           |
| Oil Age       | mths        | 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      | ATTENTION   |

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >120 | <b>31</b>    | 27       | 27       |
| Chromium | ppm    | ASTM D5185m >5   | <b>0</b>     | 0        | <1       |
| Nickel   | ppm    | ASTM D5185m >20  | <b>0</b>     | <1       | 0        |
| Titanium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Silver   | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >4   | <b>&lt;1</b> | <1       | <1       |
| Lead     | ppm    | ASTM D5185m >30  | <b>0</b>     | 0        | 0        |
| Copper   | ppm    | ASTM D5185m >17  | <b>2</b>     | 2        | 2        |
| Tin      | ppm    | ASTM D5185m >10  | <b>0</b>     | 0        | 0        |
| Vanadium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base  | current      | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m | <b>0</b>     | 0        | 0        |
| Barium     | ppm    | ASTM D5185m | <b>&lt;1</b> | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m | <b>&lt;1</b> | <1       | <1       |
| Manganese  | ppm    | ASTM D5185m | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m | <b>4</b>     | 0        | 0        |
| Calcium    | ppm    | ASTM D5185m | <b>139</b>   | 125      | 125      |
| Phosphorus | ppm    | ASTM D5185m | <b>937</b>   | 904      | 906      |
| Zinc       | ppm    | ASTM D5185m | <b>1276</b>  | 1286     | 1291     |
| Sulfur     | ppm    | ASTM D5185m | <b>16391</b> | 16776    | 16938    |

## CONTAMINANTS

|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25  | <b>2</b>     | 2        | 2        |
| Sodium    | ppm    | ASTM D5185m      | <b>2</b>     | 2        | 2        |
| Potassium | ppm    | ASTM D5185m >20  | <b>0</b>     | 0        | 0        |
| Water     | %      | ASTM D6304 >0.2  | <b>0.012</b> | 0.012    | 0.010    |
| ppm Water | ppm    | ASTM D6304 >2000 | <b>123.0</b> | 125.2    | 109.5    |

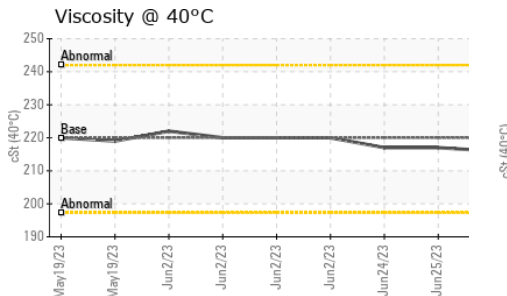
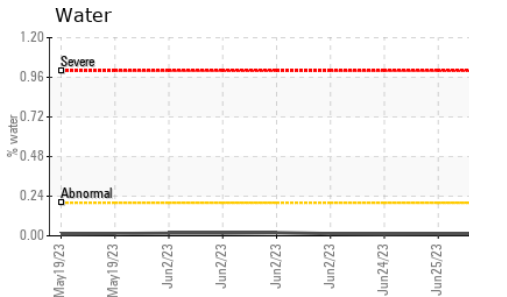
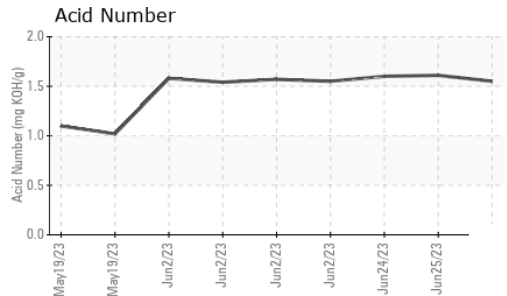
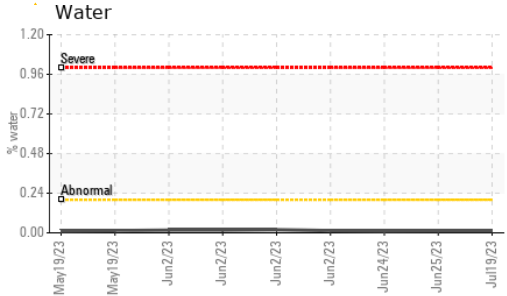
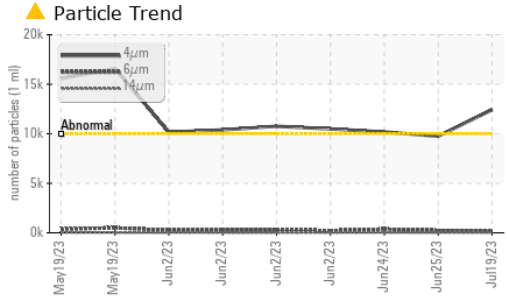
## FLUID CLEANLINESS

|                 | method       | limit/base | current           | history1 | history2          |
|-----------------|--------------|------------|-------------------|----------|-------------------|
| Particles >4µm  | ASTM D7647   | >10000     | <b>▲ 12423</b>    | 9755     | <b>▲ 10182</b>    |
| Particles >6µm  | ASTM D7647   | >2500      | <b>146</b>        | 233      | 369               |
| Particles >14µm | ASTM D7647   | >160       | <b>5</b>          | 18       | 29                |
| Particles >21µm | ASTM D7647   | >40        | <b>2</b>          | 4        | 7                 |
| Particles >38µm | ASTM D7647   | >10        | <b>1</b>          | 1        | 1                 |
| Particles >71µm | ASTM D7647   | >3         | <b>0</b>          | 1        | 0                 |
| Oil Cleanliness | ISO 4406 (c) | >20/18/14  | <b>▲ 21/14/10</b> | 20/15/11 | <b>▲ 21/16/12</b> |

## FLUID DEGRADATION

|                  | method   | limit/base | current     | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | <b>1.55</b> | 1.61     | 1.60     |

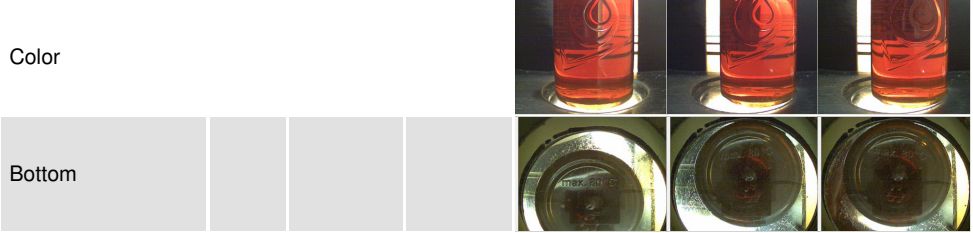
# OIL ANALYSIS REPORT



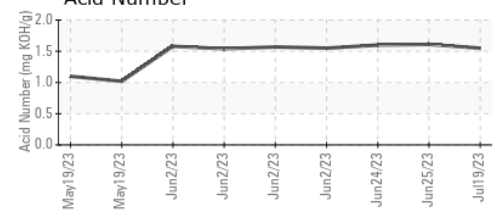
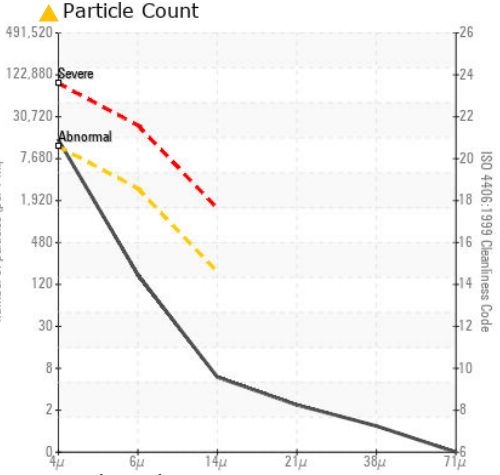
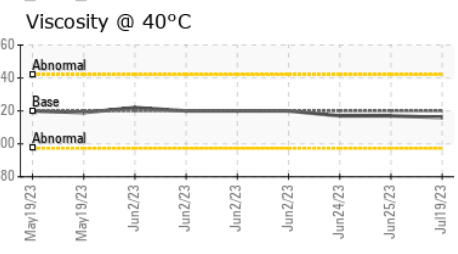
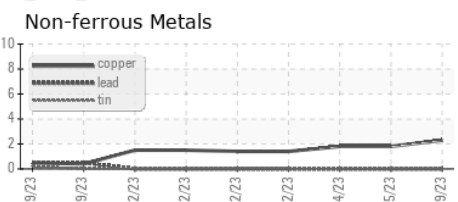
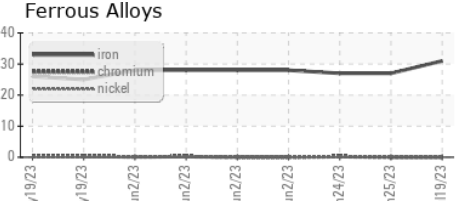
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Silt             | scalar | *Visual    | NONE    | NONE     | NONE     |
| Debris           | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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     | 216      | 217      |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0776628 **Received** : 20 Jul 2023  
**Lab Number** : 05903740 **Diagnosed** : 24 Jul 2023  
**Unique Number** : 10565096 **Diagnostician** : Doug Bogart  
**Test Package** : PLANT

**CASCADES CONTAINERBOARD PACKAGING - BEARPACK PROJECT**  
 10026 OLD RIDGE ROAD  
 ASHLAND, VA  
 US 23005  
**Contact: MARC-ANDRE HUBERT**  
 marc-andre\_hubert@cascades.com  
 T:  
 F:

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)