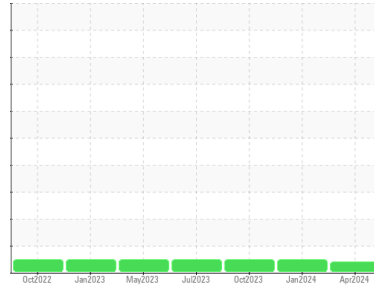




OIL ANALYSIS REPORT

Sample Rating Trend



VIS DEBRIS



Machine Id
PLANT 6 DVT 10
 Component
Vacuum Pump
 Fluid
 {not provided} (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

Moderate concentration of visible dirt/debris 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 | | USP0006778 | USP0005666 | USP232233 |
| Sample Date | Client Info | | 09 Apr 2024 | 20 Jan 2024 | 19 Oct 2023 |
| Machine Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | ABNORMAL | NORMAL | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|-----------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >20 | <1 | 0 | 0 |
| Chromium | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m >20 | 1 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >20 | <1 | 0 | 0 |
| Lead | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m >20 | 2 | 0 | 0 |
| Tin | ppm | ASTM D5185m >20 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|------------|----------|----------|
| Boron | ppm | ASTM D5185m | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 0 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | 1 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 1 | 0 | 2 |
| Calcium | ppm | ASTM D5185m | 3 | <1 | 2 |
| Phosphorus | ppm | ASTM D5185m | 133 | 99 | 79 |
| Zinc | ppm | ASTM D5185m | 0 | 7 | 0 |
| Sulfur | ppm | ASTM D5185m | 129 | 30 | 42 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >15 | <1 | 0 | <1 |
| Sodium | ppm | ASTM D5185m | 3 | <1 | 0 |
| Potassium | ppm | ASTM D5185m >20 | 3 | 0 | <1 |
| Water | % | ASTM D6304 >0.05 | 0.002 | 0.041 | 0.002 |
| ppm Water | ppm | ASTM D6304 >500 | 21 | 419 | 17.5 |

FLUID CLEANLINESS

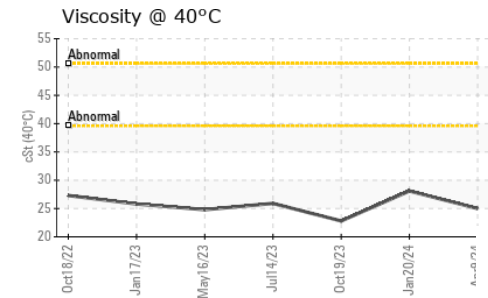
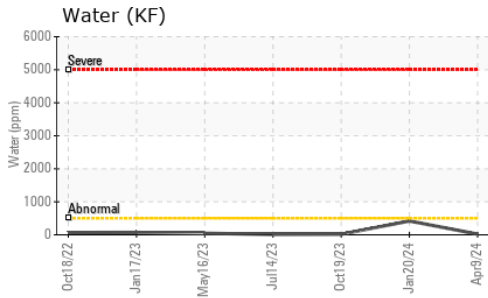
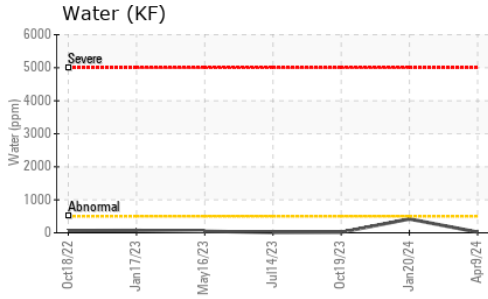
| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|------------|----------|----------|
| Particles >4µm | ASTM D7647 | >5000 | --- | 1134 | 857 |
| Particles >6µm | ASTM D7647 | >1300 | --- | 263 | 197 |
| Particles >14µm | ASTM D7647 | >160 | --- | 15 | 15 |
| Particles >21µm | ASTM D7647 | >40 | --- | 5 | 4 |
| Particles >38µm | ASTM D7647 | >10 | --- | 0 | 0 |
| Particles >71µm | ASTM D7647 | >3 | --- | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | --- | 17/15/11 | 17/15/11 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.43 | 0.31 | 0.23 |



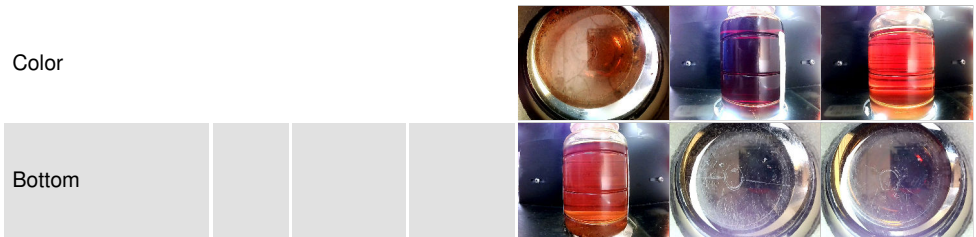
OIL ANALYSIS REPORT



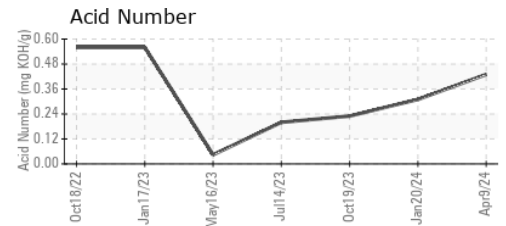
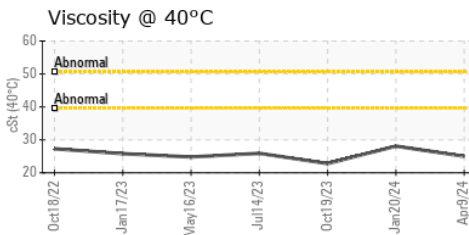
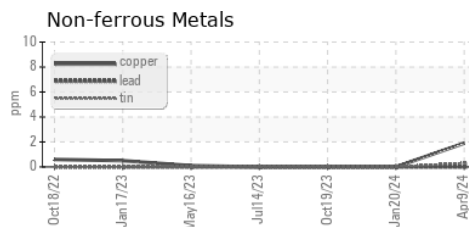
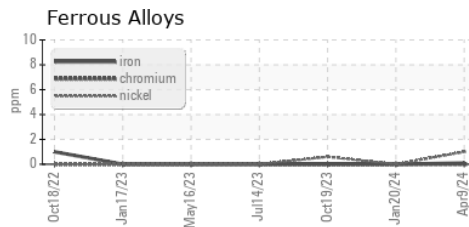
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | ▲ MODER | 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 | >0.05 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 25.0 | 28.1 | 22.8 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : USP0006778 **Received** : 16 Apr 2024
Lab Number : 06150469 **Tested** : 17 Apr 2024
Unique Number : 10980547 **Diagnosed** : 17 Apr 2024 - Doug Bogart
Test Package : IND 2

HILMAR CHEESE
 DALHART, TX
 US
 Contact: Service Manager

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)

T:
F: