

Machine Id
WHEY 2 WEST TANK FARM
 Component
Gearbox
 Fluid
MOBIL SHC 630 (--- 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 high 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 | | PCA0118378 | PCA0056140 | PCA0051126 |
| Sample Date | Client Info | | 22 May 2024 | 24 May 2022 | 27 May 2021 |
| 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 | ABNORMAL | ABNORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2 | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >200 | 17 | ▲ 99 | ▲ 81 |
| Chromium | ppm | ASTM D5185m >15 | 0 | 1 | 1 |
| Nickel | ppm | ASTM D5185m >15 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | 0 | 1 | 1 |
| Silver | ppm | ASTM D5185m | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m >25 | <1 | 12 | 11 |
| Lead | ppm | ASTM D5185m >100 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m >200 | 0 | 0 | 0 |
| Tin | ppm | ASTM D5185m >25 | 0 | <1 | 0 |
| Antimony | ppm | ASTM D5185m >5 | --- | --- | <1 |
| 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 | 2 | 0 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | 0 | <1 |
| Calcium | ppm | ASTM D5185m | 0 | 6 | 20 |
| Phosphorus | ppm | ASTM D5185m | 504 | 747 | 753 |
| Zinc | ppm | ASTM D5185m | 0 | 0 | 6 |
| Sulfur | ppm | ASTM D5185m | 32 | 642 | 696 |

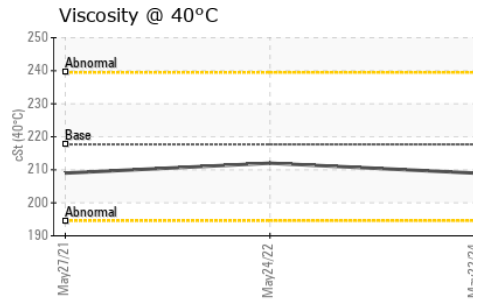
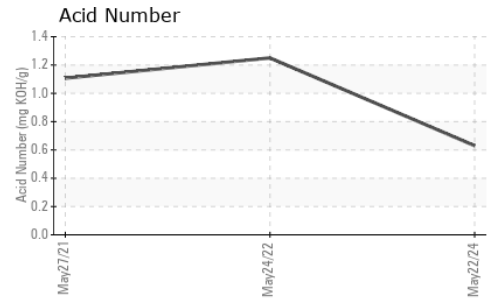
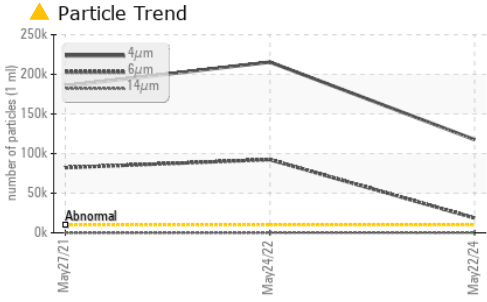
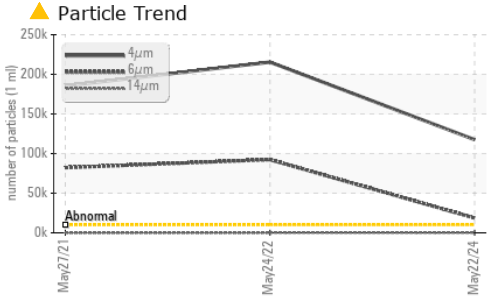
CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >50 | 20 | <1 | 0 |
| Sodium | ppm | ASTM D5185m | 0 | 5 | 3 |
| Potassium | ppm | ASTM D5185m >20 | <1 | 0 | <1 |

FLUID CLEANLINESS

| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-------------------|------------|------------|
| Particles >4µm | ASTM D7647 | >10000 | ▲ 117579 | 215433 | 185400 |
| Particles >6µm | ASTM D7647 | >2500 | ▲ 18691 | ▲ 92385 | ▲ 82180 |
| Particles >14µm | ASTM D7647 | >640 | 20 | 49 | 59 |
| Particles >21µm | ASTM D7647 | >160 | 4 | 8 | 5 |
| Particles >38µm | ASTM D7647 | >40 | 1 | 0 | 0 |
| Particles >71µm | ASTM D7647 | >10 | 1 | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >20/18/16 | ▲ 24/21/11 | ▲ 25/24/13 | ▲ 25/24/13 |

OIL ANALYSIS REPORT

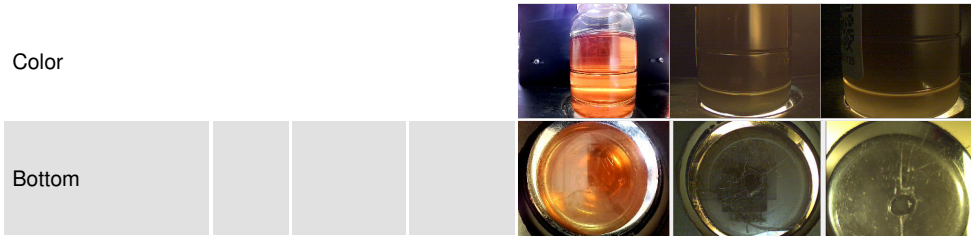


| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.63 | 1.25 | 1.107 |

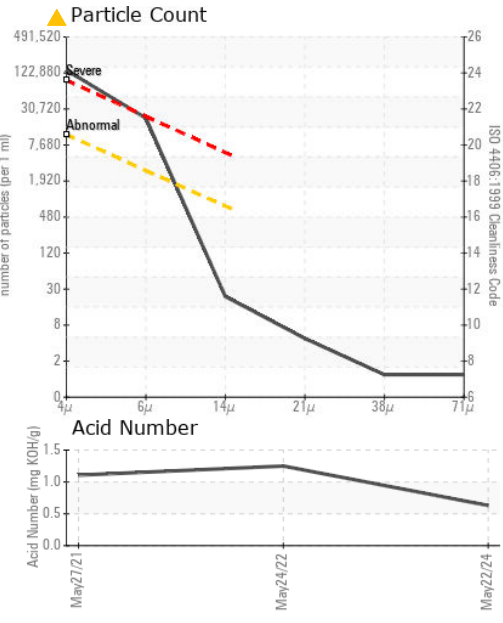
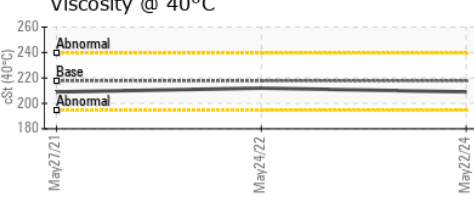
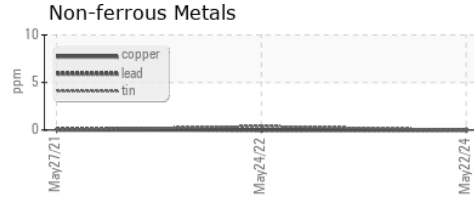
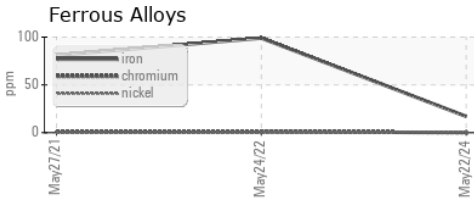
| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | LIGHT |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|-----------|------------|------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 217.7 | 209 | 212 | 209 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0118378 **Received** : 28 May 2024
Lab Number : **06192178** **Tested** : 29 May 2024
Unique Number : 11048930 **Diagnosed** : 30 May 2024 - Jonathan Hester
Test Package : IND 2 (Additional Tests: PrtCount)

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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)