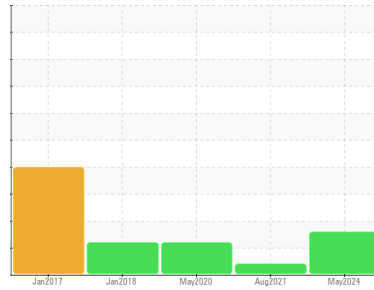




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
KAESER AS20T 4946506 (S/N 1162)
 Component
Compressor
 Fluid
KAESER SIGMA (OEM) FG-460 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. 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 | | | KCPA017301 | KCP36943 | KCP25664 |
| Sample Date | Client Info | | | 28 May 2024 | 20 Aug 2021 | 22 May 2020 |
| Machine Age | hrs | Client Info | | 6329 | 31647 | 22808 |
| Oil Age | hrs | Client Info | | 0 | 8839 | 4886 |
| Oil Changed | Client Info | | | Changed | Changed | Changed |
| Sample Status | | | | ATTENTION | ATTENTION | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|---------|----------|----------|
| Iron | ppm | ASTM D5185m | >50 | <1 | <1 | 8 |
| Chromium | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | 2 | 2 | 8 |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | 22 | 16 | 29 |
| Tin | ppm | ASTM D5185m | >10 | <1 | 4 | <1 |
| Antimony | ppm | ASTM D5185m | | --- | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

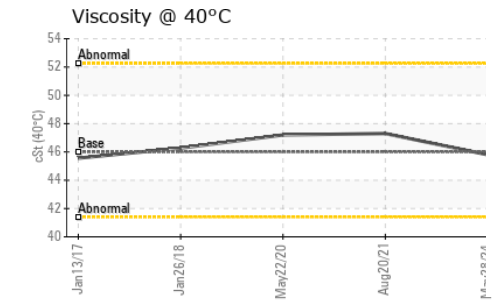
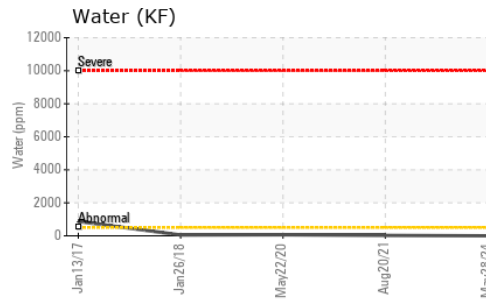
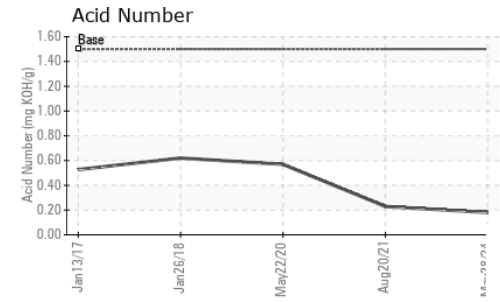
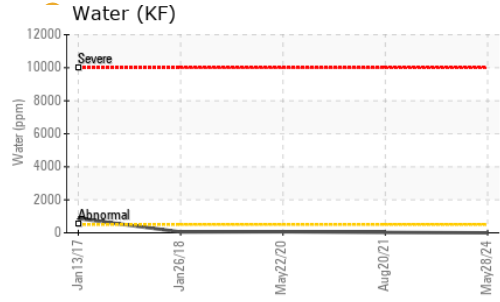
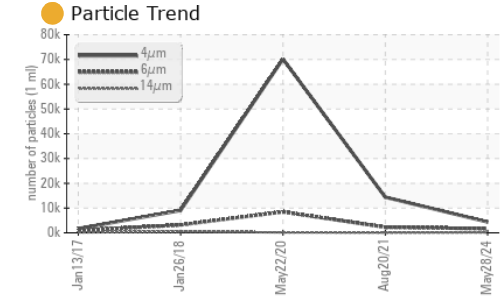
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|---------|----------|----------|
| Boron | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Calcium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Phosphorus | ppm | ASTM D5185m | 500 | 65 | 94 | 231 |
| Zinc | ppm | ASTM D5185m | | 65 | 98 | 312 |
| Sulfur | ppm | ASTM D5185m | | 1368 | 697 | 1115 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|---------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | <1 | <1 | <1 |
| Sodium | ppm | ASTM D5185m | | 0 | <1 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 6 | <1 |
| Water | % | ASTM D6304 | >0.05 | 0.00 | 0.003 | 0.006 |
| ppm Water | ppm | ASTM D6304 | >500 | 0 | 25.6 | 63.3 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|----------|----------|----------|
| Particles >4µm | | ASTM D7647 | | 4372 | 14388 | 70186 |
| Particles >6µm | | ASTM D7647 | >1300 | 1648 | 2282 | 8446 |
| Particles >14µm | | ASTM D7647 | >80 | 149 | 63 | 159 |
| Particles >21µm | | ASTM D7647 | >20 | 32 | 15 | 37 |
| Particles >38µm | | ASTM D7647 | >4 | 2 | 0 | 2 |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | 19/18/14 | 18/13 | 20/14 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|---------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.5 | 0.18 | 0.229 | 0.569 |

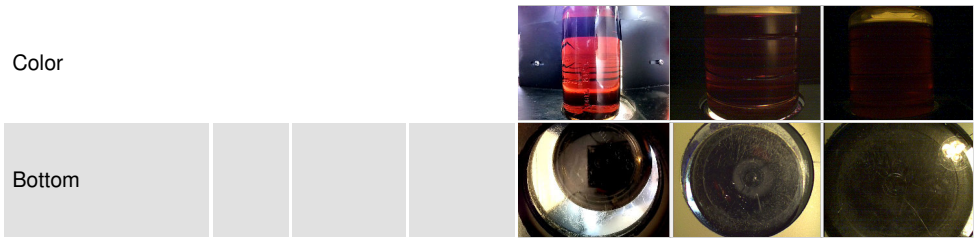
OIL ANALYSIS REPORT



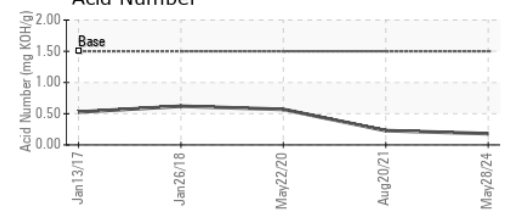
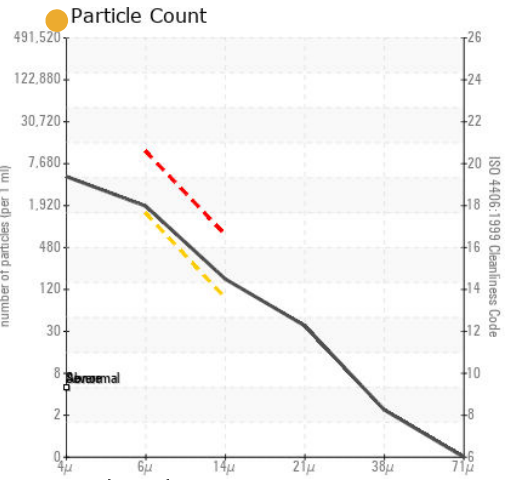
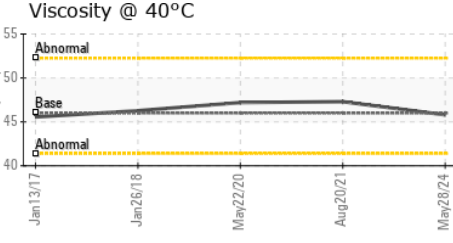
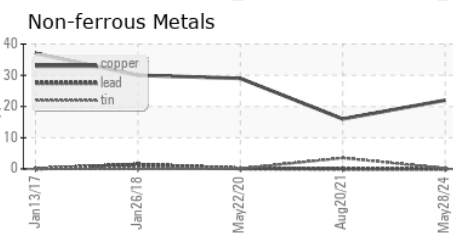
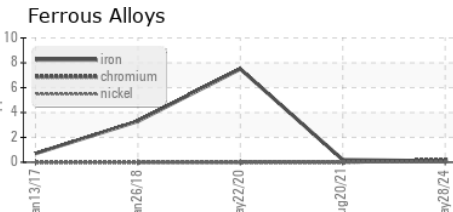
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | LIGHT |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.05 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|--------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 46 | 45.8 | 47.3 | 47.2 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA017301 **Received** : 07 Jun 2024
Lab Number : 06203408 **Tested** : 11 Jun 2024
Unique Number : 11070869 **Diagnosed** : 11 Jun 2024 - Angela Borella
Test Package : IND 2 (Additional Tests: KF, PrtCount)

REAL ALE BREWING COMPANY
 231 SAN SABA CT
 BLANCO, TX
 US 78606
 Contact: GARRY
 garry@realalebrewing.com

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)