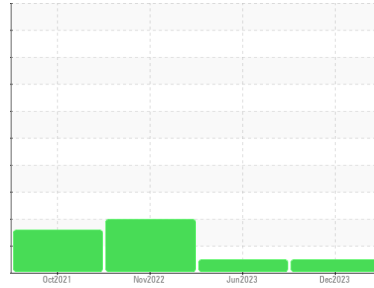




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
7449045 (S/N 1339)

Component
Compressor
Fluid
KAESER SIGMA (OEM) M-460 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

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 | | | KCPA011685 | KCPA004247 | KCP47742 |
| Sample Date | Client Info | | | 26 Dec 2023 | 30 Jun 2023 | 06 Nov 2022 |
| Machine Age | hrs Client Info | | | 21345 | 18308 | 13686 |
| Oil Age | hrs Client Info | | | 0 | 0 | 3025 |
| Oil Changed | Client Info | | | N/A | N/A | Changed |
| Sample Status | | | | NORMAL | NORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|------------|----------|----------|
| Iron | ppm | ASTM D5185m | >50 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | <1 | <1 |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | 6 | 5 | 6 |
| Tin | ppm | ASTM D5185m | >10 | 0 | 0 | <1 |
| Antimony | ppm | ASTM D5185m | | --- | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

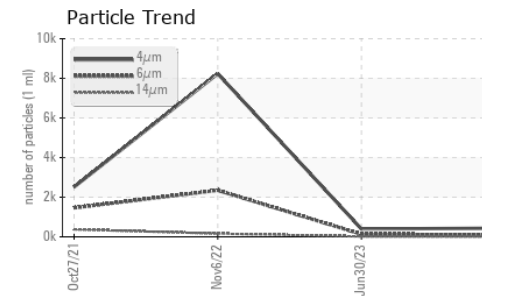
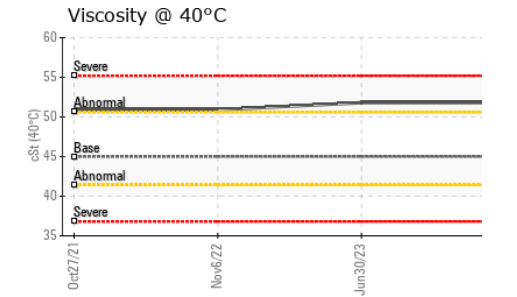
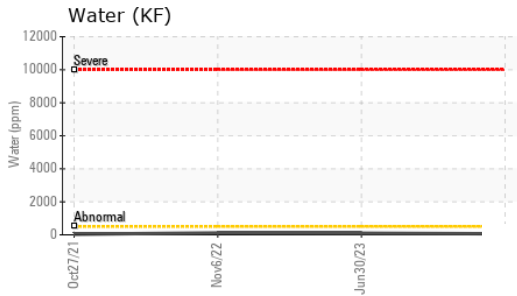
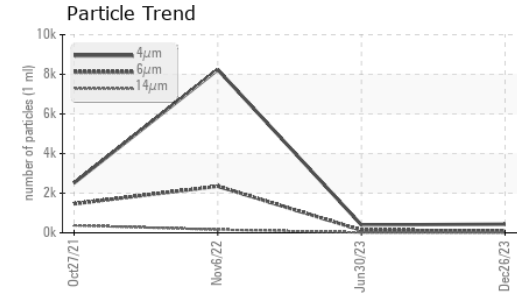
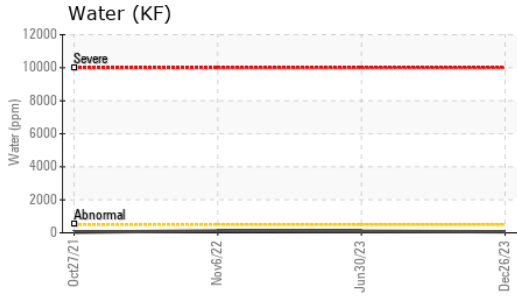
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 100 | 0 | 3 | ▲ <1 |
| Calcium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | 0 | 0 | 1 | 7 |
| Zinc | ppm | ASTM D5185m | 0 | 0 | 6 | 0 |
| Sulfur | ppm | ASTM D5185m | 23500 | 15564 | 19706 | 21134 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 0 | 0 | <1 |
| Sodium | ppm | ASTM D5185m | | <1 | <1 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 0 | <1 |
| Water | % | ASTM D6304 | >0.05 | 0.006 | 0.009 | 0.012 |
| ppm Water | ppm | ASTM D6304 | >500 | 62 | 97.9 | 121.3 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-----------------|----------|------------|
| Particles >4µm | | ASTM D7647 | | 434 | 395 | 8235 |
| Particles >6µm | | ASTM D7647 | >1300 | 101 | 128 | ▲ 2349 |
| Particles >14µm | | ASTM D7647 | >80 | 9 | 16 | ▲ 160 |
| Particles >21µm | | ASTM D7647 | >20 | 3 | 7 | ▲ 47 |
| Particles >38µm | | ASTM D7647 | >4 | 0 | 1 | 2 |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | 16/14/10 | 16/14/11 | ▲ 20/18/14 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | 0.61 | 0.61 | 0.54 |

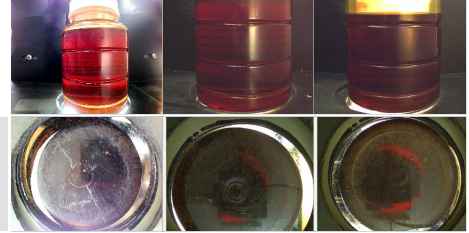
OIL ANALYSIS REPORT



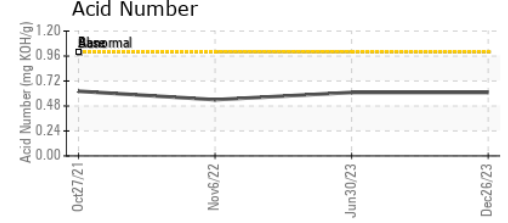
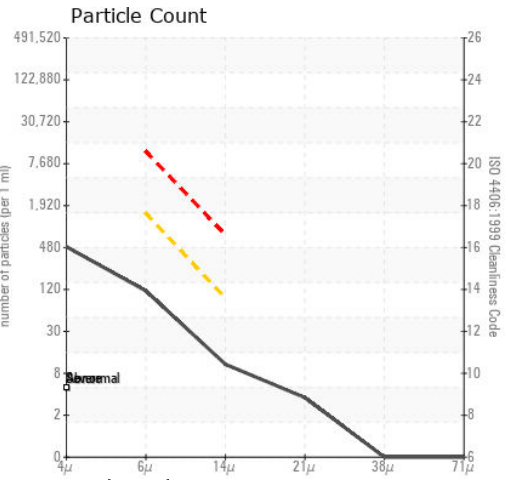
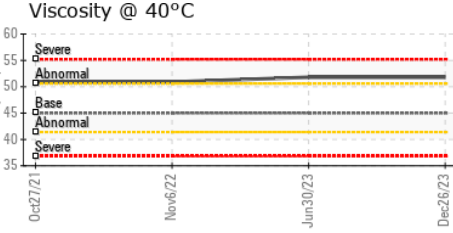
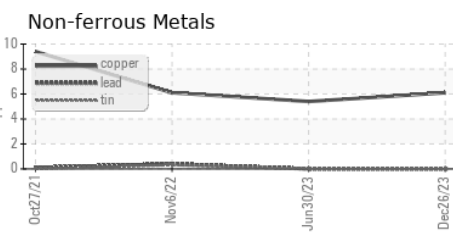
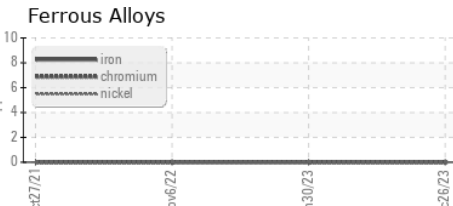
| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-------|
| White Metal | scalar | *Visual | NONE | LIGHT | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|--------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 45 | 51.8 | 51.8 | 50.9 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA011685 **Received** : 08 Jan 2024
Lab Number : 06054929 **Diagnosed** : 10 Jan 2024
Unique Number : 10820878 **Diagnostician** : Don Baldrige
Test Package : IND 2 (Additional Tests: KF, PrtCount)

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 US 43214
 Contact: Service Manager
 COLUMBUS@KAESER.COM
 T:
 F:

Certificate L2367
 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)