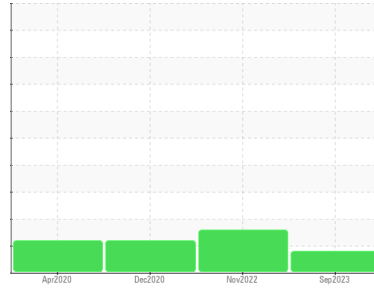


# PROBLEM SUMMARY

Sample Rating Trend



ISO



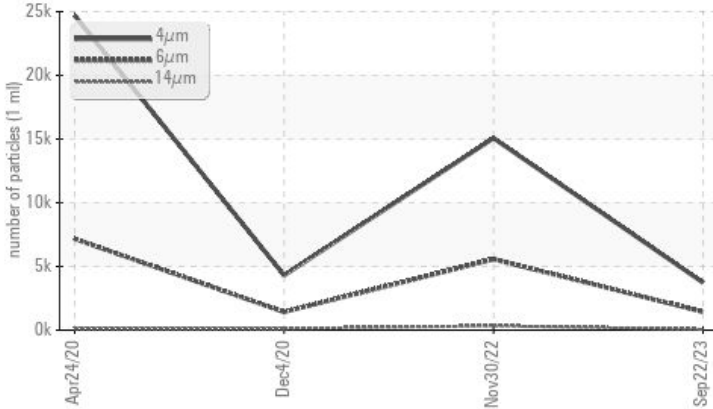
Machine Id  
**7015058 (S/N 1379)**

Component  
**Compressor**

Fluid  
**KAESER SIGMA (OEM) S-460 (--- GAL)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status   |                        | ATTENTION  | ABNORMAL   | ATTENTION |
|-----------------|------------------------|------------|------------|-----------|
| Particles >6µm  | ASTM D7647 >1300       | ▲ 1429     | ▲ 5570     | ▲ 1421    |
| Oil Cleanliness | ISO 4406 (c) >--/17/13 | ▲ 19/18/13 | ▲ 21/20/16 | ▲ 18/14   |

Customer Id: FLIHIL  
Sample No.: KCPA006372  
Lab Number: 05967034  
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@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

### 30 Nov 2022 Diag: Don Baldrige

ISO



No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 04 Dec 2020 Diag: Don Baldrige

ISO



The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 24 Apr 2020 Diag: Don Baldrige

ISO



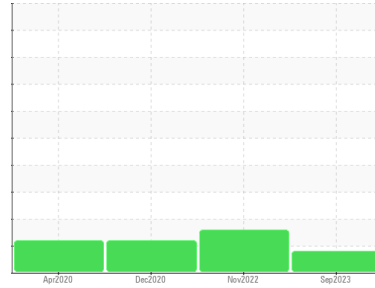
No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**7015058 (S/N 1379)**

Component

**Compressor**

Fluid

**KAESER SIGMA (OEM) S-460 (--- GAL)**

**DIAGNOSIS**

**Recommendation**

No corrective action is recommended at this time. The 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 |             |            | <b>KCPA006372</b>  | KC106324    | KC91529     |
| Sample Date        | Client Info |             |            | <b>22 Sep 2023</b> | 30 Nov 2022 | 04 Dec 2020 |
| Machine Age        | hrs         | Client Info |            | <b>12937</b>       | 11077       | 6203        |
| Oil Age            | hrs         | Client Info |            | <b>0</b>           | 1146        | 2464        |
| Oil Changed        | Client Info |             |            | <b>N/A</b>         | Not Changd  | Not Changd  |
| Sample Status      |             |             |            | <b>ATTENTION</b>   | ABNORMAL    | ATTENTION   |

| WEAR METALS |     | method      | limit/base | current    | history1 | history2 |
|-------------|-----|-------------|------------|------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >50        | <b>0</b>   | 0        | <1       |
| Chromium    | ppm | ASTM D5185m | >10        | <b>0</b>   | 0        | 0        |
| Nickel      | ppm | ASTM D5185m | >3         | <b>0</b>   | <1       | 0        |
| Titanium    | ppm | ASTM D5185m | >3         | <b>0</b>   | 0        | 0        |
| Silver      | ppm | ASTM D5185m | >2         | <b>0</b>   | 0        | 0        |
| Aluminum    | ppm | ASTM D5185m | >10        | <b>2</b>   | <1       | <1       |
| Lead        | ppm | ASTM D5185m | >10        | <b>0</b>   | <1       | <1       |
| Copper      | ppm | ASTM D5185m | >50        | <b>18</b>  | 7        | 8        |
| Tin         | ppm | ASTM D5185m | >10        | <b>0</b>   | <1       | 0        |
| Antimony    | ppm | ASTM D5185m |            | <b>---</b> | ---      | 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        | 10       |
| Barium     | ppm | ASTM D5185m | 90         | <b>0</b>     | <1       | 0        |
| Molybdenum | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Manganese  | ppm | ASTM D5185m |            | <b>0</b>     | <1       | <1       |
| Magnesium  | ppm | ASTM D5185m | 90         | <b>4</b>     | 32       | 43       |
| Calcium    | ppm | ASTM D5185m | 2          | <b>0</b>     | 0        | 0        |
| Phosphorus | ppm | ASTM D5185m |            | <b>2</b>     | 9        | 2        |
| Zinc       | ppm | ASTM D5185m |            | <b>5</b>     | 7        | 8        |
| Sulfur     | ppm | ASTM D5185m |            | <b>21490</b> | 19931    | 15872    |

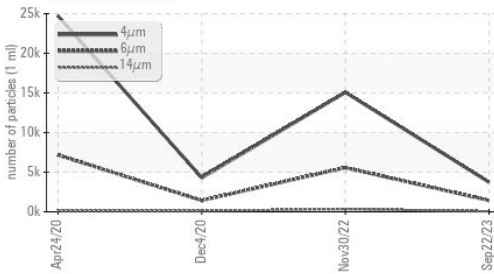
| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>&lt;1</b> | <1       | <1       |
| Sodium       | ppm | ASTM D5185m |            | <b>0</b>     | 15       | 25       |
| Potassium    | ppm | ASTM D5185m | >20        | <b>1</b>     | 4        | 9        |
| Water        | %   | ASTM D6304  | >0.05      | <b>0.010</b> | 0.013    | 0.014    |
| ppm Water    | ppm | ASTM D6304  | >500       | <b>105.8</b> | 139.2    | 146.3    |

| FLUID CLEANLINESS |  | method       | limit/base | current           | history1   | history2 |
|-------------------|--|--------------|------------|-------------------|------------|----------|
| Particles >4µm    |  | ASTM D7647   |            | <b>3730</b>       | 15067      | 4303     |
| Particles >6µm    |  | ASTM D7647   | >1300      | <b>▲ 1429</b>     | ▲ 5570     | ▲ 1421   |
| Particles >14µm   |  | ASTM D7647   | >80        | <b>54</b>         | ▲ 336      | ▲ 117    |
| Particles >21µm   |  | ASTM D7647   | >20        | <b>11</b>         | ▲ 78       | ▲ 24     |
| Particles >38µm   |  | ASTM D7647   | >4         | <b>1</b>          | 3          | 0        |
| Particles >71µm   |  | ASTM D7647   | >3         | <b>0</b>          | 0          | 0        |
| Oil Cleanliness   |  | ISO 4406 (c) | >--/17/13  | <b>▲ 19/18/13</b> | ▲ 21/20/16 | ▲ 18/14  |

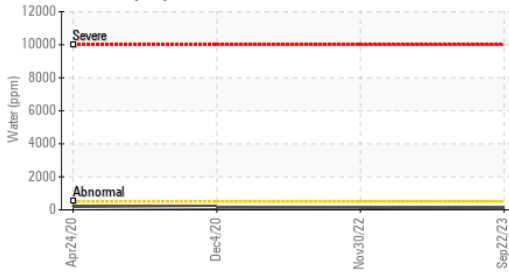
| FLUID DEGRADATION |          | method     | limit/base | current     | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D8045 | 0.4        | <b>0.34</b> | 0.36     | 0.304    |

# OIL ANALYSIS REPORT

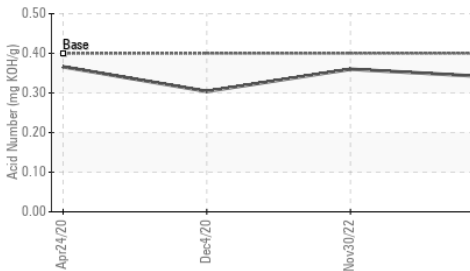
## ▲ Particle Trend



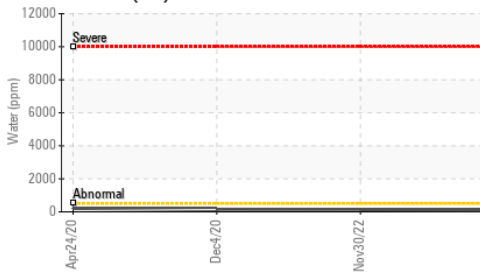
## Water (KF)



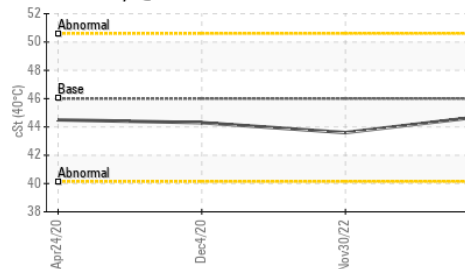
## Acid Number



## Water (KF)



## Viscosity @ 40°C

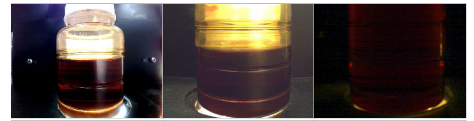


| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
|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

| FLUID PROPERTIES | method | limit/base   | current | history1 | history2 |
|------------------|--------|--------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445 46 | 44.8    | 43.6     | 44.3     |

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

Color

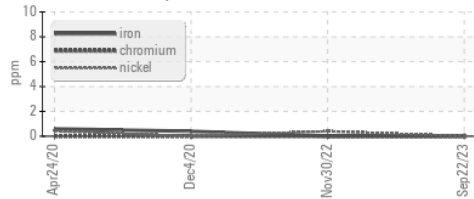


Bottom

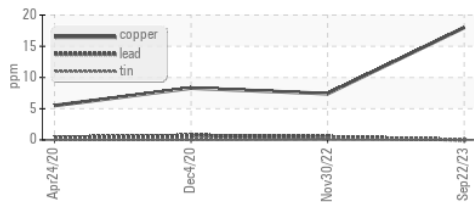


## GRAPHS

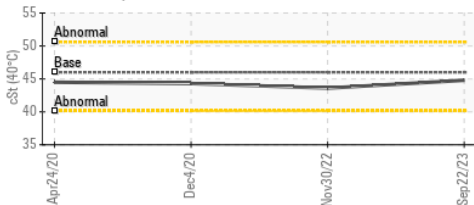
### Ferrous Alloys



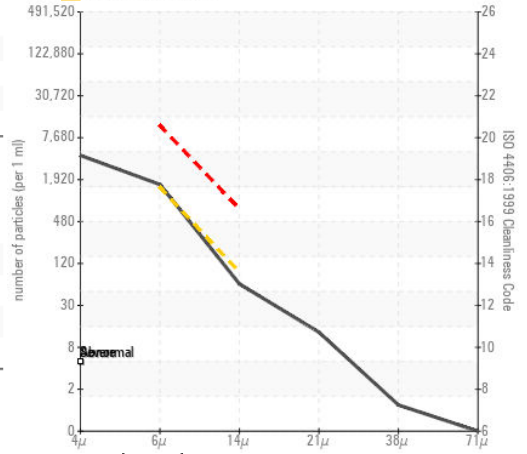
### Non-ferrous Metals



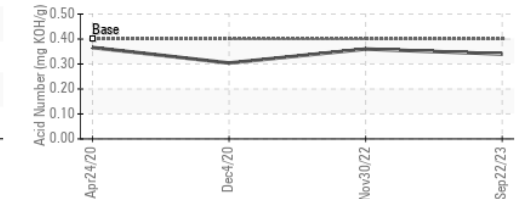
### Viscosity @ 40°C



### ▲ Particle Count



### Acid Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KCPA006372 **Received** : 02 Oct 2023  
**Lab Number** : 05967034 **Diagnosed** : 04 Oct 2023  
**Unique Number** : 10673585 **Diagnostician** : Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**FLINT HILLS IND - HILLSBORO IND**  
 220 INDUSTRIAL RD  
 HILLSBORO, KS  
 US 67063  
 Contact: M. OHARA  
 mohara@hillsboroindustries.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)

T:  
F: