

OIL ANALYSIS REPORT

Sample Rating Trend

VIS DEBRIS

Machine Id KAESER BSD 50T 6780156 (S/N 1574)

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. 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 acceptable for the time in service.

| Iron ppm ASTM 05185m >50 <1 | | | motherst | lingit/le e c | ou survey at | bistemat | histor 0 |
|--|------------------|----------|--------------|---------------|--------------|----------|---------------|
| Sample Date Client Info 13 May 2024 09 Mar 2023 15 Feb 2022 Machine Age hrs Client Info 16180 9185 7340 Oil Age hrs Client Info 0 1845 7340 Sample Status Client Info N/A Changed Changed Changed Changed ABNORMAL WEAR METALS method Imitbase current history1 history2 Iron ppm ASTM 05185m >50 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 1 <1 1 <1 <th></th> <th></th> <th></th> <th>limit/base</th> <th></th> <th></th> <th></th> | | | | limit/base | | | |
| Machine Age hrs Client Info 16180 9185 7340 Oil Age hrs Client Info N/A Changed Changed Sample Status Imathins N/A ABNORMAL ABNORMAL ABNORMAL WEAR METALS method Imit/base current history! Mistory! Iron ppm ASTM D5185m >50 <1 | • | | | | | | |
| Oil Age hrs Client Info NA T340 Oil Changed Client Info NA Changed Changed Sample Status Imit Differ ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history2 Iron ppm ASTM D5185n >50 <1 | | | | | - | | |
| Oil Changed Client Info N/A Changed Changed Sample Status Image ABNORMAL ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history2 Iron ppm ASTM D5185m >50 <1 | • | | | | | | |
| Sample Status method Imit/base Current history1 ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1 | - | hrs | | | | | |
| WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185n >50 <1 | - | | Client Info | | | Ũ | 0 |
| Iron ppm ASTM D5185m >50 <1 <1 <1 Chromium ppm ASTM D5185m >3 1 0 0 Nickel ppm ASTM D5185m >3 1 0 0 Silver ppm ASTM D5185m >2 <1 | Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |
| Ppm ASTM D5185m >10 <1 0 0 Nickel ppm ASTM D5185m >3 1 0 0 Silver ppm ASTM D5185m >2 <1 | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m >3 1 0 0 Titanium ppm ASTM D5185m >3 <1 | Iron | ppm | ASTM D5185m | >50 | <1 | <1 | <1 |
| Titanium ppm ASTM D5185m >3 <1 0 0 Silver ppm ASTM D5185m >2 <1 | Chromium | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >10 1 <1 | Nickel | ppm | ASTM D5185m | >3 | 1 | 0 | 0 |
| Aluminum ppm ASTM D5185m >10 1 <1 2 Lead ppm ASTM D5185m >10 <1 | Titanium | ppm | ASTM D5185m | >3 | <1 | 0 | 0 |
| Lead ppm ASTM D5185m >10 <1 0 0 Copper ppm ASTM D5185m >50 8 9 7 Tin ppm ASTM D5185m >10 <1 | Silver | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Copper ppm ASTM D5185m >50 8 9 7 Tin ppm ASTM D5185m >10 <1 | Aluminum | ppm | ASTM D5185m | >10 | 1 | <1 | 2 |
| Tin ppm ASTM D5185m >10 <1 0 0 Antimony ppm ASTM D5185m < < Vanadium ppm ASTM D5185m < <1 0 0 Cadmium ppm ASTM D5185m Imit/base current history1 history2 Boron ppm ASTM D5185m 90 0 0 <1 0 0 Molybdenum ppm ASTM D5185m 90 0 0 0 0 0 Magnesium ppm ASTM D5185m 90 1 6 0 0 Zalicum ppm ASTM D5185m 90 1 6 0 0 Zinc ppm ASTM D5185m 2 4 0 0 0 Sodium ppm ASTM D5185m 2 1 6 0 0 Sodium ppm ASTM D5185m 2 <1 0 <1 0 0 0 Sodium ppm ASTM D518 | Lead | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Tin ppm ASTM D5185m >10 <1 0 0 Antimony ppm ASTM D5185m < < Vanadium ppm ASTM D5185m < <1 0 0 Cadmium ppm ASTM D5185m Imit/base current history1 history2 Boron ppm ASTM D5185m 90 0 0 <1 0 0 Molybdenum ppm ASTM D5185m 90 0 0 0 0 0 Magnesium ppm ASTM D5185m 90 1 6 0 0 Zalicum ppm ASTM D5185m 90 1 6 0 0 Zinc ppm ASTM D5185m 2 4 0 0 0 Sodium ppm ASTM D5185m 2 1 6 0 0 Sodium ppm ASTM D5185m 2 <1 0 <1 0 0 0 Sodium ppm ASTM D518 | Copper | ppm | ASTM D5185m | >50 | 8 | 9 | 7 |
| Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <<1 | | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 | Antimony | ppm | ASTM D5185m | | | | |
| Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1 0 Barium ppm ASTM D5185m 90 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 90 1 6 <1 0 Calcium ppm ASTM D5185m 90 1 6 <1 0 Calcium ppm ASTM D5185m 90 1 6 <1 Calcium ppm ASTM D5185m 2 4 0 0 Zinc ppm ASTM D5185m 2 4 0 0 Solium ppm ASTM D5185m 2.0 2 <1 0 <1 Sodium ppm ASTM D5185m | Vanadium | | ASTM D5185m | | <1 | 0 | 0 |
| Boron ppm ASTM D5185m 0 0 <1 Barium ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m <1 | Cadmium | | ASTM D5185m | | <1 | 0 | 0 |
| Barium ppm ASTM D5185m 90 0 0 0 0 Molybdenum ppm ASTM D5185m <1 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Barium ppm ASTM D5185m 90 0 0 0 Molybdenum ppm ASTM D5185m <1 | Boron | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Molybdenum ppm ASTM D5185m <1 0 0 Manganese ppm ASTM D5185m 90 1 6 <1 | Barium | | ASTM D5185m | 90 | 0 | 0 | 0 |
| Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 90 1 6 <1 | Molvbdenum | | | | <1 | 0 | 0 |
| Magnesium ppm ASTM D5185m 90 1 6 <1 Calcium ppm ASTM D5185m 2 4 0 0 Phosphorus ppm ASTM D5185m 2 4 0 0 Zinc ppm ASTM D5185m 5 0 0 Zinc ppm ASTM D5185m 7 9 35 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 | | | | | | 0 | 0 |
| Calcium ppm ASTM D5185m 2 4 0 0 Phosphorus ppm ASTM D5185m 5 0 0 Zinc ppm ASTM D5185m 5 0 0 Zinc ppm ASTM D5185m 7 9 35 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 | - | | | 90 | - | | <1 |
| Phosphorus ppm ASTM D5185m 5 0 0 Zinc ppm ASTM D5185m 7 9 35 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 0 <1 Sodium ppm ASTM D5185m >20 2 2 <1 Potassium ppm ASTM D5185m >20 2 2 <1 Water % ASTM D6304 >0.05 0.046 0.014 0.023 ppm Water ppm ASTM D6304 >500 463 144.5 233.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >1300 8743 Particles >6µm ASTM D7647 >80 272 Particles >1µm ASTM D7647 >80 55 Particles >38µm ASTM D76 | • | | | | | | |
| Zinc ppm ASTM D5185m 7 9 35 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 0 <1 Sodium ppm ASTM D5185m >20 2 2 <1 Potassium ppm ASTM D5185m >20 2 2 <1 Water % ASTM D5304 >0.05 0.046 0.014 0.023 ppm Water ppm ASTM D6304 >500 463 144.5 233.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 8743 Particles >6µm ASTM D7647 >1300 272 Particles >1µm ASTM D7647 >20 4 272 Particles >38µm ASTM D7647 >3 4 6 Particles >71µm | | | | - | - | | |
| CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25<1 | | | | | | | ÷ |
| Silicon ppm ASTM D5185m >25 <1 0 <1 Sodium ppm ASTM D5185m 1 6 0 Potassium ppm ASTM D5185m >20 2 2 <1 | | | | 11 | _ | - | |
| Sodium ppm ASTM D5185m 1 6 0 Potassium ppm ASTM D5185m<>20 2 2 <1 | | | | | | | |
| Potassium ppm ASTM D5185m >20 2 2 <1 Water % ASTM D6304 >0.05 0.046 0.014 0.023 ppm Water ppm ASTM D6304 >500 463 144.5 233.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 8743 Particles >6µm ASTM D7647 >1300 8743 Particles >14µm ASTM D7647 >80 222 22 Particles >14µm ASTM D7647 >20 55 Particles >21µm ASTM D7647 >20 55 Particles >38µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 19/15 FLUID DEGRADATION method limit/base current history1 history2< | | | | >25 | | | |
| Water % ASTM D6304 >0.05 0.046 0.014 0.023 ppm Water ppm ASTM D6304 >500 463 144.5 233.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 8743 Particles >6µm ASTM D7647 8743 Particles >6µm ASTM D7647 >1300 2847 Particles >14µm ASTM D7647 >80 4 272 Particles >21µm ASTM D7647 >20 55 Particles >38µm ASTM D7647 >3 0 6 Particles >71µm ASTM D7647 >3 0 01 19/15 FLUID DEGRADATION method limit/base current history1 history2 | | ppm | | | | | |
| ppm Water ppm ASTM D6304 >500 463 144.5 233.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 8743 Particles >6µm ASTM D7647 >1300 8743 Particles >6µm ASTM D7647 >1300 2847 Particles >14µm ASTM D7647 >80 272 Particles >21µm ASTM D7647 >20 55 Particles >38µm ASTM D7647 >4 6 Particles >71µm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) /17/13 19/15 FLUID DEGRADATION method limit/base current history1 history2 | | | | | | | |
| FLUID CLEANLINESSmethodlimit/basecurrenthistory1history2Particles >4µmASTM D76478743Particles >6µmASTM D7647>1300 $\&$ 2847Particles >14µmASTM D7647>80 $\&$ 272Particles >21µmASTM D7647>20 $\&$ 55Particles >38µmASTM D7647>46Particles >71µmASTM D7647>30Oil CleanlinessISO 4406 (c)>/17/13 \checkmark 19/15FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2 | | % | | >0.05 | 0.046 | 0.014 | |
| Particles >4µm ASTM D7647 8743 Particles >6µm ASTM D7647 >1300 4 2847 Particles >14µm ASTM D7647 >80 4 272 Particles >14µm ASTM D7647 >20 4 272 Particles >21µm ASTM D7647 >20 55 Particles >38µm ASTM D7647 >4 6 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 4 19/15 FLUID DEGRADATION method limit/base current history1 history2 | ppm Water | ppm | ASTM D6304 | >500 | 463 | 144.5 | 233.4 |
| Particles >6μm ASTM D7647 >1300 ▲ 2847 Particles >14μm ASTM D7647 >80 ▲ 272 Particles >14μm ASTM D7647 >80 ▲ 272 Particles >21μm ASTM D7647 >20 ▲ 55 Particles >38μm ASTM D7647 >4 ▲ 6 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history2 | FLUID CLEANLIN | ESS | method | limit/base | current | history1 | history2 |
| Particles >14μm ASTM D7647 >80 ▲ 272 Particles >21μm ASTM D7647 >20 ▲ 55 Particles >38μm ASTM D7647 >4 ▲ 6 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history2 | | | | | | | |
| Particles >21μm ASTM D7647 >20 ▲ 55 Particles >38μm ASTM D7647 >4 ▲ 6 Particles >38μm ASTM D7647 >4 ▲ 6 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history2 | Particles >6µm | | ASTM D7647 | >1300 | | | A 2847 |
| Particles >38μm ASTM D7647 >4 ← 6 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history2 | Particles >14µm | | | | | | <u> </u> |
| Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history2 | Particles >21µm | | ASTM D7647 | >20 | | | ▲ 55 |
| Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 19/15 FLUID DEGRADATION method limit/base current history1 history2 | Particles >38µm | | ASTM D7647 | >4 | | | 6 |
| FLUID DEGRADATION method limit/base current history1 history2 | Particles >71µm | | ASTM D7647 | >3 | | | 0 |
| | Oil Cleanliness | | ISO 4406 (c) | >/17/13 | | | 1 9/15 |
| Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.32 0.35 0.40 | FLUID DEGRADA | TION | method | limit/base | current | history1 | history2 |
| | Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | 0.32 | 0.35 | 0.40 |

Contact/Location: SERVICE MANAGER ? - GLONEWLA Page 1 of 2



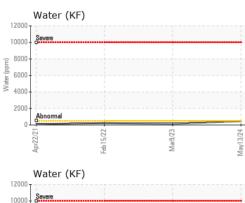
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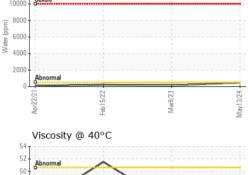
42

Apr22/21

40 - Abnorma

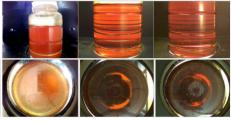
OIL ANALYSIS REPORT



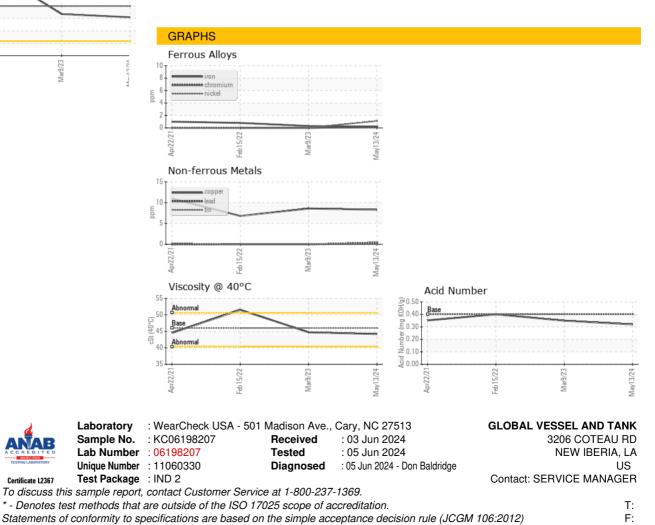


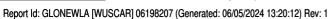
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| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | A MODER | 🔺 MODER | 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 PROPER | TIES | method | limit/base | current | history1 | history2 |
| Visc @ 40°C | cSt | ASTM D445 | 46 | 44.2 | 44.7 | 51.5 |
| SAMPLE IMAGES | | method | limit/base | current | history1 | history2 |
| Color | | | | | | |



Bottom





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