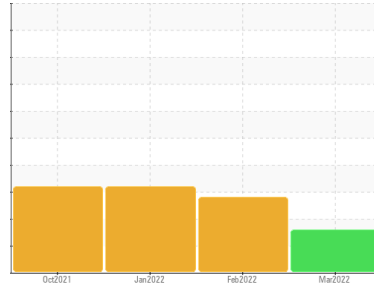


PROBLEM SUMMARY

Sample Rating Trend



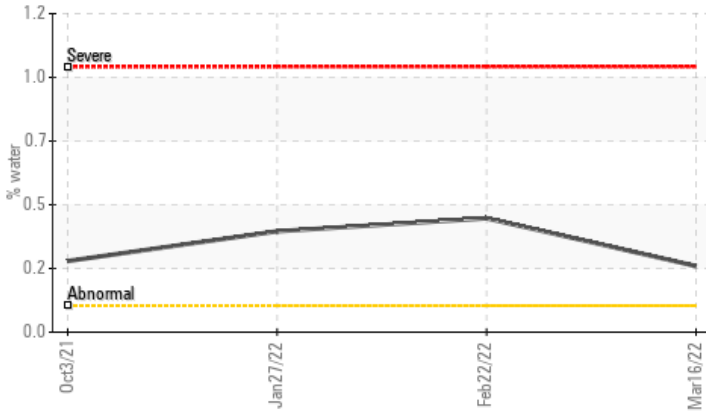
WATER



Machine Id
FRICK FRICK A
Component
Screw Compressor
Fluid
ISO 100 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Water



RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |
|---------------|-----|------------|-------|-----------------|----------|----------|
| Water | % | ASTM D6304 | >0.1 | ▲ 0.249 | ▲ 0.429 | ▲ 0.380 |
| ppm Water | ppm | ASTM D6304 | >1000 | ▲ 2493.7 | ▲ 4296.1 | ▲ 3807.0 |

Customer Id: GARROW
Sample No.: TO70000041
Lab Number: 05535251
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

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

22 Feb 2022 Diag: Jonathan Hester

WATER



We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid. Resample at the next service interval to monitor. All component wear rates are normal. Insufficient sample was received to conduct all the routine laboratory tests. There is a high amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil. The condition of the oil is acceptable for the time in service.

view report



27 Jan 2022 Diag: Jonathan Hester

WATER



We advise that you follow the water drain-off procedure for this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a light concentration of water present in the oil. Elemental level of silicon (Si) above normal. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



03 Oct 2021 Diag: Doug Bogart

WATER



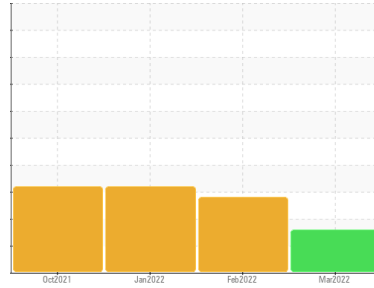
We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. There is a light concentration of water present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Machine Id
FRICK FRICK A
Component
Screw Compressor
Fluid
ISO 100 (--- 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 light concentration of water present in the oil. The amount and size of particulates present in the system are 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 | | | TO70000041 | TO50000456 | TO50000455 |
| Sample Date | Client Info | | | 16 Mar 2022 | 22 Feb 2022 | 27 Jan 2022 |
| 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 |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >60 | 0 | 0 | 0 |
| Chromium | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >30 | 0 | 0 | 0 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Antimony | ppm | ASTM D5185m | | --- | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

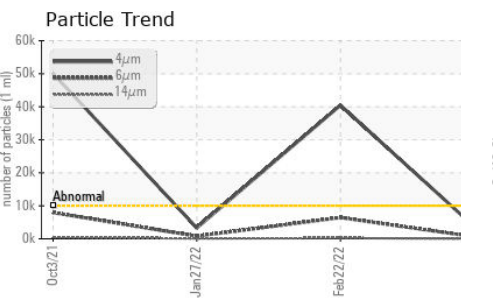
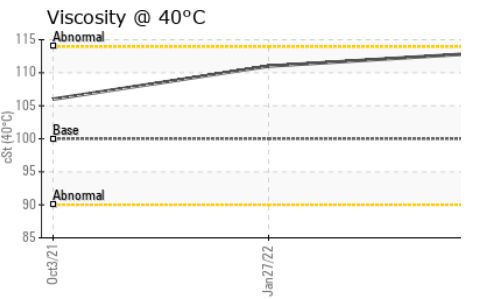
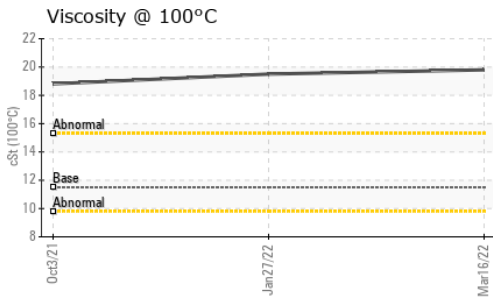
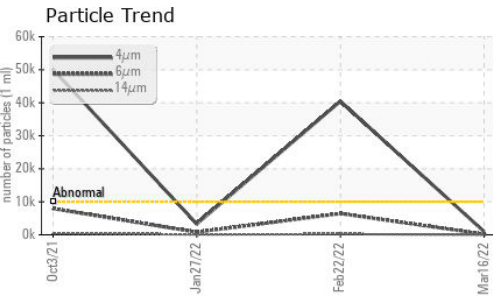
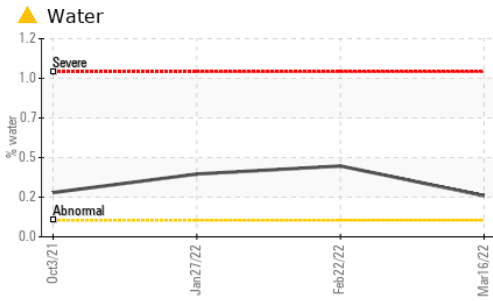
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | | <1 | 1 | 0 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | 17 | 12 | 7 |
| Zinc | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | | 2118 | 1969 | 2026 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|-----------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >50 | 15 | 28 | ▲ 52 |
| Sodium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 2 | <1 |
| Water | % | ASTM D6304 | >0.1 | ▲ 0.249 | ▲ 0.429 | ▲ 0.380 |
| ppm Water | ppm | ASTM D6304 | >1000 | ▲ 2493.7 | ▲ 4296.1 | ▲ 3807.0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-----------------|------------|----------|
| Particles >4µm | | ASTM D7647 | >10000 | 975 | ▲ 40464 | 3288 |
| Particles >6µm | | ASTM D7647 | >2500 | 177 | ▲ 6430 | 791 |
| Particles >14µm | | ASTM D7647 | >320 | 24 | 207 | 90 |
| Particles >21µm | | ASTM D7647 | >80 | 7 | 40 | 33 |
| Particles >38µm | | ASTM D7647 | >20 | 0 | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >4 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | 17/15/12 | ▲ 23/20/15 | 19/17/14 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|--------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.231 | --- | 0.277 |

OIL ANALYSIS REPORT



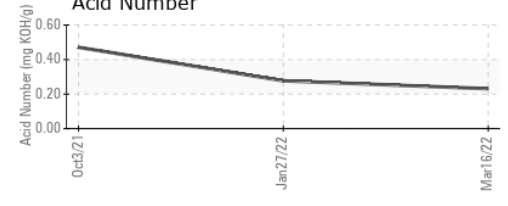
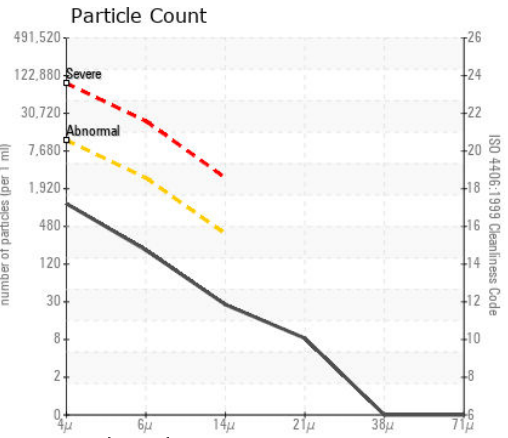
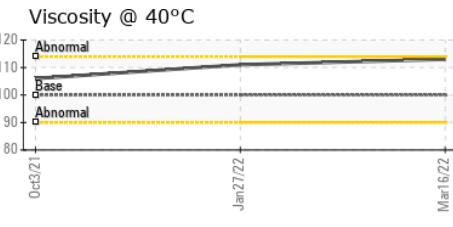
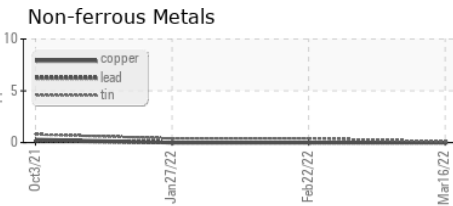
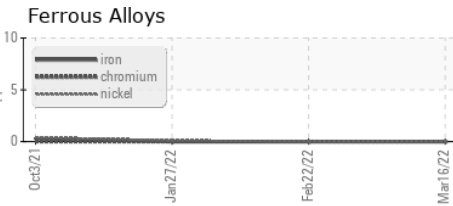
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | ▲ MODER | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|----------------------|--------|------------|---------|----------|----------|------|
| Visc @ 40°C | cSt | ASTM D445 | 100 | 113 | --- | 111 |
| Visc @ 100°C | cSt | ASTM D445 | 11.5 | 19.8 | --- | 19.5 |
| Viscosity Index (VI) | Scale | ASTM D2270 | 102 | 198 | --- | 198 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO70000041 **Received** : 03 May 2022
Lab Number : 05535251 **Diagnosed** : 05 May 2022
Unique Number : 9959540 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF, KV100, PrtCount, VI)

GARLAND RENEWABLES
 3175 ELM GROVE RD
 ROWLETT, TX
 US 75089
 Contact: DUSTIN FRY
 dustin@morrowrenew.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)