

# **OIL ANALYSIS REPORT**

# **ENGINE ROOM** FRICK ROTARY SCREW C03-4 (S/N 10241D84979021) Component

**Refrigeration Compressor** 

FRICK COMPRESSOR OIL #11 (--- PNT)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

#### Wear

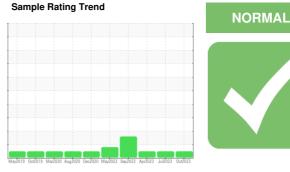
All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the 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.

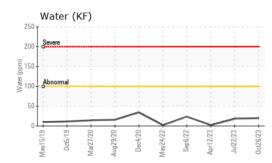


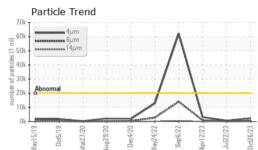


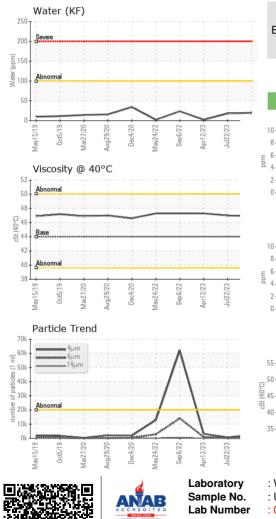
| SAMPLE INFORM    | ATION    | method       | limit/base | current     | history1    | history2    |
|------------------|----------|--------------|------------|-------------|-------------|-------------|
| Sample Number    |          | Client Info  |            | USP0002910  | USP0000528  | USP218703   |
| Sample Date      |          | Client Info  |            | 26 Oct 2023 | 22 Jul 2023 | 12 Apr 2023 |
| Machine Age      | hrs      | Client Info  |            | 9352        | 30549       | 8279        |
| Oil Age          | hrs      | Client Info  |            | 0           | 0           | 0           |
| Oil Changed      |          | Client Info  |            | N/A         | N/A         | N/A         |
| Sample Status    |          |              |            | NORMAL      | NORMAL      | NORMAL      |
| WEAR METALS      |          | method       | limit/base | current     | history1    | history2    |
| Iron             | ppm      | ASTM D5185m  | >8         | 0           | 0           | 0           |
| Chromium         | ppm      | ASTM D5185m  | >2         | <1          | 0           | 0           |
| Nickel           | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Titanium         | ppm      | ASTM D5185m  |            | <1          | <1          | 0           |
| Silver           | ppm      | ASTM D5185m  | >2         | 0           | 0           | 0           |
| Aluminum         | ppm      | ASTM D5185m  | >3         | 0           | 0           | 0           |
| Lead             | ppm      | ASTM D5185m  | >2         | 0           | 0           | 0           |
| Copper           | ppm      | ASTM D5185m  | >8         | <1          | 0           | 0           |
| Tin              | ppm      | ASTM D5185m  | >4         | <1          | 0           | 0           |
| Vanadium         | ppm      | ASTM D5185m  |            | <1          | <1          | 0           |
| Cadmium          | ppm      | ASTM D5185m  |            | <1          | 0           | 0           |
| ADDITIVES        |          | method       | limit/base | current     | history1    | history2    |
| Boron            | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Barium           | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Molybdenum       | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Manganese        | ppm      | ASTM D5185m  |            | <1          | 0           | 0           |
| Magnesium        | ppm      | ASTM D5185m  |            | 0           | <1          | 0           |
| Calcium          | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Phosphorus       | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Zinc             | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |
| Sulfur           | ppm      | ASTM D5185m  |            | 2           | 0           | 0           |
| CONTAMINANTS     |          | method       | limit/base | current     | history1    | history2    |
| Silicon          | ppm      | ASTM D5185m  | >15        | <1          | <1          | <1          |
| Sodium           | ppm      | ASTM D5185m  |            | 1           | <1          | 0           |
| Potassium        | ppm      | ASTM D5185m  | >20        | 1           | 0           | 0           |
| Water            | %        | ASTM D6304   | >0.01      | 0.002       | 0.002       | 0.001       |
| ppm Water        | ppm      | ASTM D6304   | >100       | 19.9        | 18.1        | 2.3         |
| FLUID CLEANLIN   | IESS     | method       | limit/base | current     | history1    | history2    |
| Particles >4µm   |          | ASTM D7647   | >20000     | 2404        | 627         | 3163        |
| Particles >6µm   |          | ASTM D7647   | >2500      | 452         | 163         | 867         |
| Particles >14µm  |          | ASTM D7647   | >320       | 13          | 18          | 46          |
| Particles >21µm  |          | ASTM D7647   | >80        | 3           | 6           | 8           |
| Particles >38µm  |          | ASTM D7647   | >20        | 0           | 0           | 1           |
| Particles >71µm  |          | ASTM D7647   | >4         | 0           | 0           | 0           |
| Oil Cleanliness  |          | ISO 4406 (c) | >21/18/15  | 18/16/11    | 16/15/11    | 19/17/13    |
| FLUID DEGRADA    | TION     | method       | limit/base | current     | history1    | history2    |
| Acid Number (AN) | mg KOH/g | ASTM D974    |            | 0.015       | 0.013       | 0.014       |



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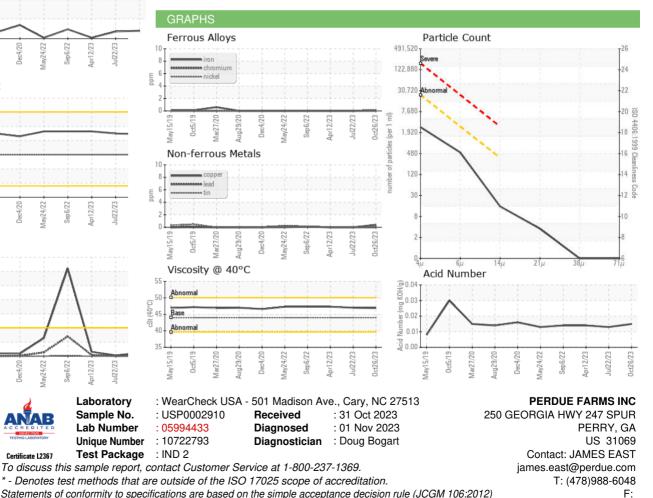






| VISUAL           |        | method    | limit/base | current | history1   | history2 |
|------------------|--------|-----------|------------|---------|--|----------|
| White Metal      | scalar | *Visual   | NONE       | NONE    | NONE   | NONE     |
| Yellow Metal     | scalar | *Visual   | NONE       | NONE    | NONE   | NONE     |
| Precipitate      | scalar | *Visual   | NONE       | NONE    | NONE   | NONE     |
| Silt             | scalar | *Visual   | NONE       | NONE    | NONE   | NONE     |
| Debris           | scalar | *Visual   | NONE       | 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   | >0.01      | NEG     | NEG  | NEG      |
| Free Water       | scalar | *Visual   |            | NEG     | NEG  | NEG      |
| FLUID PROPERT    | IES    | method    | limit/base | current | history1   | history2 |
| Visc @ 40°C      | cSt    | ASTM D445 | 44.0       | 46.9    | 47.0   | 47.3     |
| SAMPLE IMAGES    |        | method    | limit/base | current | history1   | history2 |
| Color            |        |           |            |         | The second secon |          |
|                  |        |           |            | (m)     | ( A  |          |

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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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