

# **OIL ANALYSIS REPORT**

#### Machine Id MCQUAY VCU OLIVER HALL - 24584 (S/N STNU990300094) Component

Refrigeration Compressor Fluid POE (8 GAL)

## DIAGNOSIS

#### A Recommendation

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

### Wear

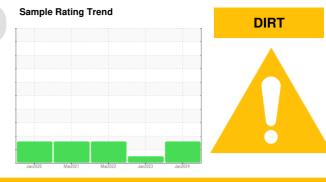
All component wear rates are normal.

#### Contamination

Elemental level of silicon (Si) above normal.

#### Fluid Condition

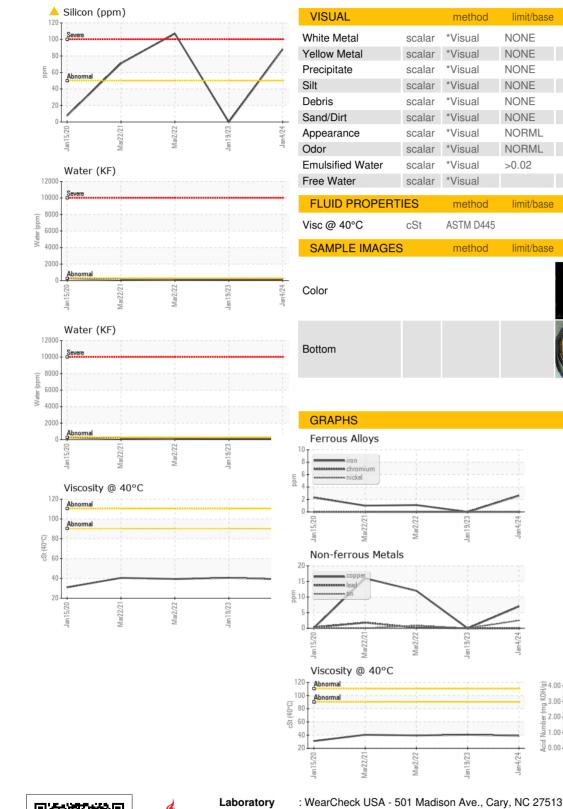
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

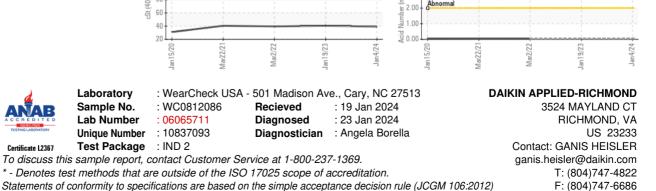


| SAMPLE INFORM   | <b>IATION</b>  | method   | limit/base                        | current   | history1   | history2   |
|---|--|--|-----------------------------------|---|--|--|
| Sample Number   |  | Client Info  |                                   | WC0812086   | WC0631953  | WC0430709  |
| Sample Date   |  | Client Info  |                                   | 04 Jan 2024   | 19 Jan 2023  | 02 Mar 2022  |
| Machine Age   | hrs  | Client Info  |                                   | 1529  | 47038  | 41461  |
| Oil Age   | hrs  | Client Info  |                                   | 0   | 0  | 0  |
| Oil Changed   |  | Client Info  |                                   | N/A   | N/A  | N/A  |
| Sample Status   |  |  |                                   | ABNORMAL  | NORMAL   | ABNORMAL   |
| WEAR METALS   |  | method   | limit/base                        | current   | history1   | history2   |
| Iron  | ppm  | ASTM D5185m  | >100                              | 3   | 0  | 1  |
| Chromium  | ppm  | ASTM D5185m  | >2                                | 0   | 0  | 0  |
| Nickel  | ppm  | ASTM D5185m  |                                   | 0   | 0  | 0  |
| Titanium  | ppm  | ASTM D5185m  |                                   | 0   | 0  | 0  |
| Silver  | ppm  | ASTM D5185m  | >2                                | 0   | 0  | <1   |
| Aluminum  | ppm  | ASTM D5185m  | >50                               | 0   | 0  | <1   |
| Lead  | ppm  | ASTM D5185m  | >2                                | 0   | 0  | <1   |
| Copper  | ppm  | ASTM D5185m  | >100                              | 7   | 0  | 12   |
| Tin   | ppm  | ASTM D5185m  | >4                                | 2   | 0  | <1   |
| Antimony  | ppm  | ASTM D5185m  |                                   |   |  |  |
| Vanadium  | ppm  | ASTM D5185m  |                                   | <1  | 0  | 0  |
| Cadmium   | ppm  | ASTM D5185m  |                                   | 0   | 0  | 0  |
|   |  |  |                                   |   |  |  |
| ADDITIVES   |  | method   | limit/base                        | current   | history1   | history2   |
| ADDITIVES<br>Boron  | ppm  | method<br>ASTM D5185m  | limit/base                        | current<br>0  | 0  | history2<br>1  |
|   | ppm<br>ppm   |  | limit/base                        |   |  |  |
| Boron   |  | ASTM D5185m  | limit/base                        | 0   | 0<br>1<br>0  | 1  |
| Boron<br>Barium   | ppm  | ASTM D5185m<br>ASTM D5185m   | limit/base                        | 0<br>0  | 0  | 1<br>0   |
| Boron<br>Barium<br>Molybdenum   | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base                        | 0<br>0<br>0   | 0<br>1<br>0  | 1<br>0<br>0  |
| Boron<br>Barium<br>Molybdenum<br>Manganese  | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base                        | 0<br>0<br>0   | 0<br>1<br>0<br>0   | 1<br>0<br>0<br>0   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium   | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base                        | 0<br>0<br>0<br>0<br>0   | 0<br>1<br>0<br>0<br>0<br>0<br>7  | 1<br>0<br>0<br>0<br>0<br>0<br>0<br>1663  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base                        | 0<br>0<br>0<br>0<br>0<br>0  | 0<br>1<br>0<br>0<br>0<br>0   | 1<br>0<br>0<br>0<br>0<br>0<br>0  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base                        | 0<br>0<br>0<br>0<br>0<br>0<br>1382  | 0<br>1<br>0<br>0<br>0<br>0<br>7  | 1<br>0<br>0<br>0<br>0<br>0<br>0<br>1663  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base                        | 0<br>0<br>0<br>0<br>0<br>0<br>1382<br>15  | 0<br>1<br>0<br>0<br>0<br>7<br>0<br>0   | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   |                                   | 0<br>0<br>0<br>0<br>0<br>1382<br>15<br>80   | 0<br>1<br>0<br>0<br>0<br>7<br>0<br>7<br>0<br>0                                 | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7<br>46  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base                        | 0<br>0<br>0<br>0<br>0<br>1382<br>15<br>80<br>current                                  | 0<br>1<br>0<br>0<br>0<br>0<br>7<br>0<br>0<br>0<br>0<br>0<br>0<br>history1      | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7<br>46<br>history2                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon                                 | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br><b>method</b>  | limit/base                        | 0<br>0<br>0<br>0<br>0<br>1382<br>15<br>80<br>current                                  | 0<br>1<br>0<br>0<br>0<br>7<br>0<br>0<br>0<br>0<br><b>history1</b><br>0         | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7<br>46<br>history2<br>▲ 107                         |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium                       | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base<br>>50<br>>20          | 0<br>0<br>0<br>0<br>0<br>1382<br>15<br>80<br><u>current</u><br>88                     | 0<br>1<br>0<br>0<br>0<br>0<br>7<br>0<br>0<br>0<br>history1<br>0<br>0           | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7<br>46<br><b>history2</b><br>▲ 107<br>0             |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium          | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m                | limit/base<br>>50<br>>20          | 0<br>0<br>0<br>0<br>0<br>1382<br>15<br>80<br><u>current</u><br>▲ 88<br>0<br>0         | 0<br>1<br>0<br>0<br>0<br>7<br>0<br>0<br>0<br>0<br>history1<br>0<br>0<br>2<br>1 | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7<br>46<br><b>history2</b><br>▲ 107<br>0<br>0        |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>Water | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m | limit/base<br>>50<br>>20<br>>0.02 | 0<br>0<br>0<br>0<br>0<br>1382<br>15<br>80<br>current<br>▲ 88<br>0<br>0<br>0<br>0<br>0 | 0<br>1<br>0<br>0<br>0<br>7<br>0<br>0<br>0<br>history1<br>0<br>0<br><1<br>0.012 | 1<br>0<br>0<br>0<br>0<br>0<br>1663<br>7<br>46<br>history2<br>▲ 107<br>0<br>0<br>0<br>0.010 |



# **OIL ANALYSIS REPORT**





Acid Number

history1

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

history

history1

NEG

NEG

40.6

current

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

current

current

NEG

NEG

39.0

history2

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

history2

history2

NEG

NEG

39.4

Report Id: MCQRIC [WUSCAR] 06065711 (Generated: 01/23/2024 11:55:17) Rev: 1

Certificate L2367

Sample No.

Lab Number

Unique Number

Test Package

: WC0812086

:06065711

: 10837093

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: IND 2

Recieved

Diagnosed

Diagnostician

Contact/Location: GANIS HEISLER - MCQRIC