

## **OIL ANALYSIS REPORT**

### Area **North Plant-Fermentation** AG1760G

Component Gearbox Fluid **ROYAL PURPLE SYNFILM GT 320 (20 GAL)** 

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

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 acceptable for the time in service.

| .)  |        | let2018 Jun20  | 19 Jan2020 Oct2020 Ma                 | y2021 Feb2022 Nov2022 May2023 | Jan2024                         |  |
|---|--------|--|---------------------------------------|-------------------------------|---------------------------------|--|
| SAMPLE INFORM   | IATION | method   | limit/base                            | current                       | history1                        | history2   |
| Sample Number   |        | Client Info  |                                       | WC0941390                     | WC0850044                       | WC0850033  |
| Sample Date   |        | Client Info  |                                       | 24 May 2024                   | 24 Jan 2024                     | 16 Oct 2023  |
| 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   |        |  |                                       | NORMAL                        | ATTENTION                       | ABNORMAL   |
| WEAR METALS   |        | method   | limit/base                            | current                       | history1                        | history2   |
| Iron  | ppm    | ASTM D5185m  | >200                                  | 3                             | 0                               | <1   |
| Chromium  | ppm    | ASTM D5185m  | >10                                   | <1                            | <1                              | 0  |
| Nickel  | ppm    | ASTM D5185m  | >10                                   | <1                            | 0                               | 0  |
| Titanium  | ppm    | ASTM D5185m  |                                       | <1                            | 0                               | 0  |
| Silver  | ppm    | ASTM D5185m  |                                       | 0                             | 0                               | 0  |
| Aluminum  | ppm    | ASTM D5185m  | >25                                   | 2                             | 2                               | 0  |
| Lead  | ppm    | ASTM D5185m  | >50                                   | <1                            | 0                               | 0  |
| Copper  | ppm    | ASTM D5185m  | >200                                  | 18                            | 16                              | 17   |
| Tin   | ppm    | ASTM D5185m  | >10                                   | <1                            | 0                               | 0  |
| Vanadium  | ppm    | ASTM D5185m  |                                       | 0                             | 0                               | 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  |                                       | <1                            | 0                               | 0  |
| Molybdenum  | ppm    | ASTM D5185m  |                                       | <1                            | 0                               | 0  |
| Manganese   | ppm    | ASTM D5185m  |                                       | 0                             | 0                               | 0  |
| Magnesium   | ppm    | ASTM D5185m  | 90                                    | <1                            | <1                              | 0  |
| Calcium   | ppm    | ASTM D5185m  |                                       | 0                             | 0                               | 0  |
| Phosphorus  | ppm    | ASTM D5185m  |                                       | 63                            | 34                              | 56   |
| Zinc  | ppm    | ASTM D5185m  |                                       | 2                             | 0                               | 0  |
| Sulfur  | ppm    | ASTM D5185m  |                                       | 21833                         | 18655                           | 17924  |
| CONTAMINANTS  |        | method   | limit/base                            | current                       | history1                        | history2   |
| Silicon   | ppm    | ASTM D5185m  | >50                                   | 10                            | 3                               | <b>▲</b> 63  |
| Sodium  | ppm    | ASTM D5185m  |                                       | <1                            | 0                               | 0  |
| Potassium   | ppm    | ASTM D5185m  | >20                                   | 1                             | <1                              | 0  |
| Water   | %      | ASTM D6304   | >0.2                                  | 0.004                         | 0.007                           | 0.010  |
|   | ppin   | ASTIVI D0304   | >2000                                 | 42                            | 1 Z                             | history  |
| Partialog & Aum   | ESS    |  | limit/base                            | current                       | history1                        | history2   |
| Particles >4µIII  |        | ASTM D7647   | >1300                                 | 500                           | 1820                            | A 8210   |
|   |        | 101W D/04/   | 21000                                 | 01                            | 1023                            |  |
| Particles 1/um  |        | <b>ASTM D76/17</b>   | N160                                  | 31                            | 1 5 5                           | <u> </u>   |
| Particles >14µm   |        | ASTM D7647   | >160                                  | 31                            | 36                              | ▲ 533<br>▲ 149   |
| Particles >14µm<br>Particles >21µm<br>Particles >38µm                                       |        | ASTM D7647<br>ASTM D7647<br>ASTM D7647                               | >160<br>>40<br>>10                    | 31<br>7<br>0                  | 36                              | ▲ 149<br>3   |
| Particles >14µm<br>Particles >21µm<br>Particles >38µm<br>Particles >71µm                    |        | ASTM D7647<br>ASTM D7647<br>ASTM D7647                               | >160<br>>40<br>>10<br>>3              | 31<br>7<br>0<br>0             | 36<br>1<br>0                    | ▲ 633<br>▲ 149<br>3  |
| Particles >14µm<br>Particles >21µm<br>Particles >38µm<br>Particles >71µm<br>Oil Cleanliness |        | ASTM D7647<br>ASTM D7647<br>ASTM D7647<br>ASTM D7647<br>ISO 4406 (c) | >160<br>>40<br>>10<br>>3<br>>19/17/14 | 31<br>7<br>0<br>0<br>19/16/12 | 133<br>36<br>1<br>0<br>20/18/14 | <ul> <li>▶ 533</li> <li>▶ 149</li> <li>3</li> <li>0</li> <li>▲ 22/20/16</li> </ul> |
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NORMAL

Sample Rating Trend



# **OIL ANALYSIS REPORT**











| 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   | >0.2       | NEG     | NEG      | NEG      |
| Free Water       | scalar | *Visual   |            | NEG     | NEG      | NEG      |
| FLUID PROPERTIES |        | method    | limit/base | current | history1 | history2 |
| Visc @ 40°C      | cSt    | ASTM D445 | 320        | 299     | 299      | 300      |
| SAMPLE IMAGES    |        | method    | limit/base | current | history1 | history2 |
| Color            |        |           |            |         |          |          |

Bottom

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)



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