

## **OIL ANALYSIS REPORT**

### North Plant-Purification AG-32341 Component

**Gear Reducer** Fluid **ROYAL PURPLE SYNFILM GT 320 (30 GAL)** 

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

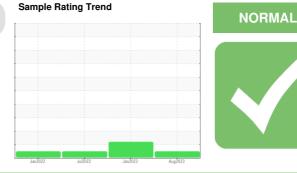
All component wear rates are normal.

#### 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

Viscosity of sample indicates oil is within ISO 220 range, advise investigate. Confirm oil type. The AN level is acceptable for this fluid.





| SAMPLE INFORM | <b>MATION</b> | method      | limit/base | current     | history1    | history2    |
|---------------|---------------|-------------|------------|-------------|-------------|-------------|
| Sample Number |               | Client Info |            | WC0786774   | WC0765957   | WC0527591   |
| Sample Date   |               | Client Info |            | 10 Aug 2023 | 20 Jan 2023 | 06 Jul 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 |               |             |            | NORMAL      | ABNORMAL    | NORMAL      |
| WEAR METALS   |               | method      | limit/base | current     | history1    | history2    |
| Iron          | ppm           | ASTM D5185m | >250       | 6           | 8           | 6           |
| Chromium      | ppm           | ASTM D5185m | >5         | 0           | 0           | 0           |
| Nickel        | ppm           | ASTM D5185m | >5         | 0           | 0           | 0           |
| Titanium      | ppm           | ASTM D5185m |            | 0           | 0           | 0           |
| Silver        | ppm           | ASTM D5185m |            | 0           | 0           | <1          |
| Aluminum      | ppm           | ASTM D5185m | >20        | 0           | 0           | <1          |
| Lead          | ppm           | ASTM D5185m | >50        | 0           | 0           | 1           |
| Copper        | ppm           | ASTM D5185m | >50        | <1          | 0           | <1          |
| Tin           | ppm           | ASTM D5185m | >5         | 0           | 0           | 0           |
| Antimony      | ppm           | ASTM D5185m | >5         |             |             |             |
| Vanadium      | ppm           | ASTM D5185m |            | 0           | 0           | 0           |
| Cadmium       | ppm           | ASTM D5185m |            | 0           | 0           | <1          |
| ADDITIVES     |               | method      | limit/base | current     | history1    | history2    |
| Boron         | ppm           | ASTM D5185m |            | 0           | 0           | <1          |
| Barium        | ppm           | ASTM D5185m |            | <1          | 1           | 0           |
| Molybdenum    | ppm           | ASTM D5185m |            | 0           | 0           | 0           |
| Manganese     | ppm           | ASTM D5185m |            | 0           | <1          | <1          |

| Molybdenum                     | ppm               | ASTM D5185m                               |            | 0             | 0              | 0              |
|--------------------------------|-------------------|---|------------|---------------|----------------|----------------|
| Manganese                      | ppm               | ASTM D5185m                               |            | 0             | <1             | <1             |
| Magnesium                      | ppm               | ASTM D5185m                               | 90         | 55            | 68             | 64             |
| Calcium                        | ppm               | ASTM D5185m                               |            | 2             | <1             | <1             |
| Phosphorus                     | ppm               | ASTM D5185m                               |            | 5             | 5              | 6              |
| Zinc                           | ppm               | ASTM D5185m                               |            | 7             | 4              | 2              |
| Sulfur                         | ppm               | ASTM D5185m                               |            | 21216         | 17919          | 23242          |
|                                |                   |   |            |               |                |                |
| CONTAMINANTS                   |                   | method                                    | limit/base | current       | history1       | history2       |
| CONTAMINANTS<br>Silicon        | ppm               | method<br>ASTM D5185m                     | limit/base | current       | history1<br><1 | history2<br><1 |
|                                |                   |   |            |               |                |                |
| Silicon                        | ppm               | ASTM D5185m                               |            | <1            | <1             | <1             |
| Silicon<br>Sodium              | ppm<br>ppm        | ASTM D5185m<br>ASTM D5185m                | >60        | <1<br>0       | <1<br>0        | <1<br>0        |
| Silicon<br>Sodium<br>Potassium | ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m | >60<br>>20 | <1<br>0<br><1 | <1<br>0<br><1  | <1<br>0<br><1  |

| FLUID GLEANLINESS | method       | iimii/base | current  | nistory i | nistoryz |
|-------------------|--------------|------------|----------|-----------|----------|
| Particles >4µm    | ASTM D7647   | >20000     | 2693     |           | 2248     |
| Particles >6µm    | ASTM D7647   | >5000      | 425      |           | 204      |
| Particles >14µm   | ASTM D7647   | >640       | 25       |           | 18       |
| Particles >21µm   | ASTM D7647   | >160       | 6        |           | 5        |
| Particles >38µm   | ASTM D7647   | >40        | 0        |           | 1        |
| Particles >71µm   | ASTM D7647   | >10        | 0        |           | 0        |
| Oil Cleanliness   | ISO 4406 (c) | >21/19/16  | 19/16/12 |           | 18/15/11 |

FLUID DEGRADATION method

Acid Number (AN) mg KOH/g ASTM D8045 0.25

0.47 0.43

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Submitted By: Alan Brittain

0.48



0.2

0.00

25

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360

340

320

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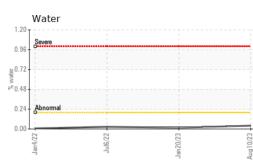
240

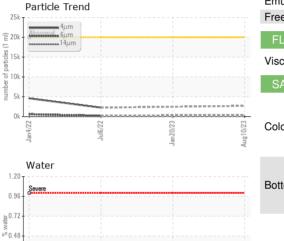
220

200

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| VISUAL           |        | method    | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual   | NONE       | NONE    | 🔺 MODER  | 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    | LIGHT    | NONE     |
| 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 PROPERT    | IES    | method    | limit/base | current | history1 | history2 |
| Visc @ 40°C      | cSt    | ASTM D445 | 320        | 203     | 206      | 208      |
| SAMPLE IMAGES    | 6      | method    | limit/base | current | history1 | history2 |
| Color            |        |           |            |         |          |          |
| Bottom           |        |           |            |         |          |          |

