



# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**EL SAUZ**  
 Machine Id  
**Q05WEA90073 (S/N W-123223)**  
 Component  
**Wind Turbine Gearbox**  
 Fluid  
**FUCHS RENOLIN CLP ISO 320 (--- LTR)**



## 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 INFORMATION

|               | method      | limit/base  | current            | history1 | history2 |
|---------------|-------------|-------------|--------------------|----------|----------|
| Sample Number | Client Info |             | <b>NX014534</b>    | ---      | ---      |
| Sample Date   | Client Info |             | <b>01 Aug 2023</b> | ---      | ---      |
| Machine Age   | hrs         | Client Info | <b>0</b>           | ---      | ---      |
| Oil Age       | hrs         | Client Info | <b>0</b>           | ---      | ---      |
| Oil Changed   | Client Info |             | <b>N/A</b>         | ---      | ---      |
| Sample Status |             |             | <b>NORMAL</b>      | ---      | ---      |

## WEAR METALS

|          | method     | limit/base  | current   | history1     | history2 |
|----------|------------|-------------|-----------|--------------|----------|
| PQ       | ASTM D8184 | >80         | <b>11</b> | ---          | ---      |
| Iron     | ppm        | ASTM D5185m | >150      | <b>19</b>    | ---      |
| Chromium | ppm        | ASTM D5185m | >5        | <b>0</b>     | ---      |
| Nickel   | ppm        | ASTM D5185m | >10       | <b>0</b>     | ---      |
| Titanium | ppm        | ASTM D5185m | >10       | <b>0</b>     | ---      |
| Silver   | ppm        | ASTM D5185m |           | <b>0</b>     | ---      |
| Aluminum | ppm        | ASTM D5185m | >10       | <b>0</b>     | ---      |
| Lead     | ppm        | ASTM D5185m | >20       | <b>&lt;1</b> | ---      |
| Copper   | ppm        | ASTM D5185m | >50       | <b>&lt;1</b> | ---      |
| Tin      | ppm        | ASTM D5185m | >3        | <b>0</b>     | ---      |
| Vanadium | ppm        | ASTM D5185m |           | <b>0</b>     | ---      |
| Cadmium  | ppm        | ASTM D5185m |           | <b>0</b>     | ---      |

## ADDITIVES

|            | method | limit/base  | current | history1     | history2 |
|------------|--------|-------------|---------|--------------|----------|
| Boron      | ppm    | ASTM D5185m |         | <b>2</b>     | ---      |
| Barium     | ppm    | ASTM D5185m |         | <b>0</b>     | ---      |
| Molybdenum | ppm    | ASTM D5185m |         | <b>0</b>     | ---      |
| Manganese  | ppm    | ASTM D5185m |         | <b>&lt;1</b> | ---      |
| Magnesium  | ppm    | ASTM D5185m |         | <b>1</b>     | ---      |
| Calcium    | ppm    | ASTM D5185m |         | <b>19</b>    | ---      |
| Phosphorus | ppm    | ASTM D5185m |         | <b>210</b>   | ---      |
| Zinc       | ppm    | ASTM D5185m |         | <b>6</b>     | ---      |
| Sulfur     | ppm    | ASTM D5185m |         | <b>4555</b>  | ---      |

## CONTAMINANTS

|           | method | limit/base  | current | history1     | history2 |
|-----------|--------|-------------|---------|--------------|----------|
| Silicon   | ppm    | ASTM D5185m | >50     | <b>6</b>     | ---      |
| Sodium    | ppm    | ASTM D5185m | >20     | <b>0</b>     | ---      |
| Potassium | ppm    | ASTM D5185m | >20     | <b>&lt;1</b> | ---      |
| Water     | %      | ASTM D6304  | >0.05   | <b>0.003</b> | ---      |
| ppm Water | ppm    | ASTM D6304  | >500    | <b>39.3</b>  | ---      |

## FLUID CLEANLINESS

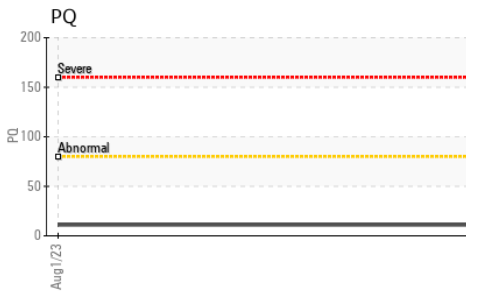
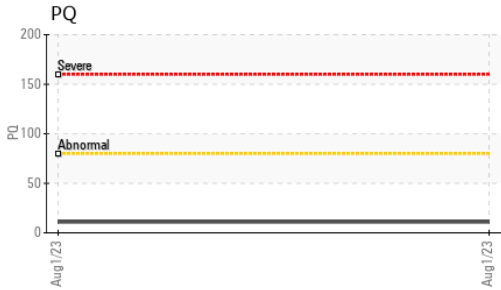
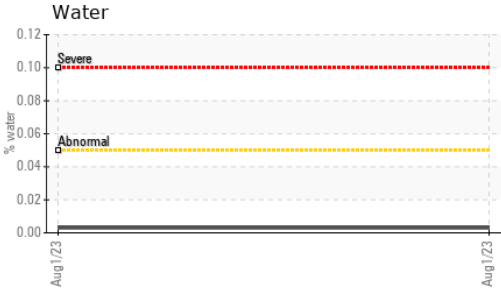
|                 | method       | limit/base | current | history1        | history2 |
|-----------------|--------------|------------|---------|-----------------|----------|
| Particles >4µm  | ASTM D7647   |            |         | <b>9465</b>     | ---      |
| Particles >6µm  | ASTM D7647   | >2500      |         | <b>2060</b>     | ---      |
| Particles >14µm | ASTM D7647   | >320       |         | <b>181</b>      | ---      |
| Particles >21µm | ASTM D7647   | >80        |         | <b>45</b>       | ---      |
| Particles >38µm | ASTM D7647   | >20        |         | <b>4</b>        | ---      |
| Particles >71µm | ASTM D7647   | >4         |         | <b>1</b>        | ---      |
| Oil Cleanliness | ISO 4406 (c) | >--/18/15  |         | <b>20/18/15</b> | ---      |

## FLUID DEGRADATION

|                  | method   | limit/base | current | history1    | history2 |
|------------------|----------|------------|---------|-------------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 |         | <b>0.35</b> | ---      |



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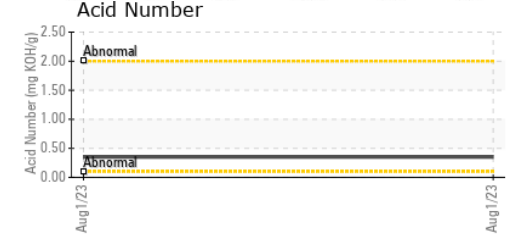
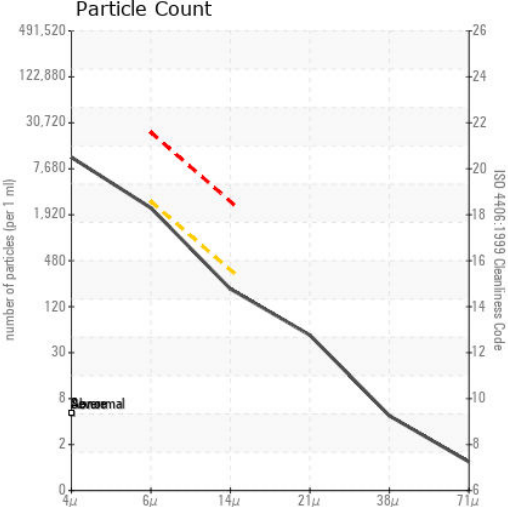
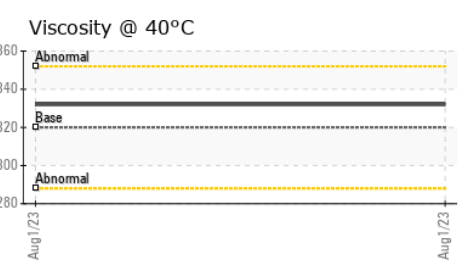
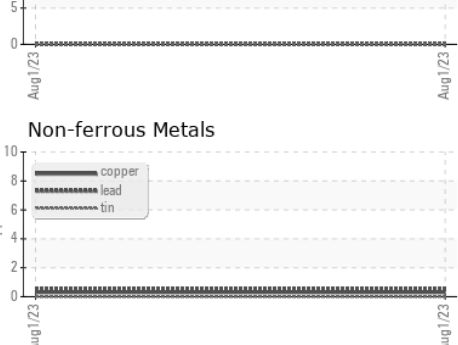
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | ---      |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | ---      |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | ---      |
| Silt             | scalar | *Visual    | NONE    | NONE     | ---      |
| Debris           | scalar | *Visual    | NONE    | NONE     | ---      |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | ---      |
| Appearance       | scalar | *Visual    | NORML   | NORML    | ---      |
| Odor             | scalar | *Visual    | NORML   | NORML    | ---      |
| Emulsified Water | scalar | *Visual    | >0.05   | NEG      | ---      |
| Free Water       | scalar | *Visual    |         | NEG      | ---      |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 320     | 332      | ---      |

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



### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX014534 **Received** : 15 Aug 2023  
**Lab Number** : 05924845 **Diagnosed** : 16 Aug 2023  
**Unique Number** : 10604792 **Diagnostician** : Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**NORDEX USA - Chicago**  
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Certificate L2367  
 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)