



# PROBLEM SUMMARY

## Sample Rating Trend



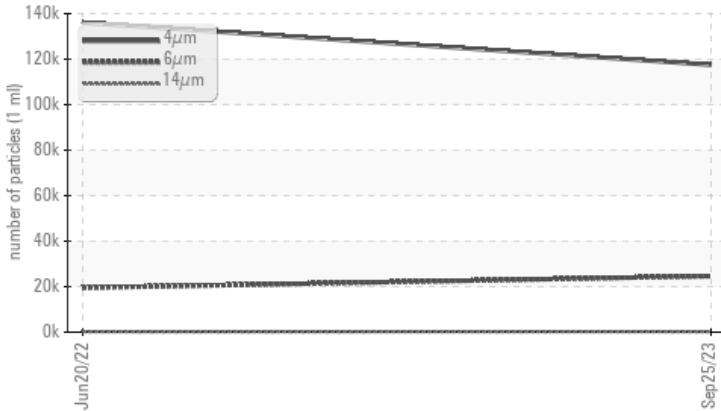
ISO



Area  
**IRON STAR [200006142]**  
 Machine Id  
**18WEA88341**  
 Component  
**Wind Turbine Gearbox**  
 Fluid  
**GEAR OIL (PAO) ISO 320 (--- LTR)**

## COMPONENT CONDITION SUMMARY

### ▲ Particle Trend



## RECOMMENDATION

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status			<b>ABNORMAL</b>	ABNORMAL	---
Particles >6µm	ASTM D7647	>320	▲ <b>24614</b>	▲ 19499	---
Particles >14µm	ASTM D7647	>40	▲ <b>173</b>	▲ 153	---
Particles >21µm	ASTM D7647	>10	▲ <b>50</b>	▲ 19	---
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ <b>24/22/15</b>	▲ 24/21/14	---

Customer Id: NORDEX  
 Sample No.: NX05961222  
 Lab Number: 05961222  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Don Baldrige +1  
[don.b505@comcast.net](mailto:don.b505@comcast.net)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component if applicable.

## HISTORICAL DIAGNOSIS

20 Jun 2022 Diag: Don Baldrige

ISO



We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report





# OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area  
**IRON STAR [200006142]**  
 Machine Id  
**18WEA88341**  
 Component  
**Wind Turbine Gearbox**  
 Fluid  
**GEAR OIL (PAO) ISO 320 (--- LTR)**



## DIAGNOSIS

### Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of particulates present in the oil.

### 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>NX05961222</b>	NX05596459	---
Sample Date	Client Info	<b>25 Sep 2023</b>	20 Jun 2022	---
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	---
Sample Status		<b>ABNORMAL</b>	ABNORMAL	---

## WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184	>50	<b>12</b>	18
Iron	ppm	ASTM D5185m	>30	<b>18</b>
Chromium	ppm	ASTM D5185m	>3	<b>0</b>
Nickel	ppm	ASTM D5185m	>3	<b>0</b>
Titanium	ppm	ASTM D5185m	>10	<b>0</b>
Silver	ppm	ASTM D5185m		<b>0</b>
Aluminum	ppm	ASTM D5185m	>30	<b>0</b>
Lead	ppm	ASTM D5185m	>15	<b>&lt;1</b>
Copper	ppm	ASTM D5185m	>10	<b>1</b>
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>
Cadmium	ppm	ASTM D5185m		<b>0</b>

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	25	<b>5</b>
Barium	ppm	ASTM D5185m	12	<b>0</b>
Molybdenum	ppm	ASTM D5185m	5	<b>0</b>
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>
Magnesium	ppm	ASTM D5185m	25	<b>0</b>
Calcium	ppm	ASTM D5185m	25	<b>18</b>
Phosphorus	ppm	ASTM D5185m	375	<b>196</b>
Zinc	ppm	ASTM D5185m	25	<b>0</b>
Sulfur	ppm	ASTM D5185m	4900	<b>5366</b>

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+15	<b>7</b>
Sodium	ppm	ASTM D5185m		<b>2</b>
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>
Water	%	ASTM D6304	>0.02	<b>0.003</b>
ppm Water	ppm	ASTM D6304	>200	<b>25.8</b>

## FLUID CLEANLINESS

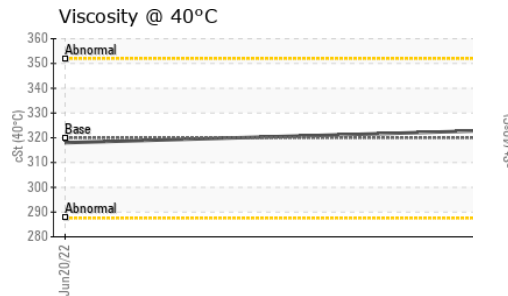
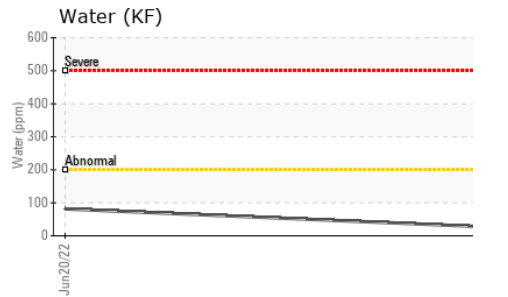
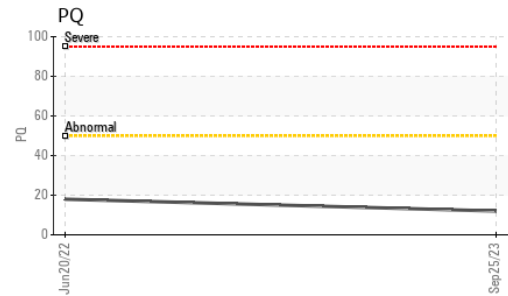
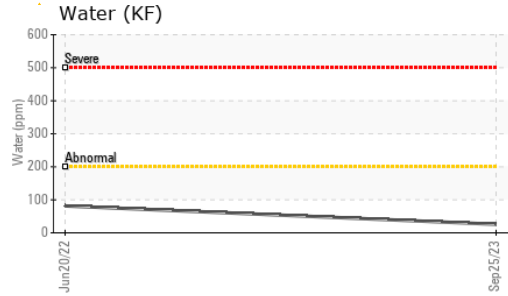
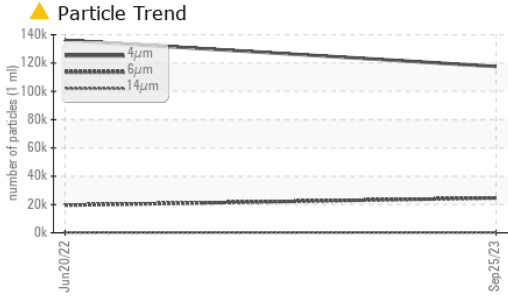
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>117528</b>	136054
Particles >6µm	ASTM D7647	>320	<b>24614</b>	19499
Particles >14µm	ASTM D7647	>40	<b>173</b>	153
Particles >21µm	ASTM D7647	>10	<b>50</b>	19
Particles >38µm	ASTM D7647	>3	<b>2</b>	1
Particles >71µm	ASTM D7647	>3	<b>0</b>	0
Oil Cleanliness	ISO 4406 (c)	>--/15/12	<b>24/22/15</b>	24/21/14

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.10	<b>0.34</b>
				0.24



# OIL ANALYSIS REPORT



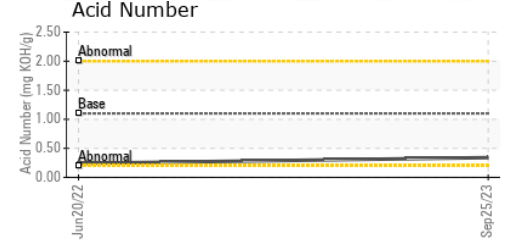
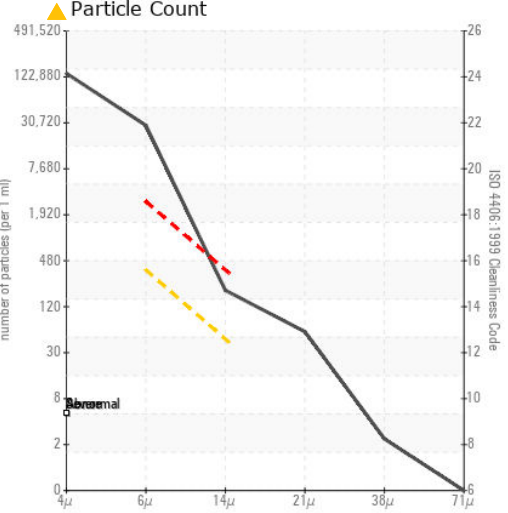
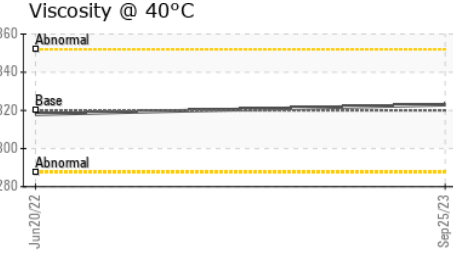
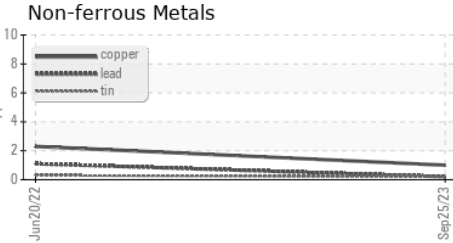
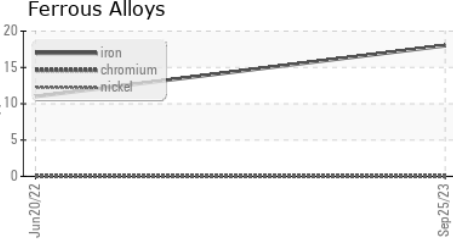
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.02	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	323	318

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : NX05961222 Received : 26 Sep 2023  
 Lab Number : 05961222 Diagnosed : 27 Sep 2023  
 Unique Number : 10662435 Diagnostician : Don Baldrige  
 Test Package : IND 2 ( Additional Tests: KF, PQ, PrtCount )

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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)