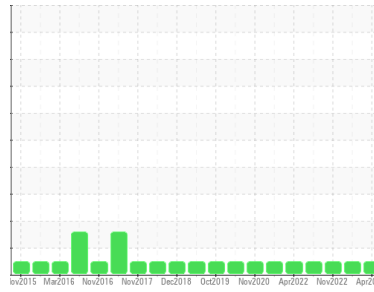




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**FAIRWIND [200009524]**  
 Machine Id  
**01WEA84125 (S/N EWP-00767)**  
 Component  
**Wind Turbine Gearbox**  
 Fluid  
**CASTROL OPTIGEAR SYNTHETIC X 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>NX015236</b>	NX012343	NX010425
Sample Date	Client Info		<b>10 Apr 2024</b>	27 Mar 2023	22 Nov 2022
Machine Age	hrs	Client Info	<b>66155</b>	56669	54293
Oil Age	hrs	Client Info	<b>66155</b>	56669	54293
Oil Changed	Client Info		<b>Not Changed</b>	Not Changd	Not Changed
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>80	<b>16</b>	11	8	
Iron	ppm	ASTM D5185m	>150	<b>5</b>	2	3
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>5</b>	<1	0
Lead	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>50	<b>1</b>	1	1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>0</b>	0	40
Barium	ppm	ASTM D5185m		<b>0</b>	0	2
Molybdenum	ppm	ASTM D5185m	1150	<b>670</b>	594	638
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>5</b>	8	8
Calcium	ppm	ASTM D5185m	2000	<b>1298</b>	1177	1269
Phosphorus	ppm	ASTM D5185m	400	<b>304</b>	267	311
Zinc	ppm	ASTM D5185m	0	<b>0</b>	0	2
Sulfur	ppm	ASTM D5185m	1850	<b>1789</b>	1284	1932

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	<b>10</b>	8	9
Sodium	ppm	ASTM D5185m	>20	<b>2</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	<1
Water	%	ASTM D6304	>0.05	<b>0.018</b>	0.015	0.009
ppm Water	ppm	ASTM D6304	>500	<b>188</b>	156.4	92.3

## FLUID CLEANLINESS

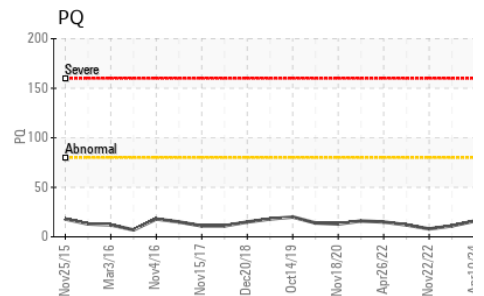
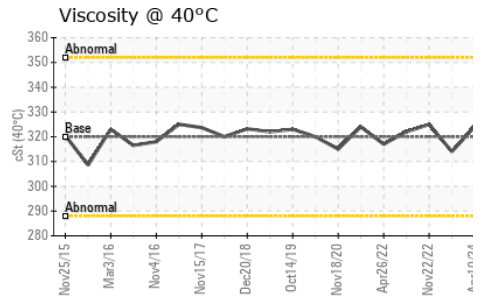
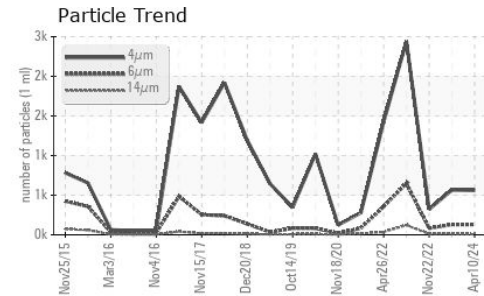
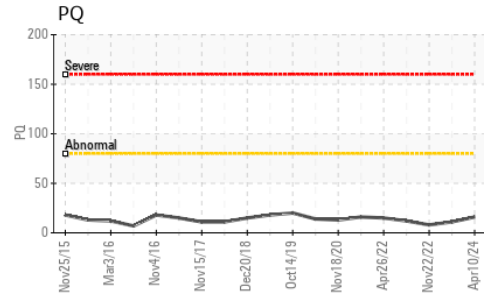
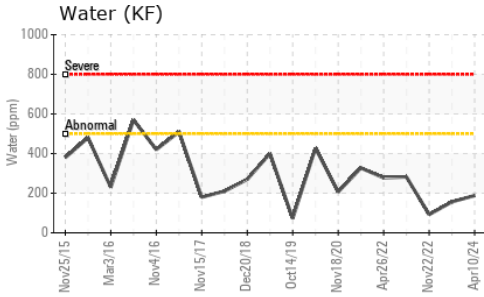
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>561</b>	566	321
Particles >6µm	ASTM D7647	>2500	<b>130</b>	130	81
Particles >14µm	ASTM D7647	>320	<b>7</b>	11	12
Particles >21µm	ASTM D7647	>80	<b>2</b>	3	2
Particles >38µm	ASTM D7647	>20	<b>0</b>	0	0
Particles >71µm	ASTM D7647	>4	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/18/15	<b>16/14/10</b>	16/14/11	16/14/11

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	<b>0.60</b>	0.57	0.82



# OIL ANALYSIS REPORT



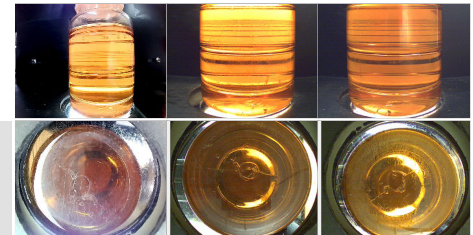
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 320	324	314	325

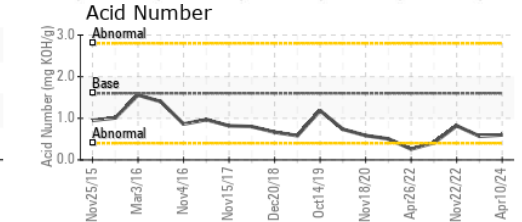
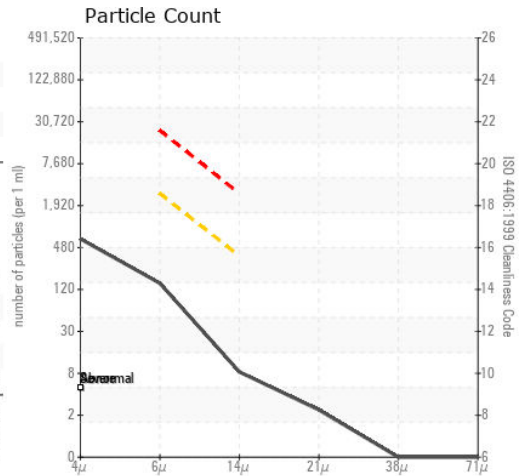
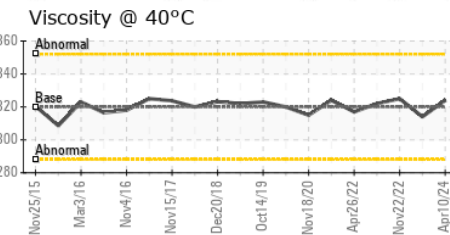
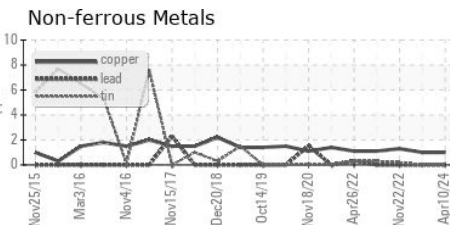
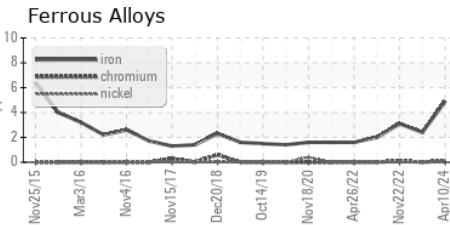
SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

Color

Bottom



## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : NX015236

Lab Number : 06209224

Unique Number : 11076685

Test Package : IND 2 ( Additional Tests: KF, PQ, PrtCount )

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)

Received : 13 Jun 2024

Tested : 16 Jun 2024

Diagnosed : 16 Jun 2024 - Doug Bogart

NORDEX USA - Chicago

300 SOUTH WACKER DRIVE, SUITE 1500

CHICAGO, IL

US 60606

Contact: DEVIN LINEHAN

DLinehan@nordex-online.com

T: (312)386-4124

F: (312)386-7102