

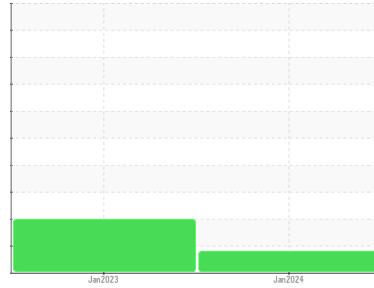


# OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Area  
**BLACKJACK CREEK [700007683]**  
 Machine Id  
**29WEA88427 - H-04 (S/N W-122589)**  
 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 a high amount of silt (particulates < 14 microns in size) present in the oil.
- Fluid Condition**  
The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>NX015707</b>	NX011586	---
Sample Date	Client Info		<b>09 Jan 2024</b>	26 Jan 2023	---
Machine Age	hrs	Client Info	<b>0</b>	1873	---
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	>80	<b>15</b>	14	---
Iron	ppm	ASTM D5185m	>150	<b>39</b>	24
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0
Silver	ppm	ASTM D5185m		<b>0</b>	0
Aluminum	ppm	ASTM D5185m	>10	<b>0</b>	0
Lead	ppm	ASTM D5185m	>20	<b>2</b>	<1
Copper	ppm	ASTM D5185m	>50	<b>&lt;1</b>	<1
Tin	ppm	ASTM D5185m	>3	<b>0</b>	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>3</b>	4
Barium	ppm	ASTM D5185m		<b>0</b>	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	0
Calcium	ppm	ASTM D5185m		<b>9</b>	18
Phosphorus	ppm	ASTM D5185m		<b>188</b>	206
Zinc	ppm	ASTM D5185m		<b>0</b>	0
Sulfur	ppm	ASTM D5185m		<b>4936</b>	5436

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>12</b>	8
Sodium	ppm	ASTM D5185m	>20	<b>2</b>	2
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0
Water	%	ASTM D6304	>0.05	<b>0.005</b>	0.008
ppm Water	ppm	ASTM D6304	>500	<b>59</b>	80.1

## FLUID CLEANLINESS

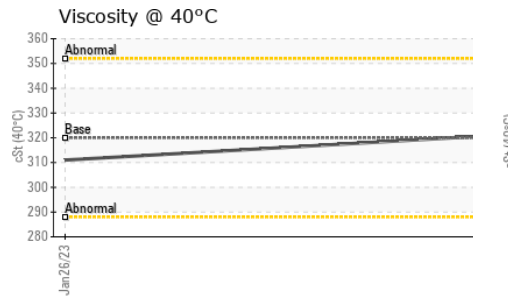
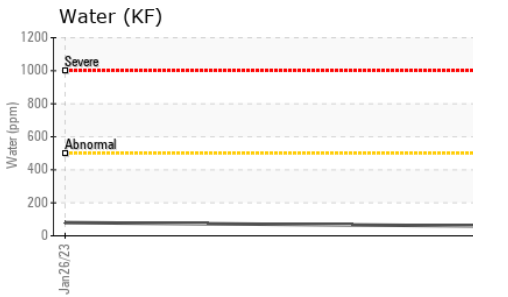
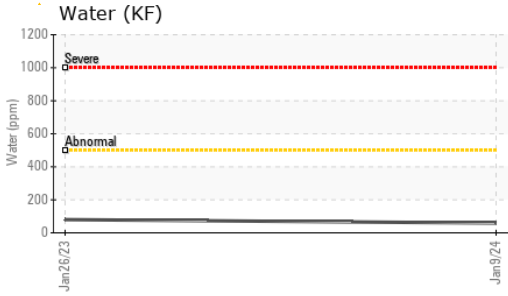
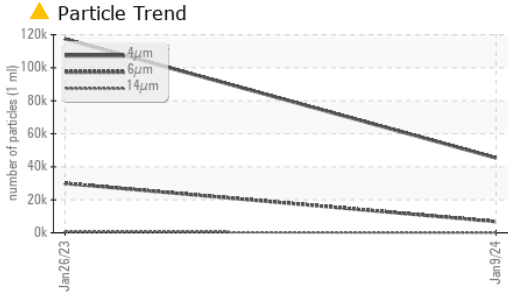
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>45329</b>	117375	---
Particles >6µm	ASTM D7647	>2500	<b>6785</b>	29925	---
Particles >14µm	ASTM D7647	>320	<b>100</b>	509	---
Particles >21µm	ASTM D7647	>80	<b>13</b>	57	---
Particles >38µm	ASTM D7647	>20	<b>1</b>	3	---
Particles >71µm	ASTM D7647	>4	<b>0</b>	0	---
Oil Cleanliness	ISO 4406 (c)	>--/18/15	<b>23/20/14</b>	24/22/16	---

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.35</b>	0.37



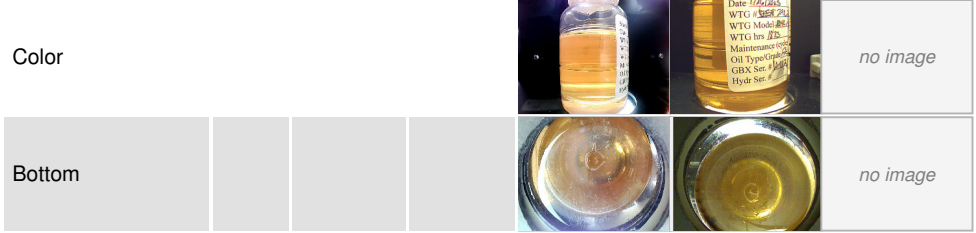
# OIL ANALYSIS REPORT



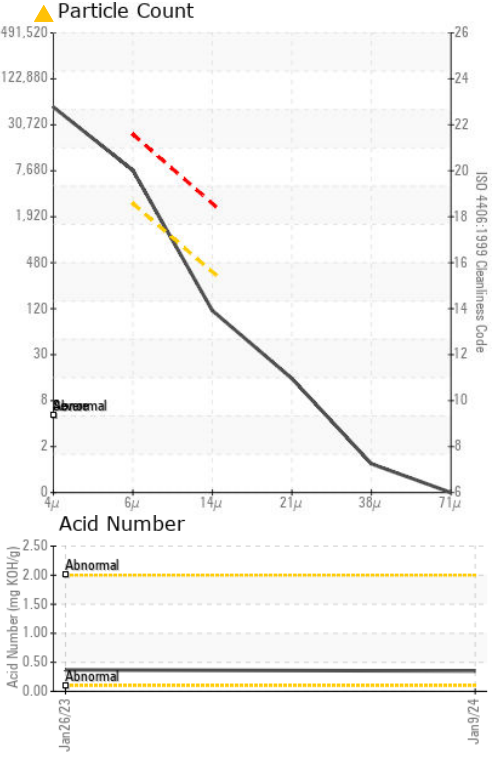
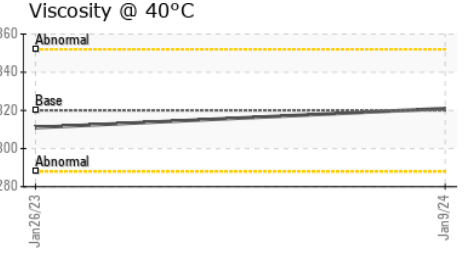
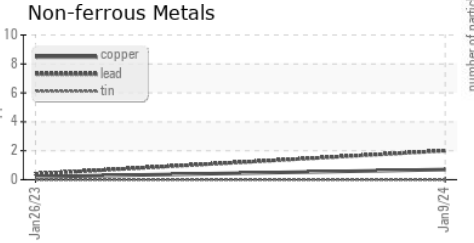
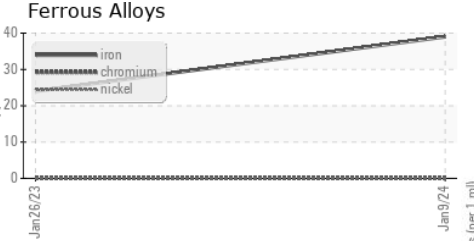
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*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	321	---

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



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX015707 **Received** : 30 Jan 2024  
**Lab Number** : 06073851 **Diagnosed** : 31 Jan 2024  
**Unique Number** : 10855942 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**NORDEX USA - Chicago**  
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 CHICAGO, IL  
 US 60606  
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 DLinehan@nordex-online.com  
 T: (312)386-4124  
 F: (312)386-7102

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)