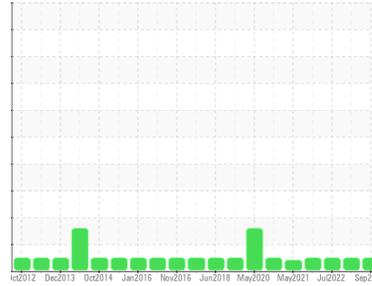




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
RIPPEY [200005325]
 Machine Id
82207 SITE 9

Component
Wind Turbine Gearbox
 Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (340 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		NX05999839	NX05913486	NX05672244
Sample Date	Client Info		21 Sep 2023	22 Mar 2023	26 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	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>80	6	11	7	
Iron	ppm	ASTM D5185m	>150	2	3	4
Chromium	ppm	ASTM D5185m	>5	0	0	0
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	5	<1	0
Lead	ppm	ASTM D5185m	>20	0	<1	0
Copper	ppm	ASTM D5185m	>50	2	3	3
Tin	ppm	ASTM D5185m	>10	0	0	0
Antimony	ppm	ASTM D5185m	>5	---	---	---
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		42	0	0
Barium	ppm	ASTM D5185m		0	0	6
Molybdenum	ppm	ASTM D5185m	1150	789	834	786
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		7	4	5
Calcium	ppm	ASTM D5185m	2000	1503	1668	1447
Phosphorus	ppm	ASTM D5185m	400	347	381	317
Zinc	ppm	ASTM D5185m	0	0	0	<1
Sulfur	ppm	ASTM D5185m	1850	1756	2163	1915

CONTAMINANTS

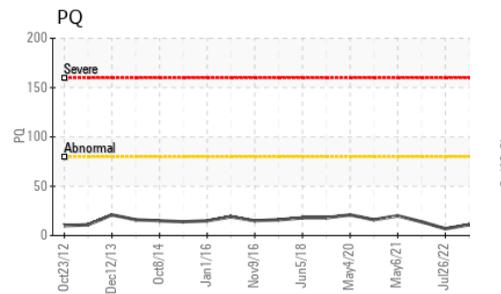
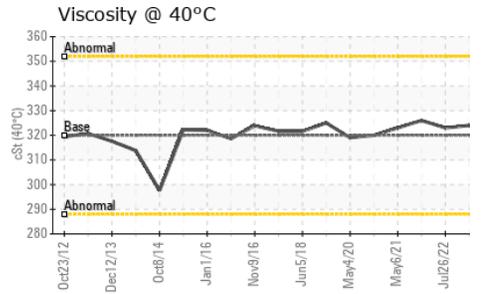
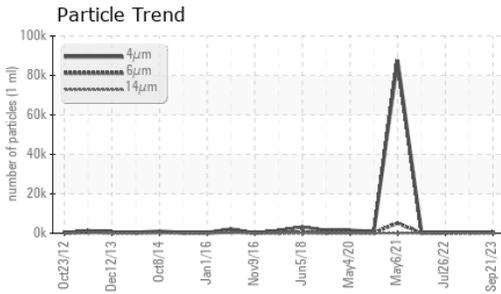
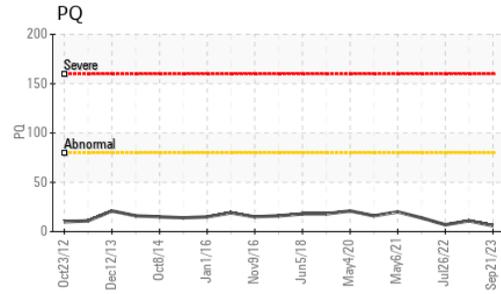
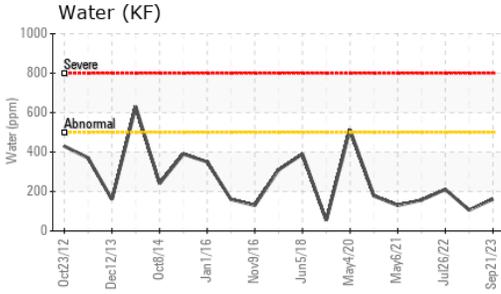
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	17	11	14
Sodium	ppm	ASTM D5185m	>20	7	8	4
Potassium	ppm	ASTM D5185m	>20	0	0	1
Water	%	ASTM D6304	>0.05	0.016	0.010	0.021
ppm Water	ppm	ASTM D6304	>500	161.8	106.1	210.4

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		599	577	484
Particles >6µm	ASTM D7647	>2500	223	243	52
Particles >14µm	ASTM D7647	>320	26	33	4
Particles >21µm	ASTM D7647	>80	7	9	1
Particles >38µm	ASTM D7647	>20	1	0	0
Particles >71µm	ASTM D7647	>4	1	0	0
Oil Cleanliness	ISO 4406 (c)	>--/18/15	16/15/12	16/15/12	16/13/9



OIL ANALYSIS REPORT

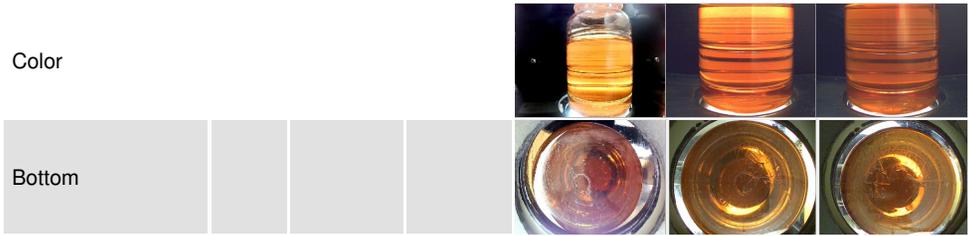


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	0.70	0.84	0.72

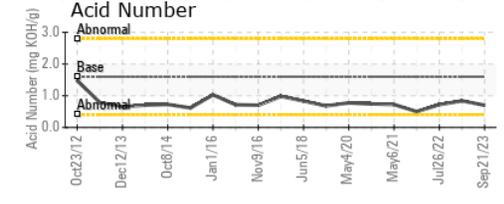
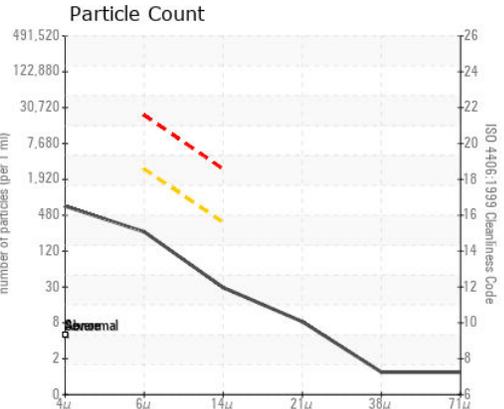
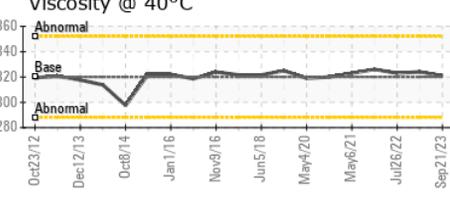
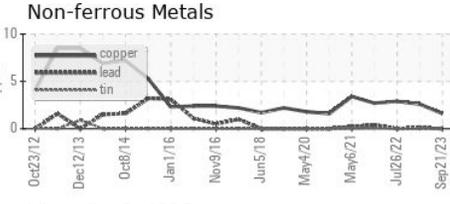
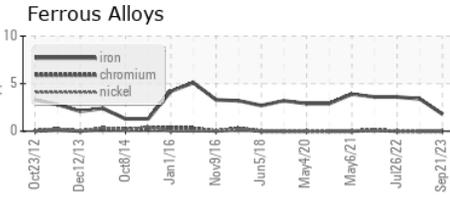
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	321	324	323

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05999839 **Received** : 06 Nov 2023
Lab Number : **05999839** **Diagnosed** : 08 Nov 2023
Unique Number : 10728199 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

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

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)