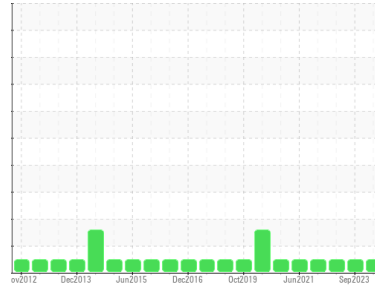




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
RIPPEY [200005325]
 Machine Id
82220 SITE 18

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		NX06027157	NX05999840	NX05672236
Sample Date	Client Info		08 Nov 2023	10 Sep 2023	29 Sep 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	15	12	10
Iron	ppm	ASTM D5185m	>150	4	3
Chromium	ppm	ASTM D5185m	>5	<1	0
Nickel	ppm	ASTM D5185m	>10	0	0
Titanium	ppm	ASTM D5185m	>10	0	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m	>10	6	5
Lead	ppm	ASTM D5185m	>20	0	0
Copper	ppm	ASTM D5185m	>50	1	<1
Tin	ppm	ASTM D5185m	>10	0	0
Antimony	ppm	ASTM D5185m	>5	---	---
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	42
Barium	ppm	ASTM D5185m		0	0
Molybdenum	ppm	ASTM D5185m	1150	854	798
Manganese	ppm	ASTM D5185m		0	0
Magnesium	ppm	ASTM D5185m		6	8
Calcium	ppm	ASTM D5185m	2000	1577	1548
Phosphorus	ppm	ASTM D5185m	400	316	352
Zinc	ppm	ASTM D5185m	0	0	0
Sulfur	ppm	ASTM D5185m	1850	1951	1828

CONTAMINANTS

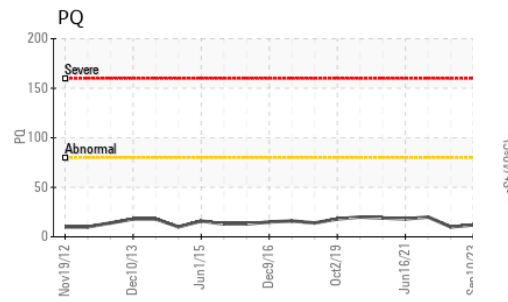
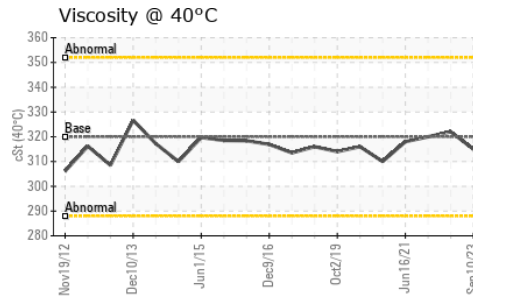
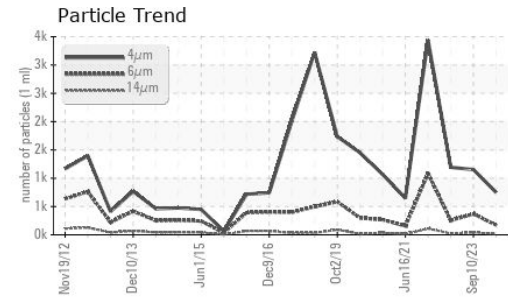
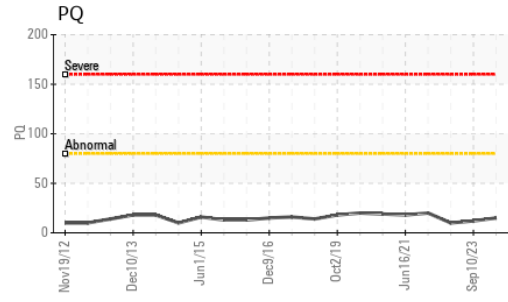
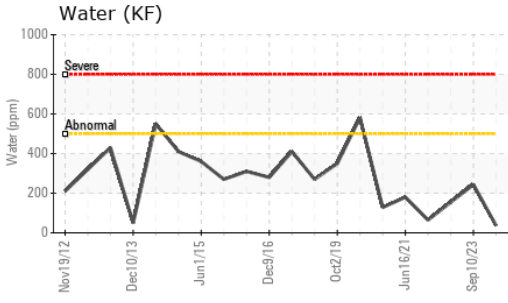
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	12	12
Sodium	ppm	ASTM D5185m	>20	3	6
Potassium	ppm	ASTM D5185m	>20	1	0
Water	%	ASTM D6304	>0.05	0.003	0.024
ppm Water	ppm	ASTM D6304	>500	37	243.5

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		750	1153	1193
Particles >6µm	ASTM D7647	>2500	173	368	257
Particles >14µm	ASTM D7647	>320	15	41	22
Particles >21µm	ASTM D7647	>80	4	11	5
Particles >38µm	ASTM D7647	>20	0	1	1
Particles >71µm	ASTM D7647	>4	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/18/15	17/15/11	17/16/13	17/15/12



OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	0.71	0.75	0.77

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	325	315	322

SAMPLE IMAGES		method	limit/base	current	history1	history2
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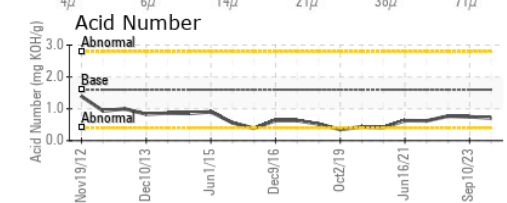
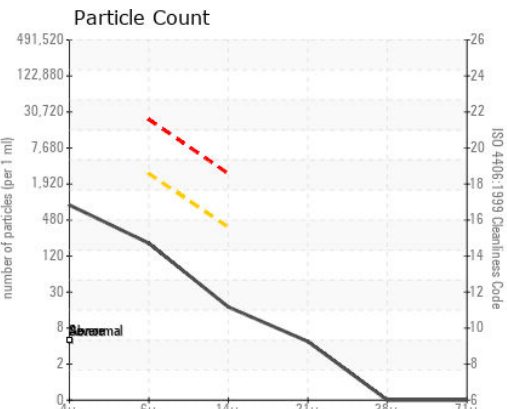
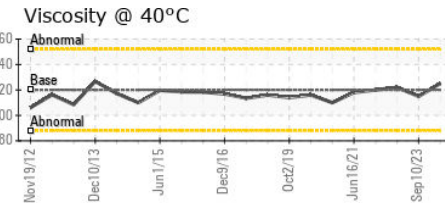
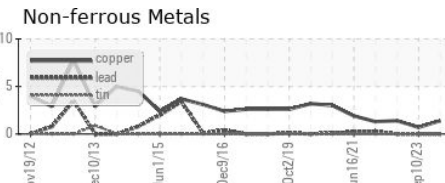
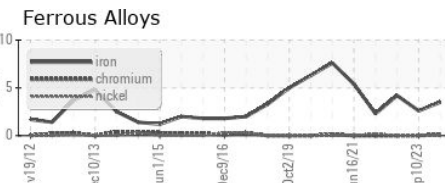
Color



Bottom



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX06027157 **Received** : 06 Dec 2023
Lab Number : 06027157 **Diagnosed** : 11 Dec 2023
Unique Number : 10776948 **Diagnostician** : Jonathan Hester

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

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)