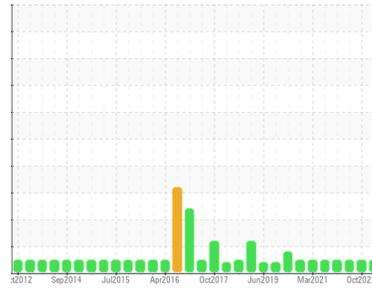




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
HIGHLAND [600380479]
 Machine Id
01WEA80808
 Component
Wind Turbine Gearbox
 Fluid
MOBIL XMP 320 (--- LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination 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		NX05928216	NX05700252	NX05602738
Sample Date	Client Info		09 Mar 2023	06 Oct 2022	10 Mar 2022
Machine Age	mths	Client Info	0	0	0
Oil Age	mths	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	16	11	23	
Iron	ppm	ASTM D5185m	>150	80	63	39
Chromium	ppm	ASTM D5185m	>5	1	<1	<1
Nickel	ppm	ASTM D5185m	>10	0	0	<1
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>10	<1	0	<1
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>50	1	1	<1
Tin	ppm	ASTM D5185m	>10	0	0	<1
Antimony	ppm	ASTM D5185m	>5	---	---	---
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		0	0	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		19	15	10
Manganese	ppm	ASTM D5185m		2	2	1
Magnesium	ppm	ASTM D5185m		0	0	0
Calcium	ppm	ASTM D5185m		7	5	<1
Phosphorus	ppm	ASTM D5185m	315	378	370	260
Zinc	ppm	ASTM D5185m		6	5	5
Sulfur	ppm	ASTM D5185m		13090	13613	9321

CONTAMINANTS

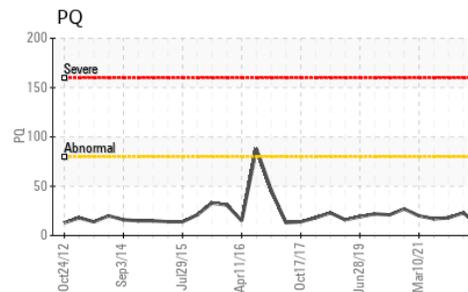
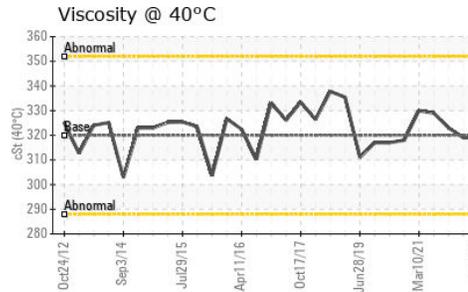
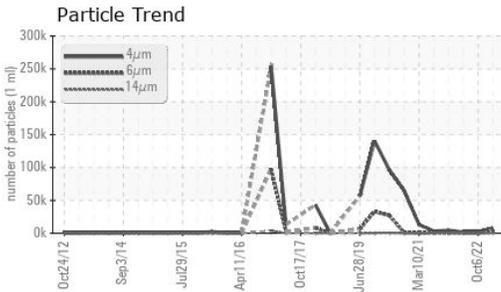
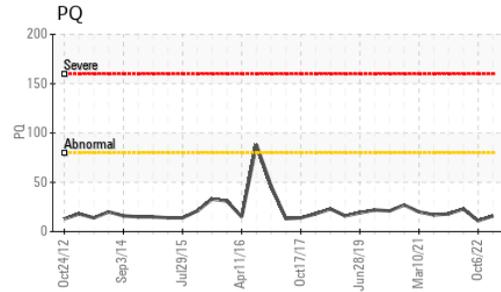
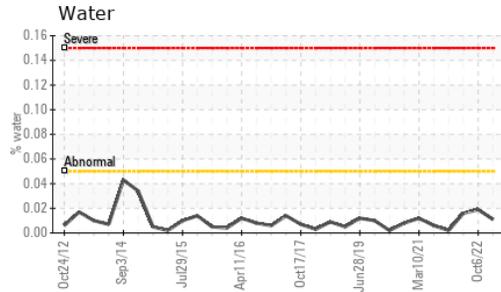
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	1	<1	<1
Sodium	ppm	ASTM D5185m	>20	0	0	0
Potassium	ppm	ASTM D5185m	>20	<1	0	0
Water	%	ASTM D6304	>0.05	0.011	0.019	0.016
ppm Water	ppm	ASTM D6304	>500	117.9	194.2	160.6

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		7274	2564	1770
Particles >6µm	ASTM D7647	>2500	2079	320	345
Particles >14µm	ASTM D7647	>320	70	24	19
Particles >21µm	ASTM D7647	>80	14	6	5
Particles >38µm	ASTM D7647	>20	1	1	2
Particles >71µm	ASTM D7647	>4	0	1	1
Oil Cleanliness	ISO 4406 (c)	>--/18/15	20/18/13	19/15/12	18/16/11



OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.99	0.98	0.90

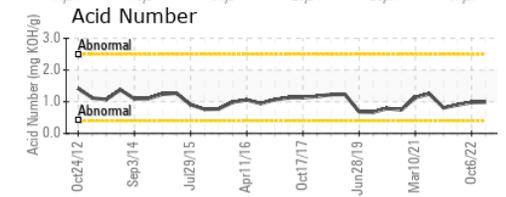
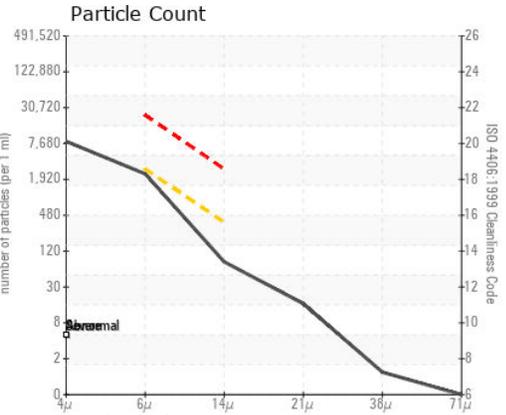
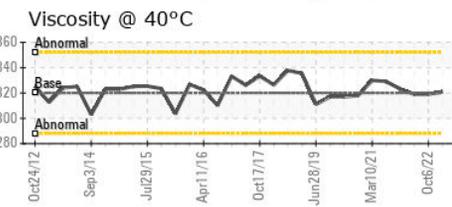
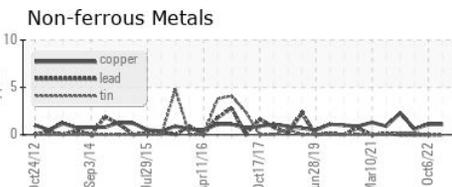
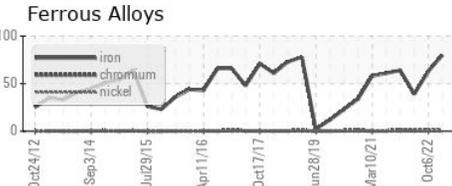
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	VLITE
Sand/Dirt	scalar	*Visual	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	319	319

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05928216 **Received** : 18 Aug 2023
Lab Number : **05928216** **Diagnosed** : 21 Aug 2023
Unique Number : 10608163 **Diagnostician** : Don Baldrige

NORDEX USA - HIGHLAND & HIGHLAND NORTH
 300 SOUTH WACKER DRIVE, SUITE 1500
 CHICAGO, IL
 US 60606
 Contact: Robert Warner
 rwarner@everpower.com

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)

T: x
F: x