



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
BEEBE [2000060080]

Machine Id
08WEA82312

Component
Wind Turbine Gearbox

Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (4 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		NX06146577	NX05798672	NX05621778
Sample Date		Client Info		26 Mar 2024	21 Mar 2023	18 Aug 2022
Machine Age	hrs	Client Info		97122	70913	67406
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	SEVERE	ABNORMAL

WEAR

All component wear rates are normal.

PQ		ASTM D8184	>80	25	▲ 99	61
Iron	ppm	ASTM D5185m	>150	47	▲ 375	▲ 320
Chromium	ppm	ASTM D5185m	>5	<1	4	3
Nickel	ppm	ASTM D5185m	>10	1	2	3
Titanium	ppm	ASTM D5185m	>10	<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	7	1	1
Lead	ppm	ASTM D5185m	>20	<1	0	0
Copper	ppm	ASTM D5185m	>50	1	2	2
Tin	ppm	ASTM D5185m	>10	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

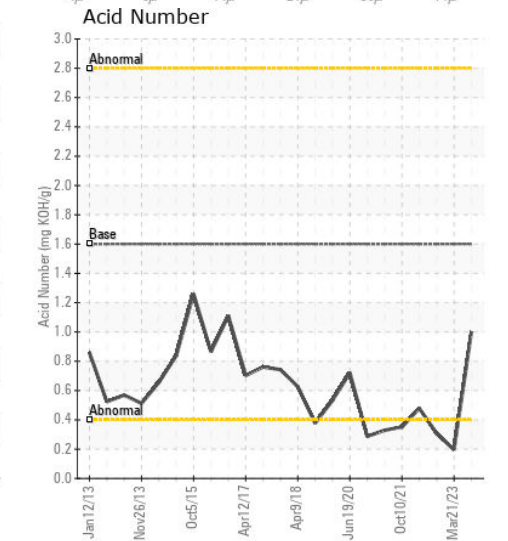
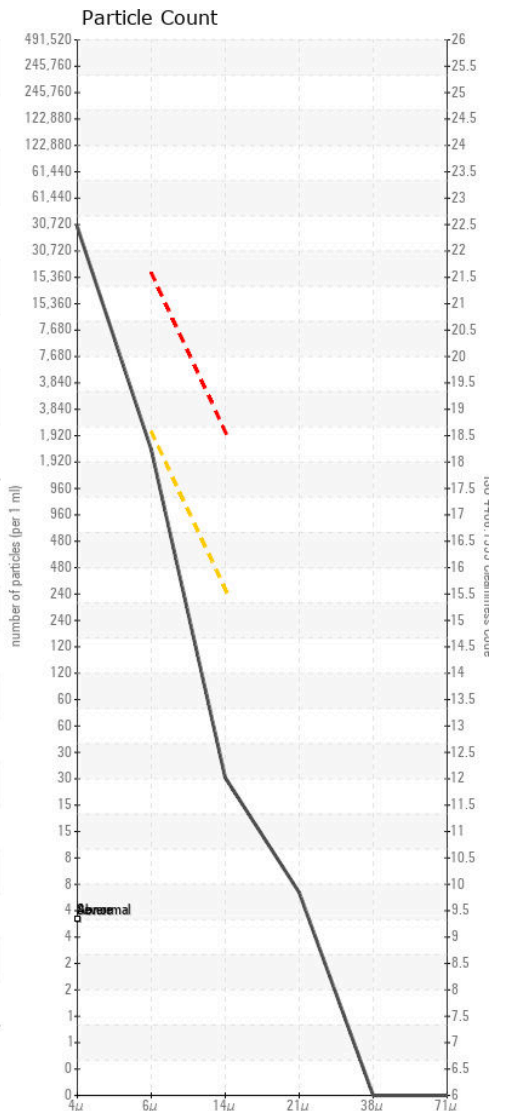
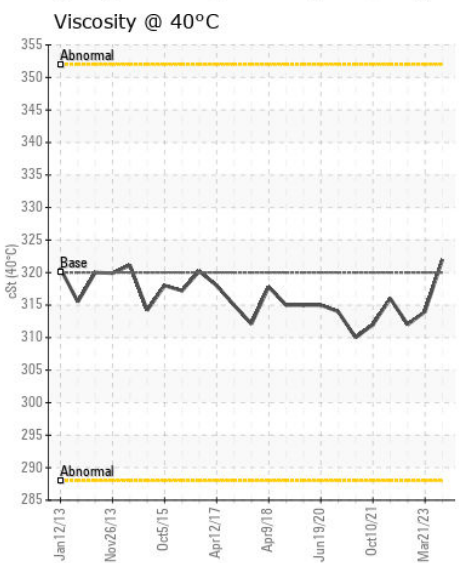
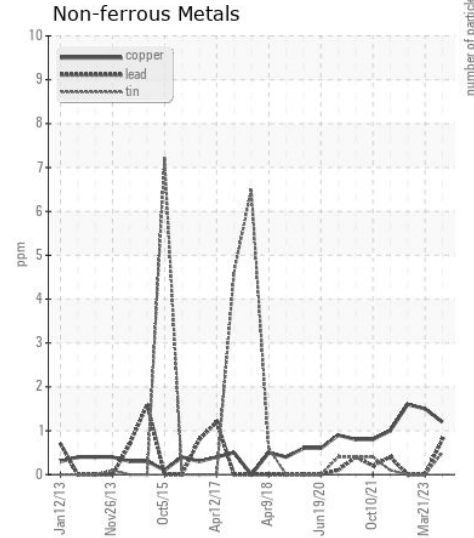
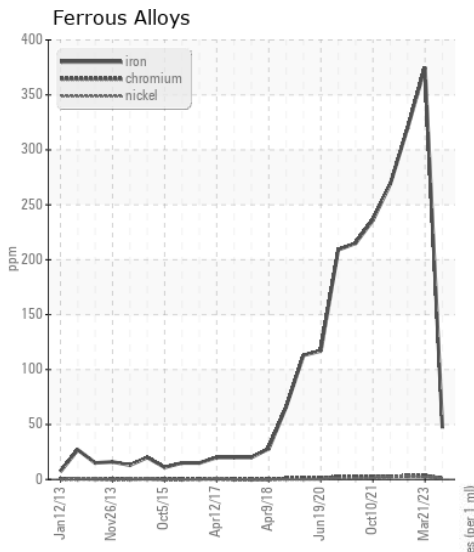
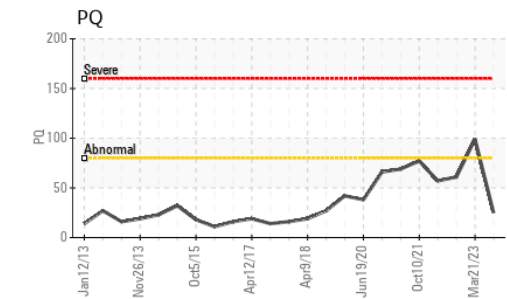
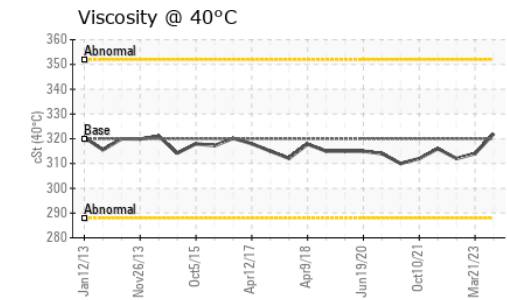
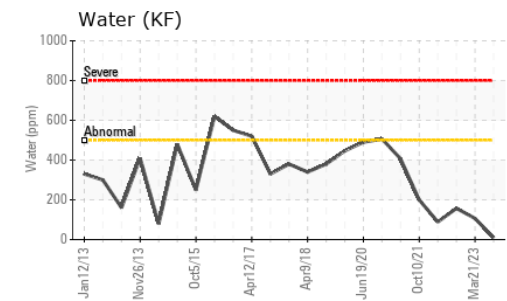
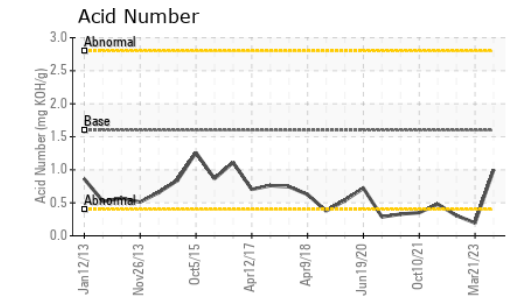
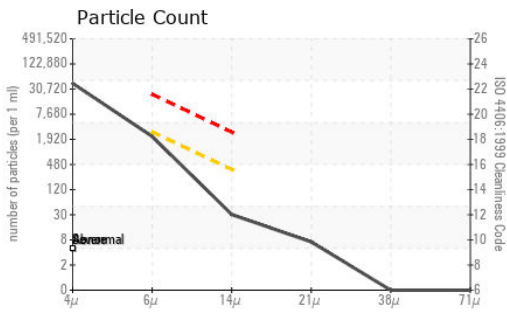
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>50	14	10	8
Potassium	ppm	ASTM D5185m	>20	1	<1	1
Water	%	ASTM D6304	>0.05	0.001	0.010	0.015
ppm Water	ppm	ASTM D6304	>500	9	106.4	157.1
Particles >4µm		ASTM D7647		36390	5290	6292
Particles >6µm		ASTM D7647	>2500	1976	346	1005
Particles >14µm		ASTM D7647	>320	27	6	48
Particles >21µm		ASTM D7647	>80	6	2	8
Particles >38µm		ASTM D7647	>20	0	1	0
Particles >71µm		ASTM D7647	>4	0	0	0
Oil Cleanliness		ISO 4406 (c)	--/18/15	22/18/12	20/16/10	20/17/13
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

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>20	0	0	6
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		4	2	0
Molybdenum	ppm	ASTM D5185m	1150	924	754	802
Manganese	ppm	ASTM D5185m		1	4	3
Magnesium	ppm	ASTM D5185m		9	31	30
Calcium	ppm	ASTM D5185m	2000	1756	1535	1570
Phosphorus	ppm	ASTM D5185m	400	353	321	345
Zinc	ppm	ASTM D5185m	0	2	17	17
Sulfur	ppm	ASTM D5185m	1850	1995	1718	1992
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	1.00	0.195	0.307
Visc @ 40°C	cSt	ASTM D445	320	322	314	312



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX06146577
Lab Number : 06146577
Unique Number : 10976655
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

NORDEX USA - BEEBE
 1200 S COUNTY FARM RD
 ITHACA, MI
 US 48847
 Contact: TUCKER WITT
 tucker.witt@constellation.com

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)

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