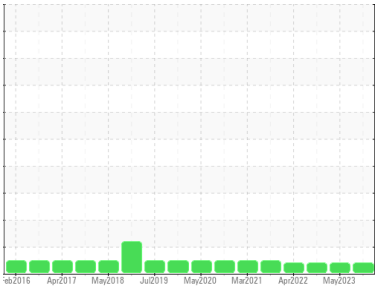
PROBLEM SUMMARY

Sample Rating Trend



ADDITIVES

Area
THUNDER SPIRIT [200005313]
Machine Id
33WEA84023 (S/N EWP01526)
Component
Wind Turbine Gearbox
Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (--- QTS)

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				**ATTENTION**	ATTENTION	ATTENTION
Molybdenum	ppm	ASTM D5185m	1150	▲ **397**	▲ 427	▲ 391

Customer Id: NORDEX
Sample No.: NX013641
Lab Number: 05968975
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

15 May 2023 Diag: Don Baldridge

ADDITIVES

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. An additive depletion is indicated. The AN level is acceptable for this fluid.

view report

04 Oct 2022 Diag: Don Baldridge

ADDITIVES

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. An additive depletion is indicated. The AN level is acceptable for this fluid.

view report

20 Apr 2022 Diag: Doug Bogart

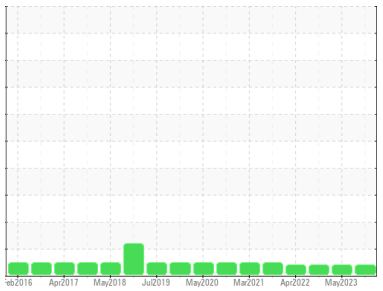
ADDITIVES

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. An additive depletion is indicated. The AN level is acceptable for this fluid.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ADDITIVES

Area
THUNDER SPIRIT [200005313]
Machine Id
33WEA84023 (S/N EWP01526)
Component
Wind Turbine Gearbox
Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (--- QTS)

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
An additive depletion is indicated. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**NX013641**	NX011668	NX004389
Sample Date		Client Info		**18 Sep 2023**	15 May 2023	04 Oct 2022
Machine Age	hrs	Client Info		**56296**	53917	49243
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ATTENTION**	ATTENTION	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>80	**10**	12	2
Iron	ppm	ASTM D5185m	>150	**1**	2	<1
Chromium	ppm	ASTM D5185m	>5	**<1**	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	**2**	0	0
Lead	ppm	ASTM D5185m	>20	**0**	0	0
Copper	ppm	ASTM D5185m	>50	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>10	**0**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	4	<1
Molybdenum	ppm	ASTM D5185m	1150	▲ **397**	▲ 427	▲ 391
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**3**	2	3
Calcium	ppm	ASTM D5185m	2000	**754**	833	796
Phosphorus	ppm	ASTM D5185m	400	**213**	225	230
Zinc	ppm	ASTM D5185m	0	**0**	0	0
Sulfur	ppm	ASTM D5185m	1850	**1899**	1944	2087

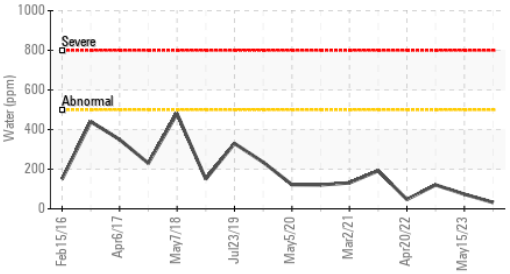
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**6**	5	5
Sodium	ppm	ASTM D5185m	>20	**8**	2	6
Potassium	ppm	ASTM D5185m	>20	**2**	2	0
Water	%	ASTM D6304	>0.05	**0.003**	0.007	0.012
ppm Water	ppm	ASTM D6304	>500	**32.1**	73.6	120.7

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**8867**	193	671
Particles >6µm		ASTM D7647	>2500	**2239**	66	139
Particles >14µm		ASTM D7647	>320	**145**	13	12
Particles >21µm		ASTM D7647	>80	**40**	5	3
Particles >38µm		ASTM D7647	>20	**1**	2	1
Particles >71µm		ASTM D7647	>4	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/18/15	**20/18/14**	15/13/11	17/14/11

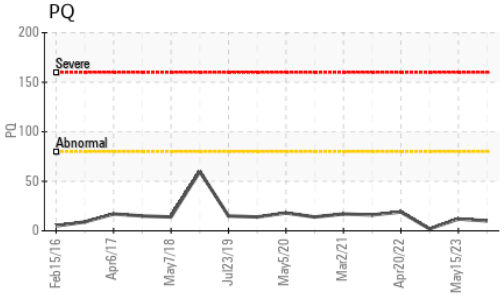
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	**0.32**	0.36	0.24

OIL ANALYSIS REPORT

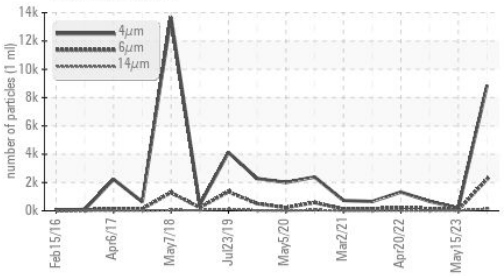
Water (KF)



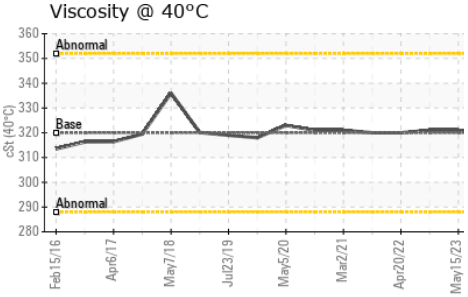
PQ



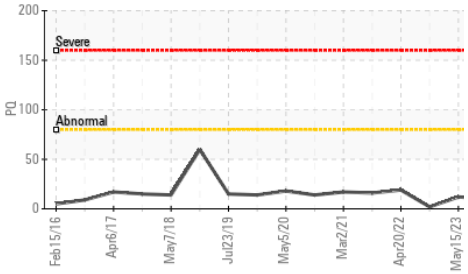
Particle Trend



Viscosity @ 40°C



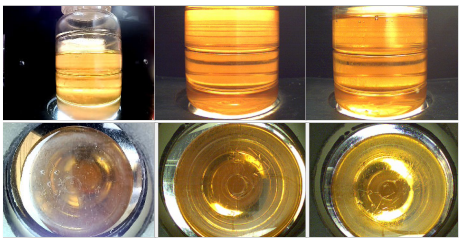
PQ



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

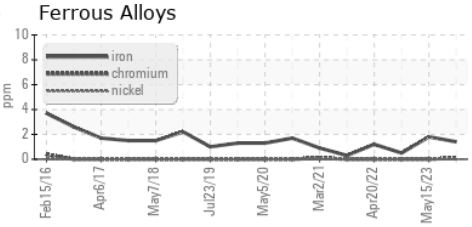
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	**319**	321	321

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

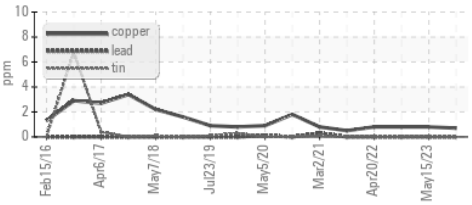


GRAPHS

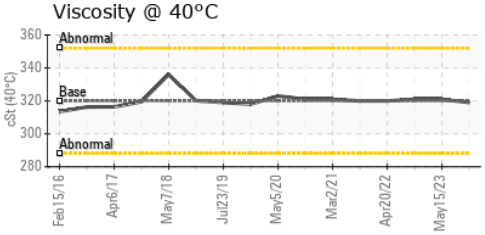
Ferrous Alloys



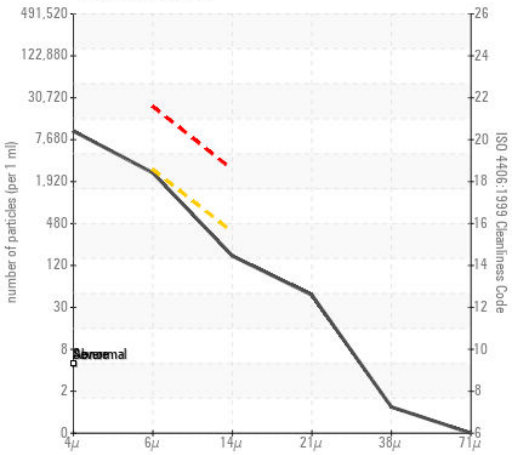
Non-ferrous Metals



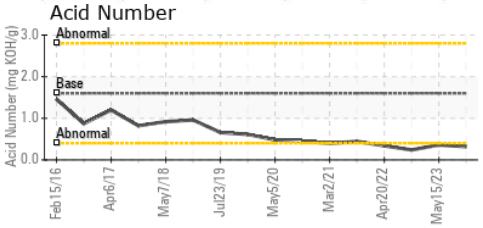
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX013641 **Received** : 04 Oct 2023
Lab Number : 05968975 **Diagnosed** : 06 Oct 2023
Unique Number : 10675526 **Diagnostician** : Don Baldridge
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)

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