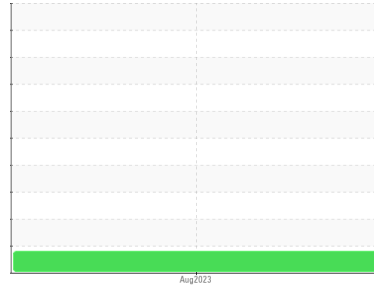




PROBLEM SUMMARY

Sample Rating Trend

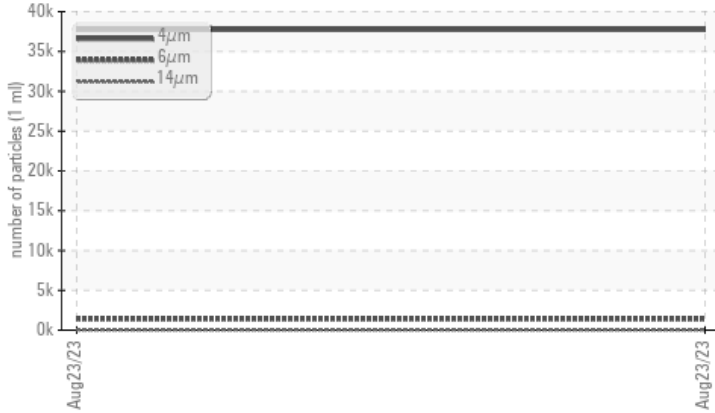
ISO



Area
IRON STAR [200006142]
 Machine Id
K04-WEA88326
 Component
Wind Turbine Gearbox
 Fluid
GEAR OIL (PAO) ISO 320 (--- LTR)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

No corrective action is recommended at this time.
 Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	---	---
Particles >6µm	ASTM D7647	>320	▲ 1405	---	---
Oil Cleanliness	ISO 4406 (c)	>--/15/12	▲ 22/18/12	---	---

Customer Id: NORDEX
 Sample No.: NX05933542
 Lab Number: 05933542
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +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



OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area
IRON STAR [200006142]
 Machine Id
K04-WEA88326
 Component
Wind Turbine Gearbox
 Fluid
GEAR OIL (PAO) ISO 320 (--- LTR)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present 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	NX05933542	---	---
Sample Date	Client Info	23 Aug 2023	---	---
Machine Age	hrs	Client Info	0	---
Oil Age	hrs	Client Info	0	---
Oil Changed	Client Info	N/A	---	---
Sample Status		ABNORMAL	---	---

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184	>50	16	---
Iron	ppm	ASTM D5185m	>30	11
Chromium	ppm	ASTM D5185m	>3	0
Nickel	ppm	ASTM D5185m	>3	0
Titanium	ppm	ASTM D5185m	>10	0
Silver	ppm	ASTM D5185m		0
Aluminum	ppm	ASTM D5185m	>30	0
Lead	ppm	ASTM D5185m	>15	<1
Copper	ppm	ASTM D5185m	>10	<1
Tin	ppm	ASTM D5185m	>10	0
Vanadium	ppm	ASTM D5185m		0
Cadmium	ppm	ASTM D5185m		0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	25	6
Barium	ppm	ASTM D5185m	12	2
Molybdenum	ppm	ASTM D5185m	5	0
Manganese	ppm	ASTM D5185m		<1
Magnesium	ppm	ASTM D5185m	25	0
Calcium	ppm	ASTM D5185m	25	17
Phosphorus	ppm	ASTM D5185m	375	195
Zinc	ppm	ASTM D5185m	25	3
Sulfur	ppm	ASTM D5185m	4900	5407

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+15	12
Sodium	ppm	ASTM D5185m		0
Potassium	ppm	ASTM D5185m	>20	1
Water	%	ASTM D6304	>0.02	0.003
ppm Water	ppm	ASTM D6304	>200	26.7

FLUID CLEANLINESS

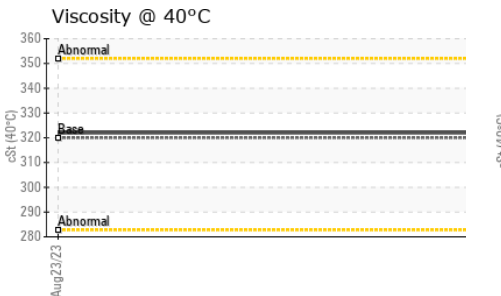
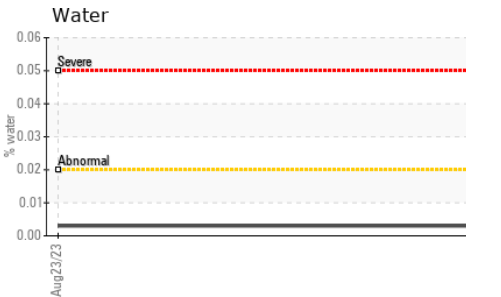
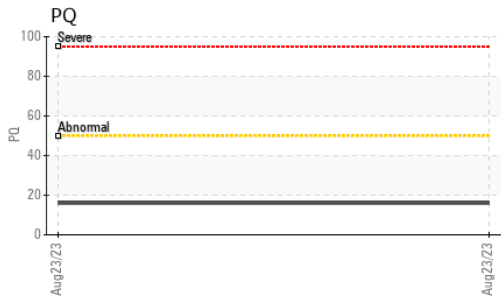
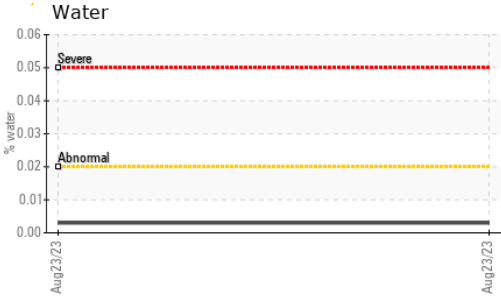
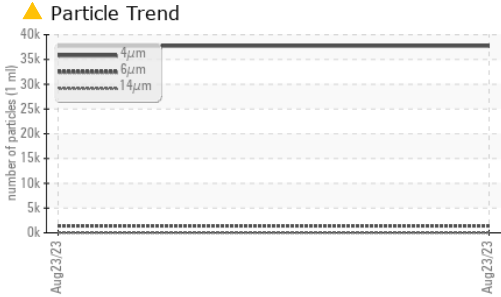
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		37736	---
Particles >6µm	ASTM D7647	>320	1405	---
Particles >14µm	ASTM D7647	>40	40	---
Particles >21µm	ASTM D7647	>10	11	---
Particles >38µm	ASTM D7647	>3	0	---
Particles >71µm	ASTM D7647	>3	0	---
Oil Cleanliness	ISO 4406 (c)	>--/15/12	22/18/12	---

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.10	0.34



OIL ANALYSIS REPORT



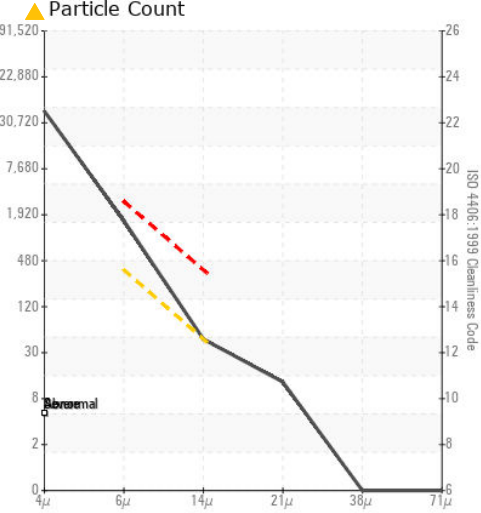
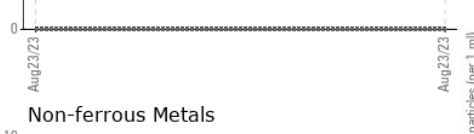
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.02	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 320	322	---	---

SAMPLE IMAGES

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				no image	no image
Bottom				no image	no image

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05933542 **Received** : 24 Aug 2023
Lab Number : 05933542 **Diagnosed** : 25 Aug 2023
Unique Number : 10618813 **Diagnostician** : Don Baldrige
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

Certificate L2367
 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)