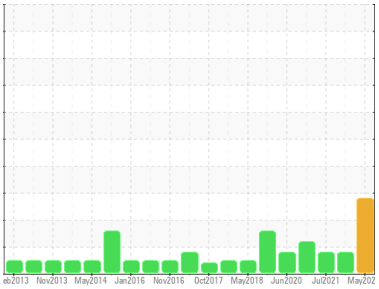
PROBLEM SUMMARY

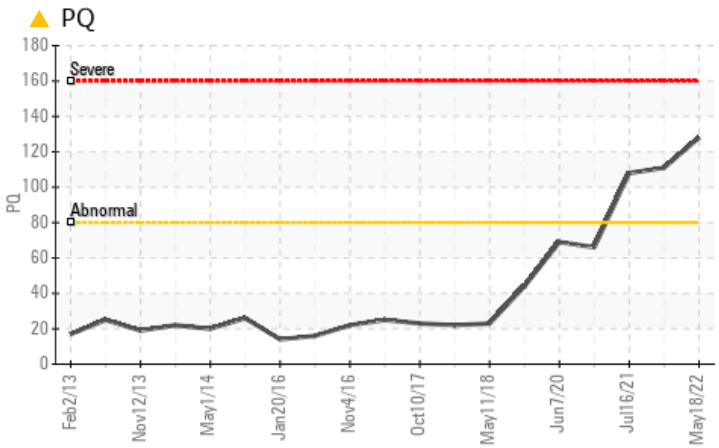
Sample Rating Trend

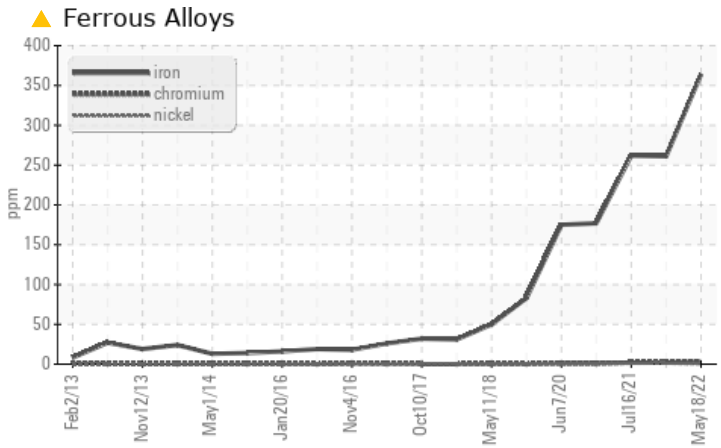


WEAR

Area
BEEBE [200005316]
Machine Id
28WEA82333
Component
Wind Turbine Gearbox
Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (4 LTR)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
PQ		ASTM D8184	>80	▲ **128**	111	108
Iron	ppm	ASTM D5185m	>150	▲ **364**	▲ 261	▲ 262

Customer Id: NORBEE
Sample No.: NX05568725
Lab Number: 05568725
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Angela Borella +1 800-237-1369
angela.borella@wearcheckusa.com

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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

20 Aug 2021 Diag: Jonathan Hester

WEAR

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.Gear wear is indicated. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

16 Jul 2021 Diag: Jonathan Hester

WEAR

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.Gear wear is indicated. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

07 Jun 2020 Diag: Jonathan Hester

WEAR

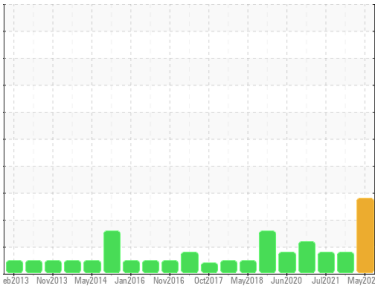
No corrective action is recommended at this time. We recommend an early resample to monitor this condition.Gear wear is indicated. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Area
BEEBE [200005316]
Machine Id
28WEA82333
Component
Wind Turbine Gearbox
Fluid
CASTROL OPTIGEAR SYNTHETIC X 320 (4 LTR)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear
Gear wear is indicated.

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		**NX05568725**	NX004293	NX005676
Sample Date		Client Info		**18 May 2022**	20 Aug 2021	16 Jul 2021
Machine Age	hrs	Client Info		**68227**	0	62184
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>80	▲ **128**	111	108
Iron	ppm	ASTM D5185m	>150	▲ **364**	▲ 261	▲ 262
Chromium	ppm	ASTM D5185m	>5	**3**	2	2
Nickel	ppm	ASTM D5185m	>10	**<1**	1	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	<1	<1
Aluminum	ppm	ASTM D5185m	>10	**<1**	0	0
Lead	ppm	ASTM D5185m	>20	**0**	<1	<1
Copper	ppm	ASTM D5185m	>50	**1**	<1	<1
Tin	ppm	ASTM D5185m		**<1**	<1	<1
Antimony	ppm	ASTM D5185m		**---**	0	0
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	<1	<1

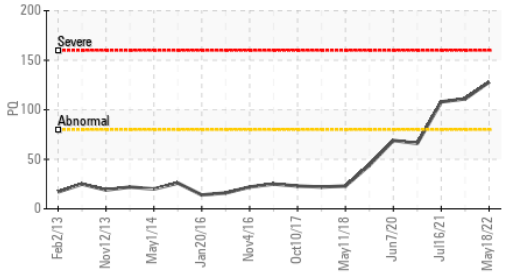
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**17**	<1	<1
Barium	ppm	ASTM D5185m		**2**	0	0
Molybdenum	ppm	ASTM D5185m	1150	**762**	750	772
Manganese	ppm	ASTM D5185m		**3**	2	2
Magnesium	ppm	ASTM D5185m		**44**	45	47
Calcium	ppm	ASTM D5185m	2000	**1569**	1553	1592
Phosphorus	ppm	ASTM D5185m	400	**358**	337	350
Zinc	ppm	ASTM D5185m	0	**21**	18	19
Sulfur	ppm	ASTM D5185m	1850	**1752**	1643	1715

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**14**	11	11
Sodium	ppm	ASTM D5185m	>20	**9**	6	6
Potassium	ppm	ASTM D5185m	>20	**0**	<1	<1
Water	%	ASTM D6304	>0.05	**0.017**	0.034	0.047
ppm Water	ppm	ASTM D6304	>500	**170.3**	346.0	472.5

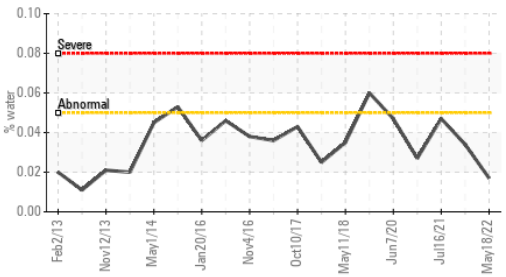
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**1084**	6112	1452
Particles >6µm		ASTM D7647	>2500	**290**	201	196
Particles >14µm		ASTM D7647	>320	**36**	7	8
Particles >21µm		ASTM D7647	>80	**10**	2	3
Particles >38µm		ASTM D7647	>20	**1**	0	1
Particles >71µm		ASTM D7647	>4	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/18/15	**17/15/12**	20/15/10	18/15/10

OIL ANALYSIS REPORT

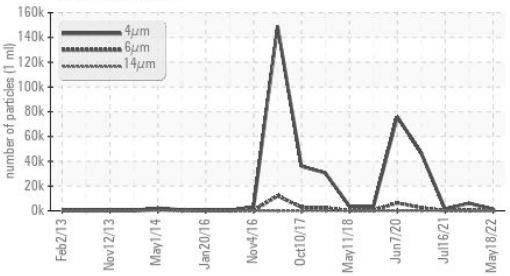
PQ



Water



Particle Trend



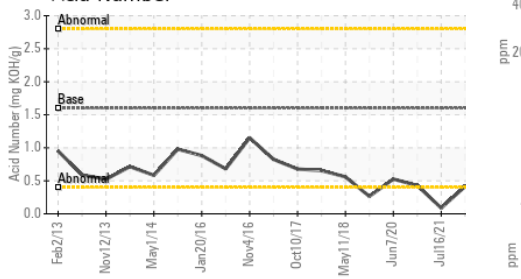
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.6	**0.421**	0.415	0.088

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

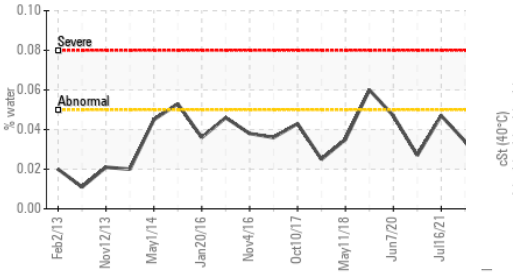
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	**311**	309	313

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

Acid Number

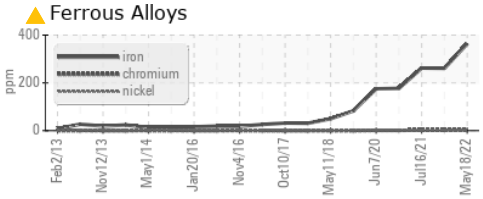


Water

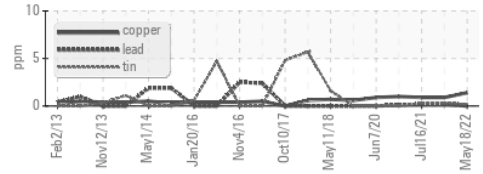


GRAPHS

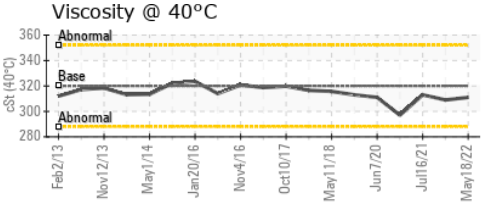
Ferrous Alloys



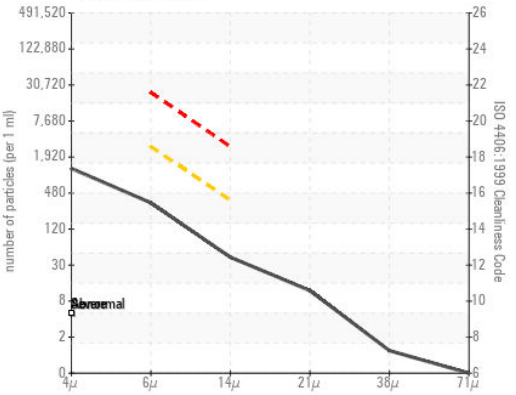
Non-ferrous Metals



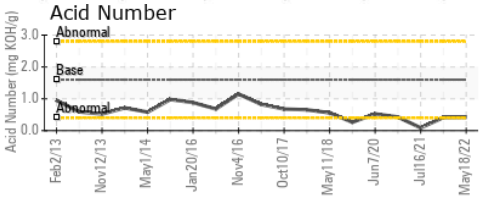
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : NX05568725 **Received** : 14 Jun 2022
Lab Number : 05568725 **Diagnosed** : 15 Jun 2022
Unique Number : 10013125 **Diagnostician** : Angela Borella
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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