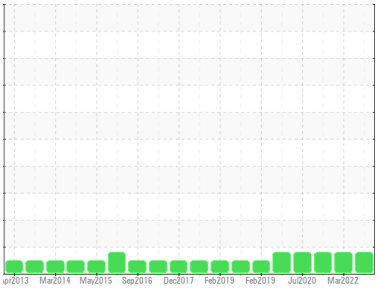
PROBLEM SUMMARY

Sample Rating Trend

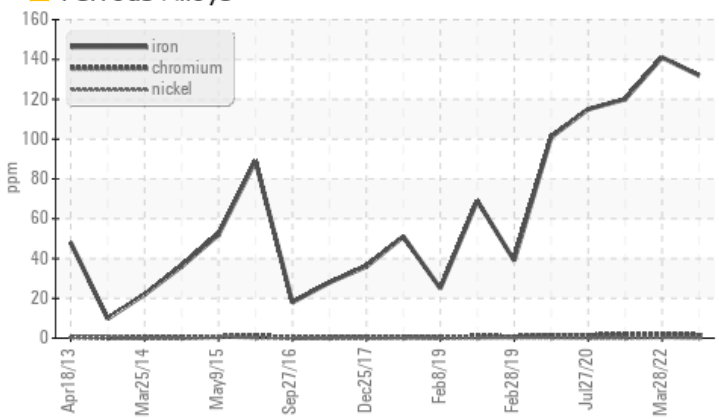


WEAR

Area
9
Machine Id
WINERGY GEARBOX WTG-903 (S/N 4836486-0020-4)
Component
Wind Turbine Gearbox
Fluid
FUCHS RENOLIN UNISYN CKC ISO 320 (340 LTR)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>65	▲ **132**	▲ 141	▲ 120

Customer Id: ENEFRA
Sample No.: WC0804482
Lab Number: 05857943
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

28 Mar 2022 Diag: Aaron Black

WEAR

We recommend an early resample to monitor this condition.Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. Analytical ferrography: wear debris is normal with typical amounts of ferrous rubbing wear present. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. Analytical ferrography: contamination is normal with typical amounts of external debris present. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

10 Mar 2021 Diag: Don Baldridge

WEAR

No corrective action is recommended at this time. Resample at the next service interval to monitor.The iron level is abnormal. All other component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

27 Jul 2020 Diag: Doug Bogart

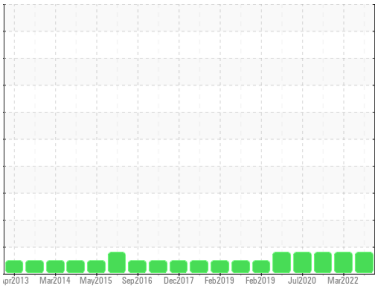
WEAR

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All ferrographic tests and evaluation performed at WC Canada laboratory.An increase in the iron level is noted. All other component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
9
Machine Id
WINERGY GEARBOX WTG-903 (S/N 4836486-0020-4)
Component
Wind Turbine Gearbox
Fluid
FUCHS RENOLIN UNISYN CKC ISO 320 (340 LTR)

DIAGNOSIS

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

Wear
The iron level is abnormal. All other 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		**WC0804482**	WC05504530	WC0547231
Sample Date		Client Info		**07 Mar 2023**	28 Mar 2022	10 Mar 2021
Machine Age	mths	Client Info		**83**	67	120
Oil Age	mths	Client Info		**83**	0	65
Oil Changed		Client Info		**Not Changd**	N/A	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>50	**12**	22	23
Iron	ppm	ASTM D5185m	>65	▲ **132**	▲ 141	▲ 120
Chromium	ppm	ASTM D5185m	>3	**2**	2	2
Nickel	ppm	ASTM D5185m	>3	**0**	<1	0
Titanium	ppm	ASTM D5185m	>10	**0**	0	0
Silver	ppm	ASTM D5185m		**0**	<1	0
Aluminum	ppm	ASTM D5185m	>10	**<1**	0	0
Lead	ppm	ASTM D5185m	>5	**0**	<1	<1
Copper	ppm	ASTM D5185m	>10	**0**	<1	<1
Tin	ppm	ASTM D5185m	>10	**<1**	<1	<1
Antimony	ppm	ASTM D5185m	>5	**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

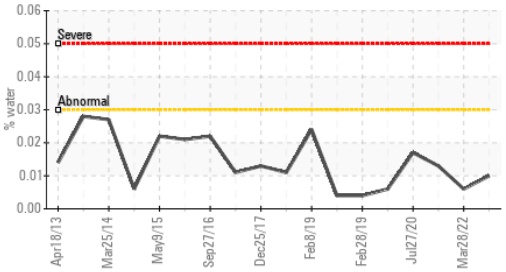
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	25	**0**	0	1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	9
Manganese	ppm	ASTM D5185m		**1**	1	1
Magnesium	ppm	ASTM D5185m		**<1**	0	0
Calcium	ppm	ASTM D5185m	17	**1**	8	17
Phosphorus	ppm	ASTM D5185m	200	**182**	208	168
Zinc	ppm	ASTM D5185m		**<1**	0	0
Sulfur	ppm	ASTM D5185m	5000	**5934**	4756	4412

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**0**	<1	<1
Sodium	ppm	ASTM D5185m		**5**	4	5
Potassium	ppm	ASTM D5185m	>20	**2**	0	<1
Water	%	ASTM D6304	>0.03	**0.010**	0.006	0.013
ppm Water	ppm	ASTM D6304	>300	**103.8**	65.2	137.3

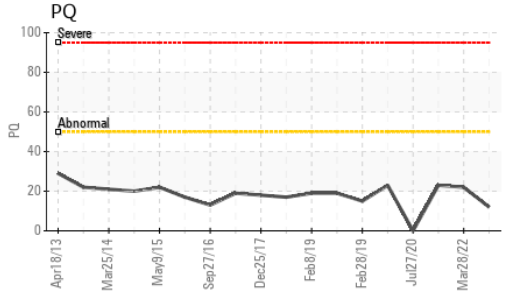
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**1025**	9431	457
Particles >6µm		ASTM D7647	>5000	**165**	511	95
Particles >14µm		ASTM D7647	>640	**9**	24	12
Particles >21µm		ASTM D7647	>160	**1**	4	4
Particles >38µm		ASTM D7647	>40	**0**	0	0
Particles >71µm		ASTM D7647	>10	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/19/16	**17/15/10**	20/16/12	16/14/11

OIL ANALYSIS REPORT

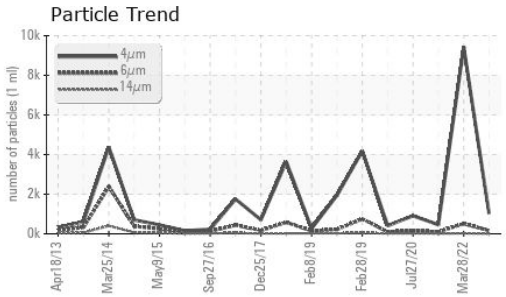
Water



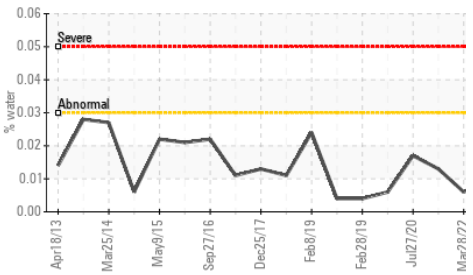
PQ



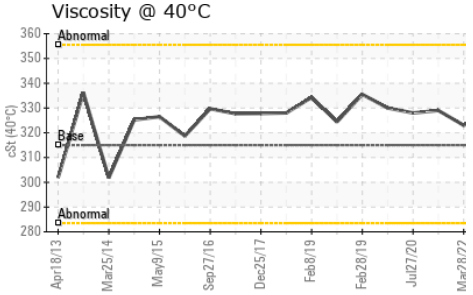
Particle Trend



Water



Viscosity @ 40°C

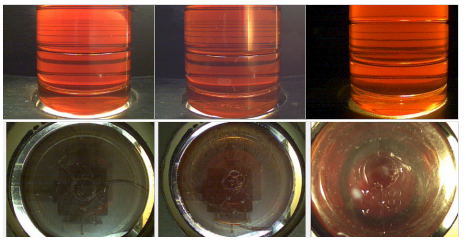


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.9	**0.76**	0.83	0.823

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	>0.03	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

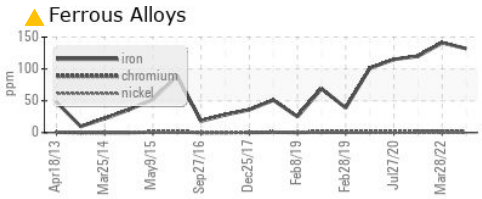
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	315	**328**	323	329

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

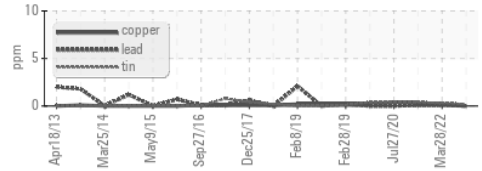


GRAPHS

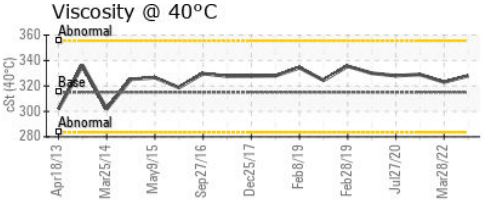
Ferrous Alloys



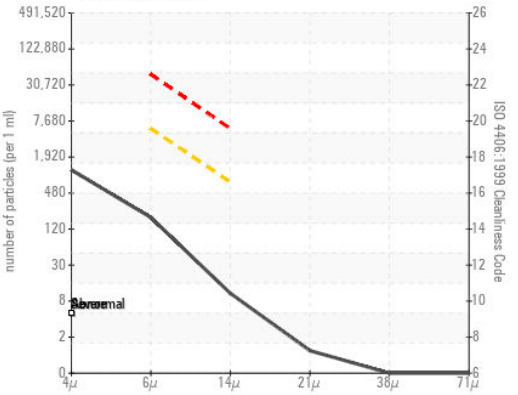
Non-ferrous Metals



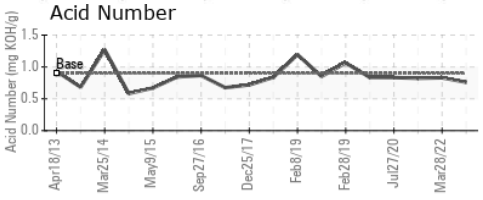
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0804482 **Received** : 26 May 2023
Lab Number : 05857943 **Diagnosed** : 30 May 2023
Unique Number : 10492408 **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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STA ANA KM25 CARRETERA AL SUR, A 1KM DEL CRUCE
FRANCISCO MORAZAN, ZZ
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