



# PROBLEM SUMMARY

Area

**3**

Machine Id

**WINERGY GEARBOX WTG-304 (S/N 4834518-0020-1)**

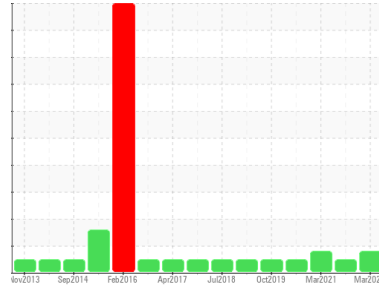
Component

**Wind Turbine Gearbox**

Fluid

**FUCHS RENOLIN UNISYN CKC ISO 320 (340 LTR)**

Sample Rating Trend



**SEDIMENT**



## COMPONENT CONDITION SUMMARY

No relevant graphs to display

## RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

## PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	NORMAL	ABNORMAL
Silt	scalar	*Visual	NONE	▲ <b>HEAVY</b>	NONE	▲ MODER

Customer Id: ENEFRA  
 Sample No.: WC0804478  
 Lab Number: 05857923  
 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](mailto:don.b505@comcast.net)

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

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Alert	---	---	?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

## HISTORICAL DIAGNOSIS

### 27 Jan 2022 Diag: Aaron Black

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. Analytical ferrography: wear is normal with typical amounts of ferrous rubbing wear. 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



### 06 Mar 2021 Diag: Doug Bogart

SEDIMENT



We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. There is a moderate amount of visible silt present in the sample. The water content is negligible. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 26 Jul 2020 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. The condition of the oil is suitable for further service.

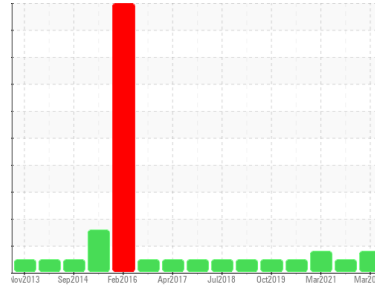
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



SEDIMENT



Area

3

Machine Id

WINERGY GEARBOX WTG-304 (S/N 4834518-0020-1)

Component

Wind Turbine Gearbox

Fluid

FUCHS RENOLIN UNISYN CKC ISO 320 (340 LTR)

## DIAGNOSIS

### Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of visible silt present in the sample.

### 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		<b>WC0804478</b>	WC05504537	WC0547165
Sample Date	Client Info		<b>02 Mar 2023</b>	27 Jan 2022	06 Mar 2021
Machine Age	mths	Client Info	<b>94</b>	78	120
Oil Age	mths	Client Info	<b>94</b>	0	65
Oil Changed	Client Info		<b>Not Chngd</b>	N/A	Not Chngd
Sample Status			<b>ABNORMAL</b>	NORMAL	ABNORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>50	<b>14</b>	17	17
Iron	ppm	ASTM D5185m	>65	<b>11</b>	17
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	<1
Nickel	ppm	ASTM D5185m	>3	<b>0</b>	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0
Silver	ppm	ASTM D5185m		<b>0</b>	<1
Aluminum	ppm	ASTM D5185m	>10	<b>1</b>	<1
Lead	ppm	ASTM D5185m	>5	<b>0</b>	<1
Copper	ppm	ASTM D5185m	>10	<b>0</b>	<1
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0

## ADDITIVES

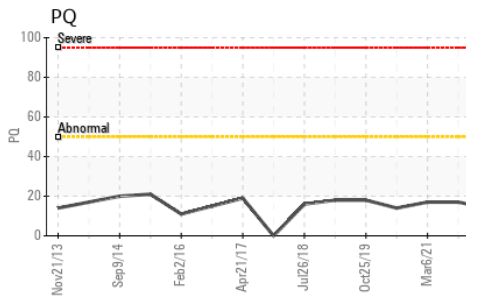
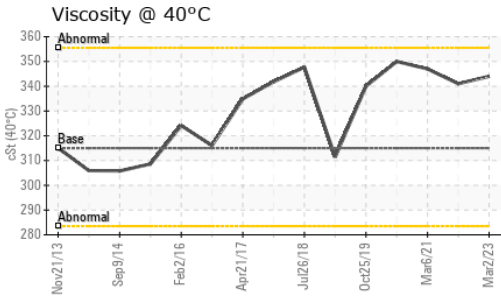
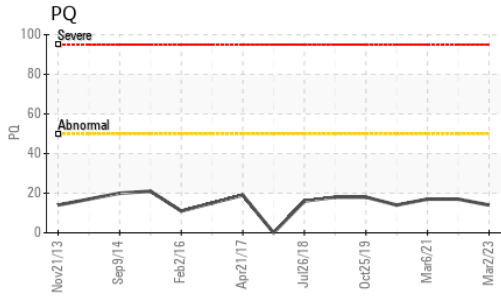
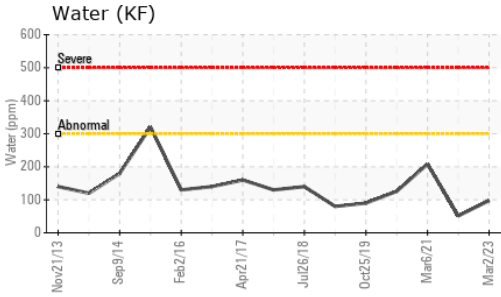
	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	25	<b>&lt;1</b>	0
Barium	ppm	ASTM D5185m		<b>0</b>	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	0
Calcium	ppm	ASTM D5185m	17	<b>6</b>	10
Phosphorus	ppm	ASTM D5185m	200	<b>112</b>	133
Zinc	ppm	ASTM D5185m		<b>4</b>	29
Sulfur	ppm	ASTM D5185m	5000	<b>4047</b>	3138

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	<b>0</b>	0
Sodium	ppm	ASTM D5185m		<b>2</b>	0
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	0
Water	%	ASTM D6304	>0.03	<b>0.009</b>	0.005
ppm Water	ppm	ASTM D6304	>300	<b>97.7</b>	51.2

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>---</b>	968	---
Particles >6µm	ASTM D7647	>5000	<b>---</b>	117	---
Particles >14µm	ASTM D7647	>640	<b>---</b>	11	---
Particles >21µm	ASTM D7647	>160	<b>---</b>	3	---
Particles >38µm	ASTM D7647	>40	<b>---</b>	0	---
Particles >71µm	ASTM D7647	>10	<b>---</b>	0	---
Oil Cleanliness	ISO 4406 (c)	>--/19/16	<b>---</b>	17/14/11	---



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.9	<b>0.91</b>	1.00	1.064

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>▲ HEAVY</b>	NONE	<b>▲ MODER</b>
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.03	<b>NEG</b>	NEG	NEG
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	315	<b>344</b>	341	347

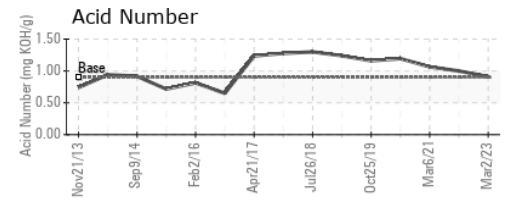
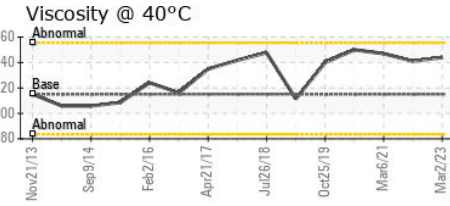
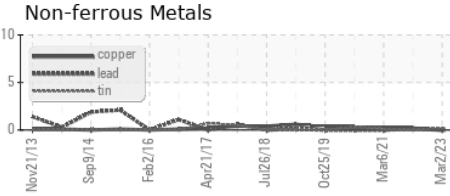
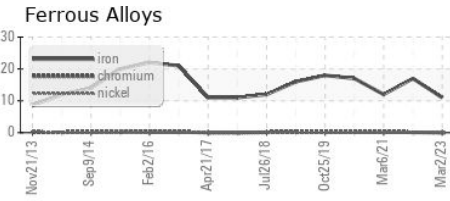
SAMPLE IMAGES		method	limit/base	current	history1	history2
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Color

Bottom



## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0804478 **Received** : 26 May 2023  
**Lab Number** : 05857923 **Diagnosed** : 30 May 2023  
**Unique Number** : 10492388 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**ENERGIA EOLICA**  
 STA ANA KM25 CARRETERA AL SUR, A 1KM DEL CRUCE  
 FRANCISCO MORAZAN, ZZ  
 HN  
 Contact: SANTOS DEL CID  
 sdelcid@dennci.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)

T: x:  
F: x: