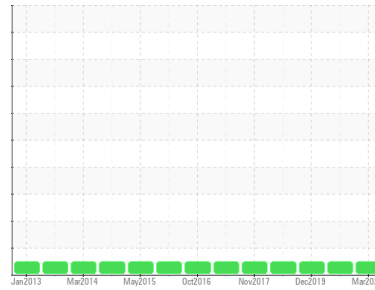




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area

**6**

Machine Id

**ECHESA WTG-606 (S/N W100482)**

Component

**Wind Turbine Gearbox**

Fluid

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

## 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 component. The amount and size of particulates present in the system is 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		<b>WC0804464</b>	WC0474108	WC0391272
Sample Date	Client Info		<b>04 Mar 2023</b>	01 Aug 2020	26 Dec 2019
Machine Age	mths	Client Info	<b>85</b>	62	64000
Oil Age	mths	Client Info	<b>85</b>	62	40000
Oil Changed	Client Info		<b>Not Changed</b>	Not Changed	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>50	<b>13</b>	19	16	
Iron	ppm	ASTM D5185m	>65	<b>6</b>	48	11
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185m	>5	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185m	>10	<b>0</b>	<1	<1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	<1	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

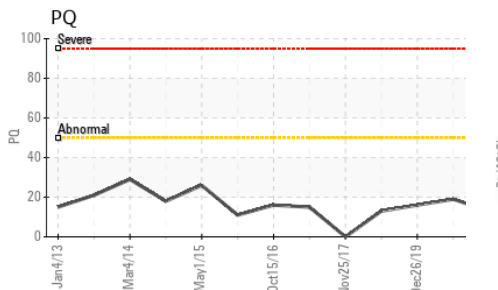
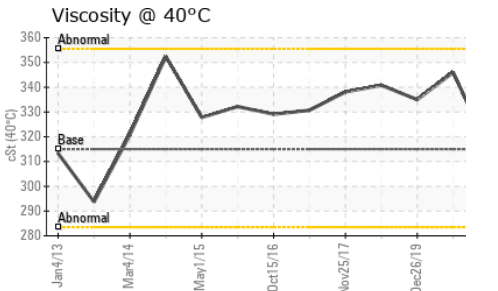
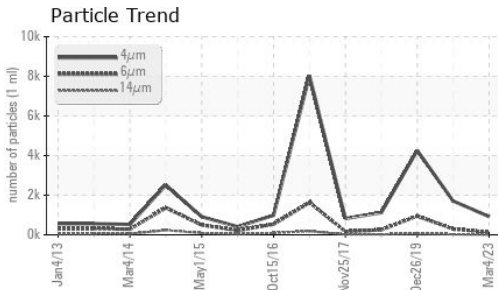
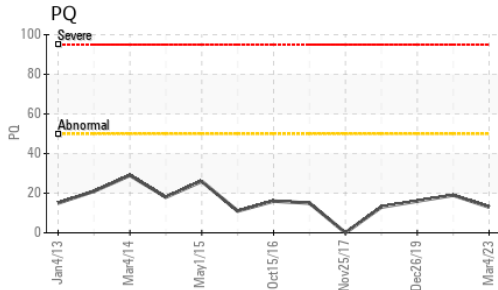
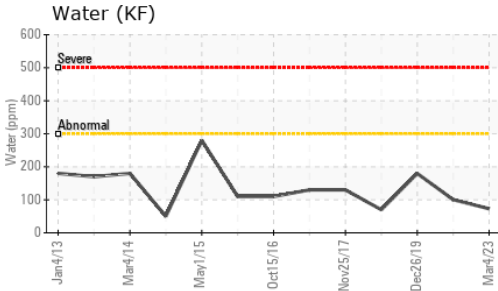
	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	25	<b>0</b>	4	5
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Calcium	ppm	ASTM D5185m	17	<b>&lt;1</b>	15	8
Phosphorus	ppm	ASTM D5185m	200	<b>476</b>	185	111
Zinc	ppm	ASTM D5185m		<b>3</b>	0	14
Sulfur	ppm	ASTM D5185m	5000	<b>4588</b>	4435	4785

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>15	<b>2</b>	1	<1
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	6	2
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	1	<1
Water	%	ASTM D6304	>0.03	<b>0.007</b>	0.010	0.017
ppm Water	ppm	ASTM D6304	>300	<b>73.0</b>	100.4	179.8

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>921</b>	1704	4258
Particles >6µm	ASTM D7647	>5000	<b>126</b>	299	947
Particles >14µm	ASTM D7647	>640	<b>4</b>	25	54
Particles >21µm	ASTM D7647	>160	<b>1</b>	6	8
Particles >38µm	ASTM D7647	>40	<b>1</b>	0	0
Particles >71µm	ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	<b>17/14/9</b>	18/15/12	19/17/13



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.9	<b>0.89</b>	1.029	0.963

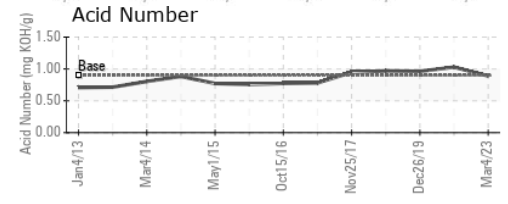
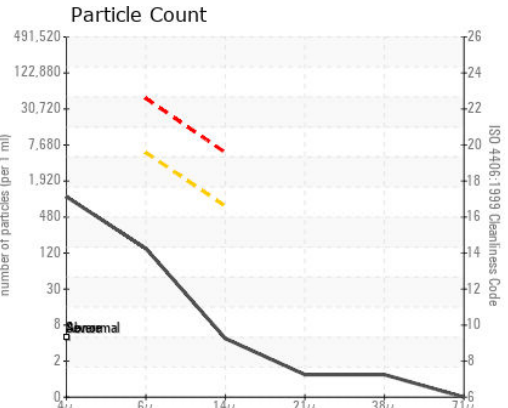
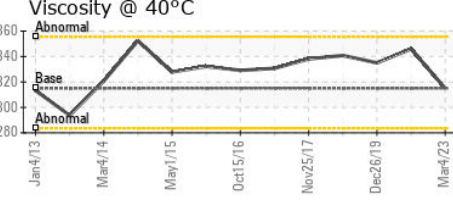
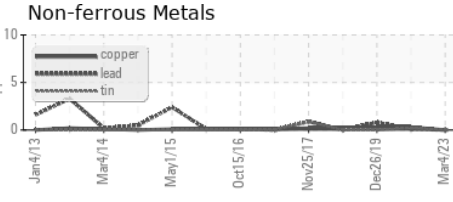
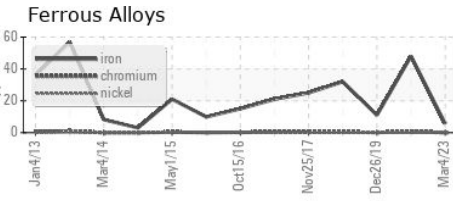
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	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>315</b>	346	335

SAMPLE IMAGES		method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0804464 **Received** : 26 May 2023  
**Lab Number** : 05857913 **Diagnosed** : 30 May 2023  
**Unique Number** : 10492378 **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)