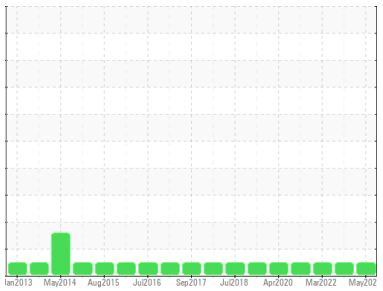
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
TURBINA 22 (S/N 101168)
Component
Wind Turbine Gearbox
Fluid
FUCHS RENOLIN UNISYN CLP 320 (340 LTR)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness 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		**WC0831491**	WC0831526	WC05582410
Sample Date		Client Info		**04 May 2024**	21 Aug 2023	31 Mar 2022
Machine Age	yrs	Client Info		**3**	24	6
Oil Age	yrs	Client Info		**3**	24	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

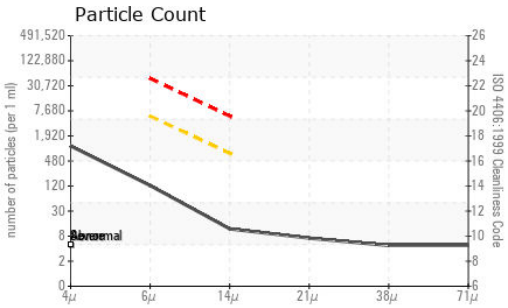
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>50	**14**	11	22
Iron	ppm	ASTM D5185m	>30	**29**	27	9
Chromium	ppm	ASTM D5185m	>3	**<1**	0	0
Nickel	ppm	ASTM D5185m	>3	**<1**	<1	0
Titanium	ppm	ASTM D5185m	>10	**<1**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**1**	0	<1
Lead	ppm	ASTM D5185m	>15	**1**	<1	<1
Copper	ppm	ASTM D5185m	>10	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>10	**<1**	0	<1
Antimony	ppm	ASTM D5185m	>5	**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

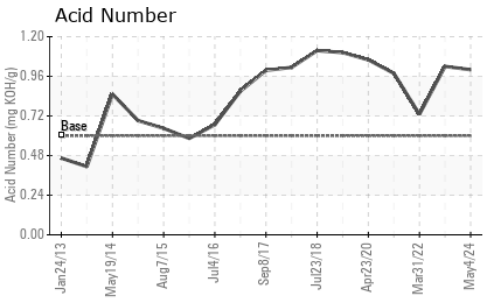
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	<1
Barium	ppm	ASTM D5185m		**1**	2	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	0
Manganese	ppm	ASTM D5185m		**0**	0	<1
Magnesium	ppm	ASTM D5185m		**<1**	<1	0
Calcium	ppm	ASTM D5185m		**10**	7	6
Phosphorus	ppm	ASTM D5185m		**219**	203	182
Zinc	ppm	ASTM D5185m		**140**	53	24
Sulfur	ppm	ASTM D5185m		**4748**	5643	5142

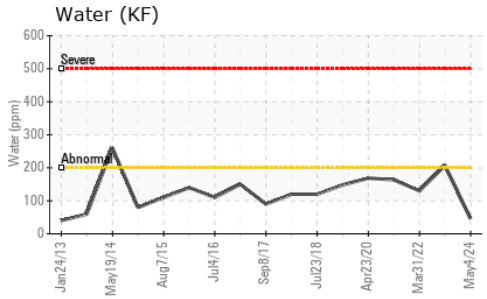
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+15	**2**	8	<1
Sodium	ppm	ASTM D5185m		**3**	0	3
Potassium	ppm	ASTM D5185m	>20	**2**	<1	<1
Water	%	ASTM D6304	>0.02	**0.004**	0.020	0.013
ppm Water	ppm	ASTM D6304	>200	**46**	206.9	130.3

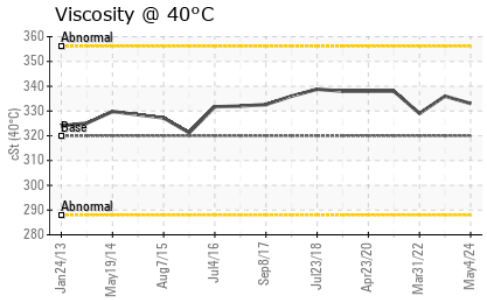
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**966**	7381	1286
Particles >6µm		ASTM D7647	>5000	**109**	2139	270
Particles >14µm		ASTM D7647	>640	**10**	223	35
Particles >21µm		ASTM D7647	>160	**6**	77	10
Particles >38µm		ASTM D7647	>40	**4**	6	0
Particles >71µm		ASTM D7647	>10	**4**	1	0
Oil Cleanliness		ISO 4406 (c)	>--/19/16	**17/14/10**	20/18/15	17/15/12

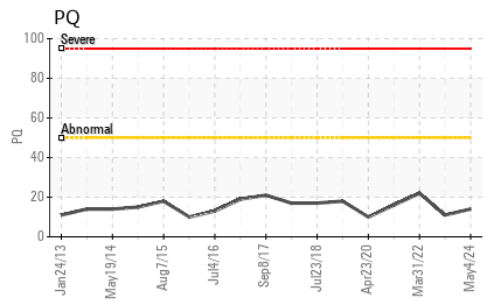
OIL ANALYSIS REPORT







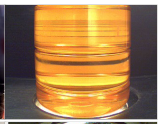
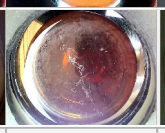




FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.6	**1.00**	1.02	0.73

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	>0.02	**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	**333**	336	329

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

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0831491 **Received** : 29 May 2024
Lab Number : 06194664 **Tested** : 31 May 2024
Unique Number : 11056787 **Diagnosed** : 31 May 2024 - Wes Davis
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

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)

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