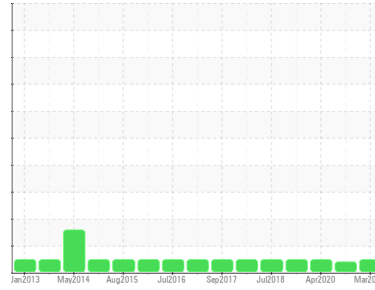




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
TURBINA 18 (S/N 101292)

Component
Wind Turbine Gearbox

Fluid
FUCHS RENOLIN CLP 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		WC05582419	WC05279178	WC0419911
Sample Date	Client Info		24 Mar 2022	26 Apr 2021	13 Apr 2020
Machine Age	yrs	Client Info	72	108	60
Oil Age	yrs	Client Info	0	57	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ABNORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>50	23	24	15	
Iron	ppm	ASTM D5185m	>30	30	42	39
Chromium	ppm	ASTM D5185m	>3	0	<1	<1
Nickel	ppm	ASTM D5185m	>3	0	0	0
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>30	<1	0	0
Lead	ppm	ASTM D5185m	>15	<1	<1	<1
Copper	ppm	ASTM D5185m	>10	<1	<1	<1
Tin	ppm	ASTM D5185m		0	<1	<1
Antimony	ppm	ASTM D5185m		---	0	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		<1	2	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		0	0	0
Calcium	ppm	ASTM D5185m		2	2	7
Phosphorus	ppm	ASTM D5185m		125	167	182
Zinc	ppm	ASTM D5185m		56	67	61
Sulfur	ppm	ASTM D5185m		3775	3827	4343

CONTAMINANTS

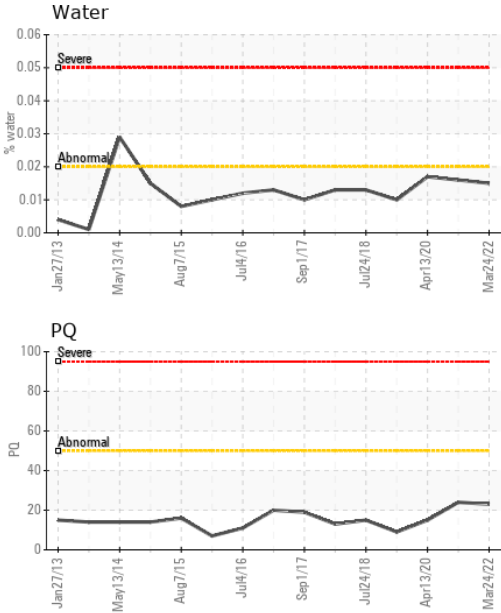
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+15	<1	<1	1
Sodium	ppm	ASTM D5185m		<1	2	3
Potassium	ppm	ASTM D5185m	>20	0	0	<1
Water	%	ASTM D6304	>0.02	0.015	0.016	0.017
ppm Water	ppm	ASTM D6304	>200	150.9	167.1	172.3

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		11586	---	5740
Particles >6µm	ASTM D7647	>5000	2547	---	1242
Particles >14µm	ASTM D7647	>640	86	---	73
Particles >21µm	ASTM D7647	>160	30	---	15
Particles >38µm	ASTM D7647	>40	2	---	2
Particles >71µm	ASTM D7647	>10	0	---	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	21/19/14	---	20/17/13



OIL ANALYSIS REPORT

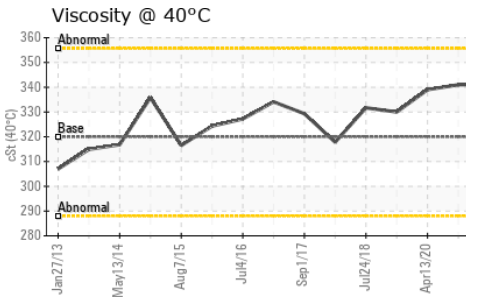
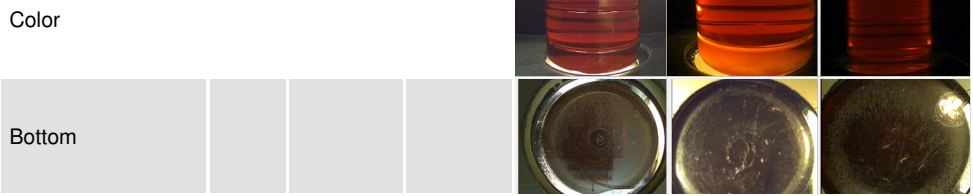
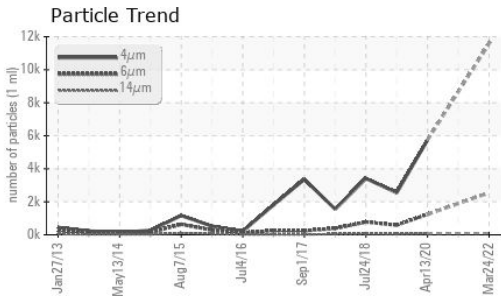


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.95	0.936	1.010

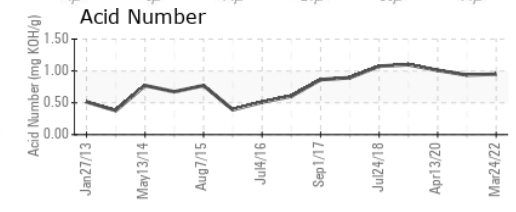
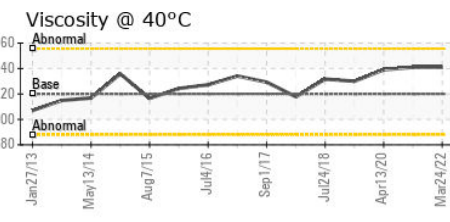
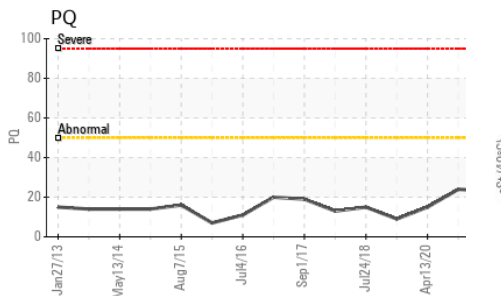
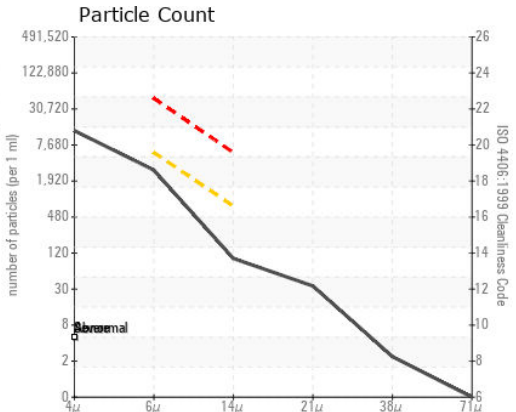
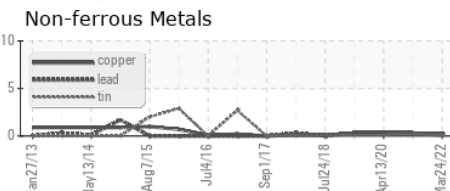
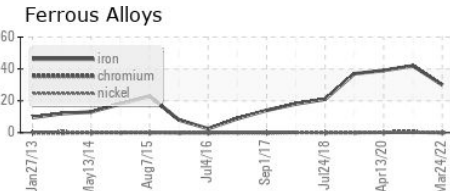
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	▲ MODER	NONE
Sand/Dirt	scalar	*Visual	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	341	341	339

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC05582419
Lab Number : 05582419
Unique Number : 10036845
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

EOL DE NICARAGUA S.A.
 DEL SEMAFORO DEL CLUB TERRAZA, 1 CUADRA AL SUR
 MANAGUA, ZZ
 NI
 Contact: Rafael Bermudez

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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F: