



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area  
**FRONTIER II [200006776]**

Machine Id  
**01WEA86921**

Component  
**Wind Turbine Gearbox**

Fluid  
**FUCHS RENOLIN CLP ISO 320 (--- LTR)**

## RECOMMENDATION

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>NX06087255</b>	NX06026388	NX05818242
Sample Date		Client Info		<b>11 Jan 2024</b>	27 Nov 2023	12 Apr 2023
Machine Age	hrs	Client Info		<b>14786</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	ATTENTION	ATTENTION

## WEAR

All component wear rates are normal.

PQ		ASTM D8184	>80	<b>20</b>	19	9
Iron	ppm	ASTM D5185m	>150	<b>23</b>	23	14
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	<1
Copper	ppm	ASTM D5185m	>50	<b>1</b>	1	<1
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

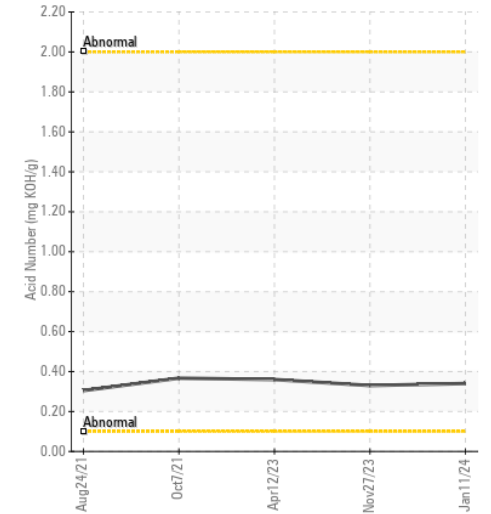
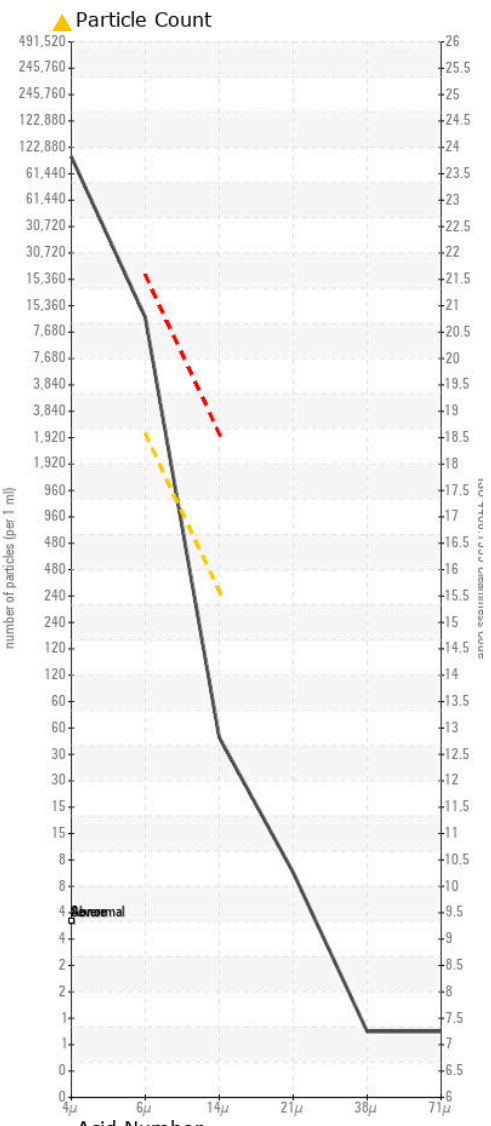
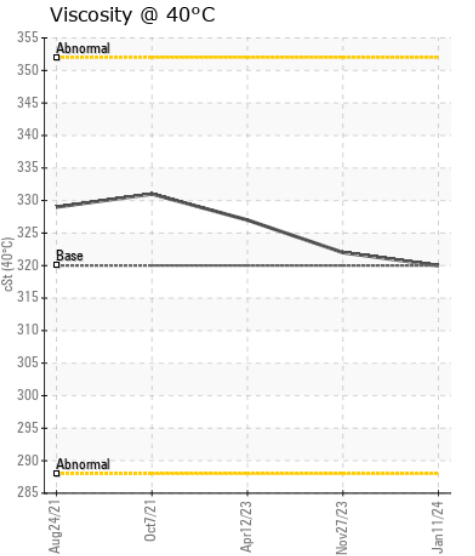
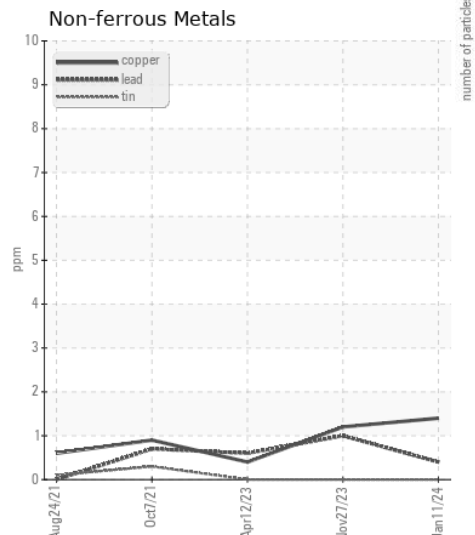
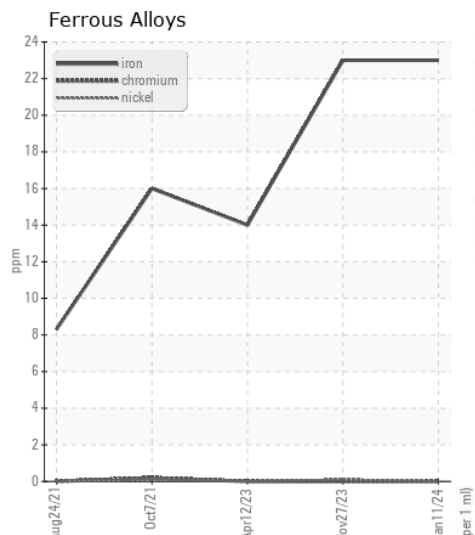
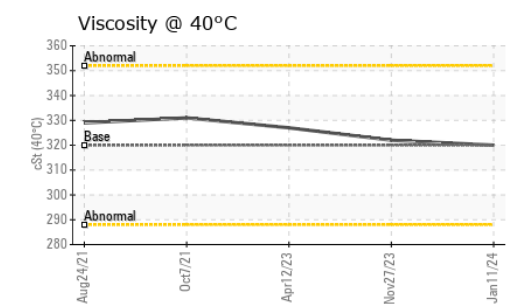
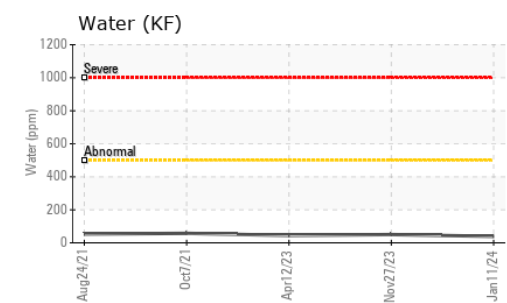
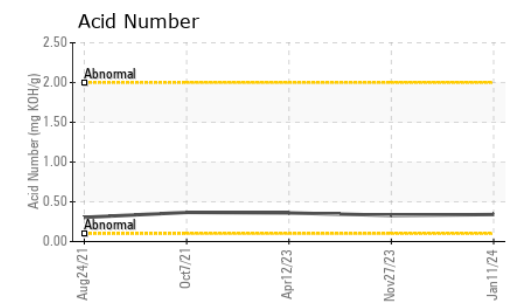
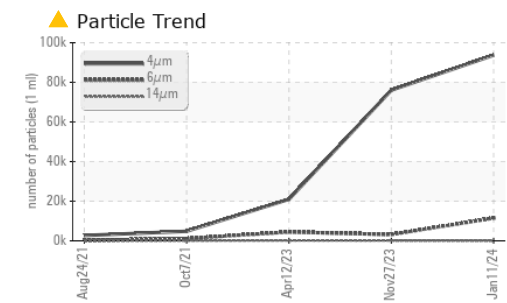
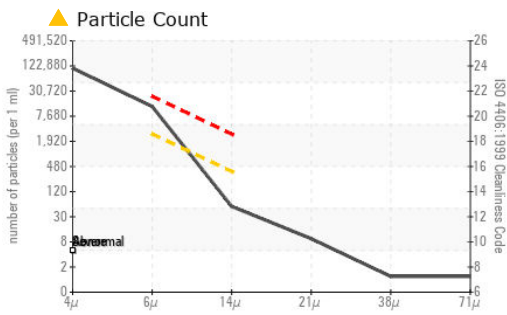
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185m	>50	<b>12</b>	14	9
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Water	%	ASTM D6304	>0.05	<b>0.003</b>	0.004	0.004
ppm Water	ppm	ASTM D6304	>500	<b>39</b>	50	44.4
Particles >4µm		ASTM D7647		<b>93720</b>	76036	20986
Particles >6µm		ASTM D7647	>2500	<b>▲ 11454</b>	▲ 3168	▲ 4469
Particles >14µm		ASTM D7647	>320	<b>47</b>	113	173
Particles >21µm		ASTM D7647	>80	<b>8</b>	24	26
Particles >38µm		ASTM D7647	>20	<b>1</b>	1	0
Particles >71µm		ASTM D7647	>4	<b>1</b>	1	0
Oil Cleanliness		ISO 4406 (c)	>-/18/15	<b>▲ 24/21/13</b>	▲ 23/19/14	▲ 22/19/15
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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	>0.05	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>20	<b>4</b>	4	3
Boron	ppm	ASTM D5185m		<b>5</b>	5	4
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m		<b>1</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>0</b>	0	3
Calcium	ppm	ASTM D5185m		<b>19</b>	25	16
Phosphorus	ppm	ASTM D5185m		<b>192</b>	178	191
Zinc	ppm	ASTM D5185m		<b>7</b>	0	0
Sulfur	ppm	ASTM D5185m		<b>4507</b>	4538	5001
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.34</b>	0.33	0.36
Visc @ 40°C	cSt	ASTM D445	320	<b>320</b>	322	327



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : NX06087255 **Received** : 13 Feb 2024  
**Lab Number** : 06087255 **Tested** : 14 Feb 2024  
**Unique Number** : 10874700 **Diagnosed** : 14 Feb 2024 - Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

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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)