



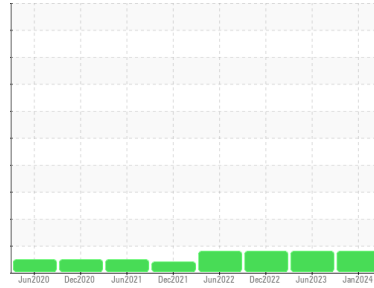
# OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area  
**Fermentation**  
 Machine Id  
**Lightnin FFG20AB01 Dosing Tank, Agitator**  
 Component  
**Gearbox**  
 Fluid  
**JAX FGG-AW ISO 220 (4 GAL)**



## DIAGNOSIS

**Recommendation**  
 No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**  
 All component wear rates are normal.

**Contamination**  
 There is a moderate amount of silt (particulates < 6 microns in size) present in the oil.

**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>WC0857612</b>	WC0793869	WC0663729
Sample Date	Client Info			<b>11 Jan 2024</b>	07 Jun 2023	06 Dec 2022
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>ATTENTION</b>	ATTENTION	ATTENTION

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	<b>11</b>	10	10
Chromium	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>2</b>	4	6
Lead	ppm	ASTM D5185m	>100	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>200	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185m	>25	<b>&lt;1</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		<b>0</b>	0	<1
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	<1	1
Calcium	ppm	ASTM D5185m		<b>99</b>	101	94
Phosphorus	ppm	ASTM D5185m		<b>530</b>	518	531
Zinc	ppm	ASTM D5185m		<b>0</b>	3	11
Sulfur	ppm	ASTM D5185m		<b>939</b>	1086	823

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>&lt;1</b>	<1	<1
Sodium	ppm	ASTM D5185m		<b>0</b>	<1	0
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Water	%	ASTM D6304	>0.2	<b>0.003</b>	0.006	0.007
ppm Water	ppm	ASTM D6304	>2000	<b>37</b>	64.5	72.3

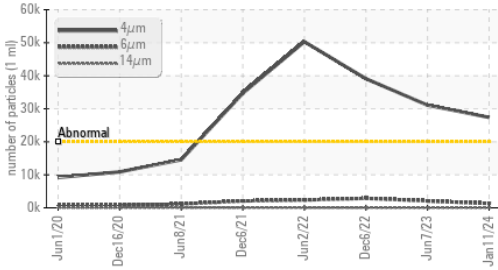
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	<b>▲ 27388</b>	▲ 31087	▲ 39103
Particles >6µm		ASTM D7647	>5000	<b>1319</b>	2080	2864
Particles >14µm		ASTM D7647	>640	<b>22</b>	13	23
Particles >21µm		ASTM D7647	>160	<b>5</b>	3	3
Particles >38µm		ASTM D7647	>40	<b>0</b>	0	1
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>▲ 22/18/12</b>	▲ 22/18/11	▲ 22/19/12

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.49</b>	0.50	0.51

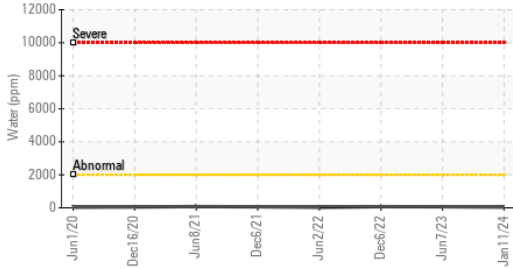


# OIL ANALYSIS REPORT

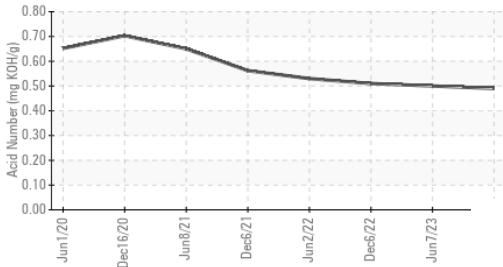
## Particle Trend



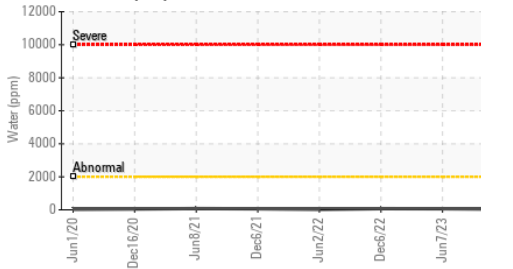
## Water (KF)



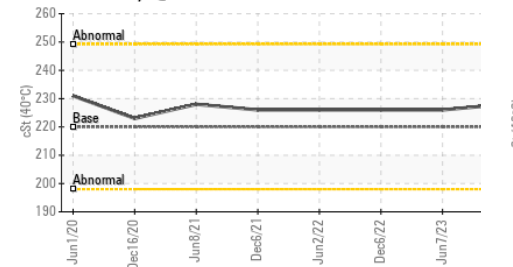
## Acid Number



## Water (KF)



## Viscosity @ 40°C

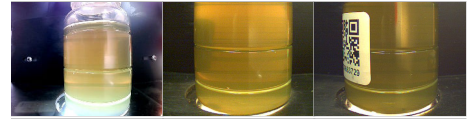


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

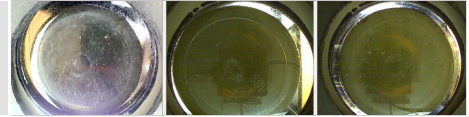
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	228	226

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

Color

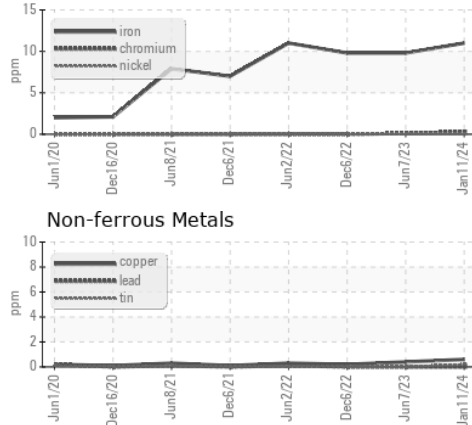


Bottom

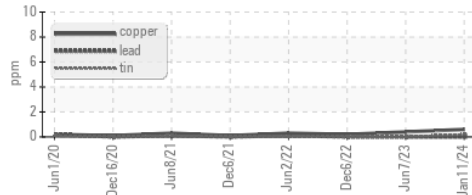


## GRAPHS

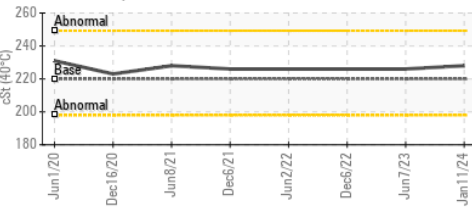
### Ferrous Alloys



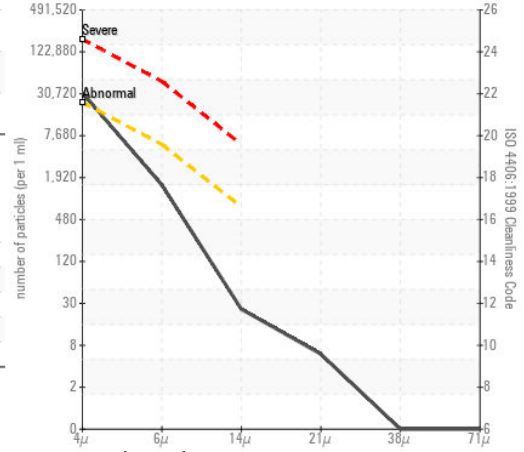
### Non-ferrous Metals



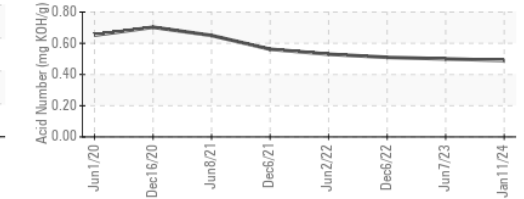
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0857612      Received : 16 Jan 2024  
 Lab Number : 06061944      Diagnosed : 18 Jan 2024  
 Unique Number : 10833326      Diagnostician : Don Baldrige

Test Package : IND 2 ( Additional Tests: KF, PrtCount )

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)

**NOVOZYMES**  
 P.O. BOX 576, 77 PERRY CHAPEL CHURCH ROAD  
 FRANKLINTON, NC  
 US 27525  
 Contact: BRUCE THOMAS  
 brct@novozymes.com  
 T: (919)494-3146  
 F: (919)494-3456