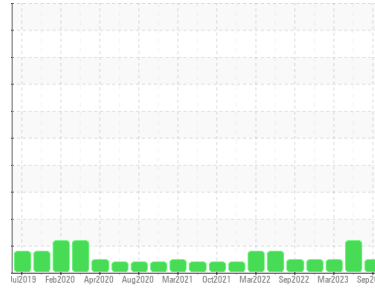




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Fermentation**  
 Machine Id  
**Lightnin FFG40MB01 Main Fermentor, Agitator**  
 Component  
**Gearbox**  
 Fluid  
**JAX FGG-AW ISO 220 (28 GAL)**

## 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 oil. The amount and size of particulates present in the system are 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>WC0843005</b>	WC0793891	WC0697850
Sample Date	Client Info	<b>26 Sep 2023</b>	16 Jun 2023	15 Mar 2023
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	ATTENTION	NORMAL

## WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >200	<b>4</b>	8	13
Chromium	ppm	ASTM D5185m >15	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m >15	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>&lt;1</b>	1	2
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>0</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	<1	0

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	<b>0</b>	<1	2
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	<1
Magnesium	ppm	ASTM D5185m	<b>0</b>	<1	0
Calcium	ppm	ASTM D5185m	<b>0</b>	5	6
Phosphorus	ppm	ASTM D5185m	<b>618</b>	581	598
Zinc	ppm	ASTM D5185m	<b>0</b>	2	11
Sulfur	ppm	ASTM D5185m	<b>715</b>	752	808

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >50	<b>5</b>	5	5
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Potassium	ppm	ASTM D5185m >20	<b>0</b>	0	0
Water	%	ASTM D6304 >0.2	<b>0.001</b>	0.003	0.006
ppm Water	ppm	ASTM D6304 >2000	<b>10.5</b>	34.0	65.7

## FLUID CLEANLINESS

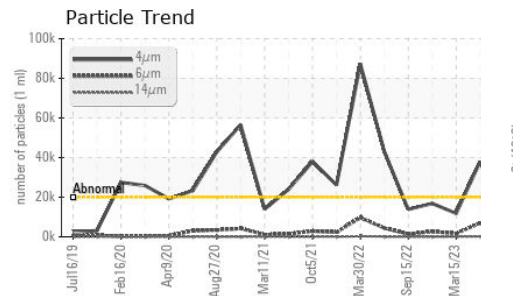
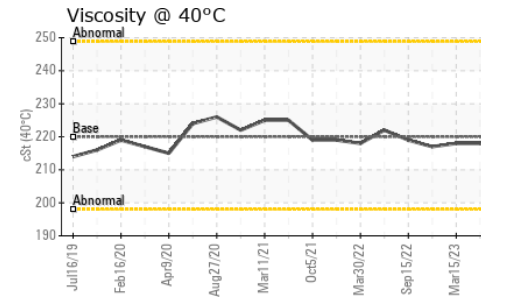
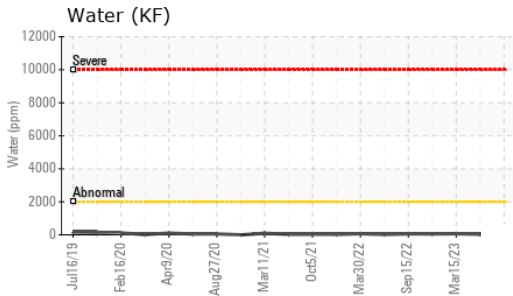
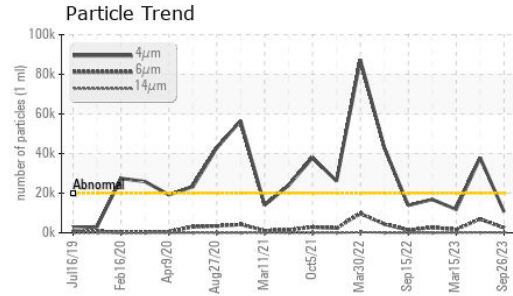
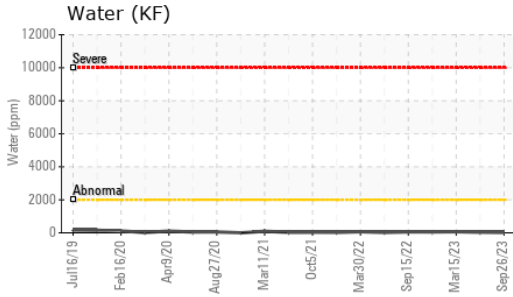
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >20000	<b>10617</b>	▲ 37942	11802
Particles >6µm	ASTM D7647 >5000	<b>2521</b>	▲ 6916	1714
Particles >14µm	ASTM D7647 >640	<b>139</b>	185	58
Particles >21µm	ASTM D7647 >160	<b>28</b>	39	14
Particles >38µm	ASTM D7647 >40	<b>0</b>	1	1
Particles >71µm	ASTM D7647 >10	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >21/19/16	<b>21/19/14</b>	▲ 22/20/15	21/18/13

## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.59</b>	0.60	0.59



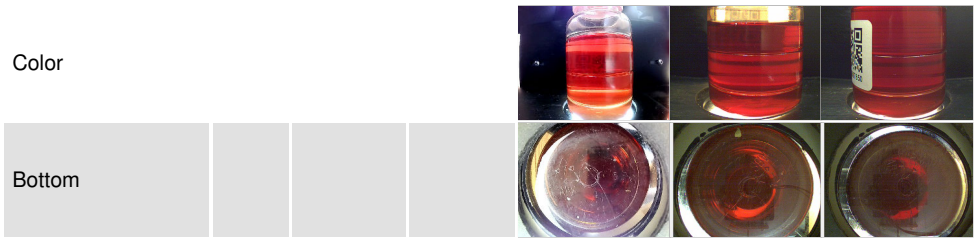
# OIL ANALYSIS REPORT



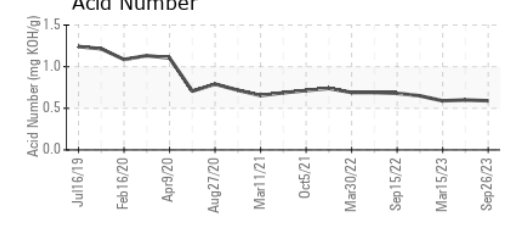
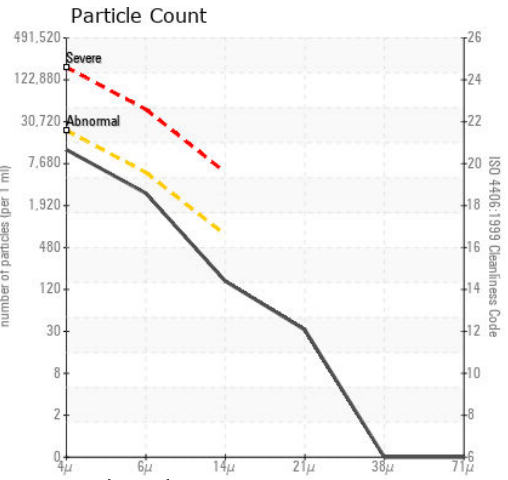
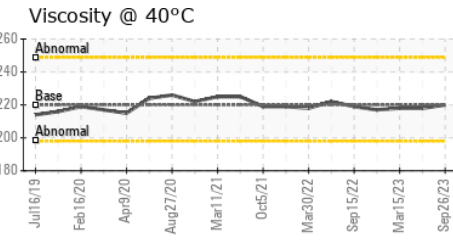
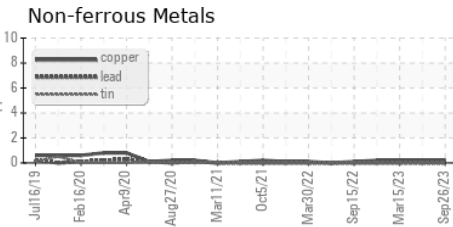
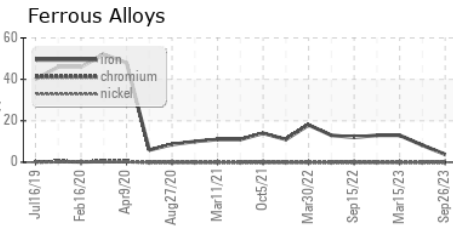
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	220	218	218

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



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0843005 **Received** : 28 Sep 2023  
**Lab Number** : 05963585 **Diagnosed** : 29 Sep 2023  
**Unique Number** : 10670136 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**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

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)