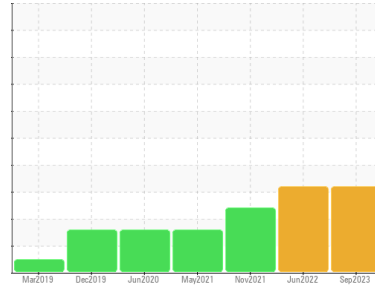




# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Area  
**METRO**  
 Machine Id  
**METRO 20019**  
 Component  
**Front Differential**  
 Fluid  
**NOT GIVEN (--- GAL)**

## DIAGNOSIS

### Recommendation

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

### Wear

Gear wear is indicated.

### Contamination

There is a high amount of silt (particulates < 6 microns in size) present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

### 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>WC0843122</b>	WC0728422	WC0642317
Sample Date	Client Info		<b>30 Sep 2023</b>	26 Jun 2022	05 Nov 2021
Machine Age	mls	Client Info	<b>435760</b>	292737	246652
Oil Age	mls	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >500	<b>▲ 730</b>	▲ 569	▲ 537
Chromium	ppm	ASTM D5185m >10	<b>5</b>	5	5
Nickel	ppm	ASTM D5185m >10	<b>4</b>	3	3
Titanium	ppm	ASTM D5185m	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>4</b>	3	3
Lead	ppm	ASTM D5185m >25	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >100	<b>3</b>	3	3
Tin	ppm	ASTM D5185m >10	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m >5	<b>---</b>	---	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>225</b>	228	283
Barium	ppm	ASTM D5185m	<b>6</b>	2	5
Molybdenum	ppm	ASTM D5185m	<b>&lt;1</b>	1	0
Manganese	ppm	ASTM D5185m	<b>23</b>	20	19
Magnesium	ppm	ASTM D5185m	<b>2</b>	<1	1
Calcium	ppm	ASTM D5185m	<b>16</b>	12	14
Phosphorus	ppm	ASTM D5185m	<b>1955</b>	1863	2056
Zinc	ppm	ASTM D5185m	<b>21</b>	15	16
Sulfur	ppm	ASTM D5185m	<b>22992</b>	25056	35474

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >75	<b>▲ 159</b>	▲ 123	▲ 124
Sodium	ppm	ASTM D5185m	<b>14</b>	13	13
Potassium	ppm	ASTM D5185m >20	<b>13</b>	12	9
Water	%	ASTM D6304 >.2	<b>0.068</b>	0.085	0.047
ppm Water	ppm	ASTM D6304 >2000	<b>689.1</b>	858.7	478.4

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>▲ 48807</b>	▲ 81469	---
Particles >6µm	ASTM D7647	>5000	<b>2981</b>	2285	---
Particles >14µm	ASTM D7647	>640	<b>94</b>	146	---
Particles >21µm	ASTM D7647	>160	<b>25</b>	39	---
Particles >38µm	ASTM D7647	>40	<b>1</b>	1	---
Particles >71µm	ASTM D7647	>10	<b>0</b>	0	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>▲ 23/19/14</b>	▲ 24/18/14	---

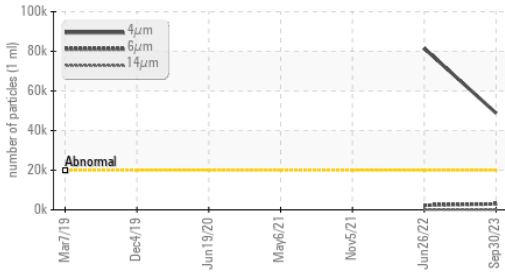
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>3.07</b>	3.01	3.078

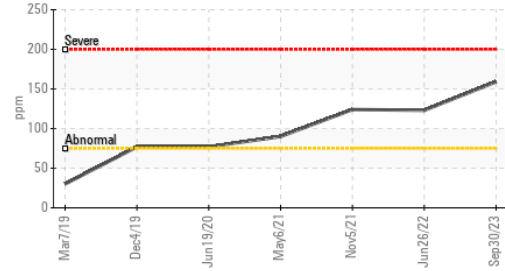


# OIL ANALYSIS REPORT

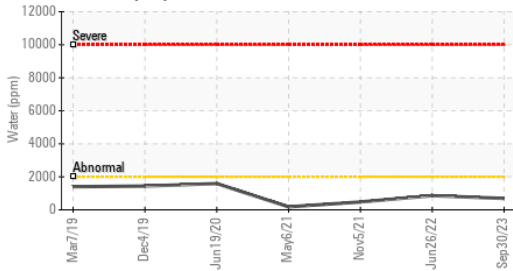
## Particle Trend



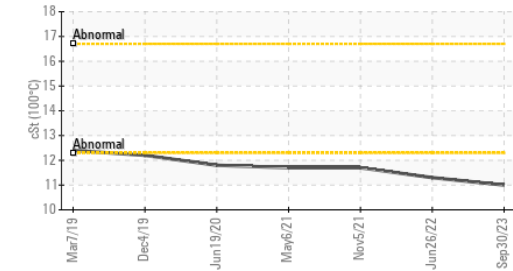
## Silicon (ppm)



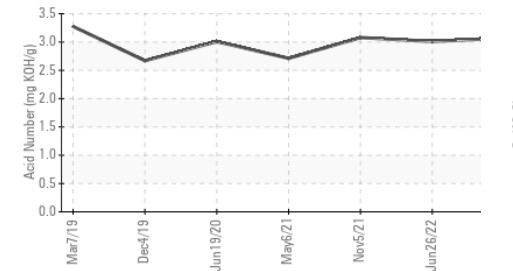
## Water (KF)



## Viscosity @ 100°C



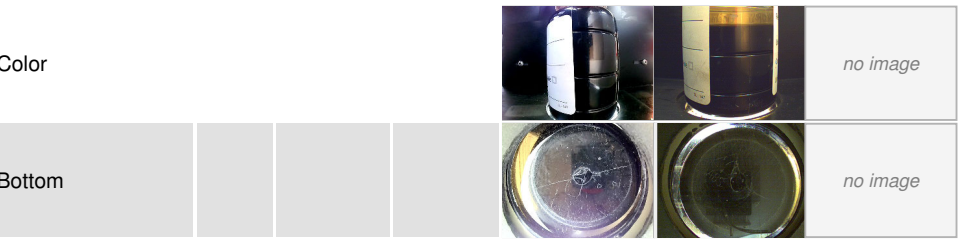
## Acid Number



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	>.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

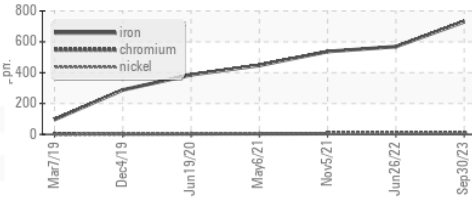
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	69.4	70.5	80.2
Visc @ 100°C	cSt	ASTM D445	11.0	11.3	11.7
Viscosity Index (VI)	Scale	ASTM D2270	149	153	138

## SAMPLE IMAGES

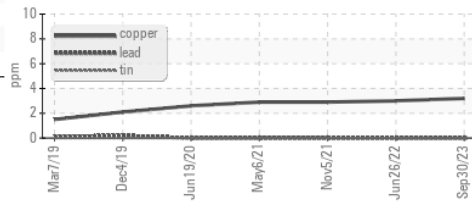


## GRAPHS

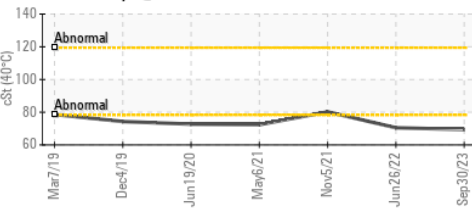
### Ferrous Alloys



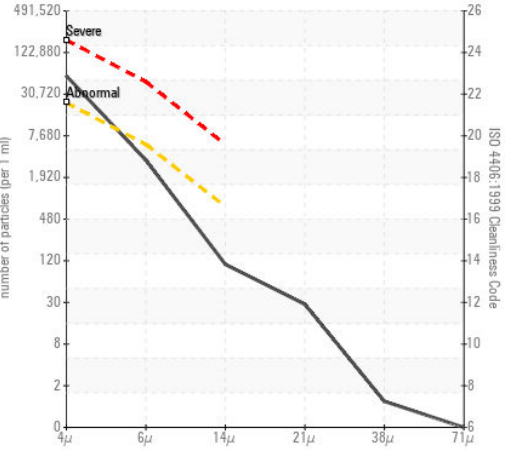
### Non-ferrous Metals



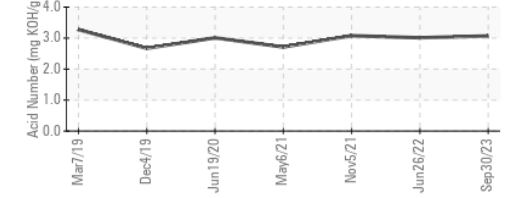
### Viscosity @ 40°C



### Particle Count



### Acid Number



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0843122 **Received** : 14 Nov 2023  
**Lab Number** : 06007686 **Diagnosed** : 16 Nov 2023  
**Unique Number** : 10741448 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: KF, KV100, PrtCount, VI )

**BASF - GIANNA CREDAROLI**  
 500 WHITE PLAINS RD  
 TARRYTOWN, NY  
 US 10591  
 Contact: GIANNA CREDAROLI  
 gianna.credaroli@basf.com

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)

T:  
F: