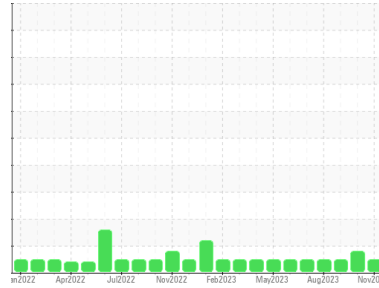




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**HSS - LOW PRESS**

Component  
**Hydraulic System**

Fluid  
**TOTAL AZOLLA ZS 22 (400 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness 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			<b>WC0791133</b>	WC0791128	WC0791119
Sample Date	Client Info			<b>01 Nov 2023</b>	02 Oct 2023	07 Sep 2023
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>NORMAL</b>	ABNORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	<b>0</b>	3	0
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	<1
Lead	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>20	<b>1</b>	<1	<1
Tin	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>&lt;1</b>	2	0
Calcium	ppm	ASTM D5185m		<b>50</b>	48	44
Phosphorus	ppm	ASTM D5185m		<b>302</b>	313	334
Zinc	ppm	ASTM D5185m		<b>420</b>	425	433
Sulfur	ppm	ASTM D5185m		<b>880</b>	883	963

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	<b>&lt;1</b>	3	<1
Sodium	ppm	ASTM D5185m		<b>0</b>	1	<1
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	<1	0

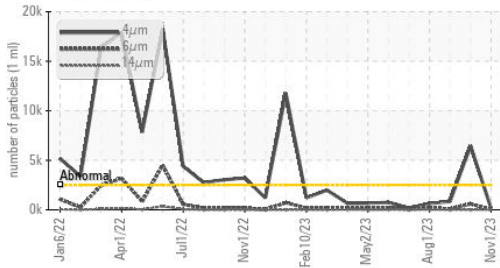
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	<b>170</b>	▲ 6448	846
Particles >6µm		ASTM D7647	>640	<b>33</b>	595	96
Particles >14µm		ASTM D7647	>80	<b>4</b>	14	10
Particles >21µm		ASTM D7647	>20	<b>2</b>	3	3
Particles >38µm		ASTM D7647	>4	<b>0</b>	1	0
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	<b>15/12/9</b>	▲ 20/16/11	17/14/10

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.39</b>	0.42	0.38

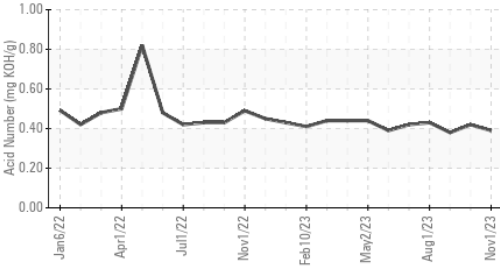


# OIL ANALYSIS REPORT

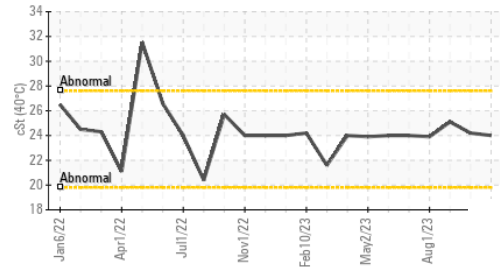
**Particle Trend**



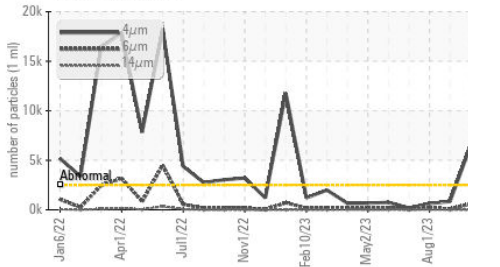
**Acid Number**



**Viscosity @ 40°C**



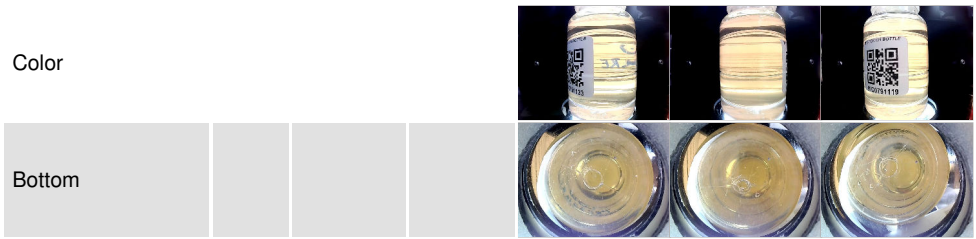
**Particle Trend**



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	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

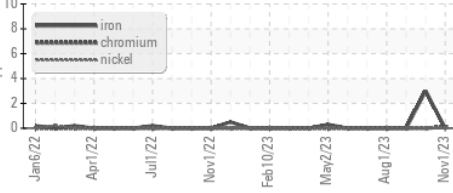
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	24.0	24.2	25.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
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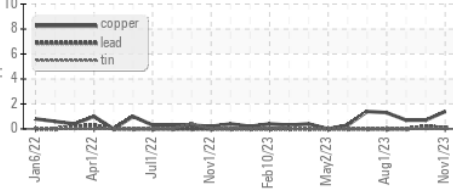


## GRAPHS

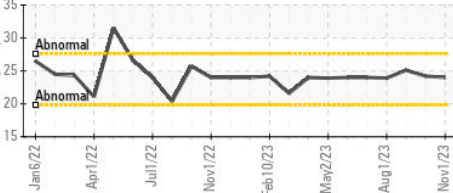
**Ferrous Alloys**



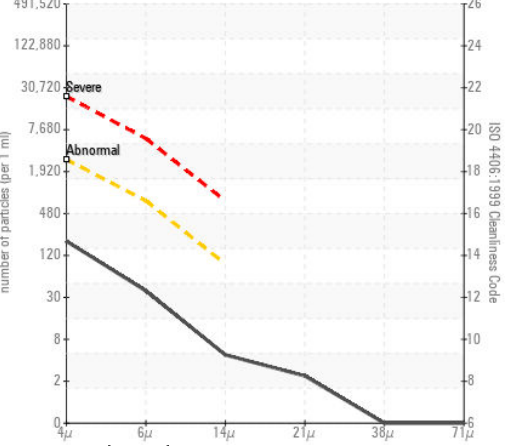
**Non-ferrous Metals**



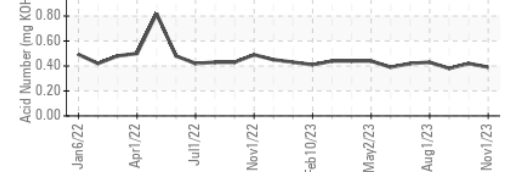
**Viscosity @ 40°C**



**Particle Count**



**Acid Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0791133  
**Lab Number** : 05996654  
**Unique Number** : 10725014  
**Test Package** : IND 2

**HAWE HYDRAULICS - HUNTERSVILLE**  
 13020 JAMESBURG DR SUITE A  
 HUNTERSVILLE, NC  
 US 28078  
 Contact: Kristina Smith  
 k.smith@hawe.com  
 T: (704)927-5610  
 F: (704)509-6302

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)