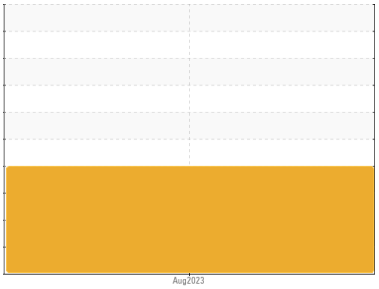
# PROBLEM SUMMARY

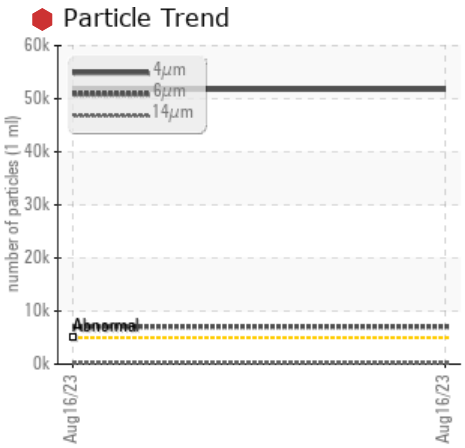
Area
**AstroShapes - A09300**
Machine Id
**M13304**
Component
**Hydraulic System**
Fluid
**NOT GIVEN (--- GAL)**

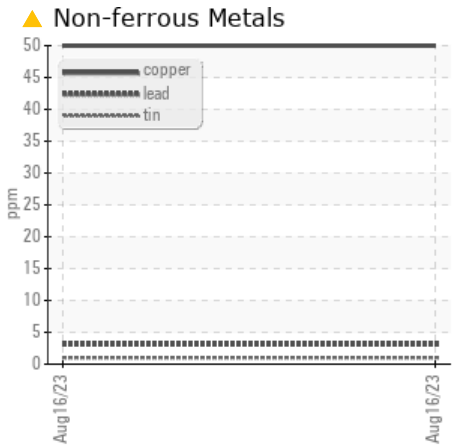
Sample Rating Trend

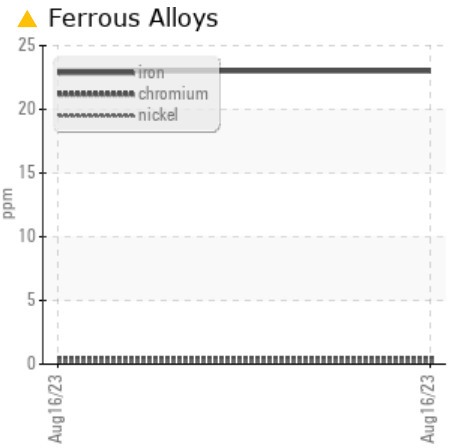



**WEAR**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

This is a baseline read-out on the submitted sample.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **SEVERE** | --- | --- |
| Iron | ppm | ASTM D5185(m) | >20 | ▲ **23** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >20 | ▲ **50** | --- | --- |
| Particles >4µm | | ASTM D7647 | >5000 | ⬢ **51727** | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **7053** | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **165** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ⬢ **23/20/15** | --- | --- |


**Customer Id:** CHECOB
**Sample No.:** E30000112
**Lab Number:** 02577486
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
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tsorkina@e360s.ca

*To change component or sample information:*
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

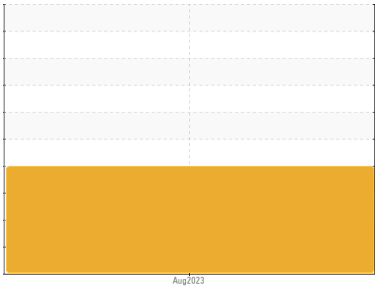
## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Area
**AstroShapes - A09300**
Machine Id
**M13304**
Component
**Hydraulic System**
Fluid
**NOT GIVEN (--- GAL)**

## DIAGNOSIS

**Recommendation**
This is a baseline read-out on the submitted sample.

**Wear**
Copper and iron ppm levels are noted.

**Contamination**
Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >6µm are abnormally high. Particles >14µm are notably high.

**Fluid Condition**
{not applicable}

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **E30000112** | --- | --- |
| Sample Date | | Client Info | | **16 Aug 2023** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **N/A** | --- | --- |
| Sample Status | | | | **SEVERE** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184* | | **0** | --- | --- |
| Iron | ppm | ASTM D5185(m) | >20 | ▲ **23** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >20 | **<1** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >20 | **<1** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Silver | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >20 | **3** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >20 | **3** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >20 | ▲ **50** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >20 | **1** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

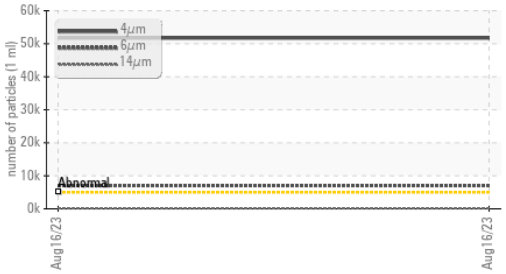
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **3** | --- | --- |
| Barium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | | **16** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | | **67** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | | **433** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | | **386** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | | **1713** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **2** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | --- | --- |
| Water | % | ASTM D6304* | >0.05 | **0.004** | --- | --- |
| ppm Water | ppm | ASTM D6304* | >500 | **45.2** | --- | --- |

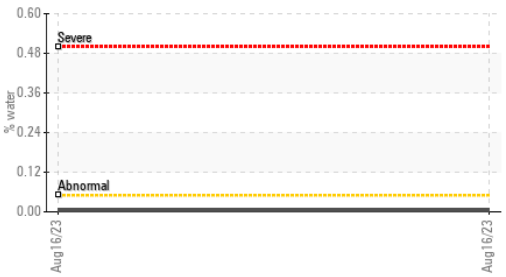
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ⬢ **51727** | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **7053** | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | ▲ **165** | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | **32** | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | **1** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **1** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ⬢ **23/20/15** | --- | --- |

# OIL ANALYSIS REPORT

Particle Trend

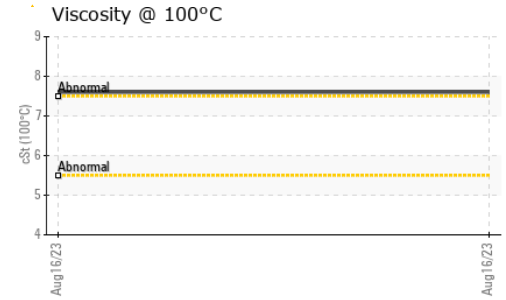



Water

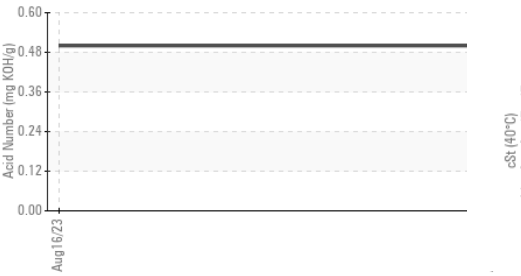



PQ


Viscosity @ 100°C



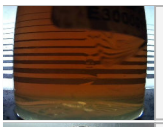

Acid Number




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | | **0.50** | --- | --- |

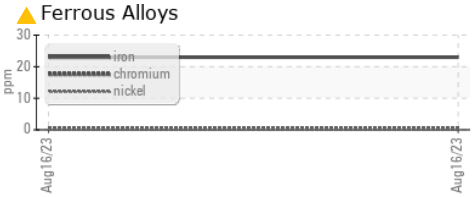
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Precipitate | scalar | Visual* | NONE | **NONE** | --- | --- |
| Silt | scalar | Visual* | NONE | **NONE** | --- | --- |
| Debris | scalar | Visual* | NONE | **NONE** | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | --- | --- |
| Appearance | scalar | Visual* | NORML | **NORML** | --- | --- |
| Odor | scalar | Visual* | NORML | **NORML** | --- | --- |
| Emulsified Water | scalar | Visual* | >0.05 | **NEG** | --- | --- |
| Free Water | scalar | Visual* | | **NEG** | --- | --- |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | | **50.6** | --- | --- |
| Visc @ 100°C | cSt | ASTM D7279(m) | | **7.6** | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270* | | **114** | --- | --- |

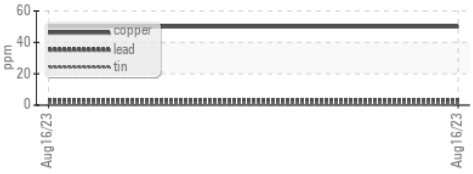
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | *no image* | *no image* |
| Bottom | | |  | *no image* | *no image* |

## GRAPHS

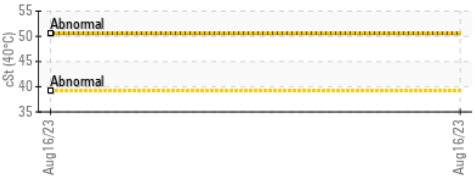
Ferrous Alloys



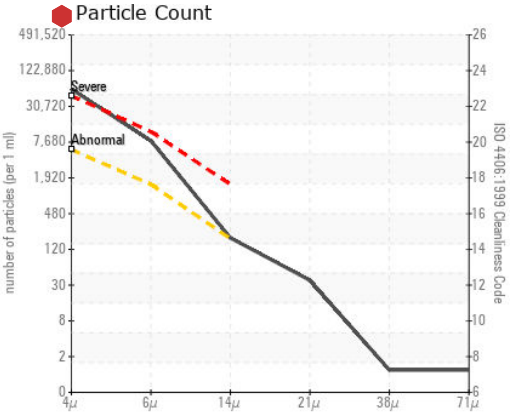

Non-ferrous Metals



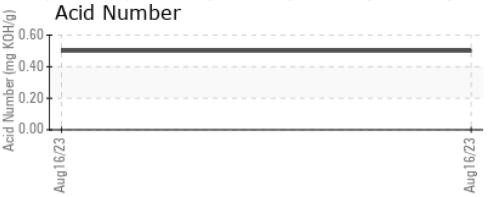

Viscosity @ 40°C




Particle Count




Acid Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : E30000112 **Received** : 22 Aug 2023
**Lab Number** : 02577486 **Diagnosed** : 25 Aug 2023
**Unique Number** : 5630546 **Diagnostician** : Tatiana Sorkina
**Test Package** : IND 2 ( Additional Tests: KF, KV100, PQ, TAN Man, VI )

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*

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