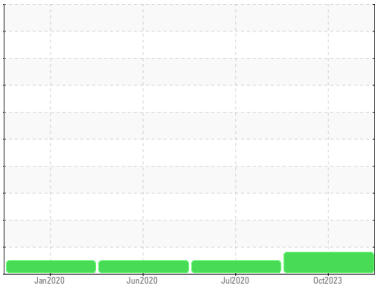
# PROBLEM SUMMARY

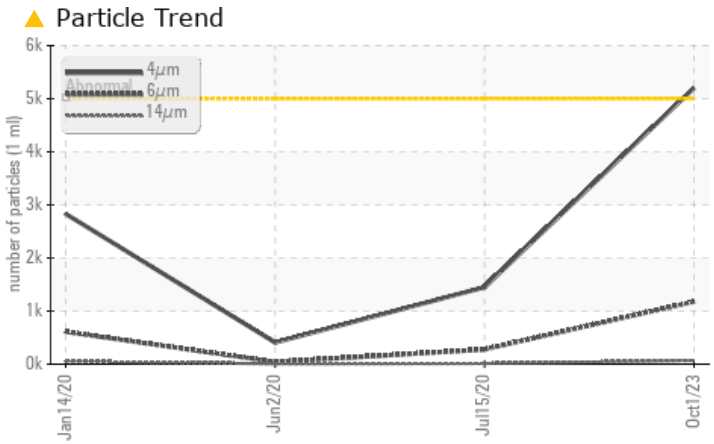
Sample Rating Trend




ISO

Machine Id
**SL3 M1**
Component
**Hydraulic System**
Fluid
**SHELL TELLUS S2 MX 46 (100 GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ATTENTION** | NORMAL | NORMAL |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **5203** | 1450 | 408 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **20/17/13** | 18/15/11 | 16/13/10 |

**Customer Id:** JOHPUL
**Sample No.:** RP0018153
**Lab Number:** 05979599
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Filter | --- | --- | ? | We recommend you service the filters on this component. |

## HISTORICAL DIAGNOSIS

**15 Jul 2020 Diag: Don Baldridge**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**02 Jun 2020 Diag: Don Baldridge**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**14 Jan 2020 Diag: Jonathan Hester**

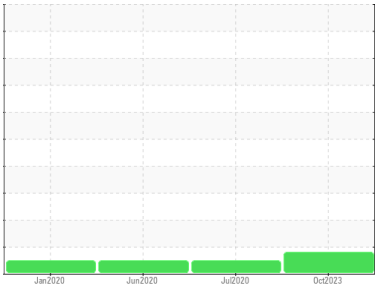
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
**SL3 M1**
Component
**Hydraulic System**
Fluid
**SHELL TELLUS S2 MX 46 (100 GAL)**

## DIAGNOSIS

**Recommendation**
We recommend you service the filters on this component. Resample at the next service interval to monitor.

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

**Contamination**
There is a light amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible.

**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 | | **RP0018153** | RP0005572 | RP168807 |
| Sample Date | | Client Info | | **01 Oct 2023** | 15 Jul 2020 | 02 Jun 2020 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | Changed | N/A |
| Sample Status | | | | **ATTENTION** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **1** | <1 | 4 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | <1 | <1 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **<1** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 70 | **51** | <1 | <1 |
| Calcium | ppm | ASTM D5185m | 10 | **<1** | 129 | 125 |
| Phosphorus | ppm | ASTM D5185m | 300 | **277** | 483 | 479 |
| Zinc | ppm | ASTM D5185m | 325 | **293** | 706 | 680 |

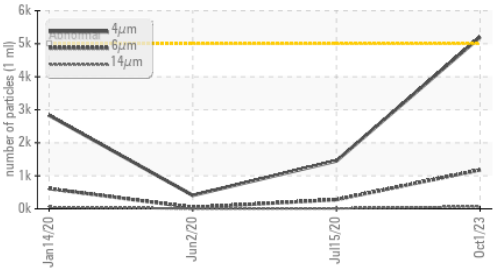
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **<1** | 1 | 1 |
| Sodium | ppm | ASTM D5185m | | **<1** | 0 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Water | % | ASTM D6304 | >0.05 | **0.008** | 0.020 | 0.012 |
| ppm Water | ppm | ASTM D6304 | >500 | **89.4** | 203.2 | 126.8 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **5203** | 1450 | 408 |
| Particles >6µm | | ASTM D7647 | >1300 | **1177** | 277 | 42 |
| Particles >14µm | | ASTM D7647 | >160 | **67** | 12 | 5 |
| Particles >21µm | | ASTM D7647 | >40 | **18** | 0 | 1 |
| Particles >38µm | | ASTM D7647 | >10 | **1** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **20/17/13** | 18/15/11 | 16/13/10 |

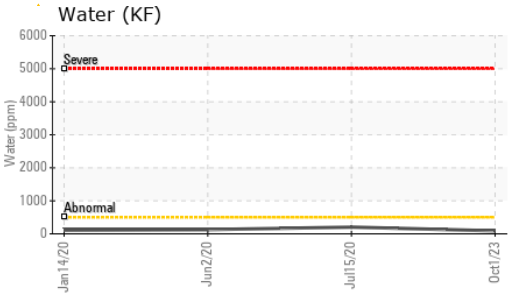
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.35 | **0.28** | 0.964 | 0.773 |

# OIL ANALYSIS REPORT

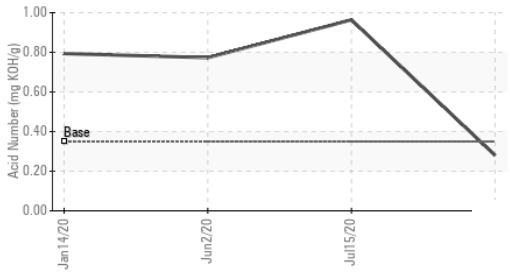
Particle Trend



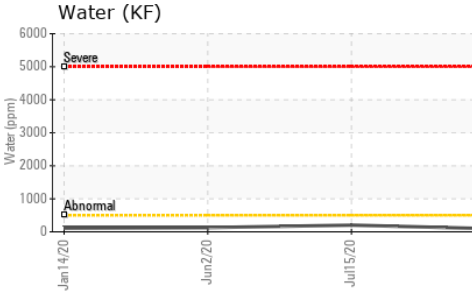

Water (KF)



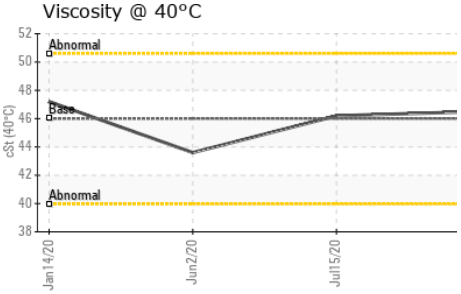

Acid Number




Water (KF)

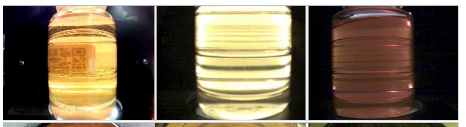



Viscosity @ 40°C



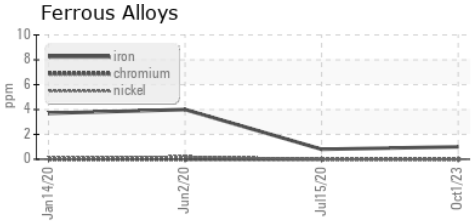

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46.0 | **46.5** | 46.2 | 43.6 |

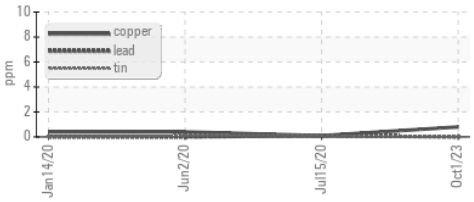
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

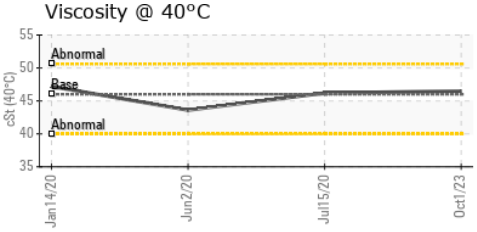
Ferrous Alloys



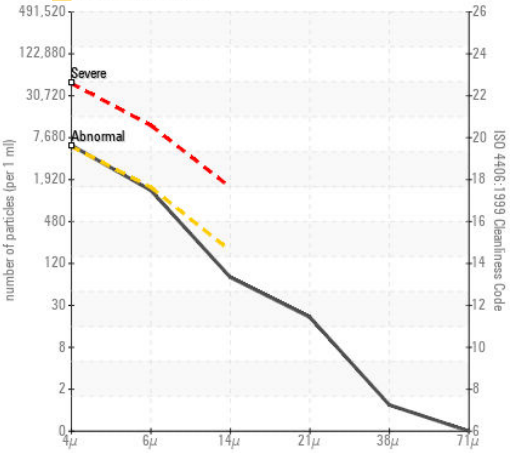

Non-ferrous Metals



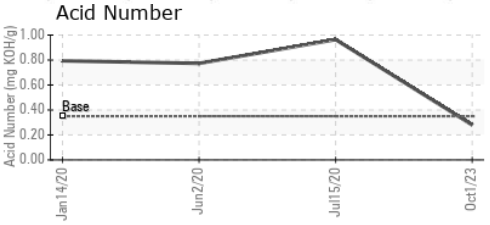

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : RP0018153
**Lab Number** : 05979599
**Unique Number** : 10696894
**Test Package** : IND 2

**Received** : 16 Oct 2023
**Diagnosed** : 17 Oct 2023
**Diagnostician** : Wes Davis

*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)*


**JOHNSON CONTROLS**
1890 MINES RD
PULASKI, TN
US 38478
Contact: MONTY POLK
monty.e.polk@jci.com
T: (931)363-5666
F: