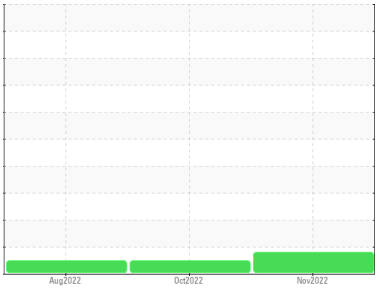
# PROBLEM SUMMARY

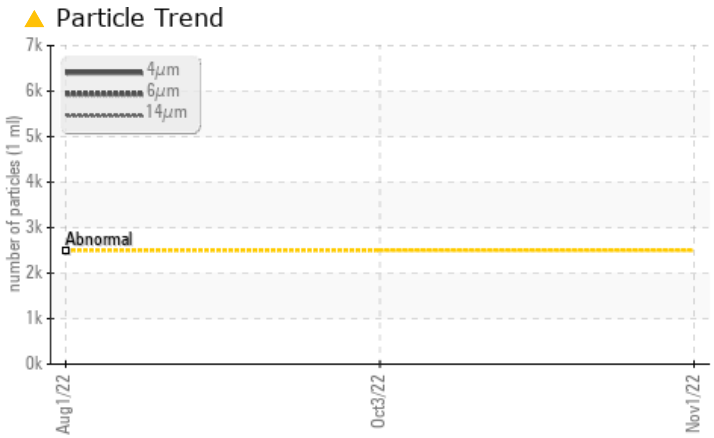
Sample Rating Trend




ISO

Machine Id
## MERCURY MARINE
Component
**Transmission (Auto)**
Fluid
**CITGO TRANSGUARD TH FLUID (45 GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please note that this is a corrected copy for data entry update for target ISO.

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ABNORMAL** | NORMAL | NORMAL |
| Particles >4µm | | ASTM D7647 | >2500 | ▲ **6692** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | ▲ **20/15/12** | --- | --- |

**Customer Id:** HAWCHANC
**Sample No.:** WC0700547
**Lab Number:** 05682714
**Test Package:** PLANT

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

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

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

**03 Oct 2022 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 fluid. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

**view report**

**01 Aug 2022 Diag: Jonathan Hester**

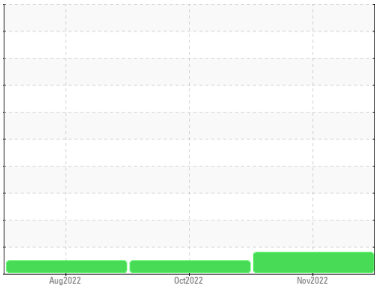
NORMAL

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

**view report**

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## MERCURY MARINE
Component
**Transmission (Auto)**
Fluid
**CITGO TRANSGUARD TH FLUID (45 GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor. Please note that this is a corrected copy for data entry update for target ISO.

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

**Contamination**
There is a high amount of silt (particulates < 6 microns in size) present in the fluid.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0700547** | WC0700542 | WC0700534 |
| Sample Date | | Client Info | | **01 Nov 2022** | 03 Oct 2022 | 01 Aug 2022 |
| Machine Age | mths | Client Info | | **0** | 0 | 0 |
| Oil Age | mths | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184 | >50 | **6** | --- | --- |
| Iron | ppm | ASTM D5185m | >160 | **0** | <1 | <1 |
| Chromium | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >5 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >50 | **<1** | 3 | 1 |
| Lead | ppm | ASTM D5185m | >50 | **<1** | 1 | 1 |
| Copper | ppm | ASTM D5185m | >225 | **0** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >10 | **0** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **107** | 64 | 72 |
| Barium | ppm | ASTM D5185m | | **6** | 4 | 3 |
| Molybdenum | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | **0** | 3 | 3 |
| Calcium | ppm | ASTM D5185m | | **73** | 96 | 94 |
| Phosphorus | ppm | ASTM D5185m | | **206** | 233 | 225 |
| Zinc | ppm | ASTM D5185m | | **<1** | 17 | 18 |
| Sulfur | ppm | ASTM D5185m | | **1129** | 992 | 850 |

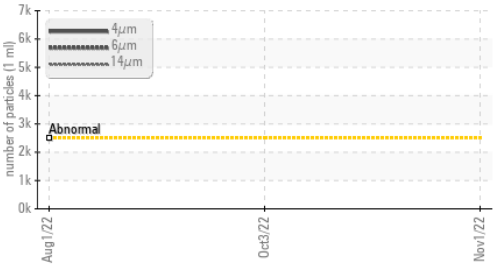
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **0** | 1 | 1 |
| Sodium | ppm | ASTM D5185m | | **0** | 3 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >2500 | ▲ **6692** | --- | --- |
| Particles >6µm | | ASTM D7647 | >640 | **295** | --- | --- |
| Particles >14µm | | ASTM D7647 | >80 | **32** | --- | --- |
| Particles >21µm | | ASTM D7647 | >20 | **8** | --- | --- |
| Particles >38µm | | ASTM D7647 | >4 | **1** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | ▲ **20/15/12** | --- | --- |

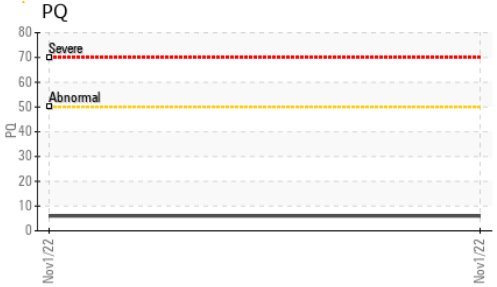
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **1.02** | 0.87 | 0.84 |

# OIL ANALYSIS REPORT

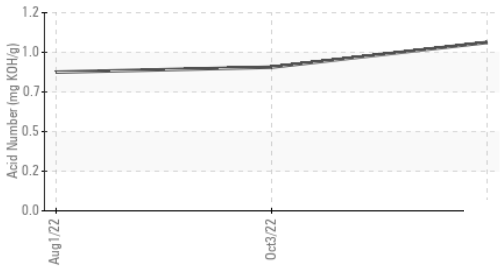
Particle Trend



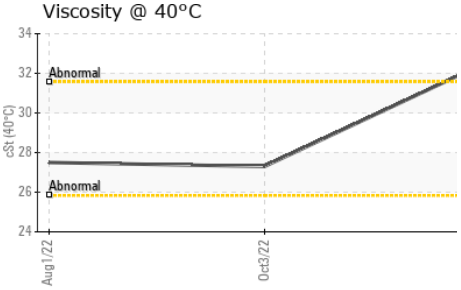

PQ



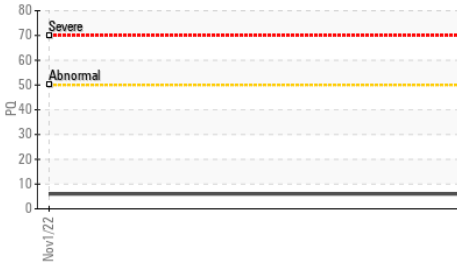

Acid Number




Viscosity @ 40°C

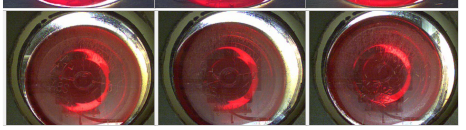



PQ



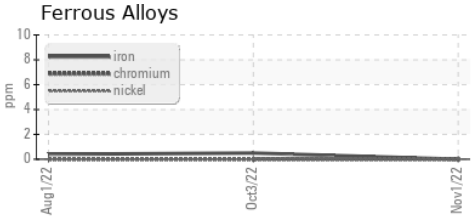

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | | **32.4** | 27.3 | 27.5 |

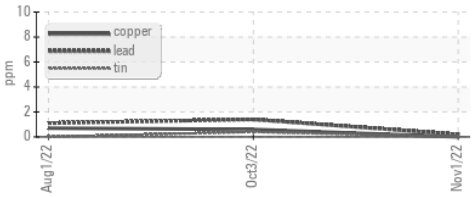
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

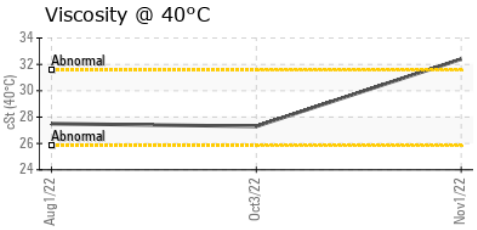
Ferrous Alloys



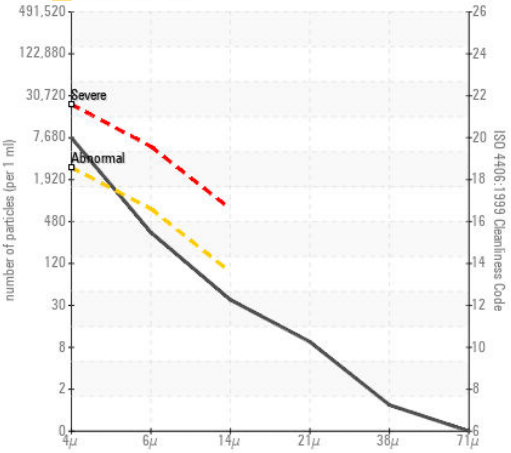

Non-ferrous Metals



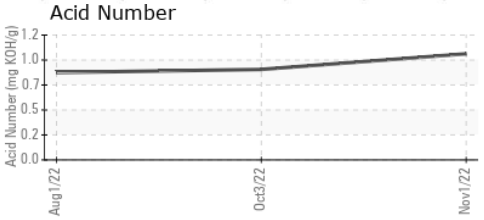

Viscosity @ 40°C




Particle Count




Acid Number




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0700547
**Lab Number** : 05682714
**Unique Number** : 10202286
**Test Package** : PLANT
**Received** : 02 Nov 2022
**Diagnosed** : 08 Nov 2022
**Diagnostician** : Doug Bogart

*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)*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