# OIL ANALYSIS REPORT

Sample Rating Trend


**WEAR**

Machine Id
## TOTE 238
Component
**Hydraulic System**
Fluid
**SHELL OMALA S2 GX 68 (275 GAL)**

## DIAGNOSIS

**Recommendation**
The filtration at the time of sampling has been noted. Resample at the next service interval to monitor.

**Wear**
The iron level is abnormal. All other component wear rates are normal.

**Contamination**
There is a high amount of particulates present in the oil.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **TLC0001387** | --- | --- |
| Sample Date | | Client Info | | **01 May 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **Filtered** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | ▲ **28** | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | **1** | --- | --- |
| Nickel | ppm | ASTM D5185m | >20 | **0** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **0** | --- | --- |
| Silver | ppm | ASTM D5185m | | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | --- | --- |
| Lead | ppm | ASTM D5185m | >20 | **0** | --- | --- |
| Copper | ppm | ASTM D5185m | >20 | **<1** | --- | --- |
| Tin | ppm | ASTM D5185m | >20 | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | --- | --- |
| Barium | ppm | ASTM D5185m | | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | **0** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185m | | **1** | --- | --- |
| Calcium | ppm | ASTM D5185m | | **213** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | **273** | --- | --- |
| Zinc | ppm | ASTM D5185m | | **23** | --- | --- |
| Sulfur | ppm | ASTM D5185m | | **8599** | --- | --- |

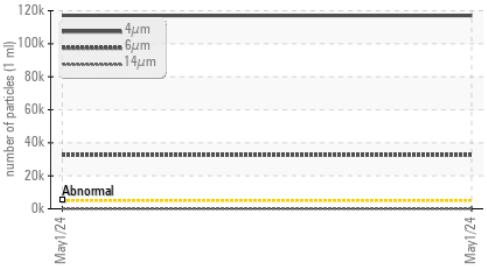
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **4** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **11** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | --- | --- |
| Water | % | ASTM D6304 | >0.05 | **NEG** | --- | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **117049** | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **32569** | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | **54** | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | **4** | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | **0** | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **24/22/13** | --- | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.19** | --- | --- |

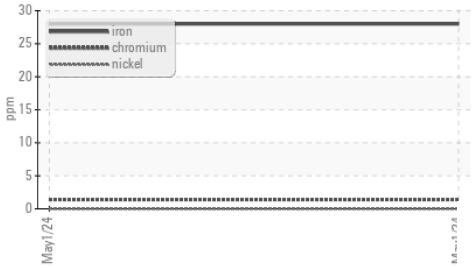
# OIL ANALYSIS REPORT

Particle Trend

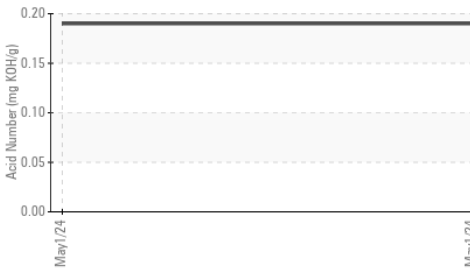



Viscosity @ 100°C

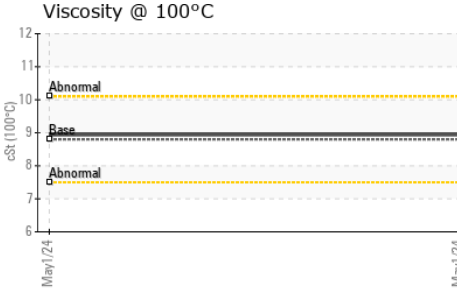

Ferrous Alloys




Acid Number




Viscosity @ 100°C



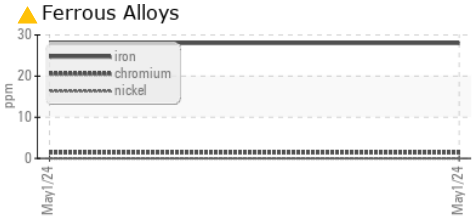

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | --- | --- |
| Silt | 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 D445 | 68 | **68.59** | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 8.8 | **8.94** | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270 | 101 | **103** | --- | --- |

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

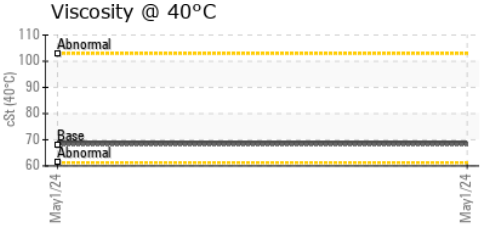
## GRAPHS

Ferrous Alloys

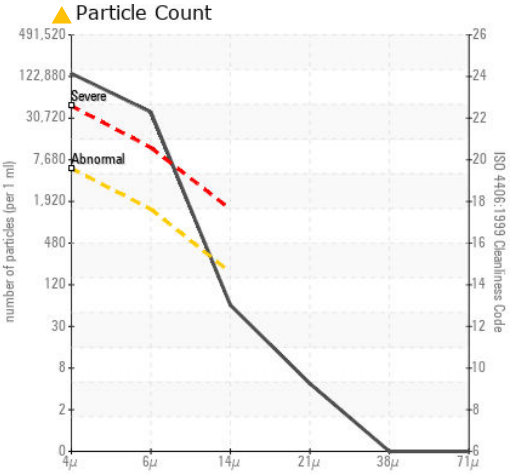



Non-ferrous Metals

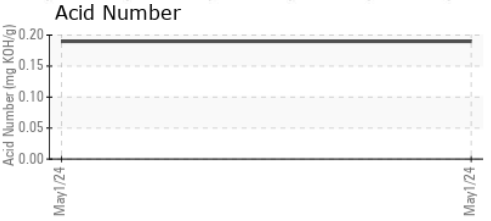

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : TLC0001387 **Received** : 09 May 2024
**Lab Number** : 06174531 **Tested** : 21 May 2024
**Unique Number** : 11020584 **Diagnosed** : 21 May 2024 - Doug Bogart
**Test Package** : PLANT ( Additional Tests: KV100, VI )

*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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