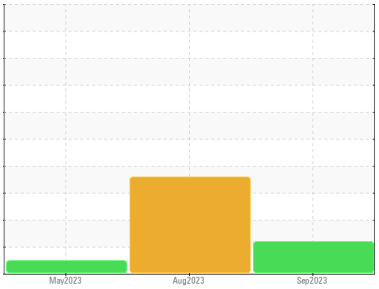
# PROBLEM SUMMARY

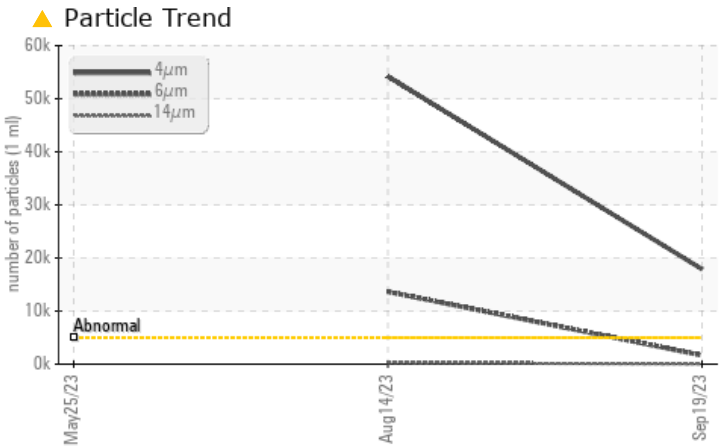
Sample Rating Trend




ISO

Machine Id
**E-4 E-4**
Component
**Lube System**
Fluid
**MOBIL DTE OIL EXTRA HEAVY (--- GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

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

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | ABNORMAL | NORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **17895** | ▲ 54229 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **1657** | ▲ 13642 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **21/18/12** | ▲ 23/21/15 | --- |

**Customer Id:** TESAUSTLC
**Sample No.:** TLC05964591
**Lab Number:** 05964591
**Test Package:** PLANT

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

*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 if applicable. |

## HISTORICAL DIAGNOSIS

**14 Aug 2023 Diag: Doug Bogart**

DIRT

We recommend you service the filters on this component. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of particulates present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**25 May 2023 Diag: Jonathan Hester**

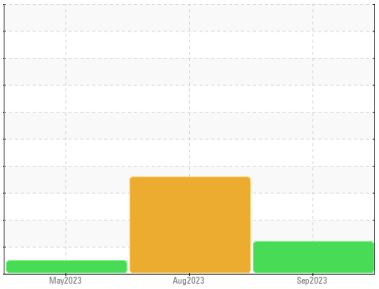
NORMAL

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 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
**E-4 E-4**
Component
**Lube System**
Fluid
**MOBIL DTE OIL EXTRA HEAVY (--- GAL)**

## DIAGNOSIS

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

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

**Contamination**
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

**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 | | **TLC05964591** | TLC0001000 | TLC0001159 |
| Sample Date | | Client Info | | **19 Sep 2023** | 14 Aug 2023 | 25 May 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **0** | <1 | 1 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **<1** | 0 | 4 |
| Copper | ppm | ASTM D5185m | >20 | **2** | 1 | 6 |
| Tin | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |
| 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 | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **<1** | 0 | 2 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | **4** | <1 | <1 |
| Calcium | ppm | ASTM D5185m | | **105** | 104 | 4 |
| Phosphorus | ppm | ASTM D5185m | | **403** | 408 | 7 |
| Zinc | ppm | ASTM D5185m | | **523** | 515 | 4 |
| Sulfur | ppm | ASTM D5185m | | **9260** | 10727 | 5090 |

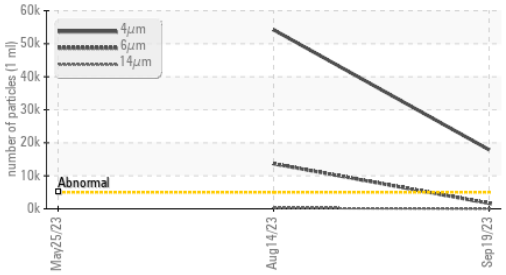
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **9** | ▲ 43 | 18 |
| Sodium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ **17895** | ▲ 54229 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **1657** | ▲ 13642 | --- |
| Particles >14µm | | ASTM D7647 | >160 | **22** | ▲ 247 | --- |
| Particles >21µm | | ASTM D7647 | >40 | **5** | ▲ 46 | --- |
| Particles >38µm | | ASTM D7647 | >10 | **1** | 3 | --- |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 0 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ **21/18/12** | ▲ 23/21/15 | --- |

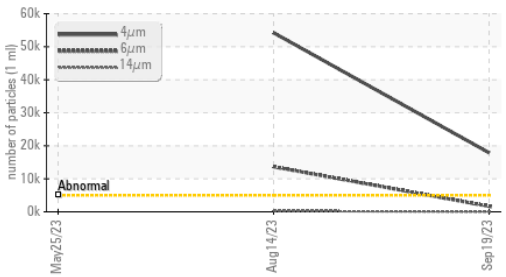
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.75** | 0.83 | 0.087 |

# OIL ANALYSIS REPORT

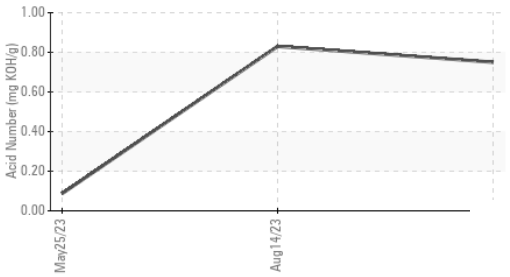
Particle Trend



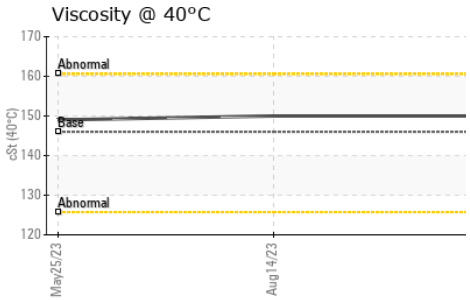

Particle Trend




Acid Number

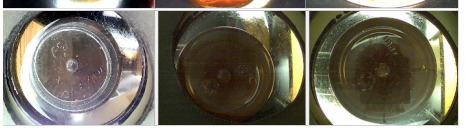



Viscosity @ 40°C



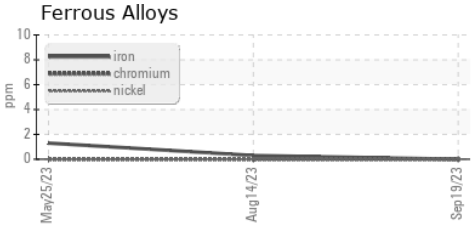

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | LIGHT | 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 | 146 | **150** | 150 | 149 |

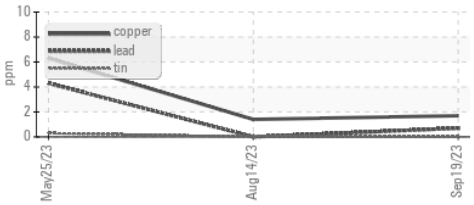
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

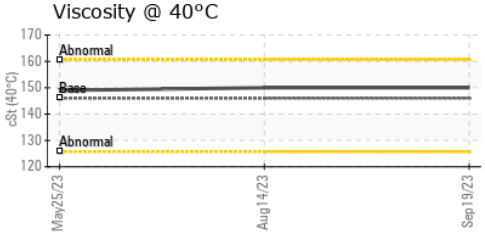
Ferrous Alloys



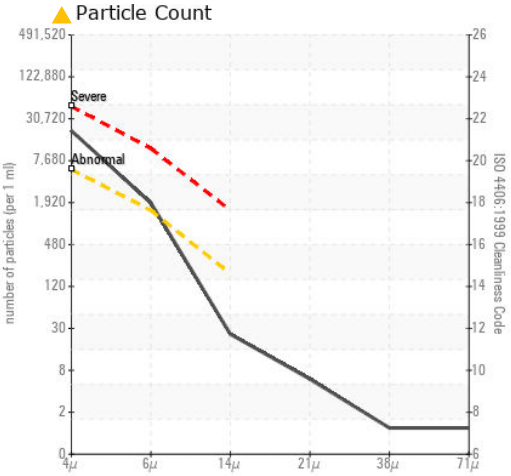

Non-ferrous Metals



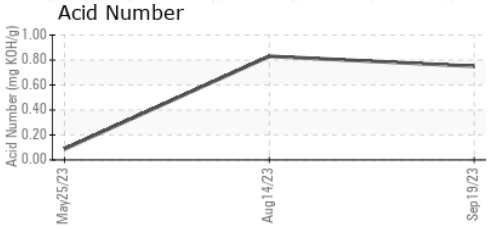

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : TLC05964591
**Lab Number** : 05964591
**Unique Number** : 10671142
**Test Package** : PLANT

**Received** : 29 Sep 2023
**Diagnosed** : 02 Oct 2023
**Diagnostician** : Don Baldridge

*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)*

**TESLA**
1 Tesla Road, BIW E58
Austin, TX
US 78725
Contact: Dave Mitchell
davmitchell@tesla.com
T: (260)226-1968
F: