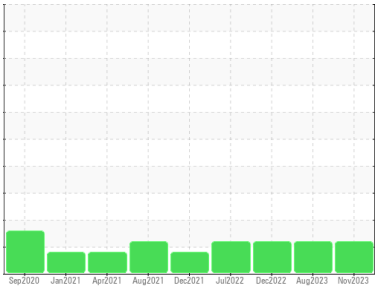
# PROBLEM SUMMARY

Sample Rating Trend

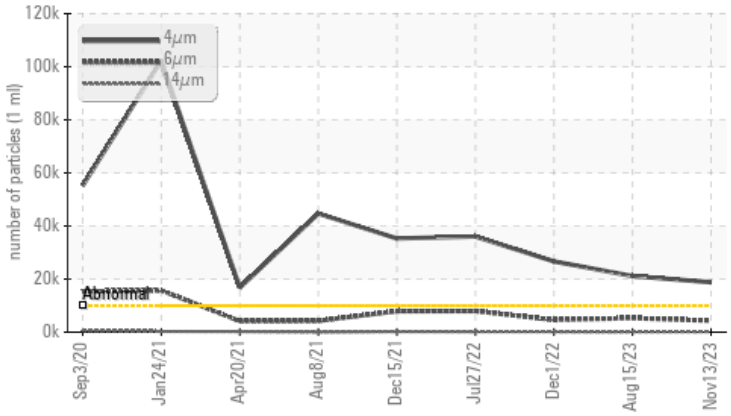



ISO

Machine Id
## ER1 HSSC-15 (S/N S1044RFMPLHAA03)
Component
**Refrigeration Compressor**
Fluid
**USPI ALT-68 SC (--- GAL)**

## COMPONENT CONDITION SUMMARY

Particle Trend




## RECOMMENDATION

Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ATTENTION | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | ▲ **18790** | ▲ 21148 | ▲ 26650 |
| Particles >6µm | | ASTM D7647 | >2500 | ▲ **4311** | ▲ 5275 | ▲ 4599 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | ▲ **21/19/14** | ▲ 22/20/14 | ▲ 22/19/14 |

**Customer Id:** AMEOMA
**Sample No.:** USP0003633
**Lab Number:** 06012469
**Test Package:** IND 2

*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

**15 Aug 2023 Diag: Doug Bogart**

ISO

Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

---

**01 Dec 2022 Diag: Doug Bogart**

ISO

Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

---

**27 Jul 2022 Diag: Doug Bogart**

ISO

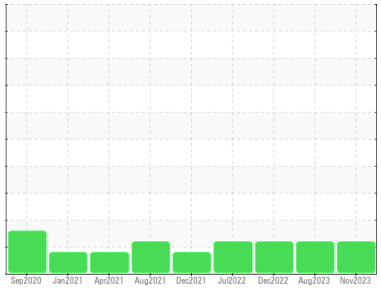
Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

---

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## ER1 HSSC-15 (S/N S1044RFMPLHAA03)
Component
**Refrigeration Compressor**
Fluid
**USPI ALT-68 SC (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

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

**Contamination**
There is a moderate 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 | | **USP0003633** | USP0000617 | USP247970 |
| Sample Date | | Client Info | | **13 Nov 2023** | 15 Aug 2023 | 01 Dec 2022 |
| Machine Age | hrs | Client Info | | **54230** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ATTENTION** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >8 | **0** | 0 | 0 |
| Chromium | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >3 | **<1** | 0 | 0 |
| Lead | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >8 | **0** | <1 | 0 |
| Tin | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 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 | | **0** | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Zinc | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Sulfur | ppm | ASTM D5185m | 50 | **9** | 0 | 0 |

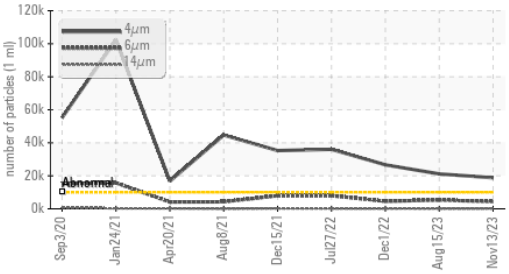
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **0** | <1 | <1 |
| Sodium | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | <1 | 0 |
| Water | % | ASTM D6304 | >0.01 | **0.003** | 0.004 | 0.003 |
| ppm Water | ppm | ASTM D6304 | >100 | **35.4** | 43.7 | 26.8 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | ▲ **18790** | ▲ 21148 | ▲ 26650 |
| Particles >6µm | | ASTM D7647 | >2500 | ▲ **4311** | ▲ 5275 | ▲ 4599 |
| Particles >14µm | | ASTM D7647 | >320 | **141** | 83 | 150 |
| Particles >21µm | | ASTM D7647 | >80 | **21** | 6 | 27 |
| Particles >38µm | | ASTM D7647 | >20 | **1** | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >4 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | ▲ **21/19/14** | ▲ 22/20/14 | ▲ 22/19/14 |

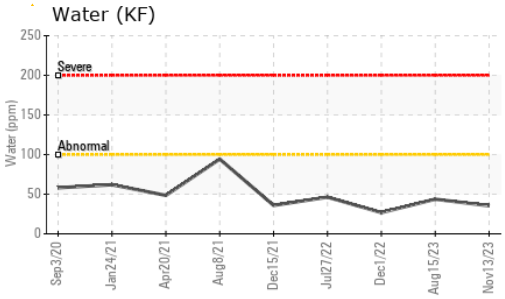
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974 | 0.005 | **0.013** | 0.015 | 0.014 |

# OIL ANALYSIS REPORT

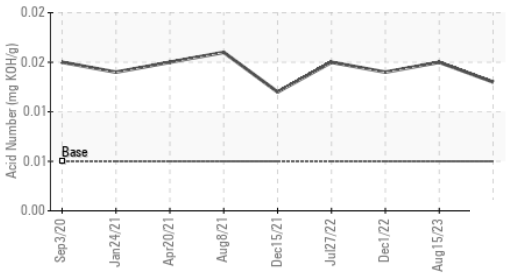
Particle Trend



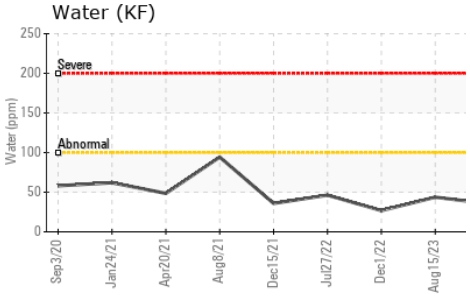

Water (KF)



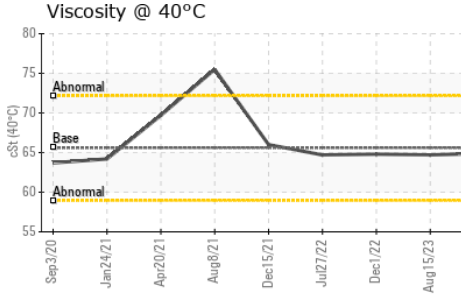

Acid Number




Water (KF)

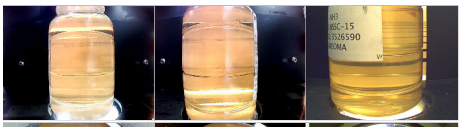



Viscosity @ 40°C



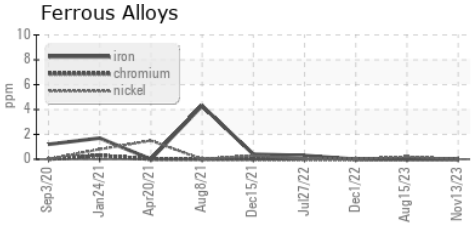

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | VLITE |
| 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 | >0.01 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 65.6 | **64.9** | 64.7 | 64.8 |

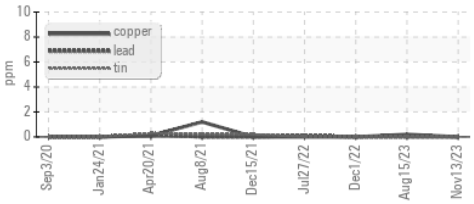
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

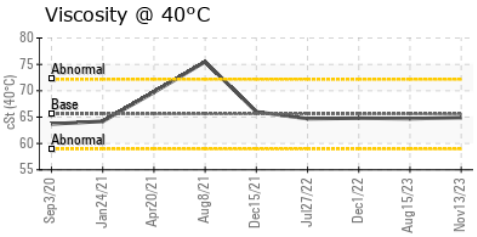
Ferrous Alloys



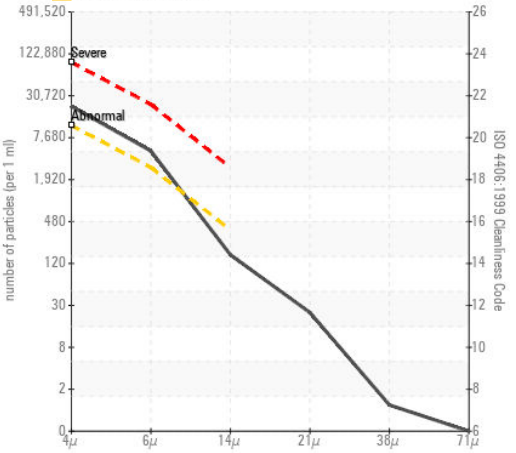

Non-ferrous Metals



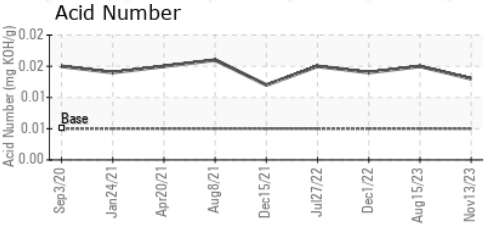

Viscosity @ 40°C




Particle Count




Acid Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : USP0003633
**Lab Number** : 06012469
**Unique Number** : 10751613
**Test Package** : IND 2

**Received** : 20 Nov 2023
**Diagnosed** : 21 Nov 2023
**Diagnostician** : Doug Bogart

Certificate L2367

*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)*

**AMERICAN FOODS GROUP**
4430 S 110TH ST
OMAHA, NE
US 68137
Contact: Service Manager

T:
F: