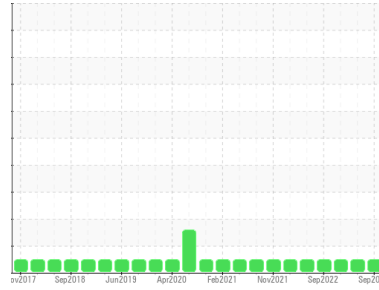




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**GEA/FES TYSCB 11 (S/N 390-004080-005)**

Component  
**Refrigeration Compressor**  
Fluid  
**USPI 1009-68 SC (--- QTS)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

### 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 | <b>USP0001721</b>  | USP249109   | USP247345   |
| Sample Date   | Client Info | <b>26 Sep 2023</b> | 14 Mar 2023 | 07 Dec 2022 |
| Machine Age   | hrs         | <b>2042</b>        | 27352       | 27207       |
| Oil Age       | hrs         | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR METALS

| method   | limit/base | current        | history1     | history2 |    |
|----------|------------|----------------|--------------|----------|----|
| Iron     | ppm        | ASTM D5185m >8 | <b>&lt;1</b> | 0        | <1 |
| Chromium | ppm        | ASTM D5185m >2 | <b>0</b>     | 0        | 0  |
| Nickel   | ppm        | ASTM D5185m    | <b>0</b>     | 0        | 0  |
| Titanium | ppm        | ASTM D5185m    | <b>0</b>     | <1       | 0  |
| Silver   | ppm        | ASTM D5185m >2 | <b>0</b>     | 0        | 0  |
| Aluminum | ppm        | ASTM D5185m >3 | <b>1</b>     | 0        | 0  |
| Lead     | ppm        | ASTM D5185m >2 | <b>0</b>     | 0        | 0  |
| Copper   | ppm        | ASTM D5185m >8 | <b>0</b>     | 0        | <1 |
| Tin      | ppm        | ASTM D5185m >4 | <b>0</b>     | 0        | 0  |
| Vanadium | ppm        | ASTM D5185m    | <b>0</b>     | <1       | 0  |
| Cadmium  | ppm        | ASTM D5185m    | <b>0</b>     | 0        | 0  |

## ADDITIVES

| method     | limit/base | current        | history1     | history2 |   |
|------------|------------|----------------|--------------|----------|---|
| Boron      | ppm        | ASTM D5185m    | <b>0</b>     | 0        | 0 |
| Barium     | ppm        | ASTM D5185m    | <b>0</b>     | 0        | 0 |
| Molybdenum | ppm        | ASTM D5185m    | <b>0</b>     | <1       | 0 |
| Manganese  | ppm        | ASTM D5185m    | <b>0</b>     | <1       | 0 |
| Magnesium  | ppm        | ASTM D5185m    | <b>&lt;1</b> | 0        | 0 |
| Calcium    | ppm        | ASTM D5185m    | <b>0</b>     | <1       | 0 |
| Phosphorus | ppm        | ASTM D5185m    | <b>0</b>     | 2        | 0 |
| Zinc       | ppm        | ASTM D5185m    | <b>0</b>     | 0        | 0 |
| Sulfur     | ppm        | ASTM D5185m 50 | <b>0</b>     | 0        | 9 |

## CONTAMINANTS

| method    | limit/base | current          | history1     | history2 |       |
|-----------|------------|------------------|--------------|----------|-------|
| Silicon   | ppm        | ASTM D5185m >15  | <b>3</b>     | 6        | 2     |
| Sodium    | ppm        | ASTM D5185m      | <b>0</b>     | <1       | 0     |
| Potassium | ppm        | ASTM D5185m >20  | <b>&lt;1</b> | 0        | 2     |
| Water     | %          | ASTM D6304 >0.01 | <b>0.007</b> | 0.003    | 0.004 |
| ppm Water | ppm        | ASTM D6304 >100  | <b>73.0</b>  | 30.0     | 48.3  |

## FLUID CLEANLINESS

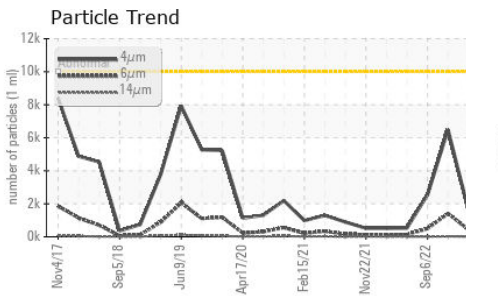
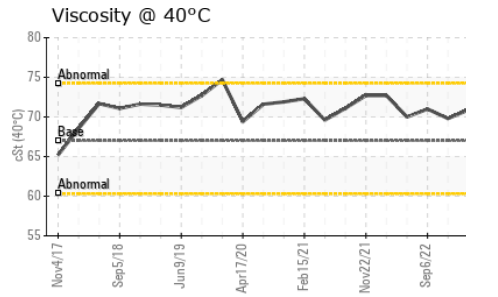
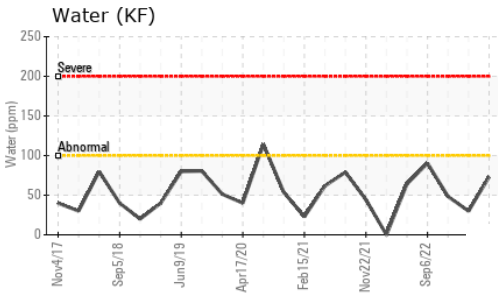
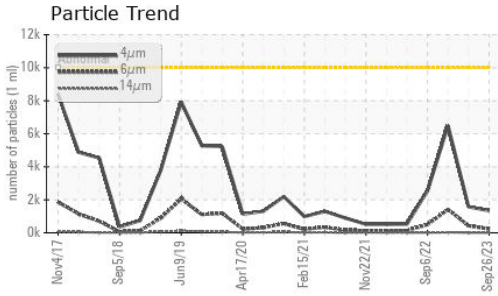
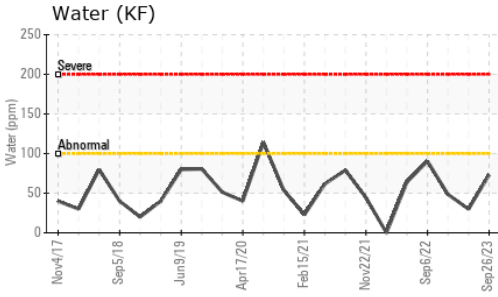
| method          | limit/base             | current         | history1 | history2 |
|-----------------|------------------------|-----------------|----------|----------|
| Particles >4µm  | ASTM D7647 >10000      | <b>1346</b>     | 1576     | 6491     |
| Particles >6µm  | ASTM D7647 >2500       | <b>233</b>      | 430      | 1413     |
| Particles >14µm | ASTM D7647 >320        | <b>10</b>       | 12       | 31       |
| Particles >21µm | ASTM D7647 >80         | <b>4</b>        | 2        | 6        |
| Particles >38µm | ASTM D7647 >20         | <b>1</b>        | 0        | 1        |
| Particles >71µm | ASTM D7647 >4          | <b>0</b>        | 0        | 0        |
| Oil Cleanliness | ISO 4406 (c) >20/18/15 | <b>18/15/10</b> | 18/16/11 | 20/18/12 |

## FLUID DEGRADATION

| method           | limit/base | current         | history1     | history2 |       |
|------------------|------------|-----------------|--------------|----------|-------|
| Acid Number (AN) | mg KOH/g   | ASTM D974 0.005 | <b>0.012</b> | 0.015    | 0.014 |



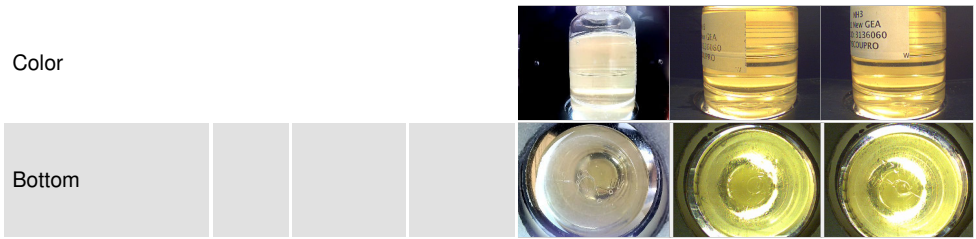
# OIL ANALYSIS REPORT



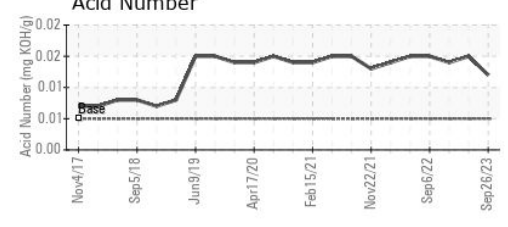
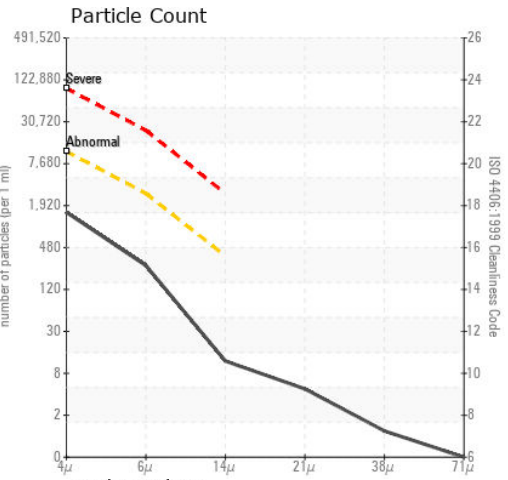
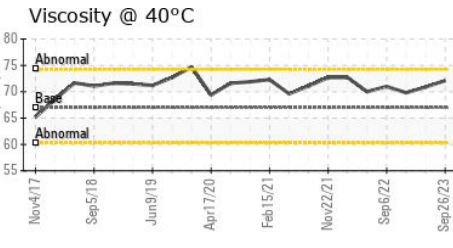
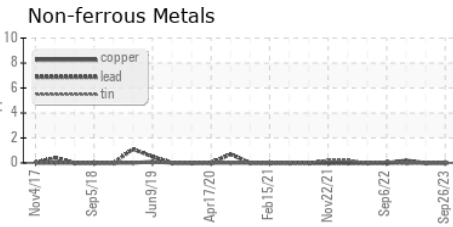
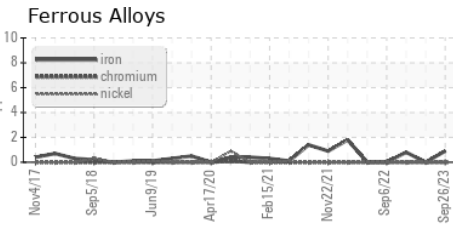
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Silt             | scalar | *Visual    | NONE    | NONE     | NONE     |
| Debris           | scalar | *Visual    | NONE    | NONE     | NONE     |
| Sand/Dirt        | scalar | *Visual    | NONE    | NONE     | NONE     |
| Appearance       | scalar | *Visual    | NORML   | NORML    | NORML    |
| Odor             | scalar | *Visual    | NORML   | NORML    | NORML    |
| Emulsified Water | scalar | *Visual    | >0.01   | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base   | current | history1 | history2 |
|------------------|--------|--------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445 67 | 72.1    | 70.9     | 69.8     |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : USP0001721  
**Lab Number** : 05967138  
**Unique Number** : 10673689  
**Test Package** : IND 2

**TYSON-COUNCIL BLUFFS-USP**  
 COUNCIL BLUFFS, IA  
 US  
 Contact: SERVICE MANAGER

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)

T:  
 F: