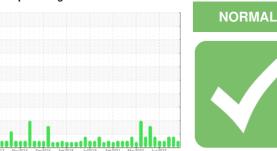


# **OIL ANALYSIS REPORT**

## Sample Rating Trend



Machine Id

# RECO TYSBBOW HS-14 (S/N 0070S)

Refrigeration Compressor

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

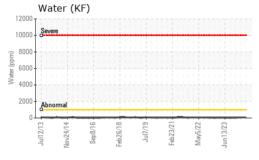
### **Fluid Condition**

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

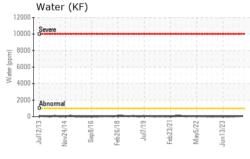
| 2013 Nov2014 Sep2016 Feb2018 Jul2013 Feb2021 May2022 Jun2023 |          |              |            |             |             |             |  |  |  |
|--|----------|--------------|------------|-------------|-------------|-------------|--|--|--|
| SAMPLE INFORM  | MATION   | method       | limit/base | current     | history1    | history2    |  |  |  |
| Sample Number  |          | Client Info  |            | USP0011401  | USP0007231  | USP0004210  |  |  |  |
| Sample Date  |          | Client Info  |            | 12 May 2024 | 08 Feb 2024 | 14 Dec 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  |          |              |            | NORMAL      | ATTENTION   | ATTENTION   |  |  |  |
| WEAR METALS  |          | method       | limit/base | current     | history1    | history2    |  |  |  |
| Iron   | ppm      | ASTM D5185m  | >50        | 0           | 0           | 0           |  |  |  |
| Chromium   | ppm      | ASTM D5185m  | >10        | <1          | 0           | 0           |  |  |  |
| Nickel   | ppm      | ASTM D5185m  |            | 0           | 0           | <1          |  |  |  |
| Titanium   | ppm      | ASTM D5185m  |            | <1          | 0           | 0           |  |  |  |
| Silver   | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |  |  |  |
| Aluminum   | ppm      | ASTM D5185m  | >25        | 0           | 0           | 0           |  |  |  |
| Lead   | ppm      | ASTM D5185m  | >25        | 0           | 0           | 0           |  |  |  |
| Copper   | ppm      | ASTM D5185m  | >50        | <1          | 0           | 0           |  |  |  |
| Tin  | ppm      | ASTM D5185m  | >15        | <1          | 0           | 0           |  |  |  |
| Vanadium   | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |  |  |  |
| Cadmium  | ppm      | ASTM D5185m  |            | <1          | 0           | 0           |  |  |  |
| ADDITIVES  |          | method       | limit/base | current     | history1    | history2    |  |  |  |
| Boron  | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |  |  |  |
| Barium   | ppm      | ASTM D5185m  |            | 1           | 0           | 0           |  |  |  |
| Molybdenum   | ppm      | ASTM D5185m  |            | <1          | 0           | 0           |  |  |  |
| Manganese  | ppm      | ASTM D5185m  |            | 0           | 0           | <1          |  |  |  |
| Magnesium  | ppm      | ASTM D5185m  |            | <1          | 0           | <1          |  |  |  |
| Calcium  | ppm      | ASTM D5185m  |            | 0           | 0           | 0           |  |  |  |
| Phosphorus   | ppm      | ASTM D5185m  |            | 0           | 0           | 1           |  |  |  |
| Zinc   | ppm      | ASTM D5185m  |            | 2           | 0           | 0           |  |  |  |
| Sulfur   | ppm      | ASTM D5185m  | 50         | 0           | 25          | 2           |  |  |  |
| CONTAMINANTS   |          | method       | limit/base | current     | history1    | history2    |  |  |  |
| Silicon  | ppm      | ASTM D5185m  | >25        | 2           | 2           | 2           |  |  |  |
| Sodium   | ppm      | ASTM D5185m  |            | 0           | 1           | 0           |  |  |  |
| Potassium  | ppm      | ASTM D5185m  | >20        | 1           | 0           | 2           |  |  |  |
| Water  | %        | ASTM D6304   | >0.1       | 0.006       | 0.006       | 0.003       |  |  |  |
| ppm Water  | ppm      | ASTM D6304   | >1000      | 69          | 68          | 30          |  |  |  |
| FLUID CLEANLIN   | ESS      | method       | limit/base | current     | history1    | history2    |  |  |  |
| Particles >4µm   |          | ASTM D7647   |            | 3899        | 9640        | 18005       |  |  |  |
| Particles >6µm   |          | ASTM D7647   | >2500      | 822         | 3158        | 4768        |  |  |  |
| Particles >14µm  |          | ASTM D7647   | >320       | 15          | 104         | 152         |  |  |  |
| Particles >21µm  |          | ASTM D7647   | >80        | 2           | 12          | 21          |  |  |  |
| Particles >38µm  |          | ASTM D7647   | >20        | 0           | 0           | 1           |  |  |  |
| Particles >71µm  |          | ASTM D7647   | >4         | 0           | 0           | 1           |  |  |  |
| Oil Cleanliness  |          | ISO 4406 (c) | >/18/15    | 19/17/11    | 20/19/14    | 21/19/14    |  |  |  |
| FLUID DEGRADA  | TION     | method       | limit/base | current     | history1    | history2    |  |  |  |
| Acid Number (AN)   | mg KOH/g | ASTM D8045   | 0.005      | 0.013       | 0.028       | 0.014       |  |  |  |

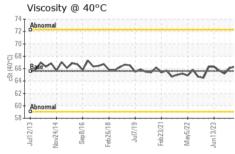


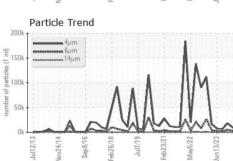
## **OIL ANALYSIS REPORT**



| 200k -<br>150k -          |          | <b>навана</b> б <i>ј.:</i> | m<br>m<br>um |          |        |          |         |          |
|---------------------------|----------|----------------------------|--------------|----------|--------|----------|---------|----------|
| 150k -<br>100k -<br>50k - |          |                            |              | Λ        |        |          | 11      | 1        |
| 200                       |          |                            | E            | 1        | W      | h        | W       | 1        |
| 0k                        | Jul12/13 | Nov24/14                   | Sep8/16      | Feb26/18 | 91/JnC | Feb23/21 | May5/22 | Jun13/23 |







| 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    |
| <b>Emulsified Water</b> | scalar | *Visual | >0.1       | NEG     | NEG      | NEG      |
| Free Water              | scalar | *Visual |            | NEG     | NEG      | NEG      |
| ELLID DDODEDT           |        |         |            |         |          |          |

| FLUID PROPER | THES | method    |      |      | riistory i | HISTORYZ |
|--------------|------|-----------|------|------|------------|----------|
| Visc @ 40°C  | cSt  | ASTM D445 | 65.6 | 66.3 | 66.1       | 65.2     |

|  | AMPLE IMAGES | method | limit/base | current | hist |
|--|--------------|--------|------------|---------|------|
|--|--------------|--------|------------|---------|------|

Color





| Ferrous                                | Allovs                 |           |          |         |               | Par  | ticle C     | `ount   |          |                 |          |         |                            |
|--|------------------------|-----------|----------|---------|---------------|--|-------------|---------|----------|-----------------|----------|---------|----------------------------|
| Terrous                                | Alloys                 | ennanpa:  |          |         |               | 491,520 T  | cicic c     | Journe  |          |                 |          |         | T                          |
| *******                                | on<br>rromium<br>ickel |           |          |         |               | 122,880  |             |         |          |                 |          |         | -2                         |
| VV                                     |                        |           |          | ~       | 1             | 30,720   |             |         |          |                 |          |         | +2                         |
| 8 4                                    | شمة                    |           | حد       | ~       | Marie Comment | € 7,680  |             | 1       |          |                 |          |         | +2                         |
| Jul12/13<br>Nov24/14                   | Sep8/16<br>Feb26/18    | Jul7/19   | Feb23/21 | May5/22 | Jun13/23      | 1,920 480 120 120 120 120 120 120 120 120 120 12 | 1           |         | •        |                 |          |         | +2<br>+1<br>+1<br>+1<br>+1 |
| Non-ferr                               | ous Meta               | ıls       |          |         |               | 480  | 1           |         | -        |                 |          |         | 1                          |
|  | opper ]                |           |          |         |               | jo<br>120-                                       |             | 1       |          |                 |          |         | 1                          |
| ************************************** | ad<br>n                |           |          |         |               | 30+  |             | 1       |          |                 |          |         | +1                         |
| M                                      | الما                   | ٨.        | Λ_       |         |               | 8 Shree  | nal         |         | /        |                 |          |         | -1                         |
| Jul12/13                               | Sep8/16<br>Feb26/18    | - 61/7JnC | Feb23/21 | May5/22 | Jun13/23      | 2-   |             |         |          | 1               |          |         | -8                         |
| Jull<br>Nov2                           | Sep<br>Feb.2           | a d       | Feb      | May     | Jun           | 0.   |             |         | ,        |                 |          | _       |                            |
|  | @ 40°C                 |           |          |         |               | 4μ<br><b>Aci</b>                                 | 6μ<br>d Num |         | 14μ      | 21 <sub>µ</sub> |          | $38\mu$ | /1μ                        |
| Abnormal                               |                        |           |          |         | 11111111      | Ŷ0.03T   | 10000       |         |          |                 |          |         |                            |
| Rane - a                               |                        |           |          |         |               | ₽0.02+   |             |         |          |                 |          |         |                            |
|  | $\sim$                 | _         | -        | _       |               | per (iii   | 7           | Α       |          | 1               | h        |         | _                          |
| Abnormal                               |                        |           |          |         |               | E 0.01-  | <u></u>     | ノレ      | ~~       |                 |          |         |                            |
| 3                                      | 9 8                    | 6         | -        | 2 +     |               | Acid Number (mg KOH/g)                           | +           | 9       |          | 6               | -        | 2       | - 2                        |
| Jul12/13                               | Sep8/16<br>Feb26/18    | Jul7/19   | Feb23/21 | May5/22 | Jun13/23      | Jul12/13   | Nov24/14    | Sep8/16 | Feb26/18 | Juf/19          | Feb23/21 | May5/22 | Jun 13/23                  |





Certificate 12367

Laboratory Sample No.

: USP0011401 Lab Number : 06177232

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 13 May 2024

Unique Number : 11023285 Test Package : IND 2

**Tested** : 14 May 2024 Diagnosed : 14 May 2024 - 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) Contact: DWAYNE B T: (580)584-9191

BROKEN BOW, OK

**TYSON-BROKEN BOW-USP** 

Report Id: TYSBRO [WUSCAR] 06177232 (Generated: 05/14/2024 22:03:04) Rev: 1

PO BOX 220

US 74728

F: