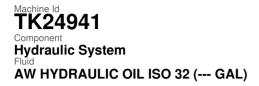


# **OIL ANALYSIS REPORT**

# Sample Rating Trend





#### DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

## Contamination

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

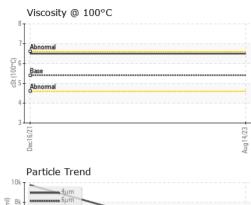
# Fluid Condition

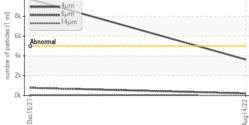
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

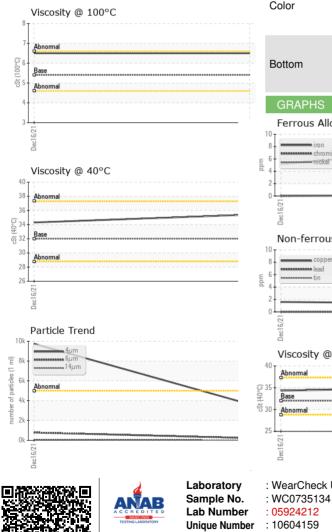
|                  |          |              | Dec2021    | Aug2023     |              |          |
|------------------|----------|--------------|------------|-------------|--------------|----------|
| SAMPLE INFORM    | IATION   | method       | limit/base | current     | history1     | history2 |
| Sample Number    |          | Client Info  |            | WC0735134   | WC0581558    |          |
| Sample Date      |          | Client Info  |            | 14 Aug 2023 | 16 Dec 2021  |          |
| Machine Age      | hrs      | Client Info  |            | 0           | 0            |          |
| Oil Age          | hrs      | Client Info  |            | 0           | 0            |          |
| Oil Changed      |          | Client Info  |            | N/A         | N/A          |          |
| Sample Status    |          |              |            | NORMAL      | ATTENTION    |          |
| WEAR METALS      |          | method       | limit/base | current     | history1     | history2 |
| Iron             | ppm      | ASTM D5185m  | >20        | 8           | 5            |          |
| Chromium         | ppm      | ASTM D5185m  | >10        | <1          | 0            |          |
| Nickel           | ppm      | ASTM D5185m  | >10        | 0           | 0            |          |
| Titanium         | ppm      | ASTM D5185m  |            | 0           | 0            |          |
| Silver           | ppm      | ASTM D5185m  |            | 0           | 0            |          |
| Aluminum         | ppm      | ASTM D5185m  | >10        | 0           | 0            |          |
| Lead             | ppm      | ASTM D5185m  | >10        | 0           | 0            |          |
| Copper           | ppm      | ASTM D5185m  | >75        | 1           | 2            |          |
| Tin              | ppm      | ASTM D5185m  | >10        | 0           | <1           |          |
| Antimony         | ppm      | ASTM D5185m  |            |             | 0            |          |
| Vanadium         | ppm      | ASTM D5185m  |            | 0           | 0            |          |
| Cadmium          | ppm      | ASTM D5185m  |            | 0           | 0            |          |
| ADDITIVES        |          | method       | limit/base | current     | history1     | history2 |
| Boron            | ppm      | ASTM D5185m  | 5          | 0           | 4            |          |
| Barium           | ppm      | ASTM D5185m  | 5          | 0           | 0            |          |
| Molybdenum       | ppm      | ASTM D5185m  | 5          | 0           | <1           |          |
| Manganese        | ppm      | ASTM D5185m  |            | 0           | 0            |          |
| Magnesium        | ppm      | ASTM D5185m  | 25         | 1           | <1           |          |
| Calcium          | ppm      | ASTM D5185m  | 200        | 60          | 60           |          |
| Phosphorus       | ppm      | ASTM D5185m  | 300        | 357         | 309          |          |
| Zinc             | ppm      | ASTM D5185m  | 370        | 435         | 393          |          |
| Sulfur           | ppm      | ASTM D5185m  | 2500       | 5944        | 3711         |          |
| CONTAMINANTS     |          | method       | limit/base | current     | history1     | history2 |
| Silicon          | ppm      | ASTM D5185m  | >20        | <1          | <1           |          |
| Sodium           | ppm      | ASTM D5185m  |            | 1           | <1           |          |
| Potassium        | ppm      | ASTM D5185m  | >20        | 0           | 0            |          |
| FLUID CLEANLIN   | IESS     | method       | limit/base | current     | history1     | history2 |
| Particles >4µm   |          | ASTM D7647   | >5000      | 3639        | <b>9</b> 736 |          |
| Particles >6µm   |          | ASTM D7647   | >1300      | 222         | 781          |          |
| Particles >14µm  |          | ASTM D7647   | >160       | 23          | 52           |          |
| Particles >21µm  |          | ASTM D7647   | >40        | 5           | 12           |          |
| Particles >38µm  |          | ASTM D7647   | >10        | 0           | 2            |          |
| Particles >71µm  |          | ASTM D7647   | >3         | 0           | 0            |          |
| Oil Cleanliness  |          | ISO 4406 (c) | >19/17/14  | 19/15/12    | ▲ 20/17/13   |          |
| FLUID DEGRADA    | TION     | method       | limit/base | current     | history1     | history2 |
| Acid Number (AN) | mg KOH/g | ASTM D8045   | 0.57       | 0.29        | 0.297        |          |
|                  |          |              |            |             |              |          |



# **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    |          |
| Ddor                 | scalar | *Visual    | NORML  | NORML          | NORML    |          |
| Emulsified Water     | scalar | *Visual    | >0.1   | NEG            | NEG      |          |
| Free Water           | scalar | *Visual    |  | NEG            | NEG      |          |
| FLUID PROPERT        | IES    | method     | limit/base   | current        | history1 | history2 |
| /isc @ 40°C          | cSt    | ASTM D445  | 32   | 35.4           | 34.3     |          |
| /isc @ 100°C         | cSt    | ASTM D445  | 5.4  | 6.5            | 6.5      |          |
| /iscosity Index (VI) | Scale  | ASTM D2270 | 102  | 138            | 145      |          |
| SAMPLE IMAGES        | 5      | method     | limit/base   | current        | history1 | history2 |
| Color                |        |            |  |                |          | no image |
| Bottom               |        |            |  |                | 0        | no image |
| GRAPHS               |        |            |  |                |          |          |
| Ferrous Alloys       |        |            | 491,520  | Particle Count |          | -7       |
| iron                 |        |            | 122,880  |                |          | -2       |
| management nickel    |        |            |  | Severe         |          |          |
|                      |        |            | 30,720   |                |          | +2       |
|                      |        |            | S2 € 7,680   | Abnormal       |          | -2       |
| Jec16/2              |        |            | Aug 14/23<br>s (per 1 ml   | N              |          | -1       |
| —                    |        |            | Au<br>icles (j   |                |          |          |
| Non-ferrous Metal    | 5      |            | optied jo  |                | ×        | 1        |
| copper               |        |            | Aug 14/2012<br>800 Aug 14/2012<br>1200 Aug 14/2000 Aug 14/2000<br>1200 Aug 14/2000<br>1200 Aug 14/2000<br>1200 Aug 14/2000<br>1200 Aug 14/2000<br>1200 Aug 14/2000<br>1200 Aug 14/200<br>1200 Aug 14/2000<br>1200 Aug 14/2000<br>1200 Aug 14/2000<br>1 |                |          | -1       |
|                      |        |            |  |                |          |          |

Aug14/23.

Acid Number (B/1.00 HOX 0.80 Abno Ê 0.60 Bas · 은 0.40 JU 0.20 0.00 PC Aug14/23 -Dec16/21 4/23 Aud 1 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **HIAB USA - HAGERSTOWN** : 14 Aug 2023 148 WESTERN MARYLAND PKWY : 15 Aug 2023 HAGERSTOWN, MD Diagnostician : Don Baldridge US 21740 Contact: CHUCK WISHARD CHUCK.WISHARD@HIAB.COM T: (240)625-0045 F: (301)797-7284

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\* - 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)

Dec16/21

Abnorm

Base

Dec16/21-

Abnorma

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Viscosity @ 40°C

Test Package : MOB 2 (Additional Tests: KV100, VI)

Received

Diagnosed

Certificate L2367

Contact/Location: CHUCK WISHARD - CARHAG

.26 .74

20 8

4406 18

1999 Cle

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12 000