

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# NK 112602 (S/N SC346001) Compressor

Fluid

## CIMARRON HB-150 (--- GAL)

#### 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

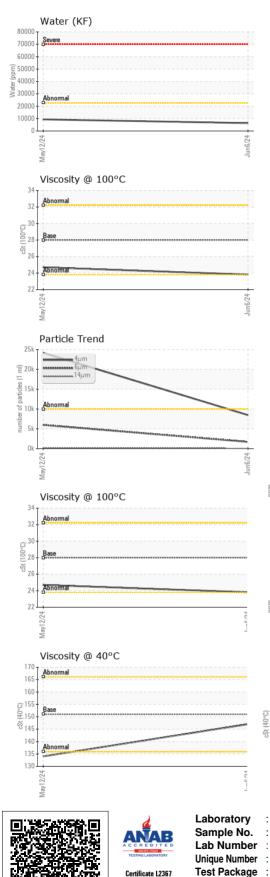
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORM    | <b>IATION</b> | method                     | limit/base | current     | history1     | history2 |
|------------------|---------------|----------------------------|------------|-------------|--------------|----------|
| Sample Number    |               | Client Info                |            | TO90004061  | TO90004192   |          |
| Sample Date      |               | Client Info                |            | 06 Jun 2024 | 12 May 2024  |          |
| 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      | ABNORMAL     |          |
| WEAR METALS      |               | method                     | limit/base | current     | history1     | history2 |
| Iron             | ppm           | ASTM D5185m                | >50        | 0           | 3            |          |
| Chromium         | ppm           | ASTM D5185m                | >10        | 0           | <1           |          |
| Nickel           | ppm           | ASTM D5185m                |            | <1          | <1           |          |
| Titanium         | ppm           | ASTM D5185m                |            | 0           | <1           |          |
| Silver           | ppm           | ASTM D5185m                |            | 0           | 0            |          |
| Aluminum         | ppm           | ASTM D5185m                | >25        | 1           | 2            |          |
| Lead             | ppm           | ASTM D5185m                | >25        | <1          | 0            |          |
| Copper           |               | ASTM D5185m                | >50        | 0           | <1           |          |
| Tin              | ppm           | ASTM D5185m                | >15        | 2           | <1           |          |
| Vanadium         | ppm           |                            | >10        | 2<br><1     |              |          |
| Cadmium          | ppm<br>ppm    | ASTM D5185m<br>ASTM D5185m |            | <1<br><1    | <1           |          |
| ADDITIVES        | ppm           | method                     | limit/base | current     | history1     | history2 |
| Boron            | ppm           | ASTM D5185m                | 0          | 3           | 0            |          |
| Barium           | ppm           | ASTM D5185m                |            | 0           | 1            |          |
| Molybdenum       | ppm           | ASTM D5185m                | 0          | 0           | <1           |          |
| Manganese        | ppm           | ASTM D5185m                | 0          | <1          | 0            |          |
| <b>U</b>         |               |                            | 0          |             | <1           |          |
| Magnesium        | ppm           | ASTM D5185m                | 0          | 2           | 4            |          |
| Calcium          | ppm           | ASTM D5185m                |            | 4           |              |          |
| Phosphorus       | ppm           | ASTM D5185m                | 0          | 21          | 32           |          |
| Zinc             | ppm           | ASTM D5185m                |            | 9           | 8            |          |
| Sulfur           | ppm           | ASTM D5185m                | 0          | 364         | 299          |          |
| CONTAMINANTS     | ;             | method                     | limit/base | current     | history1     | history2 |
| Silicon          | ppm           | ASTM D5185m                | >25        | 1           | 1            |          |
| Sodium           | ppm           | ASTM D5185m                |            | 0           | 3            |          |
| Potassium        | ppm           | ASTM D5185m                | >20        | 5           | 2            |          |
| Water            | %             | ASTM D6304                 | >2.26      | 0.638       | <b>0.938</b> |          |
| ppm Water        | ppm           | ASTM D6304                 | >22600     | 6380        | <b>9</b> 380 |          |
| FLUID CLEANLIN   | IESS          | method                     | limit/base | current     | history1     | history2 |
| Particles >4µm   |               | ASTM D7647                 | >10000     | 8460        | <u> </u>     |          |
| Particles >6µm   |               | ASTM D7647                 | >2500      | 1711        | ▲ 5984       |          |
| Particles >14µm  |               | ASTM D7647                 | >320       | 63          | 162          |          |
| Particles >21µm  |               | ASTM D7647                 | >80        | 16          | 22           |          |
| Particles >38µm  |               | ASTM D7647                 | >20        | 1           | 5            |          |
| Particles >71µm  |               | ASTM D7647                 | >4         | 0           | 4            |          |
| Oil Cleanliness  |               | ISO 4406 (c)               | >20/18/15  | 20/18/13    | ▲ 22/20/15   |          |
| FLUID DEGRADA    | TION          | method                     | limit/base | current     | history1     | history2 |
| Acid Number (AN) | mg KOH/g      | ASTM D8045                 |            | 0.14        | 0.07         |          |
| . ,              |               |                            |            |             |              |          |

Contact/Location: CARLOS LEAL - CIMCAR Page 1 of 2



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|  | 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     |                            |
| Jun6/24                                | Appearance  | scalar                      | *Visual    | NORML   | NORML               | NORML    |                            |
| -nr                                    | Odor  | scalar                      | *Visual    | NORML   | NORML               | NORML    |                            |
|  | Emulsified Water  | scalar                      | *Visual    | >2.26   | NEG                 | NEG      |                            |
|  | Free Water  | scalar                      | *Visual    |   | NEG                 | NEG      |                            |
|  | FLUID PROPER  | TIES                        | method     | limit/base  | current             | history1 | history2                   |
|  | Visc @ 40°C   | cSt                         | ASTM D445  | 151   | 147                 | 134      |                            |
|  | Visc @ 100°C  | cSt                         | ASTM D445  | 28  | 23.81               | 24.7     |                            |
|  | Viscosity Index (VI)  | Scale                       | ASTM D2270 | 224   | 193                 | 218      |                            |
|  | SAMPLE IMAGE  | S                           | method     | limit/base  | current             | history1 | history2                   |
| Jun6/24                                | Color   |                             |            |   | •                   |          | no image                   |
|  | Bottom  |                             |            |   |                     |          | no image                   |
| ******                                 | GRAPHS  |                             |            |   |                     |          |                            |
| /24                                    | Ferrous Alloys  |                             |            | 491,520   | Particle Count      | t        | 726                        |
| Jun6/24                                | 8 - iron  |                             |            |   |                     |          |                            |
|  | E 6 A   |                             |            | 122,880   | Severe              |          | -24                        |
|  | 2   |                             |            | 30,720  |                     |          | -22                        |
|  |   |                             |            |   | Abnormal            |          | -20                        |
|  | 12/24   |                             |            | for 1 ml)   |                     | •        | -20<br>-18<br>-16<br>-14   |
|  | May   |                             |            | Jun6724<br>Jun6724<br>1500<br>1500<br>1500<br>1500<br>1500<br>1500<br>1500<br>150 | 1                   |          | +10                        |
|  | Non-ferrous Meta  | als                         |            | pitted 480  |                     |          | -16                        |
|  | 10<br>8 copper ]  |                             |            | b 120   |                     | \        | -14                        |
|  | E 6 -   |                             |            |   |                     |          |                            |
| VC                                     | € 4   |                             |            |   | [                   |          | +12                        |
|  | 2   |                             |            | 8   | +                   |          | -10                        |
|  | 0   |                             |            | \$2/24  | -                   |          | -8                         |
|  | May12/24  |                             |            | Jun6/24   |                     |          |                            |
|  | <br>Viscosity @ 40°C  |                             |            | 4   | ہوں۔<br>Acid Number | 14μ 21μ  | 38µ 71µ                    |
|  | 170 Abnormal  |                             |            | ₽0.15   |                     |          |                            |
|  | چ <sup>160</sup>  |                             |            | Ö Po 10   |                     |          |                            |
|  | ()<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 |                             |            | E 0.10  |                     |          |                            |
|  | 3 140 - Abnormal  |                             |            | 0.15<br>0.10<br>0.10<br>0.05<br>0.00  |                     |          |                            |
|  | 130   |                             |            |   | 4                   |          |                            |
| Υ.<br>C                                | May12/24  |                             |            | Jun6/24   | May12/24            |          |                            |
|  |   | O1 Madia                    | - Aug. 0   |   |                     |          |                            |
| Laboratory<br>Sample No.<br>Lab Number | : WearCheck USA - 50<br>: TO90004061<br>: 06205575  | 01 Madiso<br>Recei<br>Teste | ived :10   | , NC 27513<br>) Jun 2024<br>' Jun 2024  | CIMA                |          | IDI RD, UNIT<br>ARLSBAD, N |

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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