

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# **CUMMINS PEAK CLT**

Diesel Engine Fluid NAPA Motor Oil 15W40 (--- GAL)

#### Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORM  | ATION  | method   | limit/base                                   | current  | history1   | history2   |
|--|--|--|--|--|--|--|
| Sample Number  |  | Client Info  |  | WC0901697  |  |  |
| Sample Date  |  | Client Info  |  | 20 Mar 2024  |  |  |
| Machine Age  | hrs  | Client Info  |  | 677  |  |  |
| Oil Age  | hrs  | Client Info  |  | 47   |  |  |
| Oil Changed  |  | Client Info  |  | Changed  |  |  |
| Sample Status  |  |  |  | NORMAL   |  |  |
| CONTAMINATION  |  | method   | limit/base                                   | current  | history1   | history2   |
| Fuel   |  | WC Method  | >3.0   | <1.0   |  |  |
| Water  |  | WC Method  | >0.2   | NEG  |  |  |
| Glycol   |  | WC Method  |  | NEG  |  |  |
| WEAR METALS  |  | method   | limit/base                                   | current  | history1   | history2   |
| Iron   | ppm  | ASTM D5185m  | >90  | 3  |  |  |
| Chromium   | ppm  | ASTM D5185m  | >20  | <1   |  |  |
| Nickel   | ppm  | ASTM D5185m  | >2   | <1   |  |  |
| Titanium   | ppm  | ASTM D5185m  | >2   | <1   |  |  |
| Silver   | ppm  | ASTM D5185m  | >2   | 0  |  |  |
| Aluminum   | ppm  | ASTM D5185m  | >20  | 3  |  |  |
| Lead   | ppm  | ASTM D5185m  | >40  | 1  |  |  |
| Copper   | ppm  | ASTM D5185m  | >330   | <1   |  |  |
| Tin  | ppm  | ASTM D5185m  | >15  | 1  |  |  |
| Vanadium   | ppm  | ASTM D5185m  |  | <1   |  |  |
| Cadmium  | ppm  | ASTM D5185m  |  | <1   |  |  |
| ADDITIVES  |  | method   | limit/base                                   | current  | history1   | history2   |
| Boron  | ppm  | ASTM D5185m  |  | 64   |  |  |
| Barium   | ppm  | ASTM D5185m  |  | <1   |  |  |
| Molybdenum   | ppm  | ASTM D5185m  |  | 49   |  |  |
| Manganese  |  |  |  |  |  |  |
|  | ppm  | ASTM D5185m  |  | <1   |  |  |
| Magnesium  | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m   |  | <1<br>40   |  |  |
| Magnesium<br>Calcium   |  |  |  |  |  |  |
|  | ppm  | ASTM D5185m  |  | 40   |  |  |
| Calcium  | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m   |  | 40<br>2116   |  |  |
| Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  |  | 40<br>2116<br>1004   | <br><br>   | <br><br>   |
| Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base                                   | 40<br>2116<br>1004<br>1133   |  |  |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | limit/base                                   | 40<br>2116<br>1004<br>1133<br>4130   | <br><br>   | <br><br><br>   |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS  | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>method  |  | 40<br>2116<br>1004<br>1133<br>4130<br>current  | <br><br><br><br>history1                                     | <br><br><br><br>history2                                 |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | >25  | 40<br>2116<br>1004<br>1133<br>4130<br>current<br>6   | <br><br><br><br>history1<br>                                 | <br><br><br><br>history2                                 |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br><b>method</b><br>ASTM D5185m<br>ASTM D5185m  | >25  | 40<br>2116<br>1004<br>1133<br>4130<br>current<br>6<br>3  | <br><br><br><br>history1<br>                                 | <br><br><br><br>history2<br>                             |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | >25<br>>20                                   | 40<br>2116<br>1004<br>1133<br>4130<br>current<br>6<br>3<br>2   | <br><br><br><br>history1<br><br>                             | <br><br><br>history2<br><br>                             |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | >25<br>>20<br>limit/base                     | 40<br>2116<br>1004<br>1133<br>4130<br>current<br>6<br>3<br>2<br>2<br>current                                     | <br><br><br>history1<br><br><br>history1                     | <br><br><br>history2<br><br><br>history2                 |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %                           | ppm                            | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                              | >25<br>>20<br>limit/base<br>>6               | 40<br>2116<br>1004<br>1133<br>4130<br>current<br>6<br>3<br>2<br>2<br>current<br>0.1                              | <br><br><br><br>history1<br><br><br>history1<br>             | <br><br><br><br>history2<br><br>history2                 |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m               | >25<br>>20<br>limit/base<br>>6<br>>20        | 40<br>2116<br>1004<br>1133<br>4130<br>current<br>6<br>3<br>2<br>2<br>current<br>0.1<br>6.2                       | <br><br><br>history1<br><br><br>history1<br><br>history1     | <br><br><br><br>history2<br><br>history2<br><br>history2 |
| Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D7844<br>*ASTM D7844<br>*ASTM D7844 | >25<br>>20<br>limit/base<br>>6<br>>20<br>>30 | 40<br>2116<br>1004<br>1133<br>4130<br><b>current</b><br>6<br>3<br>2<br>2<br><b>current</b><br>0.1<br>6.2<br>16.4 | <br><br><br><br>history1<br><br><br>history1<br><br>history1 | <br><br><br>history2<br><br><br>history2<br><br>history2 |



# **OIL ANALYSIS REPORT**

| FT-IR (Direct Ti   | rend)              |                   | VISUAL  |            | method        | limit/base                             | curren   | nt history1       | history2              |
|--|--------------------|-------------------|---|------------|---------------|--|----------|-------------------|-----------------------|
| 30 - Oxidation   |                    |                   | White Metal                                     | scalar     | *Visual       | NONE                                   | NONE     |                   |                       |
| 25 - Sulfation   |                    |                   | Yellow Metal                                    | scalar     | *Visual       | NONE                                   | NONE     |                   |                       |
| 23<br>10<br>10<br>10   |                    |                   | Precipitate                                     | scalar     | *Visual       | NONE                                   | NONE     |                   |                       |
| 92-5<br>15   |                    |                   | Silt  | scalar     | *Visual       | NONE                                   | NONE     |                   |                       |
|  |                    |                   | Debris  | scalar     | *Visual       | NONE                                   | NONE     |                   |                       |
| 10-  |                    |                   | Sand/Dirt                                       | scalar     | *Visual       | NONE                                   | NONE     |                   |                       |
| 24   |                    | /24               | Appearance                                      | scalar     | *Visual       | NORML                                  | NORML    |                   |                       |
| Mar20/24   |                    | Mar20/24          | Odor  | scalar     | *Visual       | NORML                                  | NORML    |                   |                       |
| E.   |                    |                   | Emulsified Water                                | scalar     | *Visual       | >0.2                                   | NEG      |                   |                       |
| Base Number  |                    |                   | Free Water                                      | scalar     | *Visual       | >0.2                                   | NEG      |                   |                       |
| 3.0  |                    |                   |   |            |               | line it //e e e e                      |          |                   |                       |
| (B) 10 10 10 10 10 10 10 10 10 10 10 10 10   |                    |                   | FLUID PROPER                                    |            | method        | limit/base                             | curren   |                   | history2              |
| 5 4.U +  |                    |                   | Visc @ 100°C                                    | cSt        | ASTM D445     |  | 13.3     |                   |                       |
| ₩ 3.0<br>2.0   |                    |                   | GRAPHS  |            |               |  |          |                   |                       |
| <sup>66</sup> 1.0 -  |                    |                   | Ferrous Alloys                                  |            |               |  |          |                   |                       |
| 24 0.0   |                    | VC                | iron  |            |               |  |          |                   |                       |
| Mar20/24   |                    | 100-1             | 8 - nickel                                      |            |               |  |          |                   |                       |
| 2  |                    | 74                |   |            |               |  |          |                   |                       |
| Viscosity @ 100  | 0°C                |                   | Edd   |            |               |  |          |                   |                       |
| 18   |                    |                   | 4   |            |               |  |          |                   |                       |
| 17<br>Abnormal   |                    |                   |   |            |               |  |          |                   |                       |
|  |                    |                   | 2   |            |               |  |          |                   |                       |
| ()<br>0015<br>001)<br>3014   |                    |                   | 0   |            |               |  |          |                   |                       |
| 13 - Abnormal  |                    |                   | Mar20/24  |            |               | Mar20/24                               |          |                   |                       |
| 12-  |                    |                   | Mar   |            |               | Mar                                    |          |                   |                       |
| 11   |                    | 9                 | Non-ferrous Meta                                | ls         |               |  |          |                   |                       |
| Mar20/24   |                    | cure.             | 10 copper                                       |            |               |  |          |                   |                       |
| N S  |                    | - M -             | 8 -   |            |               |  |          |                   |                       |
|  |                    |                   |   |            |               |  |          |                   |                       |
|  |                    |                   | Е 6-  |            |               |  |          |                   |                       |
|  |                    |                   | 4   |            |               |  |          |                   |                       |
|  |                    |                   |   |            |               |  |          |                   |                       |
|  |                    |                   | 2   |            |               |  |          |                   |                       |
|  |                    |                   | 0   |            |               |  |          |                   |                       |
|  |                    |                   | 20/24   |            |               | 0/24 -                                 |          |                   |                       |
|  |                    |                   | Mar2  |            |               | Mar2                                   |          |                   |                       |
|  |                    |                   | Viscosity @ 100°                                | 2          |               |  | Base Nun | nber              |                       |
|  |                    |                   | 18  |            |               | 8.0                                    |          |                   |                       |
|  |                    |                   | 17-<br>Abnormal                                 |            |               | 7.0                                    |          |                   |                       |
|  |                    |                   | 16-   |            |               | (B/H6.0+<br>HOX 5.0+                   | 1        |                   |                       |
|  |                    |                   | ହି <sub>15</sub>                                |            |               | ¥5.0-                                  |          |                   |                       |
|  |                    |                   | ට 15<br>-000 ව<br>ද් 14                         |            |               | 1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0 |          |                   |                       |
|  |                    |                   | 12  |            |               |  |          |                   |                       |
|  |                    |                   | Abnormal  |            |               | 2.0 ·                                  |          |                   |                       |
|  |                    |                   | 12-   |            |               | 1.0                                    |          |                   |                       |
|  |                    |                   | 114   |            |               | -0.0                                   | 24       |                   | 24                    |
|  |                    |                   | Mar20/24  |            |               | Mar20/24                               | Mar20/2  |                   | Mar20/24              |
|  |                    |                   | Z   |            |               | N                                      | N        |                   | 2                     |
|  | L.                 | Laboratory        | : WearCheck USA - 50                            | )1 Madisc  | on Ave., Carv | v. NC 27513                            |          | CAROLINA POW      | ER SOLUTION           |
|  |                    |                   | : WC0901697                                     | Recei      |               | 9 Apr 2024                             |          |                   | W GROVER ST           |
|  | ACCREDITED         | Lab Number        | : 06142849                                      | Teste      | ed :10        | 0 Apr 2024                             |          | -                 | SHELBY, NC            |
|  | TESTING LABORATORY | Unique Number     |   | Diagr      | nosed :10     | 0 Apr 2024 - We                        | es Davis |                   | US 28150              |
|  | Certificate L2367  | Test Package      |   | daa chidid | 000 007 100   |  |          |                   | Contact: PAIGE        |
| THE PROPERTY AND ADDRESS OF THE PROPERTY OF TH | i o aiscuss th     | is sample report, | contact Customer Serv                           | ice at 1-8 | 00-237-136    | <del>У</del> .                         |          | paige@carolinapow | ersolutions.com       |
|  |                    | et mathade that a | are outside of the ISO .                        | 7025 000   |               |  |          | т                 |                       |
|  | * - Denotes te     |                   | are outside of the ISO a ecifications are based |            | pe of accred  | ditation.                              |          |                   | : (704)481-0782<br>F: |

Report Id: CARSHE [WUSCAR] 06142849 (Generated: 04/10/2024 04:36:38) Rev: 1

Contact/Location: PAIGE ? - CARSHE Page 2 of 2