

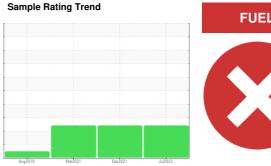
# **PROBLEM SUMMARY**



OKLAHOMA/102/EG - TRUCK-ON-HWY-HEAVY DUTY 07.46 [OKLAHOMA^102^EG - TRUCK-ON-HWY-HEAVY DUTY]

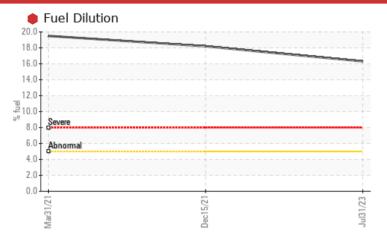
**Diesel Engine** 

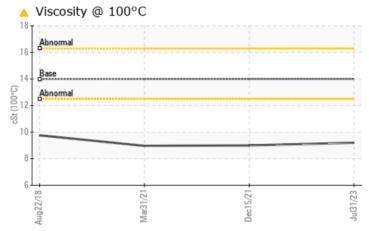
MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





## COMPONENT CONDITION SUMMARY





### **RECOMMENDATION**

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

| PROBLEMATIC T | EST RE | SULTS      |    |             |          |               |
|---------------|--------|------------|----|-------------|----------|---------------|
| Sample Status |        |            |    | SEVERE      | SEVERE   | SEVERE        |
| Fuel          | %      | ASTM D3524 | >5 | <b>16.3</b> | 18.2     | 19.5          |
| Visc @ 100°C  | cSt    | ASTM D445  | 14 | <b>9.2</b>  | <u> </u> | <b>▲</b> 8.97 |

Customer Id: SHEWIC Sample No.: WC0808074 Lab Number: 05926533 Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data: Sean Felton +1 919-379-4092 sfelton@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

| RECOMMENDED A                 | ECOMMENDED ACTIONS |      |         |   |  |  |
|-------------------------------|--------------------|------|---------|---|--|--|
| Action                        | Status             | Date | Done By | Description   |  |  |
| Change Fluid                  |                    |      | ?       | Oil and filter change at the time of sampling has been noted. |  |  |
| Change Filter                 |                    |      | ?       | Oil and filter change at the time of sampling has been noted. |  |  |
| Resample                      |                    |      | ?       | We recommend an early resample to monitor this condition.     |  |  |
| Check Fuel/injector<br>System |                    |      | ?       | We advise that you check the fuel injection system.           |  |  |

## HISTORICAL DIAGNOSIS

### 15 Dec 2021 Diag: Jonathan Hester

FUEL



We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please note that this is a corrected copy for laboratory data updates. All component wear rates are normal. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.



### 31 Mar 2021 Diag: Doug Bogart

FUEL



We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.



#### 22 Aug 2018 Diag: Jonathan Hester

NORMAL



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.





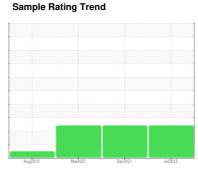
# **OIL ANALYSIS REPORT**



OKLAHOMA/102/EG - TRUCK-ON-HWY-HEAVY DUTY
07.46 [OKLAHOMA^102^EG - TRUCK-ON-HWY-HEAVY DUTY]

**Diesel Engine** 

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





## DIAGNOSIS

### Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of fuel present in the oil.

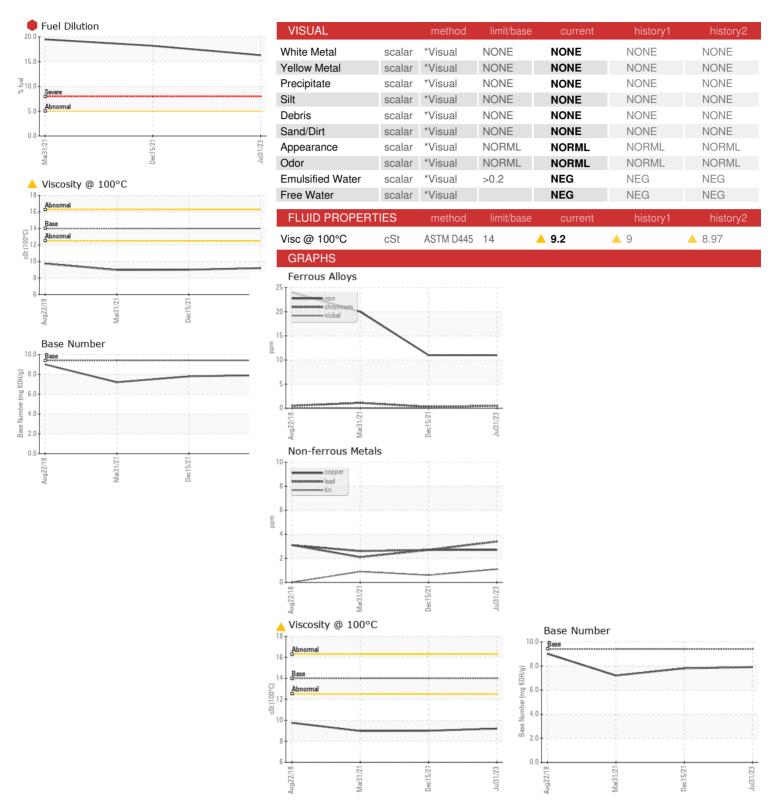
### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

| UPER15W40 (  | •   | Aug201  | 8 Mar2021  | Dec2021   | Jul2023  |  |
|--|---|---|--|---|--|--|
| SAMPLE INFORM  | MATION  | method  | limit/base   | current   | history1   | history2   |
| Sample Number  |   | Client Info   |  | WC0808074   | WC0634254  | WC0562747  |
| Sample Date  |   | Client Info   |  | 31 Jul 2023   | 15 Dec 2021  | 31 Mar 2021  |
| Machine Age  | hrs   | Client Info   |  | 5830  | 4740   | 4253   |
| Dil Age  | hrs   | Client Info   |  | 300   | 487  | 100  |
| Oil Changed  |   | Client Info   |  | Changed   | Changed  | Changed  |
| Sample Status  |   |   |  | SEVERE  | SEVERE   | SEVERE   |
| CONTAMINATIO   | N   | method  | limit/base   | current   | history1   | history2   |
| Glycol   |   | WC Method   |  | NEG   | NEG  | NEG  |
| WEAR METALS  |   | method  | limit/base   | current   | history1   | history2   |
| ron  | ppm   | ASTM D5185m   | >100   | 11  | 11   | 20   |
| Chromium   | ppm   | ASTM D5185m   | >20  | <1  | <1   | 1  |
| lickel   | ppm   | ASTM D5185m   | >2   | <1  | 0  | 0  |
| itanium  | ppm   | ASTM D5185m   | >2   | 0   | <1   | <1   |
| Silver   | ppm   | ASTM D5185m   | >2   | 0   | 0  | <1   |
| Aluminum   | ppm   | ASTM D5185m   | >25  | 2   | 2  | 7  |
| ead  | ppm   | ASTM D5185m   | >40  | 3   | 3  | 3  |
| Copper   | ppm   | ASTM D5185m   | >330   | 3   | 3  | 2  |
| īn   | ppm   | ASTM D5185m   | >15  | 1   | <1   | <1   |
| Antimony   | ppm   | ASTM D5185m   |  |   | 0  | 0  |
| anadium/   | ppm   | ASTM D5185m   |  | 0   | 0  | 0  |
| Cadmium  | ppm   | ASTM D5185m   |  | 0   | 0  | 0  |
| ADDITIVES  |   | method  | limit/base   | current   | history1   | history2   |
| Boron  | ppm   | ASTM D5185m   | 0  | 49  | 48   | 36   |
| Barium   | ppm   | ASTM D5185m   | 0  | 0   | 0  | 0  |
| Nolybdenum   | ppm   | ASTM D5185m   | 0  | 35  | 17   | 31   |
| Manganese  |   | ACTM DE10Em   |  | <1  | .4   | <1   |
|  | ppm   | ASTM D5185m   |  |   | <1   | < 1  |
| -  | ppm   | ASTM D5185m   | 0  | 396   | 504  | 389  |
| /lagnesium   |   |   | 0  | 396<br>1361   |  |  |
| Magnesium<br>Calcium   | ppm   | ASTM D5185m   | 0  |   | 504  | 389  |
| Magnesium<br>Calcium<br>Phosphorus   | ppm   | ASTM D5185m<br>ASTM D5185m  | 0  | 1361  | 504<br>1251  | 389<br>1352  |
| Magnesium<br>Calcium<br>Phosphorus<br>Zinc   | ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 0  | 1361<br>327   | 504<br>1251<br>586   | 389<br>1352<br>589   |
| Magnesium<br>Calcium<br>Phosphorus<br>Cinc   | ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 0 limit/base                                       | 1361<br>327<br>769<br>2234  | 504<br>1251<br>586<br>641  | 389<br>1352<br>589<br>700  |
| Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS   | ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base   | 1361<br>327<br>769<br>2234  | 504<br>1251<br>586<br>641<br>1865                                | 389<br>1352<br>589<br>700<br>1629  |
| Magnesium Calcium Phosphorus Zinc Sulfur 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   | limit/base   | 1361<br>327<br>769<br>2234<br>current                                   | 504<br>1251<br>586<br>641<br>1865<br>history1                    | 389<br>1352<br>589<br>700<br>1629<br>history2  |
| Magnesium Calcium Phosphorus Linc Sulfur CONTAMINANTS Silicon Sodium   | 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<br>ASTM D5185m  | limit/base   | 1361<br>327<br>769<br>2234<br>current                                   | 504<br>1251<br>586<br>641<br>1865<br>history1                    | 389<br>1352<br>589<br>700<br>1629<br>history2  |
| Magnesium Calcium Phosphorus Cinc Gulfur CONTAMINANTS Silicon Godium Potassium   | 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<br>ASTM D5185m<br>ASTM D5185m   | limit/base   | 1361<br>327<br>769<br>2234<br>current<br>4<br>0                         | 504<br>1251<br>586<br>641<br>1865<br>history1<br>6               | 389<br>1352<br>589<br>700<br>1629<br>history2<br>13  |
| Magnesium Calcium Phosphorus Cinc Gulfur CONTAMINANTS Silicon Godium Potassium   | ppm ppm ppm ppm ppm ppm ppm ppm                             | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>Method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                                       | limit/base >25 >20                                 | 1361<br>327<br>769<br>2234<br>current<br>4<br>0<br>1                    | 504<br>1251<br>586<br>641<br>1865<br>history1<br>6<br><1         | 389<br>1352<br>589<br>700<br>1629<br>history2<br>13<br>3   |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED                            | ppm ppm ppm ppm ppm ppm ppm ppm                             | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m                             | limit/base >25 >20 >5                              | 1361<br>327<br>769<br>2234<br>current<br>4<br>0<br>1                    | 504 1251 586 641 1865 history1 6 <1 0                            | 389 1352 589 700 1629 history2 13 3 0  |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m ASTM D3524                          | limit/base >25 >20 >5 limit/base                   | 1361<br>327<br>769<br>2234<br>current<br>4<br>0<br>1<br>16.3<br>current | 504 1251 586 641 1865 history1 6 <1 0 18.2 history1 0.1          | 389 1352 589 700 1629 history2 13 3 0 19.5   |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Mitration           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m ASTM D3524              | limit/base >25 >20 >5 limit/base >3                | 1361<br>327<br>769<br>2234<br>current<br>4<br>0<br>1<br>16.3            | 504 1251 586 641 1865 history1 6 <1 0 18.2 history1              | 389 1352 589 700 1629 history2 13 3 0 19.5 history2  |
| Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Mitration           | ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm                | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844                  | limit/base >25 >20 >5 limit/base >3 >20            | 1361 327 769 2234 current 4 0 1 16.3 current 0.1 8.4 20.9               | 504 1251 586 641 1865 history1 6 <1 0 18.2 history1 0.1 9.2      | 389 1352 589 700 1629 history2 13 3 0 19.5 history2  |
| Magnesium Calcium Phosphorus Zinc Gulfur CONTAMINANTS Gilicon Godium Potassium Fuel INFRA-RED Goot % Nitration Gulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm Abs/.1mm                | ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145 | limit/base >25 >20 >5 limit/base >3 >20 >3 >20 >30 | 1361 327 769 2234 current 4 0 1 16.3 current 0.1 8.4 20.9               | 504 1251 586 641 1865 history1 6 <1 0 18.2 history1 0.1 9.2 21.6 | 389<br>1352<br>589<br>700<br>1629<br>history2<br>13<br>3<br>0<br>● 19.5<br>history2<br>0.1<br>10.3<br>26.4 |



# **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: WC0808074 : 05926533 : 10606480

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 16 Aug 2023 Diagnosed : 17 Aug 2023 Diagnostician : Sean Felton

Test Package : CONST (Additional Tests: PercentFuel, TBN) 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)

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