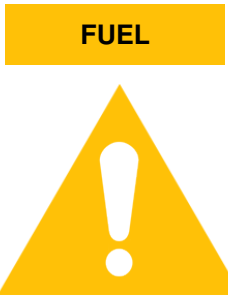
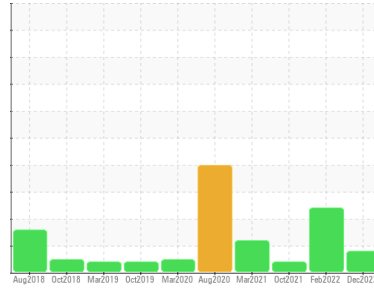




# PROBLEM SUMMARY

Sample Rating Trend



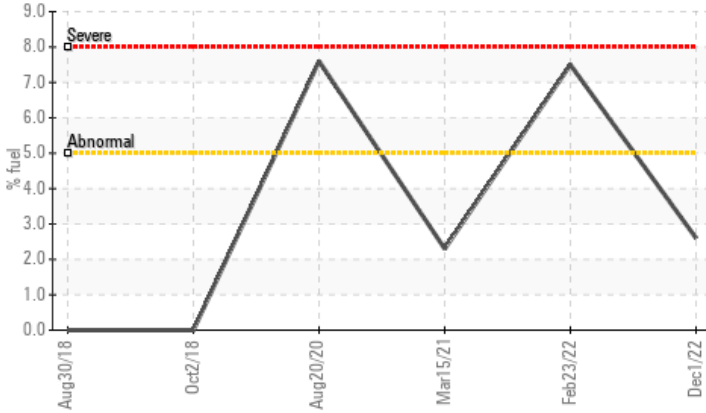
Machine Id  
**PIERCE 2766**

Component  
**Diesel Engine**

Fluid  
**CHEVRON DELO 400 XLE 15W40 (35 QTS)**

## COMPONENT CONDITION SUMMARY

### ▲ Fuel Dilution



## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status |   |            |    | <b>MARGINAL</b> | SEVERE | MARGINAL |
|---------------|---|------------|----|-----------------|--------|----------|
| Fuel          | % | ASTM D3524 | >5 | ▲ 2.6           | ● 7.5  | <1.0     |

Customer Id: TOWCARNC  
Sample No.: WC0741904  
Lab Number: 05716959  
Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@wearcheckusa.com)

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

## RECOMMENDED 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. |

## HISTORICAL DIAGNOSIS

### 23 Feb 2022 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. 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.

[view report](#)



### 01 Oct 2021 Diag: Jonathan Hester

#### VISCOSITY



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. Confirm oil type.

[view report](#)



### 15 Mar 2021 Diag: Doug Bogart

#### FUEL



No corrective action is recommended at this time. Resample at the next service interval to monitor. Please note that this is a corrected copy for data entry updates. All component wear rates are normal. Light fuel dilution occurring. Fuel is present in the oil and is lowering the viscosity.

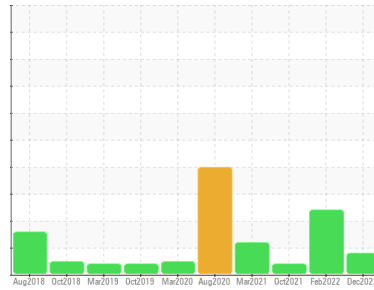
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**PIERCE 2766**

Component  
**Diesel Engine**

Fluid  
**CHEVRON DELO 400 XLE 15W40 (35 QTS)**

## DIAGNOSIS

### Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Light fuel dilution occurring.

### 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 INFORMATION

| method        | limit/base  | current            | history1    | history2    |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | <b>WC0741904</b>   | WC0680420   | WC0617001   |
| Sample Date   | Client Info | <b>01 Dec 2022</b> | 23 Feb 2022 | 01 Oct 2021 |
| Machine Age   | hrs         | <b>9278</b>        | 8876        | 8627        |
| Oil Age       | hrs         | <b>402</b>         | 529         | 280         |
| Oil Changed   | Client Info | <b>Changed</b>     | Changed     | Not Changed |
| Sample Status |             | <b>MARGINAL</b>    | SEVERE      | MARGINAL    |

## CONTAMINATION

| method | limit/base | current    | history1 | history2 |
|--------|------------|------------|----------|----------|
| Glycol | WC Method  | <b>NEG</b> | NEG      | NEG      |

## WEAR METALS

| method   | limit/base | current          | history1     | history2 |    |
|----------|------------|------------------|--------------|----------|----|
| Iron     | ppm        | ASTM D5185m >200 | <b>39</b>    | 35       | 21 |
| Chromium | ppm        | ASTM D5185m >10  | <b>4</b>     | 1        | 1  |
| Nickel   | ppm        | ASTM D5185m >4   | <b>&lt;1</b> | 0        | 0  |
| Titanium | ppm        | ASTM D5185m >2   | <b>&lt;1</b> | 10       | 11 |
| Silver   | ppm        | ASTM D5185m >2   | <b>0</b>     | 0        | <1 |
| Aluminum | ppm        | ASTM D5185m >30  | <b>7</b>     | 11       | 9  |
| Lead     | ppm        | ASTM D5185m >30  | <b>4</b>     | 8        | 2  |
| Copper   | ppm        | ASTM D5185m >30  | <b>2</b>     | 2        | 2  |
| Tin      | ppm        | ASTM D5185m >4   | <b>&lt;1</b> | 1        | <1 |
| Antimony | ppm        | ASTM D5185m      | <b>---</b>   | ---      | 0  |
| Vanadium | ppm        | ASTM D5185m      | <b>0</b>     | 0        | <1 |
| Cadmium  | ppm        | ASTM D5185m      | <b>0</b>     | 0        | 0  |

## ADDITIVES

| method     | limit/base | current          | history1     | history2 |      |
|------------|------------|------------------|--------------|----------|------|
| Boron      | ppm        | ASTM D5185m      | <b>30</b>    | 37       | 69   |
| Barium     | ppm        | ASTM D5185m      | <b>0</b>     | 0        | 0    |
| Molybdenum | ppm        | ASTM D5185m      | <b>66</b>    | 37       | 44   |
| Manganese  | ppm        | ASTM D5185m      | <b>&lt;1</b> | <1       | <1   |
| Magnesium  | ppm        | ASTM D5185m      | <b>319</b>   | 559      | 678  |
| Calcium    | ppm        | ASTM D5185m      | <b>1759</b>  | 1330     | 1438 |
| Phosphorus | ppm        | ASTM D5185m 760  | <b>895</b>   | 538      | 706  |
| Zinc       | ppm        | ASTM D5185m 830  | <b>1110</b>  | 682      | 859  |
| Sulfur     | ppm        | ASTM D5185m 2770 | <b>3712</b>  | 2209     | 2836 |

## CONTAMINANTS

| method    | limit/base | current         | history1     | history2 |      |
|-----------|------------|-----------------|--------------|----------|------|
| Silicon   | ppm        | ASTM D5185m >30 | <b>18</b>    | 7        | 6    |
| Sodium    | ppm        | ASTM D5185m     | <b>6</b>     | 8        | 8    |
| Potassium | ppm        | ASTM D5185m >20 | <b>6</b>     | 11       | 11   |
| Fuel      | %          | ASTM D3524 >5   | <b>▲ 2.6</b> | 7.5      | <1.0 |

## INFRA-RED

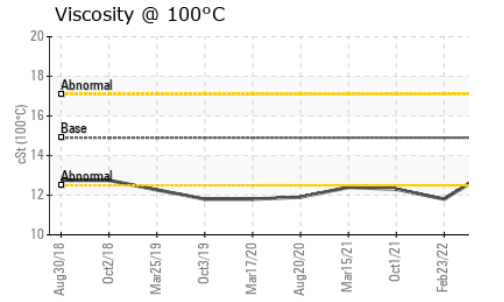
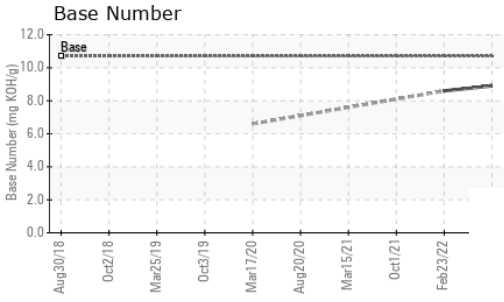
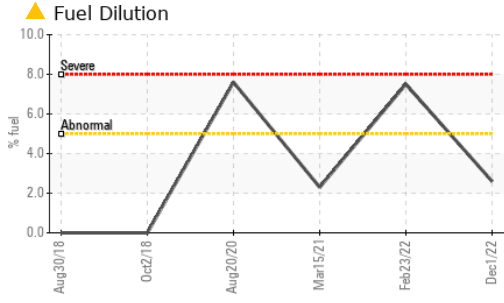
| method    | limit/base | current         | history1    | history2 |      |
|-----------|------------|-----------------|-------------|----------|------|
| Soot %    | %          | *ASTM D7844 >3  | <b>2</b>    | 2.8      | 1.8  |
| Nitration | Abs/cm     | *ASTM D7624 >20 | <b>11.6</b> | 14.1     | 11.4 |
| Sulfation | Abs/.1mm   | *ASTM D7415 >30 | <b>24.2</b> | 30.5     | 23.6 |

## FLUID DEGRADATION

| method           | limit/base | current         | history1    | history2 |      |
|------------------|------------|-----------------|-------------|----------|------|
| Oxidation        | Abs/.1mm   | *ASTM D7414 >25 | <b>16.1</b> | 22.2     | 16.5 |
| Base Number (BN) | mg KOH/g   | ASTM D2896 10.7 | <b>8.9</b>  | 8.6      | ---  |



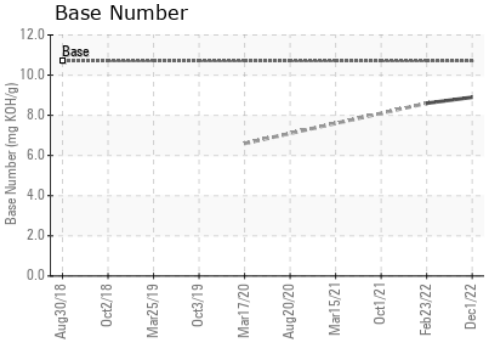
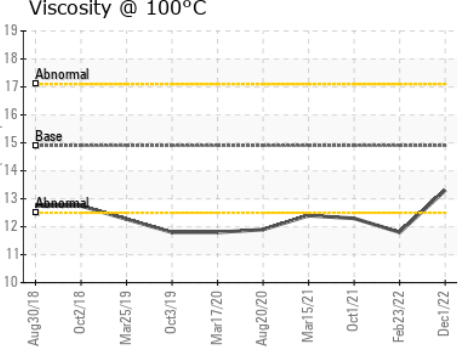
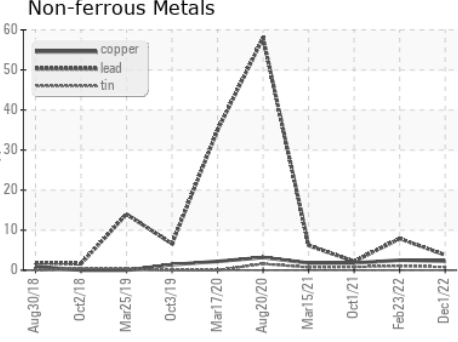
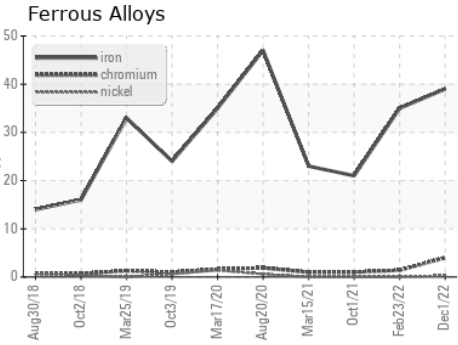
# OIL ANALYSIS REPORT



| 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    |
| Odor             | scalar | *Visual    | NORML   | NORML    | NORML    |
| Emulsified Water | scalar | *Visual    | >0.2    | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |        |
|------------------|--------|------------|---------|-------------|----------|--------|
| Visc @ 100°C     | cSt    | ASTM D445  | 14.9    | <b>13.3</b> | ▲ 11.8   | ▲ 12.3 |

### GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0741904 **Received** : 14 Dec 2022  
**Lab Number** : **05716959** **Diagnosed** : 15 Dec 2022  
**Unique Number** : 10256535 **Diagnostician** : Jonathan Hester  
**Test Package** : CONST ( Additional Tests: PercentFuel, TBN )

**TOWN OF CARY**  
 420 JAMES JACKSON AVENUE  
 CARY, NC  
 US 27513  
 Contact: BRANDON PASINSKI  
 brandon.pasinski@townofcary.org  
 T: (919)469-4098  
 F: (919)380-6420

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)