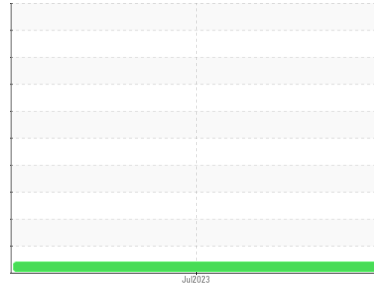




# FUEL REPORT

Sample Rating Trend

VIS DEBRIS



Machine Id  
**UNC ROCKINGHAM - NURSING HOME BT**

Component  
**Diesel Fuel**

Fluid  
**DIESEL FUEL No. 2 (--- GAL)**

## DIAGNOSIS

### ▲ Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

### Corrosion

All metal levels are normal indicating no corrosion in the system.

### ▲ Contaminants

Moderate concentration of visible dirt/debris present in the fuel. The water content is negligible. There is no bacteria or fungus (yeast and/or mold) indicated in the sample.

### Fuel Condition

Sulfur value derived by ASTM D5453 method for ULSD validation.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|----------|----------|
| Sample Number      | Client Info |             |            | <b>WC0787039</b>   | ---      | ---      |
| Sample Date        | Client Info |             |            | <b>14 Jul 2023</b> | ---      | ---      |
| Machine Age        | hrs         | Client Info |            | <b>0</b>           | ---      | ---      |
| Sample Status      |             |             |            | <b>ABNORMAL</b>    | ---      | ---      |

| PHYSICAL PROPERTIES        |        | method           | limit/base | current      | history1 | history2 |
|----------------------------|--------|------------------|------------|--------------|----------|----------|
| Specific Gravity           |        | *ASTM D1298      |            | <b>0.843</b> | ---      | ---      |
| Fuel Color                 | text   | *Visual Screen   |            | <b>Red</b>   | ---      | ---      |
| ASTM Color                 | scalar | *ASTM D1500      |            | <b>L4.5</b>  | ---      | ---      |
| Visc @ 40°C                | cSt    | ASTM D445        | 4.1        | <b>2.46</b>  | ---      | ---      |
| Pensky-Martens Flash Point | °C     | *PMCC Calculated |            | <b>58</b>    | ---      | ---      |

| SULFUR CONTENT |     | method      | limit/base | current    | history1 | history2 |
|----------------|-----|-------------|------------|------------|----------|----------|
| Sulfur         | ppm | ASTM D5185m |            | <b>439</b> | ---      | ---      |
| Sulfur (UVF)   | ppm | ASTM D5453  |            | <b>370</b> | ---      | ---      |

| DISTILLATION           |    | method   | limit/base | current    | history1 | history2 |
|------------------------|----|----------|------------|------------|----------|----------|
| Initial Boiling Point  | °C | ASTM D86 |            | <b>162</b> | ---      | ---      |
| 5% Distillation Point  | °C | ASTM D86 |            | <b>191</b> | ---      | ---      |
| 10% Distill Point      | °C | ASTM D86 |            | <b>201</b> | ---      | ---      |
| 15% Distillation Point | °C | ASTM D86 |            | <b>209</b> | ---      | ---      |
| 20% Distill Point      | °C | ASTM D86 |            | <b>217</b> | ---      | ---      |
| 30% Distill Point      | °C | ASTM D86 |            | <b>231</b> | ---      | ---      |
| 40% Distill Point      | °C | ASTM D86 |            | <b>245</b> | ---      | ---      |
| 50% Distill Point      | °C | ASTM D86 |            | <b>258</b> | ---      | ---      |
| 60% Distill Point      | °C | ASTM D86 |            | <b>272</b> | ---      | ---      |
| 70% Distill Point      | °C | ASTM D86 |            | <b>287</b> | ---      | ---      |
| 80% Distill Point      | °C | ASTM D86 |            | <b>304</b> | ---      | ---      |
| 85% Distillation Point | °C | ASTM D86 |            | <b>314</b> | ---      | ---      |
| 90% Distill Point      | °C | ASTM D86 |            | <b>325</b> | ---      | ---      |
| 95% Distillation Point | °C | ASTM D86 |            | <b>342</b> | ---      | ---      |
| Final Boiling Point    | °C | ASTM D86 |            | <b>350</b> | ---      | ---      |
| Distillation Residue   | %  | ASTM D86 |            | <b>1.4</b> | ---      | ---      |
| Distillation Loss      | %  | ASTM D86 |            | <b>0.7</b> | ---      | ---      |

| IGNITION QUALITY |  | method     | limit/base | current     | history1 | history2 |
|------------------|--|------------|------------|-------------|----------|----------|
| API Gravity      |  | ASTM D7777 |            | <b>36.4</b> | ---      | ---      |
| Cetane Index     |  | ASTM D4737 | <40.0      | <b>47.1</b> | ---      | ---      |

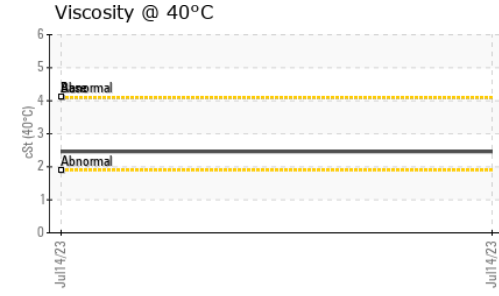
| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | <1.0       | <b>0</b>     | ---      | ---      |
| Sodium       | ppm | ASTM D5185m | <0.1       | <b>&lt;1</b> | ---      | ---      |
| Potassium    | ppm | ASTM D5185m | <0.1       | <b>&lt;1</b> | ---      | ---      |
| Water        | %   | ASTM D6304  | <0.05      | <b>0.005</b> | ---      | ---      |
| ppm Water    | ppm | ASTM D6304  | <500       | <b>51.2</b>  | ---      | ---      |
| % Gasoline   | %   | *In-House   | <0.50      | <b>0.0</b>   | ---      | ---      |
| % Biodiesel  | %   | *In-House   | <20.0      | <b>0.0</b>   | ---      | ---      |


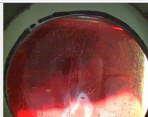


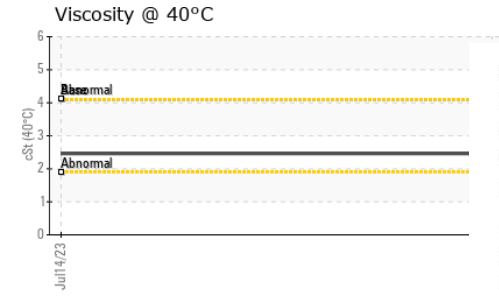
# FUEL REPORT



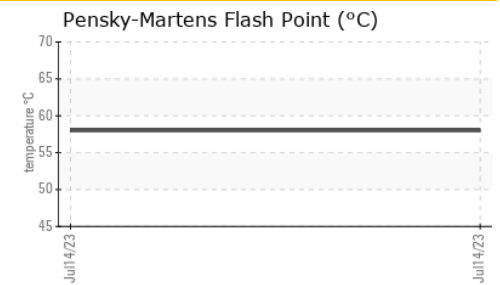
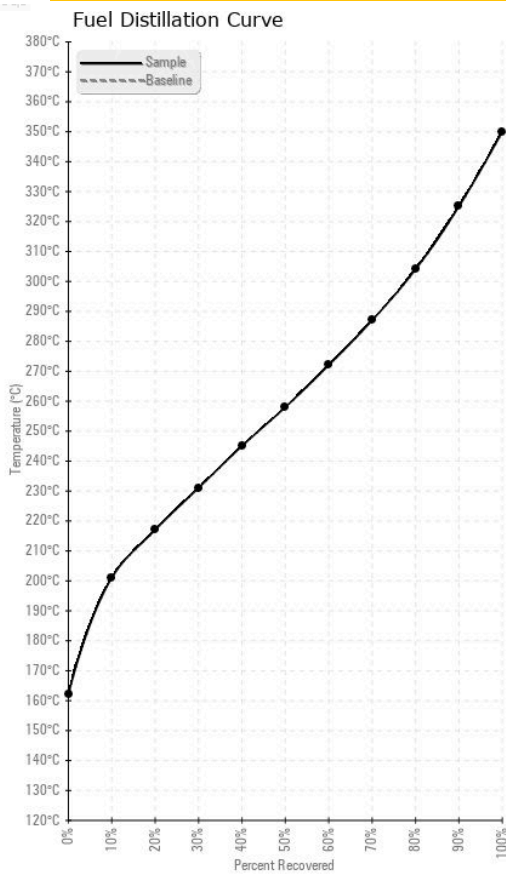
| HEAVY METALS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Aluminum     | ppm | ASTM D5185m | <0.1       | <b>&lt;1</b> | ---      | ---      |
| Nickel       | ppm | ASTM D5185m | <0.1       | <b>0</b>     | ---      | ---      |
| Lead         | ppm | ASTM D5185m | <0.1       | <b>0</b>     | ---      | ---      |
| Vanadium     | ppm | ASTM D5185m | <0.1       | <b>&lt;1</b> | ---      | ---      |
| Iron         | ppm | ASTM D5185m | <0.1       | <b>0</b>     | ---      | ---      |
| Calcium      | ppm | ASTM D5185m | <0.1       | <b>0</b>     | ---      | ---      |
| Magnesium    | ppm | ASTM D5185m | <0.1       | <b>1</b>     | ---      | ---      |
| Phosphorus   | ppm | ASTM D5185m | <0.1       | <b>0</b>     | ---      | ---      |
| Zinc         | ppm | ASTM D5185m | <0.1       | <b>0</b>     | ---      | ---      |



| SAMPLE IMAGES |   | method | limit/base | current  | history1 | history2 |
|---------------|---|--------|------------|----------|----------|----------|
| Color         |  |        |            | no image | no image | no image |
| Bottom        |  |        |            | no image | no image | no image |



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0787039      **Received** : 19 Jul 2023  
**Lab Number** : 05902707      **Diagnosed** : 26 Jul 2023  
**Unique Number** : 10564063      **Diagnostician** : Doug Bogart  
**Test Package** : DF-2 ( Additional Tests: Screen )

**VITAL FUEL SYSTEMS**  
 1076 CLASSIC RD  
 APEX, NC  
 US 27539  
 Contact: JOHN MORREALE  
 jmorreale@vitalfuelsystems.com  
 T: (919)629-8180  
 F: (919)303-7399

Certificate L2367  
 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)