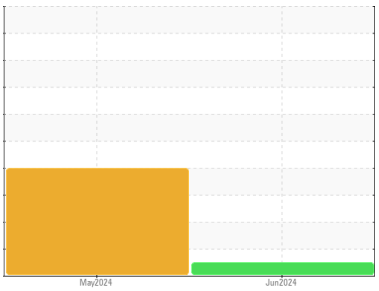
# FUEL REPORT

Sample Rating Trend




NORMAL

Area
## MUSC Columbia - Downtown [18596]
Machine Id
## [MUSC Columbia - Downtown] KOHLER
Component
**Diesel Fuel**
Fluid
**No.2 DIESEL FUEL (ULTRALOW SULPHUR) (300 GAL)**

## DIAGNOSIS

**Recommendation**
All laboratory tests indicate that this sample meets specifications for No.2 low-sulfur diesel fuel.

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

**Contaminants**
The water content is negligible. There is no bacteria or fungus (yeast and/or mold) indicated in the sample. There is no indication of any contamination in the fuel. The amount and size of particulates present in the system are acceptable.

**Fuel Condition**
Sulfur value derived by ASTM D5453 method for ULSD validation.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC06220598** | WC06179669 | --- |
| Sample Date | | Client Info | | **17 Jun 2024** | 07 May 2024 | --- |
| Machine Age | hrs | Client Info | | **0** | 0 | --- |
| Sample Status | | | | **NORMAL** | ABNORMAL | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel Color | text | *Visual Screen | Yllow | **Red** | Red | --- |
| ASTM Color | scalar | *ASTM D1500 | | **L4.5** | L4.0 | --- |
| Pensky-Martens Flash Point | °C | *PMCC Calculated | 52 | **61.7** | 62.5 | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sulfur | ppm | ASTM D5185m | 10 | **0** | 54 | --- |
| Sulfur (UVF) | ppm | ASTM D5453 | | **37** | 50 | --- |

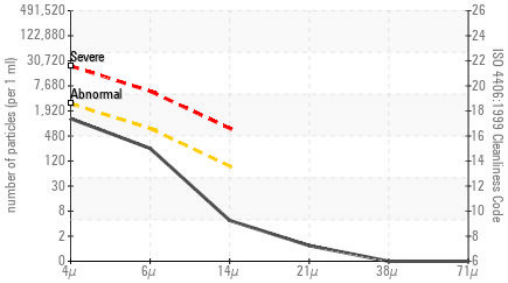
| DISTILLATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Initial Boiling Point | °C | ASTM D86 | 165 | **173** | 174 | --- |
| 5% Distillation Point | °C | ASTM D86 | | **196** | 196 | --- |
| 10% Distill Point | °C | ASTM D86 | 201 | **206** | 206 | --- |
| 15% Distillation Point | °C | ASTM D86 | | **214** | 214 | --- |
| 20% Distill Point | °C | ASTM D86 | 216 | **222** | 222 | --- |
| 30% Distill Point | °C | ASTM D86 | 230 | **236** | 236 | --- |
| 40% Distill Point | °C | ASTM D86 | 243 | **249** | 249 | --- |
| 50% Distill Point | °C | ASTM D86 | 255 | **261** | 262 | --- |
| 60% Distill Point | °C | ASTM D86 | 267 | **275** | 275 | --- |
| 70% Distill Point | °C | ASTM D86 | 280 | **288** | 289 | --- |
| 80% Distill Point | °C | ASTM D86 | 295 | **303** | 304 | --- |
| 85% Distillation Point | °C | ASTM D86 | | **314** | 315 | --- |
| 90% Distill Point | °C | ASTM D86 | 310 | **325** | 326 | --- |
| 95% Distillation Point | °C | ASTM D86 | | **343** | 344 | --- |
| Final Boiling Point | °C | ASTM D86 | 341 | **359** | 360 | --- |

| IGNITION QUALITY | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| API Gravity | ASTM D7777 | 37.7 | **37** | 37 | --- |
| Cetane Index | ASTM D4737 | <40.0 | **50** | 49 | --- |

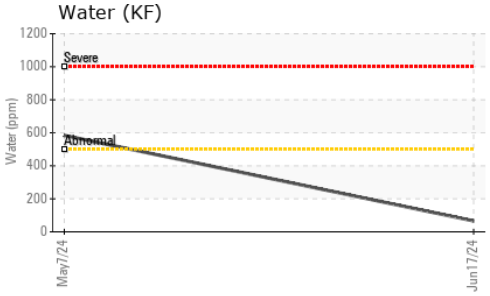
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | <1.0 | **<1** | 0 | --- |
| Sodium | ppm | ASTM D5185m | <0.1 | **<1** | <1 | --- |
| Potassium | ppm | ASTM D5185m | <0.1 | **0** | 0 | --- |
| Water | % | ASTM D6304 | <0.05 | **0.006** | ▲ 0.058 | --- |
| ppm Water | ppm | ASTM D6304 | <500 | **66** | ▲ 584 | --- |
| % Gasoline | % | *In-House | <0.50 | **0.0** | 0.0 | --- |
| % Biodiesel | % | *In-House | <20.0 | **0.0** | 0.0 | --- |

# FUEL REPORT

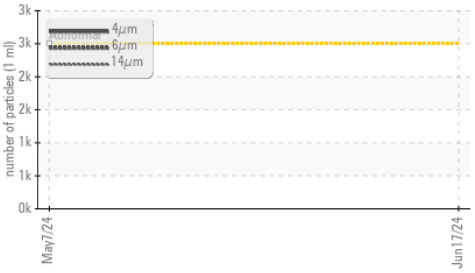
Particle Count



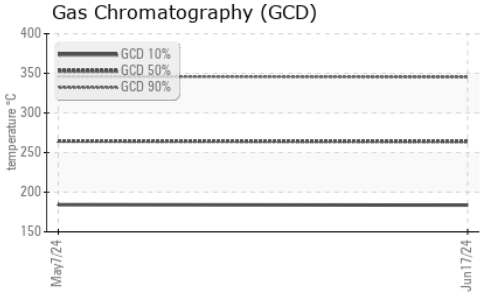

Water (KF)



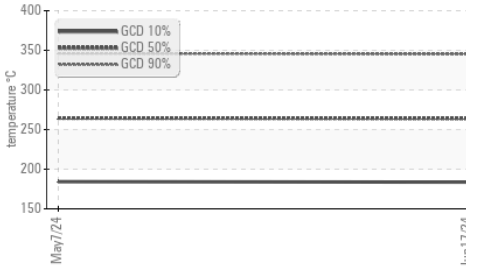

Particle Trend




Gas Chromatography (GCD)




Gas Chromatography (GCD)



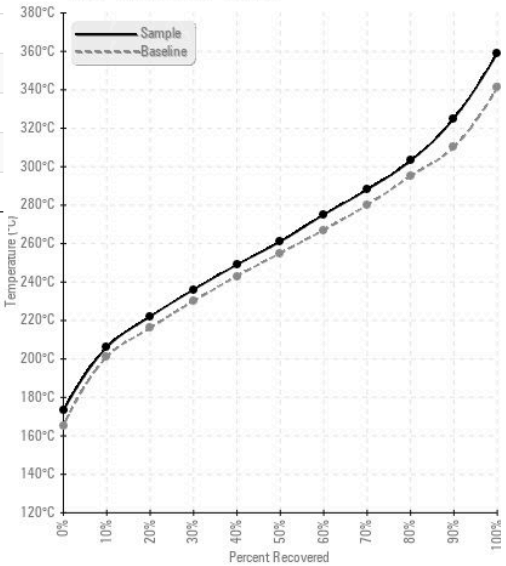

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Particles >4µm | ASTM D7647 | >2500 | **1099** | --- | --- |
| Particles >6µm | ASTM D7647 | >640 | **213** | --- | --- |
| Particles >14µm | ASTM D7647 | >80 | **4** | --- | --- |
| Particles >21µm | ASTM D7647 | >20 | **1** | --- | --- |
| Particles >38µm | ASTM D7647 | >4 | **0** | --- | --- |
| Particles >71µm | ASTM D7647 | >3 | **0** | --- | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | **17/15/9** | --- | --- |

| HEAVY METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Aluminum | ppm | ASTM D5185m | <0.1 | **0** | 0 | --- |
| Nickel | ppm | ASTM D5185m | <0.1 | **0** | 0 | --- |
| Lead | ppm | ASTM D5185m | <0.1 | **0** | 0 | --- |
| Vanadium | ppm | ASTM D5185m | <0.1 | **0** | 0 | --- |
| Iron | ppm | ASTM D5185m | <0.1 | **0** | 0 | --- |
| Calcium | ppm | ASTM D5185m | <0.1 | **0** | 3 | --- |
| Magnesium | ppm | ASTM D5185m | <0.1 | **<1** | 0 | --- |
| Phosphorus | ppm | ASTM D5185m | <0.1 | **<1** | 4 | --- |
| Zinc | ppm | ASTM D5185m | <0.1 | **0** | <1 | --- |

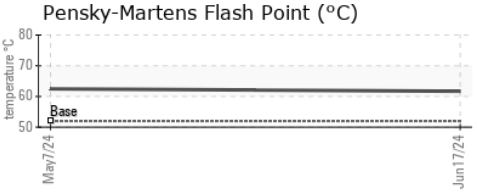
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  | *no image* |
| Bottom | | |  |  | *no image* |

## GRAPHS

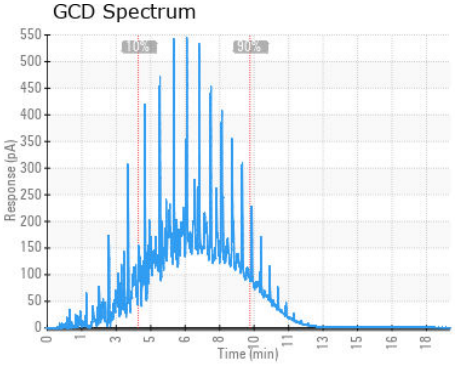
Fuel Distillation Curve




Pensky-Martens Flash Point (°C)




GCD Spectrum




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC06220598
**Lab Number** : 06220598
**Unique Number** : 11098795
**Test Package** : DF-2 ( Additional Tests: Fuel, Screen )

**Received** : 25 Jun 2024
**Tested** : 02 Jul 2024
**Diagnosed** : 02 Jul 2024 - Doug Bogart

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)*

**PETROLEUM RECOVERY SERVICES**
210 POWELL DR
SUMMERVILLE, SC
US 29483
Contact: AJAY EL
Ajay@prsfuel.com
T: (843)225-1777
F:

Report Id: PETSUM [WUSCAR] 06220598 (Generated: 07/02/2024 23:58:31) Rev: 1

Contact/Location: AJAY EL - PETSUM