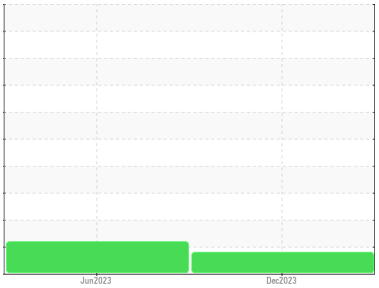
# FUEL REPORT

Sample Rating Trend




**OFF SPEC**

Machine Id
## 4100 GORDON BAKER
Component
**Diesel Fuel**
Fluid
**No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you check all areas where contaminants can enter the system. We recommend an early resample to monitor this condition.

**Corrosion**

{not applicable}

**Contaminants**

The flash point is lower than normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible.

**Fuel Condition**

The fuel is no longer serviceable due to the presence of contaminants. Laboratory tests indicate that this sample does NOT meet specifications for No.2 diesel fuel, low sulfur (CGSB-3.517-3 type A).

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PP0000878** | WC0851952 | --- |
| Sample Date | | Client Info | | **08 Dec 2023** | 06 Jun 2023 | --- |
| Machine Age | hrs | Client Info | | **0** | 0 | --- |
| Sample Status | | | | **SEVERE** | ATTENTION | --- |

| PHYSICAL PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Specific Gravity | | ASTM D1298* | 0.839 | **0.851** | 0.837 | --- |
| Fuel Color | text | Visual Screen* | Yllow | **Orang** | Red | --- |
| Visc @ 40°C | cSt | ASTM D7279(m) | 3.0 | **2.5** | 2.5 | --- |
| Pensky-Martens Flash Point | °C | ASTM D7215* | 52 | **30.8** | 56.4 | --- |

| SULFUR CONTENT | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sulfur | ppm | ASTM D5185(m) | 10 | **15** | 7 | --- |

| DISTILLATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Initial Boiling Point | °C | ASTM D2887* | 165 | **146** | 168 | --- |
| 5% Distillation Point | °C | ASTM D2887* | | **195** | 196 | --- |
| 10% Distill Point | °C | ASTM D2887* | 201 | **212** | 206 | --- |
| 15% Distillation Point | °C | ASTM D2887* | | **220** | 214 | --- |
| 20% Distill Point | °C | ASTM D2887* | 216 | **229** | 221 | --- |
| 30% Distill Point | °C | ASTM D2887* | 230 | **243** | 236 | --- |
| 40% Distill Point | °C | ASTM D2887* | 243 | **254** | 249 | --- |
| 50% Distill Point | °C | ASTM D2887* | 255 | **264** | 263 | --- |
| 60% Distill Point | °C | ASTM D2887* | 267 | **275** | 277 | --- |
| 70% Distill Point | °C | ASTM D2887* | 280 | **286** | 291 | --- |
| 80% Distill Point | °C | ASTM D2887* | 295 | **298** | 307 | --- |
| 85% Distillation Point | °C | ASTM D2887* | | **307** | 316 | --- |
| 90% Distill Point | °C | ASTM D2887* | 310 | **316** | 325 | --- |
| 95% Distillation Point | °C | ASTM D2887* | | **332** | 336 | --- |
| Final Boiling Point | °C | ASTM D2887* | 341 | **361** | 352 | --- |

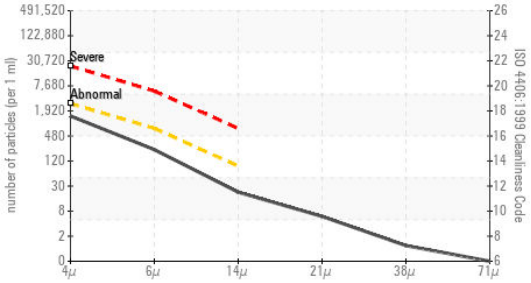
| IGNITION QUALITY | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| API Gravity | ASTM D1298* | 37.7 | **34** | 37 | --- |
| Cetane Index | ASTM D4737* | <40.0 | **45** | 50 | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | <1.0 | **<1** | 0 | --- |
| Sodium | ppm | ASTM D5185(m) | <0.1 | **<1** | 0 | --- |
| Potassium | ppm | ASTM D5185(m) | <0.1 | **0** | <1 | --- |
| Water | % | ASTM D6304* | <0.05 | **0.005** | 0.004 | --- |
| ppm Water | ppm | ASTM D6304* | <500 | **59** | 43.3 | --- |

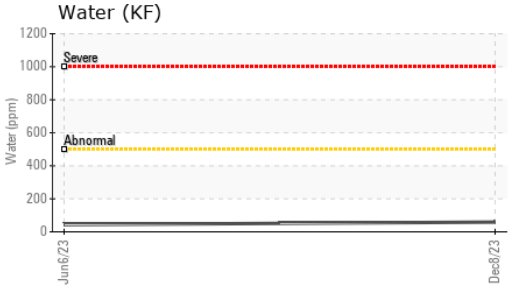
| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Particles >4µm | ASTM D7647 | >2500 | **1272** | ▲ 2568 | --- |
| Particles >6µm | ASTM D7647 | >640 | **199** | ▲ 700 | --- |
| Particles >14µm | ASTM D7647 | >80 | **19** | 72 | --- |
| Particles >21µm | ASTM D7647 | >20 | **5** | 26 | --- |
| Particles >38µm | ASTM D7647 | >4 | **1** | 1 | --- |
| Particles >71µm | ASTM D7647 | >3 | **0** | 0 | --- |
| Oil Cleanliness | ISO 4406 (c) | >18/16/13 | **17/15/11** | ▲ 19/17/13 | --- |

# FUEL REPORT

Particle Count

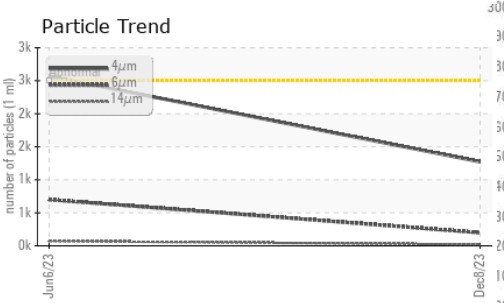



Water (KF)

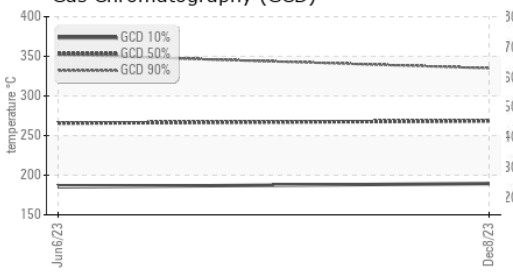



Viscosity @ 40°C

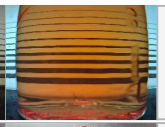
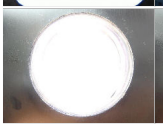

Particle Trend




Gas Chromatography (GCD)

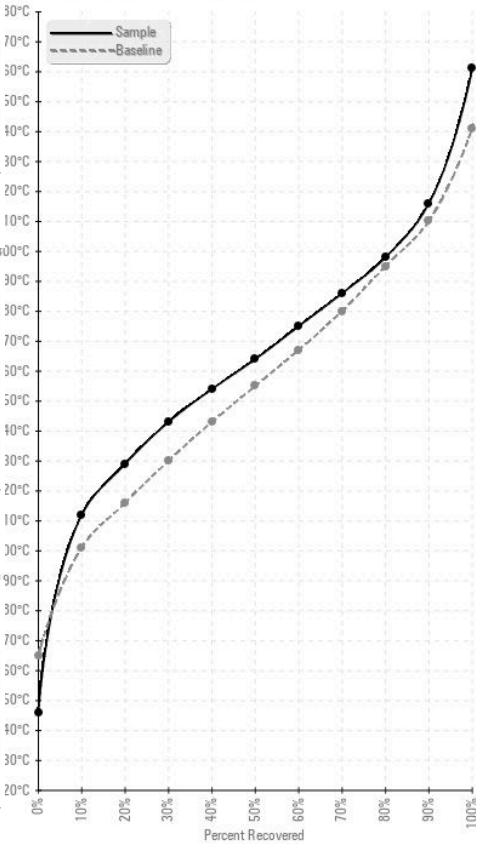



| HEAVY METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Aluminum | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Nickel | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Lead | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Vanadium | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Iron | ppm | ASTM D5185(m) | <0.1 | **<1** | <1 | --- |
| Calcium | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Magnesium | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Phosphorus | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |
| Zinc | ppm | ASTM D5185(m) | <0.1 | **0** | 0 | --- |

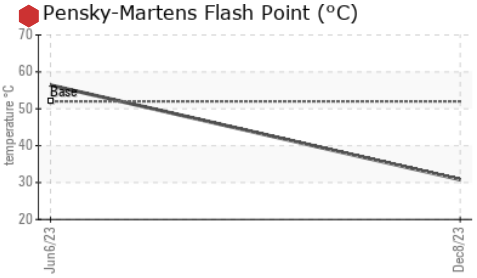
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  | *no image* |
| Bottom | | |  |  | *no image* |

## GRAPHS

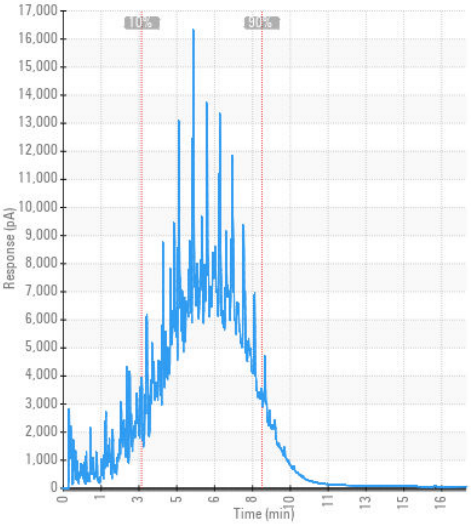
Fuel Distillation Curve




Pensky-Martens Flash Point (°C)




GCD Spectrum





CALA
ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : PP0000878 **Recieved** : 13 Dec 2023
**Lab Number** : 02602948 **Diagnosed** : 18 Dec 2023
**Unique Number** : 5696033 **Diagnostician** : Kevin Marson
**Test Package** : FUEL ( Additional Tests: CC Flash, GC-PercFuel, PrtCount )

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*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*