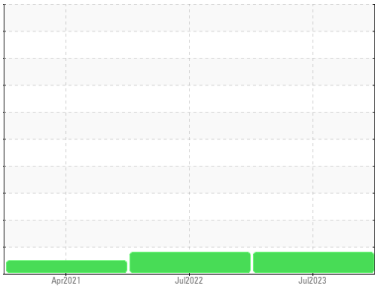
# PROBLEM SUMMARY

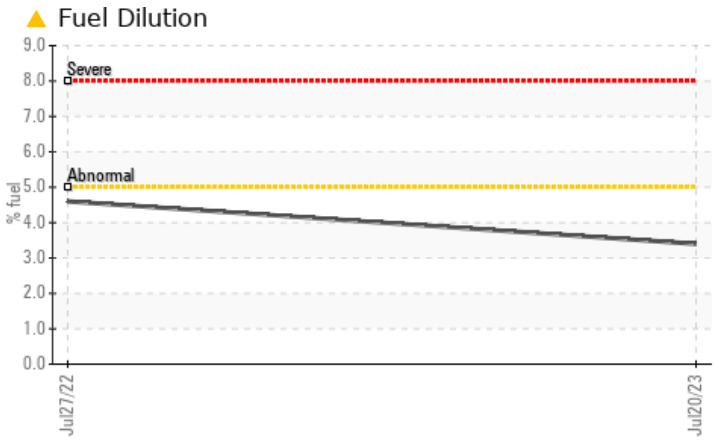
**Sample Rating Trend**




**FUEL**

Machine Id
## WELLINGTON
Component
**Diesel Engine**
Fluid
**NOT GIVEN (--- GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **MARGINAL** | MARGINAL | NORMAL |
|---|---|---|---|---|---|---|
| Fuel | % | ASTM D3524 | >5 | ▲ **3.4** | ▲ 4.6 | <1.0 |

**Customer Id:** SUENEW
**Sample No.:** RP0031517
**Lab Number:** 05904538
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

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

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Information Required | --- | --- | ? | Please specify the brand, type, and viscosity of the oil on your next sample. |

## HISTORICAL DIAGNOSIS

**27 Jul 2022 Diag: Jonathan Hester**

FUEL

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Light fuel dilution occurring. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**01 Apr 2021 Diag: Don Baldridge**

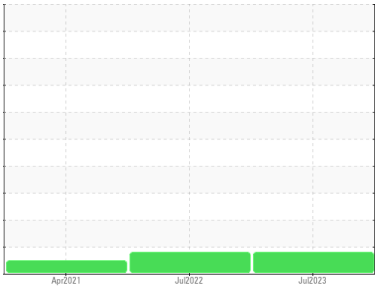
NORMAL

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. 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 suitable for further service.

view report

# OIL ANALYSIS REPORT

Sample Rating Trend




**FUEL**

Machine Id
## WELLINGTON
Component
**Diesel Engine**
Fluid
**NOT GIVEN (--- GAL)**

## DIAGNOSIS

**▲ Recommendation**

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**

All component wear rates are normal.

**▲ Contamination**

Light fuel dilution occurring. No other contaminants were detected in the oil.

**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 | | **RP0031517** | RP0001185 | RP0016872 |
| Sample Date | | Client Info | | **20 Jul 2023** | 27 Jul 2022 | 01 Apr 2021 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **MARGINAL** | MARGINAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **1** | 2 | 2 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **1** | 2 | <1 |
| Lead | ppm | ASTM D5185m | >40 | **1** | 2 | 3 |
| Copper | ppm | ASTM D5185m | >330 | **4** | 6 | 6 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | 2 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **94** | 129 | 113 |
| Barium | ppm | ASTM D5185m | | **2** | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **83** | 52 | 50 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **54** | 113 | 359 |
| Calcium | ppm | ASTM D5185m | | **2072** | 1965 | 1834 |
| Phosphorus | ppm | ASTM D5185m | | **948** | 917 | 973 |
| Zinc | ppm | ASTM D5185m | | **1113** | 1105 | 1112 |

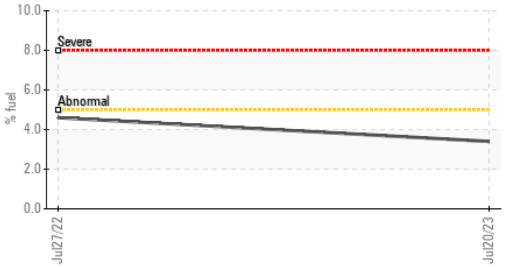
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **5** | 5 | 4 |
| Sodium | ppm | ASTM D5185m | | **0** | 3 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 3 | 0 |
| Fuel | % | ASTM D3524 | >5 | **▲ 3.4** | ▲ 4.6 | <1.0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.1** | 0 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.1** | 7.2 | 5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **17.1** | 20.3 | 21.5 |

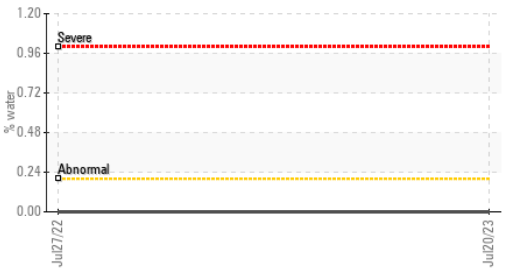
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **12.8** | 16.0 | 16.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **10.02** | 7.85 | 8.31 |

# OIL ANALYSIS REPORT

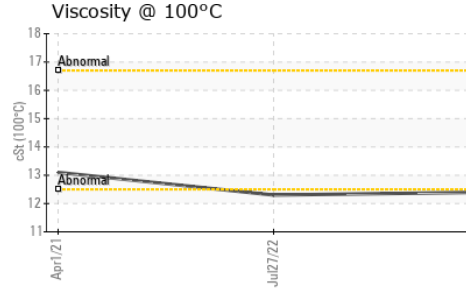
Fuel Dilution




Water




Viscosity @ 100°C



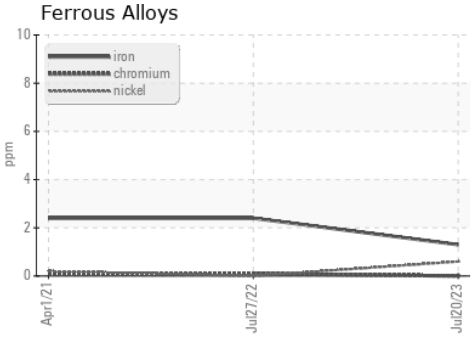

Water


| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

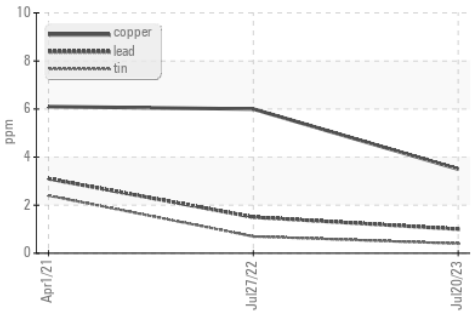
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **12.4** | 12.3 | 13.1 |

## GRAPHS

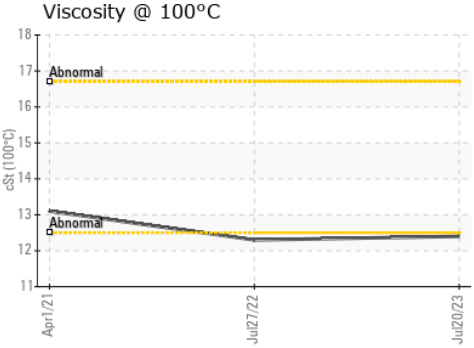
Ferrous Alloys



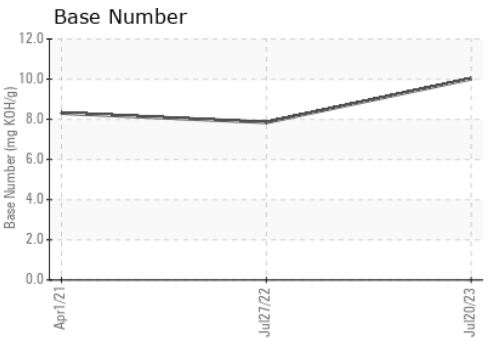

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : RP0031517 **Received** : 21 Jul 2023
**Lab Number** : 05904538 **Diagnosed** : 26 Jul 2023
**Unique Number** : 10565894 **Diagnostician** : Don Baldridge
**Test Package** : IND 2 ( Additional Tests: FT-IR, FuelDilution, KV100, 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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