



OIL ANALYSIS REPORT

| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |



Machine Id
BELL B45E B93A645EC03308114
Component
Diesel Engine
Fluid
SYNERGY 15W40 (--- GAL)

RECOMMENDATION

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

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number | | Client Info | | BE0016951 | BE0016912 | --- |
| Sample Date | | Client Info | | 08 Nov 2023 | 19 Oct 2023 | --- |
| Machine Age | | Client Info | | 634 | 497 | --- |
| Oil Age | | Client Info | | 0 | 0 | --- |
| Filter Age | | Client Info | | 0 | 0 | --- |
| Oil Changed | | Client Info | | Not Chngd | Changed | --- |
| Filter Changed | | Client Info | | Not Chngd | Changed | --- |
| Sample Status | | | | NORMAL | NORMAL | --- |

WEAR

All component wear rates are normal. The wear metal levels do not reflect the reported failure.

| | | | | | | |
|--------------|--------|-------------|------|-------------|------|-----|
| PQ | | ASTM D8184 | >79 | 20. | 19 | --- |
| Iron | ppm | ASTM D5185m | >100 | 74 | 72 | --- |
| Chromium | ppm | ASTM D5185m | >20 | 2 | 4 | --- |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 1 | --- |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | --- |
| Silver | ppm | ASTM D5185m | >3 | 1 | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 16 | 22 | --- |
| Lead | ppm | ASTM D5185m | >40 | 0 | <1 | --- |
| Copper | ppm | ASTM D5185m | >330 | 126 | 288 | --- |
| Tin | ppm | ASTM D5185m | >15 | 4 | 2 | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | --- |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |

CONTAMINATION

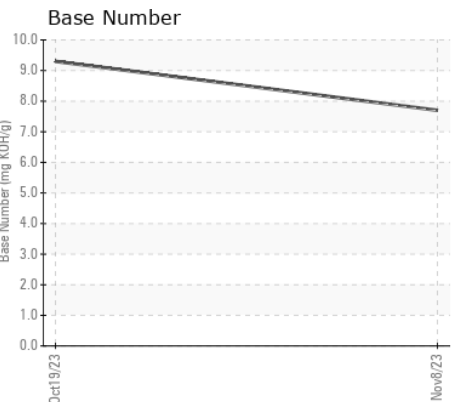
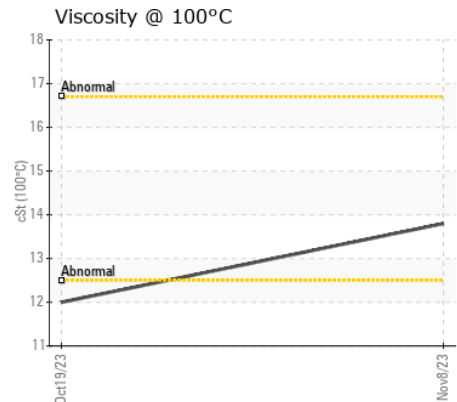
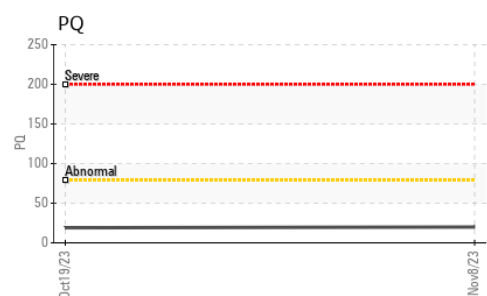
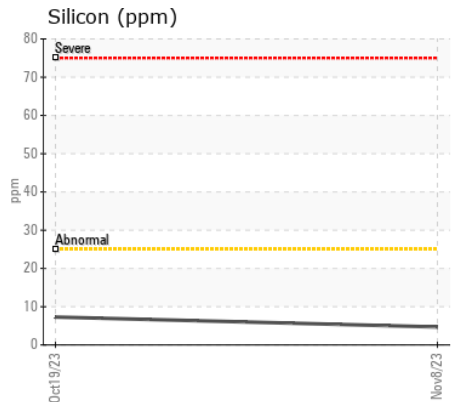
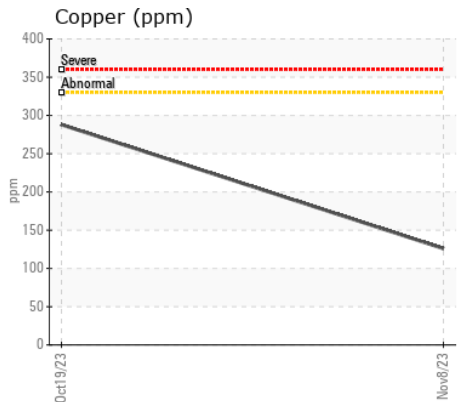
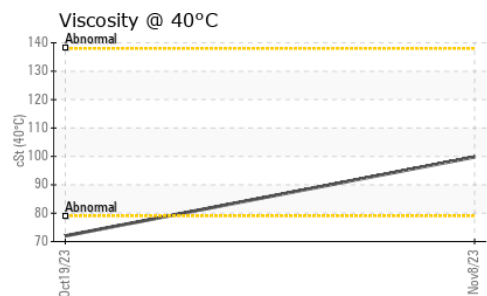
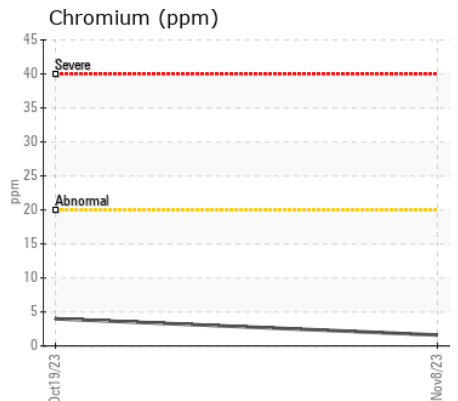
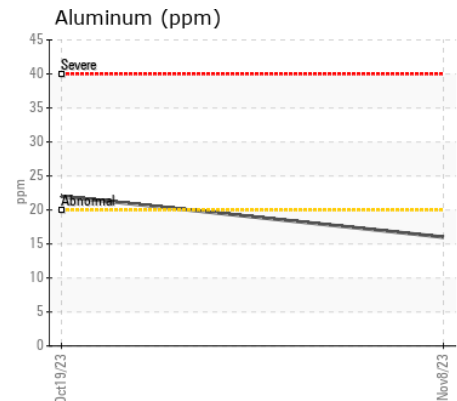
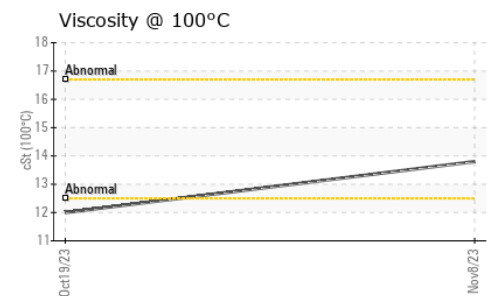
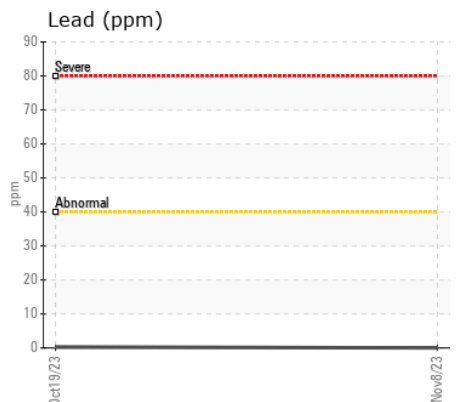
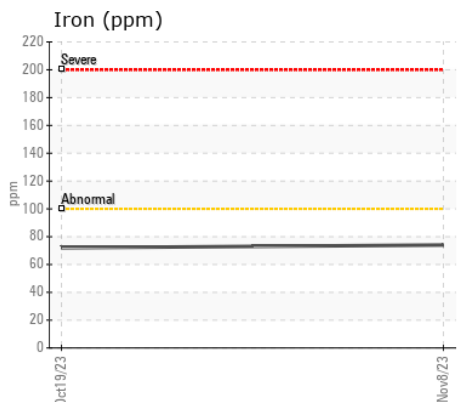
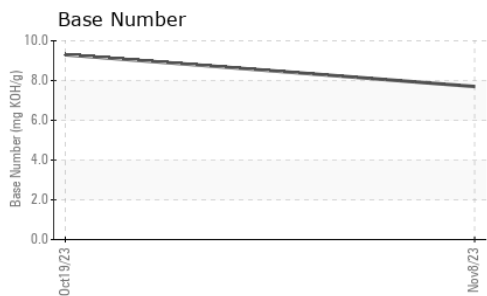
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-----|
| Silicon | ppm | ASTM D5185m | >25 | 5 | 7 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 9 | --- |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | --- |
| Water | | WC Method | >0.2 | NEG | NEG | --- |
| Glycol | | WC Method | | NEG | NEG | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 0.4 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.1 | 10.5 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.6 | 22.8 | --- |
| 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 | --- |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| | | | | | | |
|----------------------|----------|-------------|-----|-------------|------|-----|
| Sodium | ppm | ASTM D5185m | | 0 | 0 | --- |
| Boron | ppm | ASTM D5185m | | 392 | 15 | --- |
| Barium | ppm | ASTM D5185m | | 0 | 6 | --- |
| Molybdenum | ppm | ASTM D5185m | | 73 | 2 | --- |
| Manganese | ppm | ASTM D5185m | | 2 | 6 | --- |
| Magnesium | ppm | ASTM D5185m | | 366 | 76 | --- |
| Calcium | ppm | ASTM D5185m | | 1571 | 2306 | --- |
| Phosphorus | ppm | ASTM D5185m | | 1007 | 697 | --- |
| Zinc | ppm | ASTM D5185m | | 1201 | 756 | --- |
| Sulfur | ppm | ASTM D5185m | | 2894 | 2051 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.6 | 20.0 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 7.7 | 9.3 | --- |
| Visc @ 40°C | cSt | ASTM D445 | | 99.8 | 72.0 | --- |
| Visc @ 100°C | cSt | ASTM D445 | | 13.8 | 12.0 | --- |
| Viscosity Index (VI) | Scale | ASTM D2270 | | 139 | 163 | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : BE0016951 **Received** : 16 Nov 2023
Lab Number : 06010131 **Tested** : 10 Dec 2023
Unique Number : 10749275 **Diagnosed** : 10 Dec 2023 - Doug Bogart
Test Package : MOBCE

Oak Hills
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 US 62836
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 F:

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)