|  |  |  |  | W | VEAR | NOR | AL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | CONTA | MINA | ION | NOR | AL |
| $\cdots$ OIL ANALYSIS REPORT |  |  | FLUID C | ONDI | ION | NOR | AL |
| [WALLENBERG SURVEY] |  |  |  |  |  |  |  |
| VOLVO PENTA 7011390830 |  |  |  |  |  |  |  |
| Port Diesel Engine <br> DIESEL ENGINE OIL SAE 15W40 (10 GAL) |  |  |  |  |  |  |  |
| RECOMMENDATION | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Resample at the next service interval to monitor | Sample Number |  | Client Info |  | VPA057289 | --- | --- |
| Resample at the next service interval to monitor. | Sample Date |  | Client Info |  | 12 Feb 2024 | --- | --- |
|  | Machine Age | hrs | Client Info |  | 955 | --- | --- |
|  | Oil Age | hrs | Client Info |  | 0 | --- | --- |
|  | Filter Age | hrs | Client Info |  | 0 | --- | --- |
|  | Oil Changed |  | Client Info |  | Not Changd | --- | --- |
|  | Filter Changed |  | Client Info |  | Not Changd | --- | --- |
|  | Sample Status |  |  |  | NORMAL | --- | --- |
| WEAR | Iron | ppm | ASTM D5185m | >80 | 6 | --- | --- |
|  | Chromium | ppm | ASTM D5185m | >6 | <1 | --- | --- |
| All component wear rates are normal. | Nickel | ppm | ASTM D5185m | >2 | <1 | --- | --- |
|  | Titanium | ppm | ASTM D5185m | >2 | 0 | --- | --- |
|  | Silver | ppm | ASTM D5185m | >2 | 0 | --- | --- |
|  | Aluminum | ppm | ASTM D5185m | >20 | <1 | --- | --- |
|  | Lead | ppm | ASTM D5185m | >95 | <1 | --- | --- |
|  | Copper | ppm | ASTM D5185m | >85 | 6 | --- | --- |
|  | Tin | ppm | ASTM D5185m | >9 | 0 | --- | --- |
|  | Vanadium | ppm | ASTM D5185m |  | 0 | --- | --- |
|  | White Metal | scalar | *Visual | NONE | NONE | --- | --- |
|  | Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| CONTAMINATION | Silicon | ppm | ASTM D5185m | >25 | 5 | --- | --- |
|  | Potassium | ppm | ASTM D5185m | >20 | $<1$ | --- | --- |
| There is no indication of any contamination in the | Fuel |  | WC Method | >4.0 | <1.0 | --- | --- |
|  | Water |  | WC Method | >0.1 | NEG | --- | --- |
|  | Glycol |  | WC Method |  | NEG | --- | --- |
|  | Soot \% | \% | *ASTM D7844 |  | 0.1 | --- | --- |
|  | Nitration | Abs/cm | *ASTM D7624 | >20 | 4.6 | --- | --- |
|  | Sulfation | Abs. 1 mm | *ASTM D7415 | >30 | 18.0 | --- | --- |
|  | Silt | scalar | *Visual | NONE | NONE | --- | --- |
|  | Debris | scalar | *Visual | NONE | NONE | --- | --- |
|  | Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
|  | Appearance | scalar | *Visual | NORML | NORML | --- | --- |
|  | Odor | scalar | *Visual | NORML | NORML | --- | --- |
|  | Emulsified Water | scalar | *Visual | >0.1 | NEG | --- | --- |
| FLUID CONDITION | Sodium | ppm | ASTM D5185m | >158 | 0 | --- | --- |
|  | Boron | ppm | ASTM D5185m | 250 | 1 | --- | --- |
| 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. | Barium | ppm | ASTM D5185m | 10 | 0 | --- | --- |
|  | Molybdenum | ppm | ASTM D5185m | 100 | 61 | --- | --- |
|  | Manganese | ppm | ASTM D5185m |  | <1 | --- | --- |
|  | Magnesium | ppm | ASTM D5185m | 450 | 956 | --- | --- |
|  | Calcium | ppm | ASTM D5185m | 3000 | 1019 | --- | --- |
|  | Phosphorus | ppm | ASTM D5185m | 1150 | 935 | --- | --- |
|  | Zinc | ppm | ASTM D5185m | 1350 | 1282 | --- | --- |
|  | Sulfur | ppm | ASTM D5185m | 4250 | 3361 | --- | --- |
|  | Oxidation | Abs/. 1 mm | *ASTM D7414 | >25 | 13.1 | --- | --- |
|  | Base Number (BN) | $\mathrm{mg} \mathrm{KOH} / \mathrm{g}$ | ASTM D2896 | 8.5 | 10.1 | --- | --- |
|  | Visc @ $100^{\circ} \mathrm{C}$ | cSt | ASTM D445 | 14.4 | 13.7 | --- | --- |



| Sample No. | : VPA057289 | Received | $: 14$ Feb 2024 |
| :--- | :--- | :--- | :--- |
| Lab Number | $: 06089231$ | Tested | $: 15$ Feb 2024 |
| Unique Number | $: 10876676$ | Diagnosed | $: 16$ Feb 2024 - Sean Felton |

Certificate L2367 Test Package: MOB 1 (Additional Tests: 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.

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