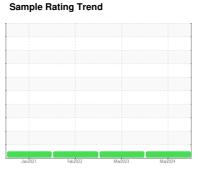


OIL ANALYSIS REPORT

Area [W134441] **RED VENTURES/RV1-1 UNIT A**

Diesel Engine

DIESEL ENGINE OIL SAE 15W40 (--- GAL)





Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the

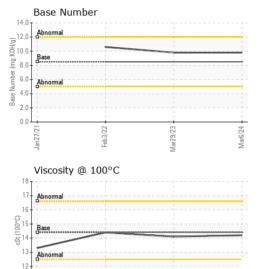
Fluid Condition

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

| OAMBLE MESSE | ATION | | 11 1-11 | | | |
|--------------------|----------|----------------------------|---------------|-------------|-------------|-------------|
| SAMPLE INFORM | MOTTAT | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | WC0911357 | WC0770499 | WC0637145 |
| Sample Date | | Client Info | | 06 Mar 2024 | 29 Mar 2023 | 03 Feb 2022 |
| Machine Age | hrs | Client Info | | 109 | 105 | 86 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| CONTAMINATION | ١ | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| | 2222 | | >100 | | | 2 |
| Iron | ppm | ASTM D5185m | | <1 <1 | <1 | 0 |
| Chromium Nickel | ppm | ASTM D5185m ASTM D5185m | >20 >4 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5165III | <i>></i> 4 | v <1 | <1 | 1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Lead | | ASTM D5185m | >40 | 0 | 0 | 1 |
| | ppm | | >330 | 1 | 0 | 2 |
| Copper Tin | ppm | ASTM D5185m | >15 | <1 | 0 | 0 |
| Antimony | ppm | ASTM D5185m | >10 | <1 | | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| | ppm | | | U | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | 250 | 11 | 77 | 100 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | 54 | 19 | 2 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | 900 | 690 | 689 |
| Calcium | ppm | ASTM D5185m | 3000 | 1063 | 1126 | 1279 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 998 | 950 | 941 |
| Zinc | ppm | ASTM D5185m | 1350 | 1202 | 1085 | 1064 |
| Sulfur | ppm | ASTM D5185m | 4250 | 3533 | 3429 | 2984 |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >25 | 5 | 3 | 4 |
| Sodium | ppm | ASTM D5185m | >158 | <1 | 0 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 3 | 3 |
| INFRA-RED | | method | limit/base | current | history1 | history2 |
| Soot % | % | *ASTM D7844 | >3 | 0 | 0.1 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 4.6 | 5.5 | 6.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.4 | 18.2 | 20.1 |
| FLUID DEGRADA | TION | method | limit/base | current | history1 | history2 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 12.6 | 11.9 | 14.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 9.8 | 9.8 | 10.6 |
| | | | | | | |



OIL ANALYSIS REPORT



| VISUAL | | method | | | | 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 | LIGHT |
| 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 PROPERT | TES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 14.2 | 14.1 | 14.4 |

| visc @ 100°C | CST ASTM D | 445 14.4 | 14.2 | 14.1 | 14.4 |
|-------------------|------------|-----------|-------------------------------|-----------|------------|
| GRAPHS | | | | | |
| Iron (ppm) | | | Lead (ppm) |) | |
| 200 Severe | | | Severe | 1 | |
| | | | 00 | | |
| 00 Abnormal | | 6 | Abnormal | | |
| 50 | | | 20 | | |
| enn27/21- | Mar29/23 - | Mar6/24 | 0 | Feb3/22 - | Mar29/23 - |
| 7 | Mar2 | Mar | Jan27/2 | | Mar2 |
| Aluminum (ppm) | | | Chromium 50 T | (ppm) | |
| 40 Severe | | | 40 Severe | | |
| 30 Abnormal | | | Abnormal | | |
| 1.5 | | | | | |
| 0 | | | 10 | | 1 |
| Jan27/21- | Mar29/23 - | Mar6/24 - | Jan27/21- | Feb3/22 - | Mar29/23 - |
| 7 | Mar | Ž | | | Mar |
| Copper (ppm) | | | Silicon (ppr | n) | |
| Abnormal | | | 60+ | | |
| 200- | | | E 40 | | |
| 00 | | | Abnormal | | |
| 0 | | | 0 | | |
| Jan27/21 | Mar29/23 | Mar6/24 | Jan27/21 | Feb3/22 | Mar29/23 - |
| -, | | Σ | | | Ma |
| Viscosity @ 100°C | | | Base Numb | er | |
| Abnormal 16 | | KOH/v | Abnormal | | |
| Base Abnormal | | Jer (ma | Abnormal 10.0 Base Abnormal | | |
| Abnormal | | N | 5.0 Abnormal | | |
| | | 000 | | | |





Laboratory Sample No.

: WC0911357 Lab Number : 06125542 Unique Number : 10939693

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

Diagnosed Test Package: MOB 1 (Additional Tests: TBN)

: 21 Mar 2024 : 22 Mar 2024

: 22 Mar 2024 - Wes Davis

RALEIGH, NC US 27616 Contact: BRANDON RICE

NATIONAL POWER CORP

4541 PRESLYN DR

brandon.rice@natpow.com T:

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)

F: (919)790-9714

Contact/Location: BRANDON RICE - NATRAL