



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

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

Machine Id
NISSAN LD 28

Component
Diesel Engine

Fluid
TRC PRO-SPEC III SYNTHETIC BLEND 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | TR05857521 | TR05725527 | TR04400929 |
| Sample Date | | Client Info | | 20 May 2023 | 13 Dec 2022 | 31 Jan 2018 |
| Machine Age | hrs | Client Info | | 12495 | 18397 | 15940 |
| Oil Age | hrs | Client Info | | 270 | 12227 | 9770 |
| Filter Age | hrs | Client Info | | 270 | 200 | 250 |
| Oil Changed | | Client Info | | Not Chngd | Changed | Not Chngd |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | ABNORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 26 | 73 | 65 |
| Chromium | ppm | ASTM D5185m | >20 | 3 | 10 | 10 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 1 | <1 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 5 | 7 | 10 |
| Lead | ppm | ASTM D5185m | >40 | 4 | 16 | 24 |
| Copper | ppm | ASTM D5185m | >330 | 1 | 3 | 4 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 4 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

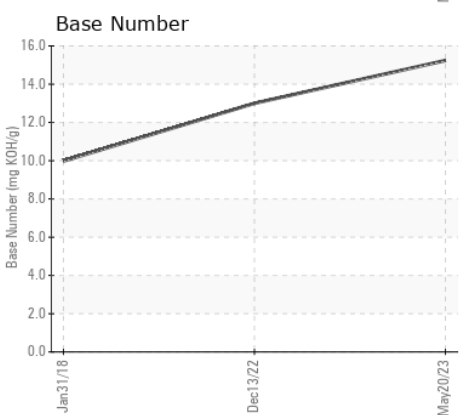
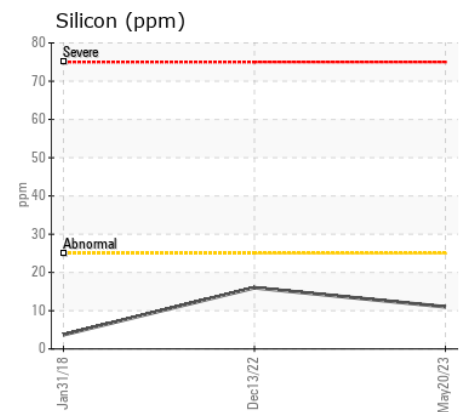
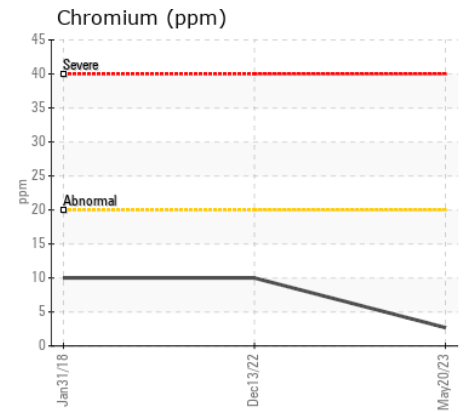
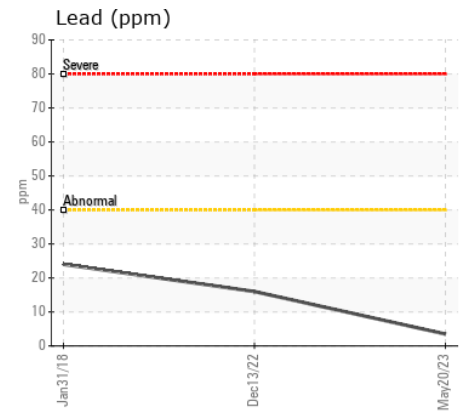
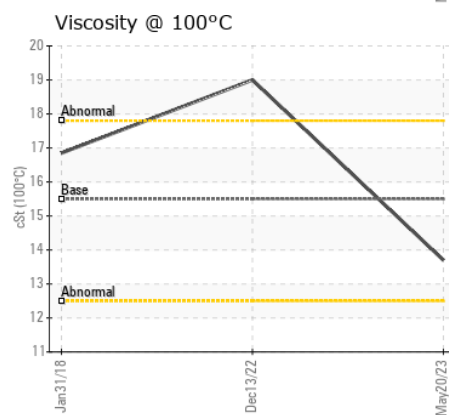
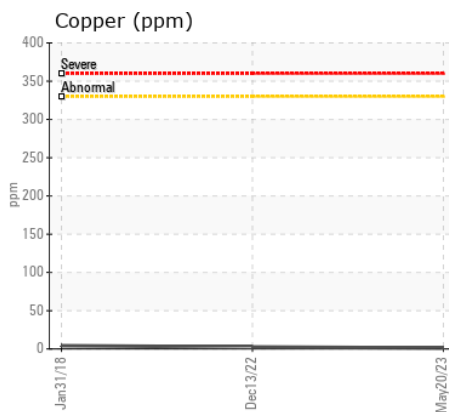
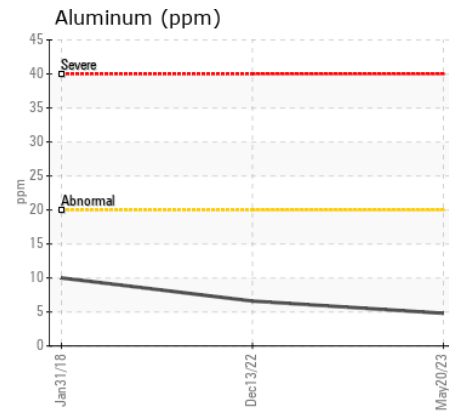
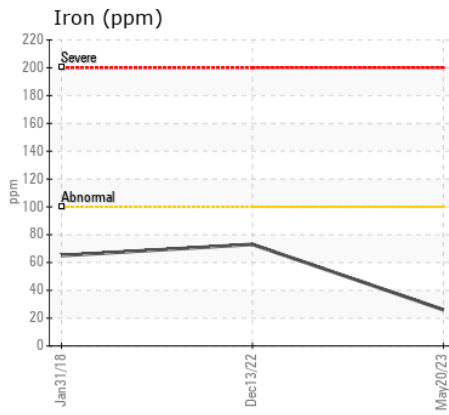
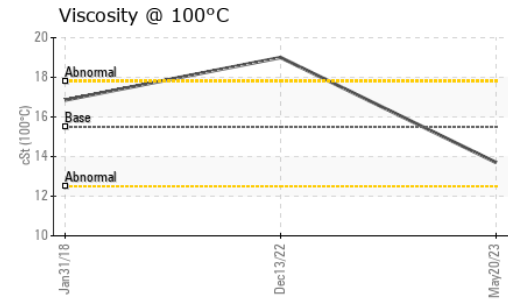
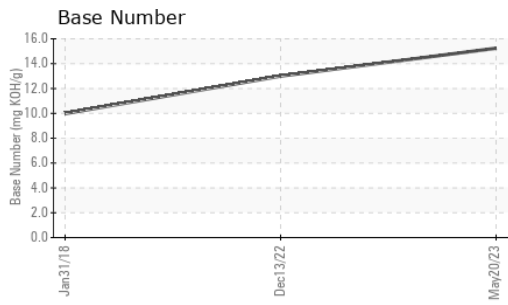
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 11 | 16 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 0 | 1 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 0.5 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.2 | 20.7 | 12. |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.2 | 30.4 | 23. |
| 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 |

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.

| | | | | | | |
|------------------|----------|-------------|------|--------------|--------|-------|
| Sodium | ppm | ASTM D5185m | | <1 | 6 | 11 |
| Boron | ppm | ASTM D5185m | | 0 | 2 | <1 |
| Barium | ppm | ASTM D5185m | | 6 | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | | 925 | 743 | 329 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 151 | 853 | 717 |
| Calcium | ppm | ASTM D5185m | | 4271 | 2424 | 1795 |
| Phosphorus | ppm | ASTM D5185m | | 1059 | 1243 | 1049 |
| Zinc | ppm | ASTM D5185m | | 1244 | 1529 | 1169 |
| Sulfur | ppm | ASTM D5185m | | 5594 | 5436 | 4116 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.1 | 33.0 | 20. |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 15.24 | 13.00 | 9.98 |
| Visc @ 100°C | cSt | ASTM D445 | 15.5 | 13.7 | ▲ 19.0 | 16.85 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05857521 **Received** : 25 May 2023
Lab Number : 05857521 **Diagnosed** : 26 May 2023
Unique Number : 10486876 **Diagnostician** : Wes Davis
Test Package : MOB 2

PATCH ROAD BUGGY SHOP
 15114 PATCH RD
 BURTON, OH
 US 44021
 Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-800-827-0711.
 * - 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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