



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

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

Machine Id
ROTOCHOPPER B66 ROTOCHOPPER-G02 17-2981

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (14 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend an early resample to monitor this condition.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|-------------|----------|
| Sample Number | | Client Info | | TR06101171 | TR06090427 | --- |
| Sample Date | | Client Info | | 20 Feb 2024 | 08 Feb 2024 | --- |
| Machine Age | hrs | Client Info | | 7735 | 7701 | --- |
| Oil Age | hrs | Client Info | | 271 | 237 | --- |
| Filter Age | hrs | Client Info | | 271 | 237 | --- |
| Oil Changed | | Client Info | | Not Changd | Not Changd | --- |
| Filter Changed | | Client Info | | Not Changd | Not Changd | --- |
| Sample Status | | | | ABNORMAL | ABNORMAL | --- |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|------|------|-----|
| Iron | ppm | ASTM D5185m | >100 | 23 | 26 | --- |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 1 | --- |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 1 | --- |
| Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | --- |
| Silver | ppm | ASTM D5185m | >2 | 0 | <1 | --- |
| Aluminum | ppm | ASTM D5185m | >25 | 3 | 3 | --- |
| Lead | ppm | ASTM D5185m | >40 | 4 | 4 | --- |
| Copper | ppm | ASTM D5185m | >330 | 2 | 4 | --- |
| Tin | ppm | ASTM D5185m | >15 | 0 | 1 | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | --- |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |

CONTAMINATION

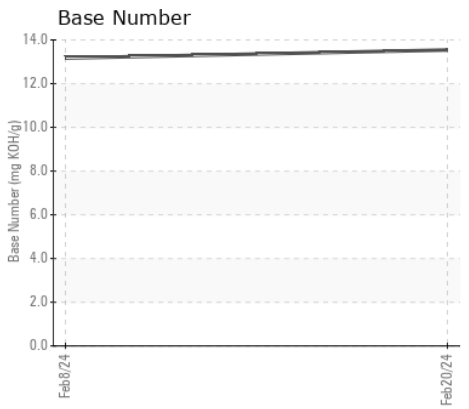
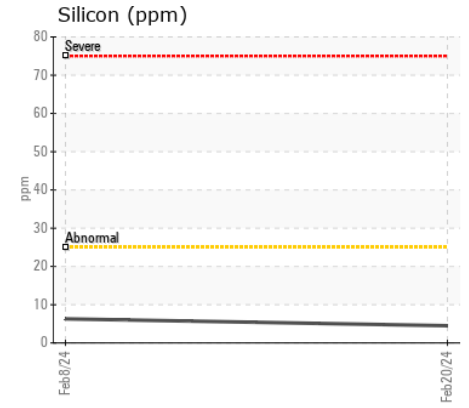
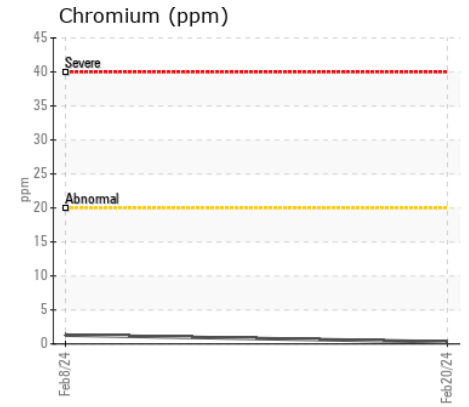
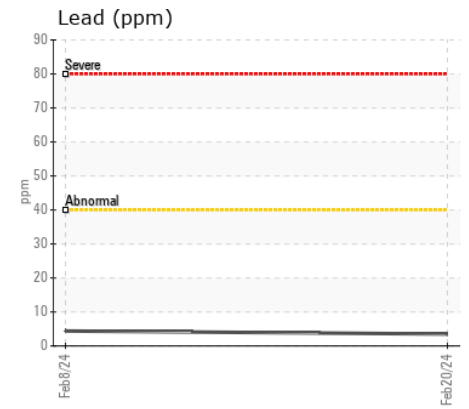
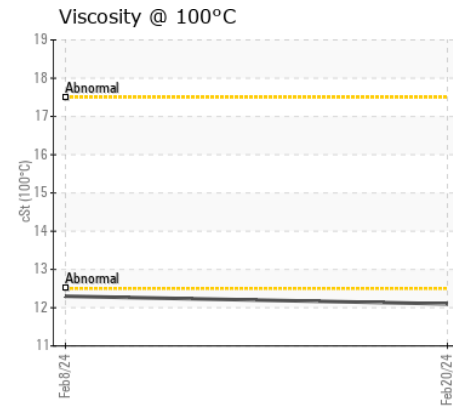
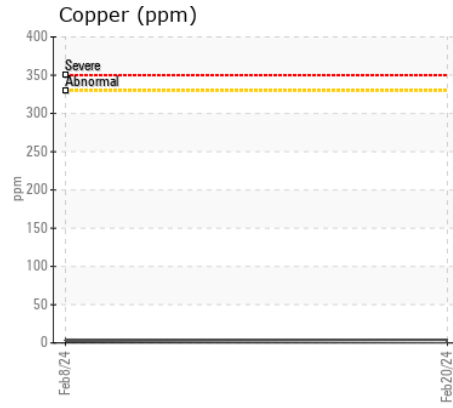
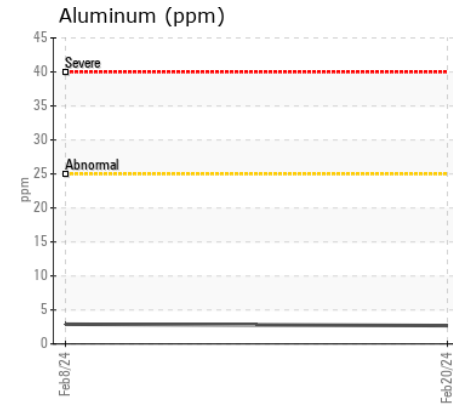
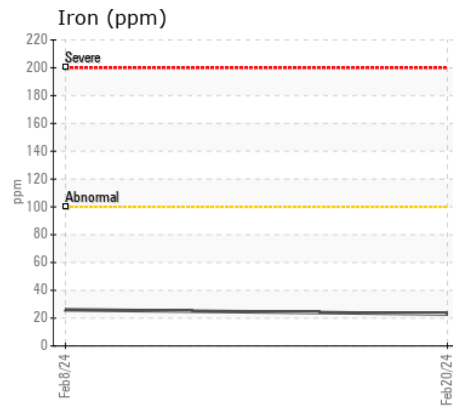
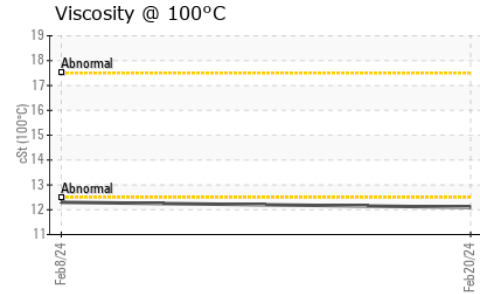
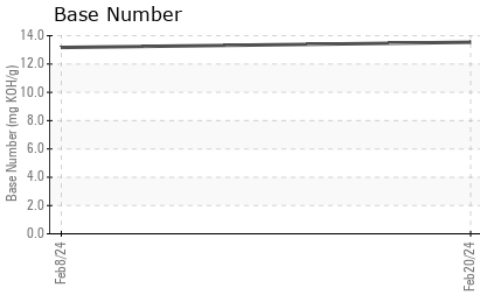
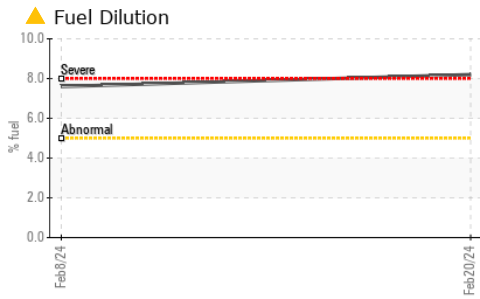
There is a high amount of fuel present in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|-------|-------|-----|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 6 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 3 | --- |
| Fuel | % | ASTM D3524 | >5 | ▲ 8.2 | ▲ 7.6 | --- |
| Water | | WC Method | >0.2 | NEG | NEG | --- |
| Glycol | | WC Method | | NEG | NEG | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.5 | 0.5 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.6 | 9.4 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.8 | 18.7 | --- |
| 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. Fuel is present in the oil and is lowering the viscosity.

| | | | | | | |
|------------------|----------|-------------|-----|-------|--------|-----|
| Sodium | ppm | ASTM D5185m | | 0 | 1 | --- |
| Boron | ppm | ASTM D5185m | | 21 | 28 | --- |
| Barium | ppm | ASTM D5185m | | 0 | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | | 108 | 106 | --- |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | --- |
| Magnesium | ppm | ASTM D5185m | | 99 | 99 | --- |
| Calcium | ppm | ASTM D5185m | | 3240 | 3184 | --- |
| Phosphorus | ppm | ASTM D5185m | | 738 | 791 | --- |
| Zinc | ppm | ASTM D5185m | | 928 | 922 | --- |
| Sulfur | ppm | ASTM D5185m | | 3511 | 3707 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 11.4 | 11.3 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 13.54 | 13.17 | --- |
| Visc @ 100°C | cSt | ASTM D445 | | 12.1 | ▲ 12.3 | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06101171 **Received** : 26 Feb 2024
Lab Number : 06101171 **Tested** : 29 Feb 2024
Unique Number : 10899401 **Diagnosed** : 29 Feb 2024 - Doug Bogart
Test Package : MOB 2 (Additional Tests: PercentFuel)

BARR-TECH COMPOSTING
 9117 KALLENBERGER RD N
 SPRAGUE, WA
 US 99032
 Contact: RON GROGAN

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)

T: (509)590-0437

F: