



OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

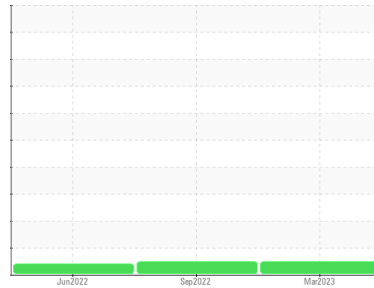


Area
Store 9 - Marietta

Machine Id
5028

Component
Diesel Engine

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



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 | |
|---------------|-------------|--------------------|-------------|-------------|-----|
| Sample Number | Client Info | LEC0034710 | LEC0035233 | LEC0028013 | |
| Sample Date | Client Info | 21 Mar 2023 | 30 Sep 2022 | 21 Jun 2022 | |
| Machine Age | hrs | Client Info | 762 | 525 | 261 |
| Oil Age | hrs | Client Info | 237 | 264 | 261 |
| Oil Changed | Client Info | Changed | Changed | Changed | |
| Sample Status | | NORMAL | NORMAL | ABNORMAL | |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|--------------|----------------|----------|----------|
| Fuel | WC Method >5 | <1.0 | <1.0 | 1.7 |
| Glycol | WC Method | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >100 | 15 | 28 | 30 |
| Chromium | ppm ASTM D5185m >20 | <1 | 1 | 1 |
| Nickel | ppm ASTM D5185m >4 | 0 | 0 | <1 |
| Titanium | ppm ASTM D5185m | 57 | 63 | <1 |
| Silver | ppm ASTM D5185m >3 | 0 | <1 | <1 |
| Aluminum | ppm ASTM D5185m >20 | 1 | 2 | 3 |
| Lead | ppm ASTM D5185m >40 | 0 | 0 | 1 |
| Copper | ppm ASTM D5185m >330 | 3 | 22 | 134 |
| Tin | ppm ASTM D5185m >15 | 0 | <1 | 1 |
| Vanadium | ppm ASTM D5185m | <1 | <1 | 0 |
| Cadmium | ppm ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron | ppm ASTM D5185m 250 | 97 | 66 | 136 |
| Barium | ppm ASTM D5185m 10 | 0 | 0 | 5 |
| Molybdenum | ppm ASTM D5185m 100 | 21 | 17 | 10 |
| Manganese | ppm ASTM D5185m | <1 | 1 | 4 |
| Magnesium | ppm ASTM D5185m 450 | 426 | 451 | 149 |
| Calcium | ppm ASTM D5185m 3000 | 1697 | 1757 | 1856 |
| Phosphorus | ppm ASTM D5185m 1150 | 983 | 972 | 802 |
| Zinc | ppm ASTM D5185m 1350 | 1180 | 1222 | 1014 |
| Sulfur | ppm ASTM D5185m 4250 | 4271 | 4063 | 2819 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|----------------------|----------|----------|----------|
| Silicon | ppm ASTM D5185m >120 | 4 | 6 | 17 |
| Sodium | ppm ASTM D5185m >158 | 0 | 2 | 5 |
| Potassium | ppm ASTM D5185m >20 | 0 | 4 | 5 |

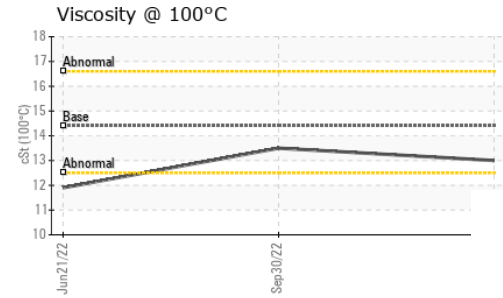
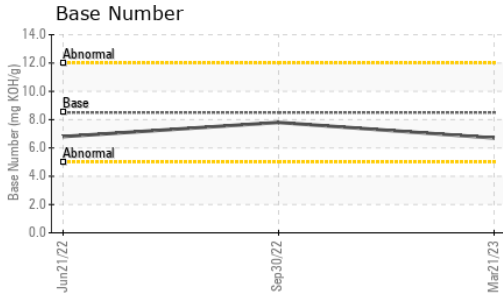
INFRA-RED

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >3 | 0.2 | 0.4 | 0.3 |
| Nitration | Abs/cm *ASTM D7624 >20 | 7.6 | 10.4 | 9.6 |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 17.4 | 22.2 | 22.1 |

FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 13.9 | 17.7 | 18.9 |
| Base Number (BN) | mg KOH/g ASTM D2896 8.5 | 6.7 | 7.8 | 6.8 |

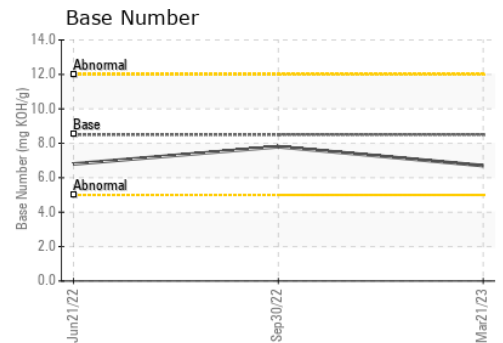
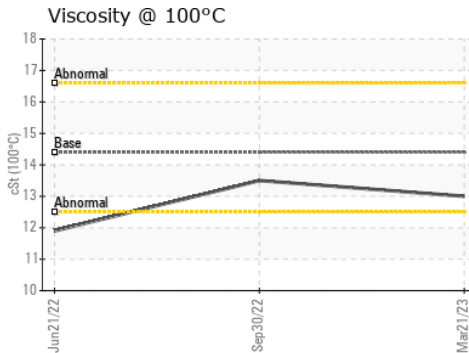
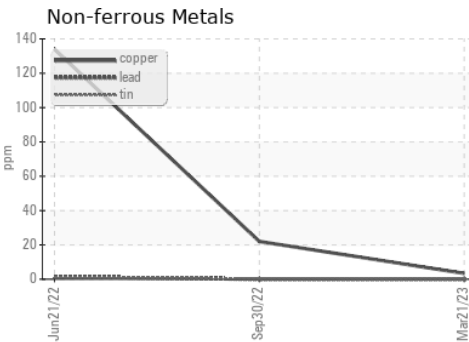
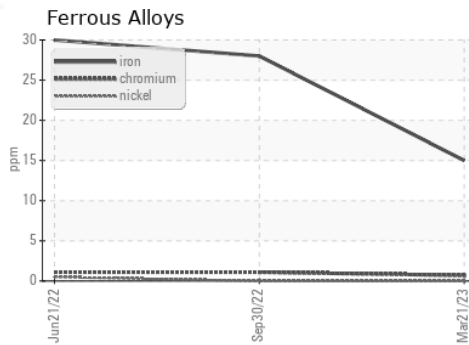
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| 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 |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|--------|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.0 | 13.5 | ▲ 11.9 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0034710 **Received** : 17 Apr 2023
Lab Number : 05821330 **Diagnosed** : 18 Apr 2023
Unique Number : 10429413 **Diagnostician** : Don Baldrige
Test Package : CONST (Additional Tests: TBN)

LAROCHE TREE SERVICE
 7 COMMERCE PKWY
 BELLAIRE, OH
 US 43906
 Contact: COTY BURGHY
 coty.burghy@larochetree.com

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)

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F: