



OIL ANALYSIS REPORT

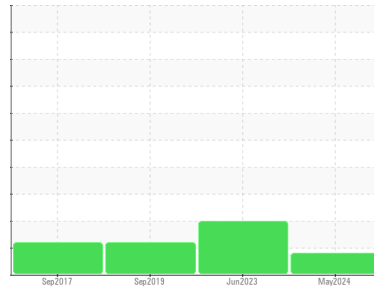
Area
CONSTRUCTORS, INC

Machine Id
13-0335

Component
Diesel Engine

Fluid
MOBIL DELVAC 1300 SUPER 10W30 (--- GAL)

Sample Rating Trend



FUEL



DIAGNOSIS

▲ Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | SBP0007188 | SBP0004520 | SBP73460033 |
| Sample Date | Client Info | 03 May 2024 | 28 Jun 2023 | 18 Sep 2019 |
| Machine Age | hrs | 9523 | 9173 | 8124 |
| Oil Age | hrs | 350 | 356 | 373 |
| Oil Changed | Client Info | Changed | Changed | Changed |
| Sample Status | | ABNORMAL | ABNORMAL | ABNORMAL |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|----------------|------------|----------|----------|
| Water | WC Method >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | NEG | NEG | 0.0 |

WEAR METALS

| method | limit/base | current | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185m >100 | 31 | 63 | 25 |
| Chromium | ppm ASTM D5185m >20 | <1 | <1 | 0 |
| Nickel | ppm ASTM D5185m >4 | 1 | 2 | 1 |
| Titanium | ppm ASTM D5185m | <1 | 0 | 0 |
| Silver | ppm ASTM D5185m >3 | 0 | 0 | 0 |
| Aluminum | ppm ASTM D5185m >20 | 2 | <1 | 3 |
| Lead | ppm ASTM D5185m >40 | 1 | 0 | 0 |
| Copper | ppm ASTM D5185m >330 | 5 | 2 | 1 |
| Tin | ppm ASTM D5185m >15 | <1 | <1 | 0 |
| Vanadium | ppm ASTM D5185m | <1 | <1 | 0 |
| Cadmium | ppm ASTM D5185m | <1 | 0 | 0 |

ADDITIVES

| method | limit/base | current | history1 | history2 |
|------------|-----------------|--------------|----------|----------|
| Boron | ppm ASTM D5185m | 6 | 24 | 47 |
| Barium | ppm ASTM D5185m | 0 | 0 | 0 |
| Molybdenum | ppm ASTM D5185m | 62 | 51 | 48 |
| Manganese | ppm ASTM D5185m | <1 | <1 | 0 |
| Magnesium | ppm ASTM D5185m | 775 | 471 | 550 |
| Calcium | ppm ASTM D5185m | 1126 | 1706 | 1653 |
| Phosphorus | ppm ASTM D5185m | 890 | 732 | 930 |
| Zinc | ppm ASTM D5185m | 1083 | 883 | 891 |
| Sulfur | ppm ASTM D5185m | 3096 | 3083 | --- |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|---------------------|--------------|----------|----------|
| Silicon | ppm ASTM D5185m >25 | 6 | 6 | 5 |
| Sodium | ppm ASTM D5185m | 33 | 56 | 15 |
| Potassium | ppm ASTM D5185m >20 | 36 | ▲ 52 | 10 |
| Chlorine | ppm ASTM D5185m | --- | --- | 0 |
| Fuel | % ASTM D3524 >2.0 | ▲ 2.1 | ▲ 4.4 | ▲ 3.37 |

INFRA-RED

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % *ASTM D7844 >3 | 0.2 | 0.3 | 0.31 |
| Nitration | Abs/cm *ASTM D7624 >20 | 7.1 | 9.4 | --- |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | 18.4 | 22.2 | --- |

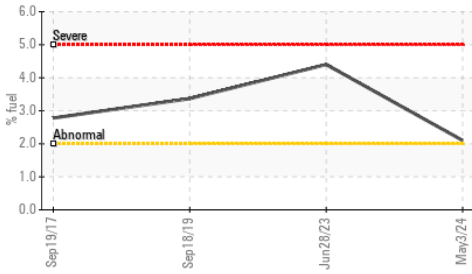
FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 >25 | 15.0 | 22.4 | 2 |
| Base Number (BN) | mg KOH/g ASTM D2896 10.5 | 8.9 | 8.7 | --- |

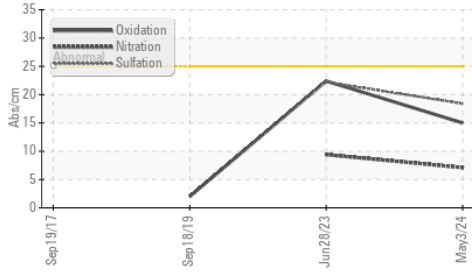


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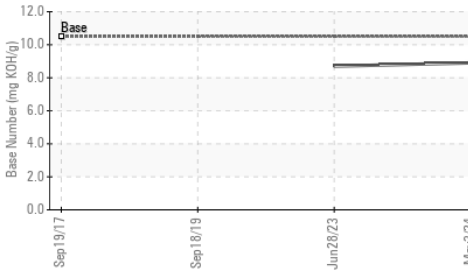
▲ Fuel Dilution



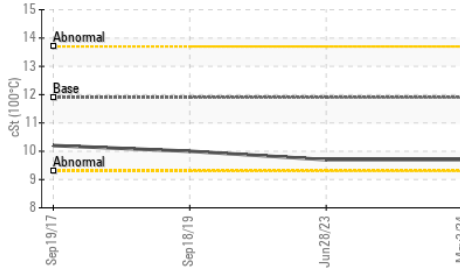
FT-IR (Direct Trend)



Base Number



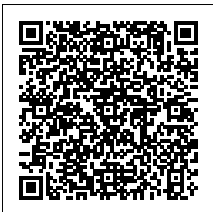
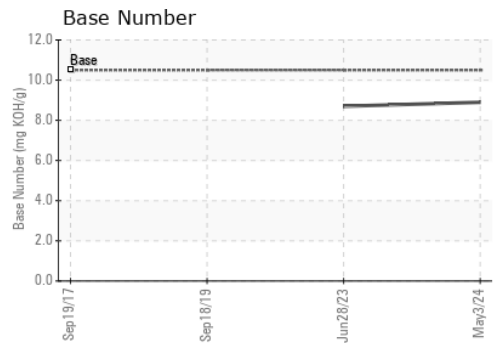
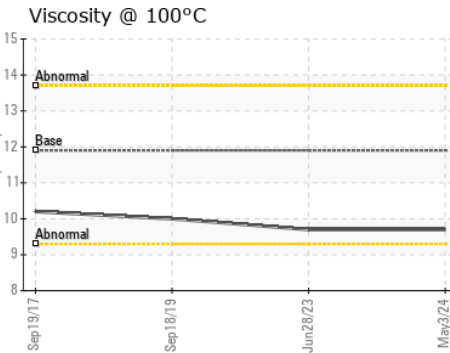
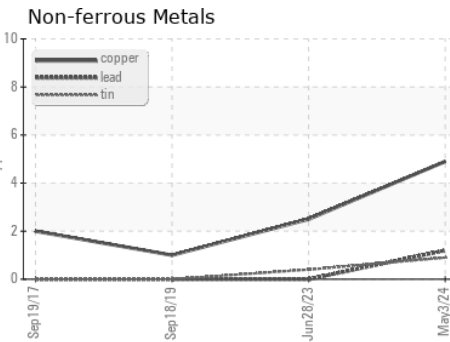
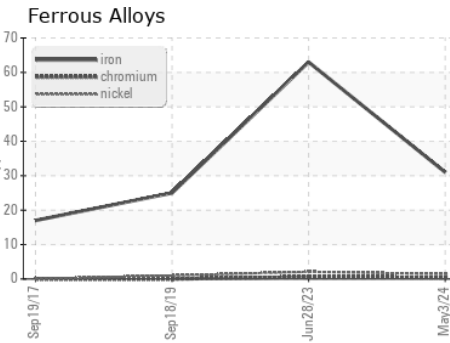
Viscosity @ 100°C



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- |
| 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 | >0.2 | NEG | --- |
| Free Water | scalar | *Visual | | NEG | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 11.9 | 9.7 | ▲ 10 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0007188 **Received** : 13 May 2024
Lab Number : 06178075 **Tested** : 16 May 2024
Unique Number : 11029401 **Diagnosed** : 16 May 2024 - Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

Constructors Inc. - 603659
 1815 Y Street
 Lincoln, NE
 US 68508

Contact: Loren Michael
 LorenM@constructorslincoln.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: