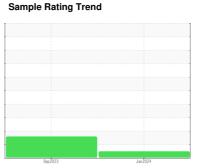


OIL ANALYSIS REPORT

Samp



NORMAL



236353AH

Component **Diesel Engine**

MOBIL DELVAC 1300 SUPER15W40 (--- 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

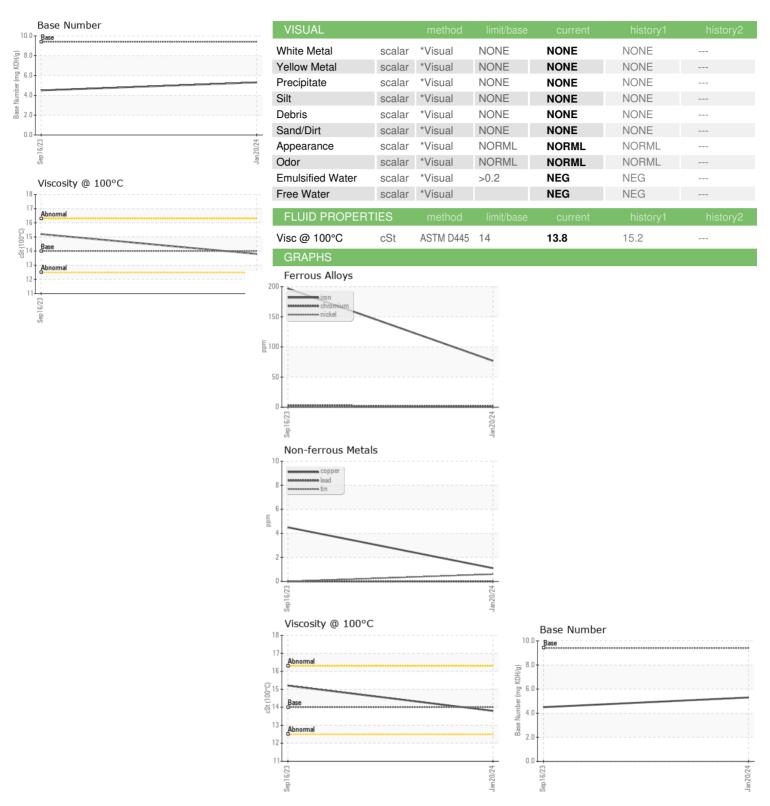
Fluid Condition

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

| Client Info Changed Client Info Changed Client Info Changed C | L) | | | Sep2023 | Jan2024 | | |
|---|------------------|----------|-------------|------------|-------------|--------------|----------|
| Sample Date | SAMPLE INFORI | MATION | method | limit/base | current | history1 | history2 |
| Machine Age mls | Sample Number | | Client Info | | IL0033192 | IL0029441 | |
| Dil Changed | Sample Date | | Client Info | | 20 Jan 2024 | 16 Sep 2023 | |
| Contamped Client Info Changed NORMAL ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 history3 history3 Mater WC Method >5 <1.0 <1.0 < | Machine Age | mls | Client Info | | 88551 | 73885 | |
| CONTAMINATION | Oil Age | mls | Client Info | | 14662 | 0 | |
| CONTAMINATION method limit/base current history1 history2 | Oil Changed | | Client Info | | Changed | Changed | |
| Valer | Sample Status | | | | NORMAL | ABNORMAL | |
| Water WC Method >0.2 NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >100 77 ▲ 197 Chromium ppm ASTM D5185m >20 1 3 Nickel ppm ASTM D5185m >4 0 <1 | CONTAMINATIO | N | method | limit/base | current | history1 | history2 |
| WEAR METALS | Fuel | | WC Method | >5 | <1.0 | <1.0 | |
| WEAR METALS | Water | | WC Method | >0.2 | NEG | NEG | |
| ASTM D5185m STM D5185m S | Glycol | | WC Method | | NEG | NEG | |
| Chromium ppm ASTM D5185m >20 1 3 | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel | Iron | ppm | ASTM D5185m | >100 | 77 | △ 197 | |
| Titanium | Chromium | ppm | ASTM D5185m | >20 | 1 | 3 | |
| Silver | Nickel | ppm | ASTM D5185m | >4 | | | |
| Aluminum ppm ASTM D5185m >20 5 10 Lead ppm ASTM D5185m >40 0 0 Copper ppm ASTM D5185m >330 1 4 Tin ppm ASTM D5185m >15 <1 | Titanium | ppm | ASTM D5185m | | 0 | 0 | |
| Lead ppm ASTM D5185m >40 0 0 | Silver | ppm | ASTM D5185m | >3 | | 0 | |
| Copper ppm ASTM D5185m >330 1 4 Tin ppm ASTM D5185m >15 <1 | Aluminum | ppm | ASTM D5185m | >20 | 5 | | |
| Tin | Lead | ppm | | | | | |
| Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 43 80 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 128 98 Manganese ppm ASTM D5185m 0 690 580 Magnesium ppm ASTM D5185m 1325 1696 Calcium ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Sodium ppm </td <td>• •</td> <td>ppm</td> <td></td> <td>>330</td> <td>1</td> <td></td> <td></td> | • • | ppm | | >330 | 1 | | |
| Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 43 80 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 128 98 Manganese ppm ASTM D5185m 0 690 580 Magnesium ppm ASTM D5185m 0 690 580 Calcium ppm ASTM D5185m 1325 1696 Phosphorus ppm ASTM D5185m 953 1457 Zinc ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Solium ppm ASTM D5185m 25 8 16 | | ppm | | >15 | | | |
| ADDITIVES | | ppm | | | - | | |
| Boron | Cadmium | ppm | ASTM D5185m | | 0 | 0 | |
| Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 128 98 Manganese ppm ASTM D5185m <1 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 0 128 98 Manganese ppm ASTM D5185m <1 2 Magnesium ppm ASTM D5185m 0 690 580 Calcium ppm ASTM D5185m 1325 1696 Phosphorus ppm ASTM D5185m 818 1094 Zinc ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 3 Nit | Boron | ppm | ASTM D5185m | 0 | | 80 | |
| Manganese ppm ASTM D5185m <1 2 Magnesium ppm ASTM D5185m 0 690 580 Calcium ppm ASTM D5185m 1325 1696 Phosphorus ppm ASTM D5185m 818 1094 Zinc ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 | Barium | ppm | ASTM D5185m | 0 | 0 | 0 | |
| Magnesium ppm ASTM D5185m 0 690 580 Calcium ppm ASTM D5185m 1325 1696 Phosphorus ppm ASTM D5185m 818 1094 Zinc ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m >20 5 16 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲3 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 | Molybdenum | ppm | | 0 | 128 | | |
| Calcium ppm ASTM D5185m 1325 1696 Phosphorus ppm ASTM D5185m 818 1094 Zinc ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Sulfation Abs/.1mm *ASTM D7624 >20 15.8 19.6 FLUID DEGRADATION method limit/base current history1 history2 | • | ppm | ASTM D5185m | | <1 | | |
| Phosphorus ppm ASTM D5185m 818 1094 Zinc ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2< | - | ppm | ASTM D5185m | 0 | | | |
| Zinc ppm ASTM D5185m 953 1457 Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 <t< td=""><td></td><td>ppm</td><td></td><td></td><td></td><td></td><td></td></t<> | | ppm | | | | | |
| Sulfur ppm ASTM D5185m 2934 3099 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | | ppm | | | | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | - | | | | | | |
| Silicon ppm ASTM D5185m >25 8 16 Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | | | ASTM D5185m | | 2934 | 3099 | |
| Sodium ppm ASTM D5185m 3 3 Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | CONTAMINANTS | 3 | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 5 16 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | Silicon | ppm | | >25 | 8 | | |
| INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | Sodium | ppm | | | | | |
| Soot % % *ASTM D7844 >3 1.7 ▲ 3 Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | Potassium | ppm | ASTM D5185m | >20 | 5 | 16 | |
| Nitration Abs/cm *ASTM D7624 >20 15.8 19.6 Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 28.9 41.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | Soot % | % | *ASTM D7844 | >3 | 1.7 | | |
| FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | Nitration | Abs/cm | *ASTM D7624 | >20 | 15.8 | 19.6 | |
| Oxidation Abs/.1mm *ASTM D7414 >25 28.2 41.9 | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 28.9 | 41.7 | |
| | FLUID DEGRADA | ATION | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 9.4 5.3 4.5 | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 28.2 | 41.9 | |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 9.4 | 5.3 | 4.5 | |



OIL ANALYSIS REPORT







Laboratory Sample No.

Lab Number Unique Number

: IL0033192 : 06077475 : 10859566 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 01 Feb 2024 Recieved Diagnosed Diagnostician

: 04 Feb 2024 : Don Baldridge

RUSH TRUCK LEASING - BOISE IDEALEASE 770 WEST AMITY ROAD

BOISE, ID US 83705

F: (208)639-4859

Contact: MATT BORCHARDT borchardtm@rushenterprises.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)

Contact/Location: MATT BORCHARDT - IDEBOI