

WEAR NORMAL CONTAMINATION SEVERE FLUID CONDITION ABNORMAL

Machine Id LOMBARDINI 5LD 825-3/L Component Diesel Engine Fluid ALPHA 15W40 (5 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter 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.

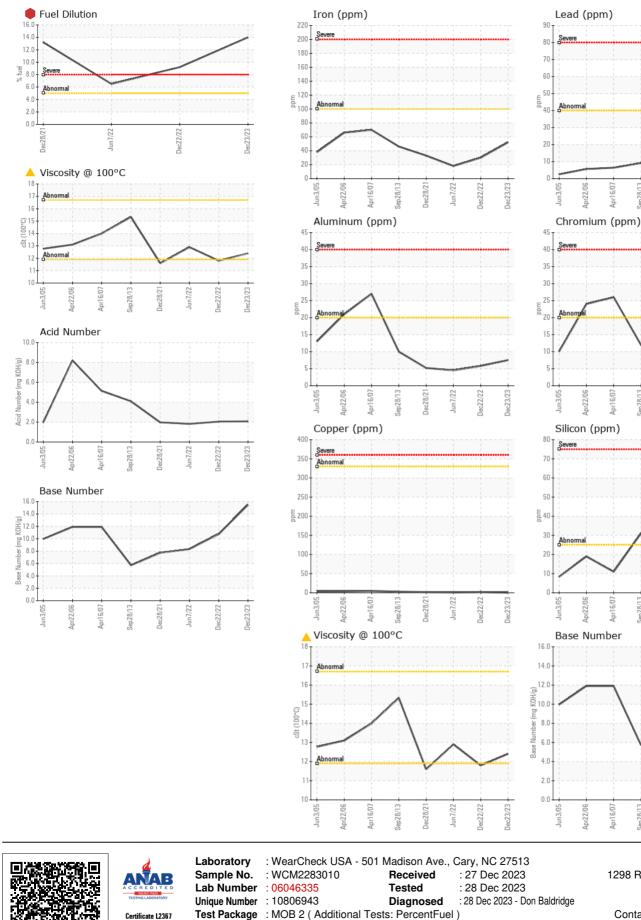
CONTAMINATION

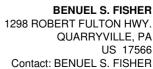
There is a high amount of fuel present in the oil.

FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

| Test UOM Method Limit/Ab Current History1 History2 Sample Number Client Info 23 De2/2023 22e.202 7.000223 7.000223 7.000223 7.000223 7.000223 7.000223 7.000223 7.000223 7.000023 7.00023 7 | | | | | | | |
|---|----------------|----------|-------------|-----------|-------------|-------------|-------------|
| Sample Date Client Info 23 Dec 2023 22 Dec 2022 07 Jun 2022 Machine Age hrs Client Info 706 662 299 Oil Age hrs Client Info 706 662 299 Oil Changed Client Info 706 662 299 Oil Changed Client Info Changed Changed Changed Changed Changed Sample Status SEVERE SEVERE SEVERE SEVERE ABNORMAL Iron ppm ASTM D5185m >20 2 2 1 Nickel ppm ASTM D5185m >20 8 6 4 Lead ppm ASTM D5185m >3 0 0 1 2 Auminum ppm ASTM D5185m >3 0 0 1 2 1 Vanadium ppm ASTM D5185m >20 21 0 1 0 1 Vanadium ppm ASTM D5185m >20 | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Machine Age hrs Client Info 706 662 299 Filter Age hrs Client Info 706 662 299 Oil Changed Client Info 706 662 299 Filter Changed Client Info Changed Changed Changed Sample Status SEVERE SEVERE ABNORMAL Iron ppm ASTM D5185m >100 52 30 18 Chromium ppm ASTM D5185m >20 2 1 1 Nickel ppm ASTM D5185m >30 0 <1 2 Silver ppm ASTM D5185m >30 0 <1 2 1 Copper ppm ASTM D5185m >30 0 <1 2 1 Tin ppm ASTM D5185m >30 <1 2 1 1 Visual NONE NONE NONE NONE NONE NONE Visual | Sample Number | | Client Info | | WCM2283010 | WCM2283011 | WCM2283013 |
| Oil Age hrs Client Info 706 662 299 Filter Age hrs Client Info 706 662 299 Oil Changed Client Info Changed Changed Changed Changed Filter Changed Client Info Changed SEVERE SEVERE Asmoged Changed Sample Status Client Info Changed SEVERE Asmoged Changed Iron ppm ASTM D5185m >20 2 2 1 Nickel ppm ASTM D5185m >20 8 6 4 Lead ppm ASTM D5185m >20 8 6 4 Lead ppm ASTM D5185m >20 8 6 4 Lead ppm ASTM D5185m >30 0 <1 2 1 Vanadium ppm ASTM D5185m >20 8 6 4 0 <1 Vanadium ppm ASTM D5185m | Sample Date | | Client Info | | 23 Dec 2023 | 22 Dec 2022 | 07 Jun 2022 |
| Filter Age hrs Client Info 706 662 299 Oil Changed Client Info Changed Chan | Machine Age | hrs | Client Info | | 25601 | 24278 | 23616 |
| Oil Changed Filter Changed Sample Status Client Info Changed Changed SEVERE Changed Changed SEVERE Changed Changed SEVERE Changed ABNORMAL Iron ppm ASTM D5185m<>100 52 30 18 Chromium ppm ASTM D5185m<>20 2 2 1 Nickel ppm ASTM D5185m >20 2 2 1 Nickel ppm ASTM D5185m >20 0 0 <1 Silver ppm ASTM D5185m >3 0 0 <1 Aluminum ppm ASTM D5185m >20 8 6 4 Lead ppm ASTM D5185m >20 8 0 <1 2 Yanadium ppm ASTM D5185m >15 <1 0 <1 8 Velavid scalar Visual NONE NONE NONE NONE Silicon ppm ASTM D7845 >20 <1 0 <1 Fuel % <th>Oil Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>706</th> <th>662</th> <th>299</th> | Oil Age | hrs | Client Info | | 706 | 662 | 299 |
| Filter Changed Sample Status Client Info Changed SEVERE Changed SEVERE Changed SEVERE Changed ABNORMAL Iron ppm ASTM D5185m<>100 52 30 18 Chromium ppm ASTM D5185m<>20 2 2 1 Nickel ppm ASTM D5185m<>3 0 0 <1 Silver ppm ASTM D5185m<>30 0 0 <1 Aluminum ppm ASTM D5185m<>30 0 0 <1 Aluminum ppm ASTM D5185m >40 2 1 2 Copper ppm ASTM D5185m >15 <1 0 <1 Vanadium ppm ASTM D5185m >20 a 0 0 Vellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >20 1 0 <1 Fuel % ASTM D5185m >20 1 0 <1 < | Filter Age | hrs | Client Info | | 706 | 662 | 299 |
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| Potassium ppm ASTM D5185m >20 <1 | Silicon | 000 | | > 2F | 11 | 0 | 6 |
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| Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGNEGSodiumppmASTM D5185m242BoronppmASTM D5185m001BariumppmASTM D5185m000MolybdenumppmASTM D5185m11449ManganeseppmASTM D5185m<1<1<1MagnesiumppmASTM D5185m34144723CalciumppmASTM D5185m548341291537PhosphorusppmASTM D5185m109210201178SulfurppmASTM D5185m350841253072OxidationAbs/.tmm*ASTM D5185m350841253072OxidationAbs/.tmm*ASTM D5185m2.072.051.82Base Number (RN)mg KOHgASTM D289615.4910.748.34 | | | | - | - | | |
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| Calcium ppm ASTM D5185m 5483 4129 1537 Phosphorus ppm ASTM D5185m 854 860 916 Zinc ppm ASTM D5185m 1092 1020 1178 Sulfur ppm ASTM D5185m 3508 4125 3072 Oxidation Abs/.tmm *ASTM D5185m 26.4 1.92 1.92 1.82 Base Number (AN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | Manganese | ppm | ASTM D5185m | | | | |
| Phosphorus ppm ASTM D5185m 854 860 916 Zinc ppm ASTM D5185m 1092 1020 1178 Sulfur ppm ASTM D5185m 3508 4125 3072 Oxidation Abs/.tmm *ASTM D7414 >25 54.9 51.9 26.4 Acid Number (AN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | Magnesium | ppm | ASTM D5185m | | 34 | 144 | 723 |
| Zinc ppm ASTM D5185m 1092 1020 1178 Sulfur ppm ASTM D5185m 3508 4125 3072 Oxidation Abs/.1mm *ASTM D7414 >25 54.9 51.9 26.4 Acid Number (AN) mg KOH/g ASTM D8045 2.07 2.05 1.82 Base Number (BN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | | ppm | | | | | |
| Sulfur ppm ASTM D5185m 3508 4125 3072 Oxidation Abs/.1mm *ASTM D7414 >25 54.9 51.9 26.4 Acid Number (AN) mg KOH/g ASTM D8045 2.07 2.05 1.82 Base Number (BN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | | ppm | | | | | 916 |
| Oxidation Abs/.1mm *ASTM D7414 >25 54.9 51.9 26.4 Acid Number (AN) mg KOH/g ASTM D8045 2.07 2.05 1.82 Base Number (BN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | | ppm | | | | | |
| Acid Number (AN) mg KOH/g ASTM D8045 2.07 2.05 1.82 Base Number (BN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | | ppm | ASTM D5185m | | | 4125 | 3072 |
| Base Number (BN) mg KOH/g ASTM D2896 15.49 10.74 8.34 | | | | >25 | 54.9 | | |
| | | mg KOH/g | ASTM D8045 | | | | |
| Visc @ 100°C cSt ASTM D445 | . , | 0 0 | | | | | |
| | Visc @ 100°C | cSt | ASTM D445 | | <u> </u> | <u> </u> | 12.9 |





Dec28/21

Jun7/22

Dec22/22

CC/Lun

ar 28/3

an 28/1

Sep28/13

Sep28/13

Sep28/13

CC/Lun

1ar78/7

or 78/7

PC/1779

Pr73/7

QUARRYVILLE, PA US 17566

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T: F:

Dec23/23 -

Contact/Location: BENUEL S. FISHER - BENQUAPA

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.