

OIL ANALYSIS REPORT

Machine Id **FREIGHTLINER 208** mpone **Diesel Engine** TRC PRO-SPEC V SYN BLEND 15W40 (20 LTR)

| Sample Date Client Info 10 May 2024 20 Mar 2024 Machine Age hrs Client Info 14844 14830 Oil Age hrs Client Info 14844 40.00 Filter Age hrs Client Info 50 80.00 Oil Changed Client Info 50 Not Changed Oil Changed Client Info Mot Changed Sample Status Client Info Changed VEAR Info ppm ASTMD556m >-5 11 0.0 Nickel ppm ASTMD556m >-5 -1 0.0 Nickel ppm ASTMD556m >-5 10 0.0 Nickel ppm ASTMD556m >-2 0 0.0 Micomponent wear rates are normal. ppm ASTMD556m >-2 0 0 Micomponent wear rates are normal. ppm | RECOMMENDATION | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|------------------|----------|---------------|-----------|-------------|-------------|----------|
| Sample DateClient Into101 Mp 202Moltar 202Moltar 202Machine AgeIvsQiclen IntoIcs1434414300Oil ChangetVisoClient IntoStill51440.00Filter AgeVisoClient IntoViso51440.01Filter AgeVisoClient IntoClient IntoClient IntoClient IntoClient IntoClient IntoViso7VEAPTionpmASTL05180-57N14NormanpmASTL05180-57114NormanpmASTL05180-50Client Into0NormanpmASTL05180-5200NormanpmASTL05180-5200NormanpmASTL05180-5200Astlo5180pmASTL05180-5200Astlo5180pmASTL05180-5200Component wear rates are normal.Client IntopmASTL05180-5200Astlo5180pmASTL05180-5200Astlo5180pmASTL05180-5200Astlo5180pmASTL0518000Astlo51 | Resample at the next service interval to monitor. | Sample Number | | Client Info | | TR02636322 | TR02626602 | |
| Oil Age hrs Client Info 799 80.00 Filter Age hrs Client Info 514 40.00 OIC Changed Client Info In 810 changed Filter Changed Client Info In Northaug Sample Status | | Sample Date | | Client Info | | 10 May 2024 | 20 Mar 2024 | |
| Filter Age hrs Client Info 514 400 Oil Changed Client Info Not Changed Filter Changed Client Info Not Changed Sample Status Client Info Not Changed VEAR Info SimUSSISII NORMAL Nickel pm ASTM DSISIII 0.0 Nickel pm ASTM DSISIII 0.0 Nickel pm ASTM DSISIII 0.0 0.0 Nickel pm ASTM DSISIII 0.0 0.0 Aurainum pm ASTM DSISIII 0.0 0.0 Qopper pm ASTM DSISIII 0.0 0.0 Contradiction of any contamination in the oil. Silicon pm ASTM DSISIII 0 0.0 Fuere is no indication of any contamination in the oil. <t< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>14844</th><th>14330</th><th></th></t<> | | Machine Age | hrs | Client Info | | 14844 | 14330 | |
| Oil Changed Client Info Not Changed Not Changed Filter Changed Client Info Changed Changed Changed Sample Status V Client Info NORMA NORMA VEAR Iron pm ASTMD585m >-5 11 4 Norde pm ASTMD585m >-4 -1 0 Norde ppm ASTMD585m >-4 -1 0 Norde ppm ASTMD585m >-4 0 Norde ppm ASTMD585m >-4 0 0 Norde ppm ASTMD585m >-55 0 0 Auranium ppm ASTMD585m >-25 0 0 CONTAMINATION pm ASTMD585m >-25 0 0 There is no indication of any contamination in the oil. Silfor | | Oil Age | hrs | Client Info | | 709 | 800 | |
| Filter Changed Olient Into Image Changed Image Image <thimage< th=""> Image Image</thimage<> | | Filter Age | hrs | Client Info | | 514 | 400 | |
| Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL Normal VEAR Iron pm ASIM D518/m >50 11 4.4 Nickel ppm ASIM D518/m >6 0.0 Nickel ppm ASIM D518/m >4 0.0 0.0 Nickel ppm ASIM D518/m >2 0 0.0 Aluminum ppm ASIM D518/m >25 0 0.0 Aluminum ppm ASIM D518/m >25 0 0 Aluminum ppm ASIM D518/m >25 0 0 0 | | Oil Changed | | Client Info | | Not Changd | Not Changd | |
| VEAR Iron ppm ASTM D588(m) >75 11 4 All component wear rates are normal. Chromium ppm ASTM D588(m) >4 1 0.0 Nickel ppm ASTM D588(m) >4 <1 0.0 Nickel ppm ASTM D588(m) >2 0 0.0 All component wear rates are normal. Nickel ppm ASTM D588(m) >2 0 0.0 Nickel ppm ASTM D588(m) >2 0 0.0 All mominum ppm ASTM D588(m) >2 0 0.0 Lead ppm ASTM D588(m) >100 <1 CONTAMINATION Stilicon ppm ASTM D588(m) >2 10 8 Chromium ppm ASTM D588(m) >2 10 8 Contronium ppm ASTM D588(m) >2 10< | | Filter Changed | | Client Info | | Changed | Changed | |
| Nickel pm ASTM D51560 > | | Sample Status | | | | NORMAL | NORMAL | |
| Nickel pp ASTM D318(m) >4 <1 0 Titanium pp ASTM D518(m) >2 0 0 Silver pp ASTM D518(m) >2 0 0 Aluminum pp ASTM D518(m) >52 0 0 Lead pp ASTM D518(m) >51 3 2 Copper pm ASTM D518(m) >10 <1 | VEAR | Iron | ppm | ASTM D5185(m) | >75 | 11 | 4 | |
| Nickel ppm ASTM DS156m >.4 1 0 Titanium ppm ASTM DS156m >.2 0.0 0.0 Silver ppm ASTM DS156m >.2 0.0 0.0 Aluminum ppm ASTM DS156m >.25 0.0 0.0 Aluminum ppm ASTM DS156m >.100 C1 <.11 | All component wear rates are normal. | Chromium | ppm | ASTM D5185(m) | >5 | <1 | 0 | |
| Silver ppm ASTM D5185(m) >2 0 0 Aluminum ppm ASTM D5185(m) >15 3 2 Lead ppm ASTM D5185(m) >52 0 0 Copper ppm ASTM D5185(m) >40 0 Tin ppm ASTM D5185(m) >4 0 0 Vanadium ppm ASTM D5185(m) >4 0 0 CONTAMINATION ppm ASTM D5185(m) >2 10 8 Potassium ppm ASTM D5185(m) >2 10 8 Potassium ppm ASTM D5185(m) >2 10 8 Solicon ppm ASTM D5185(m) >2 10 8 CONTAMINATION Silicon ppm ASTM D5185(m) >0 10 | | Nickel | ppm | ASTM D5185(m) | >4 | <1 | 0 | |
| Aluminum ppm ASTM D5165(m) >15 3 2 Lead ppm ASTM D5165(m) >25 0 0 Copper ppm ASTM D5165(m) >100 <11 | | Titanium | ppm | ASTM D5185(m) | >2 | 0 | 0 | |
| Lead pp ASTM D5185(m) >25 0 0 Copper ppm ASTM D5185(m) >100 <1 <1 Tin ppm ASTM D5185(m) >4 0 0 Vanadium ppm ASTM D5185(m) >4 0 0 CONTAMINATION Silicon ppm ASTM D5185(m) >25 10 8 CONTAMINATION Silicon ppm ASTM D5185(m) >20 <10 <1 There is no indication of any contamination in the oil. Silicon ppm ASTM D5185(m) >20 <10 8 Your Visual >20 REG NEG | | Silver | ppm | ASTM D5185(m) | >2 | 0 | 0 | |
| Copper ppm ASTM D5185(m) >100 <1 <1 Tin ppm ASTM D5185(m) >4 0 0 Vanadium ppm ASTM D5185(m) >4 0 0 CONTAMINATION Silicon ppm ASTM D5185(m) >25 10 8 There is no indication of any contamination in the oil. Potassium ppm ASTM D5185(m) >20 <1 | | Aluminum | ppm | ASTM D5185(m) | >15 | 3 | 2 | |
| Tin ppm ASTM D5185(m) >4 0 0 Vanadium ppm ASTM D5185(m) < 0 0 CONTAMINATION Potassium ppm ASTM D5185(m) >20 <10 8 CONTAMINATION Potassium ppm ASTM D5185(m) >20 <10 8 Potassium ppm ASTM D5185(m) >20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 | | Lead | ppm | ASTM D5185(m) | >25 | 0 | 0 | |
| Vanadium ppm ASTM D5185/m ··· 0 0 CONTAMINATION Silicon ppm ASTM D5185/m >-25 10 8 There is no indication of any contamination in the oil. Potassium ppm ASTM D5185/m >20 <1 | | Copper | ppm | ASTM D5185(m) | >100 | <1 | <1 | |
| Solution Silicon ppm ASTMD5185(m) >25 10 8 | | Tin | ppm | ASTM D5185(m) | >4 | 0 | 0 | |
| Potassium ppm ASTM D5185(m) >20 <1 | | Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | |
| Potassium ppm ASTM D5185(m) >20 <1 <1 Fuel VC Method >3.0 <1.0 | | Silicon | ppm | ASTM D5185(m) | >25 | 10 | 8 | |
| Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 | There is no indication of any contamination in the oil. | Potassium | ppm | ASTM D5185(m) | >20 | <1 | <1 | |
| GlycolWC MethodNEGNEGSoot %%ASTM D7844>600NitrationAbs/cmASTM D7844*>209.07.8NitrationAbs/cmASTM D7624*>209.017.7SulfationAbs/tmASTM D715*>3020.017.7Emulsified WaterscalarVisual*>0.2NEGNEGSodiumppmASTM D5185(m)53BoronppmASTM D5185(m)104262BariumppmASTM D5185(m)100MolybdenumppmASTM D5185(m)100MagnesiumppmASTM D5185(m)10129MagnesiumppmASTM D5185(m)10081013PhosphorusppmASTM D5185(m)10081013 | | Fuel | | WC Method | >3.0 | <1.0 | <1.0 | |
| Soot %%ASTM D7844*>600NitrationAbs/cmASTM D7624*>209.07.8SulfationAbs/lmASTM D715*>3020.017.7Emulsified WaterscalarVisual*>0.2NEGNEGNED result indicates that there is suitable alkalinity remaining in the bil. The condition of the oil is suitable for further service.SodiumppmASTM D5185(m)4262BoronppmASTM D5185(m)00MolybdenumppmASTM D5185(m)00ManganeseppmASTM D5185(m)00MagnesiumppmASTM D5185(m)103129PhosphorusppmASTM D5185(m)10081013 | | Water | | WC Method | >0.2 | NEG | NEG | |
| NitrationAbs/cmASTM D7624*>209.07.8SulfationAbs/tmASTM D7624*>3020.017.7Emulsified WaterscalarVisual*>0.2NEGNEGNEDSodiumppmASTM D5185(m)53BoronppmASTM D5185(m)100BariumppmASTM D5185(m)00MolybdenumppmASTM D5185(m)00ManganeseppmASTM D5185(m)1029CalciumppmASTM D5185(m)10081013 | | Glycol | | WC Method | | NEG | NEG | |
| SulfationAbs/.tmmASTM D7415*>3020.017.7Emulsified WaterscalarVisual*>0.2NEGNEGNEDSodiumppmASTM D5185(m)53BoronppmASTM D5185(m)104262BariumppmASTM D5185(m)1000MolybdenumppmASTM D5185(m)1000ManganeseppmASTM D5185(m)1000ManganesiumppmASTM D5185(m)10291CalciumppmASTM D5185(m)100810131PhosphorusppmASTM D5185(m)100810131 | | Soot % | % | ASTM D7844* | >6 | 0 | 0 | |
| Emulsified WaterscalarVisual*>0.2NEGNEGCUID CONDITIONSodiumppmASTM D5185(m)53BoronppmASTM D5185(m)4262BariumppmASTM D5185(m)000MolybdenumppmASTM D5185(m)1000ManganeseppmASTM D5185(m)1000MagnesiumppmASTM D5185(m)101013PhosphorusppmASTM D5185(m)10081013 | | Nitration | Abs/cm | ASTM D7624* | >20 | 9.0 | 7.8 | |
| Sodium ppm ASTM D5185(m) 5 3 Boron ppm ASTM D5185(m) 42 62 Barium ppm ASTM D5185(m) 0 0 Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 0 0 | | Sulfation | Abs/.1mm | ASTM D7415* | >30 | 20.0 | 17.7 | |
| Boron ppm ASTM D5185(m) 42 62 Barium ppm ASTM D5185(m) 0 0 Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 1008 1013 | | Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | |
| Boron ppm ASTM D5185(m) 42 62 Barium ppm ASTM D5185(m) 0 0 Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 1008 1013 | | Sodium | mag | ASTM D5185(m) | | 5 | 3 | |
| Barium ppm ASTM D5185(m) 0 0 Molybdenum ppm ASTM D5185(m) 86 82 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 2273 2144 Phosphorus ppm ASTM D5185(m) 1008 1013 | The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service. | | | | | | | |
| Molybdenum ppm ASTM D5185(m) 86 82 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 29 Calcium ppm ASTM D5185(m) 2273 2144 Phosphorus ppm ASTM D5185(m) 1008 1013 | | | | . , | | | | |
| Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 31 2.9 Calcium ppm ASTM D5185(m) 2273 2.144 Phosphorus ppm ASTM D5185(m) 1008 1013 | | | | | | | | |
| Magnesium ppm ASTM D5185(m) 31 29 Calcium ppm ASTM D5185(m) 2273 2144 Phosphorus ppm ASTM D5185(m) 1008 1013 | | | | | | | | |
| Calcium ppm ASTM D5185(m) 2273 2144 Phosphorus ppm ASTM D5185(m) 1008 1013 | | - | | | | | 29 | |
| Phosphorus ppm ASTM D5185(m) 1008 1013 | | - | | | | 2273 | | |
| Zinc ppm ASTM D5185(m) 1198 1146 | | Phosphorus | | ASTM D5185(m) | | 1008 | 1013 | |
| | | Zinc | ppm | ASTM D5185(m) | | 1198 | 1146 | |

Sulfur

Oxidation

Visc @ 100°C cSt

ppm

Abs/.1mm Base Number (BN) mg KOH/g ASTM D2896*

ASTM D5185(m)

ASTM D7279(m)

ASTM D7414* >25

Contact/Location: Service Manager - BOO521BON

3171

13.3

9.56

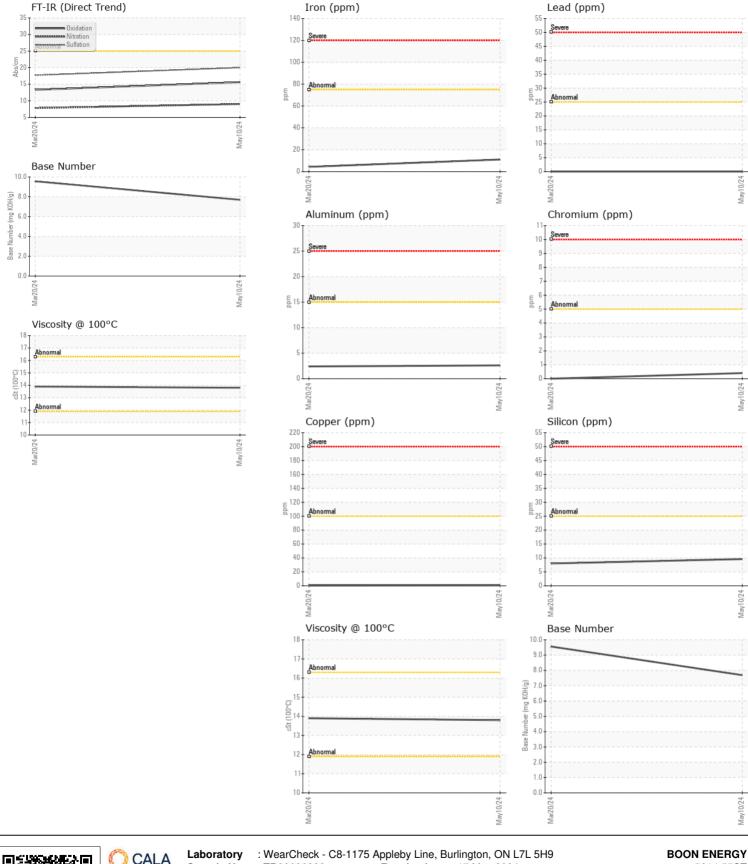
13.9

3073

15.6

7.69

13.8



CALA Sample No. Received 5214 55ST : TR02636322 : 17 May 2024 BONNYVILLE, AB Lab Number : 02636322 Tested : 21 May 2024 ISO 17025:2017 Diagnosed Accredited Unique Number : 5785484 : 21 May 2024 - Kevin Marson CA T9N 2K7 Laboratory Test Package : MOB 2 Contact: Service Manager 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. T: F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: BOO521BON [WCAMIS] 02636322 (Generated: 05/21/2024 10:58:12) Rev: 1

Contact/Location: Service Manager - BOO521BON Page 2 of 2