

CONTAMINATION NORMAL

WEAR

NORMAL

[363] Machine to JOHN DEERE 814432

Diesel Engine

Area

SHELL ROTELLA T 15W40 (--- GAL)

Resample at the next service interval to monitor. Test UOM Method Limit/Mo Current History1 History1 Sample Number Client Info IDMay 2020 VCP31086
Sample at the next service interval to monitor. Sample Date Client Info 10 May 202 65 Apr 2021 Machine Age hrs Client Info 500 500 Oil Qage hrs Client Info 500 500 Oil Changed Client Info Changed Client Info Changed -
Vertication Statupic Date Other Info Now 222 Norm 223 Norm 233 Norm 233 Norm 233 Norm 233 Norm 233
Oil Age hrs Client Info 500 500 Filter Age hrs Client Info 0 0 Oil Changed Client Info Changed Changed Changed Changed Changed Changed WEAR NORMAL NORMAL NORMAL NORMAL NORMAL All component wear rates are normal. Iron pm ASTM DS18m >11 <11 2 Nickel ppm ASTM DS18m >11 <11 2 Silver ppm ASTM DS18m >11 <11 2 Gopper ppm ASTM DS18m >3 0 <1 Auminum ppm ASTM DS18m >3 0 <1 Qopper ppm ASTM DS18m >2 4 White Metal scalar Visual NONE NONE NONE NONE
Filter Age hrs Client Into O O Image Oi Changed Client Into Changed Changed<
Oil Changed Client Info Changed Chande <t< th=""></t<>
Filter Changed Sample Status Client Info Changed NORMAL
Sample Status NORMAL NORMAL NORMAL NORMAL WEAR Iron ppm ASIX DS185 >51 31 20 1 All component wear rates are normal. Iron ppm ASIX DS185 >5 2 16 1 Silver ppm ASIX D5185 >5 2 16 1 Silver ppm ASIX D5185 >5 0 <1 2 1 Aluminum ppm ASIX D5185 >5 0 <1 2 1 Silver ppm ASIX D5185 >3 0 <1 2 1 Auminum ppm ASIX D5185 >3 0 <1 2 1 Lead ppm ASIX D5185 >2 4 1 2 1 Vanadium ppm ASIX D5185 >2 4 1 2 1 Vanadium pm ASIX D5185 >2 4 1 2 1
Iron ppm ASTM D5185m >51 31 59
All component wear rates are normal. Chromium ppm ASTM D5185m >1 <1
All component wear rates are normal. Chromium ppm ASTM D5185m >1 <1
Nickel ppm ASTM D5185m >5 2 18
TitaniumppmASTM D5185m $<$ $<$ $<$ $<$ $<$ $<$ SilverppmASTM D5185m>30 $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$
SilverppmASTM D5185m>30<1
AluminumppmASTM D5185m>31233LeadppmASTM D5185m>2602CopperppmASTM D5185m>26454TinppmASTM D5185m>4<12VanadiumppmASTM D5185m>4<12White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONE208Yellow Metalscalar*VisualNONE208Yellow Metalscalar*VisualNONE208Yellow Metalscalar*VisualNONEYellow Metalscalar*VisualNONEYellowYellowscalar*VisualNONE
LeadppmASTM D5185>2602CopperppmASTM D5185>264545TinppmASTM D5185>4<12VanadiumppmASTM D5185<4<12White Metalscalar*VisualNONENONENONE<Velow Metalscalar*VisualNONENONENONE<PotassiumppmASTM D5185>22208PotassiumppmASTM D5185>22208FuelppmASTM D5185>22208QuereeppmASTM D5185>22208GlycolppmASTM D5185>22208NereeppmASTM D5185>22208MaterppmASTM D5185>22208GlycolppmASTM D5185>2078NereeppmASTM D5185>2078Sold%%%%MEGNONESultationAbs/%%%MEG10.5SultationAbs/%%%MEG10.5SultationAbs/%%%MONENONESultationAbs/%%NONENONENONE
CopperpmASTM D5185m>2645454TinppmASTM D5185m>4<12VanadiumppmASTM D5185m<0<1White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONE208PotassiumppmASTM D5185m>2078FuelWC Method>.21WaterWC Method>.21GlycolWC Method>.21NEGNEGSoot %%*ASTM D7844>30.40.6SulfationAbs/tm*ASTM D7844>30.410.5SulfationAbs/tm*ASTM D7844>30.410.5SulfationAbs/tm*ASTM D7844>30.04NONENONEDebrisscalar*VisualNO
Tin ppm ASTM D5185m >4 <1 2 Vanadium ppm ASTM D5185m I 0 <1 I White Metal scalar *Visual NONE NONE NONE NONE NONE I Yellow Metal scalar *Visual NONE NONE NONE NONE NONE I Yellow Metal scalar *Visual NONE NONE NONE NONE I I Yellow Metal scalar Ppm ASTM D5185m >22 20 8 I I Potassium ppm ASTM D5185m >20 7 8 I I Fuel VC WC Method >2.1 <1.0 <1.0 I Water Image: MC Method >2.1 NEG NEG I Glycol WC Method >2.1 NEG NEG I Soot % % MStM D5185m >20 8.4 I I Sulfation Abs/rm %StM D5185m >20 8.4 I I Sulfation Abs/rm %StM D5185m >30 20.3 25.9 I Sulfation <t< th=""></t<>
VanadiumppmASTM D5185mImage: Constant in the oil.One image: Constant in the oil.VanadiumppmASTM D5185mVisualNONENONENONEImage: Constant in the oil.CONTAMINATIONNone indication of any contamination in the oil.SiliconppmASTM D5185m>2078PotassiumppmASTM D5185m>2078FuelWC Method>2.1<1.0<1.0WaterImage: Constant in the oil.WC Method>0.21NEGNEGGlycolWC Method>0.21NEGNEGSoot %%*ASTM D7844>30.40.66NitrationAbs/Imm*ASTM D7624>208.410.5SulfationAbs/Imm*ASTM D7445>3020.325.9Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONE
Yellow Metalscalar*VisualNONENONECONTAMINATIONppmASTM D5185m>22208PotassiumppmASTM D5185m>2078PotassiumppmASTM D5185m>2078FuelWC Method>2.1<1.0<1.0<WaterWC Method>0.21NEGNEG<GlycolWC Method>0.21NEGNEG<NitrationAbs/cm'ASTM D784t>30.40.66NitrationAbs/cm'ASTM D762t>208.410.5SulfationAbs/1m'ASTM D764t>3020.325.9Siltscalar'VisualNONENONENONEDebrisscalar'VisualNONENONESand/Dirtscalar'VisualNONENONE
Silicon ppm ASTM D5185m >22 20 8 Potassium ppm ASTM D5185m >20 7 8 There is no indication of any contamination in the oil. Fuel WC Method >2.1 <1.0 <1.0 Water Image: WC Method >0.21 NEG NEG NEG Glycol WC Method >0.21 NEG NEG Soot % % *ASTM D7844 >3 0.4 0.6 Nitration Abs/lmm *ASTM D7624 >20 8.4 10.5 Sulfation Abs/lmm *ASTM D7155 >30 20.3 25.9 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE
Potassium ppm ASTM D5185m >20 7 88 Fuel WC Method >2.1 <1.0 <1.0 < Water WC Method >0.21 NEG NEG < Glycol WC Method >0.21 NEG NEG < Soot % % *ASTM D7844 >3 0.4 0.6 < Nitration Abs/cm *ASTM D7844 >30 0.4 0.6 < Sulfation Abs/cm *ASTM D7844 >30 20.3 25.9 < Silt scalar *Visual NONE NONE NONE < Debris scalar *Visual NONE NONE < Sand/Dirt scalar *Visual NONE NONE <
Potassium ppm ASTM D5185m >20 7 88 Fuel WC Method >2.1 <1.0 <1.0 < Water WC Method >0.21 NEG NEG < Glycol WC Method >0.21 NEG NEG < Soot % % *ASTM D7844 >3 0.4 0.6 < Nitration Abs/cm *ASTM D7844 >30 0.4 0.6 < Sulfation Abs/cm *ASTM D7844 >30 20.3 25.9 < Silt scalar *Visual NONE NONE NONE < Debris scalar *Visual NONE NONE < Sand/Dirt scalar *Visual NONE NONE <
Fuel WC Method >2.1 <1.0
WaterWC Method>0.21NEGNEGGlycolWC MethodWC MethodNEGNEGSoot %%*ASTM D7844>30.40.6NitrationAbs/cm*ASTM D7624>208.410.5SulfationAbs/tm*ASTM D7455>3020.325.9Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONE
GlycolWC MethodNEGNEGSoot %%*ASTM D7844>30.40.6NitrationAbs/cm*ASTM D7624>208.410.5SulfationAbs/tm*ASTM D7615>3020.325.9Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONE
Soot %%*ASTM D7844>30.40.6NitrationAbs/cm*ASTM D7624>208.410.5SulfationAbs/1mm*ASTM D7415>3020.325.9Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONE
SulfationAbs/.1mm*ASTM D7415>3020.325.9Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONE
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONE
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONE
Sand/Dirt scalar *Visual NONE NONE
Appearance scalar *Visual NORML NORML NORML
Odor scalar *Visual NORML NORML NORML
Emulsified Water scalar *Visual >0.21 NEG NEG
FLUID CONDITION Sodium ppm ASTM D5185m >31 10 5
Boron ppm ASTM D5185m 316 65 45
The BN result indicates that there is suitable alkalinity remaining in the Barium ppm ASTM D5185m 0.0 0
oil. The condition of the oil is suitable for further service. Molybdenum ppm ASTM D5185m 1.2 33 67
Manganese ppm ASTM D5185m <1 2
Magnesium ppm ASTM D5185m 24 173 232
Calcium ppm ASTM D5185m 2292 1998 2193
Phosphorus ppm ASTM D5185m 1064 926 880

Base Number (BN) mg KOH/g ASTM D2896 10.1

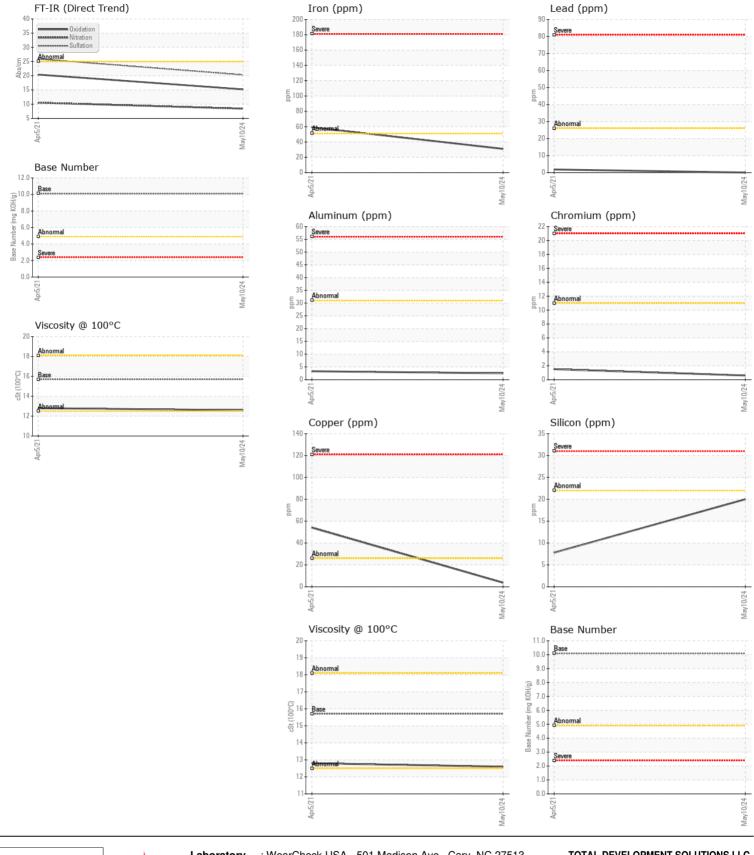
ASTM D445 15.7

Visc @ 100°C cSt

12.8

6.3

12.6



TOTAL DEVELOPMENT SOLUTIONS LLC Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : VCP397836 Received 7805 PROGRESS CT : 31 May 2024 Lab Number : 06196512 Tested GAINESVILLE, VA : 03 Jun 2024 Unique Number : 11058635 : 03 Jun 2024 - Don Baldridge Diagnosed US 20155 Test Package : MOB 1 (Additional Tests: TBN) Contact: JOE SEALE Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jseale@totaldevelopmentsolutions.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (703)222-0497 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (703)753-4586