

### **[ARCHER WESTERN CONST]** Machine Id **176X5821 (S/N 5F13D1416F005523)** Component **Diesel Engine** Eluid

# DIESEL ENGINE OIL SAE 15W40 (--- GAL)

# RECOMMENDATION

All component wear rates are normal.

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

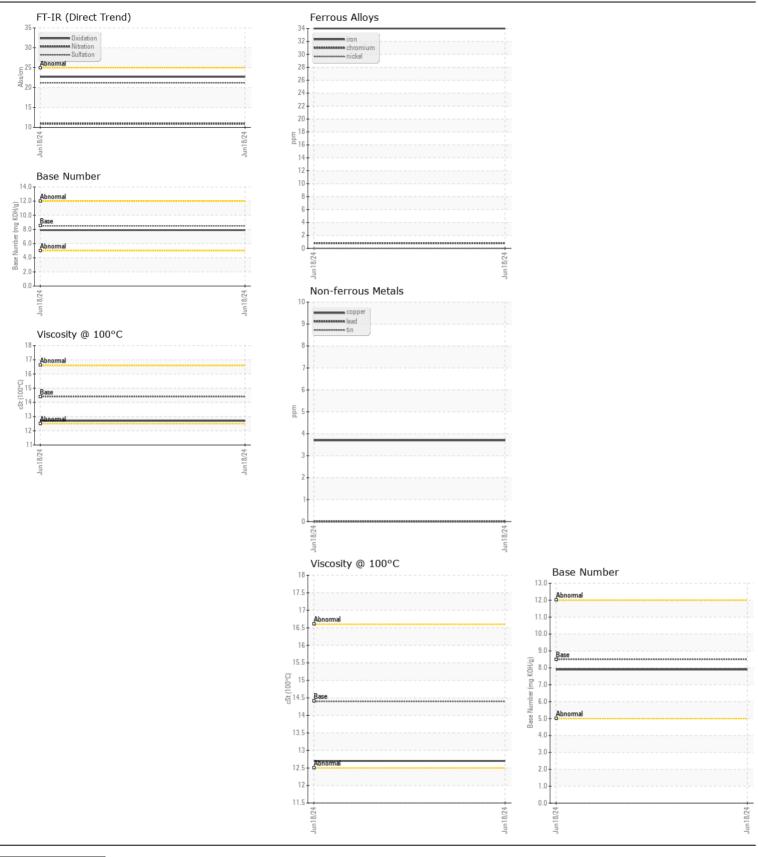
## CONTAMINATION

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 suitable for further service.

TestUOMMethodLimit/abCurrentHistory1History2Sample NumberCilent InfoJR0218632Sample DateCilent Info3412Machine AgehrsCilent Info0Cil AppehrsCilent Info0Filter AgehrsCilent InfoChangedSample StatusCilent InfoChangedIronppmASTM D5185m>10034NickelppmASTM D5185m>20<1NickelppmASTM D5185m>20<1SilverppmASTM D5185m>30SilverppmASTM D5185m>203CopperppmASTM D5185m>203TinppmASTM D5185m>304Yellow Metalscalar"VisualNONENONEYellow Metalscalar"VisualNONENONESulfacionppmASTM D7165m>2516Yellow Metalscalar"VisualNONENONEYellow Metalscalar"VisualNONENONEYellow Metalscalar"VisualNONENONE<	Sample Number         Client Info         JR0218632             Machine Age         hrs         Client Info         3412             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         Changed             Oil Changed         Client Info         Changed              Filter Changed         Client Info         Changed              Sample Status         Visual         NORMAL              Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >20         3             Aluminum         ppm         ASTM D5185m         >20         3             Vanadium         p		
Sample Date         Client Info         18 Jun 2024             Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0             Oil Changed         Client Info         0             Oil Changed         Client Info         0             Sample Status         Client Info         Changed             Iron         ppm         ASTM D5185m         >100         34             Iron         ppm         ASTM D5185m         >20         -1             Iron         ppm         ASTM D5185m         >20         3             Silver         ppm         ASTM D5185m         >33         0             Titanium         ppm         ASTM D5185m         >315         0             Silver         ppm         ASTM D5185m         >25         16             Yellow Metal         scalar         *Visual         NONE<	Sample Date         Client Info         18 Jun 2024             Machine Age         hrs         Client Info         3412             Oil Age         hrs         Client Info         0             Oil Changed         hrs         Client Info         0             Filter Age         hrs         Client Info         Changed             Filter Changed         Client Info         Changed              Filter Changed         Client Info         NORMAL              Sample Status         NORMAL               Tran         ppm         ASTM D5185m<>20         <1             Silver         ppm         ASTM D5185m<>30              Aluminum         ppm         ASTM D5185m<>330         4             Yanadium         ppm         ASTM D5185m<>15         0             Yanadium         ppm         ASTM D5185m<>22         16 <t< th=""><th>/2</th></t<>	/2	
Machine Age         hrs         Client Info         3412             Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Changed             Sample Status         Client Info         Changed             Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >4         0             Silver         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >10              Vanadium         ppm         ASTM D5185m         >16              Valadu         NONE         NONE         NONE              Valadu         ppm	Machine Age         hrs         Client Info         3412             Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Changed             Filter Changed         Client Info         NORMAL             Sample Status         NORMAL              Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <1             Silver         ppm         ASTM D5185m         >20         3             Silver         ppm         ASTM D5185m         >20         3             Aluminum         ppm         ASTM D5185m         >20         3             Vanadium         ppm         ASTM D5185m         >20         3             Vanatoium         ppm         ASTM D5185m<		
Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         Changed             Oil Changed         Client Info         Changed              Sample Status         Client Info         NORMAL              Sample Status         Client Info         NORMAL              Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <-1             Silver         ppm         ASTM D5185m         >3         0             Copper         ppm         ASTM D5185m         >330         4             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >25         16             Vellow Metal         scalar         "Visual         NONE	Oil Age Filter Age hrsClient Info0Filter Age Oil ChangedClient InfoChangedGli ChangedClient InfoChangedFilter ChangedClient InfoChangedSample StatusClient InfoChangedIronppmASTM D5185m>10034ChromiumppmASTM D5185m>20<1NickelppmASTM D5185m>20<1SilverppmASTM D5185m>203SilverppmASTM D5185m>203CopperppmASTM D5185m>304CopperppmASTM D5185m>3304VanadiumppmASTM D5185m>150VanadiumppmASTM D5185m>200Vellow Metalscalar*VisualNONENONESiliconppASTM D5185m>200FuelWC Method>5<16GlycolwC Method>5<1.0SuifationAbs/rm*ASTM D715>3021.2Siltscalar*VisualNONENONEGlycolwC Meth		
Filter AgehrsClient Info0Cil ChangedClient InfoChangedFilter ChangedClient InfoChangedSample StatusClient InfoNORMALIronppmASTM D5185m>10034ChromiumppmASTM D5185m>20<1NickelppmASTM D5185m>203TitaniumppmASTM D5185m>30SilverppmASTM D5185m>203CopperppmASTM D5185m>304TinppmASTM D5185m>150VanadiumppmASTM D5185m>150Vallow Metalscalar*VisualNONENONEVellow Metalscalar*VisualNONENONESilfoonppmASTM D5185m>2516Soto %%*ASTM D5185m>200SulfationAbs/im*ASTM D7153021.2Soto %%*ASTM D715>3021.2SulfationAbs/im*ASTM D715>3021.2SulfationAbs/im*VisualNORE	Filter Age Oil ChangedhrsClient Info0Gil ChangedClient InfoChangedFilter ChangedIClient InfoChangedSample StatusClient InfoSample StatusNORMALIronppmASTM D5185m>10034NickelppmASTM D5185m>20<1NickelppmASTM D5185m>30SilverppmASTM D5185m>30CopperppmASTM D5185m>304CopperppmASTM D5185m>150VanadiumppmASTM D5185m>150Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>200FuelWC Method>5<1.0SolifationAbs/tmm*ASTM D5185m>200SuifationAbs/tmm*ASTM D5185m>200SuifationAbs/tmm*ASTM D5185m>200SuifationAbs/tmm*ASTM D5185m>3021.2<		
Oil Changed         Client Info         Changed            Filter Changed         Client Info         NORMAL             Sample Status         View         NORMAL             Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >20         <1             Silver         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >20         3             Vanadium         ppm         ASTM D5185m         >30         4             Vanadium         ppm         ASTM D5185m         >10              Visual         NONE         NONE               Vanadium         ppm         ASTM D5185m         >20         0             Vellow Metal         scalar<	Oil Changed Filter Changed Sample StatusClient InfoChanged Client InfoFilter Changed Sample StatusClient InfoChanged NORMALIronppmASTM D5185m STM D5185m>10034ChromiumppmASTM D5185m STM D5185m>20<1NickelppmASTM D5185m STM D5185m<<1SilverppmASTM D5185m STM D5185m>30AluminumppmASTM D5185m STM D5185m>304LeadppmASTM D5185m STM D5185m>304VanadiumppmASTM D5185m STM D5185m<10VanadiumppmASTM D5185m STM D5185m>16Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m S20200SulfationppmASTM D5185m S20>200SulfationAbs/tm*ASTM D7644 *ASTM D7644>30.2SulfationAbs/tm*ASTM D7644 *ASTM D7644>30.2SulfationAbs/tm*ASTM D7644 *ASTM D7644NORESulfationAbs/tm*ASTM D7644 *ASTM D		
Oil Changed         Client Info         Changed             Filter Changed         Client Info         Changed             Sample Status         V         Client Info         NORMAL             Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >20         <1             Silver         ppm         ASTM D5185m         >20         3             Aluminum         ppm         ASTM D5185m         >30         0             Vanadium         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >25         16             Vanadium         ppm         ASTM D5185m         >22         10.0	Oil ChangedClient InfoChangedFilter ChangedClient InfoMORMALSample StatusNORMALIronppmASTM D5185m>10034NickelppmASTM D5185m>20<1NickelppmASTM D5185m>40TitaniumppmASTM D5185m>30SilverppmASTM D5185m>203LeadppmASTM D5185m>400CopperppmASTM D5185m>304VanadiumppmASTM D5185m>150Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>200Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>200Yellow Metalscalar*VisualNONENONESoliconppmASTM D5185m>200SiliconppmASTM D5185m>200SiliconppmASTM D5185m>200Soligool%*ASTM D5185m>3021.2		
Filter Changed Sample Status         Client Info         Changed NORMAL             Iron         ppm         ASTM D5185m         >100         34             Nickel         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >20         3             Aluminum         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >25         16             Vanadium         ppm         ASTM D5185m         >25         16            Vanadium         ppm         ASTM D5185m         >22         10	Filter Changed Sample StatusClient InfoImage NORMAL		
Sample Status         NORMAL             Iron         ppm         ASTM D5185m         >100         34             Chromium         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >20         <1             Silver         ppm         ASTM D5185m         >3         0             Silver         ppm         ASTM D5185m         >3         0             Lead         ppm         ASTM D5185m         >330         4             Copper         ppm         ASTM D5185m         >330         4             Vanadium         ppm         ASTM D5185m         >10              Vanadum         ppm         ASTM D5185m         >20         0             Valow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         0 <t< th=""><th>Sample Status         NORMAL             Iron         ppm         ASTM D5185m         &gt;100         34             Chromium         ppm         ASTM D5185m         &gt;20         &lt;1             Nickel         ppm         ASTM D5185m         &gt;4         0             Titanium         ppm         ASTM D5185m         &gt;4         0             Aluminum         ppm         ASTM D5185m         &gt;20         3             Lead         ppm         ASTM D5185m         &gt;20         3             Copper         ppm         ASTM D5185m         &gt;30         4             Vanadium         ppm         ASTM D5185m         &gt;30         4             Vanadium         ppm         ASTM D5185m         &gt;30         4             Vanadium         ppm         ASTM D5185m         &gt;20         0             Vanadium         ppm         ASTM D5185m         &gt;20         0        </th><th></th></t<>	Sample Status         NORMAL             Iron         ppm         ASTM D5185m         >100         34             Chromium         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >4         0             Titanium         ppm         ASTM D5185m         >4         0             Aluminum         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >20         3             Copper         ppm         ASTM D5185m         >30         4             Vanadium         ppm         ASTM D5185m         >30         4             Vanadium         ppm         ASTM D5185m         >30         4             Vanadium         ppm         ASTM D5185m         >20         0             Vanadium         ppm         ASTM D5185m         >20         0		
Iron         ppm         ASTM D5185m         >100         34             Chromium         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >4         0             Tittanium         ppm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >30         0             Lead         ppm         ASTM D5185m         >20         3             Copper         ppm         ASTM D5185m         >30         4             Vanadium         ppm         ASTM D5185m         >30         4             Vanadium         ppm         ASTM D5185m         >10             Vanadium         ppm         ASTM D5185m         >25         16             Vanadium         ppm         ASTM D5185m         >20         0             Vallow Metal         scalar         *Visual <t< th=""><th>Iron         ppm         ASTM D5185m         &gt;100         34            Chromium         ppm         ASTM D5185m         &gt;20         &lt;1            Nickel         ppm         ASTM D5185m         &gt;4         0            Titanium         ppm         ASTM D5185m         &gt;4         0            Silver         ppm         ASTM D5185m         &gt;3         0            Aluminum         ppm         ASTM D5185m         &gt;40         0            Lead         ppm         ASTM D5185m         &gt;40         0            Copper         ppm         ASTM D5185m         &gt;40         0            Vanadium         ppm         ASTM D5185m         &gt;20         0            Vanadium         ppm         ASTM D5185m         &gt;25         16            Yellow Metal         scalar         *Visual         NONE            Yellow Metal         scalar         *Visual         NONE        </th><th></th></t<>	Iron         ppm         ASTM D5185m         >100         34            Chromium         ppm         ASTM D5185m         >20         <1            Nickel         ppm         ASTM D5185m         >4         0            Titanium         ppm         ASTM D5185m         >4         0            Silver         ppm         ASTM D5185m         >3         0            Aluminum         ppm         ASTM D5185m         >40         0            Lead         ppm         ASTM D5185m         >40         0            Copper         ppm         ASTM D5185m         >40         0            Vanadium         ppm         ASTM D5185m         >20         0            Vanadium         ppm         ASTM D5185m         >25         16            Yellow Metal         scalar         *Visual         NONE            Yellow Metal         scalar         *Visual         NONE		
Draw         ASTM D5185m         >20         <1	Chromium         ppm         ASTM D5185m         >20         <1		
Nickel         ppm         ASTM D5185m         >4         0             Titanium         ppm         ASTM D5185m         >3         0             Silver         ppm         ASTM D5185m         >20         3             Aluminum         ppm         ASTM D5185m         >20         3             Copper         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >16              Vanadium         ppm         ASTM D5185m         >25         16             Vanadium         ppm         ASTM D5185m         >20         0             Vanadium         ppm         ASTM D5185m         >20         0             Vanadium         ppm         ASTM D5185m         >20         0             Vanadium         ppm         ASTM D51	Nickel         ppm         ASTM D5185m         >4         0            Titanium         ppm         ASTM D5185m         >3         0            Silver         ppm         ASTM D5185m         >20         3            Aluminum         ppm         ASTM D5185m         >20         3            Lead         ppm         ASTM D5185m         >20         3            Copper         ppm         ASTM D5185m         >40         0            Vanadium         ppm         ASTM D5185m         >15         0            Vanadium         ppm         ASTM D5185m         >15         0            Vanadium         ppm         ASTM D5185m         >15         0            Vanadium         ppm         ASTM D5185m         >25         16            Vellow Metal         scalar         *Visual         NONE             Silicon         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >0.2         NEG <th></th>		
Titanium         ppm         ASTM D5185m         <1	Titanium         ppm         ASTM D5185m          <1		
Silver         pm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >330         4             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >25         16             Vallow Metal         scalar         *Visual         NONE              Vellow Metal         scalar         *Visual         NONE	SilverppmASTM D5185m>30AluminumppmASTM D5185m>203LeadppmASTM D5185m>400CopperppmASTM D5185m>3304CopperppmASTM D5185m>3304VanadiumppmASTM D5185m>150VanadiumppmASTM D5185m>150VanadiumppmASTM D5185m>20Yellow Metalscalar'VisualNONESiliconppmASTM D5185m>200PotassiumppmASTM D5185m>200FuelWC Method>0.2NEGSoto %%'ASTM D7844>30.2SulfationAbs/.tm<'ASTM D7624>2010.9SulfationAbs/.tm<'ASTM D7145>3021.2SulfationAbs/.tm<'ASTM D7145>3021.2SulfationAbs/.tm<'ASTM D7145>3021.2SulfationAbs/.tm<'ASTM D7145>3021.2SulfationAbs/.tm<'ASTM D7145>3021.2Sodurscalar'VisualNONENONESulfationAbs/.tm<'ASTM D7185>3021.2<		
Aluminum         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >330         4             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >16              Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >0.2         NEG             Water         WC Method         >0.2         NEG             Soot %         %         'ASTM D7415         >30         21.2             Sulfation         Abs/rm         'ASTM D7415         30	Aluminum         ppm         ASTM D5185m         >20         3            Lead         ppm         ASTM D5185m         >40         0            Copper         ppm         ASTM D5185m         >330         4            Copper         ppm         ASTM D5185m         >15         0            Vanadium         ppm         ASTM D5185m         >15         0            White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE         NONE            Silicon         ppm         ASTM D5185m         >25         16            Potassium         ppm         ASTM D5185m         >20         0            Fuel         WC Method         >0.2         NEG            Glycol         WC Method         >0.2         NEG            Soot %         %         *ASTM D7624         >20         10.9            Sulfation         Abs/.tmm< *ASTM D7624         >20         10.9            Silt         s		
Aluminum         ppm         ASTM D5185m         >20         3             Lead         ppm         ASTM D5185m         >40         0             Copper         ppm         ASTM D5185m         >330         4             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m         >16             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >0.2         NEG             Soot %         'A STM D7624         >20         10.9             Sulfation         Abs/.mm         'ASTM D7624         >20         10.9	Aluminum         ppm         ASTM D5185m         >20         3            Lead         ppm         ASTM D5185m         >40         0            Copper         ppm         ASTM D5185m         >330         4            Tin         ppm         ASTM D5185m         >15         0            Vanadium         ppm         ASTM D5185m         < <td>&lt;1</td> White Metal         scalar         *Visual         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE            Silicon         ppm         ASTM D5185m         >25         16	<1	
LeadppmASTM D5185m>400CopperppmASTM D5185m>3304TinppmASTM D5185m>150VanadiumppmASTM D5185m<<1White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>200PotassiumppmASTM D5185m>200FuelWC Method>5<1.0WaterWC Method>0.2NEGSoot %%*ASTM D7844>30.2SulfationAbs/.tmm*ASTM D7624>2010.9SulfationAbs/.tmm*ASTM D7624>2010.9SulfationAbs/.tmm*ASTM D7624>2010.9SulfationAbs/.tmm*ASTM D7624>2010.9SulfationAbs/.tmm*ASTM D7624>2010.9Sodiumscalar*VisualNORMLNORESodiumgpmASTM D5185m25031 <t< th=""><th>LeadppmASTM D5185m&gt;400CopperppmASTM D5185m&gt;3304TinppmASTM D5185m&gt;150VanadiumppmASTM D5185m/&lt;11White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m&gt;2516PotassiumppmASTM D5185m&gt;200FuelWC Method&gt;5&lt;1.0GlycolWC Method&gt;0.2NEGSoto %%*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;2010.9SulfationAbs/.tm*ASTM D7624&gt;20NONEGloorscalar*VisualNORENORE</th><th></th></t<>	LeadppmASTM D5185m>400CopperppmASTM D5185m>3304TinppmASTM D5185m>150VanadiumppmASTM D5185m/<11White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>2516PotassiumppmASTM D5185m>200FuelWC Method>5<1.0GlycolWC Method>0.2NEGSoto %%*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>2010.9SulfationAbs/.tm*ASTM D7624>20NONEGloorscalar*VisualNORENORE		
Copper         ppm         ASTM D5185m         >330         4             Tin         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m          <1             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Sillicon         ppm         ASTM D5185m         >25         16             Fuel         WC Method         >0.2         NEG              Water         WC Method         >0.2         NEG              Soto %         %         *ASTM D7624         >20         10.9          Soto %         %         *ASTM D7614	CopperppmASTM D5185m>3304TinppmASTM D5185m>150VanadiumppmASTM D5185m>150White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>2516PotassiumppmASTM D5185m>200FuelWC Method>5<1.0WaterWC Method>0.2NEGGlycolWC Method>0.2NEGSoot %%*ASTM D7844>30.2SulfationAbs/.m*ASTM D7624>2010.9SulfationAbs/.m*ASTM D715>3021.2SulfationAbs/.m*VisualNONENONESand/Dirtscalar*VisualNORENOREAppearancescalar*VisualNORMLNORMLGoronscalar*VisualNORMLNORMLSodiumppmASTM D5185m>15831Bariumpp		
Tin         ppm         ASTM D5185m         >15         0             Vanadium         ppm         ASTM D5185m          <1             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >5         <1.0              Water         WC Method         >0.2         NEG              Soot %         %         *ASTM D7624         >20         10.9              Sulfation         Abs/.mm         *ASTM D7624         >20         10.9             Sulfation         Abs/.mm         *ASTM D7624         >20         10.9             Sulfation	TinppmASTM D5185m>150VanadiumppmASTM D5185m<<1White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>2516PotassiumppmASTM D5185m>200FuelWC Method>5<1.0WaterWC Method>0.2NEGGlycolWC Method>0.2NEGSoot %%*ASTM D7844>30.2SulfationAbs/.m*ASTM D7624>2010.9SulfationAbs/.m*ASTM D7624>3021.2SulfationAbs/.m*VisualNONENONESulfationAbs/.m*VisualNONENONESand/Dirtscalar*VisualNORMNORMLAppearancescalar*VisualNORMLNORMLGodorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>15833BoronppmASTM D5185m250311Barium <th></th>		
Vanadium         ppm         ASTM D5185m         <1	VanadiumppmASTM D5185m<1		
White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >5         <1.0             Water         WC Method         >0.2         NEG             Soot %         %         *ASTM D7844         >3         0.2             Soot %         %         *ASTM D7624         >20         10.9             Sulfation         Abs/cm<*ASTM D7624         >20         10.9             Sulfation         Abs/cm<*ASTM D7624         >20         10.9             Sulfation         Abs/cm<*ASTM D7624         >20         10.9             Sulfation         scalar         *Visual         NONE         NONE         -	White Metal Yellow Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>200PotassiumppmASTM D5185m>200FuelWC Method>5<1.0WaterWC Method>0.2NEGGlycolWC Method>0.2NEGSoot %%*ASTM D7844>30.2NitrationAbs/cm*ASTM D7624>2010.9SulfationAbs/cm*ASTM D7644>3021.2SulfationAbs/cm*ASTM D7145>3021.2SulfationScalar*VisualNONENONESand/Dirtscalar*VisualNORMNORMEAppearancescalar*VisualNORMNORMLGorscalar*VisualNORMNORMLSodiumppmASTM D5185m>1583BoronppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m10011 <th></th>		
Yellow Metal         scalar         *Visual         NONE             Silicon         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >5         <1.0             Water         WC Method         >0.2         NEG             Glycol         WC Method         >0.2         NEG             Soot %         %         *ASTM D7844         >3         0.2             Sulfation         Abs/cm< *ASTM D7624         >20         10.9             Sulfation         Abs/cm< *ASTM D715         >30         21.2             Sulfation         Abs/rm< *ASTM D71415         >30         21.2             Sulfation         Abs/rm< *ASTM D7141         NONE         NONE             Sulfation         scalar         *Visual         NONE         NORE             Appearance </th <th>Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m&gt;2016PotassiumppmASTM D5185m&gt;200FuelWC Method&gt;5&lt;1.0WaterWC Method&gt;0.2NEGGlycolWC Method&gt;0.2NEGSoot %%*ASTM D7844&gt;30.2NitrationAbs/cm*ASTM D7624&gt;2010.9SulfationAbs/cm*ASTM D7624&gt;2010.9SulfationAbs/cm*ASTM D7644&gt;3021.2SulfationAbs/cm*ASTM D7644&gt;3021.2SulfationAbs/cm*VisualNONENONEDebrisscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLGdorscalar*VisualNORMLNORMLGoronscalar*VisualNORMLNORMLSodiumppmASTM D5185m25031BariumppmASTM D5185m10048MolybdenumppmASTM D5185m1001ManganeseppmASTM D5185m</th> <th></th>	Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>2016PotassiumppmASTM D5185m>200FuelWC Method>5<1.0WaterWC Method>0.2NEGGlycolWC Method>0.2NEGSoot %%*ASTM D7844>30.2NitrationAbs/cm*ASTM D7624>2010.9SulfationAbs/cm*ASTM D7624>2010.9SulfationAbs/cm*ASTM D7644>3021.2SulfationAbs/cm*ASTM D7644>3021.2SulfationAbs/cm*VisualNONENONEDebrisscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLGdorscalar*VisualNORMLNORMLGoronscalar*VisualNORMLNORMLSodiumppmASTM D5185m25031BariumppmASTM D5185m10048MolybdenumppmASTM D5185m1001ManganeseppmASTM D5185m		
Silicon         ppm         ASTM D5185m         >25         16             Potassium         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >5         <1.0             Water         WC Method         >0.2         NEG             Glycol         WC Method         >0.2         NEG             Soot %         %         *ASTM D7624         >20         10.9             Sulfation         Abs/.mm         *ASTM D7624         >20         10.9             Sulfation         Abs/.mm         *ASTM D7644         >30         21.2             Sulfation         Abs/.mm         *ASTM D7644         >30         21.2             Sulfation         Abs/.mm         *ASTM D7644         >30         21.2             Sulfation         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML	Silicon         ppm         ASTM D5185m         >25         16            Potassium         ppm         ASTM D5185m         >20         0            Fuel         WC Method         >5         <1.0            Water         WC Method         >0.2         NEG            Glycol         WC Method         >0.2         NEG            Soot %         %         *ASTM D7844         >3         0.2            Nitration         Abs/m         *ASTM D7844         >3         0.2            Sulfation         Abs/m         *ASTM D7844         >30         0.2            Sulfation         Abs/m         *ASTM D7845         >30         21.2            Sulfation         Abs/m         *ASTM D7415         >30         21.2            Sulfation         scalar         *Visual         NONE         NONE            Sulfation         scalar         *Visual         NORM         NONE            Sulfation         scalar         *Visual         NORM         NORML            Appeara		
Potassium         ppm         ASTM D5185m         >20         0             Fuel         WC Method         >5         <1.0             Water         WC Method         >0.2         NEG             Glycol         WC Method         >0.2         NEG             Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.9             Sulfation         Abs/call         NONE               Sand/Dirt         scalar         *Visual         NORM	Potassium         ppm         ASTM D5185m         >20         0            Fuel         WC Method         >5         <1.0             Water         WC Method         >0.2         NEG             Glycol         WC Method         >0.2         NEG             Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.9             Sulfation         Abs/cm         *ASTM D7151         >30         21.2             Sulfation         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         N		
Fuel         WC Method         >5         <1.0	FuelWC Method>5<1.0		
Water         WC Method         >0.2         NEG            Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.9             Sulfation         Abs/.1mm         *ASTM D7115         >30         21.2             Sulfation         Abs/.1mm         *ASTM D7145         >30         21.2             Sand/Dirt         scalar         *Visual         NONE              Appearance         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual	Water         WC Method         >0.2         NEG            Glycol         WC Method         >0.2         NEG             Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7844         >3         0.2             Sulfation         Abs/cm         *ASTM D7624         >20         10.9             Sulfation         Abs/cm         *ASTM D7415         >30         21.2             Sulfation         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML             Glycor         scalar         *Visual <td< th=""><th></th></td<>		
Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.9             Sulfation         Abs/.1mm         *ASTM D7624         >20         10.9             Sulfation         Abs/.1mm         *ASTM D7615         >30         21.2             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.2             Sulfation         scalar         *Visual         NONE              Sand/Dirt         scalar         *Visual         NORE         NONE             Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Sodium         ppm         ASTM D5185m         >158         3             Barium         ppm         ASTM D5	GlycolWC MethodNEGSoot %%*ASTM D7844>30.2NitrationAbs/cm*ASTM D7624>2010.9SulfationAbs/cm*ASTM D7445>3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORNOREAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMNORMLSodiumppmASTM D5185m>1583BoronppmASTM D5185m100MolybdenumppmASTM D5185m100488ManganeseppmASTM D5185m1001		
Soot %         %         *ASTM D7844         >3         0.2             Nitration         Abs/cm         *ASTM D7624         >20         10.9             Sulfation         Abs/.1mm         *ASTM D7624         >20         10.9             Sulfation         Abs/.1mm         *ASTM D7624         >20         10.9             Sulfation         Abs/.1mm         *ASTM D7624         >20         21.2             Sulfation         Abs/.1mm         *ASTM D7624         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Sodium         ppm         ASTM D5185m         >158         3 <td< th=""><th>Soot %%*ASTM D7844&gt;30.2NitrationAbs/cm*ASTM D7624&gt;2010.9SulfationAbs/lmm*ASTM D7415&gt;3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORMNONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m&gt;1583BoronppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m101</th><th></th></td<>	Soot %%*ASTM D7844>30.2NitrationAbs/cm*ASTM D7624>2010.9SulfationAbs/lmm*ASTM D7415>3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORMNONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>1583BoronppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m101		
NitrationAbs/cm*ASTM D7624>2010.9SulfationAbs/.1mm*ASTM D7415>3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLCodorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>1583BoronppmASTM D5185m1000MalganeseppmASTM D5185m100488MagnesiumppmASTM D5185m30001967PhosphorusppmASTM D5185m1150769SulfurppmASTM D5185m13501026SulfurppmASTM D5185m2502906MagnesiumppmASTM D5185m11026SulfurppmASTM D5185m13501026SulfurppmASTM D5185m2502906 <td< th=""><th>NitrationAbs/cm*ASTM D7624&gt;2010.9SulfationAbs/.1mm*ASTM D7415&gt;3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMNORMLSodiumppmASTM D5185m&gt;1583BoronppmASTM D5185m1000MolybdenumppmASTM D5185m100488ManganeseppmASTM D5185m101</th><th></th></td<>	NitrationAbs/cm*ASTM D7624>2010.9SulfationAbs/.1mm*ASTM D7415>3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMNORMLSodiumppmASTM D5185m>1583BoronppmASTM D5185m1000MolybdenumppmASTM D5185m100488ManganeseppmASTM D5185m101		
Sulfation         Abs/.1mm         *ASTM D7415         >30         21.2             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             Odor         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Godor         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         250         31             Sodium         ppm         ASTM D5185m         100         0             Manganese         ppm	SulfationAbs/.1mm*ASTM D7415>3021.2Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m101		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m100MalganeseppmASTM D5185m100488MagnesiumppmASTM D5185m30001967PhosphorusppmASTM D5185m1150769SulfurppmASTM D5185m13501026SulfurppmASTM D5185m25222.7SulfurppmASTM D5185m2502906MagnesiumppmASTM D5185m11026SulfurppmASTM D5185m2502206SulfurppmASTM D5185m2502206SulfurppmASTM D5185m2502206	Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BaronppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m101		
Debris         scalar         *Visual         NONE             Sand/Dirt         scalar         *Visual         NONE         NONE             Appearance         scalar         *Visual         NORML         NONE             Odor         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         250         31             Boron         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         488             Manganese         ppm         ASTM D5185m         3000         1967             Calcium         ppm         ASTM D5185m	Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m100BariumppmASTM D5185m10048MolybdenumppmASTM D5185m101		
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORML $$ $$ Odorscalar*VisualNORMLNORML $$ $$ Emulsified Waterscalar*Visual>0.2NEG $$ $$ SodiumppmASTM D5185m>1583 $$ $$ BoronppmASTM D5185m100 $$ $$ BariumppmASTM D5185m10048 $$ $$ MalganeseppmASTM D5185m10048 $$ $$ MagnesiumppmASTM D5185m30001967 $$ $$ PhosphorusppmASTM D5185m1150769 $$ $$ SulfurppmASTM D5185m13501026 $$ $$ SulfurppmASTM D5185m42502906 $$ $$ SulfurppmASTM D5185m4250220.7 $$ $$	Sand/Dirtscalar*VisualNONENOREAppearancescalar*VisualNORMLNORMLIncomeIncomeIncomeOdorscalar*VisualNORMLNORMLIncomeIncomeIncomeIncomeEmulsified Waterscalar*Visual>0.2NEGIncomeIncomeIncomeIncomeSodiumppmASTM D5185m>1583IncomeIncomeIncomeIncomeIncomeBoronppmASTM D5185m100IncomeIncomeIncomeIncomeIncomeIncomeBariumppmASTM D5185m10048IncomeIncomeIncomeIncomeIncomeIncomeIncomeIncomeIncomeManganeseppmASTM D5185mIncome <td< th=""><th></th></td<>		
Appearance         scalar         *Visual         NORML             Odor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Malganese         ppm         ASTM D5185m         100         48             Magnesium         ppm         ASTM D5185m         100         48             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         3000         1967             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m <td2< th=""><th>Appearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual&gt;0.2NEGSodiumppmASTM D5185m&gt;1583BoronppmASTM D5185m25031BariumppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m101</th><th></th></td2<>	Appearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m25031BariumppmASTM D5185m100MolybdenumppmASTM D5185m10048ManganeseppmASTM D5185m101		
Odor         scalar         *Visual         NORML             Emulsified Water         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         450         522             Magnesium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         3000         1967             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906        Oxidation         Abs/.1mm         *ASTM D7	Odor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         10         1		
Emulsified Water         scalar         *Visual         >0.2         NEG            Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         >158         3             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48             Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Emulsified Water         scalar         *Visual         >0.2         NEG            Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         1         1		
Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48             Magnesium         ppm         ASTM D5185m         100         48             Calcium         ppm         ASTM D5185m         450         522             Phosphorus         ppm         ASTM D5185m         3000         1967             Zinc         ppm         ASTM D5185m         1150         769             Sulfur         ppm         ASTM D5185m         1350         1026             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48		
Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48             Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48		
Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48             Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Boron         ppm         ASTM D5185m         250         31             Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48		
Barium         ppm         ASTM D5185m         10         0            Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48             Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Barium         ppm         ASTM D5185m         10         0             Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         48		
Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         1             Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Molybdenum         ppm         ASTM D5185m         100         48             Manganese         ppm         ASTM D5185m         100         1		
Manganese         ppm         ASTM D5185m         1            Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Manganese         ppm         ASTM D5185m         1		
Magnesium         ppm         ASTM D5185m         450         522             Calcium         ppm         ASTM D5185m         3000         1967             Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7			
Calcium         ppm         ASTM D5185m         3000 <b>1967</b> Phosphorus         ppm         ASTM D5185m         1150 <b>769</b> Zinc         ppm         ASTM D5185m         1350 <b>1026</b> Sulfur         ppm         ASTM D5185m         4250 <b>2906</b> Oxidation         Abs/.1mm         *ASTM D7414         >25 <b>22.7</b>			
Phosphorus         ppm         ASTM D5185m         1150         769             Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Magnesium ppm ASIM D3185m 450 522		
Zinc         ppm         ASTM D5185m         1350         1026             Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Calcium ppm ASTM D5185m 3000 1967		
Sulfur         ppm         ASTM D5185m         4250         2906             Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Phosphorus         ppm         ASTM D5185m         1150         769		
Oxidation         Abs/.1mm         *ASTM D7414         >25         22.7	Zinc ppm ASTM D5185m 1350 1026		
	Sulfur ppm ASTM D5185m 4250 2906		
Base Number (BN) mg KOH/g ASTM D2896 8.5 7.9	Oxidation Abs/.1mm *ASTM D7414 >25 22.7		
	Base Number (BN) mg KOH/g ASTM D2896 8.5 7.9		
Visc @ 100°C cSt ASTM D445 14.4 12.7	Visc @ 100°C cSt ASTM D445 14.4 12.7		



**JRE - MANASSAS PARK** Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : JR0218632 Received : 24 Jun 2024 9107 OWENS DRIVE Lab Number : 06217968 Tested : 25 Jun 2024 MANASSAS PARK, VA Unique Number : 11096165 Diagnosed : 25 Jun 2024 - Wes Davis US 20111 Test Package : CONST (Additional Tests: TBN) Contact: DON VEST Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dvest@jamesriverequipment.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (703)631-8500 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (703)631-4715

Contact/Location: DON VEST - JAMMAN Page 2 of 2