

## Area [W64409] Machine Id KX80 (S/N 25504) Component Left Final Drive Fluid SAE 80W90 (2 QTS)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. ( Customer Sample Comment: W64409 )

## **WEAR**

Gear wear is indicated.

## CONTAMINATION

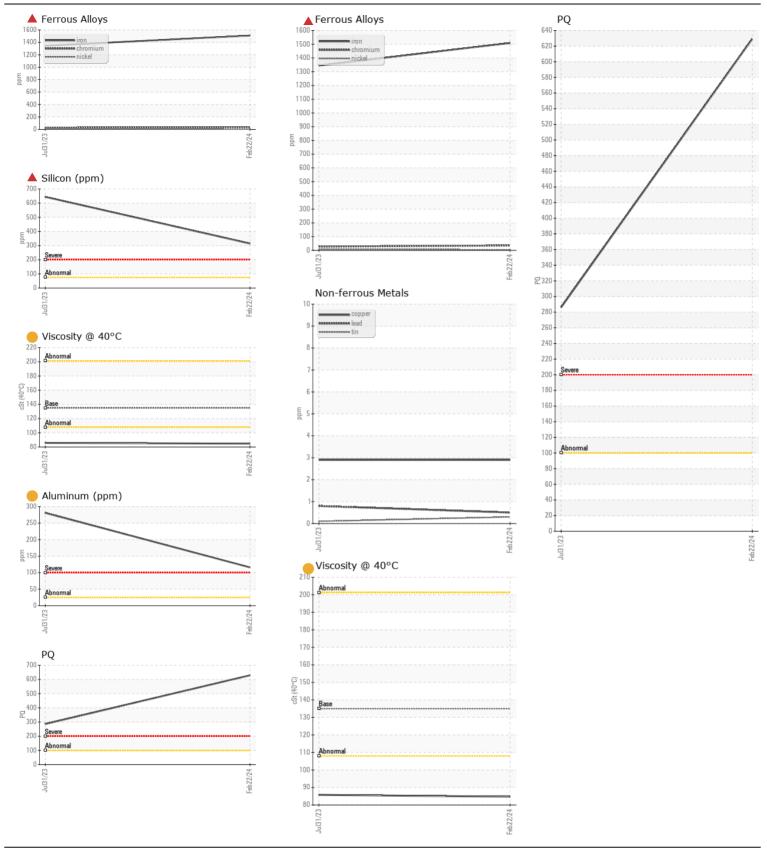
Elemental levels of silicon (Si) and aluminum (Al) indicate aluminasilicate (coarse dirt) ingress.

## FLUID CONDITION

The oil viscosity is lower than normal. Confirm oil type. The oil is no longer serviceable due to the presence of contaminants.

| TestUOMMethodLimit/MCurrentHistory1History1Sample NumerClient IntoJR0204261JR0179031Sample DatClient Into22 Feb 204331 Jul 2023Machine AgehrsClient Into560064960Dil AgehrsClient Into696064960Filter AgehrsClient IntoIntoNANAGil ChangedTClient IntoNANAFilter ChangedClient IntoNANASample StatusClient IntoNANAFilter ChangedMathoffStatusStatusStatusSample StatusVStatusStatusStatusPQASTM DS180>100A1343NickenpmASTM DS180>100AASilverpmASTM DS180>100AAuminupmASTM DS180>100IntoIntoSilverpmASTM DS180>100IntoIntoYellowhethscatuNTMENOREIntoIntoSilverpmASTM DS180>100IntoIntoYellowhethscatuNTMENOREIntoInto   |                  |        |             |           | $\frown$     |             |          |
|--|------------------|--------|-------------|-----------|--------------|-------------|----------|
| Sample DateClient InfoZ Peb 202431 Jul 2023Machine AgehrsClient Info696064960Oil AgehrsClient Info00Filter AgehrsClient InfoCChangedNot ChangeOil ChangedClient InfoNAN/AN/ASample StatusClient InfoNAN/AN/APQASTM D8184SEVERESEVERESEVEREPQASTM D8185>500150931345IronpmASTM D5185>1048NickelppmASTM D5185>1048SilverpmASTM D5185>25<116-2814SilverpmASTM D5185>25<16AuminumpmASTM D5185>50333QueberpmASTM D5185>50314<VandaiumpmASTM D5185>50314<Valedscala'VisualNONENONENONEValedscala'VisualNONENONENONEValedscala'VisualNONENONENONESilterscala'VisualNONENONENONESilterscalar'VisualNONENONENONESilte   | Test             | UOM    | Method      | Limit/Abn | Current      | History1    | History2 |
| Machine AgehrsClient Info69606496Oil AgehrsClient Info06496Filter AgehrsClient InfoNANANAOil ChangedClient InfoNANANAFilter ChangedClient InfoNANANASample StatusClient InfoNANANAPQASTM D818StotSEVERESEVEREPQASTM D818>100A 35020ChromiumpmASTM D8185>10A 350NickelpmASTM D8185>10A 30NickelpmASTM D8185>10A 30SilverpmASTM D8185>20A 30AuminumpmASTM D8185>20A 30QopperpmASTM D8185>20A 314VanadiumpmASTM D8185>10A 14Yellow Metalscala'VisualNONENONESiliconpmASTM D8185>20A 644Yellow Metalscala'VisualNONENONESiliconpmASTM D5185>20ASTYellow Metalscala'VisualNONENONESiliconpmASTM D5185>20ASTSiliconpmASTM D5185>20NONE <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>JR0204261</th> <th>JR0179031</th> <th></th>               | Sample Number    |        | Client Info |           | JR0204261    | JR0179031   |          |
| OI Age<br>Filter AgeIrsClient InfoSeb606496Filter AgeIrsClient Info00Gli ChangedIClient InfoNAN/AFilter ChangedIClient InfoNAN/ASample StatusSEVERESEVERESEVEREPQASTM D8184500A 1509A 13450IronppmASTM D5185510A 35NickelppmASTM D5185-10A 35NickelppmASTM D5185-1048SilverppmASTM D5185-1048SilverppmASTM D5185-20-116-281AluminmppmASTM D5185-50-116-281CopperppmASTM D5185-50-116-281VanadiumppmASTM D5185-50-116-216VanadiumppmASTM D5185-50-116-216VanadiumppmASTM D5185-50A114VanadiumppmASTM D5185-50A114VanadiumppmASTM D5185-50A114VanadiumppmASTM D5185-50A114VanadiumppmASTM D5185-50A114 <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>22 Feb 2024</th> <th>31 Jul 2023</th> <th></th>   | Sample Date      |        | Client Info |           | 22 Feb 2024  | 31 Jul 2023 |          |
| Filter Age<br>OIIve<br>Client InfoIve<br>OIOO  | Machine Age      | hrs    | Client Info |           | 6960         | 6496        |          |
| Oli ChangedClient IntoChangedNA (A change)Filter ChangedClient IntoN/AN/AN/ASample StatusSEVERESEVERESEVERESEVEREPQASTM DS185m500A 1509-1035IronppmASTM DS185m-10448NickelppmASTM DS185m-10448NickelppmASTM DS185m-10448SilverppmASTM DS185m-25-116-2811LeadppmASTM DS185m-5033CopperppmASTM DS185m-5033VanadiumppmASTM DS185m-503VanadiumppmASTM DS185m-503Valdescalar'VisualNONENONENONEValdescalar'VisualNONENONENONESiliconppmASTM DS185m-20NEGSiliconscalar'VisualNONENONENONESiliconppmASTM DS185m-20NEGSiliconscalar'VisualNONENONENONESoliconscalar'VisualNONENONENONESoliconscalar'VisualNONE<  | Oil Age          | hrs    | Client Info |           | 6960         | 6496        |          |
| Filter Changed<br>Sample StatusClient InfoN/AN/AN/AN/ASample StatusSEVERESEVERESEVERESEVERESEVEREPQASTM D5185m500150913450IronppmASTM D5185m1048NickelppmASTM D5185m1048NickelppmASTM D5185m1048SilverppmASTM D5185m201162811AluminumppmASTM D5185m25<11<1LeadppmASTM D5185m5033VanadiumppmASTM D5185m5033Yellow Metalscalar'VisualNONENONENONEYellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>70ASTAASTAYellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>70ASTAASTASiliconppmASTM D5185m>70ASTANONENONESiliconppmASTM D5185m>70NEGNONESiliconppmASTM D5185m>70NEGNONESoliconscalar'VisualNONENONENONESodu/Di   | Filter Age       | hrs    | Client Info |           | 0            | 0           |          |
| Sample StatusSEVERESEVERESEVEREPQASTM D8184629286IronppmASTM D5185>10A 1350NickelppmASTM D5185>10A 3527NickelppmASTM D5185>10A 3527SilverppmASTM D5185>1048SilverppmASTM D5185>20-116281LeadppmASTM D5185>20-11<1CopperppmASTM D5185>5033VanadiumppmASTM D5185>10<1<1VanadiumppmASTM D5185>5033Vellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185>75A 314A 6444Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185>202557Silitscalar'VisualNONENONENONESilitscalar'VisualNORENONENONESand/Dirtscalar'VisualNORENORENOREAppearancescalar'VisualNORENORENORESodiumppmASTM D51852020 <td< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Not Changd</th><th></th></td<>   | Oil Changed      |        | Client Info |           | Changed      | Not Changd  |          |
| PQASTM D8184629286IronpmASTM D5185>500A 1509A 1345ChromiumpmASTM D5185>10A 3527NickelpmASTM D5185>10A 3527NickelpmASTM D5185>10A 3527SilverpmASTM D5185>2000AluminumpmASTM D5185>25-116281LeadpmASTM D5185>25-11<1CopperpmASTM D5185>5033VanadiumpmASTM D5185>10<1<1VanadiumpmASTM D5185>5033Vellow Metalscalar*VisualNONENONENONEVellow Metalscalar*VisualNONENONENONESiliconpmASTM D5185>75A 3146444SiliconpmASTM D5185>202557Silitscalar*VisualNONENONENONESadd/Dirtscalar*VisualNORENORENORESodiumppmASTM D5185>50119SodiumppmASTM D5185>50119SodiumppmASTM D5185>5011   | Filter Changed   |        | Client Info |           | N/A          | N/A         |          |
| Iron    ppm    ASTM D518sm    >500    A 1509    A 1345   | Sample Status    |        |             |           | SEVERE       | SEVERE      |          |
| Iron    ppm    ASTM D518sm    >500    A 1509    A 1345   | PQ               |        | ASTM D8184  |           | 629          | 286         |          |
| Chromium<br>NickelppmASTM D5185m<br>ASTM D5185m>10 <b>A</b> 35 <b>A</b> 277NickelppmASTM D5185m>10 <b>4</b> 88TitaniumppmASTM D5185m>20 <b>6</b> 144SilverppmASTM D5185m>25 <b>●116○</b> 281AluminumppmASTM D5185m>250 <b>3</b> 33CopperppmASTM D5185m>500 <b>3</b> 33CopperppmASTM D5185m>500 <b>3</b> VanadiumppmASTM D5185m>500 <b>3</b> VanadiumppmASTM D5185m>500 <b>3</b> VanadiumppmASTM D5185m>750 <b>A</b> 314ValterWC Method>.02 <b>NONE</b> NONEVaterWC Method>.02 <b>NEG</b> NONESilitscalar*VisualNONE <b>NONE</b> NONEAppearancescalar*VisualNORHNORMLAppearancescalar*VisualNORHNORMLSodiumppmASTM D5185m>.02 <b>11</b> 9Appearancescalar*VisualNORHNORMLAppearancescalar*VisualNORHNORMLBoronppmASTM D5185m <b>11</b> 9                        |                  | nnm    |             | >500      |              |             |          |
| NickelppmASTM D5185m>10AATitaniumppmASTM D5185m614SilverppmASTM D5185m>25•116•281AluminumppmASTM D5185m>25•116•281LeadppmASTM D5185m>2033CopperppmASTM D5185m>5033VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>75<1<1Vellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2025577VaterWC Method>.0.2NEGNONESilitscalar*VisualNONENONEAppearancescalar*VisualNORENORENOREAppearancescalar*VisualNORHNORMLSodiumppmASTM D5185m>.0.2NEGNORMLBoronppmASTM D5185m>.0.2NEGMolybdenumppmASTM D5185m.0.2NEGMolybdenumppmASTM D5185m.0.2NCRMolybdenumppmASTM D5185m.0.2114 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>   |                  |        |             |           |              |             |          |
| TitaniumppmASTM D5185mininininSilverppmASTM D5185m>25I16281AluminumppmASTM D5185m>25<11<1LeadppmASTM D5185m>5033.3CopperppmASTM D5185m>5033.3VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>70<11<1VanadiumppmASTM D5185m>70<11<1Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>70<1314<644Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>20S57<1SiliconppmASTM D5185m>20NEGNONESilitscalar'VisualNONENONENONESand/Dirtscalar'VisualNORHNORHLNORHLAppearancescalar'VisualNORHNORHLNORHLSodiumppmASTM D5185m>501119BoronppmASTM D5185m>501119Boronppm<  |                  |        |             |           |              |             |          |
| Silver    ppm    ASTM D5185m    0    0       Aluminum    ppm    ASTM D5185m    >25    116    281       Lead    ppm    ASTM D5185m    >25    <1    <1<       Copper    ppm    ASTM D5185m    >50    3    3       Vanadium    ppm    ASTM D5185m    >10    <1    <1       Vanadium    ppm    ASTM D5185m    >75 <b>A</b> 314    A 644       Yellow Metal    scalar    *Visual    NONE    NONE    NONE       Silicon    ppm    ASTM D5185m    >20    25    57       Silit    scalar    *Visual    NON   |                  |        |             | 210       | -            |             |          |
| AluminumppmASTM D5185m>25116281LeadppmASTM D5185m>25<1<1<1<CopperppmASTM D5185m>50033TinppmASTM D5185m>10<1<1<VanadiumppmASTM D5185m<<1<1<Vinte Metalscalar'VisualNONENONENONE<Yellow Metalscalar'VisualNONENONENONE<SiliconppmASTM D5185m>75 <b>A</b> 314 <b>A</b> 6444Yellow Metalscalar'VisualNONENONENONE<SiliconppmASTM D5185m>75 <b>A</b> 314 <b>A</b> 6444Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>20 <b>D</b> 6NONEYellow Metalscalar'VisualNONENONENONESiliconscalar'VisualNONENONENONESolidomscalar'VisualNONENONENONEDebrisscalar'VisualNORMLNORMLNORMLAppearancescalar'VisualNORMLNORMLNORMLSodiumppmASTM D5185m>50119BarumppmASTM D5185m< <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>      |                  |        |             |           |              |             |          |
| LeadppmASTM D5185m>25<1  |                  |        |             | >25       |              |             |          |
| CopperppmASTM D5185m>5033TinppmASTM D5185m>10<1  |                  |        |             |           |              |             |          |
| TinppmASTM D5185m>10<1   |                  |        |             |           |              |             |          |
| VanadiumppmASTM D5185m<1   |                  |        |             |           | -            | -           |          |
| White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>75 <b>A</b> 314 <b>A</b> 6444PotassiumppmASTM D5185m>2025577WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNORENONENONEAppearancescalar*VisualNORHNORMLOdorscalar*VisualNORHNORMLSodiumppmASTM D5185m>50119BariumppmASTM D5185m50119ManganeseppmASTM D5185m2320ManganeseppmASTM D5185m2320ManganesiumppmASTM D5185m2736PhosphorusppmASTM D5185m202320ManganesiumppmASTM D5185m2136PhosphorusppmASTM D5185m21210210ManganesiumppmASTM D5185m2136PhosphorusppmASTM D5185m2892325 <th></th> <th></th> <th></th> <th>210</th> <th></th> <th></th> <th></th>   |                  |        |             | 210       |              |             |          |
| Yellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>75 <b>A</b> 314 <b>A</b> 644PotassiumppmASTM D5185m>202557WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNORENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMNORMLNORMLBoronppmASTM D5185m>50119BariumppmASTM D5185m50119MolybdenumppmASTM D5185m2020MagnaeseppmASTM D5185m2320MagnesiumppmASTM D5185m2736MagnesiumppmASTM D5185m2020PhosphorusppmASTM D5185m2020SiturppmASTM D5185m212320MagnesiumppmASTM D5185m2440394127PhosphorusppmASTM D5185m2828252SiturppmASTM D5185m211221108  |                  |        |             | NONE      |              |             |          |
| SiliconppmASTM D5185m<>75▲ 314▲ 644PotassiumppmASTM D5185m>202557WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMNORMLNORMLSodiumppmASTM D5185m>50119BoronppmASTM D5185m-50119MalganeseppmASTM D5185m2020ManganeseppmASTM D5185m2321MagnesiumppmASTM D5185m242320PhosphorusppmASTM D5185m242320MagnesiumppmASTM D5185m242320PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m403924127PhosphorusppmASTM D5185m24392325SolfurppmASTM D5185m240394127MagnesiumppmASTM D5185m40394127 </th <th></th> <th></th> <th></th> <th></th> <th>_</th> <th></th> <th></th>  |                  |        |             |           | _            |             |          |
| PotassiumppmASTM D5185m>202557WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>50119BariumppmASTM D5185m>50119MolybdenumppmASTM D5185m20200MagnesiumppmASTM D5185m2320PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m589282552SulfurppmASTM D5185m5011221108MagnesiumppmASTM D5185m5011221108MagnesiumppmASTM D5185m50505050MagnesiumppmASTM D5185m5011221108PhosphorusppmAST   |                  |        |             |           |              |             |          |
| WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>50119BariumppmASTM D5185m<50119MolybdenumppmASTM D5185m<2020MagnesiumppmASTM D5185m<2320PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m5911221108SollfurppmASTM D5185m<5011221108MagnesiumppmASTM D5185m<5011221108PhosphorusppmASTM D5185m<5050505050SollfurppmASTM D5185m<5011221108SollfurppmASTM D5185m<50505050SollfurppmASTM D5185m<5011221108 <td< th=""><th>Silicon</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;75</th><th><b>4</b> 314</th><th>▲ 644</th><th></th></td<>              | Silicon          | ppm    | ASTM D5185m | >75       | <b>4</b> 314 | ▲ 644       |          |
| Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>50119BoronppmASTM D5185m>50119BariumppmASTM D5185m2020MolybdenumppmASTM D5185m2320MagnesiumppmASTM D5185m242320PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m589282552SulfurppmASTM D5185m11221108   | Potassium        | ppm    | ASTM D5185m | >20       | 25           | 57          |          |
| Debrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNORNORENORENORMENORMEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>50119BoronppmASTM D5185m>50119BariumppmASTM D5185m20MolybdenumppmASTM D5185m12320MagnesiumppmASTM D5185m21736PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m892282552ZincppmASTM D5185m11221108SulfurppmASTM D5185m619975100  | Water            |        | WC Method   | >0.2      | NEG          | NEG         |          |
| Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>50119BoronppmASTM D5185mS0344BariumppmASTM D5185m2020MolybdenumppmASTM D5185m2320MagnesiumppmASTM D5185m2736PhosphorusppmASTM D5185m40394127PhosphorusppmASTM D5185m5911221108SulfurppmASTM D5185m61997510   | Silt             | scalar | *Visual     | NONE      | NONE         | NONE        |          |
| Appearancescalar*VisualNORML< | Debris           | scalar | *Visual     | NONE      | NONE         | NONE        |          |
| Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m>50119BoronppmASTM D5185m50119BariumppmASTM D5185m2020MolybdenumppmASTM D5185m2320ManganeseppmASTM D5185m2320MagnesiumppmASTM D5185m2736CalciumppmASTM D5185m40394127PhosphorusppmASTM D5185m589282552ZincppmASTM D5185m11221108SulfurppmASTM D5185m51122108   | Sand/Dirt        | scalar | *Visual     | NONE      | NONE         | NONE        |          |
| Emulsified Water  scalar  *Visual  >0.2  NEG  NEG     Sodium  ppm  ASTM D5185m  >50  11  9     Boron  ppm  ASTM D5185m  <  3  4     Barium  ppm  ASTM D5185m   20  20     Molybdenum  ppm  ASTM D5185m   23  20     Manganese  ppm  ASTM D5185m   23  20     Magnesium  ppm  ASTM D5185m   27  36     Phosphorus  ppm  ASTM D5185m  4039  4127     Phosphorus  ppm  ASTM D5185m  892  825     Zinc  ppm  ASTM D5185m  1122  1108     Sulfur  ppm  ASTM D5185m  6199  7510  | Appearance       | scalar | *Visual     | NORML     | NORML        | NORML       |          |
| Sodium    ppm    ASTM D5185m<>50    11    9       Boron    ppm    ASTM D5185m    3    4       Barium    ppm    ASTM D5185m    20    20       Molybdenum    ppm    ASTM D5185m    20    20       Manganese    ppm    ASTM D5185m    23    20       Magnesium    ppm    ASTM D5185m    23    20       Magnesium    ppm    ASTM D5185m    23    20       Calcium    ppm    ASTM D5185m    23    20       Phosphorus    ppm    ASTM D5185m    23    20       Calcium    ppm    ASTM D5185m    4039    4127       Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510  | Odor             | scalar | *Visual     | NORML     | NORML        | NORML       |          |
| Boron    ppm    ASTM D5185m    3    4       Barium    ppm    ASTM D5185m    20    20       Molybdenum    ppm    ASTM D5185m    20    20       Molybdenum    ppm    ASTM D5185m    21    4       Manganese    ppm    ASTM D5185m    23    20       Magnesium    ppm    ASTM D5185m    27    36       Calcium    ppm    ASTM D5185m    4039    4127       Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510   | Emulsified Water | scalar | *Visual     | >0.2      | NEG          | NEG         |          |
| Barium    ppm    ASTM D5185m    20    20       Molybdenum    ppm    ASTM D5185m     <1    4       Manganese    ppm    ASTM D5185m    23    20       Magnesium    ppm    ASTM D5185m    23    20       Magnesium    ppm    ASTM D5185m    27    36       Calcium    ppm    ASTM D5185m    4039    4127       Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510   | Sodium           | ppm    | ASTM D5185m | >50       | 11           | 9           |          |
| Molybdenum    ppm    ASTM D5185m    <1   | Boron            | ppm    | ASTM D5185m |           | 3            | 4           |          |
| Manganese    ppm    ASTM D5185m    23    20       Magnesium    ppm    ASTM D5185m    27    36       Calcium    ppm    ASTM D5185m    4039    4127       Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    6199    7510  | Barium           | ppm    | ASTM D5185m |           | 20           | 20          |          |
| Magnesium    ppm    ASTM D5185m    27    36       Calcium    ppm    ASTM D5185m    4039    4127       Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510   | Molybdenum       | ppm    | ASTM D5185m |           | <1           | 4           |          |
| Calcium    ppm    ASTM D5185m    4039    4127       Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510   | Manganese        | ppm    | ASTM D5185m |           | 23           | 20          |          |
| Phosphorus    ppm    ASTM D5185m    892    825       Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510   | Magnesium        | ppm    | ASTM D5185m |           | 27           | 36          |          |
| Zinc    ppm    ASTM D5185m    1122    1108       Sulfur    ppm    ASTM D5185m    6199    7510  | Calcium          | ppm    | ASTM D5185m |           | 4039         | 4127        |          |
| Sulfur    ppm    ASTM D5185m    6199    7510   | Phosphorus       | ppm    | ASTM D5185m |           | 892          | 825         |          |
|  | Zinc             | ppm    | ASTM D5185m |           | 1122         | 1108        |          |
| Visc @ 40°C cSt ASTM D445 135   84.7   85.8  | Sulfur           | ppm    | ASTM D5185m |           | 6199         | 7510        |          |
|  | Visc @ 40°C      | cSt    | ASTM D445   | 135       | 84.7         | 85.8        |          |

Submitted By: Mike Young - CHARLOTTE SHOP



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **JRE - CHARLOTTE** : JR0204261 : 27 Feb 2024 9550 STATESVILLE ROAD Sample No. Received CHARLOTTE, NC Lab Number : 06101954 Tested : 28 Feb 2024 : 29 Feb 2024 - Sean Felton Unique Number : 10900184 Diagnosed US 28269 Test Package : CONST (Additional Tests: PQ) Contact: CHARLOTTE SHOP Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. myoung@jamesriverequipment.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (704)597-0211 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (704)596-6198