

| NORMAL   | WEAR            |
|----------|-----------------|
| MARGINAL | CONTAMINATION   |
| ABNORMAL | FLUID CONDITION |

## Machine Id KIOTI VR8000121 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (--- GAL) RECOMMENDATION

| Resample at the next service interval to monitor. Please specify the |  |
|----------------------------------------------------------------------|--|
| brand, type, and viscosity of the oil on your next sample.           |  |

Metal levels are typical for a components first oil change.

WEAR

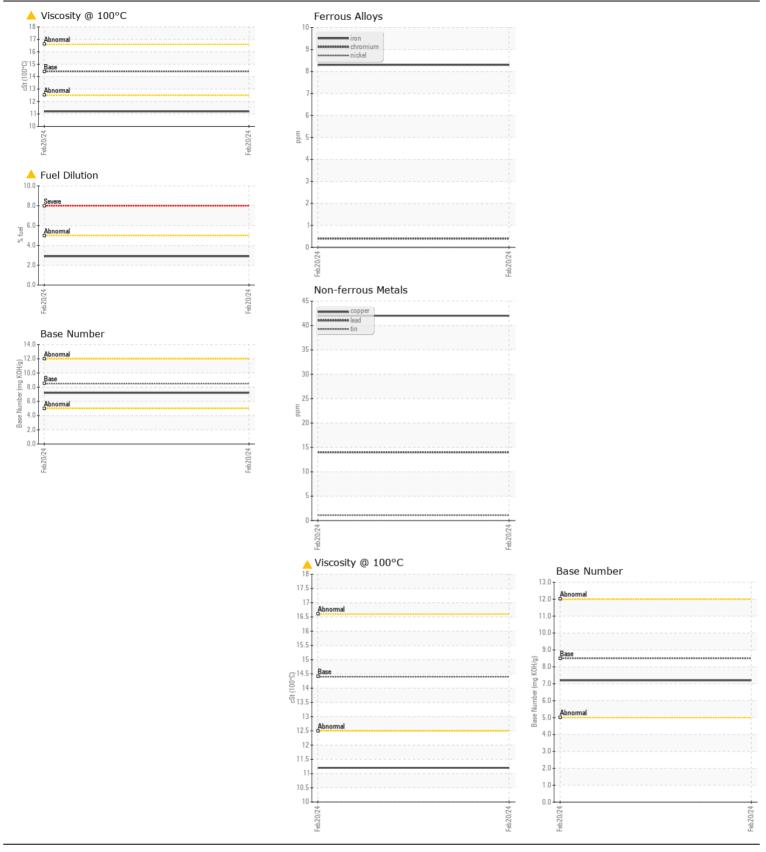
## CONTAMINATION

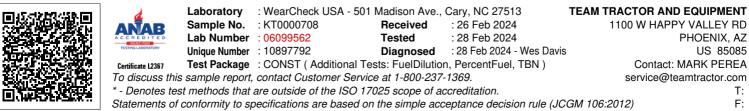
Light fuel dilution occurring.

## **FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

| TestUOMMethodLimit/AnCurrentHistory1History2Sample NumberClient Info20 Feb 2024Machine AgehrsClient Info59Oil AgehrsClient Info59Oil AgehrsClient Info59Oil AgehrsClient InfoNot ChangedOil ChangedClient InfoNot ChangedSample StatusABNORMALIronppmASTM D5185n>400NickelppmASTM D5185n>40TitaniumppmASTM D5185n>40SilverppmASTM D5185n>304AluminumppmASTM D5185n>3014LeadppmASTM D5185n>3040VanadiumppmASTM D5185n>3040SiliconppmASTM D5185n>3014VanadiumppmASTM D5185n>1VanduycaycsycsNONENONESiliconppmASTM D5185n>200Yellow Metalscalar'visualNONENONESiliconpp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |          |             |           |              |          |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|-------------|-----------|--------------|----------|----------|
| Sample DateClient Info20 Feb 2024Machine AgehrsClient Info59Oil AgehrsClient Info59Oil ChangedClient InfoNot ChangdOil ChangedClient InfoNot ChangdSample StatusABNORMALIronppmASTM D5185m>20<1NickelppmASTM D5185m>20<1NickelppmASTM D5185m>30ItaniumppmASTM D5185m>30AluminumppmASTM D5185m>30QaddumppmASTM D5185m>3042CopperppmASTM D5185m>1VanadiumppmASTM D5185m>1Vellow Metalscalar"VisualNONENONESiliconppmASTM D5185m>200VaterWC Method>NEGSiliconppmASTM D5185m>200SuitonppmASTM D5185m>200SuitonppmASTM D5185m>200 <th>Test</th> <th>UOM</th> <th>Method</th> <th>Limit/Abn</th> <th>Current</th> <th>History1</th> <th>History2</th>                                                                                                                                                                                                                                                                                                                                                                                                                       | Test             | UOM      | Method      | Limit/Abn | Current      | History1 | History2 |
| Machine Age         hrs         Client Info         59             Filter Age         hrs         Client Info         59             Filter Age         hrs         Client Info         Not Changd             GDI Changed         Client Info         Not Changd              Sample Status         ASTM D5185n<>100         8              Iron         ppm         ASTM D5185n<>20         <1             Nickel         ppm         ASTM D5185n<>20         <1             Silver         ppm         ASTM D5185n<>20         1             Aluminum         ppm         ASTM D5185n<>20         1             Aluminum         ppm         ASTM D5185n<>30         42             Vanadium         ppm         ASTM D5185n<>20         1             Vanadium         ppm         ASTM D5185n<>20         0             Veltow Metal         sccalar         'Visual <none< t<="" th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>KT0000708</th><th></th><th></th></none<>                                                                 | Sample Number    |          | Client Info |           | KT0000708    |          |          |
| Machine Age         hrs         Client Info         59             Filter Age         hrs         Client Info         59             Filter Age         hrs         Client Info         Not Changd             GDI Changed         Client Info         Not Changd              Sample Status         ASTM D5185n<>100         8              Iron         ppm         ASTM D5185n<>20         <1             Nickel         ppm         ASTM D5185n<>20         <1             Silver         ppm         ASTM D5185n<>20         1             Aluminum         ppm         ASTM D5185n<>20         1             Aluminum         ppm         ASTM D5185n<>30         42             Vanadium         ppm         ASTM D5185n<>20         1             Vanadium         ppm         ASTM D5185n<>20         0             Veltow Metal         sccalar         'Visual <none< t<="" th=""><th>Sample Date</th><th></th><th>Client Info</th><th></th><th>20 Feb 2024</th><th></th><th></th></none<>                                                                 | Sample Date      |          | Client Info |           | 20 Feb 2024  |          |          |
| Filter Age         hrs         Client Info         59             Gil Changed         Client Info         Not Changd          Astrona            Sample Status         Astrona         Astrona          Astrona            Iron         ppm         ASTM D5185n<>100         8             Iron         ppm         ASTM D5185n<>20         <1             Nickel         ppm         ASTM D5185n<>20         <1             Titanium         ppm         ASTM D5185n<>3         0             Aluminum         ppm         ASTM D5185n<>20         1             Vanadium         ppm         ASTM D5185n<>30         42             Vanadium         ppm         ASTM D5185n<>1                                                                                                                                                                                                                                                                                                                                                                                     |                  | hrs      | Client Info |           | 59           |          |          |
| Oil Changed         Client Info         Not Changed            Filter Changed         Client Info         Not Changd            Sample Status         ASTM D5185m         >100         8            Iron         ppm         ASTM D5185m         >20         <1            Nickel         ppm         ASTM D5185m         >20         <1            Nickel         ppm         ASTM D5185m         >3         0            Aluminum         ppm         ASTM D5185m         >30         14            Aluminum         ppm         ASTM D5185m         >30         142            Vanadium         ppm         ASTM D5185m         >30         42            Vanadium         ppm         ASTM D5185m         >15         1            Vanadium         ppm         ASTM D5185m         >20         0            Valued         scalar         "Visual         NONE             Valued         wCaldertod         >0.2         NEG             Valued         wCaldertod <th>Oil Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>59</th> <th></th> <th></th> | Oil Age          | hrs      | Client Info |           | 59           |          |          |
| Filter Changed<br>Sample Status         Client Into         Not Change<br>ABNORMAL            Iron         ppm         ASTM D5185n         >100         8            Iron         ppm         ASTM D5185n         >20         <1            Nickel         ppm         ASTM D5185n         >20         <1            Nickel         ppm         ASTM D5185n         >20         <1            Silver         ppm         ASTM D5185n         >3         0            Aluminum         ppm         ASTM D5185n         >30         42            Lead         ppm         ASTM D5185n         >10             Vanadium         ppm         ASTM D5185n         >15         1             Vanadium         ppm         ASTM D5185n         >250         0             Vellow Metal         scalar         "Visual         NONE         NONE             Vellow Metal         scalar         "Visual         NONE         ASTM             Vater         WC Method                                                                                                       | Filter Age       | hrs      | Client Info |           | 59           |          |          |
| Filter Changed         Client Info         Not Change             Sample Status         ABNORINAL             Iron         ppm         ASTM D5185n         >100         8             Nickel         ppm         ASTM D5185n         >20         <1             Nickel         ppm         ASTM D5185n         >20         <1             Silver         ppm         ASTM D5185n         >20         1             Lead         ppm         ASTM D5185n         >30         1             Lead         ppm         ASTM D5185n         >30         42             Vanadium         ppm         ASTM D5185n         >20         0             Valeadum         ppm         ASTM D5185n         >25         15             Vellow Metal         scalar         *Visual         NONE         NONE             Vellow Metal         scalar         *Visual         NONE                                                                                                                                                                                                   | Oil Changed      |          | Client Info |           | Not Changd   |          |          |
| Sample Status         ABNORMAL            Iron         ppm         ASTM D5185m<>100         88            Chromium         ppm         ASTM D5185m<>20         -1            Nickel         ppm         ASTM D5185m<>4         0            Silver         ppm         ASTM D5185m<>3         0            Aluminum         ppm         ASTM D5185m<>30         14            Copper         ppm         ASTM D5185m<>30         422            Copper         ppm         ASTM D5185m<>155         1            Vanadium         ppm         ASTM D5185m<>155         1            Vanadium         ppm         ASTM D5185m<>155         1            Yellow Metal         scalar         *Visual         NONE         NONE            Solicon         ppm         ASTM D5185m<>255         155             Solicon         ppm         ASTM D5185m<>250         0             Solicon         ppm         ASTM D5185m<>250         0             Glycol <th>Filter Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Not Changd</th> <th></th> <th></th>    | Filter Changed   |          | Client Info |           | Not Changd   |          |          |
| Iron         ppm         ASTM D5185m         >100         8             Chromium         ppm         ASTM D5185m         >20         <1             Nickel         ppm         ASTM D5185m         >4         0             Titanium         ppm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >30         1             Lead         ppm         ASTM D5185m         >20         1             Copper         ppm         ASTM D5185m         >20         1             Vanadium         ppm         ASTM D5185m         >1         1             Vanadium         ppm         ASTM D5185m         >15         1             Vanadium         ppm         ASTM D5185m         >20         0             Vellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM                                                                                                                                                                                   | Sample Status    |          |             |           | _            |          |          |
| Chromium         ppm         ASTM D5185m         >20         <1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |          |             |           |              |          |          |
| Nickel         ppm         ASTM D5185m         >4         0             Titanium         ppm         ASTM D5185m          <1             Silver         ppm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >20         1             Lead         ppm         ASTM D5185m         >40         14             Copper         ppm         ASTM D5185m         >40         14             Vanadium         ppm         ASTM D5185m         >40         14             Vanadium         ppm         ASTM D5185m         >40         0             Vanadium         ppm         ASTM D5185m         >20         0             Vallow Metal         scalar         *Visual         NONE             Solicon         ppm         ASTM D784         >3         0.1             Soligation         Abs/cm         *ASTM D784                                                                                                                                                                                            | Iron             | ppm      | ASTM D5185m | >100      | 8            |          |          |
| Titanium         ppm         ASTM D5185m         <1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chromium         | ppm      | ASTM D5185m | >20       | <1           |          |          |
| Silver         ppm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >20         1             Lead         ppm         ASTM D5185m         >20         14             Copper         ppm         ASTM D5185m         >330         42             Vanadium         ppm         ASTM D5185m         >1              Vanadium         ppm         ASTM D5185m         >15         1             Vanadium         ppm         ASTM D5185m         >25         15             Valate         scalar         *Visual         NONE         NONE             Solicon         ppm         ASTM D5185m         >20         0             Valate         QC Method         >0.2         NEG             Soot %         %         *ASTM D7624         >20         5.0             Sulfation         Abs/rm         *ASTM D7154                                                                                                                                                                                               | Nickel           | ppm      | ASTM D5185m | >4        | 0            |          |          |
| Aluminum         ppm         ASTM D5185m         >20         1             Lead         ppm         ASTM D5185m         >40         14             Copper         ppm         ASTM D5185m         >330         42             Tin         ppm         ASTM D5185m         >1             Vanadium         ppm         ASTM D5185m         >1             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE              Solicon         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D5185m         >20         NEG             Glycol         WC Method         >.2         NEG             Soot %         %         *ASTM D7844         >3         0.1             Sulfation         Abs/im         *ASTM D7844         >3         14.1 <th>Titanium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>&lt;1</th> <th></th> <th></th>                                                                                           | Titanium         | ppm      | ASTM D5185m |           | <1           |          |          |
| Lead         ppm         ASTM D5185m         >40         14             Copper         ppm         ASTM D5185m         >330         42             Tin         ppm         ASTM D5185m         >15         1             Wanadium         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Solicon         ppm         ASTM D5185m<>20         0              Fuel         %         ASTM D5185m<>20         0              Water         WC Method         >0.2         NEG              Soto %         %         'ASTM D7644         >3         0.1             Sulfation         Abs/.m         'ASTM D715         >30         14.1             Sodi %         %         'ASTM D7644                                                                                                                                                                                                               | Silver           | ppm      | ASTM D5185m | >3        | 0            |          |          |
| Copper         ppm         ASTM D5185m         >330         42             Tin         ppm         ASTM D5185m         >15         1             Vanadium         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m<>20         0             Potassium         ppm         ASTM D5185m<>20         0             Water         WC Method         >0.2         NEG             Glycol         WC Method         >0.2         NEG             Sott %         %         'ASTM D7624<>20         5.0             Sulfation         Abs/.1mm<"ASTM D7145<>30         14.1             Sulfation         Abs/.1mm<"ASTM D7145<>30         14.1             Sulfation         Abs/.1m                                                                                                                                                                                | Aluminum         | ppm      | ASTM D5185m | >20       | 1            |          |          |
| Tin         ppm         ASTM D5185m         >15         1            Vanadium         ppm         ASTM D5185m         0             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             Water         WC Method         >0.2         NEG              Glycol         WC Method         >0.2         NEG              Sott %         %         *ASTM D7844         >3         0.1             Sulfation         Abs/cm< *ASTM D7624         >20         5.0             Sulfation         Abs/cm< *ASTM D7624         >20         5.0             Sulfation         Abs/cm< *ASTM D7624         >20         5.0                                                                                                                                                                                   | Lead             | ppm      | ASTM D5185m | >40       | 14           |          |          |
| Vanadium         ppm         ASTM D5185m         0             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         %         ASTM D5124         >5         ▲ 2.9             Water         WC Method         >0.2         NEG              Soot %         %         *ASTM D7624         >20         5.0             Sulfation         Abs/.tmm         *ASTM D7624         >20         5.0             Sulfation         Abs/.tmm         *ASTM D76124         >20         5.0             Sulfation         Abs/.tmm         *ASTM D76124         >30         14.1             Debris         scalar         *Visual                                                                                                                                                               | Copper           | ppm      | ASTM D5185m | >330      | 42           |          |          |
| 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         %         ASTM D5185m         >20         0             Water         WC Method         >0.2         NEG              Soot %         %         *ASTM D7844         >3         0.1             Sulfation         Abs/cm< *ASTM D7624         >20         5.0             Sulfation         Abs/cm< *ASTM D7145         >30         14.1 <th>Tin</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;15</th> <th>1</th> <th></th> <th></th>                                                              | Tin              | ppm      | ASTM D5185m | >15       | 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         %         ASTM D5185m         >20         0             Water         WC Method         >0.2         NEG              Glycol         WC Method         >0.2         NEG              Soto %         %         'ASTM D7844         >3         0.1             Sulfation         Abs/cm< 'ASTM D7624         >20         5.0             Sulfation         Abs/cm< 'ASTM D7152         >30         14.1             Sulfation         Abs/cm< 'Visual         NONE           Sol             Sand/Dirt         scalar<                                                                                                                                                                                                            | Vanadium         | ppm      | ASTM D5185m |           | 0            |          |          |
| Silicon       ppm       ASTM D5185m<>25       15           Potassium       ppm       ASTM D5185m<>20       0           Fuel       %       ASTM D5185m<>20       0           Water       WC Method       >0.2       NEG           Glycol       WC Method       >0.2       NEG           Soot %       %       *ASTM D7644       >3       0.1           Nitration       Abs/tmm<*ASTM D7624       >20       5.0           Sulfation       Abs/tmm<*ASTM D7644       >30       14.1           Sulfation       Abs/tmm<*ASTM D7645       >30       14.1           Sulfation       Abs/tmm<*ASTM D7645       >30       14.1           Sulfation       Abs/tmm<*ASTM D7644       >3       NONE           Sulfation       Abs/tmm<*ASTM D7645       >30       14.1           Sulfation       scalar       *Visual       NORE           Appearance       <                                                                                                                                                                                                                     | White Metal      |          | *Visual     | NONE      | NONE         |          |          |
| Potassium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D3524         >5         ▲ 2.9             Water         WC Method         >0.2         NEG             Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.1            Nitration         Abs/cm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1mm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1mm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1mm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1m<*ASTM D715         >30         14.1             Sulfation         Abs/.1m<*ASTM D715         >30         14.1             Sand/Dirt         scalar         *Visual         NORE         NORE             Appearance                                                                                                                                                                       | Yellow Metal     | scalar   | *Visual     | NONE      | NONE         |          |          |
| Potassium         ppm         ASTM D5185m         >20         0             Fuel         %         ASTM D3524         >5         ▲ 2.9             Water         WC Method         >0.2         NEG             Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.1            Nitration         Abs/cm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1mm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1mm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1mm<*ASTM D7624         >20         5.0             Sulfation         Abs/.1m<*ASTM D715         >30         14.1             Sulfation         Abs/.1m<*ASTM D715         >30         14.1             Sand/Dirt         scalar         *Visual         NORE         NORE             Appearance                                                                                                                                                                       |                  |          |             |           |              |          |          |
| Fuel         %         ASTM D3524         >5         ▲ 2.9            Water         WC Method         >0.2         NEG            Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.1            Nitration         Abs/cm         *ASTM D7624         >20         5.0            Sulfation         Abs/1mm         *ASTM D7624         >20         5.0            Sulfation         Abs/1m         *ASTM D7624         >20             Sulfation         Scalar         *Visual         NORE         NORE                                                                                    | Silicon          | ppm      | ASTM D5185m | >25       | 15           |          |          |
| Water         WC Method         >0.2         NEG            Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.0             Sulfation         Abs/cm         *ASTM D7624         >20         5.0             Sulfation         Abs/cm         *ASTM D7624         >20         5.0             Sulfation         Abs/cm         *ASTM D7612         >30         14.1             Sulfation         Abs/cm         *ASTM D7415         >30         14.1             Sulfation         scalar         *Visual         NONE              Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NORM         NORML             Gdyor         scalar         *Visual         NORM <t< th=""><th>Potassium</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;20</th><th>0</th><th></th><th></th></t<>                                                        | Potassium        | ppm      | ASTM D5185m | >20       | 0            |          |          |
| Glycol         WC Method         NEG             Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.0             Sulfation         Abs/cm         *ASTM D7615         >30         14.1             Sulfation         Abs/cm         *Visual         NONE         NONE             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORM             Appearance         scalar         *Visual         NORM         NORML             Odor         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         20         2             Boron         ppm         ASTM D5185m                                                                                                                                                                               | Fuel             | %        | ASTM D3524  | >5        | <b>4</b> 2.9 |          |          |
| Soot %         %         *ASTM D7844         >3         0.1             Nitration         Abs/cm         *ASTM D7624         >20         5.0             Sulfation         Abs/1mm         *ASTM D7624         >20         5.0             Sulfation         Abs/1mm         *ASTM D7624         >30         14.1             Sulfation         Abs/1mm         *ASTM D7415         >30         14.1             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NOR         NORE             Sand/Dirt         scalar         *Visual         NORM         NORML             Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         >0.2         NEG             Boron         ppm         ASTM D5185m         20         2             Magnaesium                                                                                                                                                                    | Water            |          | WC Method   | >0.2      | NEG          |          |          |
| NitrationAbs/cm*ASTM D7624>205.0SulfationAbs/1mm*ASTM D7415>3014.1Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNORKNOREAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m2502ManganeseppmASTM D5185m10016MagnesiumppmASTM D5185m10054MagnesiumppmASTM D5185m30001031PhosphorusppmASTM D5185m1150992ZincppmASTM D5185m13501103SulfurppmASTM D5185m42503097QxidationAbs/1mm'ASTM D7414>259.8Base Number (BN)mg KOHgASTM D28968.57.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Glycol           |          | WC Method   |           | NEG          |          |          |
| Sulfation         Abs/.tmm         *ASTM D7415         >30         14.1             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             Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         100         16             Magnesium         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         3000         1031             Phosphorus <t< th=""><th>Soot %</th><th>%</th><th>*ASTM D7844</th><th>&gt;3</th><th>0.1</th><th></th><th></th></t<>                                                                 | Soot %           | %        | *ASTM D7844 | >3        | 0.1          |          |          |
| Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLCdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m2502BariumppmASTM D5185m1016MalganeseppmASTM D5185m10054MagnesiumppmASTM D5185m30001031PhosphorusppmASTM D5185m1150992ZincppmASTM D5185m13501103SulfurppmASTM D5185m42503097DistationAbs.1mm'ASTM D2186A557.2Base Number (BN)mg KOHgASTM D2868.57.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Nitration        | Abs/cm   | *ASTM D7624 | >20       | 5.0          |          |          |
| Debrisscalar*VisualNONESand/Dirtscalar*VisualNONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m2502BariumppmASTM D5185m10016MolybdenumppmASTM D5185m10054ManganeseppmASTM D5185m30001031PhosphorusppmASTM D5185m1150992ZincppmASTM D5185m13501103SulfurppmASTM D5185m42503097SulfurppmASTM D5185m42503097DxidationAbs.1mm'ASTM D2868.57.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sulfation        | Abs/.1mm | *ASTM D7415 | >30       | 14.1         |          |          |
| Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m>1583BoronppmASTM D5185m2502BariumppmASTM D5185m1016MolybdenumppmASTM D5185m10054ManganeseppmASTM D5185m30001031PhosphorusppmASTM D5185m1100992ZincppmASTM D5185m13501103SulfurppmASTM D5185m123097OxidationAbs.1mm*ASTM D5185m42503097Base Number (BN)mg KOHgASTM D28968.57.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Silt             | scalar   | *Visual     | NONE      | NONE         |          |          |
| Appearance         scalar         *Visual         NORML         NORML             Odor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         16             Molybdenum         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         1350         1103             Oxidation                                                                                                                                                                       | Debris           | scalar   | *Visual     | NONE      | NONE         |          |          |
| Odor         scalar         *Visual         NORML         NORML             Emulsified Water         scalar         *Visual         >0.2         NEG             Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         16             Molybdenum         ppm         ASTM D5185m         100         54             Manganese         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abx                                                                                                                                                                  | Sand/Dirt        | scalar   | *Visual     | NONE      | NONE         |          |          |
| Emulsified Water         scalar         *Visual         >0.2         NEG            Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         16             Molybdenum         ppm         ASTM D5185m         100         54             Manganese         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm<*ASTM D2886         8.5         7.2                                                                                                                                                                                                     | Appearance       | scalar   | *Visual     | NORML     | NORML        |          |          |
| Sodium         ppm         ASTM D5185m         >158         3             Boron         ppm         ASTM D5185m         250         2             Barium         ppm         ASTM D5185m         10         16             Molybdenum         ppm         ASTM D5185m         100         54             Manganese         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm< *AST                                                                                                                                                                | Odor             | scalar   | *Visual     | NORML     | NORML        |          |          |
| Boron         ppm         ASTM D5185m         250         2            Barium         ppm         ASTM D5185m         10         16             Molybdenum         ppm         ASTM D5185m         100         54             Manganese         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm         *ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                         | Emulsified Water | scalar   | *Visual     | >0.2      | NEG          |          |          |
| Boron         ppm         ASTM D5185m         250         2            Barium         ppm         ASTM D5185m         10         16             Molybdenum         ppm         ASTM D5185m         100         54             Manganese         ppm         ASTM D5185m         100         54             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm         *ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                         |                  |          |             |           | •            |          |          |
| Barium         ppm         ASTM D5185m         10         16            Molybdenum         ppm         ASTM D5185m         100         54            Manganese         ppm         ASTM D5185m         2             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm<*ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                       |                  |          |             |           |              |          |          |
| Molybdenum         ppm         ASTM D5185m         100         54            Manganese         ppm         ASTM D5185m         2             Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm         *ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                       |                  |          |             |           |              |          |          |
| Manganese         ppm         ASTM D5185m         2            Magnesium         ppm         ASTM D5185m         450         870            Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs/.1mm         *ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |          |             |           |              |          |          |
| Magnesium         ppm         ASTM D5185m         450         870             Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs/.1mm         *ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |          |             | 100       |              |          |          |
| Calcium         ppm         ASTM D5185m         3000         1031             Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm         *ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | •                |          |             |           |              |          |          |
| Phosphorus         ppm         ASTM D5185m         1150         992             Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm         *ASTM D2185         4250         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0                |          |             |           |              |          |          |
| Zinc         ppm         ASTM D5185m         1350         1103             Sulfur         ppm         ASTM D5185m         4250         3097             Oxidation         Abs.1mm         *ASTM D7141         >25         9.8             Base Number (BN)         mg KOHg         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |          |             |           |              |          |          |
| Sulfur         ppm         ASTM D5185m         4250 <b>3097</b> Oxidation         Abs/.1mm         *ASTM D7414         >25 <b>9.8</b> Base Number (BN)         mg KOH/g         ASTM D2896         8.5 <b>7.2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  | ppm      |             |           |              |          |          |
| Oxidation         Abs/.1mm         *ASTM D7414         >25         9.8             Base Number (BN)         mg KOH/g         ASTM D2896         8.5         7.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |          |             |           |              |          |          |
| Base Number (BN) mg KOH/g ASTM D2896 8.5 7.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  | ppm      |             |           | 3097         |          |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |          |             |           |              |          |          |
| Visc @ 100°C cSt ASTM D445 14.4 🔶 11.2 /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ( )              | mg KOH/g | ASTM D2896  |           | 7.2          |          |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Visc @ 100°C     | cSt      | ASTM D445   | 14.4      | 🔺 11.2 🌙     |          |          |





Contact/Location: MARK PEREA - TEAPHO