



## JOHN DEERE 310SE JR 0137448 (S/N NOT GIVEN)

Component Diesel Engine

{not provided} (--- QTS)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

Piston and cylinder wear is indicated. Bearing and/or bushing wear is indicated.

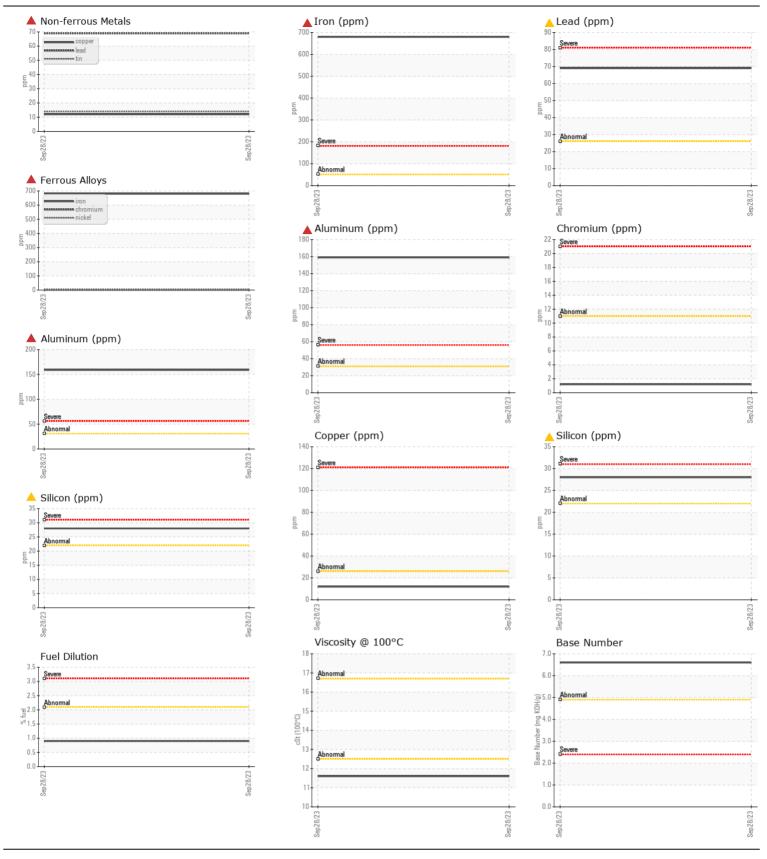
## CONTAMINATION

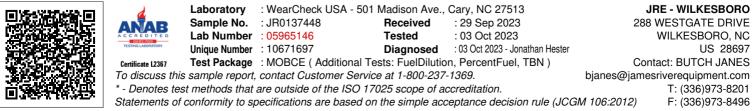
Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLU	$\frown$		
	$\mathbf{U}$		

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test   UOM   Method   Limit/an   Current   History1   History2     Sample Number   Client Info   JR0137448       Machine Age   hrs   Client Info   0       Machine Age   hrs   Client Info   0       Oil Age   hrs   Client Info   0       Filter Age   hrs   Client Info   0       Filter Changed   Client Info   N/A        Sample Status   -   SEVERE        Nickel   ppm   ASTM D5185m   >1   1       Nickel   ppm   ASTM D5185m   >3   0       Silver   ppm   ASTM D5185m   >3   0       Manaimum   ppm   ASTM D5185m   >26   12       Vanadiumum					$\frown$		
Sample Date   Client Info   28 Sep 2023       Machine Age   hrs   Client Info   0       Oil Age   hrs   Client Info   0       Oil Age   hrs   Client Info   0       Oil Changed   Client Info   N/A       Sample Status   SEVERE        Iron   ppm   ASTM D5185m<>51   A   680       Nickel   ppm   ASTM D5185m<>51   A   680       Silver   ppm   ASTM D5185m<>3   0        Aluminum   ppm   ASTM D5185m<>26   12        Vanadium   ppm   ASTM D5185m<>26   12        Vanadium   ppm   ASTM D5185m<>22   A   28       Silicon   ppm   AST	Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Date   Client Info   28 Sep 2023       Machine Age   hrs   Client Info   0       Oil Age   hrs   Client Info   0       Oil Age   hrs   Client Info   0       Oil Changed   Client Info   N/A       Sample Status   SEVERE        Iron   ppm   ASTM D5185m<>51   A   680       Nickel   ppm   ASTM D5185m<>51   A   680       Silver   ppm   ASTM D5185m<>3   0        Aluminum   ppm   ASTM D5185m<>26   12        Vanadium   ppm   ASTM D5185m<>26   12        Vanadium   ppm   ASTM D5185m<>22   A   28       Silicon   ppm   AST	Sample Number		Client Info		JR0137448		
Oil Age   hrs   Client Info   0       Filter Age   hrs   Client Info   N/A       Gil Changed   Client Info   N/A        Filter Changed   Client Info   N/A        Sample Status   SEVERE         Iron   ppm   ASTM D5185m   >51   2       Silver   ppm   ASTM D5185m   >5   2       Lead   ppm   ASTM D5185m   >26   12       Vanadium   ppm   ASTM D5185m   >26   12       Vanadium   ppm   ASTM D5185m   >4   14       Vanadium   ppm   ASTM D5185m   >22   2       Yellow Metal   scalar   Yvisual   NONE   NONE	-		Client Info		28 Sep 2023		
Filter Age Oil Changed   Ins   Client Info   0       Cil Changed Sample Status   Client Info   N/A       Iron   ppm   ASTM D5185m<>511   A   680       Iron   ppm   ASTM D5185m<>511   A   680       Nickel   ppm   ASTM D5185m<>5   2        Nickel   ppm   ASTM D5185m<>5   2        Nickel   ppm   ASTM D5185m<>5   2        Silver   ppm   ASTM D5185m<>26   6   69       Lead   ppm   ASTM D5185m<>26   12        Visual   NONE          Vellow Metal   scalar   'Visual   NONE   NONE       Vellow Metal   scalar   'Visual   NONE   <	Machine Age	hrs	Client Info		5893		
Oil Changed   Client Info   N/A       Filter Changed   Client Info   N/A       Sample Status   SEVERE       Iron   ppm   ASTM D5185m   >51   ▲ 680      Iron   ppm   ASTM D5185m   >51   2       Chromium   ppm   ASTM D5185m   >51   2       Silver   ppm   ASTM D5185m   >3   0       Aluminum   ppm   ASTM D5185m   >26   A 69       Silver   ppm   ASTM D5185m   >26   A 14       Vanadium   ppm   ASTM D5185m   >20   A 14       Vanadium   ppm   ASTM D5185m   >20   2       Silicon   ppm   ASTM D5185m   >20   2       Sulfation   Abs/rm </th <th>Oil Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>0</th> <th></th> <th></th>	Oil Age	hrs	Client Info		0		
Oil Changed   Client Info   N/A       Filter Changed   Client Info   N/A       Sample Status   SEVERE       Iron   ppm   ASTM D5185m   >51   ▲ 680      Iron   ppm   ASTM D5185m   >51   2      Silver   ppm   ASTM D5185m   >3   0      Aluminum   ppm   ASTM D5185m   >3   0      Aluminum   ppm   ASTM D5185m   >26   69       Lead   ppm   ASTM D5185m   >26   12       Vanadium   ppm   ASTM D5185m   >26   14       Vanadium   ppm   ASTM D5185m   >22   2       Vanadium   ppm   ASTM D5185m   >22   2       Silicon   ppm   ASTM D5185m   >20   2	-	hrs	Client Info		0		
Filter Changed Client Info N/A     Iron ppm ASTM D5185m >511 A 680     Iron ppm ASTM D5185m >51 A 680     Nickel ppm ASTM D5185m >5 2     Titanium ppm ASTM D5185m >3 0     Aluminum ppm ASTM D5185m >30 0     Lead ppm ASTM D5185m >26 69     Vanadium ppm ASTM D5185m >26 12     Vanadium ppm ASTM D5185m >26 14     Yallow Metal scalar *Visual NONE      Silicon ppm ASTM D5185m >22 2      Sulfation Abs/tmm ASTM D5185m >20 2      Fuel % ASTM D5	Ū		Client Info		N/A		
Sample Status   SEVERE       Iron   ppm   ASTM D5185m<>51   ▲ 680       Chromium   ppm   ASTM D5185m<>55   2       Nickel   ppm   ASTM D5185m<>5   2       Silver   ppm   ASTM D5185m<>3   0       Aluminum   ppm   ASTM D5185m<>26   69       Lead   ppm   ASTM D5185m<>26   12       Copper   ppm   ASTM D5185m<>26   12       Vanadium   ppm   ASTM D5185m<>26   12       Vanadium   ppm   ASTM D5185m<>22   28       Vellow Metal   scalar   *Visual   NONE       Silicon   ppm   ASTM D5185m<>22   28   28       Sulfation   Abs/tm   ASTM D5185m<>22   0.9    -	-		Client Info		N/A		
Iron ppm ASTM D5185m >511 1     Chromium ppm ASTM D5185m >1 1     Nickel ppm ASTM D5185m >5 2     Silver ppm ASTM D5185m >3 0     Silver ppm ASTM D5185m >3 0     Lead ppm ASTM D5185m >26 69     Copper ppm ASTM D5185m >26 12     Tin ppm ASTM D5185m >26 14     Vanadium ppm ASTM D5185m >22 2     Yellow Metal scalar *Visual NONE NONE     Silicon ppm ASTM D5185m >20 2     Sulfation Abs/dm ASTM D5185m >20 2     Glycol WC Method <t< th=""><th>Ū</th><th></th><th></th><th></th><th>SEVERE</th><th></th><th></th></t<>	Ū				SEVERE		
Chromium   ppm   ASTM D5185m   >11   1      Nickel   ppm   ASTM D5185m   >5   2      Titanium   ppm   ASTM D5185m   >3   0      Silver   ppm   ASTM D5185m   >31   ▲ 159      Aluminum   ppm   ASTM D5185m   >26   69      Copper   ppm   ASTM D5185m   >26   12      Copper   ppm   ASTM D5185m    14      Vanadium   ppm   ASTM D5185m    1      Vanadium   ppm   ASTM D5185m    14      Vanadium   ppm   ASTM D5185m   >20   10.9      Silicon   ppm   ASTM D5185m   >22   28       Silicon   ppm   ASTM D5185m   >20   2       Sulfool   WC Method   >0.21   NEG							
Nickel   ppm   ASTM D5185m   >5   2       Titanium   ppm   ASTM D5185m   >3   0       Silver   ppm   ASTM D5185m   >31   ▲ 159       Lead   ppm   ASTM D5185m   >26   ▲ 69       Copper   ppm   ASTM D5185m   >26   12       Vanadium   ppm   ASTM D5185m    4   14       Vanadium   ppm   ASTM D5185m   >26   12       Vanadium   ppm   ASTM D5185m   >26   28       Vanadium   ppm   ASTM D5185m   >20   2       Yellow Metal   scalar   *Visual   NONE       Fuel   %   ASTM D5185m   >20   2       Fuel   %   ASTM D5185m	Iron	ppm	ASTM D5185m	>51	<b>680</b>		
Titanium   ppm   ASTM D5185m   <1	Chromium	ppm	ASTM D5185m	>11	1		
Silver   ppm   ASTM D5185m   >3   0       Aluminum   ppm   ASTM D5185m   >31   ▲ 159       Lead   ppm   ASTM D5185m   >26   12       Copper   ppm   ASTM D5185m   >26   12       Vanadium   ppm   ASTM D5185m   >26   12       Wate   scalar   *Visual   NONE        White Metal   scalar   *Visual   NONE   NONE       Yellow Metal   scalar   *Visual   NONE        Silicon   ppm   ASTM D5185m   >20   2       Water   WC Method   >0.21   NEG       Glycol   WC Method   >0.21   NEG       Soti %   % ASTM D7844   >3   0.3	Nickel	ppm	ASTM D5185m	>5	2		
Aluminum ppm ASTM D5185m >31 ▲ 159     Lead ppm ASTM D5185m >26 69     Copper ppm ASTM D5185m >26 12     Tin ppm ASTM D5185m >4 14     Waradium ppm ASTM D5185m < 1     White Metal scalar *Visual NONE NONE     Yellow Metal scalar *Visual NONE NONE     Silicon ppm ASTM D5185m >20 2     Fuel % ASTM D5185m >20 2     Fuel % ASTM D5185m >20 2     Fuel % ASTM D5185m >20 2     Giycol WC Method NEG   Sott   Sott <t< th=""><th>Titanium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>&lt;1</th><th></th><th></th></t<>	Titanium	ppm	ASTM D5185m		<1		
Lead   ppm   ASTM D5185m   >26   ▲ 69       Copper   ppm   ASTM D5185m   >26   12       Tin   ppm   ASTM D5185m   >4   ▲ 14       Wanadium   ppm   ASTM D5185m   <   1       White Metal   scalar   *Visual   NONE        Yellow Metal   scalar   *Visual   NONE   NONE       Silicon   ppm   ASTM D5185m   >20   2       Fuel   %   ASTM D5185m   >20   2       Water   WC Method   >0.9         Glycol   WC Method   >0.3        Solf %   % ASTM D744   >30   16.8       Sulfation   Abs/.m   'ASTM D744   >30	Silver	ppm	ASTM D5185m	>3	0		
Lead ppm ASTM D5185m >26 ▲ 69     Copper ppm ASTM D5185m >26 12     Tin ppm ASTM D5185m >4 ▲ 14     White Metal scalar *Visual NONE NONE     White Metal scalar *Visual NONE NONE     Yellow Metal scalar *Visual NONE NONE     Silicon ppm ASTM D5185m >22 2     Potassium ppm ASTM D5185m >20 2     Water WC Method >0.21 NEG     Glycol WC Method >20 6.8     Sulfation Abs/tmm 'ASTM D7624 >20 6.8     Sulfation Abs/tmm 'ASTM D7624 >20 6.8     Sulfation Abs/tmm 'ASTM D7624 >20 <t< th=""><th>Aluminum</th><th>ppm</th><th>ASTM D5185m</th><th>&gt;31</th><th><b>1</b>59</th><th></th><th></th></t<>	Aluminum	ppm	ASTM D5185m	>31	<b>1</b> 59		
Copper   ppm   ASTM D5185m   >26   12       Tin   ppm   ASTM D5185m   >4   ▲ 14       Vanadium   ppm   ASTM D5185m    <1       White Metal   scalar   *Visual   NONE   NONE       Yellow Metal   scalar   *Visual   NONE   NONE       Potassium   ppm   ASTM D5185m<>22   ▲ 28       Fuel   %   ASTM D5185m<>20   2       Water   WC Method   >0.21   NEG       Glycol   WC Method   >0.21   NEG       Solf %   %   *ASTM D7844<>3   0.3       Sulfation   Abs/rm *ASTM D7614<>30   16.8       Sulfation   Abs/rm *ASTM D7145<>30   16.8       Debris   scalar<*Visual	Lead		ASTM D5185m	>26	<b>6</b> 9		
Tin   ppm   ASTM D5185m   >4   ▲ 14       Vanadium   ppm   ASTM D5185m   <1       White Metal   scalar   *Visual   NONE       Yellow Metal   scalar   *Visual   NONE       Silicon   ppm   ASTM D5185m   >22   ▲ 28       Potassium   ppm   ASTM D5185m   >20   2       Water   WC Method   0.21   NEG        Glycol   WC Method   0.21   NEG        Soot %   %   *ASTM D7624   >20   6.8       Sulfation   Abs/rm<*ASTM D7624   >20   6.8       Sulfation   Abs/rm   *ASTM D7624   >20   6.8       Sulfation   Abs/rm   *ASTM D7624   >20   6.8	Copper		ASTM D5185m	>26	12		
Vanadium   ppm   ASTM D5185m   <1				>4	<b>1</b> 4		
White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>202PotassiumppmASTM D5185m>202Fuel%ASTM D5185m>202WaterWC Method>0.21NEGGlycolWC Method>0.21NEGSoot %%'ASTM D7844>30.3Soot %%'ASTM D7844>316.8SulfationAbs/.tmm'ASTM D7624>206.8SulfationAbs/.tmm'ASTM D7644>316.8SulfationAbs/.tmm'ASTM D7644>2016.8SulfationAbs/.tmm'ASTM D7644>316.8SulfationAbs/.tmmNONENONESodiumscalar'VisualNONENONEAppearancescalar'VisualNORMLNORMLAppearancescalar'VisualNORMLNORMLBoronppmASTM D5185m185MolybdenumppmASTM D5185m126 <tr< th=""><th>Vanadium</th><th></th><th>ASTM D5185m</th><th></th><th>&lt;1</th><th></th><th></th></tr<>	Vanadium		ASTM D5185m		<1		
Yellow Metal   scalar   *Visual   NONE   NONE       Silicon   ppm   ASTM D5185m   >20   2       Potassium   ppm   ASTM D5185m   >20   2       Fuel   %   ASTM D5185m   >20   2       Water   WC Method   >0.9         Glycol   WC Method   >0.21   NEG        Soot %   %   *ASTM D7844   >3   0.3       Soot %   %   *ASTM D7624   >20   6.8       Sulfation   Abs/.tmm<*ASTM D715   >30   16.8       Sulfation   Abs/.tmm<*ASTM D7145   >30   16.8       Sulfation   scalar<*Visual   NONE   NORE       Sand/Dirt   scalar<*Visual   NORML   NO	White Metal		*Visual	NONE	NONE		
Silicon   ppm   ASTM D5185m   >22   ▲ 28       Potassium   ppm   ASTM D5185m   >20   2       Fuel   %   ASTM D5185m   >20   2       Water   WC Method   >0.21   NEG       Glycol   WC Method   >0.21   NEG       Soot %   %   *ASTM D7844   >3   0.3       Soot %   %   *ASTM D7624   >20   6.8       Sulfation   Abs/rm   *ASTM D7624   >20   6.8       Sulfation   scalar   *Visual   NONE	Yellow Metal		*Visual		-		
Potassium   ppm   ASTM D5185m   >20   2      Fuel   %   ASTM D3524   >2.1   0.9      Water   WC Method   >0.21   NEG      Glycol   WC Method   NEG       Soot %   %   *ASTM D7844   >3   0.3      Nitration   Abs/cm   *ASTM D7624   >20   6.8      Sulfation   Abs/.tmm   *ASTM D7624   >20   6.8      Sulfation   scalar   *Visual   NONE       Sand/Dirt   scalar   *Visual   NORML   NORML							
Fuel   %   ASTM D3524   >2.1   0.9	Silicon	ppm	ASTM D5185m	>22	<b>A</b> 28		
Water   WC Method   >0.21   NEG       Glycol   WC Method   NEG        Soot %   %   *ASTM D7844   >3   0.3       Nitration   Abs/cm   *ASTM D7624   >20   6.8       Sulfation   Abs/.1mm   *ASTM D7624   >30   16.8       Sulfation   Abs/.1mm   *ASTM D7415   >30   16.8       Sadn/Dirt   scalar   *Visual   NORL   NORML       Odor   scalar	Potassium	ppm	ASTM D5185m	>20	2		
Glycol   WC Method   NEG      Soot %   %   *ASTM D7844   >3   0.3       Nitration   Abs/mm   *ASTM D7624   >20   6.8       Sulfation   Abs/mm   *ASTM D7624   >20   6.8       Sulfation   Abs/mm   *ASTM D7615   >30   16.8       Silt   scalar   *Visual   NONE        Debris   scalar   *Visual   NONE   NONE       Appearance   scalar   *Visual   NORML   NORML       Appearance   scalar   *Visual   NORML   NORML       Odor   scalar   *Visual   NORML   NORML       Sodium   ppm   ASTM D5185m<>31   6       Boron   ppm   ASTM D5185m   188	Fuel	%	ASTM D3524	>2.1	0.9		
Soot %   %   *ASTM D7844   >3   0.3       Nitration   Abs/cm   *ASTM D7624   >20   6.8       Sulfation   Abs/1mm   *ASTM D7624   >20   16.8       Sulfation   Abs/1mm   *ASTM D7615   >30   16.8       Sulfation   Abs/1mm   *ASTM D7615   >30   16.8       Sulfation   Abs/1mm   *ASTM D7615   >30   16.8       Debris   scalar   *Visual   NONE   NONE       Appearance   scalar   *Visual   NORML   NORML       Appearance   scalar   *Visual   NORML   NORML       Appearance   scalar   *Visual   >0.21   NEG       Odor   scalar   *Visual   >0.21   NEG	Water		WC Method	>0.21	NEG		
Nitration   Abs/cm   *ASTM D7624   >20   6.8       Sulfation   Abs/.1mm   *ASTM D7415   >30   16.8       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       Emulsified Water   scalar   *Visual   >0.21   NEG       Sodium   ppm   ASTM D5185m   6        Boron   ppm   ASTM D5185m   0        Malganese   ppm   ASTM D5185m   8       Magnesium   ppm	Glycol		WC Method		NEG		
SulfationAbs/.1mm*ASTM D7415>3016.8Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLCdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.21NEGSodiumppmASTM D5185m-316BoronppmASTM D5185m0MolybdenumppmASTM D5185m0MarganeseppmASTM D5185m8MagnesiumppmASTM D5185m1469PhosphorusppmASTM D5185m797ZincppmASTM D5185m959SulfurppmASTM D5185m3470OxidationAbs/.1mm*ASTM D7444>2511.8Base Number (BN)mg KOHgASTM D28966.6	Soot %	%	*ASTM D7844	>3	0.3		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.21NEGSodiumppmASTM D5185m>316BoronppmASTM D5185m0BariumppmASTM D5185m0MolybdenumppmASTM D5185m8MagnesiumppmASTM D5185m1469PhosphorusppmASTM D5185m797ZincppmASTM D5185m959SulfurppmASTM D5185m3470SulfurppmASTM D5185m3470SulfurppmASTM D5185m3470SulfurppmASTM D5185m3470SulfurppmASTM D5185m6.6Base Number (BN)mg KOHgASTM D28966.6	Nitration	Abs/cm	*ASTM D7624	>20	6.8		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.21NEGSodiumppmASTM D5185m>316BoronppmASTM D5185m0BariumppmASTM D5185m0MolybdenumppmASTM D5185m8MagnesiumppmASTM D5185m407CalciumppmASTM D5185m1469PhosphorusppmASTM D5185m959ZincppmASTM D5185m3470SulfurppmASTM D5185m3470OxidationAbs/.1mm*ASTM D5185m3470Base Number (BN)mg KOHgASTM D28966.6	Sulfation	Abs/.1mm	*ASTM D7415	>30	16.8		
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.21NEGSodiumppmASTM D5185m>316BoronppmASTM D5185m0BariumppmASTM D5185m0MolybdenumppmASTM D5185m126MagnesiumppmASTM D5185m8MagnesiumppmASTM D5185m1469PhosphorusppmASTM D5185m959ZincppmASTM D5185m959SulfurppmASTM D5185m3470OxidationAbs/Imm*ASTM D7141>2511.8Base Number (BN)mg KOHgASTM D28966.6	Silt	scalar	*Visual	NONE	NONE		
Appearance   scalar   *Visual   NORML   NORML      Odor   scalar   *Visual   NORML   NORML       Emulsified Water   scalar   *Visual   >0.21   NEG       Sodium   ppm   ASTM D5185m   >31   6       Boron   ppm   ASTM D5185m   >31   6       Barium   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   0       Magnesium   ppm   ASTM D5185m   8       Calcium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   1469       Phosphorus   ppm   ASTM D5185m   959       Zinc   ppm   ASTM D5185m   959       Sulfur	Debris	scalar	*Visual	NONE	NONE		
Odor   scalar   *Visual   NORML   NORML       Emulsified Water   scalar   *Visual   >0.21   NEG       Sodium   ppm   ASTM D5185m   >31   6       Boron   ppm   ASTM D5185m   >31   6       Barium   ppm   ASTM D5185m   0        Malybdenum   ppm   ASTM D5185m   0        Manganese   ppm   ASTM D5185m   8        Magnesium   ppm   ASTM D5185m   407        Calcium   ppm   ASTM D5185m   407        Phosphorus   ppm   ASTM D5185m   959        Zinc   ppm   ASTM D5185m   959        Sulfur   ppm	Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water   scalar   *Visual   >0.21   NEG      Sodium   ppm   ASTM D5185m   >31   6       Boron   ppm   ASTM D5185m   >31   6       Barium   ppm   ASTM D5185m   0       Malybdenum   ppm   ASTM D5185m   0       Malganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   8       Calcium   ppm   ASTM D5185m   407       Phosphorus   ppm   ASTM D5185m   1469       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7414<>25   11.8       Base Number (BN)   mg KOHg   ASTM D2896	Appearance	scalar	*Visual	NORML	NORML		
Sodium   ppm   ASTM D5185m   >31   6       Boron   ppm   ASTM D5185m   185       Barium   ppm   ASTM D5185m   0       Barium   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   126       Maganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   407       Phosphorus   ppm   ASTM D5185m   1469       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7414<>25   11.8       Base Number (BN)   mg KOHg   ASTM D2886   6.6   <	Odor	scalar	*Visual	NORML	NORML		
Boron   ppm   ASTM D5185m   185       Barium   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   126       Manganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   407       Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm *ASTM D7141 >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Emulsified Water	scalar	*Visual	>0.21	NEG		
Boron   ppm   ASTM D5185m   185       Barium   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   126       Manganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   407       Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm *ASTM D7141 >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6							
Barium   ppm   ASTM D5185m   0       Molybdenum   ppm   ASTM D5185m   126       Manganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   407       Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7414<>25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Sodium	ppm	ASTM D5185m	>31	6		
Molybdenum   ppm   ASTM D5185m   126       Manganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   1469       Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7414<>25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Boron	ppm	ASTM D5185m		185		
Manganese   ppm   ASTM D5185m   8       Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   1469       Phosphorus   ppm   ASTM D5185m   977       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7141<>25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Barium	ppm	ASTM D5185m		0		
Magnesium   ppm   ASTM D5185m   407       Calcium   ppm   ASTM D5185m   1469       Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7144   >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Molybdenum	ppm	ASTM D5185m		126		
Calcium   ppm   ASTM D5185m   1469       Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm<*ASTM D7141<>25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Manganese	ppm	ASTM D5185m		8		
Phosphorus   ppm   ASTM D5185m   797       Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm   *ASTM D7414   >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Magnesium	ppm	ASTM D5185m		407		
Zinc   ppm   ASTM D5185m   959       Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm   *ASTM D7414   >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Calcium	ppm	ASTM D5185m		1469		
Sulfur   ppm   ASTM D5185m   3470       Oxidation   Abs/.1mm   *ASTM D7414   >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Phosphorus	ppm	ASTM D5185m		797		
Oxidation   Abs/.1mm   *ASTM D7414   >25   11.8       Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Zinc	ppm	ASTM D5185m		959		
Base Number (BN)   mg KOH/g   ASTM D2896   6.6	Sulfur	ppm	ASTM D5185m		3470		
	Oxidation	Abs/.1mm	*ASTM D7414	>25	11.8		
	Base Number (BN)	mg KOH/g	ASTM D2896		6.6		
	Visc @ 100°C		ASTM D445		11.6		





Contact/Location: BUTCH JANES - JAMWIL