

#### EAST CRANE Machine Id 170831 LUFFING DRIVE Component Luffing Drive

GEAR OIL LS 80W90 (--- GAL)

## RECOMMENDATION

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

### WEAR

All component wear rates are normal.

## CONTAMINATION

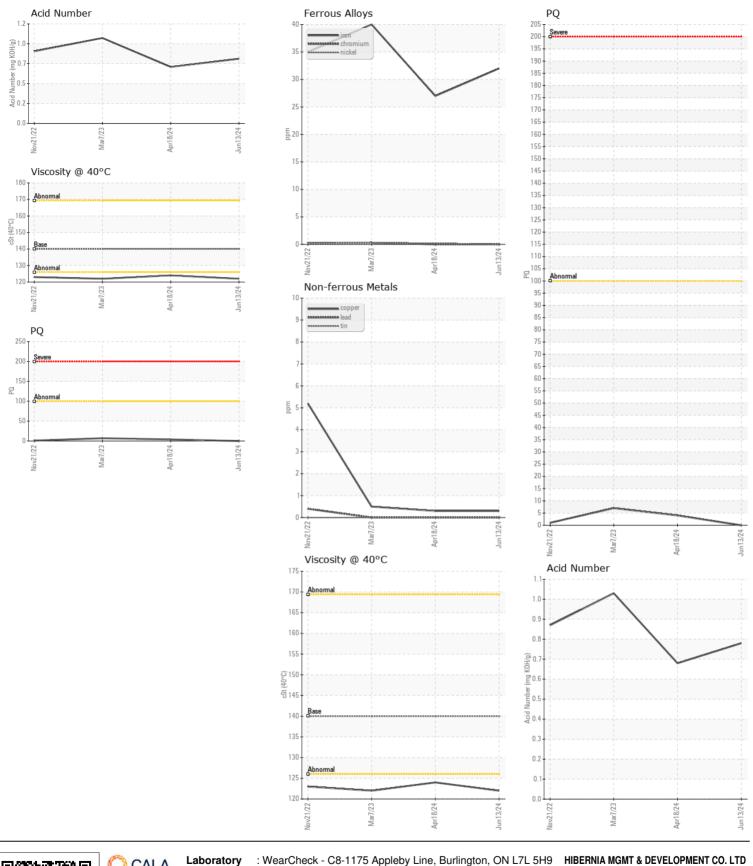
There is no indication of any contamination in the oil.

# FLUID CONDITION

The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Machine Age Oil AgehrsClient Info000Oil Age Filter AgehrsClient Info000Oil ChangedClient InfoN/AN/AN/AN/AFilter ChangedClient InfoN/AN/AN/ASample StatusClient InfoN/AN/AN/APQASTM D8184*047IronppmASTM D5185(m)>200322740ChromiumppmASTM D5185(m)>100<1<1NickelppmASTM D5185(m)>100<1<1TitaniumppmASTM D5185(m)>1000<1SilverppmASTM D5185(m)000<1LeadppmASTM D5185(m)000<1LeadppmASTM D5185(m)0000VanadiumppmASTM D5185(m)0000VanadiumppmASTM D5185(m)0000VanadiumppmASTM D5185(m)0000VanadiumppmASTM D5185(m)20<1<1<1TinppmASTM D5185(m)20<1<10VanadiumppmASTM D5185(m)0<1<1<1TinppmASTM D5185(m)20<1<1<1Velow MetalscalarVisual*NONENONE <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
Sample Date         Client Info         13 Jun 2024         18 Apr 2024         0 7 Mar 2023           Machine Age         hrs         Client Info         0         0         0           Cill Age         hrs         Client Info         0         0         0         0           Cill Changed         hrs         Client Info         N/A         N/A         N/A         N/A           Filter Changed         Client Info         N/A         N/A         N/A         N/A         N/A           Sample Status         Client Info         N/A         N/A         N/A         N/A         N/A           PQ         ASTM D818/m         O         4         7         7           Iron         ppm         ASTM D5185/m         >10         0         4         7           Iron         ppm         ASTM D5185/m         >10         0         0         0           Silver         ppm         ASTM D5185/m         0         0         0         0           All And         MSTM D5185/m         0         0         0         0         0           Glorent minum         ppm         ASTM D5185/m         0         0         0         0	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age         hrs         Client Info         0         0         0           Oil Age         hrs         Client Info         0         0         0           Filter Age         hrs         Client Info         N/A         N/A         N/A           Filter Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Client Info         N/A         N/A         N/A         N/A           PQ         ASTM D8184/         0         4         7           Iron         ppm         ASTM D8185/m         >10         0         <11           Nickel         ppm         ASTM D5185/m         0         0         0           Silver         ppm         ASTM D5185/m         0         0         0         0           Aluminum         ppm         ASTM D5185/m         0         0         0         0           Vanadium         ppm         ASTM D5185/m         0         0         0         0           Vanadum         ppm         ASTM D5185/m         0         0         0         0           Vanadum         ppm         ASTM D5185/m         0         0         0<	Sample Number		Client Info		PP	PP	PP
Oil Age         hrs         Client Info         0         0         0           Filter Age         hrs         Client Info         N/A         N/A         N/A           Filter Changed         Client Info         N/A         N/A         N/A           Filter Changed         Client Info         N/A         N/A         N/A           Sample Status         NORMAL         NORMAL         NORMAL         NORMAL           PQ         ASTM D5186(m)         >200         32         27         40           Chromium         ppm         ASTM D5186(m)         >10         0         <1         1           Nickel         ppm         ASTM D5185(m)         10         0         <1         1           Silver         ppm         ASTM D5185(m)         0         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         <1         <1         0           Vanadium         ppm         ASTM D5185(m)         0	Sample Date		Client Info		13 Jun 2024	18 Apr 2024	07 Mar 2023
Filter Age         hrs         Client Info         0         0         0           Oil Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         Client Info         N/A         N/A         N/A         N/A           Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           PQ         ASTM D5185(m)         >200         32         27         40           Chromium         ppm         ASTM D5185(m)         >10         0         <1         1           Nickel         ppm         ASTM D5185(m)         >10         0         <1         1           Titanium         ppm         ASTM D5185(m)         0         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         0         0           Copper         ppm         ASTM D5185(m)         0         0         0         0           Vanaduum         ppm         ASTM D5185(m)         0         0         0         0           Vanaduum         ppm         ASTM D5185(m)         20         <1         <1         <1           Vanadu	Machine Age	hrs	Client Info		0	0	0
Oli Changed         Client Info         N/A         N/A         N/A         N/A           Filter Changed         Client Info         N/A         N/A         N/A         N/A           Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           PQ         ASTM D8184*         0         4         7           Iron         ppm         ASTM D5185(m)         >10         0         <1           Nickel         ppm         ASTM D5185(m)         >10         0         <1         <1           Titanium         ppm         ASTM D5185(m)         0         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         0         0           Lead         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         <1         <1         1           Tin         ppm         ASTM D5185(m)         20         <1         <1         0           Vanadium         ppm	Oil Age	hrs	Client Info		0	0	0
Filter Changed         Client Info         N/A         N/A         N/A         N/A           PQ         ASTM D8184'         0         4         7           Iron         ppm         ASTM D8186(m)         >200         32         27         40           Chromium         ppm         ASTM D5185(m)         >10         0         0         1           Nickel         ppm         ASTM D5185(m)         >10         0         0         1           Nickel         ppm         ASTM D5185(m)         0         0         0         0           Silver         ppm         ASTM D5185(m)         0         0         0         0           Lead         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         -1         -1           Vanadium         ppm         ASTM D5185(m)         0         -1         -1           Vanadium         ppm	Filter Age	hrs	Client Info		0	0	0
Sample Status         NORMAL         NORMAL         NORMAL         NORMAL           PQ         ASTM D8184*         0         4         7           Iron         ppm         ASTM D5185(m)         >200         32         27         40           Chromium         ppm         ASTM D5185(m)         >10         0         0         <1         <1           Nickel         ppm         ASTM D5185(m)         >10         0         0         0         0           Silver         ppm         ASTM D5185(m)         0         0         0         0           Auminum         ppm         ASTM D5185(m)         0         0         0         0           Copper         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         <1         <1         0           Vanadium         ppm         ASTM D5185(m)         >0         <1         <1         <1 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>N/A</th> <th>N/A</th> <th>N/A</th>	Oil Changed		Client Info		N/A	N/A	N/A
PQ         ASTM D8184*         0         4         7           Iron         ppm         ASTM D5185(m)         >200         32         27         40           Chromium         ppm         ASTM D5185(m)         >10         0         0         <11           Nickel         ppm         ASTM D5185(m)         >10         0         0         <11           Titanium         ppm         ASTM D5185(m)         0         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         0         0           Lead         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         1         1           Tin         ppm         ASTM D5185(m)         0         1         1         1           Vanadium         ppm         ASTM D5185(m)         >20         21         21         21         1	Filter Changed		Client Info		N/A	N/A	N/A
Iron         ppm         ASTM D5185(m)         >200         32         277         40           Chromium         ppm         ASTM D5185(m)         >10         0         0         <1           Nickel         ppm         ASTM D5185(m)         >10         0         <1         <1           Titanium         ppm         ASTM D5185(m)         0         0         0         0           Silver         ppm         ASTM D5185(m)         0         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         0         0           Lead         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         <1         <1         <1           Tin         ppm         ASTM D5185(m)         0         <1         <1         <1           Vanadium         ppm         ASTM D5185(m)         20         <1         <1         0           Vanadium         ppm         ASTM D5185(m)         >20         <1	Sample Status				NORMAL	NORMAL	NORMAL
Chromium         ppm         ASTM D5185(m)         >10         0         <1	PQ		ASTM D8184*		0	4	7
Nickel         ppm         ASTM D5185(m)         >10         0         <1	Iron	ppm	ASTM D5185(m)	>200	32	27	40
Titanium         ppm         ASTM D5185(m)         0         0         0           Silver         ppm         ASTM D5185(m)         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         0           Lead         ppm         ASTM D5185(m)         0         0         0           Copper         ppm         ASTM D5185(m)          <1         <1         <1           Tin         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           White Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Yellow Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185(m)         20         <1         <1         0           Water         WC Method         >0.2         NEG         NEG         NORE         NORE           Debris         scalar         Visual*         NONE         NONE         NONE         NORML         NORML	Chromium	ppm	ASTM D5185(m)	>10	0	0	<1
Silver         ppm         ASTM D5185(m)         0         0         0           Aluminum         ppm         ASTM D5185(m)         0         0         <1           Lead         ppm         ASTM D5185(m)         0         0         0           Copper         ppm         ASTM D5185(m)         <1         <1         <1         <1           Tin         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         <1         <1         1           Yellow Metal         scalar         Visual*         NONE         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185(m)         >20         <1         <1         0         0           Water         WC Method         >0.2         NEG         NEG         NORE         NORE           Debris         scalar         Visual*         NORE         NORE         NORML	Nickel	ppm	ASTM D5185(m)	>10	0	<1	<1
Aluminum         ppm         ASTM D5185(m)         0         0         0         1           Lead         ppm         ASTM D5185(m)         0         0         0         0           Copper         ppm         ASTM D5185(m)         <1         <1         <1         <1           Tin         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           White Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Yellow Metal         scalar         Visual*         NONE         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185(m)         20         <1         <1         <1         0           Water         WC Method         >0.2         NEG         NEG         NEG         NEG           Sad/Dirt         scalar         Visual*         NONE         NONE         VLITE         NORE           Appearance         scalar         Visual*         NORML         NORML         NORML         NORML           Gor         scalar <th>Titanium</th> <th>ppm</th> <th>ASTM D5185(m)</th> <th></th> <th>0</th> <th>0</th> <th>0</th>	Titanium	ppm	ASTM D5185(m)		0	0	0
Lead         ppm         ASTM D5185(m)         0         0         0         0           Copper         ppm         ASTM D5185(m)         <1         <1         <1         <1           Tin         ppm         ASTM D5185(m)         0         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0         0           White Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Yellow Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185(m)         >20         <1         <1         0           Water         WC Method         >0.2         NEG         NEG         NEG           Silt         scalar         Visual*         NONE         NONE         VLITE         NONE           Debris         scalar         Visual*         NONE         NORE         NORML         NORML           Appearance         scalar         Visual*         NORML         NORML         NORML         NORML           Boron         ppm         ASTM D5185(m)         1	Silver	ppm	ASTM D5185(m)		0	0	0
Copper         ppm         ASTM D5185(m)         <1	Aluminum	ppm	ASTM D5185(m)		0	0	<1
Tin         ppm         ASTM D5185(m)         0         0         0           Vanadium         ppm         ASTM D5185(m)         0         0         0           White Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Yellow Metal         scalar         Visual*         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185(m)         20         <1         <1         0           Potassium         ppm         ASTM D5185(m)         >20         <1         <1         0           Water         WC Method         >0.2         NEG         NEG         NEG         S           Debris         scalar         Visual*         NONE         NONE         VLITE         NONE           Sand/Dirt         scalar         Visual*         NOR         NORML         NORML         NORML         NORML           Odor         scalar         Visual*         NORML         NORML         NORML         NORML         NORML           Odor         scalar         Visual*         >0.2         NEG         NEG         NEG           Sodium         ppm         ASTM D51	Lead	ppm	ASTM D5185(m)		0	0	0
Vanadium         ppm         ASTM D5185(m)         0         0         0         0           White Metal         scalar         Visual*         NONE         NONE         NONE         NONE         NONE         NONE           Yellow Metal         scalar         Visual*         NONE         NONE         NONE         NONE         NONE           Silicon         ppm         ASTM D5185(m)         20         <1         <1         0           Vater         WC Method         >0.2         NEG         NEG         NEG           Silt         scalar         Visual*         NONE         NONE         VLITE         NONE           Debris         scalar         Visual*         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         Visual*         NORML         NORML         NORML         NORML           Odor         scalar         Visual*         NORML         NORML         NORML         NORML         NORML           Odor         scalar         Visual*         >0.2         NEG         NEG         NEG           Sodium         ppm         ASTM D5185(m)         1         2         2         21         1 <th>Copper</th> <th>ppm</th> <th>ASTM D5185(m)</th> <th></th> <th>&lt;1</th> <th>&lt;1</th> <th>&lt;1</th>	Copper	ppm	ASTM D5185(m)		<1	<1	<1
White MetalscalarVisual*NONENONENONENONENONENONEYellow MetalscalarVisual*NONENONENONENONENONENONESiliconppmASTM D5185(m)0<1<10PotassiumppmASTM D5185(m)>20<1<10WaterWC Method>0.2NEGNEGNEGSilitscalarVisual*NONENONEVLITENONEDebrisscalarVisual*NONENONENONENONESand/DirtscalarVisual*NONENONENONENONEAppearancescalarVisual*NORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLBoronppmASTM D5185(m)502221BariumppmASTM D5185(m)000MagnesiumppmASTM D5185(m)10<1<12CalciumppmASTM D5185(m)70793915PhosphorusppmASTM D5185(m)2000313294423ZincppmASTM D5185(m)2000218962118321500Acid Number (AN)mg KOHgASTM D779(m)140122124122	Tin	ppm	ASTM D5185(m)		0	0	0
Yellow MetalscalarVisual*NONENONENONENONENONESiliconppmASTM D5185(m)>20<1<10PotassiumppmASTM D5185(m)>20<1<10WaterWC Method>0.2NEGNEGNEGSiltscalarVisual*NONENONEVLITENONEDebrisscalarVisual*NONENONEVLITENONESand/DirtscalarVisual*NONENONENONENORMLAppearancescalarVisual*NORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLOdorscalarVisual*>0.2NEGNEGSodiumppmASTM D5185(m)<1<1<1<1BoronppmASTM D5185(m)1502221BariumppmASTM D5185(m)000<0MagnesiumppmASTM D5185(m)10<1<12CalciumppmASTM D5185(m)50657PhosphorusppmASTM D5185(m)50657SulfurppmASTM D5185(m)50657SulfurppmASTM D5185(m)50657SulfurppmASTM D5185(m)50657SulfurppmASTM D5185(m)506<	Vanadium	ppm	ASTM D5185(m)		0	0	0
Silicon         ppm         ASTM D5185(m)         0         <1	White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
PotassiumppmASTM D5185(m)>20<1	Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
WaterWC Method>0.2NEGNEGNEGSiltscalarVisual*NONENONEVLITENONEDebrisscalarVisual*NONENONEVLITENONESand/DirtscalarVisual*NONENONENONENONEAppearancescalarVisual*NORMLNORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLNORMLEmulsified WaterscalarVisual*>0.2NEGNEGNEGSodiumppmASTM D5185(m)<<1<1<1BoronppmASTM D5185(m)1502221BariumppmASTM D5185(m)0000MagnesiumppmASTM D5185(m)10<1<12CalciumppmASTM D5185(m)70793915PhosphorusppmASTM D5185(m)2000313294423ZincppmASTM D5185(m)20000218962118321500Acid Number (AN)mg KOH/gASTM D974*0.780.681.03Visc @ 40°CcStASTM D7279(m)140122124122	Silicon	ppm	ASTM D5185(m)		0	<1	<1
SiltscalarVisual*NONENONEVLITENONEDebrisscalarVisual*NONENONEVLITENONESand/DirtscalarVisual*NONENONENONENONEAppearancescalarVisual*NORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLNORMLEmulsified WaterscalarVisual*>0.2NEGNEGNEGSodiumppmASTM D5185(m)<<1<1<1<1BoronppmASTM D5185(m)0000MolybdenumppmASTM D5185(m)0000MagnesiumppmASTM D5185(m)<10<12CalciumppmASTM D5185(m)70793915PhosphorusppmASTM D5185(m)50657SulfurppmASTM D5185(m)2000218962118321500Acid Number (AN)mg KOHgASTM D974*0.780.681.03Visc @ 40°CcStASTM D7279(m)140122124122	Potassium	ppm	ASTM D5185(m)	>20	<1	<1	0
DebrisscalarVisual*NONENONEVLITENONESand/DirtscalarVisual*NONENONENONENONENONEAppearancescalarVisual*NORMLNORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLNORMLEmulsified WaterscalarVisual*>0.2NEGNEGNEGSodiumppmASTM D5185(m)-<	Water		WC Method	>0.2	NEG	NEG	NEG
Sand/DirtscalarVisual*NONENONENONENONEAppearancescalarVisual*NORMLNORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLNORMLEmulsified WaterscalarVisual*>0.2NEGNEGNEGSodiumppmASTM D5185(m)<1<1<1<1BoronppmASTM D5185(m)1502221BariumppmASTM D5185(m)0000MolybdenumppmASTM D5185(m)0000MagnesiumppmASTM D5185(m)<10<12CalciumppmASTM D5185(m)70793915PhosphorusppmASTM D5185(m)50657SulfurppmASTM D5185(m)20000218962118321500Acid Number (AN)mg KOH/gASTM D974*0.780.681.03Visc @ 40°CcStASTM D7279(m)140122124122	Silt	scalar	Visual*	NONE	NONE	VLITE	NONE
AppearancescalarVisual*NORMLNORMLNORMLNORMLNORMLOdorscalarVisual*NORMLNORMLNORMLNORMLNORMLEmulsified WaterscalarVisual*>0.2NEGNEGNEGSodiumppmASTM D5185(m)<<1<1<1BoronppmASTM D5185(m)1502221BariumppmASTM D5185(m)0000MolybdenumppmASTM D5185(m)0000MagnesiumppmASTM D5185(m)<10<12CalciumppmASTM D5185(m)10<1<12PhosphorusppmASTM D5185(m)2000313294423ZincppmASTM D5185(m)50657SulfurppmASTM D5185(m)20000218962118321500Acid Number (AN)mg KOHgASTM D974*0.780.681.03Visc @ 40°CcStASTM D7279(m)140122124122	Debris	scalar	Visual*	NONE	NONE	VLITE	NONE
OdorscalarVisual*NORMLNORMLNORMLNORMLNORMLNORMLEmulsified WaterscalarVisual*>0.2NEGNEGNEGNEGSodiumppmASTM D5185(m)<<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1	Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Emulsified Water         scalar         Visual*         >0.2         NEG         NEG         NEG           Sodium         ppm         ASTM D5185(m) $<1$ $<1$ $<1$ $<1$ Boron         ppm         ASTM D5185(m)         150         2         2         21           Barium         ppm         ASTM D5185(m)         150         2         2         21           Barium         ppm         ASTM D5185(m)         0         0         0         0           Molybdenum         ppm         ASTM D5185(m)         0         0         0         10           Magnesium         ppm         ASTM D5185(m)         10 $<1$ 0 $<1$ Magnesium         ppm         ASTM D5185(m)         10 $<1$ $<1$ 2           Calcium         ppm         ASTM D5185(m)         10 $<1$ $<1$ $2$ Phosphorus         ppm         ASTM D5185(m)         2000         313         294         423           Zinc         ppm         ASTM D5185(m)         50         6         5         7           Sulfur         ppm         ASTM D5185(m) <th>Appearance</th> <th>scalar</th> <th>Visual*</th> <th>NORML</th> <th>NORML</th> <th>NORML</th> <th>NORML</th>	Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Sodium         ppm         ASTM D5185(m)         <1	Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Boron         ppm         ASTM D5185(m)         150         2         2         21           Barium         ppm         ASTM D5185(m)         0         0         0         0           Molybdenum         ppm         ASTM D5185(m)         0         0         0         0           Manganese         ppm         ASTM D5185(m)          <1         0         <1           Magnesium         ppm         ASTM D5185(m)          <1         <1         2           Calcium         ppm         ASTM D5185(m)         10         <1         <1         2           Calcium         ppm         ASTM D5185(m)         70         79         39         15           Phosphorus         ppm         ASTM D5185(m)         2000         313         294         423           Zinc         ppm         ASTM D5185(m)         50         6         5         7           Sulfur         ppm         ASTM D5185(m)         20000         21896         21183         21500           Acid Number (AN)         mg KOH/g         ASTM D974*         0.78         0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140	Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Barium         ppm         ASTM D5185(m)         0         0         0           Molybdenum         ppm         ASTM D5185(m)         0         0         0           Manganese         ppm         ASTM D5185(m)         <1         0         <1           Magnesium         ppm         ASTM D5185(m)         10         <1         <1         2           Calcium         ppm         ASTM D5185(m)         70         79         39         15           Phosphorus         ppm         ASTM D5185(m)         2000         313         294         423           Zinc         ppm         ASTM D5185(m)         50         6         5         7           Sulfur         ppm         ASTM D5185(m)         20000         21896         21183         21500           Acid Number (AN)         mg KOHg         ASTM D974*         0.78         0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140         122         124         122	Sodium	ppm	ASTM D5185(m)		<1	<1	<1
Molybdenum         ppm         ASTM D5185(m)         0         0         0           Manganese         ppm         ASTM D5185(m)         <1         0         <1           Magnesium         ppm         ASTM D5185(m)         10         <1         0         <1           Magnesium         ppm         ASTM D5185(m)         10         <1         <1         2           Calcium         ppm         ASTM D5185(m)         70         79         39         15           Phosphorus         ppm         ASTM D5185(m)         2000         313         294         423           Zinc         ppm         ASTM D5185(m)         50         6         5         7           Sulfur         ppm         ASTM D5185(m)         20000         21896         21183         21500           Acid Number (AN)         mg KOH/g         ASTM D974*         0.78         0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140         122         124         122	Boron	ppm	ASTM D5185(m)	150	2	2	21
Manganese         ppm         ASTM D5185(m)         <1	Barium	ppm	ASTM D5185(m)		0	0	0
Magnesium         ppm         ASTM D5185(m)         10         <1	Molybdenum	ppm	ASTM D5185(m)		0	0	0
Calcium         ppm         ASTM D5185(m)         70         79         39         15           Phosphorus         ppm         ASTM D5185(m)         2000 <b>313</b> 294         423           Zinc         ppm         ASTM D5185(m)         50 <b>6</b> 5         7           Sulfur         ppm         ASTM D5185(m)         20000 <b>21896</b> 21183         21500           Acid Number (AN)         mg KOH/g         ASTM D974* <b>0.78</b> 0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140 <b>122</b> 124         122	Manganese	ppm	ASTM D5185(m)		<1	0	<1
Phosphorus         ppm         ASTM D5185(m)         2000         313         294         423           Zinc         ppm         ASTM D5185(m)         50         6         5         7           Sulfur         ppm         ASTM D5185(m)         20000         21896         21183         21500           Acid Number (AN)         mg KOH/g         ASTM D974*         0.78         0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140         122         124         122	Magnesium	ppm	ASTM D5185(m)	10	<1	<1	2
Zinc         ppm         ASTM D5185(m)         50         6         5         7           Sulfur         ppm         ASTM D5185(m)         20000         21896         21183         21500           Acid Number (AN)         mg KOH/g         ASTM D974*         0.78         0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140         122         124         122	Calcium	ppm	ASTM D5185(m)	70	79	39	15
Sulfur         ppm         ASTM D5185(m)         20000 <b>21896</b> 21183         21500           Acid Number (AN)         mg KOH/g         ASTM D974* <b>0.78</b> 0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140 <b>122</b> 124         122	Phosphorus	ppm	ASTM D5185(m)	2000	313	294	423
Acid Number (AN)         mg KOH/g         ASTM D974*         0.78         0.68         1.03           Visc @ 40°C         cSt         ASTM D7279(m)         140         122         124         122	Zinc	ppm	ASTM D5185(m)	50	6	5	7
Visc @ 40°C cSt ASTM D7279(m) 140 122 124 122	Sulfur	ppm	ASTM D5185(m)	20000	21896	21183	21500
	Acid Number (AN)	mg KOH/g	ASTM D974*		0.78	0.68	1.03
	Visc @ 40°C	cSt	ASTM D7279(m)	140	122	124	

Contact/Location: Sam Nash - HIBSTJ



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA 回偷 : PP Sample No. Received : 14 Jun 2024 SUITE 1000,, 100 NEW GOWER STREET Lab Number : 02642123 Tested ST.JOHNS, NL : 18 Jun 2024 ISO 17025:2017 Accredited Laboratory Diagnosed Unique Number : 5799662 : 18 Jun 2024 - Kevin Marson CA A1C 6K3 Test Package : IND 2 Contact: Sam Nash To discuss this sample report, contact Customer Service at 1-800-268-2131. samantha.m.nash@exxonmobil.com Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied. F: (709)722-3766

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Contact/Location: Sam Nash - HIBSTJ Page 2 of 2

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