

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

RECOMMENDATION

Machine Id VOLVO A45G 13386 (S/N 353448)

Component Diesel Engine

NOT GIVEN (--- GAL)

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

W	EA	R

All component wear rates are normal.

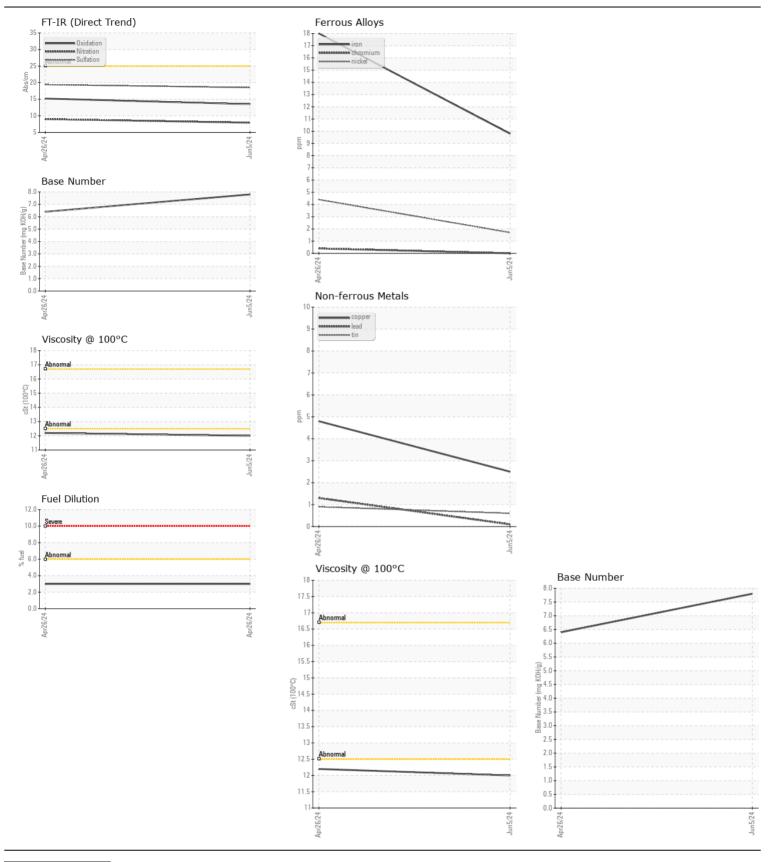
CONTAMINATION

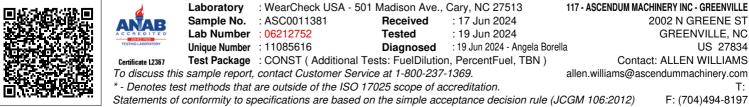
Fuel content negligible. There is no indication of any contamination in the oil.

FLU	CO	ND	ITI	

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test UOM Method Limit/An Current History1 History2 Sample Number Client Info ASC0011381 ASC0008805 Machine Age hrs Client Info Gb Jun 2024 26 Apr 2024 Oil Age hrs Client Info 4806 4242 Oil Age hrs Client Info Changed N/A Oil Changed Client Info Changed N/A Sample Status NORMAL NORMAL Iron ppm ASTM D5165 >20 0 <1 Nickel ppm ASTM D5165 >22 Q 0 Silver ppm ASTM D5165 >23 2 Aluminum ppm ASTM D5165 >330 2 Silver ppm ASTM D5165 >330 2 Auminum							
Sample Date Client Info 95 Jun 2024 26 Apr 2024 Machine Age hrs Client Info 4806 4242 Oil Age hrs Client Info 0 0 Oil Changed Client Info Changed N/A Filter Age hrs Client Info Changed N/A Goil Changed Client Info Changed N/A Sample Status Viral NORMAL NORMAL Iron ppm ASTM D5185m<>20 0 <1 Nickel ppm ASTM D5185m<>22 0 0 Silver ppm ASTM D5185m<>23 2 Copper pm ASTM D5185m<>23 2 Vanadum ppm ASTM D5185m<>23 2 Vanadum ppm ASTM D5185m<>20 2 1	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age hrs Client Info 4806 4242 Filter Age hrs Client Info 0 0 Filter Age hrs Client Info Changed N/A Oil Changed Client Info Changed N/A Sample Status Client Info Changed N/A Iron ppm ASTM D5185m >20 0 <1 Nickel ppm ASTM D5185m >20 0 <1 Aluminum ppm ASTM D5185m >20 0 <1 Aluminum ppm ASTM D5185m >25 3 2 Aluminum ppm ASTM D5185m >40 <1 1 Vanadium ppm ASTM D5185m >22 4 5 Vanadium ppm ASTM D5185m >20 2 1 Vanadium	Sample Number		Client Info		ASC0011381	ASC0008805	
Oil Age hrs Client Info 4806 4242 Filter Age hrs Client Info 0 0 Oil Changed Client Info Changed N/A Sample Status Client Info Changed N/A Iron ppm ASTM D5185m >100 10 18 Chromium ppm ASTM D5185m >20 0 <1 Nickel ppm ASTM D5185m >2 2 4 Silver ppm ASTM D5185m >2 0 0 Lead ppm ASTM D5185m >23 2 5 Vanadium ppm ASTM D5185m >330 2 5 Vanadium ppm ASTM D5185m >20 2 1 Vanadium ppm ASTM D5185m >20 2 1 Vanadium p	Sample Date		Client Info		05 Jun 2024	26 Apr 2024	
Oil Age hrs Client Info 4806 4242 Filter Age hrs Client Info 0 0 Oil Changed Client Info Changed N/A Sample Status Client Info Changed N/A Iron ppm ASTM D5185m >100 10 18 Chromium ppm ASTM D5185m >20 0 <1 Nickel ppm ASTM D5185m >2 2 4 Silver ppm ASTM D5185m >2 0 0 Lead ppm ASTM D5185m >23 2 5 Vanadium ppm ASTM D5185m >330 2 5 Vanadium ppm ASTM D5185m >20 2 1 Vanadium ppm ASTM D5185m >20 2 1 Vanadium p	Machine Age	hrs	Client Info		4806	4242	
Filter Age hrs Client Info 0 0 Oil Changed Client Info Changed N/A Sample Status NORMAL NORMAL NORMAL Iron ppm ASTM D5185m >100 10 18 Iron ppm ASTM D5185m >20 0 <1 Nickel ppm ASTM D5185m >22 2 4 Silver ppm ASTM D5185m >22 0 0 Aluminum ppm ASTM D5185m >22 0 0 Aluminum ppm ASTM D5185m >40 <1 1 Vanadium ppm ASTM D5185m >15 <1 <1 Vanadium ppm ASTM D5185m >25 4 5 Vanadium ppm ASTM D5185m >20 2 1 <t< th=""><th>-</th><th>hrs</th><th>Client Info</th><th></th><th>4806</th><th>4242</th><th></th></t<>	-	hrs	Client Info		4806	4242	
Oil Changed Client Info Changed N/A Filter Changed Client Info Changed N/A Sample Status NORMAL NORMAL NORMAL Iron ppm ASTM D5185m >20 0 <1 Nickel ppm ASTM D5185m >22 4 Silver ppm ASTM D5185m >22 0 0 Aluminum ppm ASTM D5185m >25 3 2 Aluminum ppm ASTM D5185m >25 3 2 Vanadium ppm ASTM D5185m >330 2 5 Vanadium ppm ASTM D5185m >25 4 5 Vanadium ppm ASTM D5185m >25 4 5 Vanadium ppm ASTM D5185m >20 2 1 Velow Metal sc	Filter Age	hrs	Client Info		0	0	
Filter Changed Sample Status Client Info Changed NORMAL N/A Iron ppm ASTM D5185m >100 10 18 Iron ppm ASTM D5185m >20 0 <1 Nickel ppm ASTM D5185m >22 2 4 Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >2 3 2 Lead ppm ASTM D5185m >40 <1 1 Vanadium ppm ASTM D5185m >15 <1 <1 Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual	U U		Client Info		Changed	N/A	
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Titanium ppm ASTM D5185m 0 <1	Chromium	ppm	ASTM D5185m	>20	0	<1	
Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >25 3 2 Lead ppm ASTM D5185m >25 3 2 Copper ppm ASTM D5185m >330 2 5 Vanadium ppm ASTM D5185m >15 <1	Nickel	ppm	ASTM D5185m	>2	2	4	
Aluminum ppm ASTM D5185m >25 3 2 Lead ppm ASTM D5185m >40 <1 1 Copper ppm ASTM D5185m >330 2 5 Vanadium ppm ASTM D5185m >15 <1 <1 Vanadium ppm ASTM D5185m >15 <1 <1 Vanadium ppm ASTM D5185m >15 <1 <1 Vanadium ppm ASTM D5185m >25 4 5 Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >20 2 1 Fuel % ASTM D5185m >20 2 1 Glycol WC Method >0.2 NEG NEG Soto % % *ASTM D7624 >20 7.9	Titanium	ppm	ASTM D5185m		0	<1	
Lead ppm ASTM D5185m >40 <1	Silver	ppm	ASTM D5185m	>2	0	0	
Copper ppm ASTM D5185m >330 2 5 Tin ppm ASTM D5185m >15 <1 <1 Vanadium ppm ASTM D5185m 0 0 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m<>20 2 1 Fuel % ASTM D5185m<>20 2 1 Glycol WC Method >0.2 NEG NEG Sot % % *ASTM D7624<>20 7.9 9.0 Sulfation Abs/(mm *ASTM D7624<>20 7.9 9.0 Sulfation Abs/(mm *ASTM D7624<>20 7.9 9.0 Sulfation Abs/(mm *ASTM D7624<>20 7.9 9.0 Sulfation	Aluminum	ppm	ASTM D5185m	>25	3	2	
Copper ppm ASTM D5185m >330 2 5 Tin ppm ASTM D5185m >15 <1 <1 Vanadium ppm ASTM D5185m 0 0 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >25 4 5 Potassium ppm ASTM D5185m >20 2 1 Water WC Method >0.2 NEG NEG Glycol WC Method >0.2 NEG NEG Sotd % % *ASTM D7844 >3 0.6 0.6 Sulfation Abs/(mm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/(mm *ASTM D7644 >30 18.5 19	Lead	ppm	ASTM D5185m	>40	<1	1	
Tin ppm ASTM D5185m >15 <1	Copper		ASTM D5185m	>330	2	5	
Vanadium ppm ASTM D5185m 0 0 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >25 4 5 Potassium ppm ASTM D5185m >20 2 1 Fuel % ASTM D5185m >20 2 1 Water WC Method >0.2 NEG NEG Glycol WC Method >0.2 NEG NEG Sott % % *ASTM D7624 >20 7.9 9.0 Sulfation Abs/tmm<*ASTM D715 >30 18.5 19.4 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NORE NONE			ASTM D5185m	>15	<1	<1	
White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2021PotassiumppmASTM D5185m>2021Fuel%ASTM D5185m>2021WaterWC Method>0.2NEGNEGGlycolWC Method>0.2NEGNEGSoot %%*ASTM D7624>207.99.0SulfationAbs/cm*ASTM D7624>207.99.0SulfationAbs/tmm*ASTM D7624>207.99.0SulfationAbs/tmm*ASTM D7624>207.99.0SulfationAbs/tmm*ASTM D7624>207.99.0SulfationAbs/tmm*ASTM D7624>207.99.0SulfationAbs/tmm*ASTM D7624>207.99.0Sodiumscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLAppearancescalar*VisualNORMLNORMLNORMLBoronppmASTM D5185m00Mo	Vanadium		ASTM D5185m		0	0	
Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >25 4 5 Potassium ppm ASTM D5185m >20 2 1 Fuel % ASTM D5185m >20 2 1 Water WC Method >0.2 NEG NEG Glycol WC Method >0.2 NEG NEG Soot % % *ASTM D7844 >3 0.6 0.6 Sulfation Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/cm *ASTM D7844 >30 18.5 19.4 Sulfation Abs/cm *ASTM D7844 >30 18.5 19.4 Sulfation Abs/cm *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORM NORML	White Metal		*Visual	NONE	NONE	NONE	
Silicon ppm ASTM D5185m >25 4 5 Potassium ppm ASTM D5185m >20 2 1 Fuel % ASTM D5185m >20 2 1 Water WC Method >0.2 NEG NEG Glycol WC Method >0.2 NEG NEG Soot % % 'ASTM D7844 >3 0.6 0.6 Soot % % 'ASTM D7624 >20 7.9 9.0 Sulfation Abs/cm<'ASTM D7612 >30 18.5 19.4 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NORML NORML Appearance scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 2 0			*Visual	NONE	_	-	
Potassium ppm ASTM D5185m >20 2 1 Fuel % ASTM D3524 >6.0 <1.0 3.0 Water WC Method >0.2 NEG NEG Glycol WC Method NEG NEG Soot % % *ASTM D7844 >3 0.6 0.6 Soot % % *ASTM D7624 >20 7.9 9.0 Sulfation Abs/.tmm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/.tmm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/.tmm *ASTM D715 >30 18.5 19.4 Sulfation Abs/.tmm *ASTM D7624 >20 NONE NONE Sulfation Abs/.tmm *ASTM D715 >30 18.5 19.4 Sulfation Scalar *Visual NORE <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
Fuel % ASTM D3524 >6.0 <1.0	Silicon	ppm	ASTM D5185m	>25	4	5	
Water WC Method >0.2 NEG NEG Glycol WC Method NEG NEG Soot % % *ASTM D7844 >3 0.6 0.6 Soot % % *ASTM D7844 >3 0.6 0.6 0.6 Nitration Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/cm *ASTM D7615 >30 18.5 19.4 Sulfation Abs/.tmm<*ASTM D7415 >30 18.5 19.4 Sulfation Abs/.tmm<*ASTM D7415 >30 18.5 19.4 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NOR NORML NORML Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORM	Potassium	ppm	ASTM D5185m	>20	2	1	
Glycol WC Method NEG NEG Soot % % *ASTM D7844 >3 0.6 0.6 Nitration Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/cm *ASTM D7615 >30 18.5 19.4 Sulfation Abs/cm *Visual NONE NONE NONE Debris scalar *Visual NOR NORE NORML Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 4 <1 Barium ppm ASTM D5185m 0	Fuel	%	ASTM D3524	>6.0	<1.0	3.0	
Soot % % *ASTM D7844 >3 0.6 0.6 Nitration Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/Imm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/Imm *ASTM D7415 >30 18.5 19.4 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NOR NORML NORML Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual >0.2 NEG Boron ppm ASTM D5185m 4 <1 Barium ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 105	Water		WC Method	>0.2	NEG	NEG	
Nitration Abs/cm *ASTM D7624 >20 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.5 19.4 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG Sodium ppm ASTM D5185m 4 <1 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 58 58 Magnesium ppm ASTM D5185m 1051 1064	Glycol		WC Method		NEG	NEG	
SulfationAbs/.tmm*ASTM D7415>3018.519.4Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORLNORMLNORMLNORMLOdorscalar*VisualNORLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m4<1BariumppmASTM D5185m00MolybdenumppmASTM D5185m<5858MagnesiumppmASTM D5185m10511064PhosphorusppmASTM D5185m1028998ZincppmASTM D5185m12001174SulfurppmASTM D5185m34233139OxidationAbs/.tmm<'ASTM D5185m34233139Base Number (BN)mg KOH/gASTM D28967.86.4	Soot %	%	*ASTM D7844	>3	0.6	0.6	
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m4<1BariumppmASTM D5185m00MalganeseppmASTM D5185m5858MagnesiumppmASTM D5185m10511064PhosphorusppmASTM D5185m1028998ZincppmASTM D5185m12001174SulfurppmASTM D5185m34233139OxidationAbs/1mm*ASTM D5185m13.515.2Base Number (BN)mg KOH/gASTM D28967.86.4	Nitration	Abs/cm	*ASTM D7624	>20	7.9	9.0	
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m20BoronppmASTM D5185m4<1BariumppmASTM D5185m00MolybdenumppmASTM D5185m5858MagneseppmASTM D5185m<11<1MagnesiumppmASTM D5185m10511064PhosphorusppmASTM D5185m12001174SulfurppmASTM D5185m34233139OxidationAbs/.1mm*ASTM D5185m34233139Base Number (BN)mg KOH/gASTM D28967.86.4	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.5	19.4	
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m20BoronppmASTM D5185m4<1BariumppmASTM D5185m00MolybdenumppmASTM D5185m5858MagneseppmASTM D5185m<11<1MagnesiumppmASTM D5185m10511064PhosphorusppmASTM D5185m11028998ZincppmASTM D5185m120011174SulfurppmASTM D5185m34233139OxidationAbs.1mm*ASTM D28967.86.4	Silt	scalar	*Visual	NONE	NONE	NONE	
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Emulsified Water scalar *Visual >0.2 NEG NEG Sodium ppm ASTM D5185m 2 0 Boron ppm ASTM D5185m 4 <1 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 58 58 Maganese ppm ASTM D5185m <1 <1 Magnesium ppm ASTM D5185m 905 878 Calcium ppm ASTM D5185m 1051 1064 Phosphorus ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs./1mm<*ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4 </th <th>Appearance</th> <th>scalar</th> <th>*Visual</th> <th>NORML</th> <th>NORML</th> <th>NORML</th> <th></th>	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium ppm ASTM D5185m 2 0 Boron ppm ASTM D5185m 4 <1 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m <1 <1 Magnesium ppm ASTM D5185m <1 <1 Magnesium ppm ASTM D5185m <905 878 Calcium ppm ASTM D5185m 1051 1064 Phosphorus ppm ASTM D5185m 1028 998 Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs./1mm<*ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron ppm ASTM D5185m 4 <1	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron ppm ASTM D5185m 4 <1							
Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 58 58 Manganese ppm ASTM D5185m <1 <1 Magnesium ppm ASTM D5185m 905 878 Calcium ppm ASTM D5185m 1051 1064 Phosphorus ppm ASTM D5185m 1028 998 Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm<*ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4						-	
Molybdenum ppm ASTM D5185m 58 58 Manganese ppm ASTM D5185m <1 <1 Magnesium ppm ASTM D5185m <905 878 Calcium ppm ASTM D5185m 1051 1064 Phosphorus ppm ASTM D5185m 1028 998 Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm<*ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4		ppm					
Manganese ppm ASTM D5185m <1		ppm					
Magnesium ppm ASTM D5185m 905 878 Calcium ppm ASTM D5185m 1051 1064 Phosphorus ppm ASTM D5185m 1028 998 Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4		ppm					
Calcium ppm ASTM D5185m 1051 1064 Phosphorus ppm ASTM D5185m 1028 998 Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4	-						
Phosphorus ppm ASTM D5185m 1028 998 Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4	0	ppm					
Zinc ppm ASTM D5185m 1200 1174 Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4		ppm					
Sulfur ppm ASTM D5185m 3423 3139 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4	Phosphorus	ppm	ASTM D5185m				
Oxidation Abs/.1mm *ASTM D7414 >25 13.5 15.2 Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4			ASTM D5185m				
Base Number (BN) mg KOH/g ASTM D2896 7.8 6.4	Sulfur	ppm	ASTM D5185m		3423	3139	
	Oxidation			>25	13.5	15.2	
Visc @ 100°C cSt ASTM D445 (12.0) 12.2	Base Number (BN)	mg KOH/g	ASTM D2896		7.8	6.4	
	Visc @ 100°C	cSt	ASTM D445		12.0	12.2	





Submitted By: Service - Brandon Lewis Page 2 of 2