

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION ATTENTION

K5 CONSTRUCTION CORPORATION - HODGKINS IL

2016

Hydraulic System

LEAHY WOLF LUBEMASTER HYDRAULIC OIL (30 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

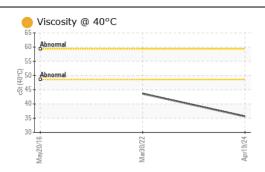
There is no indication of any contamination in the oil.

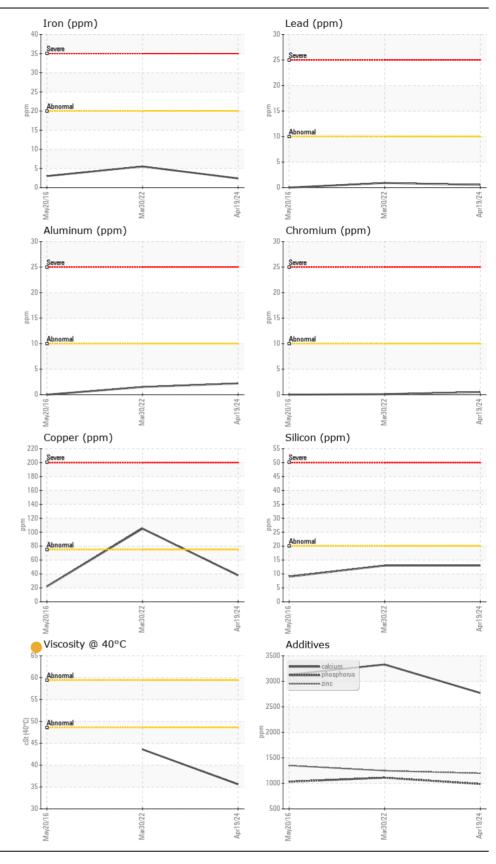
FLUID CONDITION

Viscosity of sample indicates oil is within ISO 32 range, advise investigate. Confirm oil type.

TestUOMMethodLimitAbCurrentHistory1History2Sample NumberClient Info19 Apr 202430 Mar 202220 May 2016Machine AgehrsClient Info19 Apr 202430 Mar 202220 May 2016Machine AgehrsClient Info609859685287Oil AgehrsClient Info1301001260Filter AgehrsClient InfoChangedNot ChangedOil ChangedClient InfoChangedChangedNot ChangedFilter ChangedClient InfoChangedABNORMALNORMALFilter ChangedClient InfoChangedABNORMALNORMALIronppmASTM D5185>10<1<10NickelppmASTM D5185>10<1<10SilverppmASTM D5185>10<1<10SilverppmASTM D5185>10<1<10QanadiumppmASTM D5185>10<1<10VanadiumppmASTM D5185>10<1<10VanadiumppmASTM D5185>10<1<10VanadiumppmASTM D5185>2013139PotassiumppmASTM D5185>2013139PotassiumppmASTM D5185>201313SiliconppmASTM D5185>201313 <th>(30 GAL)</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	(30 GAL)						
Sample DateClient InfoIP Apr 2024 609830 Mar 2022 596820 May 2016Machine AgehrsClient Info609859685287Oil AgehrsClient Info1301001260Filter AgehrsClient InfoChangedChangedNot ChangedOil ChangedClient InfoChangedChangedChangedNot ChangedFilter ChangedClient InfoChangedChangedChangedChangedSample StatusXTM D5185m<>20263IronppmASTM D5185m>10<100NickelppmASTM D5185m>10<100SilverppmASTM D5185m>10<1<10AluminumppmASTM D5185m>10<1<10QoperppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>20133139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>201	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient Info609859685287Oil AgehrsClient Info1301001260Filter AgehrsClient Info1301001Oil ChangedClient InfoChangedChangedNot ChangedFilter ChangedClient InfoChangedChangedChangedSample Status-ATTENTIONABNORMALNORMALIronppmASTM D5185m>20263ChromiumppmASTM D5185m>10<100NickelppmASTM D5185m>10<100SilverppmASTM D5185m>10<1<10AluminumppmASTM D5185m>10<1<10CopperppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>20<13139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139Potassiumppm <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>PCA0122069</th> <th>LW0004452</th> <th>LWI-Z88990</th>	Sample Number		Client Info		PCA0122069	LW0004452	LWI-Z88990
Oil AgehrsClient Info1301001260Filter AgehrsClient Info1301001Oil ChangedClient InfoChangedChangedNot ChangedFilter ChangedOClient InfoChangedChangedSample StatusATTM D5185m>20263IronppmASTM D5185m>10<1<10NickelppmASTM D5185m>10<1<10NickelppmASTM D5185m0<1<10AluminumppmASTM D5185m>10<1<10AluminumppmASTM D5185m>10<1<10CopperppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>10<1<10ValadiumppmASTM D5185m>10<1<10Vellow Metalscalar"VisualNONENONENONESiliconppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139Potassium	Sample Date		Client Info		19 Apr 2024	30 Mar 2022	20 May 2016
Filter Age Oil ChangedInsClient Info1301001Oil ChangedClient InfoChangedChangedNot ChangedFilter ChangedClient InfoChangedChangedChangedSample StatusATTENTIONABNORMALNORMALIronppmASTM D5185m>20263ChromiumppmASTM D5185m>10<1<10NickelppmASTM D5185m>10<1<10TitaniumppmASTM D5185m>10<1<10SilverppmASTM D5185m>10<1<10AuminumppmASTM D5185m>10<1<10CopperppmASTM D5185m>10<1<10VanaduruppmASTM D5185m>10<1<10VanaduruppmASTM D5185m>10<1<10VanaduruppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>2013139PotassiumppmASTM D5185m>201313Silico	Machine Age	hrs	Client Info		6098	5968	5287
Nucl up Oil ChangedClient InfoChangedChangedNot ChangedFilter ChangedClient InfoChangedChangedChangedChangedSample StatusClient InfoATTENTIONABNORMALNORMALIronppmASTM D5185m>20263ChromiumppmASTM D5185m>10<1<100NickelppmASTM D5185m>10<1<100SilverppmASTM D5185m>10<1<100AluminumppmASTM D5185m>10<1<100AluminumppmASTM D5185m>10<1<100VanadiumppmASTM D5185m>10<1<100VanadiumppmASTM D5185m>10<1<100White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>20220WaterWC Method>0.1NORENONESoliconscalar*VisualNONENONENONESiliconppmASTM D5185m>20220WaterWC Method>0.1NORENONESoliconscalar*VisualNONENONESolicon <th>Oil Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>130</th> <th>1001</th> <th>260</th>	Oil Age	hrs	Client Info		130	1001	260
Filter ChangedClient InfoImageChangedChangedChangedChangedSample StatusNORMALNORMALIronppmASTM D5185m>20263ChromiumppmASTM D5185m>10<1<10NickelppmASTM D5185m>10<100TitaniumppmASTM D5185m>10<100SilverppmASTM D5185m>10220LeadppmASTM D5185m>102100CopperppmASTM D5185m>10<100VanadiumppmASTM D5185m>10<100White Metalscalar*VisualNONENONE1010VanadiumppmASTM D5185m>202200WatervisualNONENONENONE1Yellow Metalscalar*VisualNONENONENONE1SiliconppmASTM D5185m>202200WaterWC Method>0.1NONENONE1SoliconppmASTM D5185m>20220WaterWC Method>0.1NONENONESoliconppmASTM D5185m>20220MaterVisualNORENONENORE <t< th=""><th>Filter Age</th><th>hrs</th><th>Client Info</th><th></th><th>130</th><th>1001</th><th></th></t<>	Filter Age	hrs	Client Info		130	1001	
Sample StatusATT ND108ABNORMALNORMALIronppmASTM D5185m>20263ChromiumppmASTM D5185m>10<100NickelppmASTM D5185m>10<100TitaniumppmASTM D5185m>10<100SilverppmASTM D5185m<10<1<10AluminumppmASTM D5185m>10<1<10AuminumppmASTM D5185m>10<1<10CopperppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>10<100White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>20220WaterVCVisualNONENONENONESiliconppmASTM D5185m>20220WaterVisualNONENONENONESiliconppmASTM D5185m>20220WaterVisualNONENONENONESoliconppmASTM D5185m>2013139PotassiumppmASTM D5185mNONENONESodiumppmASTM D5185m <t< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th>Not Changd</th></t<>	Oil Changed		Client Info		Changed	Changed	Not Changd
IronppmASTM D5185m>20263ChromiumppmASTM D5185m>10<1<100NickelppmASTM D5185m>10<1000TitaniumppmASTM D5185m<0<100SilverppmASTM D5185m<0<100AuminumppmASTM D5185m>10220LeadppmASTM D5185m>10<1<10CopperppmASTM D5185m>10<1<10VanadiumppmASTM D5185m>10<100White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>20220WaterVisualNONENONENONESolituscalar*VisualNONENONENONESand/Dirtscalar*VisualNORNOREAppearancescalar*VisualNORNORESodiumppmASTM D5185m-000BoronppmASTM D5185mNORENORESodiumppmASTM D5185m-000Maganesescalar*VisualNORENOREAppearancescalar	Filter Changed		Client Info		Changed	Changed	Changed
Ppm ASTM D5185m >10 <1	Sample Status				ATTENTION	ABNORMAL	NORMAL
Ppm ASTM D5185m >10 <1					•		
NickelppmASTM D5185m>10<1	-						
Titanium ppm ASTM D5185m <1							
Silver ppm ASTM D5185m > 0 <1				>10			
Aluminum ppm ASTM D5185m >10 2 2 0 Lead ppm ASTM D5185m >10 <1 <1 0 Copper ppm ASTM D5185m >75 38 ▲ 105 22 Tin ppm ASTM D5185m >10 <1 <1 0 Vanadium ppm ASTM D5185m >10 <1 <1 0 0 White Metal scalar 'Visual NONE NONE NONE Yellow Metal scalar 'Visual NONE NONE NONE Silicon ppm ASTM D5185m >20 13 13 9 Potassium ppm ASTM D5185m >20 2 0 NORE Silicon ppm ASTM D5185m >20 13 13 9 Potassium ppm ASTM D5185m >20 1 NORE NORE Silit scalar 'Visual							
LeadppmASTM D5185m>10<1					-		
Copper ppm ASTM D5185m >75 38 ▲ 105 22 Tin ppm ASTM D5185m >10 <1 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 0 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m<>20 13 13 9 Potassium ppm ASTM D5185m<>20 2 2 0 Water WC Method<>0.1 NEG NEG NEG Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE NONE Appearance scalar *Visual NORM NORML NORML Godor scalar *Visual NOR NORML NORML -							
Tin ppm ASTM D5185m >10 <1				-			-
VanadiumppmASTM D5185m<1		ppm					
White Metalscalar*VisualNONENONENONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2013139PotassiumppmASTM D5185m>20220WaterWC Method>0.1NEGNEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMNORMLNORMLSodiumppmASTM D5185m341BoronppmASTM D5185m341BariumppmASTM D5185m000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m<1<10MagnesiumppmASTM D5185m585924CalciumppmASTM D5185m98711101032PhosphorusppmASTM D5185m119712471349SulfurppmASTM D5185m31662915				>10			
Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2013139PotassiumppmASTM D5185m>20220WaterWC Method>0.1NEGNEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m3411BoronppmASTM D5185m0000MolybdenumppmASTM D5185m4511ManganeseppmASTM D5185m<1<100MagnesiumppmASTM D5185m5859242CalciumppmASTM D5185m98711101032PhosphorusppmASTM D5185m119712471349SulfurppmASTM D5185m31662915							0
SiliconppmASTM D5185m>2013139PotassiumppmASTM D5185m>2020WaterWC Method>0.1NEGNEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m341BoronppmASTM D5185m341BariumppmASTM D5185m000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m585924CalciumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m1119712471349SulfurppmASTM D5185m31662915	White Metal	scalar	*Visual	-	-	NONE	
PotassiumppmASTM D5185m>20220WaterWC Method>0.1NEGNEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m34191BariumppmASTM D5185m0000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m<585924CalciumppmASTM D5185m987711101032PhosphorusppmASTM D5185m987711101032ZincppmASTM D5185m31662915	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
WaterWC Method>0.1NEGNEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m3411BoronppmASTM D5185m344191BariumppmASTM D5185m0000MolybdenumppmASTM D5185m4151ManganeseppmASTM D5185m5924CalciumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m31662915	Silicon	ppm	ASTM D5185m	>20	13	13	9
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m341BoronppmASTM D5185m000MalganeseppmASTM D5185m000MagnesiumppmASTM D5185m<1<10MagnesiumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m119712471349SulfurppmASTM D5185m23162915	Potassium	ppm	ASTM D5185m	>20	2	2	0
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m341BoronppmASTM D5185m341BariumppmASTM D5185m000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185mPhosphorusppmASTM D5185mPhosphorusppmASTM D5185mSulfurppmASTM D5185mPhosphorusppmASTM D5185mSulfurppmASTM D5185mPhosphorusppmASTM D5185mSulfurppmASTM D5185mPhosphorusppmASTM D5185m </th <th>Water</th> <th></th> <th>WC Method</th> <th>>0.1</th> <th>NEG</th> <th>NEG</th> <th>NEG</th>	Water		WC Method	>0.1	NEG	NEG	NEG
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m341BoronppmASTM D5185m8810191BariumppmASTM D5185m000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m<1<10MagnesiumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m119712471349SulfurppmASTM D5185m31662915	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m341BoronppmASTM D5185m68810191BariumppmASTM D5185m0000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m45924CalciumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m119712471349SulfurppmASTM D5185m31662915	Debris	scalar	*Visual	NONE	NONE	NONE	
Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m341BoronppmASTM D5185m8810191BariumppmASTM D5185m000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m<4551MagnesiumppmASTM D5185m<585924CalciumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m119712471349SulfurppmASTM D5185m31662915	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Waterscalar*Visual>0.1NEGNEGSodiumppmASTM D5185m341BoronppmASTM D5185m8810191BariumppmASTM D5185m000MolybdenumppmASTM D5185m451ManganeseppmASTM D5185m<41510MagnesiumppmASTM D5185m<585924CalciumppmASTM D5185m277233293131PhosphorusppmASTM D5185m98711101032ZincppmASTM D5185m119712471349SulfurppmASTM D5185m31662915	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium ppm ASTM D5185m 3 4 1 Boron ppm ASTM D5185m 88 101 91 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1 0 Calcium ppm ASTM D5185m <58 59 24 Calcium ppm ASTM D5185m <2772 3329 3131 Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron ppm ASTM D5185m 88 101 91 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 4 5 1 Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 58 59 24 Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 987 11247 1349 Sulfur ppm ASTM D5185m 3166 2915	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	
Boron ppm ASTM D5185m 88 101 91 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 4 5 1 Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m <1 <1 0 Calcium ppm ASTM D5185m 58 59 24 Phosphorus ppm ASTM D5185m 2772 3329 3131 Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915	Sodium	ppm	ASTM D5185m		3	4	1
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 4 5 1 Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m <1 0 0 Calcium ppm ASTM D5185m 58 59 24 Phosphorus ppm ASTM D5185m 2772 3329 3131 Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 3166 2915			ASTM D5185m		88	101	91
Molybdenum ppm ASTM D5185m 4 5 1 Manganese ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <58 59 24 Calcium ppm ASTM D5185m <2772 3329 3131 Phosphorus ppm ASTM D5185m <987 1110 1032 Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915	Barium		ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m <1	Molybdenum		ASTM D5185m		4	5	1
Magnesium ppm ASTM D5185m 58 59 24 Calcium ppm ASTM D5185m 2772 3329 3131 Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915	Manganese		ASTM D5185m		<1	<1	0
Calcium ppm ASTM D5185m 2772 3329 3131 Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915			ASTM D5185m		58	59	24
Phosphorus ppm ASTM D5185m 987 1110 1032 Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915	Calcium		ASTM D5185m		2772	3329	3131
Zinc ppm ASTM D5185m 1197 1247 1349 Sulfur ppm ASTM D5185m 3166 2915	Phosphorus	ppm	ASTM D5185m		987	1110	1032
Sulfur ppm ASTM D5185m 3166 2915	Zinc		ASTM D5185m		1197	1247	1349
	Sulfur	ppm	ASTM D5185m		3166	2915	
	Visc @ 40°C		ASTM D445		9 35.61	43.6	

Submitted By: NOELLE TERRAULT







K5 CONSTRUCTION CORPORATION Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received 6301 S EAST AVENUE : PCA0122069 : 24 Apr 2024 Lab Number : 06159962 HODGKINS, IL Tested : 29 Apr 2024 Unique Number : 10995385 : 04 May 2024 - Don Baldridge US 60525 Diagnosed Test Package : MOB 1 Contact: Dave Gorski Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. daveg@k-five.net * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (630)257-5600

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: