

Machine Id NRL-401-1-H Component Hoisting Gearbox Fluid {not provided} (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. 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.

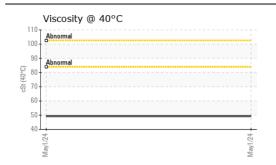
FLUID CONDITION

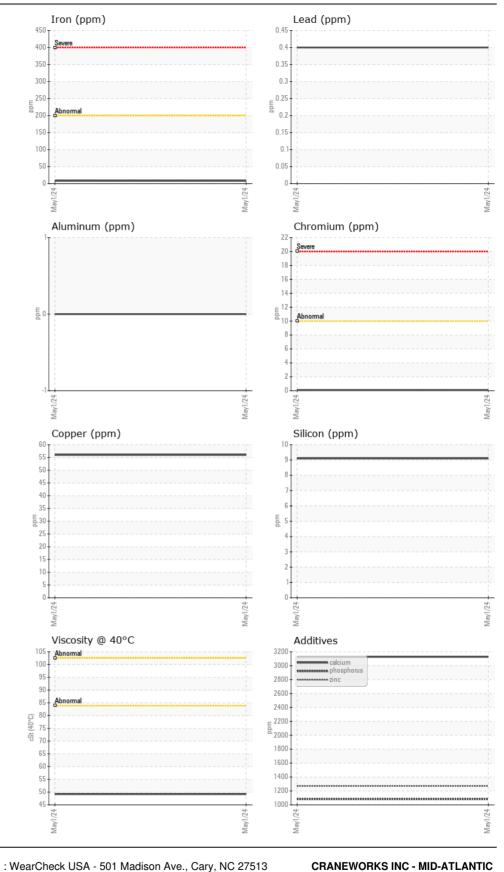
The condition of the oil is acceptable for the time in service.

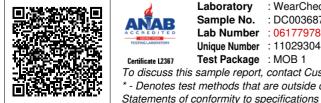
TestUOMMethodLimit/AbCurrentHistory1History2Sample NumberClient InfoDC0036876Sample DateClient Info0Machine AgehrsClient Info0Filter AgehrsClient Info0Filter AgehrsClient InfoNot ChangdFilter ChangedClient InfoNot ChangdFilter ChangedClient InfoNot ChangdSample StatusNORMALIronppmASTM D5185m>100NickelppmASTM D5185m>100NickelppmASTM D5185m0SilverppmASTM D5185m0AluminumppmASTM D5185m61VanadiumppmASTM D5185m61VanadiumppmASTM D5185m9VanadiumppmASTM D5185m9VanadiumppmASTM D5185m9VanadiumppmASTM D5185m9SiliconppmASTM D5185m1 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
Sample DateClient InfoOI May 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Filter AgehrsClient InfoNot ChangdOil ChangedClient InfoNot ChangdFilter ChangedClient InfoNot ChangdFilter ChangedClient InfoNot ChangdSample StatusNot ChangdIronppmASTM D5185>2008NickelppmASTM D5185>100NickelppmASTM D5185>100SilverppmASTM D518500AluminumppmASTM D518500LeadppmASTM D51850VanadiumppmASTM D51850Yellow Metalscalar'VisualNONENONESiliconppmASTM D51859Yellow Metalscalar'VisualNONENONESiliconppmASTM D518520<1SiliconppmASTM D5185>20<1SiliconppmASTM D5	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient Info0Oil AgehrsClient Info0Filter AgehrsClient InfoNot ChangdOil ChangedClient InfoNot ChangdFilter ChangedQClient InfoNot ChangdFilter ChangedQClient InfoNot ChangdSample StatusNORMALIronppmASTM D5185m>10<1NickelppmASTM D5185m>100NickelppmASTM D5185m0AluminumppmASTM D5185m0AluminumppmASTM D5185mC0VanadiumppmASTM D5185m<1VanadiumppmASTM D5185mS20<1Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185mS20<1Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185mS20<1Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185mS20<1	Sample Number		Client Info		DC0036876		
Oil Age Filter Age hrs Client Info 0 Filter Age Oil Changed Client Info Not Changd Filter Changed Client Info Not Changd Filter Changed Client Info Not Changd Sample Status NORMAL Iron ppm ASTM D5185m >200 8 Chromium ppm ASTM D5185m >10 Nickel ppm ASTM D5185m 10 0 Aluminum ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 0 Lead ppm ASTM D5185m 0 Vanaduim ppm ASTM D5185m 20 <1 Vellow Metal	Sample Date		Client Info		01 May 2024		
Filter Age Interest Client Info 0 Gil Changed Client Info Not Changd Filter Changed Client Info Not Changd Sample Status NORMAL Iron ppm ASTM D5185m >200 8 Chromium ppm ASTM D5185m >10 <1 Nickel ppm ASTM D5185m >10 0 Nickel ppm ASTM D5185m 10 0 Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 20 Vanadium ppm ASTM D5185m 10 Vanadium ppm ASTM D5185m >20 <1 Vanadium p	Machine Age	hrs	Client Info		0		
Oil Changed Client Info Not Changd Filter Changed Client Info Not Changd Sample Status NORMAL Iron ppm ASTM D5185m >200 8 Chromium ppm ASTM D5185m >10 <1 Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m 0 Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m <0 Vanadium ppm ASTM D5185m S0 Vanadium ppm ASTM D5185m S0 Vanadium ppm ASTM D5185m	Oil Age	hrs	Client Info		0		
Filter Changed Sample Status Client Info Not Changed NORMAL Iron ppm ASTM D5185m >200 8 Chromium ppm ASTM D5185m >10 <1 Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m <10 0 Silver ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m <11 Copper ppm ASTM D5185m <11 Vanadium ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m <1	Filter Age	hrs	Client Info		0		
Sample Status NORMAL Iron ppm ASTM D5185m >200 8 Chromium ppm ASTM D5185m >10 <1 Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m >10 0 Silver ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m 0 0 Lead ppm ASTM D5185m < 56 Vanadium ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0	Oil Changed		Client Info		Not Changd		
Iron ppm ASTM D5185m >200 8 Chromium ppm ASTM D5185m >10 <1 Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m 0 0 Lead ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m <1	Filter Changed		Client Info		Not Changd		
Chromium ppm ASTM D5185m >10 <1	Sample Status				NORMAL		
Chromium ppm ASTM D5185m >10 <1	Iron	nnm	4STM D5185m	<u>~200</u>	8		
Nickel ppm ASTM D5185m >10 0 Titanium ppm ASTM D5185m 0 Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 0 Lead ppm ASTM D5185m <1 Copper ppm ASTM D5185m <11 Vanadium ppm ASTM D5185m <10 0 Vanadium ppm ASTM D5185m NONE 0 Vanadium ppm ASTM D5185m >20 <1 Vanadium ppm ASTM D5185m >20 <1 Yellow Metal scalar *Visual NONE Silicon ppm ASTM D5185m >20 <1 <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>					-		
Tittanium ppm ASTM D5185m Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m 0 Lead ppm ASTM D5185m 6 Copper ppm ASTM D5185m 56 Tin ppm ASTM D5185m 0 Vanadium ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m >20 <1 Vanadium ppm ASTM D5185m >20 <1 Vellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >20 <1 Silit scalar *Visual NONE NONE -							
Silver ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m <1 Lead ppm ASTM D5185m <1 Copper ppm ASTM D5185m <1 Tin ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m 0 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >20 <1 Water WC Method >0.2 NEG Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual <t< th=""><th></th><th></th><th></th><th>>10</th><th>-</th><th></th><th></th></t<>				>10	-		
Aluminum ppm ASTM D5185m 0 Lead ppm ASTM D5185m <1 Copper ppm ASTM D5185m <1 Tin ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m <0 Vanadium ppm ASTM D5185m <9 Vellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m \$20 <1 Silicon ppm ASTM D5185m \$20 <1 Silit scalar *Visual NONE NORE Debris scalar *Visual							
Lead ppm ASTM D5185m <1					-		
Copper ppm ASTM D5185m 56 Tin ppm ASTM D5185m <1 Vanadium ppm ASTM D5185m 0 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m 20 <1 Potassium ppm ASTM D5185m >20 <1 Water WC Method >0.2 NEG Silt scalar *Visual NONE NONE Debris scalar *Visual NORM NORM Appearance scalar *Visual NORML NORML Godr scalar *Visual NORML NORM <					-		
Tin ppm ASTM D5185m <1							
Vanadium ppm ASTM D5185m 0 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m 9 Silicon ppm ASTM D5185m >20 <1 Potassium ppm ASTM D5185m >20 <1 Water WC Method >0.2 NEG Sadar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Sodium ppm ASTM D5185m 5 Boron ppm ASTM D5185m		ppm					
White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>20<1PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSilitscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m5BoronppmASTM D5185m5MolybdenumppmASTM D5185m0MaganeseppmASTM D5185m<11MagnesiumppmASTM D5185m11681PhosphorusppmASTM D5185m11081SulfurppmASTM D5185mSulfurppmASTM D5185m11270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270Sulfur		ppm					
Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>20<1PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m5BoronppmASTM D5185m<102MolybdenumppmASTM D5185m<1ManganeseppmASTM D5185m<11MagnesiumppmASTM D5185m111PhosphorusppmASTM D5185m1081ZincppmASTM D5185m11270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
SiliconppmASTM D5185m9PotassiumppmASTM D5185m>20<1WaterWC Method>0.2NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m5BoronppmASTM D5185m102MalganeseppmASTM D5185m<11MagnesiumppmASTM D5185m<111PhosphorusppmASTM D5185m3127ZincppmASTM D5185m1081MagnesiumppmASTM D5185m3127PhosphorusppmASTM D5185m1081SitfurppmASTM D5185mMagnesiumppmASTM D5185m3127PhosphorusppmASTM D5185m1270SulfurppmASTM D5185mSulfurppmASTM D5185m		scalar		NONE	NONE		
PotassiumppmASTM D5185m>20<1	Yellow Metal	scalar	*Visual	NONE	NONE		
PotassiumppmASTM D5185m>20<1	Silicon	ppm	ASTM D5185m		9		
WaterWC Method>0.2NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLSodiumppmASTM D5185m5BoronppmASTM D5185m102BariumppmASTM D5185m<MolybdenumppmASTM D5185m<MagnesiumppmASTM D5185m<11PhosphorusppmASTM D5185m3127ZincppmASTM D5185m1081SulfurppmASTM D5185m3127SulfurppmASTM D5185m1081SulfurppmASTM D5185m1270SulfurppmASTM D5185m3612SulfurppmASTM D5185m3612SulfurppmASTM D5185m3612SulfurppmASTM D5185m3612<	Potassium		ASTM D5185m	>20	<1		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m5BoronppmASTM D5185m102BariumppmASTM D5185m0MolybdenumppmASTM D5185m<11MagnesiumppmASTM D5185m<111PhosphorusppmASTM D5185m3127ZincppmASTM D5185m1081SulfurppmASTM D5185m1270SulfurppmASTM D5185m0SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmAST	Water		WC Method	>0.2	NEG		
Sand/Dirt scalar *Visual NONE NORML NORML Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Codor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Sodium ppm ASTM D5185m 5 Boron ppm ASTM D5185m 102 Malybdenum ppm ASTM D5185m Magnesium ppm ASTM D5185m Magnesium ppm ASTM D5185m 3127 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 31270 <	Silt	scalar	*Visual	NONE	NONE		
Appearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m5BoronppmASTM D5185m102BariumppmASTM D5185m<10MolybdenumppmASTM D5185m<11ManganeseppmASTM D5185m<111MagnesiumppmASTM D5185m3127PhosphorusppmASTM D5185m1081ZincppmASTM D5185m1270SulfurppmASTM D5185m<1270SulfurppmASTM D5185m<1270SulfurppmASTM D5185m<1270	Debris	scalar	*Visual	NONE	NONE		
Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Sodium ppm ASTM D5185m 5 Boron ppm ASTM D5185m 102 Barium ppm ASTM D5185m <1 Molybdenum ppm ASTM D5185m <1 Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m <1 Phosphorus ppm ASTM D5185m <1 Phosphorus ppm ASTM D5185m <11 Phosphorus ppm ASTM D5185m <11270 Zinc ppm ASTM D5185m <1270 Sulfur ppm ASTM D5185m <3612	Sand/Dirt	scalar	*Visual	NONE	NONE		
Odorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGSodiumppmASTM D5185m5BoronppmASTM D5185m102BariumppmASTM D5185m<102MolybdenumppmASTM D5185m<11ManganeseppmASTM D5185m<111MagnesiumppmASTM D5185m3127PhosphorusppmASTM D5185m1081ZincppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270SulfurppmASTM D5185m1270		scalar		NORML	NORML		
Emulsified Water scalar *Visual >0.2 NEG Sodium ppm ASTM D5185m 5 Boron ppm ASTM D5185m 102 Barium ppm ASTM D5185m <1 Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m <11 Calcium ppm ASTM D5185m 3127 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 3612	•••	scalar	*Visual	NORML	NORML		
Boron ppm ASTM D5185m 102 Barium ppm ASTM D5185m <1 Molybdenum ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 11 Calcium ppm ASTM D5185m 3127 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 2612	Emulsified Water	scalar		>0.2	NEG		
Boron ppm ASTM D5185m 102 Barium ppm ASTM D5185m <1 Molybdenum ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 11 Calcium ppm ASTM D5185m 3127 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 2612							
Barium ppm ASTM D5185m <1		ppm					
Molybdenum ppm ASTM D5185m 0 Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 11 Magnesium ppm ASTM D5185m 3127 Calcium ppm ASTM D5185m 1081 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 3612	Boron	ppm	ASTM D5185m		102		
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		<1		
Magnesium ppm ASTM D5185m 11 Calcium ppm ASTM D5185m 3127 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 3612	Molybdenum	ppm	ASTM D5185m		0		
Calcium ppm ASTM D5185m 3127 Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 3612	Manganese	ppm	ASTM D5185m		<1		
Phosphorus ppm ASTM D5185m 1081 Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 3612	Magnesium	ppm	ASTM D5185m		11		
Zinc ppm ASTM D5185m 1270 Sulfur ppm ASTM D5185m 3612	Calcium	ppm	ASTM D5185m		3127		
Sulfur ppm ASTM D5185m 3612	Phosphorus	ppm	ASTM D5185m		1081		
	Zinc	ppm	ASTM D5185m		1270		
Visc @ 40°C cSt ASTM D445 49.2	Sulfur	ppm	ASTM D5185m		3612		
	Visc @ 40°C	cSt	ASTM D445		49.2		

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Contact/Location: JASON WILDE - CRAASHMA







Diagnosed Unique Number : 11029304 : 15 May 2024 - Sean Felton Test Package : MOB 1 Contact: JASON WILDE To discuss this sample report, contact Customer Service at 1-800-237-1369. jcwilde@vacraneworks.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

: DC0036876

Received

Tested

: 13 May 2024

: 14 May 2024

Contact/Location: JASON WILDE - CRAASHMA Page 2 of 2

11089 LEADBETTER ROAD

ASHLAND, VA

US 23005

T:

F: