

## Machine Id CASE 15499 CR1202 - OUTER (S/N 98205) Component Front Right Final Drive Fluid GEAR OIL ISO 220 (--- GAL)

RECOMMENDATION	<b>REC</b>	OMMEN	NDATION	
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Resample at the next service interval to monitor.

## **WEAR**

All component wear rates are normal.

## CONTAMINATION

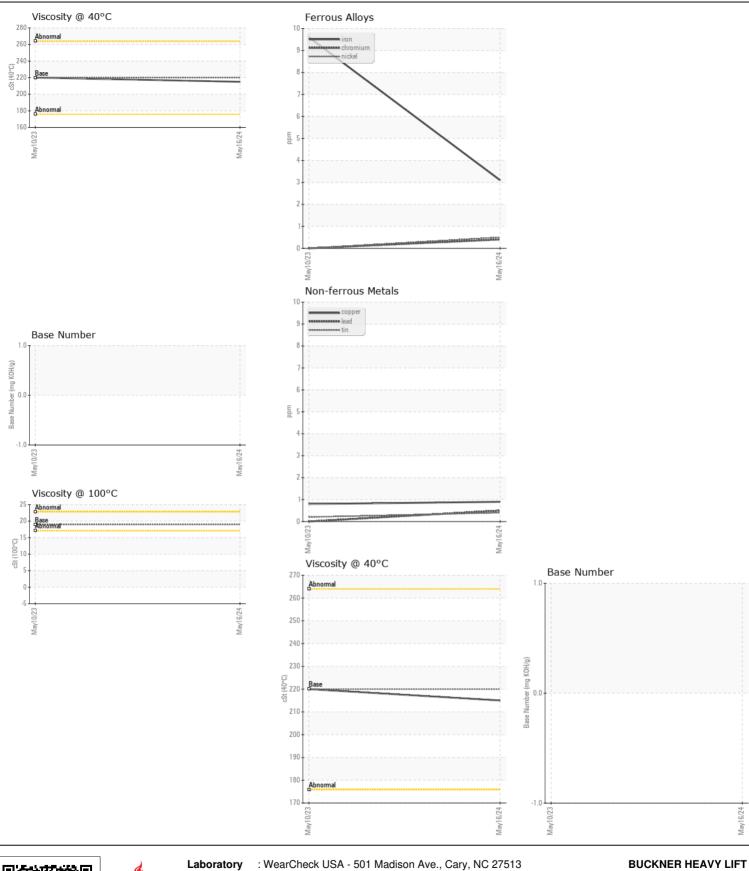
There is no indication of any contamination in the oil.

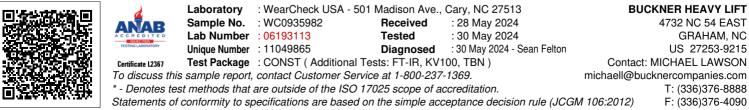
## FLUID CONDITION

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

TestUOMMethodLimit/AbCurrentHistory1History2Sample NumberClient Info16 May 202410 May 2023Sample DateClient Info1186611257Machine AgehrsClient Info10001410Oil AgehrsClient Info00Filter AgehrsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusNORMALNORMALChromiumppmASTM D5185m>500310NickelppmASTM D5185m>10<10NickelppmASTM D5185m>50<10SilverppmASTM D5185m>50<10AluminumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>2011VanadiumppmASTM D5185m>201<1Vanadiumppm							
Sample DateClient InfoIs May 2023Machine AgehrsClient InfoI186611257Oil AgehrsClient InfoI0001410Filter AgehrsClient InfoCChangedChangedOil ChangedClient InfoCChangedChangedFilter ChangedClient InfoCChangedChangedSample StatusClient InfoCChangedChangedIronppmASTM D5185>500310NickelppmASTM D5185>10<10NickelppmASTM D5185>10<10SilverppmASTM D5185>10<10AluminumppmASTM D5185>25<100LeadppmASTM D5185>10<1<VanadiumppmASTM D5185>10<1<VanadiumppmASTM D5185>10<1<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751< </th <th>Test</th> <th>UOM</th> <th>Method</th> <th>Limit/Abn</th> <th>Current</th> <th>History1</th> <th>History2</th>	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgeIrssClient InfoI 188611257Oil AgehrsClient InfoII0001410Filter AgehrsClient InfoChangedChangedGil ChangedClient InfoChangedChangedFilter ChangedQClient InfoChangedChangedSample StatusClient InfoMORMALNORMALIronppmASTM D5185m>500310IronppmASTM D5185m>10<10NickelppmASTM D5185m>10<10SilverppmASTM D5185m>25<10AluminumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>751<VanadiumppmASTM D5185m50<1<VanadiumppmASTM D5185m>751<VanadiumppmASTM D5185m501<VanadiumppmASTM D5185m501<VanadiumppmASTM D5185m501< <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>WC0935982</th> <th>WC0809303</th> <th></th>	Sample Number		Client Info		WC0935982	WC0809303	
Oil Age Filter Age Filter Age (Filter Anaged I resClient InfoIO001410Filter Changed Sample StatusClient InfoChangedChangedChangedFilter Changed Sample StatusClient InfoChangedChangedIronppmASTM D5185m>500310IronppmASTM D5185m>10<10NickelppmASTM D5185m>10<10NickelppmASTM D5185m>10<10TitaniumppmASTM D5185m>25<10AluminumppmASTM D5185m>25<10AluminumppmASTM D5185m>500<1<1VanduiumppmASTM D5185m>500<1<1VanduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>5001<1ValduiumppmASTM D5185m>20011SiliconppmASTM D5185m>20011 </th <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>16 May 2024</th> <th>10 May 2023</th> <th></th>	Sample Date		Client Info		16 May 2024	10 May 2023	
Filter Age Oil ChangedhrsClient Info00Cilent InfoChangedChangedChangedChangedFilter ChangedClient InfoChangedChangedSample StatusNORMALNORMALIronppmASTM D5185m>500310ChromiumppmASTM D5185m>10<10NickelppmASTM D5185m>10<10NickelppmASTM D5185m>25<10AluminumppmASTM D5185m>25<10AluminumppmASTM D5185m>500<1<1AgandulumppmASTM D5185m>500<1<1VanadiumppmASTM D5185m>500<1<1VanadiumppmASTM D5185m>500<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>751<1ValorvisualNONENONENONENONESiliconppmASTM D5185m>2011SiliconppmASTM D5185m>2011SiliconppmASTM D5185m>2011SoliconppmASTM D5185m>2011 <tr< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>11866</th><th>11257</th><th></th></tr<>	Machine Age	hrs	Client Info		11866	11257	
Oil ChangedClient InfoChangedChange	Oil Age	hrs	Client Info		1000	1410	
Filter Changed Sample StatusClient InfoChanged NORMALIronppmASTM D5185m>500310IronppmASTM D5185m>10<10NickelppmASTM D5185m>10<10NickelppmASTM D5185m>10<10SilverppmASTM D5185m>10<10AluminumppmASTM D5185m>25<10LeadppmASTM D5185m>25<10CopperppmASTM D5185m>25<10VanadiumppmASTM D5185m>20<1<1VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>70<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>751<1Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2011PotassiumppmASTM D5185m>2011SiliconppmASTM D5185m>2011SoliconppmASTM D5185m>20NONENONESoliconppmASTM D5185m>20NONEN	Filter Age	hrs	Client Info		0	0	
Sample StatusNORMALNORMALNORMALIronppmASTM D5185m>500310ChromiumppmASTM D5185m>10<10NickelppmASTM D5185m>10<10TitaniumppmASTM D5185m>10<10SilverppmASTM D5185m>25<10AluminumppmASTM D5185m>25<10LeadppmASTM D5185m>25<10CopperppmASTM D5185m>20<1<1VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>751<1Vellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>751<1PotassiumppmASTM D5185m>2011Silitscalar*VisualNONENONENONESand/Dirtscalar*VisualNORNORENONEAppearancescalar*VisualNORNORENORESodiumppmASTM D5185m100BoronppmASTM D5185m1500 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th></th>	Oil Changed		Client Info		Changed	Changed	
Iron  ppm  ASTM D5185m  >500  3  10     Chromium  ppm  ASTM D5185m  >10  <1  0     Nickel  ppm  ASTM D5185m  >10  <1  0     Titanium  ppm  ASTM D5185m  >10  <1  0     Aluminum  ppm  ASTM D5185m  >25  <1  0     Aluminum  ppm  ASTM D5185m  >25  <1  0     Lead  ppm  ASTM D5185m  >25  <1  0     Copper  ppm  ASTM D5185m  >25  <1  0     Vanadium  ppm  ASTM D5185m  >10  <1  0     Vanadium  ppm  ASTM D5185m  >10  <1  0     Vanadium  ppm  ASTM D5185m  >75  1  <1     Vanadium  ppm  ASTM D5185m  >75	Filter Changed		Client Info		Changed	Changed	
Chromium  ppm  ASTM D5185m  >10  <1	Sample Status				NORMAL	NORMAL	
Chromium  ppm  ASTM D5185m  >10  <1	Iron			. 500	0	10	
Nickel  ppm  ASTM D5185m  >10  <1	-				-		
Titanium  ppm  ASTM D5185m        Silver  ppm  ASTM D5185m  >25  <1  0     Aluminum  ppm  ASTM D5185m  >25  <1  0     Lead  ppm  ASTM D5185m  >25  <1  0     Copper  ppm  ASTM D5185m  >50  <1  <1  0     Vanadium  ppm  ASTM D5185m  >10  <1  <1     Vanadium  ppm  ASTM D5185m  >10  <1  0     Vanadium  ppm  ASTM D5185m  >10  <1  0     Vanadium  ppm  ASTM D5185m  >75  1  <1     Vanadium  ppm  ASTM D5185m  >75  1  <1     Vellow Metal  scalar  *Visual  NONE  NONE  NONE     Silicon  ppm  ASTM D5185m							
Silver  ppm  ASTM D5185m  1  0     Aluminum  ppm  ASTM D5185m  >25  <1  0     Lead  ppm  ASTM D5185m  >25  <1  0     Copper  ppm  ASTM D5185m  >50  <1  <1  0     Tin  ppm  ASTM D5185m  >10  <1  <1  0     Vanadium  ppm  ASTM D5185m  >10  <1  0     Vanadium  ppm  ASTM D5185m  >10  <1  0     Vanadium  ppm  ASTM D5185m  >75  1  <1     Vanadium  ppm  ASTM D5185m  >75  1  <1     Vellow Metal  scalar  *Visual  NONE  NONE  NONE     Silicon  ppm  ASTM D5185m  >20  NOR  NONE  NONE     Sand/Dirt  scalar </th <th></th> <th></th> <th></th> <th>&gt;10</th> <th></th> <th></th> <th></th>				>10			
Aluminum  ppm  ASTM D5185m  >25  <1							
Lead  ppm  ASTM D5185m  >25  <1				- OF	-	-	
Copper  ppm  ASTM D5185m  >50  <1						-	
TinppmASTM D5185m>10<1							
Vanadium  ppm  ASTM D5185m   <1							
White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>751<1PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m50820BoronppmASTM D5185m1500ManganeseppmASTM D5185m15<10ManganeseppmASTM D5185m5045PhosphorusppmASTM D5185m50428PhosphorusppmASTM D5185m100212SolifurppmASTM D5185m100212MagnesiumppmASTM D5185m100212PhosphorusppmASTM D5185m100212<				>10			
Yellow Metal  scalar  *Visual  NONE  NONE  NONE  NONE     Silicon  ppm  ASTM D5185m  >75  1  <1     Potassium  ppm  ASTM D5185m  >20  1  1     Water  WC Method  >0.2  NEG  NEG     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     Boron  ppm  ASTM D5185m  50  8  20     Barium  ppm  ASTM D5185m  15  0      Molybdenum  ppm  ASTM D5185m<						-	
SiliconppmASTM D5185m>751<1							
PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500MalganeseppmASTM D5185m1500MagnesiumppmASTM D5185m50412PhosphorusppmASTM D5185m50445PhosphorusppmASTM D5185m100212SulfurppmASTM D5185m1250055927572	Yellow Metal	scalar	" VISUAI	NONE	NONE	NONE	
VaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500MalganeseppmASTM D5185m15<10MagnesiumppmASTM D5185m5045PhosphorusppmASTM D5185m504.2PhosphorusppmASTM D5185m504.2SulfurppmASTM D5185m100212SulfurppmASTM D5185m100212	Silicon	ppm	ASTM D5185m	>75	1	<1	
Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLCodorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500MolybdenumppmASTM D5185m1500ManganeseppmASTM D5185m50412CalciumppmASTM D5185m50445PhosphorusppmASTM D5185m100212SulfurppmASTM D5185m100212	Potassium	ppm	ASTM D5185m	>20	1	1	
Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENORMNORMNORMAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500BariumppmASTM D5185m1500MalganeseppmASTM D5185m50410MagnesiumppmASTM D5185m50428PhosphorusppmASTM D5185m350355428ZincppmASTM D5185m100212SulfurppmASTM D5185m125055927572	Water		WC Method	>0.2	NEG	NEG	
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500BariumppmASTM D5185m1500MolybdenumppmASTM D5185m50<10MagnesiumppmASTM D5185m50<10CalciumppmASTM D5185m50<45PhosphorusppmASTM D5185m100212ZincppmASTM D5185m100212SulfurppmASTM D5185m1250055927572	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m-<10BoronppmASTM D5185m50820BariumppmASTM D5185m1500MolybdenumppmASTM D5185m15<100ManganeseppmASTM D5185m50<10MagnesiumppmASTM D5185m50<45PhosphorusppmASTM D5185m50<45ZincppmASTM D5185m100212SulfurppmASTM D5185m1250S5927572	Debris	scalar	*Visual	NONE	NONE	NONE	
Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m<10BoronppmASTM D5185m50820BariumppmASTM D5185m1500MolybdenumppmASTM D5185m15<10ManganeseppmASTM D5185m50<10MagnesiumppmASTM D5185m50<12PhosphorusppmASTM D5185m50<45ZincppmASTM D5185m100212SulfurppmASTM D5185m125055927572	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water  scalar  *Visual  >0.2  NEG  NEG     Sodium  ppm  ASTM D5185m  <1  0     Boron  ppm  ASTM D5185m  50  8  20     Barium  ppm  ASTM D5185m  15  0  0     Molybdenum  ppm  ASTM D5185m  15  <1  0     Manganese  ppm  ASTM D5185m  15  <1  0     Magnesium  ppm  ASTM D5185m  50  <1  2     Phosphorus  ppm  ASTM D5185m  50  <1  2     Phosphorus  ppm  ASTM D5185m  50  <1  2     Zinc  ppm  ASTM D5185m  350  355  428     Sulfur  ppm  ASTM D5185m  100  2  12	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium  ppm  ASTM D5185m  <1	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron  ppm  ASTM D5185m  50  8  20     Barium  ppm  ASTM D5185m  15  0  0     Molybdenum  ppm  ASTM D5185m  15  0  0     Manganese  ppm  ASTM D5185m  15  <1  0     Magnesium  ppm  ASTM D5185m  50  <1  2     Calcium  ppm  ASTM D5185m  50  <1  2     Phosphorus  ppm  ASTM D5185m  50  <4  5     Zinc  ppm  ASTM D5185m  100  2  12     Sulfur  ppm  ASTM D5185m  100  2  12	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron  ppm  ASTM D5185m  50  8  20     Barium  ppm  ASTM D5185m  15  0  0     Molybdenum  ppm  ASTM D5185m  15  0  0     Manganese  ppm  ASTM D5185m  15  <1  0     Magnesium  ppm  ASTM D5185m  50  <1  2     Calcium  ppm  ASTM D5185m  50  <1  2     Phosphorus  ppm  ASTM D5185m  50  <4  5     Zinc  ppm  ASTM D5185m  100  2  12     Sulfur  ppm  ASTM D5185m  100  2  12	Sodium	ppm	ASTM D5185m		<1	0	
Barium  ppm  ASTM D5185m  15  0  0     Molybdenum  ppm  ASTM D5185m  15  <1			ASTM D5185m	50		20	
Manganese  ppm  ASTM D5185m  <1	Barium		ASTM D5185m	15	0	0	
Manganese  ppm  ASTM D5185m  <1	Molybdenum		ASTM D5185m	15	<1	0	
Magnesium  ppm  ASTM D5185m  50  <1	Manganese		ASTM D5185m		<1	0	
Calcium  ppm  ASTM D5185m  50  4  5     Phosphorus  ppm  ASTM D5185m  350  355  428     Zinc  ppm  ASTM D5185m  100  2  12     Sulfur  ppm  ASTM D5185m  12500  5592  7572	-		ASTM D5185m	50	<1	2	
Phosphorus  ppm  ASTM D5185m  350  355  428     Zinc  ppm  ASTM D5185m  100  2  12     Sulfur  ppm  ASTM D5185m  12500  5592  7572	-		ASTM D5185m	50		5	
Zinc  ppm  ASTM D5185m  100  2  12     Sulfur  ppm  ASTM D5185m  12500  5592  7572	Phosphorus		ASTM D5185m	350	355	428	
Sulfur  ppm  ASTM D5185m  12500  5592  7572			ASTM D5185m			12	
	Sulfur		ASTM D5185m	12500	5592	7572	

Contact/Location: MICHAEL LAWSON - BUCGRA





Contact/Location: MICHAEL LAWSON - BUCGRA Page 2 of 2