

#### Machine Id CR1229 Component 2 Swing Drive Fluid GEAR OIL ISO 220 (--- GAL)

# RECOMMENDATION

Resample at the next service interval to monitor.

### **WEAR**

All component wear rates are normal.

### CONTAMINATION

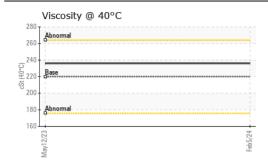
There is no indication of any contamination in the oil.

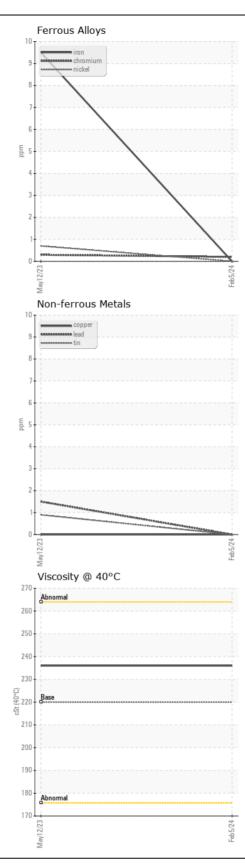
## FLUID CONDITION

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

TestUOMMethodLimit/hoCurrentHistory1History1Sample NumberCilent InfoWC0873232WC0809278Sample DateCilent Info095 Feb 202412 May 2023Machine AgehrsCilent Info30492563Oil AgehrsCilent Info00Filter AgehrsCilent InfoChangedChangedGli ChangedCilent InfoChangedChangedSample StatusCilent InfoChangedChangedFronppmASTM D5185m>00010ChromiumppmASTM D5185m>10C1NickelppmASTM D5185m>100SilverppmASTM D5185m>00AuminumppmASTM D5185m>500AgeppmASTM D5185m>00VanadiumppmASTM D5185m>00Yallow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>00Yallow Metalscalar'VisualNONENONESiliconppmASTM D5185m>00Yallow Metalscalar'VisualNONENONESiliconppmASTM D5185m>00Potassium <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>							
Sample DateClient Info05 Feb 202412 May 2023Machine AgehrsClient Info30492563Oil AgehrsClient Info00Filter AgehrsClient InfoChangedChangedOil ChangedIClient InfoChangedChangedFilter ChangedIClient InfoChangedChangedSample StatusINORMALNORMALNORMALNORMALIronppmASTM D5185m>400010ChromiumppmASTM D5185m>10C1<-1NickelppmASTM D5185m>1000SilverppmASTM D5185m>5000AluminumppmASTM D5185m>5002VanadiumppmASTM D5185m>100<-1VanadiumppmASTM D5185m>500<-1Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>500<11Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>500<11PotassiumppmASTM D5185m>500<11SiliconppmASTM D5185m>50	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine AgehrsClient Info30492563Oil AgehrsClient Info00Filter AgehrsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusVNORMALNORMALNORMALIronppmASTM D5185m>10010ChromiumppmASTM D5185m>100<11NickelppmASTM D5185m>100<11NickelppmASTM D5185m>100<11AluminumppmASTM D5185m>5002AluminumppmASTM D5185m>500<11VanadiumppmASTM D5185m>100<11VanadiumppmASTM D5185m>100<11Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>500<11PotassiumppmASTM D5185m>500<11SiliconppmASTM D5185m>500<11PotassiumppmASTM D5185m>500<11SiliconppmASTM D5185m>500<11<	Sample Number		Client Info		WC0873232	WC0809278	
Oil AgehrsClient Info00Filter AgehrsClient Info00Oil ChangedClient InfoChangedChangedFilter ChangedQClient InfoChangedChangedSample StatusVNORMALNORMALIronppmASTM D5185m>40000100ChromiumppmASTM D5185m>10C1<NickelppmASTM D5185m>100<TitaniumppmASTM D5185m>1000AluminumppmASTM D5185m>2000AluminumppmASTM D5185m>2000LeadppmASTM D5185m>2000VanadiumppmASTM D5185m>2000VanadiumppmASTM D5185m>200VanadiumppmASTM D5185m>200SiliconppmASTM D5185m>200SiliconppmASTM D5185m>200PotassiumppmASTM D5185m>200SiliconppmASTM D5185m>200SiliconppmASTM D5185m>200PotassiumppmASTM D5185m>200	Sample Date		Client Info		05 Feb 2024	12 May 2023	
Filter AgeInter AgeClient Info00Gil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusVORMALNORMALNORMALIronppmASTM D5185m>4000100ChromiumppmASTM D5185m>10<1<1NickelppmASTM D5185m>100<1NickelppmASTM D5185m>100<1SilverppmASTM D5185m>2000AluminumppmASTM D5185m>2000LeadppmASTM D5185m>2000VanadiumppmASTM D5185m>0<1VanadiumppmASTM D5185m>00<1VanadiumppmASTM D5185m>00<1Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>200<1PotassiumppmASTM D5185m>200<1SiliconppmASTM D5185m>200<1PotassiumppmASTM D5185m>200<1SiliconppmASTM D5185m>200<1Debrisscalar <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>3049</th> <th>2563</th> <th></th>	Machine Age	hrs	Client Info		3049	2563	
Oil Changed Filter ChangedClient InfoChanged Client InfoChanged ChangedSample StatusClient InfoChangedChangedIronppmASTM D5185m>400010ChromiumppmASTM D5185m>10<1<1<1NickelppmASTM D5185m>100<1TitaniumppmASTM D5185m>100<1SilverppmASTM D5185m>5000AluminumppmASTM D5185m>20000LeadppmASTM D5185m>20000VanadiumppmASTM D5185m>100<1VanadiumppmASTM D5185m>100<1Yellow Metalscalar'VisualNONENONENONESiliconppmASTM D5185m>2005Yellow Metalscalar'VisualNONENONENONESilitscalar'VisualNONENONENONEAppearancescalar'VisualNORMNORMLNORMLAppearancescalar'VisualNORMNORMLNORMLSodiumppmASTM D5185m5003Appearancescalar'VisualNORMNORMLNORML <t< th=""><th>Oil Age</th><th>hrs</th><th>Client Info</th><th></th><th>0</th><th>0</th><th></th></t<>	Oil Age	hrs	Client Info		0	0	
Filter Changed         Client Info         Changed         Changed            Sample Status         NORMAL         NORMAL         NORMAL            Iron         ppm         ASTM D5185m         >400         0         10            Chromium         ppm         ASTM D5185m         >10         <1         <1            Nickel         ppm         ASTM D5185m         >10         0         <1            Titanium         ppm         ASTM D5185m         >10         0         <1            Aluminum         ppm         ASTM D5185m         >25         0         0            Lead         ppm         ASTM D5185m         >200         0         <1            Vanadium         ppm         ASTM D5185m         >200         0         <1            Vanadium         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >20         0         <1            Vanadium         ppm         ASTM D5185m         >20         0         <1        <	Filter Age	hrs	Client Info		0	0	
Sample Status         NORMAL         NORMAL         NORMAL            Iron         ppm         ASTM D5185m         >400         0         10            Chromium         ppm         ASTM D5185m         >10         <1         <1            Nickel         ppm         ASTM D5185m         >10         0         <1            Titanium         ppm         ASTM D5185m         >10         0         <1            Silver         ppm         ASTM D5185m         >25         0         0            Aluminum         ppm         ASTM D5185m         >200         0         0            Lead         ppm         ASTM D5185m         >200         0         <1            Vanadium         ppm         ASTM D5185m         >200         0         <1            Vanadium         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >0         0         <1            Vanadium         ppm         ASTM D5185m         >0         0         <1 </th <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         >400         0         10            Chromium         ppm         ASTM D5185m         >10         <1         <1            Nickel         ppm         ASTM D5185m         >10         0         <1            Titanium         ppm         ASTM D5185m         >10         0         0            Silver         ppm         ASTM D5185m         >25         0         0            Aluminum         ppm         ASTM D5185m         >25         0         0            Aluminum         ppm         ASTM D5185m         >200         0         0            Auminum         ppm         ASTM D5185m         >200         0         <1            Lead         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >50         0         <1            Vanadium         ppm         ASTM D5185m         >0	Filter Changed		Client Info		Changed	Changed	
Chromium         ppm         ASTM D5185m         >10         <1	Sample Status				NORMAL	NORMAL	
Chromium         ppm         ASTM D5185m         >10         <1				400	•	10	
Nickel         ppm         ASTM D5185m         >10         0         <11					-		
Titanium         ppm         ASTM D5185m         0         0            Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >25         0         0            Aluminum         ppm         ASTM D5185m         >20         0         0            Lead         ppm         ASTM D5185m         >200         0         0            Copper         ppm         ASTM D5185m         >200         0         0            Vanadium         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >00         <1            Yellow Metal         scalar         *Visual         NONE         NONE         NONE            Silicon         ppm         ASTM D5185m         >20         0         <1            Soliton         scalar         *Visual         NONE         NONE         NONE         -							
Silver         ppm         ASTM D5185m         0         0            Aluminum         ppm         ASTM D5185m         >25         0         0            Lead         ppm         ASTM D5185m         >50         0         2            Copper         ppm         ASTM D5185m         >200         0         0            Vanadium         ppm         ASTM D5185m         >10         0         <1            White Metal         scalar         *Visual         NONE         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE         NONE            Silicon         ppm         ASTM D5185m         >20         0          Sada//////////////////////////////////				>10	-		
Aluminum         ppm         ASTM D5185m         >25         0         0            Lead         ppm         ASTM D5185m         >50         0         2            Copper         ppm         ASTM D5185m         >200         0         0            Tin         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >10         0         <1            White Metal         scalar         *Visual         NONE         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE         NONE            Silicon         ppm         ASTM D5185m         >20         0         <1            Vater         WC Method         >0.2         NEG         NEG            Silit         scalar         *Visual         NONE         NONE         NONE            Debris         scalar         *Visual         NOR         NORE         NORE            Appearance         scalar         *Visual         NORM							
Lead         ppm         ASTM D5185m         >50         0         2            Copper         ppm         ASTM D5185m         >200         0         0            Tin         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         >10         0         <1            White Metal         scalar         *Visual         NONE         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE         NONE            Silicon         ppm         ASTM D5185m         >50         0         <1            Potassium         ppm         ASTM D5185m         >20         0         5            Water         WC Method         >0.2         NEG         NEG            Sand/Dirt         scalar         *Visual         NONE         NONE            Appearance         scalar         *Visual         NORM         NORML         NORML            Godor         scalar         *Visual         NORM         NORML </th <th></th> <th></th> <th></th> <th>05</th> <th>-</th> <th></th> <th></th>				05	-		
Copper         ppm         ASTM D5185m         >200         0         0            Tin         ppm         ASTM D5185m         >10         0         <1            Vanadium         ppm         ASTM D5185m         0         0         <1            White Metal         scalar         *Visual         NONE         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE         NONE            Silicon         ppm         ASTM D5185m         >50         0         <1            Potassium         ppm         ASTM D5185m         >50         0         <1            Silicon         ppm         ASTM D5185m         >20         0         5            Water         WC Method         >0.2         NEG         NEG            Silit         scalar         *Visual         NONE         NONE            Appearance         scalar         *Visual         NORML         NORML            Odor         scalar         *Visual         NORML         NORML <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>					-		
TinppmASTM D5185m>100<1					-	_	
VanadiumppmASTM D5185m00<1					-	-	
White Metalscalar*VisualNONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>500<1PotassiumppmASTM D5185m>2005WaterWC Method>0.2NEGNEGSiliscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m5000BoronppmASTM D5185m15<10MalganeseppmASTM D5185m5000MagnesiumppmASTM D5185m500<MagnesiumppmASTM D5185m500<				>10	-		
Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>500<1PotassiumppmASTM D5185m>2005WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5000BoronppmASTM D5185m15<10MalganeseppmASTM D5185m1500MagnesiumppmASTM D5185m500<11				NONE	-		
SiliconppmASTM D5185m>500<1							
PotassiumppmASTM D5185m>2005WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5000BariumppmASTM D5185m15<10MalganeseppmASTM D5185m5000MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185	Yellow Metal	scalar	^Visual	NONE	NONE	NONE	
WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5000BoronppmASTM D5185m15<10MalganeseppmASTM D5185m1500MagnesiumppmASTM D5185m500<MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1MargenesiumppmASTM D5185m500<1MargenesiumppmASTM D5185m500<1MargenesiumppmASTM D5185m500<1MargenesiumppmASTM D5185m500<1MargenesiumppmASTM D5185m500<1MargenesiumppmASTM D5185m500<1Margenesium </th <th>Silicon</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;50</th> <th>0</th> <th>&lt;1</th> <th></th>	Silicon	ppm	ASTM D5185m	>50	0	<1	
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5000BoronppmASTM D5185m15<10MalybdenumppmASTM D5185m1500MagnesiumppmASTM D5185m500<11MagnesiumppmASTM D5185m5006	Potassium	ppm	ASTM D5185m	>20	0	5	
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5000BoronppmASTM D5185m5000BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m5000MagnesiumppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1CalciumppmASTM D5185m500<1	Water		WC Method	>0.2	NEG	NEG	
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m5000BoronppmASTM D5185m15<10BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m1500MagnesiumppmASTM D5185m500<11MagnesiumppmASTM D5185m5006	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m03BoronppmASTM D5185m5000BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m1500ManganeseppmASTM D5185m500<11MagnesiumppmASTM D5185m5006	Debris	scalar	*Visual	NONE	NONE	NONE	
Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m03BoronppmASTM D5185m5000BariumppmASTM D5185m15<10MolybdenumppmASTM D5185m1500ManganeseppmASTM D5185m500<1MagnesiumppmASTM D5185m500<1CalciumppmASTM D5185m5006	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water         scalar         *Visual         >0.2         NEG         NEG            Sodium         ppm         ASTM D5185m         0         3            Boron         ppm         ASTM D5185m         50         0         0            Barium         ppm         ASTM D5185m         15         <1         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         50         0         <1            Magnesium         ppm         ASTM D5185m         50         0         <1            Calcium         ppm         ASTM D5185m         50         0         <1	Appearance	scalar	*Visual	NORML	NORML	NORML	
Sodium         ppm         ASTM D5185m         0         3            Boron         ppm         ASTM D5185m         50         0         0            Barium         ppm         ASTM D5185m         15         <1         0            Molybdenum         ppm         ASTM D5185m         15         <1         0            Manganese         ppm         ASTM D5185m         50         0         <1            Magnesium         ppm         ASTM D5185m         50         0         <1            Calcium         ppm         ASTM D5185m         50         0         6	Odor	scalar	*Visual	NORML	NORML	NORML	
Boron         ppm         ASTM D5185m         50         0         0            Barium         ppm         ASTM D5185m         15         <1         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         50         0         <1            Magnesium         ppm         ASTM D5185m         50         0         <1            Calcium         ppm         ASTM D5185m         50         0         6	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Boron         ppm         ASTM D5185m         50         0         0            Barium         ppm         ASTM D5185m         15         <1         0            Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         50         0         <1            Magnesium         ppm         ASTM D5185m         50         0         <1            Calcium         ppm         ASTM D5185m         50         0         6	Sodium	ppm	ASTM D5185m		0	3	
Barium         ppm         ASTM D5185m         15         <1	Boron		ASTM D5185m	50	0		
Molybdenum         ppm         ASTM D5185m         15         0         0            Manganese         ppm         ASTM D5185m         <         <	Barium				<1		
Manganese         ppm         ASTM D5185m         <1	Molybdenum		ASTM D5185m	15	0	0	
Magnesium         ppm         ASTM D5185m         50         0         <1							
Calcium         ppm         ASTM D5185m         50         0         6	0		ASTM D5185m	50	0	<1	
	0						
	Phosphorus	ppm	ASTM D5185m	350	308	13	
Zinc ppm ASTM D5185m 100 0 0							
Sulfur         ppm         ASTM D5185m         12500         4218         3021							
Visc @ 40°C cSt ASTM D445 220 236 236							

Contact/Location: MICHAEL LAWSON - BUCGRA







Sample No. : WC0873232 Received :08 Feb 2024 4732 NC 54 EAST Lab Number : 06083985 : 09 Feb 2024 GRAHAM, NC Tested : 11 Feb 2024 - Don Baldridge Unique Number : 10871430 US 27253-9215 Diagnosed Test Package : CONST Contact: MICHAEL LAWSON Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. michaell@bucknercompanies.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (336)376-8888 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (336)376-4090

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Laboratory

Contact/Location: MICHAEL LAWSON - BUCGRA

Page 2 of 2

**BUCKNER HEAVY LIFT**