

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **5 MILL FEED END TRUNNION BEARING**

Feed Bearing Fluid SHELL OMALA S2 GX 320 (--- GAL)

Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

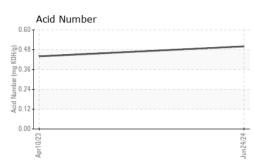
Fluid Condition

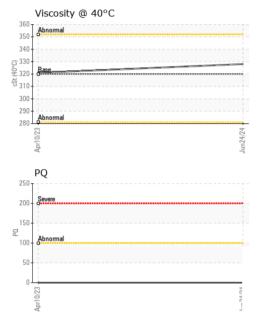
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATIONmethodSample NumberClient InfoSample DatehrsClient InfoMachine AgehrsClient InfoOil AgehrsClient InfoOil ChangedClient InfoSample StatusClient InfoSample StatusMethodWaterWC MethodWEAR METALSmethodPQASTM D5185(ChromiumppmASTM D5185(NickelppmASTM D5185(SilverppmASTM D5185(SilverppmASTM D5185(AluminumppmASTM D5185(CopperppmASTM D5185(TinppmASTM D5185(AntimonyppmASTM D5185(VanadiumppmASTM D5185(BerylliumppmASTM D5185(ADDITIVESmethodBoronppmASTM D5185(b b b b b b b b b b b b b b b b b b b	WC0898813 24 Jun 2024 0 0 Not Changd NORMAL Current NEG	history1 WC0665400 10 Apr 2023 0 Not Changd NORMAL history1 NEG history1 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 10 10 10	history2 history2 history2 history2
Sample DateClient InfrMachine AgehrsClient InfrOil AgehrsClient InfrOil ChangedClient InfrSample StatusClient InfrCONTAMINATIONmethodWaterWC MethoWEAR METALSmethodPQASTM D8184IronppmASTM D5185(rNickelppmSilverppmASTM D5185(rSilverppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rAndiumppmASTM D5185(rADDITIVESmethod	b b b b b b b b b b b b b b b b b b b	24 Jun 2024 0 0 Not Changd NORMAL Current NEG 0 current 0 6 0 2	10 Apr 2023 0 0 Not Changd NORMAL history1 NEG history1 0 5 0	 history2 history2
Sample DateClient InfrMachine AgehrsClient InfrOil AgehrsClient InfrOil ChangedClient InfrSample StatusClient InfrCONTAMINATIONmethodWaterWC MethorWEAR METALSmethodPQASTM D8184IronppmASTM D5185(rChromiumppmNickelppmSilverppmASTM D5185(rSilverppmASTM D5185(rCopperppmASTM D5185(rCopperppmASTM D5185(rVanadiumppmASTM D5185(rCadmiumppmASTM D5185(rAntimonyppmASTM D5185(rCadmiumppmASTM D5185(rAntimonyppmASTM D5185(rCadmiumppmASTM D5185(rAnadiumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	b) b) limit/base d >2 limit/base f* n) >500 n) >10 n) >10 n))	0 0 Not Changd NORMAL 0 NEG 0 0 6 0 0 4	0 0 Not Changd NORMAL history1 NEG history1 0 5 0	 history2 history2
Machine AgehrsClient InfrOil AgehrsClient InfrOil ChangedClient InfrSample StatusClient InfrCONTAMINATIONmethodWaterWC MethorWEAR METALSmethodPQASTM D8184IronppmASTM D5185(rChromiumppmNickelppmASTM D5185(rSilverppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rCadmiumppmASTM D5185(rAntimonyppmASTM D5185(rAntimonyppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	b Iimit/base d >2 limit/base limit/base #*	0 Not Changd NORMAL Current NEG 0 6 0 6 0 2	0 Not Changd NORMAL history1 NEG history1 0 5 0	 history2 history2
Oil AgehrsClient InfoOil ChangedClient InfoSample StatusClient InfoCONTAMINATIONmethodWaterWC MethodWaterWC MethodPQASTM D8184IronppmASTM D8185(rChromiumppmNickelppmSilverppmASTM D5185(rSilverppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	limit/base d >2 limit/base t* n) >500 n) >10 n) >10 n) n)	Not Changd NORMAL Current NEG Current 0 6 0 4	Not Changd NORMAL history1 NEG history1 0 5 0	 history2 history2
Oil Changed Client Info Sample Status Client Info CONTAMINATION method Water WC Method Water WC Method PQ ASTM D8184 Iron ppm ASTM D5185(r Chromium ppm Nickel ppm Ppm ASTM D5185(r Silver ppm ASTM D5185(r Copper ppm ASTM D5185(r Antimony ppm ASTM D5185(r Beryllium ppm ASTM D5185(r Antimony ppm ASTM D5185(r Antimony ppm ASTM D5185(r Beryllium ppm ASTM D5185(r ADDITIVES method	limit/base d >2 limit/base f* n) >500 n) >10 n) >10 n) n)	NORMAL current NEG current 0 6 0 <1	NORMAL history1 NEG history1 0 5 0	 history2 history2
Sample Status method CONTAMINATION method Water WC Method Wear WC Method VEAR METALS method PQ ASTM D8188 Iron ppm ASTM D5185(r Chromium ppm Nickel ppm Ppm ASTM D5185(r Silver ppm ASTM D5185(r Lead ppm Copper ppm ASTM D5185(r Antimony ppm Vanadium ppm Beryllium ppm ASTM D5185(r ADDITIVES method	d >2 limit/base 4* n) >500 n) >10 n) >10 n) n)	NORMAL current NEG current 0 6 0 <1	NORMAL history1 NEG history1 0 5 0	history2 history2
WaterWC MethodWEAR METALSmethodPQASTM D8184IronppmASTM D5185(rChromiumppmASTM D5185(rNickelppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	d >2 limit/base 4* n) >500 n) >10 n) >10 n) n)	NEG current 0 6 0 <1	NEG history1 0 5 0	history2
WEAR METALSmethodPQASTM D8184IronppmASTM D5185(rChromiumppmASTM D5185(rNickelppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rCadmiumppmASTM D5185(rCadmiumppmASTM D5185(rAntimonyppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	limit/base 4* n) >500 n) >10 n) >10 n) n)	current 0 6 0 <1	history1 0 5 0	
PQASTM D8184IronppmASTM D5185(rChromiumppmASTM D5185(rNickelppmASTM D5185(rTitaniumppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	4* n) >500 n) >10 n) >10 n) n)	0 6 0 <1	0 5 0	
IronppmASTM D5185(rChromiumppmASTM D5185(rNickelppmASTM D5185(rNickelppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n) >500 n) >10 n) >10 n) n)	6 0 <1	5 0	
ChromiumppmASTM D5185(rNickelppmASTM D5185(rTitaniumppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n) >10 n) >10 n) >10 n)	0 <1	0	
ChromiumppmASTM D5185(rNickelppmASTM D5185(rTitaniumppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n) >10 n) >10 n) >10 n)	<1		
NickelppmASTM D5185(rTitaniumppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n) n)		<1	
TitaniumppmASTM D5185(rSilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n)	0		
SilverppmASTM D5185(rAluminumppmASTM D5185(rLeadppmASTM D5185(rCopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	7		0	
Lead ppm ASTM D5185(r Copper ppm ASTM D5185(r Tin ppm ASTM D5185(r Antimony ppm ASTM D5185(r Vanadium ppm ASTM D5185(r Beryllium ppm ASTM D5185(r Cadmium ppm ASTM D5185(r ADDITIVES method	n) >15	0	0	
CopperppmASTM D5185(rTinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod		<1	<1	
TinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n) >100	1	3	
TinppmASTM D5185(rAntimonyppmASTM D5185(rVanadiumppmASTM D5185(rBerylliumppmASTM D5185(rCadmiumppmASTM D5185(rADDITIVESmethod	n) >120	2	1	
Antimony ppm ASTM D5185(r Vanadium ppm ASTM D5185(r Beryllium ppm ASTM D5185(r Cadmium ppm ASTM D5185(r ADDITIVES method		<1	<1	
Beryllium ppm ASTM D5185(r Cadmium ppm ASTM D5185(r ADDITIVES method	n)	1	1	
Cadmium ppm ASTM D5185(r ADDITIVES method	n)	0	0	
ADDITIVES method	n)	0	0	
	n)	0	0	
Boron ppm ASTM D5185(r	limit/base	e current	history1	history2
	n) 6.2	<1	<1	
Barium ppm ASTM D5185(r	n) 0.0	0	0	
Molybdenum ppm ASTM D5185(r	n) O	0	0	
Manganese ppm ASTM D5185(r	n)	0	0	
Magnesium ppm ASTM D5185(r	n) O	2	<1	
Calcium ppm ASTM D5185(r	n) 0.0	8	1	
Phosphorus ppm ASTM D5185(r	n) 290	212	286	
Zinc ppm ASTM D5185(r	n) 3.8	24	11	
Sulfur ppm ASTM D5185(r	n) 8167	7174	7895	
Lithium ppm ASTM D5185(r	n)	<1	<1	
CONTAMINANTS method	limit/base	e current	history1	history2
Silicon ppm ASTM D5185(r	n) >50	0	<1	
Sodium ppm ASTM D5185(r	n)	<1	<1	
Potassium ppm ASTM D5185(r	n) >20	<1	<1	
FLUID DEGRADATION method	limit/base	e current	history1	history2
Acid Number (AN) mg KOH/g ASTM D974	1*	0.50	0.44	



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	his
White Metal	scalar	Visual*	NONE	VLITE	VLITE	
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	
Precipitate	scalar	Visual*	NONE	NONE	NONE	
Silt	scalar	Visual*	NONE	NONE	VLITE	
Debris	scalar	Visual*	NONE	VLITE	VLITE	
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	
Appearance	scalar	Visual*	NORML	NORML	NORML	
Odor	scalar	Visual*	NORML	NORML	NORML	
Emulsified Water	scalar	Visual*	>2	NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	
FLUID PROPER	TIES	method	limit/base	current	history1	hi
Visc @ 40°C	cSt	ASTM D7279(m)	320	328	321	
SAMPLE IMAGE	S .	method	limit/base	current	history1	hi
Color						no
			9			
				0		
Bottom						no
GRAPHS						
				DO.		
Ferrous Alloys			22	PQ		
8 - iron			20	Severe		
e 6			18			
ä 4						
2 -			160	0		
	***********		14	0		
Apr1 0/23			Jun 24/24	0		
⊲ Non-ferrous Meta	lc.		-	0 - Abnormal		
¹⁰ T :			8	0		
8 - copper						
E 6-			60			
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			4	0		
2-	and and and in the other	and the state of t	2	0		
		446665aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa		o L		
Apr10/23			Jun24/2	Apr10/23		
⊲ Viscosity @ 40°C			7	∉ Acid Numbe	r	
360 Abnormal						
340 -			HO 0.4	8		
320 - Base			E 0.3	6 -		
3 300			- ^q 0.24	4		
Abnormal			(0,0.6) (0,0.4) (0,0.4) (0,0.3) (0,0.3) (0,0.3) (0,0.4) (0,0.4) (0,0.4) (0,0.4) (0,0.4) (0,0.6) (0,0.6) (0,0.6) (0,0.6) (0,0.6) (0,0.6) (0,0.4	2		
280 - 9				2		
Apri 0/23			Jun24/24	Apr10/23		
4			Ē	4		
: WearCheck - C8-117	5 Appleh [,]	y Line. Burlin	aton. ON L7	L 5H9	Vale -	Clarat
: WC0898813	Recei		2 Jul 2024		MTW (Mill,1	
: 02645015	Teste	A . 05	3 Jul 2024		COPF	
	reste	u .03	JUI 2024			
5802554	Diagr	nosed : 03	3 Jul 2024 - W	les Davis	Conta	CA

CALA ISO 17025:2017 Accredited Laboratory

Test Package : IND 2 (Additional Tests: TAN Man) To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

CA POM 1N0 Contact: Ken Obazee ken.obazee@vale.com T: 204778816 F: (705)682-6273

Report Id: INCOCLARA [WCAMIS] 02645015 (Generated: 07/03/2024 11:42:38) Rev: 1

Contact/Location: Ken Obazee - INCOCLARA