

# **OIL ANALYSIS REPORT**

## Area [BOSTON] ALSTOM R100

Gearbox Fluid TOTAL CARTER SH 220 (3 GAL)

#### DIAGNOSIS

#### Recommendation

No corrective action is recommended at this time. 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 oil viscosity is higher than normal. Confirm oil type. The AN level is acceptable for this fluid.



SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0798865	WC0798795	WC0781592
Sample Date		Client Info		15 May 2024	12 May 2024	13 May 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	N/A
Sample Status				ATTENTION	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	150	132	120
Chromium	ppm	ASTM D5185m	>10	<1	<1	1
Nickel	ppm	ASTM D5185m	>10	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	3	3
Lead	ppm	ASTM D5185m	>50	<1	2	0
Copper	ppm	ASTM D5185m	>200	26	37	30
Tin	ppm	ASTM D5185m	>10	0	<1	0
Antimony	ppm	ASTM D5185m	>5			
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	<1	2
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		0	<1	3
Manganese	ppm	ASTM D5185m		2	2	2
Magnesium	ppm	ASTM D5185m		0	2	3
Calcium	ppm	ASTM D5185m		5	10	11
Phosphorus	ppm	ASTM D5185m		322	394	376
Zinc	ppm	ASTM D5185m		75	96	46
Sulfur	ppm	ASTM D5185m		3900	4884	5158
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	17	20	25
Sodium	ppm	ASTM D5185m		26	32	32
Potassium	ppm	ASTM D5185m	>20	<1	2	<1
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.451	0.48	0.50



0.00 May27/11

Nov24/12

May24/14

# **OIL ANALYSIS REPORT**



1			method	limit/base	current	history1	Thistory2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
$\wedge$ /	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
$\sum$	Silt	scalar	*Visual	NONE	MODER	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
U	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
/118-	Annearance	scalar	*Visual	NORMI	NORMI	NORMI	NORMI
ug29 Jun4 Jay13	Odor	scalar	*Vieual	NORMI	NORMI	NORMI	NORMI
4 4 2	Emulsified Water	scalar	*Vicual		NEG	NEG	NEG
		Scalar	*\/ioual	>0.2	NEG	NEG	NEG
		Scalar	visual	11 1- 1	NEG	NEG	NEG
	FLUID PROPER	TIES	method	limit/base		history1	history2
$\sim$	Visc @ 40°C	cSt	ASTM D445		285.1	258	229
	SAMPLE IMAGE	ES	method	limit/base	current	history1	history2
u11/18 un4/20 v13/23	Color				no image	no image	no image
Aug							
	5						
	Bottom				no image	no image	no image
	GRAPHS Iron (nnm)				Lead (nnm)		
	600 T 2 T 2 T 2 T 2 T 2 T 2 T 2 T 2 T 2 T			20			
	E 400 - Severe			Ē 10			
	200 - Abnormal	$\sim$	$\sim \sim$		Abnormal		
		17	20	F 1		16	18 - 20 -
	ay27/ ay24/	/41 gr /62 gu	/111 pr //t-unf	ay I 3/	ay27/ ov24/	ug 15/	Jun4// ay13/
	≥ ≥ ≥ .	A A	A.	2	≥ 2 ≥ Chara ana isana (as	A A	A, M
	<sup>100</sup>	)		3	OT Severe	om)	
	Severe						
	5 50			E 2	0		
	Abnormal			<sup>2</sup> ط	0 - Abnormal		
	Abnormal	6	8		Abnomal	6	0
	mqq	g29/17 +	g11/18		v24/12 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	g15/16	g11/18 un4/20 y13/23
	20 0 11/12/veW 50 0 11/12/veW 50 0 11/12/veW 50 0 11/12/veW 50 0 11/12/veW 50 0 11/12/veW 50 0 11/12/veW 50 0 11/12/veW	Aug29/17	Aug 1 1/18	ud 11	Approximate the second	Aug15/16 Aug29/17 +	Aug11/18 Jun4/20 May13/23
	d	Aug 15/16 +	Aug11/18	ud 1	Abnormal 2 Uhz/NeW Silicon (ppm)	Aug15/16	Aug 1 //18
	dd 50 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Aug 15/16 +	Aug11/18 Jun4/20	2 udd 11	Abnormal Abnormal 11//2/eW Silicon (ppm) Severe	Aug15/16 <u>+</u> Aug29/7 <u>+</u>	Aug11/18 Jun4/20 May13/23
	udd 50 4 50 50 50 50 50 50 50 50 50 50	Aug15/16 Aug29/17	Aug 11/18 Jun4/20	15/ 10 11 10 10 10 10 10 10	Abnormal 21/hZ/eW Silicon (ppm) Severe Abnormal	Aug15/16	8/11/8 huut 02/huut 02/8/W
	double contract of the second	Aug19/16	Aug11/18 Jun4/20	22 udd 11 57/51 / ABW	Abnormal Clubzver Silicon (ppm) Severe Abnormal	Aug15/16	Aug 11/18 Jun4/20 May 13/23
	dd	15/16	1/18	22 udd 11 57/61/ABU	Abnormal Clubzvew Silicon (ppm) Severe Abnormal Clubzvew Silicon (ppm) Severe Abnormal Clubzvew Silicon (ppm)	15/16 + Aug15/16 + Aug29/17 + Aug	11/18
	und brownal	Aug15/16 Aug15/16 Aug28/17	Aug11/18 Aug11/18	22 udd 11 57/51/ABW	May21/11 May24/12 May24/12 May24/14 May24/14 May24/14 May24/14 May24/14	Aug15/16 + Aug15/16 + Aug29/17 +	Aug11/18 Aug11/18 Jun4/20 Jun4/20 May13/23 May13/23
	LUIZZAREW Copper (ppm) Copper (ppm) Coppe	Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug28/17	Aug11/18 Aug11/18 Aug11/18 Jun4/20	22 udd 1	Aphonema Aphone	Aug15/16 + Aug15/16 + Aug29/17 +	Aug 11/18
	Abnormal Copper (ppm) Copper	Aug15/16 Aug29/17 Aug29/17	Aug11/18 Aug11/18	2 udd 1 15 10 5 10 5 10 10 5 10 10 10 10 10 10 10 10 10 10	Abnormal Abnormal Club Zlub Zlub Zlub Zlub Zlub Zlub Zlub Z	Aug15/16	Jun4/20 May13/23 May13/23 May13/23
	do	Aug 15/15 + Aug 15/15 + Aug 29/17 + Aug 29/17 +	Aug 11/18 Aug 11/18 Aug 11/18	22 udd 1 57/51/48W 151 00/HOX 8W 57/51/48W	Acid Number	Aug15/16 - Aug15/16 - Aug15/16 - Aug15/16 - Aug29/17 -	Jun4/2014
	d	Aug 29/17 + Aug 2000 + Aug 200	Aug 11/18 Aug 11/18 Jun4/20	151 udd 1 udd 1 udd 1 udd 1 udd 5 udd 5 udd 5 udd 5 udd 1 (5)HOM	Acid Number	Aug15/16 - Aug15/16 - Aug15/16 - Aug29/17 -	Aug11/18 Aug
	do	9//16	1/18 + Aug11/18 + Aug11/18	Acid Number (mg KOH(g) 121	Acid Number	5/16 Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug15/16 Aug15/17 Aug29/17 Aug29/1	1/18 + Aug11/18 Aug11/18