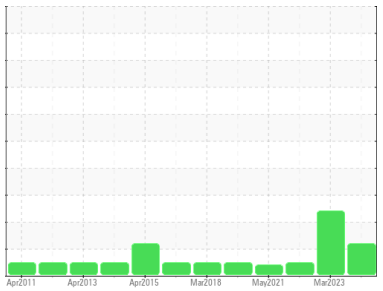
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
ALSTOM CC3209
Component
Center Hydraulic System
Fluid
ESSO UNIVIS N 32 (55 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 a moderate amount of silt (particulates < 14 microns in size) present in the oil.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0798842**	WC0649671	WC0643789
Sample Date		Client Info		**27 Mar 2024**	25 Mar 2023	29 Mar 2022
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ATTENTION**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

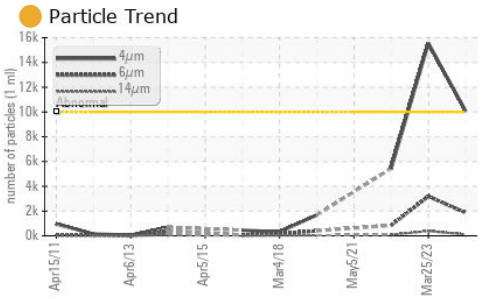
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**<1**	<1	2
Chromium	ppm	ASTM D5185m	>10	**1**	0	2
Nickel	ppm	ASTM D5185m	>10	**16**	10	16
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	<1
Aluminum	ppm	ASTM D5185m	>10	**0**	<1	<1
Lead	ppm	ASTM D5185m	>10	**10**	4	11
Copper	ppm	ASTM D5185m	>75	**5**	3	7
Tin	ppm	ASTM D5185m	>10	**<1**	0	<1
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

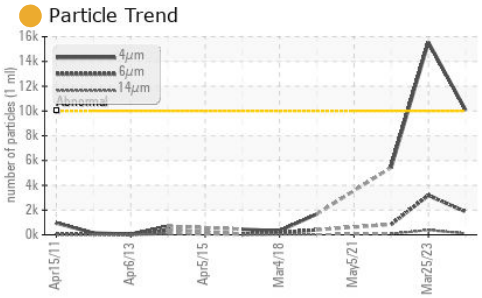
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	.1	**0**	0	<1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m	.3	**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	0
Magnesium	ppm	ASTM D5185m	0	**<1**	4	0
Calcium	ppm	ASTM D5185m	74	**50**	52	50
Phosphorus	ppm	ASTM D5185m	266	**341**	311	341
Zinc	ppm	ASTM D5185m	338	**444**	358	385
Sulfur	ppm	ASTM D5185m		**2645**	2036	2146

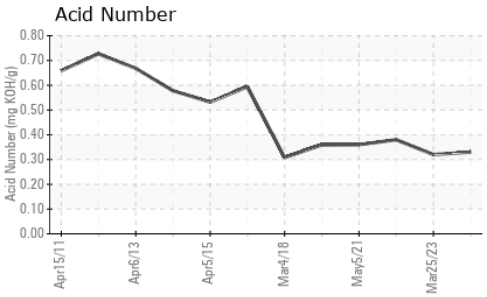
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**1**	2	1
Sodium	ppm	ASTM D5185m		**2**	0	2
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0

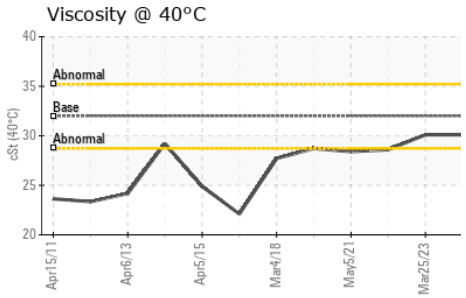
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	**10081**	▲ 15546	5438
Particles >6µm		ASTM D7647	>1300	**1861**	▲ 3191	845
Particles >14µm		ASTM D7647	>160	**112**	▲ 387	77
Particles >21µm		ASTM D7647	>40	**36**	▲ 160	32
Particles >38µm		ASTM D7647	>10	**2**	▲ 14	2
Particles >71µm		ASTM D7647	>3	**0**	1	0
Oil Cleanliness		ISO 4406 (c)	>20/17/14	**21/18/14**	▲ 21/19/16	20/17/13

OIL ANALYSIS REPORT







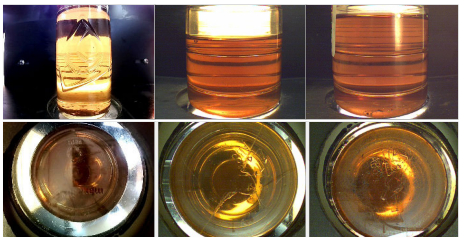


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.33**	0.32	0.38

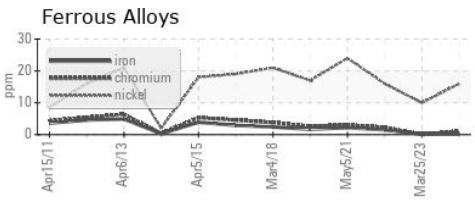
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	LIGHT	VLITE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

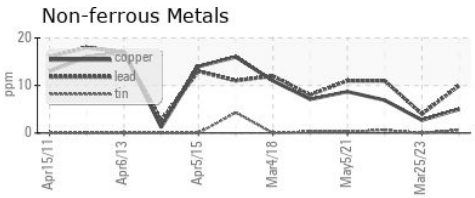
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	**30.1**	30.1	28.6

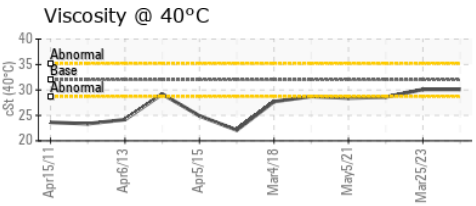
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

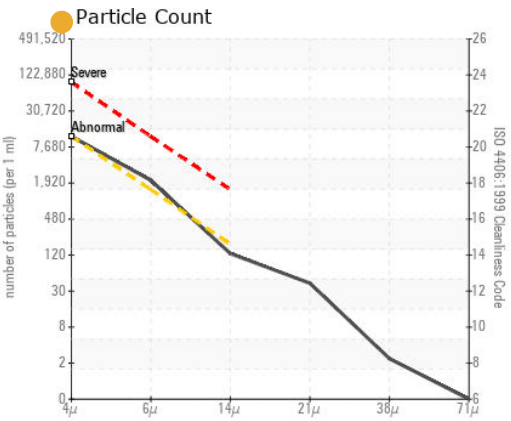


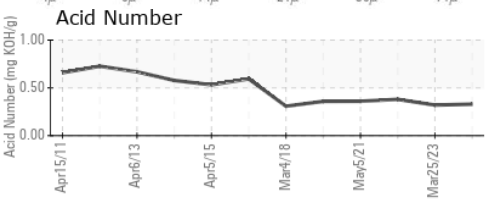
GRAPHS











Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0798842
Lab Number : 06140628
Unique Number : 10965436
Test Package : MOB 2

Received : 05 Apr 2024
Tested : 08 Apr 2024
Diagnosed : 09 Apr 2024 - Don Baldridge

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - 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)

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Report Id: AMTRAK [WUSCAR] 06140628 (Generated: 04/09/2024 12:06:40) Rev: 1
Contact/Location: MICHAEL PORTER - AMTRAK