

OIL ANALYSIS REPORT

Sample Rating Trend

VISCOSITY



ATLAS COPCO T10 JUM-008 (S/N TMGURE0154)

Component

Transmission

SHELL 15W40 (10 LTR)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We recommend that you drain the fluid from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Lithium (Li) level abnormal at 10ppm., indicates possible grease contamination.

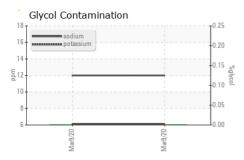
▲ Fluid Condition

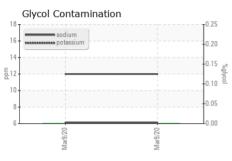
Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The fluid is no longer serviceable due to the presence of contaminants.

Sample Number Client Info WC0438331 Sample Date Client Info 09 Mar 2020 Machine Age hrs Client Info 500 Oil Age hrs Client Info 500 Oil Changed Client Info Not Changd Sample Status					Mar2020		
Sample Date Client Info 09 Mar 2020 Machine Age hrs Client Info 830 Oil Age hrs Client Info 500 Oil Changed Client Info Not Changd Sample Status ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >20 103 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >10 1 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >	SAMPLE INFORMA	NOITA	method	limit/base	current	history1	history2
Machine Age hrs Client Info 830	Sample Number		Client Info		WC0438331		
Oil Age hrs Client Info 500	Sample Date		Client Info		09 Mar 2020		
Collect Coll	Machine Age	hrs	Client Info		830		
CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		500		
CONTAMINATION method limit/base current history1 history2	Oil Changed		Client Info		Not Changd		
Water WC Method >0.1 NEG	Sample Status				ABNORMAL		
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >200 103 Chromium ppm ASTM D5185(m) >10 1 Nickel ppm ASTM D5185(m) <1	CONTAMINATION		method	limit/base	current	history1	history2
Iron	Water		WC Method	>0.1	NEG		
Chromium ppm ASTM D5185(m) >10 1 Nickel ppm ASTM D5185(m) 0 Titanium ppm ASTM D5185(m) <1 Silver ppm ASTM D5185(m) >50 2 Aluminum ppm ASTM D5185(m) >50 2 Lead ppm ASTM D5185(m) >50 <1 Copper ppm ASTM D5185(m) >10 0 Tin ppm ASTM D5185(m) >10 0 Vanadium ppm ASTM D5185(m) <1 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 103 Barium <th>WEAR METALS</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron p	ppm	ASTM D5185(m)	>200	103		
Titanium	Chromium	ppm	ASTM D5185(m)	>10	1		
Silver	Nickel p	ppm	ASTM D5185(m)		0		
Aluminum ppm ASTM D5185(m) >50 2 Lead ppm ASTM D5185(m) >50 <1	Titanium	ppm	ASTM D5185(m)		<1		
Lead ppm ASTM D5185(m) >50 <1	Silver	ppm	ASTM D5185(m)		<1		
Copper ppm ASTM D5185(m) >200 3 Tin ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) <1	Aluminum	ppm	ASTM D5185(m)	>50	2		
Tin ppm ASTM D5185(m) >10 0 Anthimony ppm ASTM D5185(m) <1	Lead p	ppm	ASTM D5185(m)	>50	<1		
Antimony	Copper	ppm	ASTM D5185(m)	>200	3		
Vanadium ppm ASTM D5185(m) <1	Tin p	ppm	ASTM D5185(m)	>10	0		
Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 103 Barium ppm ASTM D5185(m) 4 Molybdenum ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 794 Calcium ppm ASTM D5185(m) 710 Phosphorus ppm ASTM D5185(m) 6587 Zinc ppm ASTM D5185(m) 6587 Sulfur ppm ASTM D5185(m) 10 CONTAMINANTS method limit/base current	Antimony	ppm	ASTM D5185(m)		<1		
Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 103 Barium ppm ASTM D5185(m) 4 Molybdenum ppm ASTM D5185(m) 4 Manganese ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 794 Calcium ppm ASTM D5185(m) 710 Phosphorus ppm ASTM D5185(m) 1502 Zinc ppm ASTM D5185(m) 6587 Sulfur ppm ASTM D5185(m) 10 Lithium ppm ASTM D5185(m) >50 124 CONTAMINANTS method limit/base <td< td=""><td>Vanadium p</td><td>ppm</td><td>ASTM D5185(m)</td><td></td><td><1</td><td></td><td></td></td<>	Vanadium p	ppm	ASTM D5185(m)		<1		
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 103 Barium ppm ASTM D5185(m) 4 Molybdenum ppm ASTM D5185(m) 4 Manganese ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 794 Calcium ppm ASTM D5185(m) 710 Phosphorus ppm ASTM D5185(m) 1502 Zinc ppm ASTM D5185(m) 6587 Sulfur ppm ASTM D5185(m) 10 Lithium ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m	Beryllium	ppm	ASTM D5185(m)		0		
Boron ppm ASTM D5185(m) 103 Barium ppm ASTM D5185(m) 4 Molybdenum ppm ASTM D5185(m) 4 Manganese ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 794 Calcium ppm ASTM D5185(m) 710 Phosphorus ppm ASTM D5185(m) 1502 Zinc ppm ASTM D5185(m) 6587 Sulfur ppm ASTM D5185(m) 10 Lithium ppm ASTM D5185(m) >50 124 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185	Cadmium p	ppm	ASTM D5185(m)		0		
Barium ppm ASTM D5185(m) 4 Molybdenum ppm ASTM D5185(m) <1 Manganese ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 794 Calcium ppm ASTM D5185(m) 710 Phosphorus ppm ASTM D5185(m) 1502 Zinc ppm ASTM D5185(m) 6587 Sulfur ppm ASTM D5185(m) 10 Lithium ppm ASTM D5185(m) >50 124 Silicon ppm ASTM D5185(m) >150 6 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) <1	Boron p	ppm	ASTM D5185(m)		103		
Manganese ppm ASTM D5185(m) 4 Magnesium ppm ASTM D5185(m) 4 Calcium ppm ASTM D5185(m) 794 Phosphorus ppm ASTM D5185(m) 710 Zinc ppm ASTM D5185(m) 1502 Sulfur ppm ASTM D5185(m) 6587 Lithium ppm ASTM D5185(m) 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Barium	ppm	ASTM D5185(m)		4		
Magnesium ppm ASTM D5185(m) 4 Calcium ppm ASTM D5185(m) 794 Phosphorus ppm ASTM D5185(m) 710 Zinc ppm ASTM D5185(m) 1502 Sulfur ppm ASTM D5185(m) 6587 Lithium ppm ASTM D5185(m) 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Molybdenum p	ppm	ASTM D5185(m)		<1		
Calcium ppm ASTM D5185(m) 794 Phosphorus ppm ASTM D5185(m) 710 Zinc ppm ASTM D5185(m) 1502 Sulfur ppm ASTM D5185(m) 6587 Lithium ppm ASTM D5185(m) 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Manganese	ppm	ASTM D5185(m)		4		
Phosphorus ppm ASTM D5185(m) 710 Zinc ppm ASTM D5185(m) 1502 Sulfur ppm ASTM D5185(m) 6587 Lithium ppm ASTM D5185(m) 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Magnesium p	ppm	ASTM D5185(m)		4		
Zinc ppm ASTM D5185(m) 1502 Sulfur ppm ASTM D5185(m) 6587 Lithium ppm ASTM D5185(m) ▲ 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Calcium	ppm	ASTM D5185(m)		794		
Sulfur ppm ASTM D5185(m) 6587 Lithium ppm ASTM D5185(m) ▲ 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Phosphorus p	ppm	ASTM D5185(m)		710		
Lithium ppm ASTM D5185(m) ▲ 10 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Zinc	ppm	ASTM D5185(m)		1502		
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12		ppm	. , ,				
Silicon ppm ASTM D5185(m) >50 124 Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	Lithium	ppm	ASTM D5185(m)		<u> </u>		
Sodium ppm ASTM D5185(m) >150 6 Potassium ppm ASTM D5185(m) >20 12	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185(m) >20 12	Silicon	ppm	ASTM D5185(m)	>50	124		
Potassium ppm ASTM D5185(m) >20 12	Sodium	ppm	ASTM D5185(m)	>150	6		
Glycol % ASTM D7922* 0.0			ASTM D5185(m)	>20	12		
	Glycol	%	ASTM D7922*		0.0		



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	VLITE		
Debris	scalar	Visual*	NONE	VLITE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.1	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		87.3		
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image
GRAPHS						
Iron (ppm)				Lead (ppm)		
Severe			200	Severe		
Abnormal			튎100	Abnormal		
0						
Mar9/20			Mar9/20	Mar9/20		
M			N	M		
Aluminum (ppm)				Chromium (pp	om)	
Severe			30	Severe		
0 + Abnormal			E 20	Abnormal		
0			0			
Mar9/20			Mar9/20	Mar9/20		
≥ Copper (ppm)			2	≥ Silicon (ppm)		
0T :			150	Severe		
O Severe O Abnormal			E 100	Abnormal		
0 + 0			² 50	, , , , , , , , , , , , , , , , , , ,		
Mar9/20 1			Mar9/20	Mar9/20		
∑ Viscosity @ 40°C			Ä	≦ Additives		
O T Abnormal			2000	Additives		
0 - Abnormal			E 1500	calcium phosphorus	3	
Abnormal			E 1000	ZINC		
9				***************************************		
Mar9/20 +			Mar9/20 +	Mar9/20		



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number : 02346788

: WC0438331

Received **Tested** Unique Number : 5030217 Diagnosed

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : 31 Mar 2020 : 01 Apr 2020

: 01 Apr 2020 - Kevin Marson

Agnico Eagle Canada 1350 Government Rd. W, MACASSA COMPLEX

Kirkland Lake, ON CA P2N 3J1

Test Package : MOB 1 (Additional Tests: GLYCOL) To discuss this sample report, contact Customer Service at 1-800-268-2131.

Contact: Jay Gould MacassaMobileUGPlanning@agnicoeagle.com

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.

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