

OIL ANALYSIS REPORT

Area 6 Machine Id 6-3-648 Coal Mill L/P Trunion Gear Pump Fluid

MOBIL MOBILGEAR SHC 460 (300 LTR)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

🔺 Wear

Tin ppm levels are abnormal. Bearing and/or bushing wear is indicated.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

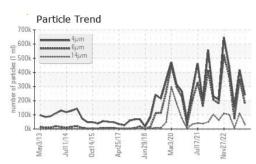
Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

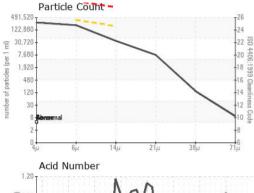


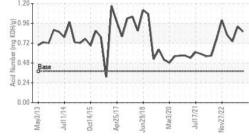
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0925351	WC0902064	WC0842714
Sample Date		Client Info		05 Apr 2024	20 Feb 2024	14 Sep 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>.1	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	3	21	<1
Chromium	ppm	ASTM D5185(m)	>5	0	0	0
Nickel	ppm	ASTM D5185(m)	>5	0	0	<1
Titanium	ppm	ASTM D5185(m)	>3	0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)		<1	2	0
Lead	ppm	ASTM D5185(m)	>12	<1	_ ▲ 9	0
Copper	ppm	ASTM D5185(m)		<1	6	<1
Tin	ppm	ASTM D5185(m)	>9	▲ 16	▲ 114	3
Antimony	ppm	ASTM D5185(m)		1	14	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	maa				history1	history2
Boron	ppm	ASTM D5185(m)	5.7	2	11	9
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	5.7 0.0	2 0	11 0	9
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0	2 0 0	11 0 0	9 0 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0	2 0 0 0	11 0 0 0	9 0 0 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0	2 0 0 0 <1	11 0 0 0 <1	9 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 0.0 0.0	2 0 0 <1 1	11 0 0 0 <1 6	9 0 0 0 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 0.0 180	2 0 0 <1 1 378	11 0 0 0 <1 6 386	9 0 0 0 0 0 <1 446
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 0.0 180 0.8	2 0 0 <1 1 378 <1	11 0 0 0 <1 6 386 <1	9 0 0 0 0 0 <1 446 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 0.0 180	2 0 0 <1 1 378 <1 • 1563	11 0 0 <1 6 386 <1 4531	9 0 0 0 0 <1 446 2 4875
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270	2 0 0 <1 1 378 <1 1563 <1	11 0 0 <1 6 386 <1 4531 <1	9 0 0 0 0 <1 446 2 4875 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 180 0.8 4270	2 0 0 <1 1 378 <1 1563 <1 vurrent	11 0 0 <1 6 386 <1 4531 <1 history1	9 0 0 0 0 <1 446 2 4875 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270	2 0 0 <1 1 378 <1 1563 <1 2 Locurrent 13	11 0 0 (0 <1 6 386 <1 4531 <1 4531 <1 history1 4	9 0 0 0 0 <1 446 2 4875 <1 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 180 0.8 4270	2 0 0 <1 1 378 <1 1563 <1 vurrent	11 0 0 (0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1	9 0 0 0 0 <1 446 2 4875 <1 kistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 180 0.8 4270 Iimit/base >60	2 0 0 <1 1 378 <1 1563 <1 2 Locurrent 13	11 0 0 (0 <1 6 386 <1 4531 <1 4531 <1 history1 4	9 0 0 0 0 <1 446 2 4875 <1 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 180 0.8 4270 Iimit/base >60	2 0 0 <1 1 378 <1 1563 <1 1563 <1 2 13 0	11 0 0 (0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1	9 0 0 0 0 <1 446 2 4875 <1 history2 3 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 0.0 180 0.8 4270 Imit/base >60 >20	2 0 0 <1 1 378 <1 1563 <1 turrent 13 0 0	11 0 0 (-1 6 386 <1 4531 <1 4531 <1 history1 4 <1 <1	9 0 0 0 (1 446 2 4875 <1 history2 3 <1 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 180 0.8 4270 limit/base >60 	2 0 0 -1 1 378 -1 1563 -1 <u>current</u> 13 0 0 <u>current</u>	11 0 0 () () () () () () () () () () () () ()	9 0 0 0 (1 446 2 4875 <1 * history2 3 <1 4 *
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5.7 0.0 0.0 0.0 180 0.8 4270 limit/base >60 	2 0 0 (1 1 378 (1 563 (1 563 (1 563 (1 1 563 (1 1 563 (1 1 563 (1 1 563 (1 1 563 (1 1 1 563 (1 1 1 5 6 1 1 1 5 1 1 1 5 1 1 1 1 5 1 1 1 1	11 0 0 0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1 <1 history1 416462	9 0 0 0 (0 (1 446 2 4875 <1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 3 * 1 * 4 * 1 * 3 * * 1 * 4 * * 1 * * * * * * * * * * * *
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D76477	5.7 0.0 0.0 0.0 180 0.8 4270 imit/base >60 imit/base >20 imit/base >320000 >160000	2 0 0 2 3 1 378 378 378 378 378 378 378 378 378 378	11 0 0 0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1 <1 history1 4 16462 3 50907	9 0 0 0 1 0 1 446 2 4875 <1 4875 <1 history2 3 <1 4 history2 153995 76683
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	5.7 0.0 0.0 0.0 180 0.8 4270 imit/base >60 imit/base >20 imit/base >320000 >160000	2 0 0 (1 378 (1 563 (1 563 (1 563 (1 563 (1 503 (1 503 (1 503 (1 503 (1 503) (1 503 (1 503) (1 50) (1 50) (1 5) (5) (11 0 0 0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1 <1 history1 4 <1 <1 history1 4 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 0 0 0 1 0 1 446 2 4875 <1 4875 <1 3 <1 3 <1 4 3 <1 4 4 153995 153995 76683 6237
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Potassium Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	5.7 0.0 0.0 0.0 180 0.8 4270 Iimit/base >60 \$20 Iimit/base >20 Iimit/base >320000 >160000 >40000 >10000	2 0 0 1 3 1 378 1 378 1 563 3 1 563 3 1 3 0 0 0 2 0 2 40340 1 79454 32079 6805	11 0 0 0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1 <1 history1 416462 350907 110891 30741	9 0 0 0 0 3 446 2 4875 <1 4875 <1 4875 <1 4 3 <1 4 3 <1 4 5 3995 153995 153995 76683 6237 1814
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5.7 0.0 0.0 0.0 180 0.8 4270 Iimit/base >60 S S Iimit/base S S S S S S S S	2 0 0 1 3 1 378 1 378 1 5 378 1 3 1 3 1 3 1 3 0 0 0 0 0 0 0 0 0 0 0 0	11 0 0 0 <1 6 386 <1 4531 <1 4531 <1 history1 4 <1 <1 <1 4 4 3 0 7 1 10891 30741 989	9 0 0 0 1 0 1 446 2 4875 4875 3 3 3 3 3 3 3 3 3 3 1 1 5 395 1 53995 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

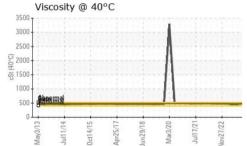


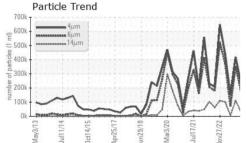
OIL ANALYSIS REPORT









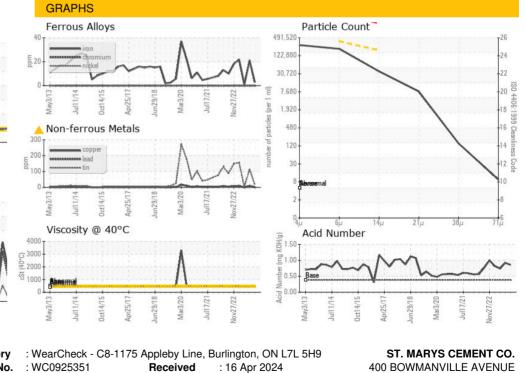


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.38	0.86	0.92	0.74
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	VLITE	NONE	VLITE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	477	481	454	449
SAMPLE IMAGES		method	limit/base	current	history1	history2
						F

Color



Bottom



Laboratory CALA Sample No. : WC0925351 Received : 16 Apr 2024 Lab Number : 02629373 Tested : 17 Apr 2024 ISO 17025:2017 Accredited Laboratory Unique Number : 5762505 Diagnosed : 17 Apr 2024 - Kevin Marson 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.

Report Id: STMBOW [WCAMIS] 02629373 (Generated: 04/17/2024 15:16:12) Rev: 1

CA L1C 7B5 Contact: Lou Traiforos lou.traiforos@vcimentos.com T: (905)440-5874 F: (905)623-4695

BOWMANVILLE, ON

Submitted By: ? Page 2 of 2