

Area 6 Machine Ic

Component Pump Fluid

PROBLEM SUMMARY



WEAR

SEVERE

6

9

162

Sample Rating Trend



RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF). Resample in 30-45 days to monitor this situation.

MOBIL MOBILGEAR SHC 460 (300 LTR)

PROBLEMATIC	TEST RI	ESULTS			
Sample Status				SEVERE	ABNORMAL
Lead	ppm	ASTM D5185(m)	>12	<u> </u>	<1
Copper	ppm	ASTM D5185(m)	>30	<u> </u>	<1
Tin	ppm	ASTM D5185(m)	>9	• 442	3
Antimony	ppm	ASTM D5185(m)		67	0
Particles >6um		ASTM D7647	>20000	251155	47472

Antimony	ppm	ASTM D5185(m)		67	0	4
Particles >6µm		ASTM D7647	>20000	e 251155	4 7472	412665
Particles >14µm		ASTM D7647	>5000	e 159645	3475	95101
Particles >21µm		ASTM D7647	>1300	e 83611	1104	• 18831
Particles >38µm		ASTM D7647	>320	A 1446	60	36
Oil Cleanliness		ISO 4406 (c)	>/21/19	e 25/25/24	4 /23/19	e 26/26/24

Customer Id: STMBOW Sample No.: WC0869895 Lab Number: 02602065 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Kevin Marson +1 (289)291-4644 x4644 Kevin.Marson@wearcheck.com

To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 gloria.gonzalez@wearcheck.com

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Action	Status	Date	Done By	Description
Change Filter			?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample			?	Resample in 30-45 days to monitor this situation. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF).
Check Breathers			?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Dirt Access			?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid			?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

14 Sep 2023 Diag: Wes Davis

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.





view report

15 May 2023 Diag: Kevin Marson



WEAR

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. Tin and antimony ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

04 Jan 2023 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. We recommend that you drain the oil from the component if this has not already been done. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF). Resample in 30-45 days to monitor this situation. Tin ppm levels are severe. Antimony ppm levels are abnormal. Bearing and/or bushing wear is indicated. Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm and oil cleanliness are severely high. Particles >38µm are abnormally high. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.







OIL ANALYSIS REPORT



Fluid

MOBIL MOBILGEAR SHC 460 (300 LTR)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF). Resample in 30-45 days to monitor this situation.

🛑 Wear

Tin and antimony ppm levels are severe. Lead ppm levels are abnormal. Copper ppm levels are noted. Bearing and/or bushing wear is indicated.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0869895	WC0842715	WC0818167
Sample Date		Client Info		28 Nov 2023	14 Sep 2023	15 May 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				SEVERE	ABNORMAL	SEVERE
CONTAMINATION	N	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	15	<1	9
Chromium	ppm	ASTM D5185(m)	>5	0	0	0
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>3	0	0	0
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>7	3	<1	1
Lead	ppm	ASTM D5185(m)	>12	<u> </u>	<1	6
Copper	ppm	ASTM D5185(m)	>30	<u> </u>	<1	9
Tin	ppm	ASTM D5185(m)	>9	• 442	3	1 62
Antimony	ppm	ASTM D5185(m)		67	0	4 24
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		2	0	2
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 5.7	current 8	history1 6	history2 9
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185(m) ASTM D5185(m)	limit/base 5.7 0.0	current 8 <1	history1 6 0	history2 9 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base 5.7 0.0 0.0	current 8 <1 0	history1 6 0 0	history2 9 0 0
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0	current 8 <1 0 0	history1 6 0 0 0	history2 9 0 0 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0	current 8 <1 0 0 <1	history1 6 0 0 0 0 0	history2 9 0 0 <1 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	methodASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 0.0	Current 8 <1 0 0 <1 9	history1 6 0 0 0 0 <1	history2 9 0 0 <1 0 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180	current 8 <1 0 0 9 361	history1 6 0 0 0 0 <1 420	history2 9 0 0 <1 0 1 437
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	methodASTM 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)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.8	Current 8 <1 0 0 <1 9 361 1	history1 6 0 0 0 0 2	history2 9 0 0 (1 437 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270	current 8 <1 0 01 02 361 1 3969	history1 6 0 0 0 0 0 0 <1 420 2 4483	history2 9 0 0 <1 0 1 437 2 4484
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270	current 8 <1 0 0 <1 9 361 1 3969 <1	history1 6 0 0 0 2 4483 <1	history2 9 0 0 <1 0 1 437 2 4484 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base	current 8 <1 0 1 361 1 3969 <1 current	history1 6 0 0 0 0 <1 420 2 4483 <1 history1	history2 9 0 0 <1 0 1 437 2 4484 <1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60	current 8 <1 0 361 1 3969 <1 Current	history1 6 0 0 0 <1 420 2 4483 <1 history1 2	history2 9 0 0 <1 0 1 437 2 4484 <1 history2 2 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60	current 8 <1 0 0 <1 9 361 1 3969 <1 current 7 <1	history1 6 0 0 0 2 4483 <1 history1 2 41	history2 9 0 0 1 437 2 4484 <1 history2 2 4484 <1 1 437 2 4484 <1 1 41 2 2 2 2 2 21
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60 s>20	current 8 <1 0 01 01 01 01 01 01 01 01 01 01 01 01 02 361 1 3969 <1 Current 7 <1 <1	history1 6 0 0 0 0 0 2 4483 <1 history1 2 41 0 <1 2 41 0	history2 9 0 0 <1 0 1 437 2 4484 <1 history2 2 <1 2 <1 2 <1 2 <1 <1 <1 <1
ADDITIVES 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	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60 s20	current 8 <1 0 <1 9 361 1 3969 <1 current 7 <1 <1 current current current	history1 6 0 0 0 0 2 4483 <1 history1 2 <10 0 0 10 11 12 13 14 15 14 15 16 16 17 18 14 14 15 16 16 17 17 18	history2 9 0 0 1 437 2 4484 <1 history2 2 41 1 437 2 4484 <1 history2 2 <1 history2 <1 history2
ADDITIVES 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	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60 s20 limit/base	current 8 <1 0 <1 9 361 1 3969 <1 Current 7 <1 <1 265842	history1 6 0 0 0 0 2 4483 <1 history1 2 <10 10 11 12 <10 history1 133584	history2 9 0 1 437 2 4484 <1 history2 2 41 1 437 2 4484 <1 history2 2 <1 510976
ADDITIVES 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	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60 >20 limit/base >20000	current 8 <1 0 <1 9 361 1 3969 <1 current 7 <1 265842 251155	history1 6 0 0 0 0 2 4483 <1 1 2 4483 <1 bistory1 2 <1 0 133584 < 172	history2 9 0 1 437 2 4484 <1 history2 2 4484 <1 1 510976 412665
ADDITIVES 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	method ASTM D5185(m)	limit/base 5.7 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60 limit/base >20 limit/base	current 8 <1 0 <1 9 361 1 3969 <1 current 7 <1 265842 251155 159645	history1 6 0 0 0 0 2 4483 <1 420 2 4483 <1 bistory1 2 <1 0 bistory1 133584 47472 3475	history2 9 0 0 1 437 2 4484 <1 history2 2 4484 <1 history2 2 1 1 1 4484 <1 history2 2 1 4484 <1 2 412665 95101
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	limit/base 5.7 0.0 0.0 0.0 0.0 180 0.8 4270 limit/base >60 limit/base >20 limit/base >200 limit/base	current 8 <1 0 <1 9 361 1 3969 <1 Current 7 <1 265842 251155 159645 83611	history1 6 0 0 0 0 2 4483 <1 2 4483 <1 0 history1 2 <1 0 history1 133584 47472 3475 1104	history2 9 0 0 1 437 2 4484 <1 history2 2 412665 95101 18831
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	<pre>limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.8 4270 imit/base >60 s=20 limit/base >200 limit/base >20000 >50000 >1300 >320</pre>	current 8 <1 0 <1 9 361 1 3969 <1 Current 7 <1 265842 251155 159645 83611 / 1446	history1 6 0 0 0 2 4483 <1 420 2 4483 <1 bistory1 2 <1 133584 47472 3475 1104 60	history2 9 0 <1 0 1 437 2 4484 <1 history2 2 412665 95101 18831 36
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.0 180 0.8 4270 limit/base >60 >20 limit/base >20000 >5000 >1300 >320 >80	Current 8 <1 0 <1 9 361 1 3969 <1 0 <1 265842 159645 83611 1446 1	history1 6 0 0 0 0 2 4483 <1 420 2 4483 <1 bistory1 2 <1 0 133584 ↓ 133584 ↓ 1104 60 6 6	history2 9 0 1 437 2 4484 <1 bistory2 4484 <1 510976 412665 95101 18831 36 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >21µm Particles >71µm Oil Cleanliness	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185(m) ASTM D7647 ASTM D7	limit/base 5.7 0.0 0.0 0.0 0.0 0.0 180 0.0 180 0.8 4270 limit/base >60 >20 limit/base >20000 >5000 >1300 >320 >80 >/21/19	current 8 <1 0 <1 9 361 1 3969 <1 0 <1 265842 251155 159645 83611 1446 1 25/25/24	history1 6 0 0 0 0 2 4483 <1 420 2 4483 <1 bistory1 2 <1 0 bistory1 133584 47472 3475 1104 60 6 24/23/19	history2 9 0 1 437 2 4484 <1 history2 21 437 2 4484 <1 bistory2 2 <1 bistory2 510976 412665 95101 18831 36 0 26/26/24



OIL ANALYSIS REPORT



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.

ST. MARYS CEMENT CO. 400 BOWMANVILLE AVENUE BOWMANVILLE, ON CA L1C 7B5 Contact: Lou Traiforos lou.traiforos@vcimentos.com T: (905)440-5874 F: (905)623-4695

106/19

Report Id: STMBOW [WCAMIS] 02602065 (Generated: 12/12/2023 16:42:43) Rev: 1

NEG NEG NEG 457 450 456

0.65

NONE

NONE

NONE

NONE

VLITE

NONE

NORML

NORML

NEG

0.80

NONE

NONE

NONE

VLITE

NONE

NONE

NORML

NORML

20

14

12 8

NEG

0.88

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

Particle Count

Acid Number

pr25/1 un29/1

491

122,88

30,720

7.680

480

120

30

(^b/HOX ^Bm) J

Ë 0.50 B

0.00 Acid N

111n

Der 1,920 NEG