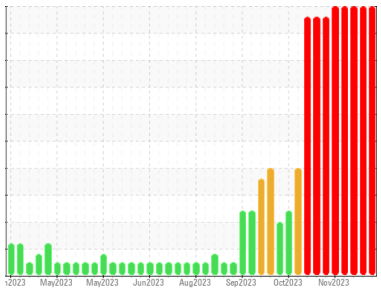
PROBLEM SUMMARY

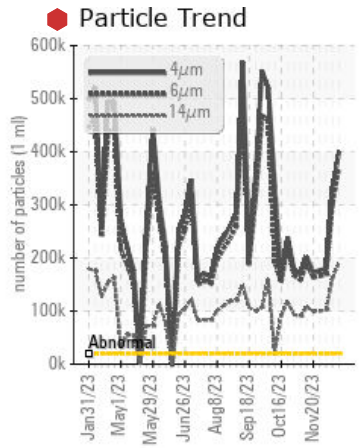
Sample Rating Trend

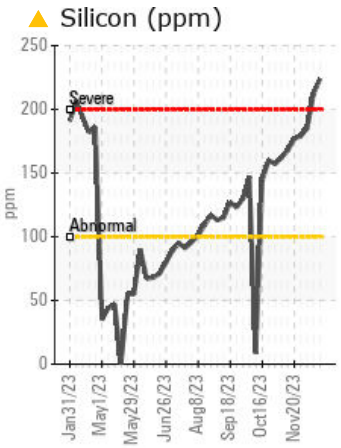


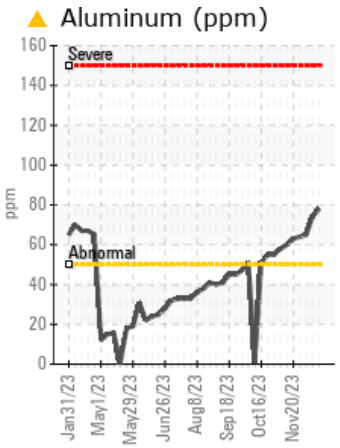
ISO

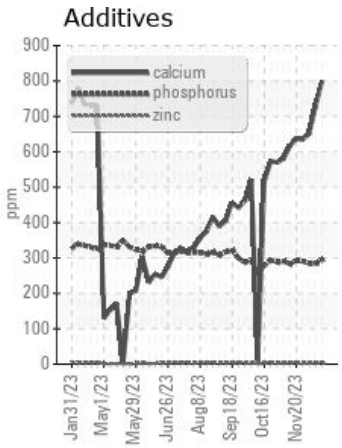
Area
3
Machine Id
3-101-MG Primary
Component
Crusher
Fluid
MOBIL MOBILGEAR 600 XP 320 (2900 LTR)

COMPONENT CONDITION SUMMARY









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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Silicon	ppm	ASTM D5185(m)	>100	▲ **224**	▲ 212	▲ 185
Particles >4µm		ASTM D7647	>20000	⬢ **400642**	⬢ 326958	⬢ 179935
Particles >6µm		ASTM D7647	>5000	⬢ **369766**	⬢ 303121	⬢ 169476
Particles >14µm		ASTM D7647	>640	⬢ **191370**	⬢ 162560	⬢ 102267
Particles >21µm		ASTM D7647	>160	⬢ **65985**	⬢ 60343	⬢ 49474
Particles >38µm		ASTM D7647	>40	▲ **81**	▲ 214	⬢ 361
Oil Cleanliness		ISO 4406 (c)	>21/19/16	⬢ **26/26/25**	⬢ 26/25/25	⬢ 25/25/24

Customer Id: STMBOW
Sample No.: WC0883460
Lab Number: 02605122
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

RECOMMENDED ACTIONS

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.
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	NOTE: We recommend using IND 3 test kits,
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.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
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

ISO

11 Dec 2023 Diag: Kevin Marson

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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.Aluminum ppm levels are noted. All other component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Additive levels indicate the addition of a different brand, or type of oil. 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

ISO

04 Dec 2023 Diag: Kevin Marson

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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.Component wear rates appear to be normal (unconfirmed). There is a high amount of particulates (2 to 100 microns in size) present in the oil. There is a moderate concentration of dirt present in the oil. Additive levels indicate the addition of a different brand, or type of oil. 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

ISO

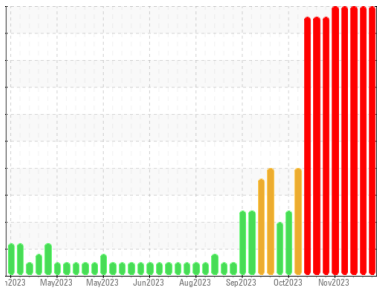
28 Nov 2023 Diag: Kevin Marson

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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.Component wear rates appear to be normal (unconfirmed). There is a high amount of particulates (2 to 100 microns in size) present in the oil. There is a moderate concentration of dirt present in the oil. Additive levels indicate the addition of a different brand, or type of oil. 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

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
3
Machine Id
3-101-MG Primary
Component
Crusher
Fluid
MOBIL MOBILGEAR 600 XP 320 (2900 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

Aluminum ppm levels are noted. All other component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. 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 INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0883460**	WC0822073	WC0869852
Sample Date		Client Info		**19 Dec 2023**	11 Dec 2023	04 Dec 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**	SEVERE	SEVERE

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 D5185(m)	>200	**119**	115	104
Chromium	ppm	ASTM D5185(m)	>15	**1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>15	**1**	2	1
Titanium	ppm	ASTM D5185(m)		**4**	3	3
Silver	ppm	ASTM D5185(m)		**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>50	▲ **78**	▲ 74	65
Lead	ppm	ASTM D5185(m)	>100	**21**	21	19
Copper	ppm	ASTM D5185(m)	>200	**91**	84	80
Tin	ppm	ASTM D5185(m)	>15	**10**	9	8
Antimony	ppm	ASTM D5185(m)	>5	**0**	0	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

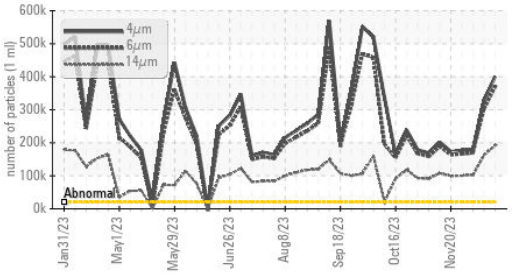
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	57	**10**	11	10
Barium	ppm	ASTM D5185(m)	0.0	**0**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	2.0	**0**	0	0
Manganese	ppm	ASTM D5185(m)	0.0	**1**	1	<1
Magnesium	ppm	ASTM D5185(m)	0.0	**37**	35	31
Calcium	ppm	ASTM D5185(m)	42	**800**	728	651
Phosphorus	ppm	ASTM D5185(m)	399	**294**	285	285
Zinc	ppm	ASTM D5185(m)	13	**3**	3	3
Sulfur	ppm	ASTM D5185(m)	13649	**11011**	10181	10222
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>100	▲ **224**	▲ 212	▲ 185
Sodium	ppm	ASTM D5185(m)		**5**	5	4
Potassium	ppm	ASTM D5185(m)	>20	**34**	30	27

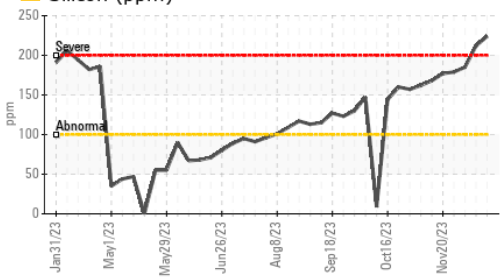
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	⬢ **400642**	⬢ 326958	⬢ 179935
Particles >6µm		ASTM D7647	>5000	⬢ **369766**	⬢ 303121	⬢ 169476
Particles >14µm		ASTM D7647	>640	⬢ **191370**	⬢ 162560	⬢ 102267
Particles >21µm		ASTM D7647	>160	⬢ **65985**	⬢ 60343	⬢ 49474
Particles >38µm		ASTM D7647	>40	▲ **81**	▲ 214	⬢ 361
Particles >71µm		ASTM D7647	>10	**0**	0	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	⬢ **26/26/25**	⬢ 26/25/25	⬢ 25/25/24

OIL ANALYSIS REPORT

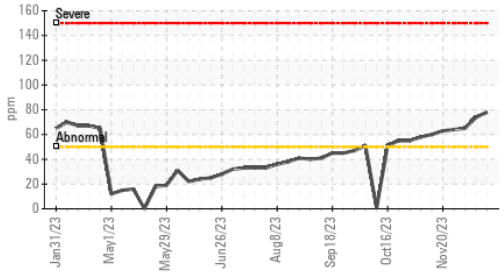
Particle Trend



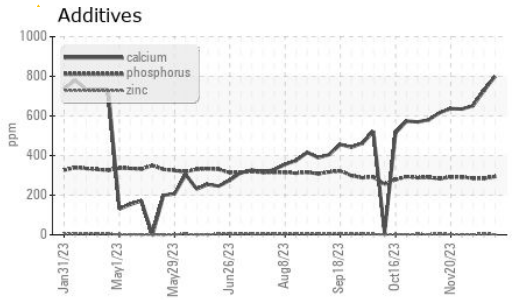
Silicon (ppm)



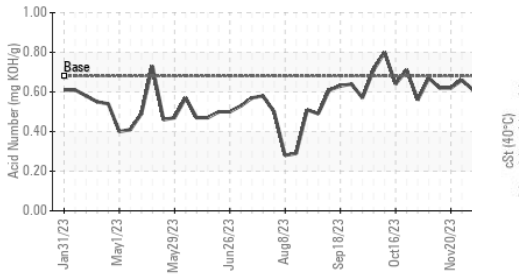
Aluminum (ppm)



Additives



Acid Number

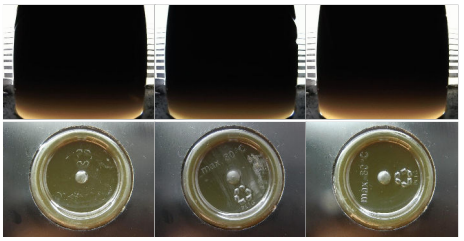


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.68	**0.65**	0.62	0.61

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	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	HAZY	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

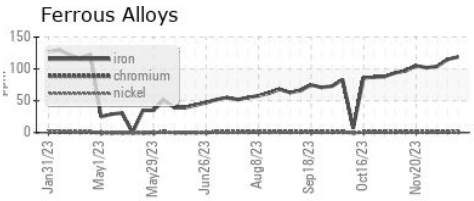
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	275	**315**	315	316

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

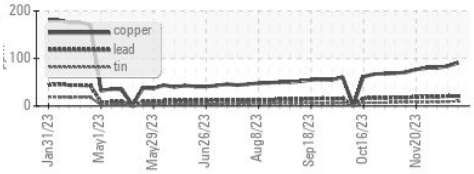


GRAPHS

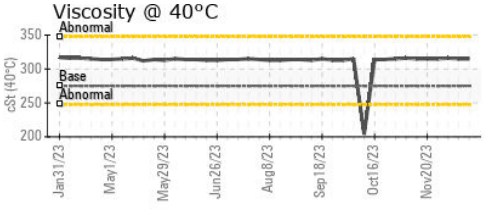
Ferrous Alloys



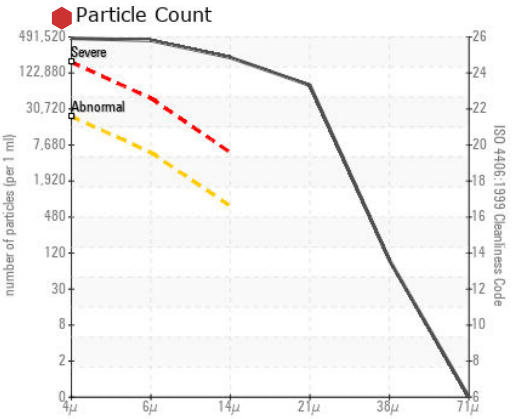
Non-ferrous Metals



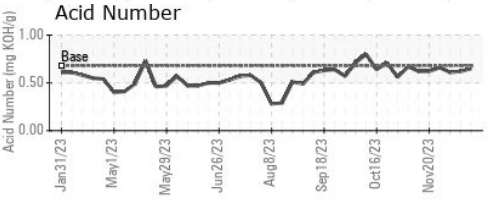
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0883460 **Recieved** : 22 Dec 2023
Lab Number : 02605122 **Diagnosed** : 27 Dec 2023
Unique Number : 5698207 **Diagnostician** : 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.

ST. MARYS CEMENT CO.
400 BOWMANVILLE AVENUE
BOWMANVILLE, ON
CA L1C 7B5
Contact: Carlos Barberi
carlos.barberi@vcimentos.com
T: (905)623-3341
F: (905)623-4695

Report Id: STMBOW [WCAMIS] 02605122 (Generated: 12/27/2023 17:50:26) Rev: 1

Submitted By: ?