

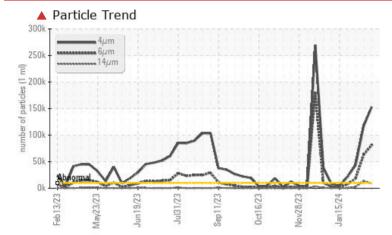
Area

# **PROBLEM SUMMARY**

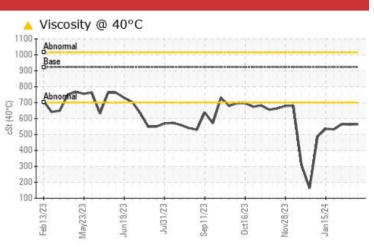
Machine Id 5-3-230-D Pump Station for Atox Roller Lube

Reservoir Bearing Lube Fluid MOBIL SHC 639 (1000 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. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS								
Sample Status				SEVERE	SEVERE	SEVERE		
Particles >4µm		ASTM D7647	>10000	<b>153037</b>	<b>1</b> 17073	<b>4</b> 3457		
Particles >6µm		ASTM D7647	>2500	<b>a</b> 81344	▲ 62998	<b>1</b> 8305		
Particles >14µm		ASTM D7647	>160	<b>&amp;</b> 8673	<b>1</b> 3336	<b>a</b> 2634		
Particles >21µm		ASTM D7647	>40	<b>4</b> 2076	<b>4866</b>	<b>6</b> 03		
Particles >38µm		ASTM D7647	>10	<b>88</b>	▲ 385	18		
Oil Cleanliness		ISO 4406 (c)	>20/18/14	<b>4</b> 24/24/20	<b>4</b> /23/21	<b>a</b> 23/21/19		
Visc @ 40°C	cSt	ASTM D7279(m)	923	🔺 565	▲ 562	▲ 565		

Customer Id: STMBOW Sample No.: WC0912460 Lab Number: 02621507 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 <u>gloria.gonzalez@wearcheck.com</u>

RECONNINENDED P	40110113			
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.
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

### 26 Feb 2024 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. Resample in 30-45 days to monitor this situation.All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. Viscosity of sample indicates oil is within ISO 460 range, advise investigate. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.



#### 29 Jan 2024 Diag: Bill Quesnel



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.All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. Viscosity of sample indicates oil is within ISO 460 range, advise investigate. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.



# 22 Jan 2024 Diag: Bill Quesnel



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. Viscosity of sample indicates oil is within ISO 460 range, advise investigate. 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**



Reservoir Bearing Lube Fluid MOBIL SHC 639 (1000 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. Resample in 30-45 days to monitor this situation.

### Wear

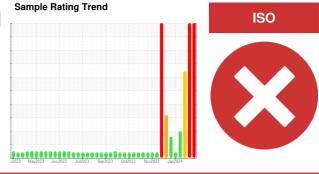
All component wear rates are normal.

### Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil.

#### Fluid Condition

Viscosity of sample indicates oil is within ISO 460 range, advise investigate. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.



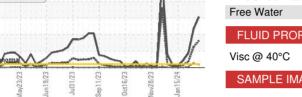
	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0912460	WC0902022	WC0873672
Sample Date		Client Info		05 Mar 2024	26 Feb 2024	29 Jan 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	SEVERE
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	2	2	<1
Chromium	ppm	ASTM D5185(m)	>5	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>4	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>30	<1	0	0
Copper	ppm	ASTM D5185(m)	>17	<1	0	<1
Tin	ppm	ASTM D5185(m)	>10	0	0	0
Antimony	ppm	ASTM D5185(m)		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)	0.2	0	0	0
Barium	ppm	ASTM D5185(m)	0.0	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m)	0.0	0 0	0	0
Molybdenum	ppm	ASTM D5185(m)	0.0	0	0	0
Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6	0 0	0	0
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6	0 0 0	0 0 0	0 0 0
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6 0.0	0 0 0 5	0 0 0 <1	0 0 0 1
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6 0.0 691	0 0 0 5 387	0 0 0 <1 365	0 0 0 1 384
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)	0.0 0.0 0.6 0.0 691 2.0	0 0 5 387 3	0 0 <1 365 1	0 0 0 1 384 1
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)	0.0 0.0 0.6 0.0 691 2.0	0 0 5 387 3 43	0 0 <1 365 1 10	0 0 1 384 1 46
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)	0.0 0.0 0.6 0.0 691 2.0 18	0 0 5 387 3 43 <1	0 0 <1 365 1 10 <1	0 0 1 384 1 46 <1
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) <b>method</b>	0.0 0.0 0.6 0.0 691 2.0 18 Iimit/base	0 0 5 387 3 43 <1 current	0 0 <1 365 1 10 <1 history1	0 0 1 384 1 46 <1 history2
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) <b>method</b> ASTM D5185(m)	0.0 0.0 0.6 0.0 691 2.0 18 Iimit/base	0 0 5 387 3 43 <1 current 14	0 0 <1 365 1 10 <1 history1 13	0 0 1 384 1 46 <1 <b>history2</b> 14
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	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)	0.0 0.0 0.6 0.0 691 2.0 18 Imit/base >25	0 0 5 387 3 43 <1 <b>current</b> 14 0	0 0 <1 365 1 10 <1 <b>history1</b> 13 0	0 0 1 384 1 46 <1 <u>history2</u> 14 0
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6 0.0 691 2.0 18 18 <b>limit/base</b> >25 >20	0 0 5 387 3 43 <1 <b>current</b> 14 0 <1	0 0 <1 365 1 10 <1 <b>history1</b> 13 0 <1	0 0 1 384 1 46 <1 <b>history2</b> 14 0 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6 0.0 691 2.0 18 18 18 10 18 2.5 525 >20 10 10 10 10 10 10 10 10 10 10 10 10 10	0 0 0 5 387 3 43 <1 <b>current</b> 14 0 <1 <b>current</b>	0 0 () () () () () () () () () () () () ()	0 0 1 384 1 46 <1 <b>history2</b> 14 0 <1 <b>history2</b>
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6 0.0 691 2.0 18 18 2.0 18 2.0 225 >20 10000	0 0 0 5 387 3 43 <1 current 14 0 <1 current 14 0 <1 14 0 <1 14	0 0 0 <1 365 1 10 <1 • • • • • • • • • • • • • • • • • •	0 0 0 1 384 1 46 <1
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	ASTM D5185(m) ASTM D5185(m)	0.0 0.0 0.6 0.0 691 2.0 18 18 <b>limit/base</b> >25 >20 <b>limit/base</b> >20 <b>limit/base</b> >20 >20 >10000 >2500 >160	0 0 0 5 387 3 43 <1 current 14 0 <1 current 14 0 <1 turrent 0 <1 current	0 0 0 <1 365 1 10 <1 • <b>history1</b> 13 0 <1 × 13 0 <1 × 13 0 <1 × 117073 ▲ 117073	0 0 0 1 384 1 46 <1 46 <1 <b>history2</b> 14 0 <1 14 0 <1 14 0 <1 <b>history2</b> 14 14 0 <1 14 0 <1 1 4 3 0 <1 1 1 4 3 8 4 1 4 3 8 4 1 1 4 6 1 1 1 4 6 1 1 1 1 1 1 1 1 1 1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	0.0 0.0 0.6 0.0 691 2.0 18 18 <b>limit/base</b> >25 >20 <b>limit/base</b> >20 <b>limit/base</b> >20 >20 >10000 >2500 >160	0 0 0 5 387 3 43 <1 <1 Current 14 0 <1 Current 14 0 <1 Surrent 4 81344 ▲ 8673	0 0 0 <1 365 1 10 <1 ×1 13 0 <1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1 ×1	0 0 0 1 384 1 46 <1 • • • • • • • • • • • • • • • • • •
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0.0 0.0 0.6 0.0 691 2.0 18 2.0 18 2.0 18 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0 0 0 5 387 3 43 <1	0 0 0 <1 365 1 10 <1 • 13 0 <1 • 13 0 <1 • • • • • • • • • • • • • • • • • •	0 0 0 1 384 1 46 4 1 46 4 1 4 1 4 0 <1 14 0 <1 14 0 <1 14 0 <1 14 0 <1 14 0 <1 14 0 <1 14 0 <1 1 14 0 <1 1 14 0 <1 1 1 1 4 3 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	0.0 0.0 0.6 0.0 691 2.0 18 <b>limit/base</b> >25 >20 <b>limit/base</b> >20 <b>limit/base</b> >20 >10000 >2500 >160 >40 >40	0 0 0 5 387 3 43 <1 <b>current</b> 14 0 <1 <b>t</b> 4 153037 ▲ 81344 ▲ 8673 ▲ 2076 ▲ 88	0 0 0 <1 365 1 10 <1 • 13 0 <1 • 13 0 <1 • 13 0 <1 • 13 0 <1 • 13 0 <1 • • • • • • • • • • • • • • • • • •	0 0 0 1 384 1 46 <1 • <b>history2</b> 14 0 <1 • <b>history2</b> ↓ 43457 • ↓ 18305 • ↓ 18305 • ↓ 2634 •

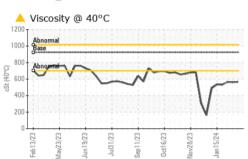


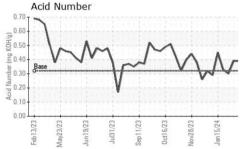
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# **OIL ANALYSIS REPORT**

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k <b>[∰</b> Ω			23	S	C3	53	54
Feb 13/23	May23/23	Jun19/23	Jul31/23	Sep11/23	0ct16/23	Nov28/23	Jan 15/24
Feb 13,	May23,	Jun19,	Jul31,	Sep11/	0ct16,	Nov28,	Jan 15,
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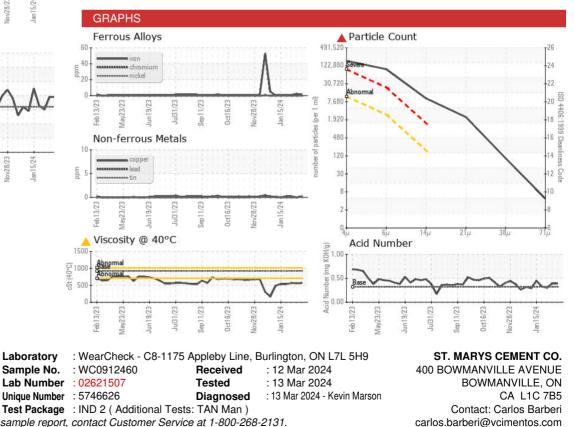






FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.32	0.39	0.39	0.30
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	LIGHT	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	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)	923	<b>6</b> 5	▲ 562	▲ 565
SAMPLE IMAGES	S	method	limit/base	current	history1	history2
Color						

Bottom



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.

CALA

ISO 17025:2017 Accredited Laboratory

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