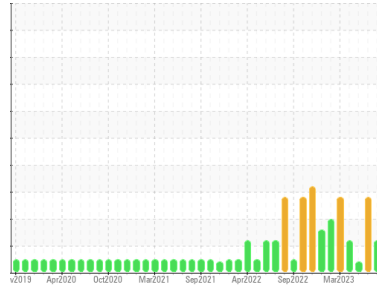




# PROBLEM SUMMARY

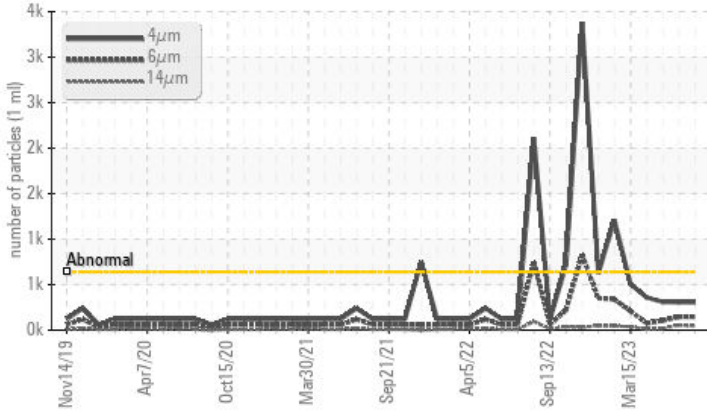
Area  
**Direct Strip Mill/Finishing**  
 Machine Id  
**SH7 HYDRAULIC SYSTEM (DSC010) (S/N 1000016488)**  
 Component  
**Hydraulic System**  
 Fluid  
**HOUGHTON HOUGHTO-SAFE 620 (15000 LTR)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status			<b>ABNORMAL</b>	ABNORMAL	ATTENTION
Particles >14µm	ASTM D7647	>20	▲ <b>43</b>	▲ 54	17
Particles >21µm	ASTM D7647	>4	▲ <b>19</b>	▲ 25	▲ 9
Oil Cleanliness	ISO 4406 (c)	>16/14/11	▲ <b>15/14/13</b>	▲ 15/14/13	15/14/11

Customer Id: ALGSSM  
 Sample No.: WC0780834  
 Lab Number: 02575513  
 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](mailto:Kevin.Marson@wearcheck.com)

To change component or sample information:  
 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto: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	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: We recommend using IND 3 test kits,
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

### DEGRADATION



#### 21 Jun 2023 Diag: Kevin Marson

Due to the low reserve alkalinity it is advised that you contact HOUGHTON to assist in restoring the proper amine concentration. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The reserve alkalinity of this fluid is lower than acceptable. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The water concentration 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



#### 15 May 2023 Diag: Kevin Marson

We recommend you service the filters on this component. Resample at the next service interval to monitor. 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 light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration level is acceptable for this fluid. The condition of the oil is suitable for further service.

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### DEGRADATION



#### 18 Apr 2023 Diag: Kevin Marson

Due to the low reserve alkalinity it is advised that you contact HOUGHTON to assist in restoring the proper amine concentration. We recommend an early resample to monitor this condition. 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). The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The reserve alkalinity of this fluid is lower than acceptable. The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The water concentration level is acceptable for this fluid.

[view report](#)





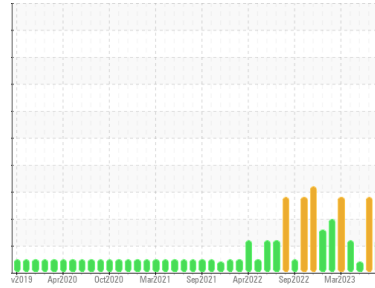
# OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area  
**Direct Strip Mill/Finishing**  
 Machine Id  
**SH7 HYDRAULIC SYSTEM (DSC010) (S/N 1000016488)**  
 Component  
**Hydraulic System**  
 Fluid  
**HOUGHTON HOUGHTO-SAFE 620 (15000 LTR)**



## DIAGNOSIS

### Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

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

### Fluid Condition

The AN level is acceptable for this fluid. The pH level of this fluid is within the acceptable limits. The reserve alkalinity of this fluid is acceptable. The water concentration 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		<b>WC0780834</b>	WC0813659	WC0780843
Sample Date	Client Info		<b>08 Aug 2023</b>	21 Jun 2023	15 May 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ATTENTION

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>40	<b>0</b>	<1
Chromium	ppm	ASTM D5185(m)	>4	<b>0</b>	<1
Nickel	ppm	ASTM D5185(m)	>20	<b>0</b>	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0
Silver	ppm	ASTM D5185(m)		<b>&lt;1</b>	0
Aluminum	ppm	ASTM D5185(m)	>4	<b>0</b>	<1
Lead	ppm	ASTM D5185(m)	>10	<b>0</b>	0
Copper	ppm	ASTM D5185(m)	>60	<b>&lt;1</b>	1
Tin	ppm	ASTM D5185(m)	>4	<b>0</b>	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<b>2</b>	<1
Barium	ppm	ASTM D5185(m)		<b>1</b>	0
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	<1
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0
Magnesium	ppm	ASTM D5185(m)		<b>2</b>	<1
Calcium	ppm	ASTM D5185(m)		<b>2</b>	<1
Phosphorus	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1
Zinc	ppm	ASTM D5185(m)		<b>0</b>	0
Sulfur	ppm	ASTM D5185(m)		<b>55</b>	7
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1

## CONTAMINANTS

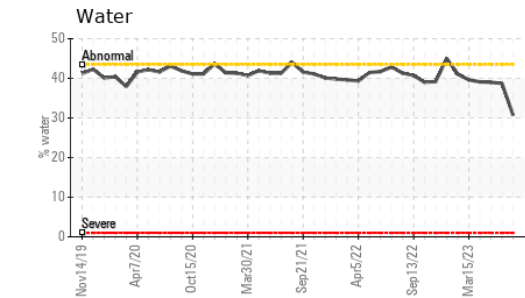
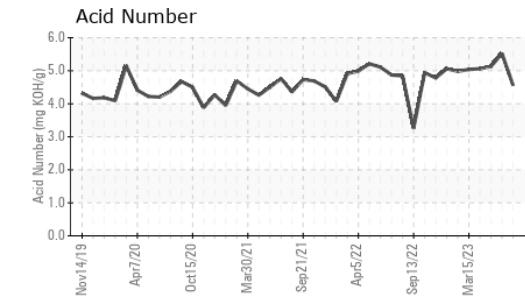
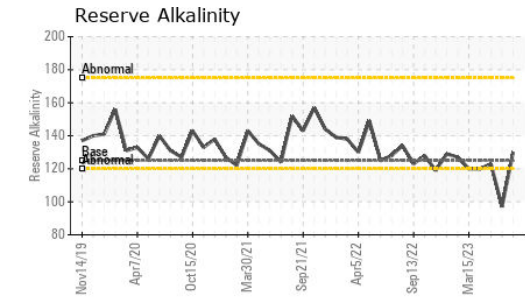
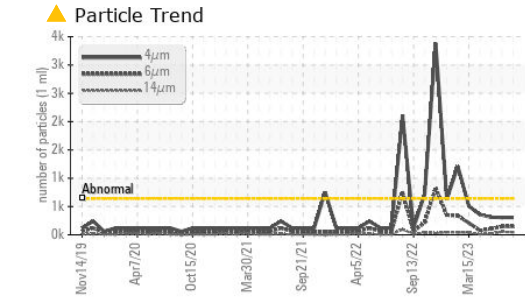
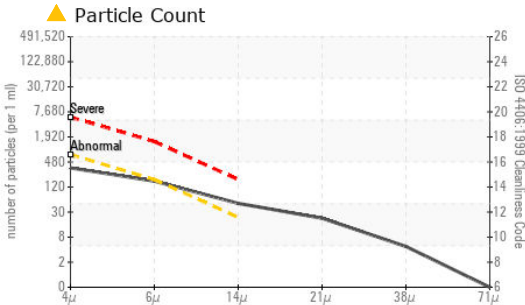
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0
Sodium	ppm	ASTM D5185(m)		<b>14</b>	32
Potassium	ppm	ASTM D5185(m)	>20	<b>20</b>	16
Water	%	ASTM D6304*	>43.5	<b>30.7</b>	38.7
ppm Water	ppm	ASTM D6304*	>435000	<b>307000</b>	387000

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>640	<b>305</b>	306	310
Particles >6µm	ASTM D7647	>160	<b>147</b>	147	106
Particles >14µm	ASTM D7647	>20	<b>▲ 43</b>	▲ 54	17
Particles >21µm	ASTM D7647	>4	<b>▲ 19</b>	▲ 25	▲ 9
Particles >38µm	ASTM D7647	>3	<b>4</b>	▲ 6	3
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	2
Oil Cleanliness	ISO 4406 (c)	>16/14/11	<b>▲ 15/14/13</b>	▲ 15/14/13	15/14/11



# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **ALGOMA STEEL INC. - STORES DEPT.**  
**Sample No.** : WC0780834 **Received** : 11 Aug 2023  
**Lab Number** : 02575513 **Diagnosed** : 22 Aug 2023  
**Unique Number** : 5620564 **Diagnostician** : Kevin Marson  
**Test Package** : IND 2 ( Additional Tests: KF, pH, ReserveAlk, 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.

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	<b>4.56</b>	5.52	5.13
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	<b>130</b>	▲ 97	123

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	FRGLY	FRGLY
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>43.5	>10%	>10%
Free Water	scalar	Visual*	<b>NEG</b>	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*	<b>9.56</b>	9.21	9.47
Visc @ 40°C	cSt	ASTM D7279(m)	<b>43.1</b>	43.9	45.2

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

