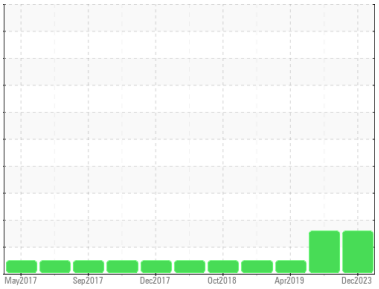
PROBLEM SUMMARY

Sample Rating Trend

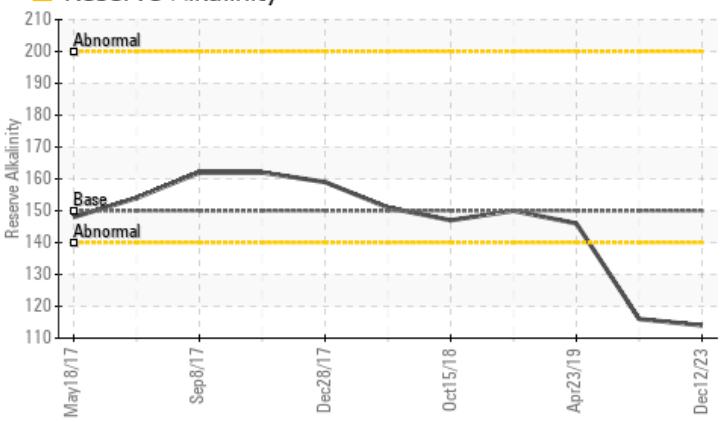


DEGRADATION

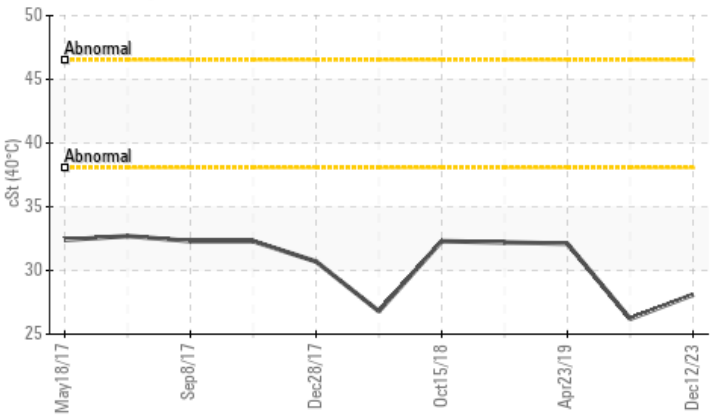
Area
#2 Slab Caster
Machine Id
MAIN HYD (STL003) (S/N 1000025481)
Component
Hydraulic System
Fluid
HOUGHTON HOUGHTON SAFE 616 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Reserve Alkalinity



▲ Viscosity @ 40°C



RECOMMENDATION

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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	NORMAL
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	150	▲ **114**	▲ 116	146
Visc @ 40°C	cSt	ASTM D7279(m)		▲ **28.1**	▲ 26.2	32.1

Customer Id: ALGSSM
Sample No.: WC0837444
Lab Number: 02603190
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
Resample	---	---	?	We recommend an early resample to monitor this condition.
Contact Required	---	---	?	Due to the low reserve alkalinity it is advised that you contact HOUGHTON to assist in restoring the proper amine concentration.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS

29 Dec 2022 Diag: Bill Quesnel

DEGRADATION

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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. 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. Viscosity of sample indicates oil is within ISO 22 range, advise investigate. 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

23 Apr 2019 Diag: Bill Quesnel

NORMAL

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. 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.

view report

28 Feb 2019 Diag: Wes Davis

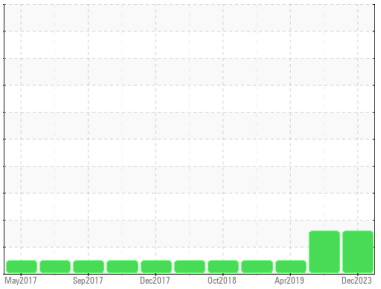
NORMAL

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. 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.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
#2 Slab Caster
Machine Id
MAIN HYD (STL003) (S/N 1000025481)
Component
Hydraulic System
Fluid
HOUGHTON HOUGHTON SAFE 616 (--- GAL)

DIAGNOSIS

Recommendation

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. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

The reserve alkalinity of this fluid is lower than acceptable. Viscosity of sample indicates oil is within ISO 32 range, advise investigate. 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0837444**	WC0644149	WC0309659
Sample Date		Client Info		**12 Dec 2023**	29 Dec 2022	23 Apr 2019
Machine Age	mths	Client Info		**0**	0	0
Oil Age	mths	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

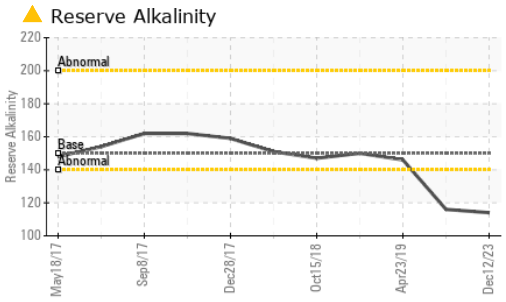
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**0**	2	0
Chromium	ppm	ASTM D5185(m)	>20	**0**	<1	0
Nickel	ppm	ASTM D5185(m)	>20	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	1	0
Aluminum	ppm	ASTM D5185(m)	>20	**0**	<1	0
Lead	ppm	ASTM D5185(m)	>20	**0**	0	0
Copper	ppm	ASTM D5185(m)	>20	**0**	2	0
Tin	ppm	ASTM D5185(m)	>20	**0**	<1	0
Antimony	ppm	ASTM D5185(m)		**<1**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

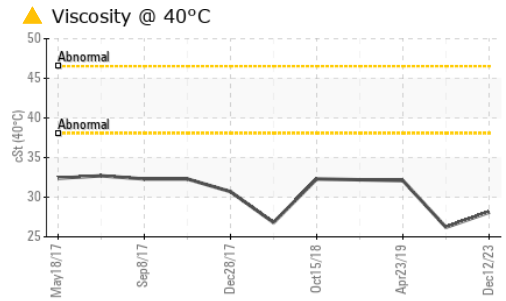
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	2	0
Barium	ppm	ASTM D5185(m)		**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)		**0**	<1	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**<1**	1	0
Calcium	ppm	ASTM D5185(m)		**<1**	2	<1
Phosphorus	ppm	ASTM D5185(m)		**3**	2	<1
Zinc	ppm	ASTM D5185(m)		**0**	<1	0
Sulfur	ppm	ASTM D5185(m)		**64**	16	0
Lithium	ppm	ASTM D5185(m)		**<1**	<1	0

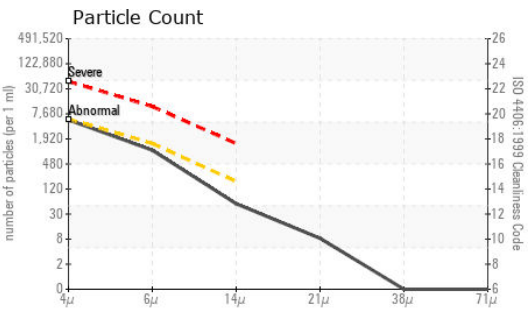
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**<1**	<1	0
Sodium	ppm	ASTM D5185(m)		**36**	43	37
Potassium	ppm	ASTM D5185(m)	>20	**34**	38	5
Water	%	ASTM D6304*	>55	**48.6**	49.97	41.1
ppm Water	ppm	ASTM D6304*	>55000	**486000**	499788.1	411000

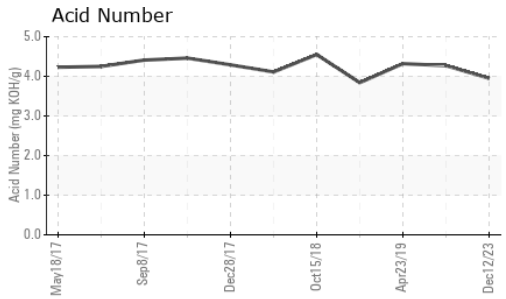
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**4809**	2852	120
Particles >6µm		ASTM D7647	>1300	**900**	1014	60
Particles >14µm		ASTM D7647	>160	**47**	123	15
Particles >21µm		ASTM D7647	>40	**7**	41	2
Particles >38µm		ASTM D7647	>10	**0**	10	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**19/17/13**	19/17/14	14/13/11

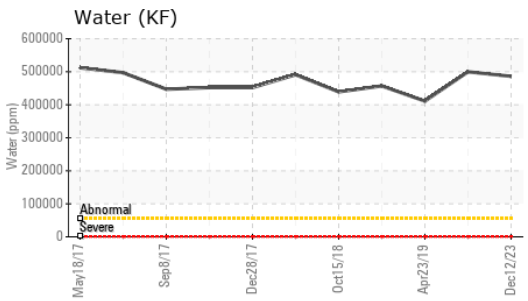
OIL ANALYSIS REPORT







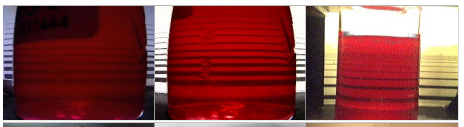
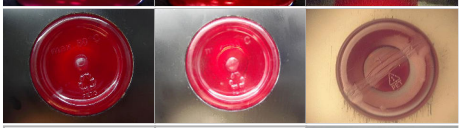




FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**3.95**	4.27	4.32
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	150	▲ **114**	▲ 116	146

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	**FRGLY**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>55	**>10%**	NEG	>10%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*		**9.03**	9.33	9.58
Visc @ 40°C	cSt	ASTM D7279(m)		▲ **28.1**	▲ 26.2	32.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter			*no image*	*no image*	

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **ALGOMA STEEL INC. - STORES DEPT.**
Sample No. : WC0837444 **Recieved** : 14 Dec 2023 301 WALLACE TERRACE
Lab Number : 02603190 **Diagnosed** : 18 Dec 2023 SAULT STE MARIE, ON
Unique Number : 5696275 **Diagnostician** : Kevin Marson CA P6C 1K8
Test Package : IND 2 (Additional Tests: KF, pH, ReserveAlk) Contact: Algoma Reliability
algomareliability@algoma.com
T: (705)206-1059
F: (705)945-3585

ISO 17025:2017 Accredited Laboratory

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.