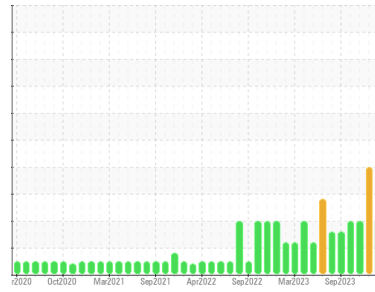




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

Direct Strip Mill/Caster

Machine Id

TSC SOUTH GLYCOL (DSC204)

Component

Hydraulic System

Fluid

HOUGHTON HOUGHTO-SAFE 620 (4500 LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

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.

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		WC0837392	WC0837436	WC0837557
Sample Date	Client Info		16 Apr 2024	29 Feb 2024	18 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			ABNORMAL	SEVERE	ABNORMAL

WEAR METALS

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

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<1	<1
Barium	ppm	ASTM D5185(m)		1	<1
Molybdenum	ppm	ASTM D5185(m)		0	0
Manganese	ppm	ASTM D5185(m)		0	0
Magnesium	ppm	ASTM D5185(m)		<1	0
Calcium	ppm	ASTM D5185(m)		<1	<1
Phosphorus	ppm	ASTM D5185(m)		<1	1
Zinc	ppm	ASTM D5185(m)		0	0
Sulfur	ppm	ASTM D5185(m)		44	58
Lithium	ppm	ASTM D5185(m)		<1	<1

CONTAMINANTS

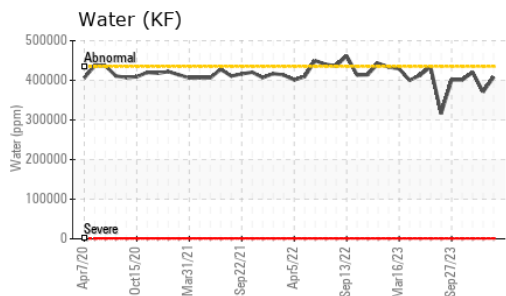
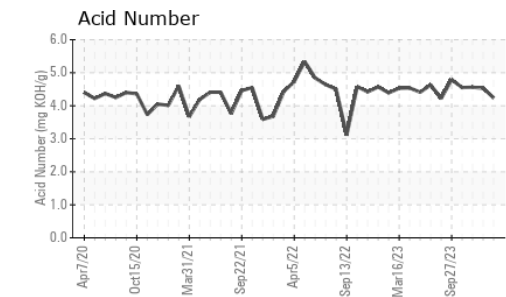
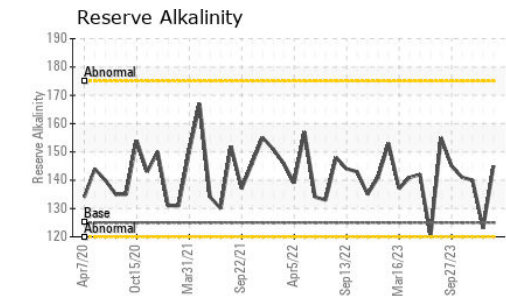
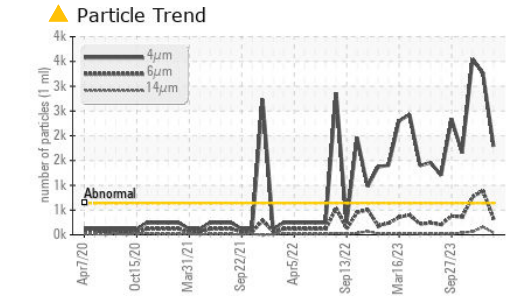
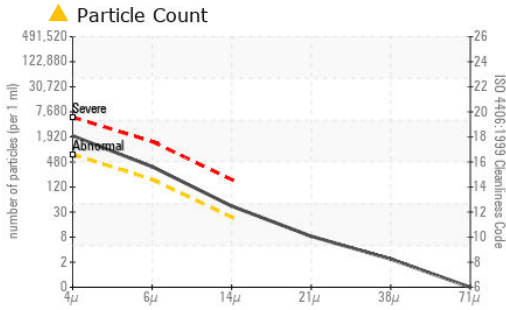
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	<1	0
Sodium	ppm	ASTM D5185(m)		36	25
Potassium	ppm	ASTM D5185(m)	>20	0	21
Water	%	ASTM D6304*	>43.5	40.8	37.1
ppm Water	ppm	ASTM D6304*	>435000	408000	371000

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>640	▲ 1785	▲ 3259	▲ 3551
Particles >6µm	ASTM D7647	>160	▲ 325	▲ 886	▲ 765
Particles >14µm	ASTM D7647	>20	● 37	▲ 159	▲ 63
Particles >21µm	ASTM D7647	>4	● 7	▲ 67	● 10
Particles >38µm	ASTM D7647	>3	2	▲ 12	1
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>16/14/11	▲ 18/16/12	▲ 19/17/14	▲ 19/17/13



OIL ANALYSIS REPORT

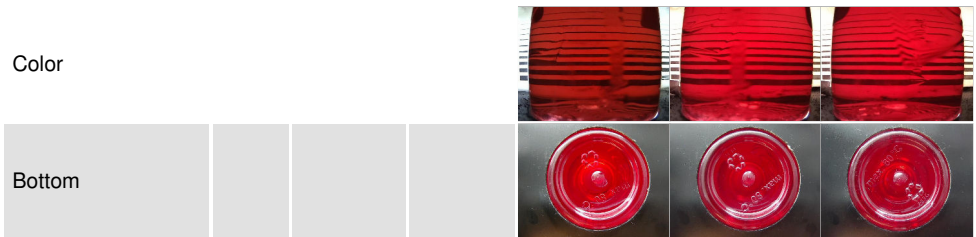


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	4.24	4.53	4.56
Alkiline Reserve (Oils)	ml KOH/g	ASTM D1121*	125	123	140

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*	>10%	>10%	>10%
Free Water	scalar	Visual*	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
pH	Scale 0-14	ASTM D1287*	9.45	9.50	9.54
Visc @ 40°C	cSt	ASTM D7279(m)	42.8	42.4	42.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0837392
Lab Number : **02630799**
Unique Number : 5763931
Test Package : IND 2 (Additional Tests: KF, pH, ReserveAlk, TAN Man)

ALGOMA STEEL INC. - STORES DEPT.
 301 WALLACE TERRACE
 SAULT STE MARIE, ON
 CA P6C 1K8
 Contact: Algoma Reliability
 algomareliability@algoma.com
 T: (705)206-1059
 F: (705)945-3585

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.