

OIL ANALYSIS REPORT

Area **#7 Blast Furnace** FLARE STACK ASKANIA HYD (IRN099) (S/N 1000040142)

Hydraulic System

AW HYDRAULIC OIL ISO 22 (--- GAL)

DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

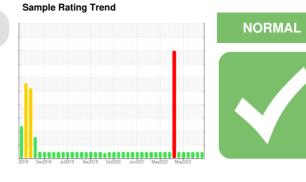
All component wear rates are normal.

Contamination

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

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

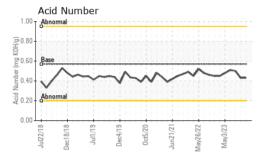


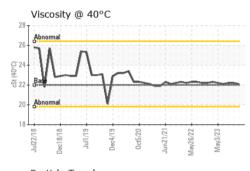
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0813619	WC0780657	WC0714509
Sample Date		Client Info		11 Apr 2024	14 Jan 2024	23 Oct 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	4	4	4
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	0	<1	0
Lead	ppm	ASTM D5185(m)	>20	0	<1	<1
Copper	ppm	· /	>20	6	6	6
Tin	ppm	ASTM D5185(m)	>20	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
ADDITIVES Boron	ppm	ASTM D5185(m)	5	0	0	history2 <1
	ppm ppm		5			
Boron		ASTM D5185(m)	5	0 0 0	0 0 0	<1
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5	0 0 0	0 0 0 0	<1 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 25 25	0 0 0 <1	0 0 0 <1	<1 <1 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200	0 0 0 <1 37	0 0 0 <1 37	<1 <1 0 0 0 35
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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)	5 5 5 25 200 300	0 0 0 <1 37 317	0 0 0 <1 37 321	<1 <1 0 0 0 35 320
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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)	5 5 5 25 200 300 370	0 0 0 <1 37 317 397	0 0 0 <1 37 321 379	<1 <1 0 0 0 35 320 404
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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)	5 5 5 25 200 300	0 0 0 <1 37 317 397 735	0 0 0 <1 37 321 379 770	<1 <1 0 0 0 35 320 404 763
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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)	5 5 5 25 200 300 370	0 0 0 <1 37 317 397	0 0 0 <1 37 321 379	<1 <1 0 0 0 35 320 404
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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)	5 5 5 25 200 300 370	0 0 0 <1 37 317 397 735	0 0 0 <1 37 321 379 770	<1 <1 0 0 0 35 320 404 763
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	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)	5 5 25 200 300 370 2500	0 0 0 <1 37 317 397 735 <1	0 0 0 <1 37 321 379 770 <1	<1 <1 0 0 0 35 320 404 763 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm 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)	5 5 25 200 300 370 2500	0 0 0 <1 37 317 397 735 <1 current	0 0 0 <1 37 321 379 770 <1 history1	<1 <1 0 0 35 320 404 763 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 25 200 300 370 2500	0 0 0 <1 37 317 397 735 <1 current 0	0 0 0 <1 37 321 379 770 <1 history1 0	<1 <1 0 0 0 35 320 404 763 <1 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 imit/base >15	0 0 0 <1 37 317 397 735 <1 <i>current</i> 0 0	0 0 0 <1 37 321 379 770 <1 history1 0 0	<1 <1 0 0 0 35 320 404 763 <1 history2 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 imit/base >15 >20	0 0 0 <1 37 317 397 735 <1 <i>current</i> 0 0 0 <1	0 0 0 <1 37 321 379 770 <1 <u>history1</u> 0 0 <1	<1 <1 0 0 35 320 404 763 <1 history2 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 imit/base >25 20	0 0 0 <1 37 317 397 735 <1 <i>current</i> 0 0 <1 <i>current</i>	0 0 0 1 37 321 379 770 <1 history1 0 0 <1 history1	<1 <1 0 0 35 320 404 763 <1 history2 0 0 0 0 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 Imit/base >20 Imit/base >20	0 0 0 <1 37 317 397 735 <1 <i>current</i> 0 0 <1 <i>current</i> 227	0 0 0 1 37 321 379 770 <1 history1 0 0 <1 history1 1787	<1 <1 0 0 0 35 320 404 763 <1 history2 0 0 0 0 0 history2 242
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	5 5 5 25 200 300 370 2500 2500 limit/base >20 limit/base >5000 >1300 >160	0 0 0 (0 <1 37 317 397 735 <1 <i>current</i> 0 0 <1 <i>current</i> 227 49	0 0 0 1 37 321 379 770 <1 history1 0 0 <1 history1 1787 462	<1 <1 0 0 0 0 35 320 404 763 <1 history2 0 0 0 history2 242 71
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 2500 limit/base >20 limit/base >5000 >1300 >160	0 0 0 (0 <1 37 317 397 735 <1 <i>current</i> 0 0 <1 227 49 6	0 0 0 10 37 321 379 770 <1 history1 0 0 0 <1 history1 1787 462 52	<1 <1 0 0 35 320 404 763 <1 history2 0 0 0 0 0 0 1 1 242 71 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 25 200 300 370 2500 2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40 >10	0 0 0 (0 <1 37 317 397 735 <1 <i>current</i> 0 0 (1 0 <1 227 49 6 3	0 0 0 10 <1 37 321 379 770 <1 history1 0 0 <1 history1 1787 462 52 17	<1 <1 0 0 0 0 35 320 404 763 <1 history2 0 0 0 0 0 kistory2 242 71 5 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ISO 4406 (c)	5 5 5 25 200 300 370 2500 2500 imit/base >15 >20 imit/base >5000 >1300 >160 >40 >40 >10 >3 >19/17/14	0 0 0 -1 37 317 397 735 <1 <u>current</u> 0 0 <1 <u>current</u> 227 49 6 3 0 0 15/13/10	0 0 0 10 -1 37 321 379 770 <1 history1 0 0 -1 history1 1787 462 52 17 3 0 1787 462	<1 <1 0 0 0 0 35 320 404 763 <1

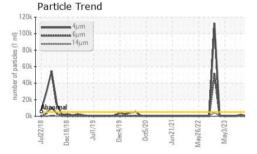


OIL ANALYSIS REPORT

100k -	4µ1	m		0.111	J.L.L.
80k	14j.	um j		1111	
60k -					
40k -	٨				
	1				
20k -				1	1.1.1.1





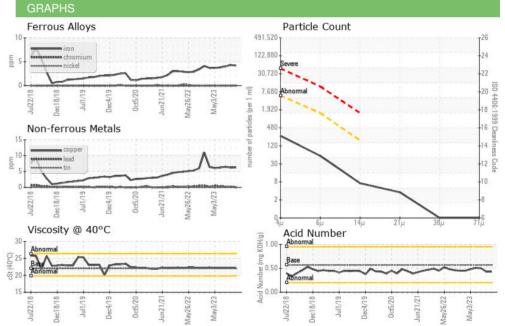


FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.57	0.43	0.43	0.50
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	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	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	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)	22	22.1	22.2	22.2
SAMPLE IMAGES	\$	method	limit/base	current	history1	history2
				E		0

Color



Bottom



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 ALGOMA STEEL INC. - STORES DEPT. CALA Sample No. : WC0813619 Received : 12 Apr 2024 301 WALLACE TERRACE Lab Number : 02628457 Tested : 15 Apr 2024 SAULT STE MARIE, ON ISO 17025:2017 Accredited Unique Number : 5761589 Diagnosed : 15 Apr 2024 - Wes Davis CA P6C 1K8 Laboratory Test Package : IND 2 Contact: Algoma Reliability To discuss this sample report, contact Customer Service at 1-800-268-2131. algomareliability@algoma.com Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (705)206-1059 Validity of results and interpretation are based on the sample and information as supplied. F: (705)945-3585

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Contact/Location: Maintenance Technology - Algoma Reliability - ALGSSM