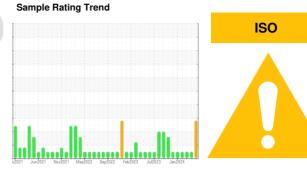


OIL ANALYSIS REPORT

MELT SHOP - HYDRAULIC MELT SHOP LSG LADLE SLIDE GATE (S/N 15-4000-0770)

Hydraulic System

FIRE-RESISTANT FLUID ISO 46 (66 GAL)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

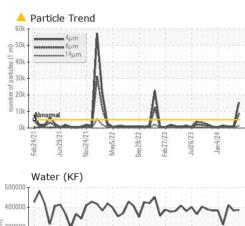
Fluid Condition

The pH level of this fluid is within the acceptable limits at 9.0. The condition of the oil is acceptable for the time in service.

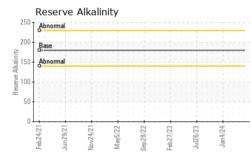
SAMPLE INFORMA	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RP0042702	RP0042695	RP0042648
Sample Date		Client Info		09 May 2024	28 Mar 2024	05 Mar 2024
	hrs	Client Info		0	0	0
	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0	3	4
Chromium	ppm	ASTM D5185m	>20	0	1	<1
Nickel	ppm	ASTM D5185m	>20	0	1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	12	11
Lead	ppm	ASTM D5185m	>20	0	0	0
• •	ppm	ASTM D5185m	>20	<1	<1	<1
	ppm	ASTM D5185m	>20	0	1	<1
	ppm	ASTM D5185m		0	1	1
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	0	3	3
	1-1-			U	0	
Barium	ppm	ASTM D5185m	5	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0	0	0
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	5	0 0 0	0 0 <1	0 0 0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5	0 0 0 <1	0 0 <1 <1	0 0 0 <1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 50	0 0 0 <1 0	0 0 <1 <1 6	0 0 0 <1 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 50 175	0 0 0 <1 0	0 0 <1 <1 6 7	0 0 0 <1 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 50	0 0 0 <1 0	0 0 <1 <1 6	0 0 0 <1 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 50 175	0 0 0 <1 0	0 0 <1 <1 6 7	0 0 0 <1 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 50 175 62	0 0 0 <1 0 0 12 current	0 0 <1 <1 6 7 3 history1	0 0 0 <1 5 3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 50 175 62 limit/base >15	0 0 0 <1 0 0 12	0 0 <1 <1 6 7 3 history1	0 0 0 <1 5 3 1 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m	5 5 5 50 175 62 limit/base >15	0 0 0 <1 0 0 12 current <1 0	0 0 <1 <1 6 7 3 history1 3 44	0 0 0 <1 5 3 1 history2 3 47
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm	ASTM D5185m	5 5 5 50 175 62 limit/base >15 >20 >55	0 0 0 <1 0 0 12 current <1 0 <1 38.6	0 0 <1 <1 6 7 3 history1 3 44 6 38.3	0 0 0 <1 5 3 1 history2 3 47 7 41.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm	ASTM D5185m	5 5 5 50 175 62 limit/base >15	0 0 0 <1 0 0 12 current <1 0	0 0 <1 <1 6 7 3 history1 3 44	0 0 0 <1 5 3 1 history2 3 47
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm	ASTM D5185m	5 5 5 50 175 62 limit/base >15 >20 >55	0 0 0 <1 0 0 12 current <1 0 <1 38.6	0 0 <1 <1 6 7 3 history1 3 44 6 38.3	0 0 0 <1 5 3 1 history2 3 47 7 41.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLINE Particles >4µm	ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647	5 5 5 50 175 62 limit/base >15 >20 >55 >5000 limit/base	0 0 0 <1 0 0 12 current <1 0 <1 38.6 386000 current ▲ 15416	0 0 0 <1 <1 6 7 3 history1 3 44 6 38.3 383000 history1 757	0 0 0 <1 5 3 1 history2 3 47 7 41.1 411000 history2 974
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLINE Particles >4µm Particles >6µm	ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647	5 5 5 5 50 175 62 limit/base >15 >20 >55 >55000 limit/base >5000 >1300	0 0 0	0 0 0 <1 <1 6 7 3 history1 3 44 6 38.3 383000 history1 757 412	0 0 0 <1 5 3 1 history2 3 47 7 41.1 411000 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLINE Particles >4µm Particles >6µm Particles >14µm	ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 5 175 62 limit/base >15 >20 >55 >55000 limit/base >5000 >1300 >160	0 0 0	0 0 0 <1 <1 6 7 3 history1 3 44 6 38.3 383000 history1 757 412 70	0 0 0 <1 5 3 1 history2 3 47 7 41.1 411000 history2 974 531
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLINE Particles >4µm Particles >14µm Particles >21µm	ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 5 50 175 62 limit/base >15 >20 >55 >55000 limit/base >5000 >1300 >160 >40	0 0 0	0 0 0 <1 <1 6 7 3 history1 3 44 6 38.3 383000 history1 757 412 70 24	0 0 0 <1 5 3 1 history2 3 47 7 41.1 411000 history2 974 531 90 30
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLINE Particles >4µm Particles >6µm Particles >21µm Particles >38µm	ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 5 50 175 62 limit/base >15 >20 >55 >55000 limit/base >5000 >1300 >160 >40 >10	0 0 0 11 0 0 12 current <1 0 <1 38.6 386000 current 15416 8398 1429 481 74	0 0 0 <1 <1 6 7 3 history1 3 44 6 38.3 383000 history1 757 412 70 24 4	0 0 0 <1 5 3 1 history2 3 47 7 41.1 411000 history2 974 531 90 30 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLINE Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 5 50 175 62 limit/base >15 >20 >55 >55000 limit/base >5000 >1300 >160 >40 >10	0 0 0	0 0 0 <1 <1 6 7 3 history1 3 44 6 38.3 383000 history1 757 412 70 24	0 0 0 <1 5 3 1 history2 3 47 7 41.1 411000 history2 974 531 90 30

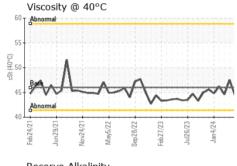


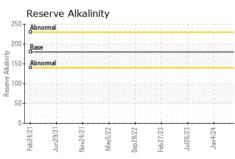
OIL ANALYSIS REPORT



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1000007	Abnormal							Ш
ıL	Severe				111	11111	11,11	
2 6 7 6 7 1		Nov24/21	May5/22	Sep28/22	Feb27/23	Jul26/23	Jan4/24	







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	>55	0.2%	0.2%	0.2%
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IFS	method	limit/base	current	history1	history2
TEOD THOI EITI	ILO	method	IIIIII/Dase	Current	TilStory	HISTOLYZ
рН	Scale 0-14	ASTM D1287		9.00	9.00	10.0
Visc @ 40°C	cSt	ASTM D445	46	44.4	47.5	44.6

SAMPLE IMAGES	method	limit/base	current	history1	history2

Color





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	rous	Alloys	5						Part	icle (Coun	t				20
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Feb24/21	Jun29/21	Nov24/21	May	Sep28/22	Feb27/23	Jul	Jan	<u>a</u> 1,920								-1
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Feb24/21	Jun29/21	Nov24/21	May5/22	Sep28/22	Feb27/23	Jul26/23	Jan4/24	0								
Vis	cosity	@ 4	0°C					04		6μ		14μ	21μ	5	38μ	71µ
Abn	ormal				44400			₹8.00	ACIC	l Nur	nber					
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Feb24/21	Jun29/21	Nov24/21	May5/22	Sep28/22	Feb27/23	Jul26/23	Jan4/24		Feb24/21	Jun29/21	Nov24/21	May5/22	Sep28/22	Feb27/23	Jul26/23	Jan4/24
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Laboratory Sample No.

: RP0042702 Lab Number : 06175586 Unique Number : 11021639

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 10 May 2024

Tested : 16 May 2024 Diagnosed : 16 May 2024 - Jonathan Hester

Test Package : IND 2 (Additional Tests: pH, ReserveAlk)

Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

OUTOKUMPU STAINLESS USA

HWY 43 N CALVERT, AL US 36513

Contact: MARIO JOHNSON Mario.johnson@outokumpu.com

T: (251)321-4105 F: x:

Report Id: OUTCALAL [WUSCAR] 06175586 (Generated: 05/16/2024 18:02:02) Rev: 1

Submitted By: DALE ROBINSON