

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

MELT SHOP - HYDRAULIC MELT SHOP LTS DE SLAG HYDRAULIC UNIT (S/N 15-4000-0770)

Tank Hydraulic System

FIRE-RESISTANT FLUID ISO 46 (200 GAL)

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

The pH level of this fluid is within the acceptable limits @ 10.0. The condition of the oil is acceptable for the time in service.

Sample Number Client Info RP0039321 RP0038639 RP0038012 Sample Date Client Info 31 Jan 2024 04 Jan 2024 06 Dec 2023 Machine Age hrs Client Info 0 0 0 0 0 0 0 0 0	n,2021 Mar2021 Aug/2021 Feb/2022 Jun/2022 New/2022 May/2023 Sep/2023						
Sample Date Client Info 31 Jan 2024 04 Jan 2024 06 Dec 2023 Machine Age hrs Client Info 0 0 0 0 Oil Age hrs Client Info 0 0 0 0 Oil Changed hrs Client Info N/A N/A N/A N/A Sample Status ATTENTION NORMAL NORMAL NORMAL WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >20 -1 0 0 Chromium ppm ASTM D5185m >20 1 0 <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 31 Jan 2024 04 Jan 2024 06 Dec 2023 Machine Age hrs Client Info 0 0 0 0 Oil Age hrs Client Info 0 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status ATTENTION NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 1 0 0 Ohickel ppm ASTM D5185m >20 1 0 <1 Silver ppm ASTM D5185m >20 1 0 <1 Aluminum ppm ASTM D5185m >20 2 0 0 Gopper ppm ASTM D5185m >20 2 0 0 Capher ppm ASTM D5185m >20 2 0 0 Capper <t< td=""><td>Sample Number</td><td></td><td>Client Info</td><td></td><th>RP0039321</th><td>RP0038639</td><td>RP0038012</td></t<>	Sample Number		Client Info		RP0039321	RP0038639	RP0038012
Machine Age Oil Age hrs Client Info 0			Client Info		31 Jan 2024	04 Jan 2024	06 Dec 2023
Oil Changed Sample Status Client Info N/A ATTENTION N/A N/A NORMAL N/A NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	•	hrs	Client Info		0	0	0
ATTENTION NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2	Oil Changed		Client Info		N/A	N/A	N/A
Iron	Sample Status				ATTENTION	NORMAL	NORMAL
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 1 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>20	<1	0	0
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>20	0	0	0
Silver	Nickel	ppm	ASTM D5185m	>20	1	0	<1
Aluminum ppm ASTM D5185m >20 <1 0 <1 Lead ppm ASTM D5185m >20 2 0 0 Copper ppm ASTM D5185m >20 4 <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >20 2 0 0 Copper ppm ASTM D5185m >20 4 <1 3 Tin ppm ASTM D5185m >20 2 0 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 1 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 0 0 0 Barium ppm ASTM D5185m 5 <1 0 0 Molybdenum ppm ASTM D5185m 5 <1 0 0 Manganese ppm ASTM D5185m 5 <1 0 0 Magnesium ppm ASTM D5185m 5 5 0 2 Phosphorus ppm ASTM D5185m 5 19 0 10	Silver		ASTM D5185m		<1	0	<1
Lead ppm ASTM D5185m >20 2 0 0 Copper ppm ASTM D5185m >20 4 <1 3 Tin ppm ASTM D5185m >20 2 0 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 1 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 0 0 0 Barium ppm ASTM D5185m 5 <1 0 0 Molybdenum ppm ASTM D5185m 5 <1 0 0 Manganese ppm ASTM D5185m 5 <1 0 0 Magnesium ppm ASTM D5185m 5 5 0 2 Phosphorus ppm ASTM D5185m 5 19 0 10	Aluminum		ASTM D5185m	>20	<1	0	<1
Tin	Lead	ppm		>20	2	0	0
Tin ppm ASTM D5185m >20 2 0 0 0 Vanadium ppm ASTM D5185m	Copper	ppm	ASTM D5185m	>20	4	<1	3
Cadmium ppm ASTM D5185m 1 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 0 0 0 Barium ppm ASTM D5185m 5 <1		ppm	ASTM D5185m	>20	2	0	0
Cadmium ppm ASTM D5185m 1 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 5 0 0 0 Barium ppm ASTM D5185m 5 <1	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 5 0 0 0 0 0 Barium ppm ASTM D5185m 5 <1 0 0 0 Molybdenum ppm ASTM D5185m 5 <1 0 0 0 Manganese ppm ASTM D5185m 5 <1 0 0 0 Manganese ppm ASTM D5185m 2 0 <1 Magnesium ppm ASTM D5185m 5 5 0 3 Calcium ppm ASTM D5185m 50 5 0 2 Phosphorus ppm ASTM D5185m 175 19 0 10 Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 3 0 <1 Sodium ppm ASTM D5185m 3 0 <1 Sodium ppm ASTM D5185m 3 0 <1 Potassium ppm ASTM D5185m 3 0 <1 Water % ASTM D6304 >55 35.7 36.2 35.1 ppm Water ppm ASTM D6304 >55000 357000 362000 351000 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >160 236 63 75 Particles >21μm ASTM D7647 >40 79 21 25	Cadmium		ASTM D5185m		1	0	1
Barium ppm ASTM D5185m 5 <1 0 0 Molybdenum ppm ASTM D5185m 5 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 5 <1 0 0 Manganese ppm ASTM D5185m 5 2 0 <1 Magnesium ppm ASTM D5185m 5 5 0 3 Calcium ppm ASTM D5185m 50 5 0 2 Phosphorus ppm ASTM D5185m 175 19 0 10 Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 0 <1 Sodium ppm ASTM D5185m >20 4 0 <1 Water % ASTM D6304 >55 35.7 36.2 35.1 ppm Water ppm ASTM D6304 >55000 357000 362000 351000 FLUID CLEANLINESS method limit/base	Boron	ppm	ASTM D5185m	5	0	0	0
Manganese ppm ASTM D5185m 2 0 <1 Magnesium ppm ASTM D5185m 5 5 0 3 Calcium ppm ASTM D5185m 50 5 0 2 Phosphorus ppm ASTM D5185m 175 19 0 10 Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Barium	ppm	ASTM D5185m	5	<1	0	0
Magnesium ppm ASTM D5185m 5 0 3 Calcium ppm ASTM D5185m 50 5 0 2 Phosphorus ppm ASTM D5185m 175 19 0 10 Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Molybdenum	ppm	ASTM D5185m	5	<1	0	0
Calcium ppm ASTM D5185m 50 5 0 2 Phosphorus ppm ASTM D5185m 175 19 0 10 Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Manganese	ppm	ASTM D5185m		2	0	<1
Phosphorus ppm ASTM D5185m 175 19 0 10 Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Magnesium	ppm	ASTM D5185m	5	5	0	3
Zinc ppm ASTM D5185m 62 52 0 17 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Calcium	ppm	ASTM D5185m	50	5	0	2
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Phosphorus	ppm	ASTM D5185m	175	19	0	10
Silicon ppm ASTM D5185m >15 <1 0 <1 Sodium ppm ASTM D5185m 3 0 <1 Potassium ppm ASTM D5185m >20 4 0 <1 Water % ASTM D6304 >55 35.7 36.2 35.1 ppm Water ppm ASTM D6304 >55000 357000 362000 351000 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >1300 ▲ 1384 370 441 Particles >14μm ASTM D7647 >160 ▲ 236 63 75 Particles >21μm ASTM D7647 >40 ▲ 79 21 25	Zinc	ppm	ASTM D5185m	62	52	0	17
Sodium ppm ASTM D5185m 3 0 <1 Potassium ppm ASTM D5185m >20 4 0 <1	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 4 0 <1 Water % ASTM D6304 >55 35.7 36.2 35.1 ppm Water ppm ASTM D6304 >55000 357000 362000 351000 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >1300 1384 370 441 Particles >14μm ASTM D7647 >160 236 63 75 Particles >21μm ASTM D7647 >40 79 21 25	Silicon	ppm	ASTM D5185m	>15	<1	0	<1
Water % ASTM D6304 >55 35.7 36.2 35.1 ppm Water ppm ASTM D6304 >55000 357000 362000 351000 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >1300 1384 370 441 Particles >14μm ASTM D7647 >160 236 63 75 Particles >21μm ASTM D7647 >40 79 21 25	Sodium	ppm	ASTM D5185m		3	0	<1
ppm Water ppm ASTM D6304 >55000 357000 362000 351000 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >1300 ▲ 1384 370 441 Particles >14μm ASTM D7647 >160 ▲ 236 63 75 Particles >21μm ASTM D7647 >40 ▲ 79 21 25	Potassium	ppm	ASTM D5185m	>20	4	0	<1
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >1300 ▲ 1384 370 441 Particles >14μm ASTM D7647 >160 ▲ 236 63 75 Particles >21μm ASTM D7647 >40 ▲ 79 21 25	Water	%	ASTM D6304	>55	35.7	36.2	35.1
Particles >4μm ASTM D7647 >5000 2540 679 809 Particles >6μm ASTM D7647 >1300 1384 370 441 Particles >14μm ASTM D7647 >160 236 63 75 Particles >21μm ASTM D7647 >40 79 21 25	ppm Water	ppm	ASTM D6304	>55000	357000	362000	351000
Particles >6μm ASTM D7647 >1300 ▲ 1384 370 441 Particles >14μm ASTM D7647 >160 ▲ 236 63 75 Particles >21μm ASTM D7647 >40 ▲ 79 21 25	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >160 ▲ 236 63 75 Particles >21μm ASTM D7647 >40 ▲ 79 21 25	Particles >4µm		ASTM D7647	>5000	2540	679	809
Particles >21μm ASTM D7647 >40 ▲ 79 21 25	Particles >6µm		ASTM D7647	>1300	1384	370	441
Particles >21μm ASTM D7647 >40 ▲ 79 21 25	Particles >14µm		ASTM D7647	>160	236	63	75
			ASTM D7647	>40	A 79	21	25
	•		ASTM D7647	>10			

1

ISO 4406 (c) >19/17/14 **19/18/15**

ASTM D7647 >3

Particles >71µm

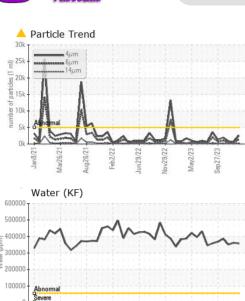
Oil Cleanliness

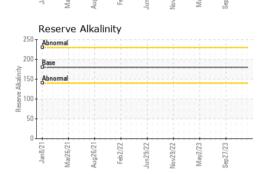
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OIL ANALYSIS REPORT

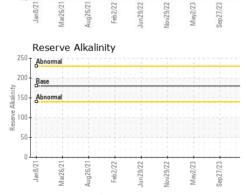




Viscosity @ 40°C

75

70 65



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

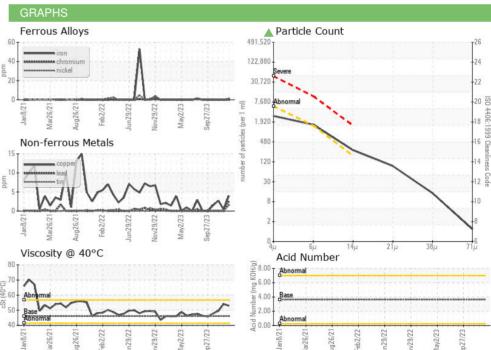
FLUID PROPERT	IES	method	limit/base	current	history1	history2
рН	Scale 0-14	ASTM D1287		10.0	9.00	9.0
Visc @ 40°C	cSt	ASTM D445	46	53.0	54.1	49.5

SAMPLE IMAGES	method		history2

Color









Laboratory Sample No. Lab Number : 06077752 Unique Number: 10859843

: RP0039321

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

: 01 Feb 2024 : 07 Feb 2024 Diagnosed

: 07 Feb 2024 - Doug Bogart

Test Package: IND 2 (Additional Tests: pH, ReserveAlk) Certificate L2367 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.

OUTOKUMPU STAINLESS USA

HWY 43 N CALVERT, AL US 36513

Contact: MARIO JOHNSON Mario.johnson@outokumpu.com T: (251)321-4105

F: x: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: DALE ROBINSON