



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>ABNORMAL</b>

Machine Id  
**HITACHI 1FFDDR70JMF941000**  
 Component  
**Hydraulic System**  
 Fluid  
**HITACHI HYDRAULIC SUPER EX 46HN (--- QTS)**

## RECOMMENDATION

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WE0006903</b>	WE0006536	WE0005222
Sample Date		Client Info		<b>11 Apr 2024</b>	14 Dec 2023	28 Sep 2023
Machine Age	hrs	Client Info		<b>4400</b>	3500	3271
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Chngd</b>	N/A	N/A
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

PQ	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184		<b>15</b>	16	20
Iron	ppm	ASTM D5185m	>20	<b>0</b>	3	6
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Lead	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>75	<b>0</b>	1	2
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

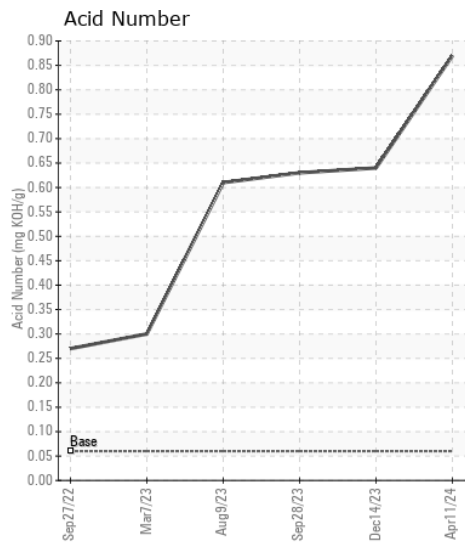
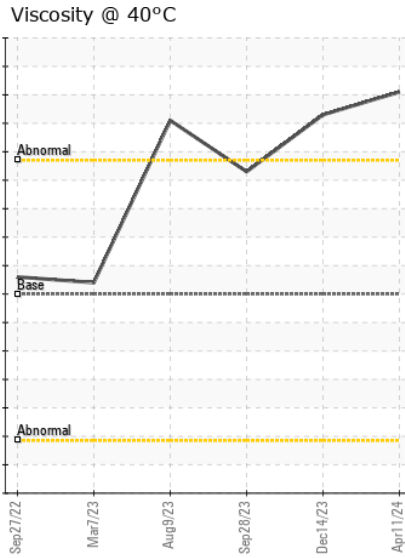
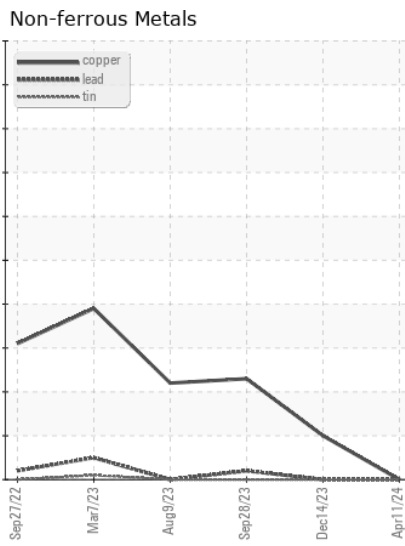
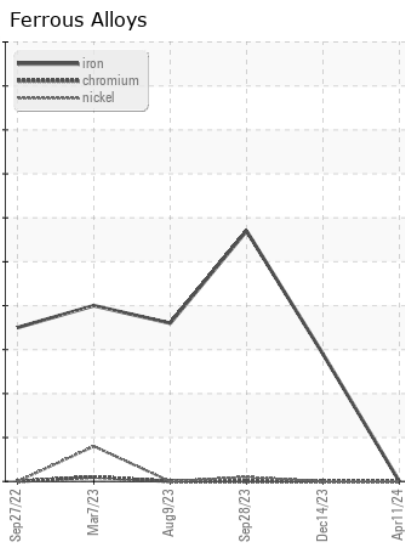
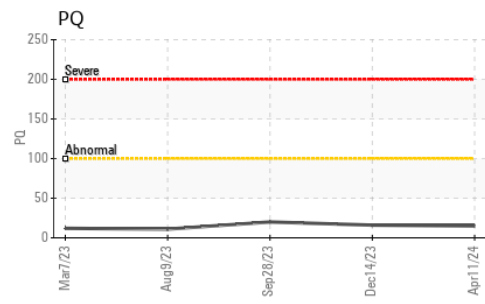
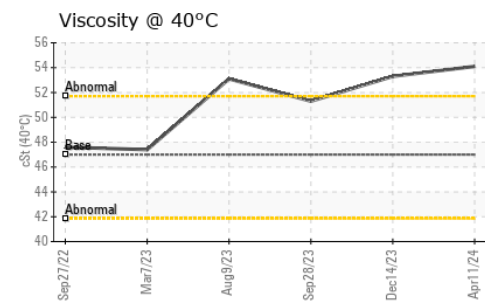
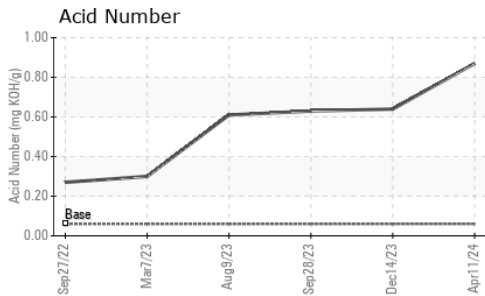
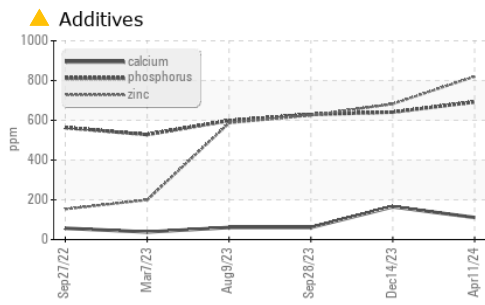
Moderate concentration of visible dirt/debris present in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	2
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	4
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>---</b>	4690	▲ 65281
Particles >6µm		ASTM D7647	>1300	<b>---</b>	656	▲ 13693
Particles >14µm		ASTM D7647	>160	<b>---</b>	40	▲ 345
Particles >21µm		ASTM D7647	>40	<b>---</b>	13	▲ 59
Particles >38µm		ASTM D7647	>10	<b>---</b>	0	3
Particles >71µm		ASTM D7647	>3	<b>---</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>---</b>	19/17/12	▲ 23/21/16
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>▲ MODER</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

Zinc level above manufacturer's recommendations. The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m		<b>0</b>	<1	0
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>1</b>	2	<1
Calcium	ppm	ASTM D5185m		<b>111</b>	165	61
Phosphorus	ppm	ASTM D5185m	827	<b>692</b>	641	629
Zinc	ppm	ASTM D5185m	0	<b>▲ 820</b>	▲ 682	▲ 625
Sulfur	ppm	ASTM D5185m	13	<b>1790</b>	1444	1257
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	<b>0.87</b>	0.64	0.63
Visc @ 40°C	cSt	ASTM D445	47	<b>54.1</b>	53.3	51.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WE0006903  
**Lab Number** : 06148570  
**Unique Number** : 10978648  
**Test Package** : CONST ( Additional Tests: PQ )

**WARRIOR TRACTOR AND EQUIPMENT - NORTHPORT**  
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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)