



# OIL ANALYSIS REPORT

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

Area  
**Contracting**  
Machine Id  
**5524 5524**  
Component  
**Hydraulic System**  
Fluid  
**HITACHI HYDRAULIC SUPER EX 46HN (15 GAL)**

## RECOMMENDATION

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0947820</b>	WC0867213	WC0794005
Sample Date		Client Info		<b>29 May 2024</b>	27 Oct 2023	20 Mar 2023
Machine Age	hrs	Client Info		<b>6168</b>	5721	5104
Oil Age	hrs	Client Info		<b>1672</b>	1225	611
Filter Age	hrs	Client Info		<b>1672</b>	1225	611
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Changed	Not Changd
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>32	<b>29</b>	23	9
Chromium	ppm	ASTM D5185m	>9	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>9	<b>&lt;1</b>	2	1
Lead	ppm	ASTM D5185m	>28	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>50	<b>13</b>	11	9
Tin	ppm	ASTM D5185m	>5	<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

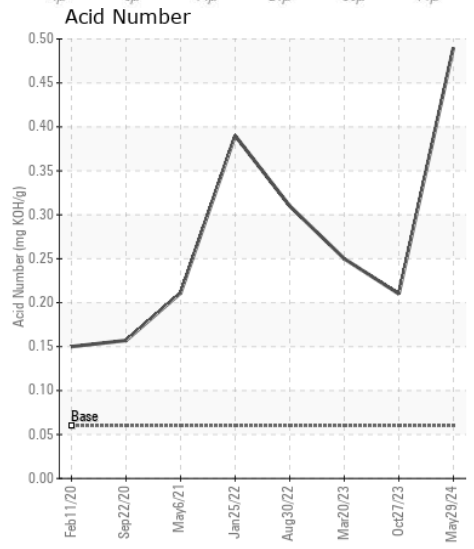
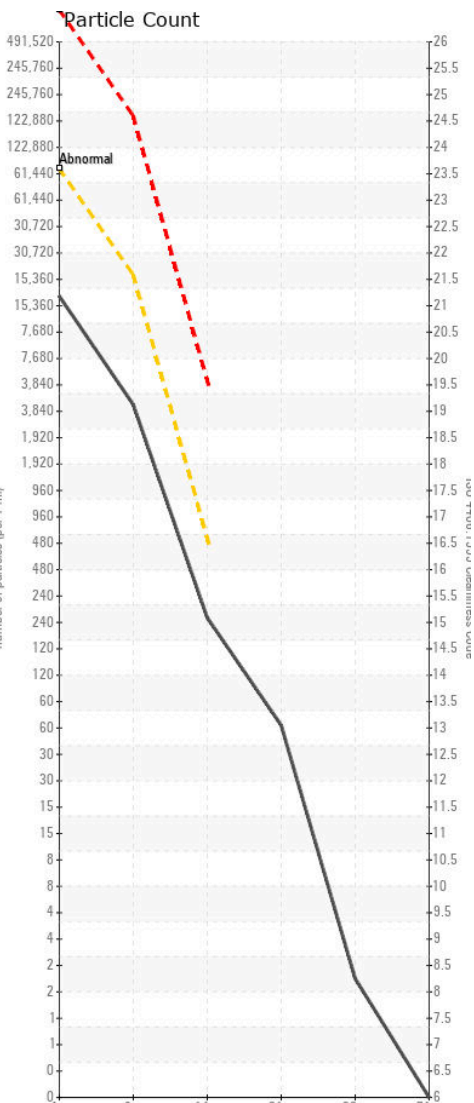
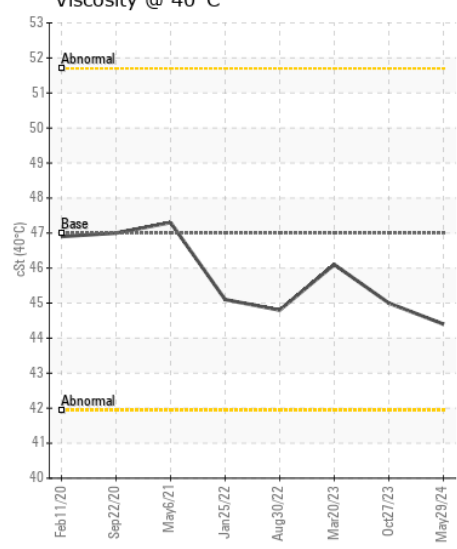
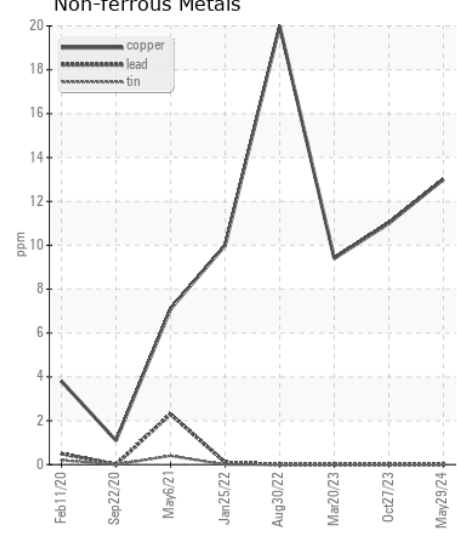
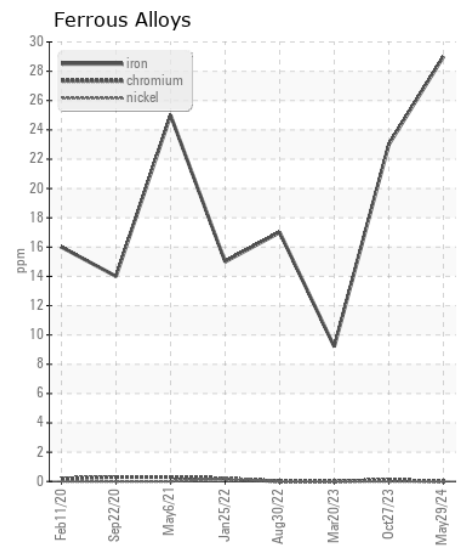
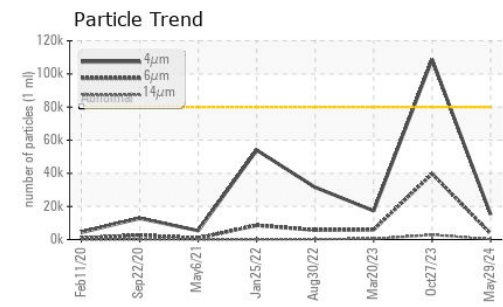
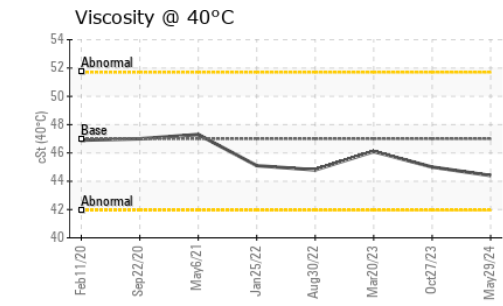
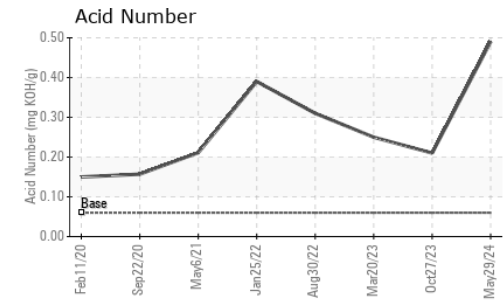
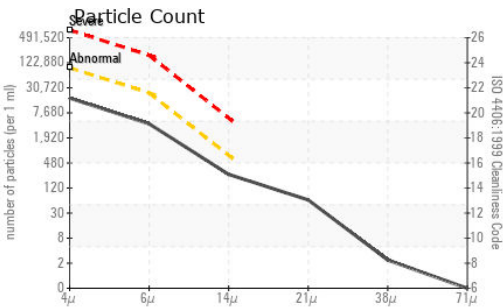
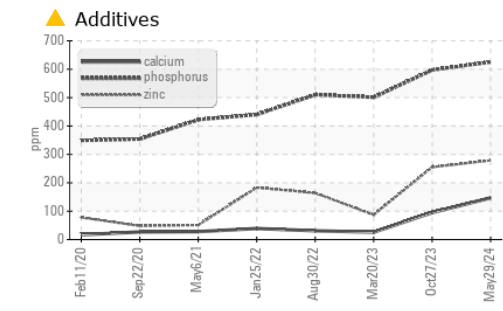
The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>11	<b>4</b>	5	1
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	2
Water		WC Method	>0.075	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>80000	<b>15114</b>	▲ 108730	17335
Particles >6µm		ASTM D7647	>20000	<b>3655</b>	▲ 39703	5914
Particles >14µm		ASTM D7647	>640	<b>225</b>	▲ 2799	466
Particles >21µm		ASTM D7647	>160	<b>55</b>	▲ 589	79
Particles >38µm		ASTM D7647	>40	<b>2</b>	21	4
Particles >71µm		ASTM D7647	>10	<b>0</b>	1	0
Oil Cleanliness		ISO 4406 (c)	>23/21/16	<b>21/19/15</b>	▲ 24/22/19	21/20/16
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	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	>0.075	<b>NEG</b>	NEG	0.2%

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185m	>21	<b>2</b>	1	0
Boron	ppm	ASTM D5185m		<b>0</b>	<1	1
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>77</b>	90	29
Calcium	ppm	ASTM D5185m		<b>147</b>	95	26
Phosphorus	ppm	ASTM D5185m	827	<b>625</b>	597	501
Zinc	ppm	ASTM D5185m	0	▲ <b>279</b>	▲ 255	▲ 87
Sulfur	ppm	ASTM D5185m	13	<b>1775</b>	1434	454
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	<b>0.49</b>	0.21	0.25
Visc @ 40°C	cSt	ASTM D445	47	<b>44.4</b>	45.0	46.1



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0947820  
**Lab Number** : 06196541  
**Unique Number** : 11058664  
**Test Package** : CONST  
**Received** : 31 May 2024  
**Tested** : 03 Jun 2024  
**Diagnosed** : 03 Jun 2024 - Don Baldrige

**CAROLINA SUNROCK**  
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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.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)