



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id  
**CATERPILLAR 990K 6088 (S/N A9P00362)**

Component  
**Steering**

Fluid  
**TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (35 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TO10003616</b>	TO10003019	TO10002893
Sample Date		Client Info		<b>13 Jun 2024</b>	22 Mar 2024	06 Nov 2023
Machine Age	hrs	Client Info		<b>15988</b>	15413	14829
Oil Age	hrs	Client Info		<b>6250</b>	5675	5091
Filter Age	hrs	Client Info		<b>724</b>	0	508
Oil Changed		Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>60	<b>6</b>	4	3
Chromium	ppm	ASTM D5185m	>12	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>6	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185m	>4	<b>2</b>	2	3
Lead	ppm	ASTM D5185m	>12	<b>4</b>	3	4
Copper	ppm	ASTM D5185m	>30	<b>4</b>	3	2
Tin	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
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**

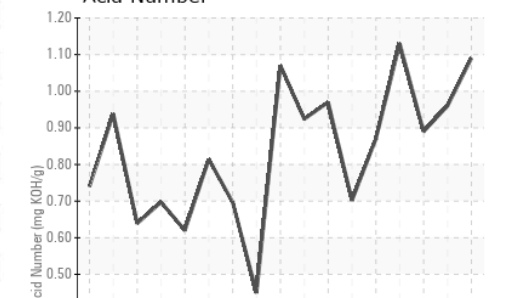
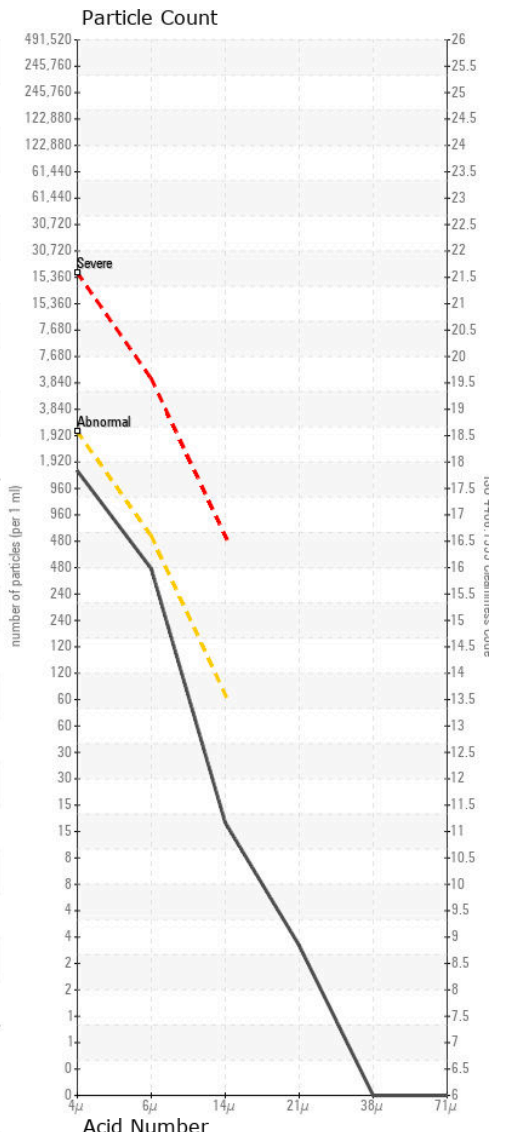
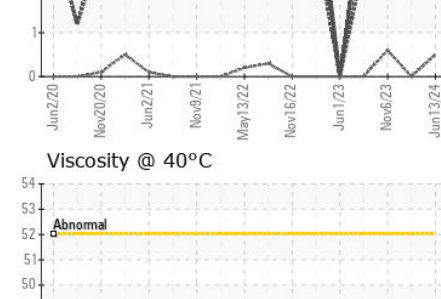
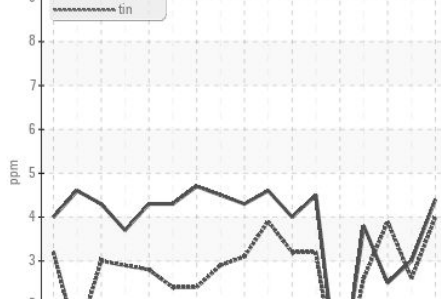
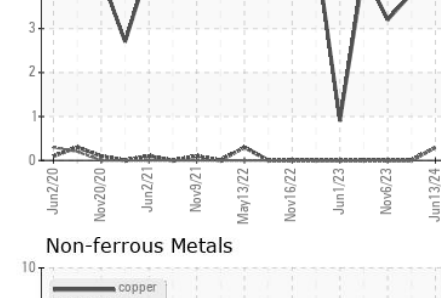
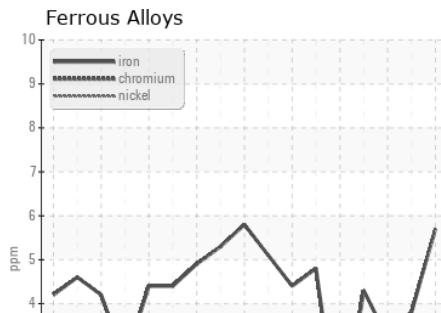
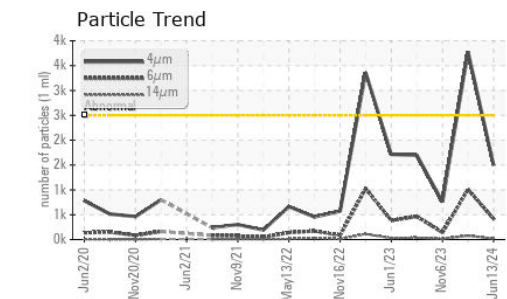
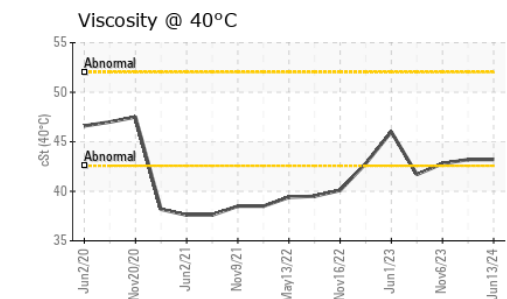
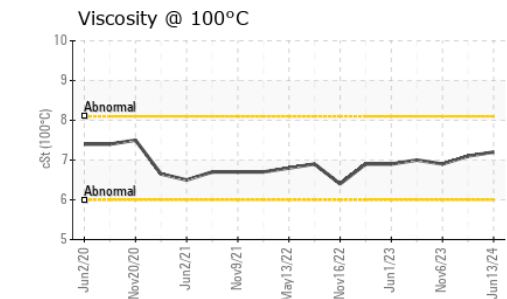
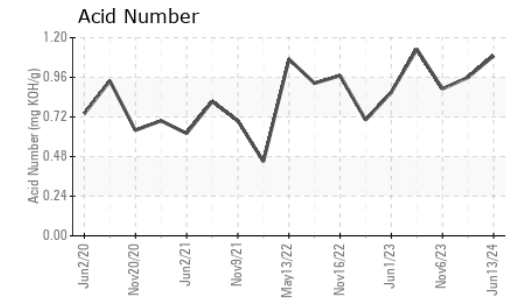
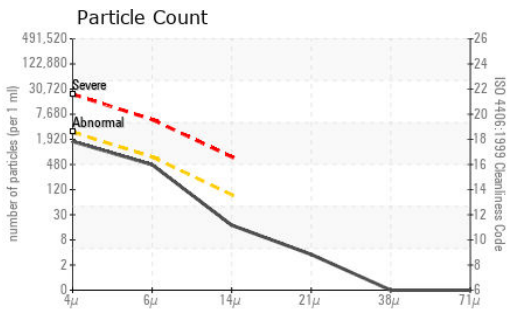
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>10	<b>9</b>	6	7
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	<1	3
Water		WC Method		<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>2500	<b>1496</b>	3776	757
Particles >6µm		ASTM D7647	>640	<b>416</b>	1009	142
Particles >14µm		ASTM D7647	>80	<b>15</b>	80	11
Particles >21µm		ASTM D7647	>20	<b>3</b>	17	4
Particles >38µm		ASTM D7647	>4	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	<b>18/16/11</b>	19/17/13	17/14/11
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</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		<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

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

Sodium	ppm	ASTM D5185m		<b>3</b>	5	4
Boron	ppm	ASTM D5185m		<b>43</b>	40	42
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>7</b>	5	6
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>69</b>	67	66
Calcium	ppm	ASTM D5185m		<b>1060</b>	1069	994
Phosphorus	ppm	ASTM D5185m		<b>690</b>	720	728
Zinc	ppm	ASTM D5185m		<b>918</b>	857	877
Sulfur	ppm	ASTM D5185m		<b>2926</b>	3077	2646
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>1.09</b>	0.96	0.89
Visc @ 40°C	cSt	ASTM D445		<b>43.2</b>	43.2	42.8
Visc @ 100°C	cSt	ASTM D445		<b>7.2</b>	7.1	6.9
Viscosity Index (VI)	Scale	ASTM D2270		<b>128</b>	124	118



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TO10003616 **Received** : 18 Jun 2024  
**Lab Number** : 06213452 **Tested** : 19 Jun 2024  
**Unique Number** : 11086316 **Diagnosed** : 20 Jun 2024 - Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: KV100, PrtCount, VI )

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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)