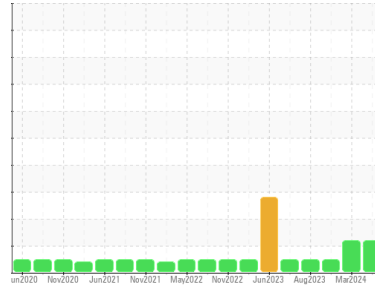


# OIL ANALYSIS REPORT



Machine Id  
**CATERPILLAR 990K 6088 (S/N A9P00362)**  
Component  
**Hydraulic System**  
Fluid  
**TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (52 GAL)**

Sample Rating Trend



ISO



## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

### Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>TO10003614</b>	TO10002084	TO10002895
Sample Date	Client Info			<b>13 Jun 2024</b>	22 Mar 2024	06 Nov 2023
Machine Age	hrs	Client Info		<b>15988</b>	15159	14829
Oil Age	hrs	Client Info		<b>829</b>	15159	3594
Oil Changed	Client Info			<b>Not Changed</b>	Changed	Not Changed
Sample Status				<b>ATTENTION</b>	ATTENTION	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	<b>2</b>	<1	<1
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>20	<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	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	0	0
Lead	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	1
Copper	ppm	ASTM D5185m	>20	<b>2</b>	<1	0
Tin	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

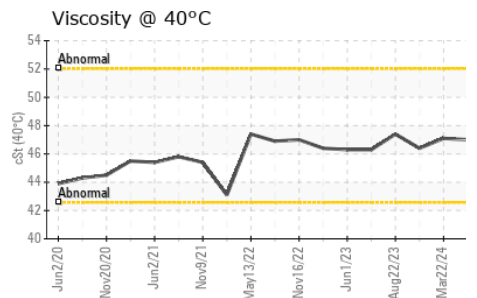
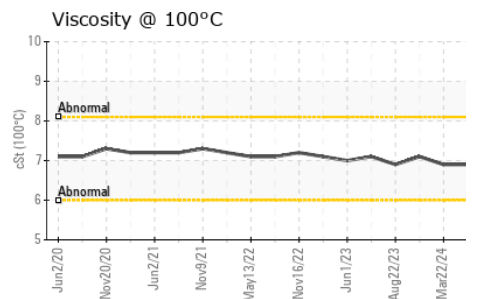
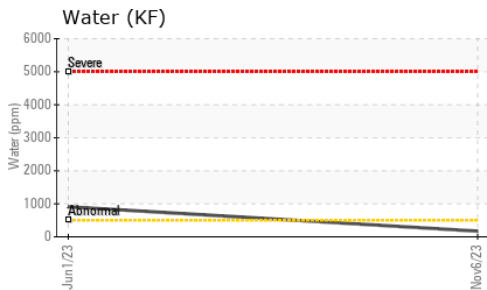
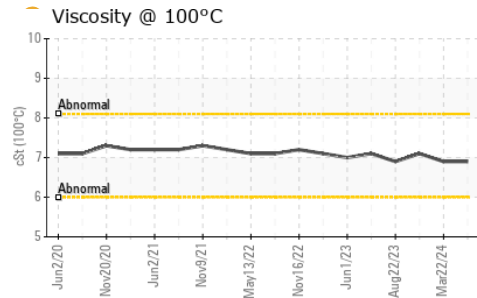
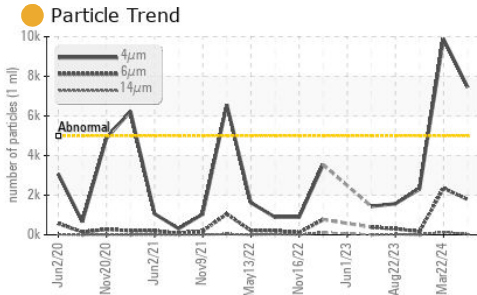
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>175</b>	176	167
Calcium	ppm	ASTM D5185m		<b>176</b>	198	154
Phosphorus	ppm	ASTM D5185m		<b>672</b>	744	727
Zinc	ppm	ASTM D5185m		<b>920</b>	894	883
Sulfur	ppm	ASTM D5185m		<b>2834</b>	3194	2687

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	<b>3</b>	<1	2
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	3	1
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	1
Water	%	ASTM D6304	>0.05	<b>NEG</b>	NEG	0.017
ppm Water	ppm	ASTM D6304	>500	<b>---</b>	---	172.4

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	<b>7451</b>	9886	2305
Particles >6µm		ASTM D7647	>1300	<b>1785</b>	2351	163
Particles >14µm		ASTM D7647	>160	<b>34</b>	135	8
Particles >21µm		ASTM D7647	>40	<b>3</b>	24	3
Particles >38µm		ASTM D7647	>10	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>20/18/12</b>	20/18/14	18/15/10

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.749</b>	0.80	0.73

# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	47.0	47.1	46.4
Visc @ 100°C	cSt	ASTM D445	6.9	6.9	7.1
Viscosity Index (VI)	Scale	ASTM D2270	101	101	111

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

### GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TO10003614 **Received** : 18 Jun 2024  
**Lab Number** : 06213453 **Tested** : 20 Jun 2024  
**Unique Number** : 11086317 **Diagnosed** : 20 Jun 2024 - Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: KF, KV100, VI )

**ANCHOR STONE TULSA ROCK**  
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE  
 TULSA, OK  
 US 74137  
 Contact: MIKE SNYDER  
 msnyder@anchorstoneco.com  
 T: (417)850-9635  
 F:

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)