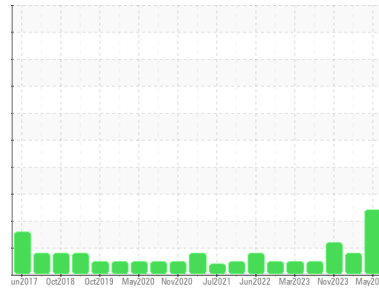


OIL ANALYSIS REPORT



Area
DE Samples - CAT LAB
 Machine ID
CATERPILLAR 990 LOADER G 6427 (S/N BCR00127)
 Component
Steering
 Fluid
TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the fluid. Moderate concentration of visible dirt/debris present in the fluid.

Fluid Condition

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

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		TO10002107	TO10003368	TO10002877
Sample Date	Client Info		31 May 2024	05 Mar 2024	13 Nov 2023
Machine Age	hrs	Client Info	49260	48658	48135
Oil Age	hrs	Client Info	4209	3124	2587
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			ABNORMAL	ATTENTION	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >60	2	1	2
Chromium	ppm	ASTM D5185m >12	<1	<1	1
Nickel	ppm	ASTM D5185m >6	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	<1
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >4	0	0	<1
Lead	ppm	ASTM D5185m >12	0	0	0
Copper	ppm	ASTM D5185m >30	1	<1	2
Tin	ppm	ASTM D5185m	0	0	<1
Vanadium	ppm	ASTM D5185m	<1	0	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	<1
Manganese	ppm	ASTM D5185m	0	0	<1
Magnesium	ppm	ASTM D5185m	123	105	31
Calcium	ppm	ASTM D5185m	135	126	70
Phosphorus	ppm	ASTM D5185m	857	829	804
Zinc	ppm	ASTM D5185m	1044	972	1107
Sulfur	ppm	ASTM D5185m	3574	3462	2861

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >10	1	<1	2
Sodium	ppm	ASTM D5185m	3	2	2
Potassium	ppm	ASTM D5185m >20	<1	<1	<1

FLUID CLEANLINESS

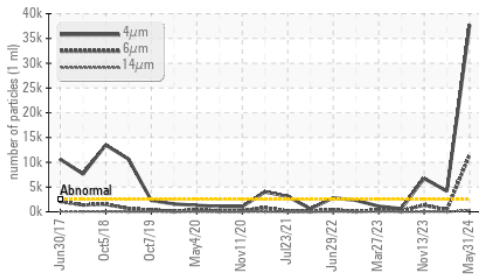
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ 37694	● 4166	▲ 6758
Particles >6µm	ASTM D7647	>640	▲ 11542	391	▲ 1353
Particles >14µm	ASTM D7647	>80	▲ 250	16	50
Particles >21µm	ASTM D7647	>20	▲ 27	3	7
Particles >38µm	ASTM D7647	>4	1	1	1
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 22/21/15	● 19/16/11	▲ 20/18/13

FLUID DEGRADATION

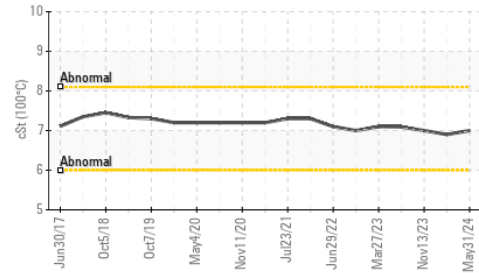
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.76	1.29	0.75

OIL ANALYSIS REPORT

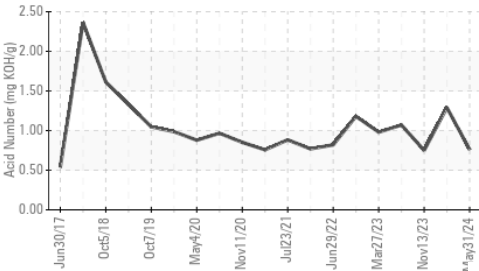
▲ Particle Trend



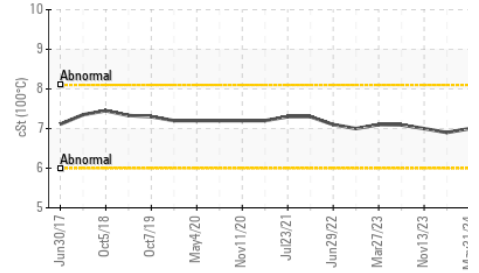
Viscosity @ 100°C



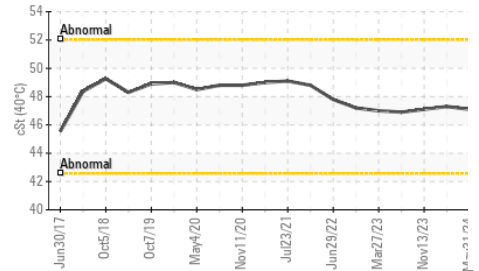
Acid Number



Viscosity @ 100°C



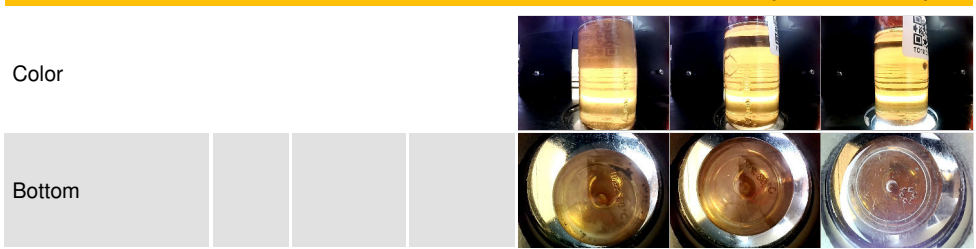
Viscosity @ 40°C



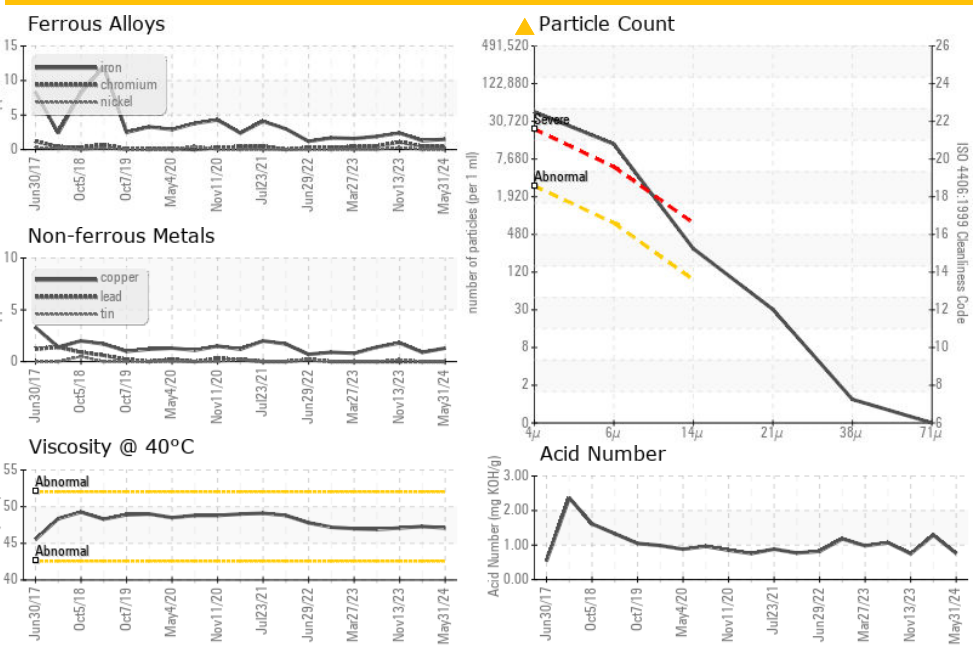
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	▲ MODER	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	47.1	47.3	47.1
Visc @ 100°C	cSt	ASTM D445	7.0	6.9	7
Viscosity Index (VI)	Scale	ASTM D2270	105	100	105

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002107 **Received** : 10 Jun 2024
Lab Number : 06205363 **Tested** : 13 Jun 2024
Unique Number : 11072824 **Diagnosed** : 13 Jun 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: KV100, PrtCount, 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)