



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 990K 6088 (S/N A9P00362)
 Component
Transmission (Manual)
 Fluid
TULCO LUBSOIL TO-4 30 (30 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003615	TO10002075	TO10002894
Sample Date		Client Info		13 Jun 2024	22 Mar 2024	06 Nov 2023
Machine Age	hrs	Client Info		15988	15413	14829
Oil Age	hrs	Client Info		1667	1092	508
Filter Age	hrs	Client Info		724	1092	508
Oil Changed		Client Info		Not Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ		ASTM D8184	>95	13	9	12
Iron	ppm	ASTM D5185m	>200	2	4	<1
Chromium	ppm	ASTM D5185m	>5	0	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>7	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	2	<1
Lead	ppm	ASTM D5185m	>45	0	<1	0
Copper	ppm	ASTM D5185m	>225	<1	4	<1
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

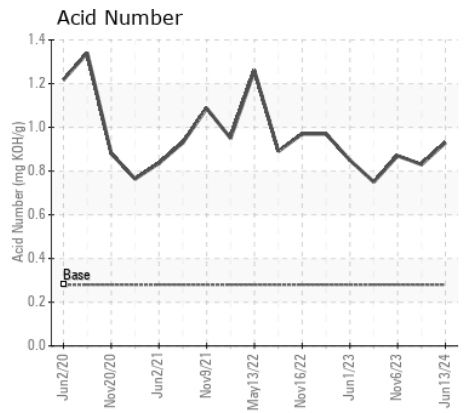
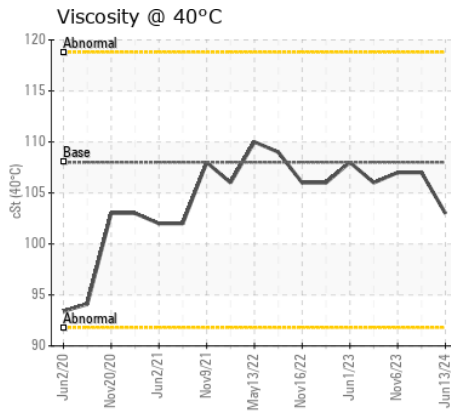
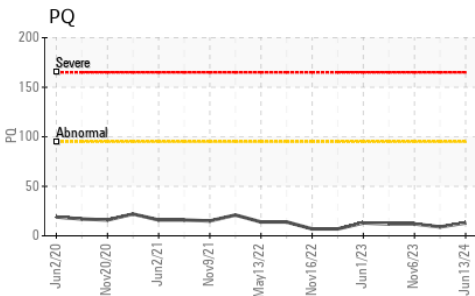
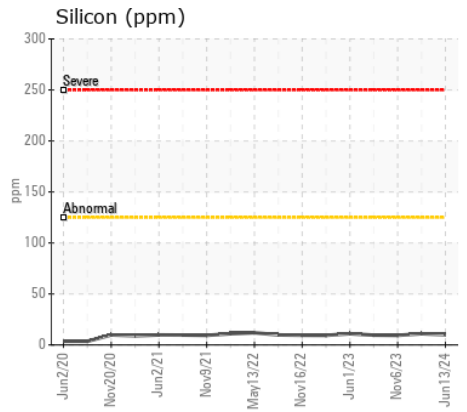
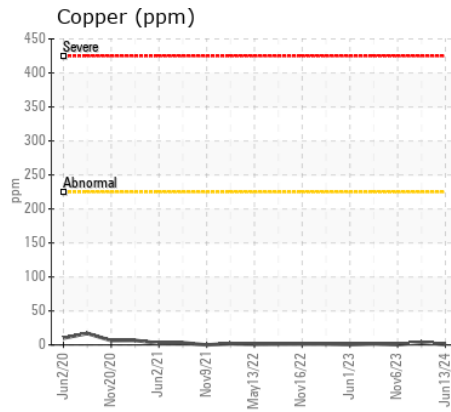
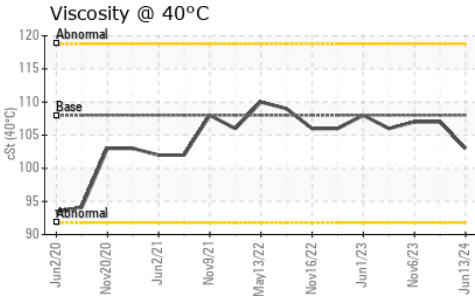
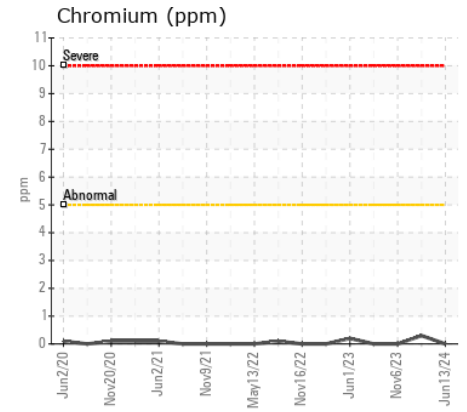
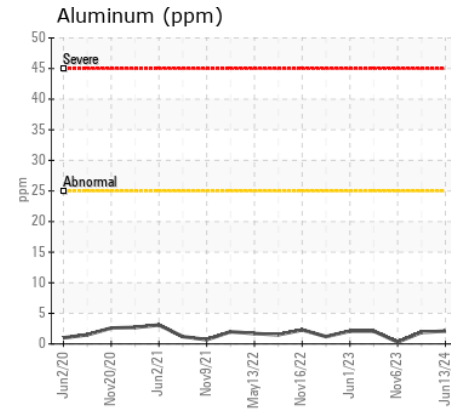
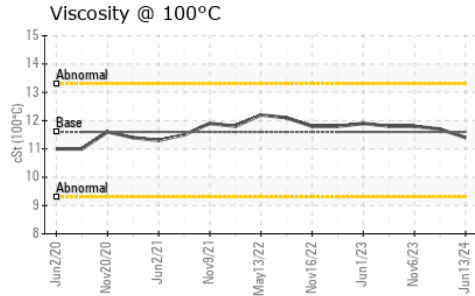
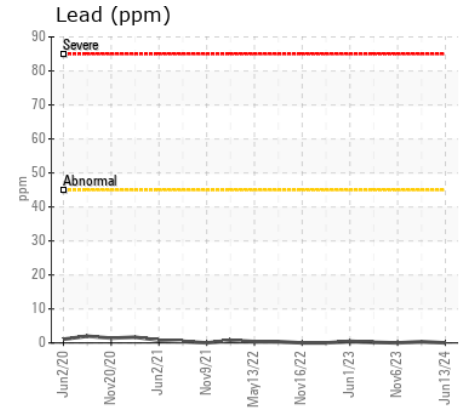
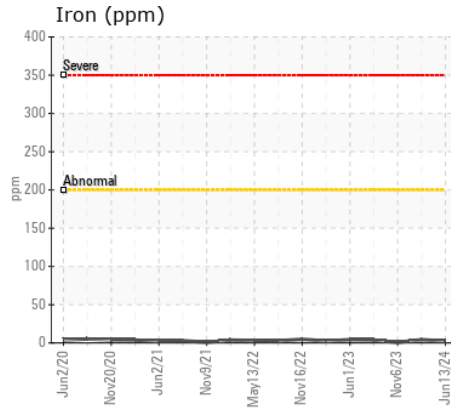
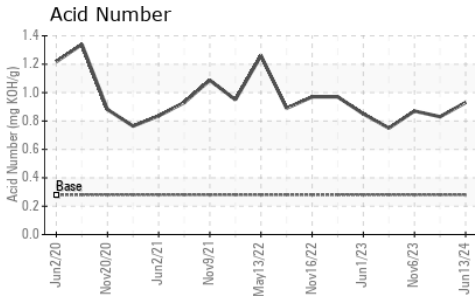
There is no indication of any contamination in the fluid.

Silicon	ppm	ASTM D5185m	>125	10	11	9
Potassium	ppm	ASTM D5185m	>20	0	2	0
Water		WC Method	>0.1	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	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		5	4	4
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	<1	0
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m	9	25	15	12
Calcium	ppm	ASTM D5185m	4500	4024	3289	2875
Phosphorus	ppm	ASTM D5185m	1150	902	971	868
Zinc	ppm	ASTM D5185m	1250	1076	1180	1085
Sulfur	ppm	ASTM D5185m	4500	5010	4853	4008
Acid Number (AN)	mg KOH/g	ASTM D8045	0.28	0.93	0.83	0.87
Visc @ 40°C	cSt	ASTM D445	108	103	107	107
Visc @ 100°C	cSt	ASTM D445	11.6	11.4	11.7	11.8
Viscosity Index (VI)	Scale	ASTM D2270	94	96	96	98



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003615 **Received** : 18 Jun 2024
Lab Number : 06213652 **Tested** : 20 Jun 2024
Unique Number : 11086516 **Diagnosed** : 20 Jun 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, PQ, 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)