



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 990K 6088 (S/N A9P00362)
Component
Rear Left Planetary
Fluid
TULCO LUBSOIL TO-4 50 (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003618	TO10003020	TO10002882
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		4500	3925	3341
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		N/A	N/A	None
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184		24	22	16
Iron	ppm	ASTM D5185m	>150	13	14	9
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>10	0	1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	2	<1
Lead	ppm	ASTM D5185m	>100	2	3	2
Copper	ppm	ASTM D5185m	>50	42	42	34
Tin	ppm	ASTM D5185m	>10	2	4	2
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

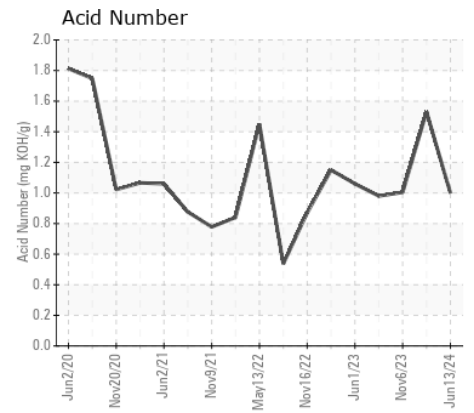
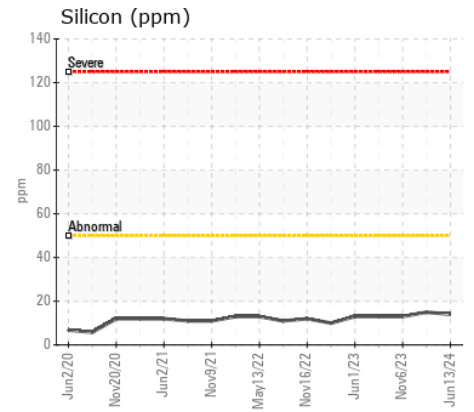
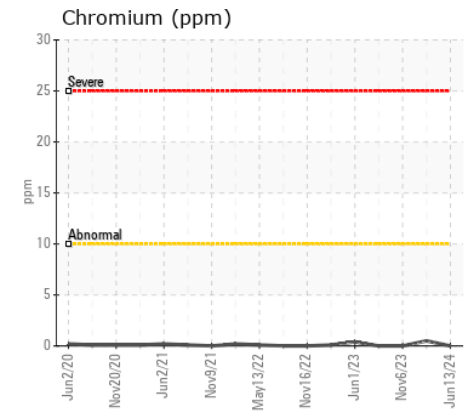
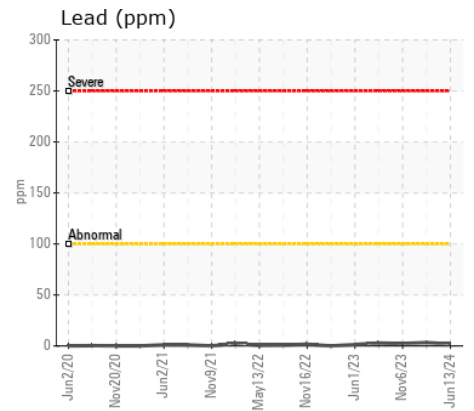
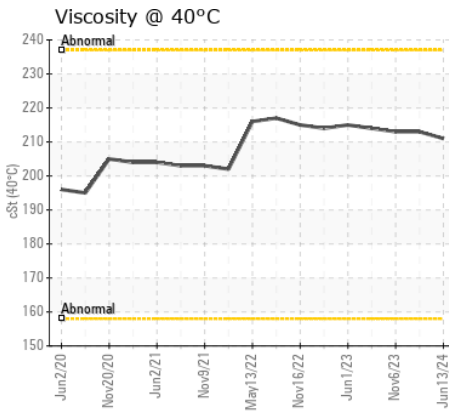
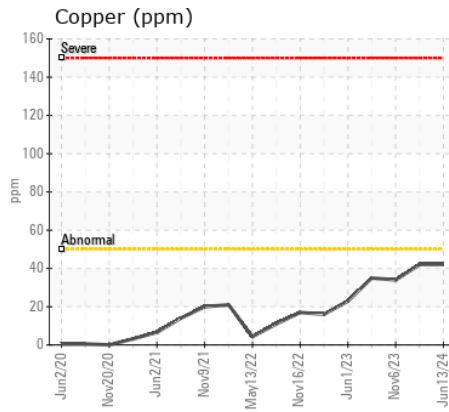
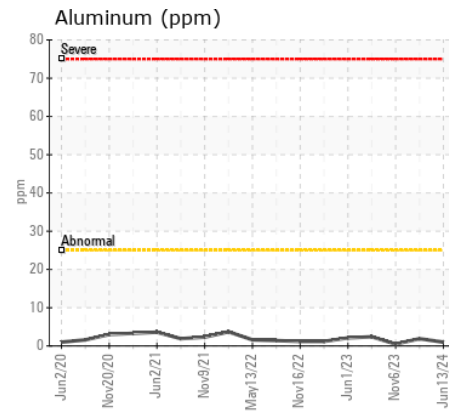
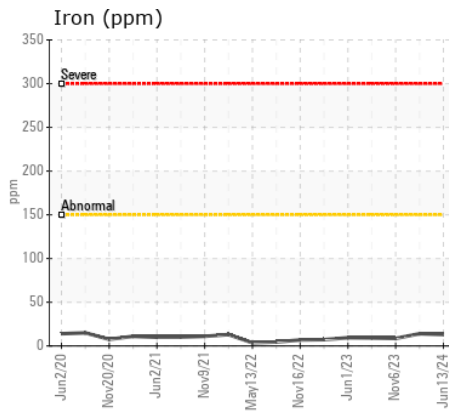
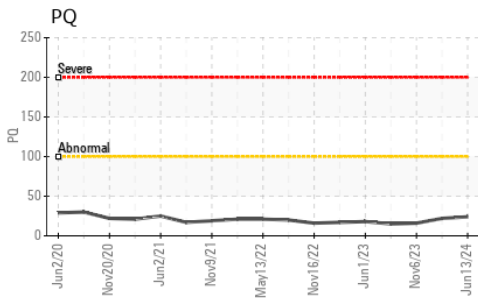
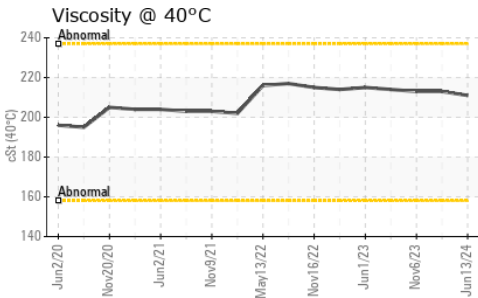
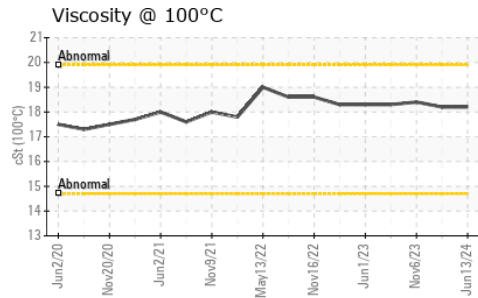
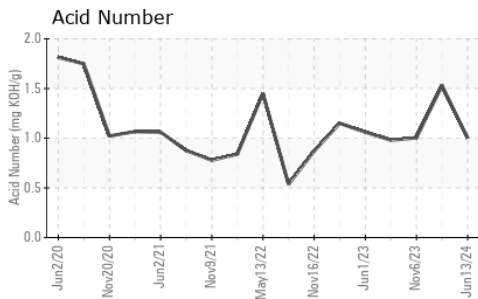
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	14	15	13
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 oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	3	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		11	11	11
Calcium	ppm	ASTM D5185m		3259	3294	3049
Phosphorus	ppm	ASTM D5185m		924	974	920
Zinc	ppm	ASTM D5185m		1093	1172	1132
Sulfur	ppm	ASTM D5185m		5466	5491	4712
Acid Number (AN)	mg KOH/g	ASTM D8045		1.00	1.53	1.004
Visc @ 40°C	cSt	ASTM D445		211	213	213
Visc @ 100°C	cSt	ASTM D445		18.2	18.2	18.4
Viscosity Index (VI)	Scale	ASTM D2270		94	93	95



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : TO10003618

Lab Number : 06213642

Unique Number : 11086506

Test Package : MOB 2 (Additional Tests: KV100, PQ, VI)

Received : 18 Jun 2024

Tested : 20 Jun 2024

Diagnosed : 20 Jun 2024 - Wes Davis

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)

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