



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 980H LOADER 6821 (S/N JMS06208)
Component
Transmission (Manual)
Fluid
TULCO LUBSOIL TO-4 30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003147	TO10002866	TO10002481
Sample Date		Client Info		20 Feb 2024	13 Nov 2023	28 Aug 2023
Machine Age	hrs	Client Info		28828	28310	27775
Oil Age	hrs	Client Info		1053	535	995
Filter Age	hrs	Client Info		518	535	249
Oil Changed		Client Info		Changed	Not Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ		ASTM D8184	>95	12	17	12
Iron	ppm	ASTM D5185m	>200	4	4	5
Chromium	ppm	ASTM D5185m	>5	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>7	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	2	2
Lead	ppm	ASTM D5185m	>45	0	<1	<1
Copper	ppm	ASTM D5185m	>225	3	3	4
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

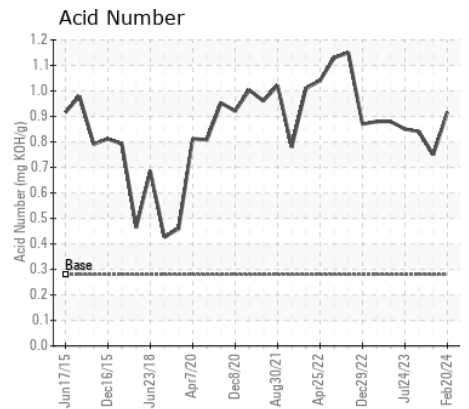
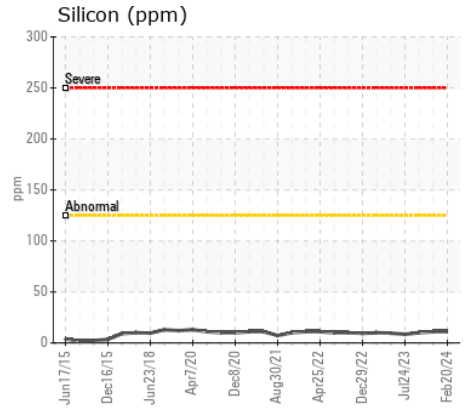
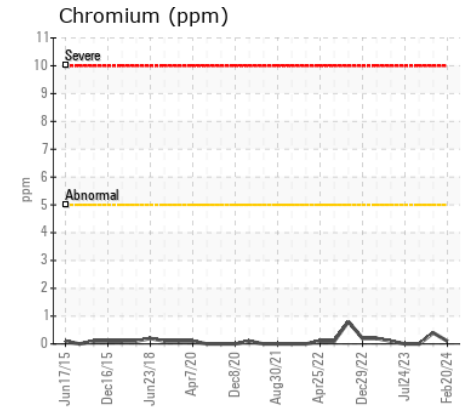
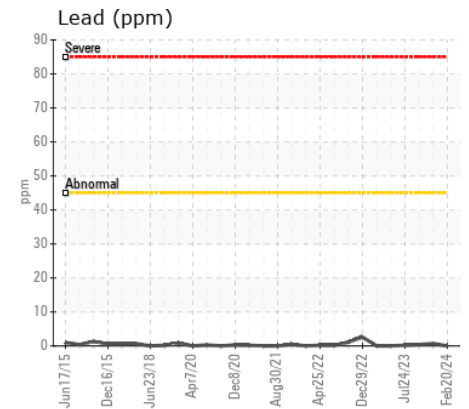
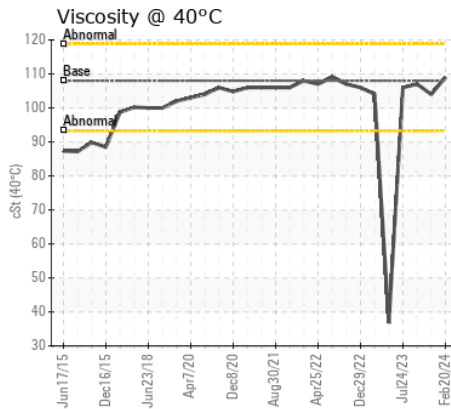
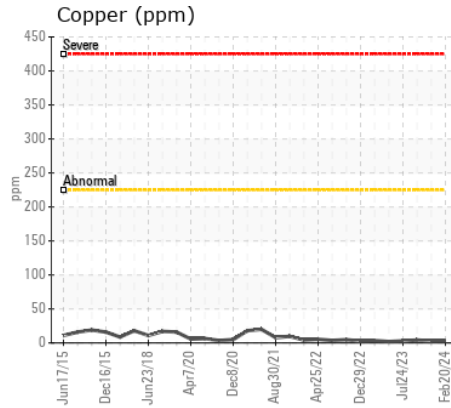
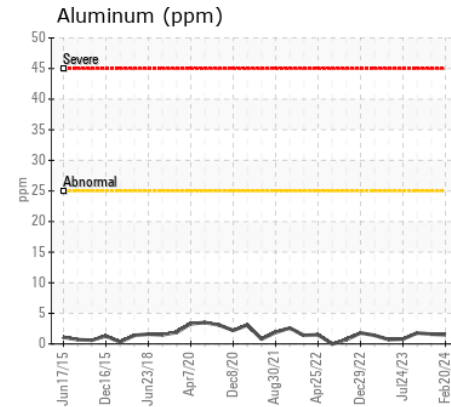
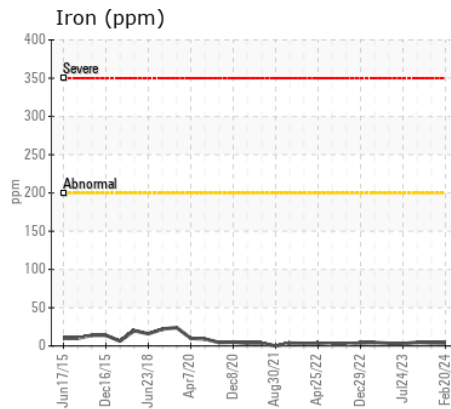
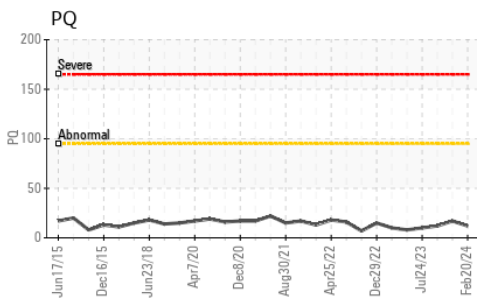
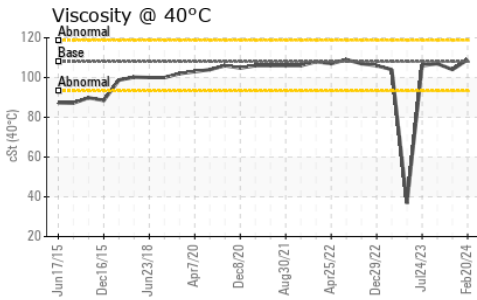
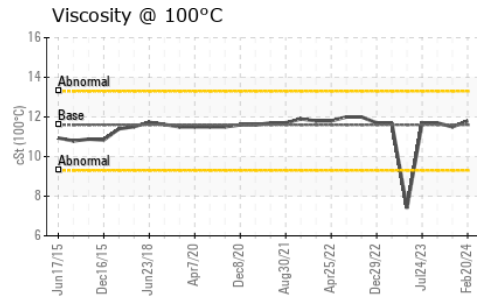
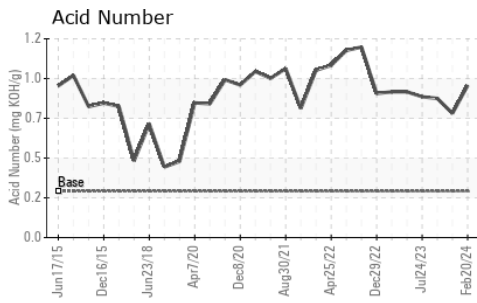
There is no indication of any contamination in the fluid.

Silicon	ppm	ASTM D5185m	>125	11	11	10
Potassium	ppm	ASTM D5185m	>20	0	0	<1
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	5
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	2	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	9	24	0	13
Calcium	ppm	ASTM D5185m	4500	3045	3048	3002
Phosphorus	ppm	ASTM D5185m	1150	907	790	844
Zinc	ppm	ASTM D5185m	1250	1120	1074	1082
Sulfur	ppm	ASTM D5185m	4500	4170	3646	4634
Acid Number (AN)	mg KOH/g	ASTM D8045	0.28	0.917	0.75	0.84
Visc @ 40°C	cSt	ASTM D445	108	109	104	107
Visc @ 100°C	cSt	ASTM D445	11.6	11.8	11.5	11.7
Viscosity Index (VI)	Scale	ASTM D2270	94	96	97	96



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003147 **Received** : 29 Feb 2024
Lab Number : 06105367 **Tested** : 01 Mar 2024
Unique Number : 10903597 **Diagnosed** : 01 Mar 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, PQ, VI)

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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