



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
Front Differential
Fluid
TULCO LUBSOIL TO-4 50 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003090	TO10003141	TO10002889
Sample Date		Client Info		08 May 2024	20 Feb 2024	13 Nov 2023
Machine Age	hrs	Client Info		29374	28828	28310
Oil Age	hrs	Client Info		5765	5219	4701
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		N/A	None	None
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ	UOM	Method	Limit/Abn	Current	History1	History2
Iron	ppm	ASTM D5185m	>500	54	47	38
Chromium	ppm	ASTM D5185m	>3	<1	<1	<1
Nickel	ppm	ASTM D5185m	>3	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>30	4	4	4
Lead	ppm	ASTM D5185m	>13	<1	<1	<1
Copper	ppm	ASTM D5185m	>103	6	2	2
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

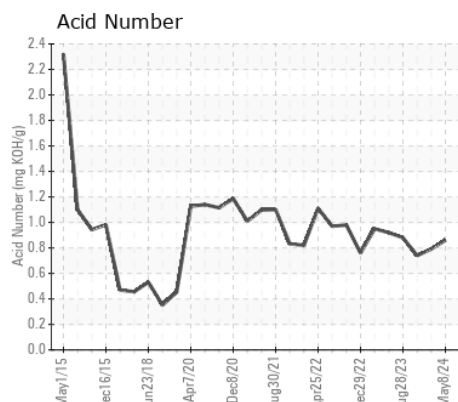
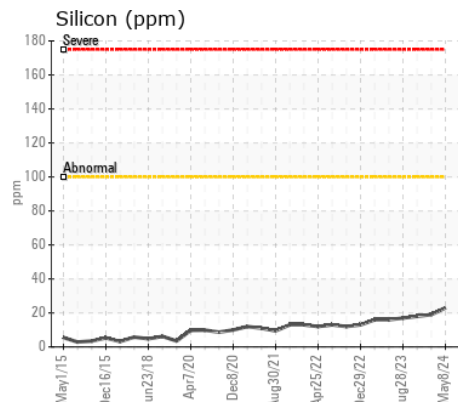
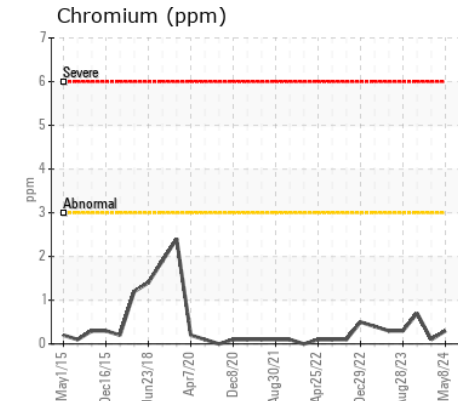
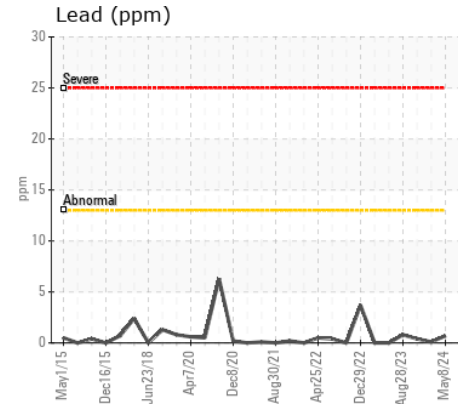
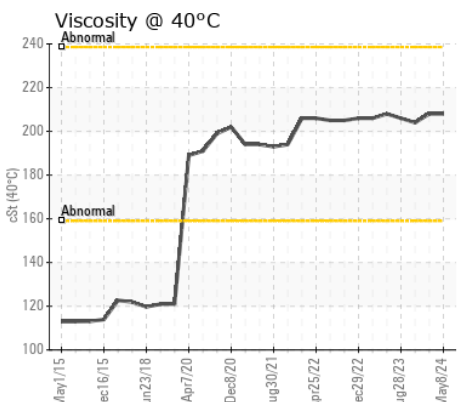
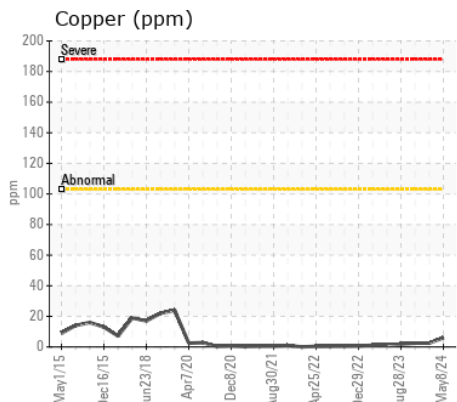
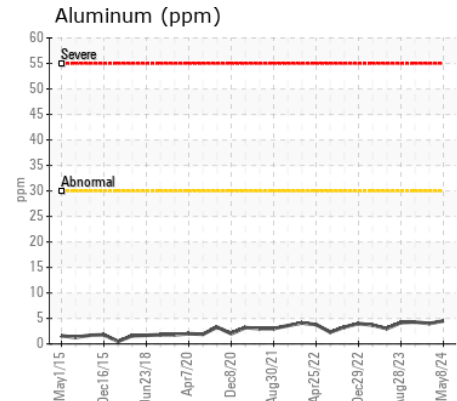
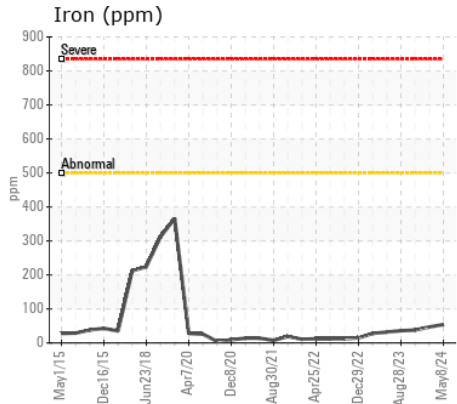
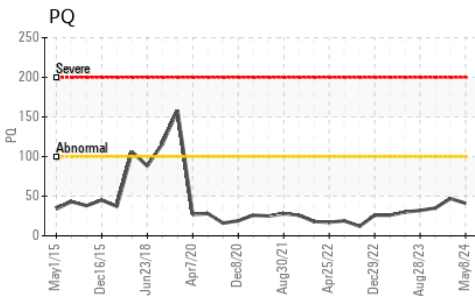
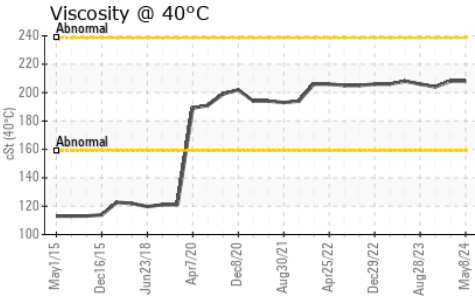
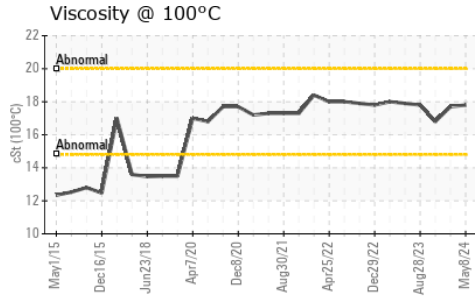
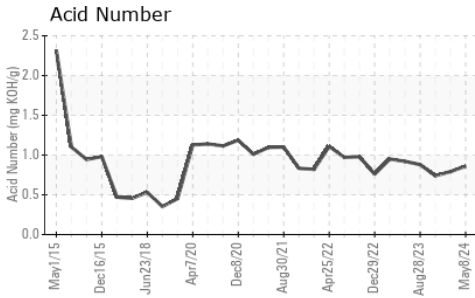
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>100	23	19	18
Potassium	ppm	ASTM D5185m	>20	3	<1	0
Water		WC Method	>.2	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
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	>.2	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		1	4	5
Boron	ppm	ASTM D5185m		2	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	0	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		17	20	0
Calcium	ppm	ASTM D5185m		4387	4380	4089
Phosphorus	ppm	ASTM D5185m		838	871	672
Zinc	ppm	ASTM D5185m		1004	1057	912
Sulfur	ppm	ASTM D5185m		5665	5142	4141
Acid Number (AN)	mg KOH/g	ASTM D8045		0.86	0.792	0.74
Visc @ 40°C	cSt	ASTM D445		208	208	204
Visc @ 100°C	cSt	ASTM D445		17.8	17.7	16.8
Viscosity Index (VI)	Scale	ASTM D2270		92	91	85



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003090 **Received** : 13 May 2024
Lab Number : 06177815 **Tested** : 14 May 2024
Unique Number : 11029141 **Diagnosed** : 14 May 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)