



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
Diesel Engine
Fluid
TULCO LUBSOIL DIESEL TURBO CJ4 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10002961	TO10003078	TO10002867
Sample Date		Client Info		20 Feb 2024	28 Dec 2023	13 Nov 2023
Machine Age	hrs	Client Info		28828	28570	28310
Oil Age	hrs	Client Info		518	260	535
Filter Age	hrs	Client Info		518	260	535
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	MARGINAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	14	9	24
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	1	<1
Lead	ppm	ASTM D5185m	>40	2	1	1
Copper	ppm	ASTM D5185m	>330	4	3	4
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

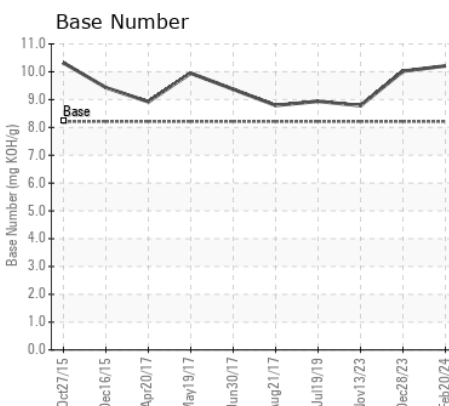
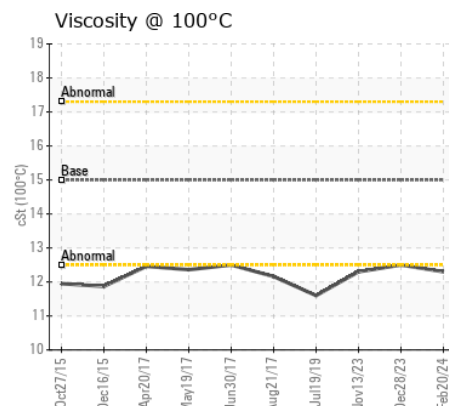
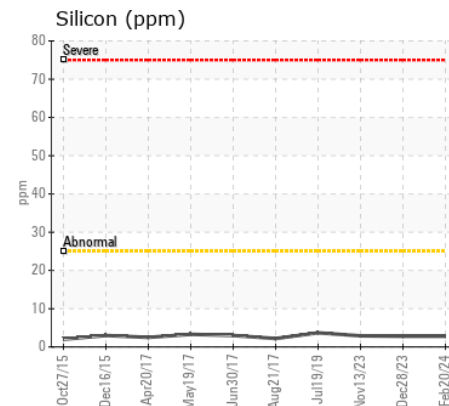
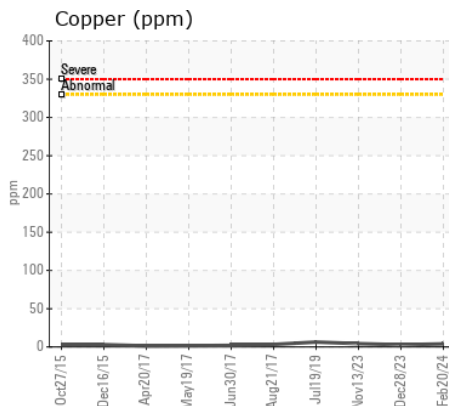
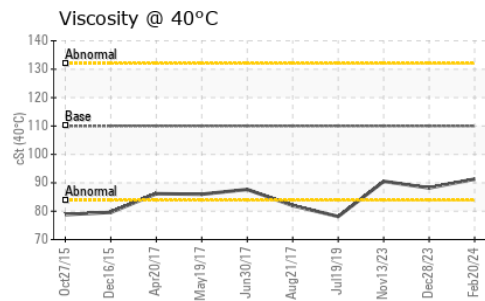
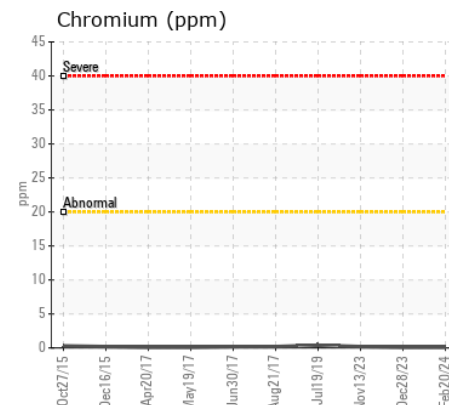
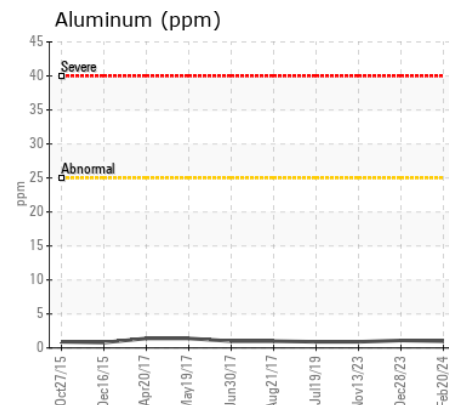
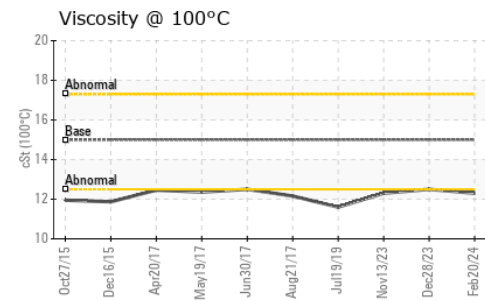
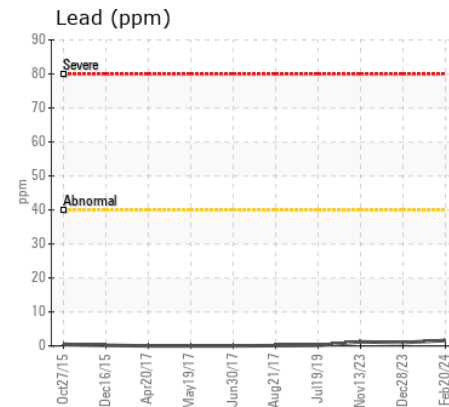
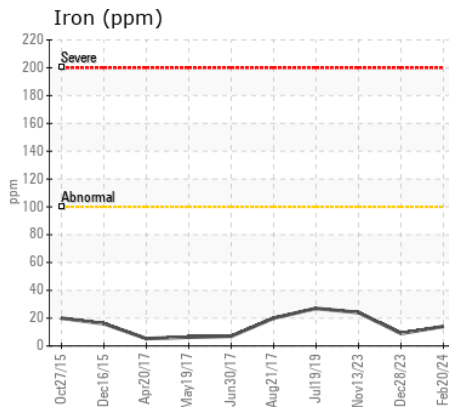
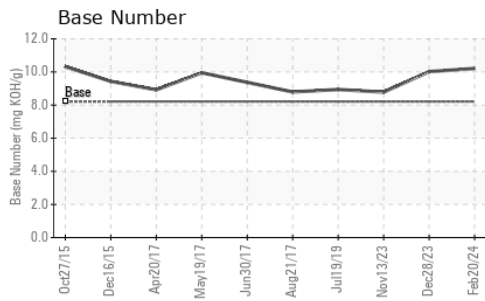
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	3	3
Potassium	ppm	ASTM D5185m	>20	<1	0	0
Fuel		WC Method	>5	<1.0	▲ 4.1	▲ 5.2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	7.8	6.8	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	19.2	20.7
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		1	2	2
Boron	ppm	ASTM D5185m	1	8	11	11
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	40	54	58	56
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	935	863	931	904
Calcium	ppm	ASTM D5185m	1234	983	1047	1059
Phosphorus	ppm	ASTM D5185m	1089	987	1059	1019
Zinc	ppm	ASTM D5185m	1090	1213	1267	1225
Sulfur	ppm	ASTM D5185m	3700	3124	3320	2997
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.2	14.6	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.21	10.21	10.02	8.78
Visc @ 40°C	cSt	ASTM D445	110	91.3	88.2	90.5
Visc @ 100°C	cSt	ASTM D445	15	12.3	12.5	▲ 12.3
Viscosity Index (VI)	Scale	ASTM D2270	143	128	137	130



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002961 **Received** : 29 Feb 2024
Lab Number : 06105427 **Tested** : 02 Mar 2024
Unique Number : 10903657 **Diagnosed** : 02 Mar 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: KV40, 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)

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