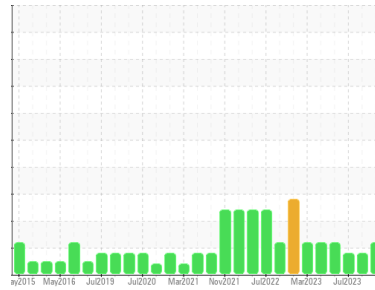


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
CATERPILLAR 980H LOADER 6821 (S/N JMS06208)
Component
Hydraulic System
Fluid
TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	TO10002862	TO10002484	TO10002412
Sample Date	Client Info	13 Nov 2023	28 Aug 2023	24 Jul 2023
Machine Age	hrs	28310	27775	27526
Oil Age	hrs	784	249	7362
Oil Changed	Client Info	Not Chngd	Not Chngd	Changed
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >20	8	7	13
Chromium	ppm	ASTM D5185m >10	<1	0	0
Nickel	ppm	ASTM D5185m >10	<1	0	0
Titanium	ppm	ASTM D5185m	<1	<1	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >10	6	3	2
Lead	ppm	ASTM D5185m >10	0	0	0
Copper	ppm	ASTM D5185m >75	4	4	7
Tin	ppm	ASTM D5185m >10	<1	<1	0
Vanadium	ppm	ASTM D5185m	<1	<1	0
Cadmium	ppm	ASTM D5185m	<1	<1	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	3	2	3
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	94	187	140
Calcium	ppm	ASTM D5185m	168	219	241
Phosphorus	ppm	ASTM D5185m	668	743	811
Zinc	ppm	ASTM D5185m	901	966	1050
Sulfur	ppm	ASTM D5185m	2468	3398	3603

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >20	8	6	11
Sodium	ppm	ASTM D5185m	4	4	3
Potassium	ppm	ASTM D5185m >20	<1	2	2
Water	%	ASTM D6304 >0.1	NEG	NEG	NEG

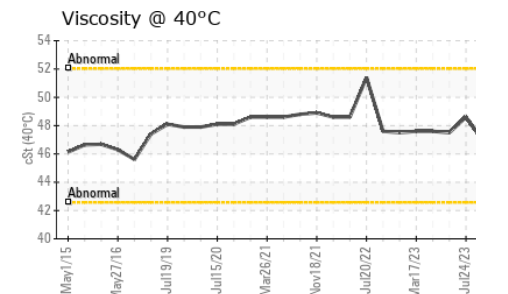
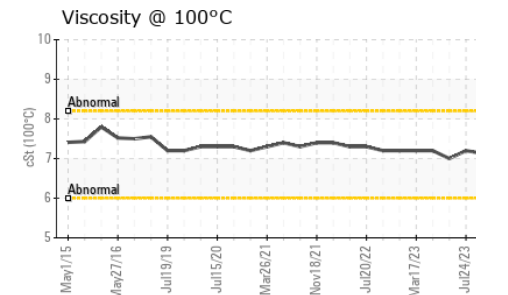
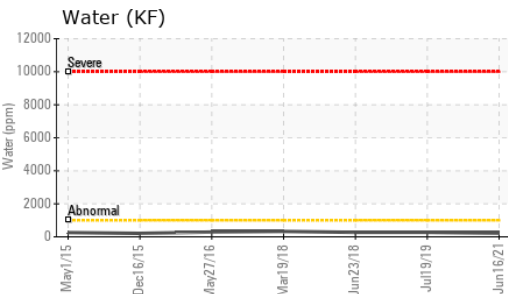
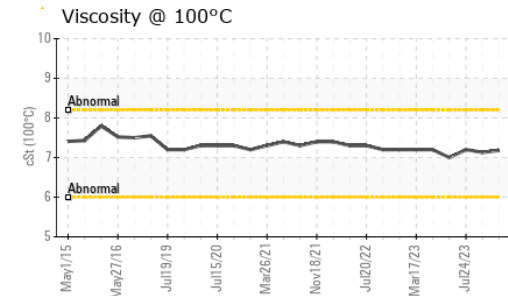
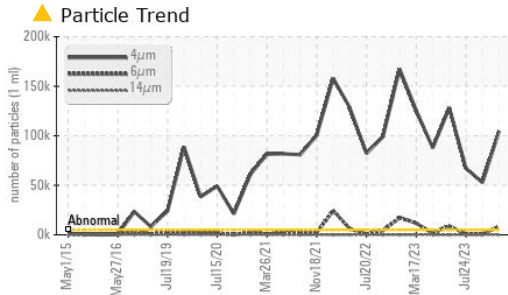
FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	▲ 104516	▲ 52642	▲ 67241
Particles >6µm	ASTM D7647 >1300	▲ 8207	744	818
Particles >14µm	ASTM D7647 >160	12	16	14
Particles >21µm	ASTM D7647 >40	3	4	4
Particles >38µm	ASTM D7647 >10	0	0	0
Particles >71µm	ASTM D7647 >3	0	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 24/20/11	▲ 23/17/11	▲ 23/17/11

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	0.83	0.97	1.501

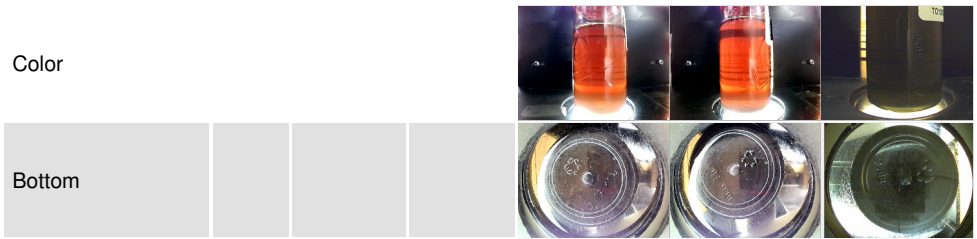
OIL ANALYSIS REPORT



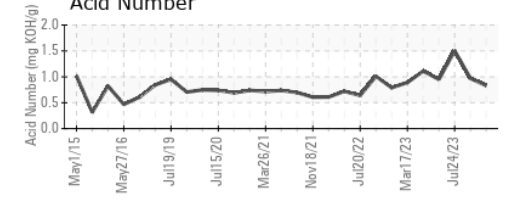
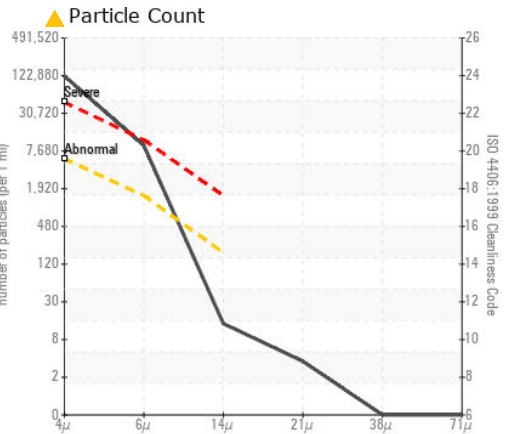
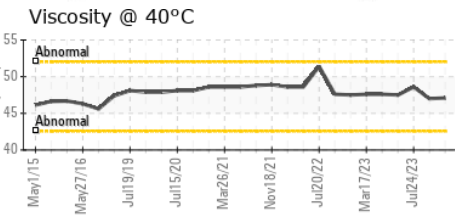
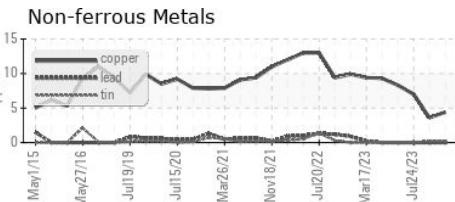
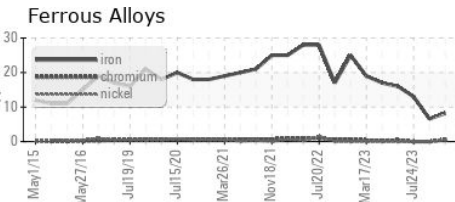
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	47.1	47.0	48.6
Visc @ 100°C	cSt	ASTM D445	7.18	7.13	7.2
Viscosity Index (VI)	Scale	ASTM D2270	111	110	107

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002862 **Received** : 17 Nov 2023
Lab Number : 06011484 **Diagnosed** : 29 Nov 2023
Unique Number : 10750628 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, KV100, VI)

ANCHOR STONE TULSA ROCK
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
 TULSA, OK
 US 74137
 Contact: MIKE SNYDER
 msnyder@anchorstoneco.com
 T: (417)850-9635
 F:

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)