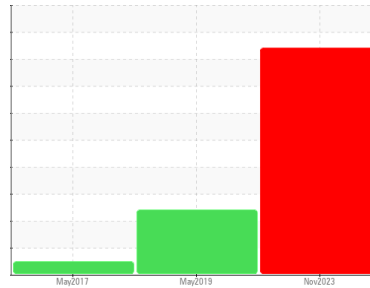


# OIL ANALYSIS REPORT

Sample Rating Trend



**GLYCOL**



Area  
**DE Samples - CAT LAB**  
Machine Id  
**CATERPILLAR 420 FST BACKHOE 6010 (S/N SKR04232)**  
Component  
**Diesel Engine**  
Fluid  
**TULCO LUBSOIL DIESEL TURBO CJ4 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

Test for glycol is positive. There is a high concentration of glycol present in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>TO10002850</b>	TO1005952	TO1006106
Sample Date	Client Info		<b>14 Nov 2023</b>	13 May 2019	15 May 2017
Machine Age	hrs	Client Info	<b>12883</b>	5200	1382
Oil Age	hrs	Client Info	<b>573</b>	300	320
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>SEVERE</b>	ABNORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>40</b>	35	22
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	3	<1
Nickel	ppm	ASTM D5185m >2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m >2	<b>2</b>	<1	<1
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>11</b>	▲ 18	8
Lead	ppm	ASTM D5185m >40	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m >330	<b>2</b>	5	51
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	0
Antimony	ppm	ASTM D5185m	<b>---</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 1	<b>10</b>	9	111
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 40	<b>87</b>	62	69
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 935	<b>977</b>	1015	735
Calcium	ppm	ASTM D5185m 1234	<b>1230</b>	1536	1203
Phosphorus	ppm	ASTM D5185m 1089	<b>1165</b>	974	946
Zinc	ppm	ASTM D5185m 1090	<b>1411</b>	1078	1064
Sulfur	ppm	ASTM D5185m 3700	<b>3640</b>	3423	3630

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>14</b>	▲ 39	7
Sodium	ppm	ASTM D5185m	▲ <b>560</b>	2	3
Potassium	ppm	ASTM D5185m >20	▲ <b>39</b>	2	1
Glycol	%	*ASTM D2982	◆ <b>0.10</b>	NEG	NEG

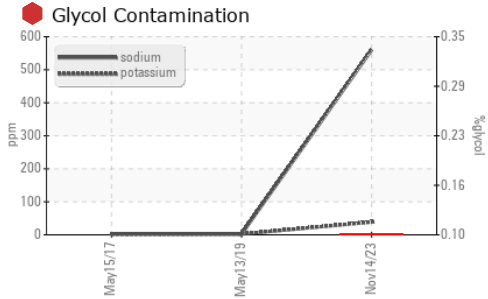
## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.7</b>	0.2	0
Nitration	Abs/cm	*ASTM D7624 >20	<b>10.8</b>	7.5	6.
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>21.9</b>	18.5	17.

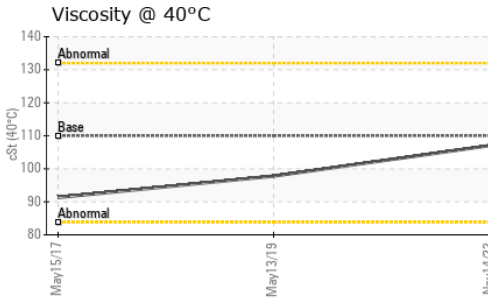
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>16.9</b>	14.4	11.
Base Number (BN)	mg KOH/g	ASTM D2896 8.21	<b>11.41</b>	10.3	8.33

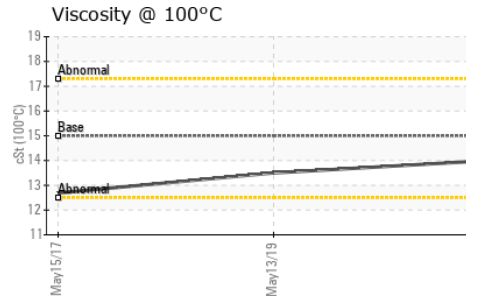
# OIL ANALYSIS REPORT



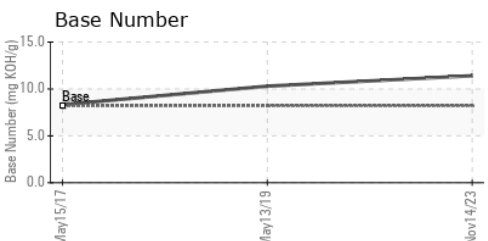
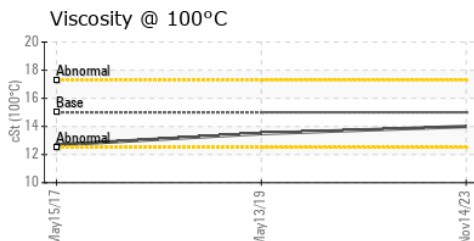
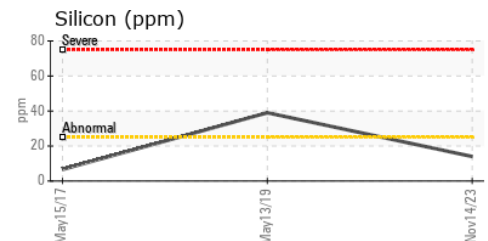
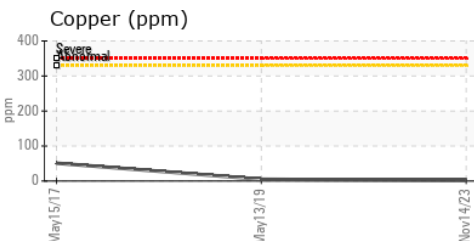
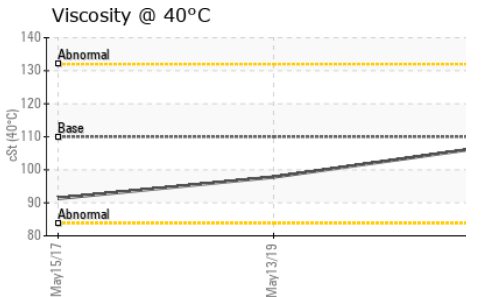
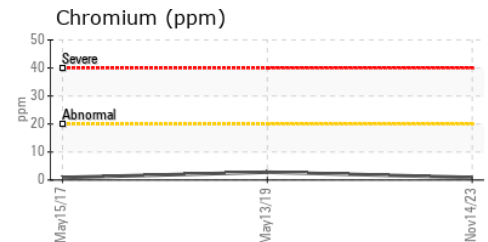
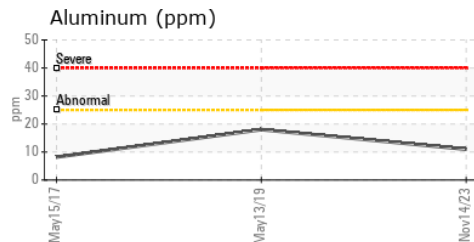
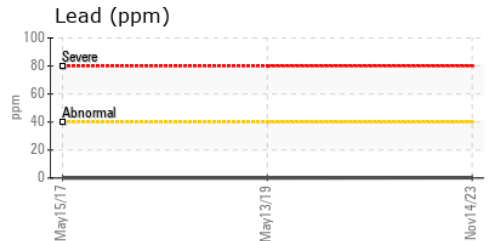
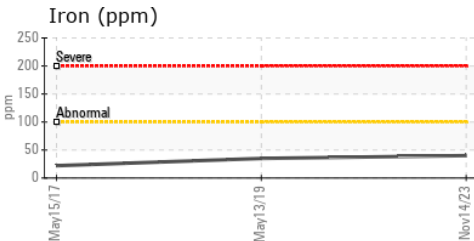
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG



FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	110	97.8	91.32
Visc @ 100°C	cSt	ASTM D445	15	13.5	12.69
Viscosity Index (VI)	Scale	ASTM D2270	143	138	135



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TO10002850 **Received** : 20 Nov 2023  
**Lab Number** : 06013508 **Diagnosed** : 24 Nov 2023  
**Unique Number** : 10752652 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2 ( Additional Tests: Glycol, KV40, VI )

**ANCHOR STONE TULSA ROCK**  
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE  
 TULSA, OK  
 US 74137

Contact: MIKE SNYDER  
 msnyder@anchorstoneco.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

T: (417)850-9635

\* - 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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