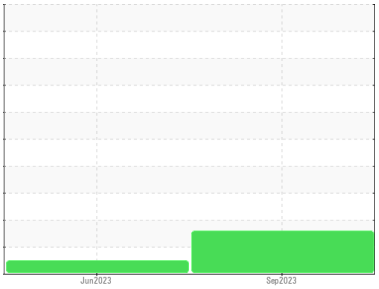
PROBLEM SUMMARY

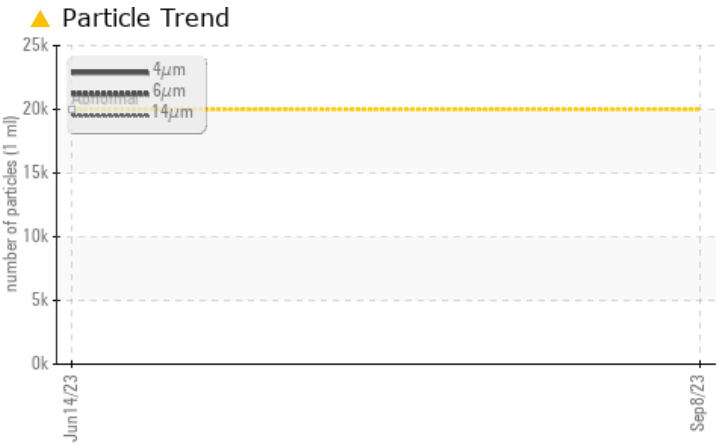
Machine Id
CATERPILLAR 320 131
Component
Diesel Engine
Fluid
PETRO CANADA 15W40 (--- GAL)

Sample Rating Trend



ISO

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	NORMAL	---
Particles >6µm		ASTM D7647	>5000	▲ **6123**	---	---
Particles >14µm		ASTM D7647	>640	▲ **1042**	---	---
Particles >21µm		ASTM D7647	>160	▲ **351**	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **21/20/17**	---	---

Customer Id: CLBMYR
Sample No.: WC0517482
Lab Number: 05961850
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

14 Jun 2023 Diag: Wes Davis

NORMAL

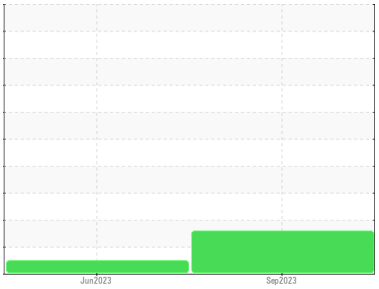
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Machine Id
CATERPILLAR 320 131
Component
Diesel Engine
Fluid
PETRO CANADA 15W40 (--- GAL)

Sample Rating Trend



ISO

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The filter 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
There is a moderate amount of particulates (2 to 100 microns in size) present in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0517482**	WC0822328	---
Sample Date		Client Info		**08 Sep 2023**	14 Jun 2023	---
Machine Age	hrs	Client Info		**1540**	1250	---
Oil Age	hrs	Client Info		**290**	248	---
Oil Changed		Client Info		**Changed**	Changed	---
Sample Status				**ABNORMAL**	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**13**	11	---
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	---
Nickel	ppm	ASTM D5185m	>2	**0**	0	---
Titanium	ppm	ASTM D5185m	>2	**<1**	0	---
Silver	ppm	ASTM D5185m	>2	**0**	0	---
Aluminum	ppm	ASTM D5185m	>25	**4**	0	---
Lead	ppm	ASTM D5185m	>40	**<1**	0	---
Copper	ppm	ASTM D5185m	>330	**4**	1	---
Tin	ppm	ASTM D5185m	>15	**<1**	0	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Cadmium	ppm	ASTM D5185m		**<1**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**2**	8	---
Barium	ppm	ASTM D5185m		**0**	0	---
Molybdenum	ppm	ASTM D5185m		**59**	61	---
Manganese	ppm	ASTM D5185m		**<1**	0	---
Magnesium	ppm	ASTM D5185m		**972**	974	---
Calcium	ppm	ASTM D5185m		**1070**	1109	---
Phosphorus	ppm	ASTM D5185m		**1011**	1026	---
Zinc	ppm	ASTM D5185m		**1249**	1239	---
Sulfur	ppm	ASTM D5185m		**3233**	3720	---

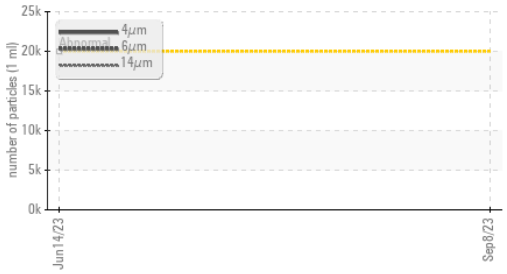
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	2	---
Sodium	ppm	ASTM D5185m		**1**	<1	---
Potassium	ppm	ASTM D5185m	>20	**2**	0	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	**6.6**	6.5	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.2**	17.9	---

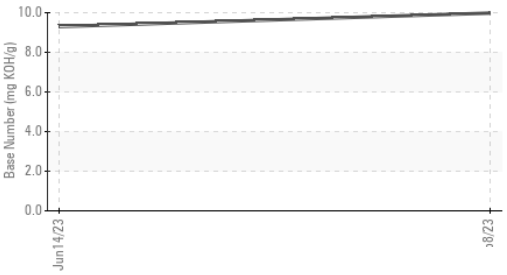
OIL ANALYSIS REPORT

Particle Trend

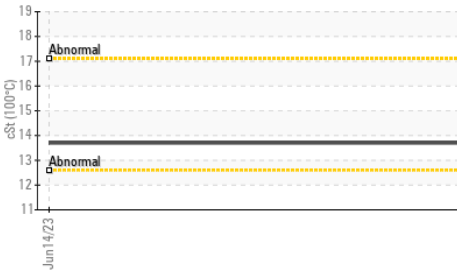
Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**11240**	---	---
Particles >6µm		ASTM D7647	>5000	▲ **6123**	---	---
Particles >14µm		ASTM D7647	>640	▲ **1042**	---	---
Particles >21µm		ASTM D7647	>160	▲ **351**	---	---
Particles >38µm		ASTM D7647	>40	**54**	---	---
Particles >71µm		ASTM D7647	>10	**6**	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **21/20/17**	---	---

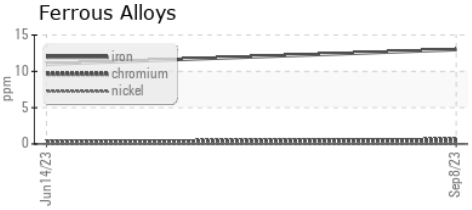
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.4**	13.8	---
Base Number (BN)	mg KOH/g	ASTM D2896		**9.98**	9.3	---

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	---

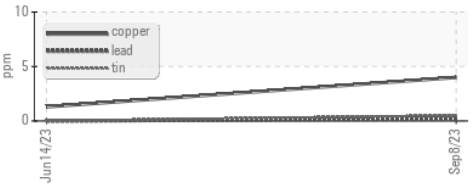
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**13.7**	13.7	---

GRAPHS

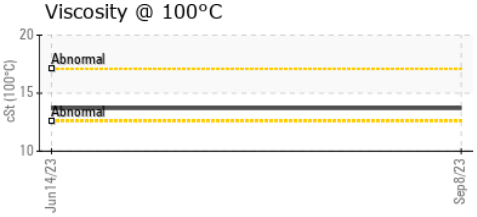
Ferrous Alloys



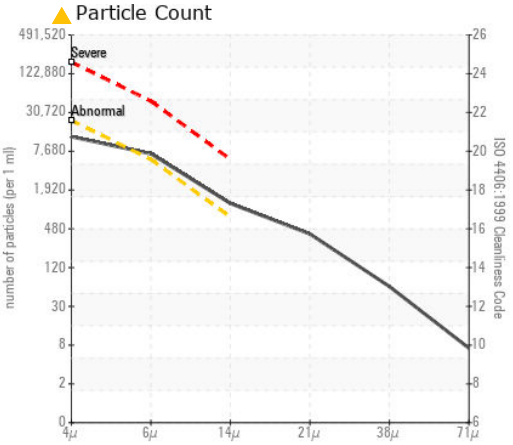
Non-ferrous Metals



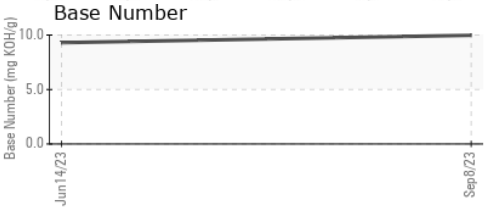
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0517482 **Received** : 26 Sep 2023
Lab Number : 05961850 **Diagnosed** : 28 Sep 2023
Unique Number : 10668401 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: PrtCount)

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)

C.L. BENTON & SONS INC
706 38TH AVE N
MYRTLE BEACH, SC
US 29577
Contact: NEIL
neil@clbenton.com
T:
F: