



# OIL ANALYSIS REPORT



Area  
**MINING**  
Machine Id  
**ME-57 CATERPILLAR 938K C8N20657**  
Component  
**Hydraulic System**  
Fluid  
**SHELL Spirax S4 CX 10W (--- GAL)**

## Sample Rating Trend



## VISCOSITY



### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

#### Fluid Condition

The oil viscosity is higher than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirm oil type. The AN level is acceptable for this fluid.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0939951</b>	---	---
Sample Date	Client Info		<b>17 Jun 2024</b>	---	---
Machine Age	hrs	Client Info	<b>11200</b>	---	---
Oil Age	hrs	Client Info	<b>11200</b>	---	---
Oil Changed	Client Info		<b>Not Chngd</b>	---	---
Sample Status			<b>ATTENTION</b>	---	---

### CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	---	---

### WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	<b>11</b>	---	---
Chromium	ppm	ASTM D5185m >10	<b>&lt;1</b>	---	---
Nickel	ppm	ASTM D5185m >10	<b>0</b>	---	---
Titanium	ppm	ASTM D5185m	<b>0</b>	---	---
Silver	ppm	ASTM D5185m	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m >10	<b>2</b>	---	---
Lead	ppm	ASTM D5185m >10	<b>0</b>	---	---
Copper	ppm	ASTM D5185m >75	<b>39</b>	---	---
Tin	ppm	ASTM D5185m >10	<b>&lt;1</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185m	<b>0</b>	---	---

### ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>2</b>	---	---
Barium	ppm	ASTM D5185m	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	<b>10</b>	---	---
Manganese	ppm	ASTM D5185m	<b>0</b>	---	---
Magnesium	ppm	ASTM D5185m	<b>144</b>	---	---
Calcium	ppm	ASTM D5185m	<b>2750</b>	---	---
Phosphorus	ppm	ASTM D5185m	<b>1056</b>	---	---
Zinc	ppm	ASTM D5185m	<b>1269</b>	---	---
Sulfur	ppm	ASTM D5185m	<b>5641</b>	---	---

### CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	<b>6</b>	---	---
Sodium	ppm	ASTM D5185m	<b>0</b>	---	---
Potassium	ppm	ASTM D5185m >20	<b>2</b>	---	---

### FLUID CLEANLINESS

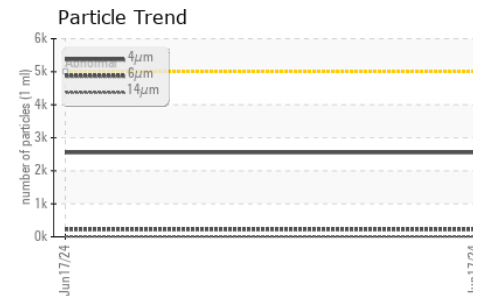
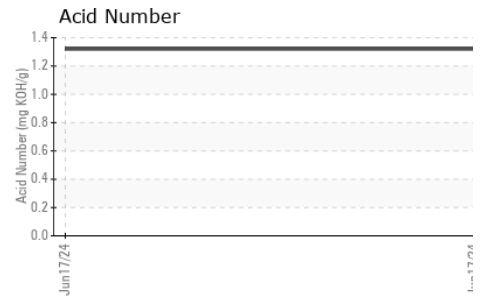
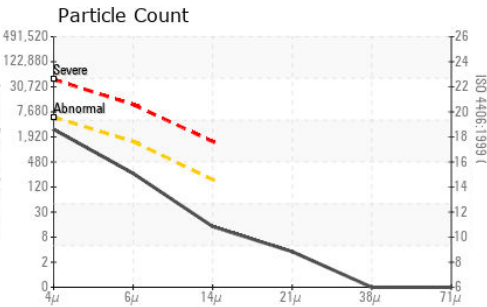
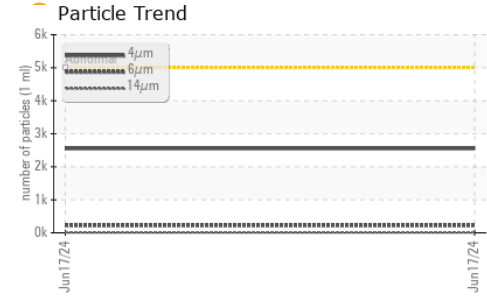
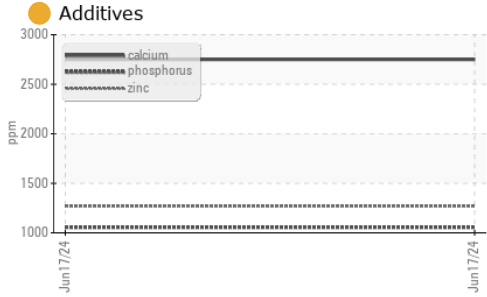
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>2552</b>	---	---
Particles >6µm	ASTM D7647	>1300	<b>225</b>	---	---
Particles >14µm	ASTM D7647	>160	<b>12</b>	---	---
Particles >21µm	ASTM D7647	>40	<b>3</b>	---	---
Particles >38µm	ASTM D7647	>10	<b>0</b>	---	---
Particles >71µm	ASTM D7647	>3	<b>0</b>	---	---
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>19/15/11</b>	---	---

### FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>1.32</b>	---	---



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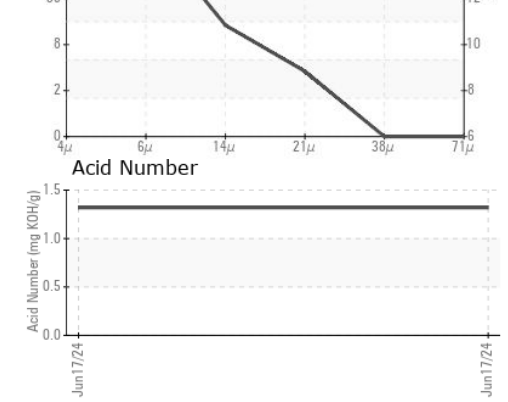
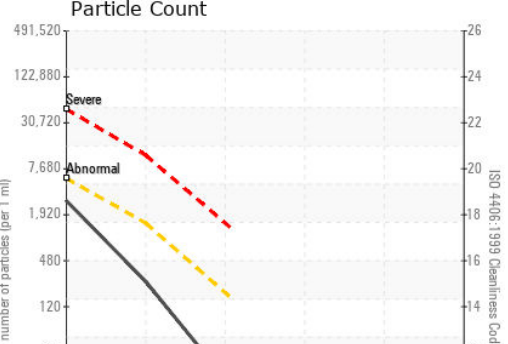
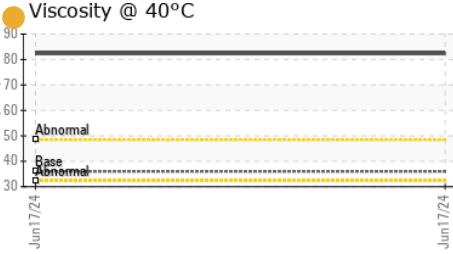
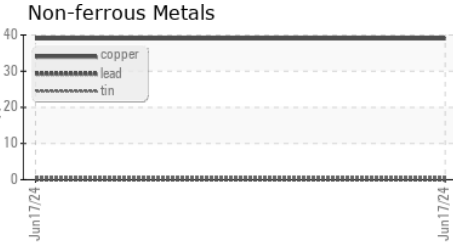
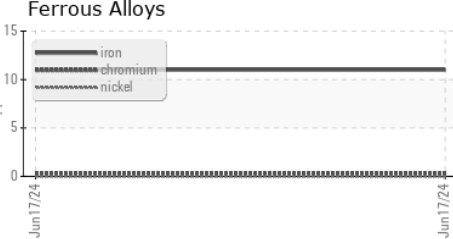
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	36	82.4	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color		no image	no image
Bottom		no image	no image

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0939951      **Received** : 19 Jun 2024  
**Lab Number** : 06214568      **Tested** : 20 Jun 2024  
**Unique Number** : 11087432      **Diagnosed** : 21 Jun 2024 - Don Baldrige  
**Test Package** : CONST

**COVIA - OTTAWA - LESUEUR - 008**  
 39770 OTTAWA ROAD  
 LE SUEUR, MN  
 US 56058-4292  
 Contact: Sam Donner  
 samuel.donner@coviacorp.com  
 T: (507)931-6081  
 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)