

# **PROBLEM SUMMARY**

Sample Rating Trend

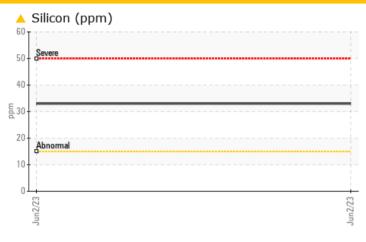
DIRT

Machine Id **66-PC-23 (S/N 13)** 

**Hydraulic System** 

**MILITARY MIL-L-7024-2 (--- LTR)** 

#### **COMPONENT CONDITION SUMMARY**



#### RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC T	EST RE	SULTS						
Sample Status				ABNORMAL				
Silicon	ppm	ASTM D5185m	>15	<b>△</b> 33				

Customer Id: WOOSANCA **Sample No.:** WC0804044 Lab Number: 05864809 Test Package: PLANT To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 jhester@wearcheckusa.com

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

### RECOMMENDED ACTIONS

There are no recommended actions for this sample.

### HISTORICAL DIAGNOSIS



## **OIL ANALYSIS REPORT**

66-PC-23 (S/N 13)

**Hydraulic System** 

**MILITARY MIL-L-7024-2 (--- LTR)** 

# Sample Rating Trend **DIRT**

#### **DIAGNOSIS**

#### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

Elemental level of silicon (Si) above normal. The amount and size of particulates present in the system are acceptable.

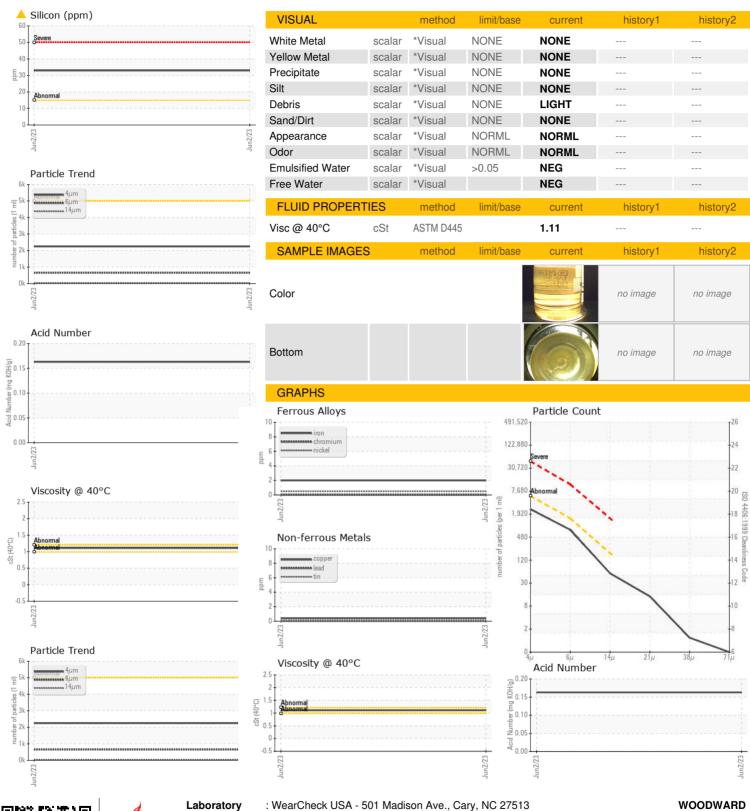
#### **Fluid Condition**

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

Sample Number   Client Info   WC0804044					Jun2023		
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0	Sample Number		Client Info		WC0804044		
Oil Changed   Nrs	Sample Date		Client Info		02 Jun 2023		
Cilichanged   Cilient Info   N/A   ABNORMAL   ABNORM	Machine Age	hrs	Client Info		0		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         2             Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >20         <1	Oil Age	hrs	Client Info		0		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         2	Oil Changed		Client Info		N/A		
Chromium	Sample Status				ABNORMAL		
Chromium         ppm         ASTM D5185m         >20         0             Nickel         ppm         ASTM D5185m         >20         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>20	2		
Description	Chromium	ppm	ASTM D5185m	>20	0		
Silver	Nickel	ppm	ASTM D5185m	>20	<1		
ASTM D5185m   >20	Titanium	ppm	ASTM D5185m		0		
Lead	Silver	ppm	ASTM D5185m		<1		
Copper         ppm         ASTM D5185m         >20         <1             Tin         ppm         ASTM D5185m         >20         0             Vanadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         0             Phosphorus         ppm         ASTM D5185m         6             Phosphorus         ppm         ASTM D5185m         0             Zinc         ppm         ASTM D5185m         0             Sulfur         ppm         ASTM D5185m         0	Aluminum	ppm	ASTM D5185m	>20	0		
Tin ppm ASTM D5185m >20 0	_ead	ppm	ASTM D5185m	>20	0		
Tin ppm ASTM D5185m >20 0	Copper		ASTM D5185m	>20	<1		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         <1             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         6             Magnesium         ppm         ASTM D5185m         6             Phosphorus         ppm         ASTM D5185m         4             Plosphorus         ppm         ASTM D5185m         0             Sulfur         ppm         ASTM D5185m         0             Contamination         ppm         ASTM D5185m         >15         33 <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;20</td> <td>0</td> <td></td> <td></td>	Tin	ppm	ASTM D5185m	>20	0		
Cadmium         ppm         ASTM D5185m         <1             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         6             Calcium         ppm         ASTM D5185m         6             Phosphorus         ppm         ASTM D5185m         0             Zinc         ppm         ASTM D5185m         0             Zinc         ppm         ASTM D5185m         0             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         0          -	Vanadium		ASTM D5185m		0		
Boron ppm ASTM D5185m 0	Cadmium		ASTM D5185m		<1		
### Barium   ppm   ASTM D5185m   0       ### Barium   ppm   ASTM D5185m   16       ### Barium   ppm   ASTM D5185m   0       ### Barium   ppm   ASTM D5185m   0       ### Barium   ppm   ASTM D5185m   20   <1       ### Barium   ppm   ASTM D5185m   >20   <1       ### Barium   ppm   ASTM D6304   >0.05   NEG       ### Particles >4µm   ASTM D647   >5000   2247       ### Particles >6µm   ASTM D7647   >1300   654       ### Particles >14µm   ASTM D7647   >10   48       ### Particles >21µm   ASTM D7647   >40   12       ### Particles >38µm   ASTM D7647   >3   0       ### Particles >71µm   ASTM D7647   >3   0       ### Barticles >71µm   ASTM D7647   >3   0       ### Barticles >71µm   ASTM D7647   >3   0       ### Barticles   S71µm   ASTM D7647   >3   0         ### Barticles   S71µm   ASTM D7647   >3   0         ### Barticles   S71µm   ASTM D7647   >3   0         ### Barticles   S71µm   ASTM D7647   >3   0           ### Barticles   S71µm   ASTM D7647   >3   0           ### Barticles   S71µm   ASTM D7647   >3   0	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0	Boron	ppm	ASTM D5185m		0		
Manganese         ppm         ASTM D5185m         0             Magnesium         ppm         ASTM D5185m         6             Phosphorus         ppm         ASTM D5185m         4             Phosphorus         ppm         ASTM D5185m         0             Zinc         ppm         ASTM D5185m         0             Sulfur         ppm         ASTM D5185m         16             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         33             Contassium         ppm         ASTM D5185m         >20         <1	Barium	ppm	ASTM D5185m		0		
Magnesium         ppm         ASTM D5185m         0             Calcium         ppm         ASTM D5185m         6             Phosphorus         ppm         ASTM D5185m         4             Zinc         ppm         ASTM D5185m         0             Sulfur         ppm         ASTM D5185m         16             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         ▲ 33             Potassium         ppm         ASTM D5185m         >20         <1	Molybdenum	ppm	ASTM D5185m		0		
Calcium         ppm         ASTM D5185m         6             Phosphorus         ppm         ASTM D5185m         4             Zinc         ppm         ASTM D5185m         0             Sulfur         ppm         ASTM D5185m         16             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         33             Sodium         ppm         ASTM D5185m         >20         <1	Manganese	ppm	ASTM D5185m		0		
Phosphorus         ppm         ASTM D5185m         4             Zinc         ppm         ASTM D5185m         0             Sulfur         ppm         ASTM D5185m         16             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         33             Sodium         ppm         ASTM D5185m         >0             Potassium         ppm         ASTM D5185m         >20         <1             Water         %         ASTM D6304         >0.05         NEG             Particles >4μm         ASTM D7647         >5000         2247             Particles >6μm         ASTM D7647         >1300         654             Particles >21μm         ASTM D7647         >40         12             Particles >71μm         ASTM D7647         >3         0             Particles >71μm         ASTM	Magnesium	ppm	ASTM D5185m		0		
Solifur   So	Calcium	ppm	ASTM D5185m		6		
Sulfur         ppm         ASTM D5185m         16             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         33             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         <1	Phosphorus	ppm	ASTM D5185m		4		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >15         ▲ 33             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         <1	Zinc	ppm	ASTM D5185m		0		
Silicon ppm ASTM D5185m >15 ▲ 33 Sodium ppm ASTM D5185m 0 Sodium ppm ASTM D5185m 0 STM D5185m ppm ASTM D5185m >20 <1 STM D5185m >20 <1 STM D5185m >20 STM D6304 >0.05 STM D647 >0.	Sulfur	ppm	ASTM D5185m		16		
Sodium   ppm   ASTM D5185m   0	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         <1             Water         %         ASTM D6304         >0.05         NEG             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         2247             Particles >6μm         ASTM D7647         >1300         654             Particles >14μm         ASTM D7647         >160         48             Particles >21μm         ASTM D7647         >40         12             Particles >38μm         ASTM D7647         >10         1             Particles >71μm         ASTM D7647         >3         0             Particles >71μm         ASTM D7647         >3         0             Dil Cleanliness         ISO 4406 (c)         >19/17/14         18/17/13             FLUID DEGRADATION         method         limit/base         current         history1         history2 <td>Silicon</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;15</td> <td><b>△</b> 33</td> <td></td> <td></td>	Silicon	ppm	ASTM D5185m	>15	<b>△</b> 33		
Water         %         ASTM D6304         >0.05         NEG             FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         2247             Particles >6μm         ASTM D7647         >1300         654             Particles >14μm         ASTM D7647         >160         48             Particles >21μm         ASTM D7647         >40         12             Particles >38μm         ASTM D7647         >10         1             Particles >71μm         ASTM D7647         >3         0             Particles >71μm         ASTM D	Sodium	ppm	ASTM D5185m		0		
FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         >5000         2247             Particles >6μm         ASTM D7647         >1300         654             Particles >14μm         ASTM D7647         >160         48             Particles >21μm         ASTM D7647         >40         12             Particles >38μm         ASTM D7647         >10         1             Particles >71μm         ASTM D7647         >3         0             Particles >71μm         ASTM D7647	Potassium	ppm	ASTM D5185m	>20	<1		
Particles >4μm       ASTM D7647       >5000       2247           Particles >6μm       ASTM D7647       >1300       654           Particles >14μm       ASTM D7647       >160       48           Particles >21μm       ASTM D7647       >40       12           Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Dil Cleanliness       ISO 4406 (c)       >19/17/14       18/17/13           FLUID DEGRADATION       method       limit/base       current       history1       history2	Water	%	ASTM D6304	>0.05	NEG		
Particles >6μm       ASTM D7647       >1300       654           Particles >14μm       ASTM D7647       >160       48           Particles >21μm       ASTM D7647       >40       12           Particles >38μm       ASTM D7647       >10       1           Particles >71μm       ASTM D7647       >3       0           Particles >71μm       ASTM D7647       >3       0           Dil Cleanliness       ISO 4406 (c)       >19/17/14       18/17/13           FLUID DEGRADATION       method       limit/base       current       history1       history2	FLUID CLEANLIN	NESS	method	limit/base	current	history1	history2
Particles >14µm       ASTM D7647       >160       48           Particles >21µm       ASTM D7647       >40       12           Particles >38µm       ASTM D7647       >10       1           Particles >71µm       ASTM D7647       >3       0           Dil Cleanliness       ISO 4406 (c)       >19/17/14       18/17/13           FLUID DEGRADATION       method       limit/base       current       history1       history2	Particles >4µm		ASTM D7647	>5000	2247		
Particles >21μm         ASTM D7647         >40         12             Particles >38μm         ASTM D7647         >10         1             Particles >71μm         ASTM D7647         >3         0             Dil Cleanliness         ISO 4406 (c)         >19/17/14         18/17/13             FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >6µm		ASTM D7647	>1300	654		
Particles >38μm         ASTM D7647         >10         1             Particles >71μm         ASTM D7647         >3         0             Dil Cleanliness         ISO 4406 (c)         >19/17/14         18/17/13             FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >14µm		ASTM D7647	>160	48		
Particles >71µm         ASTM D7647         >3         0             Dil Cleanliness         ISO 4406 (c)         >19/17/14         18/17/13             FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >21µm		ASTM D7647	>40	12		
Dil Cleanliness ISO 4406 (c) >19/17/14 <b>18/17/13</b> FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>10	1		
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0		
	Oil Cleanliness		ISO 4406 (c)	>19/17/14	18/17/13		
Acid Number (AN) mg KOH/g ASTM D8045 0.163	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.163		



# **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : PLANT

: WC0804044 : 05864809

Received Diagnosed : 10499274 Diagnostician

: 05 Jun 2023 : 07 Jun 2023 : Jonathan Hester 25200 W RYE CANYON RD SANTA CLARITA, CA US 91355

Contact: REYNARD GOLDMAN reynard.goldman@woodward.com

T: (661)702-5991

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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