



# OIL ANALYSIS REPORT

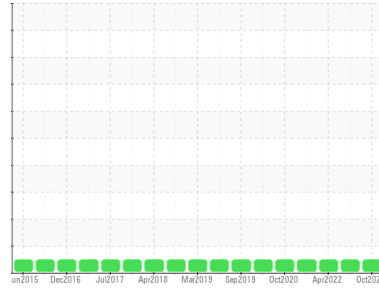
Sample Rating Trend

**NORMAL**



Area  
**CHEATHAM ANNEX**  
Machine Id  
**2A 1728 CRANE 2A (S/N 62510226)**

Component  
**Gearbox**  
Fluid  
**SHELL OMALA S4 WE 220 (--- GAL)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination 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	<b>WC0752653</b>	WC0573869	WC0573789
Sample Date	Client Info	<b>01 Oct 2023</b>	22 Jan 2023	24 Apr 2022
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >200	<b>0</b>	<1	2
Chromium	ppm	ASTM D5185m >15	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m >15	<b>0</b>	4	2
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m >25	<b>4</b>	<1	2
Lead	ppm	ASTM D5185m >100	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m >200	<b>0</b>	0	<1
Tin	ppm	ASTM D5185m >25	<b>&lt;1</b>	<1	<1
Antimony	ppm	ASTM D5185m >5	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	<1	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	<b>0</b>	0	6
Barium	ppm	ASTM D5185m	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>4</b>	<1	0
Calcium	ppm	ASTM D5185m	<b>0</b>	<1	1
Phosphorus	ppm	ASTM D5185m	<b>483</b>	394	438
Zinc	ppm	ASTM D5185m	<b>0</b>	1	0
Sulfur	ppm	ASTM D5185m	<b>2</b>	11	21

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >50	<b>5</b>	4	6
Sodium	ppm	ASTM D5185m	<b>0</b>	5	2
Potassium	ppm	ASTM D5185m >20	<b>4</b>	<1	2

## FLUID DEGRADATION

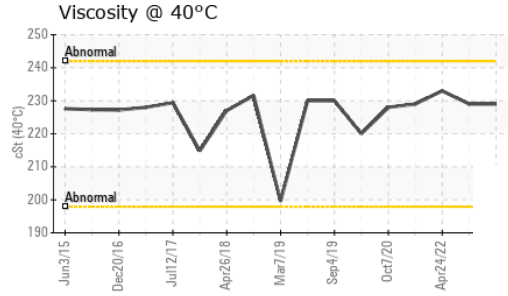
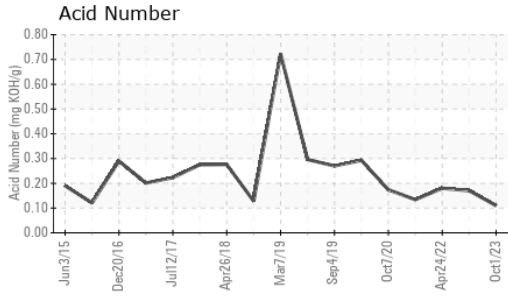
method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.11</b>	0.17	0.18

## VISUAL

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



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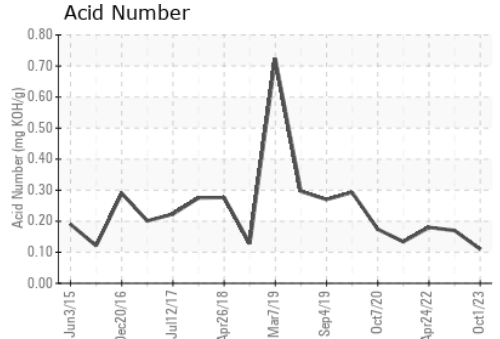
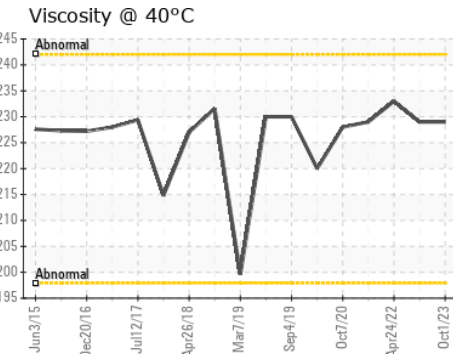
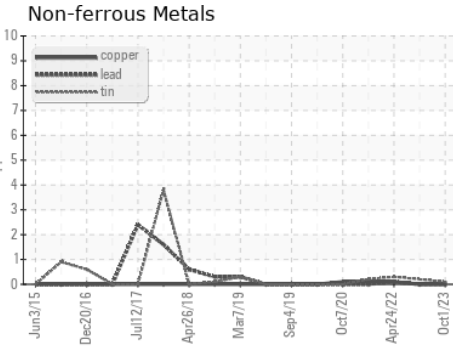
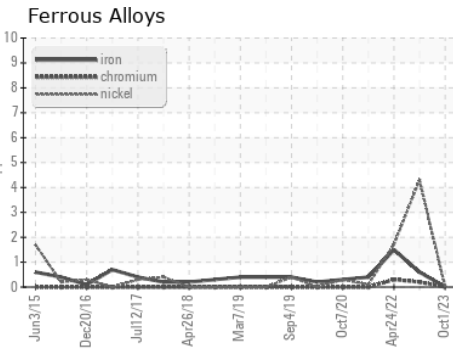


FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	<b>229</b>	229	233

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

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0752653  
**Lab Number** : 05965506  
**Unique Number** : 10672057  
**Test Package** : IND 2  
**Received** : 29 Sep 2023  
**Diagnosed** : 02 Oct 2023  
**Diagnostician** : Don Baldrige

**CARGOTEC MARINE - MACGREGOR**  
 525 BYRON ST, SUITE B  
 CHESAPEAKE, VA  
 US 23320  
 Contact: TARMO MAGI  
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 T: (757)558-4584  
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Certificate L2367  
 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)