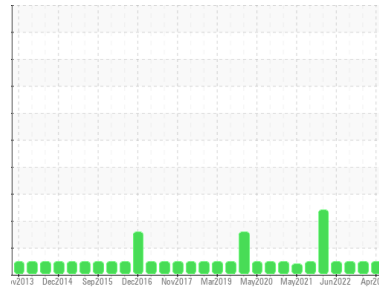




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
CHEATHAM ANNEX
 Machine Id
2B 2BLW CRANE 2B (S/N 62510227)
 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	WC0925633	WC0752693	WC0752728
Sample Date	Client Info	16 Apr 2024	01 Oct 2023	22 Jan 2023
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >200	38	11	4
Chromium	ppm	ASTM D5185m >15	<1	0	<1
Nickel	ppm	ASTM D5185m >15	0	0	4
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >25	13	9	1
Lead	ppm	ASTM D5185m >100	0	0	0
Copper	ppm	ASTM D5185m >200	0	0	<1
Tin	ppm	ASTM D5185m >25	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	0	<1
Barium	ppm	ASTM D5185m	0	0	<1
Molybdenum	ppm	ASTM D5185m	0	0	0
Manganese	ppm	ASTM D5185m	0	0	<1
Magnesium	ppm	ASTM D5185m	3	5	<1
Calcium	ppm	ASTM D5185m	2	0	<1
Phosphorus	ppm	ASTM D5185m	499	518	392
Zinc	ppm	ASTM D5185m	0	0	2
Sulfur	ppm	ASTM D5185m	0	46	77

CONTAMINANTS

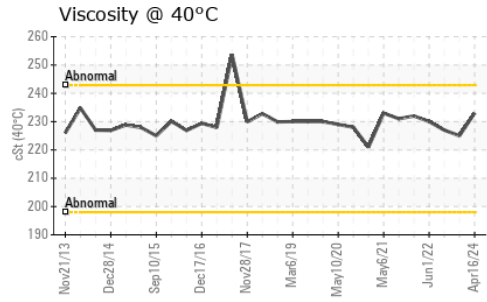
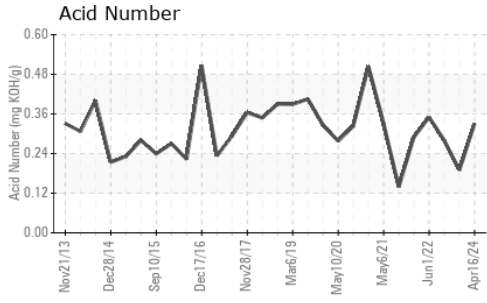
method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >50	37	18	5
Sodium	ppm	ASTM D5185m	5	0	4
Potassium	ppm	ASTM D5185m >20	3	5	1

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	0.33	0.19	0.28



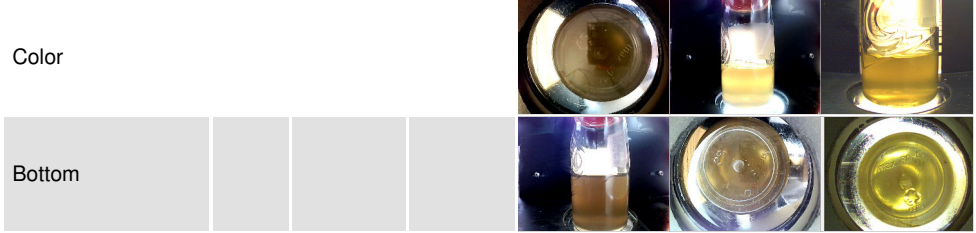
OIL ANALYSIS REPORT



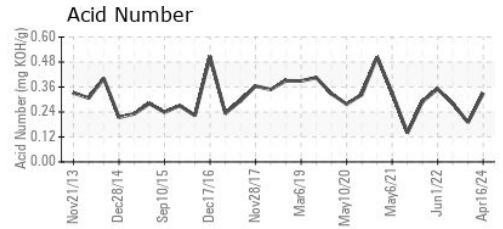
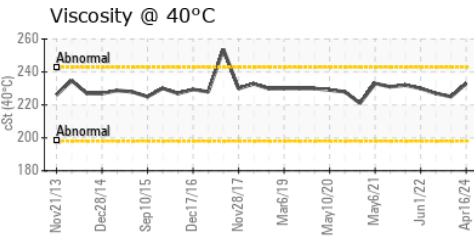
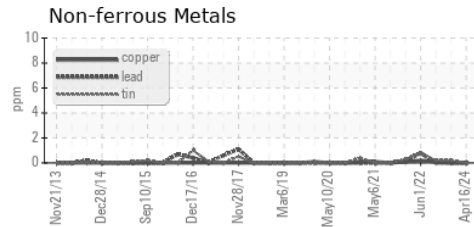
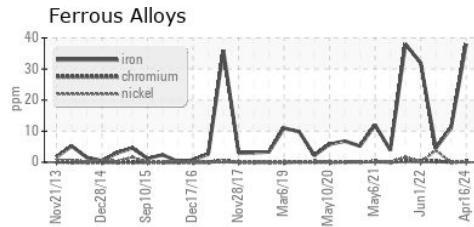
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	233	225	227

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0925633 **Received** : 16 Apr 2024
Lab Number : **06151270** **Tested** : 18 Apr 2024
Unique Number : 10981348 **Diagnosed** : 19 Apr 2024 - Jonathan Hester
Test Package : IND 2

CARGOTEC MARINE - MACGREGOR
 525 BYRON ST, SUITE B
 CHESAPEAKE, VA
 US 23320
 Contact: TARMO MAGI
 tarmo.magi@macgregor.com
 T: (757)558-4584
 F: (757)558-4581

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)