



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area  
**SEAWARD EXPLORER**  
Machine Id  
**Explorer - Anchor Windlass HPU**  
Component  
**Hydraulic System**  
Fluid  
**SHELL TELLUS T46 (--- GAL)**

## RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

## WEAR

All component wear rates are normal.

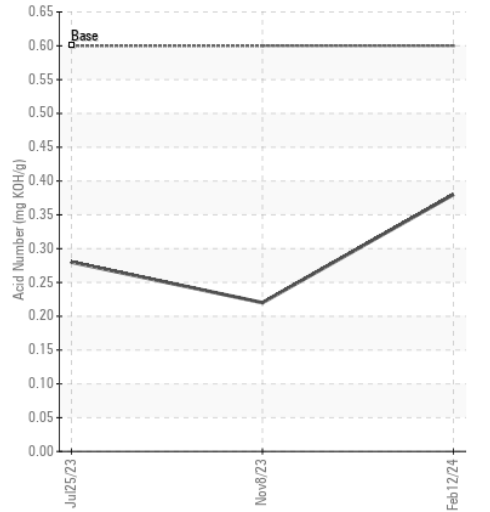
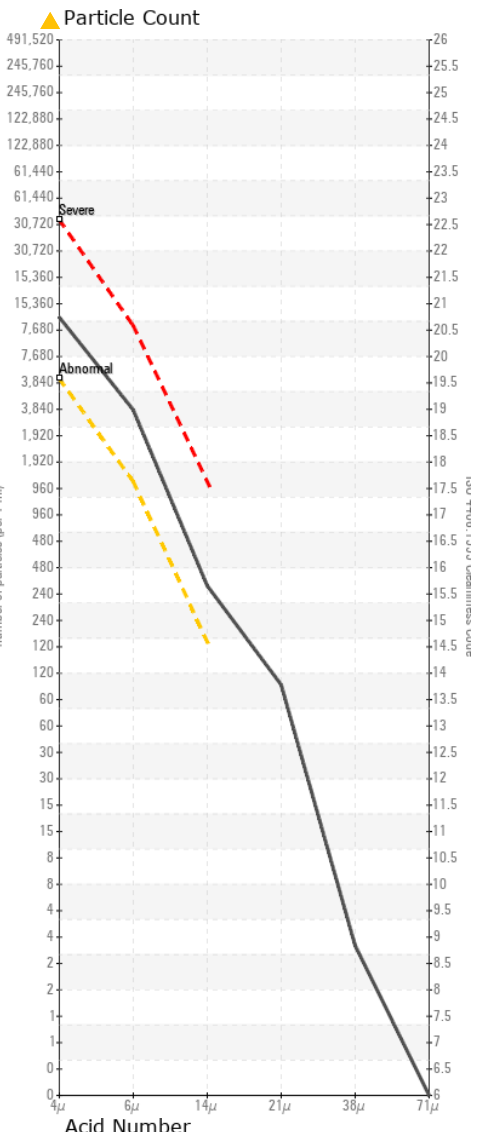
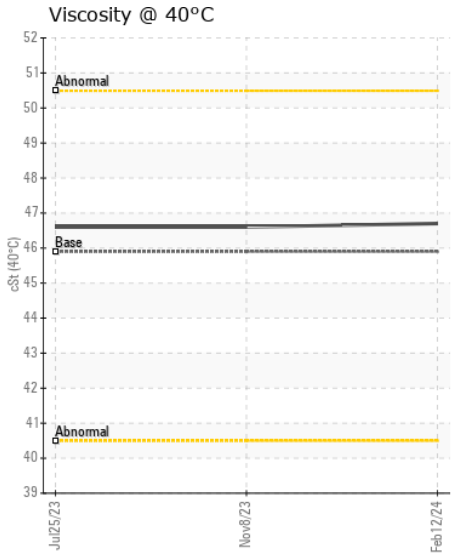
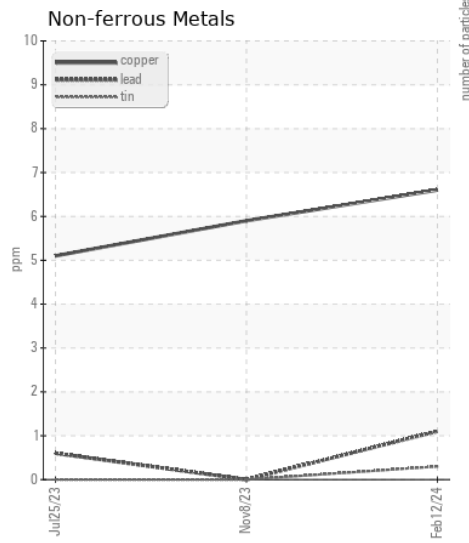
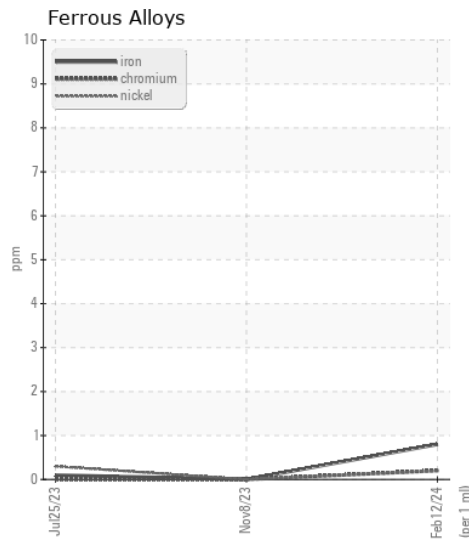
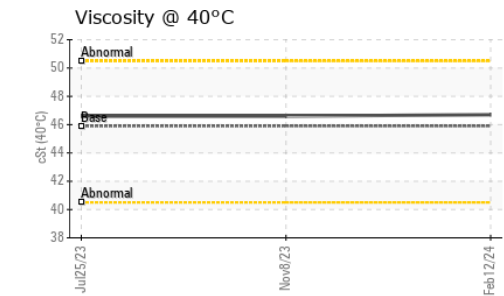
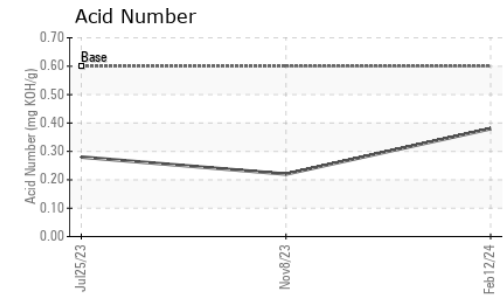
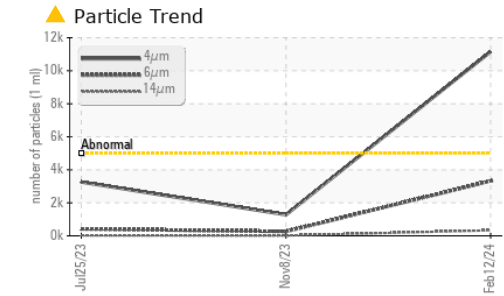
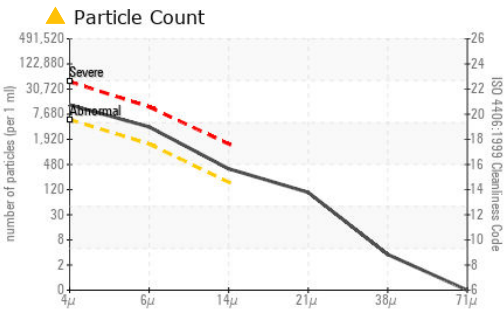
## CONTAMINATION

There is a moderate amount of particulates (2 to 100 microns in size) present in the oil.

## FLUID CONDITION

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0859378</b>	WC0859362	WC0818099
Sample Date		Client Info		<b>12 Feb 2024</b>	08 Nov 2023	25 Jul 2023
Machine Age	hrs	Client Info		<b>383</b>	379	370
Oil Age	hrs	Client Info		<b>383</b>	379	0
Filter Age	hrs	Client Info		<b>383</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	N/A
Filter Changed		Client Info		<b>Not Changd</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m	>10	<b>1</b>	0	<1
Copper	ppm	ASTM D5185m	>75	<b>7</b>	6	5
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	<b>5</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	1
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>▲ 11158</b>	1276	3259
Particles >6µm		ASTM D7647	>1300	<b>▲ 3325</b>	263	416
Particles >14µm		ASTM D7647	>160	<b>▲ 333</b>	17	26
Particles >21µm		ASTM D7647	>40	<b>▲ 91</b>	3	8
Particles >38µm		ASTM D7647	>10	<b>3</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>▲ 21/19/16</b>	17/15/11	19/16/12
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	>0.1	<b>NEG</b>	NEG	NEG
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	2	0
Boron	ppm	ASTM D5185m	0	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	1
Molybdenum	ppm	ASTM D5185m	0	<b>&lt;1</b>	0	<1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m	0	<b>&lt;1</b>	0	3
Calcium	ppm	ASTM D5185m	48	<b>71</b>	63	79
Phosphorus	ppm	ASTM D5185m	337	<b>364</b>	328	341
Zinc	ppm	ASTM D5185m	426	<b>496</b>	439	476
Sulfur	ppm	ASTM D5185m	2280	<b>1298</b>	1030	1303
Acid Number (AN)	mg KOH/g	ASTM D8045	.6	<b>0.38</b>	0.22	0.28
Visc @ 40°C	cSt	ASTM D445	45.9	<b>46.7</b>	46.6	46.6



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0859378  
**Lab Number** : 06104277  
**Unique Number** : 10902507  
**Test Package** : MAR 2  
**Received** : 29 Feb 2024  
**Tested** : 01 Mar 2024  
**Diagnosed** : 01 Mar 2024 - Wes Davis

**SEAWARD SERVICES**  
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 T:  
 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)