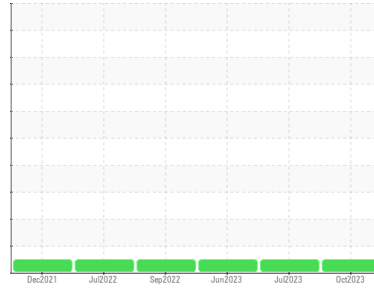




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
OCEAN VOYAGER
 Machine Id
[OCEAN VOYAGER] OCEAN VOYAGER - SHAFT
 Component
Bearing
 Fluid
CASTROL AIRCOL SW 68 (100 LTR)

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 | | | WC0824868 | WC0824818 | WC0824833 |
| Sample Date | Client Info | | | 30 Oct 2023 | 08 Jul 2023 | 30 Jun 2023 |
| Machine Age | hrs | Client Info | | 2000 | 28069 | 23280 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | Client Info | | | N/A | N/A | Not Chngd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >200 | 9 | 23 | 8 |
| Chromium | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >5 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 0 | <1 | <1 |
| Lead | ppm | ASTM D5185m | >50 | <1 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >150 | 0 | <1 | 0 |
| Tin | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 0 | <1 | 2 | 3 |
| Calcium | ppm | ASTM D5185m | 0 | 24 | 45 | 49 |
| Phosphorus | ppm | ASTM D5185m | 800 | 756 | 749 | 744 |
| Zinc | ppm | ASTM D5185m | 5 | 1 | 9 | 17 |
| Sulfur | ppm | ASTM D5185m | 10 | 1061 | 1012 | 995 |

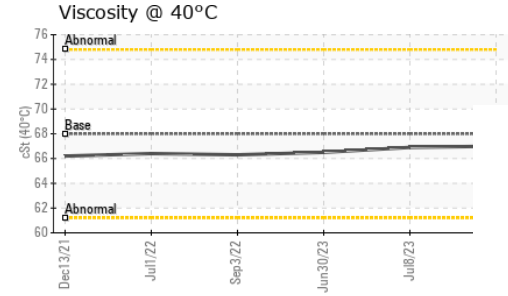
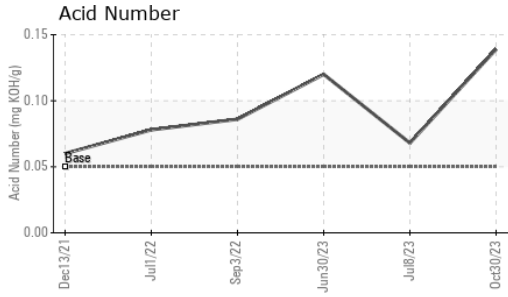
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 2 | 2 | 2 |
| Sodium | ppm | ASTM D5185m | | 0 | 2 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 3 | 4 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|--------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.05 | 0.139 | 0.068 | 0.12 |

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



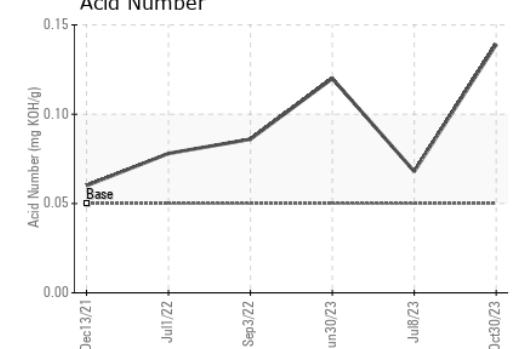
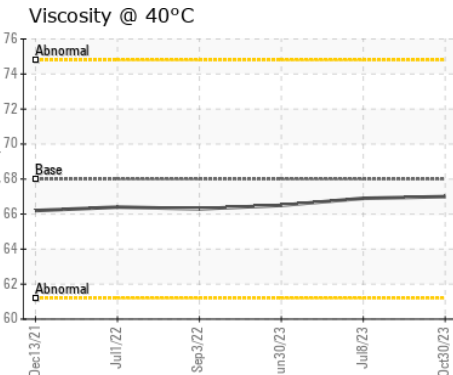
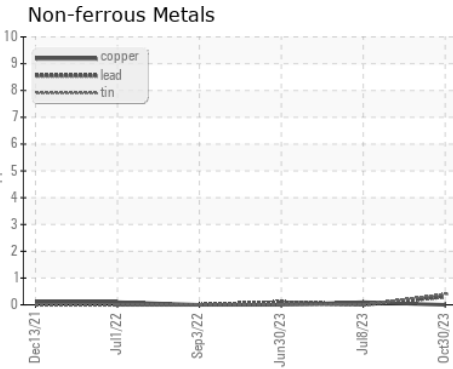
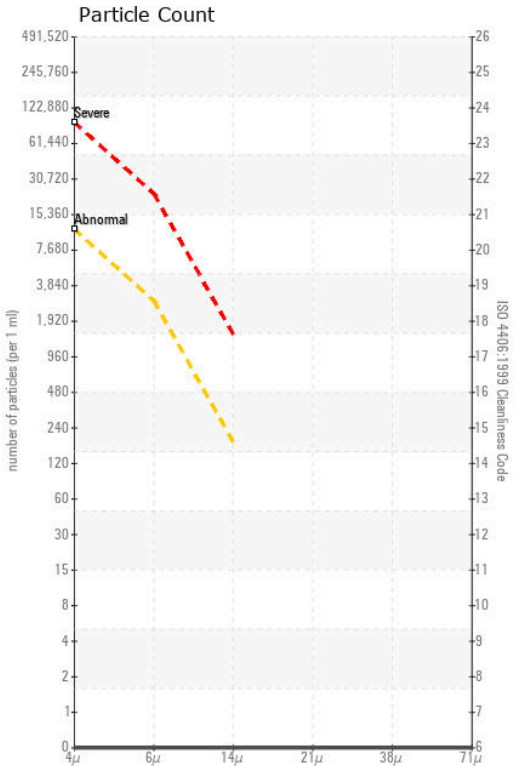
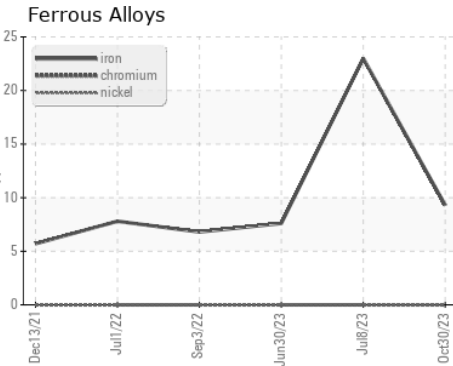
OIL ANALYSIS REPORT



| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|-----------|------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 68 | 67.0 | 66.9 | 66.5 |

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

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0824868 **Received** : 13 Nov 2023
Lab Number : 06006269 **Diagnosed** : 16 Nov 2023
Unique Number : 10740031 **Diagnostician** : Jonathan Hester
Test Package : MAR 2 (Additional Tests: PrtCount)

American Queen Voyages - Oceans
 1201 Bridgeport Drive
 Jeffersonville, IN
 US 47130
 Contact: Dietrich Giles
 DIETRICH.GILES@AQVOYAGES.COM
 T: (228)591-6239
 F:

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)