



# OIL ANALYSIS REPORT

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



Area  
**SEAWARD ENDEAVOR**  
Machine Id  
**Endeavor**  
Component  
**1 Genset**  
Fluid  
**CHEVRON DELO 400 XLE 15W40 (9 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0891211</b>	WC0891237	WC0779526
Sample Date		Client Info		<b>23 Mar 2024</b>	24 Jan 2024	06 Jul 2023
Machine Age	hrs	Client Info		<b>16820</b>	16643	15099
Oil Age	hrs	Client Info		<b>0</b>	303	200
Filter Age	hrs	Client Info		<b>0</b>	303	200
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>N/A</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	MARGINAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>8</b>	6	3
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	2	<1
Silver	ppm	ASTM D5185m	>5	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>12	<b>1</b>	1	1
Lead	ppm	ASTM D5185m	>17	<b>0</b>	1	0
Copper	ppm	ASTM D5185m	>70	<b>2</b>	<1	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	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

## CONTAMINATION

There is no indication of any contamination in the oil.

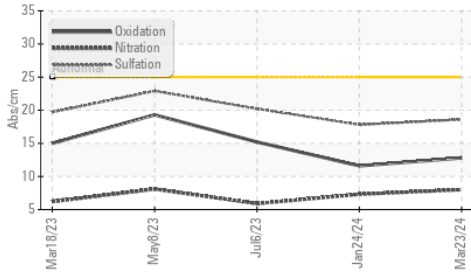
Silicon	ppm	ASTM D5185m	>25	<b>3</b>	3	3
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	3	2
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	▲ 2.5	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.0</b>	7.3	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.6</b>	17.8	20.2
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

## FLUID CONDITION

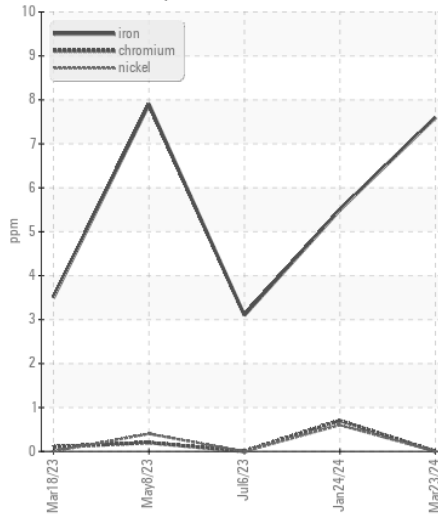
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	0	0
Boron	ppm	ASTM D5185m		<b>22</b>	28	386
Barium	ppm	ASTM D5185m		<b>0</b>	0	1
Molybdenum	ppm	ASTM D5185m		<b>8</b>	10	82
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>82</b>	79	381
Calcium	ppm	ASTM D5185m		<b>2521</b>	2376	1630
Phosphorus	ppm	ASTM D5185m	760	<b>1022</b>	968	1057
Zinc	ppm	ASTM D5185m	830	<b>1215</b>	1105	1238
Sulfur	ppm	ASTM D5185m	2770	<b>4539</b>	4515	3650
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.8</b>	11.6	15.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	<b>7.4</b>	7.4	9.07
Visc @ 100°C	cSt	ASTM D445	14.9	<b>13.1</b>	13.1	13.8

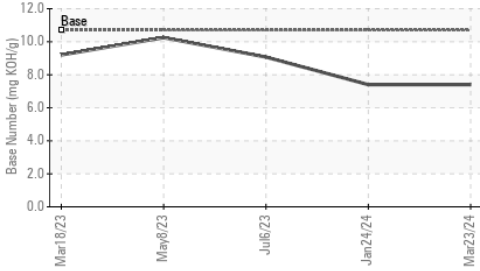
**FT-IR (Direct Trend)**



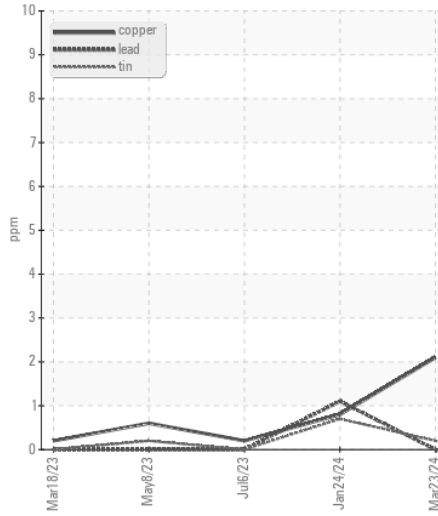
**Ferrous Alloys**



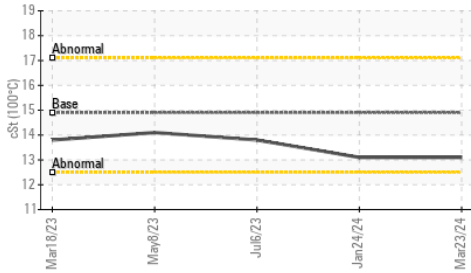
**Base Number**



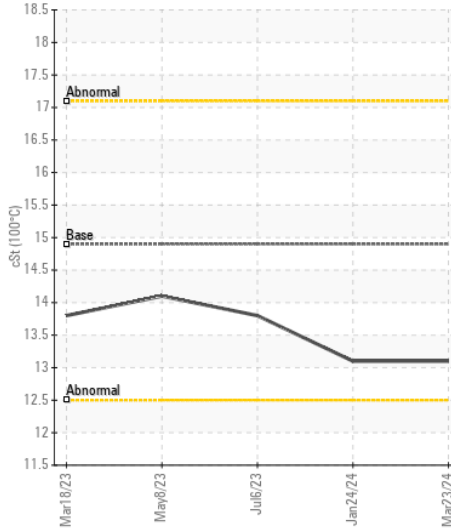
**Non-ferrous Metals**



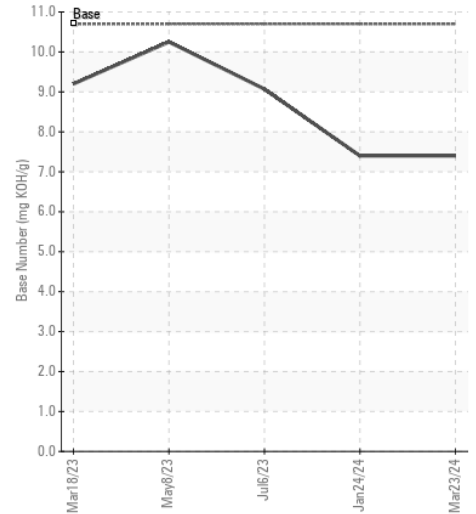
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0891211  
**Lab Number** : 06146502  
**Unique Number** : 10976580  
**Test Package** : MAR 2

**Received** : 11 Apr 2024  
**Tested** : 12 Apr 2024  
**Diagnosed** : 15 Apr 2024 - Sean Felton

**SEAWARD SERVICES**  
 222 PEARL ST  
 NEW ALBANY, IN  
 US 47150

Contact: PETER CHARBONNET  
 PCHARBONNET@HMS-SEAWARD.COM

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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F: