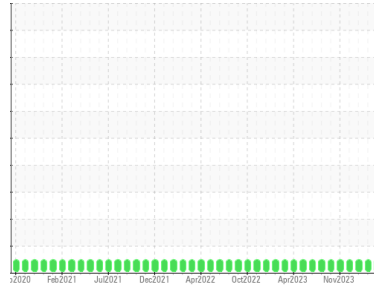




# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Area  
**OH INGRAM**  
 Machine Id  
**[OH INGRAM] 003 645896-3**  
 Component  
**Starboard Main Engine**  
 Fluid  
**CHEVRON DELO 710 LE (200 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>MW0063313</b>	MW0064801	MW0064750
Sample Date	Client Info			<b>01 May 2024</b>	01 Feb 2024	01 Jan 2024
Machine Age	hrs	Client Info		<b>29030</b>	28698	27956
Oil Age	hrs	Client Info		<b>29030</b>	28698	27956
Oil Changed	Client Info			<b>N/A</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>4.0		<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.1		<b>NEG</b>	NEG	NEG
Glycol	WC Method			<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	<b>11</b>	8	9
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	<1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>1</b>	2	2
Lead	ppm	ASTM D5185m	>18	<b>4</b>	3	6
Copper	ppm	ASTM D5185m	>80	<b>13</b>	12	12
Tin	ppm	ASTM D5185m	>14	<b>3</b>	3	5
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>48</b>	38	38
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>48</b>	43	45
Manganese	ppm	ASTM D5185m		<b>1</b>	1	<1
Magnesium	ppm	ASTM D5185m		<b>15</b>	14	13
Calcium	ppm	ASTM D5185m		<b>3733</b>	3303	3788
Phosphorus	ppm	ASTM D5185m		<b>3</b>	7	3
Zinc	ppm	ASTM D5185m	10	<b>16</b>	<1	8
Sulfur	ppm	ASTM D5185m		<b>2841</b>	2146	2399

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	<b>5</b>	5	5
Sodium	ppm	ASTM D5185m	>75	<b>18</b>	21	15
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	1	2

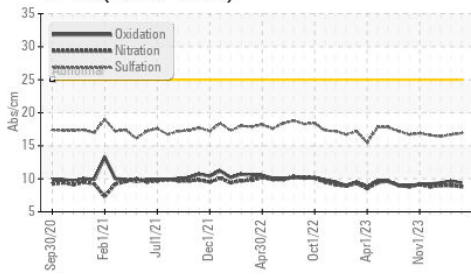
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.8</b>	9.0	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.9</b>	16.7	16.4

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.4</b>	9.6	9.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	<b>9.04</b>	9.14	8.96

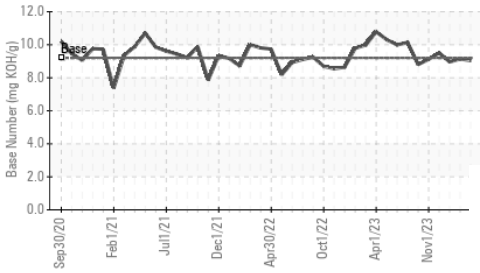


# OIL ANALYSIS REPORT

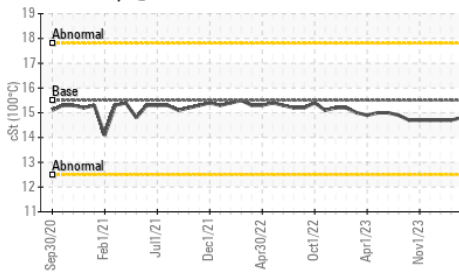
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

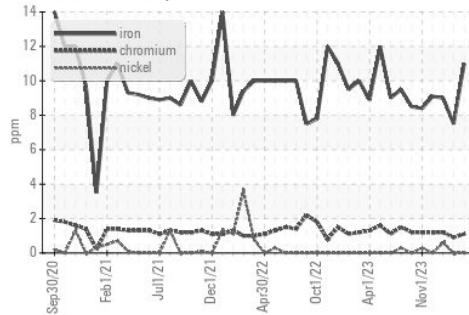


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

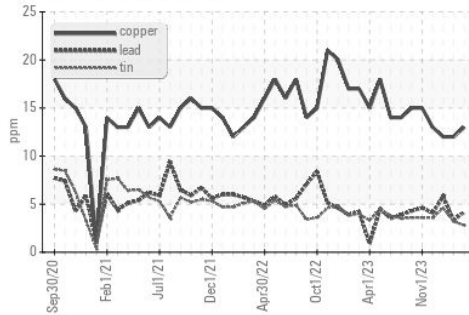
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	14.8	14.7

## GRAPHS

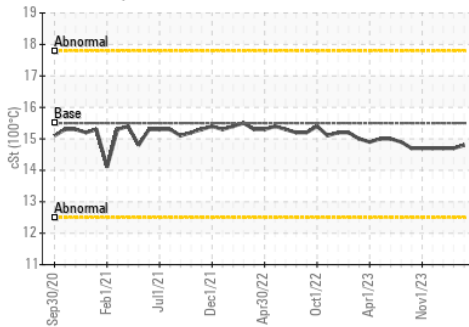
Ferrous Alloys



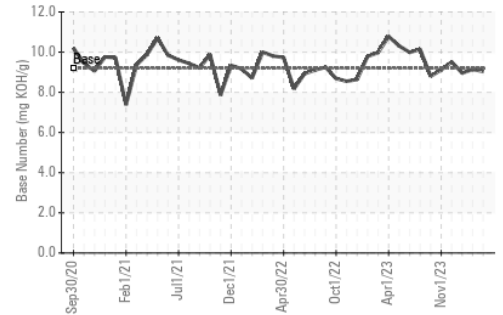
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0063313  
**Lab Number** : 06176243  
**Unique Number** : 11022296  
**Test Package** : MAR 2  
**Received** : 10 May 2024  
**Tested** : 13 May 2024  
**Diagnosed** : 13 May 2024 - Wes Davis

**INGRAM BARGE**  
 900 S 3RD ST  
 PADUCAH, KY  
 US 42003

Contact: ALLEN WILLHELM  
 allen.willhelm@ingrambarge.com  
 T: (270)415-4467  
 F: (615)695-3697

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)