



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**952524 (S/N 6VF167129)**  
 Component  
**Starboard Diesel Engine**  
 Fluid  
**TRC PRO-SPEC DD 40W (6 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TR05879661</b>	TR05079248	TR04746586
Sample Date		Client Info		<b>17 Jun 2023</b>	27 Sep 2020	26 Jun 2019
Machine Age	hrs	Client Info		<b>487</b>	1420	0
Oil Age	hrs	Client Info		<b>67</b>	100	0
Filter Age	hrs	Client Info		<b>67</b>	100	0
Oil Changed		Client Info		<b>Changed</b>	Changed	N/A
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	<b>60</b>	48	79
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	2	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>30	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>30	<b>1</b>	2	5
Copper	ppm	ASTM D5185m	>30	<b>9</b>	12	17
Tin	ppm	ASTM D5185m	>15	<b>6</b>	6	4
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

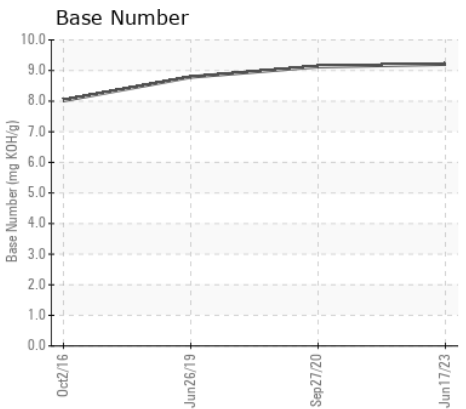
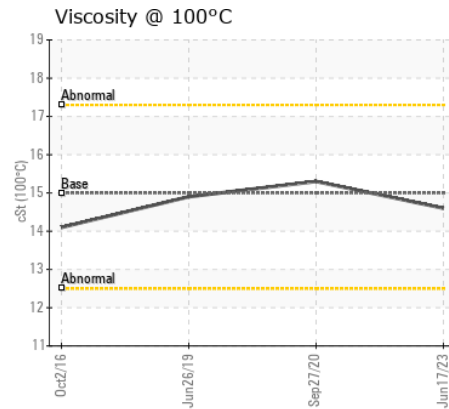
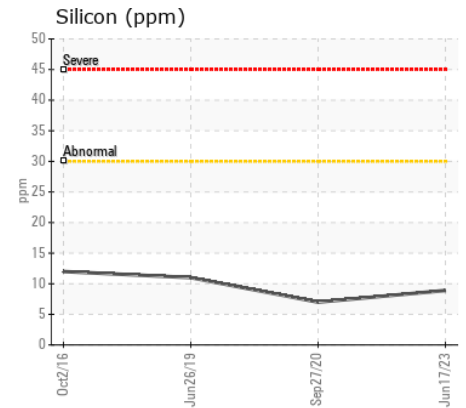
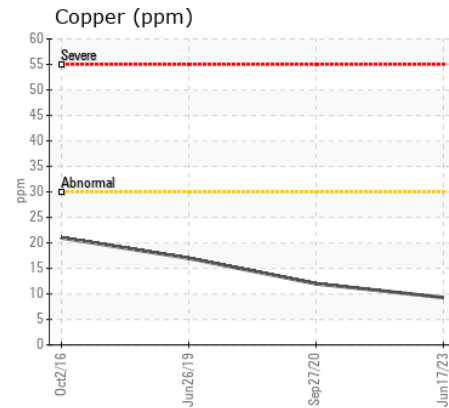
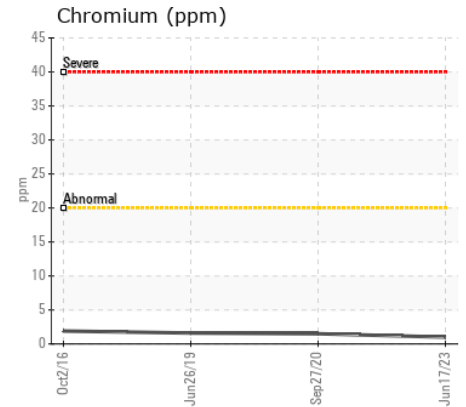
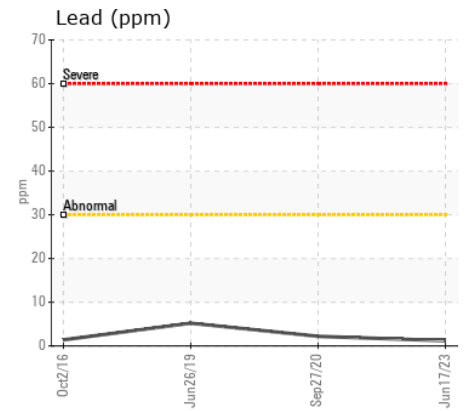
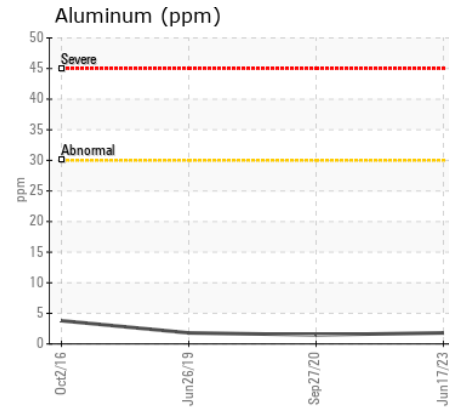
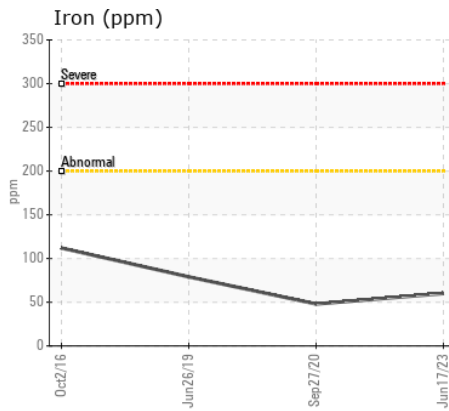
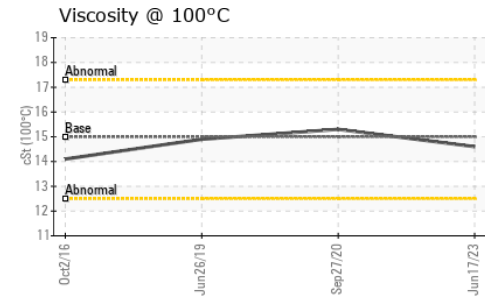
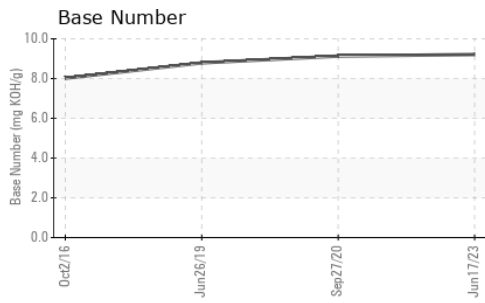
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>30	<b>9</b>	7	11
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	4
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.5</b>	5.7	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.8</b>	17.2	16.2
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	>0.2	<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>6</b>	7	15
Boron	ppm	ASTM D5185m		<b>126</b>	9	5
Barium	ppm	ASTM D5185m		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m		<b>52</b>	2	7
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>274</b>	19	30
Calcium	ppm	ASTM D5185m		<b>2477</b>	3066	2802
Phosphorus	ppm	ASTM D5185m		<b>790</b>	1058	950
Zinc	ppm	ASTM D5185m		<b>950</b>	1250	1100
Sulfur	ppm	ASTM D5185m		<b>6984</b>	6709	6700
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>11.1</b>	11.1	10.2
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.21</b>	9.13	8.79
Visc @ 100°C	cSt	ASTM D445	15.0	<b>14.6</b>	15.3	14.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR05879661  
**Lab Number** : 05879661  
**Unique Number** : 10524764  
**Test Package** : MOB 2  
**Received** : 21 Jun 2023  
**Tested** : 22 Jun 2023  
**Diagnosed** : 23 Jun 2023 - Sean Felton

**STEVEN DORAN**  
 102 ELM ST  
 KINGSTON, MA  
 US 02364  
 Contact: LEW BACON

To discuss this sample report, contact Customer Service at 1-800-827-0711.

\* - 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: