

### **OIL ANALYSIS REPORT**

Sample Rating Trend



# STARBOARD MAIN

Starboard Main Engine Fluid CHEVRON 15W40 (--- 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.

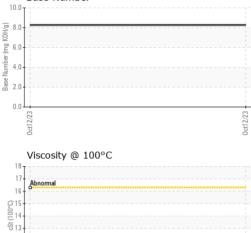
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		OF0000591		
Sample Date		Client Info		12 Oct 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		250		
Oil Changed		Client Info		Not Changd		
Sample Status				NORMAL		
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	7		
Chromium	ppm	ASTM D5185(m)	>8	<1		
Nickel	ppm	ASTM D5185(m)	>2	0		
Titanium	ppm	ASTM D5185(m)	>3	0		
Silver	ppm	ASTM D5185(m)	>2	<1		
Aluminum	ppm	ASTM D5185(m)	>15	2		
Lead	ppm	ASTM D5185(m)	>18	1		
Copper	ppm	ASTM D5185(m)	>80	<1		
Tin	ppm	ASTM D5185(m)	>14	<1		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		249		
Barium	ppm	ASTM D5185(m)		0		
Molybdenum	ppm	ASTM D5185(m)		98		
Manganese	ppm	ASTM D5185(m)		0		
Magnesium	ppm	ASTM D5185(m)		657		
Calcium	ppm	ASTM D5185(m)		1417		
Phosphorus	ppm	ASTM D5185(m)		659		
Zinc	ppm	ASTM D5185(m)		757		
Sulfur	ppm	ASTM D5185(m)		2054		
Lithium	ppm	ASTM D5185(m)		<1		
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	8		
Sodium	ppm	ASTM D5185(m)	>50	6		
Potassium	ppm	ASTM D5185(m)	>20	2		
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		0		
Nitration	Abs/cm	ASTM D7624*	>20	6.8		
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.2		



12 11-10 0ct12/23

## **OIL ANALYSIS REPORT**

Base Number



	Oxidation	Abs/.1mm	ASTM D7414*	>25	16.7		
	Base Number (BN)	mg KOH/g	ASTM D2896*		8.26		
	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	Visual*	NONE	NONE		
	Yellow Metal	scalar	Visual*	NONE	NONE		
2/23 -	Precipitate	scalar	Visual*	NONE	NONE		
0ct12/23	Silt	scalar	Visual*	NONE	NONE		
	Debris	scalar	Visual*	NONE	VLITE		
	Sand/Dirt	scalar	Visual*	NONE	NONE		
	Appearance	scalar	Visual*	NORML	NORML		
	Odor	scalar	Visual*	NORML	NORML		
	Emulsified Water Free Water	scalar	Visual*	>0.1	NEG		
		scalar	Visual*		NEG		
	FLUID PROPERT	<b>FIES</b>	method	limit/base	current	history1	history2
0ct12/23 -	Visc @ 100°C	cSt	ASTM D7279(m)		11.7		
Octl	GRAPHS						
	Iron (ppm)			4	Lead (ppm)		
	Devele			3	Severe		
	Abnormal			E 2			
	50			1			
	o L			-	) L <u></u>		
	0ct12/23			0ct12/23	0ct12/23		
	_			0			
	Aluminum (ppm)			1	Chromium (pp	om)	
	Severe						
	20 Abnormal			E	Abnormal		
	10				5		
	0ct12/23			0ct12/23	0ct12/23		
	-			0			
	Copper (ppm)			4	Silicon (ppm)		
	150 Severe			3	Severe		
	Abnormal			톱 2	Abnormal		
	50-			1			
	0ct12/23			0ct12/23	0ct12/23		
	∽ Viscosity @ 100°C				Base Number		
	18 <sub>T</sub>			(D)HO3 B) B) B) B) B) B) B) B) B) B) B) B) B)			
	216 - Abnormal			9 8. E 6	D+		
	() 16 0 () 14 () 12				,		
	12 Aphomai			N 2.	]		
	104			.0 Ba	, 123 t		
	0ct12/23			0ct12/23	0ct12/23		
CALA Sample No.		Received	:240	Oct 2023		ames Walkus F 606,, Gwa sala-Nak	waxda xw Reser
17025:2017 Lab Number ccredited Unique Number		Diagnose Diagnost		Oct 2023 s Davis			Port Hardy, B CA V0N 2F

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Report Id: JAM160POR [WCAMIS] 02591290 (Generated: 11/16/2023 20:25:18) Rev: 1

Validity of results and interpretation are based on the sample and information as supplied.

Contact/Location: Chris France - JAM160POR

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