

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# Area [1618108] 757-1 SIMULATOR

## Component **Hydraulic System**

## SHELL TELLUS S3 M 46 (500 GAL)

### Recommendation

Resample at the next service interval to monitor.

#### Wear

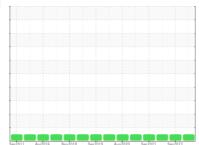
All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0803923	WC0803920	WC0739934
Sample Date		Client Info		25 Feb 2024	17 Sep 2023	21 Mar 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0	<1	0
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm		>20	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	<1	0
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>20	0	<1	0
Tin	ppm	ASTM D5185m	>20	0	0	0
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 0	history2 0
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	0	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 0	0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 0	0 0 0	0 0 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 0	0 0 0 <1	0 0 0 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 0 0 0 0	0 0 <1 0	0 0 0 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	55	0 0 0 0 0 37	0 0 <1 0 47	0 0 0 0 0 43
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	55 60	0 0 0 0 0 37 40	0 0 <1 0 47 58	0 0 0 0 43 41
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	55 60 0	0 0 0 0 37 40 16	0 0 <1 0 47 58 0	0 0 0 0 43 41 24
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	55 60 0 180	0 0 0 0 37 40 16 151	0 0 <1 0 47 58 0 223	0 0 0 0 43 41 24 203
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	55 60 0 180 limit/base	0 0 0 0 37 40 16 151 current	0 0 () () () () () () () () () () () () ()	0 0 0 0 43 41 24 203 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	55 60 0 180 limit/base	0 0 0 0 37 40 16 151 current 0	0 0 0 <1 0 47 58 0 223 history1 <1	0 0 0 0 43 41 24 203 history2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	55 60 0 180 limit/base >15 >20 limit/base	0 0 0 0 37 40 16 151 current 0 2 0 0	0 0 0 <1 0 47 58 0 223 history1 <1 2 <1 2 <1 history1	0 0 0 0 43 41 24 203 history2 <1 <1 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	55 60 0 180 limit/base >15 >20 limit/base >5000	0 0 0 0 37 40 16 151 <i>current</i> 0 2 0 2 0 <i>current</i> 102	0 0 0 <1 0 47 58 0 223 history1 <1 2 <1 2 <1 2 <1 58 0 223	0 0 0 0 43 41 24 203 history2 <1 <1 0 history2 148
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	55 60 0 180 limit/base >15 >20 limit/base >5000 >1300	0 0 0 0 37 40 16 151 <i>current</i> 0 2 0 2 0 <i>current</i> 102 17	0 0 0 <1 0 47 58 0 223 history1 <1 2 <1 2 <1 2 <1 history1 366 51	0 0 0 0 43 41 24 203 history2 <1 <1 0 history2 148 53
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	55 60 0 180 <b>limit/base</b> >15 >20 <b>limit/base</b> >5000 >1300 >160	0 0 0 0 37 40 16 151 <i>current</i> 0 2 0 <i>current</i> 102 17 2	0 0 0 <1 0 47 58 0 223 history1 <1 2 <1 2 <1 2 <1 2 <1 5 5	0 0 0 0 43 41 24 203 history2 <1 <1 <1 0 history2 148 53 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	55 60 0 180 limit/base >15 >20 limit/base >5000 >1300	0 0 0 0 37 40 16 151 <i>current</i> 0 2 0 2 0 <i>current</i> 102 17 2 0	0 0 0 <1 0 47 58 0 223 history1 <1 2 <1 2 <1 2 <1 history1 366 51	0 0 0 0 43 41 24 203 history2 <1 <1 <1 0 history2 148 53 5 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	55 60 0 180 <b>limit/base</b> >15 >20 <b>limit/base</b> >5000 >1300 >160	0 0 0 0 37 40 16 151 <b>current</b> 0 2 0 2 0 0 <b>current</b> 102 17 2 2 0 0 0	0 0 0 47 58 0 223 history1 <1 2 <1 2 <1 history1 366 51 5 1 0 0	0 0 0 0 43 41 24 203 history2 <1 <1 <1 0 V history2 148 53 5 5 2 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	55 60 0 180 <b>limit/base</b> >15 >20 <b>limit/base</b> >5000 >1300 >160 >40	0 0 0 0 37 40 16 151 <i>current</i> 0 2 0 2 0 <i>current</i> 102 17 2 0	0 0 0 <1 0 47 58 0 223 history1 <1 2 <1 2 <1 2 <1 2 <1 5 5 5 1 5 5 1	0 0 0 0 43 41 24 203 history2 <1 <1 <1 0 history2 148 53 5 5 2



# **OIL ANALYSIS REPORT**

Par	ticle Cou	nt					
491,520 T						T <sup>26</sup>	FLU
122,880 Severe 30,720	lessed and					-24 -22 8	Acid
7,680 Abnor	nal						VIS
30,720 7,680 Abnor 1,920 480 120 30 8						-20 (1999) Cleanliness Code	White
480						+16 Clean	Yello
30-						12 Iness	Prec
8-						-10 Ge	Silt
2 -						-8	Debr
0 4µ	6µ	14µ	21,	l	38µ	71μ	Sand
Acid	d Numbe	r					
0.50							Appe Odor
₽0.40							Emu
20.30							
La Base							Free
(B)0.40 0.30 Bu) Jaque 0.20 Base MW prove 0.10	$\overline{\mathbf{v}}$						FL
9 0.10						$\searrow$	Visc
0.00	9		6	-			
Sep30/1	Apr20/16	Nov16/18	Sep 9/19	Aug15/20	Sep6/21	Sep 17/23	SA
õ	A	No	05	Au		Se	
	cosity @	40°C					Colo
52 Abno	ormal		1	1			0010
50 <b>4</b> 8							
() 46 - Base () 46 - Base () 46 - Base () 46 - Base	$\sim$			-	$\sim$		Botto
42							
40 - Abno	ormal						
38			6		-		
Sep 30/1	Apr20/16	Nov16/18	Sep 9/19	Aug15/20	Sep6/21	Sep17/23	MPC
S	Ap	No	\$	Au	63	Sel	
Par	ticle Trer	nd					
6k T							
≘ <sup>5k</sup> - 9	14μm						
offer 3k -	^						

ep9/19

Aug 15/20

ep 6/2

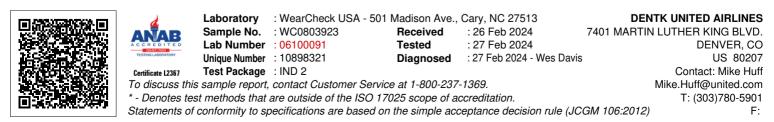
ep17/23

FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.2	0.09	0.05	0.13
VISUAL		method	limit/base	current	history1	history2
Vhite Metal	scalar	*Visual	NONE	NONE	NONE	NONE
ellow 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	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
ppearance	scalar	*Visual	NORML	NORML	NORML	NORML
Ddor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
ree Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
/isc @ 40°C	cSt	ASTM D445	46	44.9	46.1	44.7
SAMPLE IMAGES	;	method	limit/base	current	history1	history2
Color						
Pottom						

no image

no image

no image



Contact/Location: Mike Huff - DENDEN