# Water Properties Group

Institute of Ocean Sciences, Ocean Sciences Division

Ist2

K15 X2 = 1.99974 Submitted 02 Aug 2019

## AUTOSAL ANALYSIS LOGSHEET

Cruise ID:	2019-007		Cast/Station Na	me: Various	Analysis Date (dd   mmm   yyyy):				
Autosal Mod	lel: 8400B		Serial Number:	68572		30 July 2019			
Initial Stand	Iby Value: 24+	6007	Ratio After Stan	Ratio After Standardization: 24+6011					
Cell Standa	ridization (Daily)	Standardization	Values:	Standard Info.		Bath Temperature: <u>24</u> °C			
Conductivity	must be ± 0.00001	Before: <u>5.</u>	2	K <sub>15</sub> VALUE: 0.999	87	Sample Temperature: <u>22.3</u> °C			
compared to	Standard	After: <u>5.</u>	After: 5.16		[	Room Temperature: 22. 3 °C			
		Notes:		Batch Date: 03	May 2020	Analyst:			
Sample	Station Name	Depth/Nisk#	Salinity 1	Salinity 2	Salinity 3	Comments			
P161	Calibration		1.99969	1.999		alot accepted			
A Star The			LA	djusted to	1.99974				
in the set			1.99974 -	0	7	Arepted			
DWR			1.97900	1.97899	1.97899				
DWR	New Market		1.97890	1.97891	1.97892				
DWR			1.97891	1.97891	1.97892				

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AUTOSAL ANALYSIS LOGSHEET										
Cruise ID: 2011-014 Cast/Station Name: Varians Analysis Date (dd mmm yyyy):										
Autosal Mod			Serial Number:	68572		31 Jul 2019				
Initial Stand	dby Value:	6009/10	Ratio After Stan	Ratio After Standardization:						
Cell Standa	aridization (Daily)	Standardization V	Values:	Standard Info.		Bath Temperature: °C				
Conductivity	must be ± 0.00001	Before:	/	K <sub>15</sub> VALUE: 0.999		Sample Temperature: 330_°C				
compared to	o Standard	After:		Batch #:		Room Temperature: 23.0 °C				
		Notes:		Batch Date:		Analyst:5				
Sample	Station Name	Depth/Nisk#	Salinity 1	Salinity 2	Salinity 3	Comments				
DWR			1.98261	1.98263	1.98264	1				
159B	ESIS		1.97500	1.97499						
YIA	ESOB		1.97499	1.97500		74": 1.97214 pleted ran				
74	E503		1.941	1.97205	1.97212	NO Stopper! 142.				
1395	E521		1.96913	1-96911						
42	E306		1.97209	1.97206						
3	E503		1.98102	1-98/01						
157	515		1-97889	1.9 +889		The second state way and				
6	E203	-	1.9 +196	1-97195		athe and and his				
24	Esol	11741	(.96358	1,9650	107701/	79 - 1-97 + 789 percent				
	ESOJ		1.9 + +84	1.7 ++00	1.97786'	Ear No stopper! s. 2				
40	ESO6 ESU-	1	1.7 T119	1.9 419	Iganas	Delated 1st made				
156	ES 15- ES06		1.4692	1 9/092	1.1001)	Extra thish 4 bolde.				
73	E503		19072	190223		No stopper!				
44	ESOL	2	1.96762	1.98233 1.96762	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
38	6506		1.97975	197972						
7B	E503		1.96974	1.96978	- 2-3/2	The second state of the second				
41B	E506		1.9 7503	1975-04						
418	ESOJ	1.4.2.5	1.97999	1.97898	1.97898					
158A	ES15		1.97499	1.97498						
8	E503	1.5	1.96802	1.96802	EN INST					
155	E515		1.98126	1.98129	1.98126					
2	5503	Name of Sec.	1.98205	1.98204	1.98264	Deletel 2nd reading				
45	E506		1.96534	1.96535		Final Standby Value:				
DWK			1.98265	1.98266	1.98265	Final Standby Value: 24 + 600 9/10				
Notes:										

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VUI OI	Water Properties Group Institute of Ocean Sciences, Ocean Sciences Division AUTOSAL ANALYSIS LOGSHEET									
Cruise ID:	2019-014		Cast/Station Nar			Analysis Date (dd mmm yyyy):				
Autosal Mo	0111-17			68572		31 Jul 2019				
	dby Value: 24 f	6009/10	Ratio After Stan							
and the second second	aridization (Daily)	Standardization		Standard Info.	Bath Temperature: 24 °C					
	must be ± 0.00001	Before:		K <sub>15</sub> VALUE: 0.999	/	Sample Temperature: 23.0 °C				
compared to	Standard	After:		Batch #:		Room Temperature: <u>23.0</u> °C				
		Notes:		Baten Date:		Analyst: <u>TS</u>				
Sample	Station Name	Depth/Nisk#	Salinity 1	Salinity 2	Salinity 3	Comments				
OWR			1.98264	1.98265						
234	E510		1.98213	1.98213						
698	UNOG		1.98157	1.98156		e e e e e e e e e e e e e e e e e e e				
238B	Eslo		1.97485	1.97486						
302	SP02		1.96918	1.96817						
237	ES10		1.97880	1.97880						
274	0006		1,96776	1.96797	nalida	Extra thish - bubble				
9 HB	0/006		1.97489	1.97488	.77487					
240	UNOG		1.97912	1.97913	1. 3 Mar 19	S DAL SMALLY SET TO A 14				
289	SPOL		1,76511	1.76311						
235	ESIO		1.99 14 18	194719	1991 15, I	and the second states of				
256	UNIO		1,96297	1.96299	1.96297	Deletel 2nd reading				
297	SPOZ		198099	1.98100	10 / 00 / /	ferend a reading				
256 297 269	UNOG		1.98109	1.98109		1.				
239	ESIO		1.97163	1.9465	1.97166	Deletal 1st reading.				
301	SPOL		1.96993	1.96991						
273	UNO6		1.97001	1.97002						
300,	SPOZ		1.97237	1.97236						
ZHA	UNOG		1.97494	1.97494	1					
236	ES(0	-	1.98100	1.98/14	1.98/3					
272	UNO6		1.97209	1.97209		Course in the second				
240	ESIO		196767	1.96966		Number of the second second				
241 238A	E510 E510		192402	1-98774		Final Standby Values				
238A	C310		1.97483	1.97483	1.98265	Final Standby Value: 24 + 60/0				
			17 002		1.70 < 6 >					
Notes:										

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## AUTOSAL ANALYSIS LOGSHEET

Cruise ID: 20/9-014 Cast/Station Name: Varions Analysis Date (dd mmm yyyy):								
Autosal Model:	MIDDO		Serial Number:	1122)		1 Aug 2019		
Initial Standby	011	+ 6010	Ratio After Standardization: <u>24 + 6010</u>					
Cell Standarid		Standardization	N.V	Standard Info.		Bath Temperature: °C		
Conductivity mus		Before: <u>S.</u> /		K <sub>15</sub> VALUE: 0.999	87	Sample Temperature: 230 °C		
compared to Sta		After: 5./		Batch #:		Room Temperature: 23.0 °C		
compared to sta	andaro			Batch Date: 3	Mar 2020	Analyst:		
		Notes:						
	Station Name	Depth/Nisk#	Salinity 1	Salinity 2	Salinity 3	Comments		
	<b>P</b> 161		1.99972	1.99973	10021-	Accepted.		
DWR			1.78267	1.78268	1.98267	Deletal (St reading.		
DWR			1.78270	1.98267	1.98269	receta a county.		
DWR			1.98 26+	1.98288	1.7826+			
DWR	1.220		1.98 -09	(.98269	1.98268			
WK	E \$ 12		1.98266	1.98267	1.98266	S & S & S & S & S & S & S & S & S & S &		
	ES13 ES13	-	1.97122	1.97122	THE REAL PROPERTY.			
	-		10/02	1.97900	1.1.1.1.4	the No stopper + examples		
	ESIS UNID		1.96927	1.96926		Las No Stopper + carractors		
		1.	1.97765	1.97019	2			
4	INIO			1.97765		and and the second of the		
	ESZY NIO		1.96193	1.96856				
	524		1 4 4 6 0 1	1.96922				
	2524		196923	194106				
160 0	ES15		1.96983	1.96982	124 M. P.	2.7/15/24194 158 51		
232	UNIO		1.97492					
	5524	1	1.968 52	1.96853	A 12 1 2	CONTRACTOR OF THE OWNER		
	55/3		1.94623	1.98023				
	524	59	1.9745-4	1.97459	131-211			
178	524		1.97493	1.97894				
IGAA F	513		197467	197467				
	UNIO		1.97201	1.97204	1.978.03	Deletel 2nd Rend.		
The state of the s	515	12,	1.97233	1.47236	1.97233	(i li		
	324		1.97244	1,97243		Final Standby Value:		
DWR				1.98267		24+6010		
Notes:								

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# AUTOSAL ANALYSIS LOGSHEET

Cruise ID: _	2019-014		Cast/Station Nan	ne: Vario	Analysis Date (dd   mmm   yyyy):					
Autosal Mo	del: <u>64008</u>		Serial Number: 68572 2 Ang 2019							
		+ 6010	Ratio After Standardization:							
Cell Standa	aridization (Daily)	Standardization	Values:	Standard Info.		Bath Temperature: °C				
Conductivity	must be ± 0.00001	Before:		K <sub>15</sub> VALUE: 0.999	1	Sample Temperature: <u>228</u> °C				
compared to	o Standard	After:		Batch #:		Room Temperature: <u>22.8</u> °C				
		Notes:		Batch Date:		Analyst: <u>55</u>				
Sample	Station Name	Depth/Nisk#	Salinity 1	Salinity 2	Salinity 3	Comments				
200	513		1.96977	1.96978						
175B	E524		1.98203	1,98203						
218/4	UNIO		1.96856	1.96857						
198B	ESIZ		1,97459	1.97459		laploose.				
176	E574		1-98204	1.98207	1.98205	Deleter 1st reading.				
16	E523		1.97901	1.97900		U				
62	ES07		1.97890	1.97890						
118	<u>E273</u>		1.97252	1.97233	S. LASA PIS					
140	ESA		1.96757	1.96757						
64	E)07		1.97109	1.97109	an angene					
99	ESFT		1.96766	1.96767						
84	ESOLO		1-96802	1.96803						
135	ESLI		1.97893	1.97892	1,97895	Deleted 3th neall-				
IST	521		1.97485	1.97485	1.97488					
139A	ESZI		1.96913	1.96912	1010111	DAIL IST I				
65	E307	a Palita	1.96938		1,96941	Deletal (st read.				
58	ESO7	200000-2	1.98/88	1.98188		and the second sec				
63K	ES07		1.9795	1.97455						
It	ES73		1-1+)10	1.97510						
(14	E523	SUL 51 7 27	1.78007	1.98090	and the second second					
119	ES23 ES21		1971015	1.97014						
	ES07		1.97/55	1.97153						
63/4	ES016		10-11/20	197454						
120	6523		1 968.79	1.96837		Final Standby Value:				
DWR	CORS		1.98266	1.98266	1.98266					
			K	A	1.10000					
Notes:			ho	letell.						
	yelding.									



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4	Cast/Station Name:	Analysis Date (dd   mmm   yyyy):
0	101-71	Acres 2014

Cruise ID:	2014-014	_	Cast/Station Nar	ne: Varto	~5	Analysis D	Date (dd   mmm   yyyy):	
Autosal Mo	del: 8400B		Serial Number:	68572		1 Aug 2019		
Initial Standby Value: <u>24+6010</u> Ratio After Standardization:								
IV.	aridization (Daily)	Standardization	Values:	Standard Info.		Bath Temperatu	re: <u>24</u> °C	
Conductivity	must be ± 0.00001	Before:	1	K <sub>15</sub> VALUE: 0.999		Sample Tempera	ature: <u>22.9</u> °C	
compared to	o Standard	After:		Batch #:			ure: <u>22.9</u> °C	
		Notes:		Batch Date:		Analyst: <u>JS</u>		
Sample	Station Name	Depth/Nisk#	Salinity 1	Salinity 2 Salinity 3		Comments		
99	6517		1.9778	1.97732				
136	ESZI		1.97899	1.97898				
61	ES07		1.98122	1.98/23				
201	ESIS	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1.96830	1.96830				
DWR			1.98267	1-98265	1-98265			
Cali	protion	02 Au	just 201	9		K15×2=	= 1.99966	
Di i			2	2000	1100	Lab= 22	.6°C	
P162	Calr	号	1.99962	1.99966	2 Acceptar	stoby #=	24+6010	
0110	1 -1, yal <u>+ ,</u>	April 10 Concernment	Drejected	( add : a		512 2:	al- 5.16-75.21	
P162	116.00		199965	199966	34.9932	stated .	501= 34.993	
319A	H503 5802		1.97193	1.97191		stby # to	24+6014	
298	5P02 H503	3	1.97878	1,97878				
296	SP02	2	1.91095	1.97894	- 24-3 L		and the second se	
336	HSOI	2	1.96576	1.96575				
371	HS03	6	1.96785	1.96786	PEDATE C	320	318	
3193	HS03	4	1.97 88	1.97189	~	SAL	SAL	
316	HSG3	5. 1 2.	1.98098	1.98098	$\square$	HS03	HS03	
299B	SPOZ	4	1.97494	1.97493		2019-014	2019-014	
320	4503	5	197023	1.97021		Bot 5	Bot 3	
318	H503	3	1.97496	1.97497		end c	r J.Se.	
4	¥ **			· ·	1000			
319	- 298	317 🗕	296 —	336 - 3	21 - 11	9 <b>8</b> 316	5 <u>299</u> 8 —	
SAL	_ SAL	SAL -	SAL	0.3.7	AL - SA			
HS03	_ SP02 _	HS03 _	DIVI		S03 HSC	- s		
2019-014 Bot 4					9-014 2019-	4	014 2019-014	
	Bot 3	Bot 2 E	Bot 1 Bo	ot 2 Bo	ot 6 Bot		1 _ Bot 4	

Version: 20 April 2016

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	AUTOSAL ANALYSIS LOGSHEET										
Cruise	Cruise ID: 2019-019 Keiheld Cast/Station Name: Analysis Date (dd   mmm   yyyy):										
	•		1	ISL/SLALION NAP	ne:	7	Ana	ilysis Date (dd)	mmm (yyyy):		
158 <b>B</b>	41 A	7	<sup>139</sup> B	42	3	157	6	24	5		
SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL		
ES15	ES06	ES03	ES21	ES06	ES03	ES15	ES03	ES01	ES03		
2019-014	2019-014	2 2019-014	2019-014	2019-014	2 2019-014	2019-014	2	2010 014	2		
Bot 5	Bot 4	Bot 7	Bot 6	Bot 5	E Bot 3	Bot 4	2019-014	Bot 23	2019-014		
	Ť.	-	1	-	L DOC 5		- Bot 6	240 24	Bot 5		
40	156	- 43	1	44	38	7 B	41 <b>B</b>	4	158 A		
SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL		
ES06	ES15	. ES06	ES03	ES06	ES06	ES03	ES06	ES03	ES15		
2019-014	-2019-014	2019-014	2	2019-014	<sup>1</sup> 2019-014	2	2019-014	2	2019-014		
Bot 3	. Bot 3	Bot 6	2019-014 Bot 1	Bot 7	Bot 1	2019-014	Bot 4	2019-014	Bot 5		
	4		BULI	7	<b>`</b>	Bot 7	J BOL 4	Bot 4	BOCS		
8	155	2	45	234	268	238 <b>B</b>	302	237	274		
SAL	SAL	SAL	SAL	SAL	SAL	SAL	1	SAL	1		
ES03	ES15	ES03	ES06	ES10	UN06	ES10	SAL	ES10	SAL		
2	2019-014	2	2019-014	2019-014	2019-014		SP02	2019-014	UN06		
201 <b>9-</b> 014	Bot 2	2019-014 Bot 2	Bot 8	Bot 1	Bot 1	Bot 5		-	2019-014		
Bot 8		BOL Z		BOC 1		BOC 5	Bot 7	Bot 4	Bot 7		
271 <b>5</b>	270	284	* 299 A	235	256		269		201		
SAL	SAL	SAL	SAL	SAL	SAL	297	SAL	239	301		
UN06	UN06	SP01	SP02	ES10		SAL		SAL	SAL		
	2019-014	2019-014			UN01	SP02	UN06	ES10	SP02		
Bot 4 -	Bot 3	Bot 2	Bot 4	Bot 2	2019-014 Bot 2				2019-014		
BUC 4	BOUJ			BOL 2	Bot 🗶	Bot 2	Bot 2	Bot 6	Bot 6		
273	300	271	236	272	240	2.4.1	Λ				
SAL	SAL	SAL	SAL	SAL		241	238A	199	197		
UN06	SP02	UN06	ES10	UN06	SAL	SAL	SAL	SAL	SAL		
2019-014	2019-014	2019-014	2019-014		ES10	ES10	ES10	ES13	ES13		
		Bot 4	Bot 3	Bot 5			2019-014	2019-014	2019-014 -		
Bot 6	Bot 5				Bot 7	Bot 8	Bot 5	Bot 4	Bot 20 -		
<b>c</b> 1	217	215	175 <b>A</b>	<b>B</b> 218	101	f .	-	232	-		
161	217	SAL	SAL	SAL	181	177	160		182		
SAL	SAL	UN10	ES24		SAL	'SAL	SAL	Sal	SAL		
ES15	UN10			UN10	ES24	ES24	ES15	UNIO	ES24		
2019-014	2011	-	Bot 1	2019-014	2019-014	2019-014	2019-014	16 20A-014	2019-014		
Bot 8	Bot 3	Bot 1 1	Δ	Bot 4	Bot 7	Bot 3	Bot 7	Bal 8	Bot 8		
	179	178	198	216	159			175	A		
196	SAL	SAL	SAL	SAL	SAL	180	200	175	218		
SAL	ES24	ES24	ES13	UN10	ES15	SAL	SAL	- SAL	SAL		
ES13	ES24 2019-014	2019-014		2019-014	2019-014	ES24	ES13	ES24	UN10 .		
2019-014	Bot 5	Bot 4	Bot 3	Bot 2	Bot 6	2019-014	2019-014	2019-014	2019-014		
Bot 1	BUC D		N			Bot 6	Bot 5	Bot 1	Bot 4		

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					YSIS LOC		ences, oc				
Cruise ID	2019-01	4 laber	11			SHELT	-				
1980				t/Station Nam	e:		Anal	ysis Date (dd ı	mmm yyyy):		
198	176	116	62	118	140	64	99		1		
SAL	SAL	SAL	SAL	SAL	SAL	SAL	SAL	84	135		
ES13	ES24	ES23	ES07	ES23	ES21	ES07	ES17	SAL	SAL		
2019-014	2019-014 M	Bot \$3	2019-014	2019-014	2019-014	2019-014	2019-014	ES016	ES21		
Bot 3	Bot 2	BOL	Bot 5	Bot 6	Bot 7	Bot 7	Bot 2	2019-014	2019-014		
107	1394	65	5.0					Bot 2	Bot 2		
137	SAL	SAL	58	63 <b>B</b>	117	114	119	138	63 👝		
SAL	ES21	ES07	SAL	SAL	SAL	SAL	SAL	SAL	SAL		
ES21	1	2019-014	ES07	ES07	- ES23	ES23	ES23	ES21	ES07		
2019-014	Bot 6	Bot 8	2019-014		-2019-014	2019-014	2019-014	2019-014	2019-014		
Bot 4	,	1000	Bot 1	Bot 6	_ Bot #4	Bot 2	Bot 7	Bot 5	Bot 6		
83	120	- 98	136								
SAL	SAL	SAL	SAL	61	201		_				
ES016	ES23	ES17	ES21	SAL	SAL	2	and Magar		5- 55		
2019-014	2019-014	2019-014 2	019-014	ES07	ES13		_	_			
Bot 1	Bot 8	Bot 1	Bot 3	019-014	2019-014			1.6.			
Boe	A CONTRACTOR			Bot 4	Bot 6						
1							1.3				
-											
				1		1 10 10 10					
			176 -	177							
		and a start	SAL -	SALT					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
			ES13	ES13							
	1.2.1.2.1.1.1.1		2019-014	2019-01	4						
			Bot 2	Bot 3							
			10-		-1.543	12 - 41	1	21.20			
34316		St. 19-11-	inter and	- 11 - 11 -			NO ST &				
				101,044					Neg Tank Ind		
							Final Char II	Walters			
				14-14	2 1 1 2 1	10.000	Final Stand	by value:			
Notes:							-				
10103.											