

AR29 CTD Cast Sheet

Station Number: **A13**

CTD cast number: **77**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC):

**2018 Apr 22. 16:13:06**

**16:43:52**

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300		✓							✓				
	2	250		✓											
	3	200		✓							✓				
	4	150		✓											
	5	120		✓											
	6	100		✓		290	290	✓			✓	✓	✓		
	7	80		✓		290	290	✓	136	1066		✓	✓	✓	
	8	57		✓		290	290	✓				✓	✓		
	9	57									✓				
	10	38		✓		290	290	✓				✓	✓		
	11	38													
	12	25		✓		290	290	✓				✓	✓		
	13	25									✓				
	14	25													
	15	16													
	16	16		✓		290	290	✓				✓	✓		
	17	11									✓				
	18	11		✓		290	290	✓				✓	✓		
<i>zoe</i>	19	6		✓		288	287						✓		
	20	6						✓				✓			
	21	6													
<i>zoe</i>	22	sfc		✓		290	290		137	1057			✓	✓	
	23	sfc									✓				
	24	sfc						✓				✓			
	Sampler														

Surf  
6  
11  
16  
25  
38  
57

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 50, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab, 11, 16, 25, 38, 57 ✓ ✓ ✓ ✓ ✓ ✓ ✓

SPAR: 1000. → J J J J J

10  
38 m

depth: 480 m.

AR29 CTD Cast Sheet

Station Number: A13

CTD cast number: 78

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 22 17:26:56

17:41:20

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	25													
	2	25													
	3	25													
	4	25													
	5	25													
	6	25													
	7	25													
	8	25													
	9	25													
	10	25													
	11	25													
	12	25													
	13	25													
	14	25													
	15	25													
	16	25													
	17	25													
	18	25													
	19	25													
	20	25													
	21	25													
	22	25													
	23	25													
	24	25													
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, ~~30~~, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab 25

24 bottle...

AR29 CTD Cast Sheet

Station Number: ~~211~~ B1

CTD cast number: 79

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

Apr 23 00:40

00:57

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	100	/	✓		290	290	✓				✓	✓	✓	
	2	80		✓		290	290	✓				✓	✓		
	3	60		✓		290	290	✓				✓	✓		
	4	40	/	✓		290	290	✓	138	1060		✓	✓	✓	
	5	30		✓		290	290						✓		
	6	20		✓		290	290	✓				✓	✓		
	7	10		✓		287	288	✓				✓	✓		
	8	sfc	/	✓		290	290	✓	139	766		✓	✓	✓	
	9	sfc													
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, ~~120, 150, 200, 250, 300~~  
 Floating: Chl max, 10mab ✓ ✓ ✓ ✓ ✓ ✓

VPR: 00-  
 water depth: 118 m

AR29 CTD Cast Sheet

Station Number: B2

CTD cast number: 80

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

Apr 23 01:35:46

01:57:38

Floater ID	Bottle	Target Depth	TOI	Nuts	14C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	114		✓											
	2	100		✓		290	290					✓	✓		
	3	80		✓		290	290					✓	✓		
	4	60		✓		290	290					✓	✓		
	5	40		✓		290	290		140	532		✓	✓	✓	
	6	30		✓		290	290						✓		
	7	20		✓		290	290					✓	✓	✓	
	8	10		✓		288	287					✓	✓		
	9	sfc		✓		290	290		141	535			✓	✓	
	10	sfc										✓			
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, ~~120, 150, 200, 250, 300~~

Floating: Chl max, 10mab

114 ✓

vpr on.  
depth = 124 m.

AR29 CTD Cast Sheet

Station Number: **B3**

CTD cast number: **81**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC):

**Apr 23 02:36:46**

**02:56:44**

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
<b>10 mab</b>	1	<b>123</b>		✓											
	2	<b>100</b>		✓		<b>290</b>						✓	✓		
	3	<b>80</b>		✓		<b>290</b>						✓	✓	✓	
	4	<b>60</b>		✓		<b>290</b>						✓	✓		
	5	<b>40</b>		✓		<b>290</b>			<b>142</b>	<b>532</b>		✓	✓	✓	
	6	<b>30</b>		✓		<b>290</b>							✓		
	7	<b>20</b>		✓		<b>290</b>						✓	✓		
	8	<b>10</b>		✓		<b>287</b>	<b>288</b>					✓	✓		
	9	<b>Sfc</b>		✓		<b>290</b>	<b>290</b>		<b>143</b>	<b>535</b>		✓	✓	✓	
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, ~~120, 150, 200, 250, 300~~

Floating: Chl max, 10mab ✓ ✓ ✓ ✓ ✓ ✓ **123**

VPR on  
depth = 133 m.

AR29 CTD Cast Sheet

Station Number: A16  
 Start date, time (UTC): 0915  
2018-04-23

CTD cast number: 82  
 End date, time (UTC): 0940

Initials: W2

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300		✓							✓				
	2	250		✓											
	3	200	✓	✓											
	4	150	✓	✓							✓				
	5	120	✓	✓		290	290						✓		
	6	100	✓	✓							✓				
	7	100				290	290					✓	✓		
	8	80	✓	✓											
	9	80				290	290					✓	✓		
	10	60	✓	✓							✓				
	11	60				283	283		144	1060		✓	✓	✓	
	12	40	✓	✓							✓				
	13	40				290	290					✓	✓		
	14	30		✓											
	15	30				290	290						✓		
	16	20	✓	✓							✓				
	17	20				290	290					✓	✓		
	18	10		✓											
	19	10				288	287					✓	✓		
	20	Sfc	✓	✓							✓				
	21	Sfc				290	290		145	1057		✓	✓	✓	
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: ~~A13~~ A13  
 Start date, time (UTC): 1100  
 2018-04-23

CTD cast number: 83  
 End date, time (UTC): 11:30

Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300		✓											
	2	250		✓											
	3	200		✓											
	4	150		✓											
	5	120		✓											
	6	100	/	✓											
	7	100				289	286						✓		
	8	80	/	✓											
	9	80				290	290						✓		
	10	60	/	✓											
	11	60				290	290						✓		
	12	49	/	✓											
WS	13	49				290	290					✓	✓		
WS	14	33		✓		290	290					✓	✓		
	15	21	/	✓											
WS	16	21				290	290					✓	✓		
	17	14	/	✓											
JT	18	14													
WS	19	14				283	283		146	532		✓	✓	✓	
WS	20	10		✓		290	290					✓	✓		
WS	21	5		✓		287	288					✓	✓		
	22	Sfc	/	✓											
WS	23	Sfc				290	290		147	535		✓	✓	✓	
	24														
	Sampler														

SURF  
 5  
 10  
 14  
 21  
 33  
 49

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab 21 33 49 = = =  
 SPAR: 300 = 5 10 14

AR29 CTD Cast Sheet

Station Number: **A13**  
 Start date, time (UTC): **12 09**  
**2018-04-23**

CTD cast number: **84**  
 End date, time (UTC): **12 15**

Initials: **WZ**

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
JT	1	14													
JT	2	14													
JT	3	14													
JT	4	14													
JT	5	14													
JT	6	14													
JT	7	14													
JT	8	14													
JT	9	14													
JT	10	14													
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab



AR29 CTD Cast Sheet

Station Number: A14  
 Start date, time (UTC): 1250  
2018-04-23

CTD cast number: 85  
 End date, time (UTC): 1317

Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300		✓											
	2	250		✓											
	3	200		✓											
	4	150		✓											
	5	120		✓											
	6	100	-	✓											
	7	100				290	290					✓	✓		
	8	80	-	✓											
	9	80				290	290					✓	✓		
	10	60	-	✓											
	11	60				290	290					✓	✓		
	12	40	-	✓											
	13	40				290	290		148			✓	✓	✓	
	14	30													
	15	30		✓		290	290						✓		
	16	20	-	✓											
	17	20				290	290					✓	✓		
	18	10	<del>0</del>												
	19	10		✓		283	283		149	532		✓	✓	✓	
	20	Sfc	-	✓								✓			
	21	Sfc				290	290		150	535			✓	✓	
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: A15

CTD cast number: 86

Initials: WZ

Start date, time (UTC): 1355

End date, time (UTC): 14:20

2018-04-23

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300		✓											
	2	250		✓											
	3	200		✓											
	4	150		✓											
	5	120		✓		290	290						✓		
	6	100	/	✓		290	290					✓	✓		
	7	80	/	✓		290	290					✓	✓		
	8	60	/	✓		290	290					✓	✓		
	9	40	/	✓		290	290					✓	✓		
	10	30		✓		290	290						✓		
	11	20	/	✓		283	283		151	532		✓	✓	✓	
	12	10		✓		287	287					✓	✓		
	13	sfc	/												
	14	sfc		✓		290	290		152	533		✓	✓	✓	
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: A12  
 Start date, time (UTC): 1540

CTD cast number: 87  
 End date, time (UTC): 1600

Initials: WZ

2018-04-23

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	267		✓											
	2	250		✓											
	3	200		✓											
	4	150		✓											
	5	120		✓		286	289						✓		
	6	100		✓		290	290					✓	✓		
	7	80		✓		290	290						✓		
WS	8	64		✓		290	290					✓	✓		
WS	9	43		✓		290	290					✓	✓		
WS	10	28		✓		290	290					✓	✓		
WS	11	18		✓		283	283		153	532		✓	✓		
WS	12	13		✓		290	290						✓		
	13	6		✓		287	287					✓	✓		
WS	14	6											✓		
	15	sfc	✓	✓		290	290		154	535		✓	✓		
WS	16	sfc													
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

SURF  
 6  
 13  
 18  
 28  
 43  
 64

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab 18 28 43 64  
 0 6 B

SPAR 1200

AR29 CTD Cast Sheet

Station Number: A11

CTD cast number: 88

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

Apr 23 17:07:13

17:25:48

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	140		✓											
	2	120		✓											
	3	100		✓		290	290					✓	✓		
	4	80		✓		290	290					✓	✓		
	5	60		✓		290	290					✓	✓		
	6	40		✓		290	290					✓	✓		
	7	30		✓		290	290		155	532			✓	✓	
	8	20		✓		290	290					✓	✓		
	9	10		✓		287	288					✓	✓		
zoe	10	sfc		✓		290	290		156	535		✓	✓	✓	
	11	sfc													
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 140

(-4)

vpr on  
depth = 150 m.

AR29 CTD Cast Sheet

Station Number: A10

CTD cast number: 89

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC): 18:16:40

2018 Apr 23 18:03:05

Floater ID	Bottle	Target Depth	TOI	Nuts	14C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO2	C/N	FCM	IFCB	IFCBS
10 mab	1	125		✓		290	290						✓		
JF	2	125									✓				
	3	100		✓		290	290				✓	✓	✓		
JF	4	80									✓				
	5	80		✓		290	290				✓	✓	✓		
JF	6	60									✓				
	7	60		✓		290	290				✓	✓	✓		
JF	8	40									✓				
	9	40		✓		290	290		157	1060		✓	✓	✓	
	10	30		✓		290	290						✓		
	11	20		✓		290	290				✓		✓		
JF	12	20									✓				
	13	10		→	bottle not fixed properly										
	14	sfc		✓		290	290		158	1057			✓	✓	
	15	sfc										✓			
	16	sfc													
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths - Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, ~~120, 150, 200, 250, 300~~

Floating: Chl max, 10mab ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓  
125 ✓

-3  
vpr on  
depth: 135

### AR29 CTD Cast Sheet

Station Number: **A9**

CTD cast number: **90**

Initials: **C.Z.**

Start date, time (UTC):  
**2018 Apr 23 18:51:33**

End date, time (UTC):

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
<b>10 mab</b>	1	<b>119</b>		✓											
	2	<b>100</b>		✓		<b>270</b>	<b>290</b>						✓		
	3	<b>100</b>										✓			
	4	<b>80</b>		✓		<b>290</b>	<b>290</b>						✓		
	5	<b>80</b>										✓			
	6	<b>60</b>		✓		<b>290</b>	<b>290</b>						✓		
	7	<b>60</b>										✓			
	8	<b>40</b>		✓		<b>290</b>	<b>290</b>						✓		
	9	<b>40</b>										✓			
	10	<b>30</b>		✓		<b>290</b>	<b>290</b>		<b>159</b>	<b>1060</b>			✓	✓	
	11	<b>20</b>		✓		<b>290</b>	<b>290</b>								
	12	<b>20</b>										✓	✓		
	<u>13</u>	<b>10</b>													
	14	<b>10</b>		✓		<b>288</b>	<b>287</b>					✓	✓		
	15	<b>sfc</b>		✓		<b>290</b>	<b>290</b>		<b>160</b>	<b>1057</b>			✓	✓	
	16	<b>sfc.</b>										✓			
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, ~~120, 150, 200, 250, 300~~

Floating: Chl max, 10mab ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ **119** ✓

-3  
 VPR: on  
 depth: 129 m

AR29 CTD Cast Sheet

Station Number: A8

CTD cast number: 91

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

Apr 23 19:55

20:15

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	110		✓											
	2	100		✓								✓			
	3	80		✓								✓			
	4	60		✓		290	290					✓	✓		
	5	40		✓		290	290					✓	✓		
	6	30		✓		290	290		161	532			✓	✓	
	7	20		✓		290	290					✓	✓		
	8	10		✓		288	287					✓	✓		
	9	sfc		✓		290	290		162	535		✓	✓		
	10	sfc.													
	11														
	12														
	<u>13</u>														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: sfc, 10, 20, 30, 40, 60, 80, 100, ~~120, 150, 200, 250, 300~~

Floating: Chl max, 10 mab ✓ ✓ ✓ ✓ ✓ ✓ 110 ✓

-3

VPR on

depth = 120 m.



AR29 CTD Cast Sheet

Station Number: A7

CTD cast number: 92

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 23 20:39:41

Apr 23 20:58:10

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	90		✓							✓	✓	✓		
	2	80										✓			
	3	80		✓		290	290						✓		
	4	60													
	5	60		✓		290	290					✓	✓		
	6	40													
	7	40		✓		290	290					✓	✓		
	8	30													
	9	30		✓		290	290		163	1060			✓	✓	
	10	20													
	11	20		✓		290	290					✓	✓		
	12	10													
	13	10		✓		287	288						✓		
	14	10										✓			
	15	sfc		✓		290	290		164	1057		✓	✓	✓	
	16	sfc		→		bottle	not		fixed	properly.					
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab, 10, 20, 30, 40, 60, 80, 90

vpr on  
depth: 100m



AR29 CTD Cast Sheet

Station Number: **A6**

CTD cast number: **93**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC): **21:57**

**2018 Apr 23 21:44:44**

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
<b>10 mab</b>	1	<b>78</b>		✓		290	290					✓	✓		
	2	<b>60</b>		✓		290	290					✓	✓		
	3	<b>40</b>		✓		290	290					✓	✓		
	4	<b>30</b>		✓		290	290		<b>165</b>	<b>532</b>		✓	✓	✓	
	5	<b>20</b>		✓		290	290					✓	✓		
	6	<b>10</b>		✓		287	288					✓	✓		
	7	<b>sfc</b>		✓		290	290		<b>166</b>	<b>535</b>		✓	✓	✓	
	8	<b>sfc</b>													
	9														
	10														
	11														
	12														
	<u>13</u>														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, ~~80, 100, 120, 150, 200, 250, 300~~

Floating: Chl max, 10mab ✓ ✓ ✓ ✓ ✓ **78**  
✓

**-2**  
VPR on depth 88 m



### AR29 CTD Cast Sheet

Station Number: **A4**

CTD cast number: **95**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC):

**Apr 23: 23:22:05**

**23:33:29**

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
<b>10 mab</b>	1	<b>64</b>		✓		290	290					✓	✓		
	2	<b>40</b>		✓		290	290					✓	✓		
	3	<b>30</b>		✓		290	290					✓	✓		
	4	<b>20</b>		✓		290	290		<b>169</b>	<b>532</b>		✓	✓	✓	
	5	<b>10</b>		✓		<b>282</b>	<b>287</b>					✓	✓		
	6	<b>sfc</b>		✓		290	290		<b>170</b>	<b>535</b>		✓	✓	✓	
	7	<b>sfc</b>													
	8														
	9														
	10														
	11														
	12														
	<u>13</u>														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: ~~Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300~~

Floating: Chl max, 10 mab ✓ ✓ ✓ **64**

VPR on  
depth: 74 m.

AR29 CTD Cast Sheet

Station Number: A3

CTD cast number: 96

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 24 00:05:11

~~22~~ 00:18:31

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	58		✓		290	290					✓	✓		
	2	40		✓		290	290					✓	✓		
	3	40													
	4	30		✓		290	290		171	290		✓	✓	✓	
	5	30													
	6	20		✓		290	290					✓	✓		
	7	20													
	8	10		✓		288	287					✓	✓		
	9	10													
	10	sfc		✓		290	290		172	290		✓	✓	✓	
	11	sfc													
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, ~~60, 80, 100, 120, 150, 200, 250, 300~~

Floating: Chl max, 10mab, ✓, ✓, ✓, ✓, 58

VPR: on  
depth: 68 m

AR29 CTD Cast Sheet

Station Number: A2

CTD cast number: 97

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 24 00:48:53

01:03:19

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mob	1	56		✓		290	290					✓	✓		
	2	40		✓		290	290					✓	✓		
	3	30		✓		290	290		173	290		✓	✓	✓	
	4	20		✓		290	290					✓	✓		
	5	10		✓		287	288					✓	✓		
	6	sfc		✓		290	290		174	290		✓	✓	✓	
	7	sfc.													
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: sfc, 10, 20, 30, 40, ~~50, 80, 100, 120, 150, 200, 250, 300~~

Floating: Chl max, 10mob ✓ ✓ ✓ 56

-2

depth = 66.8 m

### AR29 CTD Cast Sheet

Station Number: AUV1  
 Start date, time (UTC): 0750

CTD cast number: 98  
 End date, time (UTC): 0824

Initials: WZ

2018-04-24

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	430		✓											
	2	300		✓											
	3	250		✓											
	4	200		✓											
	5	150		✓											
	6	120		✓		290	290						✓		
	7	100		✓		290	290	✓				✓	✓		
	8	80		✓		290	290	✓				✓	✓		
	9	60		✓		290	290	✓				✓	✓		
	10	40		✓		290	290	✓	175	1047		✓	✓	✓	
	11	30		✓		290	290						✓		
	12	25		✓		283	283		176/177	1053/1060			✓	✓	
	<u>13</u>	20		✓				✓				✓			
	14	20													
	15	10	✓	✓		287	288	✓				✓	✓		
	16	10													
	17	sfc	✓	✓		290	290		178	1057			✓	✓	
	18	sfc						✓				✓			
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab 25

AR29 CTD Cast Sheet

Station Number: AL-CTD1

CTD cast number: 99

Initials: WZ

Start date, time (UTC): 1345

End date, time (UTC): 11410

2018-04-24

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
<u>10mab</u>	1	<u>254</u>		✓											
	2	<u>200</u>		✓											
	3	<u>150</u>		✓											
	4	<u>120</u>		✓											
	5	<u>100</u>		✓								✓			
	6	<u>80</u>		✓		290	290					✓	✓		
	7	<u>60</u>		✓		290	290					✓	✓		
	8	<u>40</u>		✓		290	290					✓	✓		
	9	<u>30</u>		✓		290	290						✓		
	10	<u>20</u>		✓		290	290		176	1060		✓	✓	✓	
	11	<u>20</u>													
	12	<u>10</u>		✓		287	288					✓	✓		
	<u>13</u>	<u>Sfc</u>		✓		290	290		180	1057		✓	✓	✓	
	14	<u>Sfc</u>													
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: AUV 2

CTD cast number: 100

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 24 16:24:10

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10 mab	1	95		✓		287	286					✓	✓		
zoe	2	79		✓		289	286						✓		
WS	3	79										✓			
zoe	4	60		✓		290	290	181	532				✓	✓	
	5	60										✓			
JF	6	53													
WS	7	53		✓		290	290					✓	✓		
	8	40		✓		290	290						✓		
WS	9	34										✓			
zoe	10	34		✓		290	290						✓		
WS	11	22		✓		290	290					✓	✓		
WS	12	16		✓		290	290					✓	✓		
	<u>13</u>	8													
WS	14	8		✓		287	288						✓		
zoe	15	sfc		✓				182	535				✓	✓	
WS	16	sfc										✓			
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

SURF  
8  
16  
22  
34  
53  
79

Sampling depths - Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab, 16, 22, 34, 53, 79, 95

SPAR: 1400  
14  
53 m

depth: 105 m



AR29 CTD Cast Sheet

Station Number: AUV 2.

CTD cast number: 101

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 24 17:33:24

17:45:16

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	53													
	2	53													
	3	53													
	4	53													
	5	53													
	6	53													
	7	53													
	8	53													
	9	53													
	10	53													
	11														
	12														
	<u>13</u>														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

down cast bad  
use up cast!

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab

53

10 bottles

grazing



AR29 CTD Cast Sheet

Station Number: A16

CTD cast number: 103

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 25 01:27:58

01:47:35

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	<u>13</u>														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

### AR29 CTD Cast Sheet

Station Number: **A15**

CTD cast number: **104**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC):

**2018 Apr 25 02:16:57**

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
Sampler															

**Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300**

**Floating: Chl max, 10mab**

AR29 CTD Cast Sheet

Station Number: A14

CTD cast number: 105

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 25 03:12:06

03:35:33

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: *A13*

CTD cast number: *106*

Initials: *WZ*

Start date, time (UTC): *0410*

End date, time (UTC): *0430*

~~0218~~ *2018-04-25*

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	<i>sfc</i>	<i>(manually triggered)</i>												
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: A12  
 Start date, time (UTC): 0507  
 2018-04-25

CTD cast number: 107  
 End date, time (UTC): 0520

Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
Sampler															

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: A11

CTD cast number: 108

Initials: WZ

Start date, time (UTC): 0600

End date, time (UTC): 0610

2018-04-25

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab



AR29 CTD Cast Sheet

Station Number: A10  
 Start date, time (UTC): 0650  
 2018-04-25

CTD cast number: 109  
 End date, time (UTC): 0700

Initials: W2

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	Sfc													
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: *A9*  
 Start date, time (UTC): *0740*  
*2018-04-25*

CTD cast number: *110*  
 End date, time (UTC): *0750*

Initials: *WR*

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	<del>1</del>													
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

*Density inversion in the top 20m.  
 likely caused by the thruster  
 repeated the cast (No. 111)*

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: **A9**  
 Start date, time (UTC): **0750**  
**2018-04-25**

CTD cast number: **111**  
 End date, time (UTC): **0805**

Initials: **WZ**

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	sfc													
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: A11  
 Start date, time (UTC): 10:32  
 2018-04-25

CTD cast number: 112  
 End date, time (UTC): 1100

Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
10mab	1	142													
	2	120													
	3	100													
	4	100	✓												
WS	5	79													
	6	79	✓												
WS	7	53													
	8	53	✓												
	9	40													
	10	40	✓												
WS	11	34													
JT	12	34													
WS	13	22													
<del>WS</del>	14	22	✓												
WS	15	16													
	16	16													
WS	17	8													
	18	8													
WS	19	sfc													
	20	sfc	✓												
	21														
	22														
	23														
	24														
	Sampler														

Surf  
 8  
 16  
 22  
 34  
 53  
 79

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

0 8 16 22 34 = 53 79 =

SPAR: 10

AR29 CTD Cast Sheet

Station Number: *A11*  
 Start date, time (UTC): *1145*  
*2018-04-25*

CTD cast number: *113*  
 End date, time (UTC): *1153*

Initials: *W2*

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

AR29 CTD Cast Sheet

Station Number: **A16**  
 Start date, time (UTC): **1535**

CTD cast number: **114**  
 End date, time (UTC): **1558**

Initials: **WZ**

**2018-04-25**

Floater ID	Bottle	Target Depth	TOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300									✓				
	2	250													
	3	200									←				
	4	150													
	5	120									←				
	6	100													
	7	100													
WS	8	83													
	9	83									✓				
WS	10	55													
	11	55									✓				
WS	12	36													
	13	36													
WS	14	23													
	15	23									✓				
WS	16	16													
	17	16													
WS	18	8													
	19	8													
WS	20	SFC													
	21	SFC													
	22														
	23														
	24														
	Sampler														

Surf  
 8  
 16  
 23  
 36  
 55  
 83

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300

Floating: Chl max, 10mab

8 16 23 36 55 83

SPAR 150

No btl enabled on downcast. Stopped file, started new file for upcast w/ btl. Bottle was fired manually at end of downcast, also "fired" electronically at start of upcast.

AR29 CTD Cast Sheet

Station Number: A15

CTD cast number: 115

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 25 17:07:03

17:41:00

Floater ID	Bottle	Target Depth	TOI	Nuts	14C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCBS
	1	300													
	2	250													
	3	200													
	4	150													
	5	120													
	6	100													
	7	100													
	8	80													
	9	80													
	10	60													
	11	60													
	12	40													
	<del>13</del>	40													
	14	30													
	15	20													
	16	20													
	17	10													
	18	sfc													
	19	sfc													
	20														
	21														
	22														
	23														
	24														
	Sampler														

Sampling depths - Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab

-2  
 on.  
 depth: 1100 m