

### AR29 CTD Cast Sheet

Station Number: **A5**  
 Start date, time (UTC): **0420**  
**2018-04-28**

CTD cast number: **157**  
 End date, time (UTC): **0430**

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	IFCB S
10mab	1	71													
10mab	2	71	/												
	3	60													
	4	60	/												
	5	40													
	6	40	/												
	7	30													
	8	30													
	9	20													
	10	20	/												
	11	10													
	12	10													
	13	sfc													
	14	sfc	/												
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sam pler														

**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: **A4**  
 Start date, time (UTC): **0530**  
**2018-04-28**

CTD cast number: **158**  
 End date, time (UTC):

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	IFCB S
10mab	1	60													
	2	40													
	3	30													
	4	20													
	5	10													
	6	sfc	/												
	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, 60, 80, 100, 120, 150, 200, 250, 300**  
 Floating: Chl max, 10mab

### AR29 CTD Cast Sheet

Station Number: **A3**  
 Start date, time (UTC): **0615**  
**2018-04-28**

CTD cast number: **159**  
 End date, time (UTC): **6625**

Initials: **W2**

Floater ID	Bottle	Target Depth	FOI	Nuts	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCB S
10mab	1	58													
	2	58													
	3	40													
	4	40													
	5	30													
	6	30													
	7	20													
	8	20													
	9	10													
	10	10													
	11	sfc													
	12	sfc	V												
	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: **A2**  
 Start date, time (UTC): **0710**  
**2018-04-28**

CTD cast number: **160**  
 End date, time (UTC): **6718**

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	IFCB S
	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														
	Sam pler														

**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: **A1**  
 Start date, time (UTC): **0755**  
**2018-04-28**

CTD cast number: **161**  
 End date, time (UTC): **0803**

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	IFCB S
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sam pler														

density inversion at the thermohaline (~10m) during the downcast likely caused by disturbance from the thruster

**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: **A1**  
 Start date, time (UTC): **0805**  
**2018-04-28**

CTD cast number: **162**  
 End date, time (UTC): **0814**

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	IFCB S
10mab	1	55													
10mab	2	55	/												
	3	40													
	4	40	⊗												
	5	30													
	6	30													
	7	20													
	8	20	/												
	9	10													
	10	10	/												
	11	sfc													
	12	sfc	/												
	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: A2  
 Start date, time (UTC): 10030

CTD cast number: 163  
 End date, time (UTC): 1041

Initials: WZ

2018-04-28

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	IFCB S
WS (10mab)	1	57													
10mab	2	57	✓												
WS	3	40													
	4	40	✓												
WS	5	26													
	6	26													
WS	7	17	✓												
JT	8	17	✗												
WS	9	12													
	10	12													
WS	11	6													
	12	6													
	13	sfc													
	14	sfc	✓												
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
Sampler															

SUM  
 6  
 12  
 17  
 26  
 40  
 60

Sampling depths - Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 Floating: Chl max, 10mab, 17, 26, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300  
 SPAR: 54

### AR29 CTD Cast Sheet

Station Number: **A2**  
 Start date, time (UTC): **11 15**  
**2018-04-28**

CTD cast number: **164**  
 End date, time (UTC): **1123**

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	IFCB S
JT	1	26													
JT	2	26													
JT	3	26													
JT	4	26													
JT	5	26													
JT	6	26													
JT	7	26													
JT	8	26													
JT	9	26													
JT	10	26													
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sam pler														

for collecting grazing water.

**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: P1.

CTD cast number: 165

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 28 19:13:03

19:23:07

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	IFCB S
<u>10 mab</u>	<u>1</u>	<u>34</u>													
	<u>2</u>	<u>34</u>													
	<u>3</u>	<u>20</u>													
	<u>4</u>	<u>10</u>													
	<u>5</u>	<u>sfc</u>													
	<u>6</u>	<u>sfc</u>													
	<u>7</u>														
	<u>8</u>														
	<u>9</u>														
	<u>10</u>														
	<u>11</u>														
	<u>12</u>														
	<u>13</u>														
	<u>14</u>														
	<u>15</u>														
	<u>16</u>														
	<u>17</u>														
	<u>18</u>														
	<u>19</u>														
	<u>20</u>														
	<u>21</u>														
	<u>22</u>														
	<u>23</u>														
	<u>24</u>														
	<u>Sam</u>														
	<u>pler</u>														

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300 –  
 Floating: Chl max, 10 mab ✓ 34 m.

depth = 44 m

### AR29 CTD Cast Sheet

Station Number: **P1**

CTD cast number: **166**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC): **19:38**

**2018 Apr 28 19:30**

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	IFCB S
	1	sfc													
	2	sfc													
	3	sfc													
	4	sfc													
	5	sfc													
	6	sfc													
	7	sfc													
	8	---													
	9	---													
	10	---													
	11	---													
	12	---													
	13	---													
	14	---													
	15	---													
	16	---													
	17	---													
	18	---													
	19	---													
	20	---													
	21	---													
	22	---													
	23	---													
	24	---													
	Sam pler														

*All bottles fired.*

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

*5m.*

### AR29 CTD Cast Sheet

Station Number: P2.

CTD cast number: 167

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 28 20:32:21

20:43:01

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	IFCB S
<u>10 nab</u>	1	<u>40</u>													
	2	<u>40</u>													
	3	<u>30</u>													
	4	<u>20</u>													
	5	<u>10</u>													
	6	<u>Sfc</u>													
	7	<u>Sfc</u>													
	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, 10 nab

*depth = 50 m.*

AR29 CTD Cast Sheet

Station Number: **D4**

CTD cast number: **168**

Initials: **C.Z.**

Start date, time (UTC):  
**2018 Apr 29 01:00:41**

End date, time (UTC):  
**01:07**

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	IFCB S
	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

depth = 61m.

### AR29 CTD Cast Sheet

Station Number: **A2**

CTD cast number: **169**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC): **02:18**

**2018 Apr 29 02:06:30**

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	IFCB S
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sam pler														

**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: A3

CTD cast number: 170

Initials: C.Z.

Start date, time (UTC):

End date, time (UTC):

2018 Apr 29 02:49:15

02:58:21

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	IFCB S
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sam pler														

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: **A4**

CTD cast number: **171**

Initials: **C.Z.**

Start date, time (UTC):

End date, time (UTC):

**2018 Apr 29 03:32:08**

**03:43**

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	IFCB S
	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**

**74 m**

### AR29 CTD Cast Sheet

Station Number: **A5**  
 Start date, time (UTC): **0422**

CTD cast number: **172**  
 End date, time (UTC): **0430**

Initials: **WZ**

**2018-04-29**

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	IFCB S
	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: **A6**  
 Start date, time (UTC): **2018-04-29 0505**

CTD cast number: **173**  
 End date, time (UTC): **0512**

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	IFCB S
	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: **A7**  
 Start date, time (UTC): **2018-04-29 0545**

CTD cast number: **174**  
 End date, time (UTC): **0553**

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	IFCB S
	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														
	Sam pler														

**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: A8  
 Start date, time (UTC): 0626  
 2018-04-029

CTD cast number: 175  
 End date, time (UTC): 0640

Initials: W2

Floater ID	Bottle	Target Depth	TOI	Nufs	<sup>14</sup> C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO <sub>2</sub>	C/N	FCM	IFCB	IFCB S
	1	sfc													
	2														
	3														
	4	The last CTD cast of													
	5														
	6	AR29!													
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	Sam pler														

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