

Zooplankton Grazers Cast

TN-368 CTD Cast Sheet

Station Number: A12 CTD cast #: 031 Transect #: 4
 Start time (UTC): 19:59 End time (UTC): _____ Bottom Depth: 270
 Start date (UTC): 2019-07-07 End date (UTC): 2019-07-07 Initials: HO

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

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

TN-368 CTD Cast Sheet

Station Number: S1 CTD cast #: 032 Transect #: 8
 Start time (UTC): 11:25 End time (UTC): 12:05 Bottom Depth: 2652
 Start date (UTC): 2019-07-08 End date (UTC): 2019-07-08 Initials: WZ/HO

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓										
WS	6	100		✓	✓			✓			✓	✓		
WS	7	80		✓										
WS HS	8	57		✓	✓	✓		✓			✓	✓		
WS HS	9	38		✓	✓	✓		✓			✓	✓	✓	✓
CS	10	38												
CS	11	38												
CS	12	25												
CS	13	25												
WS HS	14	25		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
JT	15	25												
JT	16	25												
WS HS	17	16		✓	✓	✓		✓			✓	✓		
WS HS	18	11		✓	✓	✓		✓			✓	✓		
	19	11												
WS	20	6		✓	✓			✓			✓	✓		
	21	0												
CS	22	0												
CS	23	0												
WS HS	24	0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Sam pler													

Sampling depths - Fixed: ⁰ Sfe, ¹¹ 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300 ✓
 Floating: Chl max, 10mab 0 6, 11, 16, 25, 38, 57 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
 JT 25 ✓
 JT 25 ✓
 LS 0
 CS 0
 25/38 ✓
 25/38 ✓

zooplankton grazing water

TN-368 CTD Cast Sheet

Station Number: SL CTD cast #: 033 Transect #: 8
 Start time (UTC): 13:43 End time (UTC): 13:55 Bottom Depth: 2654
 Start date (UTC): 2019-07-08 End date (UTC): 2019-07-08 Initials: WZ

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

NO DAUPR

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

productivity

TN-368 CTD Cast Sheet

Station Number: S2 CTD cast #: 034 Transect #: 8
 Start time (UTC): 14:49 End time (UTC): 15:27 Bottom Depth: 2681
 Start date (UTC): 2019-07-08 End date (UTC): 2019-07-08 Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓										
WS	6	100		✓	✓			✓			✓	✓		
WS	7	100												
WS	8	80		✓	✓			✓			✓	✓		
WS	9	80												
WS HS	10	58		✓	✓	✓		✓			✓	✓		
WS	11	58												
WS HS	12	39		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
WS	13	39												
WS HS	14	25		✓	✓	✓		✓			✓	✓		
WS	15	25												
WS HS	16	16		✓	✓	✓		✓			✓	✓		
WS	17	16												
WS HS	18	12		✓	✓	✓		✓			✓	✓		
WS	19	12												
WS HS	20	6		✓	✓	✓		✓			✓	✓		
	21	6												
	22	sfc												
WS HS	23	sfc		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ZS WS	24	sfc	✓											
	Sam pler													

Sampling depths – Fixed: sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300 ✓
 Floating: Chl max, 10mab 0 6, 12, 16, 25, 39, 58 ✓
 0 6, 12, 16, 25, 39, 58, 80, 100 ✓
 0

TN-368 CTD Cast Sheet

Station Number: 53 CTD cast #: 035 Transect #: 8
 Start time (UTC): 16:27 End time (UTC): 17:01 Bottom Depth: 2693
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300 [✓]		✓										
HS	2	250 [✓]		✓										
HS	3	200 [✓]		✓										
HS	4	150 [✓]		✓										
HS	5	120 [✓]		✓										
WS _{HS}	6	100 [✓]		✓										
WS	7	100						✓			✓	✓		
WS _{HS}	8	80		✓										
WS	9	80						✓			✓	✓		
WS _{HS}	10	80		✓										
WS _{HS}	11	60			✓	✓	✓	✓			✓	✓		
WS _{HS}	12	40		✓										
WS _{HS}	13	40			✓	✓	✓	✓	✓	✓	✓	✓	✓	
WS _{HS}	14	26		✓										
WS _{HS}	15	26			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WS _{HS}	16	17		✓										
WS _{HS}	17	17			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WS _{HS}	18	12		✓										
WS _{HS}	19	12			✓	✓	✓	✓	✓	✓	✓	✓	✓	
WS _{HS}	20	6			✓	✓		✓				✓		
HS	21	6		✓										
	22	sfc												
WS	23	sfc												
WS, HS, ZS	24	sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sam pler													

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

Floating: Chl max, 10mab 0, 6, 12, 17, 26[✓]
 0, 6, 12, 17, 26, 40, 60, 80, 100[✓]
 0

11 depths

TN-368 CTD Cast Sheet

Station Number: 54 CTD cast #: 036 Transect #: 8
 Start time (UTC): 19:20 End time (UTC): 19:53 Bottom Depth: 7671
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300 ✓		✓										
HS	2	250 ✓		✓										
HS	3	193200 ✓		✓										
HS	4	150 ✓		✓										
HS	5	120 ✓		✓										
WS HS	6	100 ✓		✓				✓			✓	✓		
WS HS	7	80 ✓		✓				✓			✓	✓		
HS	8	60 ✓		✓		✓								
WS	9	60 ✓						✓			✓	✓		
HS	10	40 ✓				✓								
WS	11	40 ✓						✓			✓	✓		
WS CS	12	30 ✓												
CS HS	13	30 ✓				✓		✓			✓	✓		
HS	14	30 ✓		✓										
CS	15	18 ✓												
CS	16	18 ✓												
WS	17	18 ✓						✓			✓	✓		
HS	18	18 ✓		✓		✓			✓	✓			✓	✓
WS	19	10 ✓						✓			✓	✓		
HS	20	10 ✓		✓		✓								
CS	21	Sfc ✓												
CS	22	Sfc ✓												
WS	23	Sfc ✓						✓			✓	✓		
ZS HS	24	Sfc ✓	✓	✓		✓	✓		✓	✓			✓	✓
	Sam pler													

19

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

Floating: Chl max, 10mab

TN-368 CTD Cast Sheet

Station Number: 55 CTD cast #: 037 Transect #: 8
 Start time (UTC): 19:49 End time (UTC): 20:22 Bottom Depth: 2687
 Start date (UTC): 2019-07-08 End date (UTC): 2019-07-08 Initials: RS/HO

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	170		✓										
HS	6	100		✓										
WS	7	100						✓			✓	✓		
HS	8	80		✓										
WS	9	80						✓			✓	✓		
WS HS	10	60		✓		✓		✓			✓	✓		
	11	60	Bottle 11 did NOT close!											
HS	12	40		✓		✓								
WS	13	40						✓			✓	✓		
HS	14	27		✓		✓			✓	✓			✓	✓
WS	15	27						✓			✓	✓		
HS	16	23		✓		✓								
WS	17	19						✓			✓	✓		
HS	18	19		✓		✓								
WS	19	10						✓				✓		
HS	20	10		✓		✓								
	21	Sfc												
	22	SFL												
WS	23	Sfc						✓			✓	✓		
WS HS	24	Sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

Sampling depths – Fixed: Sfc, 10, ¹⁹20, ²⁷30, 40, 60, 80, 100, 120, 150, 200, 250, 300
 Floating: Chl max, 10mab

TN-368 CTD Cast Sheet

Station Number: S6 CTD cast #: 38 Transect #: 8
 Start time (UTC): 21:28 End time (UTC): 22:05 Bottom Depth: 2703
 Start date (UTC): 2014-07-08 End date (UTC): 2014-07-08 Initials: HO

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓										
HS	6	100		✓										
WS	7	100						✓			✓	✓		
HS	8	80		✓										
WS	9	80						✓			✓	✓		
HS	10	60		✓		✓								
WS	11	60						✓			✓	✓		
HS	12	43		✓		✓			✓	✓			✓	✓
WS	13	43						✓			✓	✓		
HS	14	36		✓		✓								
	15	32												
HS	16	30		✓		✓		✓			✓	✓		
WS	17	20						✓			✓	✓		
HS	18	20		✓		✓								
WS	19	10						✓				✓		
HS	20	10		✓		✓								
	21	Sfc												
	22	Sfc												
WS	23	Sfc						✓			✓	✓		
WS	24	Sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300 ✓
 Floating: Chl max, 10mab ✓
 43 ✓
 43 ✓

TN-368 CTD Cast Sheet

Station Number: 57 CTD cast #: 039 Transect #: 8
 Start time (UTC): 23:01 End time (UTC): 23:39 Bottom Depth: 2684
 Start date (UTC): 2019/07/08 End date (UTC): 2019/07/08 Initials: HO

Floater ID	Bottle	Target Depth	TOI	Nuts	13C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓	Bottle 5 leaks on the bottom									
WS HS	6	100		✓				✓			✓	✓		
WS	7	80						✓			✓	✓		
HS	8	80		✓										
WS HS	9	60		✓				✓			✓	✓		
CS	10	60												
CS HS	11	60				✓		✓			✓	✓	✓	
WS HS	12	39		✓										
CS	13	39						✓			✓	✓		
CS HS	14	39				✓			✓	✓			✓	✓
WS	15	30												
HS	16	30		✓		✓							✓	
WS	17	20						✓			✓	✓		
HS	18	20		✓		✓								
WS	19	10						✓			✓	✓		
HS	20	10		✓		✓								
CS	21	sfc												
CS	22	sfc												
WS	23	sfc						✓			✓	✓		
HS WS	24	sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

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

Floating: Chl max, 10mab

sfc ✓ ✓ ✓ ✓ ✓ ✓
 sfc ✓ ✓ ✓ ✓ ✓ ✓
 sfc ✓ ✓ ✓ ✓ ✓ ✓

TN-368 CTD Cast Sheet

Station Number: 38 CTD cast #: 040 Transect #: 8
 Start time (UTC): 00:40 End time (UTC): 01:19 Bottom Depth: 2672
 Start date (UTC): 2019-07-08 End date (UTC): 2019-07-09 Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
	5	120												
HS	6	120		✓										
WS	7	100						✓			✓	✓		
HS	8	100		✓										
WS	9	80						✓			✓	✓		
HS	10	80		✓										
WS	11	60						✓			✓	✓		
HS	12	60		✓		✓	✓		✓	✓			✓	✓
WS	13	39						✓			✓	✓		
HS	14	39		✓		✓	✓		✓	✓			✓	✓
WS	15	30						✓			✓	✓		
HS	16	30		✓		✓	✓		✓	✓			✓	✓
WS	17	20						✓			✓	✓		
HS	18	20		✓		✓	✓		✓	✓			✓	✓
WS	19	10						✓			✓	✓		
HS	20	10		✓		✓	✓		✓	✓			✓	✓
	21	sfc												
	22	sfc												
WS	23	sfc						✓			✓	✓		
WS HS	24	sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

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

PRODUCTIVITY

TN-368 CTD Cast Sheet

Station Number: A5 CTD cast #: 041 Transect #: 11
 Start time (UTC): 9:47 End time (UTC): 10:06 Bottom Depth: ~79
 Start date (UTC): 2019/02/09 End date (UTC): 2019/02/09 Initials: HS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
WS, HS	1	69		✓	✓	✓		✓				✓	✓	
WS, HS	2	60		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
WS, HS	3	40		✓	✓	✓	✓	✓	✓	✓		✓	✓	
	4	40												
WS, HS	5	26		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
	6	26												
CS	7	26												
CS	8	26												
CS	9	17												
CS	10	17												
WS, HS	11	17		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
	12	17												
WS, HS	13	11		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
JT	14	11												
JT	15	11												
	16	11												
WS, HS	17	8		✓	✓	✓	✓	✓	✓	✓		✓	✓	
	18	8												
WS	19	4			✓			✓				✓		
	20	4												
	21	0												
CS	22	0												
CS	23	0												
ZS, WS, HS	24	0	✓	✓	✓			✓				✓	✓	✓
	Sampler													

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

69

0 4 8 11 17 26 40 60 69
 10000 4 8 11 17 26 40 60 69
 10000 4 8 11 17 26 40 60 69

GRAZING

TN-368 CTD Cast Sheet

Station Number: A5 CTD cast #: 042 Transect #: 11
Start time (UTC): 11:13 End time (UTC): _____ Bottom Depth: _____
Start date (UTC): 2019/07/09 End date (UTC): 2019/08/09 Initials: HO/WZ

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

NO DATA

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

TN-368 CTD Cast Sheet

Station Number: A6 CTD cast #: 043 Transect #: 11
 Start time (UTC): 12:07 End time (UTC): 12:20 Bottom Depth: 90
 Start date (UTC): 2017-07-09 End date (UTC): 2017-07-09 Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	13C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
WS 10mab	1	79		✓	✓			✓				✓		
	2	79												
WS, HS	3	66		✓	✓	✓		✓				✓		
	4	60												
WS, HS	5	40		✓	✓	✓		✓				✓		
	6	40												
WS, HS	7	34		✓	✓	✓		✓				✓		
	8	34												
WS, HS	9	22		✓	✓	✓		✓				✓		
	10	22												
WS, HS chl max	11	15		✓	✓	✓		✓	✓	✓		✓	✓	✓
	12	15												
WS, HS	13	9		✓	✓	✓		✓				✓		
	14	9												
WS, HS	15	7		✓	✓	✓		✓				✓		
	16	7												
	17	3		✓	✓			✓				✓		
	18	3												
ZS, WS, HS	19	sfc	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
	20	sfc												
	21	sfc												
	22	sfc												
	23	sfc												
	24													
	Sam pler													

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

Floating: Chl max, 10mab 03 7 9 15 22 34 40 60 79
03 7 9 15 22 34 40 60 79
0
0

TN-368 CTD Cast Sheet

Station Number: A7 CTD cast #: 044 Transect #: 11
 Start time (UTC): 13:06 End time (UTC): 13:24 Bottom Depth: 100
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: W2

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
WS, HS	1	90		✓				✓				✓		
	2	90												
WS, HS	3	80		✓				✓				✓		
	4	80												
WS, HS	5	60		✓		✓		✓				✓		
	6	60												
WS, HS	7	40		✓		✓		✓				✓		
	8	40												
WS, HS	9	30		✓		✓		✓				✓		
	10	30												
CS	11	30												
CS	12	30												
WS, HS	Chl max	23		✓		✓		✓	✓	✓		✓	✓	✓
		23												
CS		23												
CS		23												
WS, HS	17	10		✓		✓		✓				✓		
	18	10												
WS, HS, ZS	19	sfc	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓
	20	sfc												
CS	21	sfc												
CS	22	sfc												
	23													
	24													
	Sam pler													

Sampling depths – Fixed: ~~Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300~~
 Floating: Chl max, 10mab 0, 10, 23, 30, 40, 60, 80, 90, 90
 CS 0, 23, 30
 CS 0, 23, 30

TN-368 CTD Cast Sheet

Station Number: A8 CTD cast #: 045 Transect #: 11
 Start time (UTC): 14:09 End time (UTC): 14:23 Bottom Depth: 120
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS 10mab WS, HS	1	110		✓										
	2	100		✓				✓				✓		
	3	80		✓				✓				✓		
	4	80												
	5	60		✓		✓		✓	✓	✓		✓		
	6	60												
	7	40		✓		✓		✓				✓		
	8	40												
	9	40												
ZS Chl max WS, HS	10	30	✓											
	11	30		✓		✓		✓	✓	✓		✓	✓	✓
	12	30												
	13	20	✓											
	14	20		✓		✓		✓				✓		
	15	20												
	16	10		✓		✓		✓				✓		
	17	10												
	18	sfc	✓											
	19	sfc		✓		✓	✓	✓	✓	✓		✓	✓	✓
	20	sfc												
	21	sfc												
	22	sfc												
	23													
	24													
	Sam pler													

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300
 Floating: Chl max, 10mab
 0, 10, 20, 30, 40, 60, 80, 100
 0, 20, 30, 40
 0

TN-368 CTD Cast Sheet

Station Number: A9 CTD cast #: 046 Transect #: 11
 Start time (UTC): 1505 End time (UTC): 15:29 Bottom Depth: 128
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: WZ

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS 10mab	1	118		✓										
WS, HS	2	100		✓	✓			✓				✓		
HS	3	100												
WS, HS	4	80		✓	✓			✓				✓		
	5	80												
WS, HS	6	60		✓	✓	✓		✓				✓		
	7	60												
WS, HS	8	41		✓	✓	✓		✓				✓		
	9	41												
WS, HS Chl max	10	27		✓	✓	✓		✓	✓	✓		✓	✓	✓
	11	27												
	12	27												
	13	18												
WS, HS	14	18		✓	✓	✓		✓				✓		
	15	11												
WS, HS	16	11		✓	✓	✓		✓				✓		
	17	8												
WS, HS	18	8		✓	✓	✓		✓				✓		
	19	4												
WS, HS	20	4		✓	✓			✓				✓		
	21	sfc												
	22	sfc												
WS, HS, ZS	23	sfc	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
	24	sfc												
	Sampler													

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

Floating: Chl max, 10mab 048 118 27 41 60 80 100 118

WS 048 118 27 41

CS 0

CS 0

27

TN-368 CTD Cast Sheet

Station Number: A10 CTD cast #: 047 Transect #: 11
 Start time (UTC): 16:10 End time (UTC): 16:27 Bottom Depth: 137
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS 10mab	1	127 ✓		✓										
HS	2	100 ✓		✓										
WS	3	100 ✓						✓				✓		
HS	4	80 ✓		✓										
WS	5	80 ✓						✓				✓		
HS	6	60 ✓		✓		✓								
WS	7	60 ✓						✓				✓		
HS	8	40 ✓		✓		✓								
WS	9	40 ✓						✓				✓		
HS	10	30 ✓		✓		✓								
WS	11	30 ✓						✓				✓		
HS	Chlmax	25 ✓		✓		✓			✓	✓			✓	✓
WS	Chlmax	25 ✓						✓				✓		
HS	14	10 ✓		✓		✓								
WS	15	10 ✓						✓				✓		
ZS, HS	16	Sfc ✓	✓	✓		✓	✓		✓	✓			✓	✓
WS	17	Sfc ✓						✓				✓		
	18	Sfc ✓												
	19	Sfc ✓												
	20	-												
	21	-												
	22	-												
	23	-												
	24	-												
	Sampler													

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, ¹⁰⁷120, ~~150, 200, 250, 300~~
 Floating: Chl max, 10mab

TN-368 CTD Cast Sheet

Station Number: All CTD cast #: 048 Transect #: 11
 Start time (UTC): 17:12 End time (UTC): 17:16 Bottom Depth: 152
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
	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													

MAX DEPTH 3M TO FIVE
 ALL BOTTLES FOR VIDEO
 FOOTAGE
 DAUVR was turned on
 SONA was off

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

TN-368 CTD Cast Sheet

Station Number: All CTD cast #: 049 Transect #: 11
 Start time (UTC): 17:29 End time (UTC): 17:45 Bottom Depth: 152
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: TS

	Floater ID	Bottle	Target Depth	TOI	Nuts	°C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	10MAB	1	142 ✓		✓										
HS		2	120 ✓		✓										
WS		3	100 ✓						✓				✓		
HS		4	100 ✓		✓										
WS		5	80 ✓						✓				✓		
HS		6	80 ✓		✓										
WS		7	60 ✓						✓				✓		
HS		8	60 ✓		✓		✓								
WS		9	40 ✓						✓				✓		
HS		10	40 ✓		✓		✓								
WS Chlmax		11	30 ✓						✓				✓		
HS Chlmax		12	30 ✓		✓		✓			✓	✓			✓	✓
WS		13	20 ✓						✓				✓		
HS		14	20 ✓		✓		✓								
WS		15	10 ✓						✓				✓		
HS		16	10 ✓		✓		✓								
WS		17	Sfc ✓						✓				✓		
ZS, HS		18	Sfc ✓	✓	✓		✓	✓		✓	✓			✓	✓
OS		19	Sfc ✓												
OS		20	Sfc ✓												
		21	Sfc ✓												
		22													
		23													
		24													
		Sam pler													

Sampling depths – Fixed: Sfc, 10, 20, ¹⁴²30, 40, 60, 80, 100, 120, 150, 200, 250, 300
 Floating: Chl max, 10mab

TN-368 CTD Cast Sheet

Station Number: A12 CTD cast #: 050 Transect #: 11
 Start time (UTC): 18:29 End time (UTC): 18:52 Bottom Depth: 272
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	262 ✓		✓										
HS	2	200 ✓		✓										
HS	3	150 ✓		✓										
HS	4	120 ✓		✓										
WS HS	5	100 ✓		✓				✓				✓		
WS HS	6	80 ✓		✓				✓				✓		
WS	7	60 ✓						✓				✓		
HS	8	60 ✓		✓		✓	✓		✓	✓			✓	
WS	9	40 ✓						✓				✓		
HS	10	40 ✓		✓		✓	✓		✓	✓			✓	✓
CS	11	30 ✓												
CS	12	30 ✓												
WS	13	30 ✓						✓				✓		
ZS, HS	14	30 ✓	✓	✓		✓	✓		✓	✓			✓	✓
CS	15	20 ✓												
CS	16	20 ✓												
WS	17	20 ✓						✓				✓		
ZS, HS	18	20 ✓	✓	✓		✓	✓		✓	✓			✓	✓
WS	19	10 ✓						✓				✓		
HS	20	10 ✓		✓		✓	✓		✓	✓			✓	
CS	21	Sfc ✓												
CS	22	Sfc ✓												
WS	23	Sfc ✓						✓				✓		
ZS, HS	24	Sfc ✓	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

Sampling depths – Fixed: Sfc, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, ²⁶²250, 300
 Floating: Chl max, 10mab
 30

TN-368 CTD Cast Sheet

Station Number: A13 CTD cast #: 051 Transect #: 11
 Start time (UTC): 19:35 End time (UTC): _____ Bottom Depth: 479
 Start date (UTC): 2019-07-09 End date (UTC): 2019-07-09 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300/		✓										
HS	2	250/		✓										
HS	3	200/		✓										
HS	4	150/		✓										
HS	5	120/		✓										
HS	6	100/		✓										
WS	7	100/						✓				✓		
HS	8	80/		✓										
WS	9	80/						✓				✓		
HS	10	60/		✓		✓								
WS	11	60/						✓				✓		
HS	12	40/		✓		✓			✓	✓			✓	✓
WS	13	40/						✓				✓		
HS	14	30/		✓		✓								
WS	15	30/						✓				✓		
HS	16	20/		✓		✓								
WS	17	20/						✓				✓		
HS	18	10/		✓		✓								
WS	19	10/						✓				✓		
	20	Surf												
	21	/												
	22	/												
WS	23	/						✓				✓		
ZS HS	24	↓↓	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

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

Floating: Chl max, 10mab

40

TN-368 CTD Cast Sheet

Station Number: A14 CTD cast #: 052 Transect #: 14
 Start time (UTC): 20:50 End time (UTC): ~21:20 Bottom Depth: ~715
 Start date (UTC): 2019/07/09 End date (UTC): 2019/07/09 Initials: HO

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓										
HS	6	100		✓										
WS	7	100						✓				✓		
HS	8	80		✓										
WS	9	80						✓				✓		
HS	10	60		✓		✓			✓	✓			✓	✓
WS	11	60						✓				✓		
HS	12	40		✓		✓			✓	✓			✓	✓
WS	13	40						✓				✓		
HS	14	30		✓		✓								
WS	15	30						✓				✓		
HS	chl max	20		✓		✓			✓	✓			✓	✓
WS	chl max	20						✓				✓		
HS	18	10		✓		✓			✓	✓			✓	✓
WS	19	10						✓				✓		
CS	20	sfc												
CS	21	sfc												
	22	sfc												
WS	23	sfc						✓				✓		
WS, HS	24	sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

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

0051

TN-368 CTD Cast Sheet

Station Number: AC2

CTD cast #: 053

Transect #: 16

Start time (UTC): 09:09

End time (UTC): 09:25

Bottom Depth: ~106

Start date (UTC): 2019/07/10

End date (UTC): 2019/07/10

Initials: 140

Float ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	95		✓										
	2	95												
HS	3	80		✓								✓		
	4	80												
HS	5	60		✓										
	6	60												
	7	60												
HS	8	40		✓										
	9	40												
HS	10	30		✓										
	11	30												
HS	12	20		✓		✓							✓	✓
	13	20												
HS	14	10		✓										
	15	10												
HS	16	Sfc		✓		✓	✓						✓	✓
	17	Sfc												
	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
 96

PRODUCTIVITY

TN-368 CTD Cast Sheet

Station Number: AL2 CTD cast #: 054 Transect #: 16
 Start time (UTC): 10:01 End time (UTC): 10:19 Bottom Depth: ~105
 Start date (UTC): 2019/07/10 End date (UTC): 2019/07/10 Initials: HO

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
WS, HS	1	95		✓				✓				✓		
WS, HS	2	80		✓				✓				✓		
	3	80												
WS, HS	4	60		✓				✓				✓		
WS, HS	5	41		✓	✓	✓		✓				✓		
	6	41												
WS, HS	7	27		✓	✓	✓		✓				✓	✓	✓
ZS	8	27	✓											
CS	9	27												
CS	10	27												
WS, HS	11	18		✓	✓	✓		✓	✓	✓		✓	✓	✓
ZS	12	18	✓											
WS, HS	13	11		✓	✓	✓		✓				✓		
ZS	14	11	✓											
CS	15	11												
CS	16	11												
WS, HS	17	8		✓	✓			✓				✓		
	18	8												
WS, HS	19	4		✓	✓			✓				✓		
	20	SC												
CS	21	SC												
CS	22	SC												
WS, HS	23	SC		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
ZS	24	SC	✓											
	Sampler													

Sampling depths – Fixed: ~~5, 10, 20, 30, 40, 60, 80, 100, 120, 150, 200, 250, 300~~
 Floating: Chl max, 10mab

AS
 000000
 8 11 18 27 41
 11 18 27 41
 27
 27

* Nutrient samples were taken about an hour after the bottles being sitting on deck.

TN-368 CTD Cast Sheet

Station Number: AL2 CTD cast #: 055 Transect #: 16
 Start time (UTC): 13:00 End time (UTC): 13:24 Bottom Depth: 220
 Start date (UTC): 2019/07/10 End date (UTC): 2019/07/10 Initials: W2

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS 10mab	1	210		✓										
HS	2	200		✓										
HS	3	150		✓										
HS	4	120		✓										
WS, HS	5	100		✓		✓		✓				✓		
CS	6	69												
WS, HS	7	69		✓		✓		✓				✓	✓	✓
CS	8	69												
WS, HS	9	60		✓		✓		✓				✓		
	10	60												
WS, HS	11	40		late*		✓		✓				✓		
	12	40												
WS, HS	13	30		late*		✓		✓				✓		
	14	30												
WS, HS chl/max	15	20		late*		✓		✓	✓	✓		✓	✓	✓
ZS	16	20	✓											
CS	17	20												
CS	18	20												
WS, HS	19	10		late*				✓				✓		
	20	10												
CS	21	sfc												
CS	22	sfc												
WS, HS	23	sfc		late*		✓	✓	✓	✓	✓		✓	✓	✓
ZS	24	sfc	✓											
	Sam pler													

Sampling depths - Fixed: Sfc, 10', 20', 30', 40', 60', 80', 100', 120', 150', 200', 250', 300'
 Floating: Chl max, 10mab 0', 10', 20', 30', 40', 60', 69', 210'
 CS 0', 20' 89'
 CS 0', 20' 69'

Productivity

TN-368 CTD Cast Sheet

Station Number: SSF2 CTD cast #: 056 Transect #: 17
 Start time (UTC): 16:01 End time (UTC): 16:36 Bottom Depth: 2270
 Start date (UTC): 2019-07-10 End date (UTC): 2019-07-10 Initials: TS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSI	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300 ✓		✓										
HS	2	250 ✓		✓										
HS	3	200 ✓		✓										
HS	4	150 ✓		✓										
HS	5	120 ✓		✓										
WS, HS	6	100 ✓		✓				✓				✓		
WS, HS	7	90 ✓		✓				✓				✓		
WS, HS	8	80 ✓		✓				✓				✓		
CS	9	80 ✓												
CS, HS	10	80 ✓				✓							✓	
WS, HS	11	60 ✓		✓	✓	✓		✓				✓	✓	✓
JT	12	50 ✓												
JT	13	50 ✓												
CS	14	50 ✓												
CS, WS	15	50 ✓												
HS, ZS	16	50 ✓	✓	✓		✓			✓	✓			✓	✓
WS, HS, ZS	17	40 ✓	✓	✓	✓	✓		✓				✓	✓	✓
WS, HS	18	25 ✓		✓	✓	✓		✓				✓	✓	
WS, HS	19	18 ✓		✓	✓	✓		✓				✓	✓	
WS, HS	20	9 ✓		✓	✓	✓		✓				✓	✓	
CS	21	sfc ✓												
CS	22	sfc ✓												
WS	23	sfc ✓			✓			✓				✓		
HS, ZS	24	sfc ✓	✓	✓		✓	✓		✓	✓			✓	✓
	Sam pler													

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

Floating: Chl max, 10mab

50m
134

Sfc 9 18 25 40 50 60 80 90 100 120 150 200 250 300

Graves

TN-368 CTD Cast Sheet

Station Number: SSFZ CTD cast #: 057 Transect #: 17
Start time (UTC): 17:49 End time (UTC): 18:01 Bottom Depth: 2273
Start date (UTC): 2019-07-10 End date (UTC): 2019-07-10 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
	1	48												
	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

TN-368 CTD Cast Sheet

Station Number: SSFL CTD cast #: 058 Transect #: 18
 Start time (UTC): 18:46 End time (UTC): 19:21 Bottom Depth: 2323
 Start date (UTC): 2019-07-10 End date (UTC): 2019-07-10 Initials: ZS

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300 ✓		✓										
HS	2	250 ✓		✓										
HS	3	200 ✓		✓										
HS	4	150 ✓		✓										
HS	5	120 ✓		✓										
WS, HS	6	100 ✓		✓				✓				✓		
WS	7	80 ✓						✓				✓		
HS	8	80 ✓		✓										
WS	9	60 ✓						✓				✓		
HS	10	60 ✓		✓		✓								
WS	11	45 ✓						✓				✓		
ZS, HS	12	45 ✓	✓	✓		✓								
WS	13	40 ✓						✓				✓		
HS	14	40 ✓		✓		✓			✓	✓			✓	✓
WS	15	30 ✓						✓				✓		
ZS, HS	16	30 ✓	✓	✓		✓								
WS	17	20 ✓						✓				✓		
HS	18	20 ✓		✓		✓								
WS	19	10 ✓						✓				✓		
HS	20	12 ✓		✓		✓								
	21	Sfc ✓												
	22	Sfc ✓												
WS	23	Sfc ✓						✓				✓		
ZS, HS	24	Sfc ✓	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

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

TN-368 CTD Cast Sheet

Station Number: SSF3 CTD cast #: 059 Transect #: 18
 Start time (UTC): 20:25 End time (UTC): 21:00 Bottom Depth: ~2243
 Start date (UTC): 2019/07/10 End date (UTC): 2019/07/10 Initials: HO

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓										
WS, HS	6	100		✓				✓				✓		
WS	7	80						✓				✓		
HS	8	80		✓		✓								
WS	9	60						✓				✓		
HS	10	60		✓		✓								
WS	11	54						✓				✓		
ZS, HS	12	54	✓	✓		✓			✓	✓			✓	✓
WS	13	45						✓				✓		
HS	14	45		✓		✓								
WS	15	30						✓				✓		
ZS, HS	16	30	✓	✓		✓								
WS	17	20						✓				✓		
HS	18	20		✓		✓								
WS	19	10						✓				✓		
HS	20	10		✓		✓								
	21	surf												
ZS, HS	22	surf	✓			✓	✓		✓	✓			✓	✓
WS	23	surf						✓				✓		
HS	24	surf		✓										
	Sampler													

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

45 55

TN-368 CTD Cast Sheet

Station Number: SSF4 CTD cast #: 060 Transect #: 18
 Start time (UTC): 21:33 End time (UTC): 22:05 Bottom Depth: ~2280
 Start date (UTC): 2019/07/10 End date (UTC): 2019/07/10 Initials: HD

Floater ID	Bottle	Target Depth	TOI	Nuts	¹⁴ C	Chl a vol	Chl b vol	BSi	HPLC ID	HPLC vol	CO ₂	C/N	FCM	IFCB
HS	1	300		✓										
HS	2	250		✓										
HS	3	200		✓										
HS	4	150		✓										
HS	5	120		✓										
HS	6	100		✓										
WS	7	100						✓				✓		
HS	8	80		✓		✓								
WS	9	80						✓				✓		
HS	10	60		✓		✓								
WS	11	60						✓				✓		
HS	12	44		✓		✓								
WS	13	44						✓				✓		
HS	14	35		✓		✓			✓	✓			✓	✓
WS	15	35						✓				✓		
HS	16	20		✓		✓								
WS	17	20						✓				✓		
HS	18	10		✓		✓								
WS	19	10						✓				✓		
	20	sfc												
	21	sfc												
	22	sfc												
	23	sfc						✓				✓		
HS, ZS	24	sfc	✓	✓		✓	✓		✓	✓			✓	✓
	Sampler													

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

✓ ✓ ✓ ✓ ✓