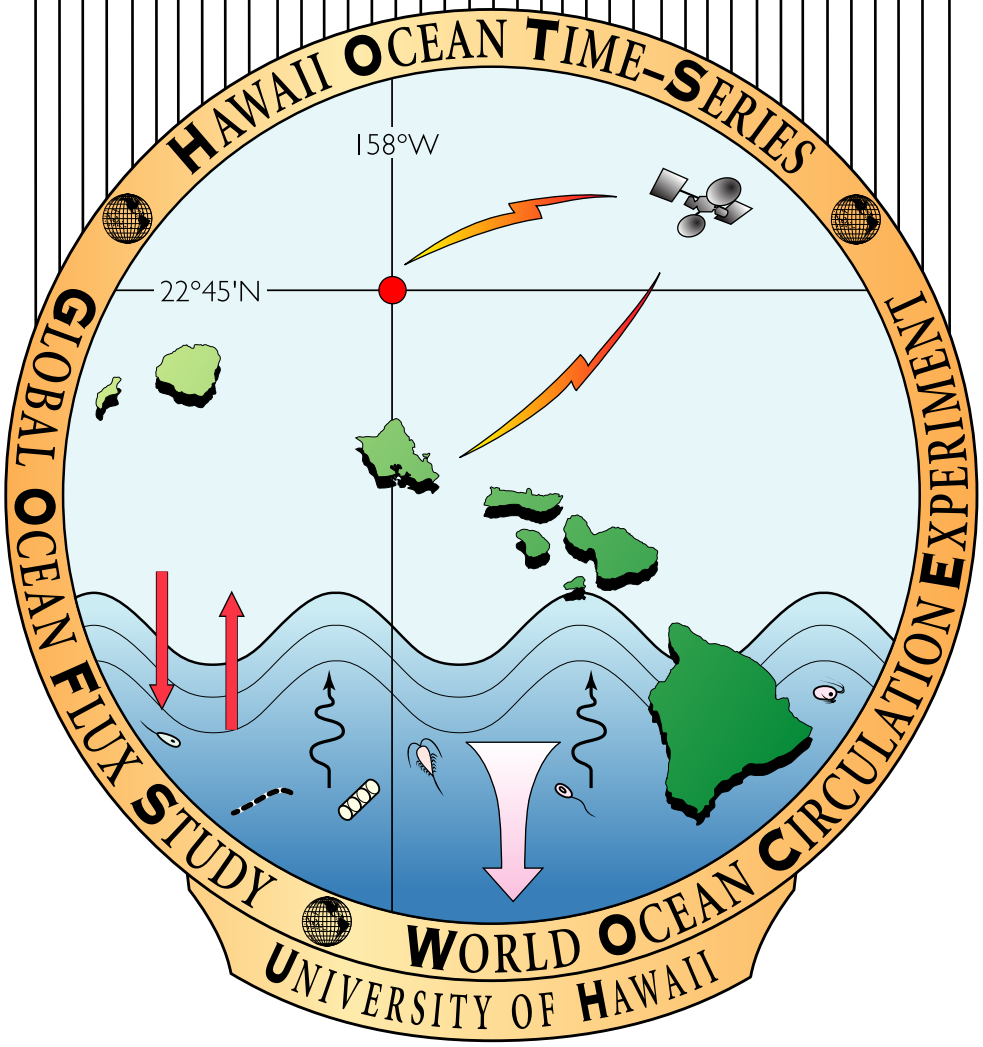
Hawaii Ocean Time-series Program

HOT 312



Hawaii Ocean Time-Series

HOT-**312**

KAHE Station Data Sheet

Station #	1	Date:	6/10/2019 (HST)
Cast #	1	Time:	13:51 (HST)
Operator(s):	DS, TC, CF		

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.5						
2	**750**	2,3,4	7.8						
3	**500**	5	8.5						
4	**350**	6	10.8			4			
5	**250**	7	14.4			5			
6	**200**								
7	**175**							7	
8	**150**	8	20.5			8	8	8	
9	**125**							9	
10	**100**	9,10,11	21.5			10	10	10A-B	
11	**75**							11	
12	**45**	12	24.9	12	1	12	12	12	
13	**25**	13	26.2	13	2			13A-B	
14	**5**	14	26.8	14	3,4,5	14	14	14	
15	**5**	QC	27.0						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes: Niskin #2 not sealed

Hawaii Ocean Time-Series
HOT-**312**
KAHE Station Data Sheet

Station # 1 Date: 6/10/2019 (HST)
Cast # 1 Time: 13:51 (HST)
Operator(s): DS, TC, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.5						
* 2	**750**	2,3,4	7.8						
3	**500**	5	8.5						
4	**350**	6	10.8			4			
5	**250**	7	14.4			5			
6	**200**								
7	**175**							7	
8	**150**	8	20.5			8	8	8	
9	**125**							9	
10	**100**	9,10,11	21.5			10	10	10A-B	
11	**75**							11	
12	**45**	12	24.9	12	1	12	12	12	
13	**25**	13	26.2	13	2			13A-B	
14	**5**	14	26.8	14	3,4,5	14	14	14	
15	**5**	QC	27.0						
16									
17									
18									
19									
20									
21									
22									
23									
24									

* not sealed #2

Notes:

Hawaii Ocean Time-series
HOT-**312**
Primary Production Data Sheet

Station # 2 Date: _____ (HST)
Cast # 1 Time: _____ (HST)
Operator(s): _____

Rosette Position	Desired Depth	Light Bottle	Chl *a* FCM	SF-S	SF-S O2	Temp	KS
1	**1000**						
2	**Sal min**						
3	**175**		3A-B				
4	**150**		4A-B				
5	**125**	3-1	5	X			X
6	**125**	3-2	6	X			
7	**125**	3-3	7	X			
8	**100**	4-1	8	X			X
9	**100**	4-2	9	X			
10	**100**	4-3	10	X			
11	**75**	5-1	11	X			X
12	**75**	5-2	12	X			
13	**75**	5-3	13	X			
14	**45**	6-1	14	X			X
15	**45**	6-2	15	X			
16	**45**	6-3	16	X			
17	**25**	7-1	17	X			X
18	**25**	7-2	18	X			
19	**25**	7-3	19	X			
20	**15**				121,122,123		
21	**5**	8-1	21	X			X
22	**5**	8-2	22	X			
23	**5**	8-3	23	X			
24	**5**						

Notes:

Hawaii Ocean Time-series
HOT-**312**
Primary Production Data Sheet

Station # 2 Date: 6/11/19 (HST)
Cast # 1 Time: 2:18 (HST)
Operator(s): RT, ML, KKB

Rosette Position	Desired Depth	Light Bottle	Chl *a* FCM	SF-S	SF-S O2	Temp	KS
1	~~**1000**~~ 170						
2	~~**Sal min**~~ 170						
3	~~**175**~~ 170		3A-B				
4	**150**		4A-B				
5	**125**	3-1	5	X			X
6	**125**	3-2	6	X			
7	**125**	3-3	7	X			
8	**100**	4-1	8	X			X
9	**100**	4-2	9	X			
10	**100**	4-3	10	X			
11	**75**	5-1	11	X			X
12	**75**	5-2	12	X			
13	**75**	5-3	13	X			
14	**45**	6-1	14	X			X
15	**45**	6-2	15	X			
16	**45**	6-3	16	X			
17	**25**	7-1	17	X			X
18	**25**	7-2	18	X			
19	**25**	7-3	19	X			
20	**15**				121,122,123	2600	
21	**5**	8-1	21	X			X
22	**5**	8-2	22	X			
23	**5**	8-3	23	X			
24	**5**						

Notes:

Hawaii Ocean Time-series

HOT-**312**

WOCE Deep Data Sheet

Station #	2	Date:	6/11/2019 (HST)
Cast #	2	Time:	7:13 (HST)
Operator(s):	TC, DS, CF		

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	4.5				1	1	
2	**4600**	16	4.3				2	2	
3	**4500**	17,18,19	4.6	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	4.3				4	4	
5	**4200**	21	4.3				5	5	
6	**4000**	22	4.5				6	6	
7	**3800**	23,24,25	4.9			7ABC	7A-B	7A-B	
8	**3600**	26	4.5				8	8	
9	**3400**	27	4.5				9	9	
10	**3200**	28	4.3				10	10	
11	**3000**	29,30,31	4.9	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	4.5				12	12	
13	**2600**	33	4.6				13	13	
14	**2400**	34	4.9				14	14	
15	**2200**	35	4.8				15	15	
16	**2000**	36	4.9	16	5	16ABC	16A-B	16A-B	
17	**1800**	37,38,39	5.8				17	17	
18	**1600**	150	5.3				18	18	
19	**1400**	41	5.6				19	19	
20	**1200**	42	6.2				20	20	
21	**1000**	43	6.4				21	21	
22	**750**	44	7.2				22	22	
23	**500**	45	9.1				23	23	
24	**5**	46	25.8				24		

Notes:

Hawaii Ocean Time-series
HOT-**312**
WOCE Deep Data Sheet

Station # 2 Date: 6/11/2019 (HST)
Cast # 2 Time: 7:13 (HST)
Operator(s): TC, DS, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	4.5				1	1	
2	**4600**	16	4.3				2	2	
3	**4500**	17,18,19	4.6	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	4.3				4	4	
5	**4200**	21	4.3				5	5	
6	**4000**	22	4.5				6	6	
7	**3800**	23,24,25	4.9			7ABC	7A-B	7A-B	
8	**3600**	26	4.5				8	8	
9	**3400**	27	4.5				9	9	
10	**3200**	28	4.3				10	10	
11	**3000**	29,30,31	4.9	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	4.5				12	12	
13	**2600**	33	4.6				13	13	
14	**2400**	34	4.9				14	14	
15	**2200**	35	4.8				15	15	
16	**2000**	36	4.9	16	5	16ABC	16A-B	16A-B	
17	**1800**	37,38,39	5.8				17	17	
18	**1600**	150	5.3				18	18	
19	**1400**	41	5.6				19	19	
20	**1200**	42	6.2				20	20	
21	**1000**	43	6.4				21	21	
22	**750**	44	7.2				22	22	
23	**500**	45	9.1				23	23	
24	**5**	46	25.8				24		

Notes:

Hawaii Ocean Time-series
HOT-**312**
PO Shallow Data Sheet

Station # 2 Date: 6/11/2019 (HST)
Cast # 3 Time: 12:18 (HST)
Operator(s): TC, DS, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	47,48,49	7.3	1	8	1	1A-B	1A-B	**1020**
2	**851**	50	7.2				2	2	
3	**758**	51,52,53	8.2	3	2	3	3	3	**750**
4	**705**	54	7.9				4	4	
5	**678**	55	7.8				5	5	
6	**620**	56	8.2	6	3	6	6	6	**600**
7	**569**	57	8.6				7	7	
8	**516**	58	9.1				8A-B	8A-B	**525**
9	**485**	59	9.6	9	4	9	9	9	**500**
10	**450**	60,61,62	10.6				10	10	**450**
11	**423**	63	10.8				11	11	
12	**375**	64	12.0				12	12	
13	**327**	65	13.3	13AB	5,6	13	13	13	**350**
14	**285**	66	14.5				14		
15	**250**	67	17.1	15	7	15	15		**250**
16	**194**	68,69,70	20.0				16		**225**
17	**146**	71	21.5				17A-B		**150**
18	**137**	72	21.8				18		
19	**117**	73	22.1				19		
20	**80**	74	23.1				20		
21	**67**	75	23.4				21		
22	**54**	76	24.1				22		
23	**25**	77	25.9				23		
24	**5**	78	26.1				24		

Notes:

Hawaii Ocean Time-series
HOT-**312**
PO Shallow Data Sheet

Station # 2 Date: 6/11/2019 (HST)
Cast # 3 Time: 12:18 (HST)
Operator(s): TC, DS, CF

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	1020	47,48,49		1	1	1	1A-B	1A-B	**1020**
2	851	50					2	2	
3	758	51,52,53		3	2	3	3	3	750
4	705	~~52,53~~,54		~~4~~	~~2~~	~~4~~	4	4	~~**750**~~
5	678	55					5	5	
6	620	56		6	3	6	6	6	600
7	569	57					7	7	
8	516	58		~~8~~	~~3~~	~~8~~	8 a b	8 a b	525
9	485	59		9	4	9	9	9	500
10	450	60,61,62					~~10A-B~~	~~10A-B~~	~~**525**~~ 450
11	423	~~61~~ 63		~~11~~	~~4~~	~~11~~	11	11	
12	375	~~62,63~~,64					12	12	**450**
13	327	65		13AB	5,6	13	13	13	350
14	285	66		~~14AB~~	~~5,6~~	~~14~~	14		~~**350**~~
15	250	67		15	7	15	15		250
16	194	68,69,70					16		**225**
17	146	71					17A-B		**150**
18	137	72					18		
19	117	73					19		
20	80	74					20		
21	67	75					21		
22	54	76					22		
23	25	77					23		
24	5	78					24		

Notes:

Hawaii Ocean Time-series

HOT- **312**

PC/PN Data Sheet

Station #	2		Date:	6/11/2019	(HST)
Cast #	4		Time:	14:43	(HST)
Operator(s):	RT, ML, KKB	Pre-screen mesh size:		202 um	
Blank #'s	**___B1___**	**___B2___**	**___B3___**		

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA	ML	
1	**1000**						
2	**Sal Min**						
3	**350**	1	10	3			
4	**350**	2	10	4			
5	**350**					X	
6	**350**					X	
7	**250**	3	10	7			
8	**250**					X	
9	**250**					X	
10	**200**	4	10	10			
11	**175**	5	10	11			
12	**150**	6	10	12			
13	**150**					X	
14	**150**					X	
15	**125**	7,8	4,4	15A-B			
16	**100**	9	4	16			
17	**75**	10	4	17			
18	**75**				X		
19	**45**	11	4	19			
20	**45**				X		
21	**25**	12,13	4,4	21A-B			
22	**25**				X		
23	**5**	14	4	23			
24	**5**				X		

Notes: Carboy #2 only 8L filtered
#7 filter torn

Hawaii Ocean Time-series
HOT- **312**
PC/PN Data Sheet

Station # 2 Date: 6/11/2019 (HST)
Cast # 4 Time: 14:43 (HST)
Operator(s): DT, ML, ICKB Pre-screen mesh size: 202 um
Blank #'s ___B1___ ___B2___ ___B3___

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	DNA	ML	
1	**1000**						
2	**Sal Min**						
3	**350**	1	10	3			
4	**350**	2	10	4			
5	**350**					X	
6	**350**					X	
7	**250**	3	10	7			
8	**250**					X	
9	**250**					X	
10	**200**	4	10	10			
11	**175**	5	10	11			
12	**150**	6	10	12			
13	**150**					X	
14	**150**					X	
15	**125**	7,8	4,4	15A-B			
16	**100**	9	4	16			
17	**75**	10	4	17			
18	**75**				X		
19	**45**	11	4	19			
20	**45**				X		
21	**25**	12,13	4,4	21A-B			
22	**25**				X		
23	**5**	14	4	23			
24	**5**				X		

Notes: Carboy #2 only
SL filtered

Hawaii Ocean Time-series

HOT- **311**

Particulate Phosphorus Data Sheet

Station # 2 Date: 6/11/19 (HST)

Cast # 5 Time: 18:05 (HST)

Operator(s): RT, ML, KKB Pre-screen mesh size: 202 um

Blank #'s **___B1___ ___B2___ ___B3___**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	O2 SF-S	Temp	MCA	KS
1	**1000**								
2	**Sal**								
3	**350**	1	10	3					
4	**350**	2	10	4					
5	**250**	3	10	5					
6	**200**	4	10	6					
7	**175**	5	10	7					
8	**150**	6	10	8					
9	**125**	7,8	4,4	9A-B					X
10	**100**	9	4	10					X
11	**100**								X
12	**75**	10	4	12					X
13	**45**	11	4	13					
14	**45**							X	X
15	**45**							X	
16	**25**	12,13	4,4	16A-B					
17	**25**				17 A,B				X
18	**25**								X
19	**15**					124,125,126	25.8		
20	**5**	14	4	20					
21	**5**				21 A,B				
22	**5**							X	X
23	**5**							X	
24									

Notes: #11 filter torn

Hawaii Ocean Time-series
HOT- **311**
Particulate Phosphorus Data Sheet

Station # 2 Date: 6/11/19 (HST)
Cast # 5 Time: 1605 (HST)
Operator(s): RT, ML, KKB Pre-screen mesh size: 202 um
Blank #'s **B1** **B2** **B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	O2 SF-S	Temp	MCA	KS
1	**1000**								
2	**Sal**								
3	**350**	1	10	3					
4	**350**	2	10	4					
5	**250**	3	10	5					
6	**200**	4	10	6					
7	**175**	5	10	7					
8	**150**	6	10	8					
9	**125**	7,8	4,4	9A-B					X
10	**100**	9	4	10					X
11	**100**								X
12	**75**	10	4	12					X
13	**45**	11	4	13					
14	**45**							X	X
15	**45**							X	
16	**25**	12,13	4,4	16A-B					
17	**25**				17 A,B				X
18	**25**								X
19	**15**					124,125,126	25.8		
20	**5**	14	4	20					
21	**5**				21 A,B				
22	**5**							X	X
23	**5**							X	
24									

Notes:

Hawaii Ocean Time-series
HOT-**312**
BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 6/11/19 (HST)
Cast # 6 Time: 20:19 (HST)
Operator(s): RT, ML, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	7.1						
2	**O_2 min**	80	8.0						
3	**Sal min**	81	10.4						
4	**200**	82	19.3	4				1	4
5	**175**	83	20.6						5
6	**165**	84	21.0						
7	**150**	85	21.5	7				2	7
8	**130**								
9	**125**	86	22.4						9
10	**115**	87	22.6						
11	**110**								
12	**100**	88,89,90	22.0	12				3	12
13	**90**								
14	**85**	91	23.4						
15	**75**	92	23.7	15				4	15
16	**60**								16
17	**45**	93	24.9	17				5	17
18	**35**								18
19	**25**	94	25.7	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	25.9	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling

Hawaii Ocean Time-series
HOT-**312**
BEACH Shallow Data Sheet (1/2)

Station # 2
Cast # 6
Operator(s): _____

Date: 6/11/17 (HST)
Time: 20:19 (HST)

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	7.1						
2	**O_2 min**	80	8.0						
3	**Sal min**	81	10.4						
4	**200**	82	19.3	4				1	4
5	**175**	83	20.6						5
6	**165**	84	21.0						
7	**150**	85	21.5	7				2	7
8	**130**								
9	**125**	86	22.4						9
10	**115**	87	22.6						
11	**110**								
12	**100**	88,89,90	22.0	12				3	12
13	**90**								
14	**85**	91	23.4						
15	**75**	92	23.7	15				4	15
16	**60**								16
17	**45**	93	24.9	17				5	17
18	**35**								18
19	**25**	94	25.7	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	25.9	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling

Hawaii Ocean Time-series
HOT-**312**
BEACH Shallow Data Sheet (2/2)

Station # 2 Date: 6/11/19 (HST)
Cast # 6 Time: 20:19 (HST)
Operator(s): RT, ML, KKB

Rosette Position	Desired Depth	Nutrient	LLN	LLP				
1	**1000**							
2	**O_2 min**							
3	**Sal min**							
4	**200**	4						
5	**175**	5	5	5				
6	**165**		6					
7	**150**	7	7A-B	7				
8	**130**		8					
9	**125**	9A-B	9	9				
10	**115**		10	10				
11	**110**		11					
12	**100**	12	12A-B	12				
13	**90**		13					
14	**85**		14	14				
15	**75**	15	15	15				
16	**60**	16	16	16				
17	**45**	17A-B	17	17				
18	**35**	18	18					
19	**25**	19	19	19				
20	**25**							
21	**15**	21	21					
22	**5**	22	22A-B	22				
23	**5**							
24	**5**							

Notes:

Hawaii Ocean Time-series
HOT-**312**
BEACH Shallow Data Sheet (2/2)

Station # 2 Date: _____ (HST)
Cast # 6 Time: _____ (HST)
Operator(s): _____

Rosette Position	Desired Depth	Nutrient	LLN	LLP				
1	**1000**							
2	**O_2 min**							
3	**Sal min**							
4	**200**	4						
5	**175**	5	5	5				
6	**165**		6					
7	**150**	7	7A-B	7				
8	**130**		8					
9	**125**	9A-B	9	9				
10	**115**		10	10				
11	**110**		11					
12	**100**	12	12A-B	12				
13	**90**		13					
14	**85**		14	14				
15	**75**	15	15	15				
16	**60**	16	16	16				
17	**45**	17A-B	17	17				
18	**35**	18	18					
19	**25**	19	19	19				
20	**25**							
21	**15**	21	21					
22	**5**	22	22A-B	22				
23	**5**							
24	**5**							

Notes:

Hawaii Ocean Time-series
HOT-**312**
Open Data Sheet

Station # 2 Date: _____ (HST)
Cast # 7 Time: _____ (HST)
Operator(s): _____

Rosette Position	Desired Depth	SF-S	DNA	MCA	KS			
1	**1000**							
2	**Sal Min**							
3	**175**		X					
4	**150**		X					
5	**125**		X					
6	**125**				X			
7	**100**		X					
8	**100**			X				
9	**100**			X				
10	**100**			X				
11	**100**			X				
12	**100**			X				
13	**100**				X			
14	**75**				X			
15	**45**				X			
16	**25**	12A,B						
17	**25**				X			
18	**5**	13A,B						
19	**5**				X			
20	**5**			X				
21	**5**			X				
22	**5**			X				
23	**5**			X				
24	**5**			X				

Notes:

Hawaii Ocean Time-series
HOT-**312**
Open Data Sheet

Station # 2
Cast # 7
Operator(s): RT, KKS, ML

Date: 06/01/19 (HST)
Time: 23:30 (HST)

Rosette Position	Desired Depth	SF-S	DNA	MCA	KS			
1	**1000**							
2	**Sal Min**							
3	**175**		X					
4	**150**		X					
5	**125**		X					
6	**125**				X			
7	**100**		X					
8	**100**			X				
9	**100**			X				
10	**100**			X				
11	**100**			X				
12	**100**			X				
13	**100**				X			
14	**75**				X			
15	**45**				X			
16	**25**	16A,B						
17	**25**				X			
18	**5**	18A,B						
19	**5**				X			
20	**5**			X				
21	**5**			X				
22	**5**			X				
23	**5**			X				
24	**5**			X				

Notes:

Hawaii Ocean Time-series

HOT- **312**

Gas Array Experiment Data Sheet

Station #	2	Date:	6/12/19 (HST)
Cast #	8	Time:	02:18 (HST)
Operator(s):	TC, DS, CF		

Rosette Position	Desired Depth	15N2	SF-S	KS			
1	**1020**						
2	**Sal min**						
3	**125**	3-1					
4	**125**	3-2					
5	**125**	3-3		X			
6	**100**	4-1					
7	**100**	4-2					
8	**100**	4-3		X			
9	**100**			X			
10	**75**	5-1					
11	**75**	5-2					
12	**75**	5-3		X			
13	**45**	6-1					
14	**45**	6-2					
15	**45**	6-3		X			
16	**25**	7-1					
17	**25**	7-2					
18	**25**	7-3					
19	**25**		19A,B	X			
20	**25**			X			
21	**5**	8-1					
22	**5**	8-2					
23	**5**	8-3					
24	**5**		24A,B	X			

Notes:

Hawaii Ocean Time-series
HOT- **312**
Gas Array Experiment Data Sheet

Station # 2 Date: 6/12/19 (HST)
Cast # 8 Time: 2:18 (HST)
Operator(s): TC, DS, CF

Rosette Position	Desired Depth	15N2	SF-S	KS			
1	**1020**						
2	**Sal min**						
3	**125**	X 3-1					
4	**125**	X 3-2					
5	**125**	X 3-3		X			
6	**100**	X 4-1					
7	**100**	X 4-2					
8	**100**	X 4-3		X			
9	**100**			X			
10	**75**	X 5-1					
11	**75**	X 5-2					
12	**75**	X 5-3		X			
13	**45**	X 6-1					
14	**45**	X 6-2					
15	**45**	X 6-3		X			
16	**25**	X 7-1					
17	**25**	X 7-2					
18	**25**	X 7-3					
19	**25**		19A,B	X			
20	**25**			X			
21	**5**	X 8-1					
22	**5**	X 8-2					
23	**5**	X 8-3					
24	**5**		24A,B	X			

Notes:

Hawaii Ocean Time-series
HOT- **312**
OPEN Data Sheet

Station # 2 Date: 6/12/2019 (HST)
Cast # 9 Time: 4:55 (HST)
Operator(s): TC, DS, CF

Rosette Position	Desired Depth	DNA	SFS	MC	Salts	O2 SF-S / Temp	MCA	ASE
1	**1020**				X			
2	**Sal min**				X			
3	**275**	X						
4	**250**	X						
5	**225**	X						
6	**200**	X						
7	**175**			X				
8	**150**			X				
9	**125**			X				
10	**100**			X				
11	**75**			X				
12	**45**			X				
13	**25**			X				
14	**25**		14AB					
15	**25**							X
16	**15**					127,128,129 25.9 °C		
17	**5**		17AB		X			
18	**5**			X				
19	**5**						X	
20	**5**						X	
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT- **312**
OPEN Data Sheet

Station # 2 Date: 6/12/2019 (HST)
Cast # 9 Time: 4:55 (HST)
Operator(s): TC, DS, CF

Rosette Position	Desired Depth	DNA	SFS	MC	Salts	O2 SF-S / Temp	MCA	ASE
1	**1020**				X			
2	**Sal min**				X			
3	**275**	X						
4	**250**	X						
5	**225**	X						
6	**200**	X						
7	**175**			X	X			
8	**150**			X				
9	**125**			X				
10	**100**			X				
11	**75**			X				
12	**45**			X				
13	**25**			X				
14	**25**		14AB					
15	**25**							X
16	**15**					127,128,129 25-9		
17	**5**		17AB		X			
18	**5**			X				
19	**5**						X	
20	**5**						X	
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series

HOT- **312**

Particulate Silica Data Sheet

Station # 2 Date: _____ (HST)

Cast # 10 Time: _____ (HST)

Operator(s): _____ Pre-screen mesh size: none

Blank # **B1, B2, B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	EL		
1	**1000**							
2	**Sal min**							
3	**DCM**					X		
4						X		
5						X		
6						X		
7						X		
8						X		
9						X		
10						X		
11						X		
12						X		
13						X		
14						X		
15	**175**	7	4	15				
16	**150**	8	4	16				
17	**125**	9,10	4,4	17A-B				
18	**100**	11	4	18				
19	**75**	12	4	19				
20	**45**	13	4	20				
21	**25**	14,15	4,4	21A-B				
22	**25**				22AB			
23	**5**				23AB			
24	**5**	16	4	24				

Notes:

Hawaii Ocean Time-series
HOT- **312**
Particulate Silica Data Sheet

Station # 2 Date: 6/12/2019 (HST)
Cast # 10 Time: (HST)
Operator(s): TC, DS, CF Pre-screen mesh size: none
Blank # **B1, B2, B3**

Rosette Position	Desired Depth	Carboy #	Total Volume	Sample #	SF-S	EL		
1	**1000**							
2	**Sal min**							
3	**175**	7	4	3				
4	**150**	8	4	4				
5	**DCM**					X		
6	**DCM**					X		
7	**DCM**					X		
8	**DCM**					X		
9	**DCM**					X		
10	**DCM**					X		
11	**DCM**					X		
12	**DCM**					X		
13	**DCM**					X		
14	**DCM**					X		
15	**DCM**					X		
16	**DCM**					X		
17	**125**	9,10	4,4	17A-B				
18	**100**	11	4	18				
19	**75**	12	4	19				
20	**45**	13	4	20				
21	**25**	14,15	4,4	21A-B				
22	**25**				22AB			
23	**5**				23AB			
24	**5**	16	4	24				

Notes:

Hawaii Ocean Time-series

HOT- **312**

OPEN Data Sheet

Station #	2	Date:	6/12/2019 (HST)
Cast #	11	Time:	10:58 (HST)
Operator(s):	TC, DS, CF		

Rosette Position	Desired Depth	SF-S	MCA	ASE			
1	**1000**						
2	**700**			X			
3	**Sal Min**						
4	**100**		X				
5	**100**		X				
6	**75**		X				
7	**75**		X				
8	**45**		X				
9	**45**		X				
10	**25**	10A,B					
11	**25**		X				
12	**25**		X				
13	**25**			X			
14	**25**			X			
15	**5**	15A,B					
16	**5**						
17	**5**		X				
18	**5**		X				
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT- **312**
OPEN Data Sheet

Station # 2
Cast # 11
Operator(s): TC, DS, CF

Date: 6/12/2019 (HST)
Time: 10:58 (HST)

Rosette Position	Desired Depth	SF-S	MCA	ASE			
1	**1000**						
2	~~**Sal Min**~~ 700			X			
3	~~**700**~~ SMIN			~~X~~			
4	**100**		X				
5	**100**		X				
6	**75**		X				
7	**75**		X				
8	**45**		X				
9	**45**		X				
10	**25**	10A,B					
11	**25**		X				
12	**25**		X				
13	**25**			X			
14	**25**			X			
15	**5**	15A,B					
16	**5**						
17	**5**		X				
18	**5**		X				
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series

HOT- **312**

ATP Data Sheet

Station #	2		Date:	6/12/2019	(HST)
Cast #	12		Time:	14:20	(HST)
Operator(s):	RT, ML, KKB	Pre-screen mesh size:		202um	

Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	**1020**						
2	**770**					X	
3	**500**					X	
4	**Sal min**						
5	**400**					X	
6	**350**	1 – 3	3x2	1			
7	**300**					X	
8	**250**	4 – 6	3x2	2			
9	**150**	7 – 9	3x1	7			
10	**125**	10 – 12	3x1	8			
11	**100**	13 – 15	3x1	9			
12	**75**	16 – 18	3x1	10			
13	**45**	19 – 21	3x1	11			
14	**45**						
15	**45**						
16	**25**	22 – 24	3x1	12			
17	**25**				17A,B		
18	**5**	25 - 27	3x1	13			
19	**5**				19AB		
20	**5**						
21	**5**						
22							
23							
24							

Notes: #28-30 are blanks
#26 lost ~100ml

Hawaii Ocean Time-series
HOT- **312**
ATP Data Sheet

Station # 2 Date: 6/12/2019 (HST)
Cast # 12 Time: (HST)
Operator(s): Pre-screen mesh size: 202um
Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	**1020**						
2	**770**					X	
3	**500**					X	
4	**Sal min**						
5	**400**					X	
6	**350**	1 – 3	3x2	1			
7	**300**					X	
8	**250**	4 – 6	3x2	2			
9	**150**	7 – 9	3x1	7			
10	**125**	10 – 12	3x1	8			
11	**100**	13 – 15	3x1	9			
12	**75**	16 – 18	3x1	10			
13	**45**	19 – 21	3x1	11			
14	**45**						
15	**45**						
16	**25**	22 – 24	3x1	12			
17	**25**				17A,B		
18	**5**	25 - 27	3x1	13			
19	**5**				19AB		
20	**5**						
21	**5**						
22							
23							
24							

Notes: #28-30 are blanks

#26 lost ~100 mL

Hawaii Ocean Time-series
HOT-**312**
OPEN CAST Data Sheet

Station # 2 Date: _____ (HST)
Cast # 13 Time: _____ (HST)
Operator(s): _____

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp	KS	
1	**1000**						
2	**800**	2					
3	**600**	3					
4	**Sal Min**						
5	**400**	5					
6	**300**	6					
7	**200**	7					
8	**175**	8					
9	**150**	9					
10	**125**	10					
11	**125**					X	
12	**100**	12					
13	**100**					X	
14	**75**	14					
15	**75**					X	
16	**45**	16					
17	**45**					X	
18	**25**					X	
19	**25**	19 A, B					
20	**25**		20A,B				
21	**15**			130,131,132			
22	**5**	22 A,B	22A,B				
23	**5**					X	
24							

Notes:

Hawaii Ocean Time-series
HOT-**312**
OPEN CAST Data Sheet

Station # 2 Date: 6/12/19 (HST)
Cast # 13 Time: (HST)
Operator(s):

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp	KS	
1	**1000**				7.8		
2	**800**	2			8.5		
3	**600**	3			9.2		
4	**Sal Min**						
5	**400**	5					
6	**300**	6					
7	**200**	7					
8	**175**	8					
9	**150**	9					
10	**125**	10					
11	**125**					X	
12	**100**	12					
13	**100**					X	
14	**75**	14					
15	**75**					X	
16	**45**	16					
17	**45**					X	
18	**25**					X	
19	**25**	19 A, B					
20	**25**		20A,B				
21	**15**			130,131,132	26.2		
22	**5**	22 A,B	22A,B				
23	**5**					X	
24							

Notes:

Hawaii Ocean Time-series

HOT-**312**

HPLC & Chl *a*. Bottle Data Sheet

Station #	2	Date:	6/12/19 (HST)
Cast #	14	Time:	20:04 (HST)
Operator(s):	RT, ML, KKB		

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl *a*.	MCA	KS	
1	**1000**							
2	**Sal min**							
3	**175**	1	10	3	3			
4	**150**	2	10	4	4			
5	**135**	7	4	5	5A-B			
6	**125**	8,9	4,4	6A-B	6			
7	**125**						X	
8	**115**	10	4	8	8			
9	**100**	11	4	9	9			
10	**100**						X	
11	**100**					X		
12	**100**					X		
13	**100**					X		
14	**85**	12	4	14	14			
15	**75**	13	4	15	15		X	
16	**60**	14	4	16	16A-B			
17	**45**	15,16	4,4	17A-B	17			
18	**45**						X	
19	**25**	3	10	19	19			
20	**25**						X	
21	**5**	4	10	21	21		X	
22	**5**					X		
23	**5**					X		
24	**5**					X		

Notes

Hawaii Ocean Time-series
HOT-**312**
HPLC & Chl *a*. Bottle Data Sheet

Station # 2
Cast # 14
Operator(s):

Date: 6/12/19 (HST)
Time: 20:04 (HST)

Rosette Position	Desired Depth	Carboy #	Total Volume	HPLC	Chl *a*.	MCA	KS	
1	**1000**							
2	**Sal min**							
3	**175**	1	10	3	3			
4	**150**	2	10	4	4			
5	**135**	7	4	5	5A-B			
6	**125**	8,9	4,4	6A-B	6			
7	**125**						X	
8	**115**	10	4	8	8			
9	**100**	11	4	9	9			
10	**100**						X	
11	**100**					X		
12	**100**					X		
13	**100**					X		
14	**85**	12	4	14	14			
15	**75**	13	4	15	15		X	
16	**60**	14	4	16	16A-B			
17	**45**	15,16	4,4	17A-B	17			
18	**45**						X	
19	**25**	3	10	19	19			
20	**25**						X	
21	**5**	4	10	21	21		X	
22	**5**					X		
23	**5**					X		
24	**5**					X		

Notes

Hawaii Ocean Time-series

HOT-**312**

WOCE Deep 2 Data Sheet

Station # 2 Date: 6/12/19 (HST)

Cast # 15 Time: 22:54 (HST)

Operator(s): RT, ML, KKB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	ML			
1	**4800**	96	4.3					
2	**4000**	97	4.3					
3	**4000**			X				
4	**3000**	98	4.5					
5	**3000**			X				
6	**2000**	99	5.2					
7	**2000**			X				
8	**1000**			X				
9	**O2 min**	100	6.9					
10	**Sal min**	101	9.8					
11	**O2 max**	102	18.5					
12	**125**				X			
13	**125**				X			
14	**75**				X			
15	**75**				X			
16	**5**				X			
17	**5**				X			
18	**5**	103	25.8					
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT-**312**
WOCE Deep 2 Data Sheet

Station # 2 Date: 6/12/19 (HST)
Cast # 15 Time: 22:54 (HST)
Operator(s):

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	ML			
1	**4800**	96	4.3					
2	**4000**	97	4.3					
3	**4000**			X				
4	**3000**	98	4.5					
5	**3000**			X				
6	**2000**	99	5.2					
7	**2000**			X				
8	**1000**			X				
9	**O2 min**	100	6.9					
10	**Sal min**	101	9.8					
11	**O2 max**	102	18.5					
12	**125**				X			
13	**125**				X			
14	**75**				X			
15	**75**				X			
16	**5**				X			
17	**5**				X			
18	**5**	103	25.8					
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT- **312**
STATION 50 Data Sheet

Station # 50 Date: 6/13/2019 (HST)
Cast # 1 Time: 12:53 (HST)
Operator(s): TC, CF

Rosette Position	Desired Depth	DIC/TA	pH	EL	ASE	CS		
1	**100**					X		
2	**75**					X		
3	**25**					X		
4	**25**			X				
5	**25**			X				
6	**25**			X				
7	**25**			X				
8	**25**			X				
9	**25**			X				
10	**25**			X				
11	**25**			X				
12	**25**			X				
13	**25**			X				
14	**25**			X				
15	**25**			X				
16	**25**				X			
17	**25**				X			
18	**25**				X			
19	**25**				X			
20	**25**				X			
21	**25**				X			
22	**25**				X			
23	**5**	23A,B	1,2,3					
24								

Notes:

Hawaii Ocean Time-series
HOT- **312**
STATION 50 Data Sheet

Station # 50
Cast # 1
Operator(s): TC, CF

Date: 6/13/2019 (HST)
Time: 12:53 (HST)

Rosette Position	Desired Depth	DIC/TA	pH	EL	ASE	CS		
1	**100**					X		
2	**75**					X		
3	**25**					X		
4	**25**			X				
5	**25**			X				
6	**25**			X				
7	**25**			X				
8	**25**			X				
9	**25**			X				
10	**25**			X				
11	**25**			X				
12	**25**			X				
13	**25**			X				
14	**25**			X				
15	**25**			X				
16	**25**				X			
17	**25**				X			
18	**25**				X			
19	**25**				X			
20	**25**				X			
21	**25**				X			
22	**25**				X			
23	**5**	23A,B	1,2,3					
24								

Notes:

Hawaii Ocean Time-series
HOT- **312**
STATION Kaena Data Sheet

Station #	6	Date:	06/13/19 (HST)
Cast #	1	Time:	21:09 (HST)
Operator(s):	RT, ML, KKB		

Rosette Position	Desired Depth	Chl a.				
1	**2500**					
2	**2000**					
3	**1500**					
4	**1000**					
5	**500**					
6	**175**	6				
7	**150**	7				
8	**125**	8				
9	**100**	9				
10	**75**	10				
11	**45**	11				
12	**25**	12				
13	**5**	13				
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Notes:

Hawaii Ocean Time-series

HOT- **312**

STATION Kaena Data Sheet

Station # 6 Date: 06/13/19 (HST)

Cast # 1 Time: 21:09 (HST)

Operator(s): RT, ML, KKB

Rosette Position	Desired Depth	Chl a.				
1	**2500**					
2	**2000**					
3	**1500**					
4	**1000**					
5	**500**					
6	**175**	6				
7	**150**	7				
8	**125**	8				
9	**100**	9				
10	**75**	10				
11	**45**	11				
12	**25**	12				
13	**5**	13				
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Notes:

Hawaii Ocean Time-series
HOT-312 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT 150m	Date:	6/11/2019
Operator(s):	RT, BW, KKB	Wind:	~5 knots
Position in:	22° 47.9727N 158° 01.452W	Sea State:	calm
Time in (HST):	01:31		
Time relseased (HST):	01:42		

Recovery

Operator(s):	DS, BW, TC, CF	Date:	6/13/2019
Start recovery (HST):	7:12	Wind:	~ 11 knots
Time out (HST):	7:29	Sea state:	2 meter swell
Position out:	22° 24.9154N 158° 14.768W		
Weight on board (HST):			

Comments:

Hawaii Ocean Time-series
HOT-312 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT 150m	Date:	06/11/2019
Operator(s):	RT, ML, BW, KKB	Wind:	~5 knts
Position in:	22 47.9727'N 158 1.6452'W	Sea State:	calm
Time in (HST):	01:31		
Time relseased (HST):	01:42		

Recovery

Operator(s):	DS, BW, TC	Date:	6/13/2019
Start recovery (HST):	7:12	Wind:	~ 11 knots
Time out (HST):	7:29	Sea state:	2 meter swell
Position out:	22° 24.9154 N 158° 14.7684 W		
Weight on board (HST):			

Comments:

Data Sheet for Sediment Trap Volumes

Cruise #: 312
Analyst: DS, CF

Directions: 1) Mark the traps with 2 lines
a) Line #1 is at the interface

Trap Name	Depth (m)	Height (cm) at Line #2 (Top Line)
A	150	40.7
B	150	35.7
C	150	40.0
D	150	36.0
E	150	38.9
F	150	35.0
G	150	37.3
H	150	37.9
I	150	37.0
J	150	36.1
K	150	36.7
L	150	37.5

Data Sheet for Sediment Trap Volumes

Cruise #: 312

Analyst: DS, CF

Directions: 1) Mark the traps with 2 lines
a) Line #1 is at the interface

Trap Name	Depth (m)	Height (cm) at Line #2 (Top Line)
A	150	40.7
B	150	35.7
C	150	40.8
D	150	36.8
E	150	38.9
F	150	35.0
G	150	37.3
H	150	37.9
I	150	37.0
J	150	36.1
K	150	36.7
L	150	37.5

Hawaii Ocean Time-series
HOT-312
In Situ Gas Array Data Sheet

Operators: BW, DS, TC, CF	**Operators: BW, DS, CF, TC**
Date Deployed : 6/12/2019	**Date Recovered: 6/13/2019**
Time (HST): 4:28	**Time (HST): 5:50**
Position In: 22° 47.9902 N 158° 01.5839 W	**Position Out: 22° 34.1877 N 158° 04.4998 W**

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	**6/12/2019**	**3:40**	**6/13/2019**	**5:55**		
3-2		**3:41**		5:56		
3-3		**3:42**		5:55		
4-1		**3:43**		5:56		
4-2		**3:43**		5:57		
4-3		**3:44**		5:57		
5-1		**3:45**		5:58		
5-2		**3:46**		5:58		
5-3		**3:47**		6:19		
6-1		**3:45**		6:20		
6-2		**3:47**		6:23		
6-3		**3:47**		6:26		
7-1		**3:43**		**6:29**		
7-2		**3:44**		6:29		**About 200 mL lost**
7-3		**3:45**		6:30		
8-1		**3:41**		6:32		
8-2		**3:41**		6:50		
8-3		**3:42**		6:53		

Hawaii Ocean Time-series
HOT-312
In Situ Gas Array Data Sheet

Operators: BW, DS, TC, CF	**Operators:** BW, DS, CF, TC
Date Deployed : 6/12/2019	**Date Recovered:** 6/13/2019
Time (HST): 4:28	**Time (HST):** 5:50
Position In: 22° 47.9902 N 158° 01.5839W	**Position Out:** 22° 34.1877 N 158° 04.4998 W

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered HST	15N Batch	Comments
3-1 1		3:40		05:55		
3-2 3		3:41		05:56		
3-3 2		3:42		5:55		
4-1 4		3:43		5:56		
4-2 5		3:43		5:57		
4-3 6		3:44		5:57		
5-1 7		3:45		5:58		
5-2 8		3:46		5:58		
5-3 1		3:47		6:19		
6-1 2		3:45		6:20		
6-2 3		3:47		6:23		
6-3 4		3:47		6:26		
7-1 5		3:43		6:29		
7-2 6		3:44		6:29		* About 200 mL lost
7-3 7		3:45		6:30		
8-1 8		3:41		6:32		
8-2 1		3:41		6:50		
8-3 2		3:42		6:53		

Hawaii Ocean Time-series
HOT-312
In Situ Primary Production Data Sheet

Operators in: DS, CF, BW, TC
Operators Out: RT, BW, KKB
Date in: 6/11/2019
Date out: 6/11/2019
Time in: Start : 5:32 Release: 5:48 (HST)
Time out: 19:40 (HST)

Incubation Depth		Insertion Time	Owner
125	✓	5:32	
100	✓		
75	✓		
45	✓		
25	✓		
5	✓	5:42	

Position in: 22°48.688 N, 158° 02.476 W
Position out: 22° 42.0229N, 158° 03.444 W

Average weather condition during incubation: calm
Average sea state during incubation: calm

Notes:

Begin Inoculation 5:03
End Inoculation 5:07
Filtration time 20:21
20:58

Hawaii Ocean Time-series
HOT-312
In Situ Primary Production Data Sheet

Operators in: DS, CF, BW, TC
Date in: 6/11/2019

Out:
Time in: Start : 5:32 (HST)
Release: 5:48

Date out: 06/11/2019

Time out: 19:40 (HST)

Incubation Depth	✓	Insertion Time	Owner
125	✓	5'32	
100	✓		
75	✓		
45	✓		
25	✓		
5	✓	5:42	

Position in: 22° 48.688 N, 158° 02.476 W
Position out: 22° 42.0229 N, 158° 3.444 W

Average weather condition during incubation:
Average sea state during incubation:

Notes:

Begin Inoculation 5:03 5:07
Filtration time

End Inoculation 5:07

Hawaii Ocean Time-series
HOT 312
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
6/10/2019	12:19	Kahe	1
"	19:19	Transit to ALOHA	2
6/11/2019	2:13	ALOHA	3
"	8:15	"	4
"	14:48	"	5
"	18:39	"	6
6/12/2019	00:58	"	7
"	6:11	"	8
"	12:38	"	9
"	18:51	"	10
6/13/2019	3:10	"	11
"	10:25	"	12
"	14:56	WHOTS	13
"	23:24	Kaena	14

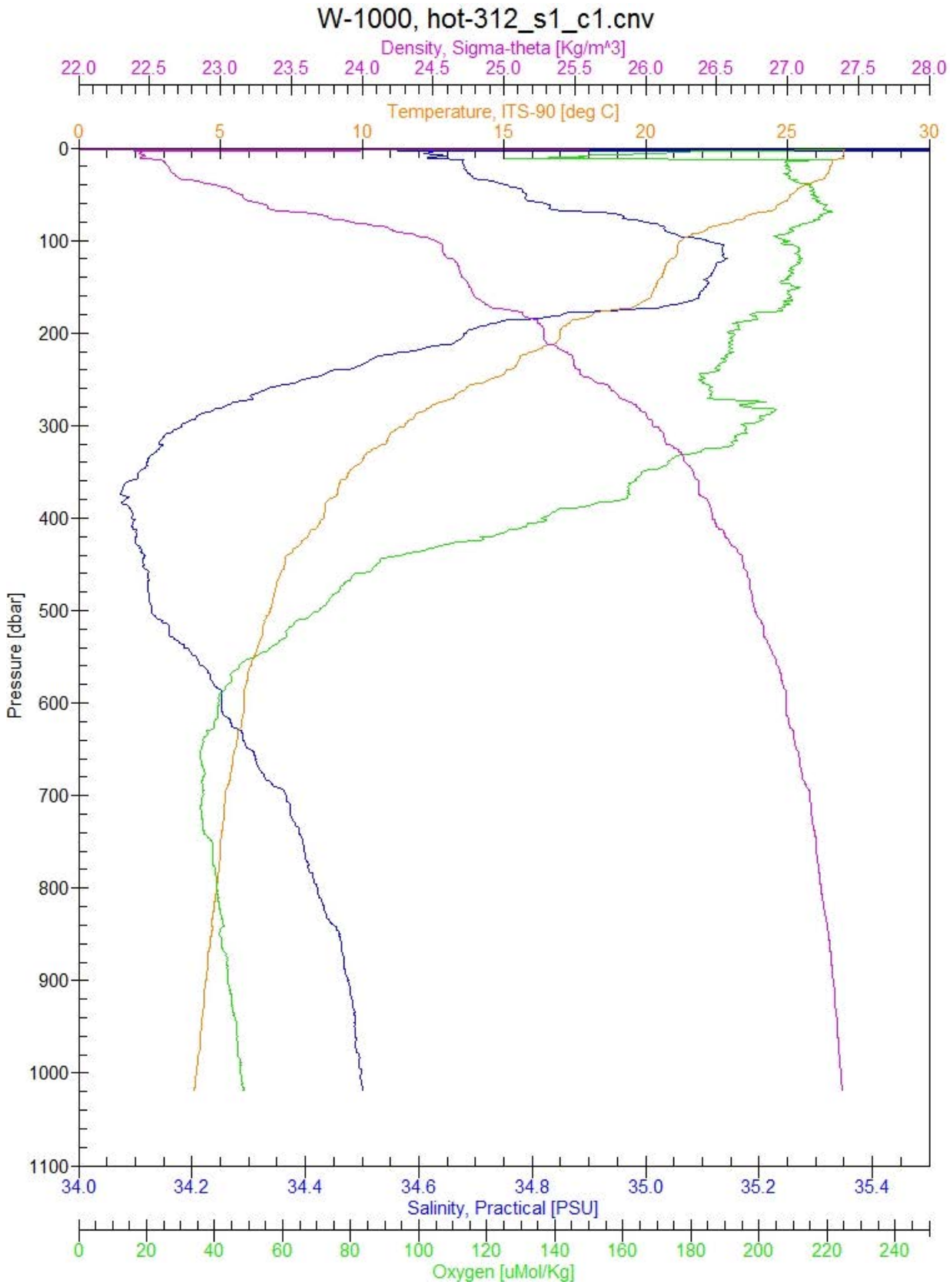
Hawaii Ocean Time-series
HOT 312
Chlorophyll Grab Sample Sheet

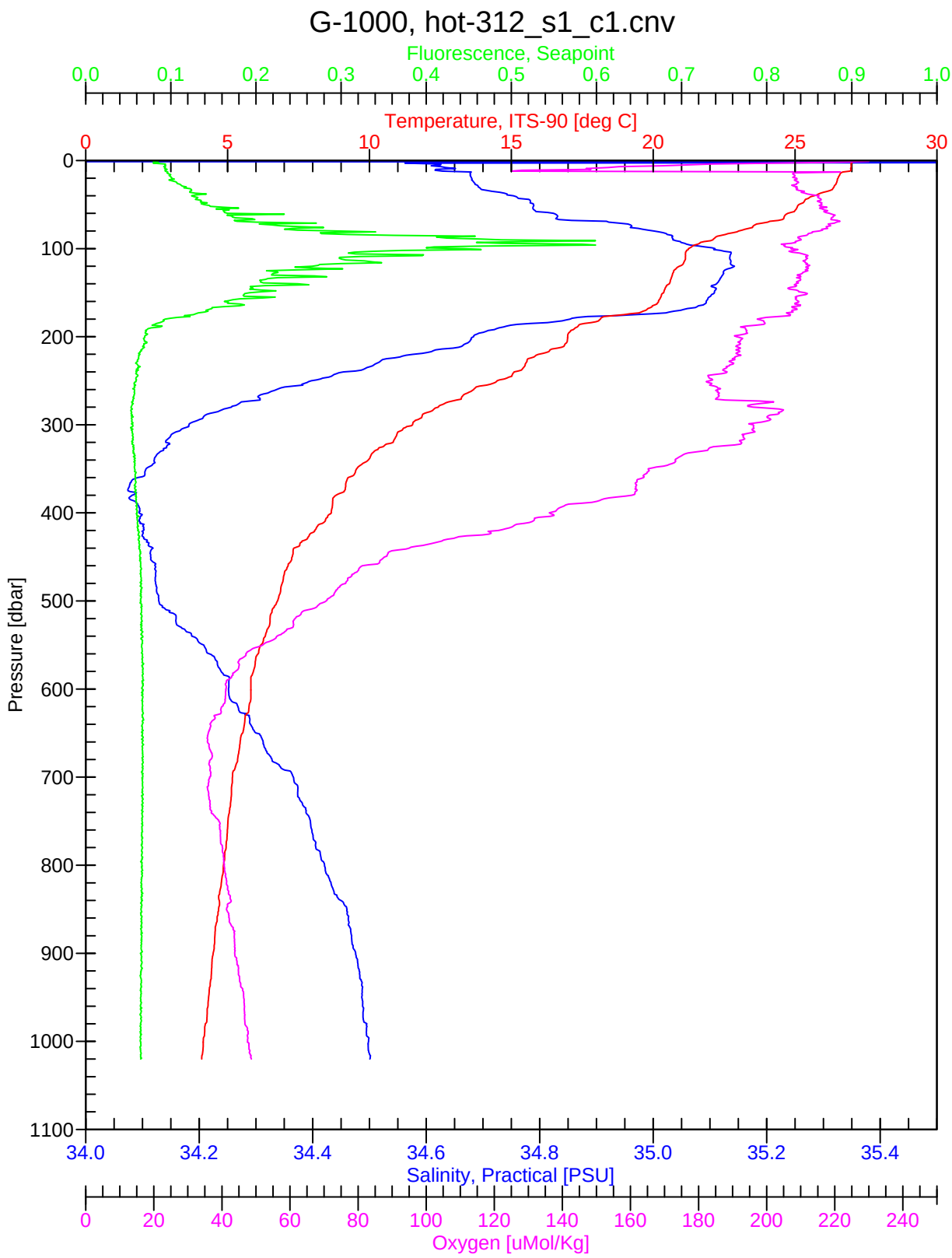
Date	Time (HST)	Location	GS #
6/10/19	12:19	kahe	1
6/10/19	19:19	transit to ALOHA	2
6/11/19	2:13	ALOHA	3
"	8:15	"	4
"	14:48	"	5
"	18:39	"	6
6/12/19	00:58	"	7
"	6:11	"	8
"	12:38	"	9
"	18:51	"	10
6/13/19	3:10	"	"
"	10:25	"	12
6/13/19	14:56	WHOTS	13
"	23:24	Kaena	14

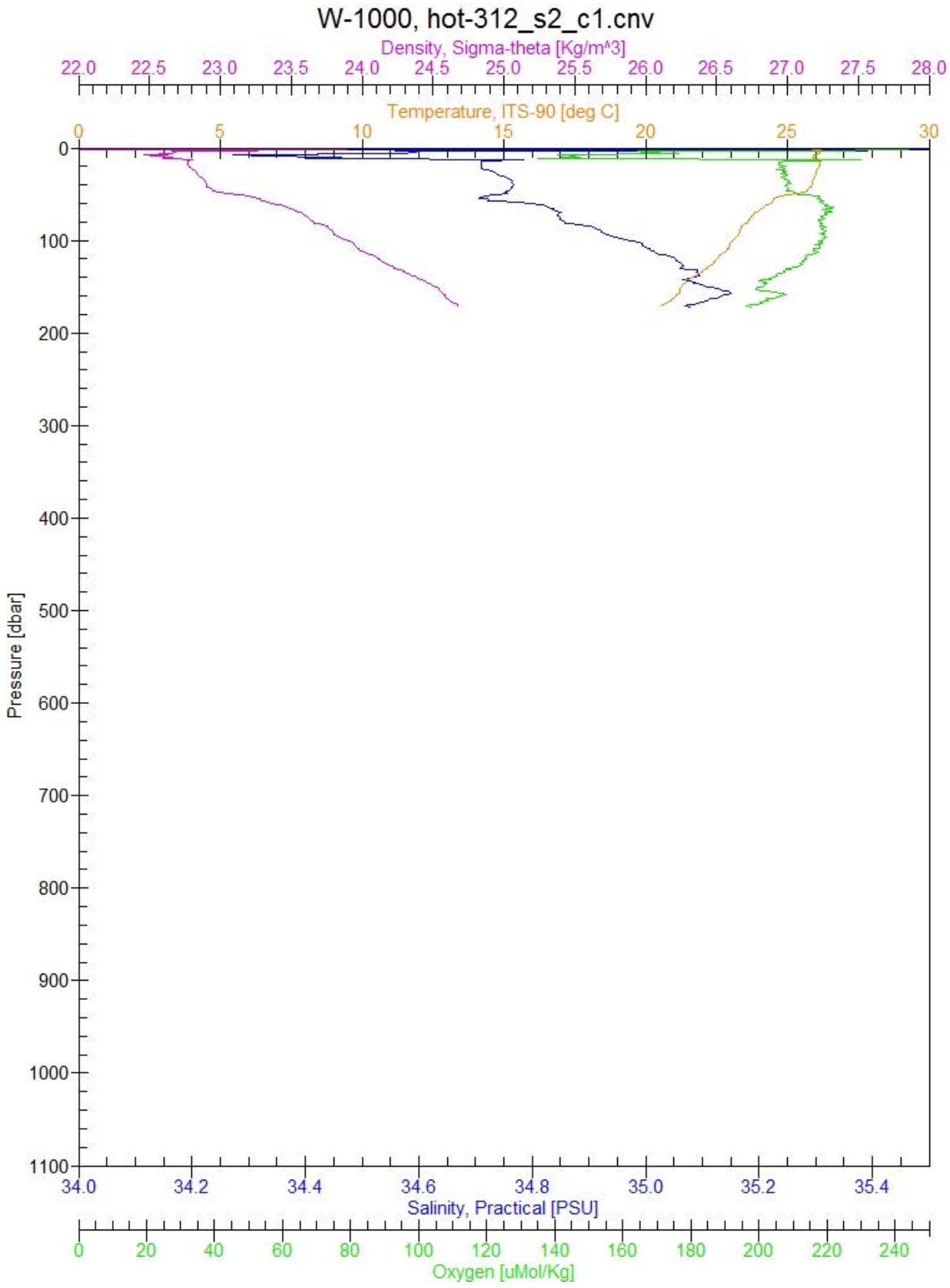
Hawaii Ocean Time-series
HOT 312
Argos Fix Log Sheet

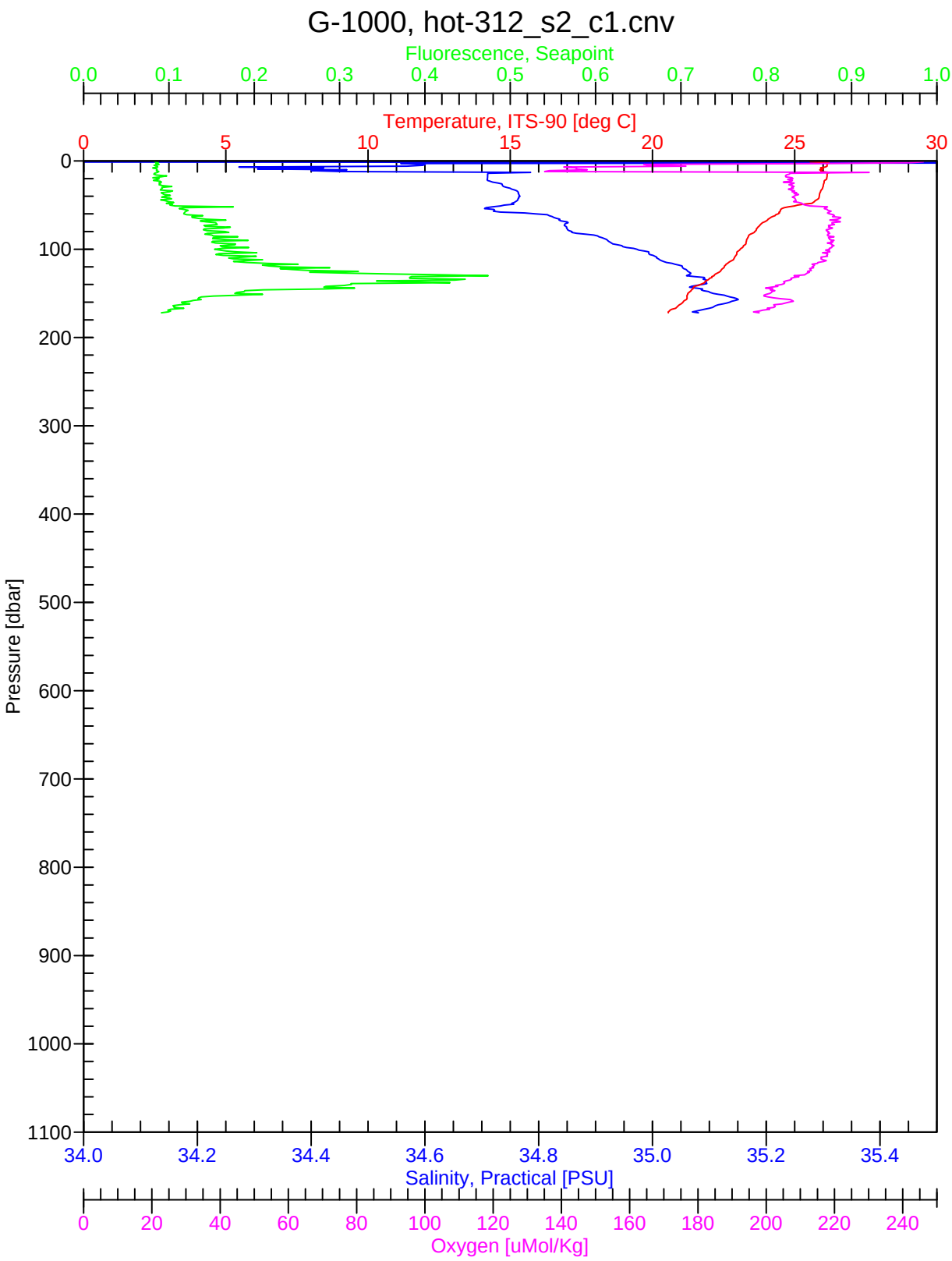
Array	Platform #	Platform #
Sediment Trap	84857	59100
PP/Gas Array	60484	50030 (78)
Wirewalker		51020 (77)

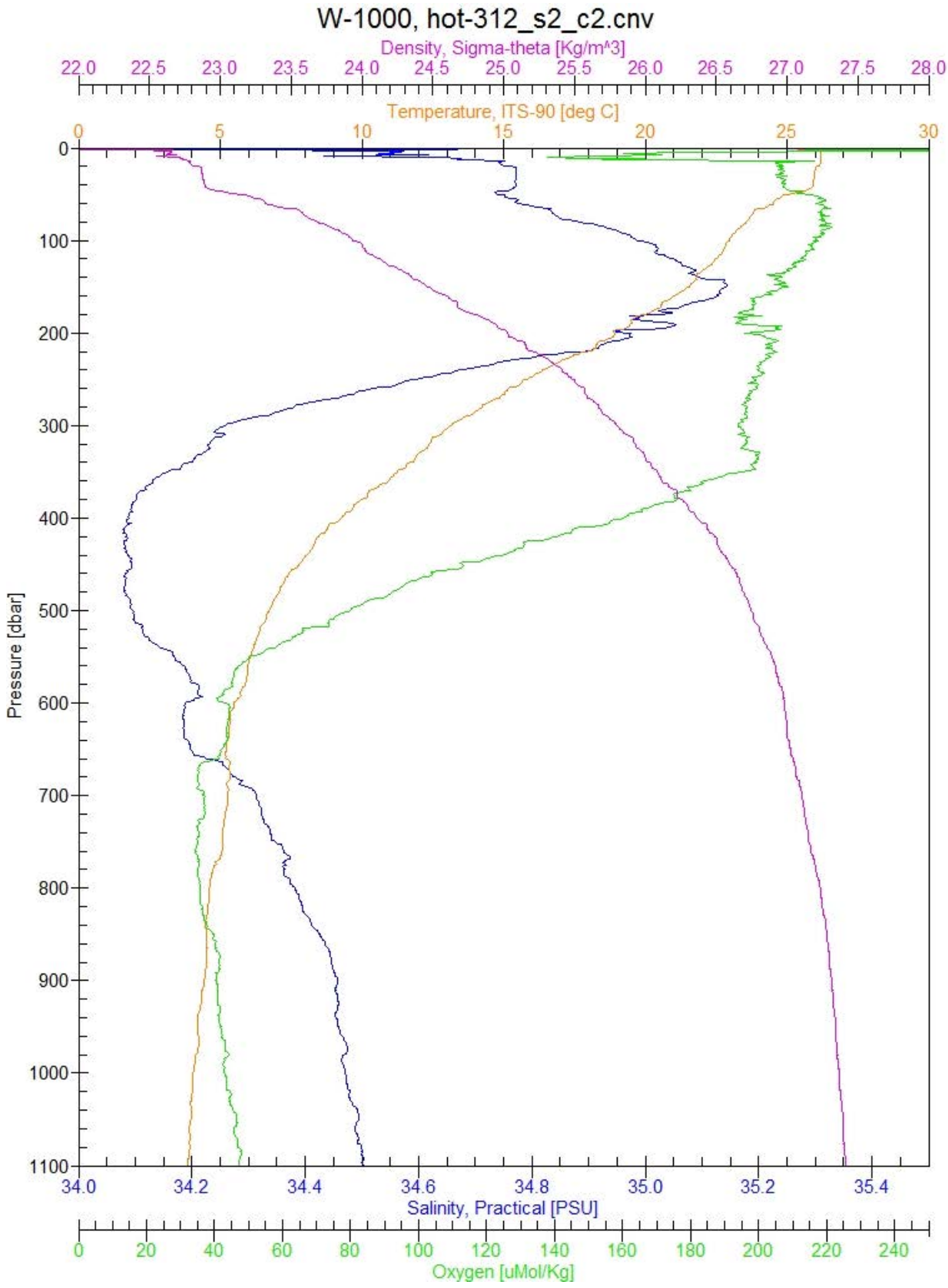
Date	Time	Platform	Position	Initials	Array Name

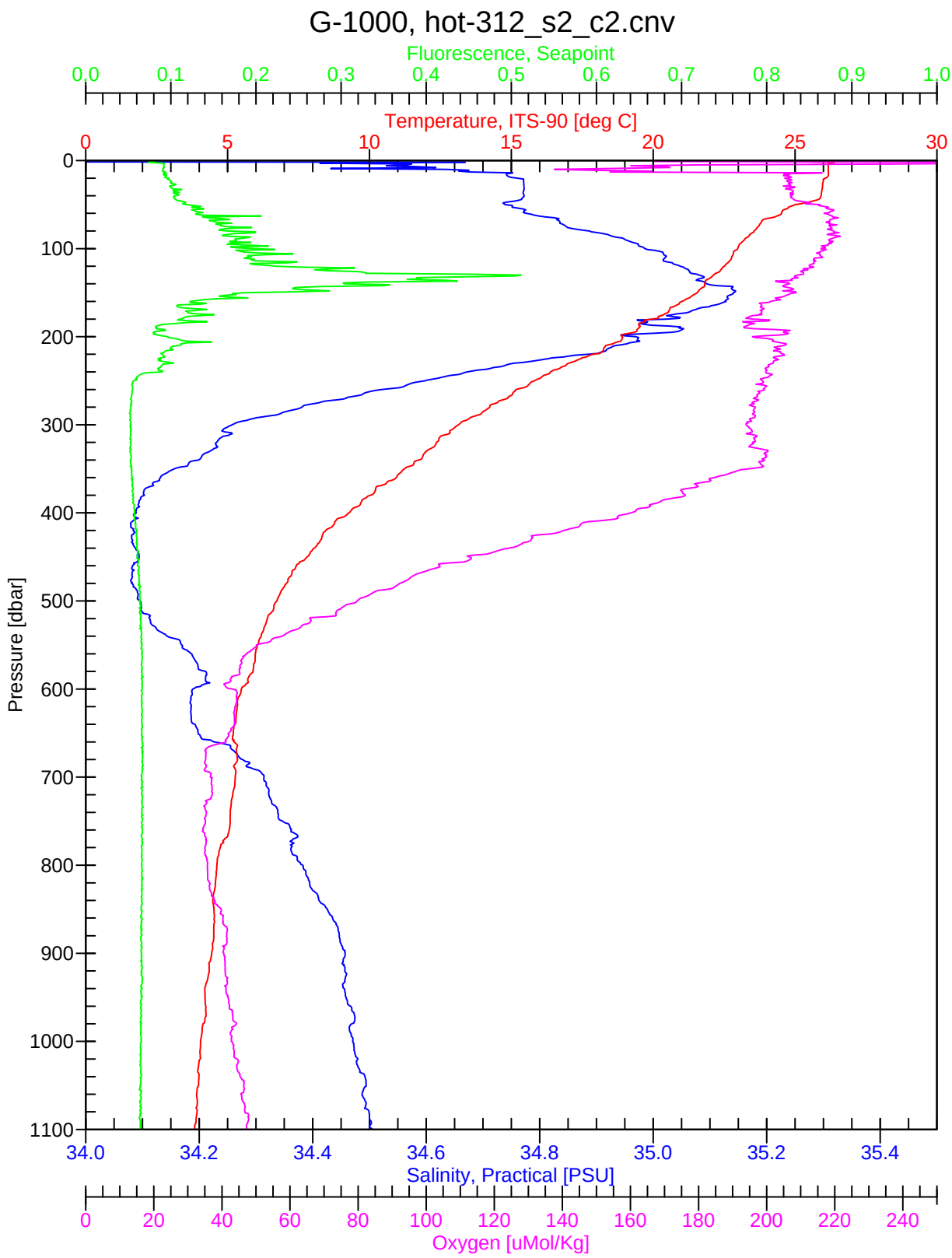

W-1000, hot-312_s1_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

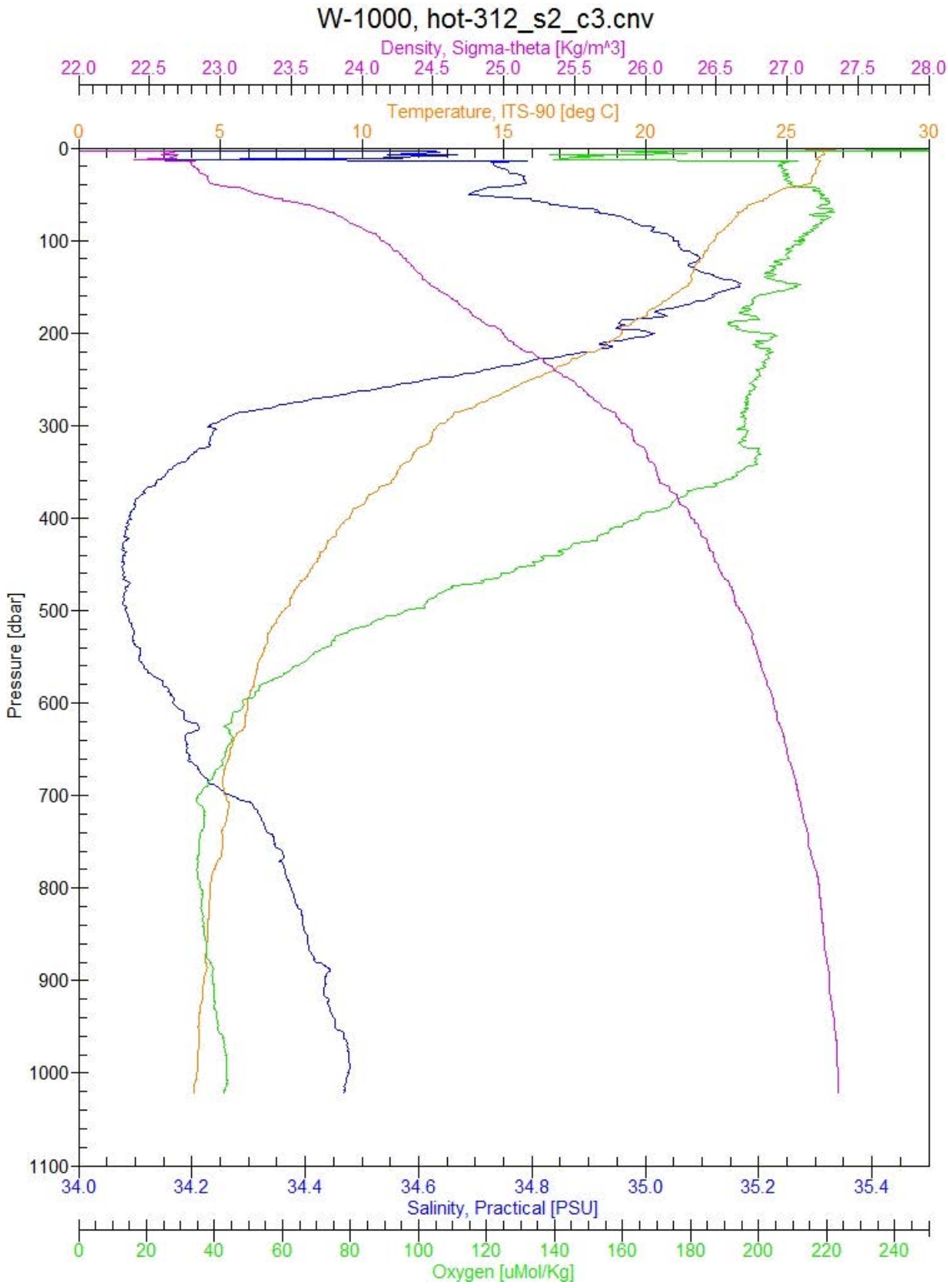

G-1000, hot-312_s1_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

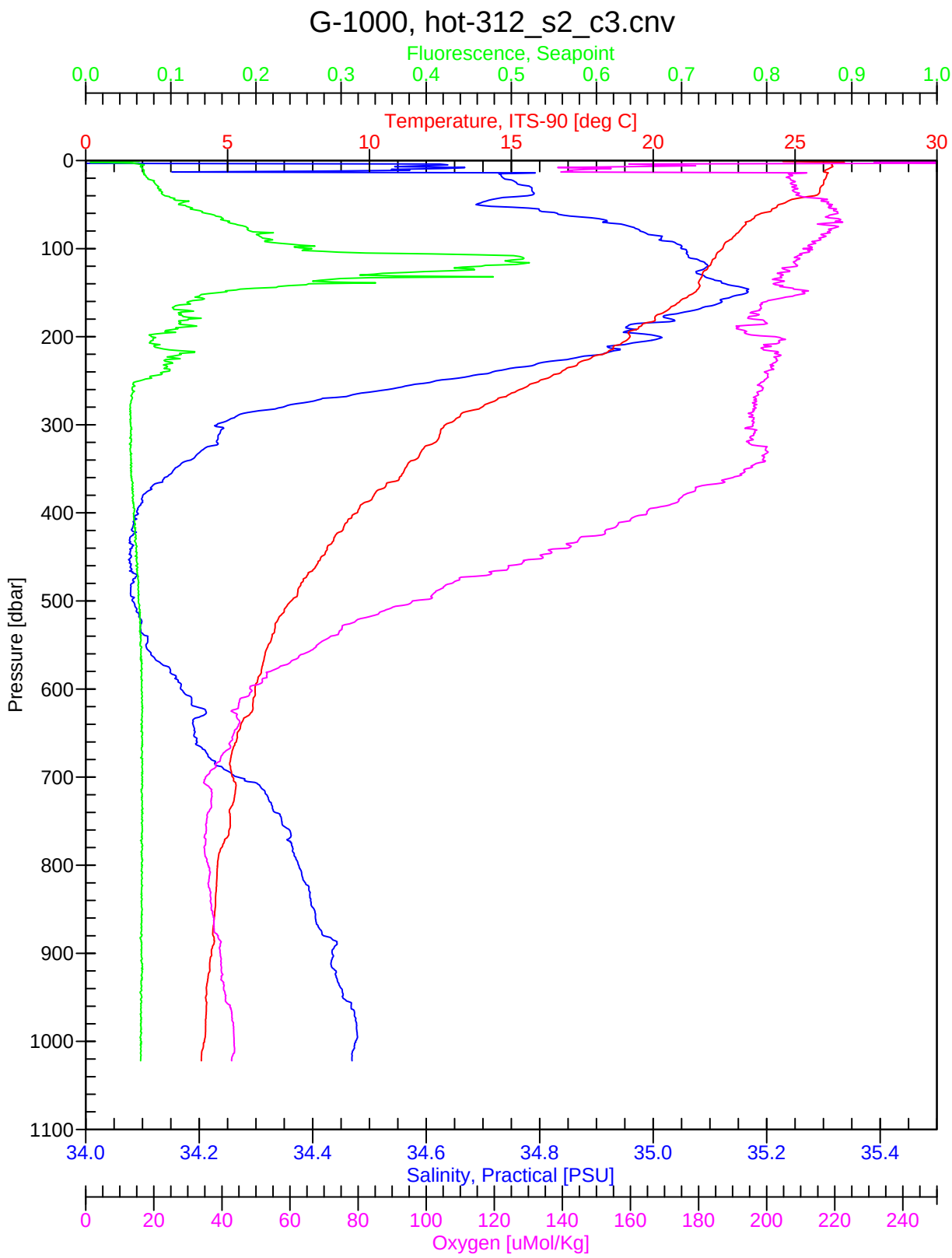

W-1000, hot-312_s2_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

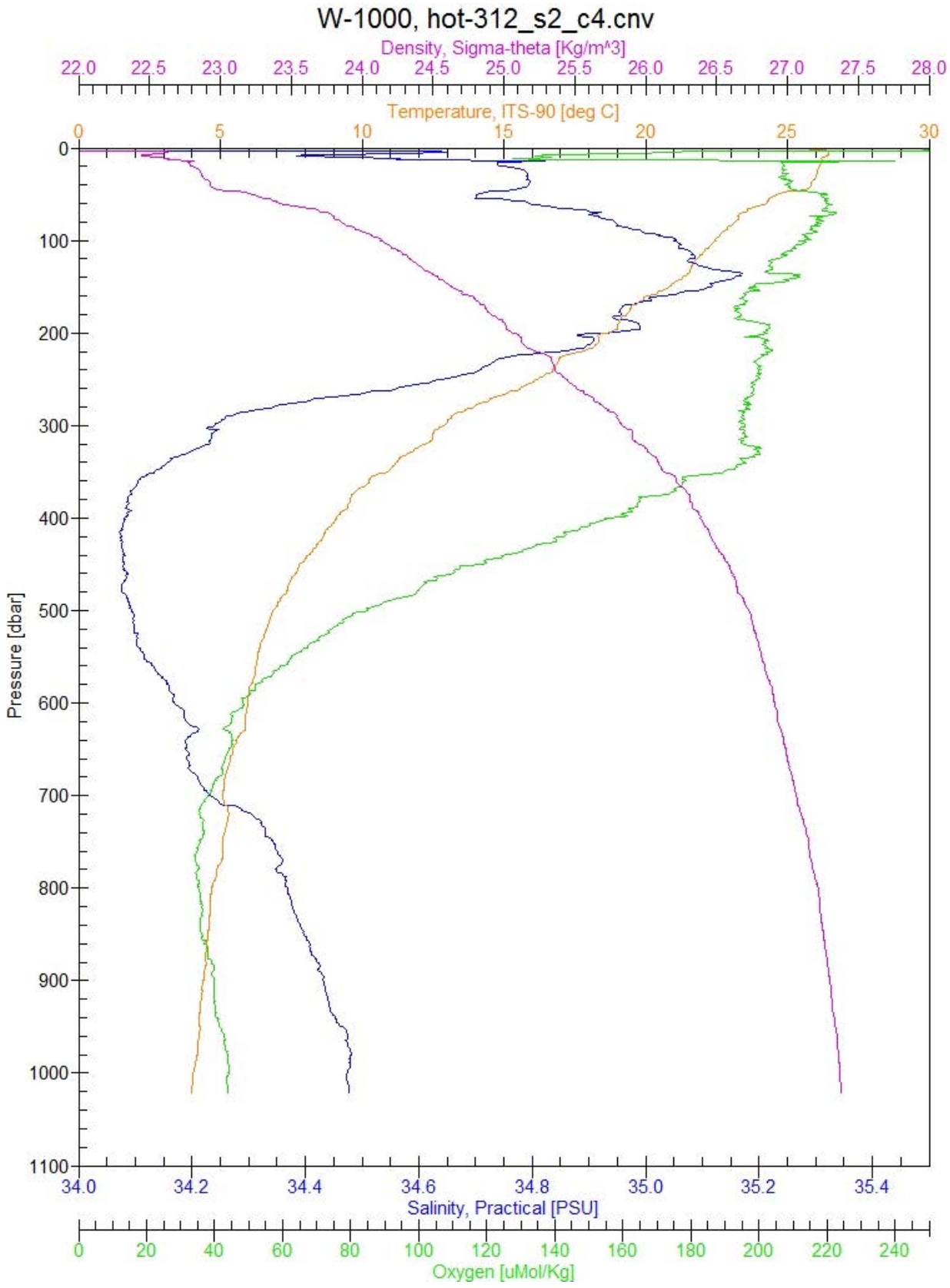

G-1000, hot-312_s2_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

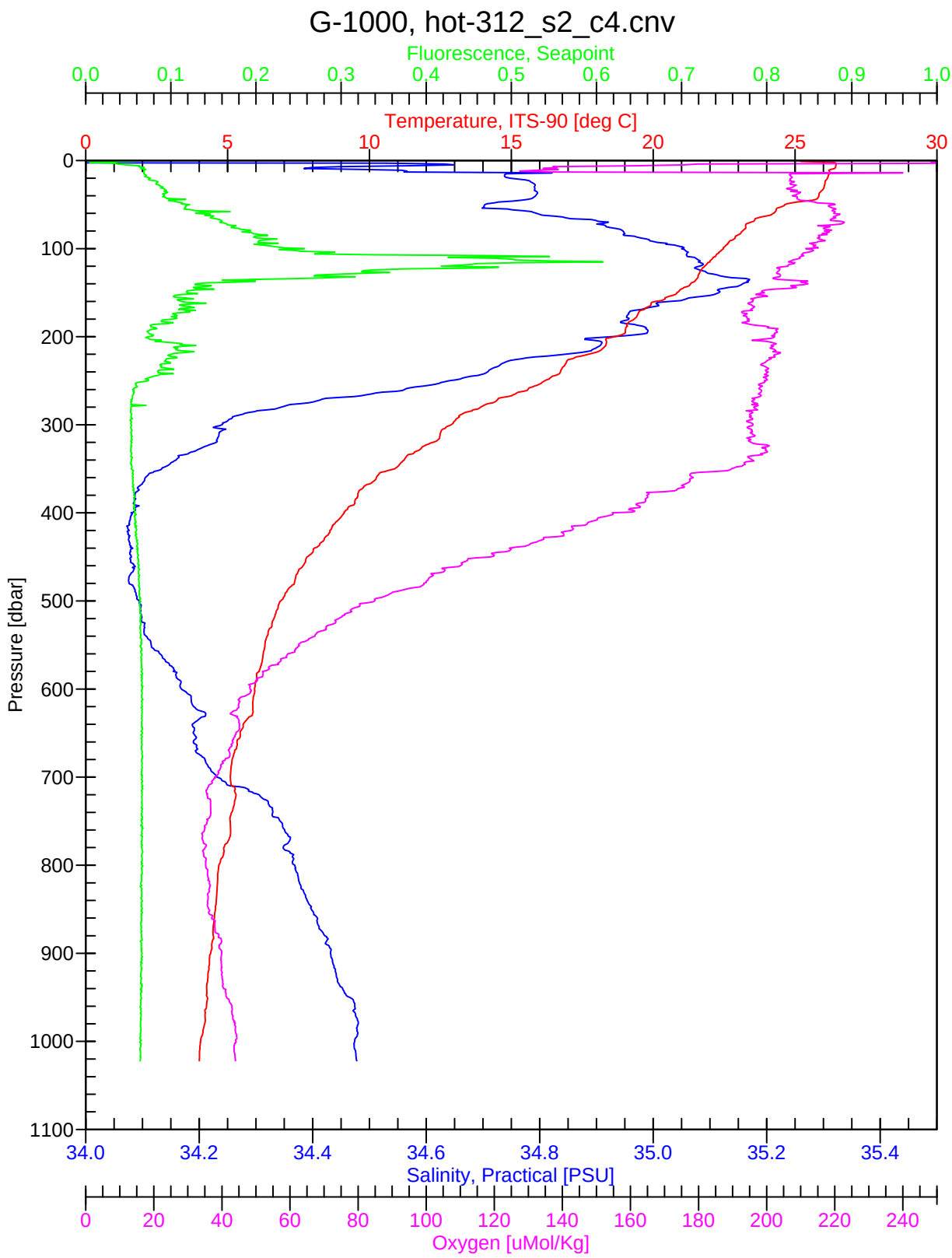

W-1000, hot-312_s2_c2.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

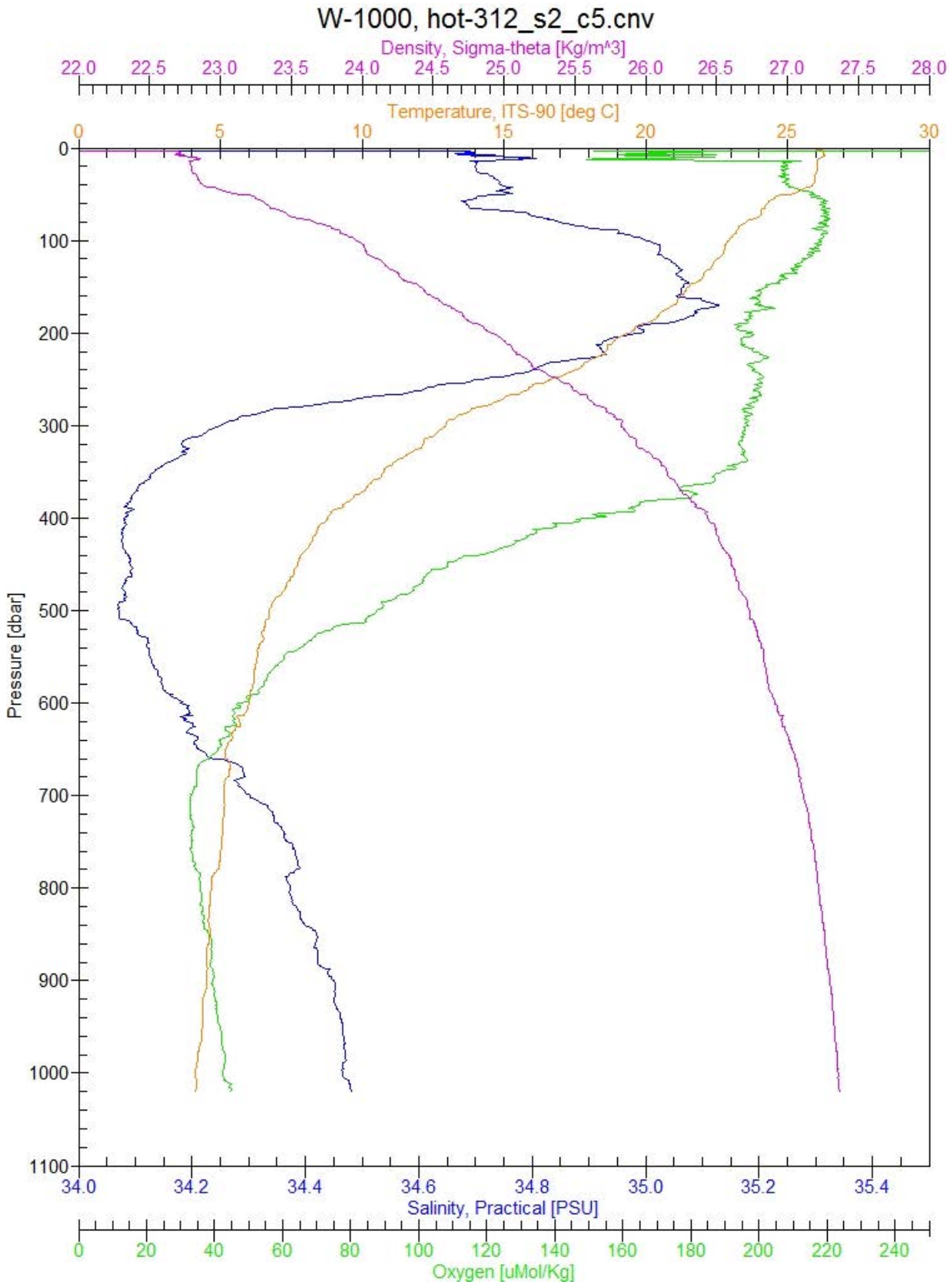

G-1000, hot-312_s2_c2.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

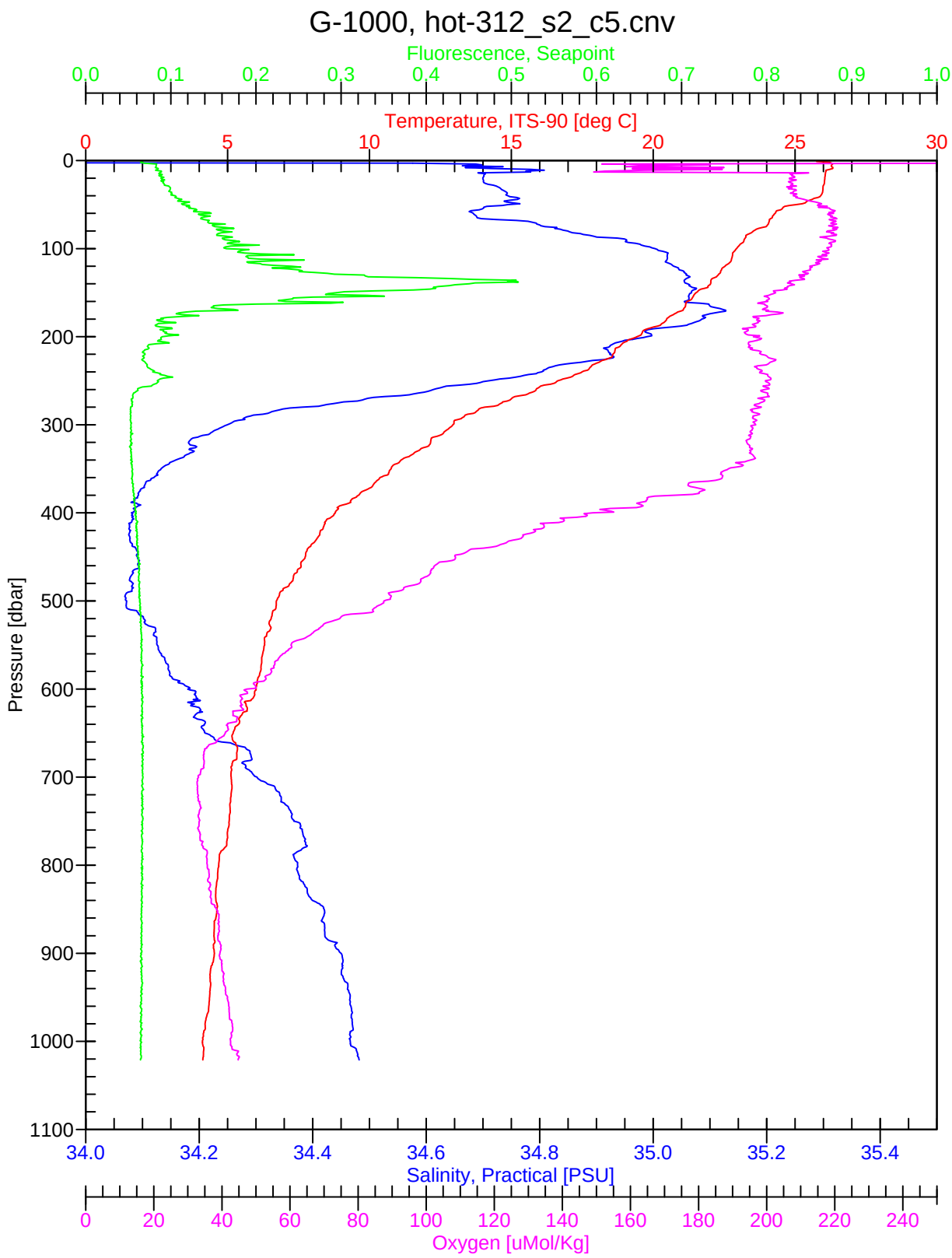

W-1000, hot-312_s2_c3.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

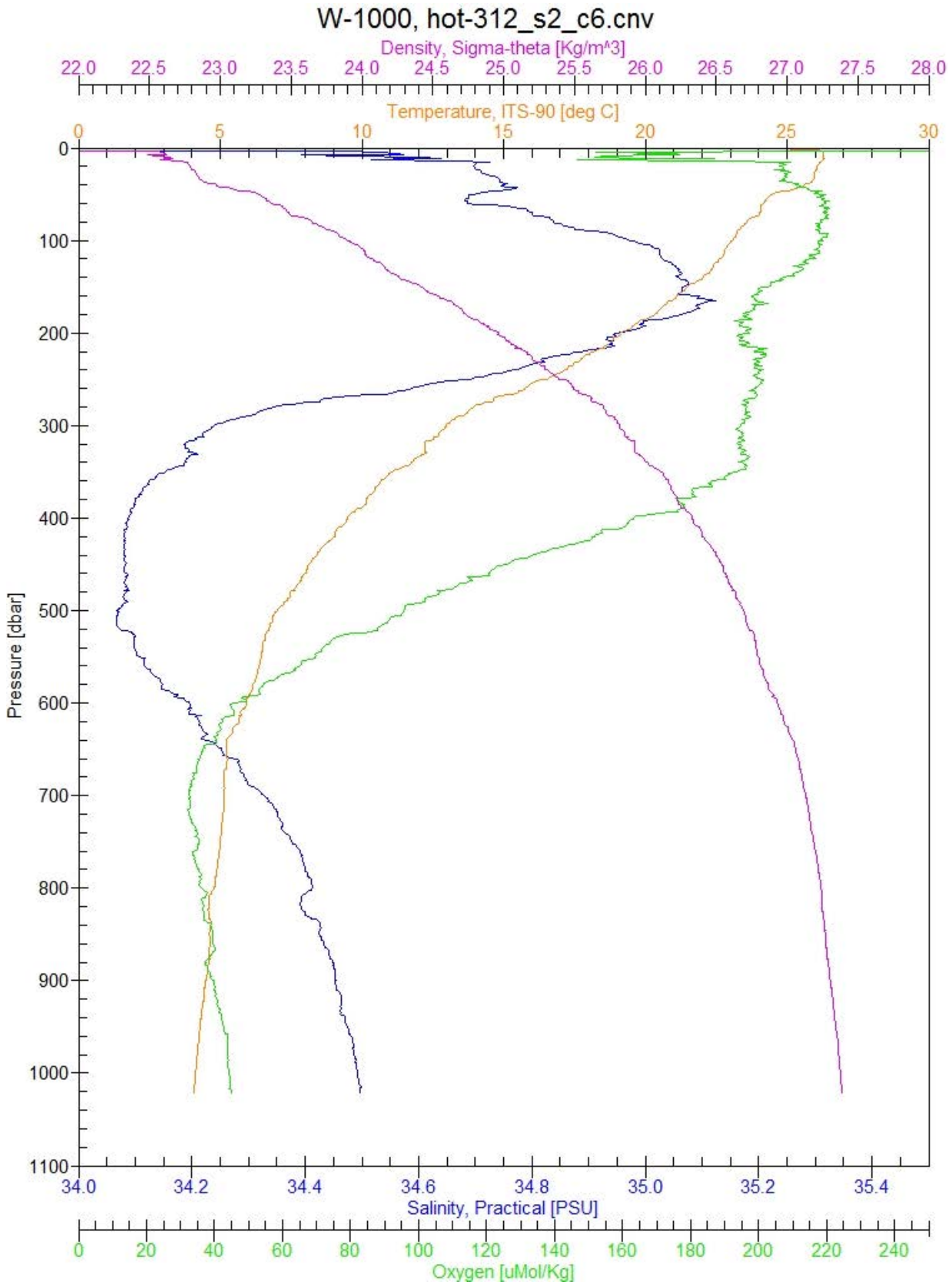

G-1000, hot-312_s2_c3.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

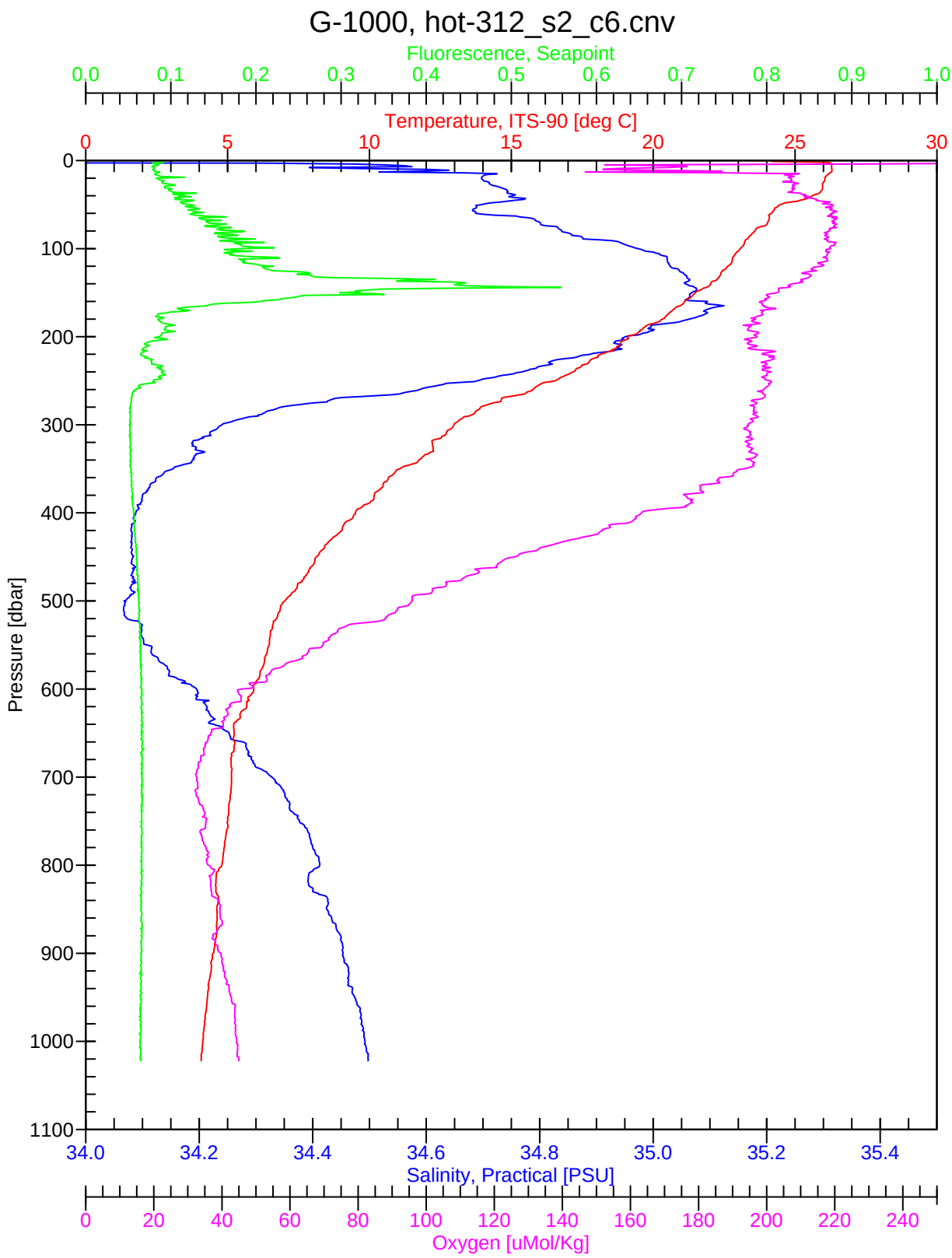

W-1000, hot-312_s2_c4.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

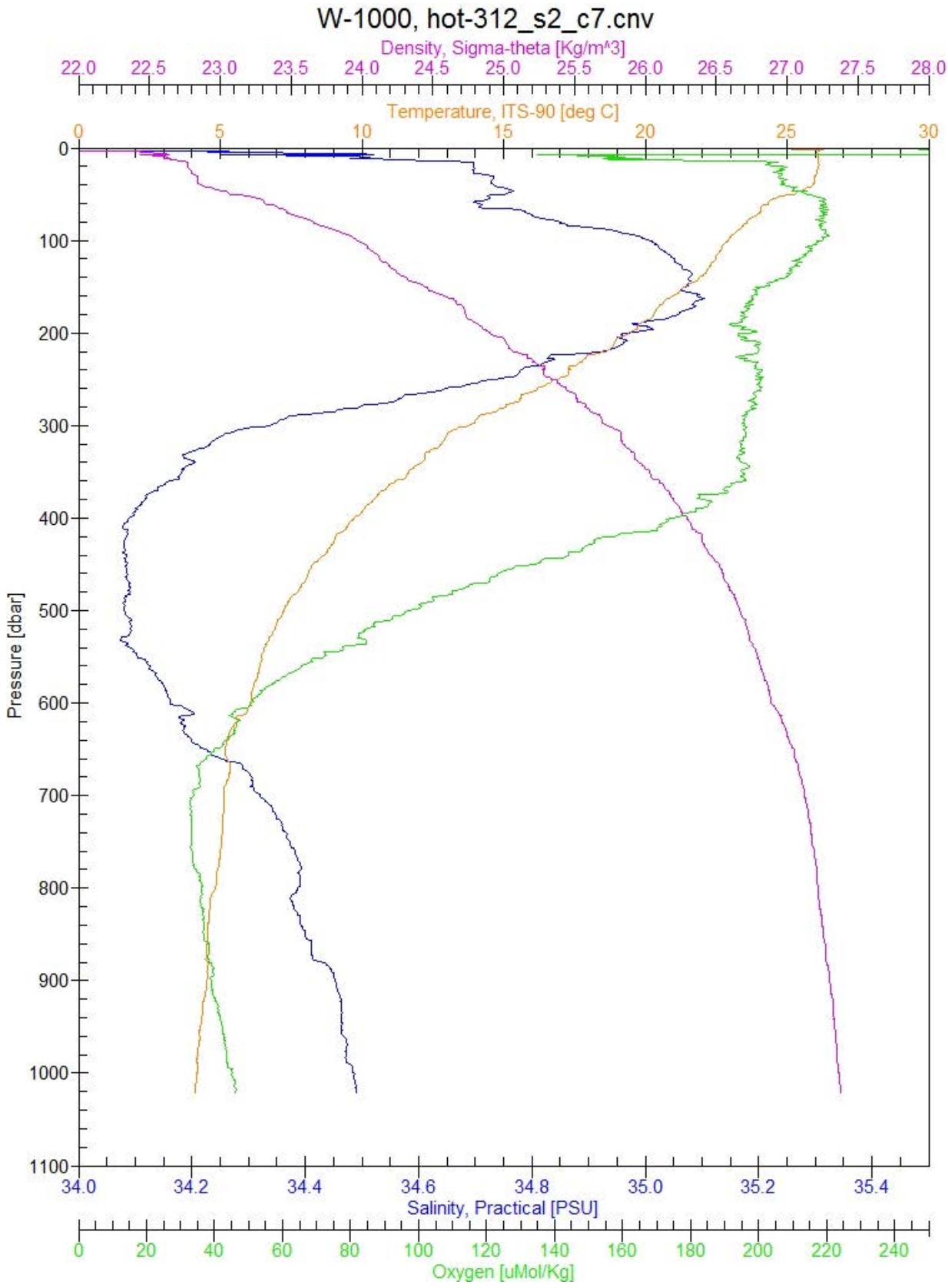

G-1000, hot-312_s2_c4.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

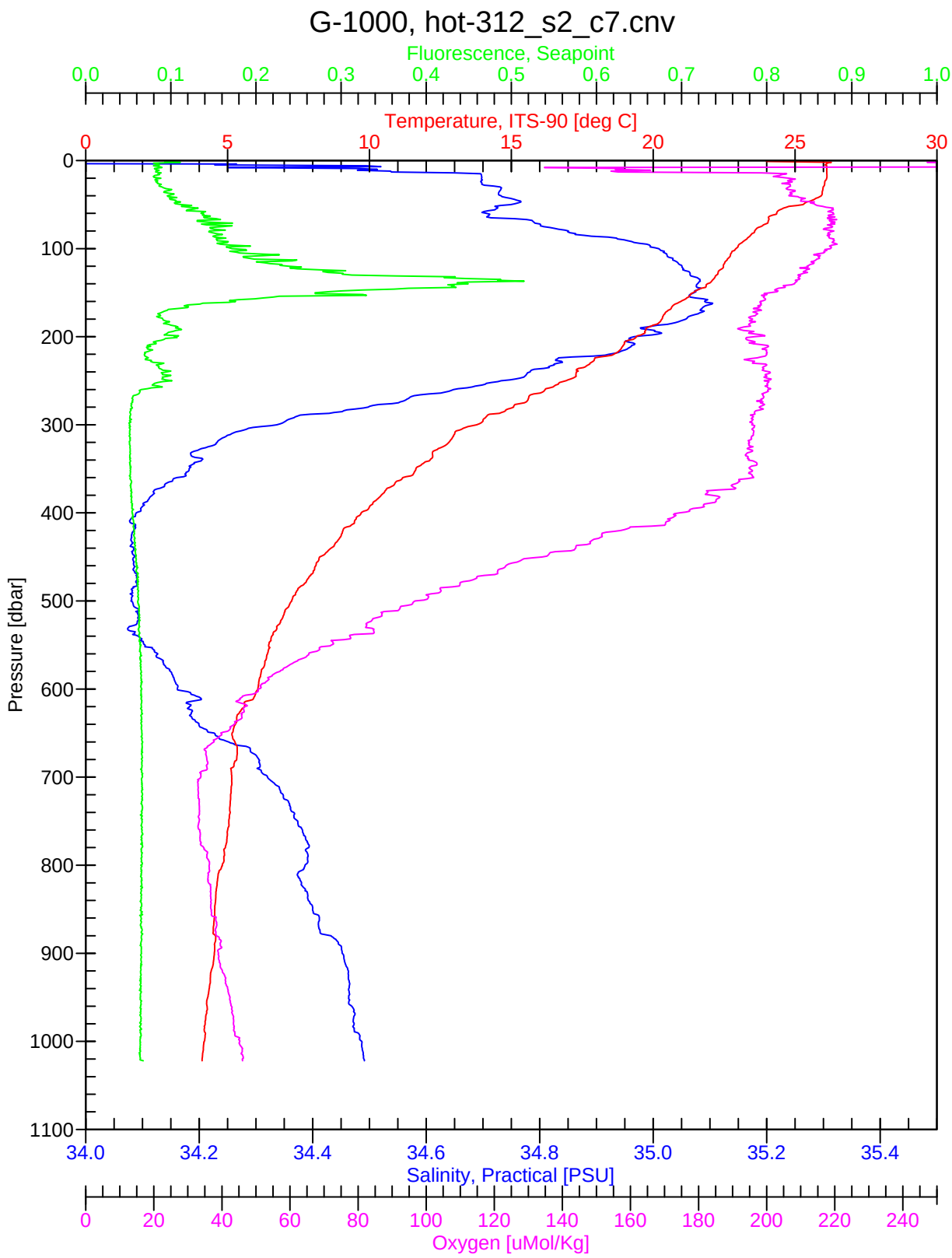

W-1000, hot-312_s2_c5.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

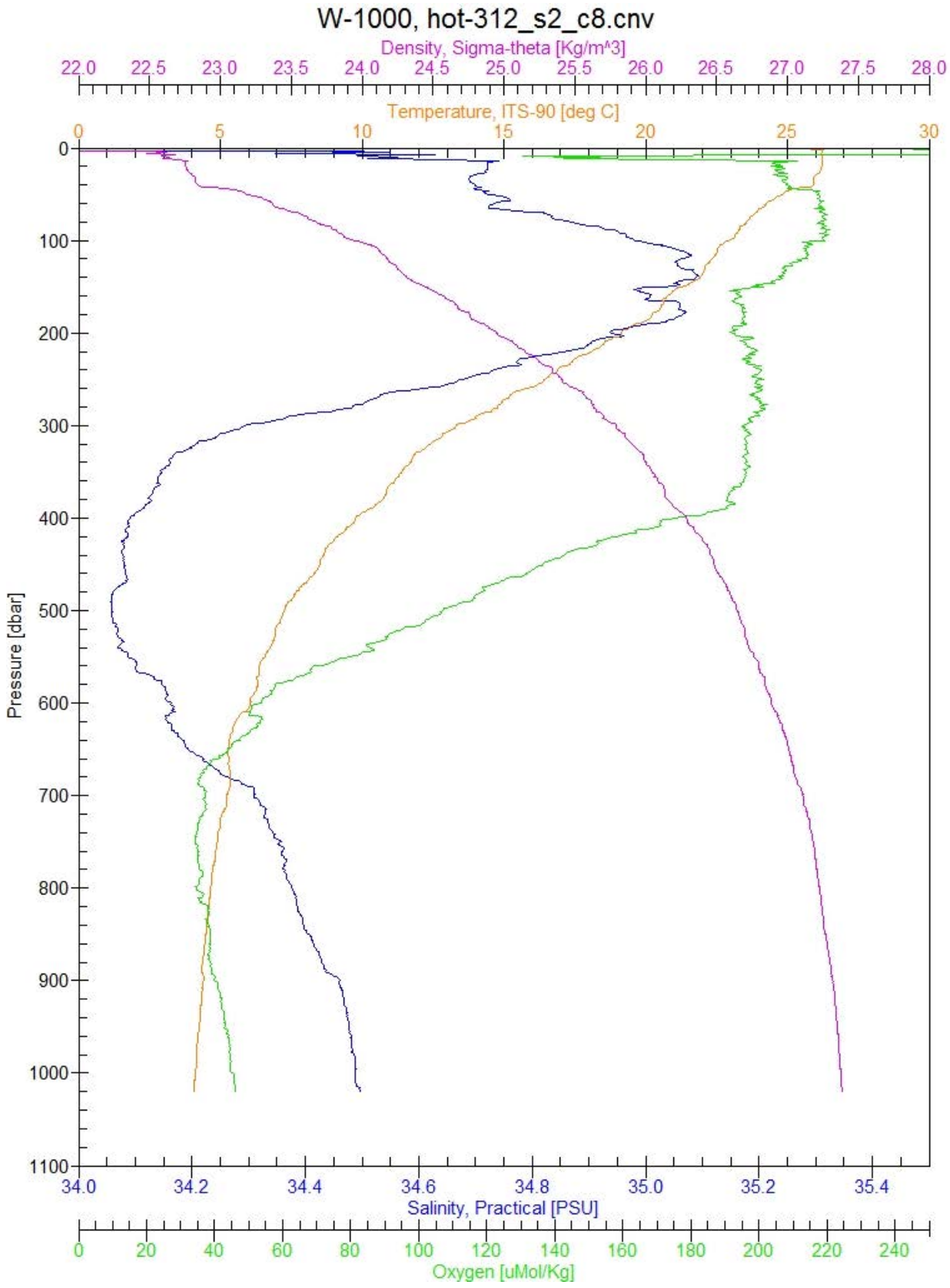

G-1000, hot-312_s2_c5.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

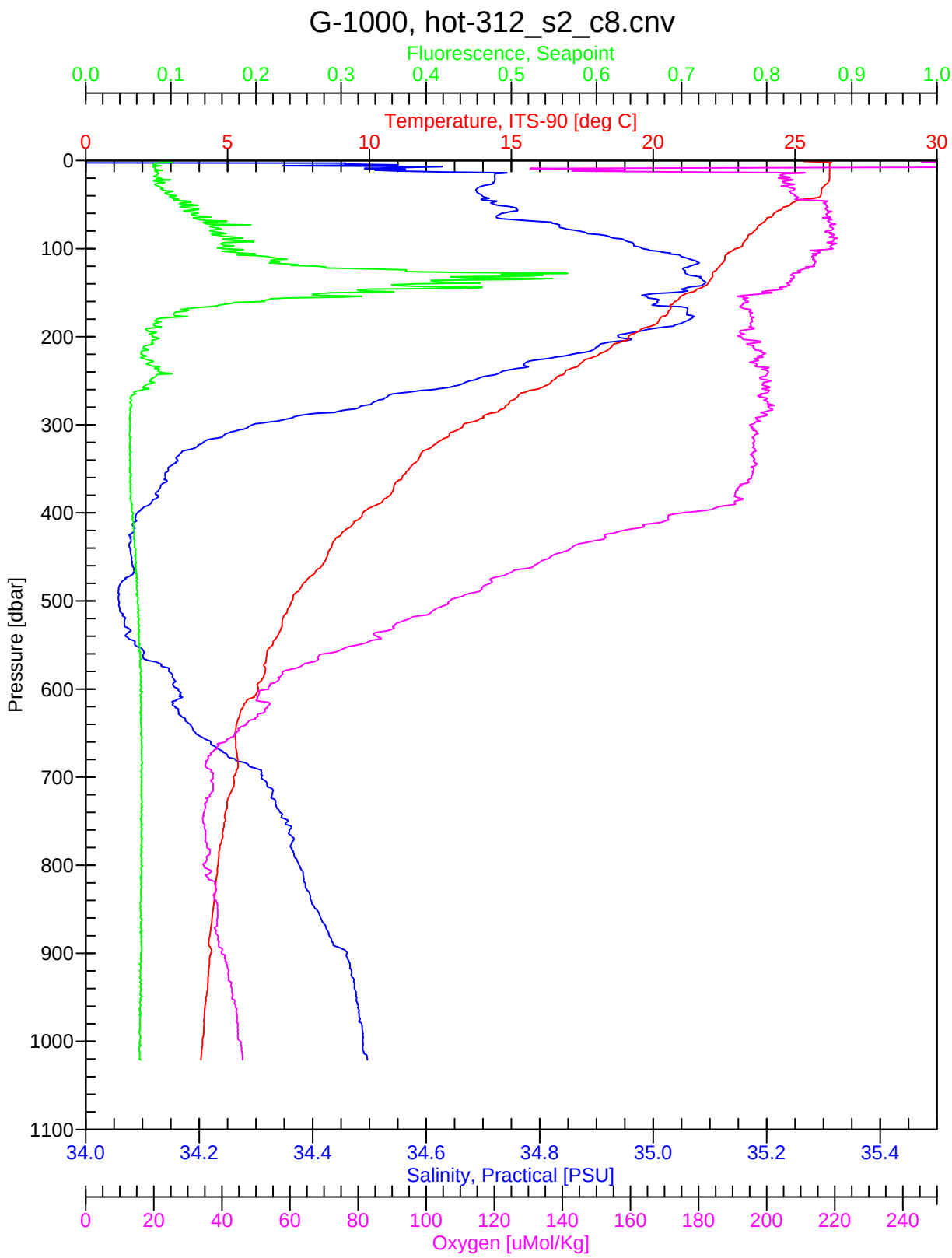

W-1000, hot-312_s2_c6.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

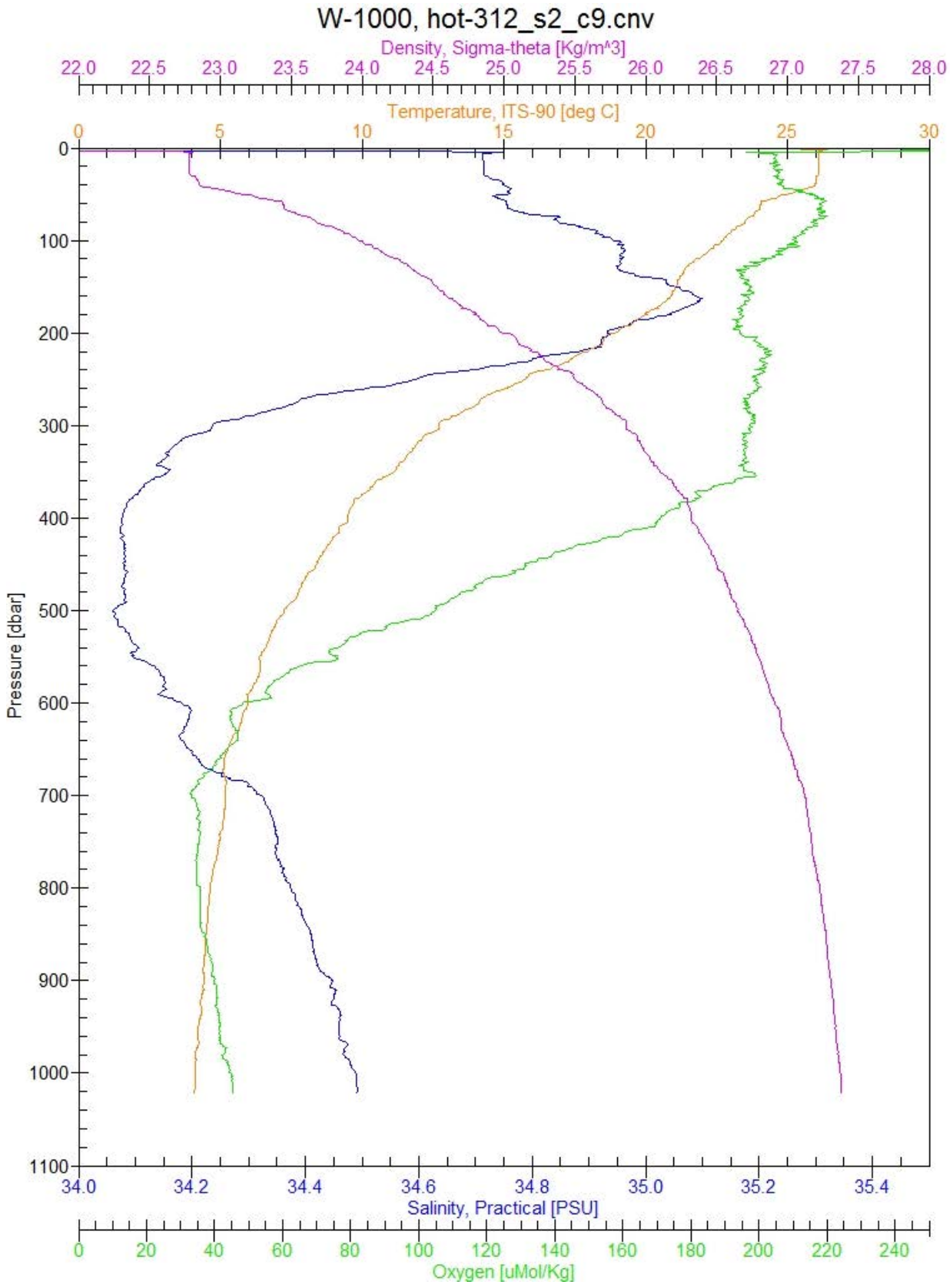

G-1000, hot-312_s2_c6.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

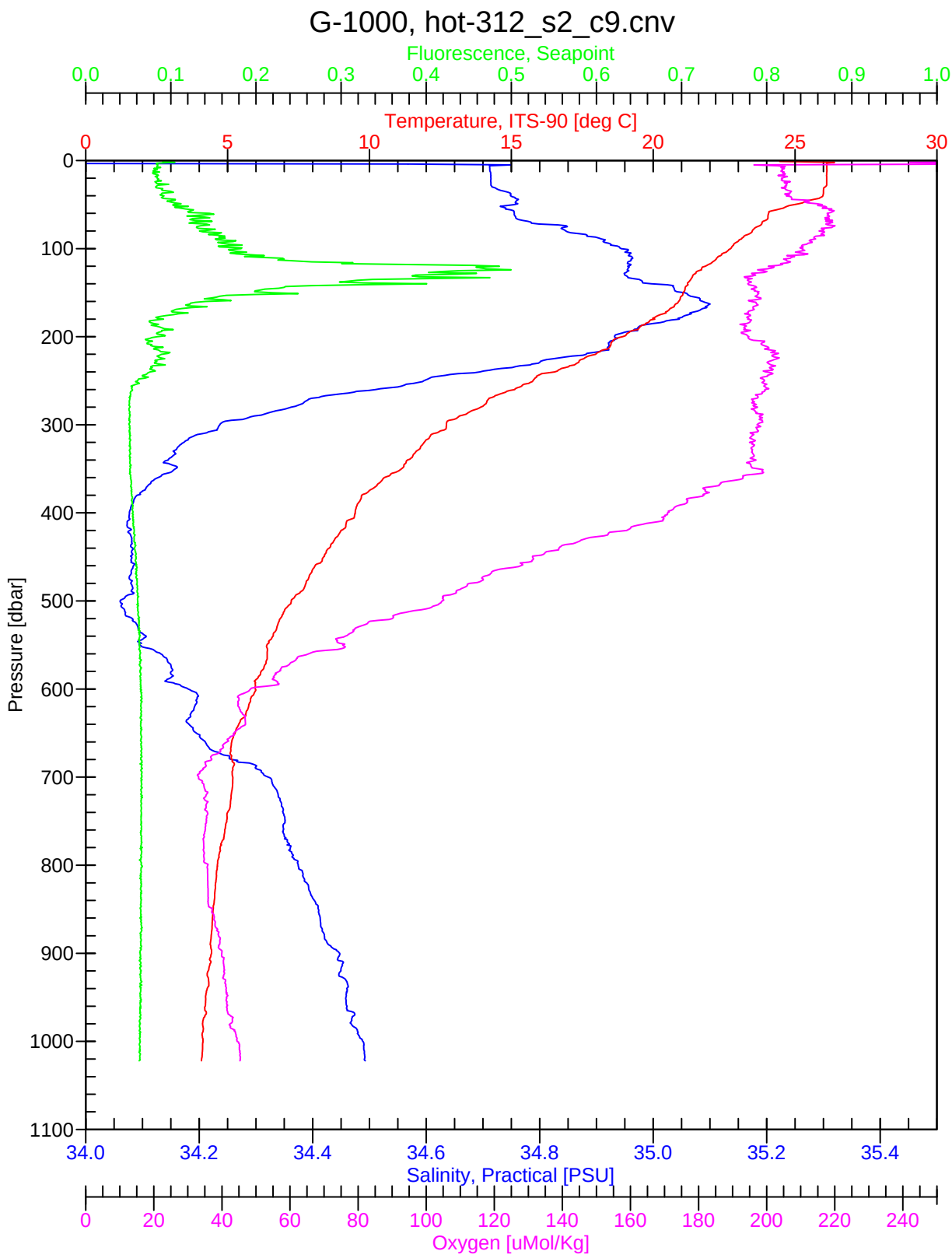

W-1000, hot-312_s2_c7.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

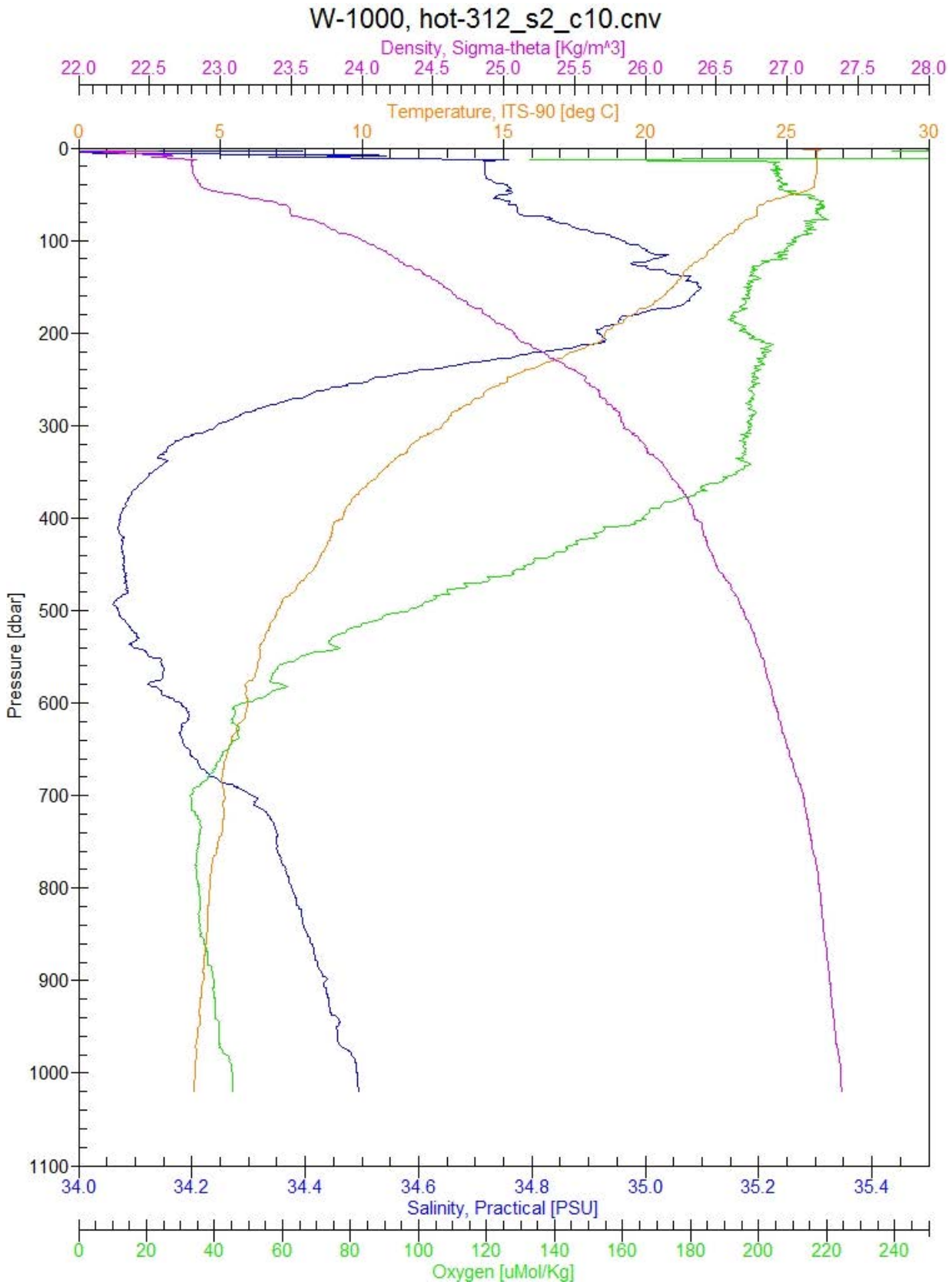

G-1000, hot-312_s2_c7.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

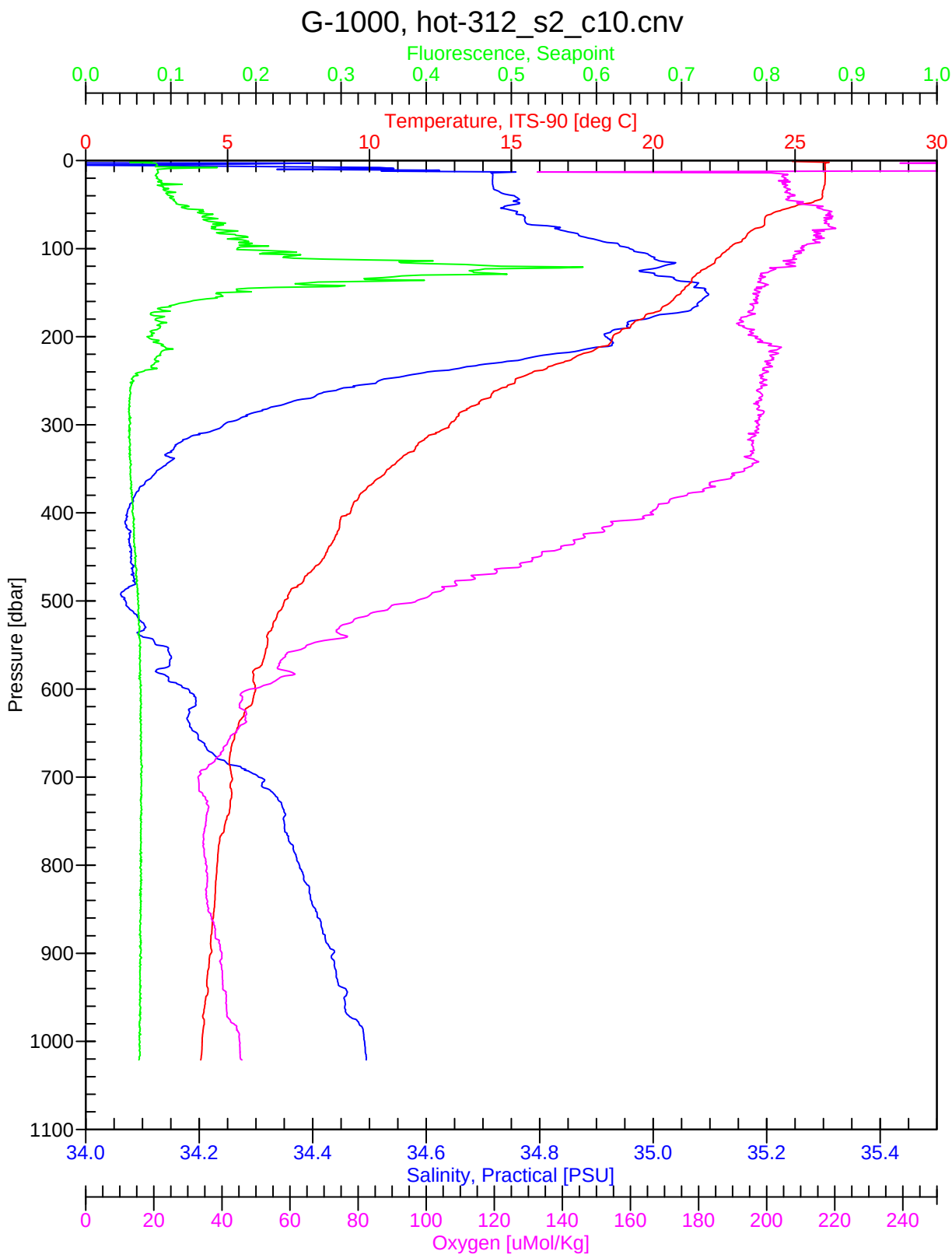

W-1000, hot-312_s2_c8.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

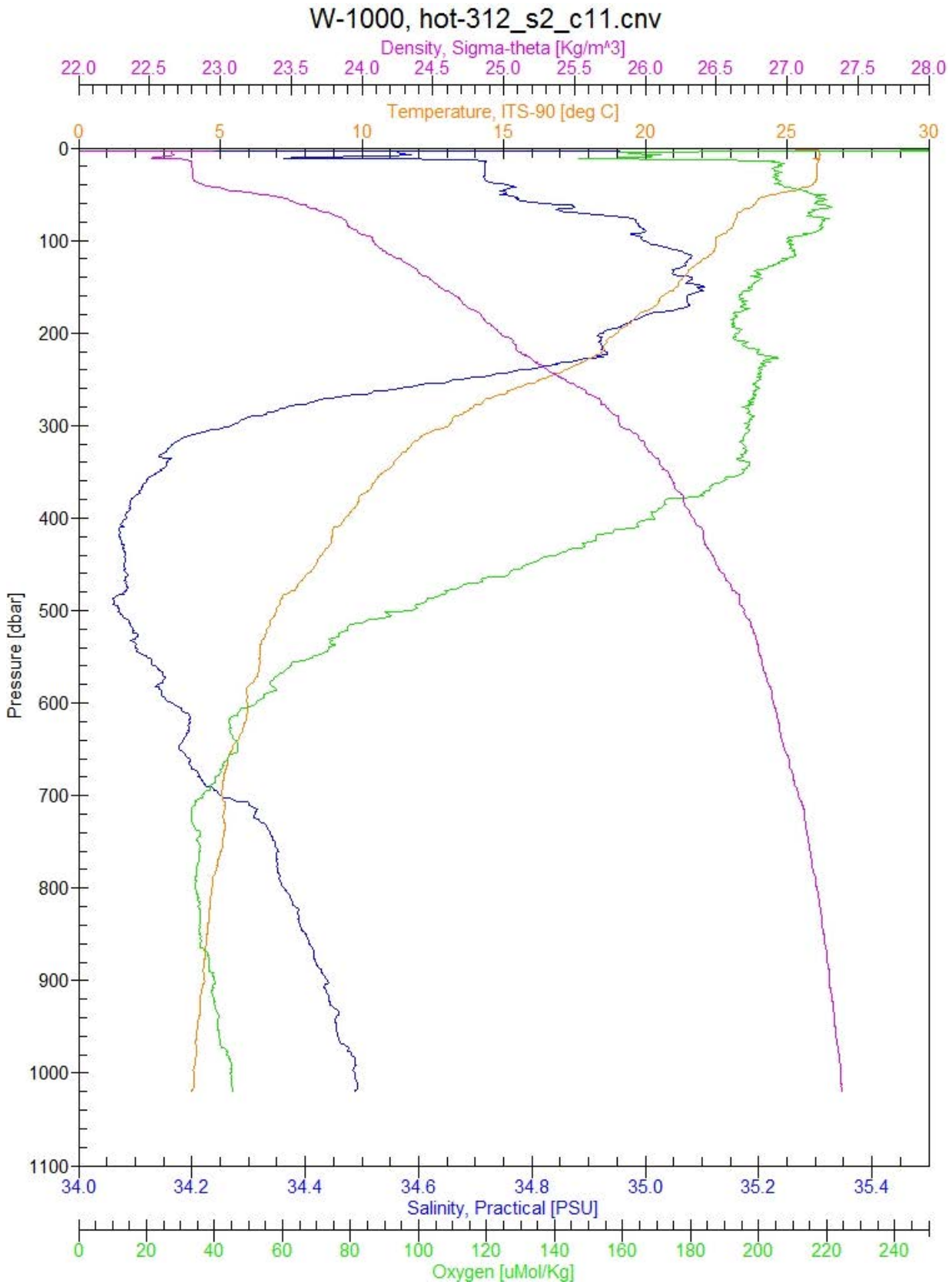

G-1000, hot-312_s2_c8.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

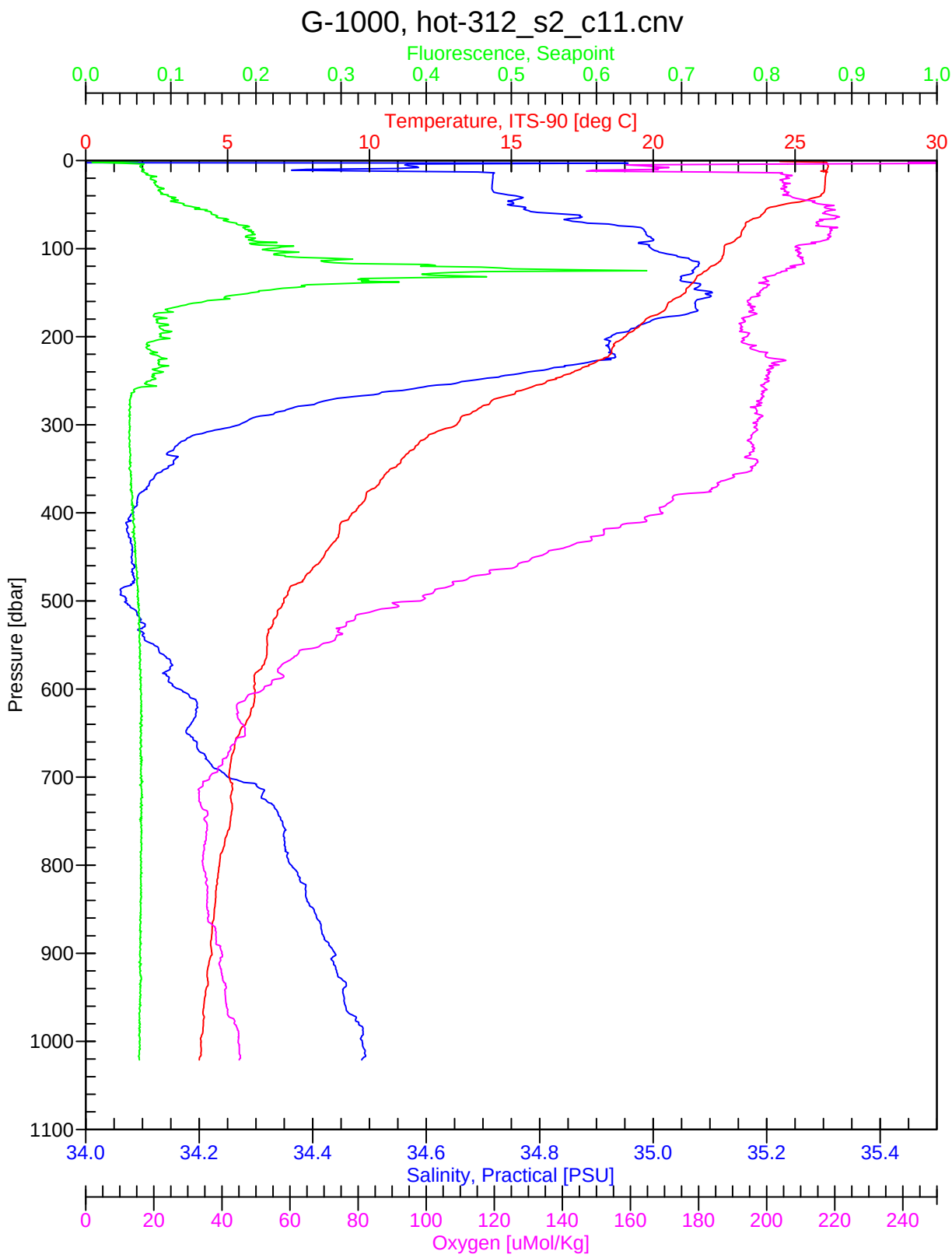

W-1000, hot-312_s2_c9.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

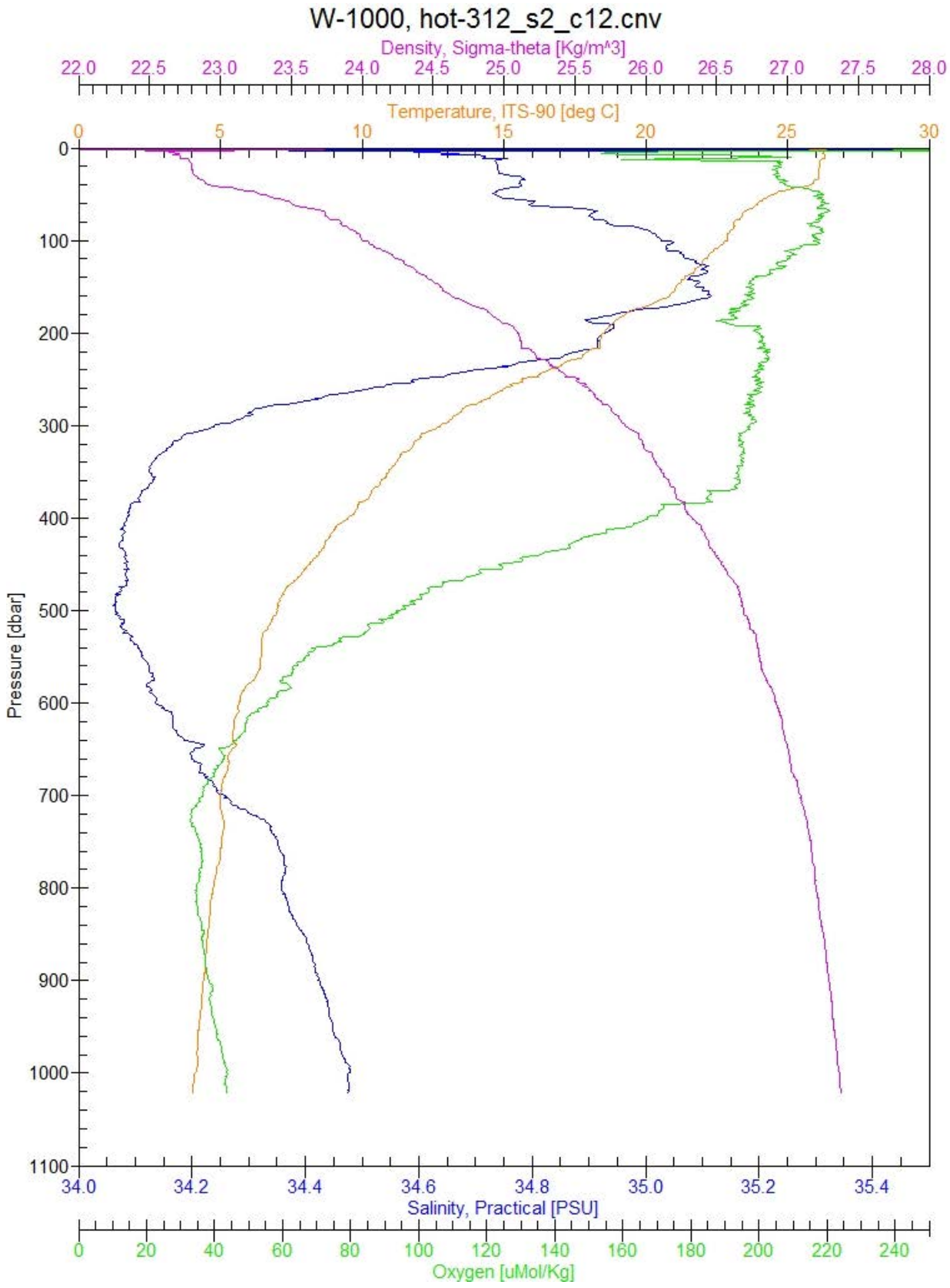

G-1000, hot-312_s2_c9.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

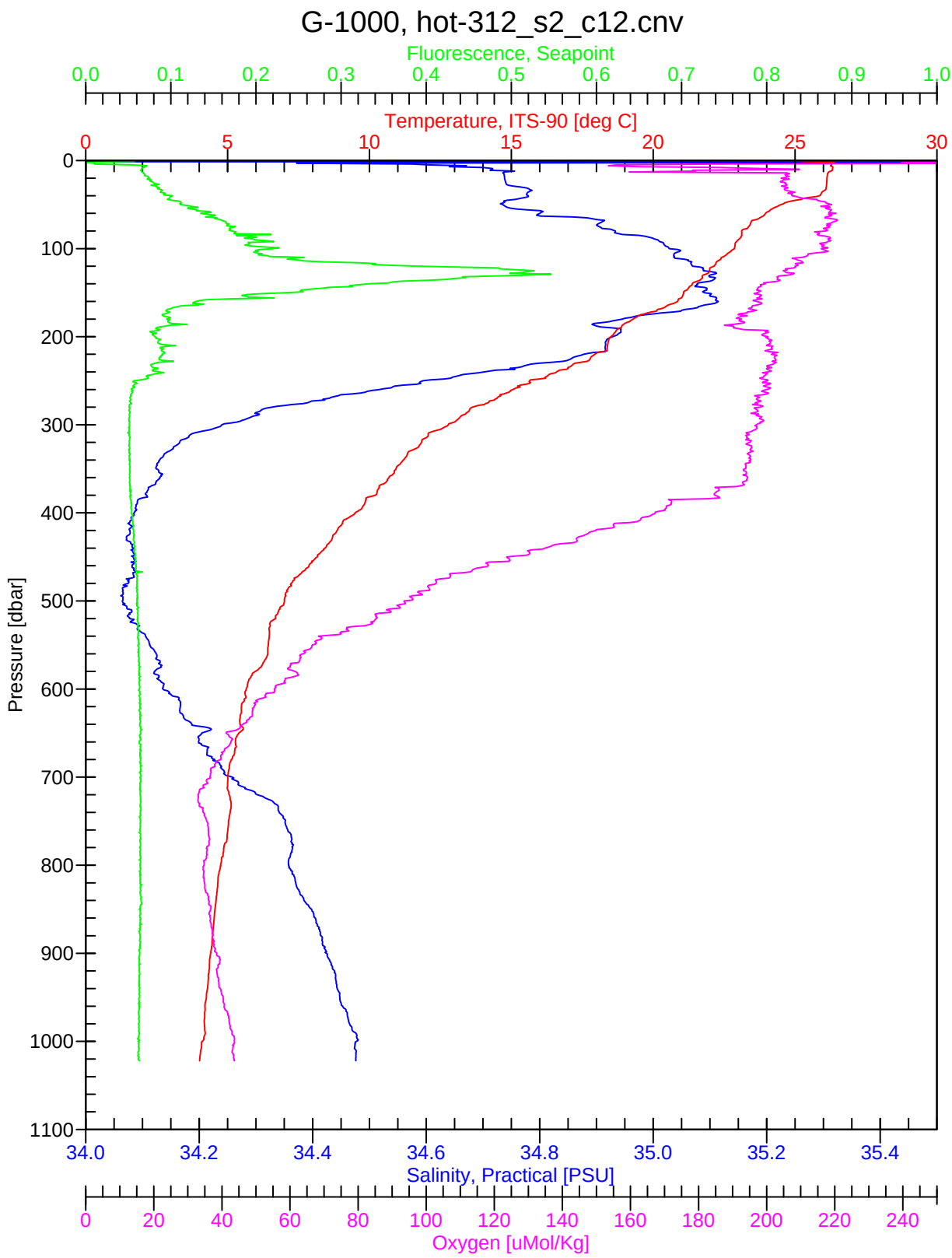

W-1000, hot-312_s2_c10.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

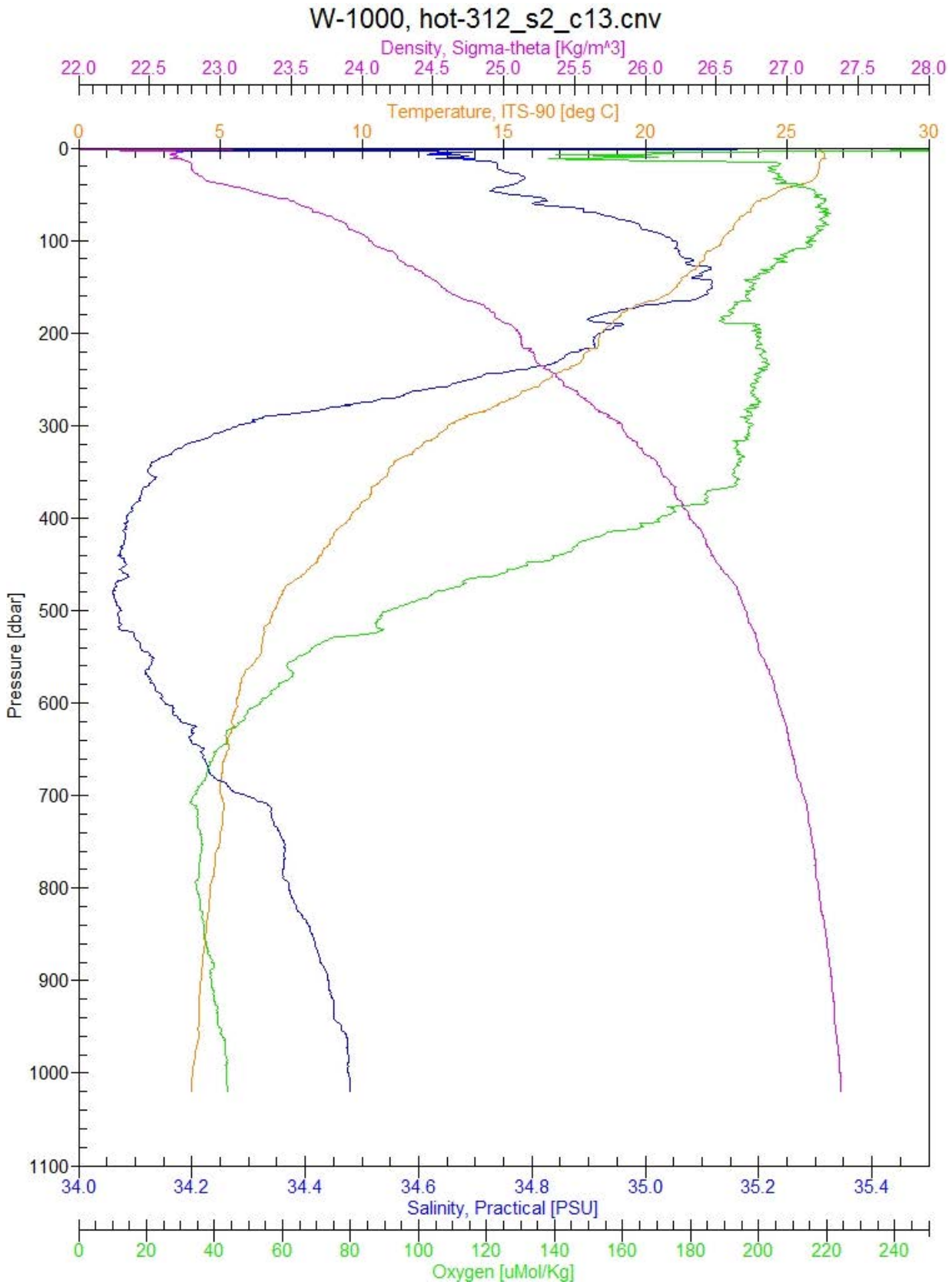

G-1000, hot-312_s2_c10.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

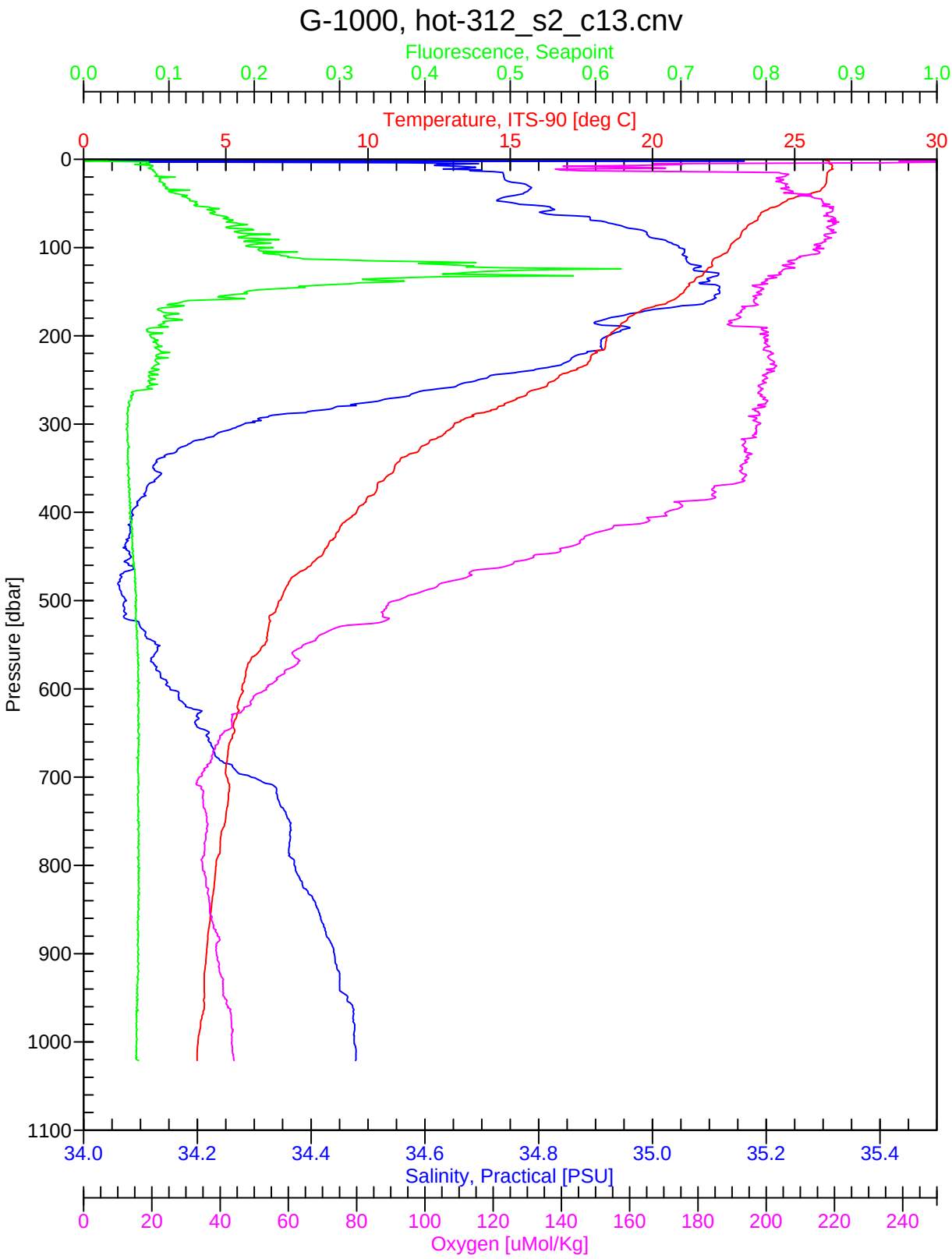

W-1000, hot-312_s2_c11.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

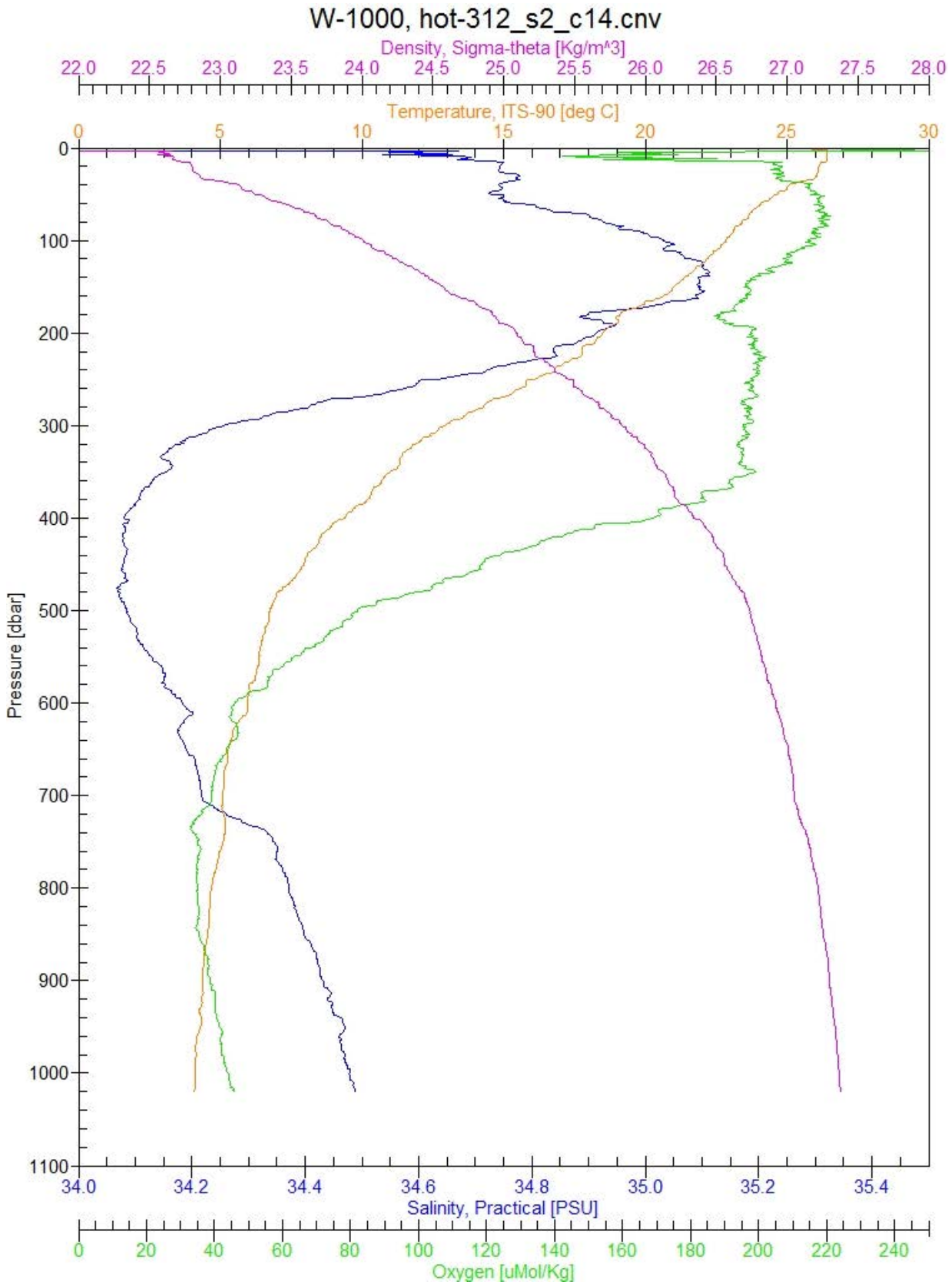

G-1000, hot-312_s2_c11.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

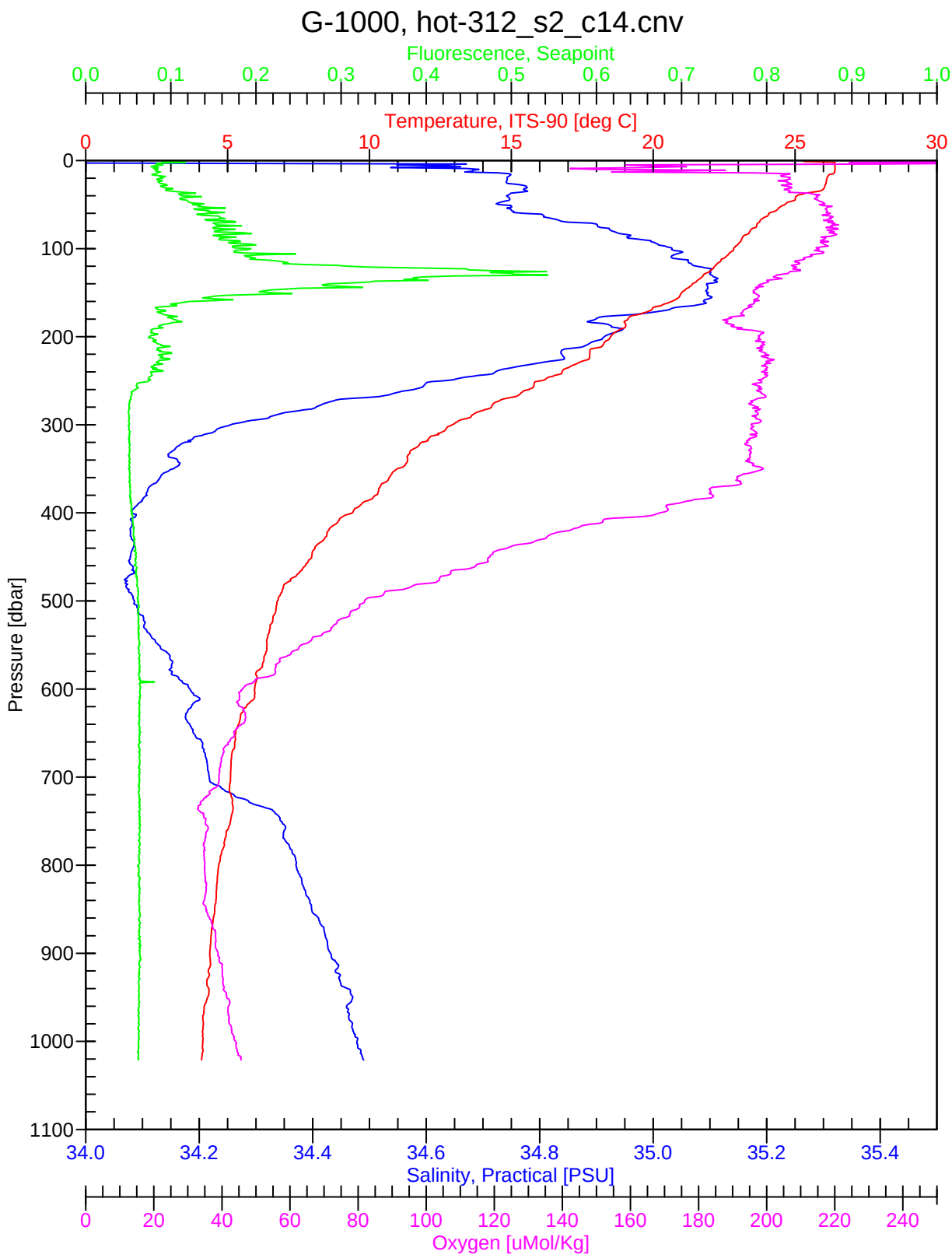

W-1000, hot-312_s2_c12.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

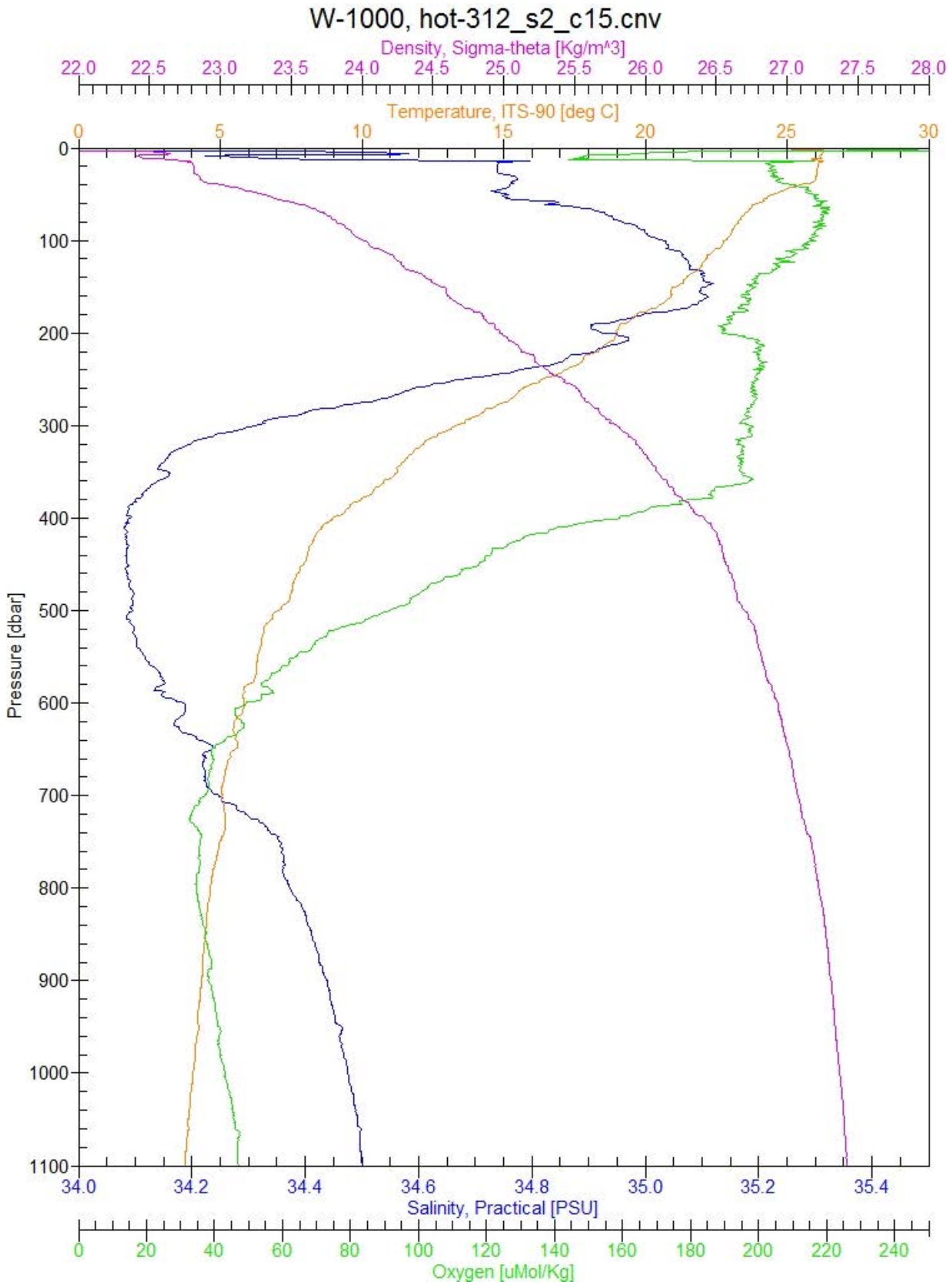

G-1000, hot-312_s2_c12.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

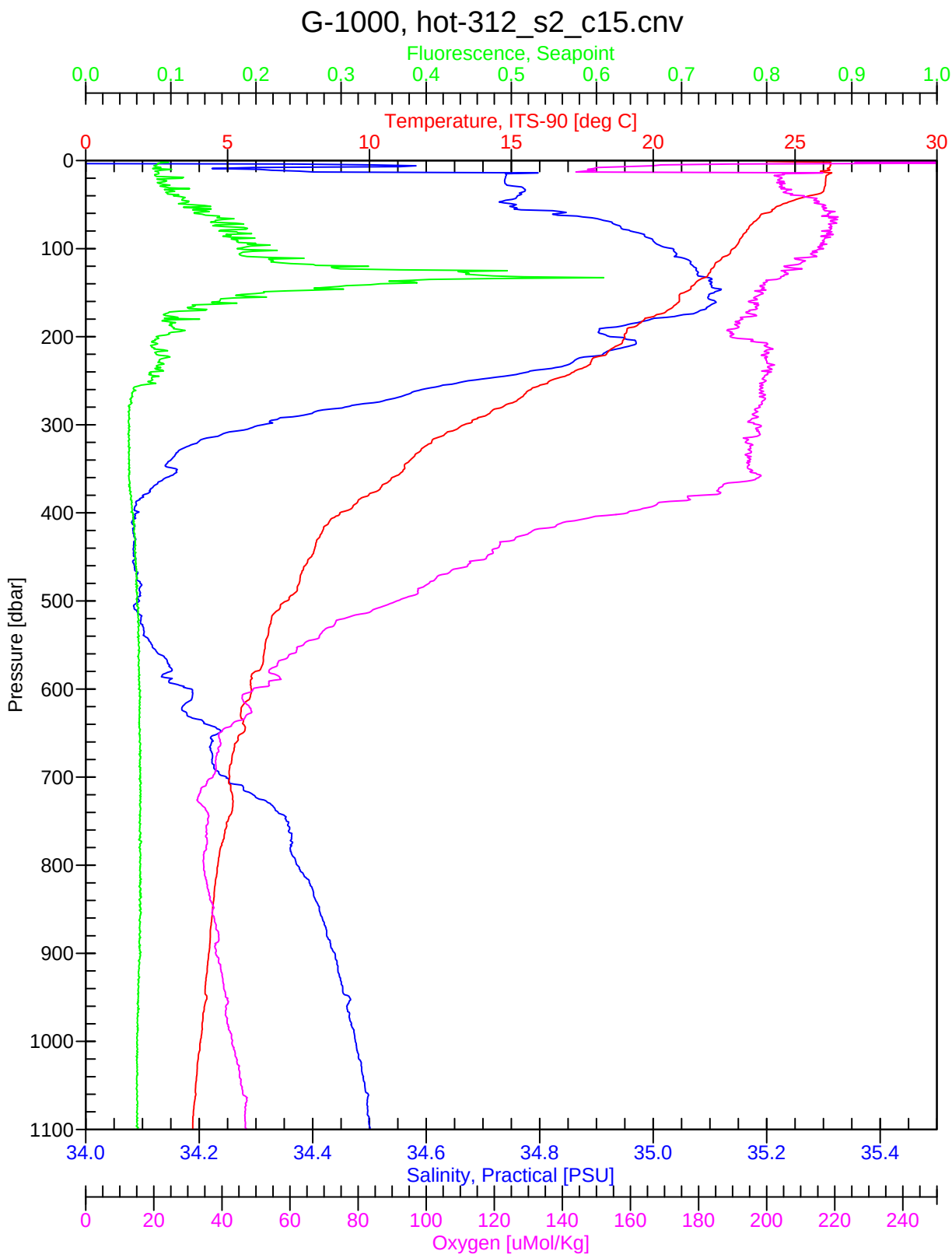

W-1000, hot-312_s2_c13.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

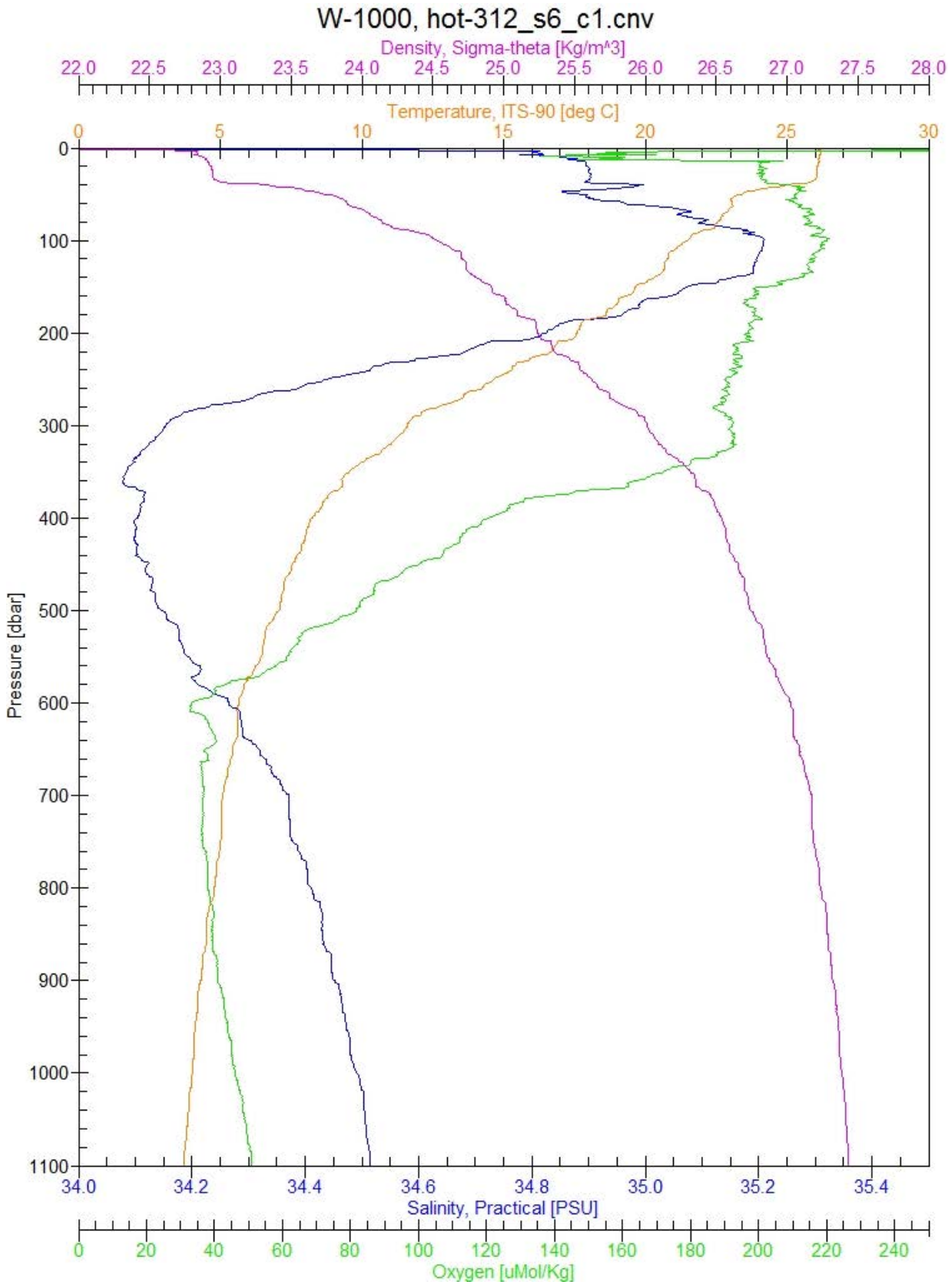

G-1000, hot-312_s2_c13.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

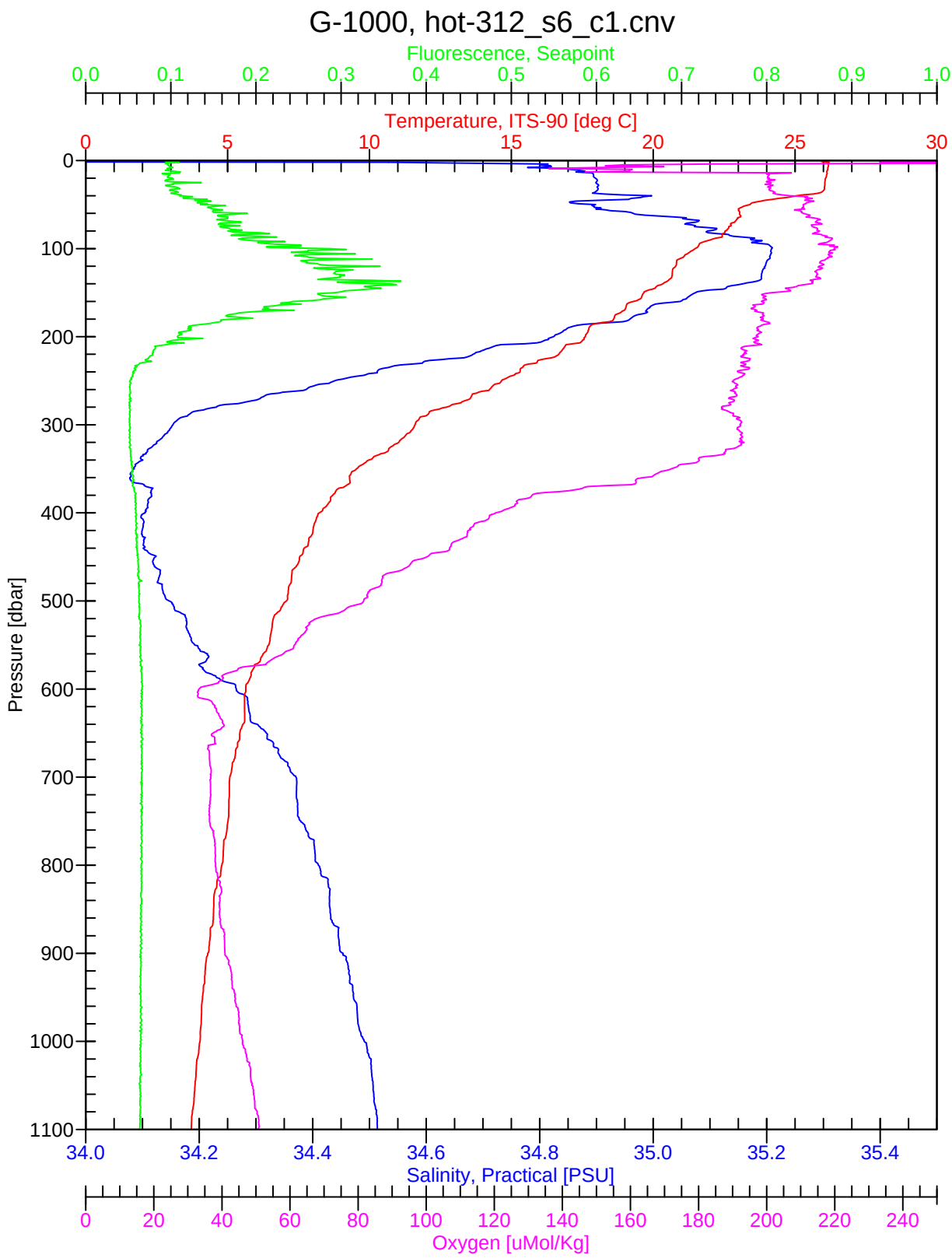

W-1000, hot-312_s2_c14.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

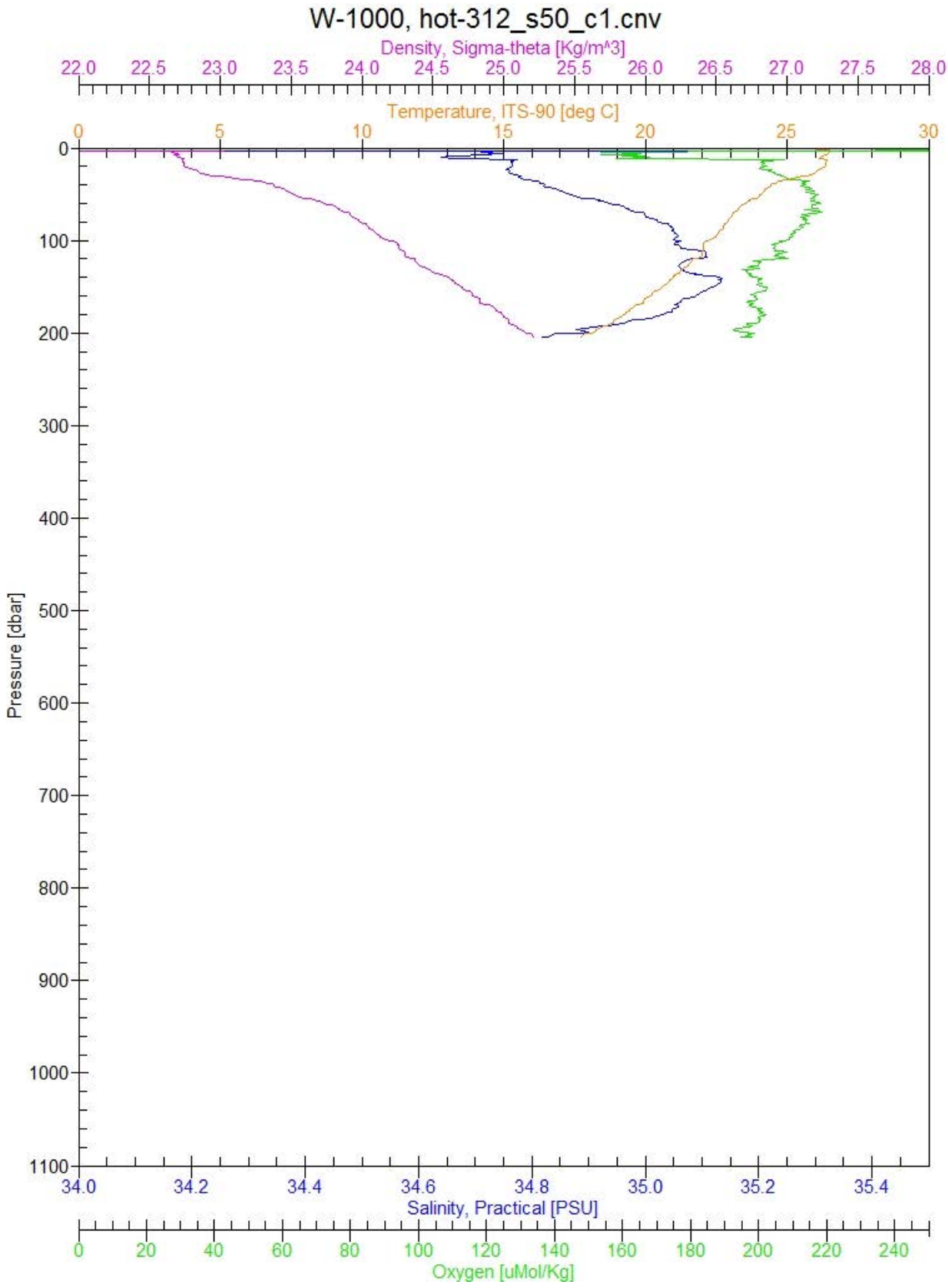

G-1000, hot-312_s2_c14.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

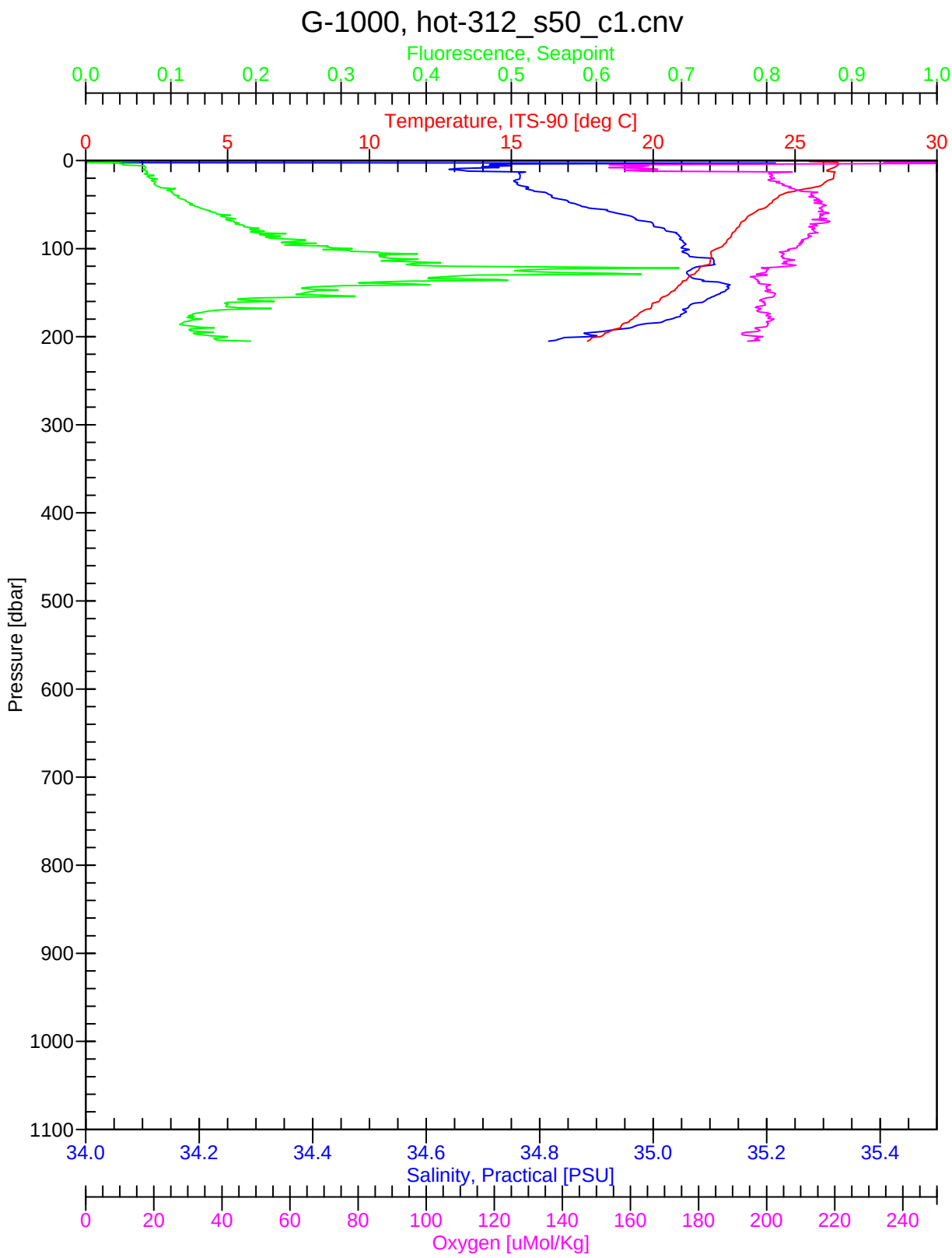

W-1000, hot-312_s2_c15.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-312_s2_c15.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-312_s6_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-312_s6_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-312_s50_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]


G-1000, hot-312_s50_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

HOT- 312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GBS	12L	27.057	TR/FSM

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

Air: 1020 lbs
Water: 600

MLD: 33 db
DCM: 94 db
S_{MIN}: 378 db

Station: 1	Cast: 2
Latitude start: 21° 20.5717 end: 21° 20.	Longitude start: 158° 16.4017 end: 158° 16.
Depth of water: 1564 meters	Date (GMT): 6 / 10 / 19
Pressure on Deck	Time:
Begin: 0.3880 End: −0.10	Start Log: 23:50 In Water: 23:51
Max cast pressure: 1020 dbar	Out of Water: 00:55

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:15:30	00:15:50	1019	1020	
2	00:21:35	00:21:55	751	750	
3	00:28:10	00:28:30	499	500	
4	00:32:36	00:32:56	352	350	
5	00:35:45	00:36:05	251	250	
6	00:37:40	00:38:00	200	200	
7	00:39:10	00:39:30	176	175	
8	00:43:35	00:43:45	150	150	
9	00:44:40	00:44:55	125	125	
10	00:45:55	00:46:10	100	100	
11	00:47 21	00:47:36	74	75	
12	00:48:56	00:49:11	46	45	
13	50:15	50:45	26	25	
14	51:00	51:30	6	5	]
15		40	6	5	]
16					~~CLOSED FOR VACUUM TEST~~
17					
18					missed
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 1	Cast #: 1	Box #: 2
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: FSM, RC, CM	
Niskin #	Depth	Serial #	Comments		
1	1020	25			
2	750	26			
3	500	~~27~~ 40	Bottle broke, replaced w/ SN 40		
4	350	28			
5	250	29			
6	200	30			
7	175	31			
8	150	32			
9	125	33			
10	100	34			
11	75	35			
12	45	36			
13	25	37			
14	5	38			
15	5	39			
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12 L	26.00	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

Station: 2	Cast: 1
Latitude start: 22 48.682 end:	Longitude start: 158 2.3904 end:
Depth of water: 4728 meters	Date (GMT): 6 / 11 / 19
Pressure on Deck	Time:
Begin: 0.40 End: 0.2864	Start Log: 12:12 In Water: 12:18
Max cast pressure: 172 dbar	Out of Water: 14:26

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	14:00:15	14:00:35	170	170	Winch wire problems prevented cast from reaching 200 db.
2	↓	:45	↓	170	
3	↓	:50	↓	170	
4	14:10:00	14:10:15	150	150	
5	14:12:07	14:12:23	125	125	
6	↓	:28	125	125	
7	↓	:32	125	125	
8	14:14:58	14:15:13	100	100	
9	↓	:16	↓	100	
10	↓	:23	↓	100	
11	14:17:00	14:17:15	75	75	
12	↓	20	↓	75	
13	↓	25	↓	75	
14	14:19:25	14:19:40	45	45	
15	↓	:47	↓	45	
16	↓	:53	↓	45	
17	14:21:18	14:21:33	25	25	
18	↓	:38	↓	25	
19	↓	:46	↓	25	
20	14:22:54	14:23:09	15	15	
21	14:24:22	14:24:37	5	5	
22	↓	:42	↓	5	
23	↓	:47	↓	5	
24	↓	:52	↓	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 2,3
Salinity Sample Log Sheet			Cruise #: HOT-312		Sampler: TR, BB
Niskin #	Depth	Serial #	Comments		
1	170	41			
2	—				
3	170	42			
4	150	43			
5	125	44			
6	125	45			
7	125	46			
8	100	47			
9	100	48			
10	100	49			
11	75	50			
12	75	51			
13	75	52			
14	45	53			
15	45	54			
16	45	55			
17	25	56			
18	25	57			
19	25	58			
20	—				
21	5	59			
22	5	60			
23	5	61			
24	—				

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G5000GBS	12L	26.15	TR

- ☒ ~~Pinger~~
- ☐ Altimeter
- ☒ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☒ ~~PO~~ Fluorometer
- ☐

MLD: 20 db
DCM: 135 db
S_{MIN}: 420 db
O_{MIN} = 760

Station: 2	Cast: 2
Latitude start: 22 44.9434 end:	Longitude start: 157 59.8947 end:
Depth of water: 4739 meters	Date (GMT): 6/11/19
Pressure on Deck	Time:
Begin: 0.3244 End: -0.2259	Start Log: 16:57 In Water: 17:13
Max cast pressure: 4810 dbar	Out of Water: 20:56

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	18:52:30	18:52:30	4809	4800	5m off Bottom, 22° 44.9906' N, 158° 00.0018' W
2	18:57:55	18:58:10	4600	4600	
3	19:01:25	19:01:40	4500	4500	
4	19:04:40	19:04:55	4401	4400	
5	19:09:22	19:09:37	4201	4200	
6	19:14:10	19:14:25	4000	4000	
7	19:18:35	19:18:50	3799	3800	
8	19:22:58	19:23:13	3600	3600	
9	19:27:35	19:27:50	3400	3400	
10	19:31:58	19:32:13	3200	3200	
11	19:36:22	19:36:37	3001	3000	
12	19:40:55	19:41:15	2800	2800	
13	19:45:34	19:45:49	2601	2600	
14	19:50:00	19:50:15	2400	2400	
15	19:54:22	19:54:37	2200	2200	
16	19:59:37	19:59:52	2000	2000	
17	20:05:51	20:06:06	1800	1800	
18	20:10:58	20:11:15	1598	1600	
19	20:16:10	20:16:25	1400	1400	
20	20:21:33	20:21:48	1200	1200	
21	20:26:50	20:27:05	1000	1000	
22	20:32:56	20:33:11	750	750	
23	20:39:05	20:39:20	499	500	
24	20:52:00	20:52:15	4	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 4
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: TR, BB, DF	
Niskin #	Depth	Serial #	Comments		
1	4800	73			
2	4600	74			
3	4500	75			
4	4400	76			
5	4200	77			
6	4000	78			
7	3800	79			
8	3600	80			
9	3400	81			
10	3200	82			
11	3000	83			
12	2800	84			
13	2600	85			
14	2400	86			
15	2200	87			
16	2000	88			
17	1800	89			
18	1600	90			
19	1400	91			
20	1200	92			
21	1000	93			
22	750	94			
23	500	95			
24	5	96			

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 5
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: TR, BB, DF	
Niskin #	Depth	Serial #	Comments		
1	4800	97			
2	4600	98			
3	4500	99			
4	4400	100			
5	4200	101			
6	4000	102			
7	3800	103			
8	3600	104			
9	3400	105			
10	3200	106			
11	3000	107			
12	2800	108			
13	2600	109			
14	2400	110			
15	2200	111			
16	2000	112			
17	1800	113			
18	1600	114			
19	1400	115			
20	1200	116			
21	1000	117			
22	750	118			
23	500	119			
24	5	120			

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	26.47	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD: 20
DCM: 117
S_{MIN}: 450
O_{MIN}: 705

Station: 2	Cast: 3
Latitude start: 22° 45.6176'N end: 22 45.0031'N	Longitude start: 158° 00.0311'W end: 158° 00.0348'W
Depth of water: 4737 meters	Date (GMT): 6 / 11 / 19
Pressure on Deck	Time:
Begin: 0.6347 End: 0.0161	Start Log: 22:12 In Water: 22:18
Max cast pressure: 1022 dbar	Out of Water: 23:30

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	22:45:30	22:46:15	1021	1020	σ_θ=26.365
2	22:50:22	22:50:37	852	851	
3	22:53:25	22:53:40	758	758	
4	55:45	56:15	706	705	O_{min}
5	57:35	57:55	679	678	
6	23:00:00	00:20	619	620	
7	2:10	2:40	565	569	
8	4:20	4:50	516	516	
9	06:15	6:30	485	485	
10	7:55	8:15	450	450	S_{MIN}
11	9:20	9:40	423	423	
12	11:10	11:30	375	375	
13	13:00	13:20	327	327	O FEATURE (HIGHER)
14	14:45	15:05	285	285	F_{MIN}
15	16:15	16:30	250	250	
16	18:10	18:25	194	194	O FEATURE (LOWER)
17	20:20	20:35	146	146	S_{MAX}
18	21:12	21:30	137	137	
19	22:20	22:35	117	117	F_{MAX}, DCM
20	23:50	24:10	80	80	
21	25:05	25:20	67	67	O_{MAX}
22	26:15	26:30	54	54	
23	27:47	28:02	25	25	
24	29:10	29:30	5	5	MIXED LAYER

Hawaii Ocean Time-Series

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Station:	2	Cast:	3
Latitude:	22° 45.0176'N	Longitude:	158° 00.0311'W
Date:	6/11/19	Time (GMT):	22:18
Operator:	TR		

$\delta\theta$	$\sigma\theta$	Depth
700	20.76	
650	21.28	
600	21.80	
550	22.33	
500	22.85	25
450	23.37	54
400	23.90	80
350	24.42	137
300	24.95	194
250	25.47	250
200	26.00	327
180	26.21	375
160	26.42	423
140	26.63	485
130	26.73	516
120	26.84	569
110	26.94	620
100	27.05	678
90	27.16	758
80	27.26	851
70	27.37	

S_{max}	146
S_{min}	450
S_{max}	
S_{min}	

O_{max}	67
O_{min}	192 (Feature)
O_{max}	327 (Feature)
O_{min}	705 (true min)
O_{max}	

F_{max}	117
F_{min}	285
F_{max}	
F_{min}	
F_{max}	

Bottle	Depth
1	1020
2	851
3	758
4	705
5	678
6	620
7	569
8	516
9	485
10	450
11	423
12	375
13	327
14	285
15	250
16	194
17	146
18	137
19	117
20	80
21	67
22	54
23	25
24	5

Hawaii Ocean Time Series			Station #: 2	Cast #: 3	Box #: 6
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: DF, CM, BB, TR	
Niskin #	Depth	Serial #	Comments		
1	1020	121			
2	851	122			
3	758	123			
4	705	124			
5	678	125			
6	620	126			
7	569	127			
8	516	128			
9	485	129			
10	450	130			
11	423	131			
12	375	132			
13	327	133			
14	285	134			
15	250	135			
16	194	136			
17	146	137			
18	137	138			
19	117	139			
20	80	140			
21	67	141			
22	54	142			
23	25	143			
24	5	144			

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12L	26.50	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

Station: 2	Cast: 4
Latitude start: 2244.881 end: 2244.882	Longitude start: 1580.038 end: 1580.049
Depth of water: 4741 meters	Date (GMT): 6/12/19
Pressure on Deck	Time:
Begin: 0.55 End: 0.45	Start Log: 00:43 In Water: 00:49
Max cast pressure: 1022 dbar	Out of Water: 02:14

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	1:20:10	20:40	1022	1020	
2	33:50	34:20	449	450	5-min
3	37:55	38:25	350	350	
4		35	350	350	
5		45	350	350	
6		55	350	350	
7	42:40	43:10	250	250	
8		20	250	250	
9		30	250	250	
10	45:50	46:20	200	200	
11	48:15	48:45	174	175	
12	50:50	51:20	150	150	
13		30	150	150	
14		40	150	150	
15	53:30	54:00	124	125	
16	55:50	56:20	101	100	
17	58:15	58:45	75	75	
18		55	75	75	
19	1:05	2:15	45	45	
20		25	45	45	
21	3:55	4:25	25	25	
22		35	25	25	
23	6:20	6:40	5	5	
24		50	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 4	Box #: 7
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: CM, RC, FS-M	
Niskin #	Depth	Serial #	Comments		
1	1020	145			
2	450	146	5-min		
3	350	147	not enough water for salts.		
4	350	148	" " " "		
5	—	—			
6	—	—			
7	250	149	No water left for salts		
8	—	—			
9	—	—			
10	200	150			
11	175	151			
12	150	152			
13	—	—			
14	—	—			
15	125	153			
16	100	154			
17	75	155			
18	—	—			
19	45	156			
20	—	—			
21	25	157			
22	—	—			
23	5	158			
24	—	—			

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Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12L	26.38	FS-M

- [x] Pinger
- [x] Altimeter
- [x] Transmissometer
- [ ] BEACH Sea Tech Fluorometer
- [ ] OTG Seapoint Fluorometer
- [ ] ISUS
- [x] PO Fluorometer
- [ ]

Station: 2	Cast: 5
Latitude start: 22 43.365 end: 22 43.3787	Longitude start: 158 3.173 end: 158 3.194
Depth of water: 4752 meters	Date (GMT): 6 / 12 / 19
Pressure on Deck	Time:
Begin: 0.45 End: 0.10	Start Log: 04:02 In Water: 04:05
Max cast pressure: 1019 dbar	Out of Water: 05:13

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	4:31:15	31:45	1019	1020	
2	45:35	46:05	418	420	5-min
3	48:45	48:55	350	350	
4		05	350	350	
5	52:05	52:35	250	250	
6	54:30	55:00	200	200	
7	56:15	56:45	174	175	
8	58:00	58:30	149	150	
9	59:45	00:15	123	125	
10	01:35	02:05	101	100	
11		15	101	100	
12	3:35	4:05	77	75	
13	5:45	6:15	46	45	
14		25	46	45	
15		35	46	45	
16	7:55	8:25	25	25	
17		35	25	25	
18		45	25	25	
19	9:20	9:50	15	15	
20	10:50	11:20	5	5	
21		30	5	5	
22		40	5	5	
23		50	5	5	
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 5	Box #: 7, 8
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: CM, RC, FS-M	
Niskin #	Depth	Serial #	Comments		
1	1020	159			
2	450	160			
3	350	161			
4	350	162			
5	250	163			
6	200	164			
7	175	165			
8	150	166			
9	125	167			
10	100	168			
11	—	—			
12	75	169			
13	45	170			
14	—	—			
15	—	—			
16	25	171			
17	—	—			
18	—	—			
19	—	—			
20	5	172			
21	—	—			
22	—	—			
23					
24					

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Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12L	26.30	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

Station: 2	Cast: 6
Latitude start: 22 42.0502 end: 22 42.049	Longitude start: 158 3.1796 end: 158 3.1879
Depth of water: 4764 meters	Date (GMT): 6 / 12 / 19
Pressure on Deck	Time:
Begin: 0.55 End: 0.20	Start Log: 6:19 In Water: 6:24
Max cast pressure: 1021 dbar	Out of Water: 7:33

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	6:51:05	51:35	1021	1020	
2	59:00	59:30	701	700	02-min
3	5:35	6:05	449	450	5-min
4	11:35	12:05	200	200	
5	13:15	13:55	176	175	
6	14:30	15:00	165	165	
7	16:00	16:30	150	150	
8	17:15	17:45	129	130	
9	18:05	18:35	125	125	
10	19:10	19:40	115	115	
11	20:10	20:40	110	110	
12	21:15	21:45	100	100	
13	22:25	22:55	95	90	
14	23:15	23:45	85	85	
15	24:10	24:40	75	75	
16	25:25	25:55	60	60	
17	26:40	28:10	45	45	
18	27:40	28:10	35	35	
19	28:50	29:20	25	25	]
20		30	25	25	]
21	30:00	30:30	15	15	
22	31:10	31:40	5	5	]
23		50	5	5	]
24		00	5	5	]

Hawaii Ocean Time Series			Station #: 2	Cast #: 6	Box #: 8, 9
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: CM, RC, FSM	
Niskin #	Depth	Serial #	Comments		
1	1020	173			
2	700	174			
3	450	175			
4	200	176			
5	175	177			
6	165	178			
7	150	179			
8	130	180			
9	125	181			
10	115	182			
11	110	183			
12	100	184			
13	90	185			
14	85	186			
15	75	187			
16	60	188			
17	45	189			
18	35	190			
19	25	191			
20	25	192			
21	15	193			
22	5	194			
23	5	195			
24	←				

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Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12 L	26.15	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

Station: 2	Cast: 7
Latitude start: 22 42.378 end: 22 42.3859	Longitude start: 158 2.292 end: 158 2.3055
Depth of water: 4748 meters	Date (GMT): 6/12/19
Pressure on Deck	Time:
Begin: 0.50 End: 0.25	Start Log: 9:18 In Water: 9:27
Max cast pressure: 1021 dbar	Out of Water: 10:37

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		54:30	1019	1020	
2	10:6:50	7:20	501	500	5-Min
3	14:55	15:25	176	175	
4	17:00	17:30	150	150	
5	19:10	19:40	125	125	
6		50	125	125	
7	21:35	22:05	100	100	
8		15	100	100	
9		25	100	100	
10		75	100	100	
11		95	100	100	
12		55	100	100	
13		05	100	100	
14	24:45	25:15	76	75	
15	27:10	27:40	45	45	
16	29:15	29:45	26	25	
17		55	26	25	
18	31:15	31:45	5	5	
19		55	5	5	
20		05	5	5	
21		15	5	5	
22		25	5	5	
23		35	5	5	
24		45	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 7	Box #: 9
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: CM, RC, FS-M	
Niskin #	Depth	Serial #	Comments		
1	1020	196			
2	450	197			
3					
4	150	198			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19	5	199			
20					
21					
22					
23					
24					

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Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12 L	26.19	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD: 43
DCM: 133
S_{MIN}: 490

Station: 2	Cast: 8
Latitude start: 22 46.2067 end: 22 46.2400	Longitude start: 158 4.0302 end: 158 04.0558
Depth of water: 4747 meters	Date (GMT): 6 / 12 / 19
Pressure on Deck	Time:
Begin: 0.40 End: -0.1343	Start Log: 12:11 In Water: 12:17
Max cast pressure: 1021 dbar	Out of Water: 15:16

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	12:44:00	12:44:15	1021	1010	
2	12:56:10	12:56:25	501	500	5-min
3	13:04:30	13:04:45	125	125	
4	↓	:50	↓	125	
5	↓	:55	↓	125	
6	13:06:07	13:06:22	100	100	
7	↓	:27	↓	100	
8	↓	:33	↓	100	
9	↓	:38	↓	100	
10	13:07:45	13:08:00	75	75	
11	↓	:05	↓	75	
12	↓	:10	↓	75	
13	13:09:39	13:09:54	45	45	
14	↓	:59	↓	45	
15	↓	:04	↓	45	
16	13:11:06	13:11:21	25	25	
17	↓	:26	↓	25	
18	↓	:31	↓	25	
19	↓	:36	↓	25	
20	↓	:41	↓	25	
21	13:13:00	13:13:15	5	5	
22	↓	:20	↓	5	
23	↓	:25	↓	5	
24	↓	:30	↓	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 8	Box #: 9, 10
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: DF, TR, BB	
Niskin #	Depth	Serial #	Comments		
1	1020	200			
2	500	201			
3	125	202			
4	125	203			
5	125	204			
6	100	205			
7	100	206			
8	100	207			
9	—	—			
10	75	208			
11	75	209			
12	75	210			
13	45	211			
14	45	212			
15	45	213			
16	25	214			
17	25	215			
18	25	216			
19	—	—			
20	—	—			
21	5	217			
22	5	218			
23	5	219			
24	—	—			

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	26.01	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD: 30 db
DCM: 125
S_{MIN}: 500

Station: 2	Cast: 9
Latitude start: 22° 48.0801' N end: 22° 48.0208' N	Longitude start: 158° 01.4438' W end: 158° 01.3678' W
Depth of water: 4732 meters	Date (GMT): 6 / 12 / 19
Pressure on Deck	Time:
Begin: 0.3663 End: 0.3077	Start Log: 14:51 In Water: 14:55
Max cast pressure: 1022 dbar	Out of Water: 16:12

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	15:23:08	15:23:23	1020	1020	
2	15:37:33	15:37:48	500	500	S_{MIN}
3	15:44:10	15:44:25	275	275	
4	15:46:15	15:46:30	250	250	
5	15:49:06	15:49:21	225	225	2nd F_{MAX} at this depth
6	15:51:43	15:51:58	200	200	
7	15:53:52	15:54:07	175	175	
8	15:56:15	15:56:30	150	150	
9	15:58:30	15:58:45	124	125	
10	16:00:58	16:01:13	100	100	
11	16:03:30	16:03:45	75	75	
12	16:05:20	16:05:35	45	45	
13	16:06:58	16:07:13	25	25	
14	↓	:18	↓	25	
15	↓	:23	↓	25	
16	16:08:30	16:08:45	15	15	
17	16:09:55	16:10:10	5	5	
18	↓	:15	↓	5	
19	↓	:20	↓	5	
20	↓	:25	↓	5	
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 9	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: DF, TR, BB	
Niskin #	Depth	Serial #	Comments		
1	1020	220			
2	500	221	5MIN		
3					
4					
5					
6					
7	175	222			
8					
9					
10					
11					
12					
13					
14					
15					
16					
17	5	223			
18					
19					
20					
21					
22					
23					
24					

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	26.18	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ JSUS
- ☑ PO Fluorometer
- ☐

MLD: 28
DCM: 125
S_{MIN}: 500

Station: 2	Cast: 10
Latitude start: 22° 47.9874' N end: 22° 47.9593' N	Longitude start: 158° 01.3156' W end: 158° 01.2744' W
Depth of water: 4725 meters	Date (GMT): 6 / 12 / 19
Pressure on Deck	Time:
Begin: 0.2933 End: -0.1845	Start Log: 17:58 In Water: 18:00
Max cast pressure: 1021 dbar	Out of Water: 18:58

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	18:28:20	18:28:35	1021	1020	
2	18:38:55	18:39:16	499	500	S_{MIN}
3	18:45:50	18:46:05	176	175	
4	18:47:20	18:47:35	150	150	
5	18:48:35	18:48:50	125	125	DCM
6	↓	↓	↓	↓	↓
7	↓	↓	↓	↓	↓
8	↓	↓	↓	↓	↓
9	↓	↓	↓	↓	↓
10	↓	↓	↓	↓	↓
11	↓	↓	↓	↓	↓
12	↓	↓	↓	↓	↓
13	↓	↓	↓	↓	↓
14	↓	↓	↓	↓	↓
15	↓	↓	↓	↓	↓
16	↓	↓	↓	↓	DCM
17	↓	18:49:44	↓	125	
18	18:50:46	18:51:01	99	100	
19	18:52:03	18:52:18	75	75	
20	18:53:17	18:53:32	47	45	
21	18:54:22	18:54:37	26	25	
22	↓	:42	26	25	
23	18:55:35	18:55:50	5	5	
24		:55	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 10	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: DF, BB, TR	
Niskin #	Depth	Serial #	Comments		
1	1020	224			
2	500	225	SMIN		
3	175	226			
4	150	227			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17	125	228			
18	100	229			
19	75	230			
20	45	231			
21	25	232			
22					
23					
24	5	233			

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GPS	12L	26.12	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD: 40
DCM: 125
S_{MIN}: 500

Station: 2	Cast: 11
Latitude start: 22° 47.2080'N end: 22° 47.2086'N	Longitude start: 158° 01.4035'W end: 158° 01.4127'W
Depth of water: 4732 meters	Date (GMT): 6/12/19
Pressure on Deck	Time:
Begin: 0.5751 End: -0.0853	Start Log: 20:57 In Water: 20:58
Max cast pressure: 1022 dbar	Out of Water: 21:58

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:23:15	21:23:30	1020	1020	
2	31:30	31:50	700	700	S_{MIN} 500
3	37:10	37:30	499	500	↵
4	21:47:23	21:47:38	100	100	2
5	↓	:43	100	100	
6	21:49:25	21:49:40	75	75	2
7	↓	:46	75	75	
8	21:51:12	21:51:27	45	45	2
9	↓	:32	45	45	
10	21:53:06	21:53:21	25	25	5
11	↓	:26	↓	25	
12		:31		25	
13		:36		25	
14		:41		25	
15	21:55:10	21:55:25	5	5	4
16	↓	:30	↓	5	
17		:35		5	
18		:40		5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 11	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: DF, BB, TR	
Niskin #	Depth	Serial #	Comments		
1	1020	234			
2		235	5MIN		
3					
4					
5					
6					
7					
8					
9					
10	25	236			
11					
12					
13					
14					
15					
16					
17					
18	15	237			
19					
20					
21					
22					
23					
24					

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	26.40	TR/FSM

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

Fluorescence peaks at 195 & 219 db.

MLD: 28 db
DCM: 128
S_{MIN}: 500

Station: 2	Cast: 12
Latitude start: 22° 48.0524 end: 22 48.0761	Longitude start: 158° 00.9109 end: 158 0.9265
Depth of water: 4725 meters	Date (GMT): 6 / 13 / 19
Pressure on Deck	Time:
Begin: 0.5779 End: −0.10	Start Log: 00:19 In Water: 00:22
Max cast pressure: 1021 dbar	Out of Water: 01:28

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:52:	00:53:20	1019	1020	
2	58:35	59:05	769	770	
3	4:35	5:05	500	500	
4		15	500	500	
5	7:30	8:00	400	400	
6	9:25	9:55	351	350	
7	11:25	11:55	300	300	
8	13:20	3:50	250	250	
9	16:10	16:40	149	150	
10	17:35	18:05	126	125	
11	19:05	19:35	99	100	
12	20:35	21:05	76	75	
13	22:15	22:45	45	45	
14		55	45	45	
15		05	45	45	
16	24:00	24:30	25	25	
17		40	25	25	
18	25:45	26:15	5	5	
19		25	5	5	
20		35	5	5	
21		55	5	5	
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 12	Box #: 10,11
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: FSM, CM, RC	
Niskin #	Depth	Serial #	Comments		
1	1020	238			
2	—				
3	—				
4	500	239			
5	—				
6	350	240			
7	—				
8	250	241			
9	150	242			
10	125	243			
11	100	244			
12	75	245			
13	45	246			
14	45	247			
15	45	248			
16	25	249			
17	—				
18	25	250			
19	—				
20	5	251			
21	5	252			
22	—				
23	—				
24	—				

HOT- 312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12L	26.49	FS-M

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD = 40
DCM = 125
5-min =

Station: 2	Cast: 13
Latitude start: 22 47.924 end: 22 47.886	Longitude start: 158 0.901 end: 158 0.8752
Depth of water: 4728 meters	Date (GMT): 6 / 13 / 19
Pressure on Deck	Time:
Begin: 0.60 End: 0.20	Start Log: 02:57 In Water: 03:02
Max cast pressure: 1020 dbar	Out of Water: 04:12

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	03:26:15	03:26:40	1020	1020	
2	31:20	31:50	800	800	
3	37:00	37:30	601	600	
4	40:15	40:45	500	500	5-min
5	44:00	44:30	400	400	
6	47:40	48:10	301	300	
7	51:15	51:45	202	200	
8	53:15	53:45	175	175	
9	55:00	55:30	150	150	
10	57:00	57:30	125	125	
11		40	125	125	
12	59:10	59:40	99	100	
13		50	99	100	
14	1:15	1:45	75	75	
15		55	75	75	
16	3:40	4:10	46	45	
17		20	46	45	
18	5:25	5:55	25	25	
19		05	25	25	
20		15	25	25	
21	7:10	7:55	15	15	
22	8:55	9:25	5	5	
23		35	5	5	
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 13	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler: CM, RC, FSM	
Niskin #	Depth	Serial #	Comments		
1	1020	253			
2					
3					
4	500	254			
5					
6					
7					
8					
9					
10	150	255			
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23	5	256			
24					

HOT- 312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12L	26.41	FS-M

- ☒ Pinger
- ☒ Altimeter
- ☒ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☒ PO Fluorometer
- ☐

Station: 2	Cast: 14
Latitude start: 22 44.865 end: 22 44.849	Longitude start: 158 1.3019 end: 158 1.261
Depth of water: 4739 meters	Date (GMT): 6 / 13 / 19
Pressure on Deck	Time:
Begin: 0.40 End: 0.05	Start Log: 6:00 In Water: 6:04
Max cast pressure: 1021 dbar	Out of Water: 7:05

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	29:05	29:35	1021	1020	
2	41:20	41:50	450	450	5-min
3	47:45	48:15	178	175	
4	49:40	50:10	149	150	
5	5055	41:25	135	135	
6	5205	52:35	125	125	
7		45	125	125	
8	53:15	53:45	115	115	
9	54:30	55:00	100	100	
10		10	100	100	
11		20	100	100	
12		30	100	100	
13		40	100	100	
14	56:15	56:45	85	85	
15	57:10	57:40	76	75	
16	58:20	58:50	60	60	
17	59:20	59:50	45	45	
18		00	45	45	
19	0040	01:10	25	25	
20		20	25	25	
21	2:15	2:45		5	
22		55		5	
23		05		5	
24		15		5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 14	Box #: 11, 12
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: CM, RC, FSM	
Niskin #	Depth	Serial #	Comments		
1	1020	257			
2	500	258			
3	175	259			
4	150	260			
5	135	261			
6	125	262			
7					
8	115	263			
9	100	264			
10					
11					
12					
13					
14	85	265			
15	75	266			
16	60	267			
17	45	268			
18					
19	25	269			
20					
21	5	270			
22					
23					
24					

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-5000	12L	26.20	FS-M

- ☒ Pinger
- ☒ Altimeter
- ☒ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☒ PO Fluorometer
- ☐

Station: 2	Cast: 15
Latitude start: 22 44.999 end: 22 44.991	Longitude start: 158 0.016 end: 158 0.009
Depth of water: 4740 meters	Date (GMT): 6 / 13 / 19
Pressure on Deck	Time:
Begin: 0.60 End: -0.10	Start Log: 8:54 In Water: 8:56
Max cast pressure: 4808 dbar	Out of Water: 12:26

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		10:38	4808	4800	
2	10:53:00	53:30	4000	4000	
3		40	4000	4000	
4	12:35	13:05	3000	3000	
5		15	3000	3000	
6	32:05	32:35	2000	2000	
7		45	2000	2000	
8	52:45	53:15	1001	1000	
9	59:00	59:30	900	800	02 min
10	7:15	7:45	450	450	5-min
11	12:45	13:15	220	220	02 max
12		17:30	125	125	
13		40	125	125	
14	20:20	20:50	75	75	
15		00	75	75	
16	23:25	23:55	5	5	
17		05	5	5	
18		15	5	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 15	Box #: 12
Salinity Sample Log Sheet			Cruise #: HOT- 312	Sampler:	
Niskin #	Depth	Serial #	Comments		
1	4800	271			
2	4000	272			
3					
4	3000	273			
5					
6	2000	274			
7					
8					
9	800	275			
10	450	276			
11	220	277			
12					
13					
14					
15					
16					
17					
18	5	278			
19					
20					
21					
22					
23					
24					

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G200 GPS	12L	25.50	TR

- ☑ Pinger
- ☑ Altimeter
- ☑ Transmissometer
- ☐ BEACH Sea Tech Fluorometer
- ☐ OTG Seapoint Fluorometer
- ☐ ISUS
- ☑ PO Fluorometer
- ☐

MLD: 21 db
DCM: 125 db

Station: 50	Cast: 1
Latitude start: 22° 44.0789'N end: 22° 44.0516'N	Longitude start: 157° 54.5471'W end: 157° 54.4885'W
Depth of water: 4713 meters	Date (GMT): 6 / 13 / 19
Pressure on Deck	Time:
Begin: 0.3977 End: 0.2890	Start Log: 22:41 In Water: 22:53
Max cast pressure: 201 dbar	Out of Water: 23:56

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	23:47:25	23:47:40	100	100	
2	23:48:45	23:49:00	75	75	
3	23:51:05	23:51:20	25	25	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22		23:52:50		25	
23	23:54:20	23:54:35	5	5	
24					(CLOSED AT 5db, not sampled)

HOT-312

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G-5000	12L	26.21	FS-M

- [x] Pinger
- [x] Altimeter
- [x] Transmissometer
- [ ] BEACH Sea Tech Fluorometer
- [ ] OTG Seapoint Fluorometer
- [ ] ISUS
- [x] PO Fluorometer
- [ ]

Station: 6	Cast: 1
Latitude start: 21 50.829 end: 2150.815	Longitude start: 158 21.7905 end: 158 21.819
Depth of water: 2476 meters	Date (GMT): 6 / 14 / 19
Pressure on Deck	Time:
Begin: 0.40 End: 0.00	Start Log: 7:05 In Water: 7:10
Max cast pressure: 2451 dbar	Out of Water: 9:03

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		8:02	2451	2500	
2	11:05	11:35	2000	2000	
3	21:45	21:55	1500	1500	
4	31:45	32:15	1000	1000	
5	42:20	42:50	499	500	
6	49:10	49:40	175	175	
7	50:50	51:20	151	150	
8	52:45	52:55	125	125	
9	53:40	54:10	100	100	
10	54:50	55:20	75	75	
11	56:20	56:50	45	45	
12	57:35	58:05	25	25	
13	59:10	59:40	5	5	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series	Station #: 6	Cast #: 1	Box #: 12/13
Salinity Sample Log Sheet	Cruise #: HOT-312	Sampler: CM, RC, FS-M	
Niskin #	Depth	Serial #	Comments

Hawaii Ocean Time Series			Station #: 6	Cast #: 1	Box #: 12/13
Salinity Sample Log Sheet			Cruise #: HOT-312	Sampler: CM, RC, FS-M	
Niskin #	Depth	Serial #	Comments		
1	2500	279			
2	2000	280			
3	1500	281			
4	1000	282			
5	500	283			
6	175	284			
7	150	285			
8	125	286			
9	100	287			
10	75	288			
11	45	289			
12	25	290			
13	5	291			
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Transmissometer:
Clear path: 4.5556
Blocked path: 0.02198

HOT 3
CTD co
CTD: 91
Deck Un
Pressure
Carouse
T$_1$: 14
C$_1$: 46
O$_1$: 160
Pump$_1$: 9
Fluoron
Altimet
Bucket
Transm

Cruise
K. Babc
R. Tabat
T. cleme
D. Fitzge
C. Funkey
T. Rohre
D. Sadler
F. Santiag
B. Watki
C. Morga
Jinchun
Elaine L
Andres S
Brandon
Richard
Mathieu
Karen Sel
M. Lunney

HOT 312 KM 19-09

CTD configuration:

CTD: 91361 (Beta)

Deck Unit: 112060 (secondary)

Pressure: 75434

Carousel: 1261 (New)

T_1: 1416 T_2: 5519

C_1: 4687 C_2: 3984

O_1: 1601 O_2: 3761

$Pump_1$: 968 $Pump_2$: 494

Fluorometer: 3831

Altimeter: 7769

Bucket Thermometer: 3622

Transmissometer: 1366

Cruise Participants:

K. Babcock

R. Tabata

T. Clemente

D. Fitzgerald

C. Funkey

T. Rohrer

D. Sadler (chief sci.)

F. Santiago-Mandujano

B. Watkins

C. Morgan

Jinchun Yuan (scientist/ECSU)

Elaine Luo (Grad. student/UH)

Andres Salazar Estrada (Grad student/UH)

Brandon Brenes (Undergrad. student/UH)

Richard Chen (Undergrad student/UH)

Mathieu Caffin (Scientist/UH)

Karen Selph (Scientist/UH)

M. Linney

J. Diehl
P. A'Hearn
> OTG

265 Ω - Black Conductor
TAPE READING @ 4//.0

Temperature sensor offset (2-1) = ~0.002 to -0.003
Conductivity sensor offset (2-1) = ~ 0.0004 to 0.0005

162 @ 01:30 UTC
↳ replaced bucket thermometer
↳ original broken

Salinity bottle SN 27 broke during sampling. Replaced w/ SN 40
* Bottle SN 27 needs to be replaced.

23:30	SET AC
	Eq
18:54	DEPART
19:45	SAFETY
20:30	FIRE D
21:40	ARRIVE
22:08	BEGIN
	A
	W
22:32	END
22:50	BEGIN H
23:35	END
23:51	BEGIN
	A
	N
0055	End
	MISS
	vacc
	Bo
0115	Tes
0200	Tra

HOT-312 KM1909 JUNE 9, 2019

23:30 SET ACQUISITION + PROCESSING COMPUTERS TO CURRENT UTC

Equipment loading.

JUNE 10, 2019

18:54 DEPART UH MARINE CENTER

19:45 SAFETY MEETING

20:30 FIRE DRILL / ABANDON SHIP DRILL

21:40 ARRIVE STATION KAHE, BRIEF DELAY FOR FIXING CAMERAS

22:08 BEGIN WEIGHT CAST, 500m

AIR WEIGHT: 1290 lbs ZERO TENSION: -100 lbs

WATER WEIGHT: 990 lbs

22:32 END WEIGHT CAST

22:50 BEGIN HYPERPRO - 21° 20.57' N 158° 16.36' W

23:35 END HYPERPRO

23:51 BEGIN S1 C1, G1000 GPS, 21° 20.5777' N, 158° 16.4017' W

AIR WEIGHT: 1020 lbs

WATER WEIGHT: 600 lbs

JUNE 11, 2019

0055 End of cast, IJ marks OK

Missed closing bottles 16-24 for vacuum test.

Bottle 2 valve was not closed

0115 Testing Drone on 02 deck

0200 Transit to ALOHA Station

HOT-312 11 JUNE 2019

16:48Z RETERM 0.322"

253Ω - BLACK

TAPE READING = 638.00

Q7577

~200 m removed

1025 Arr

1042 Dep

1049 Dep
22°

1116 Dep

1141 Dep
22°

1212 Sto

1225 Stop
the

One
it
in
aga
to

14:10 Wire r

14:26 END

15:27 BEGIN
22

15:47 END
22

HOT-312 11 June 2019

1025 Arrived to ALOHA Station

1042 Deploying Wirewalker

1049 Deployed wirewalker
22° 48.047'N, 158°00.6024'W

1116 Deploying Sediment traps

1141 Deployed Sed. traps.
22°47.9727'N, 158°1.6452'W

1212 Start S2C1 G-1000 GPS

1225 Stop winch, bad noise coming from the winch, 168m downcast.

One strand of CTD wire broke and it started accumulating on the winch. Wire "birdcaged" and bunched up against a sheave and required extensive efforts to repair enough to recover the CTD + wire remainder.

14:10 Wire repair complete. Beginning upcast.

14:26 END S2C1, 24 MARKS OK.

15:27 BEGIN PP ARRAY DEPLOYMENT
22° 48.6860' N, 158° 02.4280' W

15:47 END PP ARRAY DEPLOYMENT
22° 48.6880' N, 158° 02.4747' W

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18:52 Inspected CTD wire on the winch drum when CTD was near the bottom ~ 4800 dbar ←

D. Fitzgerald and P. A'Hearn inspected the wire.

THE WIRE is rusty + SALTY at the base, but looks useable + SAFE to continue operations.

15:50 TRAN

16:53 ON

16:57 B

17:13 STAR

18:52 REAC

← I

20:56 END

21:08 BEGIN

21:50 END

22:18 BEGI

2229 S

te

23:30 END

23:40 BEGIN

00:23 END

00:43 Sfc

Sec

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15:50 TRANSIT TO ALOHA CENTER, CONTINUE RETERMINATION OF 0.322 WIRE, ~200m of wire were cut

16:53 ON STATION, WITH NEW TERMINATION

16:57 BEGIN LOGGING S2C2

17:13 START S2C2, G5000 GPS, WOCE DEEP CAST
22° 44.9434' N, 157° 59.8947' W

18:52 REACHED DEEPEST POINT OF CAST, 5 m OFF BOTTOM
22° 44.9906' N, 158° 00.0018' W
← Inspected wire on drum

20:56 END S2C2, 24 MARKS OK
22° 45.0079' N, 158° 00.0256' W

21:08 BEGIN AERIAL DRONE OPERATION

21:50 END DRONE OPS

22:18 BEGIN S2C3, G1000 GPS, PO-2 CAST
22° 45.0203' N, 158° 00.0330' W

4:29 Slight offset in thermosal interval temperature about 0.1 hours ago.

23:30 END S2C3, 24 MARKS OK

23:40 BEGIN HYPERPRO - 22° 45.01' N, 158° 00.03' W

00:23 END HYPERPRO JUNE 12, 2019

00:43 Start S2C4 G-1000 GPS

Secondary fluorescence max at ~230 dbar

0214 End o

0220 Transi

0405 Start

Second

0513 End o

Transit

0540 Recove
21°42

0619 Start

2 secon
at ~

0733 End o

0804 Start

0832 End u

0840 Start

0905 End

0918 Start

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0214 End of cast, 24 mats OK

0220 Transit to pump tanks

0405 Start S2C5 G-1000 GPS

Secondary fluorescence max at 250 dbar

0513 End of cast, 23 mats OK.

Transit to recover PP array

0540 Recovering PP array
22°42.0229'N, 158° 3.444'W

0619 Start S2C6 G-1000 GPS

2 secondary fluorescence maxima, one at ~240 dbar, another at 190 dbar

0733 End of cast, 24 mats OK

0804 Start net tow

0832 End net tow

0840 Start net tow

0905 End net tow

0918 Start S2C7, G-1000 GPS

	Secon
037	Ends
1048	Trau
1211	Star
	Seco
13:16	END S
13:20	TRANSIT
14:11	BEGIN G 22°
14:29	END GA 22°
14:55	BEGIN 22°
16:12	END S - Fluor addi
8:00	BEGIN 22° - Fluor add
8:58	END S

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Secondary Fl maxima at 190 and 250 dbar

1037 End of cast, 24 marks OK

1048 Transit to pump ship's tanks

1211 Start S2C8 G-1000 GPS

Secondary fluor max at 240 dbar

13:16 END S2C8, 24 MARKS OK

13:20 TRANSIT NE TO GAS ARRAY DEPLOYMENT SITE

14:11 BEGIN GAS ARRAY DEPLOYMENT
22°47.9859'N, 158° 01.5912'W

14:29 END GAS ARRAY DEPLOYMENT
22°47.9902' N, 158° 01.5839'W

14:55 BEGIN S2C9, G1000 GPS
22° 48.0801' N, 158° 01.4438'W

16:12 END S2C9, 20 MARKS OK.
- Fluorescence peaks at 194 and 224 db in addition to DCM at 125 db.

18:00 BEGIN S2C10, G1000 GPS
22° 47.9874' N, 158° 01.3156'W
- Fluorescence peaks at 175 and 214 db in addition to DCM at 125 db.

18:58 END S2C10, 24 MARKS OK.

19:10 TRANSIT

20:58 BEGIN
22

21:58 END S2

22:14 BEGIN NE
22:44 END N
22:49 BEGIN NE
2320 END N
22°

23:32 BEGIN
22°

00:10 END PA

00:20 BEGIN S
22°
PUMPS
SO LOWE
SUCCESSF

28 End c

47 Start

12 End of

0 Transi

0 Start

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19:10 TRANSIT TO PUMP TANKS

20:58 BEGIN S2C11, G1000 GPS.
22° 47.2080'N, 158° 01.4035'W

21:58 END S2C11, 18 MARKS OK.

22:14 BEGIN NET TOW#1 - 22° 47.2135'N, 158° 01.4227'W

22:44 END NET TOW #1

22:49 BEGIN NET TOW #2 - 22° 47.5792'N, 158° 01.1948'W

2320 END NET TOW #2
22° 48.0266'N 158° 00.9174'W

23:32 BEGIN DRONE OPS
22° 48.0478'N, 158° 00.9082'W

00:10 END DRONE OPS 13 June 2019

00:20 BEGIN S2C12, G1000GPS
22° 48.0524'N, 158° 00.9109'W
PUMPS TURNED OFF ON FIRST ASCENT TO SURFACE, SO LOWERED TO 10db, restarted PUMPS AND WAS SUCCESSFUL ON 2ND TRY.

0128 End of cast, 21 marks OK

0247 Start S2C13, G-1000 GPS

0412 End of cast. 23 marks OK

0420 Transit to pump ship's tanks

0600 Start S2C14 G-1000 GPS

0705	End
0805	Sta
0830	End
0854	Sta
1038	7 u 22°
26	End
240	Dep 22 3
1415	END
1418	BEGI
15:35	BEGIN 22
15:50	END R 22°
15:51	TRANSIT
17:11	BEGIN S 22°

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0705 End of cast, 24 marks OK

0805 Start net tow

0830 End of net tow

0854 Start S2 C15 G5000-GPS

1038 7 m off the bottom, $\Theta \sim 1.087$ °C
22° 45.000' N, 158° 0.014' W

1226 End of cast, 18 marks OK

1240 Deployed optics package
22° 44.9919' N, 158° 00.0128' W
3 PROFILES TO 180-200m

1415 END OPTICS CAST

1418 BEGIN TRANSIT TO GAS ARRAY

15:35 BEGIN RECOVERY OF GAS ARRAY
22° 34.2098' N, 158° 04.5081' W

15:50 END RECOVERY OF GAS ARRAY
22° 34.1877' N, 158° 04.4998' W

15:51 TRANSIT TO SEDIMENT TRAP ARRAY

17:11 BEGIN SEDIMENT TRAP ARRAY RECOVERY
22° 24.9154 'N, 158° 14.7684' W

17:29 END S
2

17:30 TRANSIT

18:08 BEGIN
22°

18:20 END W
22°

18:22 TRANSIT

2140 Star

2220 End

2226 Raini

2:53 START
22°

Wind
a bi
to le

:56 END SS

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17:29 END SEDIMENT TRAP ARRAY RECOVERY
22° 24.9166 'N, 158° 14.7784 'W

17:30 TRANSIT TO WIREWALKER

18:08 BEGIN WIREWALKER RECOVERY
22° 24.9696'N, 158° 12.9025 'W

18:20 END WIREWALKER RECOVERY
22° 24.8616 'N, 158° 12.8458'W

18:22 TRANSIT TO WHOTS MOORING, STATION SO (28 miles!)

2140 Start hyperpro cast

2220 End of cast

2226 Raining on station

12:53 START S50C1, G200GPS, WHOTS MOORING YO-YO CAST
22° 44.0789'N, 157° 54.5471'W

Yo-Yo 1: 22:56 - 23:06:01 (2m from surface)
Yo-Yo 2: 23:06:05 - 23:16.50 (2 m from surface)
Yo-Yo 3: 23:16:51 - 23:26:40 (1 m from surface)
Yo-Yo 4: 23:26:45 - 23:37:25 (3 m from surface)
Yo-Yo 5: 23:37:30 - 23:56:40
Winch issue at bottom of Yo-Yo 5. Had to pay out a bit more at 200 db and then pay back in due to levelwind problem.

23:56 END S50C1, 24 MARKS OK.

00:18	BEGIN
0115	En
0159	Arg 22°
0200	Tra
0705	St
0802	11 m 21°
0903	End
0910	Tra
0927	Tra ligh Dark
5:15	LAST T
7:40	ARRIVE

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00:18 BEGIN AERIAL DRONE OPERATION

0115 End drone operations.

0159 Argo float deployed
22° 44.1187'N, 157° 54.7925'W

0200 Transit to Kaena Sta.

0705 Start S6C1, 6-5000 GPS

0802 11 m off the bottom
21° 50.812'N, 158° 21.816'W

0903 End of cast, 13 marks OK

0910 Transit to Pier 35

0927 Transmissometer calibration.
Light = 4.73 V
Dark = .03053 / 0.02686 V

15:15 LAST THERMOSALINOGRAPH SAMPLE TAKEN

17:40 ARRIVE PIER 35 / UH MARINE CENTER