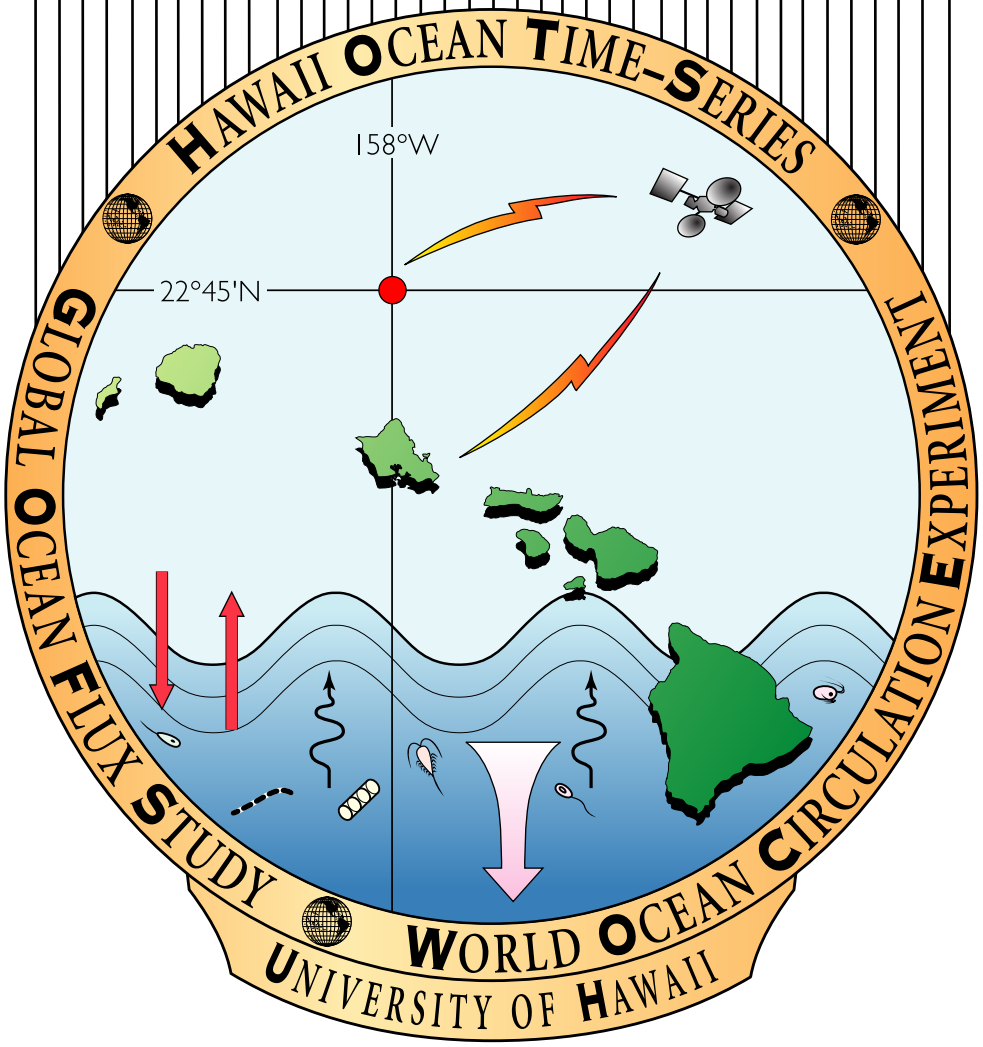
Hawaii Ocean Time-series Program

HOT 315



Hawaii Ocean Time-Series
HOT-**315**
KAHE Station Data Sheet

Station # 1 Date: 9/3/2019 (HST)
Cast # 1 Time: 1400 (HST)
Operator(s): DS, LF, MB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.8						
2	**750**	2,3,4	7.9						
3	**500**	5	9.2						
4	**350**	6	10.6			4			
5	**250**	7	13.9			5			
6	**200**								
7	**175**							7	
8	**150**	8	19.3			8	8	8	
9	**125**							9	
10	**100**	9,10,11	22.0			10	10	10A-B	
11	**75**							11	
12	**45**	12	26.6	12	1	12	12	12	
13	**25**	13	27.9	13	2			13A-B	
14	**5**	14	28.6	14	3,4,5	14	14	14	
15	**5**	QC	28.7						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes: DO bottle #13 broken
Chl filter dropped on counter (315-1-1-9)

Hawaii Ocean Time-Series
HOT-**315**
KAHE Station Data Sheet

Station # 1 Date: 9/3/2019 (HST)
Cast # 1 Time: 1400 (HST)
Operator(s): DS, LF, MB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	Nuts	LLN/ LLP	Chl *a*	
1	**1000**	1	6.8						
2	**750**	2,3,4	~~8~~ 8.9						
3	**500**	5	9.2						
4	**350**	6	10.6			4			
5	**250**	7	13.9			5			
6	**200**								
7	**175**							7	
8	**150**	8	19.3			8	8	8	
9	**125**							9	
10	**100**	9,10,11	22.0			10	10	10A-B	
11	**75**							11	
12	**45**	12	26.6	12	1	12	12	12	
13	**25**	13	27.9	13	2			13A-B	
14	**5**	14	28.6	14	3,4,5	14	14	14	
15	**5**	QC	28.7						
16									
17									
18									
19									
20									
21									
22									
23									
24									

Notes: DO bottle #13 broken
Chl #9 (125m) fell on benchtop

Hawaii Ocean Time-series
HOT-**315**
Primary Production Data Sheet

Station #	2	Date:	9/4/2019 (HST)
Cast #	1	Time:	1400 (HST)
Operator(s):	BB, KB, TB, RT		

Rosette Position	Desired Depth	Light Bottle	Chl *a* FCM	SF-S	SF-S O2	Temp	
1	**200**						
2	**200**						
3	**175**		3A-B				
4	**150**		4A-B				
5	**125**	3-1	5	X			
6	**125**	3-2	6	X			
7	**125**	3-3	7	X			
8	**100**	4-1	8	X			
9	**100**	4-2	9	X			
10	**100**	4-3	10	X			
11	**75**	5-1	11	X			
12	**75**	5-2	12	X			
13	**75**	5-3	13	X			
14	**45**	6-1	14	X			
15	**45**	6-2	15	X			
16	**45**	6-3	16	X			
17	**25**	7-1	17	X			
18	**25**	7-2	18	X			
19	**25**	7-3	19	X			
20	**15**				121,122,123	27.8	
21	**5**	8-1	21	X			
22	**5**	8-2	22	X			
23	**5**	8-3	23	X			
24							

Notes:

Hawaii Ocean Time-series
HOT-**315**
Primary Production Data Sheet

Station # 2 Date: 9/4/2019 (HST)
Cast # 1 Time: (HST)
Operator(s): BB, KB, TB, RT

Rosette Position	Desired Depth	Light Bottle	Chl *a* FCM	SF-S	SF-S O2	Temp	
1	**200**						
2	**200**						
3	**175**		3A-B				
4	**150**		4A-B				
5	**125**	3-1	5	X			
6	**125**	3-2	6	X			
7	**125**	3-3	7	X			
8	**100**	4-1	8	X			
9	**100**	4-2	9	X			
10	**100**	4-3	10	X			
11	**75**	5-1	11	X			
12	**75**	5-2	12	X			
13	**75**	5-3	13	X			
14	**45**	6-1	14	X			
15	**45**	6-2	15	X			
16	**45**	6-3	16	X			
17	**25**	7-1	17	X			
18	**25**	7-2	18	X			
19	**25**	7-3	19	X			
20	**15**				121,122,123	27.8	
21	**5**	8-1	21	X			
22	**5**	8-2	22	X			
23	**5**	8-3	23	X			
24							

Notes:

Hawaii Ocean Time-series
HOT-**315**
WOCE Deep Data Sheet

Station # 2 Date: 9/4/19 (HST)
Cast # 2 Time: 0500 (HST)
Operator(s): Ds,tc,lf

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	4.1				1	1	
2	**4600**	16	3.7				2	2	
3	**4500**	17,18,19	3.9	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.9				4	4	
5	**4200**	21	3.8				5	5	
6	**4000**	22,23,24	4.5			6ABC	6A-B	6A-B	
7	**3800**	25	4.2				7	7	
8	**3600**	26	3.9				8	8	
9	**3400**	27	3.9				9	9	
10	**3200**	28	3.9				10	10	
11	**3000**	29,30,31	4.4	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	4.2				12	12	
13	**2600**	33	6.2				13	13	
14	**2400**	34	4.4				14	14	
15	**2200**	35	4.4				15	15	
16	**2000**	36,37,38	5.0	16	5	16ABC	16A-B	16A-B	
17	**1800**	39	4.8				17	17	
18	**1600**	150	5.1				18	18	
19	**1400**	41	5.5				19	19	
20	**1200**	42	5.9				20	20	
21	**1000**	43	6.5				21	21	
22	**750**	44	7.0				22	22	
23	**500**	45	8.8				23	23	
24	**5**	46	27.5				24		

Notes:

Hawaii Ocean Time-series
HOT-**315**
WOCE Deep Data Sheet

Station # 2 Date: 9/4/19 (HST)
Cast # 2 Time: (HST)
Operator(s): Ds,tc,lf, MB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	
1	**4800**	15	4.1				1	1	
2	**4600**	16	3.7				2	2	
3	**4500**	17,18,19	3.9	3A-B	1,2,3	3ABC	3A-B	3A-B	
4	**4400**	20	3.9				4	4	
5	**4200**	21	3.8				5	5	
6	**4000**	22,23,24	4.5			6ABC	6A-B	6A-B	
7	**3800**	25	4.2				7	7	
8	**3600**	26	3.9				8	8	
9	**3400**	27	3.9				9	9	
10	**3200**	28	3.9				10	10	
11	**3000**	29,30,31	4.4	11	4	11ABC	11A-B	11A-B	
12	**2800**	32	4.2				12	12	
13	**2600**	33	4.2				13	13	
14	**2400**	34	4.4				14	14	
15	**2200**	35	4.4				15	15	
16	**2000**	36,37,38	5.0	16	5	16ABC	16A-B	16A-B	
17	**1800**	39	4.8				17	17	
18	**1600**	150	5.1				18	18	
19	**1400**	41	5.5				19	19	
20	**1200**	42	5.9				20	20	
21	**1000**	43	6.5				21	21	
22	**750**	44	7.0				22	22	
23	**500**	45	8.8				23	23	
24	**5**	46	27.5				24		

Notes:

Hawaii Ocean Time-series
HOT-**315**
PO Shallow Data Sheet

Station #	2	Date:	9/4/19 (HST)
Cast #	3	Time:	1045 (HST)
Operator(s):	Ds,lf,tc		

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	47,48,49	7.3	1	1	1	1A-B	1A-B	**1000**
2	**844**	50	7.6				2	2	
3	**729**	51,52,53	8.2	3	2	3	3	3	**750**
4	**700**	54	8.1				4	4	
5	**645**	55	8.2				5	5	
6	**571**	56	8.6	6	3	6	6	6	**600**
7	**515**	57	9.0	7	4	7	7ab	7ab	**525,500**
8	**483**	58	9.5				8	8	
9	**445**	59,60,61	10.0				9	9	**450**
10	**386**	62	10.8				10	10	
11	**341**	63	11.9				11	11	
12	**326**	64	12.2	12AB	5,6	12	12	12	**350**
13	**311**	65	12.6				13	13	
14	**247**	66,67,68	16.3	14	7	14	14		**250,225**
15	**177**	69	19.8				15		
16	**132**	70	21.5				16AB		**150**
17	**127**	71	21.9				17		
18	**113**	72	22.8				18		
19	**103**	73	23.2				19		
20	**83**	74	24.1				20		
21	**76**	75	24.6				21		
22	**65**	76	25.7				22		
23	**53**	77	26.7				23		
24	**5**	78	27.8				24		**5**

Notes:

Hawaii Ocean Time-series
HOT-**315**
PO Shallow Data Sheet

Station # 2 Date: 9/4/19 (HST)
Cast # 3 Time: 1045 (HST)
Operator(s): Ds,lf,tc ,MB

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ Alk	pH	DOC	Nutrient	Refrig. Si	Replicate Depths
1	**1020**	47,48,49	7.3	1	1	1	1A-B	1A-B	**1000**
2	**844**	50	7.6				2	2	
3	**729**	51,52,53	8.2	3	2	3	3	3	**750**
4	**700**	54	8.1				4	4	
5	**645**	55	8.2				5	5	
6	**571**	56	8.6	6	3	6	6	6	**600**
7	**515**	57	9.0	7	4	7	7ab	7ab	**525,500**
8	**483**	58	9.5				8	8	
9	**445**	59,60,61	10.0				9	9	**450**
10	**386**	62	10.8				10	10	
11	**341**	63	11.9				11	11	
12	**326**	64	12.2	12AB	5,6	12	12	12	**350**
13	**311**	65	12.6				13	13	
14	**247**	66,67,68	16.3	14	7	14	14		**250,225**
15	**177**	69	19.8				15		
16	**132**	70	21.5				16AB		**150**
17	**127**	71	21.9				17		
18	**113**	72	22.8				18		
19	**103**	73	23.2				19		
20	**83**	74	24.1				20		
21	**76**	75	24.6				21		
22	**65**	76	25.7				22		
23	**53**	77	26.7				23		
24	**5**	78	27.8				24		**5**

Notes:

Hawaii Ocean Time-series

HOT- **315**

PC/PN Data Sheet

Station #	2	Date:	9/4/19	(HST)
Cast #	4	Time:	1400	(HST)
Operator(s):	DS, TC, LF	Pre-screen mesh size:	202 um	
Blank #'s	**___B1___**	**___B2___**	**___B3___**	

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

Notes: Duplicates missed (not tripped) at 350 m, added 200 m as a duplicate instead. 2-4-3 (carboy 1) black thing on filter; 2-4-5 (carboy3) filtered slowly, redish brown stuff 8L; 2-4-6 (carboy 4) – leaked a little

Hawaii Ocean Time-series
HOT- **315**
PC/PN Data Sheet

Station # 2 Date: 9/4/19 (HST)
Cast # 4 Time: 1400 (HST)
Operator(s): Ds,lf,tc Pre-screen mesh size: 202 um
Blank #'s **__B1__ __B2__ __B3__**

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

250
200

Notes: 2 350 not tripped
added one @ 200m
(2-4-6 = leaked some carboy #4)

Hawaii Ocean Time-series

HOT- **315**

Particulate Phosphorus Data Sheet

Station #	2		Date:	9/4/2019	(HST)
Cast #	5		Time:	1700	(HST)
Operator(s):	KB, BB, TB, RT	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		
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					
10	**100**	9	4	10					
11	**75**	10	4	11					
12	**45**	11	4	12					
13	**25**	12,13	4,4,	13 A-B					
14	**25**				14 A,B				
15	**15**					124,125,126	28.0		
16	**5**	14	4	16					
17	**5**				17 A,B				
18									
19									
20									
21									
22									
23									
24									

Notes: 2-5-3 (carboy 1) filter may have been askew. Filtered OK.
2-5-5 (carboy 3) looked like some red stuff transfer from o-ring to filter from PC/PN cast.
No red stuff this cast

Hawaii Ocean Time-series
HOT- **315**
Particulate Phosphorus Data Sheet

Station # 2 Date: 9/4/2019 (HST)
Cast # 5 Time: (HST)
Operator(s): KB, BB, TB, RT 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		
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					
10	**100**	9	4	10					
11	**75**	10	4	11					
12	**45**	11	4	12					
13	**25**	12,13	4,4,	13 A-B					
14	**25**				14 A,B				
15	**15**					124,125,126	28.0°C		
16	**5**	14	4	16					
17	**5**				17 A,B				
18									
19									
20									
21									
22									
23									
24									

Notes:

Hawaii Ocean Time-series
HOT-**315**
BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 9/4/2019 (HST)
Cast # 6 Time: 2015 (HST)
Operator(s): KB, BB, TB, RT

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	8.1						
2	**O_2 min**	80	8.8						
3	**Sal min**	81	10.5						
4	**200**	82	19.5	4				1	4
5	**175**	83	20.6						5
6	**165**	84	21.0						
7	**150**	85	21.1	7				2	7
8	**130**								
9	**125**	86	22.8						9
10	**115**	87	23.0						
11	**110**								
12	**100**	88,89,96	23.8	12				3	12
13	**90**								
14	**85**	91	24.3						
15	**75**	92	25.1	15				4	15
16	**60**								16
17	**45**	93	26.8	17				5	17
18	**35**								18
19	**25**	94	27.9	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	27.9	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling 2149 A:2151 B
Niskin#17 valve open (failed vacuum test)

Hawaii Ocean Time-series
HOT-**315**
BEACH Shallow Data Sheet (1/2)

Station # 2 Date: 9/4/2019 (HST)
Cast # 6 Time: (HST)
Operator(s): KB, BB, TB, RT

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DIC/ ALK	Quay DIC	Keeling DIC	SF-S	pH	DOC
1	**1000**	79	8.1						
2	**O_2 min**	80	8.8						
3	**Sal min**	81	10.5						
4	**200**	82	19.5	4				1	4
5	**175**	83	20.6						5
6	**165**	84	21.0						
7	**150**	85	21.1	7				2	7
8	**130**								
9	**125**	86	22.8						9
10	**115**	87	23.0						
11	**110**								
12	**100**	88,89,90	23.8	12				3	12
13	**90**								
14	**85**	91	24.3						
15	**75**	92	25.1	15				4	15
16	**60**								16
17	**45**	93	26.8	17				5	17
18	**35**								18
19	**25**	94	27.9	19				6	19
20	**25**				20		20A-B		
21	**15**								21
22	**5**	95	27.9	22A-B				7,8	22
23	**5**				23	23A-B			
24	**5**						24A-B		

Notes: Keeling 4 2149
2157

Niskin #7 top valve open (faint vacuum)

Hawaii Ocean Time-series
HOT-**315**
BEACH Shallow Data Sheet (2/2)

Station # 2 Date: 9/4/2019 (HST)
Cast # 6 Time: 2015 (HST)
Operator(s): KB, BB, TB, RT

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-**315**
Open Data Sheet

Station #	2	Date:	9/4/2019 (HST)
Cast #	7	Time:	2323 (HST)
Operator(s):	KB, BB, TB, RT		

Rosette Position	Desired Depth	SF-S	DNA	MCA				
1	**1000**							
2	**500**			X				
3	**Sal min**							
4	**250**			X				
5	**175**		X					
6	**175**			X				
7	**150**		X					
8	**150**			X				
9	**125**		X					
10	**125**			X				
11	**100**		X					
12	**100**			X				
13	**75**			X				
14	**45**			X				
15	**25**	15A,B						
16	**25**			X				
17	**5**	17A,B						
18	**5**			X				
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT- **315**
Gas Array Experiment Data Sheet

Station #	2	Date:	9/5/19 (HST)
Cast #	8	Time:	0205 (HST)
Operator(s):	KB, BB, TB, RT		

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

Notes: MCA (pb)

Hawaii Ocean Time-series
HOT- **315**
OPEN Data Sheet

Station # 2 Date: 9/5/19 (HST)
Cast # 9 Time: 0500 (HST)
Operator(s): Ds,lf,tc

Rosette Position	Desired Depth	DNA	SFS	MC	O2 SF-S	Temp.		
1	**1020**							
2	**435**							
3	**275**	X						
4	**250**	X						
5	**225**	X						
6	**200**	X						
7	**175**			1				
8	**150**			2				
9	**125**			3				
10	**100**			4				
11	**75**			5				
12	**45**			6				
13	**25**			7				
14	**25**		14AB					
15	**15**				127,128,129			
16	**5**		16AB					
17	**5**			8				
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT- **315**
OPEN Data Sheet

Station # 2 Date: 9/5/19 (HST)
Cast # 9 Time: 0500 (HST)
Operator(s): Ds,lf,tc

435

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

Notes:

Hawaii Ocean Time-series

HOT- **315**

Particulate Silica Data Sheet

Station #	2		Date:	9/5/19	(HST)
Cast #	10		Time:	0800	(HST)
Operator(s):	Ds,lf,tc	Pre-screen mesh size:		none	
Blank #	**B1, B2, B3**				

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

Notes:

Hawaii Ocean Time-series

HOT- **315**

OPEN Data Sheet

Station # 2 Date: 9/5/19 (HST)

Cast # 11 Time: 1100 (HST)

Operator(s): Ds,lf,tc

Rosette Position	Desired Depth	SF-S	AC				
1	**1000**						
2	**Sal Min**						
3	**150**		X				
4	**100**		X				
5	**50**		X				
6	**25**	6A,B					
7	**5**		X				
8	**5**	8A,B					
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT- **315**
OPEN Data Sheet

Station # 2 Date: 9/5/19 (HST)
Cast # 11 Time: 1100 (HST)
Operator(s): Ds,lf,tc

Rosette Position	Desired Depth	SF-S	AC				
1	**1000**						
2 440	~~**Sal Min**~~						
3	**150**		X				
4	**100**		X				
5	**50**		X				
6	**25**	6A,B					
7	**5**		X				
8	**5**	8A,B					
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT- **315**
ATP Data Sheet

Station # 2 Date: 9/5/19 (HST)
Cast # 12 Time: 1400 (HST)
Operator(s): KB,BB,TB,RT Pre-screen mesh size: 202um
Blank #'s 28, 29, 30

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	**1000**						
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	**25**	22 – 24	3x1	12			
15	**25**				15A,B		
16	**5**	25 - 27	3x1	13			
17	**5**				17AB		
18							
19							
20							
21							
22							
23							
24							

Notes: #1 filter askew, #27 -160 ml

Hawaii Ocean Time-series
HOT- **315**
ATP Data Sheet

Station #	2		Date:	9/5/19	(HST)
Cast #	12		Time:	1400	(HST)
Operator(s):	KB,BB,TB,RT	Pre-screen mesh size:		202um	
Blank #'s	28, 29, 30				

Rosette Position	Desired Depth	ATP Tube #'s	Volume Filtered	Carboy #	SF-S	DNA	
1	**1000**						
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	**25**	22 – 24	3x1	~~14~~ 12			
15	**25**				15A,B		
16	**5**	25 - 27	3x1	~~16~~ 13			
17	**5**				17AB		
18							
19							
20							
21							
22							
23							
24							

Notes: # 27 – 160 ml
1 – filter as low?

Hawaii Ocean Time-series
HOT-**315**
OPEN CAST Data Sheet

Station # 2 Date: 9/5/2019 (HST)
Cast # 13 Time: (HST)
Operator(s): KB, BB, TB, RT

Rosette Position	Desired Depth	SW	SF-S	O2 SF-S	Temp	~~SSS~~	
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	**100**	11					
12	**75**	12					
13	**45**	13					
14	**25**	14					
15	**25**		15A,B				
16	**15**			130,131,132	28.1		
17	**5**		17A,B				
18	**5**	18					
19							
20							
21							
22							
23							
24							

Notes:

Hawaii Ocean Time-series
HOT-**315**
HPLC & Chl *a*. Bottle Data Sheet

Station #	2	Date:	9/5/2019 (HST)
Cast #	14	Time:	2000 (HST)
Operator(s):	KB, BB, TB, RT		

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

Notes Niskin #5 lanyard broken. Not used this cast. Vents to Niskin 17, 18 open

Hawaii Ocean Time-series
HOT-**315**
HPLC & Chl *a*. Bottle Data Sheet

Station # 2 Date: 9/5/2019 (HST)
Cast # 14 Time: 2000 (HST)
Operator(s): KB, BB, TB, RT

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

Notes Niksin #5 lanyard broken. Not used this cast.

Niskin #17, 18 open vent

Hawaii Ocean Time-series
HOT-**315**
WOCE Deep 2 Data Sheet

Station # 2 Date: 9/5/2019 (HST)
Cast # 15 Time: 2300 (HST)
Operator(s): KB, BB, TB, RT

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	SB (SIO)			
1	**4800**	97	3.4					
2	**4000**	98	3.6					
3	**4000**			X				
4	**3000**	99	3.7					
5	**3000**			X				
6	**2500**				X			
7	**2000**	100	4.1					
8	**2000**			X				
9	**1000**			X				
10	**1000**				X			
11	**O2 min**	101	6.6					
12	**500**				X			
13	**Sal min**	102	8.7					
14	**250**				X			
15	**O2 max**	103	24.9					
16	**25**				X			
17	**5**	104	27.8					
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT-**315**
WOCE Deep 2 Data Sheet

Station # 2 Date: 9/5/2019 (HST)
Cast # 15 Time: 2300 (HST)
Operator(s): KB, BB, TB, RT

Rosette Position	Desired Depth	Oxygen	Sample Temp.	DNA	SB (SIO)			
1	**4800**	97	3.4					
2	**4000**	98	3.6					
3	**4000**			X				
4	**3000**	99	3.7					
5	**3000**			X				
6	**2500**				X			
7	**2000**	100	4.1					
8	**2000**			X				
9	**1000**			X				
10	**1000**				X			
11	**O2 min**	101	6.6					
12	**500**				X			
13	**Sal min**	102	8.7					
14	**250**				X			
15	**O2 max**	103	24.9					
16	**25**				X			
17	**5**	104	27.8					
18								
19								
20								
21								
22								
23								
24								

Notes:

Hawaii Ocean Time-series
HOT- **315**
STATION 50 Data Sheet

Station #	50		Date:	9/6/19	(HST)
Cast #	1		Time:	1330	(HST)
Operator(s):	DS,LF,TC				

Rosette Position	Desired Depth	DIC/TA	pH	SCOPE	MCA			
1	**DCM**			X				
2	**DCM**			X				
3	**DCM**			X				
4	**DCM**			X				
5	**DCM**			X				
6	**DCM**			X				
7	**DCM**			X				
8	**DCM**			X				
9	**DCM**			X				
10	**DCM**			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**	21A,B	,2,34					
24								

Notes:

Hawaii Ocean Time-series
HOT- **315**
STATION 50 Data Sheet

Station # 50
Cast # 1
Operator(s): DS,LF,TC, MB

Date: 9/6/19 (HST)
Time: 1330 (HST)

Rosette Position	Desired Depth	DIC/TA	pH	SCOPE	MCA			
1	**DCM**			X				
2	**DCM**			X				
3	**DCM**			X				
4	**DCM**			X				
5	**DCM**			X				
6	**DCM**			X				
7	**DCM**			X				
8	**DCM**			X				
9	**DCM**			X				
10	**DCM**			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**	21A,B	1,2,3,4					
24								

Notes:

Broke pH #1

Hawaii Ocean Time-series
HOT- **315**
STATION Kaena Data Sheet

Station # 6 Date: 9/6/2019 (HST)
Cast # 1 Time: 2035 (HST)
Operator(s): KB, BB, TB, RT

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-315
In Situ Primary Production Data Sheet

Operators in: ds,lf,tc,mb
Operators Out: kb,rt, tb,bw
Date in: 9/4/19 Date out: 9/4/2019
Time in: Start : 0403 (HST) Time out: 1925 (HST)
Release: 0423

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

Position in: 22° 48.8111' N, 158° 02.2092' W
Position out: 22° 40.4237 N, 158° 06.4856 W

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

Notes:

Begin Inoculation 0321 End Inoculation 0330
Filtration time 1945-2010

Hawaii Ocean Time-series
HOT 315
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
9/3/2019	1548	Kahe	1
9/3/2019	2045	Transit ALOHA	2
9/4/2019	1449	Station ALOHA	3
9/4/2019	1834	Station ALOHA	4
9/5/2019	0149	Station ALOHA	5
9/5/2019	1209	Station ALOHA	6
9/5/2019	1635	Station ALOHA	7
9/5/2019	2202	Station ALOHA	8
9/6/2019	0355	Station ALOHA	9
9/6/2019	1610	Transit Kaena	10
9/6/2019	2258	Station Kaena	11

Hawaii Ocean Time-series
HOT 315
Chlorophyll Grab Sample Sheet

Date	Time (HST)	Location	GS #
9/3/19	15:48	Kahe	1
11	20:45	Transit ALOHA	2
9/4/19	14:45	ALOHA	3
9/4/19	18:34	ALOHA	4
9/5/19	0145	ALOHA	5
9/5/19	1201	11	6
11	1635	11	7
11	0202	11	8
9/6/19	0355	11	9
11	1610	Transit Kaena	10
11	2058	Kaena	11

Hawaii Ocean Time-series
HOT-315 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT 150m	Date:	9/4/2019
Operator(s):	BB, KB, TB, RT, BW		
Position in:	22 47.9097N, 158 02.1432W		
Time in (HST):	0041		
Time relseased (HST):	0053		

Recovery

Operator(s):	DS,LF,BW	Date:	9/6/19
Start recovery (HST):	0757	Wind:	15-20 KTS
Time out (HST):	0807	Sea state:	4-6' SWELL
Position out:	22 24.4339N, 158 18.7738W		

Comments: weight in 0030

During processing, trap G (PPO4) was lost due to operator error.

Hawaii Ocean Time-series
HOT-315 Sediment Trap Data Sheet

Deployment

Type of traps:	HOT 150m	Date:	9/4/2019
Operator(s):	KB, RT, BW, TB, BB		
Position in:	22°47.909T 158°02.472		
Time in (HST):	0041		
Time relseased (HST):	0053		

Recovery

Operator(s):		Date:	
Start recovery (HST):		Wind:	
Time out (HST):		Sea state:	
Position out:			

Comments: weight in @ 0030
traps in @ 0041
all away

Data Sheet for Sediment Trap Volumes

Cruise #: 315
Analyst: DS,LF

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	36.0
B	150	35.7
C	150	36.5
D	150	36.4
E	150	36.1
F	150	35.4
G	150	36.5
H	150	36.4
I	150	35.4
J	150	36.0
K	150	35.5
L	150	36.7

Data Sheet for Sediment Trap Volumes

Cruise #: 315
Analyst: DS, LF

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	36.0
B		35.7
C		36.5
D		36.4
E		36.1
F		35.4
G		36.5
H		36.4
I		35.4
J		36.0
K		35.5
L		36.7

0757 22° 24.4339 158 18.7738
0817 22° 24.4548 158 18.7390

Hawaii Ocean Time-series
HOT-315
In Situ Gas Array Data Sheet

Operators: ds,lf,tc,mc	Operators: ds,lf,tc,mc
Date Deployed : 9/5/19	Date Recovered: 9/6/19
Time (HST): 0436	Time (HST); 0629
Position In: 22° 44.8510' 158° 02.0782	Position Out: 22° 31.6215 158° 11.6345'

Nitrogen Fixation Sample Processing Sheet

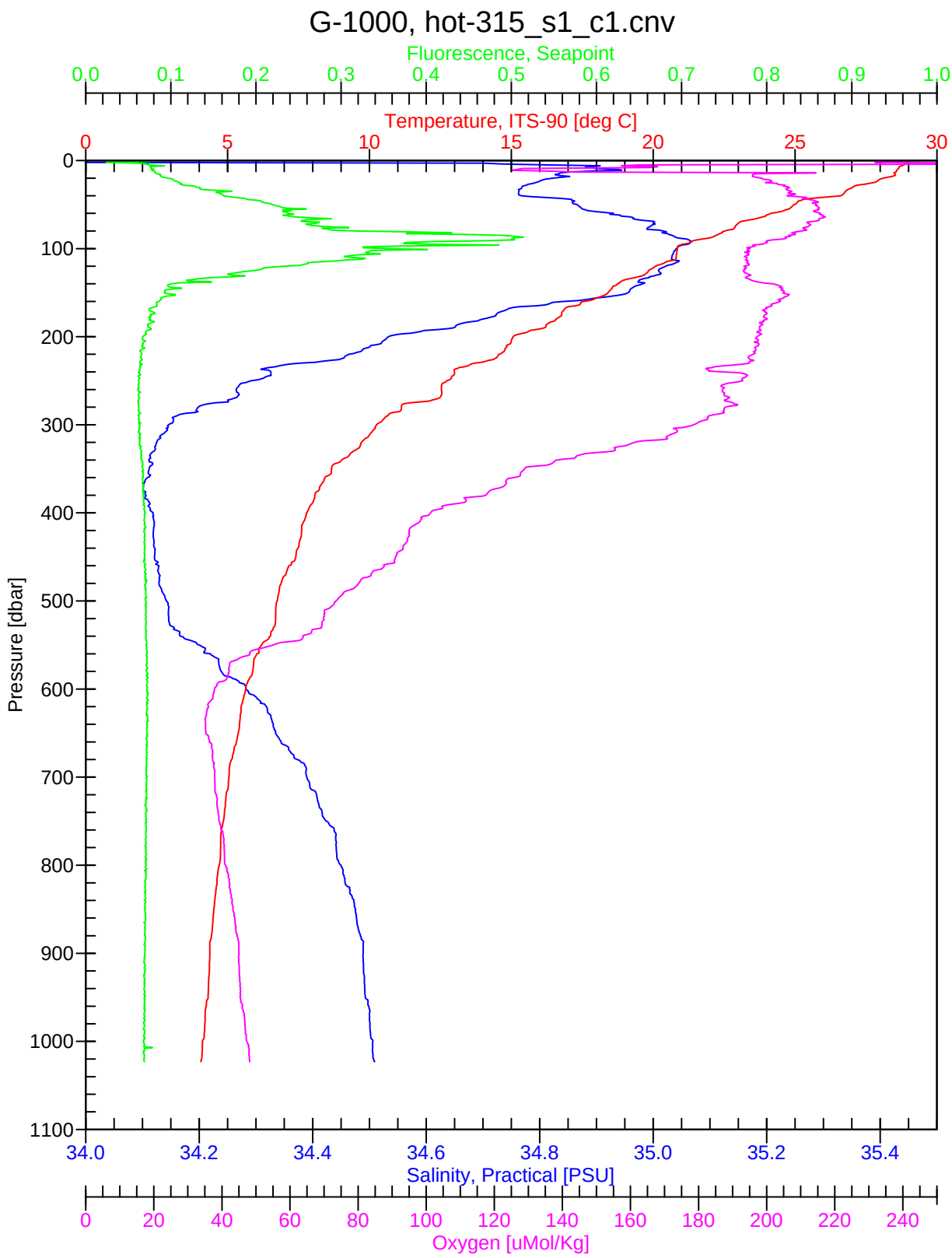
Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	9/5/19	Start 0326	9/6/19	0647		
3-2				0647		
3-3				0647		
4-1				0647		
4-2				0647		
4-3				0647		
5-1				0647		
5-2				0647		
5-3				0721		
6-1				0721		
6-2				0721		
6-3				0721		
7-1				0721		
7-2				0721		
7-3				0721		
8-1				0721		
8-2				0804		
8-3		Finish 0335		0804		

Hawaii Ocean Time-series
HOT-315
In Situ Gas Array Data Sheet

Operators: DS, CF, TC, MC	**Operators:**
Date Deployed :	**Date Recovered:**
Time (HST): 0436	**Time (HST);**
Position In: 22° 44.851O 158 02.072	**Position Out:**

Nitrogen Fixation Sample Processing Sheet

Sample ID	Date Spiked	Time Spiked	Date filtered	Time Filtered	15N Batch	Comments
3-1	9-5-19	0326				
3-2						
3-3						
4-1						
4-2						
4-3						
5-1						
5-2						
5-3						
6-1						
6-2						
6-3						
7-1						
7-2						
7-3						
8-1						
8-2						
8-3		0335				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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]
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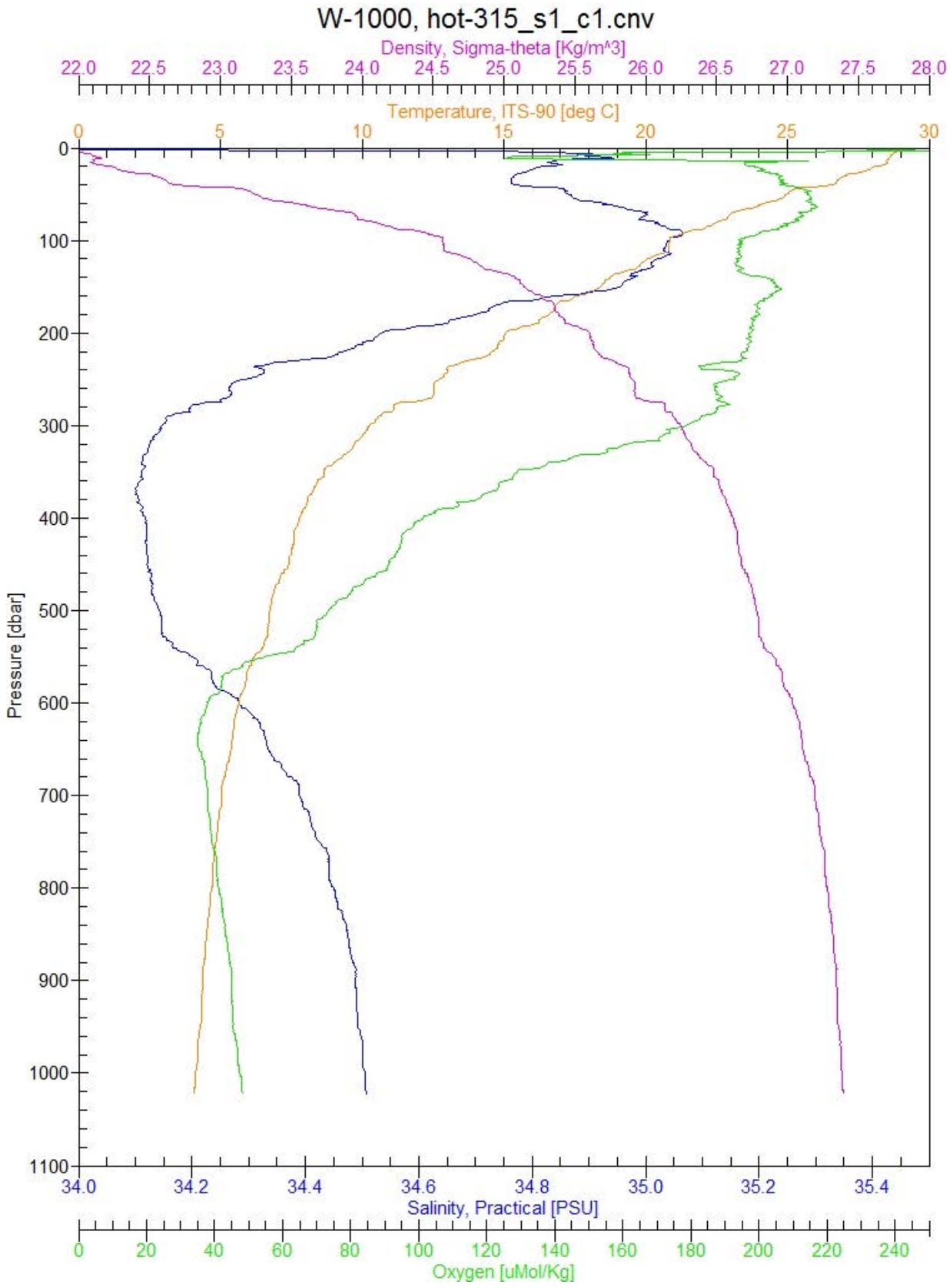
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]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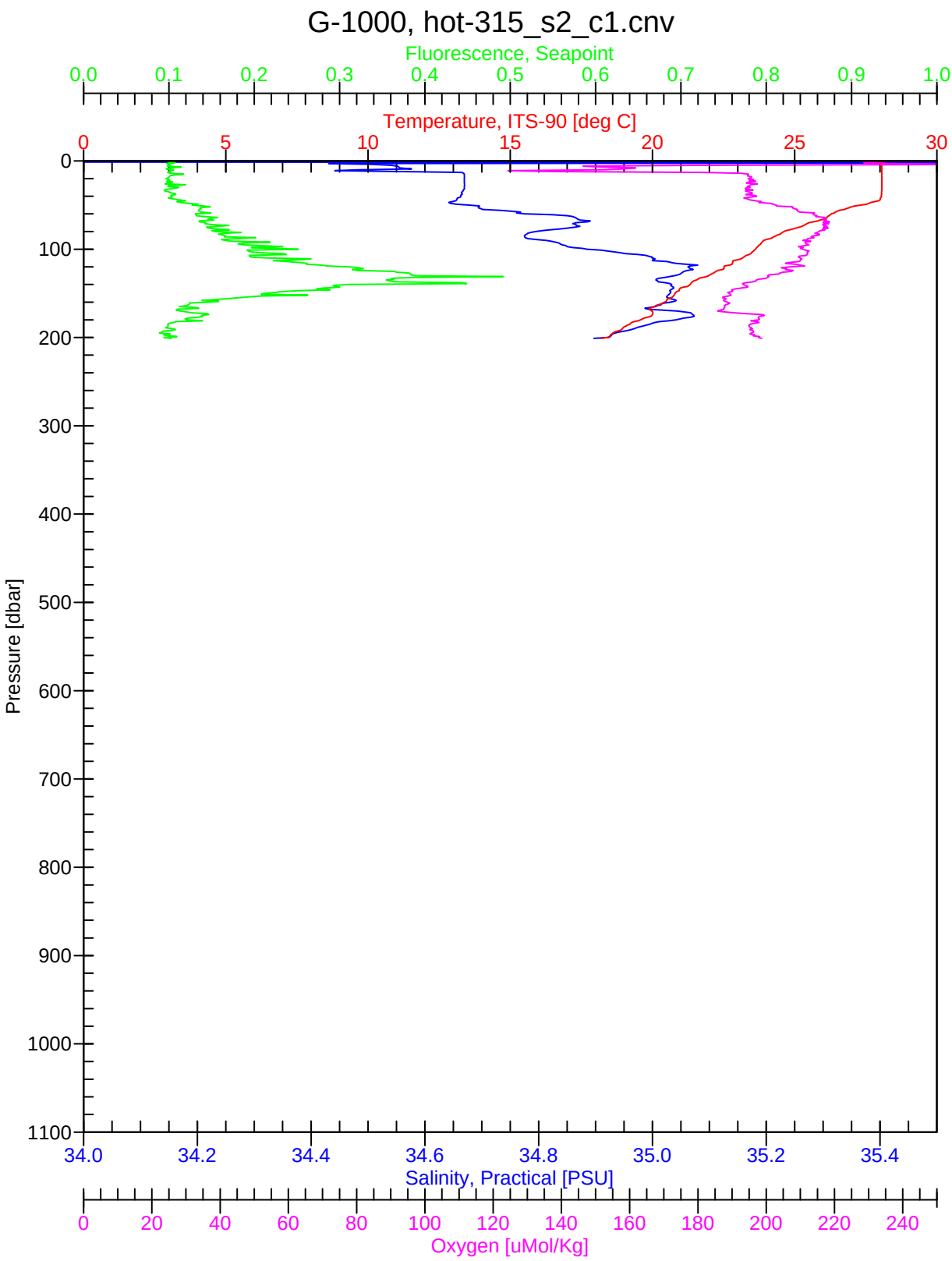
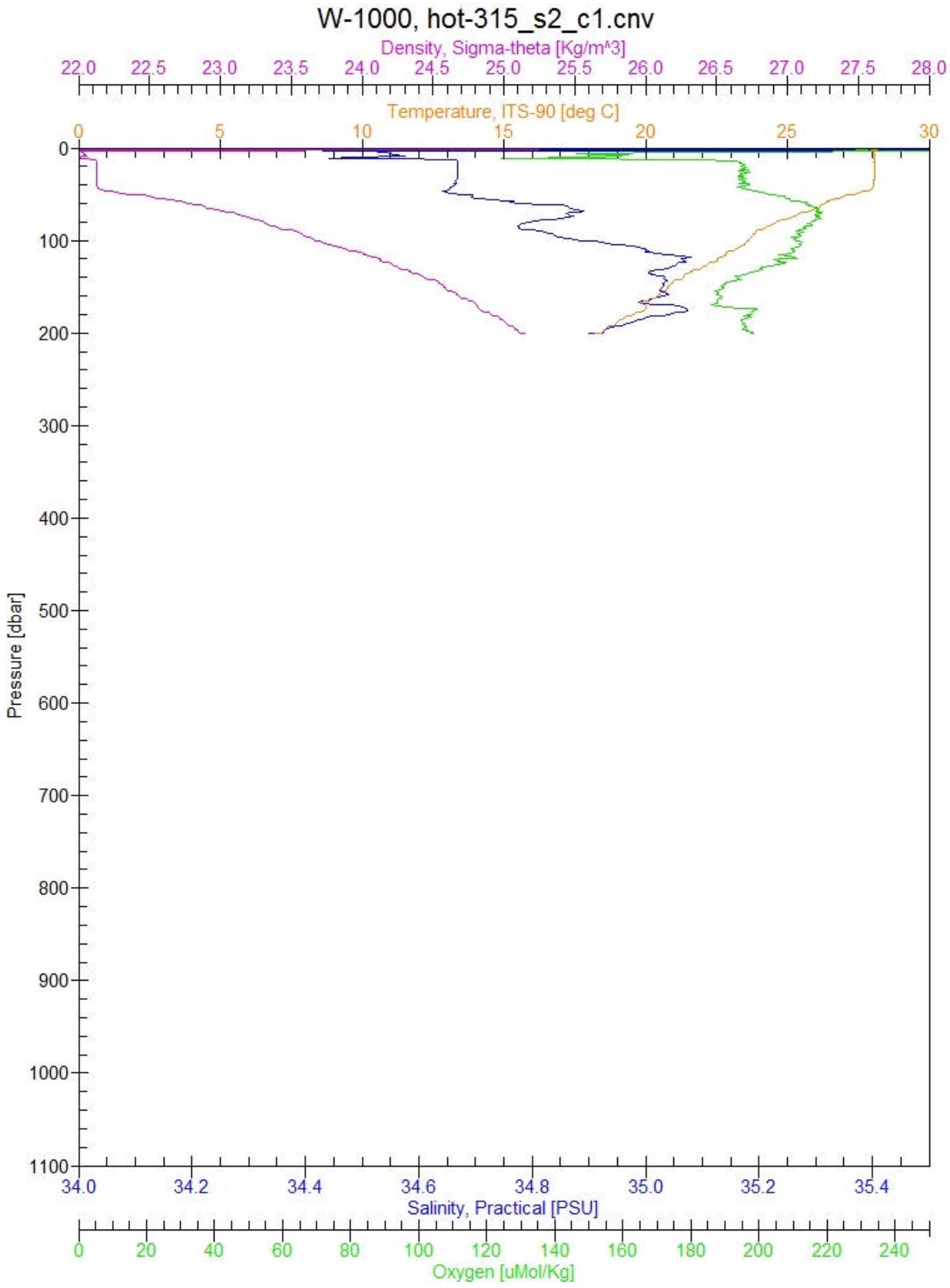
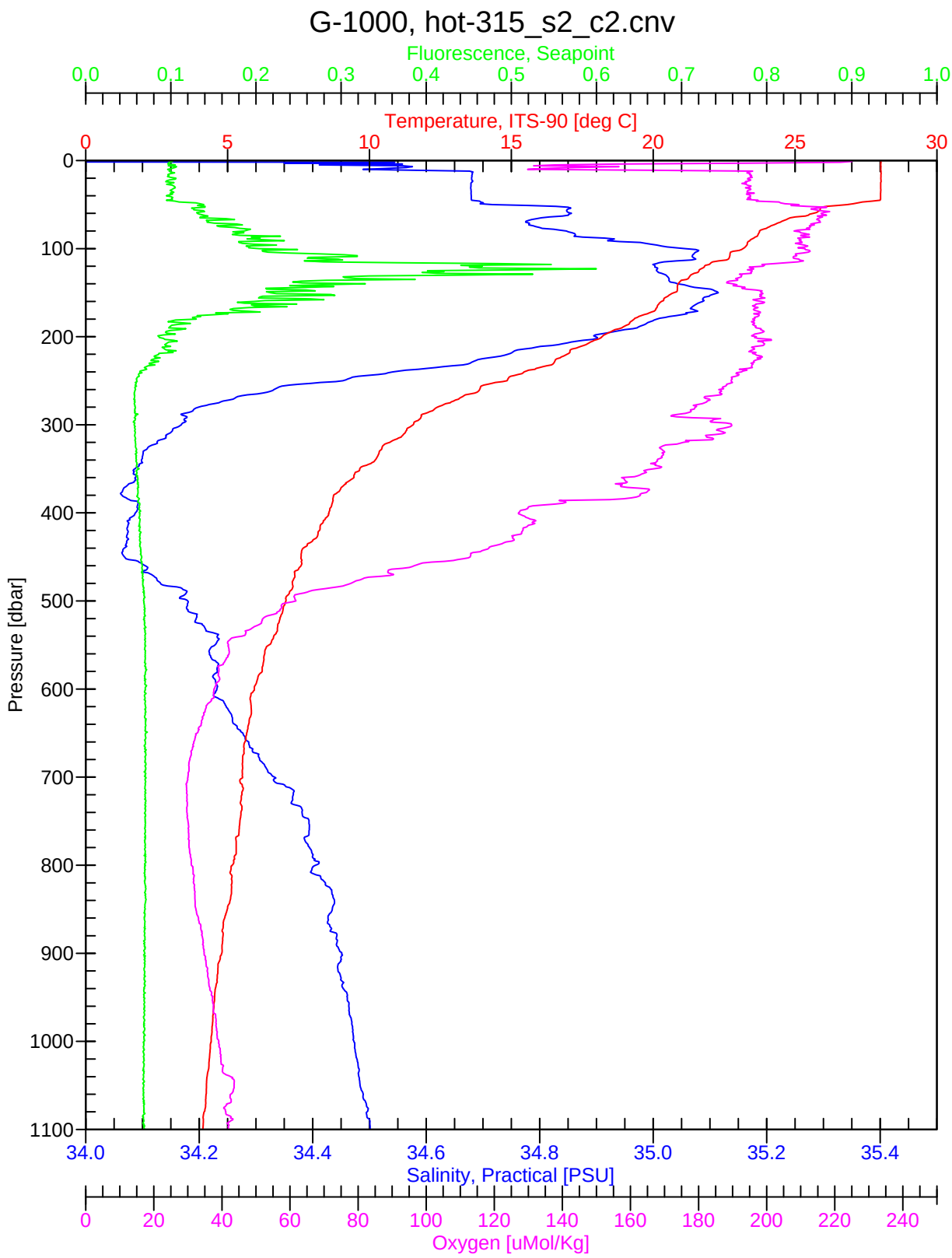
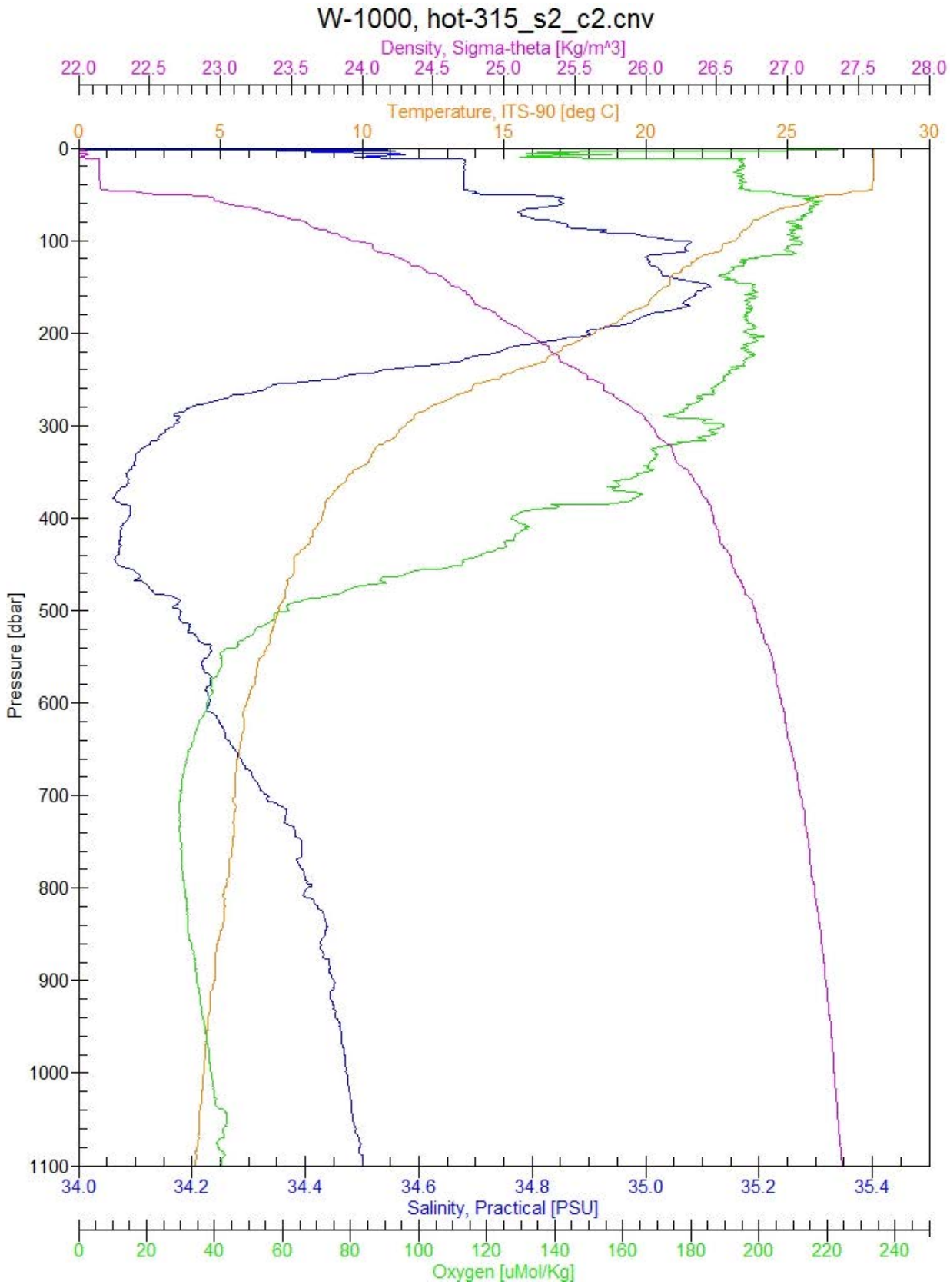
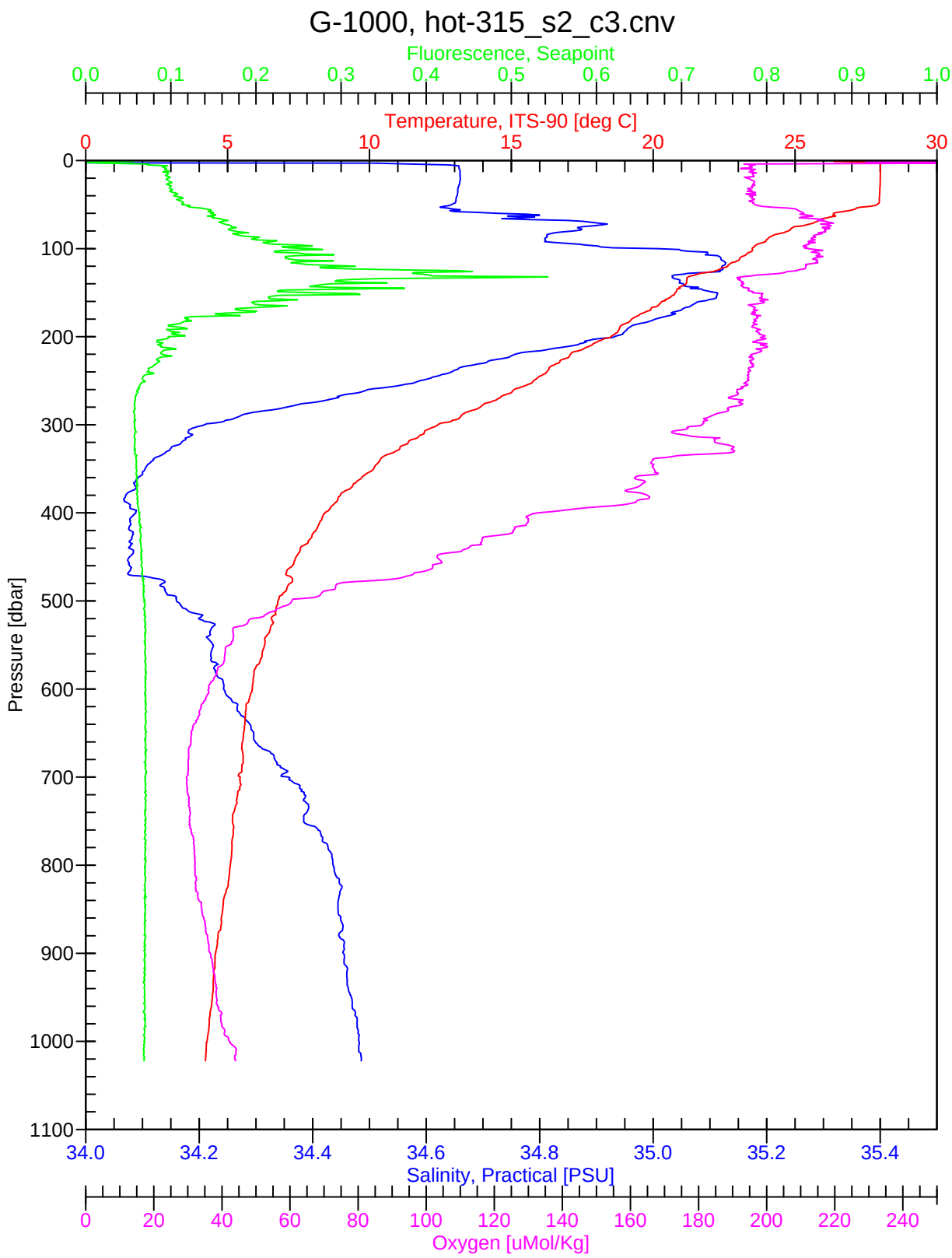
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

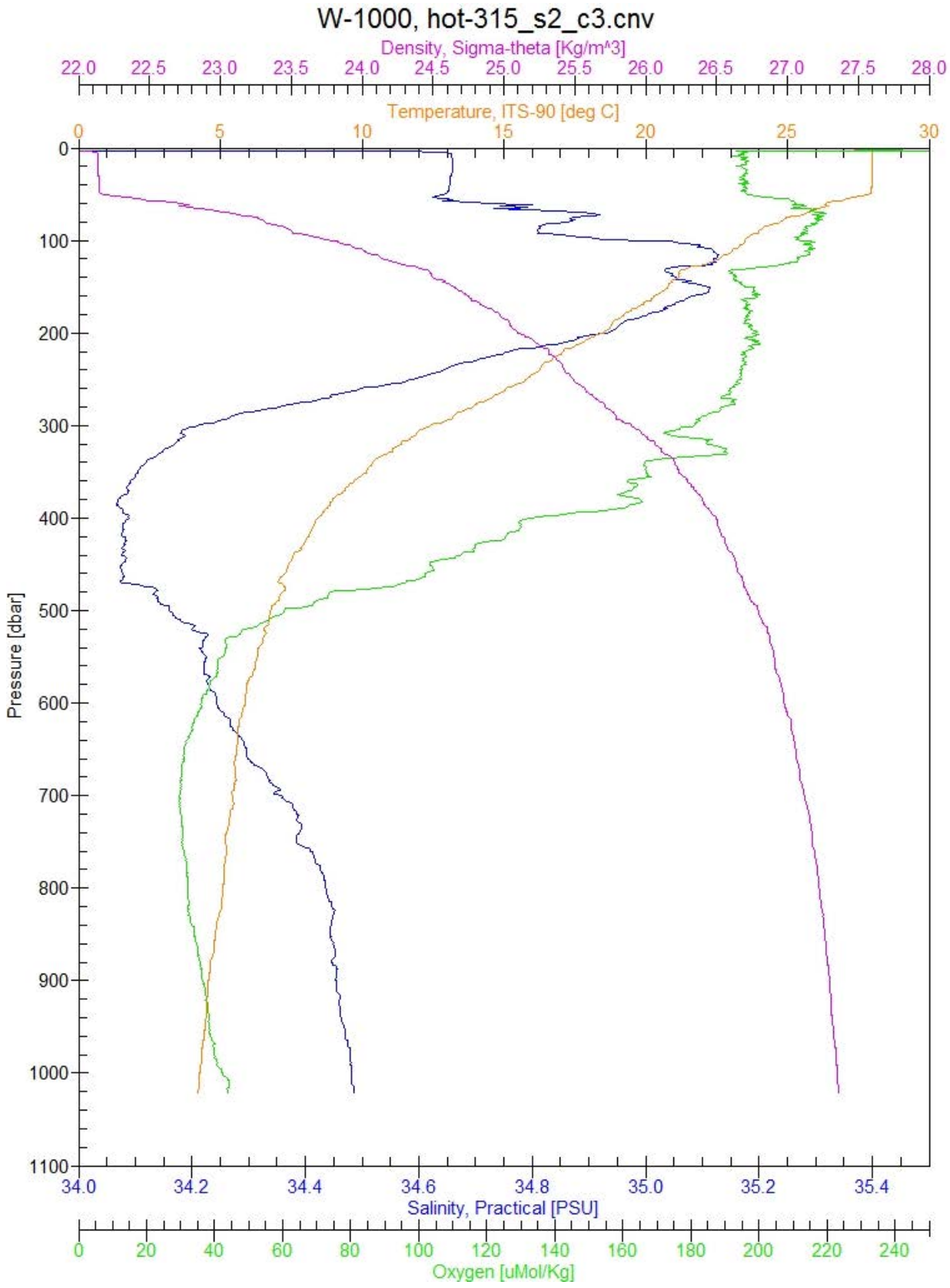

G-1000, hot-315_s2_c1.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

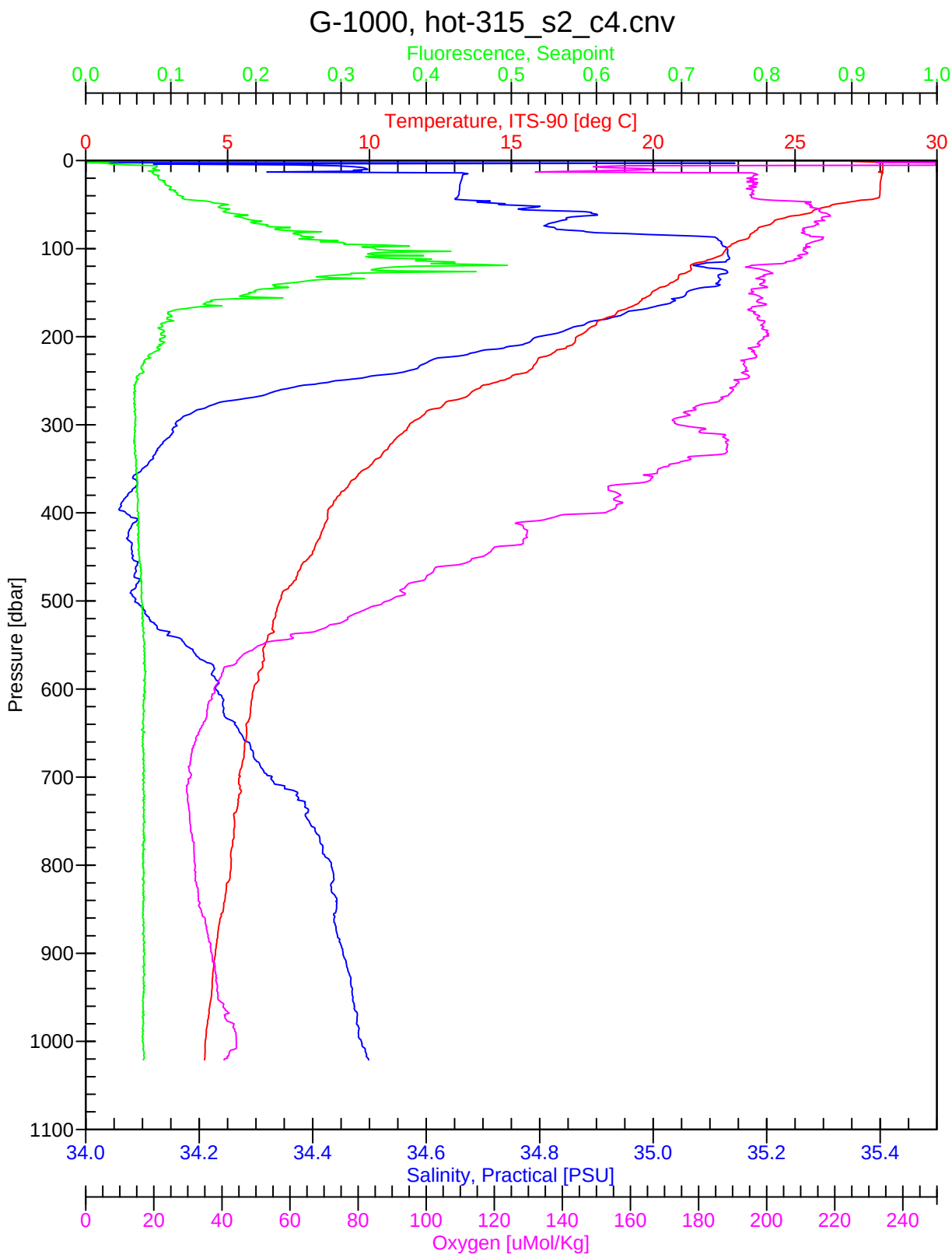

W-1000, hot-315_s2_c1.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

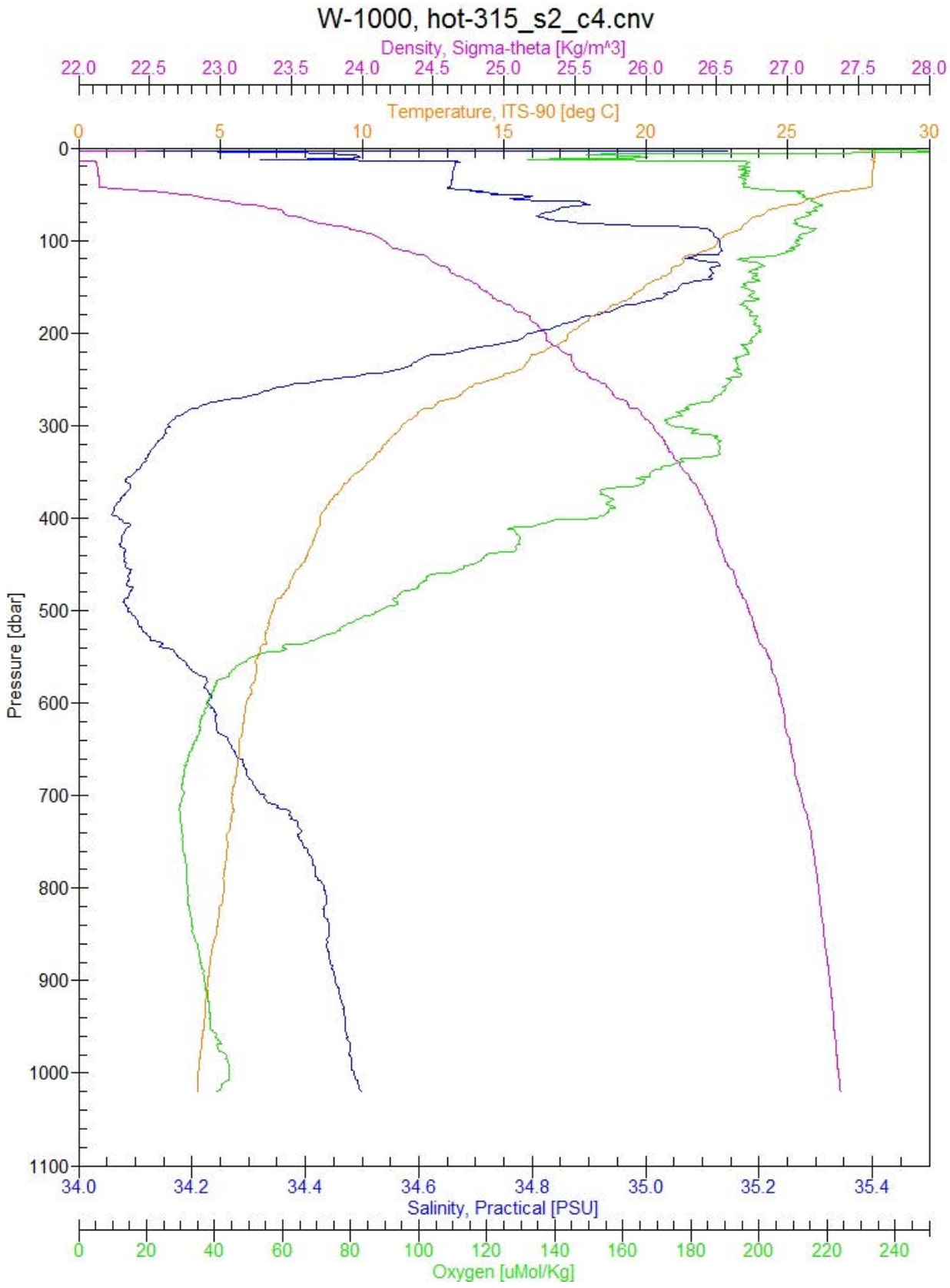

G-1000, hot-315_s2_c2.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

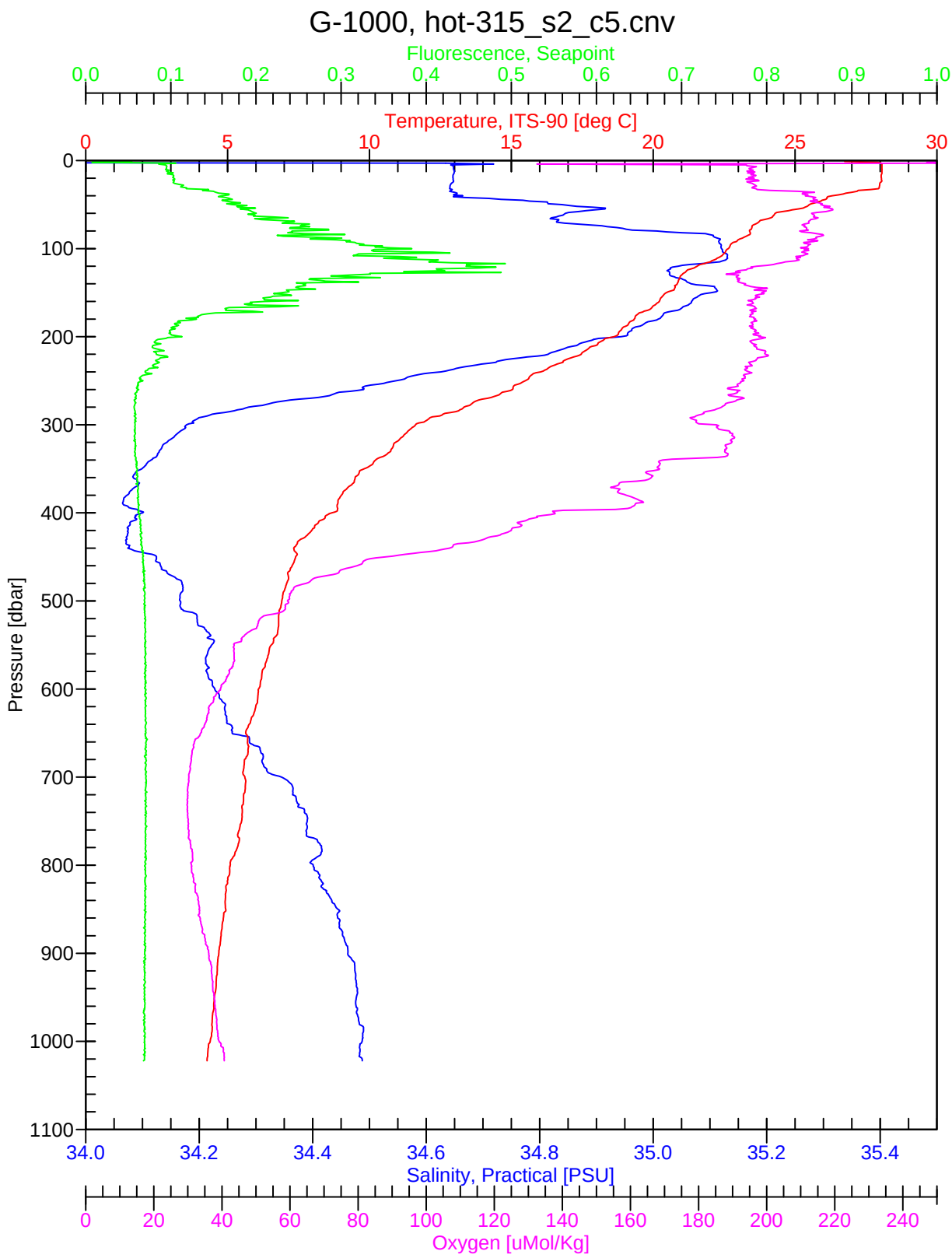

W-1000, hot-315_s2_c2.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

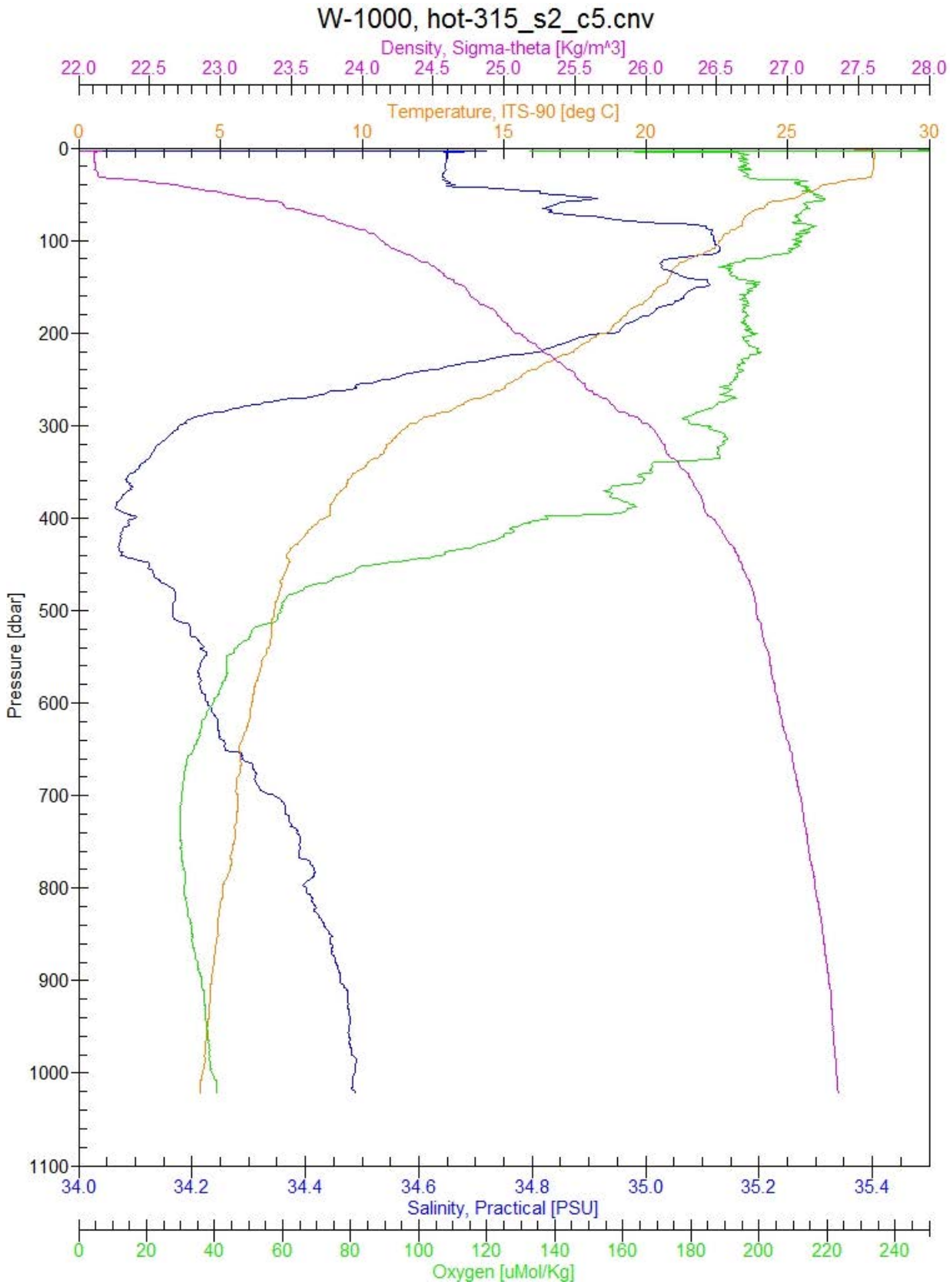

G-1000, hot-315_s2_c3.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

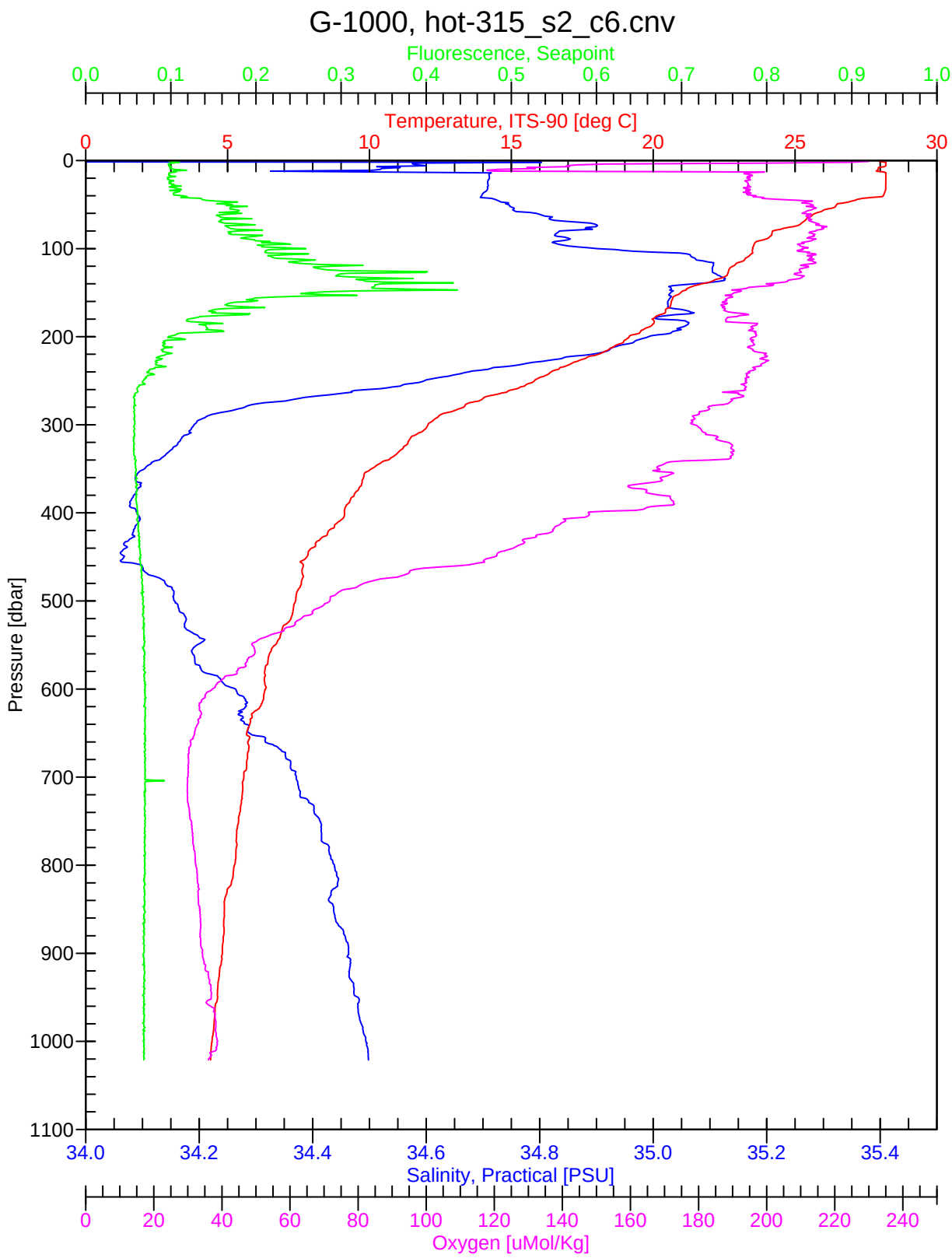

W-1000, hot-315_s2_c3.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

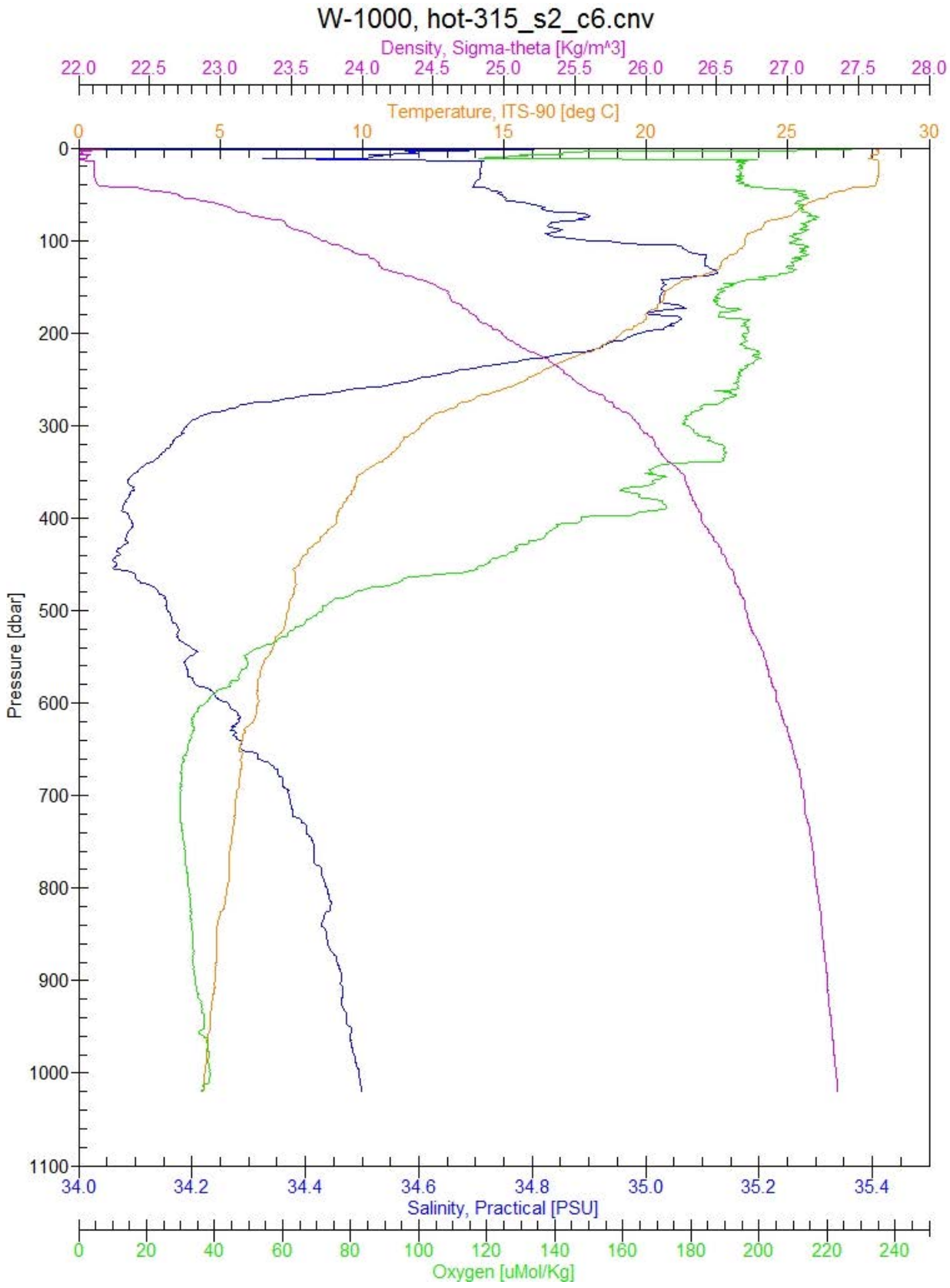

G-1000, hot-315_s2_c4.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

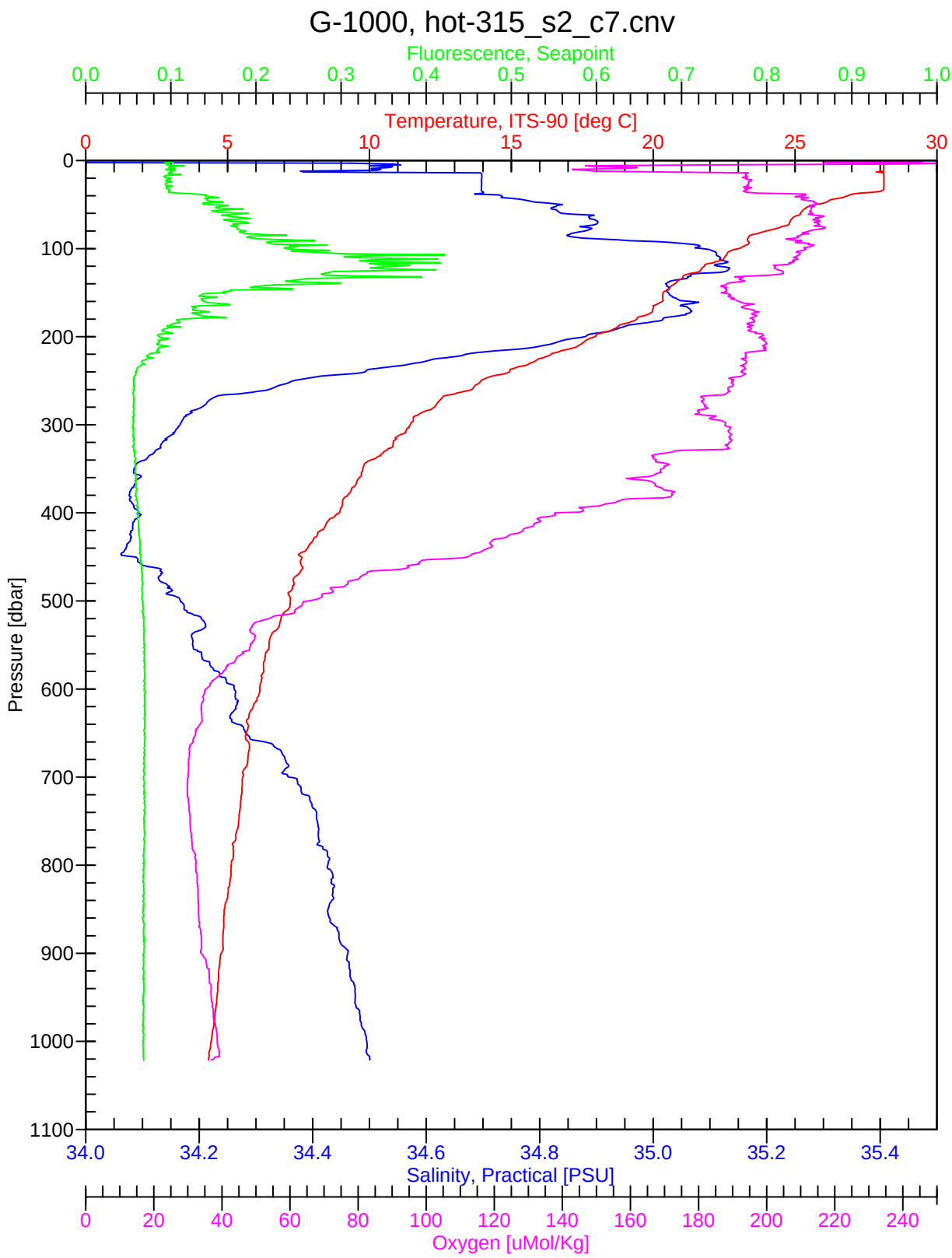

W-1000, hot-315_s2_c4.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

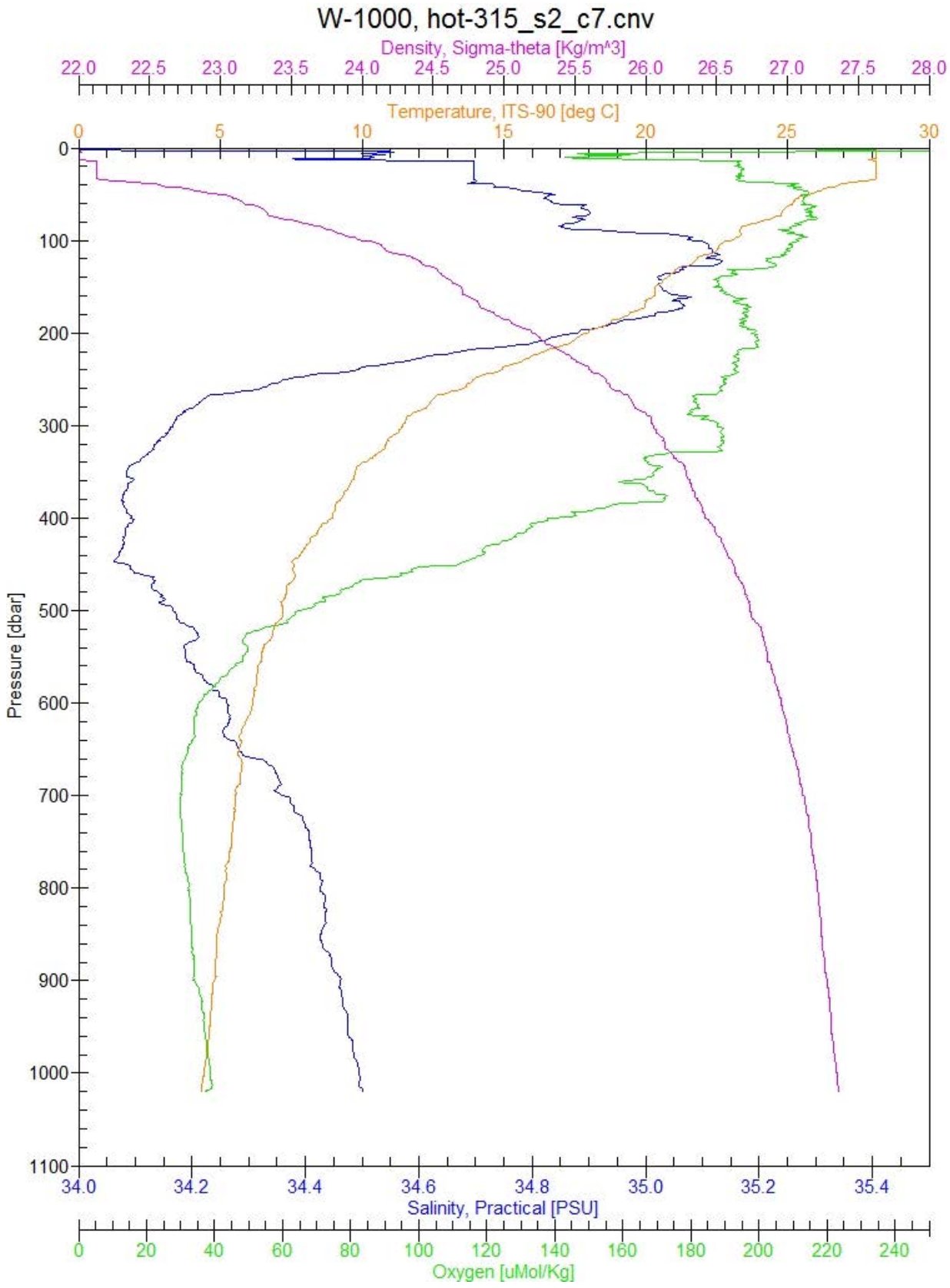

G-1000, hot-315_s2_c5.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

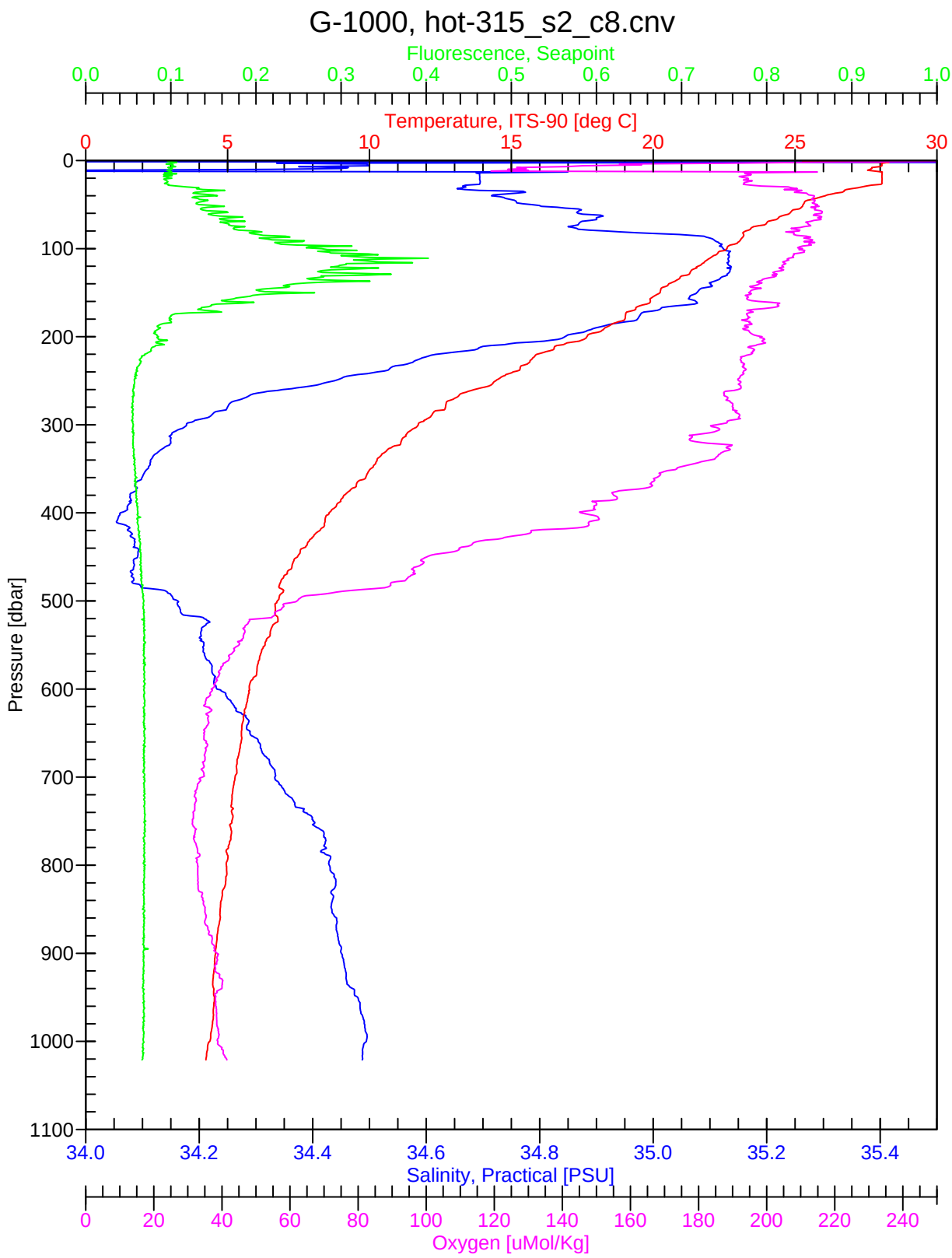

W-1000, hot-315_s2_c5.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

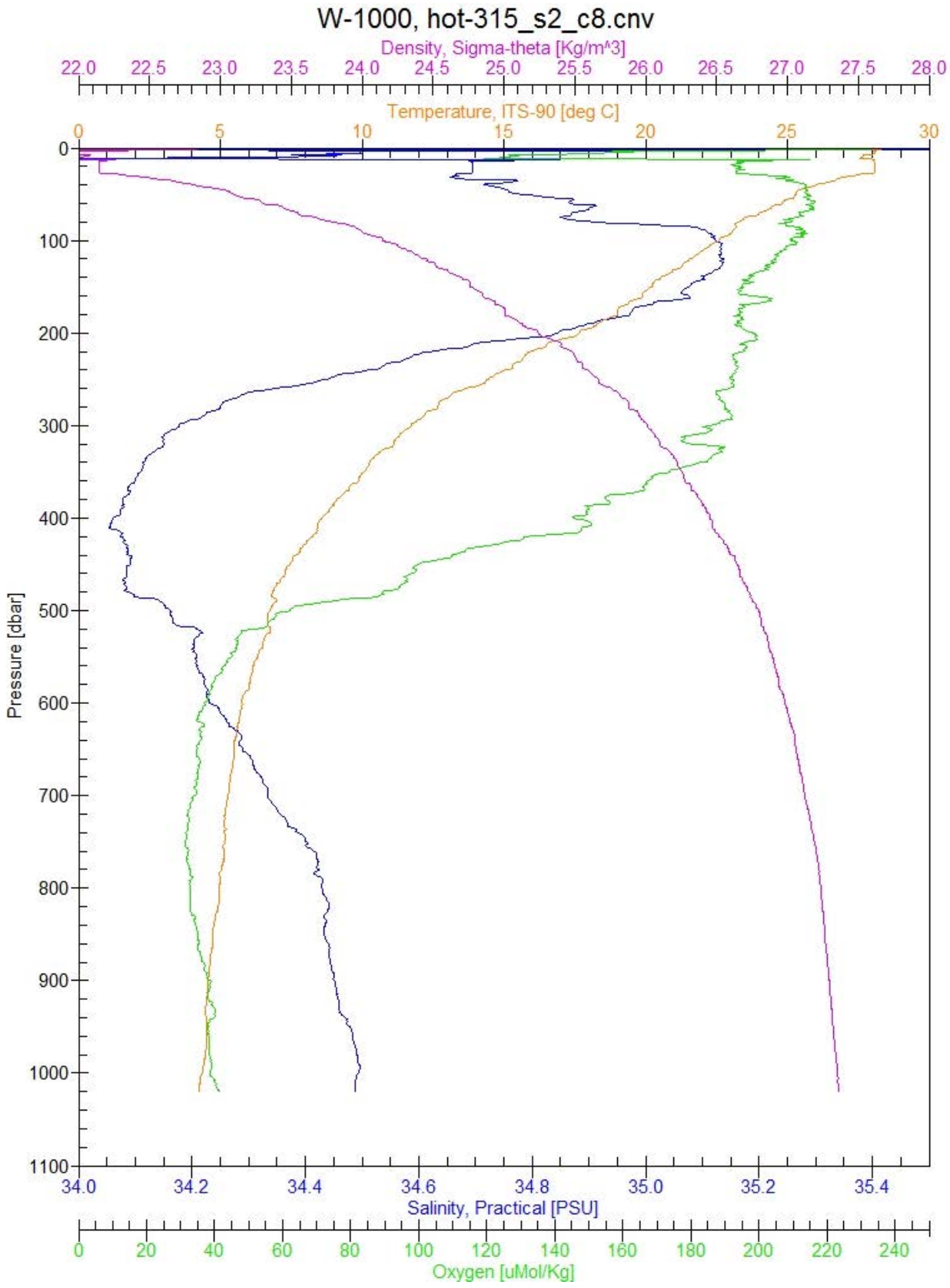

G-1000, hot-315_s2_c6.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

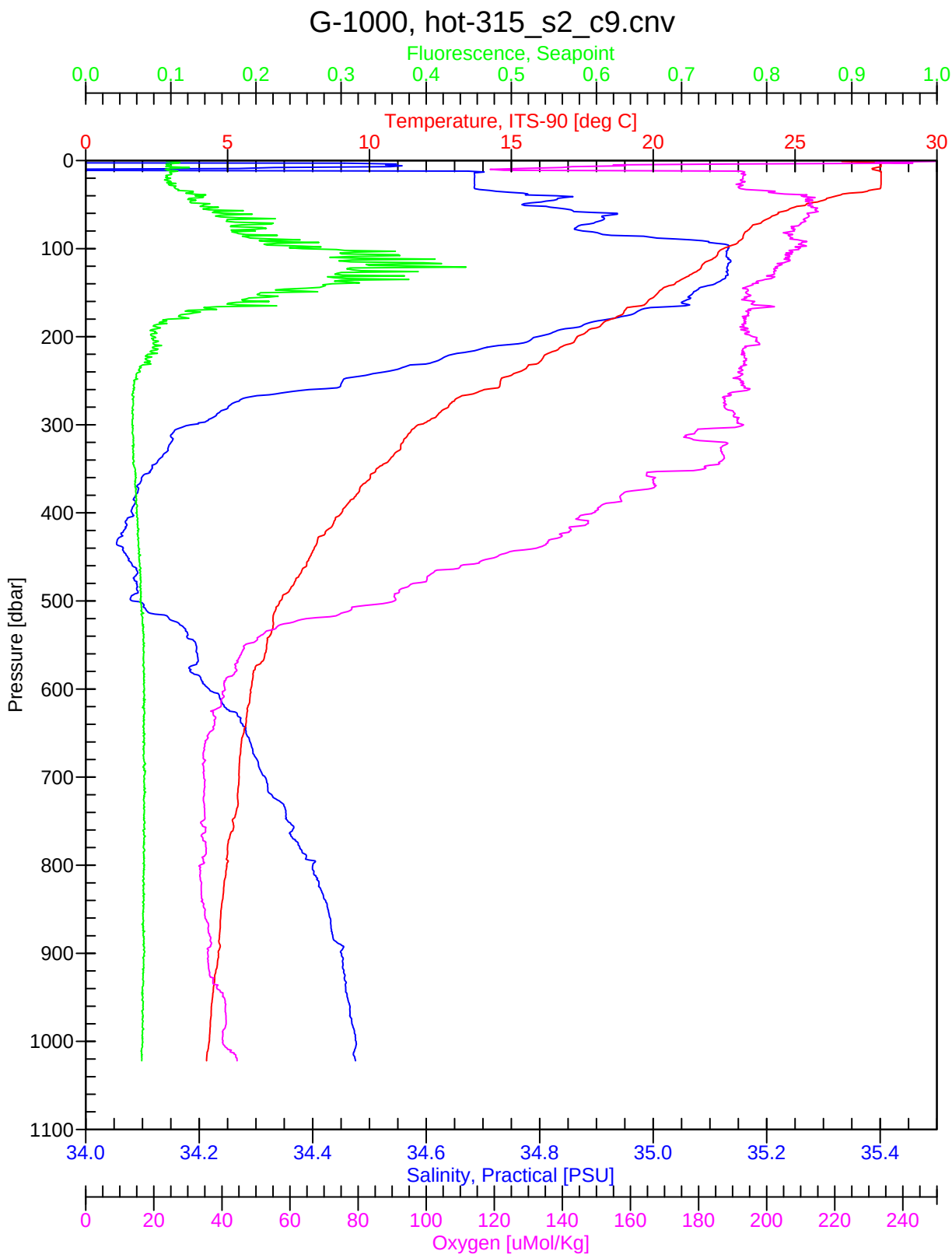

W-1000, hot-315_s2_c6.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

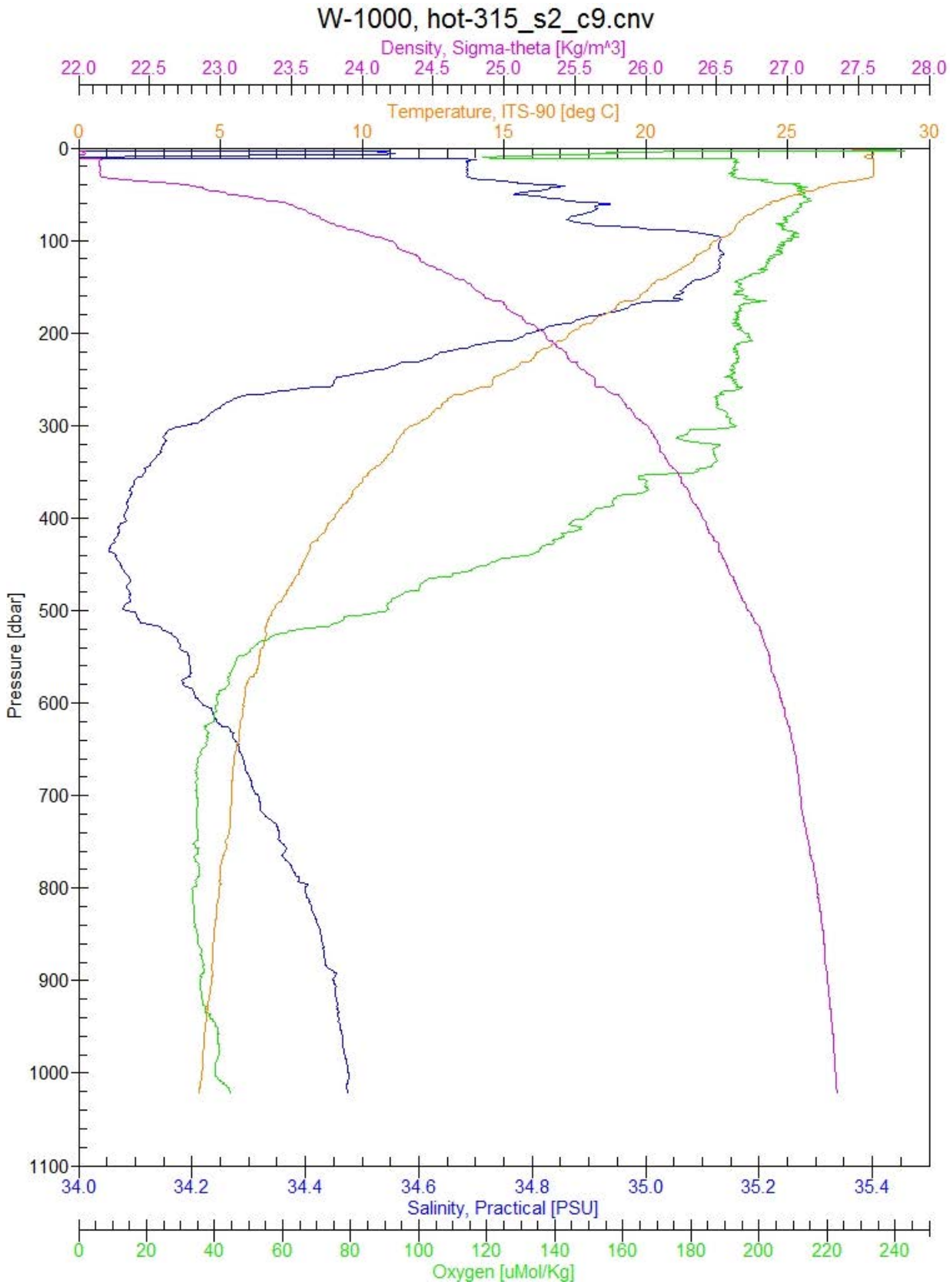

G-1000, hot-315_s2_c7.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

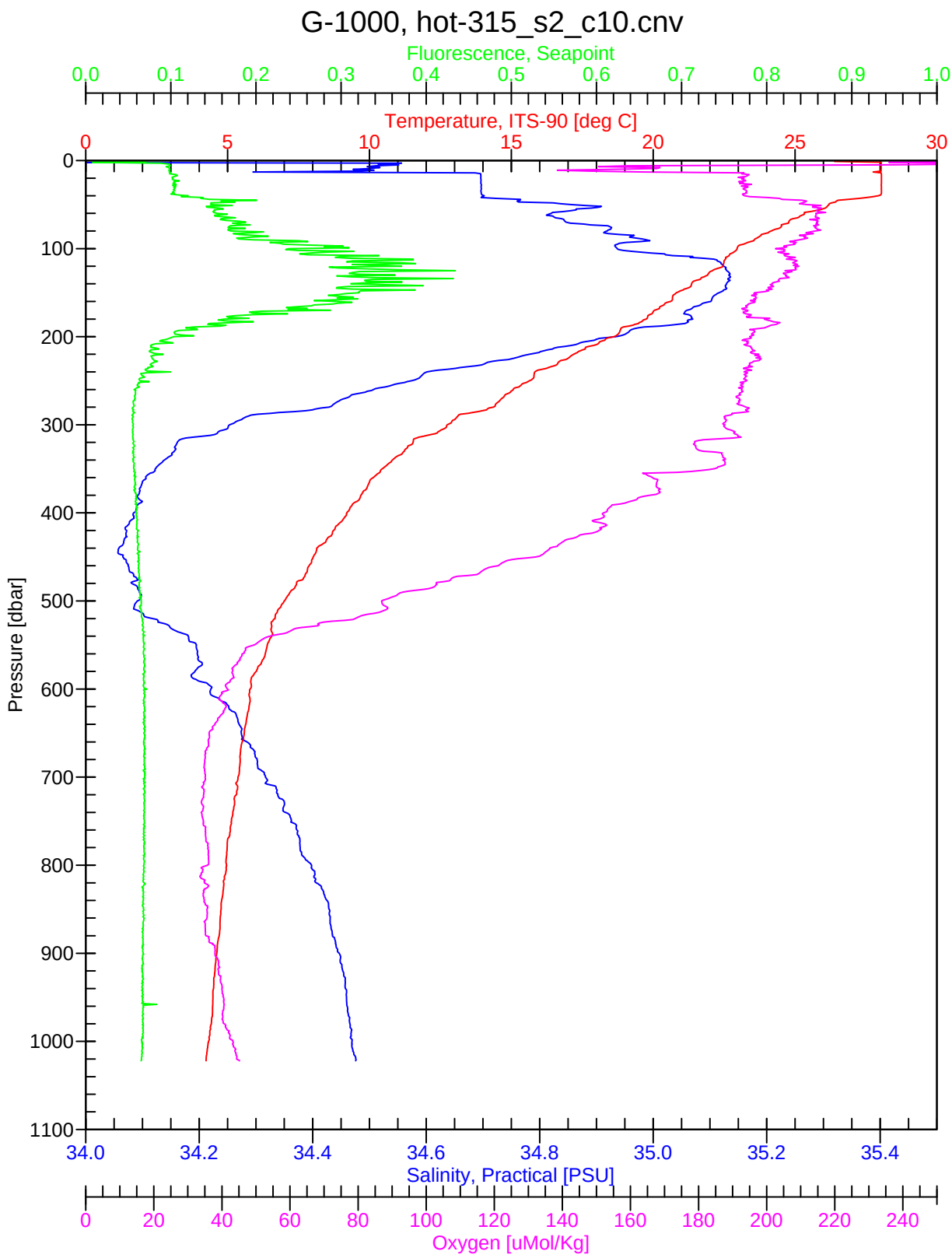

W-1000, hot-315_s2_c7.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

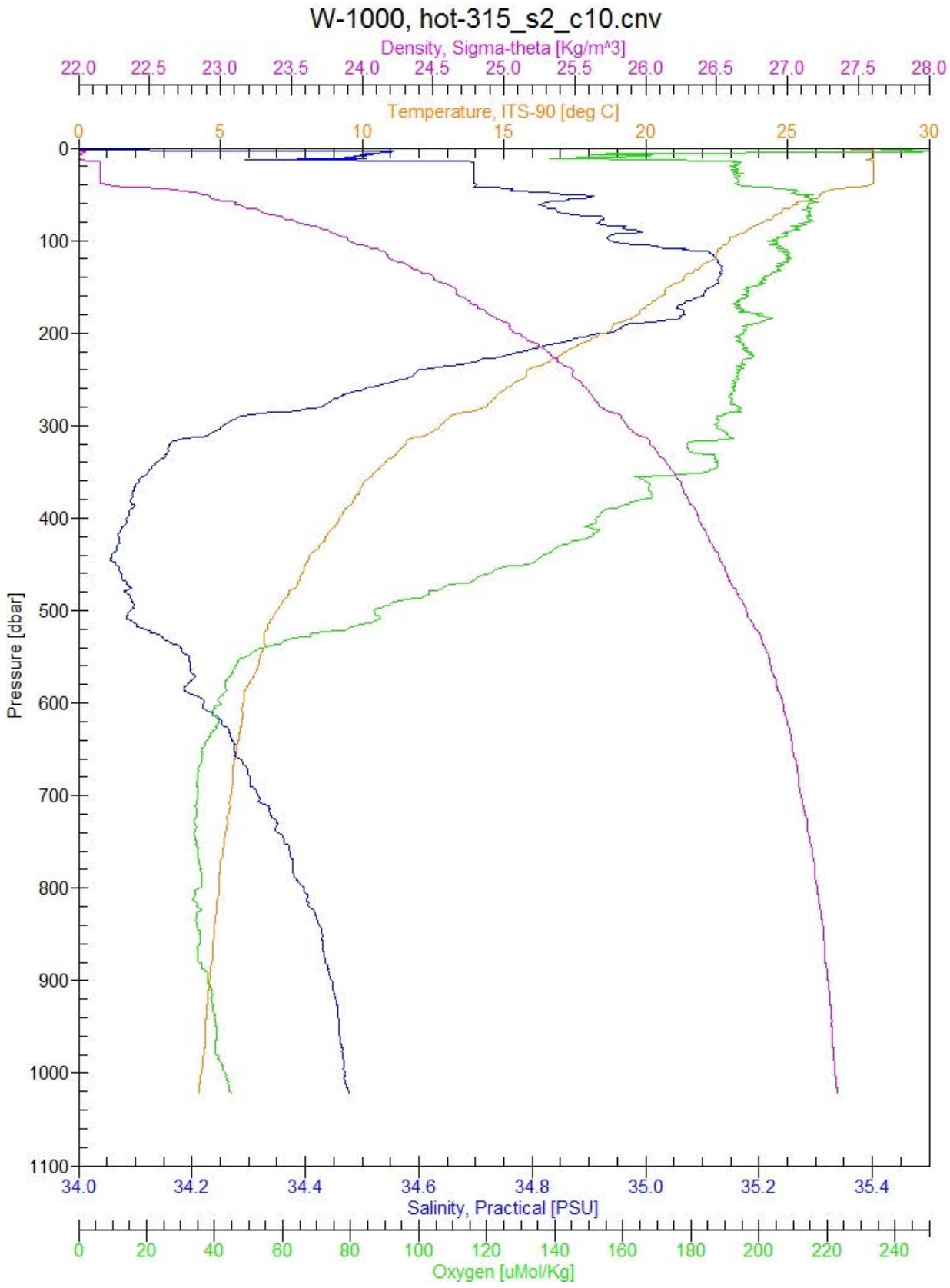

G-1000, hot-315_s2_c8.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

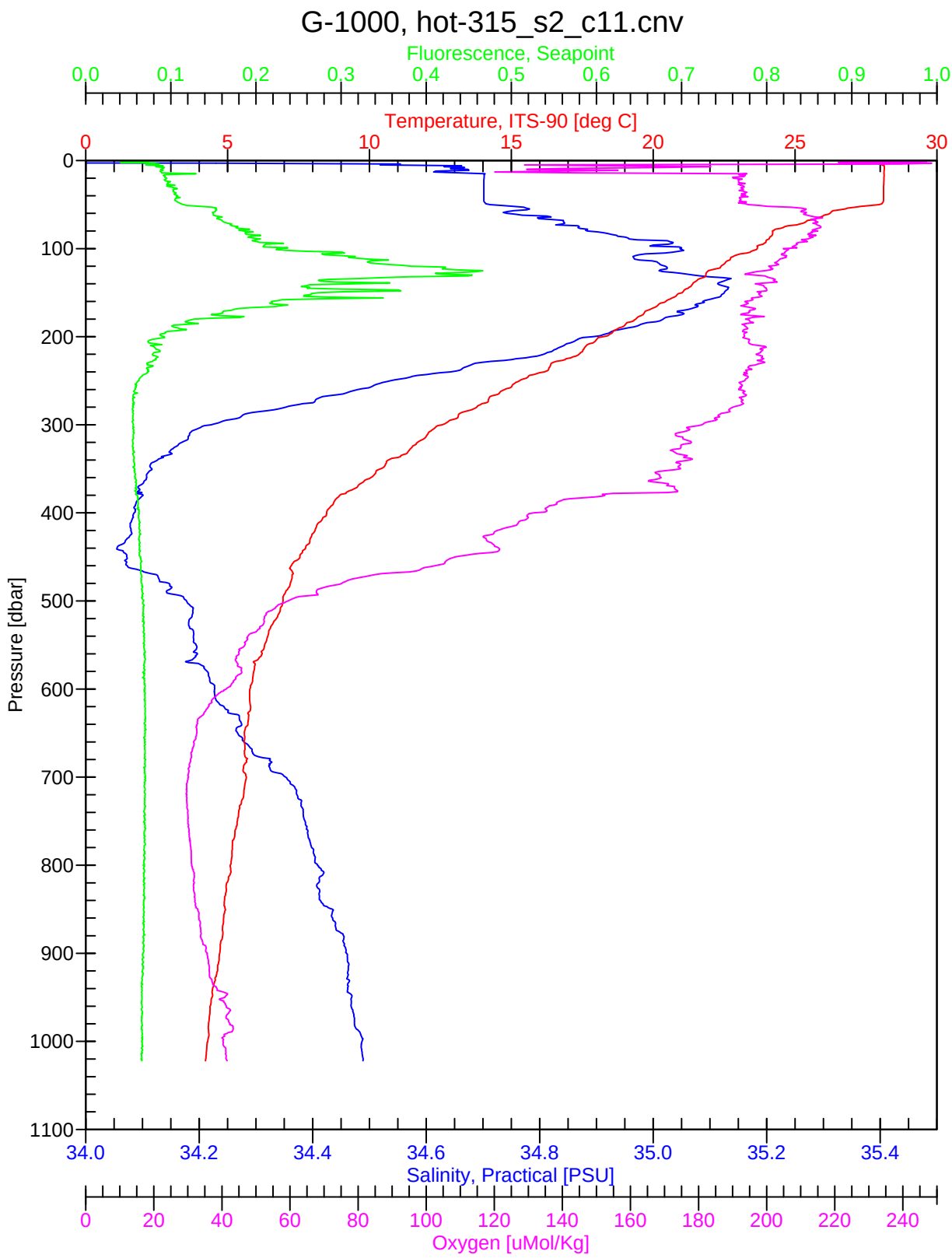

W-1000, hot-315_s2_c8.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

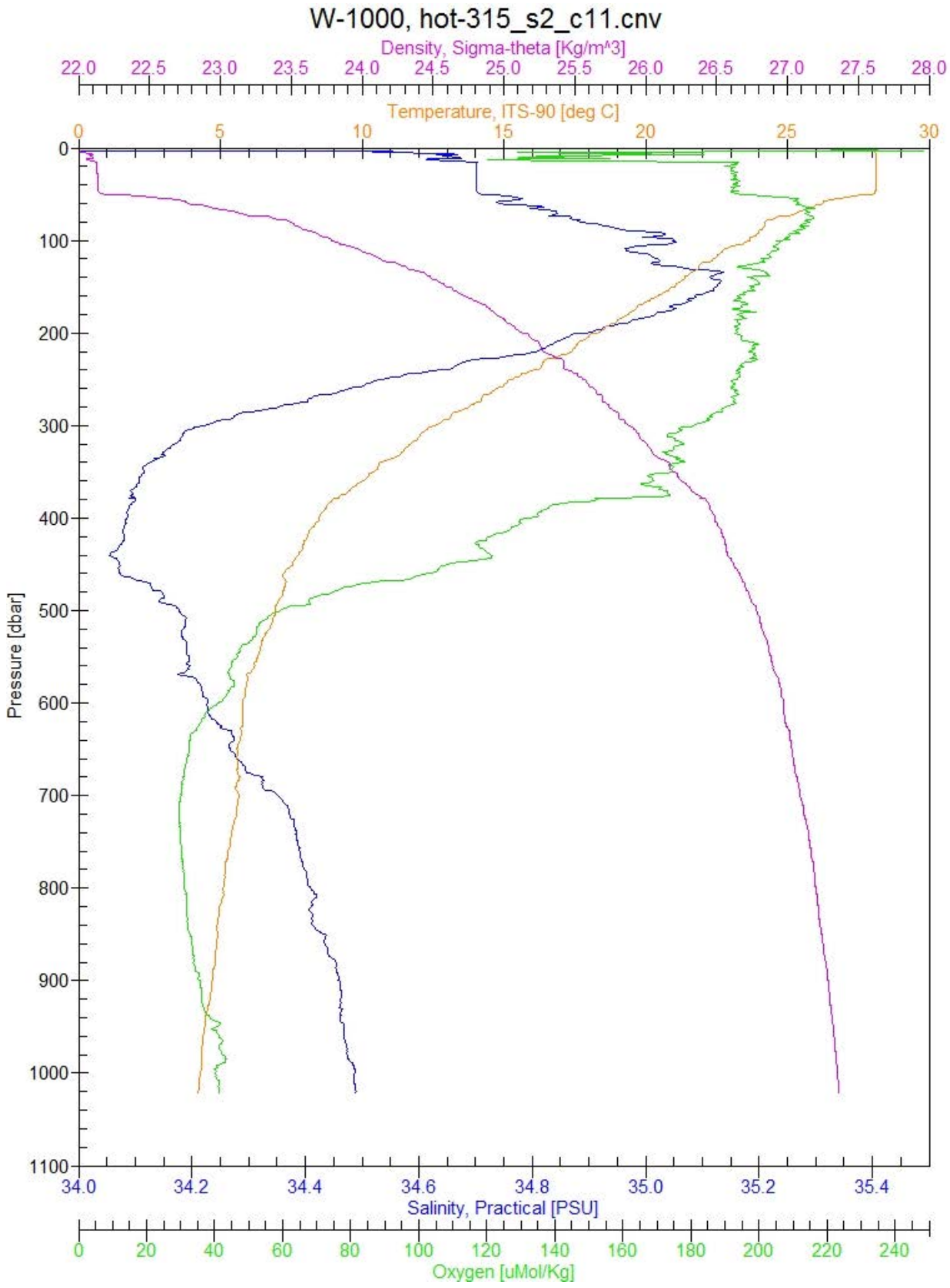

G-1000, hot-315_s2_c9.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

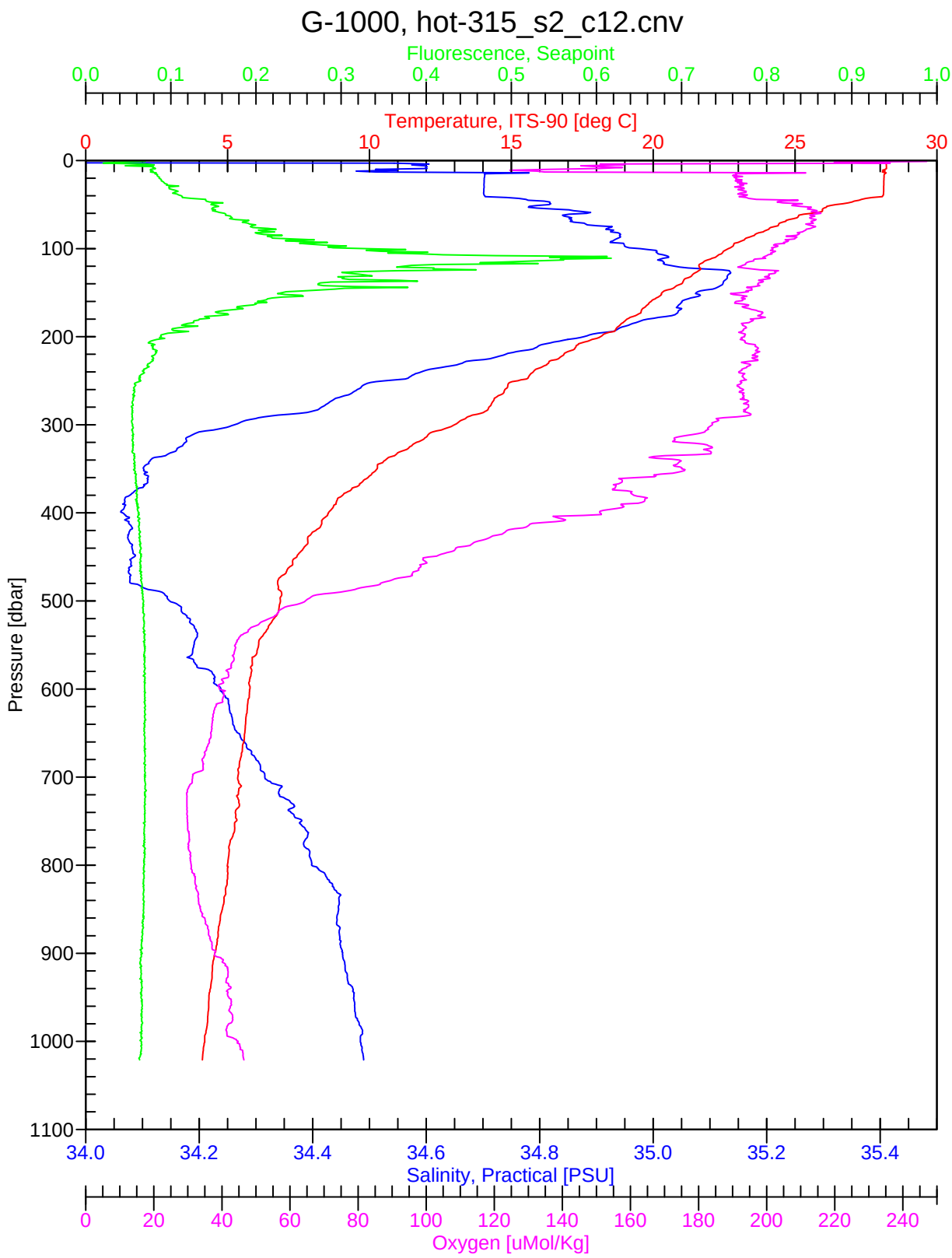

W-1000, hot-315_s2_c9.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

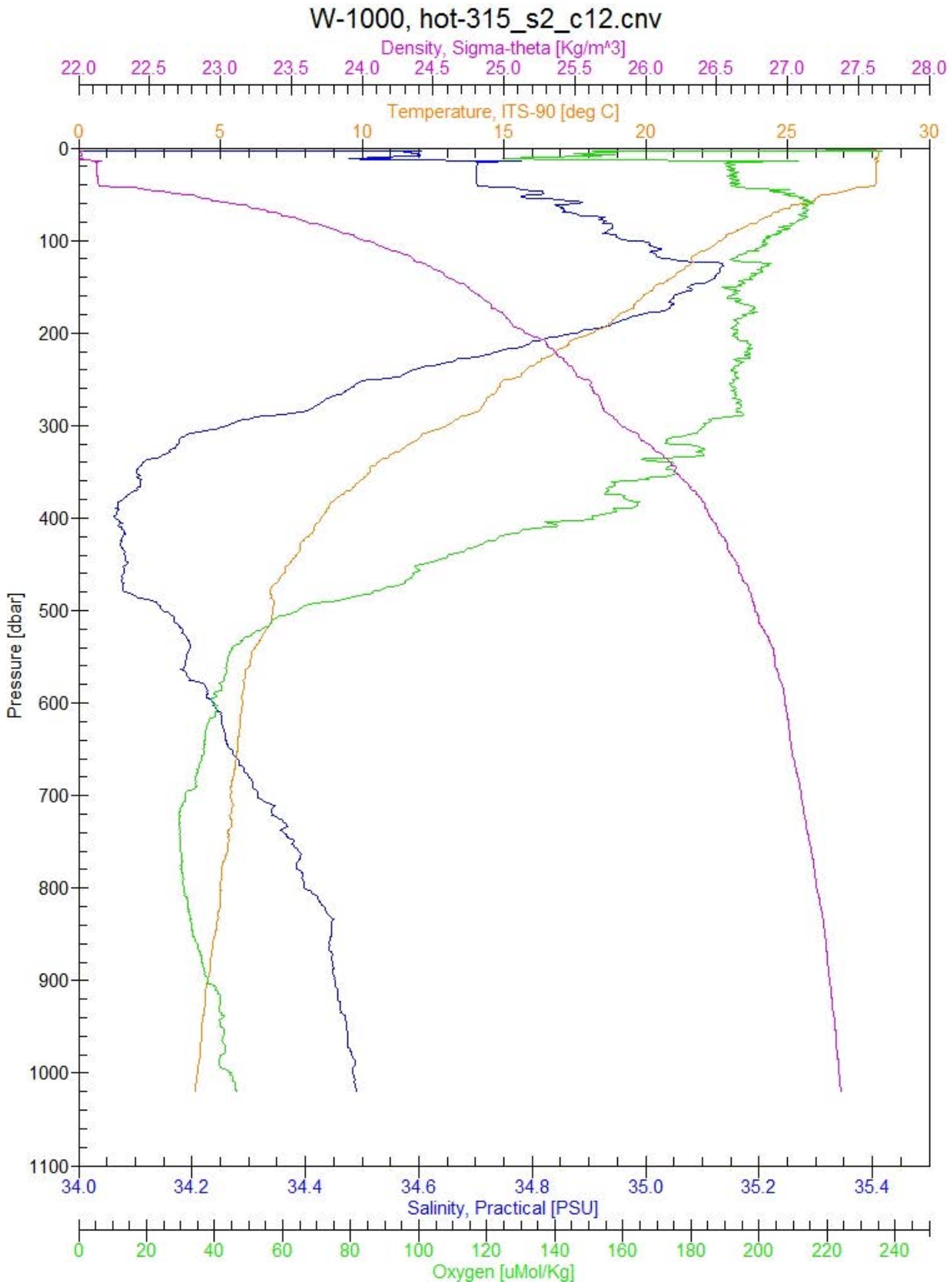

G-1000, hot-315_s2_c10.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

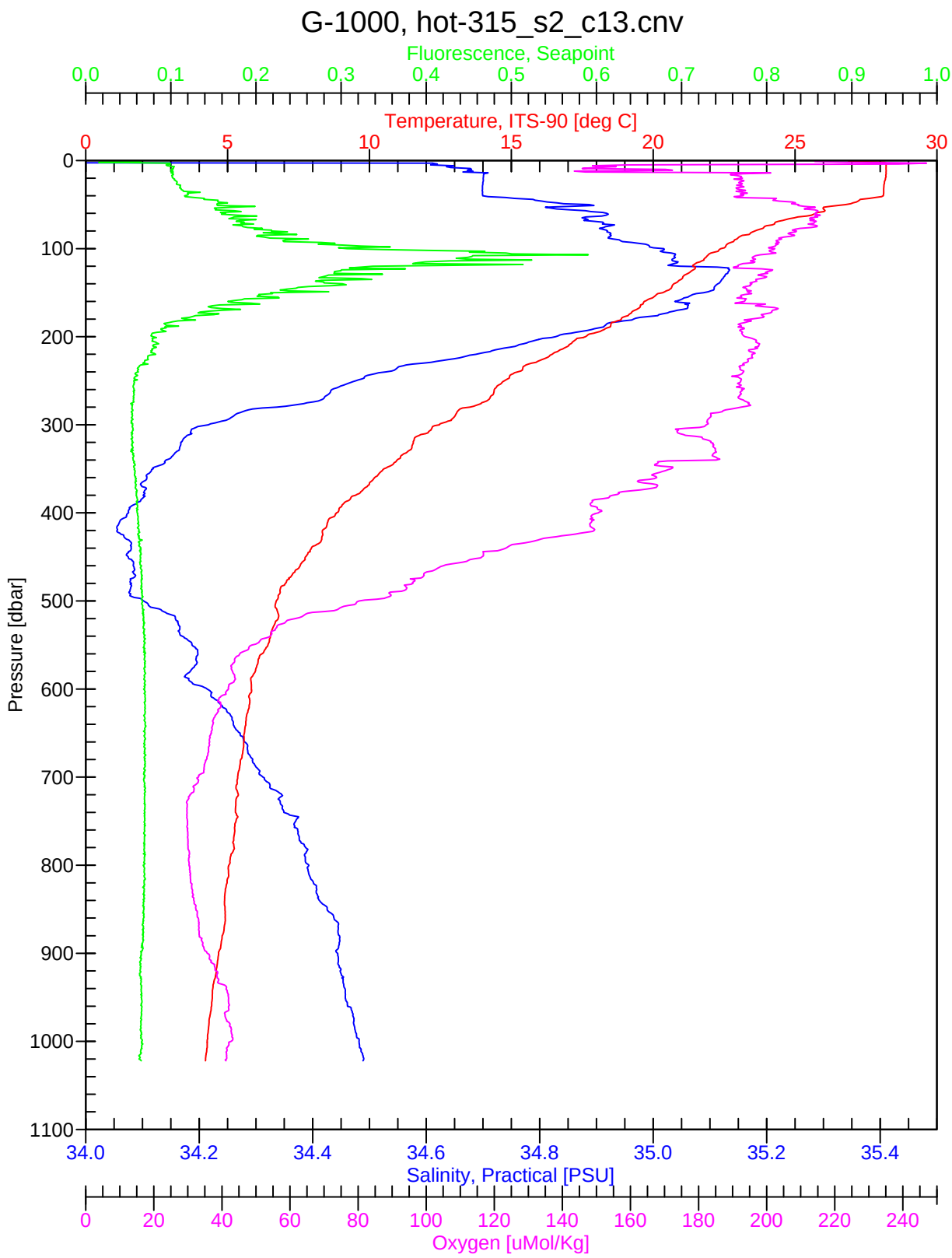

W-1000, hot-315_s2_c10.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

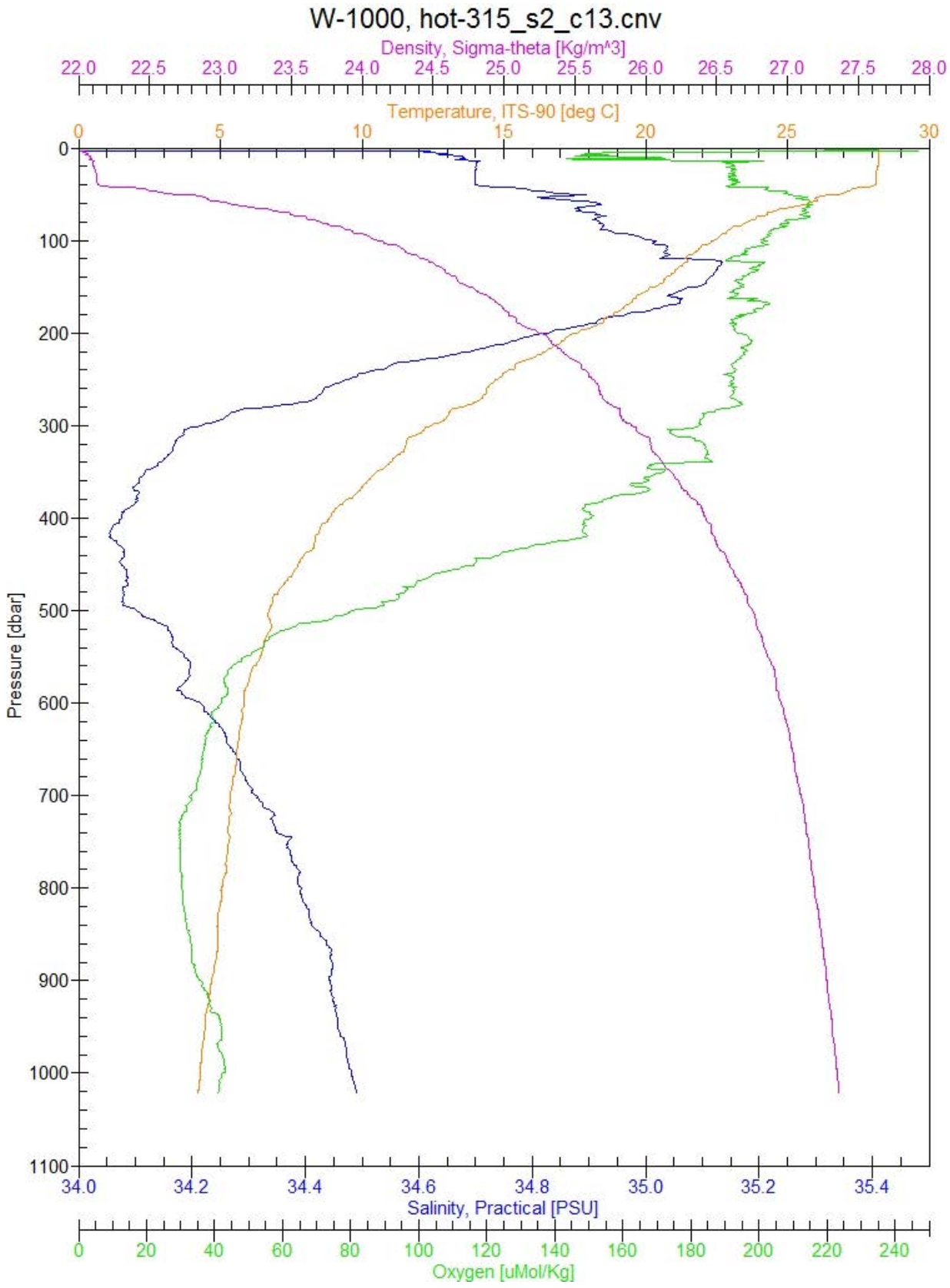

G-1000, hot-315_s2_c11.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

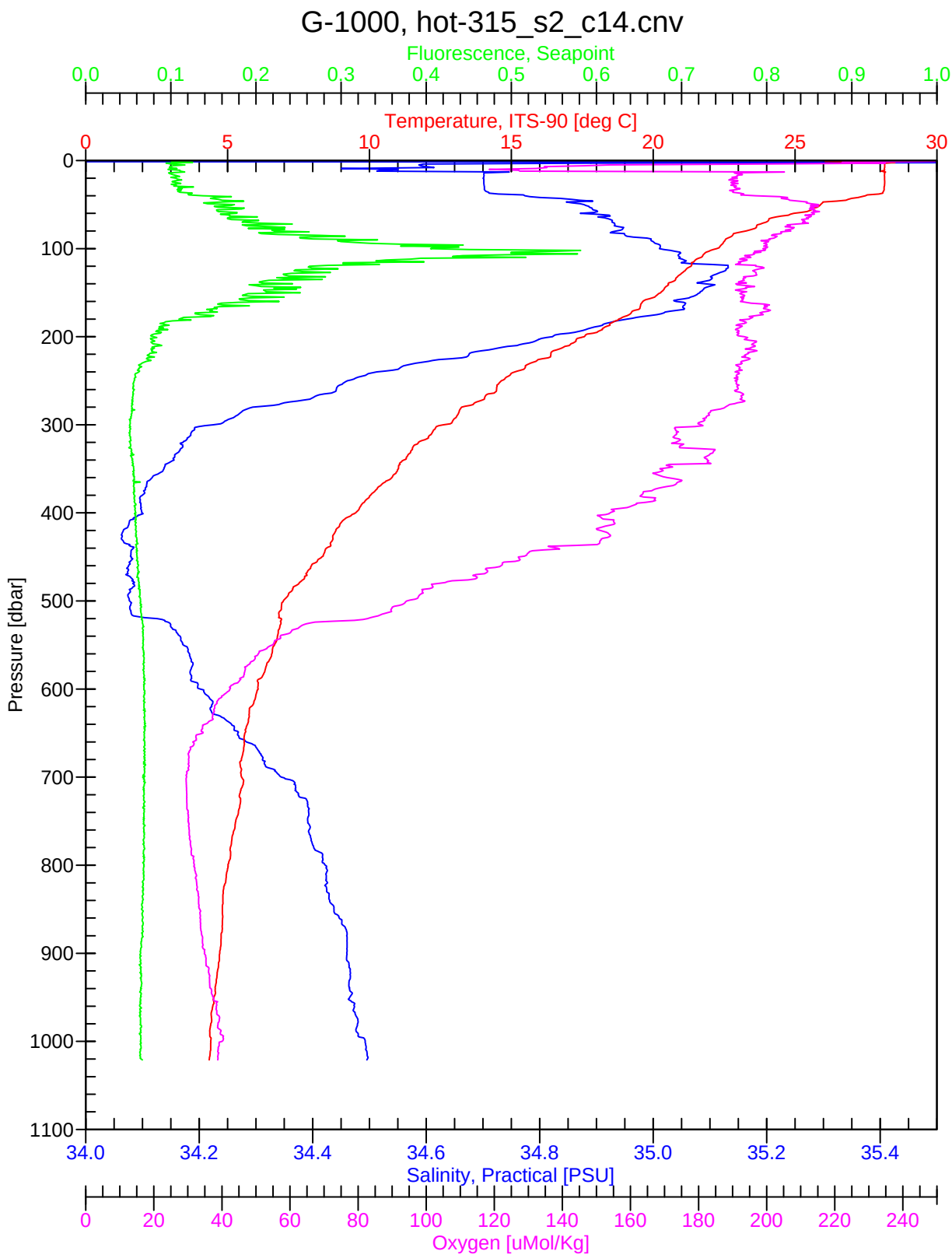

W-1000, hot-315_s2_c11.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Salinity, Practical [PSU]
0 20 40 60 80 100 120 140 160 180 200 220 240
Oxygen [uMol/Kg]

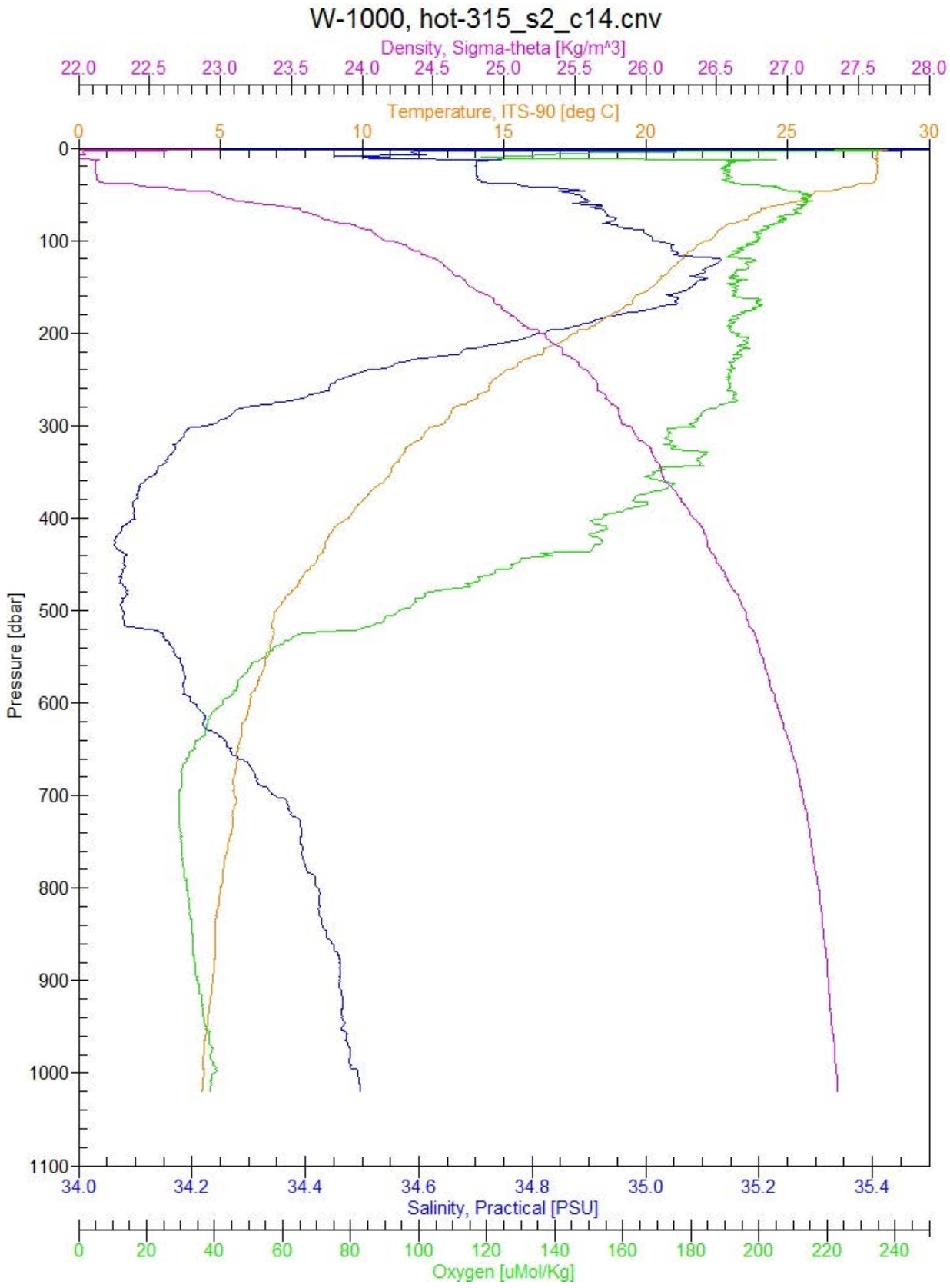

G-1000, hot-315_s2_c12.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

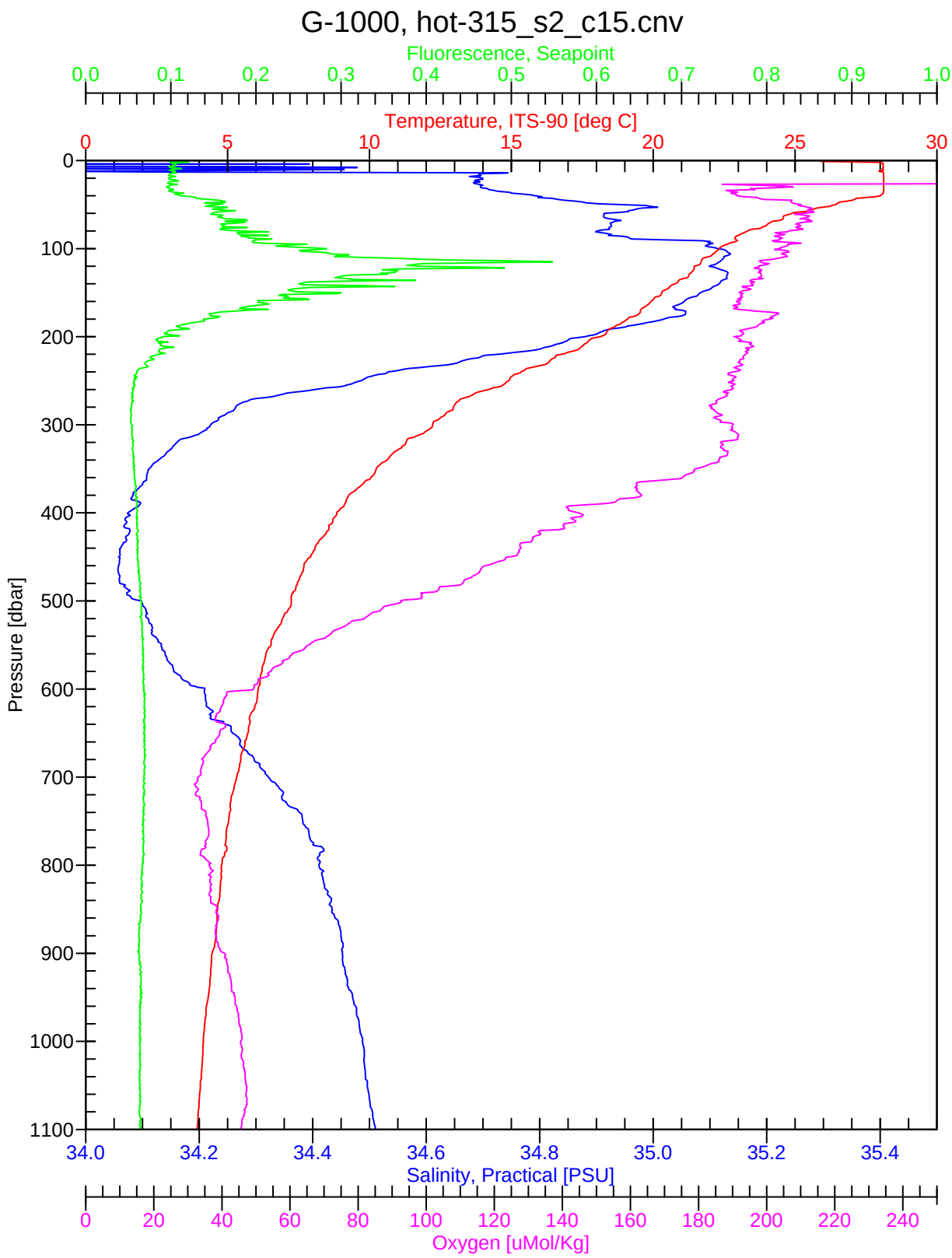

W-1000, hot-315_s2_c12.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

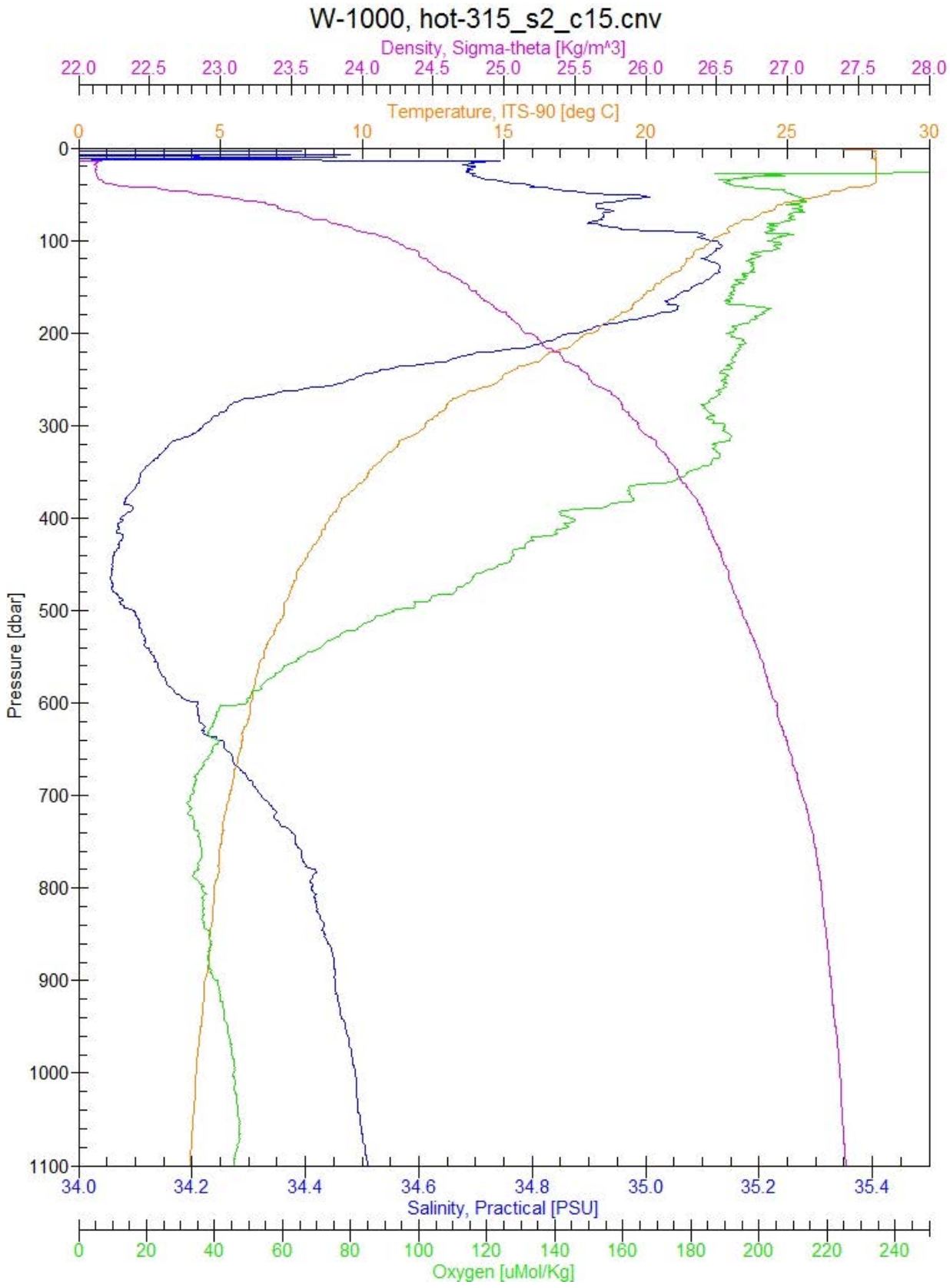

G-1000, hot-315_s2_c13.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

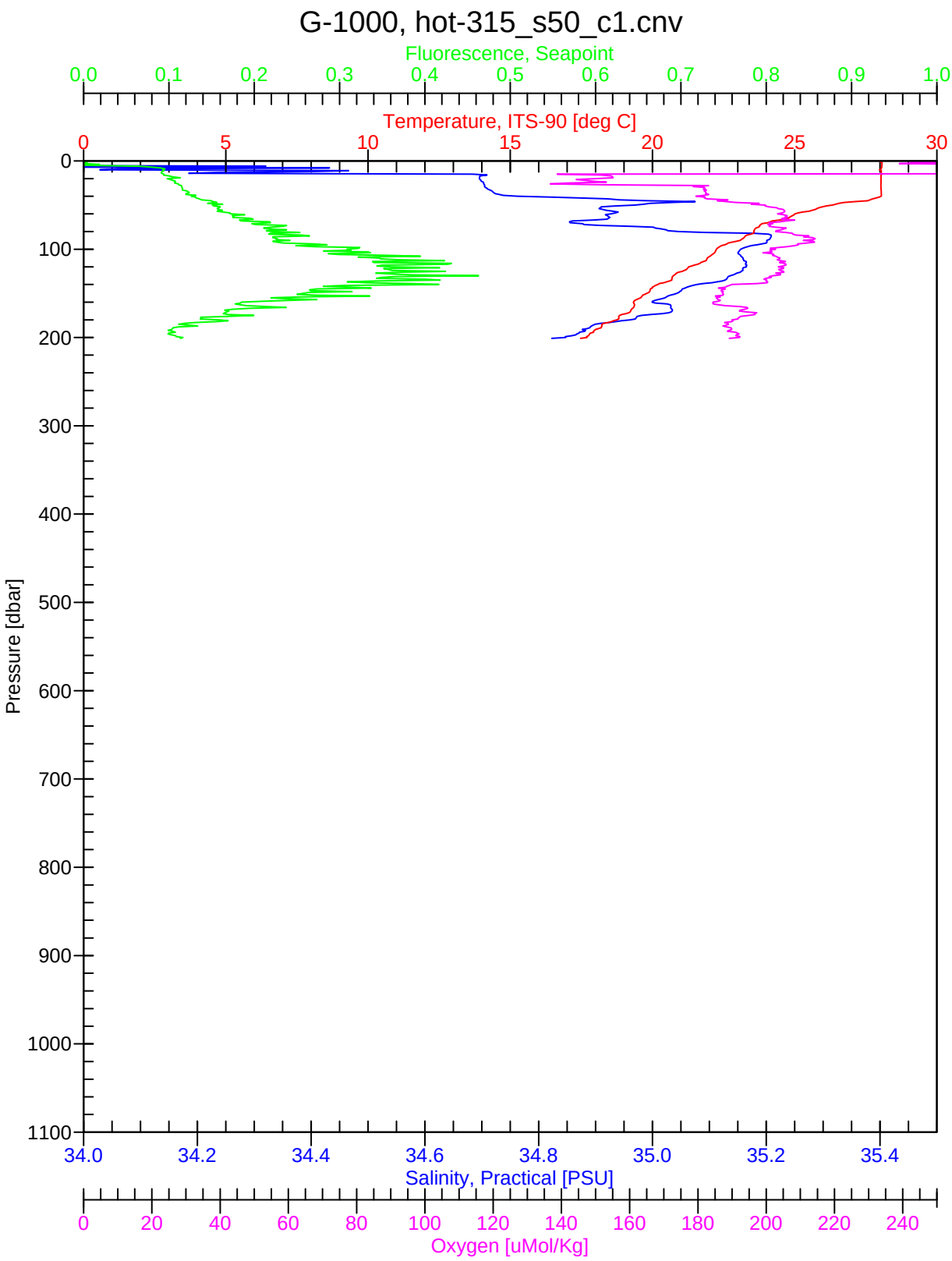

W-1000, hot-315_s2_c13.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

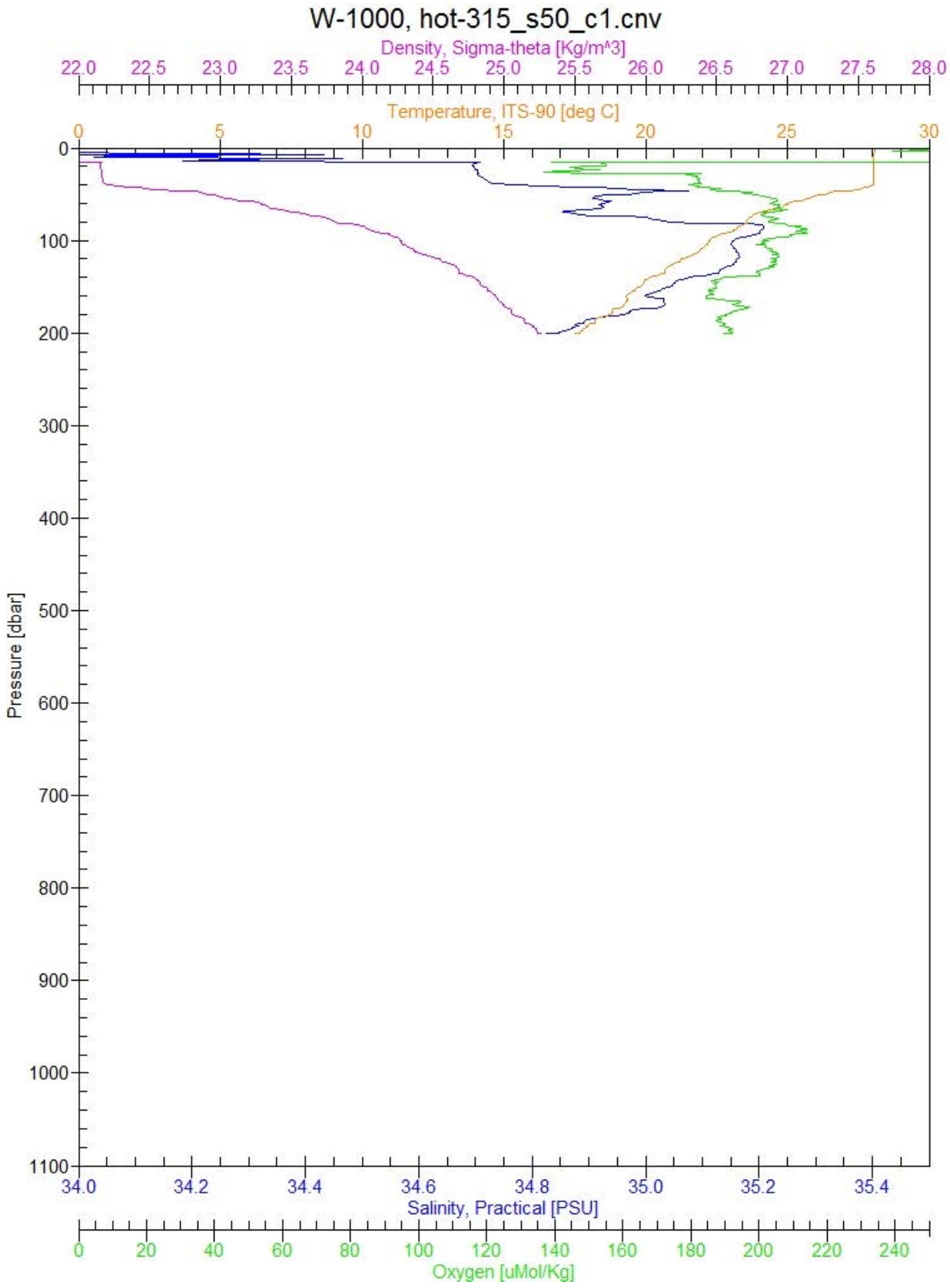

G-1000, hot-315_s2_c14.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]

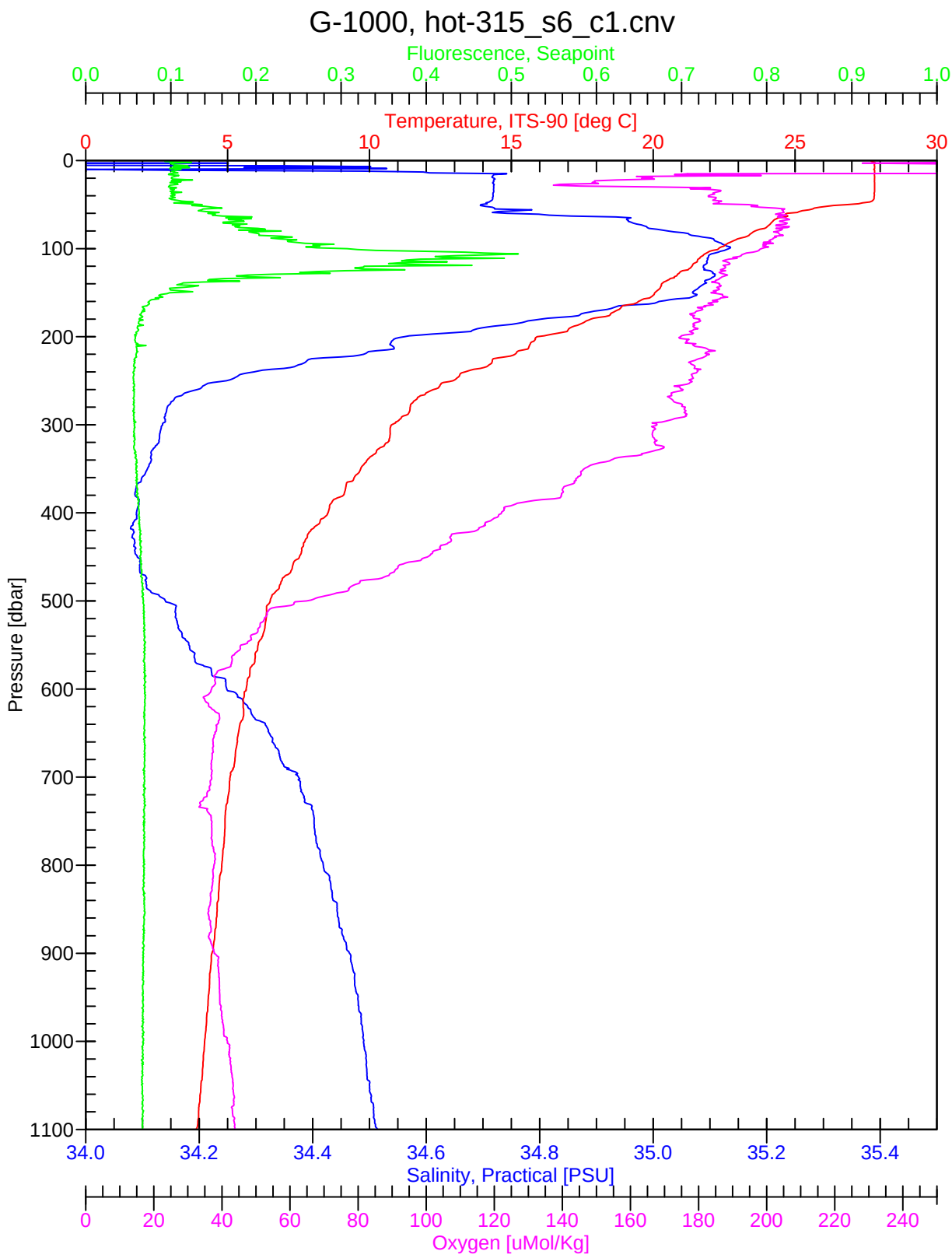

W-1000, hot-315_s2_c14.cnv
Density, Sigma-theta [Kg/m^3]
22.0 22.5 23.0 23.5 24.0 24.5 25.0 25.5 26.0 26.5 27.0 27.5 28.0
Temperature, ITS-90 [deg C]
0 5 10 15 20 25 30
Pressure [dbar]
0 100 200 300 400 500 600 700 800 900 1000 1100
Salinity, Practical [PSU]
34.0 34.2 34.4 34.6 34.8 35.0 35.2 35.4
Oxygen [uMol/Kg]
0 20 40 60 80 100 120 140 160 180 200 220 240

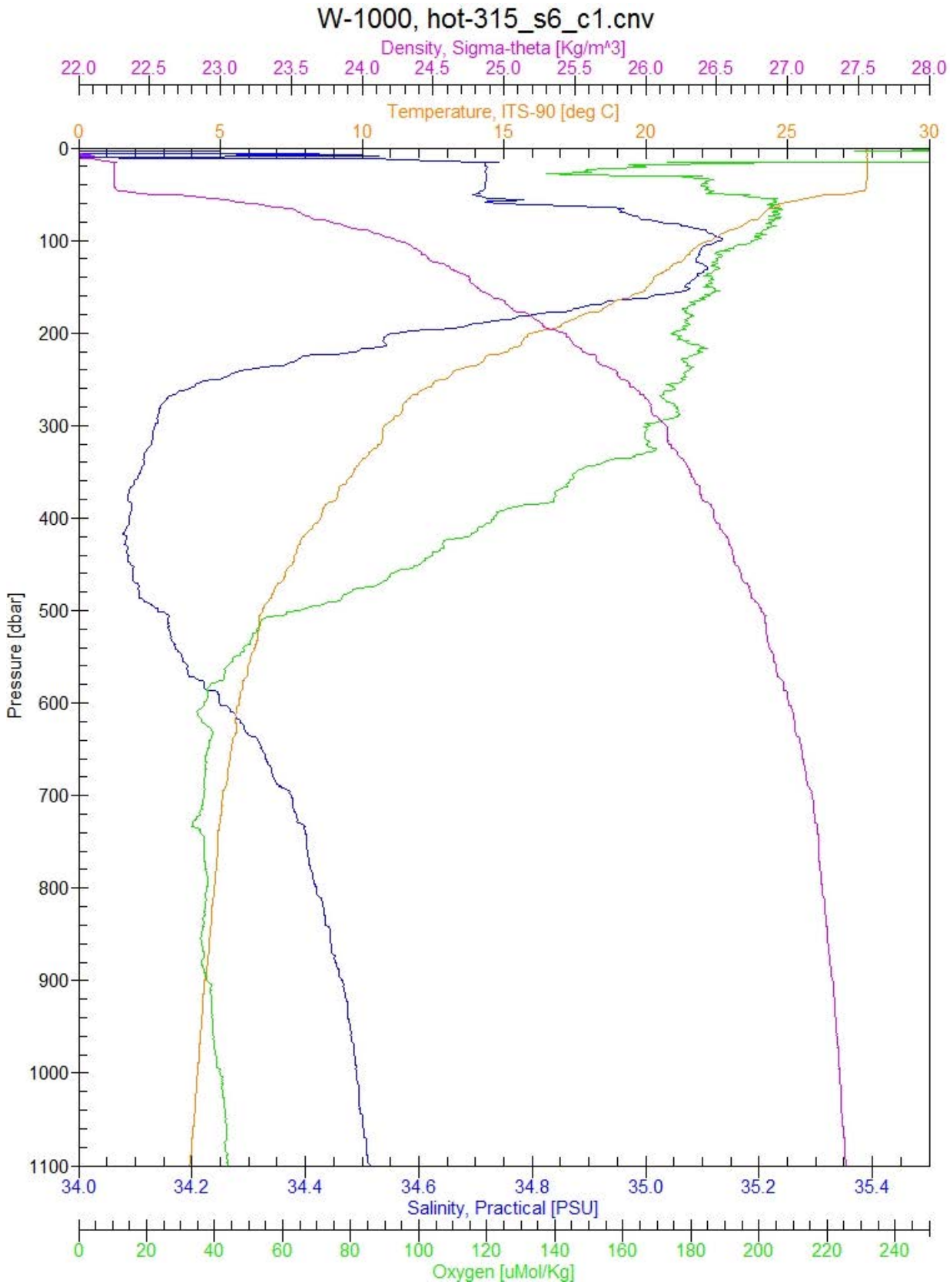

G-1000, hot-315_s2_c15.cnv
Fluorescence, Seapoint
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Temperature, ITS-90 [deg C]
0
5
10
15
20
25
30
Pressure [dbar]
0
100
200
300
400
500
600
700
800
900
1000
1100
34.0
34.2
34.4
34.6
34.8
35.0
35.2
35.4
Salinity, Practical [PSU]
0
20
40
60
80
100
120
140
160
180
200
220
240
Oxygen [uMol/Kg]


W-1000, hot-315_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
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-315_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]


W-1000, hot-315_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-315_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-315_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]

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	29.20	TR/FS-M

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

DCM: 87 db
MLD: 20 db
S_{MW}: 375 db

Station: 1	Cast: 1
Latitude start: 21° 20.4837' N end: 2120.478' N	Longitude start: 158° 16.321' W end: 158 16.297' W
Depth of water: 1499 meters	Date (GMT): 9 / 3 / 19
Pressure on Deck	Time:
Begin: 0.3485 End: −0.20	Start Log: 23:56 In Water: 00:03
Max cast pressure: 1020 dbar	Out of Water: 01:10

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	0029:59	00:30:20	1020	1020	
2	00:37:00	00:37:20	750	750	
3	00:42:45	00:43:05	500	500	
4	47:25	47:55	350	350	
5	50:40	51 10	250	250	
6	53:00	53:30	199	200	
7	54:35	55:05	175	175	
8	56:10	56:50	150	150	
9	57:50	58:20	125	125	
10	59:15	59:45	100	100	
11	01:05	01:35	78	75	
12	3:45	3:55	45	45	
13	5:05	5:35	25	25	
14	7:00	7:30	5	5	at 5 m.
15		40	5	5	close all for testing
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 1	Cast #: 1	Box #: 2
Salinity Sample Log Sheet			Cruise #: HOT- 315	Sampler: LK, JT, FM	
Niskin #	Depth	Serial #	Comments		
1	1020	25			
2	750	26			
3	500	27			
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	Bottle broke, replaced w/ #46		
14	5	38			
15	5	39			
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12 L	28.18	FS-M

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

Station: 2	Cast: 1
Latitude start: 22 48.9215 end: 22 48.926	Longitude start: 158 2.2156 end: 158 2.2202
Depth of water: 4726 meters	Date (GMT): 9/4/19
Pressure on Deck	Time:
Begin: 0.30 End: 0.20	Start Log: 12:02 In Water: 12:09
Max cast pressure: 200 dbar	Out of Water: 12:38

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	12:17:45	18:15	200	200	
2		25	200	200	
3	19:30	19:50	175	175	
4	21:10	21:40	151	150	
5	22:30	23:00	125	125	
6		10	125	125	
7		20	125	125	
8	24:30	24:50	100	100	
9	30	00	100	100	
10	40	10	100	100	
11	26:30	27:00	75	75	
12		10	75	75	
13		20	75	75	
14	29:00	29:30	46	45	
15	1	40	46	45	
16		50	46	45	
17	31:00	31:30	25	25	
18		40	25	25	
19		50	25	25	
20	32:25	32:55	15	15	
21	33:45	34:15	5	5	
22		25	5	5	
23		35	5	5	
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 1	Box #: 2, 3
Salinity Sample Log Sheet			Cruise #: HOT-315		Sampler: DF, TR, JT
Niskin #	Depth	Serial #	Comments		
1					
2					
3	175	40			
4	150	41			
5	125	42			
6	125	43			
7	125	44			
8	100	45			
9	100	47			
10	100	48			
11	75	49			
12	75	50			
13	75	51			
14	45	52			
15	45	53			
16	45	54			
17	25	55			
18	25	56			
19	25	57			
20	15	58			
21	5	59			
22	5	60			
23	5	61			
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6500DGPS	12L	28.20	TR

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

MLD: 45 db
DCM: 125 db
S_{MIN}: 380 db

Station: 2	Cast: 2
Latitude start: 22° 44.2853'N end: 22° 44.3930'N	Longitude start: 158° 00.4086'W end: 158° 00.5099'W
Depth of water: 4743 meters	Date (GMT): 9 / 4 / 19
Pressure on Deck	Time:
Begin: 0.1690 End: -0.3135	Start Log: 15:09 In Water: 15:09
Max cast pressure: 4808 dbar	Out of Water: 19:00

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	16:56:42	16:56:42	4807	4800	
2	17:01:45	17:02:05	4601	4600	
3	17:05:09	17:05:29	4501	4500	
4	17:08:00	17:08:20	4400	4400	
5	17:12:58	17:13:18	4199	4200	
6	17:19:15	17:18:35	4000	4000	
7	17:23:32	17:23:52	3800	3800	
8	17:28:10	17:28:30	3600	3600	
9	17:33:20	17:33:50	3400	3400	
10	17:38:35	17:38:55	3200	3200	
11	17:43:45	17:44:05	2999	3000	
12	17:49:10	17:49:30	2798	2800	
13	17:53:55	17:54:25	2600	2600	
14	17:59:00	17:59:20	2401	2400	
15	18:04:00	18:04:20	2198	2200	
16	18:09:00	18:09:20	2000	2000	
17	18:14:05	18:14:35	1800	1800	
18	18:19:59	18:19:19	1602	1600	
19	18:23:52	18:24:12	1400	1400	
20	18:28:49	18:29:09	1200	1200	
21	18:33:48	18:34:08	1000	1000	
22	18:39:36	18:39:56	750	750	
23	18:45:32	18:45:52	500	500	
24	18:57:44	18:58:04	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 2	Box #: 4
Salinity Sample Log Sheet			Cruise #: HOT- 315		Sampler: TR, DF, JT
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-315	Sampler: TR, DF, JT	
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-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	28.12	TR

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

MLD: 50
DCM: 132
S_{MIN}: 386

Station: 2	Cast: 3
Latitude start: 22° 44.3272'N end: 22° 44.3219'N	Longitude start: 158° 00.4001'W end: 158° 00.4010'W
Depth of water: 4737 meters	Date (GMT): 9 / 4 / 19
Pressure on Deck	Time:
Begin: 0.6015 End: -0.0073	Start Log: 20:49 In Water: 20:51
Max cast pressure: 1022 dbar	Out of Water: 22:01

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:16:40	21:17:00	1021	1020	27.3620 σ_θ
2	21:21:30	21:21:50	844	844	
3	21:24:32	21:24:52	728	729	
4	21:26:14	21:26:34	700	700	O_{MIN}
5	21:28:15	21:28:35	644	645	
6	21:30:40	21:31:00	571	571	
7	21:33:00	21:33:20	515	515	
8	21:34:30	21:34:50	483	483	
9	21:36:35	21:36:55	446	445	
10	21:38:50	21:39:10	386	386	S_{MIN}
11	21:40:50	21:41:10	341	341	
12	21:41:55	21:42:15	326	326	>O FEATURE
13	21:42:55	21:43:15	311	311	
14	21:45:00	21:45:20	247	247	
15	21:47:05	21:47:25	177	177	
16	21:49:00	21:49:20	132	132	DCM + LOW O+S LAYER
17	21:49:55	21:50:15	127	127	
18	21:50:55	21:51:15	113	113	S_{MAX}
19	21:52:00	21:52:20	103	103	
20	21:53:20	21:53:40	83	83	
21	21:54:15	21:55:40	76	76	O_{MAX}
22	21:55:15	21:55:40	65	65	
23	21:56:30	21:56:50	53	53	
24	21:58:35	21:58:55	5	5	MIXED LAYER

Hawaii Ocean Time-Series

HOT - 315

Station:	2	Cast:	3
Latitude:	22° 44.32[illegible]N	Longitude:	158° 00.400'W
Date:	9/4/19	Time (GMT):	20:51
Operator:	TR		

$\delta\theta$	$\sigma\theta$	Depth
700	20.76	
650	21.28	
600	21.80	
550	22.33	53
500	22.85	65
450	23.37	83
400	23.90	103
350	24.42	127
300	24.95	177
250	25.47	247
200	26.00	311
180	26.21	341
160	26.42	386
140	26.63	445
130	26.73	483
120	26.84	515
110	26.94	571
100	27.05	645
90	27.16	729
80	27.26	844
70	27.37	

S_{max}	113
S_{min}	386
S_{max}	
S_{min}	

O_{max}	76
O_{min}	700
O_{max}	326
O_{min}	
O_{max}	

F_{max}	132 (Also low O2 layer)	
F_{min}		
F_{max}		
F_{min}		
F_{max}		

Bottle	Depth
1	1020
2	844
3	729
4	700
5	645
6	571
7	515
8	483
9	445
10	386
11	341
12	326
13	311
14	247
15	177
16	132
17	127
18	113
19	103
20	83
21	76
22	65
23	53
24	5

Hawaii Ocean Time Series			Station #: 2	Cast #: 3	Box #: 6
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: DF, TR, JT, EY	
Niskin #	Depth	Serial #	Comments		
1	1020	121			
2	844	122			
3	729	123			
4	700	124			
5	645	125			
6	571	126			
7	515	127			
8	483	128			
9	445	129			
10	386	130			
11	341	131			
12	326	132			
13	311	133			
14	247	134			
15	177	135			
16	132	136			
17	127	137			
18	113	138			
19	103	139			
20	83	140			
21	76	141			
22	65	142			
23	53	143			
24	5	144			

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	28.20	TR/FS-M

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

MLD: 44 db
DCM: 116 db
S_{MIN}: 390 db

Station: 2	Cast: 4
Latitude start: 22°44.2649'N end: 22 44.1922	Longitude start: 157°59.6622'W end: 157 59.6100
Depth of water: 4743 meters	Date (GMT): 9 / 5 / 19
Pressure on Deck	Time:
Begin: 0.4340 End: −0.05	Start Log: 00:03 In Water: 00:04
Max cast pressure: 1021 dbar	Out of Water: 01:03

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:27:30	00:27:50	1020	1020	
2	40:40	41:00	390	390	S_{MIN}
3	42:25	42:55	351	350	
4			250	250	
5	45:20	45:50	201	200	
6			201	200	
7	49:15	49:45	175	175	
8	50:45	51:15	151	150	
9	52:10	52:40	125	125	
10	53:25	53:55	100	100	
11	55:25	55:55	78	75	]
12		05	78	75	]
13	57:40	57:50	45	45	]
14		00	45	45	]
15	58:50	59:20	25	25	]
16		30	25	25	]
17	00:40	01:10	5	5	]
18		20	5	5	]
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 4	Box #: 7
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: LK, AM, EY	
Niskin #	Depth	Serial #	Comments		
1	1020	145			
2	390	146	5MIN		
3	350	147			
4	250	148			
5	200	149			
6	200	150			
7	175	151			
8	150	152			
9	125	153			
10	100	154			
11	75	155			
12	75	~~X~~			
13	45	156			
14	45	~~X~~			
15	25	157			
16	25	~~X~~			
17	5	158			
18	5	~~X~~			
19					
20					
21					
22					
23					
24					

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6,000	12L	28.1	FS-M

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

Station: 2	Cast: 5
Latitude start: 22 42.507 end: 22 42.502	Longitude start: 158 1.468 end: 158 1.460
Depth of water: 4753 meters	Date (GMT): 9 / 5 / 19
Pressure on Deck	Time:
Begin: 0.50 End: -0.05	Start Log: 2:56 In Water: 3:01
Max cast pressure: 1022 dbar	Out of Water: 04:04

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	3:29:00	29:30	1021	1020	
2	40:25	40.55	426	425	5-min
3	42:55	43:25	350	350	
4	45:50	35	350	350	
5	45:50	46:20	250	250	
6	47:50	48:20	201	200	
7	49:15	49:45	176	175	
8	50:40	51:10	151	150	
9	52:20	52:50	126	125	
10	54:00	54:30	101	100	
11	55:35	56:05	76	75	
12	57:15	57:55	44	45	
13	58:58	59:25	26	25	
14		35	26	25	
15	00:20	00:50	15	15	
16	1:45	2:15	5	5	
17		25	5	5	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 5	Box #: 7-8
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: LK, AM, EY	
Niskin #	Depth	Serial #	Comments		
1	1010	159			
2	500	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	75	169			
12	45	170			
13	25	171			
14	—	—			
15	—	—			
16	5	172			
17					
18					
19					
20					
21					
22					
23					
24					

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6 1000	12 L	28.10	FSM

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

Station: 2	Cast: 6
Latitude start: 22 42.1017 end: 22°42.1264	Longitude start: 158 4.1391 end: 158°04.1483
Depth of water: 4767 meters	Date (GMT): 09 / 05 / 19
Pressure on Deck	Time:
Begin: 0.35 End: 0.25	Start Log: 06:11 In Water: 06:14
Max cast pressure: 1020 dbar	Out of Water: 07:28

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	06:40:10	06:40:40	1019	1020	
2	06:48:05	06:48:35	701	700	O_2 min
3	06:54:35	06:55:05	450	450	Sal min
4	07:00:55	07:01:25	200	200	
5	07:02:50	07:03:20	175	175	
6	07:04:15	07:04:45	166	165	
7	07:05:45	07:06:15	150	150	
8	07:07:25	07:07:55	129	130	
9	07:08:40	07:09:10	125	125	
10	07:09:55	07:10:25	115	115	
11	07:11:00	07:11:30	110	110	
12	07:12:30	07:13:00	100	100	
13	07:13:50	07:14:20	90	90	
14	07:15:05	07:15:35	84	85	
15	07:16:25	07:16:55	75	75	
16	07:17:55	07:18:25	61	60	
17	07:19:30	07:20:00	45	45	
18	07:20:45	07:21:15	35	35	
19	07:22:05	07:22:35	24	25	
20	07:22:05	07:23:00	24	25	
21	07:23:55	07:24:25	14	15	
22	07:25:20	07:25:50	5	5	
23	07:25:20	07:26:00	5	5	
24	07:25:20	07:26:10	5	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 6	Box #: 8
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: LK, AM, FSM	
Niskin #	Depth	Serial #	Comments		
1	1020	173			
2	750	174			
3	400	175			
4	200	176			
5	175	177			
6	165	178			
7	150	179			
8					
9	125	180			
10	115	181			
11					
12	100	182			
13					
14	85	183			
15	75	184			
16	60	185			
17	45	186			
18	35	187			
19	25	188			
20					
21	15	189			
22	5	190			
23	5	191			
24					

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
open	12L	28.10	LK

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

Station: 2	Cast: 7
Latitude start: 22°42.3785 N end: 22°42.3484	Longitude start: 158°03.7408' end: 158°03.7289
Depth of water: 4764 meters	Date (GMT): 09 / 05 / 19
Pressure on Deck	Time:
Begin: 0.38 End: −0.09	Start Log: 09:13 In Water: 09:23
Max cast pressure: 1020 dbar	Out of Water: 10:23

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	09:49:35	09:50:05	1019	1020	
2	10:00:10	10:00:40	501	500	
3	10:03:15	10:03:45	400	400	Sal. min
4	10:06:55	10:07:25	250	250	
5	10:09:30	10:10:00	175	175	
6	10:09:30	10:10:10	175	175	
7	10:11:10	10:11:40	150	150	
8	10:11:10	10:11:50	150	150	
9	10:12:45	10:13:15	125	125	
10	10:12:45	10:13:25	125	125	
11	10:14:35	10:15:05	100	100	
12	10:14:35	10:15:15	100	100	
13	10:16:25	10:16:55	75	75	
14	10:18:00	10:18:30	46	45	
15	10:19:20	10:19:50	24	25	
16	10:19:20	10:20:00	24	25	
17	10:21:10	10:21:40	4	5	
18	10:21:10	10:21:50	5	5	
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 7	Box #: 8, 9
Salinity Sample Log Sheet			Cruise #: HOT- 315	Sampler: LK, AM, FS-1	
Niskin #	Depth	Serial #	Comments		
1	10 20	192			
2					
3	400	193			
4					
5					
6					
7					
8					
9	125	194			
10					
11					
12					
13					
14					
15					
16					
17					
18	5	195			
19					
20					
21					
22					
23					
24	— —				

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
Gas array	12 L	28.02	LK/TR

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

Station: 2	Cast: 8
Latitude start: 22°42.3598'N end: 22° 42.3344'N	Longitude start: 158° 00.3250' end: 158° 00.3168
Depth of water: 4748 meters	Date (GMT): 09 / 05 / 19
Pressure on Deck	Time:
Begin: 0.50 End: -0.30	Start Log: 11:55 In Water: 12:05
Max cast pressure: 1020 dbar	Out of Water: 12:57

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	12:28:05	12:28:35	1020	1020	
2	12:40:20	12:40:50	400	400	sal. min
3	12:46:30	12:46:50	125	125	
4	12:46:30	12:47:55	125	125	
5	12:46:30	12:47:00	125	125	
6	12:47:55	12:47:15	100	100	
7	↓	12:47:20	↓	100	
8	↓	12:47:25	↓	100	
9	12:49:21	12:49:41	75	75	
10	↓	12:49:46	↓	75	
11	↓	12:49:51	↓	75	
12	12:51:27	12:51:47	45	45	
13	↓	12:51:52	↓	45	
14	↓	12:51:57	↓	45	
15	12:52:58	12:53:18	25	25	
16	↓	:23	↓	25	
17	↓	:28	↓	25	
18	↓	:33	↓	25	
19	12:54:40	12:55:00	5	5	
20	↓	:05	↓	5	
21	↓	:10	↓	5	
22	↓	:15	↓	5	
23				—	
24				—	

Hawaii Ocean Time Series			Station #: 2	Cast #: 8	Box #: 9
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: DF, JT, TR	
Niskin #	Depth	Serial #	Comments		
1	1020	196			
2	400	197			
3	—				
4	125	198			
5	125	199			
6	—				
7	100	200			
8	100	201			
9	—				
10	75	202			
11	75	203			
12	—				
13	45	204			
14	45	205			
15	25	206			
16	25	207			
17	25	208			
18	—				
19	—				
20	5	209			
21	5	210			
22	—				
23					
24					

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	27.93	TR

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

MLD: 32 db
DCM: 120
S_{MIN}: 435

Station: 2	Cast: 9
Latitude start: 22° 45.2671 end: 22° 45.2457	Longitude start: 158° 01.3907 end: 158° 01.3651
Depth of water: 4750 meters	Date (GMT): 9 / 5 / 19
Pressure on Deck	Time:
Begin: 0.43 End: -0.03	Start Log: 15:01 In Water: 15:04
Max cast pressure: 1021 dbar	Out of Water: 16:09

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	15:32:05	15:32:25	1020	1020	
2	15:44:55	15:45:15	435	435	S_{MIN}
3	15:49:30	15:49:50	275	275	
4	15:51:10	15:51:30	250	250	
5	15:52:37	15:52:57	226	225	
6	15:54:15	15:54:35	201	200	
7	15:55:30	15:55:50	175	175	
8	15:56:58	15:57:18	149	150	
9	15:58:30	15:58:50	126	125	
10	16:00:11	16:00:31	101	100	S_{MAX}
11	16:01:39	16:01:59	76	75	
12	16:03:16	16:03:36	46	45	
13	16:04:35	16:01:55	27	25	]
14	↓	05:00	26	25	]
15	16:05:55	16:06:15	15	15	
16	16:07:08	16:07:28	5	5	]
17	↓	:33	↓	5	]
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 9	Box #: 9
Salinity Sample Log Sheet			Cruise #: HOT-315		Sampler: DF, TR, JT
Niskin #	Depth	Serial #	Comments		
1	1020	221			
2	435	212	SMIN		
3					
4					
5					
6					
7					
8					
9					
10	100	213	SMAX		
11					
12					
13					
14					
15					
16					
17	5	214			
18					
19					
20					
21					
22					
23					
24					

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	28.07	TR

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

MLD: 39 db
DCM: 127 db
S_{MIN}: 445 db

Station: 2	Cast: 10
Latitude start: 22° 45.2436' end: 22° 45.2515'	Longitude start: 158° 01.3651' end: 158° 01.3724'
Depth of water: 4745 meters	Date (GMT): 9 / 5 / 19
Pressure on Deck	Time:
Begin: 0.44 End: -0.25	Start Log: 17:59 In Water: 18:01
Max cast pressure: 1022 dbar	Out of Water: 18:55

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	18:26:30	18:26:50	1021	1020	
2	18:38:01	18:38:21	445	445	S_{MIN}
3	18:43:30	18:43:45	175	175	
4	18:44:35	18:44:50	150	150	
5	18:45:46	18:45:59	125	125	
6	↓	18:46:04	↓	125	
7		18:46:08		125	
8		18:46:12		125	
9	↓	18:46:16	↓	125	
10	18:47:24	18:47:44	99	100	
11	18:48:36	18:48:56	75	75	
12	↓	18:49:00	↓	75	
13		18:49:04		75	
14		18:49:08		75	
15	↓	18:49:16	↓	75	
16	18:50:21	18:50:36	44	45	
17	18:51:33	18:51:53	25	25	
18	↓	18:51:58	↓	25	
19	18:52:59	18:53:19	5	5	
20	↓	18:53:23	↓	5	
21		18:53:27		5	
22		18:53:30		5	
23		18:53:35		5	
24	↓	18:53:40	↓	5	

Hawaii Ocean Time Series			Station #: 2	Cast #: 10	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT- 315	Sampler: DF, TR, JT	
Niskin #	Depth	Serial #	Comments		
1	1020	217			
2	445	218	S_{MIN}		
3	175	219			
4	150	220			
5	125	221			
6	—				
7	—				
8	—				
9	—				
10	100	222			
11	75	223			
12	—				
13	—				
14	—				
15	—				
16	45	224			
17	25	225			
18	—				
19	—				
20	5	226			
21	—				
22	—				
23	—				
24	—				

HOT- 315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	28.30	TR

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

MLD: 50
DCM: 127
S_{MIN}: 440

Station: 2	Cast: 11
Latitude start: 22° 46.0508' N end: 22° 46.0634'	Longitude start: 158° 04.9026' W end: 158° 04.9100' W
Depth of water: 4758 meters	Date (GMT): 9 / 5 / 19
Pressure on Deck	Time:
Begin: 0.46 End: -0.21	Start Log: 20:55 In Water: 20:56
Max cast pressure: 1021 dbar	Out of Water: 21:55

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	21:23:55	21:24:15	1021	1020	
2	21:37:00	21:37:20	440	440	S_{MIN}
3	21:45:00	21:45:20	151	150	
4	21:49:15	21:47:35	100	100	
5	21:50:00	21:50:20	50	50	
6	21:51:40	21:52:00	26	25	
7	21:53:30	21:53:55	5	5	
8	↓	21:54:02	5	5	
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 11	Box #: 10
Salinity Sample Log Sheet			Cruise #: HOT-315		Sampler: DF, JT, TR
Niskin #	Depth	Serial #	Comments		
1	1000	227			
2	440	228	S_{MIN}		
3	–				
4	100	229	S_{MAX}		
5	–				
6	–				
7	–				
8	~~5~~	~~230~~	Not sampled, see S2C12		
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000 GBS	12L	28.39	TR/LK

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

MLD: 41 db
DCM: 111 db
S_{MIN}: 400 db

Station: 2	Cast: 12
Latitude start: 22° 46.0359' N end:	Longitude start: 158° 03.5350' W end:
Depth of water: 4757 meters	Date (GMT): 9 / 6 / 19
Pressure on Deck	Time:
Begin: 0.64 End: 0.10	Start Log: 9/5/19 23:55 In Water: 00:00
Max cast pressure: 1020 dbar	Out of Water: 01:07

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:26:30	00:26:45	1020	1020	
2	00:32:32	00:32:47	769	770	
3	00:38:46	00:39:20	501	500	
4	00:42:10	00:42:40	400	400	S_{MIN}
5	00:42:10	00:43:00	400	400	S_{MIN}
6	00:45:15	00:45:45	350	350	
7	00:47:30	00:48:00	300	300	
8	00:50:00	00:50:30	249	250	
9	00:53:20	00:53:50	150	150	
10	00:55:10	00:55:40	126	125	
11	00:57:05	00:57:35	99	100	
12	00:58:55	00:59:25	76	75	
13	01:00:30	01:01:00	47	45	
14	01:02:35	01:03:05	25	25	
15	01:02:35	01:03:15	25	25	
16	01:04:50	01:05:20	4	5	
17	01:04:50	01:05:30	4	5	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 12	Box #: 10, 11
Salinity Sample Log Sheet			Cruise #: HOT- 315		Sampler: EY, AM, LK
Niskin #	Depth	Serial #	Comments		
1	1000	231			
2	—				
3	—				
4	400	232	SMIN		
5	—				
6	350	233			
7	—				
8	250	234	Bottle 230 x2 Sample		
9	150	235			
10	125	236			
11	100	237			
12	75	238			
13	45	239			
14	25	240			
15	—				
16	5	241			
17	—				
18					
19					
20					
21					
22					
23					
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
6-1000	12L	28.25	LK/FS-M

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

Station: 2	Cast: 13
Latitude start: 22°46.0289' N end: 22 46.0066	Longitude start: 158°03.5541' W end: 158 3.5349
Depth of water: 4756 meters	Date (GMT): 09 / 06 / 19
Pressure on Deck	Time:
Begin: 0.47 End: 0.00	Start Log: 02:54 In Water: 03:05
Max cast pressure: 1020 dbar	Out of Water: 4:11

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	03:29.00	03:29:30	1020	1020	
2	03:3	55:20	804	800	
3	41:10	41:40	600	600	
4	45:40	46:10	451	450	sal min
5	47:55	48:25	400	400	
6	51:25	51:55	301	300	
7	54:35	55:05	200	200	
8	56:25	56:55	174	175	
9		58:20	150	150	
10	59:25	59:55	125	125	sal max
11	1:05	1:35	99	100	
12	3:00	3:30	73	75	
13	4:35	5:05	45	45	
14	6:00	6:30	25	25	]
15		40	25	25	]
16	7:30	8:00	15	15	
17	8:50	9:20	5	5	]
18		30	5	5	]
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 13	Box #: 11
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: LK, AM, EY	
Niskin #	Depth	Serial #	Comments		
1	1020	242			
2					
3					
4	450	243	sal. min		
5					
6					
7					
8					
9					
10	125	244	sal. max		
11					
12					
13					
14					
15					
16					
17	5	245			
18					
19					
20					
21					
22					
23					
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
HPLC/G1000GRS	12L	28.21	LK/FS-M

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

Station: 2	Cast: 14
Latitude start: 22°44.5433'N end: 22°49.546	Longitude start: 158°04.3809'W end: 158° 9.3909
Depth of water: 4765 meters	Date (GMT): 09 / 06 / 19
Pressure on Deck	Time:
Begin: 0.42 End: 0.15	Start Log: 05:46 In Water: 05:57
Max cast pressure: 1020 dbar	Out of Water: 7:01

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	06:23:20	06:23:50	1019	1020	
2	06:34:35	06:35:05	450	450	Sal. min
3	06:40:40	06:41:10	176	175	
4	06:42:20	06:42:50	149	150	
5					
6	06:44:05	06:44:35	133	135	
7	06:45:30	06:46:00	124	125	
8	06:45:30	06:46:10	125	125	
9	06:47:05	06:47:35	114	115	
10	06:48:25	06:48:55	99	100	
11	06:48:25	06:49:05	100	100	
12	06:50:05	06:50:35	85	85	
13	06:51:15	06:51:45	75	75	
14	06:51:15	06:51:55	75	75	
15	06:52:50	06:53:20	60	60	
16	06:54:25	06:54:55	46	45	
17	06:54:25	06:55:10	47	45	
18	56:25	56:55	25	25	
19		05	25	25	
20	58:05	58:35	6	5	
21		45	6	5	
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 14	Box #: 11, 12
Salinity Sample Log Sheet			Cruise #: HOT-315		Sampler: LK, AM, FS-M
Niskin #	Depth	Serial #	Comments		
1	1020	246			
2	450	247	sal min		
3	175	248			
4	150	249			
5					
6	135	250			
7	125	251			
8	125	252			
9	115	253			
10	100	254			
11	100	255			
12	85	256			
13	75	257			
14	75	258			
15	60	259			
16	45	260			
17	45	261			
18	25	262			
19	25	263			
20	5	264			
21	5	265			
22					
23					
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
DEEP/95K PS	12L	27.98	LK/FS-M

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

Station: 2	Cast: 15
Latitude start: 22° 44.3451' N end: 22° 44.2673' N	Longitude start: 158° 0.3745' W end: 158° 00.3571' W
Depth of water: 4738 meters	Date (GMT): 09/06/19
Pressure on Deck	Time:
Begin: 0.38 End: -0.18	Start Log: 09:01 In Water: 09:15
Max cast pressure: 4805 dbar	Out of Water: 12:50

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		11:00	4805	4800	
2	11:16:15	16:45	4000	4000	
3		55	4000	4000	
4	36:30	37:00	3002	3000	
5		10	3002	3000	
6	47:55	48:25	2501	2500	
7	59:25	59:55	2000	2000	
8		05	2000	2000	
9	19:20	19:50	1000	1000	
10		00	1000	1000	
11	26:15	26:45	725	725	O_2 min
12	31:40	32:10	500	500	
13	12:33:50	12:34:20	450	450	Sal. min
14	12:39:25	12:39:55	248	250	
15	12:44:35	12:45:05	60	60	O_2 max
16	12:46:25	12:46:45	25	25	
17	12:47:44	12:48:04	5	5	
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 2	Cast #: 15	Box #: 12
Salinity Sample Log Sheet			Cruise #: HOT- 315		Sampler: DF, JT
Niskin #	Depth	Serial #	Comments		
1	4800	266			
2	4000	267			
3					
4	3000	268			
5					
6					
7	2000	269			
8					
9					
10					
11	725	270	O_2 min		
12					
13	450	271	Sal. min		
14					
15	60	272	O_2 max		
16					
17	5	273			
18					
19					
20					
21					
22					
23					
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G1000GPS	12L	28.21	TR

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

Station: 50	Cast: 1
Latitude start: 22° 44.2851' N end: 22° 44.2345' N	Longitude start: 157° 54.9307' W end: 157° 54.9188' W
Depth of water: 4729 meters	Date (GMT): 9 / 6 / 19
Pressure on Deck	Time:
Begin: 0.32 End: 0.20	Start Log: 23:25 In Water: 23:26
Max cast pressure: 201 dbar	Out of Water: 00:27 9/7/19

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1	00:19:44	00:19:59	125	125	
2		00:20:04		125	
3		00:20:08		125	
4		00:20:12		125	
5		00:20:16		125	
6		00:20:18		125	
7		00:20:22		125	
8		00:20:26		125	
9		00:20:30		125	
10		00:20:42		125	
11	00:23:10	00:23:30	25	25	
12		00:23:35		25	
13		00:23:40		25	
14		00:23:45		25	
15		00:23:50		25	
16		00:23:55		25	
17		00:24:00		25	
18		00:24:05		25	
19		00:24:10		25	
20		00:24:15		25	
21		00:24:20		25	
22		00:24:25		25	
23	00:25:42	00:25:59	5	5	
24					

HOT-315

Hawaii Ocean Time-Series CONSOLE LOG

Cast type	Bottle type	SST	Operator
G 5000	12L	27.86	FS-MJK

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

Station: 6	Cast: 1
Latitude start: 21 50.756 end: 21 50.796	Longitude start: 158 21.809 end: 158 21.842
Depth of water: 2433 meters	Date (GMT): 9 / 7 / 19
Pressure on Deck	Time:
Begin: 0.30 End: 0.27	Start Log: 6:29 In Water: 6:36
Max cast pressure: 2460 dbar	Out of Water: 8:48

Trip/ Niskin	Time stopped	Confirm tripped	Pressure	Target Depth	Comments
1		7:40:21	2460	2500	
2	07:49:20	07:49:50	2000	2000	
3	07:59:40	08:00:10	1501	1500	
4	08:09:55	08:10:25	998	1000	
5	08:20:55	08:21:05	500	500	
6	08:32:20	08:32:50	173	175	
7	08:34:10	08:34:40	151	150	
8	08:36:00	08:36:30	125	125	
9	08:37:55	08:38:25	100	100	
10	08:39:50	08:40:30	75	75	
11	08:42:20	08:42:50	44	45	
12	08:44:30	08:45:00	25	25	
13	08:46:10	08:46:40	4	5	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Hawaii Ocean Time Series			Station #: 6	Cast #: 1	Box #: 12
Salinity Sample Log Sheet			Cruise #: HOT-315	Sampler: LK, AM, FS-M	
Niskin #	Depth	Serial #	Comments		
1	2500	274			
2	2000	275			
3	1500	276			
4	1000	277			
5	500	278			
6	175	279			
7	150	280			
8	125	281			
9	100	282			
10	75	283			
11	45	284			
12	25	285			
13	5	286			
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Loading day 30 August 2019

CTD termination 0.322"
Red conductor
257.5 Ω
tape reading = 713.5 m

- Printer 1A does not work. It needs to be fixed.

- Hose clamps for CTD to Rosette should be replaced.

Conductivity sensors difference is -0.009 S/m, which is causing S difference of -0.1 psu. (Resolved - cod file value was incorrect).

18:45 DEPART
18:55 SET
19:25 SAFET
20:00 FIRE
21:30 ARRIVE
21:39 BEGIN
W
22:10 END
22:19 BEGIN
21°
23:03 END H
23:15 CTD PR
TR
23:55 GPS FIX
00:03 BEGIN
21°
Lar
One
coe
co

HOT-315

3 SEP 2019

18:45 DEPART UH MARINE CENTER

18:55 SET ACQ & PROC COMPUTER CLOCKS

19:25 SAFETY MEETING
20:00 FIRE & ABANDON SHIP DRILL

21:30 ARRIVE STATION KAH E

21:39 BEGIN WEIGHT CAST
AIR: 1300 lbs
WATER: 1040 lbs
NO TENSION: -100 lbs

22:10 END WEIGHT CAST

22:19 BEGIN HYPERPRO
21° 20.5705' N, 158° 16.4713' W
23:03 END HYPERPRO

23:15 CTD PREP COMPLETE, BUT SHIP'S GPS ISN'T WORKING. TROUBLESHOOTING NOW.
23:55 GPS FIXED

4 SEP 2019

00:03 BEGIN S1C1, G1000GPS
21° 20.4837' N, 158° 16.3211' W

Large conductivity differences (~0.01) One of the secondary conductivity coefficients was incorrect in the con file.

Salinity bottle SN 37 broke during sampling. Needs to be replaced.
Used bottle #46 instead.

	La
	50
0110	End
0120	Dep
	Fix
	file
	co
	in
	5
0945	Ar
1000	Dep
	End
1009	2
	5 0
	up
1032	Sta
1052	Dep
1100	Rai
1202	Sta
1238	End

HOT-315, September 4, 2019

Large xmissometer hysteresis between 500 and 1000 m

0110 End of cast.

0120 Depart to Station ALOHA

Fixed conductivity coeff in all con files in ctd_dos (acquisition computer) and ctd_dos, ctd_win in processing computer and in s1c1 con file.

0945 Arrived to ALOHA Station

1000 Deploying wirewalker

End deployment
1009 22 48.002' N, 158 1.063' W

South westward current in the upper 60 m of ~ 0.5 Kt.

1032 Start sediment traps deployment.

1052 Deployed sed. traps 22 47.928N 158 2.1835W

1100 Raining on Station

1202 Start S2C1, G1000-GPS

1238 End of cast, 23 marks OK

14:03	BEGIN
	2
14:23	END PP
	2
15:09	BEGIN
	2
	NOTE
	~
16:56	REACHED
	22
	TRAN
19:00	END S
20:51	BEGIN
	2
	No
22:01	END Sc
	2
22:18	BEGIN N
	22°
2257	RAIN
2258	BEGI
23:32	END

HOT-315 4 September 2019

14:03 BEGIN PRIMARY PRODUCTIVITY DEPLOYMENT
22°48.9043'N, 158° 02.1982'W

14:23 END PP ARRAY DEPLOYMENT
22° 48.8111'N, 158° 02.2092'W

15:09 BEGIN S2C2, WOCE DEEP CAST, G5000GPS
22° 44.2853' N, 158° 00.4056'W
NOTE: CAST PERFORMED AT CURRENT ACO SITE,
~ 1/4 mi SW of ALOHA CENTER

16:56 REACHED TARGET DEPTH, 5 m OFF BOTTOM, 4808 db max
22° 44.4257'N, 158° 00.5228'W
TRANSMISSOMETER DATA BELOW 900m LIKELY BAD.

19:00 END S2C2, 24 MARKS OK

20:51 BEGIN S2C3, PO SHALLOW CAST, G1000GPS
22° 44.3272'N, 158° 00.4001'W
NOTE: CAST PERFORMED AT ACO SITE

22:01 END S2C3, 24 MARKS OK
22° 44.3219'N, 158° 00.4010'W

22:18 BEGIN NET TOW
22° 44.3477'N, 158° 00.2637'W

2257 RAINING ON STATION

2258 BEGIN HYPERPRO 22° 44.4428'N
157° 59.7070'W

23:32 END HYPERPRO

00:04	BEGIN
0103	En
0109	T
0256	St
0404	En
0530	Rec 22°
0611	S
728	E Bo
0801	St
0829	En
0834	S
0902	E
0913	St
1026	end
1030	T
1155	Stor

HOT-315 SEPTEMBER 5, 2019

00:04 BEGIN S2C4, PC/PN CAST, G1000GPS
22° 44.2649'N, 157° 59.6622'W

0103 End of cast, 18 marks OK

0109 Transit to pump ship's tanks.

0256 Start S2C5 G-1000 GPS.

0404 End of cast, 17 marks OK

530 recovery of PP array started
22°40.3889' N 158°06.4847'W

0611 Start S2C6 G-1000 GPS

628 End of cast, 24 marks OK
Bottle 17 valve was open on recovery

0801 Start net tow

0829 End net tow

0834 Start net tow

0902 End net tow

913 Start S2C7, G1000-GPS

026 end S2C7, 18 marks ok

1030 Transit to pump ship's tanks

1155 Start S2C8, G1000GPS
22° 42.3598' N, 158° 00.3250' W

12:57	END
13:00	TRANS
14:20	BEGIN
	2
14:36	END C
	2
15:04	BEGIN
	2
16:09	END
18:00	BEGIN
	2
18:55	END
19:00	TRANS
20:55	BEGIN
	22
21:55	END
22:17	BEGIN
2245	END
2250	BE

HOT-315 Sept. 5, 2019

12:57 END S2C8, 22 MARKS OK

13:00 TRANSIT TO GAS ARRAY DEPLOYMENT SITE

14:20 BEGIN GAS ARRAY DEPLOYMENT
22° 44.9390'N, 158° 02.1268'W

14:36 END GAS ARRAY DEPLOYMENT
22° 44.8510'N, 158° 02.0782'W

15:04 BEGIN S2C9, G1000 GPS, OPEN CAST
22° 45.2671'N, 158° 01.3907'W

16:09 END S2C9, 17 MARKS OK

18:00 BEGIN S2C10, G1000GPS, PARTICULATE SILICA CAST
22° 45.2436'N, 158° 01.3651'W

18:55 END S2C10, 24 MARKS OK

19:00 TRANSIT TO PUMP TANKS

20:55 BEGIN S2C11, G1000GPS, OPEN CAST
22° 46.0508'N, 158° 04.9026'W

21:55 END S2C11, 8 MARKS OK

22:17 BEGIN NET TOW #1 22° 46.0828'N
158° 04.7800'W

2245 END NET TOW #1 22 46.1274'N
158 04.1492'W

2250 BEGIN NET TOW #2 22° 46.1381'N
158 04.0311'W

Bollister bottles replacement bottom caps dont have lanyards of the correct size

Need to check lanyards of all bottles before next cruise. Some may be frayed.

	km 917
23:18	E
	Z
00:00	BEGIN
01:07	End
0123	Ha
0130	N
0230	Re
	O
0305	BEGI
0411	En
0418	T
0546	Begi
	Bu
	l
	u
201	En
	Bo

KM1917 HOT-315 SEPT 5, 2019

23:18 END NET TOW #2
22°46.1314'N, 158° 03.4900'W

00:00 BEGIN S2C12, G1000 GPS, ATP CAST SEPT 6, 2019
22°46.0359'N, 158° 03.5350'W

0107 End S2C12. 17 marks OK.

0123 Hand held net tow deployed.

0130 Net recovered

0230 Replaced Bullister bottle #7 spigot, O-ring broken

0305 BEGIN S2C13 G-1000 GPS

0411 End of cast, 18 marks OK

0418 Transit to pump ship's tanks

0546 Begin S2C14 G-1000 GPS

Bullister bottle #5 bottom cap lanyard broke during cocking. Will not use this bottle during cast, Lanyard swan frayed.

0701 End of cast, 21 marks OK

Bottles 17, 18 valve was open.

		Fix
	0759	Dep
	0830	Ex
		AC
		one
		to
	0901	S-
		Dec
		fr
		US
		C-
		s
		(S
		v
		Al
		i
		Tra
		b
	1100	8

HOT-315 6 September 2019

Fixed lanyard bottomcap bottle #5

0759 Deployed net tow

0830 End net tow

AUSBL beacon was attached to one of the rosette upper poles for testing by OTG. At ~ 1 m height

0901 Start. S2C15 G5000 KPS.
Deepcast at the location of the ACO
Using Tang S from S2C2 deep CTD in multibeam system for sound speed calculation.
(Seabird CTD files used by multibeam system).

Also using S2C2 data for the system monitoring the USBL beacon.

Transmissometer signal looks bad below ~ 1100 dbar downcast

1100 8 m from the bottom
22° 44.348' N, 158 0.373 5' W
Beacon measured 4730 m

Km1917

1250 En
2

1308 B

1443 EN

1447 I

16:24 Arrive

16:29 Begin
2

16:42 End
2

16:43 Begin
~

17:43 Arrive

17:51 Begin
22°

19:07 End R
22°

1910 Transit

18:36 Arriv

Km1917 HOT-315 SEPT. 6, 2019

1250 END S2.C15 - 17 MARCS OK
22° 44.2673'N, 158° 00.3571'W

1308 BEGIN OPTICS CAST 22° 44.2534'N
158 00.3525'W

1443 END OPTICS CAST 22° 43.2024'N
158° 00.3259'W

1447 TRANSITING TO GAS ARRAY
~16 miles away to SW

16:24 ARRIVE GAS ARRAY

16:29 BEGIN GAS ARRAY RECOVERY (FLOAT CLIPPED)
22° 31.6265'N, 158° 11.8506'W

16:42 END RECOVERY
22° 31.6484'N, 158° 11.6345'W

16:43 BEGIN TRANSIT TO SEDIMENT TRAP ARRAY
~9.5mi to SW

17:43 ARRIVE SED TRAP

17:51 BEGIN RECOVERY OF SEDIMENT TRAP ARRAY
22° 24.4334'N, 158° 18.7738'W

18:07 END RECOVERY
22° 24.4548'N, 158° 18.7390'W

1810 TRANSIT TO WIRE WALKER

18:36 ARRIVE WIRE WALKER

KM1917

18:45 BEGIN W
22°

18:57 END WI

18:59 BEGIN T

22:09 ARRIVE

22:33 BEGIN H

2308 END H

23:26 BEGIN S
22

23:38 RAIN S

YoYo

YoYo

YoYo

YoYo

YoYo

00:27 END S

0115 Tran

0620 Arr

0629 St

KM1917 HOT-315 SEPT 6, 2019

18:45 BEGIN WIRE WALKER RECOVERY
22° 24.8204'N, 158° 15.7306'W

18:57 END WIRE WALKER RECOVERY

18:59 BEGIN TRANSIT TO STATION 50

22:09 ARRIVE STATION 50

22:33 BEGIN HYPERPRO

2308 END HYPERPRO 22° 44.2861'N
157° 54.9307'W

23:26 BEGIN S50C1, G1000GPS, WHOTS YO-YO CAST
22° 44.2851'N, 157°54.9307'W

23:38 RAIN SQUALL ON STATION

YoYo1 23:31 - 23:43:08 (3.2m from surface)
YoYo2 23:43:15 - 23:53:05 (1.8m)
YoYo3 23:53:06 - 00:02:08 (1.3m)
YoYo4 00:02:09 - 00:11:36 (1.9m)
YoYo5 00:11:37 - 00:27:23 (0m)

SEPT 7, 2019

00:27 END S50C1, 23 MARKS OK

0115 Transit to Kaena Sta.

0620 Arrived to Kaena Sta

0629 Start S6C1, G5000 GPS

	C
	&
0740	11
	2
0848	en
	tra
	da
	de
0905	T
15:20	LAST
1744	F

HOT 315 7 September 2019

CTD broke the surface 3 times after soaking,

0740 11 m off the bottom
21°50.8123'N, 158°21.8253'W

0848 end S6C1, 13 marks okay
transmissometer calibration on deck (voltage)
dark: 0.036(63)
clear: 4.85

0905 Transit to Honolulu

15:20 LAST THERMOSALINOGRAPH SAMPLE TAKEN

1744 First line, end of cruise