

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2015-17

DATE:

From: 1 April

to: 8 April

VESSEL:

Vector

PROJECT(S):

Strait of Georgia /

Salish Sea

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division
North Saanich, BC, Canada

WaterProperties.ca

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month				Year			Ship		Cruise ID						
APRIL				2015			VECTOR		2015-17						
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
1	SI	23 53	BE	ROS	US	1	48 39.10	123 30.58	187		1-9	9	RSR	✓	max floor: 26
		58	BO				39.10	30.59		100					fire up to 18 bottles
		00:10	EN				39.13	30.62							to check ops
2	58	01:54	BE	ROS		2	48 42.98	123 14.34	335					✓	max floor < 1
		02 02	BO				42.99	14.39		331					
		02 08	EN				42.00	14.41							
2	59	03 02	BE	NET		3	48 37.72	123 14.56	230						
		03 09	BO				37.63	14.54		214					1/2 m's down
		03 13	EN				37.63	15.55							1 m's up
2	59	03 25	BE	ROS	US	4	48 37.81	123 14.57	232		10-23	14		✓	floor < 1
		03 31	BO				37.77	14.53		227					
		03 47	EN				37.65	14.48							
2	60	04 32	BE	ROS		5	48 33.85	123 12.76	273					✓	5 m's down
		04 39	BO				33.78	12.75		288					
		04 45	EN				33.74	12.70							
2	61	05 27	BE	ROS		6	48 29.20	123 9.22	273					✓	AIR TEMP 9.1°C
		05 36	BO				29.15	9.21	286	280					
		05 41	EN				29.13	9.21							

Transmissometer & Fluorometer are to be cleaned before each cast

Cast Type:

BOT = Bottle cast, no CTD
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Notes:

depart Port Bay 16h15, light rain

- SPAR steady at 7.459, replace cable. some result, [↑] no spare SPAR, leave attached to see if it self-connects

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
2	101	1417	BE	ROS		7	48 25.458	124 45.108	240	230	—		SHANNI	✓	pH sensor not working!
		1426	BO				48 25.434	124 45.139							
		1431	EN				48 25.463	124 45.131							CHAINS ON
2	102	1524	BE	ROS		8	48 29.999	124 43.988	254	244	24-37	14	"	✓	pH working-No
		1531	BO				48 30.044	124 44.020							CHAINS ON
		1549	EN				48 30.098	124 44.231							
2	103	1622	BE	ROS		9	48 33.089	124 43.085	115	105	—	—	"	✓	→ pH
		1626	BO				48 33.127	124 43.085							CHAINS ON
		1628	EN				48 33.155	124 43.122							
2	76	1745	BE	ROS		10	48 31.398	124 30.040	88	80	—	—	"	✓	pH at surface 12.3
		1748	BO				48 31.373	124 30.060							Chains on
		1750	EN				48 31.362	124 30.067							
2	75	1823	BE	ROS		11	48 28.201	124 32.819	222	218	38-51	14	"	✓	
		1831	BO				48 28.147	124 32.861							
		1850	EN				48 27.977	124 32.810							

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pH very erratic 10 $\rightarrow$ -2 readings. Have emailed Scott for advice

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Month <u>APRIL</u>				Year <u>2015</u>				Ship <u>VECTOR</u>				Cruise ID <u>2015-17</u>			
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							Latitude	Longitude							
2	74	19:27	BE	ROS		12	48 25.11	124 35.73	183				PC/KS	✓	max floor: 4.5
		19:33	BO				25.10	35.74		173			KY/MA		
		19:36	EN				25.07	35.73							
2	73	21:54	BE	ROS		13	48 15.02	124 6.86	160				PC	✓	air temp 10.5°C
		22:01	BO				15.00	6.89		156					
		22:04	EN				14.98	6.89							
2	72	22:43	BE	NET		14	48 18.57	124 03.99	186				KY		
		22:53	BO				18.54	03.99		176					wire straight up
		22:56	EN				18.45	03.98		wire out					& down
2	72	23:04	BE	ROS	US	15	48 18.50	124 03.99	186		52-64	13	PC	✓	flume: 8 mg/l ²
		23:10	BO				18.54	3.99		181					
		23:25	EN				18.59	4.01							
3	71	00:05	BE	ROS		16	48 22.17	123 59.35	107				PC	✓	higher than mound
		00:09	BO				22.16	59.36		104					water temp < 50 m
		00:11	EN				22.15	59.36							
3	70	01:29	BE	ROS		17	48 19.21	123 43.25	149				PC	✓	backup CTD fls
		01:36	BO				19.20	43.22		145					
		01:38	EN				19.20	43.22							

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This page is for any notes or observations

Chains of

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							Latitude	Longitude							
3	69	02:10	BE	ROS	US	18	48 15.66	123 43.21	177		65-76	12	PC	✓	fluors 8 mg/m ³
		02:16	BO				15.63	43.20		172					
		02:20	EN				15.62	43.22							
3	68	02:57	BE	ROS		19	48 12.21	123 43.08	137				PC	✓	
		03:02	BO				12.23	43.05		133					
		03:05	EN				12.22	43.05							
3	105	05:00	BE	ROS		20	48 11.00	123 19.05	83				PC	✓	
		05:05	BO				11.00	19.02		90					
		05:06	EN				11.00	19.02							
3	00cf	05:34	BE	ROS	US	21	48 13.99	123 17.99	119		77-86	10	PC	✓	
		05:39	BO				13.98	17.98		115					
		05:50	EN				14.00	18.03							
3	104	06:36	BE	ROS		22	48 19.99	123 17.99	84				PC	✓	
		06:39	BO				19.99	17.92		80					
		06:41	EN				19.99	17.96							
3	67	07:29	BE	ROS		23	48 22.792	123 18.077	105	100			SW	✓	
		07:32	BO				48 22.788	123 18.061							
		07:35	EN				48 22.703	123 18.036							

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							Latitude	Longitude							
3	66	0839	BE	ROS		24	48 19.326	123 14.117	101	96	—	—	SWIMM MP	✓	→
		0813	BO				48 19.333	123 14.082							
		0815	EN				48 19.349	123 14.052							
3	65	0847	BE	ROS		25	48 15.892	123 9.786	124	120	87-96	10	"	✓	no improvement in pH
		0851	BO				48 15.900	123 9.791							
		0903	EN				48 15.968	123 9.644							
3	64	0934	BE	ROS		26	48 12.788	123 5.760	106	101	—	—	"	✓	
		0938	BO				48 12.779	123 5.616							
		0940	EN				48 12.778	123 5.545							
3	63	1032	BO	NET		27	48 14.60	122 58.46	150	140					Score VNH
3	63	1035	BE	ROS		28	48 14.595	122 58.507	151	148	97-109	13	"	✓	
		1040	BO				48 14.603	122 58.453							
		1054	EN				48 14.612	122 58.313							

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Checked pH coefficients as per cal sheet and they are correct. Recleaned cable to pH sensor.

$$\text{Slope} = 4.6134, \text{ offset} = 2.5497$$

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							Latitude	Longitude							
3	62	1156	BE	ROS		29	48 22.806	123 2.615	147	142	1b-120	11	SM/N/MP	✓	
		1200	BO				48 22.859	123 2.604							
		1213	EN				48 23.048	123 2.554							
3	54	1342	BE	ROS		30	48 26.620	122 44.249	76	71	—			✓	
		1345	BO				48 26.618	122 44.250							
		1346	EN				48 26.617	122 44.251							
3	53	1504	BE	ROS		31	48 33.132	122 44.994	61	56	—			✓	
		1507	BO				48 33.108	122 44.992							
		1508	EN				48 33.094	122 44.990							
3	52	1603	BE	ROS		32	48 38.862	122 43.307	80	75	—	—		✓	
		1606	BO				48 38.784	122 43.298							
		1608	EN				48 38.730	122 43.309							
3	51	1739	BE	ROS		33	48 46.674	122 51.508	156	150	—	—		✓	
		1744	BO				48 46.649	122 51.506							
		1747	EN				48 46.632	122 51.485							

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Month				Year			Ship				Cruise ID					
APRIL				2015			VECTOR				2015-17					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
3	57	19:13	BE	ROS		34	48 44.01	123 8.18	160				PC	✓		
		19:16	BO				44.00	8.20		156						
		19:19	EN				44.00	8.20								
3	56	20:21	BE	ROS	US	35	48 46.38	123 1.51	224		121-134	14	PC	✓	max fluor: 41	
		20:27	BO				46.37	1.45		218						
		20:42	EN				46.39	1.48								
3	47	21:32	BE	ROS		36	48 47.29	123 6.12	183				PC	✓		
		21:38	BO				49.30	6.13		179						
		21:41	EN				49.30	6.13								
3	48	22:08	BE	ROS		37	48 51.76	123 3.19	225				PC	✓		
		22:15	BO				51.71	3.16		221						
		22:19	EN				51.70	3.16								
3	49	22:53	BE	ROS		38	48 55.10	122 59.60	128				PC	✓	air temp 7°C	
		22:58	BO				55.10	59.59		123						
		23:00	EN				55.10	59.57								
3	50	23:25	BE	ROS		39	48 57.69	122 56.11	77				PC	✓		
		23:29	BO				57.69	56.01		72						
		23:30	EN				57.68	56.00								

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phi values - check pressure term in calibration equation

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Month APRIL				Year 2015			Ship VECTOR				Cruise ID 2015-17					
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							Latitude	Longitude								
4	44	00:30	BE	ROS		40	48 56.78	123 5.97	120				PC	✓		
		00:35	BO				56.78	5.97		116						
		00:37	EN				56.80	5.98								
4	45	01:02	BE	ROS		41	48 53.89	123 8.33	127				PC	✓		
		01:07	BO				53.90	8.36		124						
		01:09	EN				53.90	8.35								
4	46	01:33	BE	ROS	US	42	48 51.39	123 10.73	177		135-146	12	PC	✓		fluo 41
		01:37	BO				51.40	10.78		172						
		01:52	EN				51.41	10.80								
4	106	03:09	BE	ROS		43	49 0.97	123 13.23	75				PC	✓		use stby remote display for winch
		03:16	BO				0.99	13.24		74						
		03:18	EN				0.99	13.24								
4	107	04:00	BE	ROS		44	48 58.39	123 17.97	180				PC	✓		air temp 7.5°C
		04:06	BO				58.38	17.99		175						
		04:09	EN				58.38	18.00								
4	43	05:12	BE	ROS		45	49 0.23	123 30.12	195				PC	✓		
		05:18	BO				0.21	30.09								
		05:29	EN				0.21	30.06								

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TSG working - open outlet valve in engine room

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							Latitude	Longitude							
4	42	05:50	BE	ROS	US	46	49 1.78	123 26.20	318		147-162	16	PC	✓	
		06:00	BO				1.82	26.25		313					
		06:18	EN				1.81	26.18							
4	41	0708	BE	ROS		47	49 3.282	123 22.282	240	235	—	—	Sh	—	
		0714	BO				49 3.295	123 22.319							
		0719	EN				49 3.305	123 22.340							
4	N41	0729	BO	NET		48	49 03.345	123 22.410	245	235					Score Net
4	109	0800	BE	ROS		49	49 4.399	123 19.117	88	85	—	—	"	✓	
		0803	BO				49 4.402	123 19.142							
		0805	EN				49 4.408	123 19.166							
4	37	0916	BE	ROS		50	49 13.604	123 20.644	211	206	—	—	"	✓	
		0921	BO				49 13.648	123 20.638							
		0925	EN				49 13.680	123 20.657							

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Month <u>April</u>		Year <u>2015</u>		Ship <u>Veeva</u>		Cruise ID <u>2015-17</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	38	1003	BE	ROS		51	49 12.004	123 26.380	307	301			sn	✓	
		1010	BO				49 12.101	123 26.324							
		1015	EN				49 12.180	123 26.280							
4	39	1104	BE	ROS		52	49 9.809	123 33.095	373	373	163-179	17	sn	—	
		1113	BO				49 9.934	123 33.119							
		1134	EN				49 10.288	123 33.058							
4	40	1213	BE	ROS		53	49 8.600	123 36.824	147	143	—	—	—	✓	very close to bottom (kept changing)
		1217	BO				49 8.615	123 36.797							
		1220	EN				49 8.625	123 36.785							
4	GE01	1343	BO	NET		54	49 15.000	123 44.930	403	393				✓	SCOR Net
4	GE01	1359	BE	ROS		55	49 15.006	123 44.856	403	393	180	1		✓	
		1406	BO				49 15.002	123 44.857							
		1414	EN				49 14.996	123 44.884							

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	26	1449	BE	ROS		56	49 14.351	123 50.672	264	260			sn	✓	Nine says there are a crapload of seagulls
		1454	BO				49 14.352	123 50.660							
		1459	EN				49 14.345	123 50.650							
4	26 1/2	1522	BE	ROS		57	49 16.738	123 49.571	412	406	—	—		✓	hit the bottom?
		1531	BO				49 16.828	123 49.560							Yes-mud present on
		1538	EN				49 16.915	123 49.580							nom CTD side of rosette. washed rosette down
4	27	1600	BE	ROS		58	49 19.141	123 47.984	358	348	181-196	16		No	
		1608	BO				49 19.21	123 47.976							
		1629	EN				49 19.45	123 47.929							
4	27 1/2	1711	BE	ROS		59	49 21.826	123 46.486	100	95	—			✓	Swapped spigot on #16 bottle
		1716	BO				49 21.810	123 46.490							
		1719	EN				49 21.788	123 46.482							
4	28	1743	BE	ROS		60	49 24.133	123 45.288	135	132.5	—			✓	
		1747	BO				49 24.150	123 45.331							
		1750	EN				49 24.173	123 45.388							

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Transmissometer & Fluorometer are to be cleaned before each cast

Produced by the Water Properties Group, IOS

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Month <u>April</u>				Year <u>2015</u>			Ship <u>Vector</u>				Cruise ID <u>2015-17</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned		Comments
							Latitude	Longitude								
4	24	19:18	BE	ROS		61	49 30.37	124 6.00	425				PC	✓		air temp 9°C
		19:31	BO				30.34	6.02		419						
		19:38	EN				30.33	6.00								
4	25	20:05	BE	ROS		62	49 27.72	124 7.51	288				PC	✓		
		20:13	BO				27.71	7.52		288						
		20:18	EN				27.72	7.51								
4	2	20:48	BE	ROS	US	63	49 24.11	124 9.36	274				PC	✓		Down 10 m/s/m
		20:56	BO				24.11	9.35		270						
		21:12	EN				24.10	9.31								
4	CPF1	21:42	BE	ROS		64	49 22.01	124 5.15	245				PC	✓		old for net
		21:48	BO				22.02	5.12		239						
		21:53	EN				22.01	5.12								
4	CPF1	22:00	BE	NET		65	49 21.98	124 5.17	245				RY			Scan net
		22:09	BO				21.98	5.08		235						1/2 m/s down
		22:14	EN				21.98	4.99								1.0 m/s up
4	1	22:57	BE	ROS		66	49 20.31	124 12.13	245				PC	✓		
		23:01	BO				20.30	12.11		240						
		23:06	EN				20.30	12.10								

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Month				Year			Ship				Cruise ID					
APRIL				2015			VECTOR				2015-17					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
5	4	00:01	BE	ROS		67	49	24.57	124	22.15	348			RC	✓	
		00:08	BO					24.57		22.15		342				
		00:14	EN					24.59		22.13						
5	3	00:49	BE	ROS	US	68	49	26.61	124	20.21	321		212-227	16	RC	✓
		00:56	BO					26.63		20.16		316				
		01:14	EA					26.61		20.12						
5	BS	03:09	BE	NET		69	49	28.98	124	45.99	60				KY	1/2 mi ² down
		03:12	BO					28.99		45.99		50				1 mi ² up
		03:13	EN					28.99		45.99						Score
5	BS	03:20	BE	ROS	US	70	49	28.98	124	46.01	60		228-235	8	RC	✓
		03:23	BO					28.98		46.00		55				
		03:30	EN					28.98		45.99						
5	CPF2	04:54	BE	ROS		71	49	28.03	124	30.02	326				RC	✓
		05:02	BO					28.01		30.01		320				
		05:08	EN					28.00		30.02						
5	CPF2	05:13	BE	NET		72	49	27.98	124	30.03	327				KY	1/2 mi ² down
		05:24	BO					28.00		29.99		315				1 mi ² up
		05:29	EA					27.99		29.98						

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Month <u>APRIL</u>				Year <u>2015</u>			Ship <u>VECTOR</u>				Cruise ID <u>2015-17</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
5	6	05:59	BE	ROS	US	73	49 30.63	124 27.78	192		236-248	13	PC	✓	
		06:04	BO				30.63	27.80		186					
		06:17	EN				30.60	27.74							
5	7	06:59	BE	ROS		74	49 34.436	124 24.203	350	345	—	—	—	✓	
		07:06	BO				49 34.433	124 24.251							
		07:13	EN				49 34.424	124 24.280							
5	8	08:03	BE	ROS		75	49 39.316	124 33.035	332	333	1	—	—	✓	
		08:11	BO				49 39.334	124 33.118							
		08:16	EN				49 39.415	124 33.152							
5	9	08:54	BE	ROS		76	49 35.504	124 38.280	167	163	249-260	12		✓	
		08:58	BO				49 35.494	124 38.280							
		09:11	EN				49 35.439	124 38.240							
5	10	10:06	BE	ROS		77	49 40.697	124 47.291	92	88	—	—	—	✓	
		10:09	BO				49 40.690	124 47.293							
		10:10	EN				49 40.684	124 47.300							

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Month <u>April</u>		Year <u>2015</u>		Ship <u>Vector</u>		Cruise ID <u>2015-17</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
5	10		BE	ROS		77									
			BO												
			EN												
5	11	1037	BE	ROS		78	49 42.418	124 43.435	300	295			SALIN M.P.	—	
		1043	BO				49 42.437	124 43.452							
		1048	EN				49 42.458	124 43.456							
5	11	1101	BO	NET		79	49 42.485	124 43.483	302	290					Score Net
5	12	1129	BE	ROS		80	49 43.596	124 40.830	355	350	261-276	16	u	—	
		1137	BO				49 43.610	124 40.922							
		1157	EN				49 43.694	124 41.119							
5	13	1332	BE	ROS		81	49 55.307	124 55.217	242	238			u	—	
		1338	BO				49 55.314	124 55.250							
		1342	EN				49 55.312	124 55.264							
5	14	1422	BO	NET		82	49 52.931	124 59.617	315	305					Score VNH

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Month <u>April</u>				Year <u>2015</u>			Ship <u>Vector</u>				Cruise ID <u>2015-17</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned		Comments
							Latitude	Longitude								
5	14	1434	BE	ROS	US	83	49° 52.95	124° 59.64	315		277-291	15	SR/NL	✓		
		1440	BO				49° 52.98	124° 59.64		310						- didn't turn off
		1458	EN				49° 52.99	124° 59.72								pump, had to power down
5	15	1535	BE	ROS CTD		84	49° 51.59	125° 1.61	126				SR/NL	✓		
		1541	BO				49° 51.56	125° 1.58		122	—					
		1543	EN				49° 51.59	125° 1.57								
5	16	1640	BE	ROS	US	85	49° 57.73	125° 8.83	155		292-302	11		✓		
		1644	BO				49° 57.71	125° 8.80		150						
		1658	EN				49° 57.68	125° 8.80								
5	17	1726	BE	ROS		86	49 58.817	125 4.328	263	259	—		SR/NL	✓		
		1732	BO				49 58.822	125 4.303								
		1737	EN				49 58.819	125 4.286								
5	21	18:59	BE	ROS		87	50 2.05	125 13.56	82				RE	✓		current off Campbell River
		19:07	BO				2.05	13.55		82						
		19:04	EN				2.05	13.55								

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Month <i>APRIL</i>				Year <i>2015</i>			Ship <i>VECTOR</i>				Cruise ID <i>2015-17</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
5	<i>Okusilla</i>	<i>22:10</i>	<i>BE</i>			<i>88</i>	<i>50 19.10</i>	<i>125 25.00</i>							<i>boat away</i>
	<i>Nodules</i>	<i>23:30</i>	<i>EN</i>				<i>50 27.04</i>	<i>125 17.73</i>							<i>boat recover</i>
5	<i>Okusilla</i>	<i>00:30</i>	<i>BE</i>			<i>89</i>	<i>50 22.33</i>	<i>125 21.43</i>							<i>boat away</i>
		<i>00:45</i>	<i>EN</i>				<i>50 29.84</i>	<i>125 15.09</i>							
6	<i>Fred Am</i>	<i>01:00</i>				<i>90</i>	<i>50 27.02</i>	<i>125 17.77</i>							<i>drifter away (red)</i>
6	<i>Nodules</i>	<i>15:05</i>	<i>BE</i>				<i>50 19.00</i>	<i>125 25.00</i>							
	<i>Okusilla</i>	<i>17:45</i>	<i>EN</i>			<i>91</i>	<i>50 18.41</i>	<i>125 17.74</i>							<i>boat recover</i>
6	<i>Okusilla</i>	<i>19:00</i>				<i>92</i>	<i>50 18.53</i>	<i>125 16.98</i>							<i>drifter away (blue)</i>
6	<i>Nodules</i>	<i>18:15</i>	<i>BE</i>			<i>93</i>	<i>50 18.53</i>	<i>125 17.06</i>							<i>boat away</i>
	<i>Okusilla</i>	<i>19:32</i>	<i>EN</i>				<i>50 17.32</i>	<i>125 21.22</i>							
6	<i>18</i>	<i>22:44</i>	<i>BE</i>	<i>ROS</i>		<i>94</i>	<i>49° 59.195'</i>	<i>124° 58.902'</i>	<i>142</i>	<i>137</i>			<i>M.A</i>	<i>✓</i>	
		<i>22:48</i>	<i>BO</i>				<i>49° 59.122'</i>	<i>124° 58.889'</i>							
		<i>22:50</i>	<i>EN</i>				<i>49° 59.155'</i>	<i>124° 58.890'</i>							
6	<i>19</i>	<i>23:26</i>	<i>BE</i>	<i>ROS</i>		<i>95</i>	<i>50° 1.318'</i>	<i>124° 52.746'</i>	<i>296</i>	<i>290</i>			<i>M.A</i>	<i>✓</i>	
		<i>23:34</i>	<i>BO</i>				<i>50° 1.300'</i>	<i>124° 52.728'</i>							
		<i>00:05</i>	<i>EN</i>				<i>50° 1.284'</i>	<i>124° 52.740'</i>							
7	<i>20</i>	<i>01:49</i>	<i>BE</i>			<i>96</i>	<i>49° 47.16</i>	<i>124° 32.17</i>	<i>313</i>				<i>R</i>	<i>✓</i>	
		<i>01:56</i>	<i>BO</i>				<i>47.16</i>	<i>32.17</i>		<i>305</i>					
		<i>02:01</i>	<i>EN</i>				<i>47.16</i>	<i>32.17</i>							

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RIB plankton haul: horizontal - searching for sea lice - science crew Kelly + Rick

RIB proceed to Okisillo channel to deploy drift @ 1800 - science crew Ken

RIB plankton haul - Okisillo channel - science crew Kelly + Matt

RIB drift release - Fred. Arm - science crew Nina

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Sample surface bottle - chl, H_2O_2 , nutrients, phyto
2x 2x

↓ note nutrient not immediately put
into freezer block, just into rack
in freezer