

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

IOS 2016-29

SOG 2016-12

DATE:

From: 04 JUL 2016 to: 14 JUL 2016

VESSEL:

F/V NORDIC PEARL

PROJECT(S):

Neville - SoG Juvenile Salmon
Trawl Survey

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

WaterProperties.ca

This survey was originally scheduled for the CCGS W.E. Ricker,
21 JUN 2016 - 05 JUL 2016. Due to issues with the main trawl
winch on the Ricker, the survey was delayed and moved to a charter
vessel.

Preserved plankton samples ^{from this survey} will be stored at PBS until further notice.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of 13

Month <u>JULY</u>				Year <u>2016</u>			Ship <u>F/V NORDIC PEARL</u>			Cruise ID <u>2016-29</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. Fluid Cleaned	Comments
							Latitude	Longitude							
5	Set 1	1320	BE	SET		001	49°14.073	123°50.543	245						TRAWL-Surface
	↓	1430	BE	NET		002	49°15.034	123°47.565	402	200			MT		BONGO
	↓	1506	BE	CTD		003	49°14.710	123°46.552	402	200			MT	✓	No-bottle sample
5	Set 2	1600	BE	SET		004	49°17.970	123°40.943	290						TRAWL-45m
5	Set 3	1703	BE	SET		005	49°20.874	123°35.002	150						TRAWL-Surface
5	Set 4	1810	BE	SET		006	49°22.417	123°34.846	163						TRAWL-15m
5	Set 5	1912	BE	SET		007	49°24.0	123°43.07	180						TRAWL-Surface
	↓	2009	BE	NET		008	49°25.238	123°47.291	135	125					BONGO
	↓	2028	BE	CTD		009	49°25.28	123°47.310	145	125			MT		No bottle sample
5	Set 6	2046	BE	SET		010	49°25.5	123°48.49	154						TRAWL-30m
5	Set 7	2148	BE	SET		011	49°23.8	123°53.170	318						TRAWL-Surface
5	Set 8	2254	BE	SET		012	49°20.61	123°53.55	343						TRAWL-30m

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

=

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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Transmissometer & Fluorometer are to be cleaned before each cast

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 7 July 2014

No RBR in trawl net.

Set 1: CTD/bongo winch speed issues. Flowmeter side net on bongo fouled during upcast. Bongo stayed @ depth for ~ 3 min. to resolve block misalignment. CTD sat @ surface for ~ 1 min. then went to 10 m and back then sat @ surface for ~ 30 sec. prior to starting cast.

Set 2: RBR sensor on trawl net for remainder of the day.

Set 5: Both nets fouled on bongo frame, but didn't cover net opening completely.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 2 of 13

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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							
5	Set 9	2349	BE	SET		013	49°22.888	123°56.201	403						TRAWL-15m
6	Set 10	0050	BE	SET		014	49°25.972	123°55.999	221						TRAWL-15m
		0206	BE	NET		015	49°24.730	123°52.593	194	175					BONGO
	↓	0225	BE	CTD		016	49°24.907	123°52.962	197	175			MT		No bottle sample
=END OF DAY															
6	Set 11	1326	BE	SET		017	49°27.320	124°00.56	209						TRAWL-Surface
		1433	BE	NET		018	49°28.278	124°04.929	394	250					BONGO
	↓	1446	BE	CTD		019	49°28.376	124°04.945	394	250			MT	✓	No bottle sample
6	Set 12	1509	BE	SET		020	49°29.33	124°05.04	250						TRAWL-surface
6	Set 13	1613	BE	SET		021	49°31.40	124°05.38	310						TRAWL-15m
6	Set 14	1710	BE	SET		022	49°27.953	124°07.683	261						TRAWL-surface
6	Set 15	1835	BE	SET		023	49°24.06	124°09.50	284						TRAWL-15m

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WaterProperties.ca
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05 JUL (END OF DAY) Trouble uploading
3 casts ~~17.0v~~ vmain = 17.0v?

- ↳ Set 10 failed part way through upload - have full downcast, but only about ~10m of upcast data.
- Set 1 failed part way through upload (several times). File sizes are >500kb and take >20 min. to upload each cast (then fails).
- Set 5 uploaded completely

06 JUL Set 11: Uploaded completely (took 25 min) vmain 16.8v

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of 13

Month <u>JULY</u>				Year <u>2016</u>			Ship <u>F/V NORDIC PEARL</u>				Cruise ID <u>2016-29</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							
6	Set 16	1935	BE	SET		024	49°21.42	124°12.854	164						TRAWL - 60m
		—	BE	NET		—	CANCELLED		—						
	↓	—	BE	CTD		—	CANCELLED		—				MT		No bottle sample
6	Set 17	2119	BE	SET		025	49°24.7	124°16.786	321						TRAWL - Surface
6	Set 18	2229	BE	SET		026	49°26.90	124°21.51	332						TRAWL - 30m
6	Set 19	2331	BE	SET		027	49°23.86	124°25.5	191						TRAWL - 15m
7	Set 20	0028	BE	SET		028	49°25.4	124°30.02	213						TRAWL - 30m
7	Set 21	0122	BE	SET		029	49°25.2	124°33.8	128						TRAWL - Surface
	END OF DAY														
7	Set 22	1309	BE	SET		030	49°28.247	124°37.930	152						TRAWL - Surface
		1414	BE	NET		031	49°28.252	124°33.735	188	160					BONGO
	↓	1426	BE	CTD		032	49°28.266	124°33.701	185	160			MT		No bottle sample
7	Set 23	1442	BE	SET		033	49°28.8	124°32.9	163						TRAWL - 15m

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WaterProperties.ca
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Set 16: Bongo/CTD ops cancelled due to failure of winch counter

Set 22: Using marked wire for CTD/bongo depths (10m increments).
Switched to SBE 25 (serial # 0404) for remainder of survey.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 4 of 13Month JULY Year 2016 Ship F/V NORDIC PEARL Cruise ID 2016-29

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							
7	Set 24	1544	BE	SET		034	49°31.280	124°28.760	187						TRAWL-15m
7	Set 25	1645	BE	SET		035	49°34.275	124°27.991	200						TRAWL-Surface
		1748	BE	NET		036	49°35.208	124°31.620	170	150					BONGO
	↓	1802	BE	CTD		037	49°35.295	124°31.935	163	150			MT		No bottle sample.
7	Set 26	1816	BE	SET		038	49°35.9	124°32.3	167						TRAWL-30m
7	Set 27	1917	BE	SET		039	49°38.944	124°35.888	160						TRAWL-Surface
7	Set 28	2033	BE	SET		040	49°42.103	124°40.125	299						TRAWL-60m
7	Set 29	2141	BE	SET		041	49°39.333	124°43.308	132						TRAWL-surface
7	Set 30	2247	BE	SET		042	49°36.6	124°43.867	80						TRAWL-15m
8	Set 31	0047	BE	SET		043	49°38.304	124°48.643	91						TRAWL-30m
	END OF DAY														

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CTD 0404

End of day: Uploaded 2 casts. $v_{main} = 11.8v$

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of 13

Month <u>JULY</u>				Year <u>2016</u>			Ship <u>F/V NORDIC PEARL</u>			Cruise ID <u>2016-29</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							
8	Set 32	1312	BE	SET		044	49°41.506	124°46.669	145						TRAWL-Surface
		1413	BE	NET		045	49°44.378	124°47.974	238	220					BONGO
	↓	1424	BE	CTD		046	49°44.505	124°48.061	240	220			MT	✓	No bottle sample.
8	Set 33	1444	BE	SET		047	49°44.561	124°49.481	156						TRAWL-Surface
8	Set 34	1548	BE	SET		048	49°47.114	124°48.984	337						TRAWL-60m
8	Set 35	1653	BE	SET		049	49°48.519	124°44.797	226						TRAWL-15m
8	Set 36	1751	BE	SET		050	49°50.190	124°49.235	234						TRAWL-Surface
		1854	BE	NET		051	49°52.963	124°52.344	272	250					[≠ ISSUES] BONGO
	↓	1915	BE	CTD		052	49°52.902	124°52.341	272	250			MT/LT		110 0-10 sample
8	Set 37	1936	BE	SET		053	49°52.707	124°51.744	265						TRAWL-15m
8	Set 38	2036	BE	SET		054	49°54.382	124°54.240	241						TRAWL-30m
8	Set 39	2138	BE	SET		055	49°50.849	124°53.436	312						TRAWL-15m

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Set 32: Drifting @ 0.7 kts.

Set 36: Bongo - wire snarled on upcast, took several min. to clear. Weight caught in non-FM side net at some point during cast. Rinsed well & sampled.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of 13

Month <u>JULY</u>				Year <u>2016</u>			Ship <u>F/V NORDIC PEARL</u>				Cruise ID <u>2016-29</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							
8	Set40	2239	BE	SET		056	49°49.525	124°57.815	156						TRAWL-Surface
8	Set41	2336	BE	SET		057	49°52.542	125°02.650	124						TRAWL-30m
9	↓	0040	BE	NET		058	49°54.697	125°05.793	131	110					BONGO
9	↓	0052	BE	CTD		059	49°54.722	125°05.606	144	120			MT/LT		No bottle sample
= END OF DAY															
9	Set42	1324	BE	SET		060	49°54.693	125°05.419	153						TRAWL-Surface
	↓	1430	BE	NET		061	49°56.291	125°02.024	300	250					BONGO
	↓	1444	BE	CTD		062	49°56.471	125°02.302	288	250			MT	✓	No bottle sample
9	Set43	1507	BE	SET		063	49°56.293	125°01.543	286						TRAWL-15m
9	Set44	1608	BE	SET		064	49°57.129	124°57.869	163						TRAWL-Surface
9	Set45	1717	BE	SET		065	49°59.44	125°01.8	150						TRAWL-30m
9	Set46	1819	BE	SET		066	50°01.44	125°06.5	264						TRAWL-Surface
	↓	1927	BE	NET		067	50°04.589	125°08.234	244	230					BONGO
	↓	1942	BE	CTD		068	50°04.589	125°08.234	244	230			LT		No bottle sample

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Set 42: Bongo - Switched to flowmeter, TSK # 7292

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 7 of 13

Month <u>JULY</u>				Year <u>2016</u>				Ship <u>E/V Nordic Pearl</u>				Cruise ID <u>2016-29</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							
9	Set47	2000	BE	SET	069→		50°05.78	125°07.33	~249						TRAWL-15m (15 minutes)
9	Set48	2048	BE	SET	070→		50°07.17	125°06.399	249						TRAWL-30m
9	Set49	2207	BE	SET	071→		50°08.411	125°05.612	317						TRAWL-Surface (15 minutes)
9	Set50	2307	BE	SET	072→		50°12.496	125°00.780	~480						TRAWL-15m
9	↓	2354	BE	NET	073→		50°14.599	125°01.340	480	250					BONGO
10	↓	0007	BE	CTD	074→		50°14.763	125°01.054	480	250					No bottle sample.
10	Set51	0046	BE	SET	075→		50°18.700	125°02.903	336						TRAWL-Surface
= END OF DAY															
10	Set52	1305	BE	SET	076→		49°51.569	124°34.993	126						TRAWL-Surface
	↓	1417	BE	NET	077→		49°49.964	124°37.875	220	200					BONGO
	↓	1429	BE	CTD	078→		49°50.090	124°37.798	209	190			mt	✓	No bottle sample.
10	Set53	1447	BE	SET	079→		49°49.8	124°37.555	245						TRAWL-15m (38 min.)
10	Set54	1601	BE	SET	080→		49°48.06	124°33.844	315						TRAWL-30m

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 8 of 13

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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							
10	Set 55	1659	BE	SET		081	49°45.776	124°29.123	326						TRAWL - Surface
10	Set 56	1805	BE	SET		082	49°44.04	124°21.299	~300						TRAWL - 45m
	↓	1908	BE	NET		083	49°40.806	124°17.874	318	250					BONGO
	↓	1921	BE	CTD		084	49°40.719	124°17.954	334	250			MT/LT		NO bottle sample.
10	Set 57	1941	BE	SET		085	49°40.07	124°17.64	331						TRAWL - 15m
10	Set 58	2041	BE	SET		086	49°37.55	124°14.68	312						TRAWL - Surface
10	Set 59	2138	BE	SET		087	49°37.93	124°09.175	216						TRAWL - 15m
10	Set 60	2241	BE	SET		088	49°34.5	124°05.639	247						TRAWL - Surface
10	Set 61	2350	BE	SET		089	49°30.035	124°05.087	250						TRAWL - 30m
11	" 1 "	0136	BE	NET		090	49°19.618	124°00.596	420	250					BONGO
11	↓	0148	BE	CTD		091	49°19.694	124°00.802	420	250					NO bottle sample
END OF DAY															

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BONGO

Set 56: ^ Both nets fouled on upcast; rinsed well & sampled.

Set 61: Bongo/CTD is not geographically proximate to trawl location.

Y SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

h JULY Year 2016 Ship F/V Nordic Pearl Cruise ID 2016-29 Page 9 of 13

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							
St62	1313	BE	SET		092	49°12.184	123°47.721	177						TRAWL-Surface
St63	1419	BE	SET		093	49°12.00	123°42.622	322						
↓	1522	BE	NET		094	49°11.808	123°38.794	370	250					TRAWL-15m
↓	1533	BE	CTD		095	49°11.884	123°38.932	377	250			MT	✓	BONGO No bottle sample.
St64	1554	BE	SET		096	49°12.44	123°38.509	385						TRAWL-30m
St65	1659	BE	SET		097	49°13.990	123°33.975	366						TRAWL-60m
t66	1758	BE	SET		098	49°14.208	123°30.30	333						TRAWL-15m
t67	1857	BE	SET		099	49°15.789	123°25.026	196						TRAWL-Surface
↓	2000	BE	NET		100	49°17.431	123°21.621	223	200					BONGO
↓	2012	BE	CTD		101	49°17.363	123°21.686	239	200			MT		No bottle sample.
t68	2040	BE	SET		102	49°16.165	123°18.374	92						TRAWL-Surface
t69	2149	BE	SET		103	49°12.0	123°18.4	107						TRAWL-15m

the cast, no CTD
without Rosette
ette plus CTD
Set

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Set 63: Bongo/CTD — boat drifting @ ~1.1 kts.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 10 of 13

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							Latitude	Longitude							
11	Set70	2255	BE	SET		104	49°09.3	123°18.6	105						TRAWL-Surface
11	Set71	0058	BE	SET		105	49°02.675	123°17.539	109						TRAWL-15m
12	↓	0027	BE	NET		106	49°02.017	123°16.650	112	90					BONGO
12	↓	0037	BE	CTD		107	49°02.092	123°16.725	112	90			MT		No bottle sample
= END OF DAY															
12	Set72	1317	BE	SET		108	49°02.333	123°20.702	216						TRAWL-Surface
	↓	1422	BE	NET		109	49°01.576	123°25.948	315	250					BONGO
	↓	1434	BE	CTD		110	49°01.562	123°26.262	315	250			MT	✓	No bottle sample.
12	Set73	1500	BE	SET		111	49°03.0	123°27.3	326						TRAWL-60m
12	Set74	1611	BE	SET		112	49°04.975	123°35.435	210						TRAWL-Surface
12	Set75	1722	BE	SET		113	49°01.1	123°32.8	154						TRAWL-15m
	↓	1827	BE	NET		114	48°59.173	123°30.452	130	120					BONGO
	↓	1840	BE	CTD		115	48°59.234	123°30.705	115	100			MT		No bottle sample

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Bottle Firing Method:

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Set 70: Anchovies!

Set 71: Trawl set after bongo/CTD. Consecutive numbers not changed.

Set 75: CTD turned on then had winch issues so turned unit off and waited 2 min. before re-starting.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 11 of 13

Month JULY				Year 2016			Ship F/V Nordic Pearl				Cruise ID 2016-29				
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							
12	Set 76	1856	BE	SET		116	48°59.12	123°30.326	131						TRAWL - Surface
12	Set 77	1957	BE	SET		117	48°58.51	123°25.045	131						TRAWL - 30m
12	Set 78	2125	BE	SET		118	48°53.462	123°14.508	185						TRAWL - 15m
	↓	2210	BE	NET		119	48°52.11	123°11.770	166	150					(20 min) BONGO
	↓	2222	BE	CTD		120	48°52.061	123°11.788	170	160			MT		No bottle sample
12	Set 79	2242	BE	SET		121	48°52.44	123°11.049	149						TRAWL - 30m (20 min)
13	Set 80	0125	BE	SET		122	48°42.792	123°30.500	70						TRAWL - Surface
= END OF DAY															
13	Set 81	2126	BE	SET		123	48°01.096	122°38.634	103						TRAWL - Surface (20 min)
	↓	2210	BE	CTD		124	47°58.789	122°36.758	80	70			LT	✓	No bottle sample
13	Set 82	2232	BE	SET		125	47°57.3	122°53.359	86						TRAWL - 15m (5 min)
13	Set 83	2333	BE	SET		126	47°53.6	122°29.910	170						TRAWL - Surface (10 min)
14	↓	0019	BE	CTD		127	47°52.810	122°29.766	146	135			LT		No bottle sample

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Set 80: Cowichan Bay

Set 81: Puget Sound

Set 83: [Set: ~360L of juvenile salmon $\cong$ 6,650 juveniles
CTD not switched on, no cast logged.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 12 of 13

Month <u>JULY</u>				Year <u>2016</u>				Ship <u>F/V Nordic Pearl</u>				Cruise ID <u>2016-29</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							
14	Set 84	0200	BE	SET		128	47°47.466	122°25.642	186						TRAWL-60m
	↓	0250	BE	CTD		129	47°45.735	122°24.801	229	210			LT		No bottle sample
END OF DAY															
14	Set 85	1305	BE	SET		130	47°33.878	122°25.560	164						TRAWL-Surface
	↓	1349	BE	CTD		131	47°32.057	122°24.686	182	170			MT		No bottle sample
14	Set 86	1409	BE	SET		132	47°30.391	122°24.164	143						TRAWL-30m
14	Set 87	1508	BE	SET		133	47°26.2	122°22.5	185						TRAWL-15m
14	Set 88	1559	BE	SET		134	47°22.2	122°20.653	178						TRAWL-45m
14	Set 89	1710	BE	SET		135	47°21.985	122°24.662	164						TRAWL-Surface
	↓	1753	BE	CTD		136	47°21.251	122°25.868	178	160			MT		No bottle sample
14	Set 90	1844	BE	SET		137	47°21.182	122°32.568	106						TRAWL-Surface
14	Set 91	1929	BE	SET		138	47°22.44	122°31.738	105						TRAWL-60m

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 13 of 13

Month JULY				Year 2016			Ship F/V Nordic Pearl				Cruise ID 2016-29				
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							
14	Set92	2020	BE	SET		139	47°26.2	122°31.543	120						TRAWL-Surface
	↓	2109	BE	CTD		140	47°28.794	122°30.674	100	90			LT		No bottle sample
14	Set93	2240	BE	SET		141	47°40.6	120°26.637	150						TRAWL-15m

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