

DAILY SCIENCE LOG BOOK

CRUISE
NUMBER

2018-31

DATE:

From:

26 SEP 2018

To:

2 OCT 2018

VESSEL:

VECTOR

PROJECT(S):

STRAIT OF GEORGIA

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division

WaterProperties.ca

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**** The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board ****

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. Any mid-cruise changes to be noted by watch leader in the notes.

Data logging computer: IN937-DH T411-7H54K

Data acquisition program: Seasave

CTD deck unit make: SBE model: 11+ serial number: 0619

Primary CTD

Make: SEAIRD model: 9 serial number: 550

Primary temperature serial number: 2106

Primary conductivity serial number: 2280

Secondary temperature serial number: 2663

Secondary conductivity serial number: 2754

Transmissometer: Metlabs Model: C-Star s/n: 1005 DR

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model Seapoint Cable gain: 10x s/n: 2356 P, S or NO pump?

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?

Oxygen sensor: SBE Model: 43 s/n: 1119 P, S or NO pump?

PAR sensor: Biospherical Model: QSP200L45 s/n: 4656 Surface PAR? Y / N

Other sensors: PH SBE 18 s/n: 0852 P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number: _____

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ s/n: _____

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?

Oxygen sensor: _____ Model: _____ s/n: _____ P, S or NO pump?

PAR sensor: _____ Model: _____ s/n: _____ Surface PAR? Y / N

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

CTD calibration bottle location (freight above CTD in metres): ~1m

This also includes the bottle location above the CTD on non-rosette casts (e.g., W.E. Ricker)

192.168.10.104
1 - Seawater
3 - Seawater
2 - CTD
computer

Rosette Setup:

Number of bottles: 24
Manufacturer: 7AS
Volume of bottles (litres): 10 litres

Winches:

1. Make: SIEMENS Model: 4120 Serial #: 1432 Used for: CTD Deployment (surface)
2. Make: SIEMENS Model: 329 Serial #: 1483 Used for: NET DEPLOYMENT (BET-100)
3. Make: SIEMENS Model: 4120 Serial #: 1567 Used for: CHART DEPLOYMENT (578-100C)

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

ALL WINCHES PERFORMED WELL. BET-100C A-ARMING REMOTE
STAGED WORKING ~ HALF-WAY THROUGH CRUISE.
BET-100C WITH LEAKED HYDRAULIC SEALS PRIOR TO OPERATION,
AND WORK WELL FOLLOWING THIS

Salinometer:

Make: _____ Model: _____ Serial Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Oxygen Kit(s):

Make: SCHOTT (570) Model: NA Kit Number: 1
Make: _____ Model: _____ Kit Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):
KIT PERFORMED ADVERSELY THROUGHOUT DURATION
OF CRUISE

Thermosalinograph System (SBE21):

Program: SEASAVE Version: 7.26.7.110
Sampling interval (seconds): 30
Fluorometer sensor serial number: NA
Comments on performance during cruise (comments should also be reflected in the post-cruise report):
SAVED, NO INTERRUPTIONS ORC LINKING

ADCP Setup: NA

Computer time zone: _____ User Exit: Name: _____ Exit points: _____
Sampling interval (sec): _____ Name: _____ Exit points: _____
Bin Length: (2^{nx}): _____ Name: _____ Exit points: _____
Pulse Length: _____ Name: _____ Exit points: _____
Buffer (bytes): _____ Work File: _____
Gyro Offset: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

CTD Test Cast Information

Test Cast along side? Yes No
Comments _____

Test Cast in Saanich Inlet or other location? (Yes) No

Comments FLUOROMETER + O₂ SENSORS OFFSCALE OR ROL DUE TO FREE
CONVECTION, MANY PROBLEMS WITH WATER RESISTANCE, MAINTENANCE
→ CTD pressure reading on deck (db), before cast: 0.4 after cast: 1.1 recovered.

Pumps working? (Yes) (0011) No (0010) Initially Failed - Reconnection Required.

Secondary Temp - Primary Temp: ~ 0.001 } ONCE STABILIZED

(Average from the mixed region)
Secondary Salinity - Primary Salinity: ~ 0.001

Additional Comments:

Scientific Equipment Used During Cruise

This sheet allows you to enter all of the equipment used while on board. Please use the separate CTD sheet for entry for SBE 9/16/19/25.

Other CTD units:

RBR Serial Number: 81 (SCOE NET) Sensors: _____

Others: _____

Plankton Nets:

~~SCOE~~ Bongo #1 Frame Size: 60 cm Mesh: 236 μ m Flowmeter: TSK 7/33

Bongo #2 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Multinet ☐ BIONESS ☐ Neuston ☐ Others: _____

Trawl Gear: N/A

Midwater Trawls: SOG ☐ Highseas ☐ Pelagic ☐ Other: _____

Bottom Trawls: Atlantic Western I/A ☐ Yankee 36 Hard & Soft Bottom ☐ Other: _____

American Shrimp Trawl ☐

Notes: _____

Trawl Doors: USA Jet ☐ Tyburon ☐ _____

Sounders : Wesmar 380 ☐ Others: _____

Acoustics:

Echosounder #1 EA6410 Frequencies (KHz): 12 ☒ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Echosounder #2 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Software & Notes: _____

Other Gear in Operation:

1. SPACE PR * 205/18

2. _____

3. _____

4. _____

5. _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-31</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
1	SE	27	04:28	BE	ROS	US	48° 39.091	123° 30.558	188	181	1 - 10	10	MB	☒	
			04:33	BO			48° 39.095	123° 30.558			-			☐	
			04:50	EN			48° 39.109	123° 30.551			-			☐	
2	SG	27	07:08	BE	ROS	US	48° 37.788	123° 14.563			11 - 25	15	MB	☒	FORCED ACC
			07:13	BO			48° 37.776	123° 14.540			-			☐	BURIES FOR
			07:29	EN			48° 37.831	123° 14.287			-			☐	INTERCEPT TEST
3	SG	27	07:57	BE	NET	-	48° 37.799	123° 14.592	239		-	-	MB/KS	☐	
			08:05	BO			48° 37.723	123° 14.580		799	-			☐	
			08:09	EN			48° 37.671	123° 14.542			-			☐	
4	GO	27	08:43	BE	ROS	-	48° 33.866	123° 12.814	297	291	-	-	MB	☒	
			08:48	BO			48° 33.848	123° 12.827			-			☐	
			08:53	EN			48° 33.820	123° 12.866			-			☐	
5	bl	27	09:30	BE	ROS	-	48° 29.171	123° 09.171	287		-		CS	☐	
			09:37	BO			48° 29.147	123° 09.281		282	-			☐	
			09:41	EN			48° 29.185	123° 09.343			-			☐	
6	101	27	18:05	BE	ROS	-	48° 25.328	124° 45.175	211		-	-	SR	☒	
			18:09	BO			48° 25.306	124° 45.188		184	-			☐	
			18:13	EN			48° 25.250	124° 45.270			-			☐	
			:				.	.			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring

NET = Plankton Net Haul

DRF = Drifter

_____ = _____

Bottle Firing Method:

US = Up / Stop (default)

UN = Up / No stop

DN = Down / No stop

Notes: _____

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EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time

MR = Messenger Release Time

RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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Version: 6 December 2016

18.00 → DEPARTED PAT BAY, NICE CALM WEATHER

- DECK UNIT NOT TAKING TO CTD, RETURMINATION

- STARTED TSG @ ~20:00, SOME TROUBLE WITH NEW CONFIG FILE 2018-89-003, USED AN OLD FILE 2018-89-002, WORKED

- CANNOT USE NMCA COMFORT FOR BOTH O2IExplorer AND THE TSG (CANNOT SHARE PORT?)

- SOME TROUBLE CONNECTING WIFE TABLETS TO VNC

- NEEDS TO BE A WRITTEN PROCEDURE FOR THIS?

- PYLON LOOSE, NEED TO TIGHTEN

EVENT 0001

- CASH DELAY @ ~8PM DUE TO TABLETS DRIPPING OUT

- O₂ TRACE LOOKS NOISY, CHANGED TO DIFFERENT CHANNEL IN CONFIG FILE

- FL NOT READING CORRECTLY FLATLINING DOWN.

- WENT BACK DOWN 10M AFTER COMING BACK TO SURFACE, SCOTT LOOKING AT SETPOINTS.

- BOTTLE 4 ALMOST FELL OUT OF THE ROSETTE, MANY OF THE BOTTLES WERE LOOSE

- BOTTLE 16 MISSING A HOSE CLAMP

- BOTTLE 9 WATER WOULD NOT COME OUT OF SPIGOT, EVEN THOUGH BOTTLE WAS FULL, PLUGGED WITH DIRT

- TRIPPED ALL BOTTLES FOR INTEGRITY TEST (REDO @ NEXT STN) -

Problem bottles - 13 bottom cap o-ring leak

15 top cap o-ring leak

24 spigot leak with open vent

Vent o-rings replaced on Niskins;

1, 3, 4, 5, 7, 11

all others look fine

SEP 20
2018

DAILY SCIENCE LOG

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-31</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
7	102	27	19:01	BC	Ros	US	48°30.079	124°43.065	260		260-40	15	MB	☒ ☐	
			19:06	BO			48°30.091	124°44.003		252	-			☐ ☐	
			19:22	EW			48°30.182	124°43.976			-			☐ ☐	
8	102	27	20:36	BC	NET	-	48°30.66	124°44.057	260		-	-	MB	☐ ☐	
			20:44	BO			48°30.136	124°44.21		250	-			☐ ☐	
			20:48	EW			48°30.15	124°44.22			-			☐ ☐	
9	103	27	21:31	BC	Ros	-	48°33.060	124°43.049	124		-	-	MB	☒ ☐	
			21:36	BO			48°33.082	124°43.063		120	-			☐ ☐	
			21:39	EW			48°33.098	124°43.072			-			☐ ☐	
10	76	27	22:55	BC	Ros	-	48°31.41	124°28.970	93		-	-	MB	☒ ☐	
			22:56	BO			48°31.416	124°28.950			-			☐ ☐	
			22:59	EW			48°31.422	124°28.921			-			☐ ☐	
11	75	27	23:40	BC	Ros	US	48°28.214	124°32.807	226		411-54	14	MB	☒ ☐	
			23:45	BO			48°28.216	124°32.778		218	-			☐ ☐	
			23:58	EW			48°28.208	124°32.502			-			☐ ☐	
12	74	28	00:47	BC	Ros	-	48°25.091	124°35.718	188		-	-	MB	☒ ☐	
			00:51	BO			48°25.099	124°35.792		180	-			☐ ☐	
			00:55	EW			48°25.100	124°35.816			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Notes:

Time Code:

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- WHALES, LOTS

EUGENT 102:

WIRE ANGLE HARD TO STARBWARD

FIRE / ABANDON SHIP MUSTER @ 12:45 → ~1320 SUPERNUMMARY PARTICIPATION

- SWAPPED BOTTLE 1 FOR BOTTLE 22, SINCE ROUND BOTTLE CANS HARD TO COCK WITHOUT USING TWO HANDS

→ COMMENTS AND CHANGES AS SUGGEST BY GERMAINE FOLLOWING SENDING 1ST TWO CANTS

(CHANGE PAR CAL. CONSTANT TO 1855287569.57 FROM 1

MADE ALL CHANGES RECOMMENDED BY GERMAINE IN THE CONFIG FILE

→ SAVED AS '556 SEP SoGvZ_27SEP2018.xml' con

- CLEANED SEACABLE INPUT INTO CTD, TRI AND IMPROVE SIGNAL / NOISE

→ GERMAINE SUGGESTED ITS THE SWELL CAUSING A MESSY DESCENT RATE

- SIGNALS LOOK BETTER ON EVENT 12, LESS SWELL / LESS NOISE

- SWAPPED TOP FOR 7 FROM ROUND TO FLAT TOP.

EUGENT 11: BOTTLE 5 MIS-FIRING SUGGESTED BY WINKLER DO RESULTS.

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Month <u>SEPTEMBER</u>			Year <u>2018</u>		Vessel <u>VECTOR</u>			Cruise ID <u>2018-31</u>							
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							Latitude	Longitude							
13	73	28	03:38	BE	ROS	-	48°15.002	124°6.794	163		-		KY/MB	☒	delay to fix winch tablet
			03:42	BO			48°15.014	124°6.853		156	-			☐	at start of cast
			03:45	EN			48°15.023	124°6.895			-			☐	
14	72	28	04:33	BE	ROS	VS	48°18.673	124°4.099	190		55-68	14	KY/MB	☒	
			04:37	BO			48°18.745	124°4.240		181	-			☐	
			04:51	EN			48°18.961	124°4.596			-			☐	
15	72	28	05:25	BE	NET		48°18.631	124°4.028	189		-		KY/MB	☐	
			05:32	BO			48°18.717	124°4.235		179	-			☐	
			05:36	EN			48°18.766	124°4.332			-			☐	
16	71	28	06:29	BE	ROS	-	48°22.184	123°59.483	113		-		KY/MB	☒	Flu connector
			06:32	BO			48°22.189	123°59.530		106	-			☐	cleaned and re-
			06:34	EN			48°22.194	123°59.590			-			☐	seated
17	70	28	08:02	BE	ROS	-	48°19.202	123°43.128	154		-		SR	☒	Trip mechanism
			08:05	BO			°19.205	°43.069		149	-			☐	#5 was cleaned
			08:08	EN			°19.204	°43.049			-			☐	spigot on 11 was
18	69	28	08:40	BE	ROS	US	48°15.653	123°43.314	180		69-80		SR	☐	served.
			08:44	BO			°15.647	°43.295		175	-			☐	
			08:59	EN			°15.6	°43.			-			☐	
			:				°	°			-			☐	

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Notes:

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BOTTLE 5 APPEARS TO BE MIS-FIRING ACCORDING TO WINKLER DO RESULTS

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Month <u>Sept</u>				Year <u>2018</u>		Vessel <u>Vector</u>				Cruise ID <u>2018-031</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
19	68	28	10:01	BE	ROS	✓	48°12.233	123°43.025	142		✓	✓	SR	☒	
			10:04	BO			°12.240	°43.000		138	-			☐	
			10:07	EN			°12.238	°42.937			-			☐	
20	105	28	11:57	BE	ROS	✓	48°11.024	123°18.931	90		✓	✓	SR	☒	
			11:59	BO			°11.038	°18.905		86	-			☐	
			12:01	EN			°11.051	°18.870			-			☐	
21	ADCP	28	12:50	BE	ROS	US	48°14.010	123°17.739	122		81-91	11	SR	☒	
			12:54	BO			°14.005	°17.910		118	-			☐	
			13:04	EN			°13.919	°17.735			-			☐	
22	104	28	13:55	BE	ROS	✓	48°19.998	123°17.974	87		✓	✓	SR	☒	
			13:57	BO			° .999	° .942		83	-			☐	
			:	EN			° .	° .			-			☐	
23	67	28	14:24	BE	ROS	✓	48°22.711	123°18.063	110		✓	✓	SR	☒	
			14:26	BO			°22.762	°18.047		105	-			☐	
			14:28	EN			°22.754	°18.029			-			☐	
24	66		15:02	BE	ROS		48°19.312	123°14.089			✓	✓	SR	☒	
			15:04	BO			°19.313	°14.084			-			☐	
			15:07	EN			°19.312	°14.080			-			☐	
			:				° .	° .			-			☐	

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Month <u>Sept</u>			Year <u>2018</u>			Vessel <u>Vector</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
25	65	28	15:41	BE	ROS	US	48° 15.884	123° 9.882	130		92-101	10	SR	☒	
			15:44	BO			° 15.853	° 9.943		125	-			☐	
			15:56	EN			° 15.703	° 10.166			-			☐	
26	64	28	16:28	BE	ROS	US	48° 12.792	123° 5.778	112		-	-	SR	☒	
			16:30	BO			° 12.778	° 5.774		107	-			☐	
			16:32	EN			° 12.761	° 5.772			-			☐	
27	63	28	17:13	BE	ROS	US	48° 14.597	122° 58.525	155		102-104		SR	☒	
			17:17	BO			° 14.596	° 58.523		150	-			☐	
			17:22	EN			° 14.596	° 58.512			-			☐	
28	63	28	17:40	BE	NET		48° 14.605	122° 58.509	156		-	-	ES	☐	
			17:45	BO			° 14.603	° 58.504		146	-			☐	
			17:48	EN			° 14.595	° 58.519			-			☐	
29	62	28	19:08	BE	ROS	US	48° 22.804	123° 2.748	152		105 - 115	11	MR	☒	SEE PAGE →
			19:11	BO			48° 22.780	123° 2.744		145	-			☐	
			19:27	EN			48° 22.666	123° 2.814			-			☐	
30	54	28	21:23	BE	ROS	-	48° 26.578	122° 44.323	83		-	-	MR	☒	
			21:25	BO			48° 26.566	122° 44.326		74	-			☐	
			21:27	EN			48° 26.549	122° 44.328			-			☐	
			:				° .	° .			-			☐	

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CHANGED FLUOROMETER: 2228 (NEW), UPDATED COVER FILE

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
31	S3	28	12:26	BE	Ros	-	48° 33.271	122° 44.946	604		-	-	MB	☒	
			12:27	BO			48° 33.266	122° 44.936		56	-			☐	
			12:29	EW			48° 33.263	122° 44.927			-			☐	
32	S2	28	13:19	BE	Ros	-	48° 38.855	122° 43.272	87		-	-	MB	☒	
			13:21	BO			48° 38.850	122° 43.270		77.5	-			☐	
			13:23	EW			48° 38.854	122° 43.276			-			☐	
33	S1	29	00:44	BE	Ros	-	48° 46.696	122° 51.583	166		-	-	MB	☒	
			00:47	BO			48° 46.704	122° 51.634		153	-			☐	
			00:51	EW			48° 46.722	122° 51.719			-			☐	
34	S7	29	02:29	BE	Ros	-	48° 44.020	123° 7.986	157		-	-	MB	☒	
			02:32	BO			48° 44.045	123° 7.978		146	-			☐	
			02:36	EW			48° 44.066	123° 7.963			-			☐	
35	S8	29	03:13	BE	Ros	-	48° 43.028	123° 14.407	340		-	-	MB	☒	
			03:20	BO			48° 43.080	123° 14.540		332	-			☐	
			03:28	EW			48° 43.157	123° 14.522			-			☐	
36	S6	29	06:20	BE	Ros	US	48° 46.319	123° 01.823	210		116-130	15	MB	☐	TRIPPED 8+9
			06:24	BO			48° 46.243	123° 01.034		203	-			☐	TOGETHER @ 50m
			06:38	EW			48° 46.246	123° 01.656			-			☐	BUMPED ALL SUBSEQUENT
			:				.	.			-			☐	BOTTLES UP 1

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Notes:

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Month <u>Sept</u>			Year <u>2018</u>			Vessel <u>Vector</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
37	47	29	07:47	BE	ROS		48°49.279	123° 6.161			/	/	SR	☒	
			07:51	BO			°49.265	° 6.134			-			☐	
			07:55	EN			°49.241	° 6.100			-			☐	
38	48	29	08:23	BE	ROS		48°51.733	123° 3.146	226		/	/	SR	☒	
			08:28	BO			°51.713	° 3.175		221	-			☐	
			08:32	EN			°51.727	° 3.211			-			☐	
39	49	29	09:07	BE	ROS		48°54.989	122°59.609	132		/	/	SR	☒	
			09:09	BO			°54.986	°59.603		127	-			☐	
			09:12	EN			°55.002	°59.611			-			☐	
40	50	29	09:42	BE	ROS		48°57.695	122°56.092	27		/	/	SR	☒	
			09:43	BO			°57.692	°56.089		23	-			☐	
			09:44	EN			°57.692	°56.092			-			☐	
41	44	29	10:37	BE	ROS		48°56.794	123° 5.952	121		/	/	SR	☒	
			10:40	BO			°56.796	° 5.960		116	-			☐	
			10:42	EN			°56.797	° 5.969			-			☐	
42	45	29	11:12	BE	ROS		48°53.878	123° 8.380	128		/	/	SR	☒	
			11:15				°53.868	° 8.378		123	-			☐	
			11:17				°53.861	° 8.378			-			☐	
			:				°	°			-			☐	

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Notes:

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Month <u>Sept</u>				Year <u>2018</u>			Vessel <u>Vector</u>			Cruise ID <u>2018-031</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
43	46	29	11:42	BE	NET		48°51.405	123°10.797	174		-	/	CS	☐ ☐	
			11:47	BO			°51.390	°10.824		164	-			☐ ☐	
			11:51	EN			°51.359	°10.863			-			☐ ☐	
44	46	29	12:01	BE	ROS	US	48°51.384	123°10.763	178		131-142	12	SR	☒ ☐	
			12:05	BO			°51.410	°10.799		173	-			☐ ☐	
			12:20	EN			°51.481	°11.030			-			☐ ☐	
45	106	29	13:31	BE	ROS	/	49°1.018	123°13.214	77		/	/	SR	☒ ☐	
			13:32	BO			°1.014	°13.216		72	-			☐ ☐	
			13:34	EN			°1.016	°13.226			-			☐ ☐	
46	107	29	14:08	BE	ROS	/	48°58.404	123°18.095	184		/	/	SR	☒ ☐	
			14:12	BO			°58.430	°18.188		179	-			☐ ☐	
			14:15	EN			°58.471	°18.289			-			☐ ☐	
47	43	29	15:12	BE	ROS	/	49°0.200	123°30.103	197		/	/	SR	☒ ☐	
			15:15	BO	1		°0.221	°30.127		192	-			☐ ☐	
			15:20	EN			°0.264	°30.115			-			☐ ☐	
48	42	29	15:43	BE	NET	/	49°01.788	123°26.229	320		/	/	CS	☐ ☐	
			15:55	BO			°01.800	°26.382			-			☐ ☐	
			15:59	EN			°01.820	°20.395			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>Sept</u>				Year <u>2018</u>		Vessel <u>Vector</u>				Cruise ID <u>2018-031</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
							Latitude	Longitude							
49	42	29	16:13	BE	ROS	US	49° 1.834	123° 26.494	322		143-159	17	SR	☒	
			16:21	BO			49° 1.880	123° 26.557		319	-			☐	
			16:40	EN			° 1.908	° 26.636			-			☐	
50	41	29	17:18	BE	ROS	/	49° 3.248	123° 22.297	244		/	/	SR	☒	
			17:22	BO			° 3.244	° 22.318		239	-			☐	
			17:27	EN			° 3.256	° 22.331			-			☐	
51	41	29	17:34	BE	NET		49° 3.246	123° 22.329	244		/	/	CS	☐	
			17:41	BO			° 3.278	° 22.321		234	-			☐	
			17:47	EN			° 3.304	° 22.296			-			☐	
52	108	29	18:11	BE	ROS		49° 4.378	123° 19.115	93		-		SR	☒	
			18:13	BO			° 4.393	° 19.112		88	-			☐	
			18:15	EN			° 4.421	° 19.103			-			☐	
53	37	29	19:33	BE	ROS	-	49° 13.604	123° 20.674	211		-	-	MR	☒	
			19:37	BO			° 13.601	° 20.683		209	-			☐	
			19:41	EN			° 13.604	° 20.719			-			☐	
54	38	29	20:27	BE	ROS	-	49° 12.624	123° 26.369	306		-	-	MR	☒	
			20:33	BO			° 12.606	° 26.277		303	-			☐	
			20:39	EN			° 11.976	° 26.226			-			☐	
			:				° .	° .			-			☐	

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SCOTT REPLACED BOTTLES 13 + 15 WITH FLAT TOPPED BOTTLES ON HIS SHIFT.

→ OVERCAST

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Month <u>SEPTEMBER</u>				Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-031</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
55	38	29	20:47	BC	NET	-	49° 11.957	123° 26.756	305		-	-	MR/KY	☐ ☐	
			20:57	BO			° 11.957	° 26.756		291	-			☐ ☐	
			21:03	EN			° 11.961	° 26.211			-			☐ ☐	
56	39	29	21:54	BC	ROS	US	49° 9.850	123° 32.975	373		160 - 176	17	MB	☒ ☐	
			22:01	BO			° 9.850	° 32.935		370	-			☐ ☐	
			22:18	EN			° 9.851	° 32.921			-			☐ ☐	
57	40	29	22:49	BC	ROS	US	49° 8.603	123° 36.935	135		-	-	MB	☒ ☐	
			22:52	BO			° 8.612	° 36.944		135	-			☐ ☐	
			22:55	EN			° 8.620	° 36.954			-			☐ ☐	
58	40	29	23:05	BC	NET	-	49° 8.572	123° 36.870	150		-	-	MB	☐ ☐	
			23:09	BO			° 8.585	° 36.900		135	-			☐ ☐	
			23:12	EN			° 8.607	° 36.915			-			☐ ☐	
59	GEO1	30	00:16	BC	NET	-	49° 15.014	123° 44.926	400		-	-	MR/KY	☐ ☐	
			00:30	BO			° 15.028	° 45.071		390	-			☐ ☐	
			00:35	EN			° 15.029	° 45.117			-			☐ ☐	
60	GEO1	30	00:40	BC	NET	-	49° 15.025	123° 45.162	401		-	-	MR/KY	☐ ☐	SEGE FRACTION
			00:57	BO			° 15.022	° 45.316		390	-			☐ ☐	NET
			00:59	EN			° 15.022	° 45.376			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
601	GC01	30	01:10	BE	ROS	US	49° 14.996	123° 44.946	400		177-179	3	MS	☒	
			01:19	BO			° 14.996	° 45.026		396	-			☐	
			01:29	EN			° 14.989	° 45.123			-			☐	
602	26	30	01:59	BE	ROS	US	49° 14.294	123° 50.891	247		-	-	MS	☒	
			02:04	BO			49° 14.287	123° 50.964		240	-			☐	
			02:09	EN			49° 14.294	123° 51.065			-			☐	
603	27	30	02:58	BE	ROS	US	49° 19.148	123° 47.975	345		180-196	17	KY	☒	
			03:05	BO			49° 19.105	123° 47.965		342	-			☐	
			03:23	EN			49° 18.977	123° 47.848			-			☐	
604	28	30	04:12	BE	ROS	US	49° 24.123	123° 45.329	135		-	-	MS	☒	
			04:15	BO			° 24.130	° 45.330		131	-			☐	
			04:18	EN			° 24.127	° 45.329			-			☐	
605	28	30	04:22	BE	NET	-	49° 24.057	123° 45.317	135		-	-	MS/KY	☐	
			04:26	BO			° 24.069	° 45.299		125	-			☐	
			04:28	EN			° 24.050	° 45.288			-			☐	
606	CPFI	30	06:11	BE	NET	-	49° 27.031	124° 04.958	244		-	-	MS/KY	☐	
			06:18	BO			° 27.053	° 04.818		234	-			☐	
			06:23	EN			° 27.058	° 04.790			-			☐	
			:				°	°			-			☐	

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SKIPPED 26.5 + 27.5

DA SAMPLES TAKING > 1 HR ON OCCASION, CAN LESS VOLUME BE USED?

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
67	CPF1	30	06:36	BE	ROS		49° 21.972	124° 4.979	244		197-199	3	MB	☒ ☐	
			06:40	BO			° 21.985	° 4.915		241	-			☐ ☐	
			06:47	EN			° 22.062	° 4.813			-			☐ ☐	
68	2	30	07:20	BE	ROS	US	49° 24.126	124° 9.299			200-215	16	SR	☒ ☐	
			07:26	BO			° 24.144	° 9.288			-			☐ ☐	
			07:44	EN			° 24.158	° 9.259			-			☐ ☐	
69	1	30	08:20	BE	ROS	/	49° 20.305	124° 12.073	248		/	/	SR	☒ ☐	
			08:26	BO			° 20.371	° 12.091		243	-			☐ ☐	
			08:31	EN			° 20.422	° 12.097			-			☐ ☐	
70	4	30	09:27	BE	ROS	/	49° 24.512	124° 22.112	344		/	/	SR	☒ ☐	
			09:34	BO			° 24.542	° 22.236		339	-			☐ ☐	
			09:41	EN			° 24.571	° 22.373			-			☐ ☐	
71	3	30	10:05	BE	ROS	US	49° 26.620	124° 20.186	320		216-231	16	SR	☒ ☐	
			10:13	BO			° 26.579	° 20.164		316	-			☐ ☐	
			10:32	EN			° 26.554	° 19.946			-			☐ ☐	
72	5/CPF2	30	11:24	BE	ROS	/	49° 28.003	124° 29.994	325		/	/	SR	☒ ☐	
			11:30	BO			° 28.015	° 29.953		320	-			☐ ☐	
			11:36	EN			° 28.013	° 29.900			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>Sept</u>			Year <u>2018</u>			Vessel <u>Vector</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
73	5/CPF2	30	11:44	BE	NET		49°28.035	124°29.922	325		-		CS	☐	
			11:55	BO			49°28.059	124°29.816		315	-			☐	
			12:00	EN			49°28.074	124°29.781			-			☐	
74	6	30	12:27	BE	ROS		49°30.601	124°27.893	192		-		SR	☒	
			12:31	BO			°30.614	°27.845		187	-			☐	
			12:46	EN			°30.572	°27.649			-			☐	
75	7	30	13:35	BE	ROS		49°34.410	124°24.192	351		-		CS	☐	
			13:41	BO			°34.384	°24.175		347	-			☐	
			13:47	EN			°34.358	°24.150			-			☐	
76	8	30	14:42	BE	ROS		49°39.336	124°32.923	338		-		SR	☒	
			14:49	BO			°39.343	°32.888		334	-			☐	
			14:55	EN			°39.338	°32.866			-			☐	
77	9	30	15:35	BE	ROS	US	49°35.503	124°38.292	170		245-256		SR	☒	
			15:39	BO			°35.495	°38.272		165	-			☐	
			15:53	EN			°35.408	°38.209			-			☐	
78	10	30	16:47	BE	ROS		49°40.718	124°47.296	100		-		SR	☒	
			16:50	BO			°40.712	°47.274		95	-			☐	
			16:54	EN			°40.710	°47.268			-			☐	
			:				°	°			-			☐	

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Month <u>Sept</u>				Year <u>2018</u>			Vessel <u>Vector</u>			Cruise ID <u>2018-031</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
79	11	30	17:17	BE	ROS		49°42.408	124°43.421	303		-	-	SR	☒	
			17:23	BO			°42.402	°43.387		298	-			☐	
			17:29	EN			°42.367	°43.390			-			☐	
80	11	30	17:36	BE	NET		49°42.374	124°43.379	295		-	-	CS	☐	
			17:46	BO			°42.310	°43.469		285	-			☐	
			17:51	EN			°42.289	°43.504			-			☐	
81	12	30	18:15	BE	MET		49°43.579	124°40.774	355		-	-	CS	☐	
			18:27	BO			°43.634	°40.702		345	-			☐	
			18:34	EN			°43.702	°40.665			-			☐	
82	12	30	18:46	BE	ROS	US	49°43.600	124°40.744	356		257-273	17	MB	☒	
			18:53	BO			°43.584	°40.676		353	-			☐	
			19:11	EN			°43.595	°40.547			-			☐	
83	13	30	20:58	BE	ROS	-	49°55.351	124°55.192	240		-	-	MB	☒	
			21:03	BO			°55.360	°55.177		244	-			☐	
			21:08	EN			°55.345	°55.112			-			☐	
84	14	30	21:43	BE	NET	-	49°52.985	124°59.567	314		-	-	MB/K-1	☐	
			21:52	BO			°52.935	°59.417		304	-			☐	
			21:58	EN			°52.871	°59.429			-			☐	
			:				°	°			-			☐	

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Notes:

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Month			SEPT/OCT		Year			2018		Vessel		VECTOR		Cruise ID			2018-031	
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments			
85	141	30	22:02	BC	NET	-	49° 52.824	124° 59.440	311		-	-	MB/KJ	☐ ☐	SIZE FRACTIONATION			
			22:12	BO			° 52.740	° 59.366		304	-			☐ ☐				
			22:18	EN			° 52.701	° 59.318			-			☐ ☐				
86	14	30	22:27	BC	ROS	US	49° 52.620	124° 59.218	308		274-289	16	MB	☒ ☐				
			22:32	BO			° 52.586	° 59.180		306	-			☐ ☐				
			22:52	EN			° 52.428	° 59.026			-			☐ ☐				
87	15	30	23:21	BC	ROS	-	49° 51.708	125° 1.358	150		-	-	MB	☐ ☐				
			23:23	BO			° 51.684	° 1.309		147	273-			☐ ☐				
			23:27	EN			° 51.671	° 1.271			-			☐ ☐				
88	16	1	00:39	BC	ROS	US	49° 57.715	125° 8.934	155		290-301	12	MB	☒ ☐				
			00:42	BO			° 57.742	° 8.981		152	-			☐ ☐				
			00:54	EN			° 57.646	° 9.322			-			☐ ☐				
89	17	1	01:27	BC	ROS	-	49° 58.679	125° 4.750	265		-	-	MB	☒ ☐				
			01:32	BO			° 58.639	° 4.258		264	-			☐ ☐				
			01:39	EN			° 58.586	° 4.213			-			☐ ☐				
90	Q039	1	02:08	BC	ROS	US	50° 1.804	125° 5.387	274		302-304	3	MB	☒ ☐				
			02:14	BO			° 1.865	° 5.478		273	-			☐ ☐				
			02:21	EN			° 1.961	° 5.576			-			☐ ☐				
			:				° .	° .			-			☐ ☐				

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Notes:

LOTS OF TAR LIKE GREASE COMING OFF CTD CABLE.

STATION 21 SKIPPED DUE TO TIME CONSIDERATIONS

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Month <u>OCTOBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
91	Q039	1	02:28	BE	NET	-	50° 2.088	125° 5.670	255		-	-	MB/KY	☐	
			02:36	BO			° 2.185	° 5.741		245	-			☐	
			02:40	EN			° 2.247	° 5.790			-			☐	
92	18	1	3:53	BE	ROS	-	49° 59.333	124° 58.828	142		-	-	MB/	☒	KY/ KS
			3:56	BO			49° 59.339	124° 58.793		137	-			☐	
			3:59	EN			49° 59.354	124° 58.776			-			☐	
93	19	1	05:00	BE	ROS	-	50° 01.254	124° 53.003	291		-	-	MB/KY/	☒	
			05:06	BO			50° 01.278	124° 53.030		290	-		KS	☐	
			05:11	EN			50° 01.316	124° 53.058			-			☐	
94	PEN1	1	13:37	BE	ROS	US	50° 17.044	124° 42.590	165		305-319	15	SR	☒	
			13:40	BO			° 17.051	° 42.596		160	-			☐	
			13:57	EN			° 17.040	° 42.841			-			☐	
95	PEN2	1	14:38	BE	NET		50° 14.714	124° 44.139	293		-	-	CS	☐	
			14:48				° 14.730	° 44.039		283	-			☐	
			14:54				° 14.745	° 44.000			-			☐	
96	PEN2	1	15:04		ROS	US	50° 14.758	124° 44.029			320-337	18		☐	
			15:10				° 14.788	° 43.996			-			☐	
			15:36				° 14.934	° 43.750			-			☐	
			:				°	°			-			☐	

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ROUGH LAUNCH SWELL CAME UP DURING DEPLOYMENT, CAUSED SLACK AND JOLT IN WIRE

FINISHED STATION 19. WILL DO PENDRELL SOUND STATIONS FIRST DAY LIGHT. JAZZ WEATHER
COURSE UNTIL ~ 0430 THEN PROCEED TO RND (4 KNT RESTRICTION IN PENDRELL SOUND),
AIM TO DO FIRST STATION ~ 0630 - 0700.

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Month			Year			Vessel			Cruise ID						
OCTOBER			2018			VECTOR			2018-031						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
97	PEN 3	1	16:24	BC	ROS	US	50° 12.400	124° 45.119	421		338 - 353	16	SR	☐	
			16:32	BO			° 12.404	° 45.122		417	-			☐	
			16:58	EN			° 12.445	° 45.134			-			☐	
98	20	1	20:33	BC	ROS	-	49° 47.258	124° 32.374	301		-	-	MS	☒	
			20:39	BO			° 47.261	° 32.540		313	-			☐	
			20:46	EN			° 47.263	° 32.627			-			☐	
99	22	1	22:12	BC	ROS	US	49° 40.258	124° 16.320	353		554 - 555	3	MS/KY	☒	
			22:19	BO			49° 40.342	124° 16.405		354	-		KY	☐	surface bottle caught
			22:27	EN			49° 40.451	124° 16.511			-			☐	
100	22	1	22:31	EN	ROS		49° 40.530	124° 16.584	353	1	356	1	MS/KY	☐	Redeploy to fire →
101	22	1	22:35	BE	NET		49° 40.352	124° 16.379	358		-		MS/KY	☐	
			22:47	BO			49° 40.487	124° 16.482		348	-			☐	
	21		23:01	EN			49° 40.508	124° 16.481	3		-			☐	
102	22	1	23:10	BE	NET		49° 40.529	124° 16.488	358	2118	-		MS/KY	☐	SIZE FRACTION
			23:18	BO			49° 40.588	124° 16.477		348	-			☐	
			23:23	EN			49° 40.669	124° 16.539			-			☐	
			:				° .	° .			357 - 359			☐	
			:				° .	° .			-			☐	
			:				° .	° .			-			☐	

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#3 didn't fire

surface bottle. #3 only. Didn't turn pump on. Archived as cast 100.

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Month <u>OCTOBER</u>			Year <u>2018</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2018-031</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
103	24	2	00:57	BE	NET	-	49° 30.329	124° 6.036	425		-	-	MB/KY	☐ ☐	
			01:11	BO			° 30.538	° 6.152		420	-			☐ ☐	~20° ANGLE
			01:17	EN			° 30.598	° 6.156			-			☐ ☐	
104	24	2	01:26	BE	ROS	US	49° 30.730	124° 6.178	425		357-359	3	MB	☒ ☐	
			01:35	BO			° 30.880	° 6.196		425	-			☐ ☐	
			01:45	EN			° 31.008	° 6.204			-			☐ ☐	
105	25	2	02:18	BE	ROS	-	49° 27.752	124° 7.556	280		-	-	MB	☐ ☐	
			02:23	BO			° 27.774	° 7.556		275	-			☐ ☐	
			02:28	EN			° 27.787	° 7.552			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
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			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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