Monitoring of Chinese White Dolphins in Southwest Lantau Waters

24th Monthly Progress Report (March 2017)
submitted to Environmental Project Office for the HZMB HKLR, HZMB HKBCF and TM-CLKL – Investigation

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1. Introduction

1.1. In March 2015, Hong Kong Cetacean Research Project (HKCRP) was appointed by the Environmental Project Office for the HZMB Hong Kong Projects to undertake a monitoring study of Chinese White Dolphins in Southwest Lantau (SWL) waters.

1.2. The objectives of the monitoring study are to quantify the abundance and density of Chinese White Dolphins in SWL waters, to identify individuals during the monitoring surveys, and to analyze their range use and movement patterns in Hong Kong and the wider Pearl River Estuary waters.

1.3. The monitoring study can supplement the on-going EM&A monitoring results of the HZMB Hong Kong Projects in North and West Lantau waters, and provide a more complete picture of dolphin usage and movements between different survey areas in western Hong Kong waters.

1.4. The present report is the 24th monthly progress report under this dolphin monitoring study submitted to the Environmental Project Office, summarizing the survey findings during the month of March 2017.

2. Monitoring Methodology

2.1. Vessel-based Line-transect Survey

2.1.1. According to the requirement of the technical proposal submitted to the Environmental Project Office, dolphin monitoring programme should cover all transect lines in SWL

survey area (see Figure 1) once per month upon instruction. The co-ordinates of all transect lines conducted during the dolphin monitoring survey are shown in Table 1.

Table 1. Co-ordinates of transect lines in SWL survey area (corresponding to transect line layout as shown in Figure 1)

Line #		Northing	Easting		Line #		Northing	Easting
SWL001	1	806180	802510		SWL007	13	807380	808520
	2	804250	802510			14	805600	808520
SWL002	3	806710	803480			15	804400	808520
	4	803450	803480			16	803000	808520
SWL003	5	807270	804500			17	802100	808520
	6	802690	804500			18	800470	808520
SWL004	7	807590	805450		SWL008	19	807380	809550
	8	802295	805450			20	805050	809550
SWL005	9	808490	806500			21	804400	809550
	10	801410	806500			22	800470	809550
SWL006	11	808500	807430		SWL009	23	807380	810550
	12	801250	807430			24	800470	810550
					SWL010	25	809410	811510
						26	801470	811510

2.1.2. The HKCRP survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 18 years of marine mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2014). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

2.1.3. Two experienced observers from HKCRP (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and

filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270° and 90° (in relation to the bow, which is defined as 0°). One to two additional experienced observer was available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.

2.1.4. During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS (*Garmin eTrex Legend*).

2.1.5. Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.

2.1.6. When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.

2.1.7. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1) was labeled as “primary” survey effort, while the survey effort conducted along the connecting lines between parallel lines as well as the section around the Soko Islands was labeled as “secondary” survey effort. Both primary and secondary survey effort were presented as on-effort survey effort in this report.

2.1.8. Encounter rates of Chinese White Dolphins (number of on-effort sightings per 100 km of survey effort and number of dolphins from all on-effort sightings per 100 km of survey effort) were calculated in SWL survey area in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using the combined survey effort from both primary and secondary lines for comparison to the historical data collected by HKCRP in this survey area. For the historical data, the encounter rates were calculated by pooling all relevant survey effort and dolphin sightings to calculate a single index.

2.2. Photo-identification Work

2.2.1. When a group of Chinese White Dolphins were sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.

2.2.2. A professional digital camera (*Canon* EOS 7D Mark II model), equipped with long telephoto lenses (100-400 mm zoom), were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

2.2.3. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995. For individual dolphins that are not readily identifiable from the catalogue but have distinct features on their bodies, they will be placed in a pool of "potential new individuals", with decision being made at the end of each year on whether any of them should be incorporated into the photo-ID catalogue.

2.2.4. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features (Jefferson 2000).

2.2.5. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

3. Monitoring Results

3.1. Vessel-based Line-transect Survey

3.1.1. One set of systematic line-transect vessel survey was conducted under the present monitoring study on March 6th to cover all transect lines in SWL survey area once. The route and track log of this survey are presented in Figure 2 and Appendix I respectively.

3.1.2. In addition, three line-transect surveys were also conducted under the AFCD long-term marine mammal monitoring programme in SWL survey area on March 1st (with lines no. SWL001, SWL003, SWL005, SWL007 and SWL009 covered), March 13th (with lines no. SWL002, SWL004, SWL006 and SWL008 covered) and March 21st (with lines no. SWL006, SWL008 and SWL010 covered). Such monitoring data were also incorporated into the present study for various analyses.

3.1.3. For the present study alone, a total of 70.90 km of survey effort was collected from 11:00 to 15:55 (i.e. 4 hours and 55 minutes of survey time) on March 6th, with 100% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) (Appendix II). The total survey effort conducted on primary and secondary lines were 54.05 km and 16.85 km respectively.

3.1.4. For the combined monitoring dataset from both the present study and AFCD monitoring study, a total of 172.39 km of survey effort was collected in SWL waters in March 2017.

3.1.5. During this monitoring month, three groups of five Chinese White Dolphins were sighted from two of the three AFCD monitoring surveys, but none from the survey of the present study (Appendix III). Only one of the three dolphin groups were sighted during on-effort search, and all three dolphin groups were associated with operating fishing vessels (two with purse-seiners and one with pair-trawlers).

3.1.6. Notably, nine groups of 20 finless porpoises were also sighted in SWL survey area during the surveys conducted in March, with two groups of two porpoises sighted during the survey from the present study.

3.1.7. Distribution of the three dolphin sightings made in March 2017 is shown in Figure 3. Two of the three dolphin groups were located near Fan Lau toward the western end of the SWL survey area, while the other sighting was located between the Soko Islands (Figure 3). Besides the lone dolphin sighted near Soko Islands, they were mostly absent from the central and eastern portions of the survey area during this monitoring month, where finless porpoises occurred frequently (Figure 3).

3.1.8. Encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) in March 2017 are shown in Table 2. Comparison of encounter rates was also made to the one deduced in spring months (March-May) in the past decade (2005-14), as well as in March 2016 under the present study (Table 2).

Table 2. Overall dolphin encounter rates (sightings per 100 km of survey effort) from the present monitoring survey and combined database with AFCD monitoring survey conducted in March 2017 (primary lines only, as well as both primary lines and secondary lines were used) in SWL survey area in comparison to the ones deduced during spring months (March-May 2005-14) in the past decade

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		**Encounter rate (ANI)** (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	Primary Lines Only	Both Primary and Secondary Lines	Primary Lines Only	Both Primary and Secondary Lines
HYD-HZMB data (March 2017)	0.0	0.0	0.0	0.0
Combined data (March 2017)	0.85	0.60	2.54	1.80
Combined data (March 2016)	2.57	3.00	3.43	7.20
Historical Data (Spring 2005-14)		1.54		4.14

3.1.9. From the combined data of HYD-HZMB and AFCD monitoring surveys, the overall encounter rates based on both the number of dolphin sightings (ER(STG)) and total number of dolphins (ER(ANI)) deduced in March 2017 in SWL waters were lower than the ones deduced in March 2016 as well as the ones during the spring months of 2005-14 (Table 2).

3.1.10. The average group size of Chinese White Dolphins sighted during SWL monitoring surveys in March 2017 was 1.7 animal per group. This was lower than the average group size recorded in spring months of 2005-14 (2.7). All three groups were small with only 1-3 animals per group (see Appendix III).

3.2. Photo-identification Work

3.2.1. Attempts were made to photograph the dolphins sighted during all SWL surveys conducted in March 2017.

3.2.2. Among the five dolphins sighted during this month's surveys, only one individual dolphin (WL62) was identified and re-sighted once (Appendices IV and V). This individual was not accompanied by any young calves.

3.2.3. Notably, the locations where this individual WL62 was re-sighted were well within its past home range in Southwest and West Lantau waters.

4. References

Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L., and Thomas, L. 2001. Introduction to distance sampling: estimating abundance of biological populations. Oxford University Press, London.

Hung, S. K. 2014. Monitoring of Marine Mammals in Hong Kong waters: final report (2013-14). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department, 231 pp.

Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

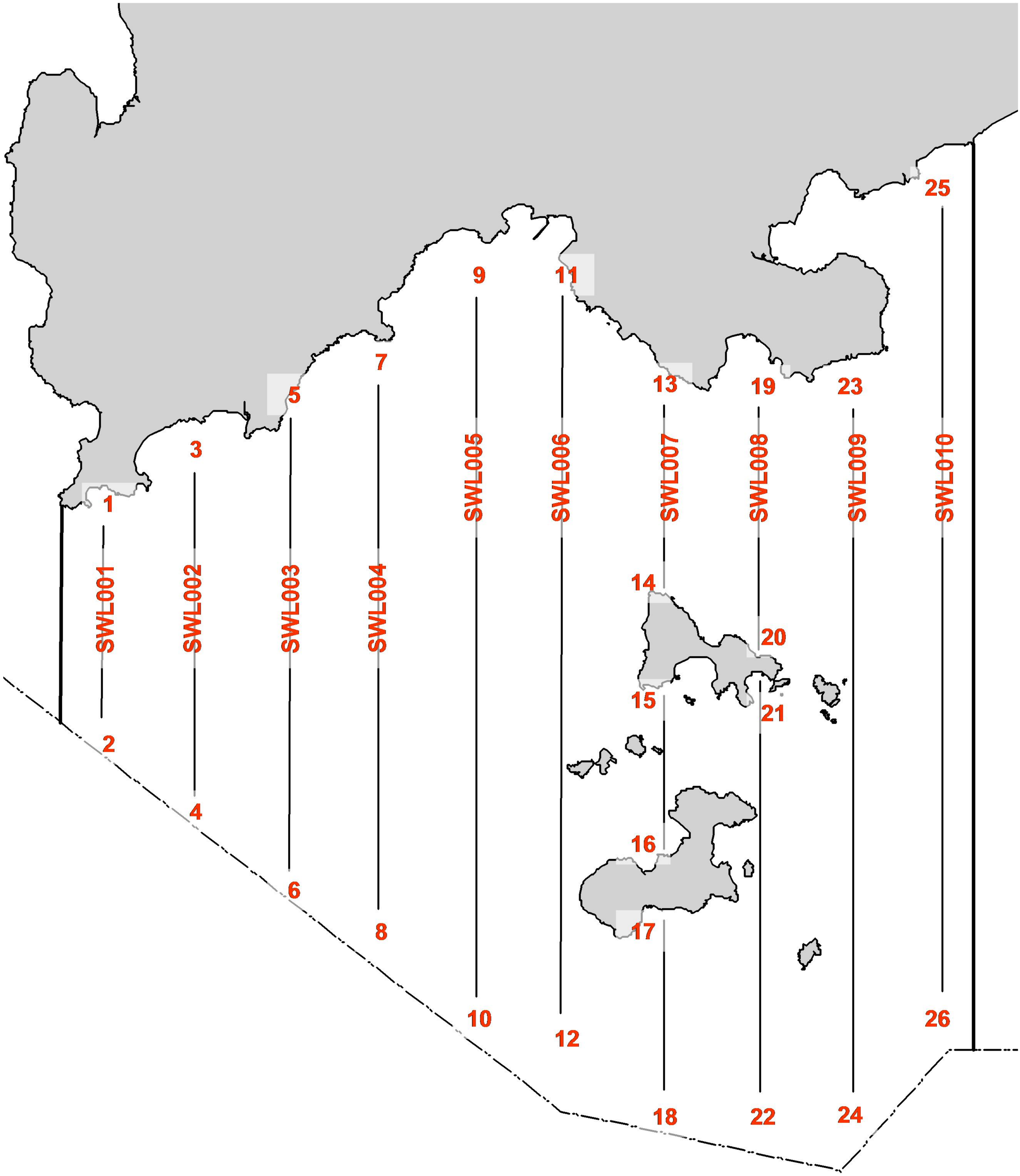

Figure 1. Survey Lines and associated coordinates in Southwest Lantau survey area

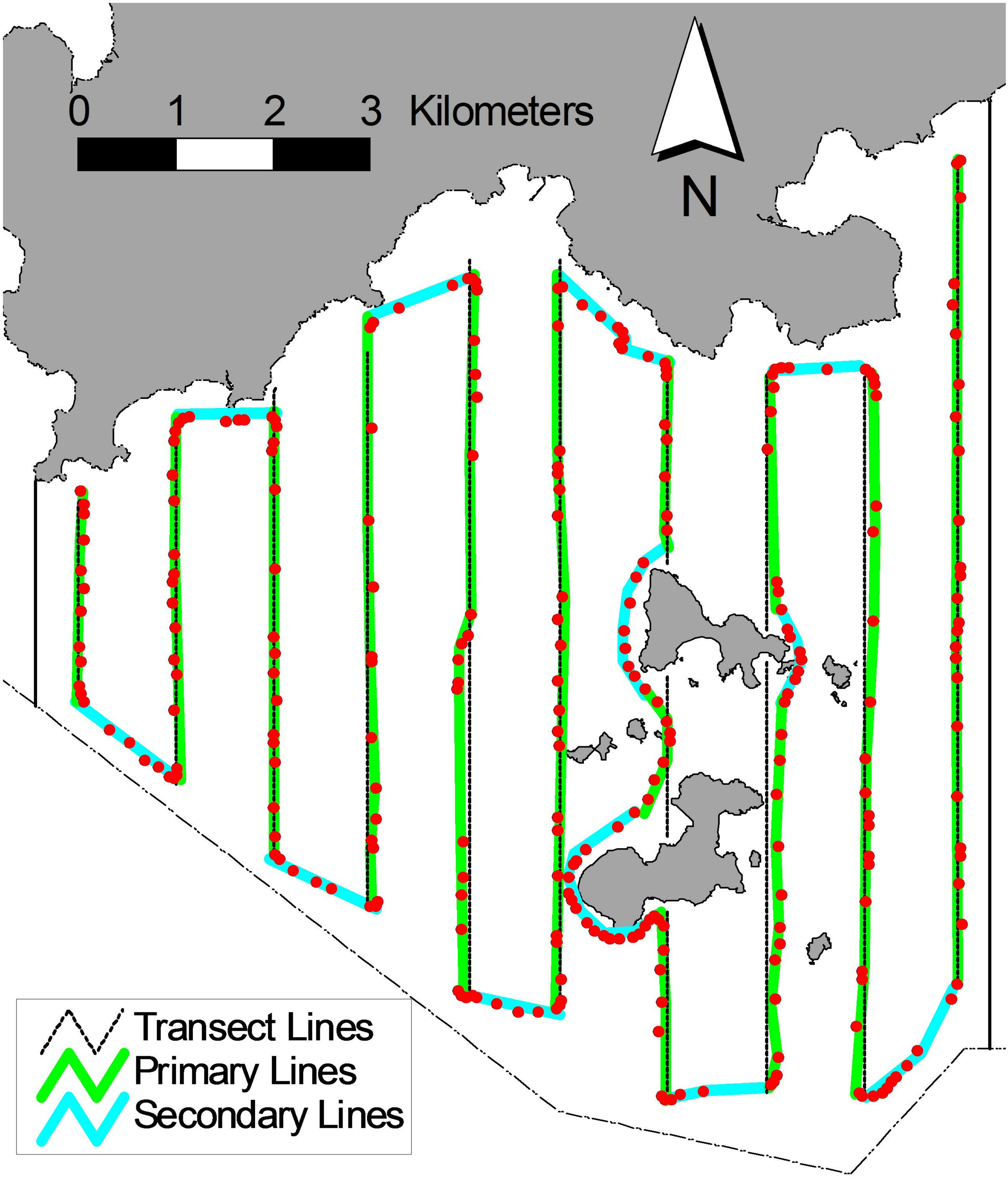

Figure 2. Survey Route on March 6th, 2017 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

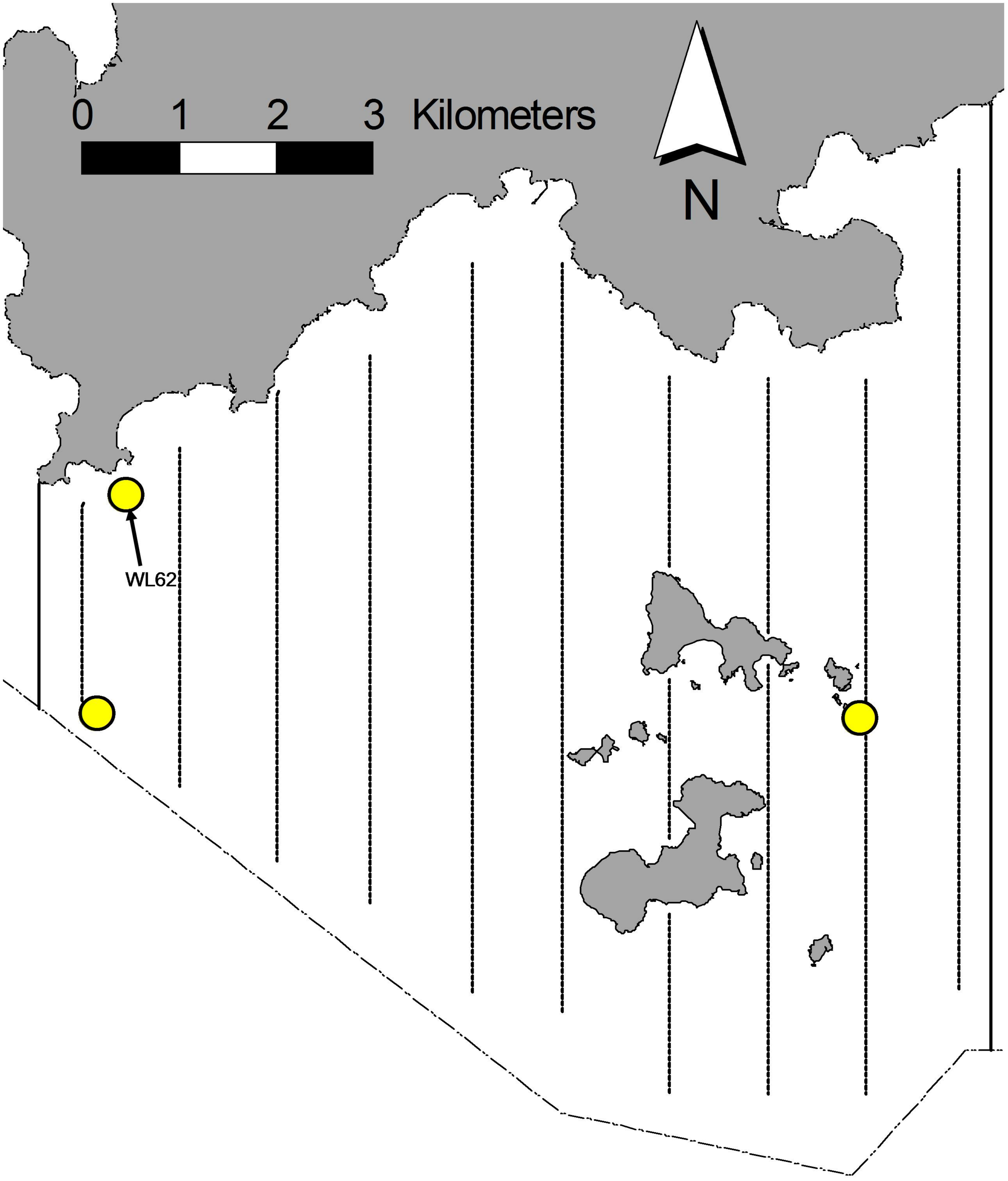

Figure 3. Distribution of Chinese White Dolphin sightings during March 2017 monitoring surveys in Southwest Lantau survey area, with identified individuals indicated for their corresponding sightings (red dot: HYD-HZMB sighting; yellow dot: AFCD sighting)

Appendix I. Track Log of SW Lantau Survey on March 6th, 2017

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 11:00	ON	N22.19444 E113.84901			
6/3/2017 11:00	ON	N22.19448 E113.84964	65 m	0:00:19	12 kph
6/3/2017 11:00	ON	N22.19410 E113.84982	47 m	0:00:13	13 kph
6/3/2017 11:01	ON	N22.19347 E113.84991	70 m	0:00:17	15 kph
6/3/2017 11:01	ON	N22.19264 E113.84987	92 m	0:00:21	16 kph
6/3/2017 11:01	ON	N22.19188 E113.84990	84 m	0:00:19	16 kph
6/3/2017 11:02	ON	N22.19101 E113.84989	97 m	0:00:22	16 kph
6/3/2017 11:02	ON	N22.19030 E113.84987	79 m	0:00:18	16 kph
6/3/2017 11:02	ON	N22.18963 E113.84983	74 m	0:00:17	16 kph
6/3/2017 11:02	ON	N22.18889 E113.84972	84 m	0:00:19	16 kph
6/3/2017 11:03	ON	N22.18831 E113.84961	65 m	0:00:15	16 kph
6/3/2017 11:03	ON	N22.18758 E113.84963	81 m	0:00:19	15 kph
6/3/2017 11:03	ON	N22.18676 E113.84983	94 m	0:00:22	15 kph
6/3/2017 11:04	ON	N22.18606 E113.84994	79 m	0:00:19	15 kph
6/3/2017 11:04	ON	N22.18538 E113.84985	76 m	0:00:18	15 kph
6/3/2017 11:04	ON	N22.18469 E113.84974	78 m	0:00:18	16 kph
6/3/2017 11:05	ON	N22.18407 E113.84967	69 m	0:00:16	15 kph
6/3/2017 11:05	ON	N22.18340 E113.84969	75 m	0:00:18	15 kph
6/3/2017 11:05	ON	N22.18283 E113.84970	63 m	0:00:15	15 kph
6/3/2017 11:05	ON	N22.18210 E113.84962	82 m	0:00:19	16 kph
6/3/2017 11:06	ON	N22.18157 E113.84954	60 m	0:00:14	15 kph
6/3/2017 11:06	ON	N22.18104 E113.84954	59 m	0:00:14	15 kph
6/3/2017 11:06	ON	N22.18034 E113.84971	79 m	0:00:19	15 kph
6/3/2017 11:06	ON	N22.17974 E113.84973	67 m	0:00:16	15 kph
6/3/2017 11:07	ON	N22.17893 E113.84964	90 m	0:00:21	16 kph
6/3/2017 11:07	ON	N22.17817 E113.84951	86 m	0:00:20	15 kph
6/3/2017 11:07	ON	N22.17757 E113.84946	67 m	0:00:16	15 kph
6/3/2017 11:08	ON	N22.17689 E113.84964	78 m	0:00:19	15 kph
6/3/2017 11:08	ON	N22.17613 E113.85002	93 m	0:00:23	15 kph
6/3/2017 11:08	ON	N22.17565 E113.85052	74 m	0:00:19	14 kph
6/3/2017 11:09	ON	N22.17519 E113.85101	73 m	0:00:18	15 kph
6/3/2017 11:09	ON	N22.17480 E113.85153	69 m	0:00:17	15 kph
6/3/2017 11:09	ON	N22.17433 E113.85209	77 m	0:00:19	15 kph
6/3/2017 11:10	ON	N22.17384 E113.85261	77 m	0:00:19	15 kph
6/3/2017 11:10	ON	N22.17335 E113.85328	88 m	0:00:22	14 kph
6/3/2017 11:10	ON	N22.17303 E113.85388	72 m	0:00:18	14 kph
6/3/2017 11:11	ON	N22.17262 E113.85448	77 m	0:00:19	15 kph
6/3/2017 11:11	ON	N22.17219 E113.85496	69 m	0:00:17	15 kph
6/3/2017 11:11	ON	N22.17159 E113.85554	90 m	0:00:22	15 kph
6/3/2017 11:12	ON	N22.17113 E113.85609	76 m	0:00:19	14 kph
6/3/2017 11:12	ON	N22.17080 E113.85678	80 m	0:00:20	14 kph
6/3/2017 11:12	ON	N22.17046 E113.85738	72 m	0:00:18	14 kph
6/3/2017 11:13	ON	N22.17000 E113.85803	84 m	0:00:21	14 kph
6/3/2017 11:13	ON	N22.16959 E113.85853	69 m	0:00:17	15 kph
6/3/2017 11:13	ON	N22.16952 E113.85901	50 m	0:00:14	13 kph
6/3/2017 11:13	ON	N22.16984 E113.85926	43 m	0:00:13	12 kph
6/3/2017 11:14	ON	N22.17044 E113.85922	67 m	0:00:17	14 kph
6/3/2017 11:14	ON	N22.17123 E113.85909	89 m	0:00:21	15 kph
6/3/2017 11:14	ON	N22.17201 E113.85907	88 m	0:00:21	15 kph
6/3/2017 11:15	ON	N22.17287 E113.85897	96 m	0:00:23	15 kph
6/3/2017 11:15	ON	N22.17374 E113.85898	96 m	0:00:23	15 kph
6/3/2017 11:15	ON	N22.17438 E113.85894	71 m	0:00:17	15 kph
6/3/2017 11:16	ON	N22.17498 E113.85888	68 m	0:00:16	15 kph
6/3/2017 11:16	ON	N22.17548 E113.85885	55 m	0:00:13	15 kph
6/3/2017 11:16	ON	N22.17611 E113.85884	71 m	0:00:17	15 kph
6/3/2017 11:16	ON	N22.17685 E113.85898	83 m	0:00:20	15 kph
6/3/2017 11:17	ON	N22.17770 E113.85909	96 m	0:00:23	15 kph
6/3/2017 11:17	ON	N22.17846 E113.85915	84 m	0:00:20	15 kph
6/3/2017 11:17	ON	N22.17917 E113.85908	80 m	0:00:19	15 kph
6/3/2017 11:18	ON	N22.17985 E113.85898	76 m	0:00:18	15 kph
6/3/2017 11:18	ON	N22.18071 E113.85894	96 m	0:00:23	15 kph
6/3/2017 11:18	ON	N22.18138 E113.85901	75 m	0:00:18	15 kph
6/3/2017 11:19	ON	N22.18204 E113.85905	74 m	0:00:18	15 kph
6/3/2017 11:19	ON	N22.18270 E113.85906	73 m	0:00:18	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 11:19	ON	N22.18325 E113.85902	61 m	0:00:15	15 kph
6/3/2017 11:20	ON	N22.18397 E113.85890	81 m	0:00:23	13 kph
6/3/2017 11:20	ON	N22.18479 E113.85876	93 m	0:00:25	13 kph
6/3/2017 11:20	ON	N22.18550 E113.85879	79 m	0:00:21	14 kph
6/3/2017 11:21	ON	N22.18595 E113.85879	50 m	0:00:13	14 kph
6/3/2017 11:21	ON	N22.18667 E113.85877	81 m	0:00:21	14 kph
6/3/2017 11:21	ON	N22.18742 E113.85894	85 m	0:00:22	14 kph
6/3/2017 11:22	ON	N22.18821 E113.85892	88 m	0:00:22	14 kph
6/3/2017 11:22	ON	N22.18901 E113.85887	89 m	0:00:22	15 kph
6/3/2017 11:23	ON	N22.18987 E113.85893	97 m	0:00:24	14 kph
6/3/2017 11:23	ON	N22.19080 E113.85894	103 m	0:00:26	14 kph
6/3/2017 11:23	ON	N22.19152 E113.85889	80 m	0:00:20	14 kph
6/3/2017 11:24	ON	N22.19233 E113.85884	91 m	0:00:23	14 kph
6/3/2017 11:24	ON	N22.19296 E113.85887	70 m	0:00:18	14 kph
6/3/2017 11:24	ON	N22.19372 E113.85891	85 m	0:00:21	15 kph
6/3/2017 11:25	ON	N22.19448 E113.85888	84 m	0:00:21	14 kph
6/3/2017 11:25	ON	N22.19524 E113.85881	85 m	0:00:21	15 kph
6/3/2017 11:25	ON	N22.19599 E113.85873	84 m	0:00:21	14 kph
6/3/2017 11:26	ON	N22.19667 E113.85877	76 m	0:00:19	14 kph
6/3/2017 11:26	ON	N22.19742 E113.85879	83 m	0:00:21	14 kph
6/3/2017 11:26	ON	N22.19816 E113.85883	82 m	0:00:21	14 kph
6/3/2017 11:27	ON	N22.19899 E113.85894	94 m	0:00:24	14 kph
6/3/2017 11:27	ON	N22.19988 E113.85911	101 m	0:00:26	14 kph
6/3/2017 11:28	ON	N22.20061 E113.85939	85 m	0:00:22	14 kph
6/3/2017 11:28	ON	N22.20104 E113.85981	65 m	0:00:18	13 kph
6/3/2017 11:28	ON	N22.20109 E113.86041	62 m	0:00:17	13 kph
6/3/2017 11:28	ON	N22.20105 E113.86108	69 m	0:00:18	14 kph
6/3/2017 11:29	ON	N22.20102 E113.86180	75 m	0:00:20	13 kph
6/3/2017 11:29	ON	N22.20088 E113.86266	90 m	0:00:24	14 kph
6/3/2017 11:30	ON	N22.20077 E113.86335	72 m	0:00:19	14 kph
6/3/2017 11:30	ON	N22.20073 E113.86401	69 m	0:00:18	14 kph
6/3/2017 11:30	ON	N22.20077 E113.86465	66 m	0:00:17	14 kph
6/3/2017 11:30	ON	N22.20082 E113.86530	68 m	0:00:18	14 kph
6/3/2017 11:31	ON	N22.20088 E113.86588	60 m	0:00:16	14 kph
6/3/2017 11:31	ON	N22.20095 E113.86643	57 m	0:00:15	14 kph
6/3/2017 11:31	ON	N22.20099 E113.86689	48 m	0:00:13	13 kph
6/3/2017 11:31	ON	N22.20099 E113.86754	67 m	0:00:18	13 kph
6/3/2017 11:32	ON	N22.20104 E113.86809	57 m	0:00:15	14 kph
6/3/2017 11:32	ON	N22.20107 E113.86857	50 m	0:00:13	14 kph
6/3/2017 11:32	ON	N22.20085 E113.86900	50 m	0:00:14	13 kph
6/3/2017 11:32	ON	N22.20030 E113.86913	63 m	0:00:16	14 kph
6/3/2017 11:33	ON	N22.19962 E113.86893	78 m	0:00:18	16 kph
6/3/2017 11:33	ON	N22.19893 E113.86875	79 m	0:00:18	16 kph
6/3/2017 11:33	ON	N22.19819 E113.86865	83 m	0:00:19	16 kph
6/3/2017 11:34	ON	N22.19737 E113.86871	91 m	0:00:21	16 kph
6/3/2017 11:34	ON	N22.19649 E113.86881	99 m	0:00:23	15 kph
6/3/2017 11:34	ON	N22.19591 E113.86889	64 m	0:00:15	15 kph
6/3/2017 11:35	ON	N22.19534 E113.86894	64 m	0:00:15	15 kph
6/3/2017 11:35	ON	N22.19465 E113.86897	77 m	0:00:18	15 kph
6/3/2017 11:35	ON	N22.19384 E113.86898	90 m	0:00:21	15 kph
6/3/2017 11:36	ON	N22.19307 E113.86895	86 m	0:00:20	15 kph
6/3/2017 11:36	ON	N22.19234 E113.86890	82 m	0:00:19	15 kph
6/3/2017 11:36	ON	N22.19156 E113.86886	86 m	0:00:20	16 kph
6/3/2017 11:36	ON	N22.19100 E113.86894	63 m	0:00:15	15 kph
6/3/2017 11:37	ON	N22.19016 E113.86900	94 m	0:00:22	15 kph
6/3/2017 11:37	ON	N22.18946 E113.86897	78 m	0:00:18	16 kph
6/3/2017 11:38	ON	N22.18856 E113.86895	99 m	0:00:23	16 kph
6/3/2017 11:38	ON	N22.18782 E113.86895	82 m	0:00:19	16 kph
6/3/2017 11:38	ON	N22.18721 E113.86894	68 m	0:00:16	15 kph
6/3/2017 11:38	ON	N22.18652 E113.86892	77 m	0:00:18	15 kph
6/3/2017 11:39	ON	N22.18574 E113.86891	87 m	0:00:20	16 kph
6/3/2017 11:39	ON	N22.18508 E113.86895	73 m	0:00:17	15 kph
6/3/2017 11:39	ON	N22.18435 E113.86897	81 m	0:00:19	15 kph
6/3/2017 11:40	ON	N22.18355 E113.86894	89 m	0:00:21	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 11:40	ON	N22.18263 E113.86887	104 m	0:00:24	16 kph
6/3/2017 11:40	ON	N22.18190 E113.86887	81 m	0:00:19	15 kph
6/3/2017 11:41	ON	N22.18123 E113.86897	75 m	0:00:18	15 kph
6/3/2017 11:41	ON	N22.18040 E113.86901	93 m	0:00:22	15 kph
6/3/2017 11:41	ON	N22.17969 E113.86895	79 m	0:00:19	15 kph
6/3/2017 11:42	ON	N22.17880 E113.86886	99 m	0:00:23	16 kph
6/3/2017 11:42	ON	N22.17802 E113.86895	88 m	0:00:21	15 kph
6/3/2017 11:42	ON	N22.17720 E113.86906	92 m	0:00:22	15 kph
6/3/2017 11:43	ON	N22.17629 E113.86906	102 m	0:00:24	15 kph
6/3/2017 11:43	ON	N22.17563 E113.86902	73 m	0:00:17	15 kph
6/3/2017 11:44	ON	N22.17480 E113.86901	92 m	0:00:22	15 kph
6/3/2017 11:44	ON	N22.17399 E113.86897	90 m	0:00:21	15 kph
6/3/2017 11:44	ON	N22.17344 E113.86887	63 m	0:00:15	15 kph
6/3/2017 11:44	ON	N22.17261 E113.86881	93 m	0:00:22	15 kph
6/3/2017 11:45	ON	N22.17191 E113.86891	79 m	0:00:19	15 kph
6/3/2017 11:45	ON	N22.17103 E113.86900	98 m	0:00:24	15 kph
6/3/2017 11:46	ON	N22.17024 E113.86901	87 m	0:00:21	15 kph
6/3/2017 11:46	ON	N22.16949 E113.86901	83 m	0:00:20	15 kph
6/3/2017 11:46	ON	N22.16859 E113.86894	100 m	0:00:24	15 kph
6/3/2017 11:47	ON	N22.16784 E113.86882	85 m	0:00:20	15 kph
6/3/2017 11:47	ON	N22.16701 E113.86881	92 m	0:00:22	15 kph
6/3/2017 11:47	ON	N22.16616 E113.86891	95 m	0:00:23	15 kph
6/3/2017 11:48	ON	N22.16529 E113.86897	97 m	0:00:23	15 kph
6/3/2017 11:48	ON	N22.16443 E113.86903	96 m	0:00:23	15 kph
6/3/2017 11:49	ON	N22.16359 E113.86901	93 m	0:00:22	15 kph
6/3/2017 11:49	ON	N22.16277 E113.86901	91 m	0:00:22	15 kph
6/3/2017 11:49	ON	N22.16235 E113.86936	60 m	0:00:16	13 kph
6/3/2017 11:50	ON	N22.16191 E113.87006	87 m	0:00:22	14 kph
6/3/2017 11:50	ON	N22.16142 E113.87081	95 m	0:00:24	14 kph
6/3/2017 11:50	ON	N22.16108 E113.87152	82 m	0:00:21	14 kph
6/3/2017 11:51	ON	N22.16075 E113.87231	90 m	0:00:23	14 kph
6/3/2017 11:51	ON	N22.16038 E113.87317	97 m	0:00:25	14 kph
6/3/2017 11:51	ON	N22.16016 E113.87395	85 m	0:00:22	14 kph
6/3/2017 11:52	ON	N22.15992 E113.87474	85 m	0:00:22	14 kph
6/3/2017 11:52	ON	N22.15967 E113.87549	82 m	0:00:21	14 kph
6/3/2017 11:53	ON	N22.15933 E113.87628	90 m	0:00:23	14 kph
6/3/2017 11:53	ON	N22.15895 E113.87696	82 m	0:00:21	14 kph
6/3/2017 11:53	ON	N22.15862 E113.87767	82 m	0:00:21	14 kph
6/3/2017 11:54	ON	N22.15832 E113.87843	85 m	0:00:22	14 kph
6/3/2017 11:54	ON	N22.15833 E113.87897	55 m	0:00:16	12 kph
6/3/2017 11:54	ON	N22.15872 E113.87917	49 m	0:00:14	13 kph
6/3/2017 11:54	ON	N22.15935 E113.87908	71 m	0:00:18	14 kph
6/3/2017 11:55	ON	N22.16000 E113.87898	74 m	0:00:18	15 kph
6/3/2017 11:55	ON	N22.16074 E113.87895	82 m	0:00:20	15 kph
6/3/2017 11:55	ON	N22.16139 E113.87886	73 m	0:00:18	15 kph
6/3/2017 11:56	ON	N22.16204 E113.87873	74 m	0:00:18	15 kph
6/3/2017 11:56	ON	N22.16269 E113.87871	72 m	0:00:18	14 kph
6/3/2017 11:56	ON	N22.16335 E113.87868	74 m	0:00:18	15 kph
6/3/2017 11:57	ON	N22.16405 E113.87861	78 m	0:00:19	15 kph
6/3/2017 11:57	ON	N22.16469 E113.87870	72 m	0:00:18	14 kph
6/3/2017 11:57	ON	N22.16530 E113.87890	71 m	0:00:18	14 kph
6/3/2017 11:57	ON	N22.16595 E113.87898	73 m	0:00:18	15 kph
6/3/2017 11:58	ON	N22.16654 E113.87898	65 m	0:00:16	15 kph
6/3/2017 11:58	ON	N22.16723 E113.87902	77 m	0:00:19	15 kph
6/3/2017 11:58	ON	N22.16797 E113.87899	82 m	0:00:20	15 kph
6/3/2017 11:59	ON	N22.16872 E113.87900	83 m	0:00:20	15 kph
6/3/2017 11:59	ON	N22.16946 E113.87888	83 m	0:00:20	15 kph
6/3/2017 11:59	ON	N22.17030 E113.87883	94 m	0:00:23	15 kph
6/3/2017 12:00	ON	N22.17105 E113.87878	83 m	0:00:20	15 kph
6/3/2017 12:00	ON	N22.17172 E113.87874	75 m	0:00:18	15 kph
6/3/2017 12:00	ON	N22.17243 E113.87870	79 m	0:00:19	15 kph
6/3/2017 12:01	ON	N22.17311 E113.87864	76 m	0:00:18	15 kph
6/3/2017 12:01	ON	N22.17378 E113.87863	75 m	0:00:18	15 kph
6/3/2017 12:01	ON	N22.17442 E113.87862	71 m	0:00:17	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 12:02	ON	N22.17513 E113.87861	80 m	0:00:19	15 kph
6/3/2017 12:02	ON	N22.17584 E113.87865	79 m	0:00:19	15 kph
6/3/2017 12:02	ON	N22.17637 E113.87862	58 m	0:00:14	15 kph
6/3/2017 12:02	ON	N22.17685 E113.87861	54 m	0:00:13	15 kph
6/3/2017 12:03	ON	N22.17745 E113.87860	66 m	0:00:16	15 kph
6/3/2017 12:03	ON	N22.17808 E113.87857	70 m	0:00:17	15 kph
6/3/2017 12:03	ON	N22.17874 E113.87855	73 m	0:00:18	15 kph
6/3/2017 12:03	ON	N22.17929 E113.87850	62 m	0:00:15	15 kph
6/3/2017 12:04	ON	N22.17977 E113.87847	54 m	0:00:13	15 kph
6/3/2017 12:04	ON	N22.18014 E113.87846	40 m	0:00:10	15 kph
6/3/2017 12:04	ON	N22.18057 E113.87846	48 m	0:00:12	14 kph
6/3/2017 12:04	ON	N22.18104 E113.87850	52 m	0:00:13	14 kph
6/3/2017 12:04	ON	N22.18154 E113.87855	56 m	0:00:14	14 kph
6/3/2017 12:05	ON	N22.18234 E113.87859	89 m	0:00:22	15 kph
6/3/2017 12:05	ON	N22.18309 E113.87862	84 m	0:00:21	14 kph
6/3/2017 12:05	ON	N22.18364 E113.87862	61 m	0:00:15	15 kph
6/3/2017 12:06	ON	N22.18433 E113.87868	77 m	0:00:19	15 kph
6/3/2017 12:06	ON	N22.18515 E113.87868	92 m	0:00:23	14 kph
6/3/2017 12:06	ON	N22.18576 E113.87870	68 m	0:00:17	14 kph
6/3/2017 12:07	ON	N22.18623 E113.87869	52 m	0:00:13	14 kph
6/3/2017 12:07	ON	N22.18673 E113.87864	57 m	0:00:14	15 kph
6/3/2017 12:07	ON	N22.18734 E113.87858	68 m	0:00:17	14 kph
6/3/2017 12:07	ON	N22.18796 E113.87853	68 m	0:00:17	14 kph
6/3/2017 12:08	ON	N22.18879 E113.87843	93 m	0:00:23	15 kph
6/3/2017 12:08	ON	N22.18954 E113.87841	83 m	0:00:21	14 kph
6/3/2017 12:09	ON	N22.19048 E113.87833	105 m	0:00:26	15 kph
6/3/2017 12:09	ON	N22.19126 E113.87831	87 m	0:00:22	14 kph
6/3/2017 12:09	ON	N22.19203 E113.87829	85 m	0:00:21	15 kph
6/3/2017 12:10	ON	N22.19290 E113.87833	97 m	0:00:24	14 kph
6/3/2017 12:10	ON	N22.19375 E113.87833	95 m	0:00:24	14 kph
6/3/2017 12:10	ON	N22.19440 E113.87831	73 m	0:00:18	15 kph
6/3/2017 12:11	ON	N22.19515 E113.87831	84 m	0:00:21	14 kph
6/3/2017 12:11	ON	N22.19595 E113.87834	88 m	0:00:22	14 kph
6/3/2017 12:11	ON	N22.19670 E113.87833	84 m	0:00:21	14 kph
6/3/2017 12:12	ON	N22.19753 E113.87838	93 m	0:00:23	15 kph
6/3/2017 12:12	ON	N22.19839 E113.87843	95 m	0:00:24	14 kph
6/3/2017 12:13	ON	N22.19913 E113.87851	83 m	0:00:21	14 kph
6/3/2017 12:13	ON	N22.20012 E113.87850	110 m	0:00:28	14 kph
6/3/2017 12:13	ON	N22.20084 E113.87852	80 m	0:00:20	14 kph
6/3/2017 12:14	ON	N22.20157 E113.87848	81 m	0:00:20	15 kph
6/3/2017 12:14	ON	N22.20246 E113.87848	99 m	0:00:25	14 kph
6/3/2017 12:15	ON	N22.20328 E113.87847	91 m	0:00:23	14 kph
6/3/2017 12:15	ON	N22.20420 E113.87855	102 m	0:00:26	14 kph
6/3/2017 12:15	ON	N22.20500 E113.87854	89 m	0:00:23	14 kph
6/3/2017 12:16	ON	N22.20585 E113.87848	95 m	0:00:24	14 kph
6/3/2017 12:16	ON	N22.20658 E113.87846	82 m	0:00:21	14 kph
6/3/2017 12:16	ON	N22.20733 E113.87842	84 m	0:00:21	14 kph
6/3/2017 12:17	ON	N22.20819 E113.87836	95 m	0:00:24	14 kph
6/3/2017 12:17	ON	N22.20889 E113.87842	78 m	0:00:20	14 kph
6/3/2017 12:17	ON	N22.20942 E113.87869	66 m	0:00:18	13 kph
6/3/2017 12:18	ON	N22.20976 E113.87930	74 m	0:00:20	13 kph
6/3/2017 12:18	ON	N22.21005 E113.88000	79 m	0:00:21	14 kph
6/3/2017 12:19	ON	N22.21038 E113.88069	80 m	0:00:21	14 kph
6/3/2017 12:19	ON	N22.21059 E113.88134	71 m	0:00:18	14 kph
6/3/2017 12:19	ON	N22.21090 E113.88211	87 m	0:00:22	14 kph
6/3/2017 12:20	ON	N22.21120 E113.88277	75 m	0:00:19	14 kph
6/3/2017 12:20	ON	N22.21147 E113.88344	75 m	0:00:19	14 kph
6/3/2017 12:20	ON	N22.21177 E113.88422	88 m	0:00:22	14 kph
6/3/2017 12:21	ON	N22.21204 E113.88489	76 m	0:00:19	14 kph
6/3/2017 12:21	ON	N22.21236 E113.88571	91 m	0:00:23	14 kph
6/3/2017 12:21	ON	N22.21266 E113.88650	88 m	0:00:22	14 kph
6/3/2017 12:22	ON	N22.21291 E113.88726	84 m	0:00:21	14 kph
6/3/2017 12:22	ON	N22.21319 E113.88805	87 m	0:00:22	14 kph
6/3/2017 12:22	ON	N22.21318 E113.88862	59 m	0:00:16	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 12:22	ON	N22.21287 E113.88894	48 m	0:00:13	13 kph
6/3/2017 12:23	ON	N22.21220 E113.88903	75 m	0:00:19	14 kph
6/3/2017 12:23	ON	N22.21142 E113.88895	88 m	0:00:21	15 kph
6/3/2017 12:23	ON	N22.21064 E113.88896	86 m	0:00:21	15 kph
6/3/2017 12:24	ON	N22.20986 E113.88885	88 m	0:00:21	15 kph
6/3/2017 12:24	ON	N22.20915 E113.88877	79 m	0:00:19	15 kph
6/3/2017 12:24	ON	N22.20839 E113.88874	84 m	0:00:20	15 kph
6/3/2017 12:25	ON	N22.20782 E113.88872	64 m	0:00:15	15 kph
6/3/2017 12:25	ON	N22.20706 E113.88874	84 m	0:00:20	15 kph
6/3/2017 12:25	ON	N22.20628 E113.88881	88 m	0:00:21	15 kph
6/3/2017 12:26	ON	N22.20552 E113.88888	85 m	0:00:20	15 kph
6/3/2017 12:26	ON	N22.20488 E113.88893	72 m	0:00:17	15 kph
6/3/2017 12:26	ON	N22.20420 E113.88893	75 m	0:00:18	15 kph
6/3/2017 12:27	ON	N22.20349 E113.88894	80 m	0:00:19	15 kph
6/3/2017 12:27	ON	N22.20281 E113.88897	75 m	0:00:18	15 kph
6/3/2017 12:27	ON	N22.20197 E113.88893	93 m	0:00:22	15 kph
6/3/2017 12:28	ON	N22.20121 E113.88887	85 m	0:00:20	15 kph
6/3/2017 12:28	ON	N22.20050 E113.88885	80 m	0:00:19	15 kph
6/3/2017 12:28	ON	N22.19978 E113.88883	80 m	0:00:19	15 kph
6/3/2017 12:29	ON	N22.19922 E113.88877	63 m	0:00:15	15 kph
6/3/2017 12:29	ON	N22.19866 E113.88869	63 m	0:00:15	15 kph
6/3/2017 12:29	ON	N22.19768 E113.88860	109 m	0:00:26	15 kph
6/3/2017 12:30	ON	N22.19687 E113.88860	91 m	0:00:22	15 kph
6/3/2017 12:30	ON	N22.19611 E113.88857	84 m	0:00:20	15 kph
6/3/2017 12:30	ON	N22.19552 E113.88856	66 m	0:00:16	15 kph
6/3/2017 12:31	ON	N22.19457 E113.88855	105 m	0:00:25	15 kph
6/3/2017 12:31	ON	N22.19378 E113.88854	88 m	0:00:21	15 kph
6/3/2017 12:31	ON	N22.19304 E113.88858	83 m	0:00:20	15 kph
6/3/2017 12:32	ON	N22.19235 E113.88855	76 m	0:00:18	15 kph
6/3/2017 12:32	ON	N22.19174 E113.88852	68 m	0:00:16	15 kph
6/3/2017 12:32	ON	N22.19080 E113.88846	106 m	0:00:25	15 kph
6/3/2017 12:33	ON	N22.18987 E113.88842	103 m	0:00:24	15 kph
6/3/2017 12:33	ON	N22.18912 E113.88845	84 m	0:00:20	15 kph
6/3/2017 12:33	ON	N22.18832 E113.88843	89 m	0:00:21	15 kph
6/3/2017 12:34	ON	N22.18752 E113.88836	89 m	0:00:21	15 kph
6/3/2017 12:34	ON	N22.18686 E113.88832	73 m	0:00:18	15 kph
6/3/2017 12:34	ON	N22.18620 E113.88835	73 m	0:00:18	15 kph
6/3/2017 12:35	ON	N22.18547 E113.88829	81 m	0:00:20	15 kph
6/3/2017 12:35	ON	N22.18466 E113.88832	90 m	0:00:22	15 kph
6/3/2017 12:35	ON	N22.18385 E113.88835	91 m	0:00:22	15 kph
6/3/2017 12:36	ON	N22.18304 E113.88830	90 m	0:00:22	15 kph
6/3/2017 12:36	OFF	N22.18261 E113.88826	49 m	0:00:18	10 kph
6/3/2017 12:36	OFF	N22.18226 E113.88818	40 m	0:00:22	7 kph
6/3/2017 12:37	OFF	N22.18204 E113.88809	26 m	0:00:20	5 kph
6/3/2017 12:37	OFF	N22.18186 E113.88801	21 m	0:00:23	3 kph
6/3/2017 12:37	OFF	N22.18177 E113.88795	12 m	0:00:15	3 kph
6/3/2017 12:38	OFF	N22.18167 E113.88787	14 m	0:00:19	3 kph
6/3/2017 12:38	OFF	N22.18158 E113.88780	13 m	0:00:20	2 kph
6/3/2017 12:38	OFF	N22.18150 E113.88772	12 m	0:00:20	2 kph
6/3/2017 12:39	OFF	N22.18144 E113.88765	10 m	0:00:18	2 kph
6/3/2017 12:39	ON	N22.18129 E113.88754	21 m	0:00:19	4 kph
6/3/2017 12:39	ON	N22.18092 E113.88739	44 m	0:00:16	10 kph
6/3/2017 12:39	ON	N22.18048 E113.88730	49 m	0:00:14	13 kph
6/3/2017 12:40	ON	N22.17991 E113.88720	65 m	0:00:18	13 kph
6/3/2017 12:40	ON	N22.17918 E113.88716	81 m	0:00:23	13 kph
6/3/2017 12:40	ON	N22.17863 E113.88716	61 m	0:00:17	13 kph
6/3/2017 12:41	ON	N22.17793 E113.88715	78 m	0:00:21	13 kph
6/3/2017 12:41	ON	N22.17739 E113.88706	61 m	0:00:16	14 kph
6/3/2017 12:41	ON	N22.17674 E113.88707	72 m	0:00:20	13 kph
6/3/2017 12:42	ON	N22.17599 E113.88717	84 m	0:00:23	13 kph
6/3/2017 12:42	ON	N22.17534 E113.88718	72 m	0:00:19	14 kph
6/3/2017 12:42	ON	N22.17463 E113.88722	79 m	0:00:20	14 kph
6/3/2017 12:43	ON	N22.17385 E113.88727	87 m	0:00:22	14 kph
6/3/2017 12:43	ON	N22.17303 E113.88719	92 m	0:00:23	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 12:43	ON	N22.17235 E113.88724	76 m	0:00:19	14 kph
6/3/2017 12:44	ON	N22.17147 E113.88730	98 m	0:00:25	14 kph
6/3/2017 12:44	ON	N22.17078 E113.88741	78 m	0:00:20	14 kph
6/3/2017 12:45	ON	N22.17018 E113.88746	67 m	0:00:17	14 kph
6/3/2017 12:45	ON	N22.16945 E113.88749	80 m	0:00:20	14 kph
6/3/2017 12:45	ON	N22.16876 E113.88753	78 m	0:00:20	14 kph
6/3/2017 12:45	ON	N22.16807 E113.88752	76 m	0:00:19	14 kph
6/3/2017 12:46	ON	N22.16743 E113.88757	72 m	0:00:18	14 kph
6/3/2017 12:46	ON	N22.16671 E113.88766	80 m	0:00:20	14 kph
6/3/2017 12:46	ON	N22.16595 E113.88765	85 m	0:00:21	14 kph
6/3/2017 12:47	ON	N22.16525 E113.88762	78 m	0:00:20	14 kph
6/3/2017 12:47	ON	N22.16469 E113.88768	62 m	0:00:16	14 kph
6/3/2017 12:47	ON	N22.16406 E113.88773	71 m	0:00:18	14 kph
6/3/2017 12:48	ON	N22.16337 E113.88773	76 m	0:00:19	14 kph
6/3/2017 12:48	ON	N22.16262 E113.88774	84 m	0:00:21	14 kph
6/3/2017 12:48	ON	N22.16198 E113.88769	71 m	0:00:18	14 kph
6/3/2017 12:49	ON	N22.16153 E113.88771	50 m	0:00:13	14 kph
6/3/2017 12:49	ON	N22.16087 E113.88779	74 m	0:00:20	13 kph
6/3/2017 12:49	ON	N22.16040 E113.88771	53 m	0:00:14	14 kph
6/3/2017 12:49	ON	N22.15993 E113.88758	54 m	0:00:14	14 kph
6/3/2017 12:50	ON	N22.15936 E113.88755	64 m	0:00:17	14 kph
6/3/2017 12:50	ON	N22.15876 E113.88760	66 m	0:00:18	13 kph
6/3/2017 12:50	ON	N22.15812 E113.88751	72 m	0:00:19	14 kph
6/3/2017 12:51	ON	N22.15752 E113.88758	67 m	0:00:18	13 kph
6/3/2017 12:51	ON	N22.15698 E113.88761	60 m	0:00:16	14 kph
6/3/2017 12:51	ON	N22.15637 E113.88764	68 m	0:00:18	14 kph
6/3/2017 12:51	ON	N22.15590 E113.88760	53 m	0:00:14	14 kph
6/3/2017 12:52	ON	N22.15529 E113.88756	68 m	0:00:18	14 kph
6/3/2017 12:52	ON	N22.15474 E113.88757	61 m	0:00:16	14 kph
6/3/2017 12:52	ON	N22.15407 E113.88754	74 m	0:00:19	14 kph
6/3/2017 12:53	ON	N22.15347 E113.88752	67 m	0:00:17	14 kph
6/3/2017 12:53	ON	N22.15283 E113.88748	72 m	0:00:18	14 kph
6/3/2017 12:53	ON	N22.15223 E113.88743	67 m	0:00:17	14 kph
6/3/2017 12:53	ON	N22.15166 E113.88738	64 m	0:00:16	14 kph
6/3/2017 12:54	ON	N22.15095 E113.88734	79 m	0:00:20	14 kph
6/3/2017 12:54	ON	N22.15050 E113.88764	59 m	0:00:17	12 kph
6/3/2017 12:54	ON	N22.15044 E113.88809	47 m	0:00:14	12 kph
6/3/2017 12:54	ON	N22.15053 E113.88857	51 m	0:00:14	13 kph
6/3/2017 12:55	ON	N22.15043 E113.88912	58 m	0:00:15	14 kph
6/3/2017 12:55	ON	N22.15023 E113.88979	73 m	0:00:18	15 kph
6/3/2017 12:55	ON	N22.15005 E113.89043	69 m	0:00:17	15 kph
6/3/2017 12:56	ON	N22.14977 E113.89112	78 m	0:00:19	15 kph
6/3/2017 12:56	ON	N22.14961 E113.89160	53 m	0:00:13	15 kph
6/3/2017 12:56	ON	N22.14954 E113.89211	53 m	0:00:13	15 kph
6/3/2017 12:56	ON	N22.14943 E113.89263	56 m	0:00:14	14 kph
6/3/2017 12:57	ON	N22.14922 E113.89328	70 m	0:00:18	14 kph
6/3/2017 12:57	ON	N22.14911 E113.89406	82 m	0:00:21	14 kph
6/3/2017 12:57	ON	N22.14909 E113.89467	63 m	0:00:16	14 kph
6/3/2017 12:57	ON	N22.14914 E113.89524	59 m	0:00:15	14 kph
6/3/2017 12:58	ON	N22.14926 E113.89597	77 m	0:00:20	14 kph
6/3/2017 12:58	ON	N22.14930 E113.89660	65 m	0:00:17	14 kph
6/3/2017 12:58	ON	N22.14939 E113.89714	57 m	0:00:15	14 kph
6/3/2017 12:59	ON	N22.14967 E113.89743	43 m	0:00:12	13 kph
6/3/2017 12:59	ON	N22.15023 E113.89754	64 m	0:00:16	14 kph
6/3/2017 12:59	ON	N22.15084 E113.89750	68 m	0:00:16	15 kph
6/3/2017 12:59	ON	N22.15133 E113.89753	55 m	0:00:13	15 kph
6/3/2017 13:00	ON	N22.15198 E113.89752	72 m	0:00:17	15 kph
6/3/2017 13:00	ON	N22.15267 E113.89741	78 m	0:00:18	16 kph
6/3/2017 13:00	ON	N22.15345 E113.89728	87 m	0:00:20	16 kph
6/3/2017 13:00	ON	N22.15403 E113.89721	65 m	0:00:15	16 kph
6/3/2017 13:01	ON	N22.15461 E113.89715	65 m	0:00:15	16 kph
6/3/2017 13:01	ON	N22.15519 E113.89708	65 m	0:00:15	16 kph
6/3/2017 13:01	ON	N22.15590 E113.89703	79 m	0:00:18	16 kph
6/3/2017 13:01	ON	N22.15644 E113.89704	60 m	0:00:14	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 13:02	ON	N22.15707 E113.89705	70 m	0:00:16	16 kph
6/3/2017 13:02	ON	N22.15775 E113.89706	75 m	0:00:17	16 kph
6/3/2017 13:02	ON	N22.15851 E113.89712	85 m	0:00:20	15 kph
6/3/2017 13:03	ON	N22.15928 E113.89714	86 m	0:00:21	15 kph
6/3/2017 13:03	ON	N22.15983 E113.89715	61 m	0:00:15	15 kph
6/3/2017 13:03	ON	N22.16045 E113.89716	69 m	0:00:17	15 kph
6/3/2017 13:03	ON	N22.16103 E113.89716	65 m	0:00:16	15 kph
6/3/2017 13:04	ON	N22.16179 E113.89715	85 m	0:00:21	15 kph
6/3/2017 13:04	ON	N22.16253 E113.89714	82 m	0:00:20	15 kph
6/3/2017 13:04	ON	N22.16323 E113.89712	78 m	0:00:19	15 kph
6/3/2017 13:05	ON	N22.16390 E113.89709	74 m	0:00:18	15 kph
6/3/2017 13:05	ON	N22.16449 E113.89709	66 m	0:00:16	15 kph
6/3/2017 13:05	ON	N22.16502 E113.89709	59 m	0:00:14	15 kph
6/3/2017 13:06	ON	N22.16554 E113.89707	58 m	0:00:14	15 kph
6/3/2017 13:06	ON	N22.16614 E113.89705	66 m	0:00:16	15 kph
6/3/2017 13:06	ON	N22.16674 E113.89706	67 m	0:00:16	15 kph
6/3/2017 13:06	ON	N22.16737 E113.89710	71 m	0:00:17	15 kph
6/3/2017 13:07	ON	N22.16796 E113.89711	66 m	0:00:16	15 kph
6/3/2017 13:07	ON	N22.16852 E113.89712	62 m	0:00:15	15 kph
6/3/2017 13:07	ON	N22.16912 E113.89715	67 m	0:00:16	15 kph
6/3/2017 13:07	ON	N22.16965 E113.89717	59 m	0:00:14	15 kph
6/3/2017 13:08	ON	N22.17018 E113.89720	59 m	0:00:14	15 kph
6/3/2017 13:08	ON	N22.17087 E113.89722	76 m	0:00:18	15 kph
6/3/2017 13:08	ON	N22.17156 E113.89723	77 m	0:00:18	15 kph
6/3/2017 13:09	ON	N22.17236 E113.89726	89 m	0:00:21	15 kph
6/3/2017 13:09	ON	N22.17297 E113.89724	68 m	0:00:16	15 kph
6/3/2017 13:09	ON	N22.17372 E113.89715	84 m	0:00:20	15 kph
6/3/2017 13:09	ON	N22.17447 E113.89719	83 m	0:00:20	15 kph
6/3/2017 13:10	ON	N22.17503 E113.89726	63 m	0:00:15	15 kph
6/3/2017 13:10	ON	N22.17551 E113.89728	54 m	0:00:13	15 kph
6/3/2017 13:10	ON	N22.17604 E113.89725	59 m	0:00:14	15 kph
6/3/2017 13:10	ON	N22.17665 E113.89719	68 m	0:00:16	15 kph
6/3/2017 13:11	ON	N22.17730 E113.89714	72 m	0:00:17	15 kph
6/3/2017 13:11	ON	N22.17796 E113.89714	73 m	0:00:17	16 kph
6/3/2017 13:11	ON	N22.17849 E113.89716	60 m	0:00:14	15 kph
6/3/2017 13:11	ON	N22.17903 E113.89719	60 m	0:00:14	15 kph
6/3/2017 13:12	ON	N22.17949 E113.89722	51 m	0:00:12	15 kph
6/3/2017 13:12	ON	N22.18001 E113.89728	59 m	0:00:14	15 kph
6/3/2017 13:12	ON	N22.18057 E113.89734	62 m	0:00:15	15 kph
6/3/2017 13:12	ON	N22.18115 E113.89736	65 m	0:00:16	15 kph
6/3/2017 13:13	ON	N22.18166 E113.89734	57 m	0:00:14	15 kph
6/3/2017 13:13	ON	N22.18221 E113.89730	61 m	0:00:15	15 kph
6/3/2017 13:13	ON	N22.18282 E113.89721	69 m	0:00:17	15 kph
6/3/2017 13:13	ON	N22.18347 E113.89716	72 m	0:00:18	14 kph
6/3/2017 13:14	ON	N22.18397 E113.89721	56 m	0:00:14	14 kph
6/3/2017 13:14	ON	N22.18469 E113.89740	83 m	0:00:21	14 kph
6/3/2017 13:14	ON	N22.18547 E113.89751	87 m	0:00:22	14 kph
6/3/2017 13:15	ON	N22.18610 E113.89751	71 m	0:00:18	14 kph
6/3/2017 13:15	ON	N22.18672 E113.89748	68 m	0:00:17	14 kph
6/3/2017 13:15	ON	N22.18741 E113.89742	77 m	0:00:19	15 kph
6/3/2017 13:16	ON	N22.18803 E113.89737	70 m	0:00:17	15 kph
6/3/2017 13:16	ON	N22.18877 E113.89731	82 m	0:00:20	15 kph
6/3/2017 13:16	ON	N22.18962 E113.89727	95 m	0:00:23	15 kph
6/3/2017 13:17	ON	N22.19033 E113.89723	79 m	0:00:19	15 kph
6/3/2017 13:17	ON	N22.19115 E113.89721	92 m	0:00:22	15 kph
6/3/2017 13:17	ON	N22.19182 E113.89716	75 m	0:00:18	15 kph
6/3/2017 13:18	ON	N22.19250 E113.89710	75 m	0:00:18	15 kph
6/3/2017 13:18	ON	N22.19332 E113.89712	91 m	0:00:22	15 kph
6/3/2017 13:18	ON	N22.19404 E113.89726	81 m	0:00:20	15 kph
6/3/2017 13:19	ON	N22.19481 E113.89728	86 m	0:00:21	15 kph
6/3/2017 13:19	ON	N22.19555 E113.89711	84 m	0:00:20	15 kph
6/3/2017 13:19	ON	N22.19615 E113.89705	67 m	0:00:16	15 kph
6/3/2017 13:20	ON	N22.19681 E113.89713	74 m	0:00:18	15 kph
6/3/2017 13:20	ON	N22.19753 E113.89728	81 m	0:00:20	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 13:20	ON	N22.19816 E113.89728	70 m	0:00:17	15 kph
6/3/2017 13:21	ON	N22.19906 E113.89718	102 m	0:00:24	15 kph
6/3/2017 13:21	ON	N22.19981 E113.89714	84 m	0:00:20	15 kph
6/3/2017 13:21	ON	N22.20064 E113.89715	92 m	0:00:22	15 kph
6/3/2017 13:22	ON	N22.20124 E113.89714	67 m	0:00:16	15 kph
6/3/2017 13:22	ON	N22.20204 E113.89711	89 m	0:00:21	15 kph
6/3/2017 13:22	ON	N22.20290 E113.89711	96 m	0:00:23	15 kph
6/3/2017 13:23	ON	N22.20376 E113.89711	96 m	0:00:23	15 kph
6/3/2017 13:23	ON	N22.20474 E113.89703	110 m	0:00:26	15 kph
6/3/2017 13:23	ON	N22.20557 E113.89703	91 m	0:00:22	15 kph
6/3/2017 13:24	ON	N22.20638 E113.89704	91 m	0:00:22	15 kph
6/3/2017 13:24	ON	N22.20728 E113.89707	101 m	0:00:24	15 kph
6/3/2017 13:25	ON	N22.20816 E113.89706	98 m	0:00:23	15 kph
6/3/2017 13:25	ON	N22.20911 E113.89697	106 m	0:00:25	15 kph
6/3/2017 13:25	ON	N22.20997 E113.89702	96 m	0:00:23	15 kph
6/3/2017 13:26	ON	N22.21108 E113.89709	125 m	0:00:30	15 kph
6/3/2017 13:26	ON	N22.21176 E113.89707	76 m	0:00:18	15 kph
6/3/2017 13:27	ON	N22.21240 E113.89712	71 m	0:00:20	13 kph
6/3/2017 13:27	ON	N22.21245 E113.89748	38 m	0:00:14	10 kph
6/3/2017 13:27	ON	N22.21209 E113.89802	68 m	0:00:18	14 kph
6/3/2017 13:27	ON	N22.21153 E113.89873	96 m	0:00:23	15 kph
6/3/2017 13:28	ON	N22.21102 E113.89953	100 m	0:00:24	15 kph
6/3/2017 13:28	ON	N22.21068 E113.90012	72 m	0:00:17	15 kph
6/3/2017 13:28	ON	N22.21038 E113.90068	67 m	0:00:16	15 kph
6/3/2017 13:29	ON	N22.21001 E113.90130	76 m	0:00:18	15 kph
6/3/2017 13:29	ON	N22.20949 E113.90214	104 m	0:00:25	15 kph
6/3/2017 13:30	ON	N22.20901 E113.90295	99 m	0:00:24	15 kph
6/3/2017 13:30	OFF	N22.20875 E113.90332	48 m	0:00:18	10 kph
6/3/2017 13:30	OFF	N22.20849 E113.90352	35 m	0:00:21	6 kph
6/3/2017 13:31	OFF	N22.20829 E113.90362	25 m	0:00:21	4 kph
6/3/2017 13:31	OFF	N22.20812 E113.90365	19 m	0:00:18	4 kph
6/3/2017 13:31	OFF	N22.20799 E113.90362	15 m	0:00:18	3 kph
6/3/2017 13:32	OFF	N22.20791 E113.90353	12 m	0:00:22	2 kph
6/3/2017 13:32	OFF	N22.20787 E113.90347	8 m	0:00:18	2 kph
6/3/2017 13:32	OFF	N22.20784 E113.90344	4 m	0:00:04	3 kph
6/3/2017 13:32	OFF	N22.20757 E113.90324	37 m	0:00:18	7 kph
6/3/2017 13:32	ON	N22.20723 E113.90335	40 m	0:00:15	10 kph
6/3/2017 13:33	ON	N22.20703 E113.90385	56 m	0:00:17	12 kph
6/3/2017 13:33	ON	N22.20686 E113.90459	79 m	0:00:20	14 kph
6/3/2017 13:33	ON	N22.20673 E113.90530	74 m	0:00:19	14 kph
6/3/2017 13:34	ON	N22.20652 E113.90602	78 m	0:00:20	14 kph
6/3/2017 13:34	ON	N22.20616 E113.90693	102 m	0:00:26	14 kph
6/3/2017 13:34	ON	N22.20580 E113.90766	85 m	0:00:22	14 kph
6/3/2017 13:35	ON	N22.20531 E113.90786	58 m	0:00:15	14 kph
6/3/2017 13:35	ON	N22.20465 E113.90790	74 m	0:00:18	15 kph
6/3/2017 13:35	ON	N22.20404 E113.90784	68 m	0:00:16	15 kph
6/3/2017 13:36	ON	N22.20336 E113.90784	76 m	0:00:18	15 kph
6/3/2017 13:36	ON	N22.20256 E113.90782	89 m	0:00:21	15 kph
6/3/2017 13:36	ON	N22.20179 E113.90780	85 m	0:00:20	15 kph
6/3/2017 13:37	ON	N22.20122 E113.90777	64 m	0:00:15	15 kph
6/3/2017 13:37	ON	N22.20054 E113.90782	76 m	0:00:18	15 kph
6/3/2017 13:37	ON	N22.19986 E113.90788	76 m	0:00:18	15 kph
6/3/2017 13:37	ON	N22.19922 E113.90791	72 m	0:00:17	15 kph
6/3/2017 13:38	ON	N22.19869 E113.90788	59 m	0:00:14	15 kph
6/3/2017 13:38	ON	N22.19793 E113.90781	84 m	0:00:20	15 kph
6/3/2017 13:38	ON	N22.19736 E113.90777	64 m	0:00:15	15 kph
6/3/2017 13:39	ON	N22.19671 E113.90770	73 m	0:00:17	15 kph
6/3/2017 13:39	ON	N22.19603 E113.90767	76 m	0:00:18	15 kph
6/3/2017 13:39	ON	N22.19547 E113.90773	63 m	0:00:15	15 kph
6/3/2017 13:39	ON	N22.19487 E113.90778	67 m	0:00:16	15 kph
6/3/2017 13:40	ON	N22.19437 E113.90779	55 m	0:00:13	15 kph
6/3/2017 13:40	ON	N22.19377 E113.90776	67 m	0:00:16	15 kph
6/3/2017 13:40	ON	N22.19309 E113.90779	76 m	0:00:18	15 kph
6/3/2017 13:40	ON	N22.19253 E113.90786	63 m	0:00:15	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 13:41	ON	N22.19186 E113.90796	75 m	0:00:18	15 kph
6/3/2017 13:41	ON	N22.19126 E113.90790	67 m	0:00:16	15 kph
6/3/2017 13:41	ON	N22.19076 E113.90754	67 m	0:00:16	15 kph
6/3/2017 13:42	ON	N22.19019 E113.90701	83 m	0:00:19	16 kph
6/3/2017 13:42	ON	N22.18967 E113.90651	78 m	0:00:18	16 kph
6/3/2017 13:42	ON	N22.18905 E113.90600	87 m	0:00:20	16 kph
6/3/2017 13:42	ON	N22.18846 E113.90558	79 m	0:00:18	16 kph
6/3/2017 13:43	ON	N22.18779 E113.90524	83 m	0:00:19	16 kph
6/3/2017 13:43	ON	N22.18705 E113.90490	89 m	0:00:21	15 kph
6/3/2017 13:43	ON	N22.18642 E113.90465	75 m	0:00:18	15 kph
6/3/2017 13:44	ON	N22.18567 E113.90435	89 m	0:00:21	15 kph
6/3/2017 13:44	ON	N22.18492 E113.90415	85 m	0:00:21	15 kph
6/3/2017 13:44	ON	N22.18414 E113.90399	89 m	0:00:22	14 kph
6/3/2017 13:45	ON	N22.18324 E113.90381	102 m	0:00:25	15 kph
6/3/2017 13:45	ON	N22.18247 E113.90372	86 m	0:00:21	15 kph
6/3/2017 13:46	ON	N22.18162 E113.90374	95 m	0:00:23	15 kph
6/3/2017 13:46	ON	N22.18094 E113.90380	76 m	0:00:18	15 kph
6/3/2017 13:46	ON	N22.18019 E113.90392	84 m	0:00:20	15 kph
6/3/2017 13:47	ON	N22.17933 E113.90423	101 m	0:00:24	15 kph
6/3/2017 13:47	ON	N22.17853 E113.90474	104 m	0:00:24	16 kph
6/3/2017 13:47	ON	N22.17789 E113.90523	87 m	0:00:20	16 kph
6/3/2017 13:48	ON	N22.17736 E113.90576	81 m	0:00:19	15 kph
6/3/2017 13:48	ON	N22.17678 E113.90643	94 m	0:00:23	15 kph
6/3/2017 13:48	ON	N22.17616 E113.90705	94 m	0:00:23	15 kph
6/3/2017 13:49	ON	N22.17542 E113.90755	98 m	0:00:24	15 kph
6/3/2017 13:49	ON	N22.17448 E113.90804	116 m	0:00:28	15 kph
6/3/2017 13:50	ON	N22.17359 E113.90831	103 m	0:00:25	15 kph
6/3/2017 13:50	ON	N22.17282 E113.90831	85 m	0:00:20	15 kph
6/3/2017 13:50	ON	N22.17199 E113.90804	97 m	0:00:22	16 kph
6/3/2017 13:51	ON	N22.17099 E113.90757	121 m	0:00:27	16 kph
6/3/2017 13:51	ON	N22.17018 E113.90712	101 m	0:00:23	16 kph
6/3/2017 13:52	ON	N22.16942 E113.90671	95 m	0:00:21	16 kph
6/3/2017 13:52	ON	N22.16842 E113.90640	115 m	0:00:27	15 kph
6/3/2017 13:52	ON	N22.16781 E113.90610	75 m	0:00:18	15 kph
6/3/2017 13:53	ON	N22.16720 E113.90553	89 m	0:00:21	15 kph
6/3/2017 13:53	ON	N22.16661 E113.90482	98 m	0:00:23	15 kph
6/3/2017 13:53	ON	N22.16615 E113.90415	86 m	0:00:20	16 kph
6/3/2017 13:54	ON	N22.16568 E113.90355	81 m	0:00:19	15 kph
6/3/2017 13:54	ON	N22.16533 E113.90311	60 m	0:00:14	15 kph
6/3/2017 13:54	ON	N22.16489 E113.90247	82 m	0:00:19	16 kph
6/3/2017 13:55	ON	N22.16456 E113.90195	64 m	0:00:15	15 kph
6/3/2017 13:55	ON	N22.16410 E113.90118	95 m	0:00:22	15 kph
6/3/2017 13:55	ON	N22.16371 E113.90052	81 m	0:00:19	15 kph
6/3/2017 13:56	ON	N22.16337 E113.89991	73 m	0:00:17	16 kph
6/3/2017 13:56	ON	N22.16296 E113.89947	64 m	0:00:15	15 kph
6/3/2017 13:56	ON	N22.16239 E113.89903	78 m	0:00:18	16 kph
6/3/2017 13:56	ON	N22.16196 E113.89874	57 m	0:00:13	16 kph
6/3/2017 13:57	ON	N22.16142 E113.89846	67 m	0:00:15	16 kph
6/3/2017 13:57	ON	N22.16090 E113.89826	61 m	0:00:14	16 kph
6/3/2017 13:57	ON	N22.16027 E113.89820	70 m	0:00:16	16 kph
6/3/2017 13:57	ON	N22.15953 E113.89830	83 m	0:00:19	16 kph
6/3/2017 13:58	ON	N22.15893 E113.89850	69 m	0:00:16	16 kph
6/3/2017 13:58	ON	N22.15821 E113.89899	95 m	0:00:22	16 kph
6/3/2017 13:58	ON	N22.15754 E113.89957	96 m	0:00:22	16 kph
6/3/2017 13:59	ON	N22.15696 E113.90014	87 m	0:00:20	16 kph
6/3/2017 13:59	ON	N22.15633 E113.90089	105 m	0:00:24	16 kph
6/3/2017 14:00	ON	N22.15579 E113.90169	102 m	0:00:24	15 kph
6/3/2017 14:00	ON	N22.15555 E113.90241	79 m	0:00:19	15 kph
6/3/2017 14:00	ON	N22.15545 E113.90321	83 m	0:00:21	14 kph
6/3/2017 14:00	ON	N22.15550 E113.90390	71 m	0:00:18	14 kph
6/3/2017 14:01	ON	N22.15567 E113.90466	81 m	0:00:21	14 kph
6/3/2017 14:01	ON	N22.15602 E113.90531	77 m	0:00:20	14 kph
6/3/2017 14:02	ON	N22.15665 E113.90590	93 m	0:00:24	14 kph
6/3/2017 14:02	ON	N22.15725 E113.90625	76 m	0:00:19	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 14:02	ON	N22.15748 E113.90672	55 m	0:00:15	13 kph
6/3/2017 14:02	ON	N22.15727 E113.90722	57 m	0:00:15	14 kph
6/3/2017 14:03	ON	N22.15674 E113.90755	68 m	0:00:17	14 kph
6/3/2017 14:03	ON	N22.15599 E113.90767	84 m	0:00:20	15 kph
6/3/2017 14:03	ON	N22.15528 E113.90765	80 m	0:00:19	15 kph
6/3/2017 14:04	ON	N22.15455 E113.90766	80 m	0:00:19	15 kph
6/3/2017 14:04	ON	N22.15403 E113.90762	58 m	0:00:14	15 kph
6/3/2017 14:04	ON	N22.15334 E113.90749	78 m	0:00:18	16 kph
6/3/2017 14:04	ON	N22.15278 E113.90743	62 m	0:00:15	15 kph
6/3/2017 14:05	ON	N22.15219 E113.90746	66 m	0:00:16	15 kph
6/3/2017 14:05	ON	N22.15175 E113.90749	49 m	0:00:12	15 kph
6/3/2017 14:05	ON	N22.15120 E113.90748	61 m	0:00:15	15 kph
6/3/2017 14:05	ON	N22.15064 E113.90748	62 m	0:00:15	15 kph
6/3/2017 14:06	ON	N22.15006 E113.90747	65 m	0:00:16	15 kph
6/3/2017 14:06	ON	N22.14958 E113.90737	54 m	0:00:13	15 kph
6/3/2017 14:06	ON	N22.14911 E113.90730	54 m	0:00:13	15 kph
6/3/2017 14:06	ON	N22.14862 E113.90730	54 m	0:00:13	15 kph
6/3/2017 14:07	ON	N22.14796 E113.90721	74 m	0:00:18	15 kph
6/3/2017 14:07	ON	N22.14749 E113.90716	53 m	0:00:13	15 kph
6/3/2017 14:07	ON	N22.14694 E113.90722	62 m	0:00:15	15 kph
6/3/2017 14:07	ON	N22.14650 E113.90723	49 m	0:00:12	15 kph
6/3/2017 14:08	ON	N22.14589 E113.90727	68 m	0:00:17	14 kph
6/3/2017 14:08	ON	N22.14543 E113.90735	52 m	0:00:13	14 kph
6/3/2017 14:08	ON	N22.14478 E113.90738	71 m	0:00:18	14 kph
6/3/2017 14:08	ON	N22.14417 E113.90735	69 m	0:00:17	15 kph
6/3/2017 14:09	ON	N22.14359 E113.90734	64 m	0:00:16	14 kph
6/3/2017 14:09	ON	N22.14302 E113.90740	64 m	0:00:16	14 kph
6/3/2017 14:09	ON	N22.14242 E113.90748	68 m	0:00:17	14 kph
6/3/2017 14:09	ON	N22.14179 E113.90755	70 m	0:00:18	14 kph
6/3/2017 14:10	ON	N22.14150 E113.90788	47 m	0:00:14	12 kph
6/3/2017 14:10	ON	N22.14150 E113.90844	58 m	0:00:17	12 kph
6/3/2017 14:10	ON	N22.14174 E113.90889	53 m	0:00:15	13 kph
6/3/2017 14:11	ON	N22.14192 E113.90944	60 m	0:00:16	14 kph
6/3/2017 14:11	ON	N22.14203 E113.91019	79 m	0:00:20	14 kph
6/3/2017 14:11	ON	N22.14212 E113.91092	75 m	0:00:19	14 kph
6/3/2017 14:12	ON	N22.14226 E113.91171	83 m	0:00:21	14 kph
6/3/2017 14:12	ON	N22.14235 E113.91259	91 m	0:00:23	14 kph
6/3/2017 14:12	ON	N22.14238 E113.91341	85 m	0:00:21	15 kph
6/3/2017 14:13	ON	N22.14240 E113.91420	81 m	0:00:20	15 kph
6/3/2017 14:13	ON	N22.14249 E113.91510	93 m	0:00:23	15 kph
6/3/2017 14:13	ON	N22.14262 E113.91603	97 m	0:00:24	15 kph
6/3/2017 14:14	ON	N22.14267 E113.91673	73 m	0:00:18	15 kph
6/3/2017 14:14	ON	N22.14273 E113.91752	81 m	0:00:20	15 kph
6/3/2017 14:14	ON	N22.14283 E113.91830	81 m	0:00:20	15 kph
6/3/2017 14:15	ON	N22.14313 E113.91874	57 m	0:00:15	14 kph
6/3/2017 14:15	ON	N22.14366 E113.91898	64 m	0:00:16	14 kph
6/3/2017 14:15	ON	N22.14417 E113.91901	57 m	0:00:14	15 kph
6/3/2017 14:15	ON	N22.14481 E113.91907	71 m	0:00:17	15 kph
6/3/2017 14:16	ON	N22.14525 E113.91913	50 m	0:00:12	15 kph
6/3/2017 14:16	ON	N22.14591 E113.91910	73 m	0:00:18	15 kph
6/3/2017 14:16	ON	N22.14649 E113.91904	65 m	0:00:16	15 kph
6/3/2017 14:16	ON	N22.14713 E113.91906	71 m	0:00:17	15 kph
6/3/2017 14:17	ON	N22.14771 E113.91902	65 m	0:00:16	15 kph
6/3/2017 14:17	ON	N22.14826 E113.91894	61 m	0:00:15	15 kph
6/3/2017 14:17	ON	N22.14871 E113.91892	50 m	0:00:12	15 kph
6/3/2017 14:17	ON	N22.14911 E113.91895	45 m	0:00:11	15 kph
6/3/2017 14:18	ON	N22.14973 E113.91885	70 m	0:00:17	15 kph
6/3/2017 14:18	ON	N22.15040 E113.91881	75 m	0:00:18	15 kph
6/3/2017 14:18	ON	N22.15099 E113.91884	66 m	0:00:16	15 kph
6/3/2017 14:18	ON	N22.15167 E113.91886	75 m	0:00:18	15 kph
6/3/2017 14:19	ON	N22.15226 E113.91888	66 m	0:00:16	15 kph
6/3/2017 14:19	ON	N22.15305 E113.91883	88 m	0:00:22	14 kph
6/3/2017 14:19	ON	N22.15365 E113.91884	66 m	0:00:17	14 kph
6/3/2017 14:20	ON	N22.15438 E113.91897	82 m	0:00:21	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 14:20	ON	N22.15514 E113.91924	90 m	0:00:23	14 kph
6/3/2017 14:20	ON	N22.15590 E113.91934	85 m	0:00:22	14 kph
6/3/2017 14:21	ON	N22.15663 E113.91926	82 m	0:00:21	14 kph
6/3/2017 14:21	ON	N22.15736 E113.91936	82 m	0:00:21	14 kph
6/3/2017 14:21	ON	N22.15801 E113.91937	73 m	0:00:19	14 kph
6/3/2017 14:22	ON	N22.15866 E113.91940	72 m	0:00:18	14 kph
6/3/2017 14:22	ON	N22.15939 E113.91943	82 m	0:00:21	14 kph
6/3/2017 14:22	ON	N22.16002 E113.91934	71 m	0:00:18	14 kph
6/3/2017 14:23	ON	N22.16070 E113.91928	76 m	0:00:19	14 kph
6/3/2017 14:23	ON	N22.16132 E113.91925	68 m	0:00:17	14 kph
6/3/2017 14:23	ON	N22.16204 E113.91920	80 m	0:00:20	14 kph
6/3/2017 14:24	ON	N22.16286 E113.91915	91 m	0:00:23	14 kph
6/3/2017 14:24	ON	N22.16362 E113.91906	85 m	0:00:21	15 kph
6/3/2017 14:25	ON	N22.16456 E113.91903	105 m	0:00:26	15 kph
6/3/2017 14:25	ON	N22.16544 E113.91898	98 m	0:00:24	15 kph
6/3/2017 14:25	ON	N22.16640 E113.91895	107 m	0:00:26	15 kph
6/3/2017 14:26	ON	N22.16726 E113.91894	96 m	0:00:23	15 kph
6/3/2017 14:26	ON	N22.16816 E113.91890	100 m	0:00:24	15 kph
6/3/2017 14:26	ON	N22.16879 E113.91896	71 m	0:00:17	15 kph
6/3/2017 14:27	ON	N22.16957 E113.91903	87 m	0:00:21	15 kph
6/3/2017 14:27	ON	N22.17039 E113.91906	91 m	0:00:22	15 kph
6/3/2017 14:28	ON	N22.17116 E113.91917	87 m	0:00:21	15 kph
6/3/2017 14:28	ON	N22.17200 E113.91925	94 m	0:00:23	15 kph
6/3/2017 14:28	ON	N22.17289 E113.91922	100 m	0:00:24	15 kph
6/3/2017 14:29	ON	N22.17344 E113.91925	61 m	0:00:15	15 kph
6/3/2017 14:29	ON	N22.17409 E113.91934	72 m	0:00:18	14 kph
6/3/2017 14:29	ON	N22.17473 E113.91943	72 m	0:00:18	14 kph
6/3/2017 14:29	ON	N22.17547 E113.91954	84 m	0:00:21	14 kph
6/3/2017 14:30	ON	N22.17627 E113.91973	91 m	0:00:23	14 kph
6/3/2017 14:30	ON	N22.17696 E113.91995	80 m	0:00:20	14 kph
6/3/2017 14:31	ON	N22.17765 E113.92035	87 m	0:00:22	14 kph
6/3/2017 14:31	ON	N22.17825 E113.92071	77 m	0:00:19	15 kph
6/3/2017 14:31	ON	N22.17903 E113.92109	95 m	0:00:23	15 kph
6/3/2017 14:32	ON	N22.17991 E113.92132	100 m	0:00:25	14 kph
6/3/2017 14:32	ON	N22.18061 E113.92108	83 m	0:00:21	14 kph
6/3/2017 14:32	ON	N22.18133 E113.92072	88 m	0:00:22	14 kph
6/3/2017 14:33	ON	N22.18192 E113.92034	77 m	0:00:19	15 kph
6/3/2017 14:33	ON	N22.18268 E113.91987	97 m	0:00:24	15 kph
6/3/2017 14:34	ON	N22.18349 E113.91962	94 m	0:00:23	15 kph
6/3/2017 14:34	ON	N22.18431 E113.91928	98 m	0:00:24	15 kph
6/3/2017 14:34	ON	N22.18509 E113.91918	88 m	0:00:22	14 kph
6/3/2017 14:35	ON	N22.18594 E113.91897	97 m	0:00:24	15 kph
6/3/2017 14:35	ON	N22.18681 E113.91885	97 m	0:00:24	15 kph
6/3/2017 14:35	ON	N22.18765 E113.91877	94 m	0:00:23	15 kph
6/3/2017 14:36	ON	N22.18843 E113.91870	87 m	0:00:21	15 kph
6/3/2017 14:36	ON	N22.18912 E113.91865	77 m	0:00:19	15 kph
6/3/2017 14:36	ON	N22.18983 E113.91857	79 m	0:00:19	15 kph
6/3/2017 14:37	ON	N22.19037 E113.91852	61 m	0:00:15	15 kph
6/3/2017 14:37	ON	N22.19103 E113.91851	73 m	0:00:18	15 kph
6/3/2017 14:37	ON	N22.19187 E113.91852	93 m	0:00:23	15 kph
6/3/2017 14:38	ON	N22.19249 E113.91846	69 m	0:00:17	15 kph
6/3/2017 14:38	ON	N22.19307 E113.91840	65 m	0:00:16	15 kph
6/3/2017 14:38	ON	N22.19389 E113.91838	92 m	0:00:23	14 kph
6/3/2017 14:39	ON	N22.19463 E113.91831	82 m	0:00:20	15 kph
6/3/2017 14:39	ON	N22.19532 E113.91822	78 m	0:00:19	15 kph
6/3/2017 14:39	ON	N22.19608 E113.91815	86 m	0:00:21	15 kph
6/3/2017 14:40	ON	N22.19685 E113.91809	86 m	0:00:21	15 kph
6/3/2017 14:40	ON	N22.19761 E113.91807	85 m	0:00:21	15 kph
6/3/2017 14:40	ON	N22.19827 E113.91804	73 m	0:00:18	15 kph
6/3/2017 14:41	ON	N22.19905 E113.91803	87 m	0:00:22	14 kph
6/3/2017 14:41	ON	N22.19966 E113.91808	68 m	0:00:17	14 kph
6/3/2017 14:41	ON	N22.20040 E113.91811	82 m	0:00:21	14 kph
6/3/2017 14:42	ON	N22.20111 E113.91814	80 m	0:00:20	14 kph
6/3/2017 14:42	ON	N22.20172 E113.91819	68 m	0:00:17	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 14:42	ON	N22.20240 E113.91828	76 m	0:00:19	14 kph
6/3/2017 14:43	ON	N22.20316 E113.91842	87 m	0:00:22	14 kph
6/3/2017 14:43	ON	N22.20379 E113.91855	71 m	0:00:18	14 kph
6/3/2017 14:43	ON	N22.20439 E113.91846	67 m	0:00:17	14 kph
6/3/2017 14:43	ON	N22.20492 E113.91838	60 m	0:00:16	14 kph
6/3/2017 14:44	ON	N22.20531 E113.91871	55 m	0:00:16	12 kph
6/3/2017 14:44	ON	N22.20549 E113.91931	66 m	0:00:18	13 kph
6/3/2017 14:44	ON	N22.20551 E113.92002	73 m	0:00:19	14 kph
6/3/2017 14:45	ON	N22.20550 E113.92074	74 m	0:00:19	14 kph
6/3/2017 14:45	ON	N22.20548 E113.92123	50 m	0:00:13	14 kph
6/3/2017 14:45	ON	N22.20546 E113.92168	46 m	0:00:12	14 kph
6/3/2017 14:45	ON	N22.20543 E113.92220	55 m	0:00:14	14 kph
6/3/2017 14:46	ON	N22.20539 E113.92264	46 m	0:00:12	14 kph
6/3/2017 14:46	ON	N22.20534 E113.92317	54 m	0:00:14	14 kph
6/3/2017 14:46	ON	N22.20526 E113.92384	70 m	0:00:18	14 kph
6/3/2017 14:46	ON	N22.20520 E113.92455	73 m	0:00:19	14 kph
6/3/2017 14:47	ON	N22.20524 E113.92534	81 m	0:00:21	14 kph
6/3/2017 14:47	ON	N22.20526 E113.92597	65 m	0:00:17	14 kph
6/3/2017 14:47	ON	N22.20528 E113.92664	69 m	0:00:18	14 kph
6/3/2017 14:48	ON	N22.20530 E113.92712	50 m	0:00:13	14 kph
6/3/2017 14:48	ON	N22.20534 E113.92760	49 m	0:00:13	14 kph
6/3/2017 14:48	ON	N22.20511 E113.92812	59 m	0:00:17	13 kph
6/3/2017 14:48	ON	N22.20465 E113.92845	61 m	0:00:16	14 kph
6/3/2017 14:49	ON	N22.20404 E113.92864	71 m	0:00:18	14 kph
6/3/2017 14:49	ON	N22.20361 E113.92869	48 m	0:00:12	14 kph
6/3/2017 14:49	ON	N22.20299 E113.92873	69 m	0:00:17	15 kph
6/3/2017 14:49	ON	N22.20237 E113.92864	70 m	0:00:17	15 kph
6/3/2017 14:50	ON	N22.20171 E113.92865	74 m	0:00:18	15 kph
6/3/2017 14:50	ON	N22.20100 E113.92865	78 m	0:00:19	15 kph
6/3/2017 14:50	ON	N22.20042 E113.92869	65 m	0:00:16	15 kph
6/3/2017 14:51	ON	N22.19980 E113.92870	69 m	0:00:17	15 kph
6/3/2017 14:51	ON	N22.19910 E113.92873	77 m	0:00:19	15 kph
6/3/2017 14:51	ON	N22.19844 E113.92874	73 m	0:00:18	15 kph
6/3/2017 14:51	ON	N22.19787 E113.92875	64 m	0:00:16	14 kph
6/3/2017 14:52	ON	N22.19740 E113.92875	52 m	0:00:13	15 kph
6/3/2017 14:52	ON	N22.19678 E113.92876	69 m	0:00:17	15 kph
6/3/2017 14:52	ON	N22.19627 E113.92873	57 m	0:00:14	15 kph
6/3/2017 14:52	ON	N22.19573 E113.92871	60 m	0:00:15	14 kph
6/3/2017 14:53	ON	N22.19516 E113.92874	64 m	0:00:16	14 kph
6/3/2017 14:53	ON	N22.19456 E113.92871	67 m	0:00:17	14 kph
6/3/2017 14:53	ON	N22.19399 E113.92868	64 m	0:00:16	14 kph
6/3/2017 14:53	ON	N22.19338 E113.92866	67 m	0:00:17	14 kph
6/3/2017 14:54	ON	N22.19282 E113.92864	63 m	0:00:16	14 kph
6/3/2017 14:54	ON	N22.19222 E113.92858	66 m	0:00:17	14 kph
6/3/2017 14:54	ON	N22.19158 E113.92852	72 m	0:00:18	14 kph
6/3/2017 14:55	ON	N22.19108 E113.92849	56 m	0:00:14	14 kph
6/3/2017 14:55	ON	N22.19045 E113.92850	71 m	0:00:18	14 kph
6/3/2017 14:55	ON	N22.18973 E113.92848	79 m	0:00:20	14 kph
6/3/2017 14:56	ON	N22.18896 E113.92847	87 m	0:00:22	14 kph
6/3/2017 14:56	ON	N22.18838 E113.92846	64 m	0:00:16	14 kph
6/3/2017 14:56	ON	N22.18775 E113.92843	71 m	0:00:18	14 kph
6/3/2017 14:56	ON	N22.18711 E113.92844	71 m	0:00:18	14 kph
6/3/2017 14:57	ON	N22.18629 E113.92843	91 m	0:00:23	14 kph
6/3/2017 14:57	ON	N22.18566 E113.92843	71 m	0:00:18	14 kph
6/3/2017 14:57	ON	N22.18489 E113.92847	85 m	0:00:21	15 kph
6/3/2017 14:58	ON	N22.18409 E113.92844	89 m	0:00:22	15 kph
6/3/2017 14:58	ON	N22.18334 E113.92843	84 m	0:00:21	14 kph
6/3/2017 14:59	ON	N22.18242 E113.92836	102 m	0:00:25	15 kph
6/3/2017 14:59	ON	N22.18146 E113.92832	108 m	0:00:26	15 kph
6/3/2017 14:59	ON	N22.18066 E113.92825	89 m	0:00:22	15 kph
6/3/2017 15:00	ON	N22.17991 E113.92823	84 m	0:00:21	14 kph
6/3/2017 15:00	ON	N22.17920 E113.92821	80 m	0:00:20	14 kph
6/3/2017 15:00	ON	N22.17848 E113.92816	80 m	0:00:20	14 kph
6/3/2017 15:01	ON	N22.17782 E113.92816	73 m	0:00:18	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 15:01	ON	N22.17701 E113.92813	90 m	0:00:22	15 kph
6/3/2017 15:01	ON	N22.17628 E113.92808	82 m	0:00:20	15 kph
6/3/2017 15:02	ON	N22.17545 E113.92801	93 m	0:00:23	15 kph
6/3/2017 15:02	ON	N22.17464 E113.92798	90 m	0:00:22	15 kph
6/3/2017 15:02	ON	N22.17392 E113.92790	81 m	0:00:20	15 kph
6/3/2017 15:03	ON	N22.17316 E113.92782	85 m	0:00:21	15 kph
6/3/2017 15:03	ON	N22.17247 E113.92777	77 m	0:00:19	14 kph
6/3/2017 15:03	ON	N22.17193 E113.92775	60 m	0:00:15	14 kph
6/3/2017 15:04	ON	N22.17128 E113.92771	72 m	0:00:18	14 kph
6/3/2017 15:04	ON	N22.17041 E113.92771	97 m	0:00:24	14 kph
6/3/2017 15:04	ON	N22.16983 E113.92769	65 m	0:00:16	15 kph
6/3/2017 15:05	ON	N22.16904 E113.92768	88 m	0:00:22	14 kph
6/3/2017 15:05	ON	N22.16828 E113.92772	84 m	0:00:21	14 kph
6/3/2017 15:05	ON	N22.16757 E113.92778	80 m	0:00:20	14 kph
6/3/2017 15:06	ON	N22.16699 E113.92796	67 m	0:00:17	14 kph
6/3/2017 15:06	ON	N22.16638 E113.92804	68 m	0:00:17	14 kph
6/3/2017 15:06	ON	N22.16554 E113.92809	93 m	0:00:23	15 kph
6/3/2017 15:07	ON	N22.16491 E113.92810	70 m	0:00:17	15 kph
6/3/2017 15:07	ON	N22.16423 E113.92809	77 m	0:00:19	14 kph
6/3/2017 15:07	ON	N22.16353 E113.92806	78 m	0:00:19	15 kph
6/3/2017 15:08	ON	N22.16276 E113.92808	86 m	0:00:21	15 kph
6/3/2017 15:08	ON	N22.16205 E113.92807	78 m	0:00:19	15 kph
6/3/2017 15:08	ON	N22.16120 E113.92800	95 m	0:00:23	15 kph
6/3/2017 15:09	ON	N22.16043 E113.92793	86 m	0:00:21	15 kph
6/3/2017 15:09	ON	N22.15954 E113.92781	100 m	0:00:24	15 kph
6/3/2017 15:09	ON	N22.15883 E113.92776	79 m	0:00:19	15 kph
6/3/2017 15:10	ON	N22.15828 E113.92779	62 m	0:00:15	15 kph
6/3/2017 15:10	ON	N22.15746 E113.92778	91 m	0:00:22	15 kph
6/3/2017 15:10	ON	N22.15660 E113.92771	96 m	0:00:23	15 kph
6/3/2017 15:11	ON	N22.15576 E113.92766	93 m	0:00:22	15 kph
6/3/2017 15:11	ON	N22.15512 E113.92762	72 m	0:00:17	15 kph
6/3/2017 15:11	ON	N22.15437 E113.92756	83 m	0:00:20	15 kph
6/3/2017 15:12	ON	N22.15359 E113.92752	88 m	0:00:21	15 kph
6/3/2017 15:12	ON	N22.15283 E113.92749	84 m	0:00:20	15 kph
6/3/2017 15:12	ON	N22.15204 E113.92743	88 m	0:00:21	15 kph
6/3/2017 15:13	ON	N22.15142 E113.92735	70 m	0:00:17	15 kph
6/3/2017 15:13	ON	N22.15070 E113.92729	80 m	0:00:19	15 kph
6/3/2017 15:13	ON	N22.14985 E113.92716	96 m	0:00:23	15 kph
6/3/2017 15:14	ON	N22.14927 E113.92702	66 m	0:00:16	15 kph
6/3/2017 15:14	ON	N22.14864 E113.92689	71 m	0:00:17	15 kph
6/3/2017 15:14	ON	N22.14798 E113.92688	74 m	0:00:18	15 kph
6/3/2017 15:15	ON	N22.14719 E113.92694	88 m	0:00:21	15 kph
6/3/2017 15:15	ON	N22.14659 E113.92698	67 m	0:00:16	15 kph
6/3/2017 15:15	ON	N22.14603 E113.92698	62 m	0:00:15	15 kph
6/3/2017 15:15	ON	N22.14544 E113.92696	67 m	0:00:16	15 kph
6/3/2017 15:16	ON	N22.14484 E113.92699	67 m	0:00:16	15 kph
6/3/2017 15:16	ON	N22.14429 E113.92704	62 m	0:00:15	15 kph
6/3/2017 15:16	ON	N22.14377 E113.92709	58 m	0:00:14	15 kph
6/3/2017 15:16	ON	N22.14311 E113.92711	74 m	0:00:18	15 kph
6/3/2017 15:17	ON	N22.14255 E113.92702	62 m	0:00:15	15 kph
6/3/2017 15:17	ON	N22.14206 E113.92707	55 m	0:00:14	14 kph
6/3/2017 15:17	ON	N22.14177 E113.92746	51 m	0:00:14	13 kph
6/3/2017 15:17	ON	N22.14171 E113.92798	54 m	0:00:14	14 kph
6/3/2017 15:18	ON	N22.14180 E113.92864	68 m	0:00:17	14 kph
6/3/2017 15:18	ON	N22.14215 E113.92938	86 m	0:00:21	15 kph
6/3/2017 15:18	ON	N22.14257 E113.92991	72 m	0:00:18	14 kph
6/3/2017 15:19	ON	N22.14308 E113.93026	68 m	0:00:17	14 kph
6/3/2017 15:19	ON	N22.14353 E113.93083	77 m	0:00:19	15 kph
6/3/2017 15:19	ON	N22.14404 E113.93139	82 m	0:00:20	15 kph
6/3/2017 15:20	ON	N22.14463 E113.93189	83 m	0:00:20	15 kph
6/3/2017 15:20	ON	N22.14517 E113.93241	81 m	0:00:20	15 kph
6/3/2017 15:20	ON	N22.14578 E113.93294	87 m	0:00:21	15 kph
6/3/2017 15:21	ON	N22.14639 E113.93341	83 m	0:00:20	15 kph
6/3/2017 15:21	ON	N22.14715 E113.93398	103 m	0:00:25	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 15:21	ON	N22.14779 E113.93445	86 m	0:00:21	15 kph
6/3/2017 15:22	ON	N22.14835 E113.93485	75 m	0:00:18	15 kph
6/3/2017 15:22	ON	N22.14896 E113.93531	83 m	0:00:20	15 kph
6/3/2017 15:22	ON	N22.14964 E113.93579	91 m	0:00:22	15 kph
6/3/2017 15:23	ON	N22.15037 E113.93628	96 m	0:00:23	15 kph
6/3/2017 15:23	ON	N22.15094 E113.93665	74 m	0:00:18	15 kph
6/3/2017 15:23	ON	N22.15155 E113.93688	73 m	0:00:18	15 kph
6/3/2017 15:24	ON	N22.15228 E113.93701	82 m	0:00:20	15 kph
6/3/2017 15:24	ON	N22.15302 E113.93710	82 m	0:00:20	15 kph
6/3/2017 15:24	ON	N22.15360 E113.93711	65 m	0:00:16	15 kph
6/3/2017 15:25	ON	N22.15445 E113.93722	95 m	0:00:23	15 kph
6/3/2017 15:25	ON	N22.15534 E113.93731	99 m	0:00:24	15 kph
6/3/2017 15:25	ON	N22.15604 E113.93737	78 m	0:00:19	15 kph
6/3/2017 15:26	ON	N22.15692 E113.93741	98 m	0:00:24	15 kph
6/3/2017 15:26	ON	N22.15781 E113.93737	99 m	0:00:24	15 kph
6/3/2017 15:27	ON	N22.15855 E113.93733	83 m	0:00:20	15 kph
6/3/2017 15:27	ON	N22.15944 E113.93720	100 m	0:00:24	15 kph
6/3/2017 15:27	ON	N22.16037 E113.93709	104 m	0:00:25	15 kph
6/3/2017 15:28	ON	N22.16116 E113.93714	88 m	0:00:21	15 kph
6/3/2017 15:28	ON	N22.16194 E113.93719	87 m	0:00:21	15 kph
6/3/2017 15:28	ON	N22.16283 E113.93717	100 m	0:00:24	15 kph
6/3/2017 15:29	ON	N22.16361 E113.93707	87 m	0:00:21	15 kph
6/3/2017 15:29	ON	N22.16429 E113.93708	76 m	0:00:18	15 kph
6/3/2017 15:29	ON	N22.16520 E113.93709	100 m	0:00:24	15 kph
6/3/2017 15:30	ON	N22.16599 E113.93705	88 m	0:00:21	15 kph
6/3/2017 15:30	ON	N22.16674 E113.93700	84 m	0:00:20	15 kph
6/3/2017 15:30	ON	N22.16738 E113.93694	71 m	0:00:17	15 kph
6/3/2017 15:31	ON	N22.16813 E113.93689	84 m	0:00:20	15 kph
6/3/2017 15:31	ON	N22.16893 E113.93691	89 m	0:00:21	15 kph
6/3/2017 15:31	ON	N22.16965 E113.93697	80 m	0:00:19	15 kph
6/3/2017 15:32	ON	N22.17044 E113.93700	88 m	0:00:21	15 kph
6/3/2017 15:32	ON	N22.17108 E113.93700	71 m	0:00:17	15 kph
6/3/2017 15:32	ON	N22.17175 E113.93697	76 m	0:00:18	15 kph
6/3/2017 15:33	ON	N22.17258 E113.93700	92 m	0:00:22	15 kph
6/3/2017 15:33	ON	N22.17349 E113.93698	101 m	0:00:24	15 kph
6/3/2017 15:33	ON	N22.17424 E113.93692	84 m	0:00:20	15 kph
6/3/2017 15:34	ON	N22.17500 E113.93689	84 m	0:00:20	15 kph
6/3/2017 15:34	ON	N22.17576 E113.93688	85 m	0:00:20	15 kph
6/3/2017 15:35	ON	N22.17660 E113.93687	93 m	0:00:22	15 kph
6/3/2017 15:35	ON	N22.17740 E113.93687	89 m	0:00:21	15 kph
6/3/2017 15:35	ON	N22.17835 E113.93688	106 m	0:00:25	15 kph
6/3/2017 15:36	ON	N22.17927 E113.93684	102 m	0:00:43	9 kph
6/3/2017 15:36	ON	N22.18014 E113.93670	99 m	0:00:23	15 kph
6/3/2017 15:37	ON	N22.18110 E113.93668	106 m	0:00:25	15 kph
6/3/2017 15:37	ON	N22.18186 E113.93674	85 m	0:00:20	15 kph
6/3/2017 15:37	ON	N22.18258 E113.93686	81 m	0:00:19	15 kph
6/3/2017 15:38	ON	N22.18322 E113.93699	72 m	0:00:17	15 kph
6/3/2017 15:38	ON	N22.18390 E113.93696	76 m	0:00:18	15 kph
6/3/2017 15:38	ON	N22.18455 E113.93691	72 m	0:00:17	15 kph
6/3/2017 15:39	ON	N22.18538 E113.93692	92 m	0:00:22	15 kph
6/3/2017 15:39	ON	N22.18630 E113.93699	103 m	0:00:24	15 kph
6/3/2017 15:40	ON	N22.18733 E113.93706	115 m	0:00:27	15 kph
6/3/2017 15:40	ON	N22.18813 E113.93708	89 m	0:00:21	15 kph
6/3/2017 15:40	ON	N22.18901 E113.93701	98 m	0:00:23	15 kph
6/3/2017 15:41	ON	N22.18993 E113.93696	103 m	0:00:24	15 kph
6/3/2017 15:41	ON	N22.19084 E113.93698	101 m	0:00:24	15 kph
6/3/2017 15:41	ON	N22.19152 E113.93694	76 m	0:00:18	15 kph
6/3/2017 15:42	ON	N22.19220 E113.93690	75 m	0:00:18	15 kph
6/3/2017 15:42	ON	N22.19298 E113.93690	87 m	0:00:21	15 kph
6/3/2017 15:42	ON	N22.19369 E113.93693	79 m	0:00:19	15 kph
6/3/2017 15:43	ON	N22.19432 E113.93690	70 m	0:00:17	15 kph
6/3/2017 15:43	ON	N22.19506 E113.93688	83 m	0:00:20	15 kph
6/3/2017 15:43	ON	N22.19579 E113.93688	81 m	0:00:20	15 kph
6/3/2017 15:44	ON	N22.19657 E113.93690	87 m	0:00:21	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/3/2017 15:44	ON	N22.19731 E113.93688	83 m	0:00:20	15 kph
6/3/2017 15:44	ON	N22.19816 E113.93689	95 m	0:00:23	15 kph
6/3/2017 15:45	ON	N22.19909 E113.93686	104 m	0:00:25	15 kph
6/3/2017 15:45	ON	N22.19976 E113.93680	74 m	0:00:18	15 kph
6/3/2017 15:45	ON	N22.20050 E113.93676	83 m	0:00:20	15 kph
6/3/2017 15:46	ON	N22.20127 E113.93669	86 m	0:00:21	15 kph
6/3/2017 15:46	ON	N22.20200 E113.93669	81 m	0:00:20	15 kph
6/3/2017 15:46	ON	N22.20261 E113.93677	68 m	0:00:17	14 kph
6/3/2017 15:47	ON	N22.20331 E113.93686	78 m	0:00:19	15 kph
6/3/2017 15:47	ON	N22.20409 E113.93686	87 m	0:00:21	15 kph
6/3/2017 15:47	ON	N22.20497 E113.93685	98 m	0:00:24	15 kph
6/3/2017 15:48	ON	N22.20589 E113.93682	102 m	0:00:25	15 kph
6/3/2017 15:48	ON	N22.20672 E113.93675	93 m	0:00:23	15 kph
6/3/2017 15:48	ON	N22.20758 E113.93669	96 m	0:00:04	86 kph
6/3/2017 15:49	ON	N22.20840 E113.93667	91 m	0:00:22	15 kph
6/3/2017 15:49	ON	N22.20930 E113.93661	100 m	0:00:25	14 kph
6/3/2017 15:49	ON	N22.21016 E113.93651	97 m	0:00:24	15 kph
6/3/2017 15:50	ON	N22.21101 E113.93642	95 m	0:00:23	15 kph
6/3/2017 15:50	ON	N22.21185 E113.93639	94 m	0:00:23	15 kph
6/3/2017 15:51	ON	N22.21292 E113.93641	118 m	0:00:29	15 kph
6/3/2017 15:51	ON	N22.21391 E113.93646	111 m	0:00:27	15 kph
6/3/2017 15:52	ON	N22.21484 E113.93654	103 m	0:00:25	15 kph
6/3/2017 15:52	ON	N22.21602 E113.93674	133 m	0:00:32	15 kph
6/3/2017 15:53	ON	N22.21705 E113.93688	116 m	0:00:28	15 kph
6/3/2017 15:53	ON	N22.21817 E113.93694	125 m	0:00:30	15 kph
6/3/2017 15:54	ON	N22.21916 E113.93701	111 m	0:00:27	15 kph
6/3/2017 15:54	ON	N22.22039 E113.93710	137 m	0:00:33	15 kph
6/3/2017 15:55	ON	N22.22142 E113.93700	115 m	0:00:28	15 kph
6/3/2017 15:55	ON	N22.22242 E113.93676	114 m	0:00:28	15 kph
6/3/2017 15:55	ON	N22.22332 E113.93666	100 m	0:00:25	14 kph

Appendix II. Survey Effort Database in SWL (March 2017)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
1-Mar-17	SW LANTAU	2	8.68	SPRING	STANDARD36826	HKCRP	P
1-Mar-17	SW LANTAU	3	11.77	SPRING	STANDARD36826	HKCRP	P
1-Mar-17	SW LANTAU	4	3.08	SPRING	STANDARD36826	HKCRP	P
1-Mar-17	SW LANTAU	2	4.80	SPRING	STANDARD36826	HKCRP	S
1-Mar-17	SW LANTAU	3	7.15	SPRING	STANDARD36826	HKCRP	S
1-Mar-17	SW LANTAU	4	2.41	SPRING	STANDARD36826	HKCRP	S
6-Mar-17	SW LANTAU	1	8.60	SPRING	STANDARD36826	HYD-HZMB	P
6-Mar-17	SW LANTAU	2	43.55	SPRING	STANDARD36826	HYD-HZMB	P
6-Mar-17	SW LANTAU	3	1.90	SPRING	STANDARD36826	HYD-HZMB	P
6-Mar-17	SW LANTAU	1	2.10	SPRING	STANDARD36826	HYD-HZMB	S
6-Mar-17	SW LANTAU	2	14.75	SPRING	STANDARD36826	HYD-HZMB	S
13-Mar-17	SW LANTAU	1	1.58	SPRING	STANDARD36826	HKCRP	P
13-Mar-17	SW LANTAU	2	14.53	SPRING	STANDARD36826	HKCRP	P
13-Mar-17	SW LANTAU	3	6.81	SPRING	STANDARD36826	HKCRP	P
13-Mar-17	SW LANTAU	2	5.50	SPRING	STANDARD36826	HKCRP	S
13-Mar-17	SW LANTAU	3	2.36	SPRING	STANDARD36826	HKCRP	S
21-Mar-17	SW LANTAU	2	19.48	SPRING	STANDARD36826	HKCRP	P
21-Mar-17	SW LANTAU	3	1.30	SPRING	STANDARD36826	HKCRP	P
21-Mar-17	SW LANTAU	1	2.75	SPRING	STANDARD36826	HKCRP	S
21-Mar-17	SW LANTAU	2	6.89	SPRING	STANDARD36826	HKCRP	S
21-Mar-17	SW LANTAU	3	2.40	SPRING	STANDARD36826	HKCRP	S

Appendix III. Chinese White Dolphin Sighting Database in SWL (March 2017)

(Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; ND = Not Determined; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Lines)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
1-Mar-17	1	1308	3	SW LANTAU	3	181	ON	HKCRP	804145	802627	SPRING	PAIR	P
1-Mar-17	2	1529	1	SW LANTAU	2	ND	OFF	HKCRP	804097	810476	SPRING	PURSE-SEINE	
13-Mar-17	1	1307	1	SW LANTAU	2	ND	OFF	HKCRP	806260	802931	SPRING	PURSE-SEINE	

Appendix IV. Individual dolphins identified during HYD-HZMB and AFCD monitoring surveys in SWL waters in March 2017

ID#	DATE	STG#	TYPE	AREA
WL62	13/03/17	1	HKCRP	SW LANTAU

Appendix V. Photograph of Identified Individual Dolphin in March 2017 in SWL waters