Monitoring of Chinese White Dolphins in Southwest Lantau Waters

5th Monthly Progress Report (July 2015)
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 will 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 fifth monthly progress report under this dolphin monitoring study submitted to the Environmental Project Office, summarizing the results of the surveys findings during the month of July 2015.

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 17 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^{o} and 90^{o} (in relation to the bow, which is defined as 0^{o}). 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 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 July 8th, 2015, to cover all transect lines in SWL survey area once (the survey route and track log 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 July 6th (with lines no. SWL002, SWL004, SWL006 covered), July 28th (with lines no. SWL003, SWL005, SWL007, SWL009 covered), and July 31st (with lines no. SWL004, 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 70.41 km of survey effort was collected from 11:10 to 16:39 (i.e. 5 hours and 29 minutes of survey time) on July 8th, with 88.0% 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 53.95 km and 16.46 km respectively. For the combined monitoring dataset from both the present study and AFCD monitoring study, a total of 141.66 km of survey effort was collected SWL waters in July 2015.

3.1.4. During this month, 15 groups of 51 Chinese White Dolphins were sighted from the present study's survey and AFCD monitoring surveys conducted in SWL survey area (Appendix III). All except two dolphin sightings were made during on-effort search, while seven of the 13 on-effort sightings were made on primary lines. One of these dolphin groups was associated with an operating purse-seiner.

3.1.5. Distribution of dolphin sightings made in July 2015 is shown in Figure 3. The dolphin groups were mostly distributed along the inshore waters of South Lantau coastline from Fan Lau to Shui Hau Peninsula. Several sightings were also made between and around the Soko Islands (Figure 3). On the contrary, they were rarely sighted in the southern portion of the survey area.

3.1.6. 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 July 2015 are shown in Table 2. Comparison of encounter rates was also made to the one deduced in summer months (June-August) in the past decade (2005-14) (Table 2).

3.1.7. The overall dolphin encounter rates deduced in July 2015 in Southwest Lantau waters were 2-3 times higher than the ones deduced from the historical data during the summer months of 2004-15 (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 July 2015 (primary lines only, as well as both primary lines and secondary lines were used) in Southwest Lantau survey area in comparison to the ones deduced during summer months in the past decade (June-August 2005-14)

	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 (July 2015)	2.10	4.84	4.20	12.92
Combined data (July 2015)	7.62	9.89	26.12	35.77
Historical Data (Summer 2005-14)		4.02		11.78

3.1.8. The average group size of Chinese White Dolphins in July 2015 was 3.4 individuals per group. About half of the dolphin groups were very small, composed of 1-3 animals only. On the other hand, there were five groups with five dolphins and one large group of ten dolphins sighted in Southwest Lantau waters during this monitoring month (Figure 3).

3.2. Photo-identification Work

3.2.1. Attempts were made to photograph the dolphins sighted during all July 2015 surveys.

3.2.2. Among the 51 dolphins sighted during this month's surveys, 24 individual dolphins were identified and they were re-sighted 35 times in total (Appendices IV and V). None of these individuals were accompanied by their young calves.

3.2.3. The locations where the majority of individuals were re-sighted were well within their past home ranges in Southwest and West Lantau waters. However, NL226 was primarily sighted in North Lantau waters in the past, but has shown up in Southwest Lantau for during this month's surveys. This same individual was also sighted in Southwest Lantau waters in the previous month for the first time.

3.2.4. Moreover, WL98 and WL160 were sighted in Southwest Lantau waters for the first time during this month's surveys as well, both they were sighted primarily in West and Northwest Lantau in the past.

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.

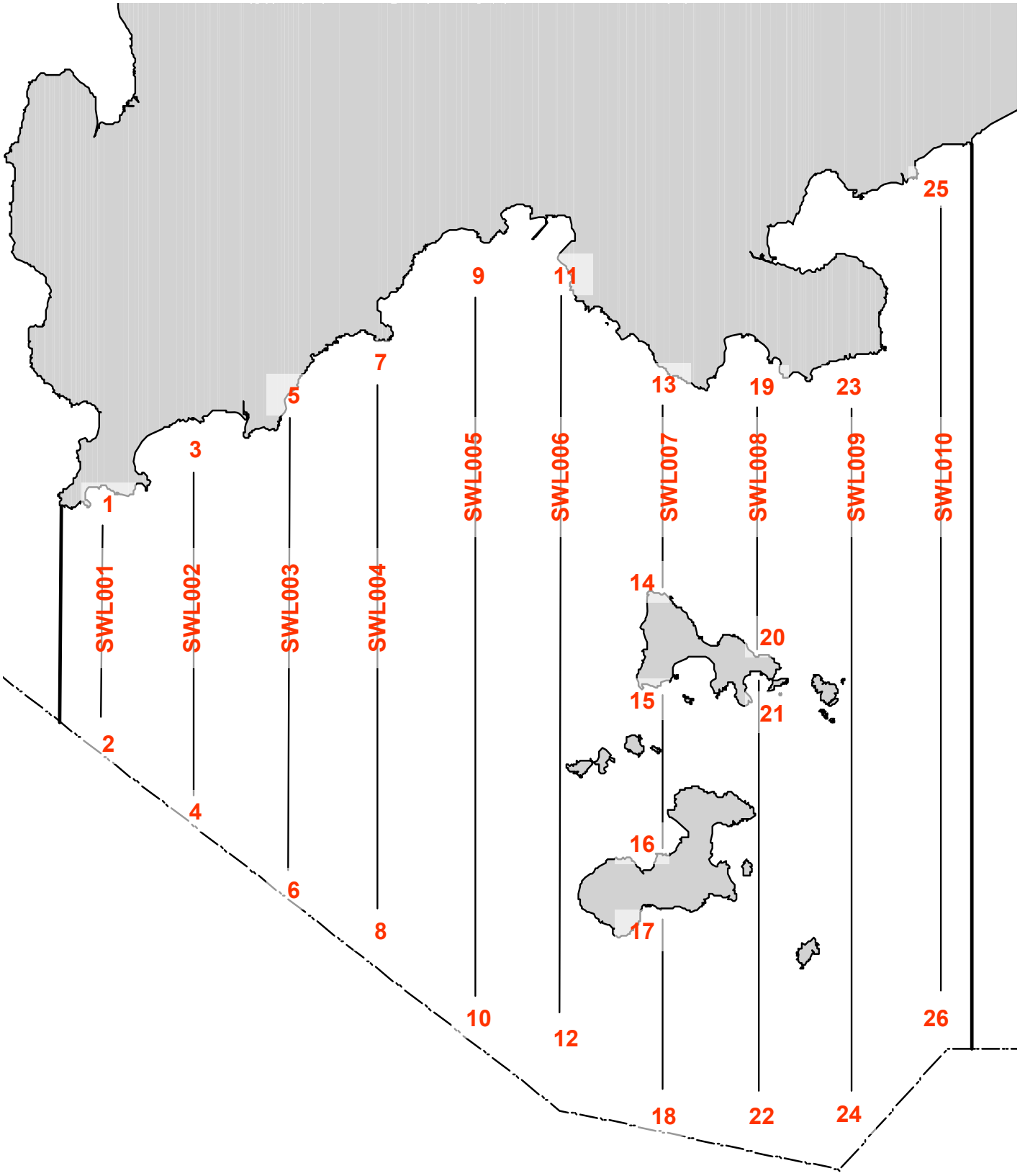

Figure 1. Survey Lines and associated coordinates in Southwest Lantau survey area

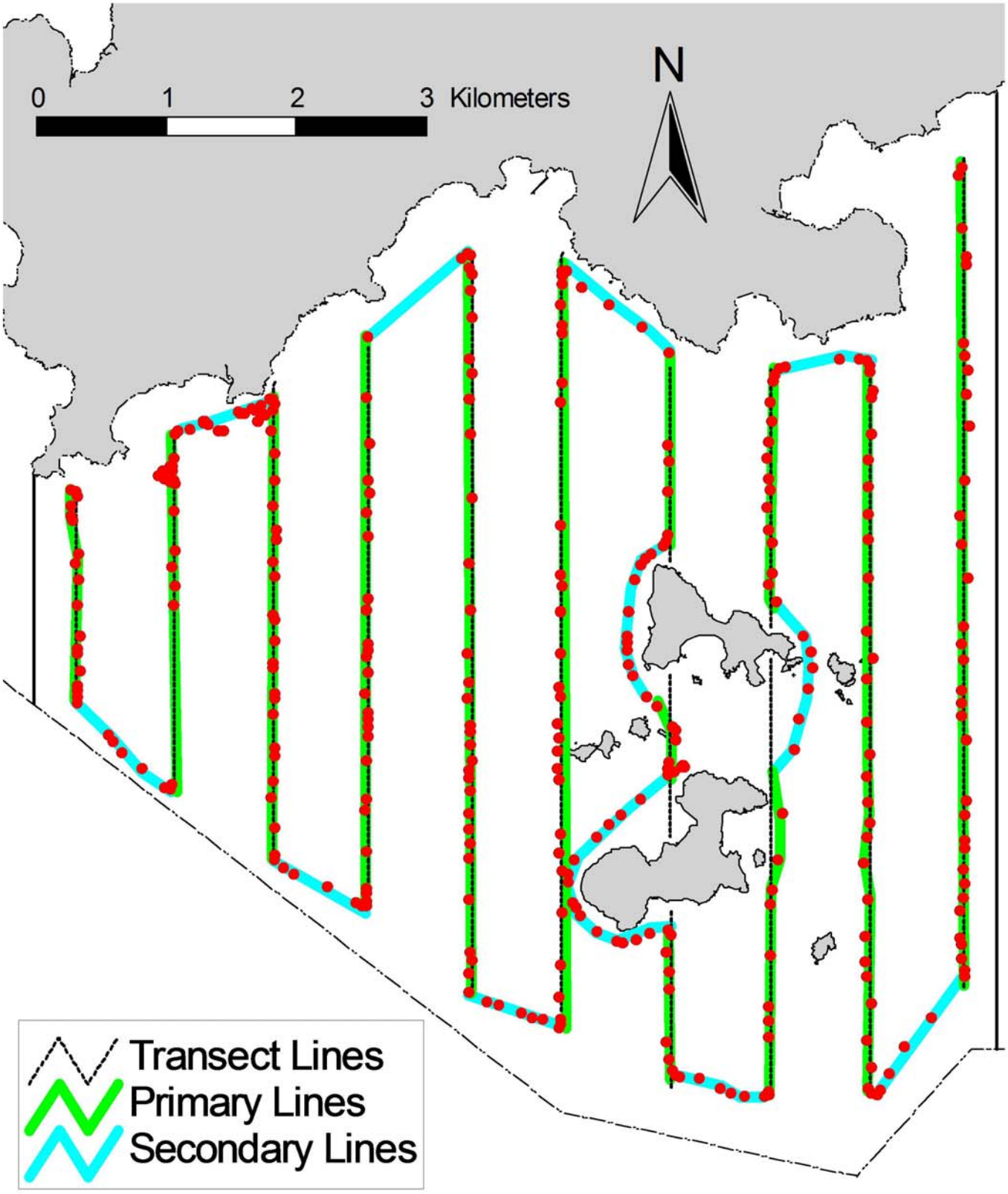

Figure 2. Survey Route on July 8th, 2015 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

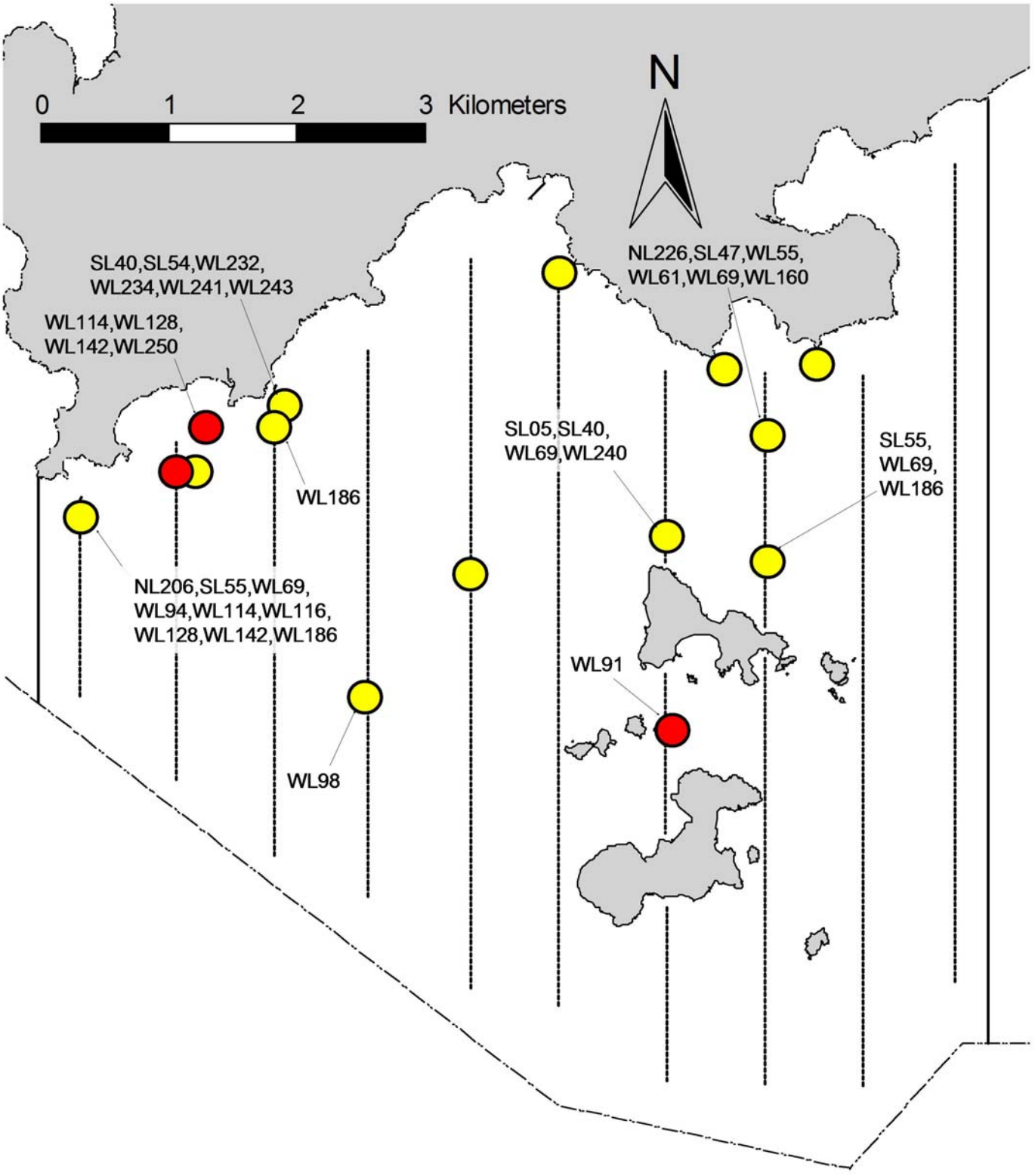

Figure 3. Distribution of Chinese White Dolphin sightings during July 2015 monitoring surveys in Southwest Lantau survey area, with identified individuals indicated for their corresponding sightings (red dot: HYD-HZMB sighting; yellow dot: AFCD sighting)

Appendix I. Track Log of Southwest Lantau Survey on July 8th, 2015

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 11:10	ON	N22.19425 E113.84894			
8/7/2015 11:11	ON	N22.19418 E113.84930	38 m	0:00:13	10 kph
8/7/2015 11:11	ON	N22.19379 E113.84938	44 m	0:00:14	11 kph
8/7/2015 11:11	ON	N22.19335 E113.84915	55 m	0:00:13	15 kph
8/7/2015 11:11	ON	N22.19292 E113.84893	52 m	0:00:12	16 kph
8/7/2015 11:11	ON	N22.19252 E113.84887	45 m	0:00:11	15 kph
8/7/2015 11:12	ON	N22.19211 E113.84890	46 m	0:00:12	14 kph
8/7/2015 11:12	ON	N22.19159 E113.84899	59 m	0:00:15	14 kph
8/7/2015 11:12	ON	N22.19112 E113.84900	51 m	0:00:13	14 kph
8/7/2015 11:12	ON	N22.19069 E113.84909	49 m	0:00:13	14 kph
8/7/2015 11:13	ON	N22.19019 E113.84921	56 m	0:00:15	14 kph
8/7/2015 11:13	ON	N22.18971 E113.84934	56 m	0:00:15	13 kph
8/7/2015 11:13	ON	N22.18930 E113.84946	47 m	0:00:13	13 kph
8/7/2015 11:13	ON	N22.18881 E113.84956	55 m	0:00:15	13 kph
8/7/2015 11:14	ON	N22.18835 E113.84943	52 m	0:00:13	14 kph
8/7/2015 11:14	ON	N22.18786 E113.84931	56 m	0:00:14	14 kph
8/7/2015 11:14	ON	N22.18739 E113.84934	53 m	0:00:14	14 kph
8/7/2015 11:14	ON	N22.18696 E113.84950	51 m	0:00:14	13 kph
8/7/2015 11:14	ON	N22.18654 E113.84961	48 m	0:00:13	13 kph
8/7/2015 11:15	ON	N22.18612 E113.84961	47 m	0:00:12	14 kph
8/7/2015 11:15	ON	N22.18571 E113.84959	46 m	0:00:12	14 kph
8/7/2015 11:15	ON	N22.18516 E113.84957	61 m	0:00:16	14 kph
8/7/2015 11:15	ON	N22.18472 E113.84952	49 m	0:00:13	14 kph
8/7/2015 11:16	ON	N22.18432 E113.84951	45 m	0:00:12	13 kph
8/7/2015 11:16	ON	N22.18388 E113.84959	50 m	0:00:14	13 kph
8/7/2015 11:16	ON	N22.18328 E113.84959	67 m	0:00:17	14 kph
8/7/2015 11:16	ON	N22.18276 E113.84953	58 m	0:00:15	14 kph
8/7/2015 11:17	ON	N22.18218 E113.84957	64 m	0:00:17	14 kph
8/7/2015 11:17	ON	N22.18171 E113.84965	53 m	0:00:14	14 kph
8/7/2015 11:17	ON	N22.18121 E113.84964	55 m	0:00:14	14 kph
8/7/2015 11:17	ON	N22.18064 E113.84954	65 m	0:00:16	15 kph
8/7/2015 11:18	ON	N22.18014 E113.84949	56 m	0:00:14	14 kph
8/7/2015 11:18	ON	N22.17975 E113.84952	43 m	0:00:11	14 kph
8/7/2015 11:18	ON	N22.17927 E113.84958	54 m	0:00:14	14 kph
8/7/2015 11:18	ON	N22.17868 E113.84965	66 m	0:00:17	14 kph
8/7/2015 11:18	ON	N22.17825 E113.84961	48 m	0:00:12	14 kph
8/7/2015 11:19	ON	N22.17779 E113.84950	52 m	0:00:13	15 kph
8/7/2015 11:19	ON	N22.17741 E113.84941	44 m	0:00:11	14 kph
8/7/2015 11:19	ON	N22.17695 E113.84935	51 m	0:00:13	14 kph
8/7/2015 11:19	ON	N22.17638 E113.84935	63 m	0:00:16	14 kph
8/7/2015 11:20	ON	N22.17588 E113.84949	57 m	0:00:15	14 kph
8/7/2015 11:20	ON	N22.17552 E113.84987	57 m	0:00:16	13 kph
8/7/2015 11:20	ON	N22.17512 E113.85032	64 m	0:00:17	14 kph
8/7/2015 11:20	ON	N22.17472 E113.85077	64 m	0:00:17	14 kph
8/7/2015 11:21	ON	N22.17427 E113.85121	68 m	0:00:18	14 kph
8/7/2015 11:21	ON	N22.17385 E113.85168	67 m	0:00:18	13 kph
8/7/2015 11:21	ON	N22.17341 E113.85221	74 m	0:00:20	13 kph
8/7/2015 11:22	ON	N22.17307 E113.85257	52 m	0:00:14	13 kph
8/7/2015 11:22	ON	N22.17256 E113.85300	72 m	0:00:19	14 kph
8/7/2015 11:22	ON	N22.17204 E113.85346	75 m	0:00:20	14 kph
8/7/2015 11:23	ON	N22.17159 E113.85395	70 m	0:00:19	13 kph
8/7/2015 11:23	ON	N22.17121 E113.85443	66 m	0:00:17	14 kph
8/7/2015 11:23	ON	N22.17083 E113.85497	70 m	0:00:19	13 kph
8/7/2015 11:23	ON	N22.17048 E113.85543	62 m	0:00:17	13 kph
8/7/2015 11:24	ON	N22.17019 E113.85582	52 m	0:00:14	13 kph
8/7/2015 11:24	ON	N22.16988 E113.85628	58 m	0:00:16	13 kph
8/7/2015 11:24	ON	N22.16960 E113.85669	52 m	0:00:14	13 kph
8/7/2015 11:24	ON	N22.16924 E113.85716	64 m	0:00:17	14 kph
8/7/2015 11:25	ON	N22.16884 E113.85764	67 m	0:00:18	13 kph
8/7/2015 11:25	ON	N22.16855 E113.85807	54 m	0:00:15	13 kph
8/7/2015 11:25	ON	N22.16839 E113.85838	36 m	0:00:10	13 kph
8/7/2015 11:25	ON	N22.16835 E113.85874	38 m	0:00:12	11 kph
8/7/2015 11:26	ON	N22.16857 E113.85888	29 m	0:00:10	10 kph
8/7/2015 11:26	ON	N22.16891 E113.85888	38 m	0:00:11	12 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 11:26	ON	N22.16932 E113.85884	46 m	0:00:12	14 kph
8/7/2015 11:26	ON	N22.16985 E113.85882	59 m	0:00:15	14 kph
8/7/2015 11:26	ON	N22.17023 E113.85885	43 m	0:00:11	14 kph
8/7/2015 11:26	ON	N22.17057 E113.85882	38 m	0:00:10	14 kph
8/7/2015 11:27	ON	N22.17108 E113.85884	56 m	0:00:15	14 kph
8/7/2015 11:27	ON	N22.17151 E113.85893	49 m	0:00:13	13 kph
8/7/2015 11:27	ON	N22.17202 E113.85896	57 m	0:00:15	14 kph
8/7/2015 11:27	ON	N22.17253 E113.85897	57 m	0:00:15	14 kph
8/7/2015 11:28	ON	N22.17294 E113.85897	46 m	0:00:12	14 kph
8/7/2015 11:28	ON	N22.17339 E113.85895	50 m	0:00:13	14 kph
8/7/2015 11:28	ON	N22.17377 E113.85893	43 m	0:00:11	14 kph
8/7/2015 11:28	ON	N22.17414 E113.85893	42 m	0:00:11	14 kph
8/7/2015 11:28	ON	N22.17462 E113.85891	52 m	0:00:14	13 kph
8/7/2015 11:29	ON	N22.17506 E113.85889	49 m	0:00:13	14 kph
8/7/2015 11:29	ON	N22.17543 E113.85885	42 m	0:00:11	14 kph
8/7/2015 11:29	ON	N22.17588 E113.85888	49 m	0:00:13	14 kph
8/7/2015 11:29	ON	N22.17638 E113.85891	57 m	0:00:15	14 kph
8/7/2015 11:30	ON	N22.17694 E113.85890	61 m	0:00:16	14 kph
8/7/2015 11:30	ON	N22.17742 E113.85892	54 m	0:00:14	14 kph
8/7/2015 11:30	ON	N22.17780 E113.85892	42 m	0:00:11	14 kph
8/7/2015 11:30	ON	N22.17821 E113.85890	46 m	0:00:12	14 kph
8/7/2015 11:31	ON	N22.17880 E113.85889	65 m	0:00:17	14 kph
8/7/2015 11:31	ON	N22.17911 E113.85890	34 m	0:00:09	14 kph
8/7/2015 11:31	ON	N22.17952 E113.85892	46 m	0:00:12	14 kph
8/7/2015 11:31	ON	N22.18004 E113.85892	58 m	0:00:15	14 kph
8/7/2015 11:31	ON	N22.18038 E113.85892	38 m	0:00:10	14 kph
8/7/2015 11:31	ON	N22.18071 E113.85893	37 m	0:00:10	13 kph
8/7/2015 11:32	ON	N22.18115 E113.85894	49 m	0:00:13	14 kph
8/7/2015 11:32	ON	N22.18155 E113.85894	45 m	0:00:12	14 kph
8/7/2015 11:32	ON	N22.18189 E113.85894	37 m	0:00:10	13 kph
8/7/2015 11:32	ON	N22.18236 E113.85894	53 m	0:00:14	14 kph
8/7/2015 11:32	ON	N22.18270 E113.85895	38 m	0:00:10	14 kph
8/7/2015 11:33	ON	N22.18311 E113.85896	45 m	0:00:12	14 kph
8/7/2015 11:33	ON	N22.18358 E113.85895	53 m	0:00:14	14 kph
8/7/2015 11:33	ON	N22.18400 E113.85892	47 m	0:00:12	14 kph
8/7/2015 11:33	ON	N22.18434 E113.85891	38 m	0:00:10	14 kph
8/7/2015 11:33	ON	N22.18478 E113.85895	49 m	0:00:13	14 kph
8/7/2015 11:34	ON	N22.18518 E113.85900	45 m	0:00:12	14 kph
8/7/2015 11:34	ON	N22.18562 E113.85907	49 m	0:00:13	13 kph
8/7/2015 11:34	ON	N22.18602 E113.85908	45 m	0:00:12	14 kph
8/7/2015 11:34	ON	N22.18650 E113.85899	54 m	0:00:14	14 kph
8/7/2015 11:34	ON	N22.18692 E113.85891	47 m	0:00:12	14 kph
8/7/2015 11:35	ON	N22.18732 E113.85886	46 m	0:00:12	14 kph
8/7/2015 11:35	ON	N22.18769 E113.85884	41 m	0:00:11	13 kph
8/7/2015 11:35	ON	N22.18807 E113.85891	43 m	0:00:12	13 kph
8/7/2015 11:35	ON	N22.18847 E113.85902	46 m	0:00:13	13 kph
8/7/2015 11:36	ON	N22.18909 E113.85906	69 m	0:00:19	13 kph
8/7/2015 11:36	ON	N22.18948 E113.85901	44 m	0:00:12	13 kph
8/7/2015 11:36	ON	N22.18997 E113.85899	55 m	0:00:15	13 kph
8/7/2015 11:36	ON	N22.19039 E113.85901	46 m	0:00:13	13 kph
8/7/2015 11:36	ON	N22.19080 E113.85899	46 m	0:00:13	13 kph
8/7/2015 11:37	ON	N22.19119 E113.85895	43 m	0:00:12	13 kph
8/7/2015 11:37	ON	N22.19168 E113.85891	55 m	0:00:15	13 kph
8/7/2015 11:37	ON	N22.19207 E113.85890	44 m	0:00:12	13 kph
8/7/2015 11:37	ON	N22.19253 E113.85891	51 m	0:00:14	13 kph
8/7/2015 11:38	ON	N22.19307 E113.85893	60 m	0:00:17	13 kph
8/7/2015 11:38	ON	N22.19366 E113.85897	66 m	0:00:19	13 kph
8/7/2015 11:38	ON	N22.19421 E113.85903	61 m	0:00:18	12 kph
8/7/2015 11:39	ON	N22.19490 E113.85905	76 m	0:00:22	13 kph
8/7/2015 11:39	ON	N22.19541 E113.85894	58 m	0:00:16	13 kph
8/7/2015 11:39	ON	N22.19576 E113.85887	40 m	0:00:11	13 kph
8/7/2015 11:39	ON	N22.19605 E113.85885	32 m	0:00:13	9 kph
8/7/2015 11:40	OFF	N22.19620 E113.85884	16 m	0:00:12	5 kph
8/7/2015 11:40	OFF	N22.19633 E113.85883	15 m	0:00:18	3 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 11:40	OFF	N22.19639 E113.85879	7 m	0:00:18	1.5 kph
8/7/2015 11:40	OFF	N22.19641 E113.85875	5 m	0:00:15	1.2 kph
8/7/2015 11:41	OFF	N22.19641 E113.85869	7 m	0:00:16	1.5 kph
8/7/2015 11:41	OFF	N22.19639 E113.85864	5 m	0:00:12	2 kph
8/7/2015 11:41	OFF	N22.19636 E113.85858	7 m	0:00:14	2 kph
8/7/2015 11:41	OFF	N22.19630 E113.85852	9 m	0:00:17	2 kph
8/7/2015 11:42	OFF	N22.19622 E113.85842	14 m	0:00:21	2 kph
8/7/2015 11:42	OFF	N22.19615 E113.85833	12 m	0:00:18	2 kph
8/7/2015 11:42	OFF	N22.19608 E113.85824	12 m	0:00:17	3 kph
8/7/2015 11:43	OFF	N22.19601 E113.85812	14 m	0:00:18	3 kph
8/7/2015 11:43	OFF	N22.19597 E113.85804	10 m	0:00:12	3 kph
8/7/2015 11:43	OFF	N22.19591 E113.85795	11 m	0:00:15	3 kph
8/7/2015 11:43	OFF	N22.19586 E113.85788	9 m	0:00:13	2 kph
8/7/2015 11:44	OFF	N22.19580 E113.85781	10 m	0:00:18	2 kph
8/7/2015 11:44	OFF	N22.19575 E113.85775	8 m	0:00:18	2 kph
8/7/2015 11:44	OFF	N22.19570 E113.85767	10 m	0:00:17	2 kph
8/7/2015 11:44	OFF	N22.19565 E113.85760	10 m	0:00:17	2 kph
8/7/2015 11:45	OFF	N22.19561 E113.85753	8 m	0:00:12	2 kph
8/7/2015 11:45	OFF	N22.19562 E113.85750	3 m	0:00:16	0.6 kph
8/7/2015 11:45	OFF	N22.19563 E113.85753	3 m	0:00:03	4 kph
8/7/2015 11:45	OFF	N22.19557 E113.85776	25 m	0:00:14	6 kph
8/7/2015 11:45	OFF	N22.19534 E113.85810	43 m	0:00:14	11 kph
8/7/2015 11:46	OFF	N22.19499 E113.85862	66 m	0:00:19	12 kph
8/7/2015 11:46	ON	N22.19508 E113.85888	29 m	0:00:12	9 kph
8/7/2015 11:46	ON	N22.19547 E113.85888	43 m	0:00:14	11 kph
8/7/2015 11:46	ON	N22.19599 E113.85880	58 m	0:00:16	13 kph
8/7/2015 11:47	ON	N22.19653 E113.85892	61 m	0:00:17	13 kph
8/7/2015 11:47	ON	N22.19709 E113.85902	64 m	0:00:18	13 kph
8/7/2015 11:47	ON	N22.19782 E113.85904	81 m	0:00:22	13 kph
8/7/2015 11:48	ON	N22.19846 E113.85900	71 m	0:00:19	13 kph
8/7/2015 11:48	ON	N22.19911 E113.85911	73 m	0:00:20	13 kph
8/7/2015 11:48	ON	N22.19941 E113.85944	48 m	0:00:15	12 kph
8/7/2015 11:49	ON	N22.19954 E113.86001	60 m	0:00:18	12 kph
8/7/2015 11:49	ON	N22.19963 E113.86058	59 m	0:00:18	12 kph
8/7/2015 11:49	ON	N22.19983 E113.86119	67 m	0:00:20	12 kph
8/7/2015 11:49	OFF	N22.20001 E113.86163	50 m	0:00:17	10 kph
8/7/2015 11:50	OFF	N22.20012 E113.86187	28 m	0:00:22	5 kph
8/7/2015 11:50	OFF	N22.20015 E113.86194	8 m	0:00:20	1.4 kph
8/7/2015 11:50	OFF	N22.20016 E113.86194	1 m	0:00:15	0.3 kph
8/7/2015 11:51	OFF	N22.20020 E113.86202	10 m	0:00:18	2 kph
8/7/2015 11:51	OFF	N22.20020 E113.86207	5 m	0:00:04	5 kph
8/7/2015 11:51	OFF	N22.20001 E113.86240	39 m	0:00:21	7 kph
8/7/2015 11:51	OFF	N22.19985 E113.86269	35 m	0:00:15	8 kph
8/7/2015 11:52	OFF	N22.19965 E113.86304	43 m	0:00:18	9 kph
8/7/2015 11:52	OFF	N22.19942 E113.86341	46 m	0:00:18	9 kph
8/7/2015 11:52	OFF	N22.19942 E113.86390	50 m	0:00:16	11 kph
8/7/2015 11:53	OFF	N22.19954 E113.86447	60 m	0:00:18	12 kph
8/7/2015 11:53	OFF	N22.19969 E113.86507	64 m	0:00:19	12 kph
8/7/2015 11:53	OFF	N22.19988 E113.86559	58 m	0:00:17	12 kph
8/7/2015 11:54	OFF	N22.20010 E113.86631	78 m	0:00:23	12 kph
8/7/2015 11:54	OFF	N22.20022 E113.86675	47 m	0:00:16	11 kph
8/7/2015 11:54	OFF	N22.20030 E113.86702	29 m	0:00:20	5 kph
8/7/2015 11:55	OFF	N22.20034 E113.86716	15 m	0:00:22	2 kph
8/7/2015 11:55	OFF	N22.20035 E113.86720	4 m	0:00:11	1.4 kph
8/7/2015 11:55	OFF	N22.20043 E113.86738	21 m	0:00:17	4 kph
8/7/2015 11:55	OFF	N22.20059 E113.86768	35 m	0:00:19	7 kph
8/7/2015 11:56	OFF	N22.20075 E113.86790	28 m	0:00:19	5 kph
8/7/2015 11:56	OFF	N22.20083 E113.86798	12 m	0:00:17	3 kph
8/7/2015 11:56	OFF	N22.20085 E113.86800	3 m	0:00:13	0.9 kph
8/7/2015 11:56	OFF	N22.20086 E113.86800	2 m	0:00:17	0.4 kph
8/7/2015 11:57	OFF	N22.20089 E113.86795	5 m	0:00:19	1.0 kph
8/7/2015 11:57	OFF	N22.20088 E113.86787	9 m	0:00:20	2 kph
8/7/2015 11:57	OFF	N22.20085 E113.86780	7 m	0:00:15	2 kph
8/7/2015 11:58	OFF	N22.20093 E113.86776	10 m	0:00:16	2 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 11:58	OFF	N22.20095 E113.86774	3 m	0:00:03	4 kph
8/7/2015 11:58	OFF	N22.20105 E113.86757	21 m	0:00:15	5 kph
8/7/2015 11:58	OFF	N22.20113 E113.86732	27 m	0:00:16	6 kph
8/7/2015 11:58	OFF	N22.20114 E113.86725	7 m	0:00:04	6 kph
8/7/2015 11:58	OFF	N22.20115 E113.86702	24 m	0:00:16	5 kph
8/7/2015 11:59	OFF	N22.20114 E113.86688	15 m	0:00:12	5 kph
8/7/2015 11:59	OFF	N22.20113 E113.86683	5 m	0:00:04	5 kph
8/7/2015 11:59	OFF	N22.20105 E113.86660	25 m	0:00:20	5 kph
8/7/2015 11:59	OFF	N22.20100 E113.86633	29 m	0:00:19	5 kph
8/7/2015 12:00	OFF	N22.20098 E113.86610	24 m	0:00:17	5 kph
8/7/2015 12:00	OFF	N22.20096 E113.86588	23 m	0:00:21	4 kph
8/7/2015 12:00	OFF	N22.20095 E113.86569	19 m	0:00:18	4 kph
8/7/2015 12:01	OFF	N22.20093 E113.86552	18 m	0:00:20	3 kph
8/7/2015 12:01	OFF	N22.20093 E113.86545	8 m	0:00:09	3 kph
8/7/2015 12:01	OFF	N22.20109 E113.86533	22 m	0:00:19	4 kph
8/7/2015 12:01	OFF	N22.20119 E113.86565	35 m	0:00:17	7 kph
8/7/2015 12:02	OFF	N22.20131 E113.86622	60 m	0:00:19	11 kph
8/7/2015 12:02	ON	N22.20140 E113.86659	40 m	0:00:12	12 kph
8/7/2015 12:02	ON	N22.20150 E113.86692	36 m	0:00:11	12 kph
8/7/2015 12:02	ON	N22.20160 E113.86725	35 m	0:00:11	12 kph
8/7/2015 12:02	ON	N22.20170 E113.86757	35 m	0:00:11	12 kph
8/7/2015 12:03	ON	N22.20187 E113.86790	38 m	0:00:12	11 kph
8/7/2015 12:03	ON	N22.20202 E113.86815	32 m	0:00:10	11 kph
8/7/2015 12:03	ON	N22.20221 E113.86842	34 m	0:00:11	11 kph
8/7/2015 12:03	ON	N22.20219 E113.86877	36 m	0:00:13	10 kph
8/7/2015 12:03	ON	N22.20183 E113.86892	43 m	0:00:12	13 kph
8/7/2015 12:04	ON	N22.20121 E113.86881	70 m	0:00:16	16 kph
8/7/2015 12:04	ON	N22.20045 E113.86866	85 m	0:00:19	16 kph
8/7/2015 12:04	ON	N22.19994 E113.86864	58 m	0:00:13	16 kph
8/7/2015 12:04	ON	N22.19938 E113.86860	62 m	0:00:14	16 kph
8/7/2015 12:05	ON	N22.19868 E113.86861	79 m	0:00:18	16 kph
8/7/2015 12:05	ON	N22.19808 E113.86875	68 m	0:00:16	15 kph
8/7/2015 12:05	ON	N22.19748 E113.86887	68 m	0:00:16	15 kph
8/7/2015 12:06	ON	N22.19693 E113.86887	61 m	0:00:14	16 kph
8/7/2015 12:06	ON	N22.19639 E113.86885	61 m	0:00:14	16 kph
8/7/2015 12:06	ON	N22.19589 E113.86888	55 m	0:00:13	15 kph
8/7/2015 12:06	ON	N22.19578 E113.86889	13 m	0:00:03	16 kph
8/7/2015 12:06	ON	N22.19524 E113.86892	60 m	0:00:14	16 kph
8/7/2015 12:06	ON	N22.19476 E113.86891	53 m	0:00:12	16 kph
8/7/2015 12:07	ON	N22.19421 E113.86888	61 m	0:00:14	16 kph
8/7/2015 12:07	ON	N22.19413 E113.86887	9 m	0:00:02	16 kph
8/7/2015 12:07	ON	N22.19397 E113.86886	18 m	0:00:04	16 kph
8/7/2015 12:07	ON	N22.19350 E113.86883	52 m	0:00:12	16 kph
8/7/2015 12:07	ON	N22.19292 E113.86879	65 m	0:00:15	16 kph
8/7/2015 12:07	ON	N22.19239 E113.86883	58 m	0:00:14	15 kph
8/7/2015 12:08	ON	N22.19192 E113.86889	54 m	0:00:13	15 kph
8/7/2015 12:08	ON	N22.19139 E113.86895	59 m	0:00:14	15 kph
8/7/2015 12:08	ON	N22.19078 E113.86898	68 m	0:00:16	15 kph
8/7/2015 12:08	ON	N22.19012 E113.86900	73 m	0:00:17	15 kph
8/7/2015 12:09	ON	N22.18937 E113.86895	84 m	0:00:19	16 kph
8/7/2015 12:09	ON	N22.18930 E113.86893	9 m	0:00:02	16 kph
8/7/2015 12:09	ON	N22.18871 E113.86883	66 m	0:00:15	16 kph
8/7/2015 12:09	ON	N22.18809 E113.86877	70 m	0:00:16	16 kph
8/7/2015 12:10	ON	N22.18764 E113.86880	50 m	0:00:12	15 kph
8/7/2015 12:10	ON	N22.18694 E113.86889	79 m	0:00:19	15 kph
8/7/2015 12:10	ON	N22.18648 E113.86887	52 m	0:00:12	15 kph
8/7/2015 12:10	ON	N22.18586 E113.86881	69 m	0:00:16	15 kph
8/7/2015 12:11	ON	N22.18525 E113.86877	68 m	0:00:16	15 kph
8/7/2015 12:11	ON	N22.18473 E113.86878	58 m	0:00:14	15 kph
8/7/2015 12:11	ON	N22.18413 E113.86881	67 m	0:00:16	15 kph
8/7/2015 12:11	ON	N22.18361 E113.86883	59 m	0:00:14	15 kph
8/7/2015 12:12	ON	N22.18313 E113.86886	54 m	0:00:13	15 kph
8/7/2015 12:12	ON	N22.18254 E113.86889	65 m	0:00:16	15 kph
8/7/2015 12:12	ON	N22.18194 E113.86893	67 m	0:00:16	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 12:12	ON	N22.18128 E113.86898	74 m	0:00:18	15 kph
8/7/2015 12:13	ON	N22.18062 E113.86891	74 m	0:00:18	15 kph
8/7/2015 12:13	ON	N22.17999 E113.86884	70 m	0:00:17	15 kph
8/7/2015 12:13	ON	N22.17944 E113.86876	62 m	0:00:15	15 kph
8/7/2015 12:13	ON	N22.17890 E113.86876	60 m	0:00:15	14 kph
8/7/2015 12:14	ON	N22.17836 E113.86881	60 m	0:00:15	15 kph
8/7/2015 12:14	ON	N22.17804 E113.86882	36 m	0:00:09	14 kph
8/7/2015 12:14	ON	N22.17764 E113.86882	44 m	0:00:11	15 kph
8/7/2015 12:14	ON	N22.17721 E113.86886	48 m	0:00:12	14 kph
8/7/2015 12:14	ON	N22.17680 E113.86894	47 m	0:00:12	14 kph
8/7/2015 12:15	ON	N22.17625 E113.86897	61 m	0:00:15	15 kph
8/7/2015 12:15	ON	N22.17581 E113.86889	50 m	0:00:12	15 kph
8/7/2015 12:15	ON	N22.17525 E113.86878	63 m	0:00:15	15 kph
8/7/2015 12:15	ON	N22.17496 E113.86878	32 m	0:00:08	14 kph
8/7/2015 12:15	ON	N22.17482 E113.86880	17 m	0:00:04	15 kph
8/7/2015 12:16	ON	N22.17433 E113.86891	56 m	0:00:14	14 kph
8/7/2015 12:16	ON	N22.17382 E113.86896	57 m	0:00:14	15 kph
8/7/2015 12:16	ON	N22.17325 E113.86894	63 m	0:00:15	15 kph
8/7/2015 12:16	ON	N22.17258 E113.86895	74 m	0:00:18	15 kph
8/7/2015 12:17	ON	N22.17197 E113.86900	68 m	0:00:17	14 kph
8/7/2015 12:17	ON	N22.17127 E113.86904	78 m	0:00:19	15 kph
8/7/2015 12:17	ON	N22.17071 E113.86900	62 m	0:00:15	15 kph
8/7/2015 12:17	ON	N22.17014 E113.86888	65 m	0:00:16	15 kph
8/7/2015 12:18	ON	N22.16975 E113.86879	44 m	0:00:11	14 kph
8/7/2015 12:18	ON	N22.16911 E113.86879	72 m	0:00:18	14 kph
8/7/2015 12:18	ON	N22.16843 E113.86878	76 m	0:00:19	14 kph
8/7/2015 12:19	ON	N22.16783 E113.86872	68 m	0:00:17	14 kph
8/7/2015 12:19	ON	N22.16727 E113.86875	62 m	0:00:16	14 kph
8/7/2015 12:19	ON	N22.16660 E113.86880	75 m	0:00:19	14 kph
8/7/2015 12:19	ON	N22.16608 E113.86884	58 m	0:00:15	14 kph
8/7/2015 12:20	ON	N22.16558 E113.86888	55 m	0:00:14	14 kph
8/7/2015 12:20	ON	N22.16505 E113.86886	59 m	0:00:15	14 kph
8/7/2015 12:20	ON	N22.16448 E113.86883	63 m	0:00:16	14 kph
8/7/2015 12:20	ON	N22.16397 E113.86885	57 m	0:00:15	14 kph
8/7/2015 12:21	ON	N22.16363 E113.86889	38 m	0:00:10	14 kph
8/7/2015 12:21	ON	N22.16321 E113.86888	47 m	0:00:12	14 kph
8/7/2015 12:21	ON	N22.16274 E113.86887	53 m	0:00:14	14 kph
8/7/2015 12:21	ON	N22.16232 E113.86901	49 m	0:00:14	13 kph
8/7/2015 12:21	ON	N22.16202 E113.86930	45 m	0:00:13	12 kph
8/7/2015 12:22	ON	N22.16167 E113.86987	71 m	0:00:20	13 kph
8/7/2015 12:22	ON	N22.16140 E113.87034	57 m	0:00:17	12 kph
8/7/2015 12:22	ON	N22.16111 E113.87091	67 m	0:00:19	13 kph
8/7/2015 12:23	ON	N22.16091 E113.87150	65 m	0:00:19	12 kph
8/7/2015 12:23	ON	N22.16074 E113.87197	52 m	0:00:15	13 kph
8/7/2015 12:23	ON	N22.16056 E113.87251	59 m	0:00:17	12 kph
8/7/2015 12:24	ON	N22.16039 E113.87306	60 m	0:00:17	13 kph
8/7/2015 12:24	ON	N22.16024 E113.87354	53 m	0:00:15	13 kph
8/7/2015 12:24	ON	N22.16004 E113.87416	67 m	0:00:19	13 kph
8/7/2015 12:24	ON	N22.15979 E113.87472	64 m	0:00:18	13 kph
8/7/2015 12:25	ON	N22.15947 E113.87531	70 m	0:00:20	13 kph
8/7/2015 12:25	ON	N22.15918 E113.87584	63 m	0:00:17	13 kph
8/7/2015 12:25	ON	N22.15887 E113.87642	69 m	0:00:19	13 kph
8/7/2015 12:26	ON	N22.15859 E113.87695	63 m	0:00:18	13 kph
8/7/2015 12:26	ON	N22.15839 E113.87757	68 m	0:00:19	13 kph
8/7/2015 12:26	ON	N22.15842 E113.87796	40 m	0:00:13	11 kph
8/7/2015 12:26	ON	N22.15878 E113.87807	42 m	0:00:13	12 kph
8/7/2015 12:27	ON	N22.15919 E113.87801	46 m	0:00:12	14 kph
8/7/2015 12:27	ON	N22.15954 E113.87797	40 m	0:00:10	14 kph
8/7/2015 12:27	ON	N22.15994 E113.87798	44 m	0:00:11	14 kph
8/7/2015 12:27	ON	N22.16037 E113.87799	48 m	0:00:12	14 kph
8/7/2015 12:27	ON	N22.16081 E113.87799	49 m	0:00:12	15 kph
8/7/2015 12:28	ON	N22.16125 E113.87802	49 m	0:00:12	15 kph
8/7/2015 12:28	ON	N22.16162 E113.87804	41 m	0:00:10	15 kph
8/7/2015 12:28	ON	N22.16217 E113.87803	61 m	0:00:15	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 12:28	ON	N22.16265 E113.87806	54 m	0:00:13	15 kph
8/7/2015 12:28	ON	N22.16305 E113.87809	45 m	0:00:11	15 kph
8/7/2015 12:29	ON	N22.16360 E113.87806	61 m	0:00:15	15 kph
8/7/2015 12:29	ON	N22.16403 E113.87802	49 m	0:00:12	15 kph
8/7/2015 12:29	ON	N22.16448 E113.87799	50 m	0:00:12	15 kph
8/7/2015 12:29	ON	N22.16493 E113.87799	50 m	0:00:12	15 kph
8/7/2015 12:29	ON	N22.16534 E113.87799	46 m	0:00:11	15 kph
8/7/2015 12:30	ON	N22.16574 E113.87798	45 m	0:00:11	15 kph
8/7/2015 12:30	ON	N22.16617 E113.87795	48 m	0:00:12	14 kph
8/7/2015 12:30	ON	N22.16667 E113.87792	56 m	0:00:14	14 kph
8/7/2015 12:30	ON	N22.16712 E113.87797	51 m	0:00:13	14 kph
8/7/2015 12:30	ON	N22.16756 E113.87807	50 m	0:00:13	14 kph
8/7/2015 12:31	ON	N22.16802 E113.87808	51 m	0:00:14	13 kph
8/7/2015 12:31	ON	N22.16854 E113.87802	58 m	0:00:16	13 kph
8/7/2015 12:31	ON	N22.16901 E113.87803	52 m	0:00:14	13 kph
8/7/2015 12:31	ON	N22.16948 E113.87808	52 m	0:00:14	13 kph
8/7/2015 12:32	ON	N22.16987 E113.87810	44 m	0:00:12	13 kph
8/7/2015 12:32	ON	N22.17016 E113.87810	32 m	0:00:09	13 kph
8/7/2015 12:32	ON	N22.17051 E113.87806	39 m	0:00:11	13 kph
8/7/2015 12:32	ON	N22.17086 E113.87801	40 m	0:00:11	13 kph
8/7/2015 12:32	ON	N22.17129 E113.87802	48 m	0:00:13	13 kph
8/7/2015 12:33	ON	N22.17179 E113.87807	55 m	0:00:15	13 kph
8/7/2015 12:33	ON	N22.17215 E113.87814	41 m	0:00:11	13 kph
8/7/2015 12:33	ON	N22.17264 E113.87821	56 m	0:00:15	13 kph
8/7/2015 12:33	ON	N22.17299 E113.87820	39 m	0:00:11	13 kph
8/7/2015 12:33	ON	N22.17341 E113.87814	47 m	0:00:13	13 kph
8/7/2015 12:34	ON	N22.17380 E113.87807	43 m	0:00:12	13 kph
8/7/2015 12:34	ON	N22.17415 E113.87808	40 m	0:00:11	13 kph
8/7/2015 12:34	ON	N22.17457 E113.87814	47 m	0:00:13	13 kph
8/7/2015 12:34	ON	N22.17512 E113.87817	61 m	0:00:17	13 kph
8/7/2015 12:34	ON	N22.17553 E113.87816	46 m	0:00:13	13 kph
8/7/2015 12:35	ON	N22.17588 E113.87810	39 m	0:00:11	13 kph
8/7/2015 12:35	ON	N22.17630 E113.87800	47 m	0:00:13	13 kph
8/7/2015 12:35	ON	N22.17665 E113.87794	40 m	0:00:11	13 kph
8/7/2015 12:35	ON	N22.17704 E113.87795	43 m	0:00:12	13 kph
8/7/2015 12:35	ON	N22.17746 E113.87799	47 m	0:00:13	13 kph
8/7/2015 12:36	ON	N22.17794 E113.87808	54 m	0:00:15	13 kph
8/7/2015 12:36	ON	N22.17847 E113.87811	59 m	0:00:16	13 kph
8/7/2015 12:36	ON	N22.17893 E113.87806	52 m	0:00:14	13 kph
8/7/2015 12:37	ON	N22.17945 E113.87800	59 m	0:00:16	13 kph
8/7/2015 12:37	ON	N22.18001 E113.87801	63 m	0:00:17	13 kph
8/7/2015 12:37	ON	N22.18050 E113.87813	56 m	0:00:16	13 kph
8/7/2015 12:37	ON	N22.18105 E113.87822	62 m	0:00:17	13 kph
8/7/2015 12:38	ON	N22.18154 E113.87820	54 m	0:00:15	13 kph
8/7/2015 12:38	ON	N22.18202 E113.87812	54 m	0:00:15	13 kph
8/7/2015 12:38	ON	N22.18244 E113.87808	47 m	0:00:13	13 kph
8/7/2015 12:38	ON	N22.18283 E113.87807	43 m	0:00:12	13 kph
8/7/2015 12:38	ON	N22.18321 E113.87806	43 m	0:00:12	13 kph
8/7/2015 12:39	ON	N22.18363 E113.87801	47 m	0:00:13	13 kph
8/7/2015 12:39	ON	N22.18395 E113.87800	36 m	0:00:10	13 kph
8/7/2015 12:39	ON	N22.18439 E113.87806	49 m	0:00:14	13 kph
8/7/2015 12:39	ON	N22.18491 E113.87817	59 m	0:00:17	12 kph
8/7/2015 12:40	ON	N22.18539 E113.87816	54 m	0:00:15	13 kph
8/7/2015 12:40	ON	N22.18591 E113.87809	57 m	0:00:16	13 kph
8/7/2015 12:40	ON	N22.18633 E113.87809	47 m	0:00:13	13 kph
8/7/2015 12:40	ON	N22.18677 E113.87816	49 m	0:00:14	13 kph
8/7/2015 12:41	ON	N22.18733 E113.87819	63 m	0:00:18	13 kph
8/7/2015 12:41	ON	N22.18787 E113.87811	60 m	0:00:17	13 kph
8/7/2015 12:41	ON	N22.18835 E113.87805	54 m	0:00:15	13 kph
8/7/2015 12:41	ON	N22.18881 E113.87803	51 m	0:00:14	13 kph
8/7/2015 12:42	ON	N22.18932 E113.87810	57 m	0:00:16	13 kph
8/7/2015 12:42	ON	N22.18978 E113.87813	51 m	0:00:14	13 kph
8/7/2015 12:42	ON	N22.19034 E113.87809	62 m	0:00:17	13 kph
8/7/2015 12:42	ON	N22.19091 E113.87808	63 m	0:00:18	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 12:43	ON	N22.19138 E113.87804	54 m	0:00:15	13 kph
8/7/2015 12:43	ON	N22.19187 E113.87797	55 m	0:00:15	13 kph
8/7/2015 12:43	ON	N22.19236 E113.87795	55 m	0:00:15	13 kph
8/7/2015 12:44	ON	N22.19291 E113.87806	61 m	0:00:17	13 kph
8/7/2015 12:44	ON	N22.19350 E113.87819	67 m	0:00:19	13 kph
8/7/2015 12:44	ON	N22.19401 E113.87819	57 m	0:00:16	13 kph
8/7/2015 12:44	ON	N22.19459 E113.87812	65 m	0:00:18	13 kph
8/7/2015 12:45	ON	N22.19523 E113.87806	71 m	0:00:19	13 kph
8/7/2015 12:45	ON	N22.19589 E113.87813	74 m	0:00:20	13 kph
8/7/2015 12:45	ON	N22.19637 E113.87814	55 m	0:00:15	13 kph
8/7/2015 12:46	ON	N22.19699 E113.87809	69 m	0:00:18	14 kph
8/7/2015 12:46	ON	N22.19755 E113.87809	63 m	0:00:17	13 kph
8/7/2015 12:46	ON	N22.19832 E113.87817	86 m	0:00:23	13 kph
8/7/2015 12:47	ON	N22.19892 E113.87815	66 m	0:00:18	13 kph
8/7/2015 12:47	ON	N22.19944 E113.87808	58 m	0:00:16	13 kph
8/7/2015 12:47	ON	N22.20002 E113.87808	65 m	0:00:18	13 kph
8/7/2015 12:47	ON	N22.20066 E113.87813	72 m	0:00:20	13 kph
8/7/2015 12:48	ON	N22.20125 E113.87812	65 m	0:00:18	13 kph
8/7/2015 12:48	ON	N22.20184 E113.87808	66 m	0:00:18	13 kph
8/7/2015 12:48	ON	N22.20244 E113.87803	66 m	0:00:18	13 kph
8/7/2015 12:49	ON	N22.20304 E113.87807	67 m	0:00:19	13 kph
8/7/2015 12:49	ON	N22.20363 E113.87814	66 m	0:00:18	13 kph
8/7/2015 12:49	ON	N22.20424 E113.87815	69 m	0:00:19	13 kph
8/7/2015 12:50	ON	N22.20490 E113.87810	73 m	0:00:20	13 kph
8/7/2015 12:50	ON	N22.20556 E113.87806	73 m	0:00:20	13 kph
8/7/2015 12:50	ON	N22.20622 E113.87808	74 m	0:00:20	13 kph
8/7/2015 12:51	ON	N22.20691 E113.87804	77 m	0:00:21	13 kph
8/7/2015 12:51	ON	N22.20756 E113.87813	73 m	0:00:20	13 kph
8/7/2015 12:51	ON	N22.20793 E113.87856	60 m	0:00:17	13 kph
8/7/2015 12:52	ON	N22.20823 E113.87902	58 m	0:00:16	13 kph
8/7/2015 12:52	ON	N22.20855 E113.87951	62 m	0:00:17	13 kph
8/7/2015 12:52	ON	N22.20889 E113.87998	61 m	0:00:17	13 kph
8/7/2015 12:52	ON	N22.20935 E113.88058	81 m	0:00:22	13 kph
8/7/2015 12:53	ON	N22.20972 E113.88107	65 m	0:00:18	13 kph
8/7/2015 12:53	ON	N22.21005 E113.88152	59 m	0:00:16	13 kph
8/7/2015 12:53	ON	N22.21041 E113.88203	66 m	0:00:18	13 kph
8/7/2015 12:54	ON	N22.21077 E113.88252	64 m	0:00:17	13 kph
8/7/2015 12:54	ON	N22.21112 E113.88296	60 m	0:00:16	13 kph
8/7/2015 12:54	ON	N22.21146 E113.88341	60 m	0:00:16	13 kph
8/7/2015 12:54	ON	N22.21176 E113.88384	56 m	0:00:15	13 kph
8/7/2015 12:55	ON	N22.21215 E113.88436	69 m	0:00:18	14 kph
8/7/2015 12:55	ON	N22.21263 E113.88496	81 m	0:00:21	14 kph
8/7/2015 12:55	ON	N22.21305 E113.88550	74 m	0:00:19	14 kph
8/7/2015 12:56	ON	N22.21360 E113.88621	94 m	0:00:24	14 kph
8/7/2015 12:56	ON	N22.21405 E113.88680	79 m	0:00:20	14 kph
8/7/2015 12:56	ON	N22.21447 E113.88733	72 m	0:00:18	14 kph
8/7/2015 12:57	ON	N22.21487 E113.88792	75 m	0:00:20	13 kph
8/7/2015 12:57	ON	N22.21465 E113.88824	41 m	0:00:13	11 kph
8/7/2015 12:57	ON	N22.21421 E113.88818	49 m	0:00:14	13 kph
8/7/2015 12:57	ON	N22.21358 E113.88813	70 m	0:00:18	14 kph
8/7/2015 12:58	ON	N22.21295 E113.88839	75 m	0:00:19	14 kph
8/7/2015 12:58	ON	N22.21237 E113.88839	65 m	0:00:17	14 kph
8/7/2015 12:58	ON	N22.21164 E113.88818	84 m	0:00:21	14 kph
8/7/2015 12:59	ON	N22.21100 E113.88818	72 m	0:00:19	14 kph
8/7/2015 12:59	ON	N22.21040 E113.88826	66 m	0:00:17	14 kph
8/7/2015 12:59	ON	N22.20980 E113.88824	68 m	0:00:17	14 kph
8/7/2015 13:00	ON	N22.20930 E113.88827	56 m	0:00:14	14 kph
8/7/2015 13:00	ON	N22.20869 E113.88822	68 m	0:00:17	14 kph
8/7/2015 13:00	ON	N22.20800 E113.88816	76 m	0:00:19	14 kph
8/7/2015 13:00	ON	N22.20750 E113.88817	56 m	0:00:14	14 kph
8/7/2015 13:01	ON	N22.20690 E113.88819	67 m	0:00:17	14 kph
8/7/2015 13:01	ON	N22.20639 E113.88816	56 m	0:00:14	14 kph
8/7/2015 13:01	ON	N22.20574 E113.88812	72 m	0:00:18	14 kph
8/7/2015 13:01	ON	N22.20513 E113.88818	69 m	0:00:17	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 13:02	ON	N22.20449 E113.88826	71 m	0:00:18	14 kph
8/7/2015 13:02	ON	N22.20391 E113.88824	65 m	0:00:16	15 kph
8/7/2015 13:02	ON	N22.20336 E113.88820	62 m	0:00:15	15 kph
8/7/2015 13:03	ON	N22.20277 E113.88814	66 m	0:00:16	15 kph
8/7/2015 13:03	ON	N22.20230 E113.88812	53 m	0:00:13	15 kph
8/7/2015 13:03	ON	N22.20179 E113.88815	57 m	0:00:14	15 kph
8/7/2015 13:03	ON	N22.20140 E113.88816	43 m	0:00:11	14 kph
8/7/2015 13:03	ON	N22.20085 E113.88817	61 m	0:00:15	15 kph
8/7/2015 13:04	ON	N22.20041 E113.88819	48 m	0:00:12	15 kph
8/7/2015 13:04	ON	N22.19979 E113.88821	70 m	0:00:17	15 kph
8/7/2015 13:04	ON	N22.19924 E113.88824	60 m	0:00:15	14 kph
8/7/2015 13:04	ON	N22.19870 E113.88827	60 m	0:00:15	14 kph
8/7/2015 13:05	ON	N22.19801 E113.88827	77 m	0:00:19	15 kph
8/7/2015 13:05	ON	N22.19739 E113.88823	69 m	0:00:17	15 kph
8/7/2015 13:05	ON	N22.19684 E113.88821	61 m	0:00:15	15 kph
8/7/2015 13:06	ON	N22.19620 E113.88829	72 m	0:00:18	14 kph
8/7/2015 13:06	ON	N22.19565 E113.88830	61 m	0:00:15	15 kph
8/7/2015 13:06	ON	N22.19505 E113.88828	66 m	0:00:16	15 kph
8/7/2015 13:06	ON	N22.19457 E113.88827	54 m	0:00:13	15 kph
8/7/2015 13:07	ON	N22.19405 E113.88827	58 m	0:00:14	15 kph
8/7/2015 13:07	ON	N22.19357 E113.88830	53 m	0:00:13	15 kph
8/7/2015 13:07	ON	N22.19298 E113.88830	66 m	0:00:16	15 kph
8/7/2015 13:07	ON	N22.19249 E113.88827	55 m	0:00:13	15 kph
8/7/2015 13:08	ON	N22.19190 E113.88826	66 m	0:00:16	15 kph
8/7/2015 13:08	ON	N22.19138 E113.88828	57 m	0:00:14	15 kph
8/7/2015 13:08	ON	N22.19093 E113.88827	50 m	0:00:12	15 kph
8/7/2015 13:08	ON	N22.19037 E113.88823	63 m	0:00:15	15 kph
8/7/2015 13:08	ON	N22.18973 E113.88821	71 m	0:00:17	15 kph
8/7/2015 13:09	ON	N22.18928 E113.88822	50 m	0:00:12	15 kph
8/7/2015 13:09	ON	N22.18917 E113.88822	13 m	0:00:03	15 kph
8/7/2015 13:09	ON	N22.18897 E113.88821	22 m	0:00:05	15 kph
8/7/2015 13:09	ON	N22.18848 E113.88819	55 m	0:00:13	15 kph
8/7/2015 13:09	ON	N22.18795 E113.88814	59 m	0:00:14	15 kph
8/7/2015 13:09	ON	N22.18754 E113.88814	45 m	0:00:11	15 kph
8/7/2015 13:10	ON	N22.18703 E113.88821	57 m	0:00:14	15 kph
8/7/2015 13:10	ON	N22.18659 E113.88823	50 m	0:00:12	15 kph
8/7/2015 13:10	ON	N22.18617 E113.88819	47 m	0:00:11	15 kph
8/7/2015 13:10	ON	N22.18560 E113.88816	64 m	0:00:15	15 kph
8/7/2015 13:11	ON	N22.18515 E113.88817	50 m	0:00:12	15 kph
8/7/2015 13:11	ON	N22.18453 E113.88821	70 m	0:00:17	15 kph
8/7/2015 13:11	ON	N22.18397 E113.88824	62 m	0:00:15	15 kph
8/7/2015 13:11	ON	N22.18333 E113.88819	72 m	0:00:17	15 kph
8/7/2015 13:12	ON	N22.18284 E113.88813	55 m	0:00:13	15 kph
8/7/2015 13:12	ON	N22.18231 E113.88808	59 m	0:00:14	15 kph
8/7/2015 13:12	ON	N22.18193 E113.88808	42 m	0:00:10	15 kph
8/7/2015 13:12	ON	N22.18144 E113.88809	54 m	0:00:13	15 kph
8/7/2015 13:12	ON	N22.18080 E113.88799	72 m	0:00:17	15 kph
8/7/2015 13:13	ON	N22.18029 E113.88797	57 m	0:00:14	15 kph
8/7/2015 13:13	ON	N22.17973 E113.88807	63 m	0:00:16	14 kph
8/7/2015 13:13	ON	N22.17930 E113.88807	48 m	0:00:12	14 kph
8/7/2015 13:13	ON	N22.17880 E113.88806	56 m	0:00:14	14 kph
8/7/2015 13:14	ON	N22.17834 E113.88812	51 m	0:00:13	14 kph
8/7/2015 13:14	ON	N22.17780 E113.88814	60 m	0:00:15	14 kph
8/7/2015 13:14	ON	N22.17726 E113.88811	60 m	0:00:15	14 kph
8/7/2015 13:14	ON	N22.17671 E113.88806	62 m	0:00:15	15 kph
8/7/2015 13:15	ON	N22.17631 E113.88804	45 m	0:00:11	15 kph
8/7/2015 13:15	ON	N22.17588 E113.88809	47 m	0:00:12	14 kph
8/7/2015 13:15	ON	N22.17535 E113.88818	60 m	0:00:15	14 kph
8/7/2015 13:15	ON	N22.17491 E113.88816	49 m	0:00:12	15 kph
8/7/2015 13:15	ON	N22.17455 E113.88819	40 m	0:00:10	14 kph
8/7/2015 13:16	ON	N22.17402 E113.88830	60 m	0:00:15	14 kph
8/7/2015 13:16	ON	N22.17351 E113.88833	57 m	0:00:14	15 kph
8/7/2015 13:16	ON	N22.17298 E113.88826	59 m	0:00:14	15 kph
8/7/2015 13:16	ON	N22.17238 E113.88820	67 m	0:00:16	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 13:17	ON	N22.17191 E113.88823	53 m	0:00:13	15 kph
8/7/2015 13:17	ON	N22.17150 E113.88829	45 m	0:00:11	15 kph
8/7/2015 13:17	ON	N22.17102 E113.88835	54 m	0:00:13	15 kph
8/7/2015 13:17	ON	N22.17057 E113.88830	51 m	0:00:12	15 kph
8/7/2015 13:17	ON	N22.17007 E113.88818	57 m	0:00:13	16 kph
8/7/2015 13:18	ON	N22.16951 E113.88812	63 m	0:00:15	15 kph
8/7/2015 13:18	ON	N22.16885 E113.88822	74 m	0:00:18	15 kph
8/7/2015 13:18	ON	N22.16833 E113.88826	58 m	0:00:14	15 kph
8/7/2015 13:18	ON	N22.16758 E113.88820	84 m	0:00:20	15 kph
8/7/2015 13:19	ON	N22.16706 E113.88822	58 m	0:00:14	15 kph
8/7/2015 13:19	ON	N22.16642 E113.88818	71 m	0:00:17	15 kph
8/7/2015 13:19	ON	N22.16576 E113.88812	74 m	0:00:18	15 kph
8/7/2015 13:20	ON	N22.16502 E113.88808	82 m	0:00:20	15 kph
8/7/2015 13:20	ON	N22.16442 E113.88816	68 m	0:00:17	14 kph
8/7/2015 13:20	ON	N22.16378 E113.88833	74 m	0:00:18	15 kph
8/7/2015 13:20	ON	N22.16317 E113.88832	67 m	0:00:16	15 kph
8/7/2015 13:21	ON	N22.16249 E113.88820	77 m	0:00:18	15 kph
8/7/2015 13:21	ON	N22.16186 E113.88819	70 m	0:00:17	15 kph
8/7/2015 13:21	ON	N22.16112 E113.88821	83 m	0:00:20	15 kph
8/7/2015 13:22	ON	N22.16057 E113.88824	61 m	0:00:15	15 kph
8/7/2015 13:22	ON	N22.15990 E113.88824	74 m	0:00:18	15 kph
8/7/2015 13:22	ON	N22.15935 E113.88818	61 m	0:00:15	15 kph
8/7/2015 13:22	ON	N22.15890 E113.88814	51 m	0:00:13	14 kph
8/7/2015 13:23	ON	N22.15848 E113.88818	47 m	0:00:12	14 kph
8/7/2015 13:23	ON	N22.15793 E113.88827	62 m	0:00:16	14 kph
8/7/2015 13:23	ON	N22.15740 E113.88822	59 m	0:00:15	14 kph
8/7/2015 13:23	ON	N22.15690 E113.88819	56 m	0:00:15	14 kph
8/7/2015 13:24	ON	N22.15632 E113.88821	64 m	0:00:17	14 kph
8/7/2015 13:24	ON	N22.15582 E113.88824	55 m	0:00:15	13 kph
8/7/2015 13:24	ON	N22.15533 E113.88824	55 m	0:00:15	13 kph
8/7/2015 13:24	ON	N22.15482 E113.88826	57 m	0:00:15	14 kph
8/7/2015 13:25	ON	N22.15427 E113.88833	62 m	0:00:17	13 kph
8/7/2015 13:25	ON	N22.15373 E113.88835	59 m	0:00:16	13 kph
8/7/2015 13:25	ON	N22.15330 E113.88829	49 m	0:00:13	13 kph
8/7/2015 13:25	ON	N22.15289 E113.88823	46 m	0:00:12	14 kph
8/7/2015 13:26	ON	N22.15246 E113.88815	49 m	0:00:13	14 kph
8/7/2015 13:26	ON	N22.15196 E113.88814	55 m	0:00:15	13 kph
8/7/2015 13:26	ON	N22.15134 E113.88817	69 m	0:00:19	13 kph
8/7/2015 13:26	ON	N22.15092 E113.88822	47 m	0:00:13	13 kph
8/7/2015 13:27	ON	N22.15068 E113.88856	44 m	0:00:14	11 kph
8/7/2015 13:27	ON	N22.15053 E113.88902	50 m	0:00:15	12 kph
8/7/2015 13:27	ON	N22.15026 E113.88958	65 m	0:00:19	12 kph
8/7/2015 13:27	ON	N22.15007 E113.89001	49 m	0:00:14	13 kph
8/7/2015 13:28	ON	N22.14992 E113.89058	61 m	0:00:18	12 kph
8/7/2015 13:28	ON	N22.14981 E113.89114	59 m	0:00:17	13 kph
8/7/2015 13:28	ON	N22.14965 E113.89179	69 m	0:00:20	12 kph
8/7/2015 13:29	ON	N22.14953 E113.89227	52 m	0:00:15	12 kph
8/7/2015 13:29	ON	N22.14935 E113.89283	61 m	0:00:18	12 kph
8/7/2015 13:29	ON	N22.14914 E113.89337	60 m	0:00:17	13 kph
8/7/2015 13:29	ON	N22.14889 E113.89391	63 m	0:00:18	13 kph
8/7/2015 13:30	ON	N22.14868 E113.89438	53 m	0:00:15	13 kph
8/7/2015 13:30	ON	N22.14856 E113.89490	56 m	0:00:16	13 kph
8/7/2015 13:30	ON	N22.14848 E113.89540	52 m	0:00:15	12 kph
8/7/2015 13:30	ON	N22.14834 E113.89594	58 m	0:00:16	13 kph
8/7/2015 13:31	ON	N22.14812 E113.89652	65 m	0:00:18	13 kph
8/7/2015 13:31	ON	N22.14793 E113.89706	59 m	0:00:17	13 kph
8/7/2015 13:31	ON	N22.14812 E113.89728	31 m	0:00:11	10 kph
8/7/2015 13:31	ON	N22.14849 E113.89728	42 m	0:00:12	12 kph
8/7/2015 13:32	ON	N22.14897 E113.89718	54 m	0:00:14	14 kph
8/7/2015 13:32	ON	N22.14927 E113.89719	34 m	0:00:09	14 kph
8/7/2015 13:32	ON	N22.14965 E113.89722	42 m	0:00:11	14 kph
8/7/2015 13:32	ON	N22.15006 E113.89717	47 m	0:00:12	14 kph
8/7/2015 13:32	ON	N22.15046 E113.89711	44 m	0:00:11	14 kph
8/7/2015 13:33	ON	N22.15089 E113.89713	48 m	0:00:12	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 13:33	ON	N22.15132 E113.89716	48 m	0:00:12	14 kph
8/7/2015 13:33	ON	N22.15167 E113.89720	40 m	0:00:10	14 kph
8/7/2015 13:33	ON	N22.15210 E113.89726	48 m	0:00:12	14 kph
8/7/2015 13:33	ON	N22.15245 E113.89726	40 m	0:00:10	14 kph
8/7/2015 13:33	ON	N22.15270 E113.89727	28 m	0:00:07	14 kph
8/7/2015 13:34	ON	N22.15292 E113.89730	24 m	0:00:06	15 kph
8/7/2015 13:34	ON	N22.15331 E113.89734	44 m	0:00:11	14 kph
8/7/2015 13:34	ON	N22.15370 E113.89735	44 m	0:00:11	14 kph
8/7/2015 13:34	ON	N22.15413 E113.89731	48 m	0:00:12	14 kph
8/7/2015 13:34	ON	N22.15448 E113.89730	39 m	0:00:10	14 kph
8/7/2015 13:35	ON	N22.15499 E113.89732	57 m	0:00:14	15 kph
8/7/2015 13:35	ON	N22.15534 E113.89731	39 m	0:00:10	14 kph
8/7/2015 13:35	ON	N22.15591 E113.89726	64 m	0:00:16	14 kph
8/7/2015 13:35	ON	N22.15635 E113.89726	49 m	0:00:12	15 kph
8/7/2015 13:35	ON	N22.15674 E113.89729	44 m	0:00:11	14 kph
8/7/2015 13:36	ON	N22.15717 E113.89732	48 m	0:00:12	14 kph
8/7/2015 13:36	ON	N22.15793 E113.89735	84 m	0:00:22	14 kph
8/7/2015 13:36	ON	N22.15862 E113.89734	77 m	0:00:20	14 kph
8/7/2015 13:36	ON	N22.15913 E113.89735	57 m	0:00:15	14 kph
8/7/2015 13:37	ON	N22.15971 E113.89728	64 m	0:00:17	14 kph
8/7/2015 13:37	ON	N22.16021 E113.89723	56 m	0:00:15	13 kph
8/7/2015 13:37	ON	N22.16079 E113.89726	64 m	0:00:17	14 kph
8/7/2015 13:38	ON	N22.16143 E113.89727	72 m	0:00:19	14 kph
8/7/2015 13:38	ON	N22.16197 E113.89713	62 m	0:00:17	13 kph
8/7/2015 13:38	ON	N22.16247 E113.89707	55 m	0:00:16	12 kph
8/7/2015 13:38	ON	N22.16301 E113.89702	60 m	0:00:17	13 kph
8/7/2015 13:39	ON	N22.16355 E113.89702	60 m	0:00:17	13 kph
8/7/2015 13:39	ON	N22.16410 E113.89706	62 m	0:00:18	12 kph
8/7/2015 13:39	ON	N22.16464 E113.89717	62 m	0:00:18	12 kph
8/7/2015 13:40	ON	N22.16525 E113.89715	68 m	0:00:19	13 kph
8/7/2015 13:40	ON	N22.16592 E113.89711	74 m	0:00:21	13 kph
8/7/2015 13:40	ON	N22.16648 E113.89711	63 m	0:00:18	13 kph
8/7/2015 13:41	ON	N22.16696 E113.89710	53 m	0:00:15	13 kph
8/7/2015 13:41	ON	N22.16751 E113.89710	61 m	0:00:17	13 kph
8/7/2015 13:41	ON	N22.16812 E113.89708	68 m	0:00:19	13 kph
8/7/2015 13:41	ON	N22.16864 E113.89704	58 m	0:00:16	13 kph
8/7/2015 13:42	ON	N22.16931 E113.89697	75 m	0:00:20	13 kph
8/7/2015 13:42	ON	N22.16982 E113.89691	56 m	0:00:15	14 kph
8/7/2015 13:42	ON	N22.17026 E113.89692	49 m	0:00:13	14 kph
8/7/2015 13:42	ON	N22.17070 E113.89693	50 m	0:00:13	14 kph
8/7/2015 13:43	ON	N22.17126 E113.89690	62 m	0:00:16	14 kph
8/7/2015 13:43	ON	N22.17184 E113.89687	64 m	0:00:16	14 kph
8/7/2015 13:43	ON	N22.17228 E113.89694	50 m	0:00:14	13 kph
8/7/2015 13:44	ON	N22.17286 E113.89708	66 m	0:00:18	13 kph
8/7/2015 13:44	ON	N22.17330 E113.89703	50 m	0:00:14	13 kph
8/7/2015 13:44	ON	N22.17375 E113.89689	52 m	0:00:14	13 kph
8/7/2015 13:44	ON	N22.17423 E113.89687	54 m	0:00:15	13 kph
8/7/2015 13:44	ON	N22.17468 E113.89691	50 m	0:00:14	13 kph
8/7/2015 13:45	ON	N22.17512 E113.89693	50 m	0:00:14	13 kph
8/7/2015 13:45	ON	N22.17558 E113.89696	51 m	0:00:14	13 kph
8/7/2015 13:45	ON	N22.17606 E113.89708	55 m	0:00:15	13 kph
8/7/2015 13:45	ON	N22.17651 E113.89717	51 m	0:00:14	13 kph
8/7/2015 13:46	ON	N22.17697 E113.89711	52 m	0:00:14	13 kph
8/7/2015 13:46	ON	N22.17738 E113.89704	46 m	0:00:12	14 kph
8/7/2015 13:46	ON	N22.17788 E113.89707	56 m	0:00:15	13 kph
8/7/2015 13:46	ON	N22.17830 E113.89709	46 m	0:00:12	14 kph
8/7/2015 13:46	ON	N22.17867 E113.89707	42 m	0:00:11	14 kph
8/7/2015 13:47	ON	N22.17903 E113.89708	39 m	0:00:10	14 kph
8/7/2015 13:47	ON	N22.17941 E113.89709	43 m	0:00:11	14 kph
8/7/2015 13:47	ON	N22.17987 E113.89708	51 m	0:00:13	14 kph
8/7/2015 13:47	ON	N22.18033 E113.89707	52 m	0:00:13	14 kph
8/7/2015 13:47	ON	N22.18079 E113.89709	50 m	0:00:13	14 kph
8/7/2015 13:48	ON	N22.18123 E113.89715	50 m	0:00:13	14 kph
8/7/2015 13:48	ON	N22.18171 E113.89721	54 m	0:00:14	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 13:48	ON	N22.18220 E113.89718	54 m	0:00:14	14 kph
8/7/2015 13:48	ON	N22.18271 E113.89716	58 m	0:00:15	14 kph
8/7/2015 13:49	ON	N22.18331 E113.89720	67 m	0:00:18	13 kph
8/7/2015 13:49	ON	N22.18388 E113.89724	64 m	0:00:17	13 kph
8/7/2015 13:49	ON	N22.18449 E113.89721	68 m	0:00:18	14 kph
8/7/2015 13:50	ON	N22.18497 E113.89721	54 m	0:00:15	13 kph
8/7/2015 13:50	ON	N22.18555 E113.89728	65 m	0:00:18	13 kph
8/7/2015 13:50	ON	N22.18610 E113.89725	61 m	0:00:17	13 kph
8/7/2015 13:50	ON	N22.18655 E113.89715	52 m	0:00:14	13 kph
8/7/2015 13:51	ON	N22.18701 E113.89710	51 m	0:00:14	13 kph
8/7/2015 13:51	ON	N22.18753 E113.89716	58 m	0:00:16	13 kph
8/7/2015 13:51	ON	N22.18807 E113.89721	60 m	0:00:17	13 kph
8/7/2015 13:51	ON	N22.18846 E113.89720	43 m	0:00:12	13 kph
8/7/2015 13:52	ON	N22.18892 E113.89716	51 m	0:00:14	13 kph
8/7/2015 13:52	ON	N22.18940 E113.89719	54 m	0:00:15	13 kph
8/7/2015 13:52	ON	N22.19006 E113.89719	74 m	0:00:20	13 kph
8/7/2015 13:53	ON	N22.19076 E113.89719	78 m	0:00:21	13 kph
8/7/2015 13:53	ON	N22.19126 E113.89716	55 m	0:00:15	13 kph
8/7/2015 13:53	ON	N22.19182 E113.89714	63 m	0:00:17	13 kph
8/7/2015 13:53	ON	N22.19235 E113.89716	58 m	0:00:16	13 kph
8/7/2015 13:54	ON	N22.19295 E113.89722	67 m	0:00:18	13 kph
8/7/2015 13:54	ON	N22.19345 E113.89721	56 m	0:00:15	14 kph
8/7/2015 13:54	ON	N22.19412 E113.89721	74 m	0:00:20	13 kph
8/7/2015 13:54	ON	N22.19468 E113.89723	63 m	0:00:17	13 kph
8/7/2015 13:55	ON	N22.19513 E113.89722	50 m	0:00:13	14 kph
8/7/2015 13:55	ON	N22.19568 E113.89718	61 m	0:00:16	14 kph
8/7/2015 13:55	ON	N22.19629 E113.89720	68 m	0:00:18	14 kph
8/7/2015 13:56	ON	N22.19690 E113.89718	68 m	0:00:18	14 kph
8/7/2015 13:56	ON	N22.19750 E113.89712	67 m	0:00:17	14 kph
8/7/2015 13:56	ON	N22.19816 E113.89711	74 m	0:00:19	14 kph
8/7/2015 13:56	ON	N22.19881 E113.89714	73 m	0:00:19	14 kph
8/7/2015 13:57	ON	N22.19951 E113.89713	78 m	0:00:20	14 kph
8/7/2015 13:57	ON	N22.20018 E113.89711	75 m	0:00:19	14 kph
8/7/2015 13:57	ON	N22.20081 E113.89710	70 m	0:00:18	14 kph
8/7/2015 13:58	ON	N22.20141 E113.89711	67 m	0:00:17	14 kph
8/7/2015 13:58	ON	N22.20197 E113.89710	63 m	0:00:16	14 kph
8/7/2015 13:58	ON	N22.20253 E113.89714	62 m	0:00:16	14 kph
8/7/2015 13:59	ON	N22.20313 E113.89721	67 m	0:00:17	14 kph
8/7/2015 13:59	ON	N22.20367 E113.89729	61 m	0:00:16	14 kph
8/7/2015 13:59	ON	N22.20425 E113.89729	64 m	0:00:17	13 kph
8/7/2015 13:59	ON	N22.20475 E113.89725	56 m	0:00:15	14 kph
8/7/2015 14:00	ON	N22.20530 E113.89731	61 m	0:00:16	14 kph
8/7/2015 14:00	ON	N22.20599 E113.89728	78 m	0:00:21	13 kph
8/7/2015 14:00	ON	N22.20661 E113.89720	69 m	0:00:19	13 kph
8/7/2015 14:01	ON	N22.20726 E113.89721	73 m	0:00:20	13 kph
8/7/2015 14:01	ON	N22.20796 E113.89726	79 m	0:00:21	13 kph
8/7/2015 14:01	ON	N22.20868 E113.89732	81 m	0:00:22	13 kph
8/7/2015 14:02	ON	N22.20935 E113.89730	74 m	0:00:21	13 kph
8/7/2015 14:02	ON	N22.20984 E113.89720	56 m	0:00:16	13 kph
8/7/2015 14:02	ON	N22.21037 E113.89711	59 m	0:00:17	13 kph
8/7/2015 14:03	ON	N22.21097 E113.89711	67 m	0:00:19	13 kph
8/7/2015 14:03	ON	N22.21160 E113.89711	70 m	0:00:20	13 kph
8/7/2015 14:03	ON	N22.21229 E113.89720	78 m	0:00:22	13 kph
8/7/2015 14:04	ON	N22.21289 E113.89715	67 m	0:00:20	12 kph
8/7/2015 14:04	ON	N22.21332 E113.89723	49 m	0:00:16	11 kph
8/7/2015 14:04	ON	N22.21329 E113.89767	45 m	0:00:13	12 kph
8/7/2015 14:04	ON	N22.21287 E113.89813	67 m	0:00:16	15 kph
8/7/2015 14:05	ON	N22.21234 E113.89864	78 m	0:00:18	16 kph
8/7/2015 14:05	ON	N22.21193 E113.89920	73 m	0:00:17	16 kph
8/7/2015 14:05	ON	N22.21162 E113.89972	65 m	0:00:15	16 kph
8/7/2015 14:05	ON	N22.21126 E113.90033	73 m	0:00:17	16 kph
8/7/2015 14:06	ON	N22.21098 E113.90082	60 m	0:00:14	15 kph
8/7/2015 14:06	ON	N22.21065 E113.90143	73 m	0:00:17	16 kph
8/7/2015 14:06	ON	N22.21038 E113.90193	59 m	0:00:14	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 14:06	ON	N22.21004 E113.90248	68 m	0:00:16	15 kph
8/7/2015 14:07	ON	N22.20972 E113.90298	64 m	0:00:15	15 kph
8/7/2015 14:07	ON	N22.20940 E113.90349	63 m	0:00:15	15 kph
8/7/2015 14:07	ON	N22.20909 E113.90404	67 m	0:00:16	15 kph
8/7/2015 14:07	ON	N22.20878 E113.90466	72 m	0:00:17	15 kph
8/7/2015 14:08	ON	N22.20848 E113.90523	68 m	0:00:16	15 kph
8/7/2015 14:08	ON	N22.20803 E113.90578	76 m	0:00:18	15 kph
8/7/2015 14:08	ON	N22.20759 E113.90625	68 m	0:00:16	15 kph
8/7/2015 14:09	ON	N22.20713 E113.90676	73 m	0:00:17	15 kph
8/7/2015 14:09	ON	N22.20676 E113.90731	71 m	0:00:17	15 kph
8/7/2015 14:09	ON	N22.20633 E113.90777	67 m	0:00:17	14 kph
8/7/2015 14:09	ON	N22.20583 E113.90780	56 m	0:00:14	14 kph
8/7/2015 14:10	ON	N22.20518 E113.90771	72 m	0:00:17	15 kph
8/7/2015 14:10	ON	N22.20459 E113.90769	66 m	0:00:16	15 kph
8/7/2015 14:10	ON	N22.20408 E113.90769	57 m	0:00:14	15 kph
8/7/2015 14:10	ON	N22.20352 E113.90769	62 m	0:00:15	15 kph
8/7/2015 14:11	ON	N22.20294 E113.90771	65 m	0:00:16	15 kph
8/7/2015 14:11	ON	N22.20242 E113.90776	58 m	0:00:14	15 kph
8/7/2015 14:11	ON	N22.20194 E113.90780	54 m	0:00:13	15 kph
8/7/2015 14:11	ON	N22.20142 E113.90776	58 m	0:00:14	15 kph
8/7/2015 14:12	ON	N22.20087 E113.90774	61 m	0:00:15	15 kph
8/7/2015 14:12	ON	N22.20045 E113.90776	47 m	0:00:12	14 kph
8/7/2015 14:12	ON	N22.19991 E113.90783	60 m	0:00:15	14 kph
8/7/2015 14:12	ON	N22.19937 E113.90782	61 m	0:00:15	15 kph
8/7/2015 14:13	ON	N22.19883 E113.90776	61 m	0:00:15	15 kph
8/7/2015 14:13	ON	N22.19829 E113.90773	60 m	0:00:15	14 kph
8/7/2015 14:13	ON	N22.19782 E113.90777	52 m	0:00:13	14 kph
8/7/2015 14:13	ON	N22.19740 E113.90783	47 m	0:00:12	14 kph
8/7/2015 14:13	ON	N22.19693 E113.90786	52 m	0:00:13	15 kph
8/7/2015 14:14	ON	N22.19646 E113.90781	53 m	0:00:13	15 kph
8/7/2015 14:14	ON	N22.19587 E113.90775	66 m	0:00:16	15 kph
8/7/2015 14:14	ON	N22.19529 E113.90771	65 m	0:00:16	15 kph
8/7/2015 14:14	ON	N22.19478 E113.90771	57 m	0:00:14	15 kph
8/7/2015 14:15	ON	N22.19422 E113.90773	62 m	0:00:15	15 kph
8/7/2015 14:15	ON	N22.19368 E113.90773	60 m	0:00:15	15 kph
8/7/2015 14:15	ON	N22.19317 E113.90770	57 m	0:00:14	15 kph
8/7/2015 14:15	ON	N22.19262 E113.90767	61 m	0:00:15	15 kph
8/7/2015 14:16	ON	N22.19211 E113.90772	57 m	0:00:14	15 kph
8/7/2015 14:16	ON	N22.19157 E113.90776	61 m	0:00:15	15 kph
8/7/2015 14:16	ON	N22.19101 E113.90775	62 m	0:00:15	15 kph
8/7/2015 14:16	ON	N22.19050 E113.90772	57 m	0:00:14	15 kph
8/7/2015 14:17	ON	N22.19000 E113.90756	58 m	0:00:14	15 kph
8/7/2015 14:17	ON	N22.18960 E113.90719	59 m	0:00:14	15 kph
8/7/2015 14:17	ON	N22.18929 E113.90671	60 m	0:00:14	15 kph
8/7/2015 14:17	ON	N22.18887 E113.90602	84 m	0:00:20	15 kph
8/7/2015 14:18	ON	N22.18844 E113.90551	71 m	0:00:17	15 kph
8/7/2015 14:18	ON	N22.18786 E113.90506	81 m	0:00:19	15 kph
8/7/2015 14:18	ON	N22.18731 E113.90477	68 m	0:00:16	15 kph
8/7/2015 14:19	ON	N22.18672 E113.90450	71 m	0:00:17	15 kph
8/7/2015 14:19	ON	N22.18609 E113.90432	72 m	0:00:18	14 kph
8/7/2015 14:19	ON	N22.18556 E113.90419	61 m	0:00:15	15 kph
8/7/2015 14:19	ON	N22.18494 E113.90409	70 m	0:00:17	15 kph
8/7/2015 14:20	ON	N22.18429 E113.90398	74 m	0:00:18	15 kph
8/7/2015 14:20	ON	N22.18375 E113.90386	61 m	0:00:15	15 kph
8/7/2015 14:20	ON	N22.18313 E113.90376	70 m	0:00:17	15 kph
8/7/2015 14:21	ON	N22.18244 E113.90371	78 m	0:00:19	15 kph
8/7/2015 14:21	ON	N22.18180 E113.90368	71 m	0:00:17	15 kph
8/7/2015 14:21	ON	N22.18124 E113.90368	62 m	0:00:15	15 kph
8/7/2015 14:21	ON	N22.18046 E113.90368	87 m	0:00:21	15 kph
8/7/2015 14:22	ON	N22.17987 E113.90376	67 m	0:00:16	15 kph
8/7/2015 14:22	ON	N22.17928 E113.90391	67 m	0:00:17	14 kph
8/7/2015 14:22	ON	N22.17874 E113.90411	64 m	0:00:17	14 kph
8/7/2015 14:23	ON	N22.17834 E113.90430	48 m	0:00:13	13 kph
8/7/2015 14:23	ON	N22.17795 E113.90458	52 m	0:00:14	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 14:23	ON	N22.17755 E113.90493	57 m	0:00:15	14 kph
8/7/2015 14:23	ON	N22.17714 E113.90527	58 m	0:00:15	14 kph
8/7/2015 14:24	ON	N22.17663 E113.90571	72 m	0:00:19	14 kph
8/7/2015 14:24	ON	N22.17619 E113.90617	69 m	0:00:18	14 kph
8/7/2015 14:24	ON	N22.17568 E113.90672	80 m	0:00:21	14 kph
8/7/2015 14:24	ON	N22.17523 E113.90713	66 m	0:00:17	14 kph
8/7/2015 14:25	ON	N22.17480 E113.90747	59 m	0:00:15	14 kph
8/7/2015 14:25	ON	N22.17430 E113.90791	72 m	0:00:18	14 kph
8/7/2015 14:25	OFF	N22.17387 E113.90823	58 m	0:00:18	12 kph
8/7/2015 14:26	OFF	N22.17355 E113.90843	41 m	0:00:21	7 kph
8/7/2015 14:26	OFF	N22.17334 E113.90851	25 m	0:00:17	5 kph
8/7/2015 14:26	OFF	N22.17313 E113.90855	24 m	0:00:17	5 kph
8/7/2015 14:27	OFF	N22.17279 E113.90851	38 m	0:00:17	8 kph
8/7/2015 14:27	OFF	N22.17225 E113.90837	62 m	0:00:20	11 kph
8/7/2015 14:27	OFF	N22.17179 E113.90823	53 m	0:00:16	12 kph
8/7/2015 14:27	OFF	N22.17129 E113.90807	58 m	0:00:17	12 kph
8/7/2015 14:28	OFF	N22.17091 E113.90793	45 m	0:00:18	9 kph
8/7/2015 14:28	OFF	N22.17064 E113.90781	32 m	0:00:18	6 kph
8/7/2015 14:28	OFF	N22.17033 E113.90777	34 m	0:00:16	8 kph
8/7/2015 14:29	OFF	N22.17011 E113.90795	31 m	0:00:18	6 kph
8/7/2015 14:29	OFF	N22.17010 E113.90825	30 m	0:00:16	7 kph
8/7/2015 14:29	OFF	N22.17028 E113.90872	53 m	0:00:23	8 kph
8/7/2015 14:30	OFF	N22.17050 E113.90905	42 m	0:00:25	6 kph
8/7/2015 14:30	OFF	N22.17058 E113.90920	18 m	0:00:24	3 kph
8/7/2015 14:30	OFF	N22.17060 E113.90923	4 m	0:00:26	0.5 kph
8/7/2015 14:31	OFF	N22.17059 E113.90925	2 m	0:00:18	0.4 kph
8/7/2015 14:31	OFF	N22.17057 E113.90927	3 m	0:00:21	0.5 kph
8/7/2015 14:31	OFF	N22.17052 E113.90928	6 m	0:00:18	1.2 kph
8/7/2015 14:32	OFF	N22.17044 E113.90929	9 m	0:00:21	1.5 kph
8/7/2015 14:32	OFF	N22.17036 E113.90929	9 m	0:00:21	2 kph
8/7/2015 14:32	OFF	N22.17037 E113.90931	2 m	0:00:08	0.9 kph
8/7/2015 14:32	OFF	N22.17041 E113.90931	4 m	0:00:04	4 kph
8/7/2015 14:33	OFF	N22.17049 E113.90905	29 m	0:00:15	7 kph
8/7/2015 14:33	OFF	N22.17022 E113.90842	72 m	0:00:18	14 kph
8/7/2015 14:33	ON	N22.16983 E113.90783	75 m	0:00:17	16 kph
8/7/2015 14:34	ON	N22.16932 E113.90715	90 m	0:00:20	16 kph
8/7/2015 14:34	ON	N22.16877 E113.90640	99 m	0:00:22	16 kph
8/7/2015 14:34	ON	N22.16825 E113.90563	99 m	0:00:22	16 kph
8/7/2015 14:35	ON	N22.16774 E113.90495	89 m	0:00:20	16 kph
8/7/2015 14:35	ON	N22.16721 E113.90439	83 m	0:00:18	17 kph
8/7/2015 14:35	ON	N22.16668 E113.90376	89 m	0:00:20	16 kph
8/7/2015 14:35	ON	N22.16626 E113.90323	71 m	0:00:16	16 kph
8/7/2015 14:36	ON	N22.16582 E113.90257	85 m	0:00:19	16 kph
8/7/2015 14:36	ON	N22.16539 E113.90193	81 m	0:00:18	16 kph
8/7/2015 14:36	ON	N22.16492 E113.90129	84 m	0:00:19	16 kph
8/7/2015 14:37	ON	N22.16442 E113.90067	85 m	0:00:19	16 kph
8/7/2015 14:37	ON	N22.16393 E113.90010	80 m	0:00:18	16 kph
8/7/2015 14:37	ON	N22.16376 E113.89991	27 m	0:00:06	16 kph
8/7/2015 14:37	ON	N22.16321 E113.89929	89 m	0:00:20	16 kph
8/7/2015 14:38	ON	N22.16284 E113.89889	58 m	0:00:13	16 kph
8/7/2015 14:38	ON	N22.16237 E113.89848	67 m	0:00:15	16 kph
8/7/2015 14:38	ON	N22.16183 E113.89819	67 m	0:00:16	15 kph
8/7/2015 14:38	ON	N22.16119 E113.89800	75 m	0:00:18	15 kph
8/7/2015 14:39	ON	N22.16053 E113.89797	73 m	0:00:18	15 kph
8/7/2015 14:39	ON	N22.15990 E113.89803	70 m	0:00:17	15 kph
8/7/2015 14:39	ON	N22.15927 E113.89818	72 m	0:00:18	14 kph
8/7/2015 14:40	ON	N22.15869 E113.89839	69 m	0:00:17	15 kph
8/7/2015 14:40	ON	N22.15816 E113.89867	65 m	0:00:16	15 kph
8/7/2015 14:40	ON	N22.15759 E113.89918	83 m	0:00:20	15 kph
8/7/2015 14:41	ON	N22.15718 E113.89960	63 m	0:00:15	15 kph
8/7/2015 14:41	ON	N22.15666 E113.90018	83 m	0:00:20	15 kph
8/7/2015 14:41	ON	N22.15622 E113.90077	78 m	0:00:19	15 kph
8/7/2015 14:41	ON	N22.15589 E113.90143	77 m	0:00:19	15 kph
8/7/2015 14:42	ON	N22.15555 E113.90206	75 m	0:00:19	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 14:42	ON	N22.15528 E113.90267	69 m	0:00:18	14 kph
8/7/2015 14:42	ON	N22.15518 E113.90330	66 m	0:00:17	14 kph
8/7/2015 14:43	ON	N22.15528 E113.90400	73 m	0:00:19	14 kph
8/7/2015 14:43	ON	N22.15551 E113.90467	74 m	0:00:19	14 kph
8/7/2015 14:43	ON	N22.15577 E113.90530	71 m	0:00:18	14 kph
8/7/2015 14:44	ON	N22.15605 E113.90602	81 m	0:00:20	15 kph
8/7/2015 14:44	ON	N22.15625 E113.90688	91 m	0:00:23	14 kph
8/7/2015 14:44	ON	N22.15628 E113.90766	81 m	0:00:21	14 kph
8/7/2015 14:45	ON	N22.15593 E113.90795	49 m	0:00:14	13 kph
8/7/2015 14:45	ON	N22.15545 E113.90786	54 m	0:00:14	14 kph
8/7/2015 14:45	ON	N22.15493 E113.90765	61 m	0:00:15	15 kph
8/7/2015 14:45	ON	N22.15435 E113.90759	65 m	0:00:17	14 kph
8/7/2015 14:46	ON	N22.15375 E113.90770	68 m	0:00:17	14 kph
8/7/2015 14:46	ON	N22.15329 E113.90782	52 m	0:00:13	15 kph
8/7/2015 14:46	ON	N22.15276 E113.90791	59 m	0:00:15	14 kph
8/7/2015 14:46	ON	N22.15220 E113.90785	63 m	0:00:15	15 kph
8/7/2015 14:47	ON	N22.15176 E113.90787	49 m	0:00:12	15 kph
8/7/2015 14:47	ON	N22.15120 E113.90793	62 m	0:00:15	15 kph
8/7/2015 14:47	ON	N22.15072 E113.90794	54 m	0:00:13	15 kph
8/7/2015 14:47	ON	N22.15020 E113.90793	58 m	0:00:14	15 kph
8/7/2015 14:47	ON	N22.14976 E113.90790	49 m	0:00:12	15 kph
8/7/2015 14:48	ON	N22.14927 E113.90788	54 m	0:00:13	15 kph
8/7/2015 14:48	ON	N22.14873 E113.90787	61 m	0:00:15	15 kph
8/7/2015 14:48	ON	N22.14821 E113.90786	58 m	0:00:14	15 kph
8/7/2015 14:48	ON	N22.14772 E113.90785	55 m	0:00:13	15 kph
8/7/2015 14:49	ON	N22.14715 E113.90778	64 m	0:00:15	15 kph
8/7/2015 14:49	ON	N22.14667 E113.90772	54 m	0:00:13	15 kph
8/7/2015 14:49	ON	N22.14619 E113.90773	53 m	0:00:13	15 kph
8/7/2015 14:49	ON	N22.14565 E113.90784	62 m	0:00:15	15 kph
8/7/2015 14:50	ON	N22.14508 E113.90798	65 m	0:00:16	15 kph
8/7/2015 14:50	ON	N22.14463 E113.90810	51 m	0:00:13	14 kph
8/7/2015 14:50	ON	N22.14421 E113.90829	51 m	0:00:13	14 kph
8/7/2015 14:50	ON	N22.14381 E113.90864	57 m	0:00:15	14 kph
8/7/2015 14:50	ON	N22.14358 E113.90904	49 m	0:00:13	13 kph
8/7/2015 14:51	ON	N22.14349 E113.90965	63 m	0:00:17	13 kph
8/7/2015 14:51	ON	N22.14354 E113.91031	69 m	0:00:18	14 kph
8/7/2015 14:51	ON	N22.14354 E113.91090	60 m	0:00:16	14 kph
8/7/2015 14:52	ON	N22.14331 E113.91150	67 m	0:00:17	14 kph
8/7/2015 14:52	ON	N22.14306 E113.91192	52 m	0:00:13	14 kph
8/7/2015 14:52	ON	N22.14282 E113.91239	56 m	0:00:14	14 kph
8/7/2015 14:52	ON	N22.14256 E113.91299	68 m	0:00:17	14 kph
8/7/2015 14:53	ON	N22.14235 E113.91353	60 m	0:00:15	14 kph
8/7/2015 14:53	ON	N22.14221 E113.91404	56 m	0:00:14	14 kph
8/7/2015 14:53	ON	N22.14208 E113.91465	64 m	0:00:16	14 kph
8/7/2015 14:53	ON	N22.14199 E113.91530	68 m	0:00:17	14 kph
8/7/2015 14:54	ON	N22.14194 E113.91596	68 m	0:00:17	14 kph
8/7/2015 14:54	ON	N22.14191 E113.91663	69 m	0:00:17	15 kph
8/7/2015 14:54	ON	N22.14191 E113.91729	68 m	0:00:17	14 kph
8/7/2015 14:54	ON	N22.14209 E113.91767	44 m	0:00:13	12 kph
8/7/2015 14:55	ON	N22.14241 E113.91778	38 m	0:00:11	12 kph
8/7/2015 14:55	ON	N22.14276 E113.91778	39 m	0:00:11	13 kph
8/7/2015 14:55	ON	N22.14329 E113.91773	59 m	0:00:16	13 kph
8/7/2015 14:55	ON	N22.14363 E113.91777	38 m	0:00:10	14 kph
8/7/2015 14:55	ON	N22.14404 E113.91781	46 m	0:00:12	14 kph
8/7/2015 14:56	ON	N22.14440 E113.91778	40 m	0:00:11	13 kph
8/7/2015 14:56	ON	N22.14479 E113.91775	44 m	0:00:12	13 kph
8/7/2015 14:56	ON	N22.14534 E113.91778	61 m	0:00:16	14 kph
8/7/2015 14:56	ON	N22.14580 E113.91780	52 m	0:00:14	13 kph
8/7/2015 14:57	ON	N22.14616 E113.91779	41 m	0:00:11	13 kph
8/7/2015 14:57	ON	N22.14656 E113.91780	44 m	0:00:12	13 kph
8/7/2015 14:57	ON	N22.14706 E113.91782	55 m	0:00:15	13 kph
8/7/2015 14:57	ON	N22.14754 E113.91781	54 m	0:00:15	13 kph
8/7/2015 14:57	ON	N22.14792 E113.91775	43 m	0:00:12	13 kph
8/7/2015 14:58	ON	N22.14841 E113.91767	55 m	0:00:15	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 14:58	ON	N22.14894 E113.91770	59 m	0:00:16	13 kph
8/7/2015 14:58	ON	N22.14929 E113.91776	40 m	0:00:11	13 kph
8/7/2015 14:58	ON	N22.14970 E113.91784	46 m	0:00:13	13 kph
8/7/2015 14:59	ON	N22.15017 E113.91785	53 m	0:00:15	13 kph
8/7/2015 14:59	ON	N22.15069 E113.91780	57 m	0:00:16	13 kph
8/7/2015 14:59	ON	N22.15119 E113.91777	56 m	0:00:16	13 kph
8/7/2015 14:59	ON	N22.15164 E113.91782	51 m	0:00:14	13 kph
8/7/2015 15:00	ON	N22.15209 E113.91787	50 m	0:00:14	13 kph
8/7/2015 15:00	ON	N22.15254 E113.91787	50 m	0:00:14	13 kph
8/7/2015 15:00	ON	N22.15309 E113.91783	62 m	0:00:17	13 kph
8/7/2015 15:00	ON	N22.15365 E113.91785	63 m	0:00:17	13 kph
8/7/2015 15:01	ON	N22.15415 E113.91786	55 m	0:00:15	13 kph
8/7/2015 15:01	ON	N22.15468 E113.91784	60 m	0:00:16	13 kph
8/7/2015 15:01	ON	N22.15519 E113.91784	57 m	0:00:15	14 kph
8/7/2015 15:01	ON	N22.15580 E113.91784	67 m	0:00:18	13 kph
8/7/2015 15:02	ON	N22.15641 E113.91784	69 m	0:00:18	14 kph
8/7/2015 15:02	ON	N22.15713 E113.91781	80 m	0:00:21	14 kph
8/7/2015 15:02	ON	N22.15783 E113.91777	77 m	0:00:20	14 kph
8/7/2015 15:03	ON	N22.15846 E113.91779	70 m	0:00:18	14 kph
8/7/2015 15:03	ON	N22.15921 E113.91786	84 m	0:00:22	14 kph
8/7/2015 15:03	ON	N22.15979 E113.91796	65 m	0:00:17	14 kph
8/7/2015 15:04	ON	N22.16036 E113.91809	66 m	0:00:17	14 kph
8/7/2015 15:04	ON	N22.16107 E113.91825	81 m	0:00:21	14 kph
8/7/2015 15:04	ON	N22.16174 E113.91846	77 m	0:00:20	14 kph
8/7/2015 15:05	ON	N22.16237 E113.91860	72 m	0:00:19	14 kph
8/7/2015 15:05	ON	N22.16306 E113.91866	77 m	0:00:20	14 kph
8/7/2015 15:05	ON	N22.16375 E113.91873	77 m	0:00:20	14 kph
8/7/2015 15:06	ON	N22.16433 E113.91878	65 m	0:00:17	14 kph
8/7/2015 15:06	ON	N22.16502 E113.91890	78 m	0:00:20	14 kph
8/7/2015 15:06	ON	N22.16570 E113.91901	76 m	0:00:19	14 kph
8/7/2015 15:07	ON	N22.16638 E113.91909	76 m	0:00:19	14 kph
8/7/2015 15:07	ON	N22.16701 E113.91924	72 m	0:00:18	14 kph
8/7/2015 15:07	ON	N22.16769 E113.91941	78 m	0:00:20	14 kph
8/7/2015 15:08	ON	N22.16828 E113.91951	67 m	0:00:17	14 kph
8/7/2015 15:08	ON	N22.16881 E113.91960	59 m	0:00:15	14 kph
8/7/2015 15:08	ON	N22.16936 E113.91970	62 m	0:00:16	14 kph
8/7/2015 15:08	ON	N22.16983 E113.91979	54 m	0:00:14	14 kph
8/7/2015 15:09	ON	N22.17040 E113.91988	64 m	0:00:17	14 kph
8/7/2015 15:09	ON	N22.17084 E113.91997	49 m	0:00:13	14 kph
8/7/2015 15:09	ON	N22.17135 E113.92008	58 m	0:00:15	14 kph
8/7/2015 15:09	ON	N22.17197 E113.92020	71 m	0:00:18	14 kph
8/7/2015 15:10	ON	N22.17260 E113.92031	71 m	0:00:18	14 kph
8/7/2015 15:10	ON	N22.17304 E113.92037	50 m	0:00:13	14 kph
8/7/2015 15:10	ON	N22.17353 E113.92043	54 m	0:00:14	14 kph
8/7/2015 15:10	ON	N22.17416 E113.92049	71 m	0:00:18	14 kph
8/7/2015 15:11	ON	N22.17462 E113.92055	51 m	0:00:13	14 kph
8/7/2015 15:11	ON	N22.17510 E113.92070	56 m	0:00:14	14 kph
8/7/2015 15:11	ON	N22.17563 E113.92093	64 m	0:00:16	14 kph
8/7/2015 15:11	ON	N22.17619 E113.92117	67 m	0:00:17	14 kph
8/7/2015 15:12	ON	N22.17675 E113.92141	67 m	0:00:17	14 kph
8/7/2015 15:12	ON	N22.17722 E113.92157	55 m	0:00:14	14 kph
8/7/2015 15:12	ON	N22.17786 E113.92175	74 m	0:00:19	14 kph
8/7/2015 15:13	ON	N22.17853 E113.92190	76 m	0:00:19	14 kph
8/7/2015 15:13	ON	N22.17909 E113.92196	64 m	0:00:16	14 kph
8/7/2015 15:13	ON	N22.17989 E113.92191	89 m	0:00:22	15 kph
8/7/2015 15:13	ON	N22.18047 E113.92180	66 m	0:00:17	14 kph
8/7/2015 15:14	ON	N22.18110 E113.92153	75 m	0:00:20	14 kph
8/7/2015 15:14	ON	N22.18179 E113.92110	88 m	0:00:24	13 kph
8/7/2015 15:14	ON	N22.18231 E113.92068	72 m	0:00:20	13 kph
8/7/2015 15:15	ON	N22.18271 E113.92025	64 m	0:00:18	13 kph
8/7/2015 15:15	ON	N22.18318 E113.91981	69 m	0:00:19	13 kph
8/7/2015 15:15	ON	N22.18371 E113.91932	78 m	0:00:21	13 kph
8/7/2015 15:16	ON	N22.18424 E113.91881	78 m	0:00:21	13 kph
8/7/2015 15:16	ON	N22.18474 E113.91840	71 m	0:00:19	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 15:16	ON	N22.18527 E113.91808	67 m	0:00:18	13 kph
8/7/2015 15:17	ON	N22.18574 E113.91779	60 m	0:00:16	14 kph
8/7/2015 15:17	ON	N22.18620 E113.91758	56 m	0:00:15	13 kph
8/7/2015 15:17	ON	N22.18669 E113.91767	55 m	0:00:15	13 kph
8/7/2015 15:17	ON	N22.18723 E113.91791	65 m	0:00:17	14 kph
8/7/2015 15:18	ON	N22.18771 E113.91795	53 m	0:00:15	13 kph
8/7/2015 15:18	ON	N22.18822 E113.91793	57 m	0:00:15	14 kph
8/7/2015 15:18	ON	N22.18883 E113.91795	69 m	0:00:18	14 kph
8/7/2015 15:19	ON	N22.18939 E113.91803	62 m	0:00:16	14 kph
8/7/2015 15:19	ON	N22.18991 E113.91803	58 m	0:00:16	13 kph
8/7/2015 15:19	ON	N22.19037 E113.91781	56 m	0:00:15	13 kph
8/7/2015 15:19	ON	N22.19090 E113.91762	63 m	0:00:17	13 kph
8/7/2015 15:20	ON	N22.19138 E113.91762	53 m	0:00:14	14 kph
8/7/2015 15:20	ON	N22.19190 E113.91761	59 m	0:00:16	13 kph
8/7/2015 15:20	ON	N22.19248 E113.91751	65 m	0:00:17	14 kph
8/7/2015 15:20	ON	N22.19292 E113.91745	49 m	0:00:13	14 kph
8/7/2015 15:21	ON	N22.19332 E113.91749	45 m	0:00:12	14 kph
8/7/2015 15:21	ON	N22.19391 E113.91767	68 m	0:00:18	14 kph
8/7/2015 15:21	ON	N22.19437 E113.91778	52 m	0:00:14	13 kph
8/7/2015 15:21	ON	N22.19491 E113.91775	60 m	0:00:16	14 kph
8/7/2015 15:22	ON	N22.19544 E113.91761	61 m	0:00:16	14 kph
8/7/2015 15:22	ON	N22.19604 E113.91754	67 m	0:00:18	13 kph
8/7/2015 15:22	ON	N22.19670 E113.91752	73 m	0:00:19	14 kph
8/7/2015 15:22	ON	N22.19724 E113.91751	61 m	0:00:16	14 kph
8/7/2015 15:23	ON	N22.19788 E113.91753	71 m	0:00:18	14 kph
8/7/2015 15:23	ON	N22.19861 E113.91765	82 m	0:00:21	14 kph
8/7/2015 15:23	ON	N22.19921 E113.91775	67 m	0:00:17	14 kph
8/7/2015 15:24	ON	N22.19970 E113.91782	55 m	0:00:14	14 kph
8/7/2015 15:24	ON	N22.20025 E113.91789	62 m	0:00:16	14 kph
8/7/2015 15:24	ON	N22.20081 E113.91784	62 m	0:00:16	14 kph
8/7/2015 15:24	ON	N22.20130 E113.91778	56 m	0:00:14	14 kph
8/7/2015 15:25	ON	N22.20198 E113.91780	76 m	0:00:19	14 kph
8/7/2015 15:25	ON	N22.20258 E113.91786	66 m	0:00:17	14 kph
8/7/2015 15:25	ON	N22.20315 E113.91794	64 m	0:00:16	14 kph
8/7/2015 15:26	ON	N22.20378 E113.91808	72 m	0:00:18	14 kph
8/7/2015 15:26	ON	N22.20438 E113.91823	68 m	0:00:17	14 kph
8/7/2015 15:26	ON	N22.20485 E113.91863	66 m	0:00:17	14 kph
8/7/2015 15:26	ON	N22.20506 E113.91926	69 m	0:00:17	15 kph
8/7/2015 15:27	ON	N22.20513 E113.92003	80 m	0:00:19	15 kph
8/7/2015 15:27	ON	N22.20521 E113.92079	79 m	0:00:19	15 kph
8/7/2015 15:27	ON	N22.20530 E113.92142	66 m	0:00:16	15 kph
8/7/2015 15:28	ON	N22.20545 E113.92222	84 m	0:00:20	15 kph
8/7/2015 15:28	ON	N22.20559 E113.92298	79 m	0:00:19	15 kph
8/7/2015 15:28	ON	N22.20570 E113.92375	81 m	0:00:19	15 kph
8/7/2015 15:29	ON	N22.20580 E113.92459	87 m	0:00:20	16 kph
8/7/2015 15:29	ON	N22.20583 E113.92530	73 m	0:00:17	16 kph
8/7/2015 15:29	ON	N22.20581 E113.92608	80 m	0:00:19	15 kph
8/7/2015 15:29	ON	N22.20575 E113.92664	58 m	0:00:14	15 kph
8/7/2015 15:30	ON	N22.20559 E113.92730	70 m	0:00:17	15 kph
8/7/2015 15:30	ON	N22.20519 E113.92760	54 m	0:00:14	14 kph
8/7/2015 15:30	ON	N22.20466 E113.92758	59 m	0:00:15	14 kph
8/7/2015 15:30	ON	N22.20413 E113.92761	59 m	0:00:15	14 kph
8/7/2015 15:31	ON	N22.20355 E113.92779	67 m	0:00:17	14 kph
8/7/2015 15:31	ON	N22.20298 E113.92786	64 m	0:00:16	14 kph
8/7/2015 15:31	ON	N22.20241 E113.92782	64 m	0:00:16	14 kph
8/7/2015 15:32	ON	N22.20191 E113.92783	55 m	0:00:14	14 kph
8/7/2015 15:32	ON	N22.20140 E113.92782	56 m	0:00:14	14 kph
8/7/2015 15:32	ON	N22.20091 E113.92773	56 m	0:00:14	14 kph
8/7/2015 15:32	ON	N22.20034 E113.92768	64 m	0:00:16	14 kph
8/7/2015 15:33	ON	N22.19983 E113.92774	56 m	0:00:14	14 kph
8/7/2015 15:33	ON	N22.19926 E113.92772	64 m	0:00:16	14 kph
8/7/2015 15:33	ON	N22.19863 E113.92757	72 m	0:00:18	14 kph
8/7/2015 15:33	ON	N22.19813 E113.92748	57 m	0:00:14	15 kph
8/7/2015 15:34	ON	N22.19751 E113.92740	70 m	0:00:17	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 15:34	ON	N22.19696 E113.92738	62 m	0:00:15	15 kph
8/7/2015 15:34	ON	N22.19638 E113.92738	65 m	0:00:16	15 kph
8/7/2015 15:34	ON	N22.19582 E113.92738	62 m	0:00:15	15 kph
8/7/2015 15:35	ON	N22.19527 E113.92738	62 m	0:00:15	15 kph
8/7/2015 15:35	ON	N22.19471 E113.92736	62 m	0:00:15	15 kph
8/7/2015 15:35	ON	N22.19408 E113.92737	70 m	0:00:17	15 kph
8/7/2015 15:35	ON	N22.19349 E113.92740	66 m	0:00:16	15 kph
8/7/2015 15:36	ON	N22.19283 E113.92746	74 m	0:00:18	15 kph
8/7/2015 15:36	ON	N22.19231 E113.92751	58 m	0:00:14	15 kph
8/7/2015 15:36	ON	N22.19187 E113.92750	49 m	0:00:12	15 kph
8/7/2015 15:36	ON	N22.19132 E113.92744	62 m	0:00:15	15 kph
8/7/2015 15:37	ON	N22.19070 E113.92738	69 m	0:00:17	15 kph
8/7/2015 15:37	ON	N22.19007 E113.92735	70 m	0:00:17	15 kph
8/7/2015 15:37	ON	N22.18948 E113.92736	66 m	0:00:16	15 kph
8/7/2015 15:38	ON	N22.18875 E113.92742	82 m	0:00:20	15 kph
8/7/2015 15:38	ON	N22.18804 E113.92747	79 m	0:00:19	15 kph
8/7/2015 15:38	ON	N22.18735 E113.92751	78 m	0:00:19	15 kph
8/7/2015 15:38	ON	N22.18678 E113.92753	63 m	0:00:15	15 kph
8/7/2015 15:39	ON	N22.18611 E113.92752	75 m	0:00:18	15 kph
8/7/2015 15:39	ON	N22.18538 E113.92750	82 m	0:00:20	15 kph
8/7/2015 15:39	ON	N22.18466 E113.92747	80 m	0:00:19	15 kph
8/7/2015 15:40	ON	N22.18399 E113.92745	74 m	0:00:18	15 kph
8/7/2015 15:40	ON	N22.18347 E113.92742	59 m	0:00:14	15 kph
8/7/2015 15:40	ON	N22.18280 E113.92742	74 m	0:00:18	15 kph
8/7/2015 15:40	ON	N22.18231 E113.92743	54 m	0:00:13	15 kph
8/7/2015 15:41	ON	N22.18178 E113.92747	59 m	0:00:14	15 kph
8/7/2015 15:41	ON	N22.18112 E113.92764	75 m	0:00:18	15 kph
8/7/2015 15:41	ON	N22.18055 E113.92782	67 m	0:00:16	15 kph
8/7/2015 15:42	ON	N22.17991 E113.92790	72 m	0:00:17	15 kph
8/7/2015 15:42	ON	N22.17921 E113.92773	80 m	0:00:19	15 kph
8/7/2015 15:42	ON	N22.17862 E113.92748	71 m	0:00:17	15 kph
8/7/2015 15:42	ON	N22.17806 E113.92737	63 m	0:00:15	15 kph
8/7/2015 15:43	ON	N22.17742 E113.92737	72 m	0:00:17	15 kph
8/7/2015 15:43	ON	N22.17677 E113.92743	73 m	0:00:17	15 kph
8/7/2015 15:43	ON	N22.17620 E113.92746	63 m	0:00:15	15 kph
8/7/2015 15:43	ON	N22.17564 E113.92747	63 m	0:00:15	15 kph
8/7/2015 15:44	ON	N22.17541 E113.92746	25 m	0:00:06	15 kph
8/7/2015 15:44	ON	N22.17481 E113.92741	67 m	0:00:16	15 kph
8/7/2015 15:44	ON	N22.17433 E113.92741	54 m	0:00:13	15 kph
8/7/2015 15:44	ON	N22.17354 E113.92747	88 m	0:00:21	15 kph
8/7/2015 15:45	ON	N22.17282 E113.92756	80 m	0:00:19	15 kph
8/7/2015 15:45	ON	N22.17211 E113.92763	80 m	0:00:19	15 kph
8/7/2015 15:45	ON	N22.17162 E113.92762	55 m	0:00:13	15 kph
8/7/2015 15:46	ON	N22.17090 E113.92749	80 m	0:00:19	15 kph
8/7/2015 15:46	ON	N22.17032 E113.92735	67 m	0:00:16	15 kph
8/7/2015 15:46	ON	N22.16957 E113.92725	84 m	0:00:20	15 kph
8/7/2015 15:46	ON	N22.16894 E113.92726	71 m	0:00:17	15 kph
8/7/2015 15:47	ON	N22.16826 E113.92735	76 m	0:00:18	15 kph
8/7/2015 15:47	ON	N22.16751 E113.92749	85 m	0:00:20	15 kph
8/7/2015 15:47	ON	N22.16691 E113.92761	68 m	0:00:16	15 kph
8/7/2015 15:48	ON	N22.16642 E113.92767	55 m	0:00:13	15 kph
8/7/2015 15:48	ON	N22.16570 E113.92768	80 m	0:00:19	15 kph
8/7/2015 15:48	ON	N22.16496 E113.92752	84 m	0:00:20	15 kph
8/7/2015 15:48	ON	N22.16435 E113.92732	70 m	0:00:17	15 kph
8/7/2015 15:49	ON	N22.16363 E113.92717	82 m	0:00:19	16 kph
8/7/2015 15:49	ON	N22.16291 E113.92709	81 m	0:00:19	15 kph
8/7/2015 15:49	ON	N22.16220 E113.92707	80 m	0:00:19	15 kph
8/7/2015 15:50	ON	N22.16155 E113.92712	73 m	0:00:17	15 kph
8/7/2015 15:50	ON	N22.16097 E113.92721	64 m	0:00:15	15 kph
8/7/2015 15:50	ON	N22.16040 E113.92732	65 m	0:00:15	16 kph
8/7/2015 15:50	ON	N22.15975 E113.92741	73 m	0:00:17	15 kph
8/7/2015 15:51	ON	N22.15898 E113.92748	86 m	0:00:20	16 kph
8/7/2015 15:51	ON	N22.15864 E113.92749	38 m	0:00:09	15 kph
8/7/2015 15:51	ON	N22.15794 E113.92744	78 m	0:00:18	16 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 15:52	ON	N22.15721 E113.92734	81 m	0:00:19	15 kph
8/7/2015 15:52	ON	N22.15652 E113.92728	78 m	0:00:18	16 kph
8/7/2015 15:52	ON	N22.15582 E113.92728	77 m	0:00:18	15 kph
8/7/2015 15:53	ON	N22.15509 E113.92727	82 m	0:00:19	16 kph
8/7/2015 15:53	ON	N22.15439 E113.92726	78 m	0:00:18	16 kph
8/7/2015 15:53	ON	N22.15364 E113.92727	83 m	0:00:19	16 kph
8/7/2015 15:53	ON	N22.15302 E113.92733	70 m	0:00:16	16 kph
8/7/2015 15:54	ON	N22.15232 E113.92744	78 m	0:00:18	16 kph
8/7/2015 15:54	ON	N22.15174 E113.92756	66 m	0:00:15	16 kph
8/7/2015 15:54	ON	N22.15128 E113.92766	53 m	0:00:12	16 kph
8/7/2015 15:54	ON	N22.15058 E113.92777	79 m	0:00:18	16 kph
8/7/2015 15:55	ON	N22.14995 E113.92780	70 m	0:00:16	16 kph
8/7/2015 15:55	ON	N22.14924 E113.92772	79 m	0:00:18	16 kph
8/7/2015 15:55	ON	N22.14862 E113.92758	71 m	0:00:16	16 kph
8/7/2015 15:55	ON	N22.14813 E113.92746	56 m	0:00:13	16 kph
8/7/2015 15:56	ON	N22.14751 E113.92737	70 m	0:00:16	16 kph
8/7/2015 15:56	ON	N22.14683 E113.92735	75 m	0:00:17	16 kph
8/7/2015 15:56	ON	N22.14629 E113.92740	61 m	0:00:14	16 kph
8/7/2015 15:57	ON	N22.14572 E113.92751	65 m	0:00:15	16 kph
8/7/2015 15:57	ON	N22.14516 E113.92768	65 m	0:00:15	16 kph
8/7/2015 15:57	ON	N22.14443 E113.92783	83 m	0:00:19	16 kph
8/7/2015 15:57	ON	N22.14381 E113.92779	69 m	0:00:16	15 kph
8/7/2015 15:58	ON	N22.14318 E113.92764	72 m	0:00:17	15 kph
8/7/2015 15:58	ON	N22.14256 E113.92761	69 m	0:00:16	15 kph
8/7/2015 15:58	ON	N22.14215 E113.92793	56 m	0:00:14	14 kph
8/7/2015 15:58	ON	N22.14212 E113.92836	44 m	0:00:12	13 kph
8/7/2015 15:59	ON	N22.14245 E113.92871	51 m	0:00:15	12 kph
8/7/2015 15:59	ON	N22.14290 E113.92888	53 m	0:00:15	13 kph
8/7/2015 15:59	ON	N22.14337 E113.92928	67 m	0:00:18	13 kph
8/7/2015 15:59	ON	N22.14386 E113.92957	62 m	0:00:17	13 kph
8/7/2015 16:00	ON	N22.14437 E113.92991	67 m	0:00:18	13 kph
8/7/2015 16:00	ON	N22.14488 E113.93025	67 m	0:00:18	13 kph
8/7/2015 16:00	ON	N22.14526 E113.93046	48 m	0:00:13	13 kph
8/7/2015 16:00	ON	N22.14570 E113.93072	55 m	0:00:15	13 kph
8/7/2015 16:01	ON	N22.14616 E113.93109	64 m	0:00:17	13 kph
8/7/2015 16:01	ON	N22.14662 E113.93153	68 m	0:00:18	14 kph
8/7/2015 16:01	ON	N22.14706 E113.93199	69 m	0:00:18	14 kph
8/7/2015 16:02	ON	N22.14743 E113.93241	60 m	0:00:16	14 kph
8/7/2015 16:02	ON	N22.14779 E113.93281	57 m	0:00:15	14 kph
8/7/2015 16:02	ON	N22.14825 E113.93335	76 m	0:00:20	14 kph
8/7/2015 16:03	ON	N22.14866 E113.93380	65 m	0:00:17	14 kph
8/7/2015 16:03	ON	N22.14901 E113.93412	52 m	0:00:14	13 kph
8/7/2015 16:03	ON	N22.14956 E113.93455	75 m	0:00:20	14 kph
8/7/2015 16:03	ON	N22.14999 E113.93490	60 m	0:00:16	13 kph
8/7/2015 16:04	ON	N22.15035 E113.93523	53 m	0:00:14	14 kph
8/7/2015 16:04	ON	N22.15074 E113.93557	56 m	0:00:15	14 kph
8/7/2015 16:04	ON	N22.15115 E113.93590	57 m	0:00:15	14 kph
8/7/2015 16:04	ON	N22.15156 E113.93628	60 m	0:00:16	14 kph
8/7/2015 16:05	ON	N22.15195 E113.93664	57 m	0:00:15	14 kph
8/7/2015 16:05	ON	N22.15240 E113.93701	63 m	0:00:17	13 kph
8/7/2015 16:05	ON	N22.15288 E113.93709	54 m	0:00:16	12 kph
8/7/2015 16:05	ON	N22.15338 E113.93688	59 m	0:00:17	13 kph
8/7/2015 16:06	ON	N22.15387 E113.93674	57 m	0:00:16	13 kph
8/7/2015 16:06	ON	N22.15445 E113.93678	65 m	0:00:18	13 kph
8/7/2015 16:06	ON	N22.15508 E113.93672	70 m	0:00:20	13 kph
8/7/2015 16:07	ON	N22.15567 E113.93658	68 m	0:00:19	13 kph
8/7/2015 16:07	ON	N22.15619 E113.93657	58 m	0:00:16	13 kph
8/7/2015 16:07	ON	N22.15675 E113.93666	63 m	0:00:17	13 kph
8/7/2015 16:07	ON	N22.15729 E113.93669	60 m	0:00:17	13 kph
8/7/2015 16:08	ON	N22.15800 E113.93663	79 m	0:00:22	13 kph
8/7/2015 16:08	ON	N22.15856 E113.93672	63 m	0:00:17	13 kph
8/7/2015 16:08	ON	N22.15910 E113.93687	62 m	0:00:17	13 kph
8/7/2015 16:09	ON	N22.15971 E113.93699	69 m	0:00:19	13 kph
8/7/2015 16:09	ON	N22.16035 E113.93703	72 m	0:00:20	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 16:09	ON	N22.16095 E113.93698	67 m	0:00:19	13 kph
8/7/2015 16:10	ON	N22.16157 E113.93693	69 m	0:00:19	13 kph
8/7/2015 16:10	ON	N22.16220 E113.93694	69 m	0:00:19	13 kph
8/7/2015 16:10	ON	N22.16275 E113.93701	62 m	0:00:17	13 kph
8/7/2015 16:11	ON	N22.16341 E113.93708	73 m	0:00:20	13 kph
8/7/2015 16:11	ON	N22.16413 E113.93711	81 m	0:00:22	13 kph
8/7/2015 16:11	ON	N22.16464 E113.93704	57 m	0:00:16	13 kph
8/7/2015 16:12	ON	N22.16520 E113.93695	62 m	0:00:17	13 kph
8/7/2015 16:12	ON	N22.16584 E113.93692	72 m	0:00:19	14 kph
8/7/2015 16:12	ON	N22.16642 E113.93696	65 m	0:00:18	13 kph
8/7/2015 16:12	ON	N22.16701 E113.93706	66 m	0:00:18	13 kph
8/7/2015 16:13	ON	N22.16760 E113.93713	65 m	0:00:18	13 kph
8/7/2015 16:13	ON	N22.16821 E113.93715	69 m	0:00:19	13 kph
8/7/2015 16:13	ON	N22.16886 E113.93714	72 m	0:00:20	13 kph
8/7/2015 16:14	ON	N22.16946 E113.93713	68 m	0:00:19	13 kph
8/7/2015 16:14	ON	N22.16999 E113.93712	58 m	0:00:16	13 kph
8/7/2015 16:14	ON	N22.17061 E113.93709	69 m	0:00:19	13 kph
8/7/2015 16:15	ON	N22.17119 E113.93708	65 m	0:00:18	13 kph
8/7/2015 16:15	ON	N22.17177 E113.93709	65 m	0:00:18	13 kph
8/7/2015 16:15	ON	N22.17226 E113.93712	54 m	0:00:15	13 kph
8/7/2015 16:15	ON	N22.17278 E113.93713	58 m	0:00:16	13 kph
8/7/2015 16:16	ON	N22.17326 E113.93709	54 m	0:00:15	13 kph
8/7/2015 16:16	ON	N22.17389 E113.93694	71 m	0:00:20	13 kph
8/7/2015 16:16	ON	N22.17442 E113.93679	61 m	0:00:17	13 kph
8/7/2015 16:17	ON	N22.17492 E113.93671	57 m	0:00:16	13 kph
8/7/2015 16:17	ON	N22.17549 E113.93670	63 m	0:00:17	13 kph
8/7/2015 16:17	ON	N22.17601 E113.93670	58 m	0:00:16	13 kph
8/7/2015 16:17	ON	N22.17660 E113.93668	65 m	0:00:18	13 kph
8/7/2015 16:18	ON	N22.17718 E113.93668	66 m	0:00:18	13 kph
8/7/2015 16:18	ON	N22.17781 E113.93670	70 m	0:00:19	13 kph
8/7/2015 16:18	ON	N22.17840 E113.93676	66 m	0:00:18	13 kph
8/7/2015 16:19	ON	N22.17909 E113.93685	77 m	0:00:21	13 kph
8/7/2015 16:19	ON	N22.17965 E113.93693	62 m	0:00:17	13 kph
8/7/2015 16:19	ON	N22.18036 E113.93686	80 m	0:00:22	13 kph
8/7/2015 16:20	ON	N22.18107 E113.93673	80 m	0:00:22	13 kph
8/7/2015 16:20	ON	N22.18167 E113.93674	67 m	0:00:18	13 kph
8/7/2015 16:20	ON	N22.18220 E113.93677	59 m	0:00:16	13 kph
8/7/2015 16:21	ON	N22.18270 E113.93682	56 m	0:00:15	13 kph
8/7/2015 16:21	ON	N22.18321 E113.93687	56 m	0:00:15	14 kph
8/7/2015 16:21	ON	N22.18381 E113.93693	68 m	0:00:18	14 kph
8/7/2015 16:21	ON	N22.18435 E113.93701	61 m	0:00:16	14 kph
8/7/2015 16:22	ON	N22.18486 E113.93711	58 m	0:00:15	14 kph
8/7/2015 16:22	ON	N22.18550 E113.93723	73 m	0:00:19	14 kph
8/7/2015 16:22	ON	N22.18608 E113.93731	64 m	0:00:17	14 kph
8/7/2015 16:23	ON	N22.18679 E113.93731	80 m	0:00:21	14 kph
8/7/2015 16:23	ON	N22.18732 E113.93726	59 m	0:00:16	13 kph
8/7/2015 16:23	ON	N22.18788 E113.93715	63 m	0:00:17	13 kph
8/7/2015 16:23	ON	N22.18850 E113.93700	71 m	0:00:19	13 kph
8/7/2015 16:24	ON	N22.18911 E113.93686	70 m	0:00:19	13 kph
8/7/2015 16:24	ON	N22.18975 E113.93673	72 m	0:00:19	14 kph
8/7/2015 16:24	ON	N22.19031 E113.93665	63 m	0:00:17	13 kph
8/7/2015 16:25	ON	N22.19100 E113.93655	78 m	0:00:21	13 kph
8/7/2015 16:25	ON	N22.19161 E113.93645	69 m	0:00:18	14 kph
8/7/2015 16:25	ON	N22.19219 E113.93645	65 m	0:00:17	14 kph
8/7/2015 16:25	ON	N22.19271 E113.93655	58 m	0:00:15	14 kph
8/7/2015 16:26	ON	N22.19310 E113.93667	46 m	0:00:12	14 kph
8/7/2015 16:26	ON	N22.19360 E113.93679	57 m	0:00:15	14 kph
8/7/2015 16:26	ON	N22.19404 E113.93687	50 m	0:00:13	14 kph
8/7/2015 16:26	ON	N22.19466 E113.93694	69 m	0:00:18	14 kph
8/7/2015 16:27	ON	N22.19534 E113.93704	76 m	0:00:20	14 kph
8/7/2015 16:27	ON	N22.19588 E113.93708	61 m	0:00:16	14 kph
8/7/2015 16:27	ON	N22.19633 E113.93709	50 m	0:00:13	14 kph
8/7/2015 16:28	ON	N22.19688 E113.93709	61 m	0:00:16	14 kph
8/7/2015 16:28	ON	N22.19747 E113.93712	66 m	0:00:17	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
8/7/2015 16:28	ON	N22.19806 E113.93721	67 m	0:00:17	14 kph
8/7/2015 16:28	ON	N22.19872 E113.93732	74 m	0:00:19	14 kph
8/7/2015 16:29	ON	N22.19927 E113.93735	61 m	0:00:16	14 kph
8/7/2015 16:29	ON	N22.20000 E113.93736	81 m	0:00:21	14 kph
8/7/2015 16:29	ON	N22.20055 E113.93733	61 m	0:00:16	14 kph
8/7/2015 16:30	ON	N22.20099 E113.93727	50 m	0:00:13	14 kph
8/7/2015 16:30	ON	N22.20157 E113.93717	66 m	0:00:17	14 kph
8/7/2015 16:30	ON	N22.20213 E113.93710	63 m	0:00:16	14 kph
8/7/2015 16:30	ON	N22.20277 E113.93706	71 m	0:00:18	14 kph
8/7/2015 16:31	ON	N22.20345 E113.93710	76 m	0:00:19	14 kph
8/7/2015 16:31	ON	N22.20419 E113.93718	83 m	0:00:21	14 kph
8/7/2015 16:31	ON	N22.20484 E113.93718	71 m	0:00:18	14 kph
8/7/2015 16:32	ON	N22.20549 E113.93708	74 m	0:00:19	14 kph
8/7/2015 16:32	ON	N22.20608 E113.93693	67 m	0:00:17	14 kph
8/7/2015 16:32	ON	N22.20663 E113.93680	63 m	0:00:16	14 kph
8/7/2015 16:32	ON	N22.20724 E113.93675	69 m	0:00:17	15 kph
8/7/2015 16:33	ON	N22.20801 E113.93676	86 m	0:00:21	15 kph
8/7/2015 16:33	ON	N22.20883 E113.93682	91 m	0:00:22	15 kph
8/7/2015 16:34	ON	N22.20967 E113.93688	94 m	0:00:23	15 kph
8/7/2015 16:34	ON	N22.21048 E113.93688	90 m	0:00:22	15 kph
8/7/2015 16:34	ON	N22.21131 E113.93685	92 m	0:00:23	14 kph
8/7/2015 16:35	ON	N22.21218 E113.93688	98 m	0:00:24	15 kph
8/7/2015 16:35	ON	N22.21303 E113.93695	95 m	0:00:24	14 kph
8/7/2015 16:36	ON	N22.21394 E113.93705	101 m	0:00:25	15 kph
8/7/2015 16:36	ON	N22.21473 E113.93707	88 m	0:00:22	14 kph
8/7/2015 16:36	ON	N22.21555 E113.93698	92 m	0:00:23	14 kph
8/7/2015 16:37	ON	N22.21635 E113.93678	91 m	0:00:23	14 kph
8/7/2015 16:37	ON	N22.21715 E113.93657	92 m	0:00:23	14 kph
8/7/2015 16:37	ON	N22.21802 E113.93653	97 m	0:00:24	15 kph
8/7/2015 16:38	ON	N22.21874 E113.93653	81 m	0:00:20	15 kph
8/7/2015 16:38	ON	N22.21976 E113.93649	113 m	0:00:28	15 kph
8/7/2015 16:39	ON	N22.22071 E113.93643	106 m	0:00:26	15 kph
8/7/2015 16:39	ON	N22.22169 E113.93643	109 m	0:00:27	15 kph
8/7/2015 16:39	ON	N22.22239 E113.93663	80 m	0:00:20	14 kph

Appendix II. Survey Effort Database in SWL (July 2015)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
6-Jul-15	SW LANTAU	2	10.55	SUMMER	STANDARD31516	HKCRP	P
6-Jul-15	SW LANTAU	2	7.73	SUMMER	STANDARD31516	HKCRP	S
6-Jul-15	SW LANTAU	3	2.30	SUMMER	STANDARD31516	HKCRP	S
8-Jul-15	SW LANTAU	2	5.84	SUMMER	STANDARD31516	HYD-HZMB	P
8-Jul-15	SW LANTAU	3	41.76	SUMMER	STANDARD31516	HYD-HZMB	P
8-Jul-15	SW LANTAU	4	6.35	SUMMER	STANDARD31516	HYD-HZMB	P
8-Jul-15	SW LANTAU	2	4.08	SUMMER	STANDARD31516	HYD-HZMB	S
8-Jul-15	SW LANTAU	3	10.25	SUMMER	STANDARD31516	HYD-HZMB	S
8-Jul-15	SW LANTAU	4	2.13	SUMMER	STANDARD31516	HYD-HZMB	S
28-Jul-15	SW LANTAU	2	9.10	SUMMER	STANDARD31516	HKCRP	P
28-Jul-15	SW LANTAU	3	3.03	SUMMER	STANDARD31516	HKCRP	P
28-Jul-15	SW LANTAU	2	6.50	SUMMER	STANDARD31516	HKCRP	S
28-Jul-15	SW LANTAU	3	4.31	SUMMER	STANDARD31516	HKCRP	S
31-Jul-15	SW LANTAU	2	9.63	SUMMER	STANDARD31516	HKCRP	P
31-Jul-15	SW LANTAU	3	11.98	SUMMER	STANDARD31516	HKCRP	P
31-Jul-15	SW LANTAU	2	3.01	SUMMER	STANDARD31516	HKCRP	S
31-Jul-15	SW LANTAU	3	1.31	SUMMER	STANDARD31516	HKCRP	S
31-Jul-15	SW LANTAU	4	1.80	SUMMER	STANDARD31516	HKCRP	S

Appendix III. Chinese White Dolphin Sighting Database in SWL (July 2015)

(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
6-Jul-15	2	1414	10	SW LANTAU	2	208	ON	HKCRP	805984	802486	SUMMER	NONE	S
6-Jul-15	3	1436	1	SW LANTAU	2	102	ON	HKCRP	806424	803663	SUMMER	NONE	S
6-Jul-15	4	1439	5	SW LANTAU	2	39	ON	HKCRP	807065	804582	SUMMER	PURSE-SEINE	S
8-Jul-15	1	1140	2	SW LANTAU	3	155	ON	HYD-HZMB	806425	803467	SUMMER	NONE	P
8-Jul-15	2	1149	5	SW LANTAU	3	76	ON	HYD-HZMB	806856	803767	SUMMER	NONE	S
8-Jul-15	3	1425	1	SW LANTAU	2	173	ON	HYD-HZMB	803923	808578	SUMMER	NONE	S
28-Jul-15	1	1411	2	SW LANTAU	2	274	ON	HKCRP	806855	804479	SUMMER	NONE	P
28-Jul-15	2	1449	1	SW LANTAU	3	614	ON	HKCRP	805433	806497	SUMMER	NONE	P
28-Jul-15	3	1507	1	SW LANTAU	2	262	ON	HKCRP	808366	807420	SUMMER	NONE	S
28-Jul-15	4	1523	5	SW LANTAU	2	127	ON	HKCRP	805795	808519	SUMMER	NONE	P
31-Jul-15	1	1258	5	SW LANTAU	2	776	ON	HKCRP	805560	809560	SUMMER	NONE	P
31-Jul-15	2	1306	5	SW LANTAU	2	105	ON	HKCRP	806789	809562	SUMMER	NONE	P
31-Jul-15	3	1428	4	SW LANTAU	3	573	ON	HKCRP	804239	805401	SUMMER	NONE	P
31-Jul-15	4	1512	3	SW LANTAU	2	ND	OFF	HKCRP	807421	809110	SUMMER	NONE	
31-Jul-15	5	1516	1	SW LANTAU	2	ND	OFF	HKCRP	807464	810059	SUMMER	NONE	

Appendix IV. Individual dolphins identified during HYD-HZMB and AFCD monitoring surveys in SWL waters in July 2015

ID#	DATE	STG#	TYPE	AREA
NL206	06/07/15	2	HKCRP	SW LANTAU
NL226	31/07/15	2	HKCRP	SW LANTAU
SL05	28/07/15	4	HKCRP	SW LANTAU
SL40	06/07/15	4	HKCRP	SW LANTAU
	28/07/15	4	HKCRP	SW LANTAU
SL47	31/07/15	2	HKCRP	SW LANTAU
SL54	06/07/15	4	HKCRP	SW LANTAU
SL55	06/07/15	2	HKCRP	SW LANTAU
	31/07/15	1	HKCRP	SW LANTAU
	31/07/15	2	HKCRP	SW LANTAU
WL61	31/07/15	2	HKCRP	SW LANTAU
WL69	06/07/15	2	HKCRP	SW LANTAU
	28/07/15	4	HKCRP	SW LANTAU
	31/07/15	1	HKCRP	SW LANTAU
	31/07/15	2	HKCRP	SW LANTAU
WL91	08/07/15	3	HYD-HZMB	SW LANTAU
WL94	06/07/15	2	HKCRP	SW LANTAU
WL98	31/07/15	3	HKCRP	SW LANTAU
WL114	06/07/15	2	HKCRP	SW LANTAU
	08/07/15	2	HYD-HZMB	SW LANTAU
WL116	06/07/15	2	HKCRP	SW LANTAU
WL128	06/07/15	2	HKCRP	SW LANTAU
	08/07/15	2	HYD-HZMB	SW LANTAU
WL142	06/07/15	2	HKCRP	SW LANTAU
	08/07/15	2	HYD-HZMB	SW LANTAU
WL160	31/07/15	2	HKCRP	SW LANTAU
WL186	06/07/15	2	HKCRP	SW LANTAU
	28/07/15	1	HKCRP	SW LANTAU
	31/07/15	1	HKCRP	SW LANTAU
WL232	06/07/15	4	HKCRP	SW LANTAU
WL234	06/07/15	4	HKCRP	SW LANTAU
WL240	28/07/15	4	HKCRP	SW LANTAU
WL241	06/07/15	4	HKCRP	SW LANTAU
WL243	06/07/15	4	HKCRP	SW LANTAU
WL250	08/07/15	2	HYD-HZMB	SW LANTAU

Appendix V. Photographs of Identified Individual Dolphins in July 2015 in SWL waters

Appendix V (cont'd).

Appendix V (cont'd).

Appendix V (cont'd).