JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
STATE OCEANIC ADMINISTRATION (SOA)
PEOPLE'S REPUBLIC OF CHINA

THE STUDY ON IMPROVEMENT OF MARINE ENVIRONMENTAL MONITORING SYSTEM FOR THE PEARL RIVER ESTUARY IN THE PEOPLE'S REPUBLIC OF CHINA

FINAL REPORT

DATA BOOK

September 2001

METOCEAN ENVIRONMENT INC.
UNICO INTERNATIONAL CORPORATION

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Transient Season

Rainy Season

FIELD SURVEY REPORT ON RAINY SEASON
FOR
THE STUDY ON THE IMPROVEMENT
OF
MARINE ENVIRONMENTAL MONITORING SYSTEM
FOR
THE PEARL RIVER ESTUARY

SOUTH CHINA SEA ENVIRONMENTAL MONITORING CENTRE
OF
STATE OCEANIC ADMINISTRATION
SEPT 2000

CONTENT

1. Introduction

The objective of field survey on rainy season of the Study on Improvement of Marine Environmental Monitoring System for the Pearl River Estuary is to provide the hydrology, water quality, sediment quality and biology data for developing a water quality and a ecological simulation model. The survey was conducted from 31,July to 10,Aug 2000 .The participators amounted to 69,among which 1 professor, 15 senior engineers, 29 engineers, 18 assistant engineers and the other 6. The workers of both sides of China and Japan did their best and overcame the difficulties such as gale blowing and rough sea etc to fulfill the survey.

2. Survey Points

In the study area, there were 26 point locations for water quality, bottom sediment quality and aquatic biota, of which 20 were intensive points and 6 were continuous points. In addition to that, there were 3 points set up for water level observation.

During the survey, the vessel could not go to P05 and P10 points as the water was much more shallower. The original points were modified, and the Table 1 shows the modified latitude and longitude.

3. Information of Vessels Employed

During the survey, 5 vessels were employed. They were Haijian 73, civil boat A, civil boat B, civil boat C and civil boat D. Haijian 73 and civil boat A were in charge of the continuous points, civil boat B and civil boat C were in charge of the intensive points, and civil boat D for delivering samples.

4. Work Time and Navigation Route

As the weather was changeable, the original plan was modified according to field sea state. The Table 2 presents the modified plan of each boats operation, which shows the original operation time, points, route as well as actual operation time, points and route.

The wind and sea wave were stronger during spring tide, the civil boat was too small and swayed very much. In consideration of maritime safety and operator safety as well as P26 far away from the main study area, Haijian 73 was sent to carry out the survey on P26. Because of the same reason, Haijian 73 was expedited to conduct the survey on P24, P25 and P26.

In addition, during neap tide the original survey on P20 and P19 was changed to one hour ahead of scheduled time in order to finish the survey going from P19 and P20 to P01 and P04 on time.

5. Field Survey

5.1 Water Quality Sampling in Site

The collected water samples amounted to 6094 at 26 point locations in rainy season survey. There were no samples missing during water collected. The samples were collected in accordance with sampling regulations and in order. There was no contaminated sample. The additive was added to sample in pre-treated work for the sake of sample stability. During delivered and stored, there was no sample missing and breaking.

5.2 Sea Current and CTD

Instrument test

ADR RCM-9 was tested together with DRCM SLC9-2 on-board Haijian 73. Before and after survey at each point, the water temperature, salinity and turbidity were tested. Water temperature micro-sensor was tested with reversing thermometer, conductivity and turbidity were tested with salinometer and turbidity meter. The method of testing CTD was: taking surface sea water to pour the pond made of plastics and placing CTD, RCM-9 and reversing thermometer into the pond, the temperature, salinity and turbidity were read after 15 minutes. At the same time, the sampled water was analyzed for salinity and turbidity.

RCM-9 was used to observe sea current, SLC9-2 was lowered into sea to attest RCM-9. The test time was at 0100, 1300 and the next 0100 o'clock for each point.

Problems were as follows:

At some point locations, the water flowed very fast when flooding and ebbing. This caused sea current meter to drift, the inclination was larger even though heavy lead weight added. If the inclination is larger than 15°, the water depth will be corrected (cosine correction).

As there was something wrong with the turbidity meter probe contained in CTD, the probe was replaced immediately. During the probe replaced, at P12 and several points there were short of CTD/Tu data at 1100, 1200 and 1500 o'clock on 31 Jul. The points short of turbidity were; P06 at 1700 o'clock on 31 Jul, P15 at 1620 on 8 Aug, P16 at 1520 on 8 Aug and P18 at 1400 on 7 Aug. The above-mentioned data of turbidity were analyzed at laboratory with the water samples, but data only at the surface, mid-depth and bottom. In addition, the turbidity data at P12 on 31 Jul were abnormal because the data were the same from surface to bottom.

During spring tide, as the water was shallower at P19 and draft of Haijian 73 was deep, the sediment went up around and the water was turbid. The turbidity data observed were higher than usual. The phenomena were very obviously at 1500 to 2100 on 1st Aug.

5.3 Tidal Level Observation

Tidal level observation points were located at Humen, Zhuhai and Guishan. Self-recorded water level recorder (WLR-7) was used and deployed before 29 Jul. After 30 days observation in succession, the water level recorders were retrieved on 31 Aug. The recorders worked well during observation.

5.4 Meteorological Observation

The meteorological observation was conducted at 26 points and 1700 parameters were obtained. After the observed air temperature data compared with each other, it was noted that the air temperature observed (at daytime) on-board Haijian 73 was higher than other boats. That had something to do with sunlight reflection from the deck as the air temperature was read on the front deck on-board Haijian 73.

5.5 Phytoplankton, Zooplankton and Benthos

Phytoplankton, zooplankton and benthos survey were conducted at 26 points, and 126 samples were collected. The sampling was carried out in accordance with the survey regulations. At the request of Japanese experts, the all aquatic organisms left on the sieve with 1mm in mesh during benthic survey were collected to be analyzed with low-power microscope at laboratory for qualitative and quantitative analysis.

5.6 Sediment

There were 26 points for sediment quality survey, and 26 samples were collected. During sampling, the sample was taken only 2cm in depth of top surface of sediment for the sake of reflecting exactly the present pollution conditions.

5.7 Light Quantum

Chinese scientific workers could operate the light quantum meter well with the help of Japanese experts. In particular, the scientific worker avoided the sheltered umbra on-board civil boat to observe light quantum.

6. Samples Delivering, Analyzing and Data Processing

During the survey, the boat delivering sample could carry the samples collected by other civil boats to Haijian 73 on time for analysis. After the field survey, all samples were transported safely to the laboratory of SCSEMC. Each lot of samples with delivering note was checked and signed on the note during delivering. There were no samples confused, damaged and missed when lots of samples delivered.

All analytic instruments employed were calibrated during the rainy season survey. Before or after each lot or group of samples (30 samples in usual) analyzed, an additional test sample would be analyzed. At the same time, over-all recovery would be analyzed to attest the analysis procedure and quality control. All analyzing jobs at laboratory were well-knit and smoothly functioning, then the data were reliable.

The procedure of data processing observed ISO9000, and data processing such as calculation, check, examining, data format and Excel table met the needs of quality control.

7. Statistics Results

During the rainy season survey, 7596 analysis data of water quality were obtained,

234 data of bottom sediment quality, 795 parameters of aquatic biota, 57342 variables/parameters of hydrometeorology and light quantum (including water level). Table-3 presents the statistics results.

8. Suggestions

In a common effort of both sides of China and Japan, the rainy season survey was succeeded. For the sake of the dry season survey functioning smoothly, several suggestions are given as follows:

8.1 Survey point

Some points were shallower in this survey, the modified points in this survey should be accepted in the dry season survey.

8.2 Maneuver of research vessel(R/V)

In the dry season, wind will bellow much more fiercely and sea wave will beat much stronger than in the rainy season. In consideration of operators safety and survey smooth functioning, it would be best if tow vessels similar to Haijian 73 could be employed. It would be better if vessels could carry out the survey in supplemental study area and civil boats could do the jobs in main study area.

8.3 CTD

The turbidity probe will go wrong at times. The probes should be of stand-by.
Pay attention to water depth while operating CTD.

8.4 Site of air temperature observation

The sunlight will warm the vessel deck, and heat reflection from the deck will affect air temperature. Observe air temperature in the site avoiding the above side effect.

8.5 Water sampler's rack

The civil boat should be equipped with water sampler's rack as the sea will be rough in the dry season survey.

9. Table 1 Survey Point

Point No.	Planned survey point						Actual survey point						Remark
	longitude (E)			latitude (N)			longitude (E)			latitude (N)			
	°	′	″	°	′	″	°	′	″	°	′	″	
P01	113	40	00	22	43	59	113	40	00	22	43	59	**Continuous point**
P02	113	44	33	22	38	30	113	44	33	22	38	30	Intensive point
P03	113	39	29	22	36	42	113	39	29	22	36	42	Intensive point
P04	113	37	48	22	33	30	113	37	48	22	33	30	**Continuous point**
P05	113	43	59	22	32	30	113	44	44	22	32	36	Intensive point *
P06	113	47	59	22	32	30	113	47	59	22	32	30	Intensive point
P07	113	38	42	22	28	07	113	38	42	22	28	07	Intensive point
P08	113	44	12	22	28	11	113	44	12	22	28	11	Intensive point
P09	113	52	59	22	27	00	113	52	59	22	27	00	Intensive point
P10	113	58	48	22	30	25	113	58	59	22	30	11	Intensive point *
P11	113	45	00	22	24	29	113	45	00	22	24	29	**Continuous point**
P12	113	52	36	22	24	29	113	52	36	22	24	29	**Continuous point**
P13	113	38	56	22	22	41	113	38	56	22	22	41	Intensive point
P14	113	37	59	22	19	47	113	37	59	22	19	47	Intensive point
P15	113	43	00	22	19	47	113	43	00	22	19	47	Intensive point
P16	113	47	59	22	19	47	113	47	59	22	19	47	Intensive point
P17	113	40	59	22	15	29	113	40	59	22	15	29	Intensive point
P18	113	47	30	22	15	29	113	47	30	22	15	29	Intensive point
P19	113	39	28	22	11	56	113	42	00	22	11	56	**Continuous point**
P20	113	48	00	22	11	56	113	48	00	22	11	56	**Continuous point**
P21	113	40	42	22	08	59	113	40	42	22	08	59	Intensive point
P22	113	47	01	22	05	08	113	47	01	22	05	08	Intensive point
P23	113	42	47	22	04	57	113	42	47	22	04	57	Intensive point
P24	113	30	00	22	00	00	113	30	00	22	00	00	Intensive point
P25	113	38	30	21	56	30	113	38	30	21	56	30	Intensive point
P26	113	04	59	21	53	59	113	04	59	21	53	59	Intensive point
T01	113	42	29	22	45	04	113	42	29	22	45	04	Humen
T02	113	34	40	22	13	39	113	34	40	22	13	39	Zhuhai
T03	113	52	12	22	09	15	113	52	12	22	09	15	Guishan

* Modified survey point

10. Table 2 Survey Time and Route

Vessel name	Tide	Operation time (M:D:H:Min)	Planned point and route	Actual point and route
Haijian 73 (continuous point)	Spring	07:31:10:00~08:01:10:00	P11	P11
		08:01:15:00~08:02:15:00	P19	***P20***
		08:02:20:00~08:03:20:00	P01	P01
	Neap	08:07:10:00~08:08:10:00	P11	***P12***
		08:08:14:00~08:09:14:00 *	P19	***P20***
		08:09:20:00~08:10:20:00	P01	P01
Civil boat A (Continuous point)	Spring	07:31:10:00~08:01:10:00	P12	P12
		08:01:15:00~08:02:15:00	P20	***P19***
		08:02:20:00~08:03:20:00	P04	P04
	Neap	08:07:10:00~08:08:10:00	P12	***P11***
		08:08:14:00~08:09:14:00 *	P20	***P19***
		08:09:20:00~08:10:20:00	P04	P04
Civil boat B (intensive point)	Spring	7 月 31 日	P14→P13→P07→P03→P02→***P11***	P14→P13→P07→P03→P02→*P11*
		8 月 1 日	P15→P17→P21→P24→P26→***P19***	P17→P21→P24→*P20*
	Neap	8 月 7 日	P14→P13→P07→P03→P02→***P11***	P14→P13→P07→P03→P02→*P12*
		8 月 8 日	P15→P17→P21→P24→P26→***P19***	P15→P17→P21→*P20*
Civil boat C (intensive point)	Spring	7 月 31 日	P10→P09→P08→P05→P06→***P11***	P10→P09→P08→P05→P06→*P11*
		8 月 1 日	P16→P18→P22→P23→P25→***P19***	P15→P16→P18→P22→P23→P25→*P20*
	Neap	8 月 7 日	P10→P09→P08→P05→P06→***P11***	P10→P09→P08→P05→P06→*P12*
		8 月 8 日	P16→P18→P22→P23→P25→***P19***	P16→P18→P22→P23→*P20*
Civil boat D (delivering sample)	Spring	7 月 31 日	P07→P08→P11 P12←→P11	P07→P08→P11 P12←→P11
		8 月 1 日	P18→P21→P19 P20←→P19	P18→P21→P20 P20←→P19
		8 月 2 日~8 月 3 日	P20←→P19 P01←→P04	P20←→P19 P01←→P04
	Neap	8 月 7 日	P07→P08→P11 P12←→P11	P07→P08→P12 P12←→P11
		8 月 8 日	P18→P21→P19 P20←→P19	P18→P21→P20 P20←→P19
		8 月 9 日~8 月 10 日	P20←→P19 P01←→P04	P20←→P19 P01←→P04

Remark：* indicates operation time of the point was one hour ahead of schedule time.

11. Table 3 Statistic Data Results on the Rainy Season Survey

No	Water quality items	Data numbers	No	Sediment quality items	Data numbers	No	Aquatic biota items	Data numbers	No	Hydrometeorological items	Data numbers
1	DO	436	**22**	Grain size	26	**31**	Chl-a	451	**36**	Water temperature	8331
2	pH	436	**23**	COD	26	**32**	Coli.	218	**37**	Salinity	8331
3	BOD_5	436	**24**	Sulfide	26	**33**	Zooplankton	74	**38**	Water depth (sounding)	8331
4	Chinese COD_{Mn}	436	**25**	T-N	26	**34**	Phytoplankton	26	**39**	Turdity	8116
5	Japanese COD_{Mn}	472	**26**	T-P	26	**35**	Benthos	26	**40**	Current speed	1740
6	TOC	436	**27**	Oils	26				**41**	Current direction	1740
7	NO_3-N	475	**28**	Ignition Loss	26				**42**	Water color (China)	216
8	NO_2-N	475	**29**	Eh(ROP)	26				**43**	Water color (Japan)	216
9	NH_3-N	475	**30**	Organic matter	26				**44**	Transparency	216
10	PO_4-P	475							**45**	Weather	340
11	SiO_2-Si	436							**46**	Water depth (lead weight)	340
12	T-N	481							**47**	Air temperature	340
13	T-P	481							**48**	Air pressure	340
14	Oils	100							**49**	Wind speed	340
15	SS	442							**50**	Wind direction	340
16	Hg	184							**51**	Water level	12963
17	Cd	184							**52**	Light quantum	5102
18	Pb	184									
19	Cu	184									
20	Zn	184									
21	As	184									
total		7596			234			795			57342

HYDROLOGICAL DATA SHEET

ON RAINY SEASON

FOR

SINO-JAPAN JOINT STUDY

ON

THE PEARL RIVER ESTUARY

R - 10

SOUTH CHINA SEA ENVIRONMENTAL MONITORING CENTRE
OF
STATE OCEANIC ADMINISTRATION
SEPT 2000

HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in spring tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
1	P02	2000	7	31	17	57	22 °	38 ′	30 ″	113 °	44 ′	33 ″	6.5	0.3	22	2.5y4/4	Overcast	28.8		6.9	120	
2	P03	2000	7	31	16	11	22 °	36 ′	42 ″	113 °	39 ′	29 ″	4.0	0.5	21	2.5y6/8	Raining	27.4		2.9	330	
3	P05	2000	7	31	18	58	22 °	32 ′	36 ″	113 °	44 ′	44 ″	3.5	0.3	20	5.5Y6/8	Overcast	30.0		3.4	170	
4	P06	2000	7	31	17	05	22 °	32 ′	30 ″	113 °	48 ′	00 ″	5.0	0.2	20	5.5y6/8	Overcast	29.9		7.6	195	
5	P07	2000	7	31	11	56	22 °	28 ′	07 ″	113 °	38 ′	42 ″	8.0	0.4	20	5.5y6/8	Clear	32.1		5.0	200	
6	P08	2000	7	31	12	15	22 °	28 ′	11 ″	113 °	44 ′	12 ″	6.5	0.9	15	10Y6.5/10	Clear	31.2		6.9	190	
7	P09	2000	7	31	09	55	22 °	27 ′	00 ″	113 °	52 ′	57 ″	15.5	1.0	14	10Y6.5/10	Clear	31.1		7.0	215	
8	P10	2000	7	31	08	00	22 °	30 ′	11 ″	113 °	58 ′	59 ″	3.3	0.5	16	5.5Y7/5	Clear	30.0		8.0	220	
9	P13	2000	7	31	09	48	22 °	22 ′	41 ″	113 °	38 ′	56 ″	4.5	0.9	12	10y6.5/10	Clear	32.1		6.4	220	
10	P14	2000	7	31	08	00	22 °	19 ′	47 ″	113 °	37 ′	59 ″	5.8	1.0	12	10y6.5/10	Clear	31.6		6.3	210	
11	P15	2000	8	1	07	55	22 °	19 ′	48 ″	113 °	43 ′	00 ″	6.5	1.0	14	10Y6.5/10	Clear	29.6		4.8	210	
12	P16	2000	8	1	09	18	22 °	19 ′	48 ″	113 °	48 ′	00 ″	12.3	1.2	15	10Y6.5/10	Overcast	27.4		10.7	265	
13	P17	2000	8	1	07	14	22 °	15 ′	29 ″	113 °	40 ′	59 ″	5.8	1.0	13	10y6.5/10	Clear	27.3		6.2	210	
14	P18	2000	8	1	10	51	22 °	15 ′	30 ″	113 °	47 ′	30 ″	14.5	1.5	14	10Y6.5/10	Overcast	27.6		7.6	240	
15	P21	2000	8	1	09	11	22 °	08 ′	59 ″	113 °	40 ′	42 ″	8.3	1.3	10	10Y6.5/10	Raining	27.2		6.5	260	
16	P22	2000	8	1	13	10	22 °	05 ′	07 ″	113 °	47 ′	03 ″	12.5	2.0	13	10Y6.5/10	Overcast	28.1		8.2	240	
17	P23	2000	8	1	14	50	22 °	04 ′	55 ″	113 °	42 ′	48 ″	10.0	1.5	13	10Y6.5/10	Overcast	28.1		3.4	245	
18	P24	2000	8	1	12	29	22 °	00 ′	01 ″	113 °	30 ′	00 ″	5.7	2.0	9	5GY6/10	Raining	26.1		8.5	220	
19	P25	2000	8	1	17	15	21 °	56 ′	30 ″	113 °	38 ′	32 ″	19.5	2.0	13	10Y6.5/10	Overcast	28.4		2.4	250	
20	P26	2000	8	4	12	35	21 °	54 ′	08 ″	113 °	04 ′	56 ″	7.1	1.8	14	10GY3/4	Overcast	27.1		1.4	210	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in neap tide

Total page 14

No	Point No	Sampling time					Position		Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude	Longitude										
1	P02	2000	8	7	07	20	22 ° 38 ′ 30 ″	113 ° 44 ′ 33 ″	8.3	0.3	20	5.5Y6/8	Clear	27.8		5.5	110	
2	P03	2000	8	7	09	25	22 ° 36 ′ 42 ″	113 ° 39 ′ 28 ″	4.0	0.3	20	5.5Y6/8	Clear	27.5		3.0	210	
3	P05	2000	8	7	08	30	22 ° 32 ′ 57 ″	113 ° 44 ′ 44 ″	5.0	0.5	17	5Gy6/4	Clear	28.6		1.8	140	
4	P06	2000	8	7	07	00	22 ° 32 ′ 19 ″	113 ° 47 ′ 57 ″	5.5	0.5	18	2.5Y7.5/0.5	Clear	27.8		4.1	100	
5	P07	2000	8	7	12	25	22 ° 28 ′ 07 ″	113 ° 38 ′ 43 ″	7.2	0.4	19	5.5Y6/8	Clear	29.4		5.1	190	
6	P08	2000	8	7	09	40	22 ° 28 ′ 07 ″	113 ° 44 ′ 26 ″	6.0	0.5	18	5.5Y6/2	Clear	29.4		1.5	170	
7	P09	2000	8	7	11	45	22 ° 27 ′ 00 ″	113 ° 52 ′ 57 ″	4.2	0.5	18	5GY6/4	Clear	29.6		3.6	220	
8	P10	2000	8	7	13	25	22 ° 30 ′ 06 ″	113 ° 58 ′ 59 ″	3.1	0.5	17	10Y6.5/10	Clear	30.1		2.8	280	
9	P13	2000	8	7	14	10	22 ° 22 ′ 41 ″	113 ° 38 ′ 56 ″	3.5	0.4	19	5.5Y6/8	Clear	30.0		3.8	170	
10	P14	2000	8	7	15	00	22 ° 19 ′ 47 ″	113 ° 37 ′ 59 ″	4.2	0.6	19	5.5Y7/5	Clear	29.5		6.0	165	
11	P15	2000	8	8	16	26	22 ° 19 ′ 47 ″	113 ° 43 ′ 00 ″	5.6	1.2	13	10Y6.5/10	Clear	30.0		6.0	210	
12	P16	2000	8	8	15	05	22 ° 19 ′ 46 ″	113 ° 47 ′ 59 ″	13.4	1.0	17	5.5Y6/8	Clear	29.6		5.5	210	
13	P17	2000	8	8	08	25	22 ° 15 ′ 29 ″	113 ° 40 ′ 57 ″	5.1	1.2	16	5.5Y7/5	Clear	30.8		1.2	125	
14	P18	2000	8	8	13	25	22 ° 15 ′ 29 ″	113 ° 47 ′ 30 ″	12.6	2.0	14	10y6.5/10	Clear	30.3		4.9	210	
15	P21	2000	8	8	10	10	22 ° 08 ′ 59 ″	113 ° 40 ′ 42 ″	7.0	1.2	18	10Y6.5/10	Clear	30.8		2.0	130	
16	P22	2000	8	9	08	20	22 ° 05 ′ 08 ″	113 ° 47 ′ 01 ″	15.0	1.2	12	5.5y7/5	Clear	29.6		2.7	215	
17	P23	2000	8	9	09	25	22 ° 04 ′ 56 ″	113 ° 42 ′ 47 ″	9.8	1.2	19	5.5y6/8	Clear	30.6		3.6	245	
18	P24	2000	8	6	15	46	22 ° 00 ′ 03 ″	113 ° 29 ′ 57 ″	5.4	1.6	13	5Gy6/4	Clear	30.1		3.3	160	
19	P25	2000	8	6	14	35	21 ° 56 ′ 31 ″	113 ° 38 ′ 30 ″	20.1	4.2	5	5G3.5/7	Clear	28.1		2.2	160	
20	P26	2000	8	6	18	25	21 ° 54 ′ 03 ″	113 ° 05 ′ 00 ″	5.7	1.2	13	5Gy6/4	Clear	28.3		1.0	160	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
1	P01	2000	8	2	20	00	22 °	44 ′	00 ″	113 °	40 ′	00 ″					Raining	28.1	1004.1	3.7	160	
2		2000	8	2	21	00											Raining	28.1	1004.8	5.2	180	
3		2000	8	2	22	00											Overcast	28.1	1005.1	4.3	170	
4		2000	8	2	23	00											Overcast	28.3	1005.0	3.8	180	
5		2000	8	2	00	00											Overcast	28.1	1004.2	6.0	190	
6		2000	8	3	01	00											Overcast	28.1	1003.6	5.5	180	
7		2000	8	3	02	00											Raining	27.9	1004.4	6.6	130	
8		2000	8	3	03	00											Raining	26.5	1004.6	4.4	130	
9		2000	8	3	04	00											Raining	27.1	1003.9	4.7	140	
10		2000	8	3	05	00											Overcast	27.4	1004.4	4.4	130	
11		2000	8	3	06	00											Overcast	27.7	1003.3	3.6	140	
12		2000	8	3	07	00											Overcast	28.1	1004.2	1.9	140	
13		2000	8	3	08	00							24.0	0.3	22	5.5y4/4	Overcast	27.9	1003.8	3.8	160	
14		2000	8	3	09	00							24.4	0.4	22	5.5y4/4	Overcast	27.8	1003.7	4.3	100	
15		2000	8	3	10	00							26.2	0.4	22	5.5y4/4	Raining	28.8	1004.0	4.8	110	
16		2000	8	3	11	00							28.2	0.5	16	5Gy6/4	Raining	25.3	1005.7	9.0	210	
17		2000	8	3	12	00							26.5	0.3	18	5.5y6/2	Raining	25.3	1005.2	5.6	240	
18		2000	8	3	13	00							26.8	0.5	18	5.5y6/2	Raining	25.7	1004.9	4.2	210	
19		2000	8	3	14	00							26.5	0.5	21	5.5y6/2	Overcast	26.7	1004.6	2.6	230	
20		2000	8	3	15	00							26.4	0.4	21	5.5y6/2	Overcast	27.7	1004.4	3.7	160	
21		2000	8	3	16	00							25.4	0.4	21	5.5y6/2	Overcast	27.9	1004.0	4.2	140	
22		2000	8	3	17	00							25.2	0.5	20	5.5y4/4	Clear	30.3	1003.2	2.1	150	
23		2000	8	3	18	00							23.7	0.5	19	5.5y4/4	Clear	29.1	1003.6	5.4	160	
24		2000	8	3	19	00											Overcast	28.4	1003.9	3.9	150	
25		2000	8	3	20	00											Overcast	28.3	1004.7	1.7	160	
26	P04	2000	8	2	20	00	22 °	33 ′	31 ″	113 °	38 ′	01 ″					Overcast	28.1	1004.9	3.8	150	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
27		2000	8	2	21	00											Overcast	27.9	1005.4	4.3	150	
28		2000	8	2	22	00											Overcast	27.8	1005.9	4.4	160	
29		2000	8	2	23	00											Overcast	28.1	1005.9	4.8	180	
30		2000	8	3	00	00											Overcast	28.4	1005.4	5.9	180	
31		2000	8	3	01	00											Overcast	28.2	1005.4	6.1	220	
32		2000	8	3	02	00											Raining	28.2	1004.9	5.1	200	
33		2000	8	3	03	00											Raining	27.6	1004.4	4.1	120	
34		2000	8	3	04	00											Raining	27.6	1004.1	5.3	150	
35		2000	8	3	05	00											Raining	27.4	1004.4	5.1	150	
36		2000	8	3	06	00											Overcast	27.4	1003.9	3.3	170	
37		2000	8	3	07	00							6.5	0.3	21	2.5y6/8	Clear	27.4	1003.4	1.9	120	
38		2000	8	3	08	00							6.6	0.3	21	2.5y6/8	Overcast	27.8	1004.4	1.3	140	
39		2000	8	3	09	00							6.5	0.5	20	5.5y7/8	Overcast	27.9	1004.4	3.7	120	
40		2000	8	3	10	00							7.5	0.5	20	5.5y7/5	Overcast	28.5	1004.9	3.7	150	
41		2000	8	3	11	00							8.0	0.5	20	5.5y7/5	Raining	29.3	1006.4	4.1	240	
42		2000	8	3	12	00							8.0	0.5	20	5.5y7/5	Raining	28.6	1006.4	3.9	230	
43		2000	8	3	13	00							8.0	0.5	20	5.5y7/5	Overcast	28.1	1005.2	2.9	200	
44		2000	8	3	14	00							8.0	0.5	20	5.5y7/5	Overcast	28.0	1004.3	2.5	180	
45		2000	8	3	15	00							7.3	0.5	20	5.5y7/5	Overcast	28.0	1004.3	3.1	180	
46		2000	8	3	16	00							7.0	0.5	20	5.5y6/8	Overcast	28.2	1003.9	6.1	180	
47		2000	8	3	17	00							7.0	0.4	20	2.5y6/8	Overcast	28.1	1003.4	5.2	190	
48		2000	8	3	18	00							7.0	0.3	20	2.5y6/8	Overcast	28.3	1004.3	5.0	210	
49		2000	8	3	19	00											Overcast	28.3	1004.4	4.7	135	
50		2000	8	3	20	00											Overcast	28.6	1004.9	3.7	150	
51	P11	2000	7	31	10	00	22 °	11 ′	56 ″	113 °	47 ′	58 ″	8.2	0.8	18	5Gy6/4	Raining	32.3	1004.6	5.3	240	
52		2000	7	31	11	00							8.0	0.8	16	5Gy6/4	Clear	29.9	1004.5	8.0	210	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
53		2000	7	31	12	00							8.0	0.8	17	5Gy6/4	Clear	33.9	1004.0	9.5	200	
54		2000	7	31	13	00							7.5	0.8	18	5Gy6/4	Clear	36.4	1003.5	8.7	190	
55		2000	7	31	14	00							7.1	0.7	17	5Gy6/4	Clear	32.3	1002.5	8.4	200	
56		2000	7	31	15	00							6.3	0.8	18	5Gy6/4	Clear	31.7	1002.7	9.1	200	
57		2000	7	31	16	00							6.3	0.6	21	2.5y4/4	Overcast	31.1	1002.6	7.2	200	
58		2000	7	31	17	00											Overcast	28.9	1003.1	6.9	190	
59		2000	7	31	18	00											Overcast	29.9	1003.1	7.7	190	
60		2000	7	31	19	00											Overcast	28.4	1003.6	5.8	170	
61		2000	7	31	20	00											Overcast	29.2	1003.7	6.4	210	
62		2000	7	31	21	00											Overcast	29.1	1004.1	7.5	220	
63		2000	7	31	22	00											Overcast	30.1	1004.9	8.1	210	
64		2000	7	31	23	00											Overcast	29.4	1005.1	2.9	80	
65		2000	7	31	00	00											Overcast	28.4	1005.5	2.7	70	
66		2000	8	1	01	00											Overcast	28.5	1005.1	1.2	160	
67		2000	8	1	02	00											Overcast	28.5	1004.6	1.1	160	
68		2000	8	1	03	00											Overcast	27.9	1004.2	0.9	150	
69		2000	8	1	04	00											Overcast	27.9	1004.1	0.7	150	
70		2000	8	1	05	00											Overcast	28.1	1004.0	0.9	140	
71		2000	8	1	06	00											Overcast	28.1	1004.5	2.1	190	
72		2000	8	1	07	00							7.4	0.8	17	5Gy6/4	Overcast	28.5	1004.6	8.0	180	
73		2000	8	1	08	00							8.2	0.8	16	5Gy6/4	Clear	28.7	1004.7	5.0	210	
74		2000	8	1	09	00							8.8	1.2	16	5Gy6/4	Overcast	27.9	1005.0	5.1	210	
75		2000	8	1	10	00							8.8	0.7	19	5Gy6.5/1.5	Overcast	27.0	1005.2	5.7	210	
76	P12	2000	7	31	10	00	22 °	24 ′	31 ″	113 °	52 ′	36 ″	11.0	0.5	18	5.5y7/5	Clear	31.9	1005.2	6.6	240	
77		2000	7	31	11	00							17.5	0.5	18	5.5y7/5	Clear	32.1	1006.3	8.2	210	
78		2000	7	31	12	00							12.0	0.5	18	5.5y7/5	Clear	31.4	1006.3	8.0	200	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
79		2000	7	31	13	00							14.0	0.5	18	5.5y7/5	Raining	31.5	1006.3	11.1	200	
80		2000	7	31	14	00							17.0	0.5	18	5.5y7/5	Clear	30.4	1003.2	9.4	190	
81		2000	7	31	15	00							17.0	0.2	20	2.5y6/8	Clear	29.6	1004.3	9.9	190	
82		2000	7	31	16	00							15.5	0.2	20	2.5y6/8	Clear	28.9	1003.2	8.7	185	
83		2000	7	31	17	00							13.5	0.2	20	2.5y6/8	Clear	29.4	1004.8	8.2	210	
84		2000	7	31	18	00							12.0	0.2	20	2.5y6/8	Clear	29.3	1004.8	7.3	200	
85		2000	7	31	19	00											Clear	29.4	1004.4	6.0	210	
86		2000	7	31	20	00											Overcast	29.7	1004.7	4.1	210	
87		2000	7	31	21	00											Overcast	29.8	1006.5	5.5	200	
88		2000	7	31	22	00											Overcast	29.4	1007.5	4.0	150	
89		2000	7	31	23	00											Overcast	28.0	1006.6	3.7	60	
90		2000	8	1	00	00											Overcast	28.3	1006.9	2.0	140	
91		2000	8	1	01	00											Overcast	28.6	1005.8	2.2	130	
92		2000	8	1	02	00											Raining	28.6	1005.8	4.7	150	
93		2000	8	1	03	00											Overcast	28.0	1004.9	3.8	180	
94		2000	8	1	04	00											Clear	28.0	1004.9	3.7	150	
95		2000	8	1	05	00											Clear	28.1	1004.8	1.9	150	
96		2000	8	1	06	00											Clear	28.4	1005.3	3.3	180	
97		2000	8	1	07	00							15.0	0.7	14	5Gy6/4	Raining	27.8	1005.4	8.9	210	
98		2000	8	1	08	00							14.0	0.6	15	5Gy6/4	Clear	27.8	1005.8	4.8	210	
99		2000	8	1	09	00							14.0	0.5	15	5Gy6/4	Clear	27.7	1006.4	2.5	180	
100		2000	8	1	10	00							14.0	0.5	15	5Gy6/4	Raining	27.9	1006.7	8.0	270	
101	P19	2000	8	1	15	00	22 °	11 ′	57 ″	113 °	42. ′	07 ″	4.5	0.5	16	5.5y6/2	Clear	27.8	1004.4	1.5	300	
102		2000	8	1	16	00							4.5	0.5	16	5.5y6/2	Clear	28.0	1004.9	3.4	160	
103		2000	8	1	17	00							4.3	0.3	19	5.5y7/5	Clear	27.5	1004.9	2.7	190	
104		2000	8	1	18	00							4.5	0.2	19	5.5y7/5	Raining	27.4	1005.9	4.4	180	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

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No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
105		2000	8	1	19	00											Overcast	27.4	1004.9	5.1	180	
106		2000	8	1	20	00											Overcast	27.8	1006.1	5.7	220	
107		2000	8	1	21	00											Overcast	28.0	1006.3	4.5	210	
108		2000	8	1	22	00											Overcast	28.0	1006.4	3.9	210	
109		2000	8	1	23	00											Overcast	28.3	1007.2	4.2	170	
110		2000	8	2	00	00											Overcast	28.2	1007.3	3.7	180	
111		2000	8	2	01	00											Overcast	28.4	1006.4	5.4	190	
112		2000	8	2	02	00											Overcast	28.4	1006.2	5.2	200	
113		2000	8	2	03	00											Overcast	28.1	1005.8	5.4	190	
114		2000	8	2	04	00											Overcast	28.3	1004.9	4.9	210	
115		2000	8	2	05	00											Raining	28.4	1005.6	8.7	210	
116		2000	8	2	06	00											Raining	26.2	1004.4	2.5	120	
117		2000	8	2	07	00							6.0	0.7	19	5.5y7/5	Overcast	26.6	1004.9	2.9	180	
118		2000	8	2	08	00							7.0	0.8	16	10y6.5/10	Raining	26.7	1005.9	6.3	210	
119		2000	8	2	09	00							7.0	0.8	16	10y6.5/10	Raining	26.8	1006.9	2.9	160	
120		2000	8	2	10	00							7.5	0.8	16	5Gy5/8	Raining	26.8	1006.0	4.5	150	
121		2000	8	2	11	00							7.0	1.0	15	5Gy6/4	Overcast	26.4	1006.5	4.2	135	
122		2000	8	2	12	00							7.0	1.0	15	5Gy6/4	Raining	26.5	1006.5	5.1	190	
123		2000	8	2	13	00							6.5	0.9	13	5Gy6/4	Overcast	26.6	1006.2	5.7	210	
124		2000	8	2	14	00							7	1.0	13	5Gy6/4	Overcast	26.9	1005.4	3.5	210	
125		2000	8	2	15	00							7.0	1.0	13	5Gy6/4	Overcast	27.0	1003.7	3.5	160	
126	P20	2000	8	1	15	00	22 °	11 ′	56 ″	113 °	48 ′	00 ″	19.3	1.0	14	5G5/4	Overcast	28.3	1004.2	0.8	240	
127		2000	8	1	16	00							18.6	1.0	14	5G5/4	Raining	27.8	1004.6	4.4	190	
128		2000	8	1	17	00							17.8	1.0	14	5G5/4	Raining	27.9	1003.3	1.2	160	
129		2000	8	1	18	00							17.3	0.8	19	5G5/4	Raining	27.7	1003.5	3.8	170	
130		2000	8	1	19	00											Raining	27.5	1003.7	4.5	170	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total page 14

No	Point No	Sampling time					Position		Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude	Longitude										
131		2000	8	1	20	00							Raining	27.8	1004.0	4.5	180	
132		2000	8	1	21	00							Overcast	27.7	1005.0	3.6	160	
133		2000	8	1	22	00							Overcast	27.9	1005.6	3.8	160	
134		2000	8	1	23	00							Overcast	27.7	1006.0	4.5	120	
135		2000	8	2	00	00							Overcast	27.9	1006.0	4.2	150	
136		2000	8	2	01	00							Overcast	27.5	1005.5	4.2	120	
137		2000	8	2	02	00							Overcast	28.1	1005.2	2.9	130	
138		2000	8	2	03	00							Overcast	28.3	1004.0	3.2	170	
139		2000	8	2	04	00							Overcast	27.9	1003.6	3.7	160	
140		2000	8	2	05	00							Raining	26.8	1003.2	11.0	210	
141		2000	8	2	06	00							Raining	25.7	1004.0	4.7	250	
142		2000	8	2	07	00			20.6	1.3	15	5Gy5/8	Raining	25.0	1003.9	6.6	220	
143		2000	8	2	08	00			20.8	1.2	15	5Gy5/6	Raining	24.9	1005.9	6.1	210	
144		2000	8	2	09	00			21.0	1.2	15	5G5/4	Raining	23.9	1006.0	5.4	190	
145		2000	8	2	10	00			20.6	1.4	14	5G5/4	Raining	24.3	1005.6	5.9	190	
146		2000	8	2	11	00			21.0	1.6	14	5G5/4	Raining	25.1	1006.0	4.0	170	
147		2000	8	2	12	00			21.2	1.2	15	5G5/4	Raining	25.9	1006.0	5.8	180	
148		2000	8	2	13	00			21.5	1.2	15	5G5/4	Raining	26.5	1005.5	7.3	200	
149		2000	8	2	14	00			21.1	1.2	15	5G5/4	Raining	26.1	1004.5	2.4	170	
150		2000	8	2	15	00			20.2	1.2	15	5G5/4	Raining	27.1	1003.6	1.0	190	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
1	P01	2000	8	9	20	00	22 °	44 ′	00 ″	113 °	40 ′	00 ″					Clear	30.5	1005.8	5.1	170	
2		2000	8	9	21	00											Clear	30.3	1005.8	5.7	180	
3		2000	8	9	22	00											Clear	30.1	1006.5	6.2	180	
4		2000	8	9	23	00											Clear	29.7	1006.6	7.2	180	
5		2000	8	10	00	00											Clear	29.2	1006.7	2.8	210	
6		2000	8	10	01	00											Clear	29.8	1005.6	2.0	260	
7		2000	8	10	02	00											Clear	28.6	1005.9	2.7	240	
8		2000	8	10	03	00											Clear	28.5	1005.9	2.6	210	
9		2000	8	10	04	00											Clear	28.3	1005.8	2.9	200	
10		2000	8	10	05	00											Clear	27.9	1005.3	3.0	210	
11		2000	8	10	06	00							27.5	1.0	18	5.5Y6/8	Clear	28.1	1006.1	2.8	230	
12		2000	8	10	07	00							27.5	0.9	17	5.5Y7/5	Clear	28.5	1006.0	3.9	240	
13		2000	8	10	08	00							27.3	0.9	17	5.5Y7/5	Clear	29.3	1006.8	2.4	240	
14		2000	8	10	09	00							26.6	0.8	19	5.5Y6/8	Clear	29.5	1007.5	2.5	240	
15		2000	8	10	10	00							26.1	0.8	17	5.5Y6/8	Clear	30.1	1007.5	2.3	240	
16		2000	8	10	11	00							25.6	0.7	18	5.5Y4/4	Clear	30.1	1007.3	1.7	250	
17		2000	8	10	12	00							25.1	0.7	18	5.5Y4/4	Clear	34.4	1005.9	1.6	150	
18		2000	8	10	13	00							24.8	0.7	18	5.5Y4/4	Clear	33.9	1004.7	3.5	160	
19		2000	8	10	14	00							24.3	0.7	18	5.5Y4/4	Clear	33.9	1004.4	3.3	240	
20		2000	8	10	15	00							24.2	0.7	18	5.5Y4/4	Clear	32.9	1003.4	4.6	175	
21		2000	8	10	16	00							24.3	0.8	18	5.5Y4/4	Clear	31.4	1001.8	4.4	170	
22		2000	8	10	17	00							24.6	0.9	17	5.5Y7/5	Clear	31.3	1001.8	6.4	160	
23		2000	8	10	18	00							25.3	0.8	18	5.5Y7/5	Clear	31.1	1002.0	6.7	160	
24		2000	8	10	19	00											Clear	30.9	1002.3	6.6	180	
25		2000	8	10	20	00											Clear	30.7	1002.3	7.0	170	
26	P04	2000	8	9	20	00	22 °	33 ′	31 ″	113 °	37 ′	54 ″					Clear	30.3	1006.7	4.4	180	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
27		2000	8	9	21	00											Clear	30.3	1007.2	5.0	170	
28		2000	8	9	22	00											Clear	30.2	1007.8	5.5	200	
29		2000	8	9	23	00											Clear	29.8	1008.0	6.1	210	
30		2000	8	10	00	00											Clear	29.3	1007.4	5.9	210	
31		2000	8	10	01	00											Clear	28.8	1006.9	3.1	240	
32		2000	8	10	02	00											Clear	30.2	1006.3	1.2	260	
33		2000	8	10	03	00											Clear	29.8	1006.3	1.7	240	
34		2000	8	10	04	00											Clear	29.8	1005.8	0.7	240	
35		2000	8	10	05	00											Clear	30.4	1006.2	3.2	280	
36		2000	8	10	06	00											Clear	29.9	1006.3	2.1	230	
37		2000	8	10	07	00							8.8	0.5	14	10Y6.5/10	Clear	30.6	1006.8	2.3	210	
38		2000	8	10	08	00							9.0	0.8	14	10Y6.5/10	Clear	28.9	1007.5	2.3	240	
39		2000	8	10	09	00							9.3	0.7	14	10Y6.5/10	Clear	29.0	1007.8	2.3	150	
40		2000	8	10	10	00							9.1	0.5	16	5.5Y7/5	Clear	29.4	1007.3	2.1	180	
41		2000	8	10	11	00							9.2	0.5	17	5.5Y6/8	Clear	29.9	1007.3	3.3	130	
42		2000	8	10	12	00							8.7	0.5	20	5.5Y6/8	Clear	30.0	1006.4	2.5	130	
43		2000	8	10	13	00							8.0	0.3	21	5.5Y4/4	Clear	30.4	1005.7	3.9	150	
44		2000	8	10	14	00							7.8	0.3	20	5.5Y6/8	Clear	30.9	1004.3	2.5	170	
45		2000	8	10	15	00							8.0	0.3	20	5.5Y6/8	Clear	31.0	1003.2	3.1	150	
46		2000	8	10	16	00							8.0	0.3	20	5.5Y6/8	Clear	31.4	1002.7	4.3	170	
47		2000	8	10	17	00							8.3	0.3	20	5.5Y6/8	Clear	31.5	1002.3	5.1	170	
48		2000	8	10	18	00							8.5	0.4	19	5.5Y6/8	Clear	31.4	1002.2	4.8	150	
49		2000	8	10	19	00							8.8	0.4	19	5.5Y6/8	Clear	31.2	1002.3	4.1	180	
50		2000	8	10	20	00											Clear	31.0	1002.7	6.4	210	
51	P11	2000	8	7	10	00	22°	24′	29″	113°	45′	00″	6.5	0.8	15	10Y6.5/10	Clear	28.4	1009.8	2.1	120	
52		2000	8	7	11	00							6.0	0.7	15	10Y6.5/10	Clear	28.8	1010.0	2.3	240	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
53		2000	8	7	12	00							7.2	1.0	15	10Y6.5/10	Clear	28.2	1009.7	3.8	220	
54		2000	8	7	13	00							7.2	0.8	15	10Y6.5/10	Clear	28.6	1009.3	5.1	170	
55		2000	8	7	14	00							8.2	0.8	15	10Y6.5/10	Clear	29.0	1009.2	4.3	150	
56		2000	8	7	15	00							8.0	0.8	14	10Y6.5/10	Clear	30.2	1008.7	5.5	170	
57		2000	8	7	16	00							7.8	0.8	14	10Y6.5/10	Clear	30.6	1007.9	5.7	190	
58		2000	8	7	17	00							8.0	0.9	14	10Y6.5/10	Clear	29.4	1007.7	7.6	170	
59		2000	8	7	18	00							8.0	0.9	15	10Y6.5/10	Clear	29.4	1007.7	7.1	180	
60		2000	8	7	19	00							7.8	0.9	15	10Y6.5/10	Clear	29.2	1008.2	6.7	160	
61		2000	8	7	20	00											Clear	29.2	1009.1	6.9	170	
62		2000	8	7	21	00											Clear	28.6	1010.2	6.7	170	
63		2000	8	7	22	00											Clear	28.6	1010.6	5.8	170	
64		2000	8	7	23	00											Clear	28.6	1010.8	6.3	150	
65		2000	8	8	00	00											Clear	28.5	1010.7	6.1	150	
66		2000	8	8	01	00											Clear	28.6	1010.3	4.6	170	
67		2000	8	8	02	00											Clear	28.8	1010.2	4.4	210	
68		2000	8	8	03	00											Clear	28.8	1010.6	3.4	200	
69		2000	8	8	04	00											Clear	28.8	1010.3	2.5	150	
70		2000	8	8	05	00											Clear	29.0	1010.3	1.9	170	
71		2000	8	8	06	00							8.0	1.0	15	10Y6.5/10	Clear	28.0	1009.4	1.7	120	
72		2000	8	8	07	00							8.0	1.2	13	10Y6.5/10	Clear	28.2	1009.5	3.3	100	
73		2000	8	8	08	00							8.0	1.5	13	10Y6.5/10	Clear	28.5	1010.0	2.7	100	
74		2000	8	8	09	00							7.8	1.4	13	10Y6.5/10	Clear	29.0	1010.6	2.3	120	
75		2000	8	8	10	00							7.5	1.2	15	10Y6.5/10	Clear	30.3	1010.9	2.0	90	
76	P12	2000	8	7	10	00	22 °	24 ′	32 ″	113 °	52 ′	37 ″	13.0	1.0	15	5GY5/8	Clear	29.9	1009.4	2.2	180	
77		2000	8	7	11	00							13.7	0.9	15	5GY5/8	Clear	30.1	1008.5	2.6	240	
78		2000	8	7	12	00							14.2	1.1	14	5GY5/8	Clear	29.5	1008.1	3.7	260	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
79		2000	8	7	13	00							13.9	1.1	15	5GY5/8	Clear	29.9	1008.3	3.2	250	
80		2000	8	7	14	00							15.0	1.3	15	5GY5/8	Clear	30.7	1008.5	2.0	240	
81		2000	8	7	15	00							15.6	1.1	15	5GY5/8	Clear	31.5	1008.0	3.5	240	
82		2000	8	7	16	00							15.0	1.1	14	5GY6/4	Clear	32.1	1007.2	1.7	220	
83		2000	8	7	17	00							14.3	1.2	14	5GY6/4	Clear	31.8	1007.1	5.5	210	
84		2000	8	7	18	00							14.3	1.2	14	5GY6/4	Clear	30.7	1007.4	4.5	170	
85		2000	8	7	19	00							14.4	1.3	14	5GY6/4	Clear	29.6	1007.9	3.8	150	
86		2000	8	7	20	00											Clear	29.1	1008.2	3.6	160	
87		2000	8	7	21	00											Clear	28.7	1010.0	1.8	160	
88		2000	8	7	22	00											Clear	28.6	1010.1	4.0	150	
89		2000	8	7	23	00											Clear	28.5	1010.5	3.5	150	
90		2000	8	8	00	00											Clear	28.1	1009.8	2.4	120	
91		2000	8	8	01	00											Clear	27.9	1010.3	2.2	120	
92		2000	8	8	02	00											Clear	27.9	1010.1	2.9	120	
93		2000	8	8	03	00											Clear	27.9	1009.3	1.1	110	
94		2000	8	8	04	00											Clear	27.8	1009.0	1.1	60	
95		2000	8	8	05	00											Clear	27.5	1008.9	1.8	70	
96		2000	8	8	06	00							15.3	1.0	14	5GY6/4	Clear	27.7	1009.3	2.2	70	
97		2000	8	8	07	00							14.8	1.0	15	5GY5/8	Clear	27.9	1009.4	2.3	80	
98		2000	8	8	08	00							14.2	0.9	15	5GY5/8	Clear	28.4	1009.9	2.7	70	
99		2000	8	8	09	00							14.2	0.9	15	5GY5/8	Clear	29.7	1010.7	1.3	60	
100		2000	8	8	10	00							13.9	0.9	15	5GY6/4	Clear	30.7	1010.3	0.5	60	
101	P19	2000	8	8	14	00	22°	11′	56″	113°	42′	00″	6.0	1.5	13	10Y6.5/10	Clear	29.1	1010.4	4.1	210	
102		2000	8	8	15	00							6.8	1.2	13	10Y6.5/10	Clear	30.2	1009.4	5.1	210	
103		2000	8	8	16	00							6.5	1.1	13	10Y6.5/10	Clear	30.2	1009.3	5.0	220	
104		2000	8	8	17	00							6.8	1.0	13	10Y6.5/10	Clear	29.8	1008.8	5.2	210	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
105		2000	8	8	18	00							6.8	1.1	13	10Y6.5/10	Clear	29.6	1008.8	4.8	210	
106		2000	8	8	19	00							6.7	1.0	13	10Y6.5/10	Clear	29.2	1009.1	4.5	150	
107		2000	8	8	20	00											Clear	29.2	1009.7	2.9	150	
108		2000	8	8	21	00											Clear	29.0	1010.1	3.1	170	
109		2000	8	8	22	00											Clear	29.0	1010.7	3.9	180	
110		2000	8	8	23	00											Clear	29.0	1010.8	3.8	210	
111		2000	8	9	00	00											Clear	28.9	1010.3	3.0	190	
112		2000	8	9	01	00											Clear	28.9	1009.3	3.8	180	
113		2000	8	9	02	00											Clear	29.0	1008.8	4.5	200	
114		2000	8	9	03	00											Clear	29.0	1008.7	3.6	210	
115		2000	8	9	04	00											Clear	28.8	1008.3	3.7	250	
116		2000	8	9	05	00											Clear	28.8	1008.5	3.9	250	
117		2000	8	9	06	00											Overcast	28.7	1009.0	3.1	300	
118		2000	8	9	07	00							7.8	1.1	14	10Y6.5/10	Clear	28.8	1009.7	2.9	250	
119		2000	8	9	08	00							7.0	0.8	14	10Y6.5/10	Clear	28.8	1010.5	2.1	310	
120		2000	8	9	09	00							7.1	1.0	13	10Y6.5/10	Clear	28.6	1010.7	2.0	290	
121		2000	8	9	10	00							6.7	1.1	13	10Y6.5/10	Clear	28.9	1010.3	2.1	240	
122		2000	8	9	11	00							6.5	1.0	13	10Y6.5/10	Clear	29.4	1010.3	1.6	210	
123		2000	8	9	12	00							6.5	0.9	14	10Y6.5/10	Clear	29.5	1009.8	2.7	210	
124		2000	8	9	13	00							6.0	0.9	13	10Y6.5/10	Clear	29.1	1009.2	3.3	190	
125		2000	8	9	14	00							6.5	1.0	14	10Y6.5/10	Clear	30.4	1008.3	5.9	210	
126	P20	2000	8	8	14	00	22 °	11 ′	56 ″	113 °	48 ′	00 ″	18.1	1.3	15	5GY5/8	Clear	33.3	1009.5	1.5	240	
127		2000	8	8	15	00							18.7	1.6	14	5GY5/8	Clear	32.9	1009.1	1.5	240	
128		2000	8	8	16	00							18.8	1.5	14	5GY5/8	Clear	32.7	1009.1	2.7	240	
129		2000	8	8	17	00							18.9	1.4	15	5GY5/8	Clear	32.1	1006.8	4.0	220	
130		2000	8	8	18	00							18.8	1.2	16	5GY5/8	Clear	31.1	1008.5	2.6	230	

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HYDROLOGICAL DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total page 14

No	Point No	Sampling time					Position						Water depth (m)	Transparency (m)	Water color (No)	Japan water color	Weather	Air temperature (°C)	Air pressure (hPs)	Wind speed (m/s)	Wind direction (°)	Remark
		Y	M	D	H	Min	Latitude			Longitude												
131		2000	8	8	19	00											Clear	30.5	1008.5	1.5	210	
132		2000	8	8	20	00											Clear	29.9	1009.4	2.4	190	
133		2000	8	8	21	00											Clear	29.1	1009.8	1.9	180	
134		2000	8	8	22	00											Clear	28.9	1010.7	1.3	190	
135		2000	8	8	23	00											Clear	28.7	1009.9	1.7	190	
136		2000	8	9	00	00											Clear	28.4	1009.8	2.2	190	
137		2000	8	9	01	00											Clear	27.9	1009.2	2.7	180	
138		2000	8	9	02	00											Clear	28.1	1008.5	3.4	200	
139		2000	8	9	03	00											Clear	28.2	1008.3	2.9	240	
140		2000	8	9	04	00											Clear	28.0	1008.1	3.0	240	
141		2000	8	9	05	00											Clear	28.1	1008.0	1.9	250	
142		2000	8	9	06	00											Clear	28.3	1008.7	2.3	250	
143		2000	8	9	07	00							19.9	1.5	14	5G5/4	Clear	28.3	1009.2	3.1	270	
144		2000	8	9	08	00							19.4	1.6	14	5G5/4	Clear	28.8	1010.0	2.7	270	
145		2000	8	9	09	00							19.3	1.8	14	5GY6/10	Clear	29.3	1010.1	2.8	300	
146		2000	8	9	10	00							18.8	1.6	14	5GY6/10	Clear	29.9	1009.9	1.7	270	
147		2000	8	9	11	00							18.6	1.5	13	5GY6/10	Clear	30.8	1009.6	2.1	270	
148		2000	8	9	12	00							18.3	1.7	14	5GY6/10	Clear	31.1	1009.8	1.9	270	
149		2000	8	9	13	00							18.2	1.8	14	5GY6/10	Clear	33.9	1008.2	2.0	210	
150		2000	8	9	14	00							18.2	1.8	14	5GY6/10	Clear	33.1	1007.8	2.9	220	

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON
FOR
SINO-JAPAN JOINT STUDY
ON
THE PEARL RIVER ESTUARY

SOUTH CHINA SEA ENVIRONMENTAL MONITORING CENTRE
OF
STATE OCEANIC ADMINISTRATION
SEPT 2000

LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
1	P02	2000	7	31	17	55	deck	16.32	17.60	18.63	18.10	16.78	18.41	17.20					
2							water	17.18	1.238	0.4860	0.2353	0.07155	0.04025	0.03225					
3	P03	2000	7	31	16	20	deck	25.11	26.82	28.49	28.56	29.62							
4							water	25.10	1.970	0.1206	0.09704	0.07155							
5	P05	2000	7	31	18	58	deck	1.144	1.088	1.006	0.9628	0.8934							
6							water	1.015	0.01386	0.07975	0.03920	0.01000							
7	P06	2000	7	31	17	05	deck	110.7	109.7	105.1	100.1	98.01	99.02	99.07					
8							water	52.07	4.912	0.6150	0.1593	0.07270	0.02300	0					
9	P07	2000	7	31	11	45	deck	1679	1608	1573	1601	1593	1621	1601	1580	1575			
10							water	760.0	76.80	10.30	0.2353	0.04853	0.01568	0.008821	0.008920	0.007841			
11	P08	2000	7	31	12	15	deck	1517	1523	1501	1503	1487	1500	1497	1499				
12							water	1311	827.2	187.6	105.3	16.52	5.772	3.424	0.8903				
13	P09	2000	7	31	09	50	deck	1234	1201	1210	1208	1211	1208	1210	1209	1209	1209	1211	1213
14							water	1089	932.7	571.1	210.0	81.86	19.05	17.52	4.804	3.072	1.371	0.9731	0.4895
15	P10	2000	7	31	08	00	deck	285.7	280.4	277.3	270.4	272.5							
16							water	261.3	50.78	2.889	0.4487	0.05682							
17	P13	2000	7	31	09	15	deck	620.4	660.8	894.6	854	822.4	911.7						
18							water	641.2	284.9	33.49	2.631	0.07155	0.00784						
19	P14	2000	7	31	8	40	deck	878.1	950.2	930.7	971.7	947	961.3						
20							water	770.8	350.5	157.5	36.66	0.05537	0.02627						

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
21	P15	2000	8	01	07	55	deck	48.30	49.51	49.88	50.76	49.17	54.88	54.63	57.71				
22							water	23.47	18.28	13.27	10.11	6.225	2.379	0.4851	0.01521				
23	P16	2000	8	01	09	17	deck	127.6	129.1	130.2	128.7	110.9	108.7	111.7	115.2	117.3	116.2	109.8	105.3
24							water	100.8	90.72	74.18	52.11	20.01	5.462	0.03879	0.01521	0.01306	0	0	0
25	P17	2000	8	01	07	30	deck	618.7	633.4	654.1	625.8	636.5	664.0	625.1					
26							water	415.7	189.4	88.53	25.37	0.4499	0.04019	0.02451					
27	P18	2000	8	01	10	50	deck	565.3	607.2	618.3	602.4	590.3	571.2	566.8	565.7	570.9	577.8	580.2	583.3
28							water	290.5	284.8	111.7	30.66	8.553	1.456	0.5304	0.09772	0.07211	0.01595	0	0
29	P21	2000	8	01	09	20	deck	148.3	185.6	215.3	244.2	270.1	354.4	368.7	378.2	401.5			
30							water	184.6	148.6	131.2	54.40	29.62	15.55	4.936	0.7881	0.1843			
31	P22	2000	8	01	13	10	deck	525.1	510.7	527.1	489.2	500.3	530.1	532.7	527.6	529.2	550.7	563.8	578.3
32							water	475.2	291.5	181.6	92.30	52.13	41.34	25.00	16.95	7.427	2.451	0.9312	0.9312
33	P23	2000	8	01	14	50	deck	631.7	520.1	520.4	521.3	518.4	507.7	503.1	491.7	489.9	495.1	499.8	520.7
34							water	460.1	401.7	141.4	82.90	34.93	8.454	3.937	1.070	0.3103	0.2612	0.2011	0.02393
35	P24	2000	8	01	12	55	deck	215.3	217.8	229.2	212.1	221.8	199.1						
36							water	209.2	158.3	91.19	46.35	49.66	24.46						
37	P25	2000	8	01	17	15	deck	64.20	71.76	69.44	65.00	60.76	60.13	64.58	61.88	58.75	57.07	58.44	57.51
38							water	13.23	12.20	10.17	6.723	6.201	4.558	3.552	2.344	1.348	0.8495	0.4485	0.02394
39	P26	2000	8	04	12	25	deck	472.1	473.5	472.8	457.7	443.7	432.6						
40							water	250.4	143.4	91.08	70.02	27.29	14.56						

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
1	P02	2000	7	31	17	55	deck												
2							water												
3	P03	2000	7	31	16	20	deck												
4							water												
5	P05	2000	7	31	18	58	deck												
6							water												
7	P06	2000	7	31	17	05	deck												
8							water												
9	P07	2000	7	31	11	45	deck												
10							water												
11	P08	2000	7	31	12	15	deck												
12							water												
13	P09	2000	7	31	09	50	deck	1220	1219	1207	1210	1211							
14							water	0.05681	0	0	0	0							
15	P10	2000	7	31	08	00	deck												
16							water												
17	P13	2000	7	31	09	15	deck												
18							water												
19	P14	2000	7	31	8	40	deck												
20							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
21	P15	2000	8	01	07	55	deck												
22							water												
23	P16	2000	8	01	09	17	deck	110.7	120.0										
24							water	0	0										
25	P17	2000	8	01	07	30	deck												
26							water												
27	P18	2000	8	01	10	50	deck	581.2	582.3	560.3	501.2								
28							water	0	0	0	0								
29	P21	2000	8	01	09	20	deck												
30							water												
31	P22	2000	8	01	13	10	deck	591.2	601.2										
32							water	0.1545	0.1124										
33	P23	2000	8	01	14	50	deck												
34							water												
35	P24	2000	8	01	12	55	deck												
36							water												
37	P25	2000	8	01	17	15	deck	56.88	56.24	61.38	59.76	57.07	58.50	57.13	57.39	52.21			
38							water	0	0	0	0	0	0	0	0	0			
39	P26	2000	8	04	12	25	deck												
40							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in neap tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
1	P02	2000	8	07	07	35	deck	637.0	545.9	558.0	547.2	548.2	541.0	533.8	410.5	149.1			
2							water	201.3	88.04	16.62	2.131	0.2245	0.01568	0.03137	0.04803	0.02451			
3	P03	2000	8	07	09	45	deck	1447	1450	1452	1449	1444							
4							water	896.6	237.7	31.69	0.5950	0.0409							
5	P05	2000	8	07	08	25	deck	463.0	386.9	380.1	355.7	350.1	350.0	340.5					
6							water	111.7	98.23	90.20	13.27	6.628	0.3788	0.08892					
7	P06	2000	8	07	07	00	deck	263.7	253.9	206.3	113.4	109.0	106.4	110.2					
8							water	67.55	60.32	13.49	1.584	0.3180	0.07279	0					
9	P07	2000	8	07	12	45	deck	2037	2029	2008	2006	2141	2147	2044	2120				
10							water	176.9	125.4	43.01	5.607	0.4019	0.06371	0.03137	0.01568				
11	P08	2000	8	07	09	35	deck	1571	1275	1248	1244	1203	1163	1160	1037				
12							water	1233	889.5	247.5	67.07	20.57	5.776	1.716	0.01595				
13	P09	2000	8	07	11	40	deck	222.1	180.7	187.4	181.3	174.3	151.3	130.9	140.7	144.9	125.7	134.2	132.5
14							water	81.51	34.87	17.02	6.175	3.277	1.422	0.8335	0.5304	0.2532	0.1216	0.05682	0.02393
15	P10	2000	8	07	13	25	deck	1715	1709	1680	1694	1674							
16							water	1093	203.1	70.02	14.13	4.313							
17	P13	2000	8	07	14	25	deck	1650	1695	1722	1718								
18							water	1266	198.2	29.85	0.8361								
19	P14	2000	8	07	15	20	deck	825.9	673.8	745.0	778.4	840.4							
20							water	237.0	146.1	61.58	11.30	3.684							

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in neap tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
21	P15	2000	8	08	16	50	deck	157.2	145.8	153.4	162.5	168.7	181.4	190.5					
22							water	84.36	41.80	27.18	10.22	4.392	2.292	0.7558					
23	P16	2000	8	08	15	30	deck	1584	1581	1549	1467	1563	1538	1547	1079	1569	1533	1543	1545
24							water	1185	462.1	209.7	54.28	12.71	4.618	1.706	0.9655	0.3695	0.2245	0.1248	0.07155
25	P17	2000	8	08	08	45	deck	1128	1146	1131	1137	1149	1120						
26							water	894.2	537.3	359.6	141.5	17.65	1.987						
27	P18	2000	8	08	13	45	deck	1989	1977	2000	1975	1998	1966	1978	1986	1982	1981	1997	1981
28							water	1596	846.7	605.6	221.6	98.67	41.90	22.90	9.405	5.526	2.115	0.7558	0.2568
29	P21	2000	8	08	10	30	deck	1728	1711	1708	1709	1722	1725	1716	1676				
30							water	1312	919.3	347.8	147.9	75.44	39.24	17.60	4.464				
31	P22	2000	8	09	08	15	deck	781.9	770.1	769.5	768.4	772.6	780.4	780.8	778.6	792.7	790.3	788.5	787.3
32							water	558.7	235.6	178.8	73.78	33.98	21.55	14.85	8.674	6.331	4.281	3.611	2.483
33	P23	2000	8	09	09	20	deck	1217	1215	1210	1198	1200	1204	1199	1198	1198	1200	1203	
34							water	687.8	429.7	203.3	69.27	43.22	32.54	20.87	10.29	8.312	5.181	3.517	
35	P24	2000	8	06	15	45	deck	1484	1482	1501	1477	1496	1490						
36							water	68.02	30.81	27.94	12.21	6.030	4.929						
37	P25	2000	8	06	14	00	deck	1749	1629	1420	1275	1277	1233	1424	1937	1829	1457	1454	1397
38							water	1342	1186	633.4	513.7	349.9	239.2	226.5	185.2	109.8	63.12	58.83	47.54
39	P26	2000	8	06	18	25	deck	59.69	59.41	57.45	57.69	57.22	56.53	55.84					
40							water	34.65	18.19	7.312	5.813	1.950	1.904	1.101					

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in neap tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
1	P02	2000	8	07	07	35	deck												
2							water												
3	P03	2000	8	07	09	45	deck												
4							water												
5	P05	2000	8	07	08	25	deck												
6							water												
7	P06	2000	8	07	07	00	deck												
8							water												
9	P07	2000	8	07	12	45	deck												
10							water												
11	P08	2000	8	07	09	35	deck												
12							water												
13	P09	2000	8	07	11	40	deck	128.6	118.4										
14							water	0	0										
15	P10	2000	8	07	13	25	deck												
16							water												
17	P13	2000	8	07	14	25	deck												
18							water												
19	P14	2000	8	07	15	20	deck												
20							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Intensive point in neap tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
21	P15	2000	8	08	16	50	deck												
22							water												
23	P16	2000	8	08	15	30	deck	1516	1447	1562									
24							water	0.05587	0.04019	0.007841									
25	P17	2000	8	08	08	45	deck												
26							water												
27	P18	2000	8	08	13	45	deck	1980	1977										
28							water	0.1117	0.05587										
29	P21	2000	8	08	10	30	deck												
30							water												
31	P22	2000	8	09	08	15	deck	793.3	798.4	798.9	783.5	780.8							
32							water	1.442	0.7268	0.4048	0.2941	0.1137							
33	P23	2000	8	09	09	20	deck												
34							water												
35	P24	2000	8	06	15	45	deck												
36							water												
37	P25	2000	8	06	14	00	deck	1393	1502	1661	1793	1996	2078	2212	2131	1718			
38							water	37.39	30.96	31.87	26.59	19.83	16.50	10.50	4.957	2.777			
39	P26	2000	8	06	18	25	deck												
40							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
1	P01	2000	8	03	06		deck	Raining											
2							water	Raining											
3	P01	2000	8	03	07		deck	50.89	48.78	47.16	42.70	45.40	45.77	47.39	49.11	51.82	53.58	52.72	50.86
4							water	13.75	3.432	0.577	0.0658	0.022	0.0142	0.0839	0.0687	0.0387	0.0456	0.003800	0.06850
5	P01	2000	8	03	08		deck	104.2	107.3	109.7	113.7	116.7	120.1	124.6	130.4	135.5	142.4	150.2	160.3
6							water	55.74	4.503	1.024	0.02984	0.3814	0	0.02238	0.3515	0	0.1520	0.1138	0.09884
7	P01	2000	8	03	09		deck	383.8	407.9	413.0	420.0	427.4	438.2	448.9	459.5	465.5	469.8	472.0	473.1
8							water	115.3	19.66	2.538	0.6499	0.1912	0.09884	0	0	0.2751	0.2368	0	0.1912
9	P01	2000	8	03	10		deck	431.2	440.6	449.6	479.7	527.7	753.6	456.8	444.8	445.2	445.6	431.2	429.4
10							water	104.4	40.98	1.751	0.6415	0.3972	0.4429	0	0.1222	0.07646	0.02518	0.03823	0.1445
11	P01	2000	8	03	11		deck	Raining											
12							water	Raining											
13	P01	2000	8	03	12		deck	Raining											
14							water	Raining											
15	P01	2000	8	03	13		deck	567.6	569.5	573.4	579.2	582.7	586.6	591.2	597.9	600.8	605.6	615.3	622.3
16							water	169.1	33.7	5.127	0.2687	0.04569	0	0.02690	0.07690	0.04210	0.02690	0	0.09210
17	P01	2000	8	03	14		deck	326.0	326.0	327.6	327.9	327.6	327.7	325.6	325.5	324.6	323.9	322.4	321.6
18							water	169.3	115.1	31.45	1.055	0.1063	0.5427	0	0.1445	0.2061	0.1678	0.2667	0.3972
19	P01	2000	8	03	15		deck	449.8	452.6	454.5	455.9	457.7	459.5	461.4	463.7	466.5	467.9	470.2	472.1
20							water	275.8	9.786	0.4355	0.1604	0.01492	0.06061	0	0.1604	0.1986	0.6574	0.2900	0.2975
21	P01	2000	8	03	16		deck	470.8	465.6	463.8	461.4	458.6	457.3	454.5	453.1	453.6	455.0	456.3	460.6
22							water	223.2	30.50	3.151	0.04569	0.03823	0.07646	0.6425	0.3515	0.06806	0.09138	0.07646	0
23	P01	2000	8	03	17		deck	367.0	366.8	365.9	368.8	375.0	376.3	377.6	375.4	376.2	374.5	374.5	374.6
24							water	100.3	26.3	5.589	0	0.0296	0.0356	0.1608	0.1448	0.2518	0.04600	0	0
25	P01	2000	8	03	18		deck	169.2	168.7	167.6	168.1	167.6	165.8	164.2	167.8	166.5	165.6	165.6	160.6
26							water	102.8	23.50	5.282	0.186	0.2520	0.1820	0.3210	0.1126	0	0.08020	0	0

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
27	P01	2000	8	03	19		deck	2. 941	2.769	2.694	2.582	2.517	2.368	2.312	2.242	2.212	2.102	2.206	1.814
28							water	0. 1670	0.2518	0.2216	0.02160	0	0	0.05710	0.007410	0	0	0.002180	0
29	P04	2000	8	03	06		deck	78.53	78.02	79.32	78.49	78.91	78.10	77.91	78.25				
30							water	20.98	3.526	0.1081	0.06191	0.04644	0.03033	0.01611	0.02375				
31	P04	2000	8	03	07		deck	162.3	159.3	157.3	156.2	155.7	157.2	158.4	159.9				
32							water	40.87	7.342	2.353	0.1081	0.04644	0.0616	0.03791	0.01611				
33	P04	2000	8	03	08		deck	165.0	156.9	152.1	144.8	137.3	128.3	122.6					
34							water	45.88	6.261	1.607	0.1242	0.04644	0.0237	0.01393					
35	P04	2000	8	03	09		deck	974.7	1438	982.6	992.2	1460	1046	949.1	1020				
36							water	662.5	166.0	33.97	3.534	0.2796	0.02275	0.01517	0.00853				
37	P04	2000	8	03	10		deck	950.9	935.0	928.5	907.0	892.5	875.0	908.7	1086				
38							water	182.1	75.57	18.95	17.06	0.9943	0.07391	0.04644	0.1242				
39	P04	2000	8	03	11		deck	Raining											
40							water	Raining											
41	P04	2000	8	03	12		deck	Raining											
42							water	Raining											
43	P04	2000	8	03	13		deck	754.2	752.9	750.6	749.8	747.0	744.4	742.1	738.6				
44							water	250.9	45.26	10.74	0.9048	0.03033	0.03791	0.007582	0.003128				
45	P04	2000	8	03	14		deck	554.9	552.7	549.0	547.2	544.5	543.2	541.4	540.1	537.8	535.6		
46							water	208.2	51.24	25.14	1.009	0.1156	0.03791	0.03033	0.07677	0.007582	0.01517		
47	P04	2000	8	03	15		deck	601.6	598	596.6	595.3	594.4	592.6	590.8	590.9	590.4	590.4		
48							water	145.5	51.58	17.94	10.91	15.92	0.1156	0.02275	0.03886	0.03128	0.01611		
49	P04	2000	8	03	16		deck	473.7	479.5	483.0	485.3	489.4	482.6	497.0	496.5	495.9			
50							water	157.2	48.63	12.14	0.3649	0.2711	0.04644	0.02275	0.04644	0.02275			
51	P04	2000	8	03	17		deck	310.7	310.3	310.5	310	309.8	308.8	308.9	308.6				
52							water	136.9	45.62	9.542	0.5279	0.06913	0.03791	0.01517	0.01242				

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
53	P04	2000	8	03	18		deck	101.8	100.2	99.67	98.91	98.15	97.53	96.17	94.58				
54							water	35.42	16.45	1.926	0.0616	0.03033	0.1393	0.07677	0.06166				
55	P04	2000	8	03	19		deck	6.970	5.634	5.309	5.066	4.755	4.396	4.073	3.920				
56							water	2.828	0.4967	0.3877	0.2407	0.09288	0.06919	0.04644	0.1317				
57	P11	2000	7	31	10		deck	1695	1652	1583.4	1626	1698	1669	1714	1662	1701			
58							water	932.2	210.3	72.36	2.683	0.06129	0	0.007400	0	0.007400			
59	P11	2000	7	31	11		deck	1901	1876	1883	1941	1950	1983	1950	1922	1934	1931		
60							water	898.4	406.4	203.6	30.04	2.983	0.3972	0.0224	0.0453	0.01492	0.0074		
61	P11	2000	7	31	12		deck	1914	1940	1939	1914	1906	1880	1879	1902	1918	1936		
62							water	683.5	281.0	171.2	83.50	47.82	12.29	2.134	0.2063	0	0		
63	P11	2000	7	31	13		deck	1927	1990	1919	1849	1873	1908	1888	1857	1866	1863		
64							water	936.4	630.0	211.0	75.62	21.91	1.446	0.7338	0.4819	0.0074	0		
65	P11	2000	7	31	14		deck	1853	1840	1816	1825	1768	1693	1659	1641	1642	1570		
66							water	1410	449.6	487.8	103.5	19.85	122.22	4.092	0.1604	0.1296	0.04569		
67	P11	2000	7	31	15		deck	978.5	986.4	980.8	981.9	983.7	985.6	993.5	987.9	985.6	975.7		
68							water	310.0	181.0	127.6	30.22	9.501	0.1828	0.01492	0.09884	0.03823	0.05408		
69	P11	2000	7	31	16		deck	399.2	380.5	376.9	373.6	372.6	368.9	366.6	364.4	360.6	358.7		
70							water	223.9	158.4	44.95	12.01	8.467	4.712	0.8719	0.2061	0.09138	0.05315		
71	P11	2000	7	31	17		deck	130.9	130.0	129.8	129.4	128.7	128.8	128.3					
72							water	2.301	0.03916	0.04662	0.02238	0.06806	0.05408	0.02984					
73	P11	2000	7	31	18		deck	92.62	91.13	90.9	89.82	89.02	87.52	87.36					
74							water	16.42	0.2238	0.0074	0.007	0.00745	0	0.003800					
75	P11	2000	7	31	19		deck	3.098	2.922	2.782	2.568	2.396	2.163	2.000					
76							water	0.06060	0.03700	0.01400	0.007400	0	0	0					
77	P11	2000	8	01	06		deck	8.977	10.02	10.31	10.58	10.88	11.26	11.66	12.08	12.61			
78							water	3.708	2.140	0.9856	0.221	0.0373	0.05335	0.02238	0	0.007458			

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Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
79	P11	2000	8	01	07		deck	115.8	115.1	116.9	117.8	120.7	126.0	127.4	134.7	133.7			
80							water	58.93	32.66	16.67	4.174	1.094	0.3975	0.1986	0.0291	0.0382			
81	P11	2000	8	01	08		deck	800.4	665.6	551.2	476.3	458.4	450.0	520.2	531.5	532.4			
82							water	429.6	253.0	108.2	11.38	9.924	6.262	2.661	0.1986	0.0826			
83	P11	2000	8	01	09		deck	491.2	489.7	509.4	524.6	542.6	532.0	510.2	529.3	576.4			
84							water	185.0	120.8	57.60	38.80	35.70	20.60	0.3215	0.01960	0.01540			
85	P11	2000	8	01	10		deck	462.0	478.2	484.3	491.3	494.0	497.8	502.9	509.8	513.2			
86							water	126.3	36.00	13.00	0.4355	0.05315	0.01492	0	0	0.007458			
87	P12	2000	7	31	10		deck	1704	1650	1778	1643	1781	1773	1825	1828	1818	1793	1830	1821
88							water	143.3	105.5	69.90	23.23	8.009	2.584	0.4730	0.1545	0.1156	0.06916	0.04739	0.03533
89	P12	2000	7	31	11		deck	1915	1916	1899	1879	1905	1872	1846	1870	1906	1890	1897	1912
90							water	226.7	91.97	59.86	20.78	7.093	2.548	1.149	0.4395	0.1317	0.03791	0.01517	0.03791
91	P12	2000	7	31	12		deck	2054	2054	2058	2056	2044	2077	2075	2076	2063	2066	2070	2073
92							water	204.1	130.97	53.54	19.78	6.191	5.508	1.755	0.5128	0.1706	0.05402	0.02275	0.04644
93	P12	2000	7	31	13		deck	2228	2220	2222	2223	2217	2212	2223	2202	2159	2179	2191	2170
94							water	210.7	81.47	38.29	29.28	10.33	2.586	0.8542	0.4189	0.3962	0.3412	0.05402	0.03796
95	P12	2000	7	31	14		deck	1628	1665	1686	1639	1642	1649	1620	1624	1637	1645	1650	1638
96							water	165.1	166.5	123.0	86.29	32.27	8.702	3.985	1.515	0.2407	0.0379	0.1242	0.07677
97	P12	2000	7	31	15		deck	1262	1265	1238	1229	1202	1208	1206	1173	1108	1145	1096	1060
98							water	256.3	59.49	11.10	0.1782	0.09283	0.1156	0.0543	0.01517	0.03033	0.0616	0.03791	0.04644
99	P12	2000	7	31	16		deck	425.2	421.1	415.7	403.2	401.6	384.4	389.2	392.0	374.4	383.9	376.7	365.8
100							water	114.8	6.548	0.6112	0.1005	0.1018	0.06919	0.03033	0.04644	0.0616	0.03791	0.03886	0.05402
101	P12	2000	7	31	17		deck	185.5	181.1	177.7	181.0	177.8	179.7	178.4	178.1	177.6	175.4	176.9	170.2
102							water	58.80	14.93	0.04644	0.04739	0.03128	0.01517	0.03033	0.01611	0.02700	0.007582	0.03791	0.02275
103	P12	2000	7	31	18		deck	75.30	73.55	73.63	72.82	71.39	70.31	70.85	70.35	69.28	68.60	67.92	67.49
104							water	27.76	4.730	0.1469	0.08625	0	0.1517	0.3033	0.007582	0.01517	0.008356	0.02275	0

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
105	P12	2000	7	31	19		deck	6.479	5.861	5.518	5.302	5.038	4.808	4.498	4.261	3.951	3.708	3.489	3.139
106							water	2.129	0.2948	0.1081	0.07460	0.03790	0.03033	0.02275	0.02370	0.007582	0.04644	0.03886	0.07677
107	P12	2000	8	01	06		deck	2.869	3.084	3.360	3.507	3.843	4.000	4.131	4.222	4.261	4.325	4.400	4.463
108							water	0.4189	0.2635	0.217	0.06919	0.01617	0.02275	0.01517	0.07677	0.007582	0.04739	0.008537	0.05402
109	P12	2000	8	01	07		deck	27.77	30.69	33.92	36.42	39.73	42.43	45.25	48.35	53.2	58.37	63.39	67.88
110							water	10.61	7.855	5.384	1.189	0.5431	0.2948	0.09288	0.06102	0.05402	0.09328	0.03128	0.07772
111	P12	2000	8	01	08		deck	188.2	192.5	196.3	198.8	201.4	203.6	205.8	207.4	209.9	212.7	216.8	221.4
112							water	65.32	43.20	25.78	10.23	3.596	1.522	0.5279	0.2559	0.2246	0.1221	0.2483	0.05497
113	P12	2000	8	01	09		deck	289.6	275.4	270.9	274.0	285.1	303.8	312.5	322.1	335.6	363.2	384.2	423.8
114							water	108.4	85.50	47.28	22.34	5.018	0.4967	0.1547	0.1050	0.0818	0.04644	0.05402	0.03033
115	P12	2000	8	01	10		deck	548.6	554.9	561.6	575.1	589.5	601.1	612.4	617.8	621.3	614.2	598.4	578.6
116							water	234.6	104.2	98.33	22.50	6.877	2.706	0.9317	0.4341	0.06919	0.02275	0.03033	0.03128
117	P19	2000	8	01	15		deck	613.6	611.1	606.1	598.4	596.6	589	581.4	573.8				
118							water	244.4	215.8	125.8	58.42	1.211	0.09288	0.06918	0.05402				
119	P19	2000	8	01	16		deck	342.1	344.5	348.9	354.6	359.5	361.8	354.6					
120							water	147.6	118.3	81.95	2.096	0.04644	0.01517	0.02370					
121	P19	2000	8	01	17		deck	194.3	192.7	191.8	189.2	187.8	186.7						
122							water	85.59	76.27	3.977	0.1156	0.03033	0.02370						
123	P19	2000	8	01	18		deck	79.29	78.8	79.33	78.26	77.76	76.28						
124							water	23.37	13.48	4.132	0.1317	0.09298	0.07677						
125	P19	2000	8	01	19		deck	9.336	9.094	8.726	8.406	8.105	7.699	7.333					
126							water	2.897	2.229	0.1858	0.1317	0.1706	0.05497	0.01611					
127	P19	2000	8	02	06		deck	Raining											
128							water	Raining											
129	P19	2000	8	02	07		deck	Raining											
130							water	Raining											

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		Y	M	D	H	Min													
131	P19	2000	8	02	08		deck	Raining											
132							water	Raining											
133	P19	2000	8	02	09		deck	Raining											
134							water	Raining											
135	P19	2000	8	02	10		deck	Raining											
136							water	Raining											
137	P19	2000	8	02	11		deck	Raining											
138							water	Raining											
139	P19	2000	8	02	12		deck	Raining											
140							water	Raining											
141	P19	2000	8	02	13		deck	Raining											
142							water	Raining											
143	P19	2000	8	02	14		deck	571.0	566.6	570.2	576.4	572.5	567.0	578.2	548.2	544.2			
144							water	198.1	141.4	84.59	58.60	19.69	6.896	1.095	0.1319	0.04644			
145	P19	2000	8	02	15		deck	679.7	689.2	691.8	699.9	704.0	711.2	705.8	709.8				
146							water	268.5	190.5	140.9	68.8	34.96	2.865	0.1014	0.09288				
147	P20	2000	8	01	15		deck	478.2	476.9	472.7	471.7	470.8	468.0	463.2	461.2	458.8	457.6	453.1	449.4
148							water	141.6	128.3	88.20	56.30	32.40	21.20	10.25	7.000	5.530	4.115	3.068	2.096
149	P20	2000	8	01	16		deck	245.5	242.3	241.8	242.4	241.0	240.6	242.4	242.3	242.4	242.3	243.0	242.9
150							water	179.8	62.14	42.30	16.94	13.67	8.860	4.221	2.096	1.529	0.715	0.195	0.0532
151	P20	2000	8	01	17		deck	195.5	192.4	193.6	193.1	192.4	192.7	191.8	190.8	190.1	190.3	189.5	188.2
152							water	64.90	32.30	16.08	6.708	2.654	1.185	1.016	0.6310	0.2210	0.07610	0.0261	0.0836
153	P20	2000	8	01	18		deck	57.40	54.98	40.98	47.21	48.21	49.26	52.85	54.10	53.68	53.49	53.36	53.82
154							water	52.10	16.01	11.28	2.493	0.1912	0.04569	0.2061	0.02238	0.09884	0.01492	0.02984	0.09884
155	P20	2000	8	01	19		deck	5.420	5.200	5.014	4.838	4.637	4.442	4.224	4.031	3.828	3.675	3.442	3.223
156							water	2.256	0.6266	0.2210	0.1138	0.02984	0.007458	0.01492	0.1604	0.01492	0.02984	0.04569	0

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
157	P20	2000	8	02	06		deck	Raining											
158							water	Raining											
159	P20	2000	8	02	07		deck	17.00	17.18	17.29	17.39	17.49	17.60	17.68	17.80	17.89	18.00	18.12	18.20
160							water	10.44	5.190	3.784	1.896	0.8793	0.3972	0.07552	0.1063	0.01492	0.1912	0.01492	0.2682
161	P20	2000	8	02	08		deck	Raining											
162							water	Raining											
163	P20	2000	8	02	09		deck	Raining											
164							water	Raining											
165	P20	2000	8	02	10		deck	Raining											
166							water	Raining											
167	P20	2000	8	02	11		deck	773.9	783.7	785.2	787.8	789.9	794.9	797.8	801.4	805.6	810.7	812.6	813.9
168							water	325.2	238.0	178.4	79.84	41.40	24.12	10.05	5.011	1.544	0.6184	0.3815	0.1445
169	P20	2000	8	02	12		deck	193.6	198.3	205.6	216.4	232.4	245.8	255.7	260.2	255.7	235.4	223.9	219.4
170							water	95.18	51.89	40.1	17.85	6.896	3.563	4.327	1.819	0.7264	0.3208	0.08392	0.02238
171	P20	2000	8	02	13		deck	410.2	411.2	414.4	419.8	421.9	425.1	426.0	423.2	419.6	413.9	409.3	405.6
172							water	145.9	75.35	78.67	37.52	35.90	13.98	6.706	3.471	1.621	0.6117	0.1902	0.06062
173	P20	2000	8	02	14		deck	457.2	458.6	454.0	455.9	455.8	455.4	455.8	454.9	455.8	455.8	454.0	453.1
174							water	153.0	72.40	42.38	15.52	5.804	2.232	1.322	0.4450	0.02238	0.1445	0.1445	0.1445
175	P20	2000	8	02	15		deck	432.4	436.3	436.2	436.1	434.4	433.9	433.4	434.9	434.5	435.8	435.4	436.2
176							water	174.1	118.4	92.40	41.50	18.85	9.786	4.160	2.123	1.766	0.3856	0.3125	0.1298

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
1	P01	2000	8	03	06		deck												
2							water												
3	P01	2000	8	03	07		deck	49.62	48.61	48.1	45.65	45.63	46.79	48.69					
4							water	0.007700	0.005100	0.006600	0.02960	0.08360	0.04360	0.002800					
5	P01	2000	8	03	08		deck	170.8	180.2	190.4	198.6	207.6	217.0	222.8	228.6	233.8			
6							water	0.1063	0.06806	0.1753	0.1138	0.1828	0.1445	0	0.07646	0.08392			
7	P01	2000	8	03	09		deck	474	475.9	478.2	479.5	481.4	483.3	486.5	491.2	490.7	491.2		
8							water	0.7562	0.02984	0.2751	0	0.3739	0.1371	0.1445	0.01492	0.05315	0.007458		
9	P01	2000	8	03	10		deck	423.8	423.4	414.9	397.3	394.5	385.7	371.3	327.3	303.7			
10							water	0.06061	0.09138	0.007458	0.1912	0.3665	0.6806	0.221	0.02238	0.03823			
11	P01	2000	8	03	11		deck												
12							water												
13	P01	2000	8	03	12		deck												
14							water												
15	P01	2000	8	03	13		deck	625.5	630.1	638.1	643.7	649.7	654.0	657.3	654.1	667.4	652.1		
16							water	0	0	0	0	0	0	0	0	0	0		
17	P01	2000	8	03	14		deck	320.2	318.6	316.8	315.1	312.6	310.5	309.8	306.7	305.2	303.6		
18							water	0.1222	0.4504	0.4737	0.2975	0.1222	0.2135	0.08391	0.1063	0.1296	0.02238		
19	P01	2000	8	03	15		deck	474.8	477.3	479.1	481.4	485.6	488.9	492.1	496.8	501	506.6		
20							water	0.4504	0.3441	0.02984	0.05315	0.05315	0.07646	0.03823	0.04288	0.01429	0.07646		
21	P01	2000	8	03	16		deck	462.8	465.1	467.1	471.2	473.6	476.4	477.8	479.2	480.0	481.0		
22							water	0.1828	0	0.02338	0.05315	0.02984	0.1678	0.09138	0.007458	0.05315	0		
23	P01	2000	8	03	17		deck	373.1	371.5	371.3	369.5	368.5	368.9	368.5	368.0				
24							water	0.0308	0.00741	0.1194	0	0.0918	0	0	0				
25	P01	2000	8	03	18		deck	160.1	168.1	168.7	166.7	168.1	165.6	164.6	163.6				
26							water	0	0.0082	0.00815	0.1208	0.0256	0.0081	0.0806	0				

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
27	P01	2000	8	03	19		deck	1.842	1.781	1.749	1.721	1.679	1.637	1.601					
28							water	0	0.01402	0	0.007410	0	0	0					
29	P04	2000	8	03	06		deck												
30							water												
31	P04	2000	8	03	07		deck												
32							water												
33	P04	2000	8	03	08		deck												
34							water												
35	P04	2000	8	03	09		deck												
36							water												
37	P04	2000	8	03	10		deck												
38							water												
39	P04	2000	8	03	11		deck												
40							water												
41	P04	2000	8	03	12		deck												
42							water												
43	P04	2000	8	03	13		deck												
44							water												
45	P04	2000	8	03	14		deck												
46							water												
47	P04	2000	8	03	15		deck												
48							water												
49	P04	2000	8	03	16		deck												
50							water												
51	P04	2000	8	03	17		deck												
52							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
53	P04	2000	8	03	18		deck												
54							water												
55	P04	2000	8	03	19		deck												
56							water												
57	P11	2000	7	31	10		deck												
58							water												
59	P11	2000	7	31	11		deck												
60							water												
61	P11	2000	7	31	12		deck												
62							water												
63	P11	2000	7	31	13		deck												
64							water												
65	P11	2000	7	31	14		deck												
66							water												
67	P11	2000	7	31	15		deck												
68							water												
69	P11	2000	7	31	16		deck												
70							water												
71	P11	2000	7	31	17		deck												
72							water												
73	P11	2000	7	31	18		deck												
74							water												
75	P11	2000	7	31	19		deck												
76							water												
77	P11	2000	8	01	06		deck												
78							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
79	P11	2000	8	01	07		deck												
80							water												
81	P11	2000	8	01	08		deck												
82							water												
83	P11	2000	8	01	09		deck												
84							water												
85	P11	2000	8	01	10		deck												
86							water												
87	P12	2000	7	31	10		deck	1823											
88							water	0.09288											
89	P12	2000	7	31	11		deck	1891											
90							water	0.01317											
91	P12	2000	7	31	12		deck	2068	2066	2066	2072								
92							water	0.03791	0.04644	0.02755	0.01611								
93	P12	2000	7	31	13		deck	2160	2141	2166	2182								
94							water	0.0306	0.03033	0.03128	0.03033								
95	P12	2000	7	31	14		deck	1656	1618	1505	1525								
96							water	0.05402	0.0616	0.03033	0.04739								
97	P12	2000	7	31	15		deck	1028	995.8	976.5	1034	1019	1030	1010					
98							water	0.05491	0.0853	0.02365	0.01517	0.01014	0	0					
99	P12	2000	7	31	16		deck	374.9	378.9										
100							water	0.06255	0.03128										
101	P12	2000	7	31	17		deck	167.4	165.4	164.0									
102							water	0	0	0									
103	P12	2000	7	31	18		deck	66.80	66.82										
104							water	0	0										

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
105	P12	2000	7	31	19		deck	2.882											
106							water	0.03033											
107	P12	2000	8	01	06		deck	4.482	4.512										
108							water	0.03886	0.02166										
109	P12	2000	8	01	07		deck	73.27	77.27	86.02									
110							water	0.0237	0.04739	0.01611									
111	P12	2000	8	01	08		deck	221.9	222.1	219.9	217.4								
112							water	0.09288	0.1081	0.09383	0.06919								
113	P12	2000	8	01	09		deck	462.4	489.4	505.5	532.7	532.5	508.6						
114							water	0.03791	0.06919	0.02275	0.05497	0.01611	0.008530						
115	P12	2000	8	01	10		deck	562.8	546.8	536.8	528.9								
116							water	0.06255	0.01611	0.008530	0.02370								
117	P19	2000	8	01	15		deck												
118							water												
119	P19	2000	8	01	16		deck												
120							water												
121	P19	2000	8	01	17		deck												
122							water												
123	P19	2000	8	01	18		deck												
124							water												
125	P19	2000	8	01	19		deck												
126							water												
127	P19	2000	8	02	06		deck												
128							water												
129	P19	2000	8	02	07		deck												
130							water												

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
131	P19	2000	8	02	08		deck												
132							water												
133	P19	2000	8	02	09		deck												
134							water												
135	P19	2000	8	02	10		deck												
136							water												
137	P19	2000	8	02	11		deck												
138							water												
139	P19	2000	8	02	12		deck												
140							water												
141	P19	2000	8	02	13		deck												
142							water												
143	P19	2000	8	02	14		deck												
144							water												
145	P19	2000	8	02	15		deck												
146							water												
147	P20	2000	8	01	15		deck	447.2	444.6	441.5	440.0	436.5	431.7	426.8	424.6				
148							water	1.391	1.000	0.2136	0.2130	0.5420	0.4120	0.0680	0.02180				
149	P20	2000	8	01	16		deck	242.7	242.2	242.2	239.6	239.7	238.9	237.7					
150							water	0.068	0.076	0.1604	0.1600	0.02980	0.008100	0.008200					
151	P20	2000	8	01	17		deck	187.4	186.8	186.5	183.0	184.5	183.0	182.7					
152							water	0.1371	0.0452	0.04510	0.0225	0.0385	########	0.001200					
153	P20	2000	8	01	18		deck	52.65	53.26	50.70	51.64	51.63	51.17	50.93					
154							water	0.01492	0.02238	0.01492	0.08392	0.007458	0	0.002338					
155	P20	2000	8	01	19		deck	3.121	2.982	2.842	2.717	2.614	2.475	2.400					
156							water	0.09138	0.09884	0.05315	0.09138	0.007458	0.01492	0.01492					

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in spring tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
157	P20	2000	8	02	06		deck												
158							water												
159	P20	2000	8	02	07		deck	18.30	18.44	18.55	18.60	18.63	18.77	18.89	18.94	18.98	18.96		
160							water	0	0.01492	0.01492	0.1604	0.1986	0.1604	0.02984	0.01492	0.06061	0.07464		
161	P20	2000	8	02	08		deck												
162							water												
163	P20	2000	8	02	09		deck												
164							water												
165	P20	2000	8	02	10		deck												
166							water												
167	P20	2000	8	02	11		deck	813.5	813.0	812.6	809.7	801.4	789.5	778.6	764.2	754.4			
168							water	0.1087	0.04569	0.0074	0.01490	0.007400	0.002500	0.003700	0	0.001400			
169	P20	2000	8	02	12		deck	214.1	217.8	224.6	223.8	239.1	241.3	241.0	237.4	228.6			
170							water	0.01492	0.01492	0.007458	0.007458	0.007458	0	0.01492	0	0.03823			
171	P20	2000	8	02	13		deck	403.2	399.5	394.9	390.2	386.5	381.9	380.5	382.3	388.4			
172							water	0.07646	0.007458	0.06806	0	0.04569	0	0.02238	0.04569	0.02984			
173	P20	2000	8	02	14		deck	452.1	451.1	450.7	449.8	448.8	446.5	444.6	441.9	441.4			
174							water	0.01429	0.03823	0.01492	0.01429	0.1296	0.05315	0.02238	0	0.06061			
175	P20	2000	8	02	15		deck	437.6	438.6	438.1	437.7	438.6	439.0	437.7	438.1	436.7			
176							water	0.0604	0.1825	0.1521	0.0074	0.1672	0.0456	0.0081	0.0016	0.01601			

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

Continuous point in neap tide

Total Page 36

Unit: umol/m2/s

No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
1	P01	2000	8	10	06		deck	8.226	8.503	8.651	8.847	8.996	9.166	9.410	9.602	9.798	9.942	10.17	10.36
2							water	3.678	1.850	0.5268	0.1828	0.152	0.06866	0	0.1063	0.1147	0.007458	0.1604	0.04569
3	P01	2000	8	10	07		deck	251.1	252.8	252.4	253.8	254.9	256.0	256.8	257.1	257.9	258.9	259.0	261.0
4							water	75.06	13.24	5.107	1.696	0.3590	0.1448	0.007458	0.007458	0.1678	0.09138	0	0.007458
5	P01	2000	8	10	08		deck	667.4	667.6	668.5	666.1	676.2	674.5	678.0	676.0	673.0	677.0	682.0	688.0
6							water	18405	80.60	46.01	41.84	29.86	12.76	1.500	0.00600	0.0	0.5400	0	0
7	P01	2000	8	10	09		deck	1060	1066	1083	1084	1078	1072	1068	1067	1061	1055	1062	1065
8							water	565.0	198.7	65.28	7.694	1.206	0.2967	0.007610	0	0	0	0	0
9	P01	2000	8	10	10		deck	1309	1320	1339	1358	1361	1347	1350	1344	1347	1350	1430	1462
10							water	158.4	88.31	37.29	10.97	5.346	1.135	0.6871	0.02890	0.1447	0.03529	0.00801	0
11	P01	2000	8	10	11		deck	1713	1707	1709	1707	1702	1702	1702	1705	1700	1703	1714	1719
12							water	162.4	119.2	106.0	23.54	10.33	4.588	4.550	2.239	1.560	0.7646	0.4205	0.5194
13	P01	2000	8	10	12		deck	1741	1731	1723	1728	1721	1711	1715	1732	1724	1731	1734	1732
14							water	833.6	230.5	196.1	105.8	78.22	66.21	43.95	26.68	10.45	12.96	7.181	7.114
15	P01	2000	8	10	13		deck	1679	1682	1695	1678	1689	1701	1687	1677	1688	1673	1666	1677
16							water	891.8	497.2	291.9	210.2	55.84	34.62	39.22	10.58	9.079	5.185	3.037	2.364
17	P01	2000	8	10	14		deck	1672	1600	1595	1585	1569	1586	1584	1579	1578	1566	1560	1556
18							water	128.3	52.11	14.73	13.94	9.523	4.951	0.7450	0	0	0.2169	0	0.449
19	P01	2000	8	10	15		deck	1396.2	1405	1395.4	1404.3	1412.8	1400	1421.3	1423	1433.2	1425	1435	1437.3
20							water	114.2	24.123	3.2964	0.4726	0.2045	0.10124	0.0846	0	0	0	0	0
21	P01	2000	8	10	16		deck	949.5	950.3	948.1	949.4	941.3	940.6	942.9	929.8	926.7	916.5	915.4	907.5
22							water	53.24	4.735	0.9304	0.08329	0	0.00214	0.03214	0.00815	0.00741	0.05218	0.01456	0.08211
23	P01	2000	8	10	17		deck	458.8	457.8	458.4	458.2	459.7	460.6	462.5	464.4	466.7	465.7	463.4	466.7
24							water	296.2	68.29	25.59	7.664	5.147	0.3058	0.3590	0.09884	0.6117	0	0.05315	0.1063
25	P01	2000	8	10	18		deck	170.6	46.80	166.7	166.5	165.0	165.5	165.5	164.7	164.7	164.1	163.8	162.7
26							water	52.04	18.68	33.08	1.888	0.9399	0.1147	0.1063	0.05315	0.04569	0.08392	0.002381	0.06061

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

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No	Point No	SAMPLING TIME					Depth / Position	0m	0.5m	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
		Y	M	D	H	Min													
27	P01	2000	8	10	19		deck	19.52	19.20	18.92	18.72	18.45	18.16	17.93	17.53	17.27	16.85	16.66	16.41
28							water	12.69	0.566	0.04569	0.2975	0	0	0	0.01492	0	0.4205	0	0
29	P04	2000	8	10	06		deck	13.36	14.20	14.56	14.96	15.52	16.01	16.83	17.36	18.25	19.25	20.26	
30							water	4.164	1.600	0.5204	0.1156	0.01517	0.01517	0.007582	0.008532	0	0	0	
31	P04	2000	8	10	07		deck	265.7	271.1	271.4	273.3	274.9	281.3	280.0	285.1	289.1	293.3		
32							water	94.3	31.31	13.25	2.944	0.6445	0.1630	0.03791	0.01517	0.02257	0		
33	P04	2000	8	10	08		deck	726.0	727.3	723.7	724.0	727.4	725.4	732.2	731.4	736.4	743.0		
34							water	357.7	159.9	68.35	16.24	1.848	0.3412	0.03791	0.05412	0	0		
35	P04	2000	8	10	09		deck	1136	1154	1186	1187	1173	1169	1163	1159	1161	1162		
36							water	648.6	510.5	121.6	22.07	2.913	0.4578	0.04644	0.06919	0.03033	0.06160		
37	P04	2000	8	10	10		deck	1530	1519	1528	1522	1542	1524	1535	1535	1525	1522		
38							water	613.6	206.0	55.78	2.968	0.3877	0.03033	0.02019	0.07677	0.1861	0.04644		
39	P04	2000	8	10	11		deck	1706	1703	1707	1711	1725	1735	1754	1737	1768	1838		
40							water	939.8	338.4	83.24	8.165	0.6985	0.2322	0.03033	0.5595	0.2246	0.07677		
41	P04	2000	8	10	12		deck	1922	1926	1928	1924	1930	1960	1954	1939	1947	1944		
42							water	866.9	139.5	23.45	1.809	0.3649	0.4654	0.3099	0.1706	0.1393	0.1005		
43	P04	2000	8	10	13		deck	1830	1822	1825	1860	1857	1827	1828	1861	1814	1812		
44							water	366.2	108.4	97.78	5.197	0.5279	0.2948	0.09288	0.1246	0.3877	0.1081		
45	P04	2000	8	10	14		deck	1765	1777	1785	1706	1659	1600	1692	1683	1740	1755		
46							water	115.6	56.69	11.86	8.53	0.1785	0.03033	0.04644	0.1393	0.05402	0.02275		
47	P04	2000	8	10	15		deck	1457	1441	1458	1460	1455	1460	1450	1437	1412	1414		
48							water	141.7	45.33	9.549	1.134	0.1469	0.1317	0.2095	0.2019	0.2322	0.1412		
49	P04	2000	8	10	16		deck	1031	1038	1051	1044	1039	1040	1037	925.4	940.7			
50							water	168.3	28.56	2.649	0.1469	0.1156	0.07677	0.3024	0.1545	0.05402			
51	P04	2000	8	10	17		deck	636.7	624.7	614.2	622.7	625.4	623.2	631.2	634.4	623.1			
52							water	109.3	18.46	6.993	0.2872	0.05402	0.1706	0.0853	0.07677	0.08625			

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		Y	M	D	H	Min													
53	P04	2000	8	10	18		deck	276.9	266.3	260.3	246.9	241.9	211.7	206.4	209.2	243.3			
54							water	86.68	9.646	2.408	2.109	0.05497	0.07677	0.02275	0.01517	0.01517			
55	P04	2000	8	10	19		deck	26.47	25.68	25.17	24.74	23.88	23.19	22.69	22.03	21.59	20.70		
56							water	10.96	1.732	0.8000	0.07677	0.02275	0.02275	0.09288	0.03791	0.06919	0.03033		
57	P11	2000	8	07	10		deck	1716	1720	1695	1702	1719	1731	1721	1746				
58							water	1116	597.3	260.5	40.72	8.635	2.579	1.530	0.6445				
59	P11	2000	8	07	11		deck	1274	1147	1059	1011	986.5	966.1	977.4	955.4				
60							water	459.1	168.3	99.88	29.56	8.933	2.874	0.4265	0.1514				
61	P11	2000	8	07	12		deck	2091	2099	2097	2093	2096	2098	2092	2100	2101			
62							water	1156	769.8	248.9	59.16	21.26	11.42	3.123	0.7763	0.2407			
63	P11	2000	8	07	13		deck	1060	888.3	775.0	730.9	723.7	724.1	743.9	745.2	739.4			
64							water	463.0	203.9	63.77	15.49	3.589	1.530	0.3488	0.06160	0.01517			
65	P11	2000	8	07	14		deck	2033	2038	2010	2011	2024	2028	2023	2033	2030	2041		
66							water	1395	474.5	252.8	55.28	18.48	10.92	5.508	2.485	0.4654	0.08532		
67	P11	2000	8	07	15		deck	1675	1673	1680	1677	1689	1691	1693	1696	1694	1684		
68							water	1100	465.9	235.4	45.36	19.51	4.873	1.645	0.8532	0.1517	0.04644		
69	P11	2000	8	07	16		deck	448.2	542.3	651.8	719.2	875.6	945.6	994.9	1051	997.4			
70							water	262.5	175.0	95.16	27.47	10.37	4.132	1.515	0.1630	0.03791			
71	P11	2000	8	07	17		deck	901.9	909.8	913.6	917.2	911.2	881.8	863.7	871.0	873.7			
72							water	731.7	295.2	138.5	25.04	8.491	3.775	1.724	0.3801	0.09288			
73	P11	2000	8	07	18		deck	374.2	356.7	378.6	375.8	357.2	375.1	369.9	352.0	358.3			
74							water	113.4	90.49	33.76	8.194	2.603	1.126	0.4654	0.1393	0.07374			
75	P11	2000	8	07	19		deck	20.06	19.19	18.58	18.26	17.44	16.89	16.35	15.61	15.20			
76							water	10.15	3.286	1.437	0.2711	0.1081	0.03791	0.04644	0.01517	0.05402			
77	P11	2000	8	08	06		deck	18.15	18.92	19.59	20.39	21.42	22.26	22.80	23.95	24.91	25.96		
78							water	7.162	4.784	1.880	0.8464	0.2948	0.1393	0.0853	0.04644	0.06919	0.01517		

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		Y	M	D	H	Min													
79	P11	2000	8	08	07		deck	342.5	347.9	346.8	348.8	362.7	348.4	355.6	356.0	357.9	368.6		
80							water	261.9	107.9	57.34	17.25	6.726	2.385	1.126	0.4752	0.2172	0.06160		
81	P11	2000	8	08	08		deck	860.3	860.2	862.9	851.1	868.3	870.6	878.8	887.9	904.3	933.4		
82							water	474.6	219.2	71.14	27.58	9.338	3.898	1.842	0.5279	0.1156	0.04644		
83	P11	2000	8	08	9		deck	1327	1342	1324	1322	1324	1318	1319	1336	1342			
84							water	868.3	378.8	228.9	78.91	28.06	13.48	6.789	0.9791	0.7611			
85	P11	2000	8	08	10		deck	1597	1644	1594	1637	1639	1633	1627	1651	1644			
86							water	58.05	49.31	48.03	31.52	15.29	7.129	3.131	0.2635	0.06160			
87	P12	2000	8	7	10		deck	1513	1562	1568	1570	1577	1576	1578	1576	1568	1574	1572	1577
88							water	914.0	609.0	393.0	121.5	52.15	23.42	6.049	1.550	0.8800	0.3133	0.0521	0
89	P12	2000	8	7	11		deck	1118	1149	1184	1256	1339	1407	1410	1393	1568	1567	1569	1552
90							water	797.9	430.1	238.3	61.83	47.85	13.42	7.543	3.783	1.928	0.8660	0.2133	0.1083
91	P12	2000	8	07	12		deck	2012	2013	2018	2007	2005	1997	2008	1994	1992	1997	1989	1986
92							water	1107	773.2	291.3	134.3	71.68	31.70	10.38	3.230	1.224	0.5014	0.1607	0
93	P12	2000	8	07	13		deck	2075	2068	2067	2064	2067	2062	2063	2064	2062	2060	2060	2058
94							water	730.7	680.2	334.1	127.0	54.69	27.77	13.47	5.395	2.671	1.232	0.1912	0.01492
95	P12	2000	8	07	14		deck	1884	1914	1922	1922	1925	1928	1931	1931	1927	1919	1912	1917
96							water	1051	787.4	431.2	173.4	88.23	33.76	13.78	6.275	3.168	1.714	0.8952	0.428
97	P12	2000	8	07	15		deck	1693	1704	1697	1700	1695	1684	1693	1698	1699	1698	1699	1699
98							water	1234	665.8	306.1	132.8	59.78	29.98	13.96	8.636	5.398	3.368	1.508	0.4513
99	P12	2000	8	07	16		deck	1180	1253	1260	1244	1247	1253	1305	1299	1296	1297	1295	1292
100							water	728.0	408.0	238.0	65.48	15.82	9.681	1.484	0.8330	0.6650	0.07590	0	0
101	P12	2000	8	07	17		deck	936.2	934.0	935.0	934.7	933.0	928.0	931.8	928.0	925.0	918.0	910.0	910.5
102							water	766.2	362.4	167.3	50.28	11.63	7.284	3.069	1.043	0.6821	0.02401	0.05433	0
103	P12	2000	8	07	18		deck	369.5	366.4	369.8	362.6	363.2	362.0	364.9	362.5	362.9	358.3	361.3	360.6
104							water	322.4	139.8	64.90	16.58	7.683	2.016	1.116	0.2671	0.05847	0.02433	0.00751	0

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

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		Y	M	D	H	Min													
105	P12	2000	8	07	19		deck	10.78	9.598	9.205	9.435	9.215	9.022	8.570	6.961	7.896	8.237	7.728	7.791
106							water	5.271	2.079	2.270	1.246	0.3972	0.2432	0.1371	0.1147	0.2294	0.02238	0.02238	0.01492
107	P12	2000	8	08	06		deck	15.99	16.31	16.30	16.89	17.23	17.56	17.83	18.51	18.87	19.22	19.54	20.07
108							water	6.092	5.695	0.8103	0.3351	0.2238	0.3973	0	0.1520	0	0	0	0
109	P12	2000	8	08	07		deck	421.8	428.4	427.8	429.7	427.8	426.9	425.5	426.0	425.4	328.2	340.1	336.8
110							water	298.6	137.0	18.79	5.718	2.506	1.146	0.718	0.4229	0.1371	0.08392	0.1063	0.01492
111	P12	2000	8	08	08		deck	800.6	804.6	808.8	809.4	811.2	812.1	811.5	813.0	811.6	812.8	813.9	815.4
112							water	968.6	142.9	78.74	42.66	25.67	18.95	14.86	3.028	1.735	0.6648	0.3357	0.02443
113	P12	2000	8	08	09		deck	1213	1222	1219	1219	1219	1221	1219	1211	1208	1221	1224	1222
114							water	982	555.4	302.0	143.8	36.88	16.61	6.409	4.780	2.852	1.956	1.04	0.7189
115	P12	2000	8	08	10		deck	1635	1631	1637	1637	1636	1644	1635	1632	1629	1629	1633	1634
116							water	1030	788.1	330.7	106.7	34.31	12.33	5.124	1.927	1.248	0.5098	0.1304	0.0988
117	P19	2000	8	08	14		deck	1930	1996	1528	2363	2272	2342	2268	2361				
118							water	1320	836.5	616.0	234.7	102.8	45.16	22.48	1.165				
119	P19	2000	8	08	15		deck	1736	1706	1734	1708	1712	1722	1708	1706				
120							water	993.4	654.6	288.4	177.1	49.36	19.31	8.250	8.554				
121	P19	2000	8	08	16		deck	735.7	713.7	864.3	1037	1177	1273	1234	1359				
122							water	409.2	253.1	251.6	76.9	41.52	21.37	4.716	0.04066				
123	P19	2000	8	08	17		deck	918.8	1033	956.7	964.9	964.1	958.1	929.0	943.4				
124							water	563.8	360.9	235.8	113.3	28.04	12.91	4.163	0.1706				
125	P19	2000	8	08	18		deck	283.6	270.8	274.2	275.7	288.0	300.0	285.5	279.1				
126							water	128.8	116.6	38.48	15.5	6.755	3.216	0.5744	0.4815				
127	P19	2000	8	08	19		deck	10.93	10.22	10.18	9.882	9.325	9.078	8.729	8.361				
128							water	4.054	2.081	1.172	0.3336	0.217	0.1081	0.01517	0.04662				
129	P19	2000	8	09	06		deck	13.92	14.51	14.71	15.02	15.36	15.69	16.02	16.42	16.84			
130							water	5.980	2.104	1.117	0.504	0.2872	0.217	0.1242	0.03033	0.03033			

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		Y	M	D	H	Min													
131	P19	2000	8	09	07		deck	196.3	195.5	197.4	193.2	198.2	197.4	196.3	194.7	198.5			
132							water	105.9	37.63	17.79	8.678	5.679	3.509	1.335	0.5895	0.2796			
133	P19	2000	8	09	08		deck	740.8	736.8	771.8	744.4	741.1	744	772.2	780.7	758.2			
134							water	80.07	59.95	30.02	19.75	11.72	6.780	2.999	1.422	0.8928			
135	P19	2000	8	09	09		deck	1165	1199	1178	1164	1189	1213	1135	1211				
136							water	567.4	341.0	254.7	108.1	54.39	25.35	7.589	2.081				
137	P19	2000	8	09	10		deck	1557	1560	1586	1572	1576	1620	1590	1578				
138							water	88.78	371.9	309.5	144.7	58.56	15.65	2.229	0.326				
139	P19	2000	8	09	11		deck	1868	1885	1887	1866	1878	1853	1899	1858				
140							water	1302	733.9	381.7	248.6	112.9	39.93	17.88	1.087				
141	P19	2000	8	09	12		deck	2006	1999	2012	2011	2007	2006	2009	2005				
142							water	1128	510.3	320.8	237.9	106.5	19.18	4.638	1.434				
143	P19	2000	8	09	13		deck	2001	2010	2017	2019	2031	2037	2039	2043				
144							water	1107	158.0	196.0	122.6	59.02	41.99	8.077	2.905				
145	P19	2000	8	09	14		deck	1904	1903	1865	1877	1879	1872	1892	1888				
146							water	1389	584.1	286.6	100.8	38.06	10.97	2.392	0.7687				
147	P20	2000	8	08	14		deck	1843	1835	1832	1832	1829	1831	1836	1835	1827	1836	1834	1834
148							water	78.32	44.95	31.99	35.53	17.28	11.70	8.231	4.659	2.807	1.874	1.017	0.5352
149	P20	2000	8	08	15		deck	1636	1637	1642	1636	1635	1648	1632	1626	1629	1622	1622	1624
150							water	1134	684.5	405.8	195.1	128.2	68.99	44.88	28.09	20.49	12.46	7.682	4.834
151	P20	2000	8	08	16		deck	1399	1385	1387	1392	1391	1395	1384	1373	1372	1377	1384	1382
152							water	1001	224.1	77.96	43.36	29.71	18.66	10.31	8.01	2.681	1.813	0.9334	0.4205
153	P20	2000	8	08	17		deck	1048	1043	1039	1040	1048	1039	1047	1038	1043	1038	1031	1031
154							water	609.0	343.0	149.0	46.19	30.60	12.83	6.990	3.580	2.018	1.216	0.598	0.2828
155	P20	2000	8	08	18		deck	298.0	287.0	287.5	288.0	294.0	291.9	297.8	299.3	299.0	298.0	308.0	310.0
156							water	240.0	90.46	24.60	9.530	4.450	2.739	1.871	0.9143	0.4406	0.2247	0.06062	0

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		Y	M	D	H	Min													
157	P20	2000	8	08	19		deck	21.40	20.87	20.33	19.89	19.59	19.15	18.68	18.29	17.75	17.44	17.04	16.99
158							water	10.04	6.47	2.279	0.7338	0.4355	0.221	0.155	0.06500	0.02390	0.05130	0	0.0145
159	P20	2000	8	09	06		deck	7.450	7.760	7.920	8.070	8.230	8.423	8.613	8.760	8.902	9.202	9.550	9.260
160							water	2.870	1.820	0.870	0.440	0.2600	0.167	0.1222	0.08300	0.05300	0.05600	0.01570	0.007800
161	P20	2000	8	09	07		deck	62.70	62.74	57.92	52.93	52.32	47.58	48.10	47.40	40.21	46.05	44.88	44.10
162							water	39.04	43.23	37.03	12.40	3.860	1.702	1.445	0.8342	0.5619	0.3357	0.2443	0.1371
163	P20	2000	8	09	08		deck	761.0	811.2	812.1	803.2	810.6	816.6	814.8	794.4	810.2	827.4	831.2	603.6
164							water	751.4	401.9	222.2	92.19	34.42	17.67	11.38	7.731	8.037	4.557	3.471	2.309
165	P20	2000	8	09	09		deck	1107	1117	1113	1096	1106	1132	1127	1131	1139	1146	1144	1145
166							water	624.6	576.3	167.8	61.78	31.16	21.19	14.24	8.127	3.227	2.103	1.016	0.8411
167	P20	2000	8	09	10		deck	1173	1453	1523	1574	1551	1541	1554	1560	1551	1557	1555	1543
168							water	981.4	619.5	595.8	419.9	295.9	176.0	151.1	101.2	56.43	41.28	36.3	39.44
169	P20	2000	8	09	11		deck	1790	1785	1787	1791	1794	1793	1791	1792	1785	1780	1795	1795
170							water	1606	674.3	316.5	124.8	117.1	33.04	21.98	13.66	8.871	3.482	1.203	0.1943
171	P20	2000	8	09	12		deck	1926	1930	1937	1936	1935	1938	1937	1939	1939	1940	1942	1940
172							water	1106	684.3	354.2	111.1	35.32	22.98	13.83	10.66	6.715	4.133	1.767	0.8263
173	P20	2000	8	09	13		deck	1916	1910	1899	1896	1901	1900	1896	1892	1890	1892	1891	1887
174							water	1028	90.87	70.61	53.92	35.04	24.89	15.44	10.26	7.835	4.337	1.478	0.4506
175	P20	2000	8	09	14		deck	1825	1813	1813	1817	1821	1826	1827	1828	1825	1819	1816	1814
176							water	151.5	111.3	48.45	31.08	21.06	11.31	7.222	6.450	4.889	4.129	3.871	2.349

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LIGHT QUANTUM DATA SHEET ON RAINY SEASON FOR SINO-JAPAN JOINT STUDY ON THE PEARL RIVER ESTUARY

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		Y	M	D	H	Min													
1	P01	2000	8	10	06		deck	10.57	10.81	11.03	11.20	11.37	11.54	11.73					
2							water	0.007458	0	0.2825	0.05315	0	0.02238	0.007458					
3	P01	2000	8	10	07		deck	261.9	263.0	264.5	265.9	267.9	269.5	270.5	274.0	275.3	278.0		
4							water	0.1063	0	0	0.007458	0.007458	0	0.02984	0	0.02984	0.007458		
5	P01	2000	8	10	08		deck	687.0	680.0	676.0	681.0	680.0	692.0	696.8	696.0	700.8	709.0		
6							water	0	0.254	0.0304	0	0	0	0	0	0	0		
7	P01	2000	8	10	09		deck	1074	1068	1065	1058	1054	1061	1049	1054	1056	1048		
8							water	0	0	0	0	0.0	0.03087	0	0.0299	0	0		
9	P01	2000	8	10	10		deck	1462	1449	1457	1444	1441	1437	1439	1432	1450			
10							water	0.00742	0	0.00743	0.02256	0	0.1445	0.04528	0	0			
11	P01	2000	8	10	11		deck	1724	1724	1731	1733	1731	1726	1724	1717	1713	1711		
12							water	0.1829	0.3282	0.359	0.1371	0.09138	0.09138	0.1222	0.1317	0.1296	0.2135		
13	P01	2000	8	10	12		deck	1723	1723	1731	1742	1738	1741	1750	1750	1736	1728		
14							water	3.816	3.381	2.211	1.346	1.032	0.359	0.2825	0.1529	0.08392	0.1604		
15	P01	2000	8	10	13		deck	1671	1676	1685	1694	1716	1722	1726	1732	1714	1723		
16							water	2.539	1.328	0.8485	0.5278	0.5427	0.3898	0.1296	0.1371	0.05315	0.1529		
17	P01	2000	8	10	14		deck	1555	1567	1566	1558	1551	1542	1555	1548	1554	1553		
18							water	0	0	0	0.05150	0.1750	0.003100	0.002100	0.003100	0.09100	0.000100		
19	P01	2000	8	10	15		deck	1402.5	1402.1	1393.6	1401.2	1369	1367.2	1400.4	1394.6	1359	1362.5		
20							water	0	0	0	0	0	0	0	0	0.0315	0		
21	P01	2000	8	10	16		deck	904.4	897.1	893.5	892.7	889.6	891.8	891.7	901.5	905.4	908.7		
22							water	0.00212	0.02981	0.06819	0	0.08321	0.008340	0	0.1024	0.003460	0		
23	P01	2000	8	10	17		deck	470.9	470.4	471.8	469.8	472.7	473.7	469.1	376.0	461.1	464.0		
24							water	0.1604	0.06806	0.2294	0.1063	0.08392	1.116	0.05315	0.1445	0.06806	0.6042		
25	P01	2000	8	10	18		deck	162.2	161.9	161.4	161.2	161.0	160.3	160.4	159.6	158.7	158.0		
26							water	0	0.2294	0.03823	0.02984	0.04569	0.1296	0.01492	0.002381	0.007458	0.007458		

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		Y	M	D	H	Min													
27	P01	2000	8	10	19		deck	16.10	15.94	15.75	15.56	15.21	14.73	14.57	14.35	13.85	13.61		
28							water	0	0.2210	0.01492	0.03825	0	0	0	0	0	0		
29	P04	2000	8	10	06		deck												
30							water												
31	P04	2000	8	10	07		deck												
32							water												
33	P04	2000	8	10	08		deck												
34							water												
35	P04	2000	8	10	09		deck												
36							water												
37	P04	2000	8	10	10		deck												
38							water												
39	P04	2000	8	10	11		deck												
40							water												
41	P04	2000	8	10	12		deck												
42							water												
43	P04	2000	8	10	13		deck												
44							water												
45	P04	2000	8	10	14		deck												
46							water												
47	P04	2000	8	10	15		deck												
48							water												
49	P04	2000	8	10	16		deck												
50							water												
51	P04	2000	8	10	17		deck												
52							water												

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		Y	M	D	H	Min													
53	P04	2000	8	10	18		deck												
54							water												
55	P04	2000	8	10	19		deck												
56							water												
57	P11	2000	8	07	10		deck												
58							water												
59	P11	2000	8	07	11		deck												
60							water												
61	P11	2000	8	07	12		deck												
62							water												
63	P11	2000	8	07	13		deck												
64							water												
65	P11	2000	8	07	14		deck												
66							water												
67	P11	2000	8	07	15		deck												
68							water												
69	P11	2000	8	07	16		deck												
70							water												
71	P11	2000	8	07	17		deck												
72							water												
73	P11	2000	8	07	18		deck												
74							water												
75	P11	2000	8	07	19		deck												
76							water												
77	P11	2000	8	08	06		deck												
78							water												

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		Y	M	D	H	Min													
79	P11	2000	8	08	07		deck												
80							water												
81	P11	2000	8	08	08		deck												
82							water												
83	P11	2000	8	08	9		deck												
84							water												
85	P11	2000	8	08	10		deck												
86							water												
87	P12	2000	8	7	10		deck	1577	1583	1587									
88							water	0	0	0									
89	P12	2000	8	7	11		deck	1600											
90							water	0.0762											
91	P12	2000	8	07	12		deck	1988											
92							water	0.1147											
93	P12	2000	8	07	13		deck	2057											
94							water	0											
95	P12	2000	8	07	14		deck	1927	1933	1932									
96							water	0.1753	0.03823	0									
97	P12	2000	8	07	15		deck	1695	1697	1695									
98							water	0.4821	0.1296	0.03823									
99	P12	2000	8	07	16		deck	1287	1284										
100							water	0	0										
101	P12	2000	8	07	17		deck	909.0											
102							water	0											
103	P12	2000	8	07	18		deck	356.0	353.1										
104							water	0	0										

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No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
105	P12	2000	8	07	19		deck	7.592	7.449										
106							water	0	0										
107	P12	2000	8	08	06		deck	20.54	20.96										
108							water	0	0										
109	P12	2000	8	08	07		deck	335.9	342.2										
110							water	0	0.02984										
111	P12	2000	8	08	08		deck	816.3	817.2	819.5	820.2	821.8							
112							water	0.06806	0.09138	0.02328	0.02328	0							
113	P12	2000	8	08	09		deck	1229	1228	1227	1221	1230							
114							water	0.4662	0.4429	0.1371	0.1296	0.1529							
115	P12	2000	8	08	10		deck	1636	1628	1631	1649								
116							water	0.064	0.058	0	0.001400								
117	P19	2000	8	08	14		deck												
118							water												
119	P19	2000	8	08	15		deck												
120							water												
121	P19	2000	8	08	16		deck												
122							water												
123	P19	2000	8	08	17		deck												
124							water												
125	P19	2000	8	08	18		deck												
126							water												
127	P19	2000	8	08	19		deck												
128							water												
129	P19	2000	8	09	06		deck												
130							water												

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No	Point No	SAMPLING TIME					Depth / Position	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	B-1m	Remark
		Y	M	D	H	Min													
131	P19	2000	8	09	07		deck												
132							water												
133	P19	2000	8	09	08		deck												
134							water												
135	P19	2000	8	09	09		deck												
136							water												
137	P19	2000	8	09	10		deck												
138							water												
139	P19	2000	8	09	11		deck												
140							water												
141	P19	2000	8	09	12		deck												
142							water												
143	P19	2000	8	09	13		deck												
144							water												
145	P19	2000	8	09	14		deck												
146							water												
147	P20	2000	8	08	14		deck	1839	1846	1847	1853	1855	1851	1857					
148							water	0.3357	0.221	0.3441	0.1678	0.07646	0.02984	0.1529					
149	P20	2000	8	08	15		deck	1623	1617	1621	1615	1616	1615						
150							water	3.274	1.927	1.445	0.4429	0.2433	0.2249						
151	P20	2000	8	08	16		deck	1377	1376	1370	1372	1376	1367						
152							water	0.2751	0.02238	0.1065	0.02984	0	0.06061						
153	P20	2000	8	08	17		deck	1035	1038	1037	1034	1035.8	1031	1036					
154							water	0.144	0.1147	0.0286	0	0.0086	0.091	0					
155	P20	2000	8	08	18		deck	311.0	310.3	315.0	325.8	295.0	262.0	248.5					
156							water	0	0.2366	0	0	0	0.1554	0					

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		Y	M	D	H	Min													
157	P20	2000	8	08	19		deck	16.43	16.04	15.73	15.32	14.93	14.73	14.40					
158							water	0.00714	0	0	0	0	0	0					
159	P20	2000	8	09	06		deck	9.980	10.25	10.49	10.72	11.26	11.48	11.70	12.14				
160							water	0	0.007600	0	0	0	0	0.00745	0				
161	P20	2000	8	09	07		deck	43.09	43.02	42.66	42.98	43.60	42.70	42.56	42.28				
162							water	0.0372	0.0149	0.0741	0	0	0	0	0				
163	P20	2000	8	09	08		deck	626.6	722.2	822.4	733.0	600.8	565.6	548.4	730.2				
164							water	2.638	2.707	1.857	1.368	0.9707	0.5119	0.4355	0.02984				
165	P20	2000	8	09	09		deck	1157	1169	1172	1171	1175	1160	1168	1173				
166							water	0.2368	0.2443	0	0.2676	0	0	0.2135	0.3133				
167	P20	2000	8	09	10		deck	1543	1543	1533	1534	1536	1525	1530	1512				
168							water	35.64	30.44	27.96	20.80	17.01	11.34	10.73	10.12				
169	P20	2000	8	09	11		deck	1786	1785	1793	1785	1784	1783	1774	1777				
170							water	0.2091	0	0	0	0	0	0	0				
171	P20	2000	8	09	12		deck	1943	1945	1945	1947	1942	1944	1946	1945				
172							water	0.1986	0.00781	0.2483	0.1389	0.05382	0	0.1245	0				
173	P20	2000	8	09	13		deck	1883	1887	1890	1888	1887	1902	1897	1894				
174							water	0.1939	0.01498	0.01451	0.09156	0	0.1445	0	0				
175	P20	2000	8	09	14		deck	1815	1819	1819	1819	1814	1814	1820	1818				
176							water	1.599	1.04	0.6956	0.566	0.3515	0.2592	0.2135	0.1986				

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