

FAP24

Government of
the People's
Republic of
Bangladesh

Water Resources
Planning
Organization

European
Commission

Delft
Hydraulics



Danish
Hydraulic
Institute



Hydroland
Approtech
Osiris

**RIVER
SURVEY
PROJECT**

**Special
Report
No.23**

**River Data Book
April 1995 - May 1996**

Part B.3: Aricha

October 1996

Call 947
FAP-24

64



BN-726
A-947

P-24

r-796

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n-8

Special Report 23

**River Data Book
April 1995 - March 1996**

Part B.3: Aricha (Teota)

October 1996



Contents of entire Data Book

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Part B:

Routine gauging April 1995 - March 1996

- B.1 Bahadurabad
- B.2 Sirajganj
- B.3 Aricha (Teota)
- B.4 Hardinge Bridge
- B.5 Baruria
- B.6 Mawa
- B.7 Mymensingh
- B.8 Tilly
- B.9 Gorai
- B.10 Arial Khan
- B.11 Bhairab Bazar

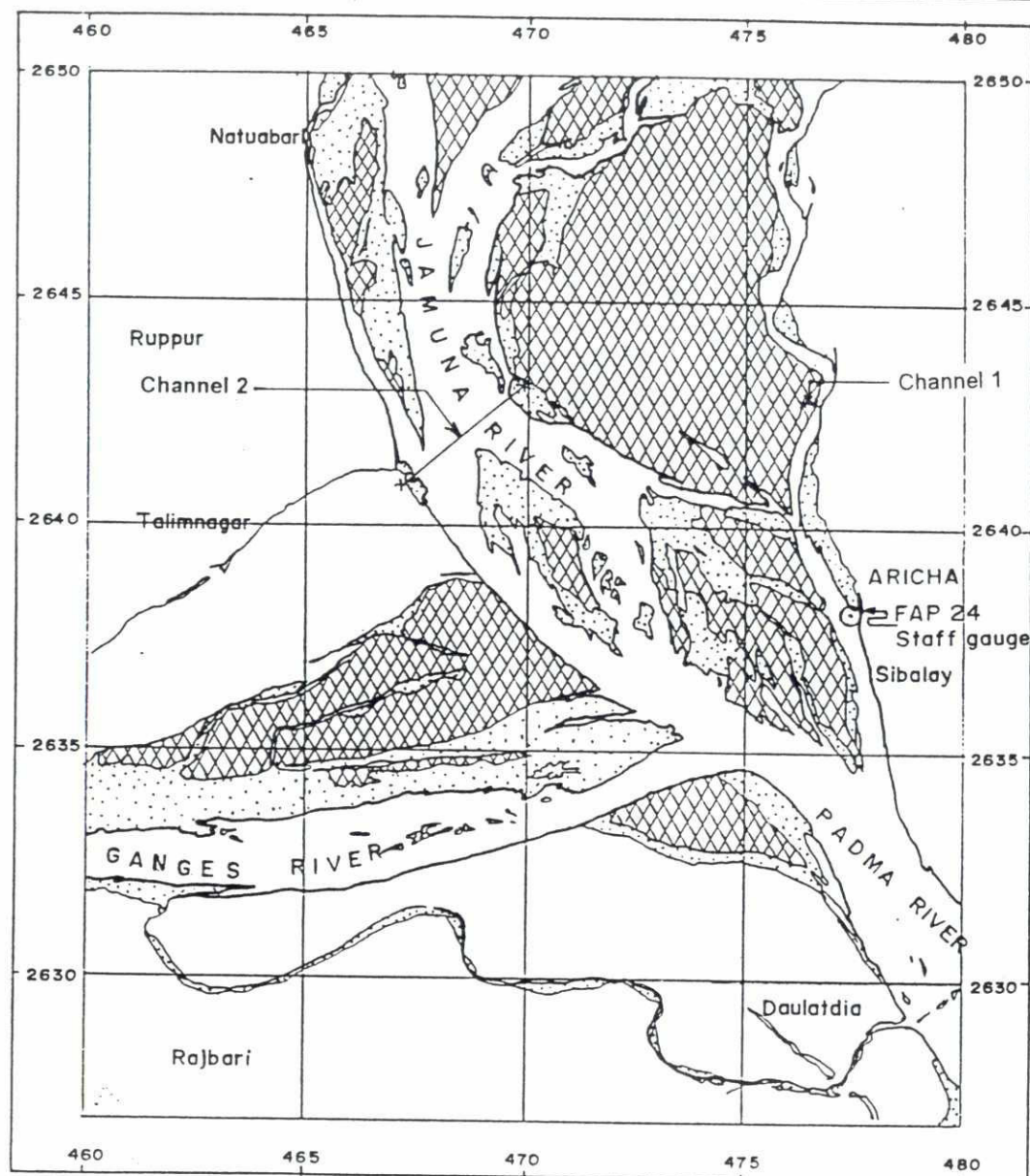
Part C:

Special surveys April 1995 - March 1996







Contents of Part B.3

Survey No.	Time
162	12-14/6 95
191	6-9/9 95
202	3-5/10 95
211	16-17/10 95



LEGEND :

-  High land
-  Unstable / low char
-  Cross section
-  FAP 24 Staff gauge



5000m 2500m 0
Scale

Map is based on satellite
images of March 1995

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Survey Bulletin 162 : 13 - 14 June, 1995

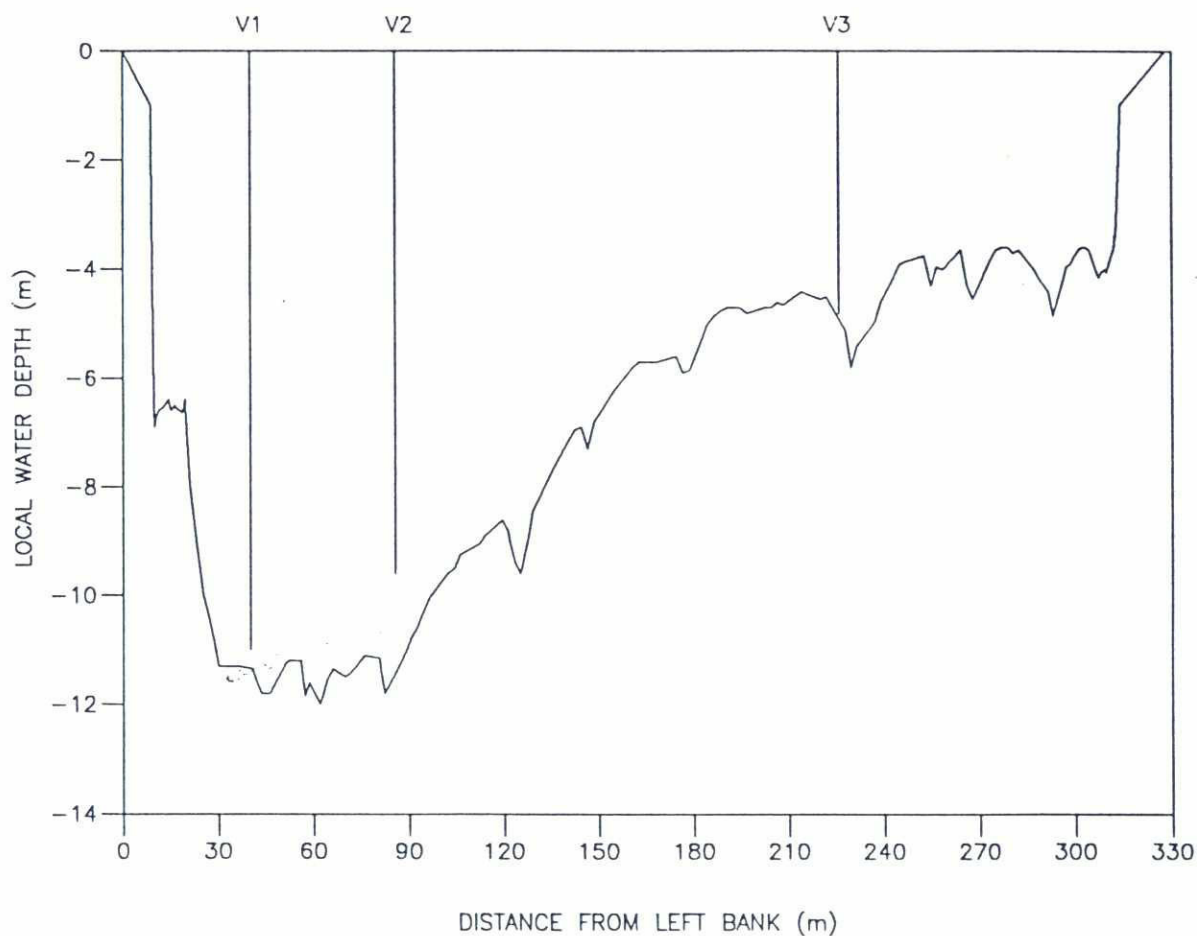
Location 3 : Jamuna River, Aricha

Date : 15 Oct 1995

Unit : ss

Location map

page
1.1



Water level : 6.73 m + PWD measured at the station indicated on page 1.1

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Survey Bulletin 162 : 13-14 June, 1995

Location 3 : Jamuna River, Aricha

File : A56E1T07

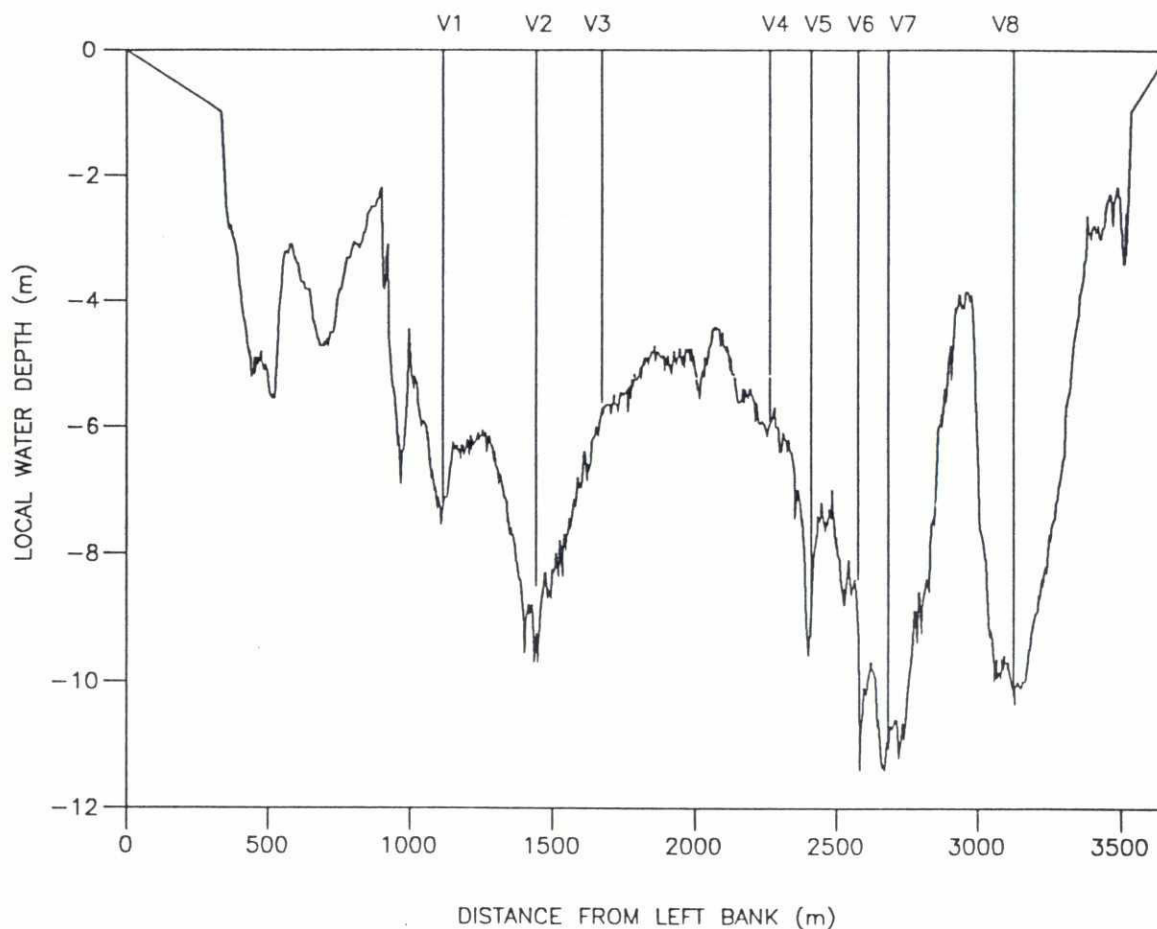
Date : 15 Oct 1995

Init : ss

Cross-sections and measured verticals
Channel 1

page

1.2



Water level : 6.60 m + PWD measured at the station indicated on page 1.1

FAP 24



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Survey Bulletin 162 : 13-14 June, 1995

Location 3 : Jamuna River, Aricha

File : A56D1T01

Date : 15 Oct 1995

Init : ss

Cross-sections and measured verticals
Channel 2

page

1.3

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	4	4	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	3	8	-	-
	ADCP	3	8	-	-
	S4 current meter	1	1	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	3	8	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	2	2	-	-
	Delft Bottle	6	16	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made


Channel	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Near bed transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	328	2143	6.73	2383	71 *	1560
Channel 2	3668	19964	6.60	18667	546 *	9791

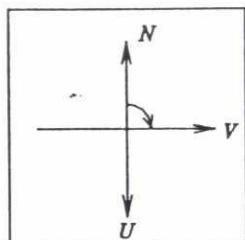
Table 2.2: Key figures

* based on Delft bottle measurement

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Aricha	Channel 1	14 Jun 95	6.73	FAP 24
	Channel 2	13 Jun 95	6.60	

Table 2.3: Water-levels

 FAP 24 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 162 : 13-14 June, 1995	
				Location 3 : Jamuna River, Aricha	
File : A56E1T07 A56D1T01		Date : 15 Oct 1995 Init : ss		Survey programme as made and key figures	
				page 2.1	

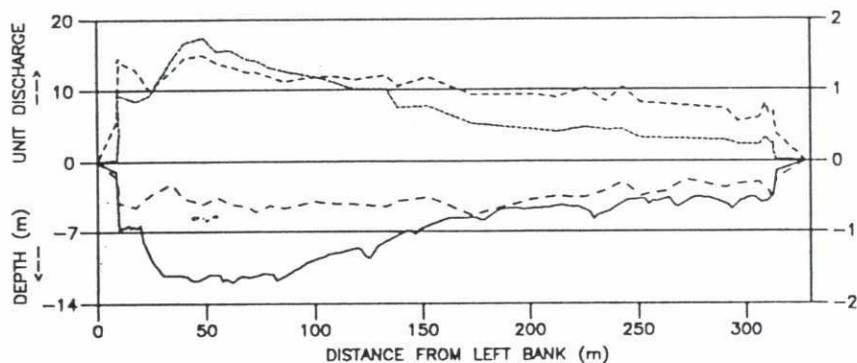


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

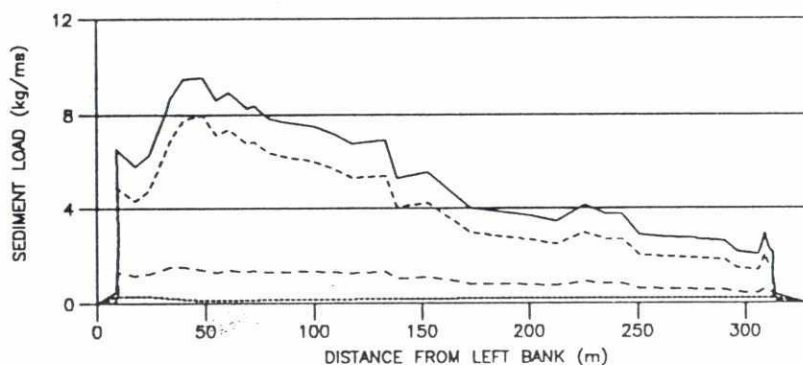
LEGEND :

— WATER DEPTH (m below STAGE)
 --- UNIT DISCHARGE (m³/s.m)
 ... U - (m/s)
 ... V - (m/s)

STAGE = 6.73 (m+PWD)

A = 2143 (m²)

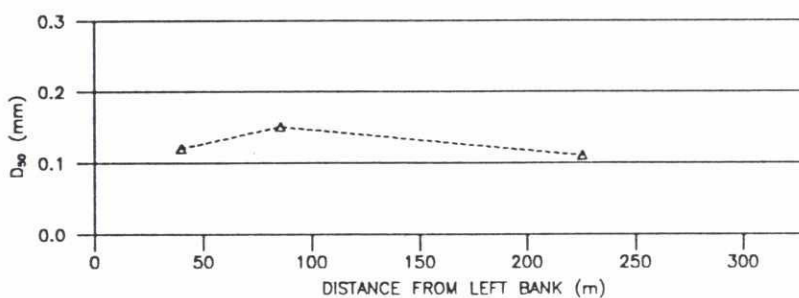
Q = 2383 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 1631 (kg/s)
 --- S_{WASH LOAD} 1254 (kg/s)
 ... S_{SUSP. BED} 306 (kg/s)
 -.- S_{NEAR BED} 71 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)
 △△△△△ D₅₀ NEAR BED (mm)
 □□□□□ D₅₀ BED MAT. (mm)

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Location 3 : Jamuna River, Aricha

File : A56E1T07

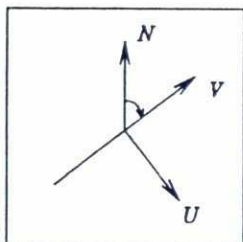
Date : 15 Oct 1995

Init : ss.

Horizontal distribution of flow and sediments
 Channel 1

page

3.1

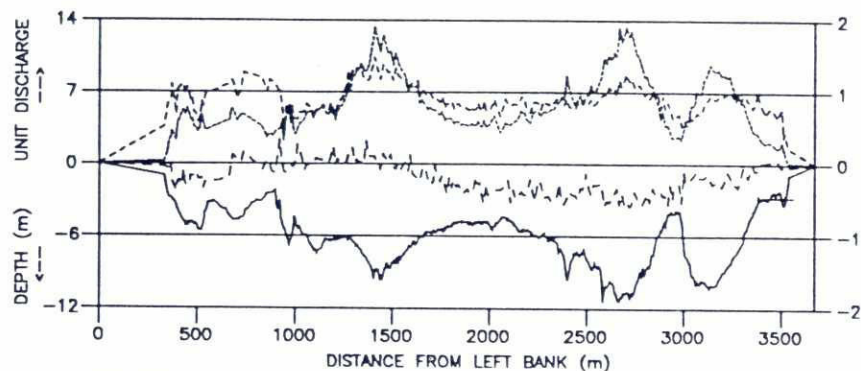


TRANSECT AZIMUTH = 52°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

LEGEND :

— WATER DEPTH (m below STAGE)

--- UNIT DISCHARGE (m³/s.m)

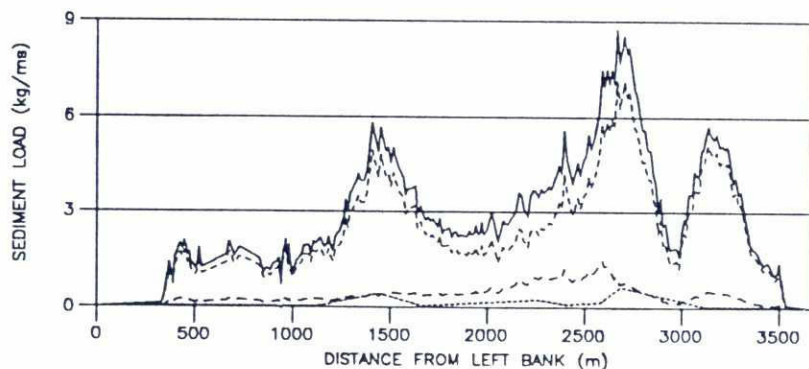
... U - (m/s)

-.- V - (m/s)

STAGE = 6.60 (m+PWD)

A = 19964 (m²)

Q = 18667 (m³/s)



SEDIMENT TRANSPORT

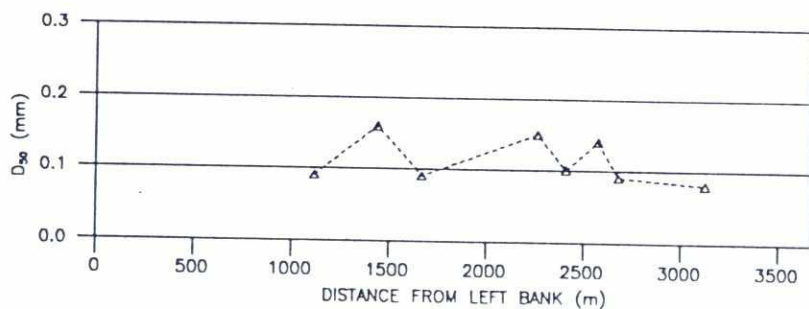
LEGEND :

— S_{TOTAL} 10337 (kg/s)

--- S_{WASH LOAD} 8362 (kg/s)

... S_{SUSP. BED} 1429 (kg/s)

-.- S_{NEAR BED} 546 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)

△△△△△ D₅₀ NEAR BED (mm)

□□□□□ D₅₀ BED MAT. (mm)

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Location 3 : Jamuna River, Aricha

File : A56D1T01

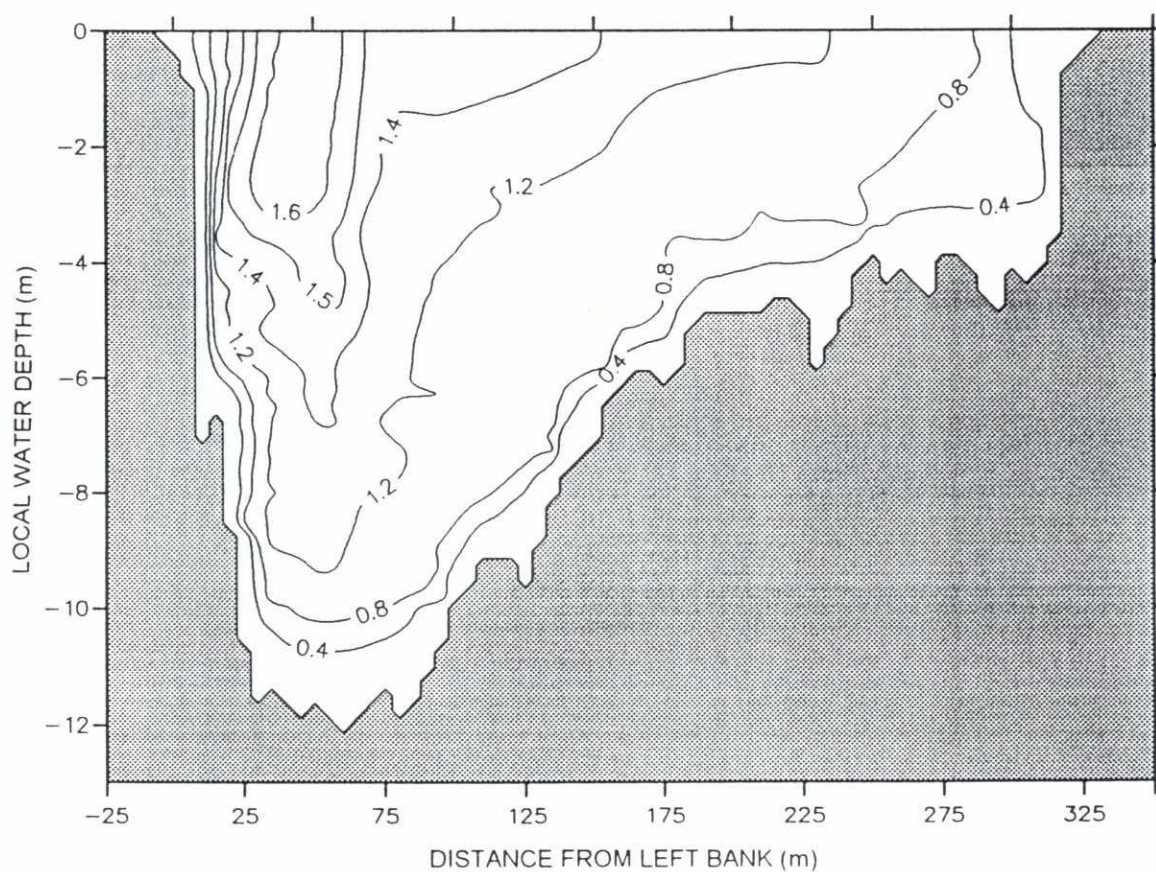
Date : 15 Oct 1995

Init : ss

Horizontal distribution of flow and sediments
Channel 2

page

3.2



Iso-velocity contours (m/s)

Water level : 6.73 m + PWD measured at the station indicated on page 1.1

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Location 3 : Jamuna River, Aricha

File : A56E1T07

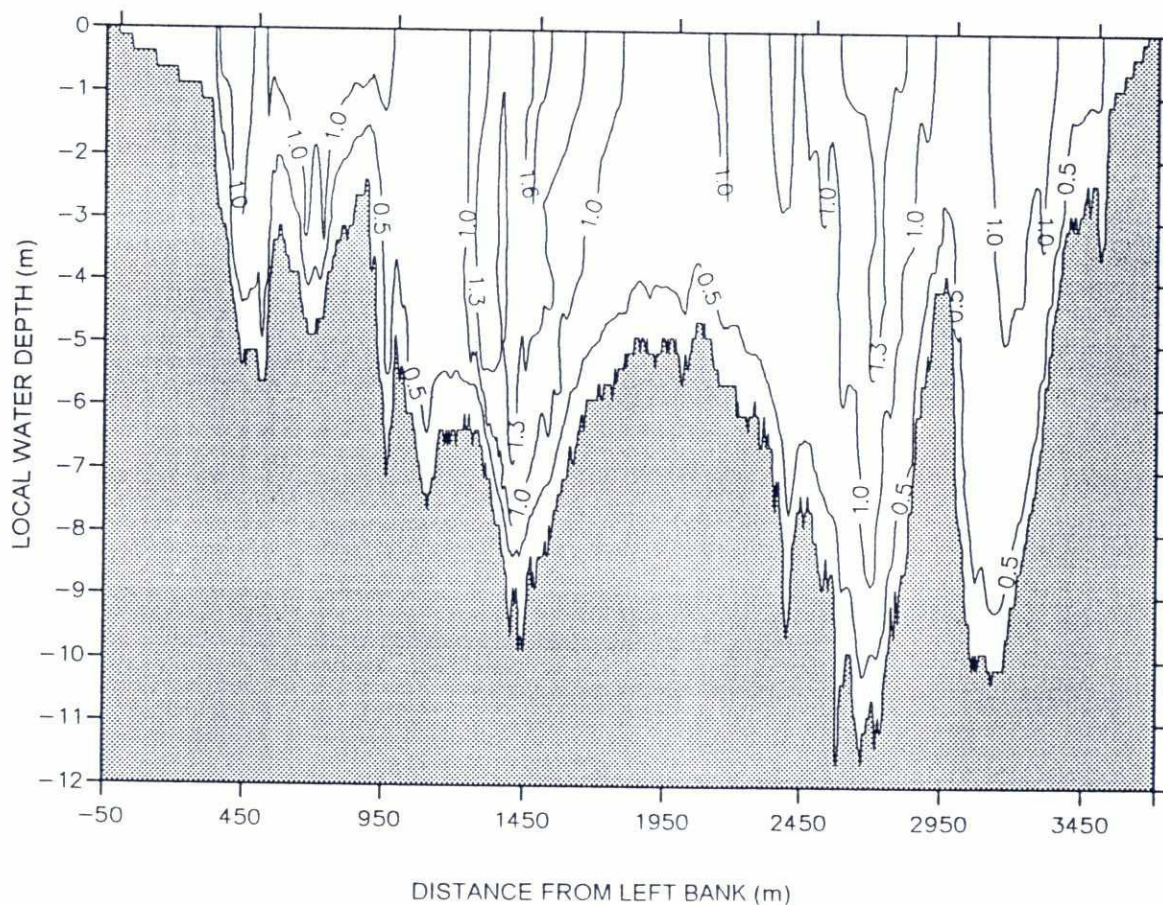
Date : 15 Oct 1995

Init : ss

Cross-sectional distribution of flow velocity
 Channel 1

page

4.1



Iso-velocity contours (m/s)

Water level : 6.60 m + PWD measured at the station indicated on page 1.1

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Location 3 : Jamuna River, Aricha

File : A56D1T01

Date : 15 Oct 1995

Init : ss

Cross-sectional distribution of flow velocity
Channel 2

page


4.2

Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	1	9506140946-1057	11.00	1.72	98.29	0.199	0.251	0.310
	1	9506140946-1057	11.00	3.77	96.23	0.248	0.295	0.350
2	7	9506131430-1528	11.00	6.61	93.39	0.086	0.102	0.120
	7	9506131430-1528	11.00	7.13	92.87	0.089	0.107	0.133

Table 5.1 : Grain sizes of bed load

Delft-Bottle								
Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	1	9506140946-1057	11.00	11.67	88.33	0.099	0.131	0.162
	2	9506141120-1144	9.60	0.23	99.77	0.152	0.173	0.195
	3	9506141200-1220	4.80	12.76	87.24	0.089	0.113	0.145
	1	9506140946-1057	11.00	13.23	86.77	0.090	0.116	0.149
	2	9506141120-1144	9.60	4.87	95.13	0.109	0.137	0.166
	3	9506141200-1220	4.80	15.02	84.98	0.087	0.111	0.142
2	1	9506131039-1056	7.20	19.32	80.68	0.074	0.085	0.099
	2	9506131117-1135	8.50	4.61	95.39	0.155	0.200	0.260
	3	9506131152-1207	5.60	26.51	73.49	0.071	0.087	0.108
	4	9506131241-1253	5.90	2.10	97.91	0.144	0.165	0.189
	5	9506131338-1354	9.30	17.06	82.94	0.082	0.101	0.126
	6	9506131405-1418	8.40	0.96	99.04	0.147	0.173	0.203
	7	9506131430-1528	11.00	8.13	91.88	0.082	0.095	0.110
	8	9506131539-1601	10.20	29.72	70.28	0.067	0.082	0.099
	1	9506131039-1056	7.20	17.56	82.44	0.075	0.087	0.102
	2	9506131117-1135	8.50	14.51	85.49	0.091	0.120	0.169
	3	9506131152-1207	5.60	26.18	73.82	0.071	0.087	0.107
	4	9506131241-1253	5.90	8.49	91.51	0.105	0.135	0.164
	5	9506131338-1354	9.30	19.99	80.01	0.077	0.095	0.116
	6	9506131405-1418	8.40	16.58	83.42	0.080	0.098	0.119
	7	9506131430-1528	11.00	14.23	85.77	0.077	0.089	0.102
	8	9506131539-1601	10.20	25.50	74.50	0.071	0.085	0.102

Table 5.2 : Grain sizes of near bed load


 <p>FAP 24 DELFT - DHI</p>	<p>RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities</p>	Survey Bulletin 162 : 13-14 June, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 15 Oct 1995	Grain size distributions	page
	Init : ss		5.1

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name	
ADCP & EMF transect	1	9506140900-0904	A56E1T03	
		9506140907-0911	A56E1T05	
		9506141228-1231	A56E1T07 *	
		9506141235-1239	A56E1T09	
	2	9506130843-0908	A56D1T01 *	
		9506130913-0939	A56D1T03	
		9506131614-1637	A56D1T07	
		9506131639-1702	A56D1T08	
	Table 6.1: ADCP & EMF transects			
	* : transect in PSD 24 data base and presented in Sections 3 and 4			

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	File name
Vertical current & turbidity profiles (ADCP/S4/MEX)	1	1	9506140946-1057	476605	642290	11.00	A56E1P01 **
		2	9506141120-1144	476535	642512	9.60	A56E1P03 *
		3	9506141200-1220	476427	642316	4.80	A56E1P04 *
	2	1	9506131039-1056	469220	641987	7.20	A56D1P02 *
		2	9506131117-1135	468972	641785	8.50	A56D1P03 *
		3	9506131152-1207	468802	641636	5.60	A56D1P04 *
		4	9506131241-1253	468330	641267	5.90	A56D1P06 *
		5	9506131338-1354	468225	641175	9.30	A56D1P07 *
		6	9506131405-1418	468092	641066	8.40	A56D1P08 *
		7	9506131430-1528	468006	641004	11.00	A56D1P09 **
		8	9506131539-1601	467666	640728	10.20	A56D1P10 *

Table 6.2: Vertical profiles	** MEX not available	* S4 & MEX not available
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Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	1	6	9506140946-1057	476605	642290	11.00
	2	7	6	9506131430-1528	468006	641004	11.00
Table 6.3: Suspended sediment - point sample							

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Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9506140946-1057	476605	642290	11.00
		2	1	9506141120-1144	476535	642512	9.60
		3	1	9506141200-1220	476427	642316	4.80
	2	1	1	9506131039-1056	469220	641987	7.20
		2	1	9506131117-1135	468972	641785	8.50
		3	1	9506131152-1207	468802	641636	5.60
		4	1	9506131241-1253	468330	641267	5.90
		5	1	9506131338-1354	468225	641175	9.30
		6	1	9506131405-1418	468092	641066	8.40
		7	1	9506131430-1528	468006	641004	11.00
		8	1	9506131539-1601	467666	640728	10.20

Table 6.4: Suspended sediment - depth integrated

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley-Smith Sample	1	1	9506140946-1057	476605	642290	11.00	A0691
		1	9506140946-1057	476605	642290	11.00	A2182
	2	7	9506131430-1528	468006	641004	11.00	A0364
		7	9506131430-1528	468006	641004	11.00	A0050

Table 6.5: Bed load



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Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft-Bottle Sample	1	1	9506140946-1057	476605	642290	11.00	A0221
		2	9506141120-1144	476535	642512	9.60	A0177
		3	9506141200-1220	476427	642316	4.80	A0208
		1	9506140946-1057	476605	642290	11.00	A0494
		2	9506141120-1144	476535	642512	9.60	A0430
		3	9506141200-1220	476427	642316	4.80	A0224
	2	1	9506131039-1056	469220	641987	7.20	A0428
		2	9506131117-1135	468972	641785	8.50	A0662
		3	9506131152-1207	468802	641636	5.60	A0204
		4	9506131241-1253	468330	641267	5.90	A0232
		5	9506131338-1354	468225	641175	9.30	A0150
		6	9506131405-1418	468092	641066	8.40	A0153
		7	9506131430-1528	468006	641004	11.00	A0148
		8	9506131539-1601	467666	640728	10.20	A0171
		1	9506131039-1056	469220	641987	7.20	A0224
		2	9506131117-1135	468972	641785	8.50	A0654
		3	9506131152-1207	468802	641636	5.60	A0488
		4	9506131241-1253	468330	641267	5.90	A0147
		5	9506131338-1354	468225	641175	9.30	A4060
		6	9506131405-1418	468092	641066	8.40	A0672
		7	9506131430-1528	468006	641004	11.00	A4030
		8	9506131539-1601	467666	640728	10.20	A0184

Table 6.6: Near bed load

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Collected data and their storage (3)


page

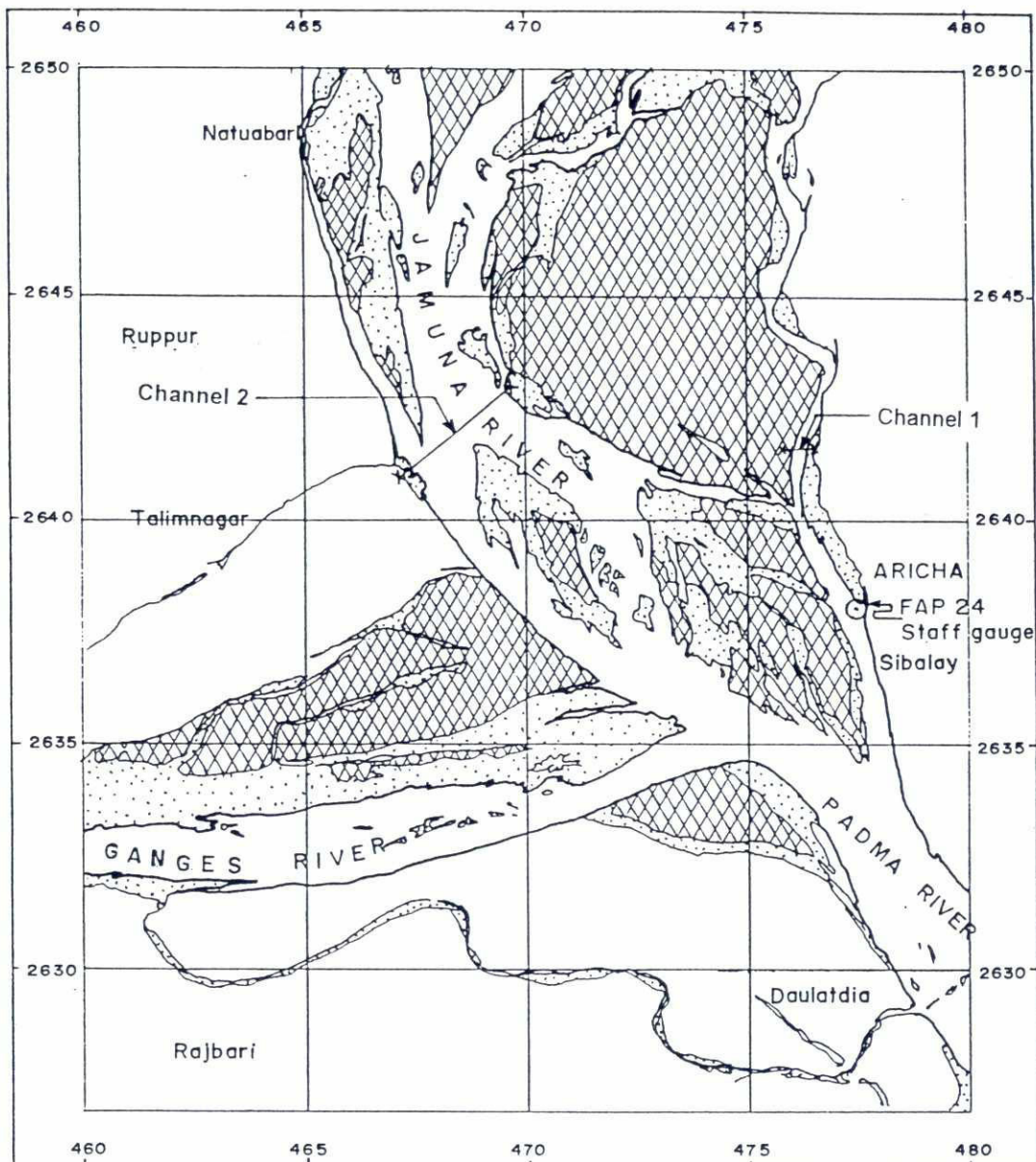
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


Types of Data	Channel	Format	Filename
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Echosounder data	1	QUATTRO	A56E1T07 .ech
Echosounder data	2	QUATTRO	A56D1T01 .ech
Sediment transport data	1	QUATTRO	A56E1T07 .sed
Sediment transport data	2	QUATTRO	A56D1T01 .sed
Susp. sed. conc. analysis	1	QUATTRO	A56E1T07 .ssc
Susp. sed. conc. analysis	2	QUATTRO	A56D1T01 .ssc
Bedload sediment analysis	1	QUATTRO	A56E1T07 .bdl
Bedload sediment analysis	2	QUATTRO	A56D1T01 .bdl
Transect plot data	1	QUATTRO	A56E1T07 .trs
Transect plot data	2	QUATTRO	A56D1T01 .trs
Iso-velocity plot data	1	MIKE21 MIKE21	A56E1T07 .ct2 A56E1T07 .dt2
Iso-velocity plot data	2	MIKE21 MIKE21	A56D1T01 .ct2 A56D1T01 .dt2

Table 7.1 PSD 24 Database file description

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 162 : 13-14 June, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 15 Oct 1995	PSD 24 Database file description	page 7.1
	Init : ss		



LEGEND :

-  High land
-  Unstable / low char
-  Cross section
-  FAP 24 Staff gauge



5000m 2500m 0
Scale

Map is based on satellite
images of March 1995

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 191 : 06 - 09 September, 1995

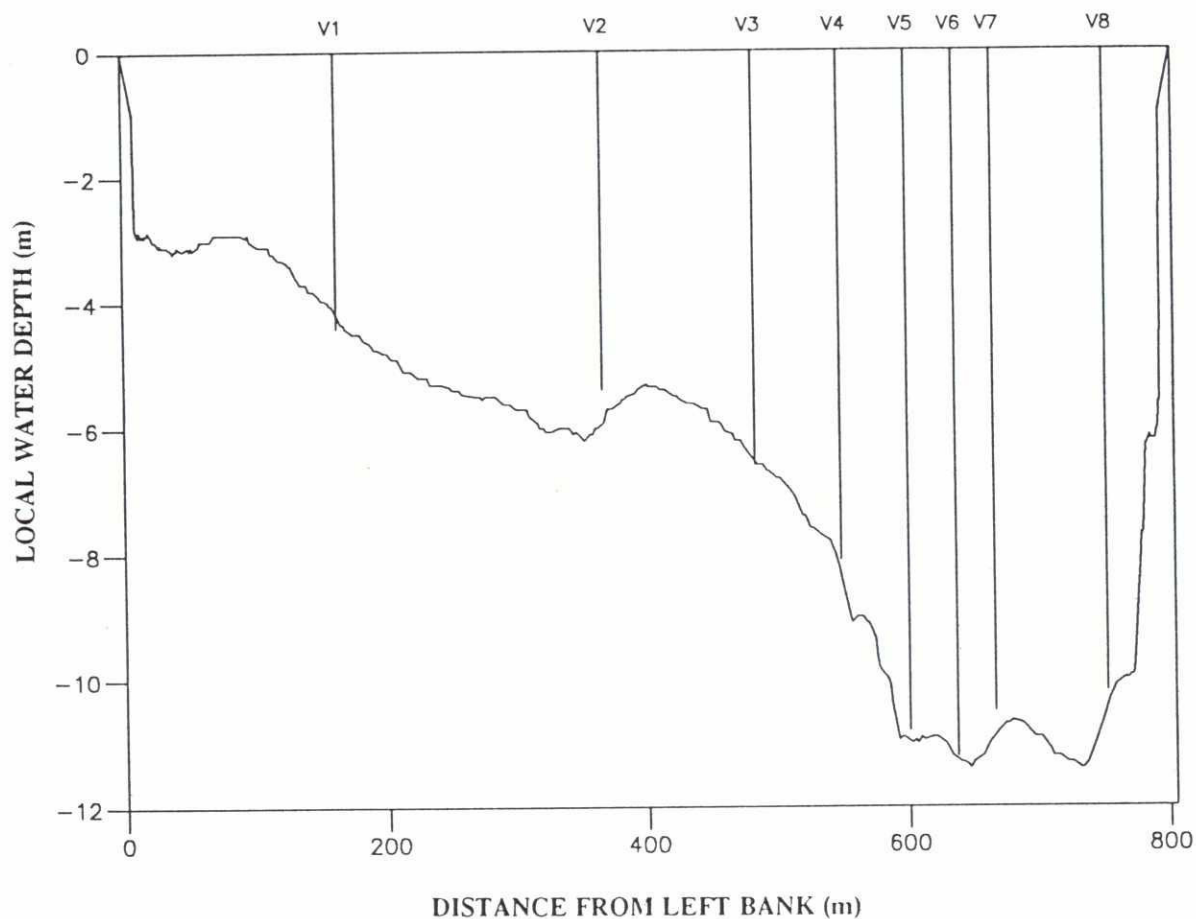
Location 3 : Jamuna River, Aricha

Location map


Date : 31 Jan 1995

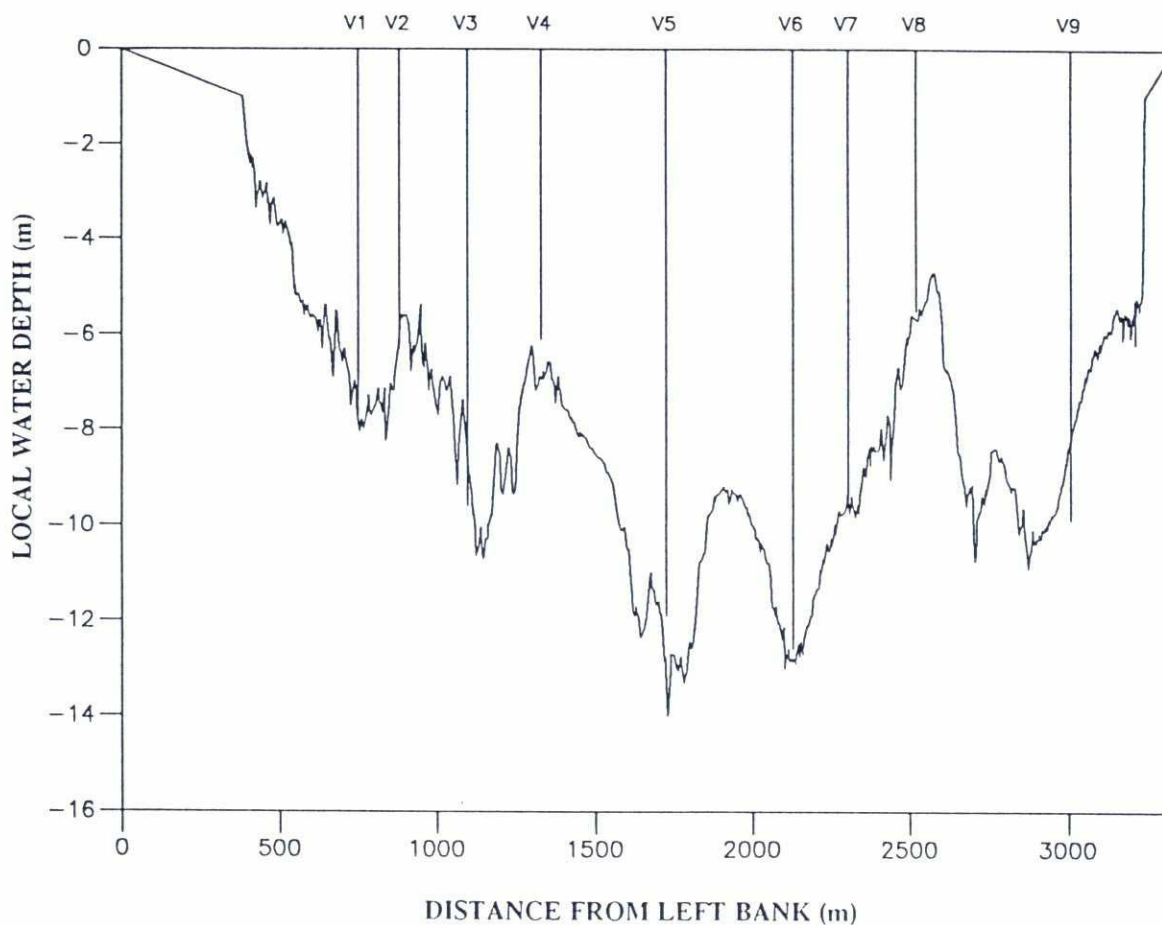
Init : sjr

page
1.1



Water level : 8.64 m+PWD measured at the station indicated on page 1.1

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>	Survey Bulletin 191 : 06 - 09 September, 1995		
	Location 3 : Jamuna River, Aricha		
File : A5991T01	Date : 31 Jan 1996	Cross-sections and measured verticals Channel 1	page 1.2
	Init : sjr		



Water level : 8.79 m+PWD measured at the station indicated on page 1.1

FAP 24



RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 191 : 06 - 09 September, 1995

Location 3 : Jamuna River, Aricha

File : A5961T09

Date : 31 Jan 1996

Init : sjr

Cross-sections and measured verticals
Channel 2

page
1.3

22

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	8	8	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	8	9	-	-
	ADCP	8	9	-	-
	S4 current meter	1	1	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	8	9	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	1	1	-	-
	Delft Bottle	16	18	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made


Channel	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Near Bed transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	804	5283	8.64	8881	1375 *	4345
Channel 2	3334	23901	8.79	22906	1083 *	8934

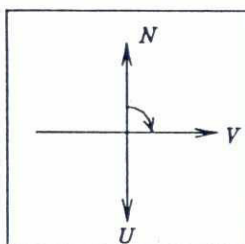
Table 2.2: Key figures

* based on Delft bottle measurements

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Aricha	Channel 1	08 Sep 95	8.64	FAP 24
		09 Sep 95	8.64	
	Channel 2	06 Sep 95	8.79	
		07 Sep 95	8.68	

Table 2.3: Water-levels

<div><div><p>FAP 24</p><p>DELFT - DHI</p></div><div><p>RIVER SURVEY PROJECT</p><p>Flood Plan Coordination Organization</p><p>Commission of the European Communities</p></div></div>		Survey Bulletin 191 : 06 - 09 September, 1995		
		Location 3 : Jamuna River, Aricha		
File : A5991T01 A5961T09	Date : 31 Jan 1996	Survey programme as made and key figures		page 2.1
	Init : sjr			

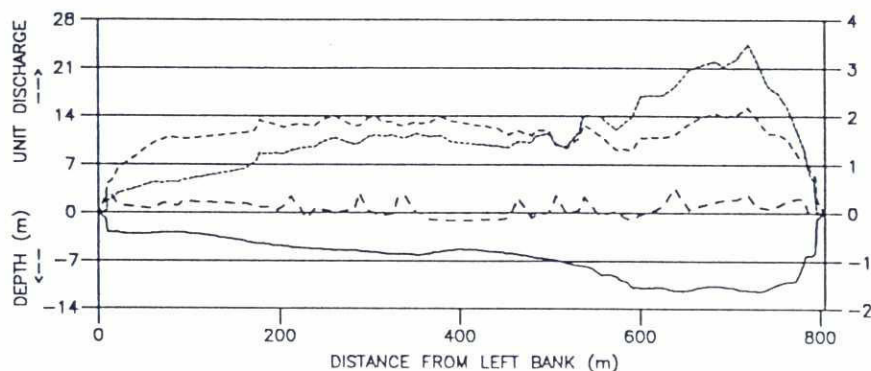


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

LEGEND :

— WATER DEPTH (m below STAGE)

— UNIT DISCHARGE (m³/s.m)

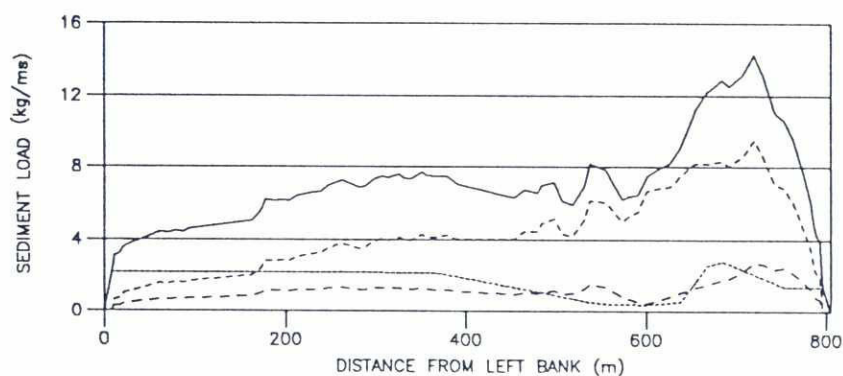
--- U (m/s)

--- V (m/s)

STAGE = 8.64 (m+PWD)

A = 5283 (m²)

Q = 8881 (m³/s)



SEDIMENT TRANSPORT

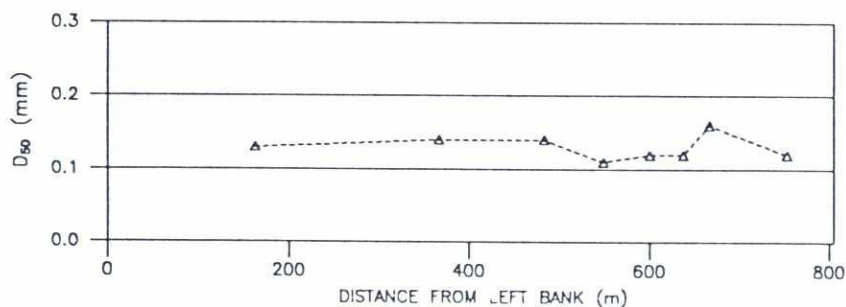
LEGEND :

— S_{TOTAL} 5720 (kg/s)

--- S_{WASH LOAD} 3437 (kg/s)

--- S_{SUSP. BED} 908 (kg/s)

--- S_{NEAR BED} 1375 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)

△△△△△ D₅₀ NEAR BED (mm)

□□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 191 : 06 - 09 September, 1995

Location 3 : Jamuna River, Aricha

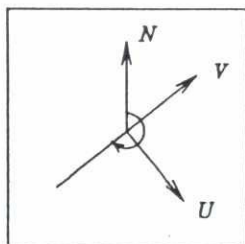
File : A5991T01

Date : 31 Jan 1996

Init : sjr

Horizontal distribution of flow and sediments
Channel 1

page
3.1

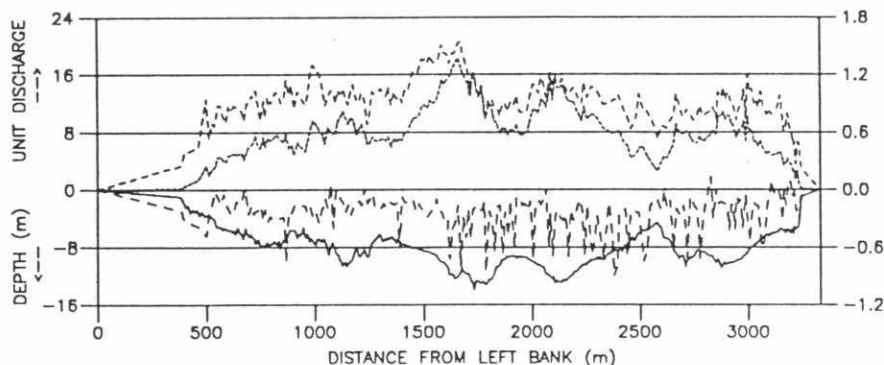


TRANSECT AZIMUTH = 231°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

LEGEND :

— WATER DEPTH (m below STAGE)

--- UNIT DISCHARGE (m³/s.m)

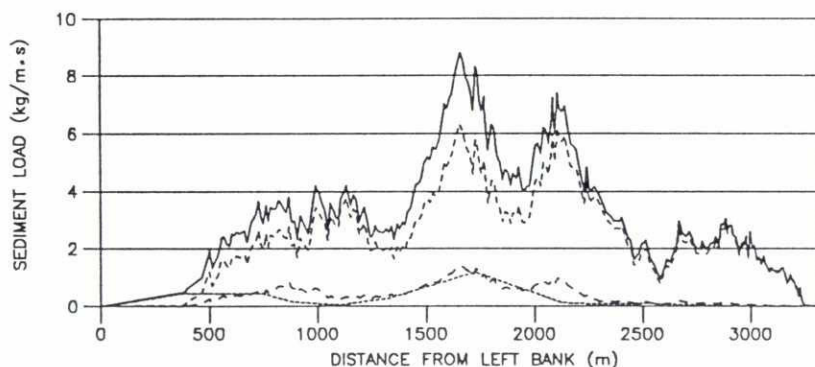
... U (m/s)

... V (m/s)

STAGE = 8.79 (m+PWD)

A = 23901 (m²)

Q = 22906 (m³/s)



SEDIMENT TRANSPORT

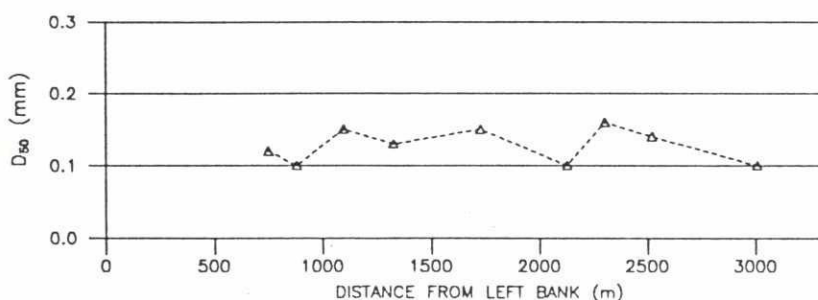
LEGEND :

— S_{TOTAL} 10017 (kg/s)

--- S_{WASH LOAD} 7719 (kg/s)

... S_{SUSP. BED} 1215 (kg/s)

-.- S_{NEAR BED} 1083 (kg/s)



GRAIN SIZE

LEGEND :

◆◆◆◆ D₅₀ SUSP. (mm)

△△△△ D₅₀ NEAR BED (mm)

□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
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Survey Bulletin 191 : 06 - 09 September, 1995

Location 3 : Jamuna River, Aricha

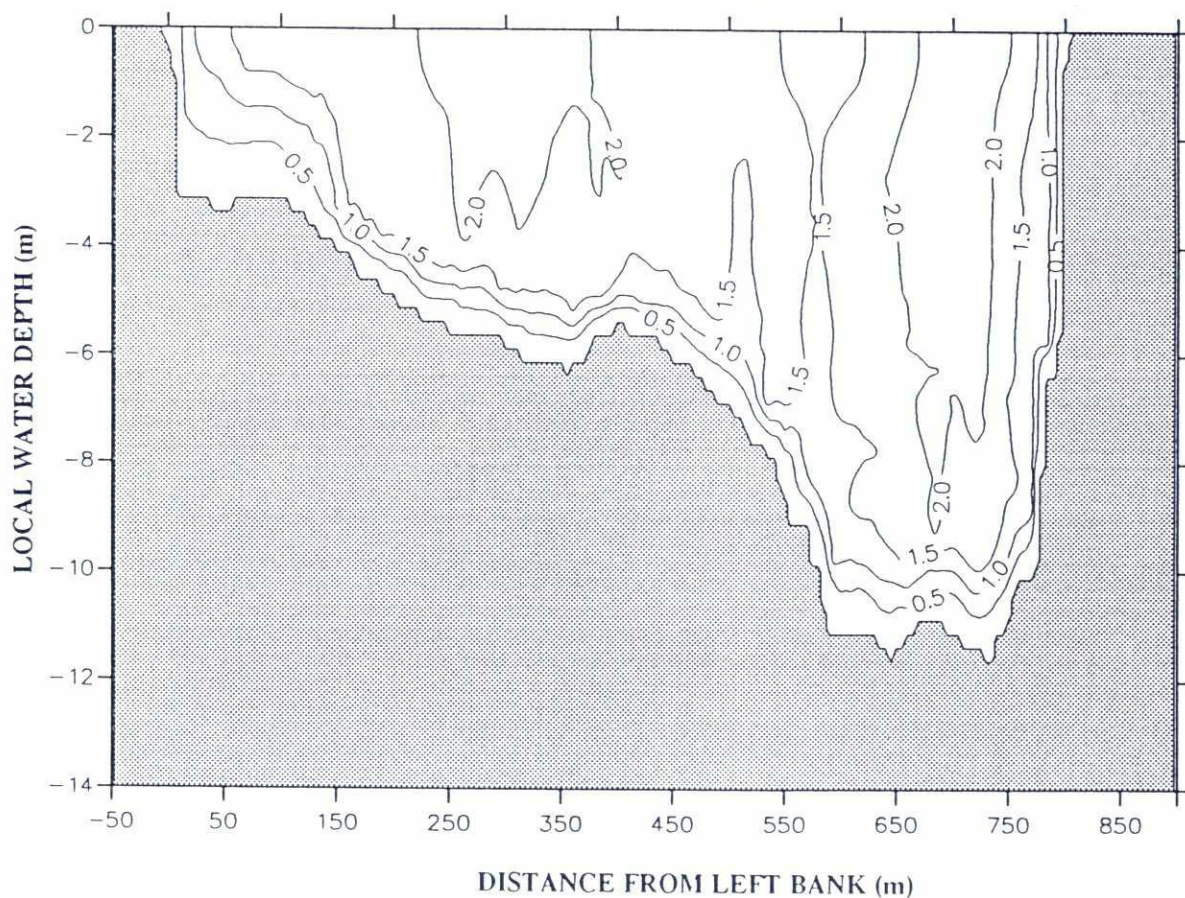
File : A5961T09

Date : 31 Jan 1996

Init : sjr

Horizontal distribution of flow and sediments
Channel 2

page
3.2



Iso-velocity contours (m/s)

Water level : 8.64 m+PWD measured at the station indicated on page 1.1

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 191 : 06 - 09 September, 1995

Location 3 : Jamuna River, Aricha

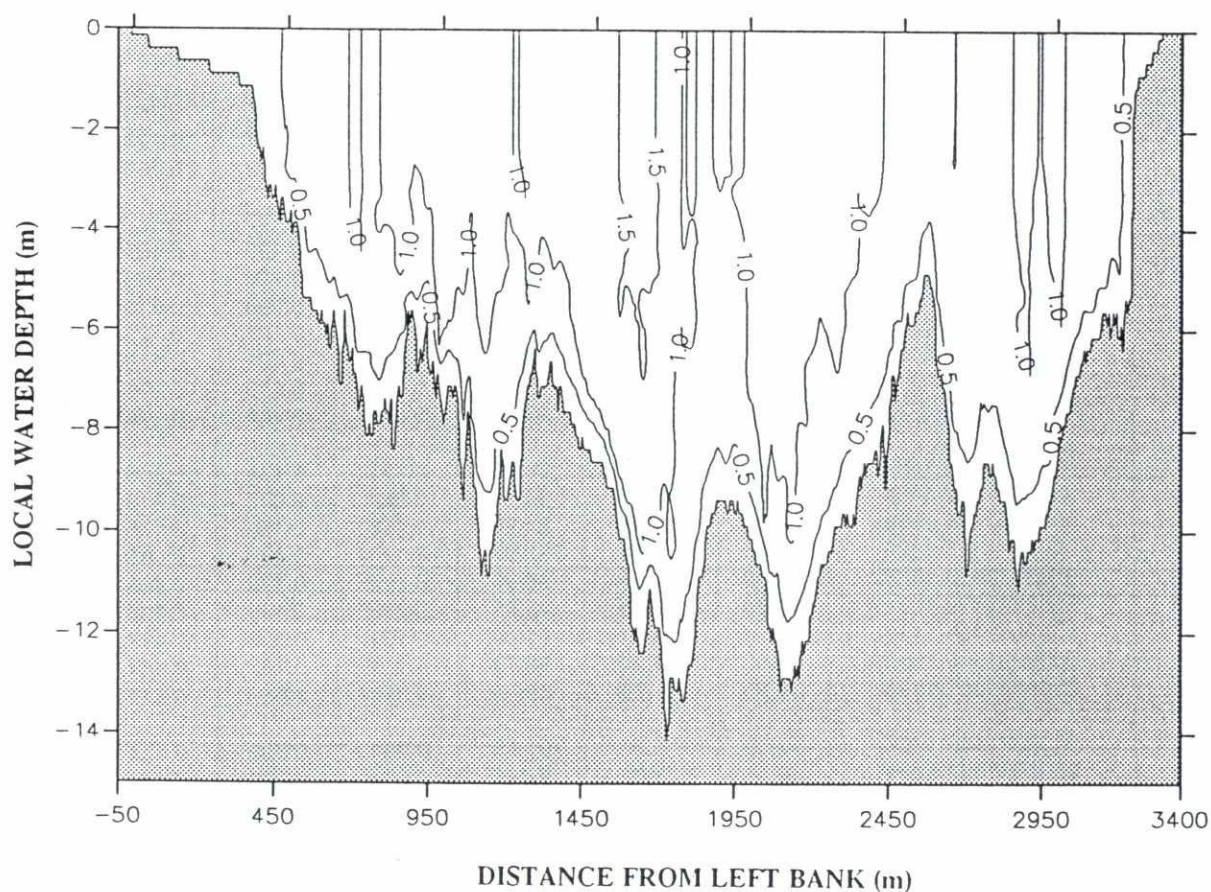
File : A5991T01

Date : 31 Jan 1996

Init : sjr

Cross-sectional distribution of flow velocity
Channel 1

page
4.1



Iso-velocity contours (m/s)

Water level : 8.79 m+PWD measured at the station indicated on page 1.1

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 191 : 06 - 09 September, 1995

Location 3 : Jamuna River, Aricha

File : A5961T09

Date : 31 Jan 1996

Init : sjr

Cross-sectional distribution of flow velocity
Channel 2

page
4.2


Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	6	9509090932-1115	11.20	2.10	97.90	0.128	0.152	0.179
2	5	9509071053-1205	11.90	0.16	99.84	0.252	0.298	0.352

Table 5.1 : Grain sizes of bed load

Delft Bottle

Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	1	9509081212-1230	4.40	0.95	99.05	0.114	0.141	0.169
	2	9509081308-1328	5.40	0.90	99.10	0.130	0.152	0.178
	3	9509081346-1406	6.60	2.02	97.98	0.130	0.151	0.177
	4	9509081420-1437	8.10	5.34	94.66	0.096	0.119	0.149
	5	9509081508-1531	10.80	3.46	96.54	0.104	0.131	0.159
	6	9509090932-1115	11.20	4.92	95.08	0.106	0.135	0.164
	7	9509091151-1211	10.50	0.55	99.45	0.147	0.167	0.189
	8	9509081558-1622	10.20	1.30	98.70	0.105	0.132	0.160
	1	9509081212-1230	4.40	1.55	98.45	0.097	0.117	0.147
	2	9509081308-1328	5.40	1.94	98.06	0.101	0.125	0.155
	3	9509081346-1406	6.60	4.23	95.77	0.099	0.123	0.153
	4	9509081420-1437	8.10	14.01	85.99	0.079	0.093	0.110
	5	9509081508-1531	10.80	8.74	91.26	0.086	0.103	0.123
	6	9509090932-1115	11.20	8.25	91.75	0.085	0.101	0.119
	7	9509091151-1211	10.50	1.90	98.10	0.129	0.150	0.176
	8	9509081558-1622	10.20	2.63	97.37	0.090	0.107	0.128
2	1	9509071446-1457	7.70	1.24	98.76	0.112	0.138	0.166
	2	9509071422-1434	6.30	5.29	94.71	0.084	0.097	0.113
	3	9509071346-1358	9.60	5.15	94.85	0.128	0.150	0.175
	4	9509071315-1329	6.10	1.05	98.95	0.110	0.137	0.165
	5	9509071053-1205	11.90	1.04	98.96	0.152	0.172	0.195
	6	9509071022-1034	12.60	10.45	89.55	0.088	0.108	0.136
	7	9509061409-1423	9.50	8.12	91.88	0.131	0.153	0.178
	8	9509061340-1353	5.50	1.24	98.76	0.111	0.137	0.164
	9	9509061305-1325	9.90	11.75	88.25	0.082	0.097	0.114
	1	9509071446-1457	7.70	7.24	92.76	0.084	0.098	0.114
	2	9509071422-1434	6.30	3.52	96.48	0.084	0.097	0.111
	3	9509071346-1358	9.60	3.82	96.18	0.134	0.156	0.181
	4	9509071315-1329	6.10	1.84	98.16	0.099	0.122	0.152
	5	9509071053-1205	11.90	6.47	93.53	0.099	0.126	0.156
	6	9509071022-1034	12.60	16.55	83.45	0.077	0.091	0.108
	7	9509061409-1423	9.50	0.22	99.78	0.152	0.171	0.192
	8	9509061340-1353	5.50	1.05	98.95	0.115	0.141	0.167
	9	9509061305-1325	9.90	7.72	92.28	0.085	0.100	0.118


Table 5.2 : Grain sizes of near bed load

<div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div>		<div>RIVER SURVEY PROJECT</div> <div>Flood Plan Coordination Organization</div> <div>Commission of the European Communities</div>		<div>Survey Bulletin 191 : 06 - 09 September, 1995</div>	
		Location 3 : Jamuna River, Aricha			
		Date : 31 Jan 1996		Grain size distributions	
		Init : sjr			
				page	
				5.1	

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9509081044-1052 9509081058-1106 9509081640-1647 9509081650-1657 9509090854-0902 9509090910-0918 9509091311-1318 9509091326-1334	A5981T01 A5981T02 A5981T05 A5981T06 A5991T01 * A5991T02 A5991T03 A5991T05
	2	9509060956-1018 9509061027-1048 9509061547-1609 9509061615-1635 9509070914-0937 9509070945-1007 9509071509-1529 9509071531-1555	A5961T01 A5961T02 A5961T08 A5961T09 * A5971T01 A5971T03 A5971T04 A5971T05
Table 6.1 : ADCP & EMF transects * : transect in PSD 24 data base and presented in Sections 3 and 4			

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	File name
Vertical current & turbidity profiles (ADCP/S4/MEX)	1	1 2 3 4 5 6 7 8	9509081212-1230 9509081308-1328 9509081346-1406 9509081420-1437 9509081508-1531 9509090932-1115 9509091151-1211 9509081558-1622	476518 476316 476193 476136 476083 476043 476008 475926	641051 641049 641051 641050 641036 641043 641047 641049	4.40 5.40 6.60 8.10 10.80 11.20 10.50 10.20	A5981P01 * A5981P02 * A5981P04 * A5981P06 * A5981P07 * A5991P03 ** A5991P05 * A5981P09 *
	2	1 2 3 4 5 6 7 8 9	9509071446-1457 9509071422-1434 9509071346-1358 9509071315-1329 9509071053-1205 9509071022-1034 9509061409-1423 9509061340-1353 9509061305-1325	469227 469121 468948 468774 468466 468155 468022 467842 467387	641986 641906 641773 641622 641371 641123 641007 640870 640663	7.70 6.30 9.60 6.10 11.90 12.60 9.50 5.50 9.90	A5971P06 * A5971P05 * A5971P04 * A5971P03 * A5971P02 ** A5971P01 * A5961P03 * A5961P02 * A5961P01 *
Table 6.2: Vertical profiles				** MEX not available		* S4 & MEX not available	


Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	6	6	9509090932-1115	476043	641043	11.20
	2	5	6	9509071053-1205	468466	641371	11.90
Table 6.3: Suspended sediment - point sample							

<div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div> <div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div>		Survey Bulletin 191 : 06 - 09 September, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 31 Jan 1996	Collected data and their storage (1)	page 6.1
	Init : sjr		

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Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft Bottle Sample	1	1	9509081212-1230	476518	641051	4.40	A946
		2	9509081308-1328	476316	641049	5.40	A797
		3	9509081346-1406	476193	641051	6.60	A986
		4	9509081420-1437	476136	641050	8.10	A1001
		5	9509081508-1531	476083	641036	10.80	A440
		6	9509090932-1115	476043	641043	11.20	A387
		7	9509091151-1211	476008	641047	10.50	A4057
		8	9509081558-1622	475926	641049	10.20	A4086
	2	1	9509071446-1457	469227	641986	7.70	A845
		2	9509071422-1434	469121	641906	6.30	A434
		3	9509071346-1358	468948	641773	9.60	A498
		4	9509071315-1329	468774	641622	6.10	A230
		5	9509071053-1205	468466	641371	11.90	A4034
		6	9509071022-1034	468155	641123	12.60	A174
		7	9509061409-1423	468022	641007	9.50	A194
		8	9509061340-1353	467842	640870	5.50	A510
		9	9509061305-1325	467387	640663	9.90	A429
		1	9509071446-1457	469227	641986	7.70	A200
		2	9509071422-1434	469121	641906	6.30	A450
		3	9509071346-1358	468948	641773	9.60	A153
		4	9509071315-1329	468774	641622	6.10	A397
		5	9509071053-1205	468466	641371	11.90	A4047
		6	9509071022-1034	468155	641123	12.60	A231
		7	9509061409-1423	468022	641007	9.50	A443
		8	9509061340-1353	467842	640870	5.50	A662
		9	9509061305-1325	467387	640663	9.90	A433

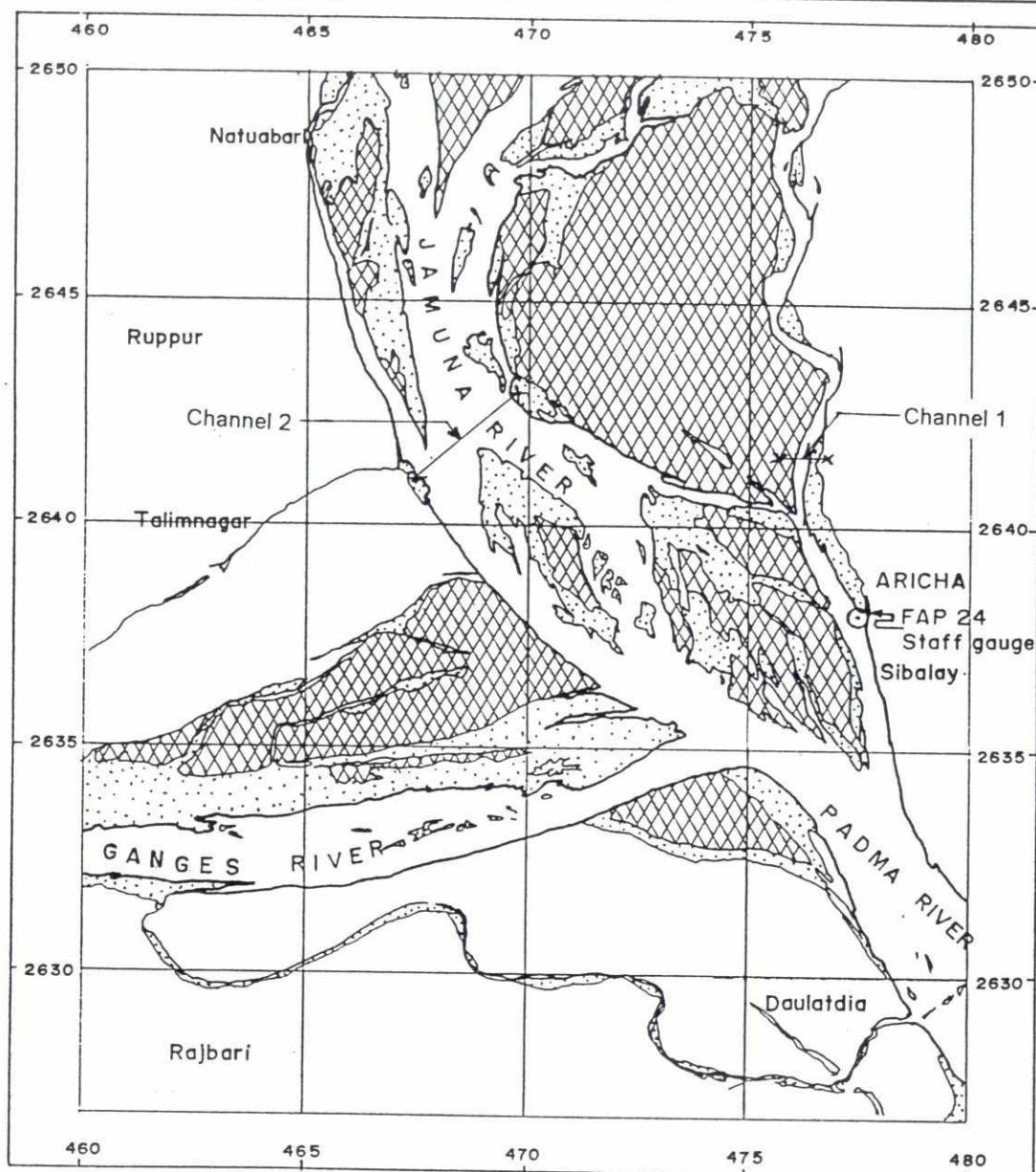
Table 6.6 : Near bed load

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 191 : 06 - 09 September, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 31 Jan 1996	Collected data and their storage (3)	page 6.3
	Init : sjr		





Types of data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	A5991T01.ase
ADCP/S4/EMF data	2	QUATTRO	A5961T09.ase
Echosounder data	1	QUATTRO	A5991T01.ech
Echosounder data	2	QUATTRO	A5961T09.ech
Sediment transport data	1	QUATTRO	A5991T01.sed
Sediment transport data	2	QUATTRO	A5961T09.sed
Bed load sediment analysis	1	QUATTRO	A5991T01.bdl
Bed load sediment analysis	2	QUATTRO	A5961T09.bdl
Susp. sed. conc. analysis	1	QUATTRO	A5991T01.ssc
Susp. sed. conc. analysis	2	QUATTRO	A5961T09.ssc
Transect plot data	1	QUATTRO	A5991T01.trs
Transect plot data	2	QUATTRO	A5961T09.trs
Iso-velocity plot data	1	MIKE 21	A5991T01.ct2
		MIKE 21	A5991T01.dt2
Iso-velocity plot data	2	MIKE 21	A5961T09.ct2
		MIKE 21	A5961T09.dt2

Table 7.1: PSD 24 Database file description

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities DELT - DHI	Survey Bulletin 191 : 06 - 09 September, 1995		
	Location 3 : Jamuna River, Aricha		
	Date : 31 Jan 1996	PSD 24 Database file description	page 7.1
	Init : sjr		



LEGEND :

-  High land
-  Unstable/low char
-  Cross section
-  FAP 24 Staff gauge



5000m 2500m 0
Scale

Map is based on satellite images of March 1995

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 202 : 03 - 05 October, 1995

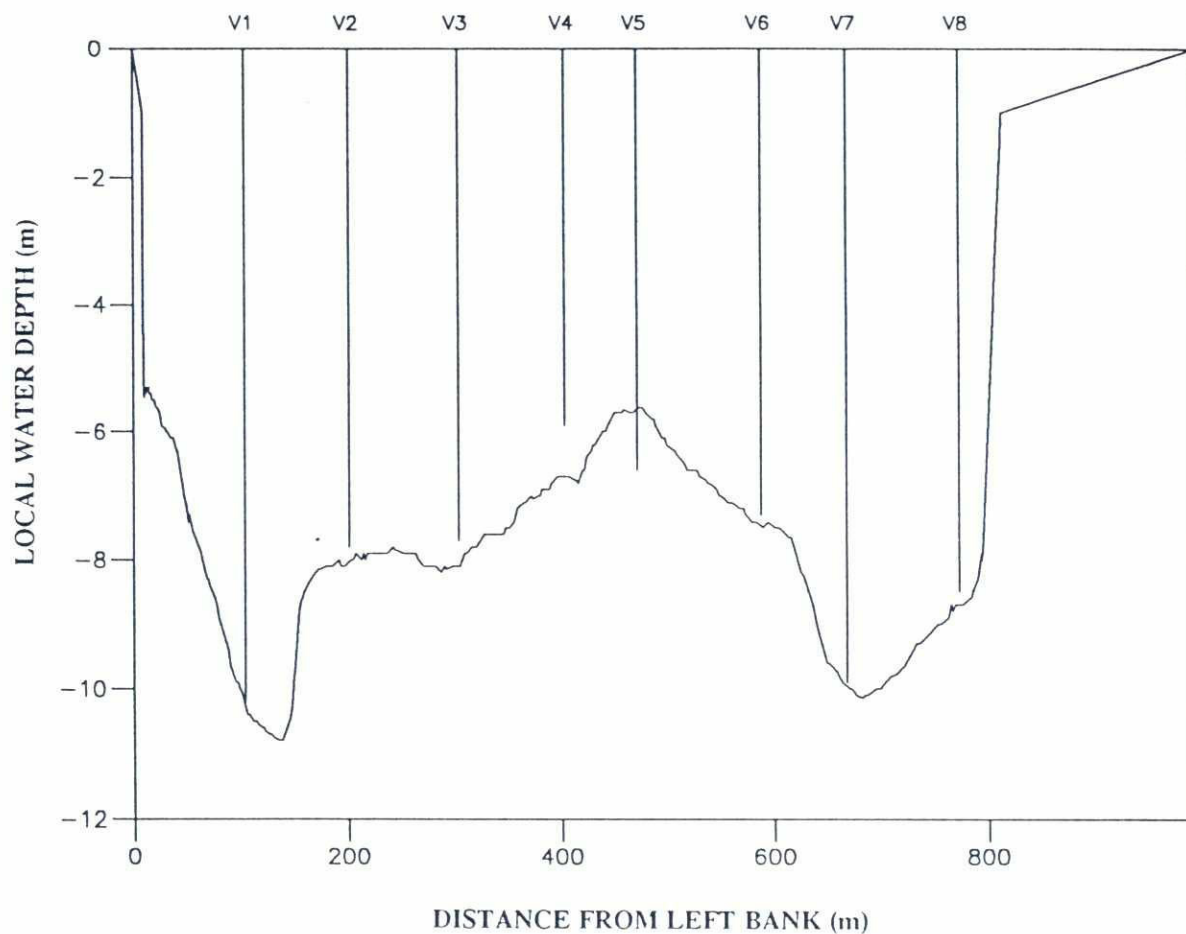
Location 3 : Jamuna River, Aricha

Date : 11 Feb 1996

Init : sjr

Location map

page
1.1



Water level : 8.94 m+PWD measured at the station indicated on page 1.1

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 202 : 03 - 05 October, 1995

Location 3 : Jamuna River, Aricha

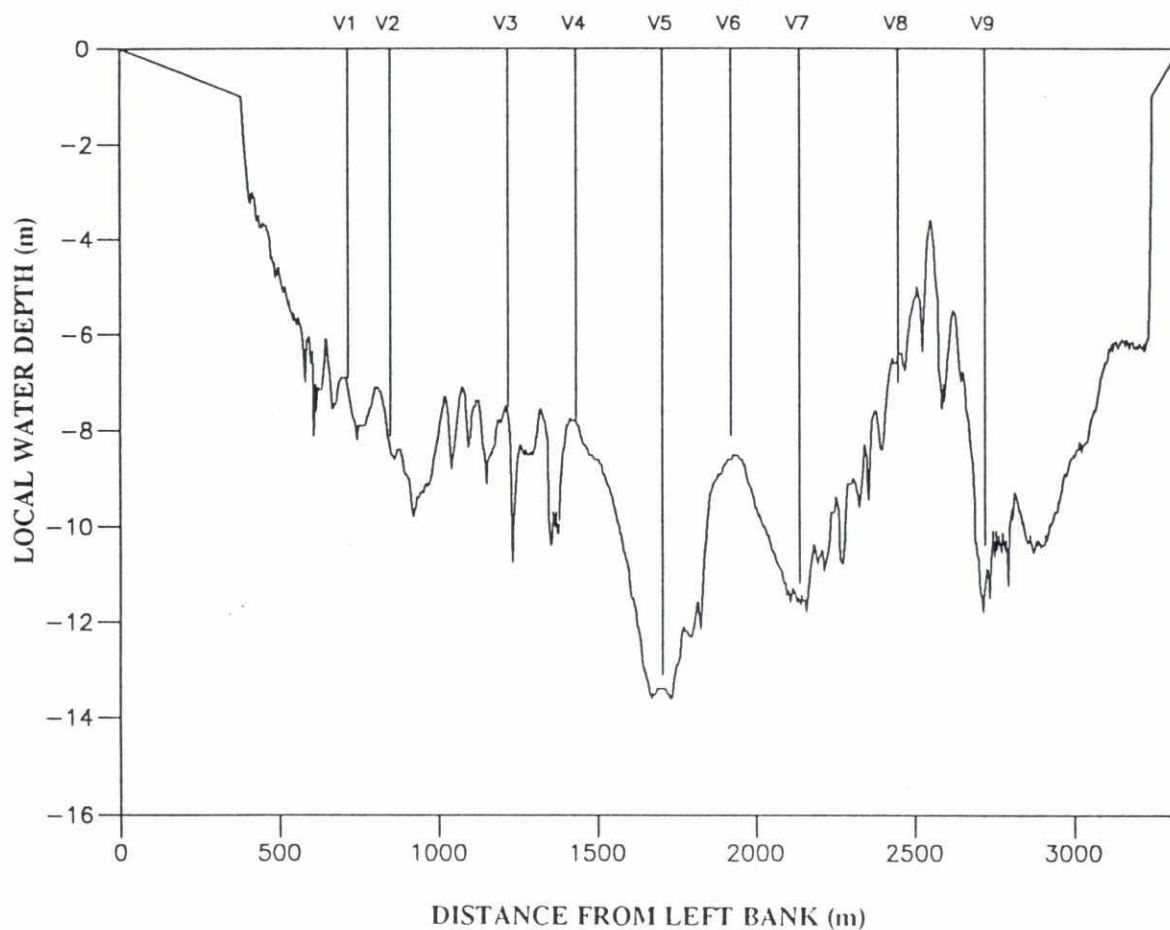
File : A5A31T01

Date : 08 Feb 1996


Init : sjr

Cross-sections and measured verticals
Channel 1

page
1.2



Water level : 8.74 m+PWD measured at the station indicated on page 1.1

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 202 : 03 - 05 October, 1995	
		Location 3 : Jamuna River, Aricha	
File : A5A41T07	Date : 08 Feb 1996	Cross-sections and measured verticals Channel 2	page 1.3
	Init : sjr		

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	4	8	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	8	9	-	-
	ADCP	8	9	-	-
	S4 current meter	1	1	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	8	9	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	1	1	-	-
	Delft Bottle	16	18	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made


Channel	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Near Bed transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	994	6410	8.94	14445	1792 *	12527
Channel 2	3336	24607	8.74	30141	1502 *	18124

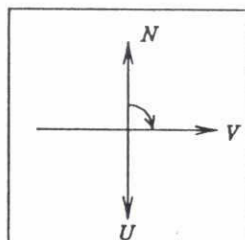
Table 2.2: Key figures

* based on Delft bottle measurements

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Aricha	Channel 1	03 Oct 95	8.94	FAP 24
	Channel 2	04 Oct 95	8.74	
		05 Oct 95	8.60	

Table 2.3: Water-levels

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 202 : 03 - 05 October, 1995	
		Location 3 : Jamuna River, Aricha	
File : A5A31T01 A5A41T07	Date : 08 Feb 1996	Survey programme as made and key figures	page
	Init : sjr		2.1

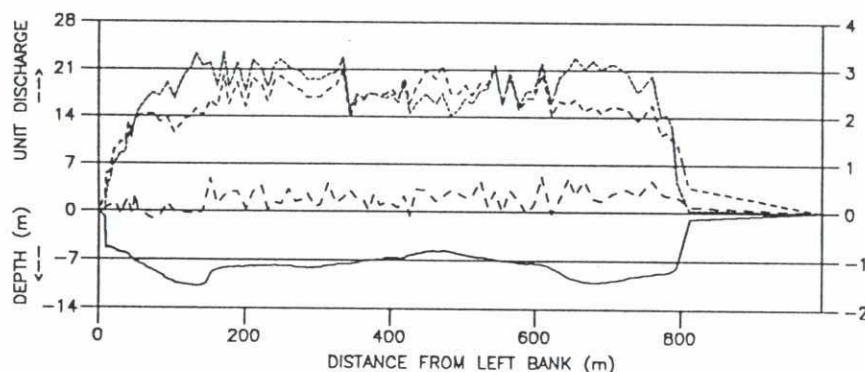


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

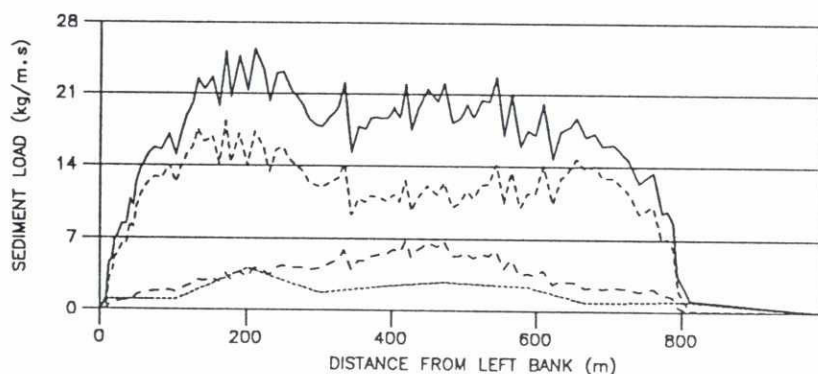
LEGEND :

— WATER DEPTH (m below STAGE)
 --- UNIT DISCHARGE (m³/s.m)
 ... U (m/s)
 -.- V (m/s)

STAGE = 8.94 (m+PWD)

A = 6410 (m²)

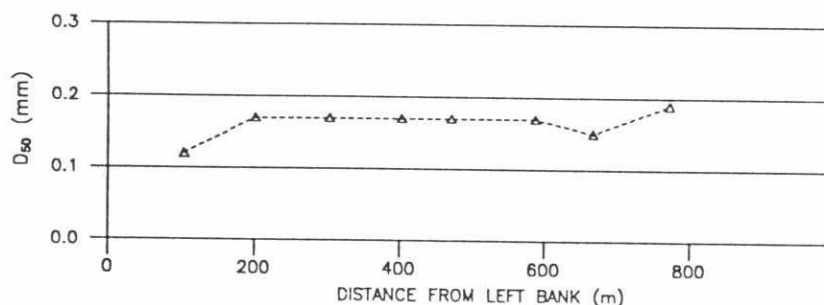
Q = 14445 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 14319 (kg/s)
 --- S_{WASH LOAD} 9650 (kg/s)
 ... S_{SUSP. BED} 2877 (kg/s)
 -.- S_{NEAR BED} 1792 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇ D₅₀ SUSP. (mm)
 △△△△ D₅₀ NEAR BED (mm)
 □□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
 Commission of the European Communities

Survey Bulletin 202 : 03 - 05 October, 1995

Location 3 : Jamuna River, Aricha

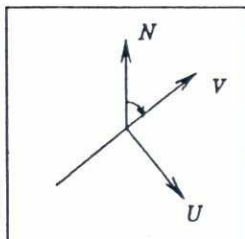
File : ASA31T01

Date : 08 Feb 1996

Init : sjr

Horizontal distribution of flow and sediments
 Channel 1

page
 3.1

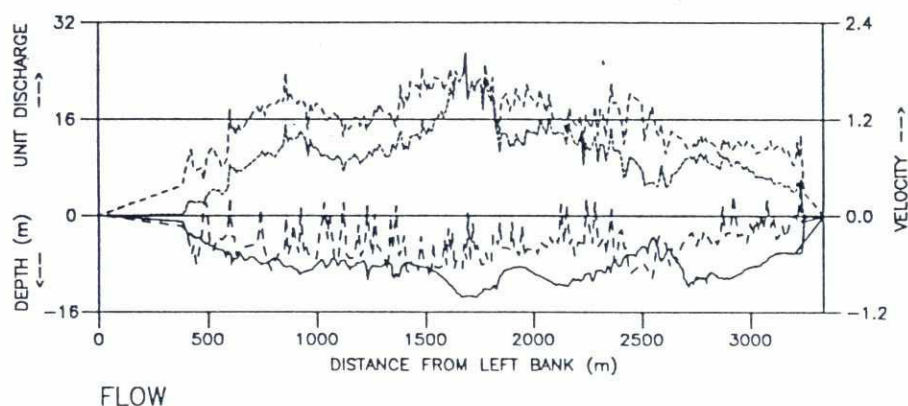


TRANSECT AZIMUTH = 51°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



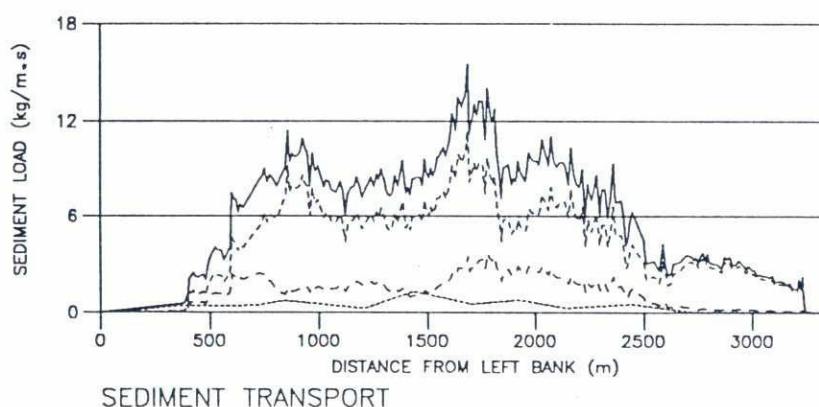
LEGEND :

— WATER DEPTH (m below STAGE)
 --- UNIT DISCHARGE (m³/s.m)
 ... U (m/s)
 -.- V (m/s)

STAGE = 8.74 (m+PWD)

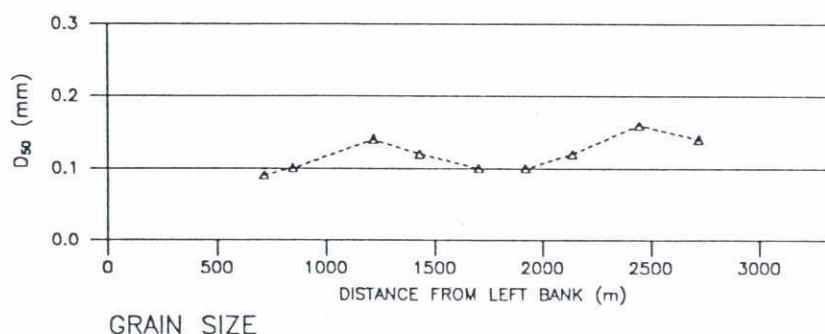
A = 24607 (m³)

Q = 30141 (m³/s)



LEGEND :

— S_{TOTAL} 19626 (kg/s)
 --- S_{WASH LOAD} 14041 (kg/s)
 ... S_{SUSP. BED} 4083 (kg/s)
 -.- S_{NEAR BED} 1502 (kg/s)



LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)
 △△△△△ D₅₀ NEAR BED (mm)
 □□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
 Commission of the European Communities

Survey Bulletin 202 : 03 - 05 October, 1995

Location 3 : Jamuna River, Aricha

File : A5A41T07

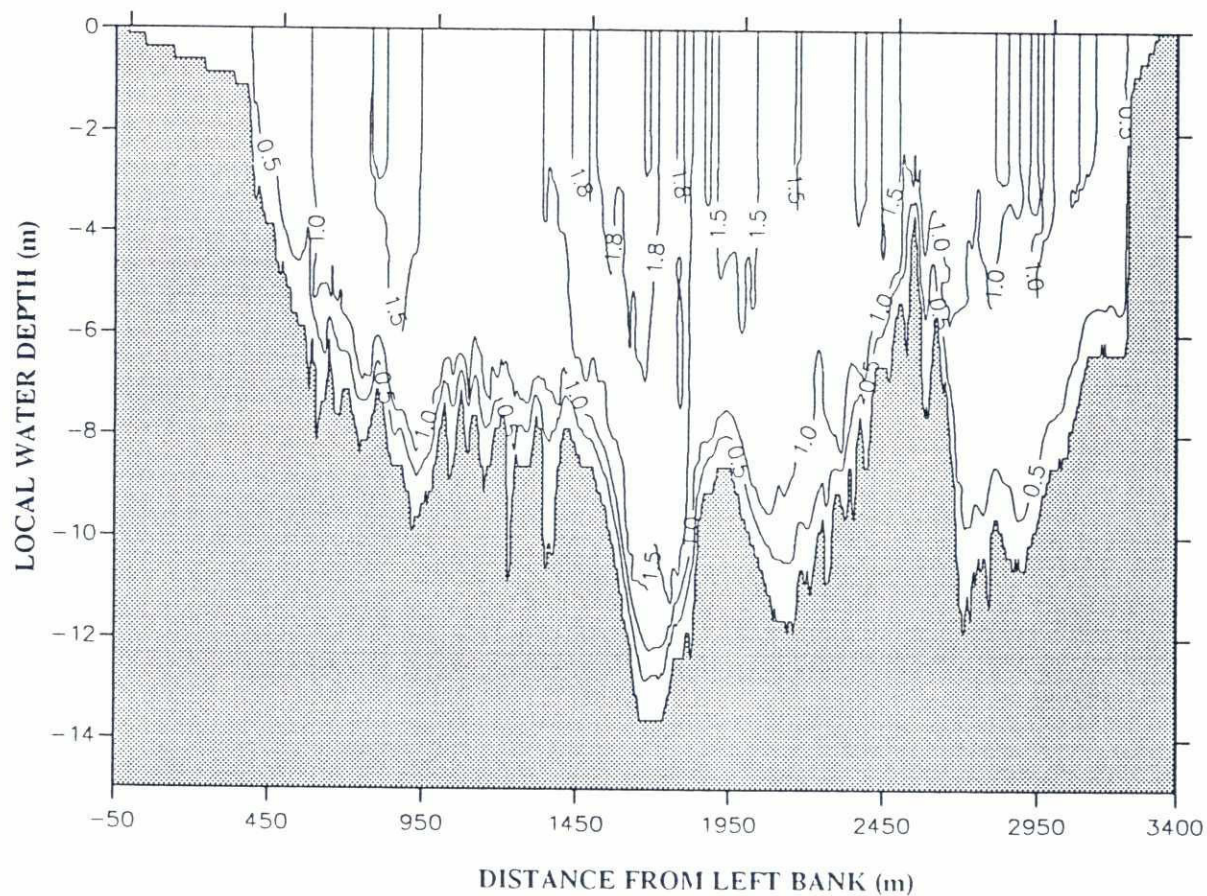
Date : 08 Feb 1996

Init : sjr

Horizontal distribution of flow and sediments
 Channel 2

page
 3.2

95



Iso-velocity contours (m/s)

Water level : 8.74 m+PWD measured at the station indicated on page 1.1

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 202 : 03 - 05 October, 1995

Location 3 : Jamuna River, Aricha

File : A5A41T07

Date : 08 Feb 1996

Init : sjr

Cross-sectional distribution of flow velocity
Channel 2

page
4.2


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Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	7	9510031500-1615	9.90	1.08	98.92	0.154	0.176	0.202
2	5	9510051010-1129	13.10	2.54	97.46	0.123	0.154	0.191

Table 5.1 : Grain sizes of bed load

Delft Bottle								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	1	9510031137-1146	10.20	3.92	96.08	0.100	0.125	0.157
	2	9510031204-1220	7.80	1.20	98.80	0.150	0.171	0.196
	3	9510031236-1249	7.70	2.02	97.98	0.151	0.172	0.196
	4	9510031333-1351	5.90	1.15	98.85	0.154	0.175	0.198
	5	9510031403-1419	6.60	1.27	98.73	0.154	0.175	0.199
	6	9510031433-1446	7.30	1.07	98.93	0.149	0.170	0.193
	7	9510031500-1615	9.90	2.22	97.78	0.139	0.161	0.186
	8	9510031631-1644	8.50	1.78	98.22	0.178	0.219	0.275
	1	9510031137-1146	10.20	6.42	93.58	0.091	0.110	0.137
	2	9510031204-1220	7.80	2.34	97.66	0.144	0.165	0.190
	3	9510031236-1249	7.70	2.95	97.05	0.145	0.167	0.192
	4	9510031333-1351	5.90	1.18	98.82	0.152	0.172	0.194
	5	9510031403-1419	6.60	1.59	98.41	0.143	0.164	0.188
	6	9510031433-1446	7.30	1.03	98.97	0.141	0.163	0.187
	7	9510031500-1615	9.90	5.48	94.52	0.115	0.142	0.169
	8	9510031631-1644	8.50	5.51	94.49	0.130	0.153	0.180
2	1	9510041325-1341	6.90	13.60	86.40	0.081	0.097	0.115
	2	9510041401-1413	8.10	8.45	91.55	0.086	0.103	0.123
	3	9510041430-1441	7.50	7.43	92.57	0.119	0.145	0.172
	4	9510041458-1510	7.80	3.24	96.76	0.101	0.126	0.157
	5	9510051010-1129	13.10	7.51	92.49	0.088	0.106	0.129
	6	9510051150-1201	8.10	5.18	94.82	0.088	0.104	0.123
	7	9510051219-1231	11.20	5.89	94.11	0.133	0.155	0.181
	8	9510051248-1259	7.00	1.16	98.84	0.145	0.167	0.191
	9	9510051348-1403	10.40	5.34	94.66	0.107	0.136	0.164
	1	9510041325-1341	6.90	22.16	77.84	0.073	0.086	0.101
	2	9510041401-1413	8.10	17.10	82.90	0.075	0.088	0.102
	3	9510041430-1441	7.50	13.38	86.62	0.097	0.132	0.187
	4	9510041458-1510	7.80	6.47	93.53	0.087	0.103	0.122
	5	9510051010-1129	13.10	10.18	89.82	0.081	0.095	0.111
	6	9510051150-1201	8.10	7.85	92.15	0.082	0.094	0.109
	7	9510051219-1231	11.20	22.20	77.80	0.075	0.092	0.112
	8	9510051248-1259	7.00	3.28	96.72	0.137	0.158	0.182
	9	9510051348-1403	10.40	6.84	93.16	0.108	0.137	0.165

Table 5.2 : Grain sizes of near bed load

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 202 : 03 - 05 October, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 08 Feb 1996	Grain size distributions	page 5.1
	Init : sjr		

80 Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9510030940-0948	A5A31T01 *
		9510030955-1005	A5A31T02
		9510031658-1706	A5A31T08
		9510031708-1716	A5A31T09
	2	9510041104-1125	A5A41T01
		9510041133-1153	A5A41T02
		9510041529-1551	A5A41T07 *
		9510041557-1618	A5A41T08
		9510050856-0918	A5A51T01
		9510050920-0941	A5A51T02
		9510051419-1441	A5A51T03
		9510051444-1504	A5A51T04

Table 6.1: ADCP & EMF transects

* : transect in PSD 24 data base and presented in Sections 3 and 4

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	File name
Vertical current & turbidity profiles (ADCP/S4/MEX)	1	1	9510031137-1146	476581	641050	10.20	A5A31P02 *
		2	9510031204-1220	476484	641044	7.80	A5A31P03 *
		3	9510031236-1249	476385	641051	7.70	A5A31P04 *
		4	9510031333-1351	476287	641048	5.90	A5A31P05 *
		5	9510031403-1419	476216	641049	6.60	A5A31P06 *
		6	9510031433-1446	476098	641048	7.30	A5A31P07 *
		7	9510031500-1615	476016	641048	9.90	A5A31P08 **
		8	9510031631-1644	475912	641055	8.50	A5A31P09 *
	2	1	9510041325-1341	469255	642014	6.90	A5A41P01 *
		2	9510041401-1413	469158	641923	8.10	A5A41P02 *
		3	9510041430-1441	468868	641696	7.50	A5A41P04 *
		4	9510041458-1510	468690	641557	7.80	A5A41P05 *
		5	9510051010-1129	468487	641380	13.10	A5A51P01 **
		6	9510051150-1201	468320	641242	8.10	A5A51P02 *
		7	9510051219-1231	468143	641111	11.20	A5A51P03 *
		8	9510051248-1259	467909	640920	7.00	A5A51P04 *
		9	9510051348-1403	467690	640746	10.40	A5A51P05 *


Table 6.2: Vertical profiles

** MEX not available

* S4 & MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	7	6	9510031500-1615	476016	641048	9.90
	2	5	6	9510051010-1129	468487	641380	13.10

Table 6.3: Suspended sediment - point sample

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 202 : 03 - 05 October, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 08 Feb 1996	Collected data and their storage (1)	page 6.1
	Init : sjr		

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9510031137-1146	476581	641050	10.20
		2	1	9510031204-1220	476484	641044	7.80
		3	1	9510031236-1249	476385	641051	7.70
		4	1	9510031333-1351	476287	641048	5.90
		5	1	9510031403-1419	476216	641049	6.60
		6	1	9510031433-1446	476098	641048	7.30
		7	1	9510031500-1615	476016	641048	9.90
		8	1	9510031631-1644	475912	641055	8.50
	2	1	1	9510041325-1341	469255	642014	6.90
		2	1	9510041401-1413	469158	641923	8.10
		3	1	9510041430-1441	468868	641696	7.50
		4	1	9510041458-1510	468690	641557	7.80
		5	1	9510051010-1129	468487	641380	13.10
		6	1	9510051150-1201	468320	641242	8.10
		7	1	9510051219-1231	468143	641111	11.20
		8	1	9510051248-1259	467909	640920	7.00
		9	1	9510051348-1403	467690	640746	10.40


Table 6.4: Suspended sediment - depth integrated

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley-Smith Sample	1	7	9510031500-1615	476016	641048	9.90	A348
	2	5	9510051010-1129	468487	641380	13.10	A356

Table 6.5: Bed load


Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft Bottle Sample	1	1	9510031137-1146	476581	641050	10.20	A480
		2	9510031204-1220	476484	641044	7.80	A188
		3	9510031236-1249	476385	641051	7.70	A525
		4	9510031333-1351	476287	641048	5.90	A390
		5	9510031403-1419	476216	641049	6.60	A577
		6	9510031433-1446	476098	641048	7.30	A487
		7	9510031500-1615	476016	641048	9.90	A475
		8	9510031631-1644	475912	641055	8.50	A843

Table 6.6: Near bed load (continued)


 <p>FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities</p>		Survey Bulletin 202 : 03 - 05 October, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 08 Feb 1996	Collected data and their storage (2)	page 6.2
	Init : sjr		

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft Bottle Sample	1	1	9510031137-1146	476581	641050	10.20	A4049
		2	9510031204-1220	476484	641044	7.80	A518
		3	9510031236-1249	476385	641051	7.70	A649
		4	9510031333-1351	476287	641048	5.90	A650
		5	9510031403-1419	476216	641049	6.60	A658
		6	9510031433-1446	476098	641048	7.30	A519
		7	9510031500-1615	476016	641048	9.90	A4052
		8	9510031631-1644	475912	641055	8.50	A446
	2	1	9510041325-1341	469255	642014	6.90	A4021
		2	9510041401-1413	469158	641923	8.10	A481
		3	9510041430-1441	468868	641696	7.50	A183
		4	9510041458-1510	468690	641557	7.80	A442
		5	9510051010-1129	468487	641380	13.10	A638
		6	9510051150-1201	468320	641242	8.10	A400
		7	9510051219-1231	468143	641111	11.20	A431
		8	9510051248-1259	467909	640920	7.00	A375
		9	9510051348-1403	467690	640746	10.40	A4020
		1	9510041325-1341	469255	642014	6.90	A4036
		2	9510041401-1413	469158	641923	8.10	A482
		3	9510041430-1441	468868	641696	7.50	A393
		4	9510041458-1510	468690	641557	7.80	A590
		5	9510051010-1129	468487	641380	13.10	A4061
		6	9510051150-1201	468320	641242	8.10	A673
		7	9510051219-1231	468143	641111	11.20	A515
		8	9510051248-1259	467909	640920	7.00	A474
		9	9510051348-1403	467690	640746	10.40	A4079

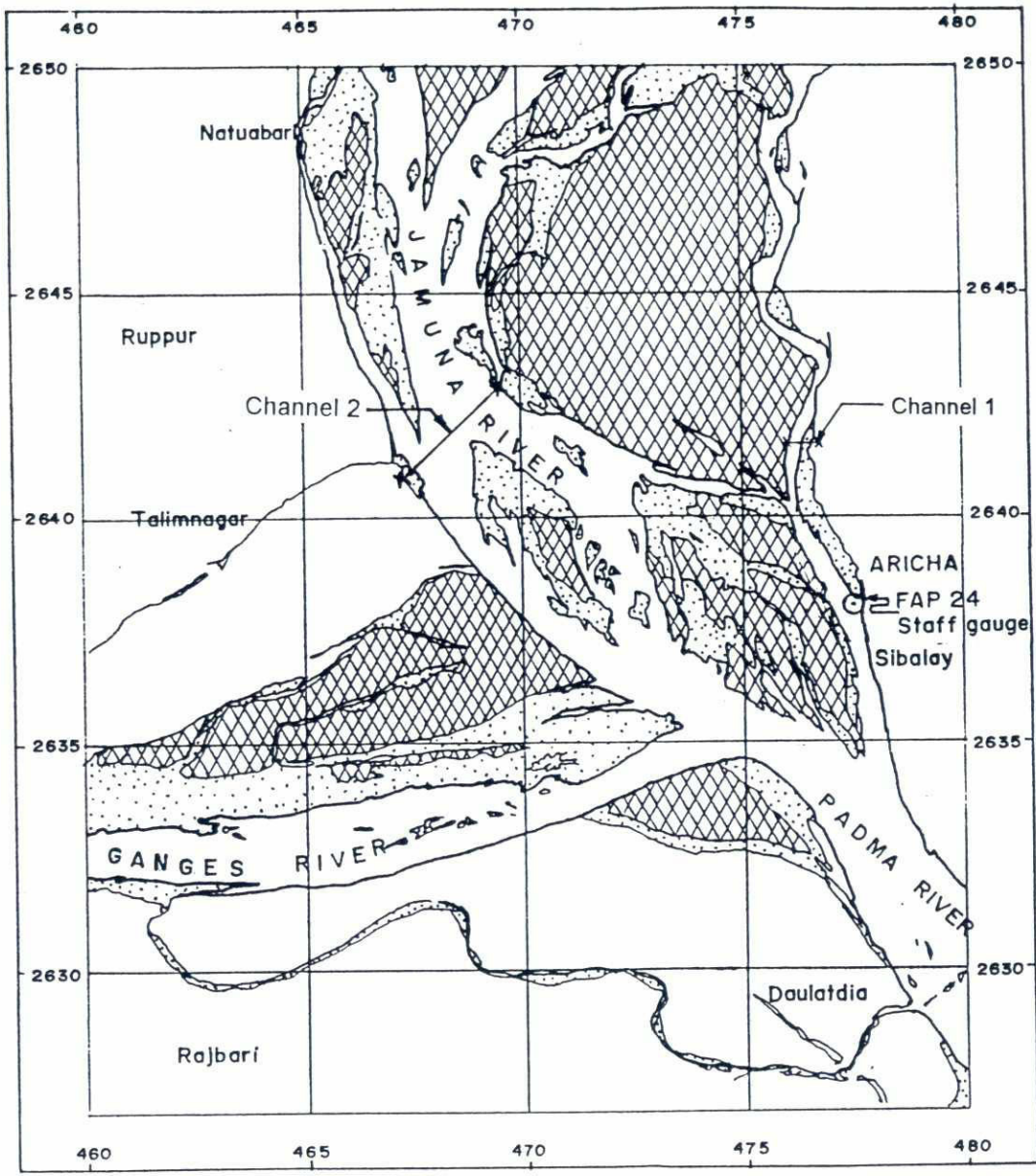
Table 6.6: Near bed load

 <p>FAP 24 DELFT - DHI</p>		<p>RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities</p>		<p>Survey Bulletin 202 : 03 - 05 October, 1995</p>	
		<p>Location 3 : Jamuna River, Aricha</p>		<p>Collected data and their storage (3)</p>	
		<p>Date : 08 Feb 1996</p>			
		<p>Init : sjr</p>		<p>page 6.3</p>	


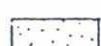


Types of data	Channel	Format	Filename 86
ADCP/S4/EMF data	1	QUATTRO	A5A31T01.ase
ADCP/S4/EMF data	2	QUATTRO	A5A41T07.ase
Echosounder data	1	QUATTRO	A5A31T01.ech
Echosounder data	2	QUATTRO	A5A41T07.ech
Sediment transport data	1	QUATTRO	A5A31T01.sed
Sediment transport data	2	QUATTRO	A5A41T07.sed
Bed load sediment analysis	1	QUATTRO	A5A31T01.bdl
Bed load sediment analysis	2	QUATTRO	A5A41T07.bdl
Susp. sed. conc. analysis	1	QUATTRO	A5A31T01.ssc
Susp. sed. conc. analysis	2	QUATTRO	A5A41T07.ssc
Transect plot data	1	QUATTRO	A5A31T01.trs
Transect plot data	2	QUATTRO	A5A41T07.trs
Iso-velocity plot data	1	MIKE 21 MIKE 21	A5A31T01.ct2 A5A31T01.dt2
Iso-velocity plot data	2	MIKE 21 MIKE 21	A5A41T07.ct2 A5A41T07.dt2
Table 7.1: PSD 24 Database file description			

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities DELFT - DHI	Survey Bulletin 202 : 03 - 05 October, 1995		
	Location 3 : Jamuna River, Aricha		
	Date : 08 Feb 1996	PSD 24 Database file description	page 7.1
	Init : sjr		

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LEGEND :

-  High land
-  Unstable /low char
-  Cross section
-  FAP 24 Staff gauge



5000m 2500m 0
Scale

Map is based on satellite
images of March 1995

FAP 24

DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization
Commission of the European Communities

Survey Bulletin 211 : 16 - 17 October, 1995

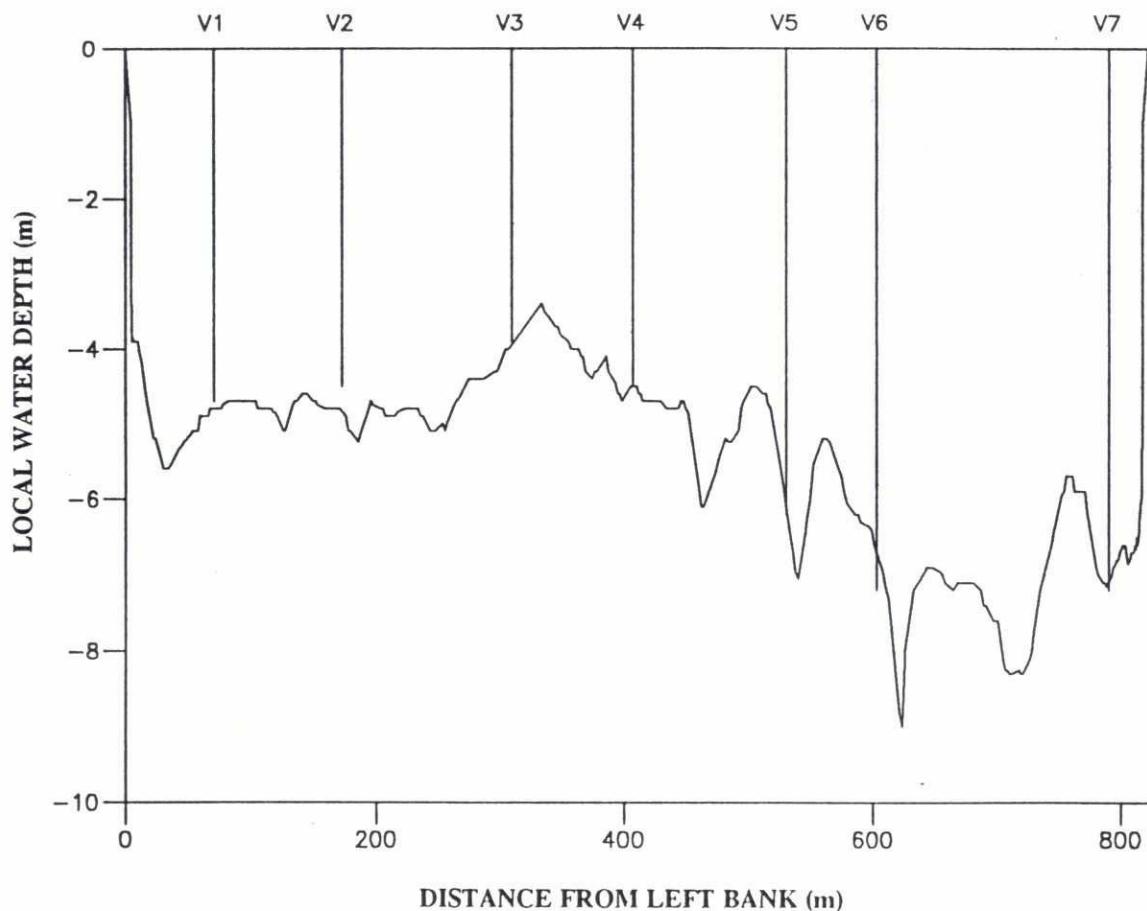
Location 3 : Jamuna River, Aricha

Date : 28 Feb 1996


Init : mk/ss

Location map

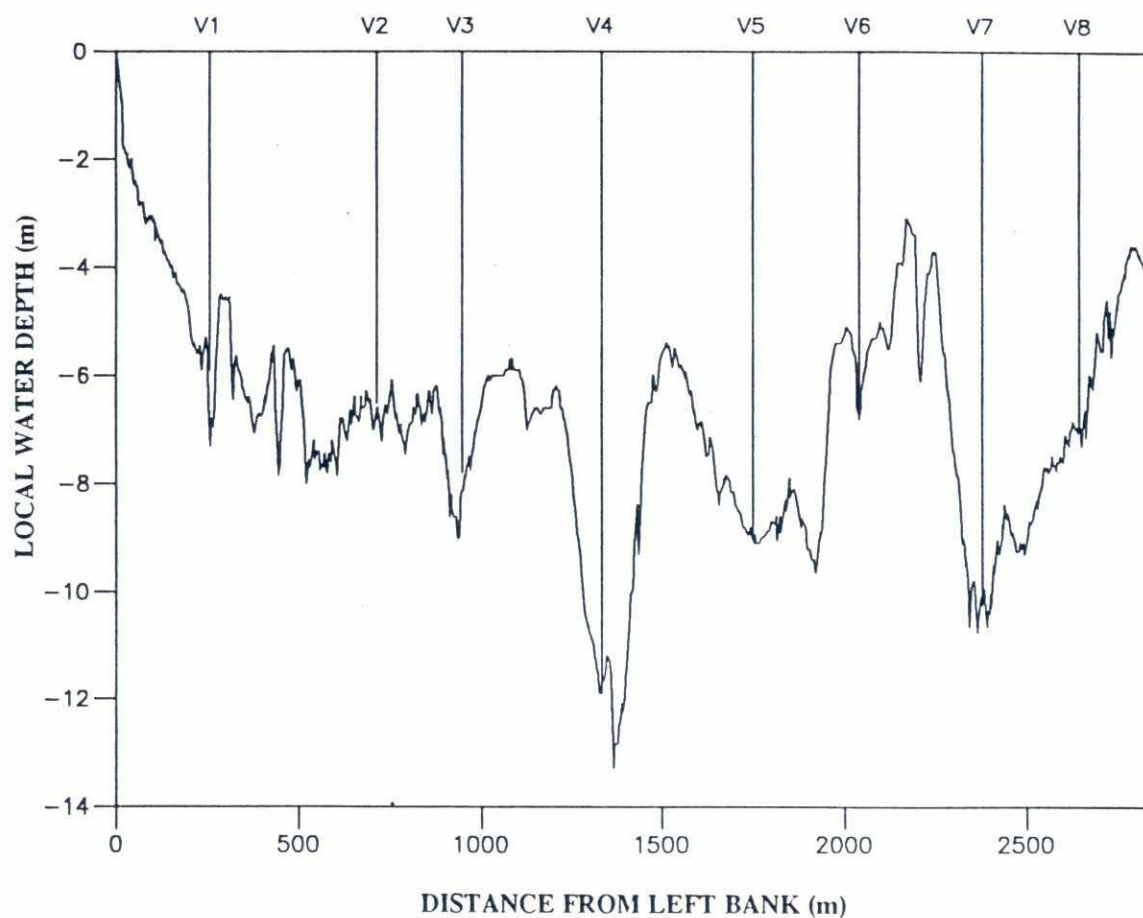
page
1.1




Water level : 7.18 m+PWD measured at the station indicated on page 1.1

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 211 : 16 - 17 October, 1995	
		Location 3 : Jamuna River, Aricha	
File : A5AHIT01	Date : 28 Feb 1996	Cross-sections and measured verticals Channel 1	page 1.2
	Init : mk/ss		

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Water level : 7.27 m+PWD measured at the station indicated on page 1.1

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 211 : 16 - 17 October, 1995	
		Location 3 : Jamuna River, Aricha	
File : A5AG1T10	Date : 28 Feb 1996	Cross-sections and measured verticals Channel 2	page 1.3
	Init : mk/ss		

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	4	4	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	7	8	-	-
	ADCP	7	8	-	-
	S4 current meter	1	1	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	7	8	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	1	1	-	-
	Delft Bottle	14	16	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made


Channel	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Near bed transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	821	4441	7.18	7697	1383 *	3620
Channel 2	2843	19259	7.27	18949	545 *	8519

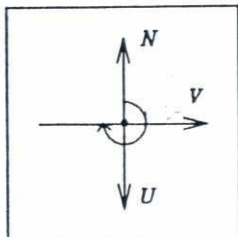
Table 2.2: Key figures

* based on Delft bottle measurement

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Aricha	Channel 1	17 Oct 95	7.18	FAP 24
	Channel 2	16 Oct 95	7.27	

Table 2.3: Water-levels

 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 211 : 16-17 October, 1995	
				Location 3 : Jamuna River, Aricha	
File : A5AH1T01 A5AG1T10	Date : 28 Feb 1996		Survey programme as made and key figures		page 2.1
	Init : mk/ss				

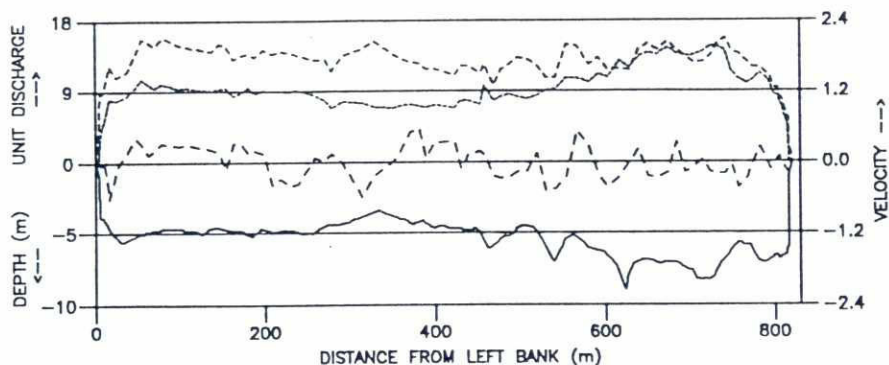


TRANSECT AZIMUTH = 270°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

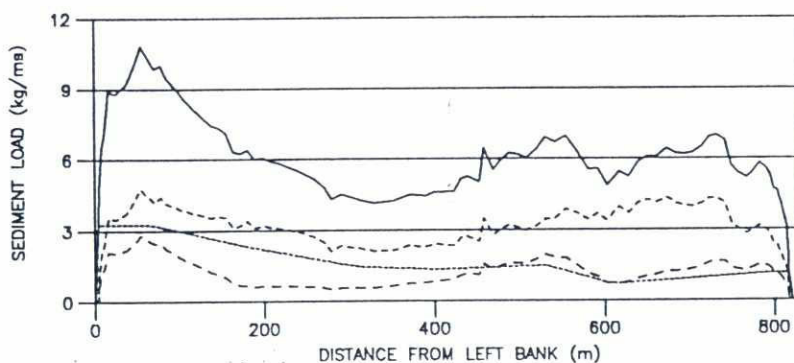
LEGEND :

— WATER DEPTH (m below STAGE)
 UNIT DISCHARGE (m³/s.m)
 --- U - (m/s)
 -.- V - (m/s)

STAGE = 7.18 (m+PWD)

A = 4441 (m²)

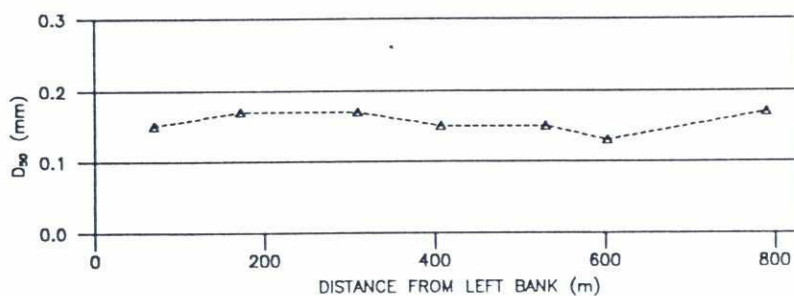
Q = 7697 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 5003 (kg/s)
 --- S_{WASH LOAD} 2626 (kg/s)
 S_{SUSP. BED} 994 (kg/s)
 -.- S_{NEAR BED} 1383 (kg/s)



GRAIN SIZE

LEGEND :

♦♦♦♦♦ D₅₀ SUSP. (mm)
 ▲▲▲▲▲ D₅₀ NEAR BED (mm)
 □□□□□ D₅₀ BED MAT. (mm)

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DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
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Survey Bulletin 211 : 16 - 17 October, 1995

Location 3 : Jamuna River, Aricha

File : A5AIIIT01

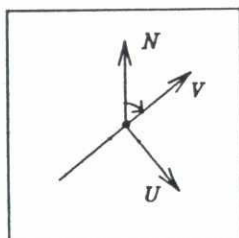
Date : 28 Feb 1996

Init : mk/ss

Horizontal distribution of flow and sediments
 Channel 1

page
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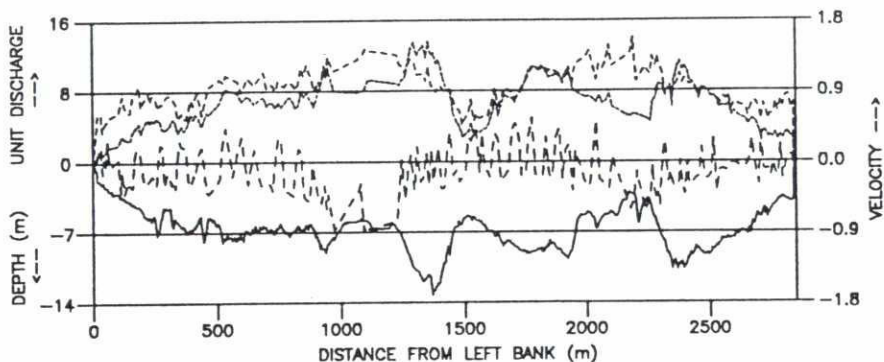


TRANSECT AZIMUTH = 51°

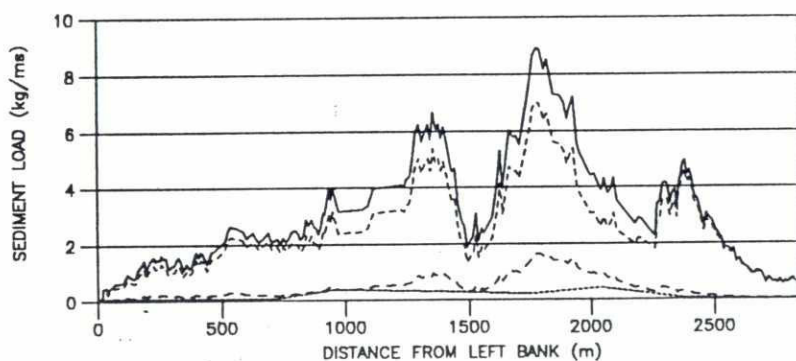
U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

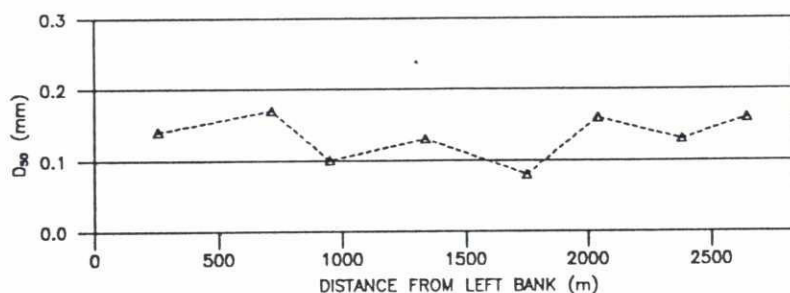
N - MAGNETIC NORTH



FLOW



SEDIMENT TRANSPORT



GRAIN SIZE

LEGEND :

- WATER DEPTH (m below STAGE)
- UNIT DISCHARGE (m³/s.m)
- U - (m/s)
- .- V - (m/s)

STAGE = 7.27 (m+PWD)

A = 19259 (m²)

Q = 18949 (m³/s)

LEGEND :

- S_{TOTAL} 9064 (kg/s)
- S_{WASH LOAD} 7234 (kg/s)
- .- S_{SUSP. BED} 1285 (kg/s)
- S_{NEAR BED} 545 (kg/s)

LEGEND :

- ◆◆◆◆ D₅₀ SUSP. (mm)
- △△△△ D₅₀ NEAR BED (mm)
- D₅₀ BED MAT. (mm)



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Location 3 : Jamuna River, Aricha

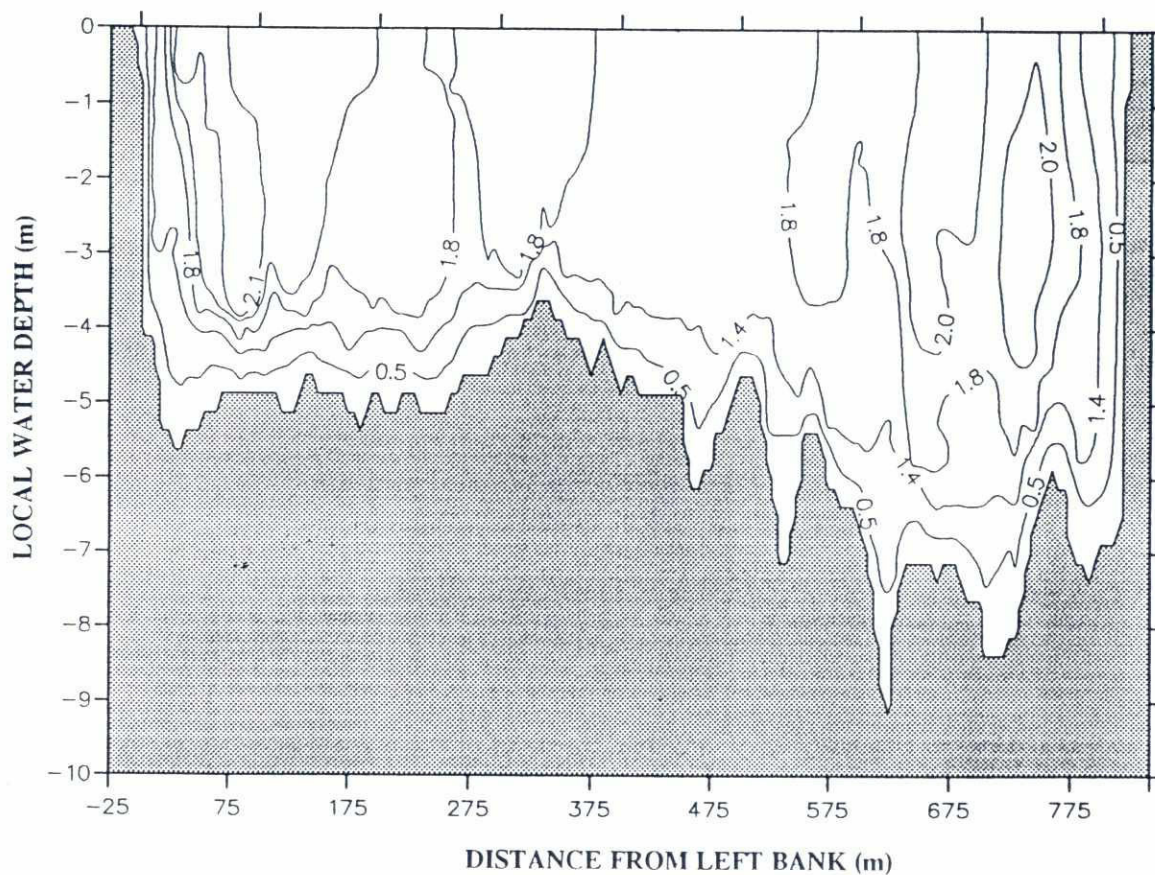
File : A5AG1T10

Date : 28 Feb 1996

Init : mk/ss

Horizontal distribution of flow and sediments
Channel 2

page
3.2



Iso-velocity contours (m/s)

Water level : 7.18 m+PWD measured at the station indicated on page 1.1

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization
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Location 3 : Jamuna River, Aricha

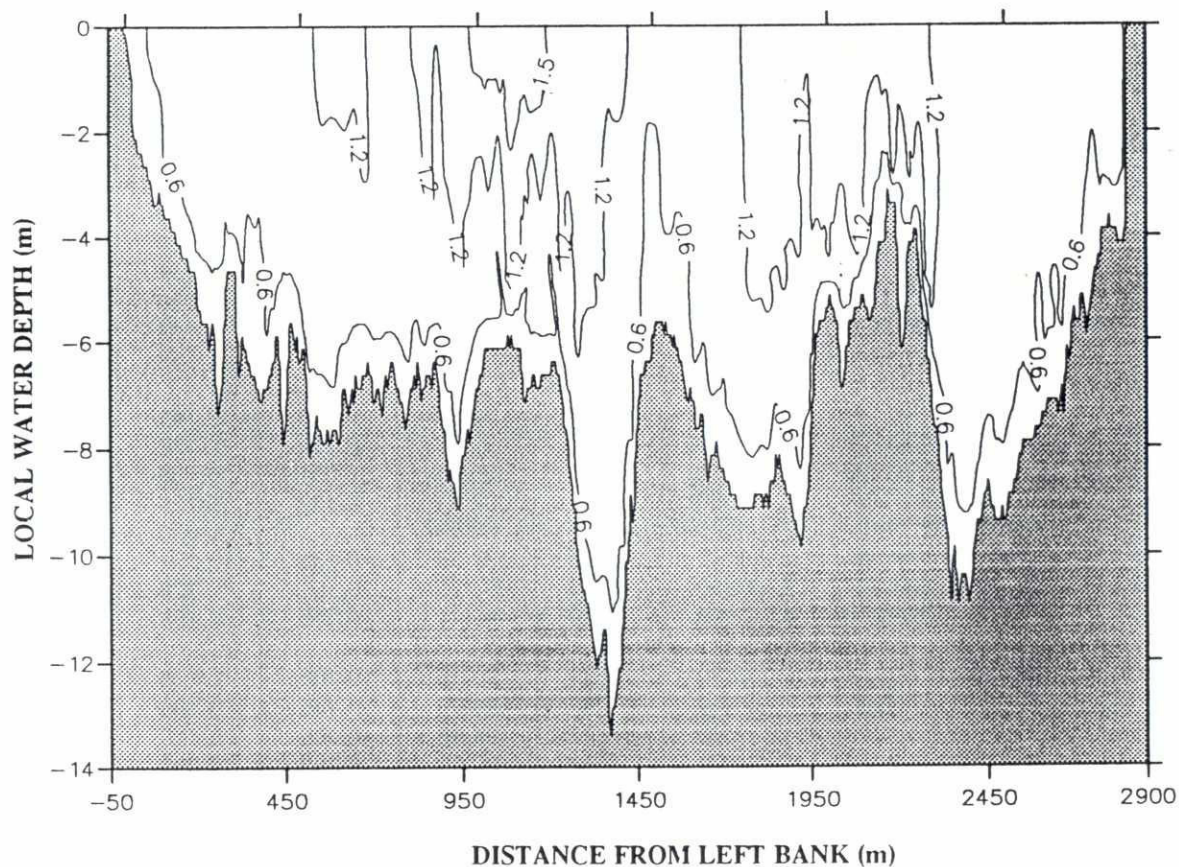
File : A5AHH101

Date : 28 Feb 1996

Unit : m/s


Cross-sectional distribution of flow velocity
Channel 1

page
4.1



Iso-velocity contours (m/s)

Water level : 7.27 m + PWD measured at the station indicated on page 1.1

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div><div><div>Survey Bulletin 211 : 16 - 17 October, 1995</div><div>Location 3 : Jamuna River, Aricha</div></div></div>			
File : A5AG1T10	Date : 28 Feb 1996	Cross-sectional distribution of flow velocity Channel 2	page 4.2
	Init : mk/ss		

Helley-Smith


Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	6	9510171329-1431	7.20	0.86	99.14	0.152	0.173	0.198
2	4	9510161324-1423	11.90	0.13	99.87	0.274	0.316	0.363

Table 5.1 : Grain sizes of bed load

Delft-Bottle

Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	1	9510171034-1046	4.70	0.75	99.25	0.143	0.163	0.187
	2	9510171057-1107	4.50	0.61	99.39	0.152	0.171	0.193
	3	9510171117-1128	3.90	0.67	99.33	0.153	0.172	0.194
	4	9510171138-1150	4.50	1.38	98.62	0.138	0.159	0.183
	5	9510171202-1216	6.20	1.21	98.79	0.143	0.164	0.188
	6	9510171329-1431	7.20	2.71	97.29	0.117	0.143	0.171
	7	9510171229-1240	7.20	0.40	99.60	0.158	0.181	0.207
	1	9510171034-1046	4.70	1.49	98.51	0.117	0.143	0.170
	2	9510171057-1107	4.50	1.49	98.51	0.137	0.158	0.182
	3	9510171117-1128	3.90	1.09	98.91	0.150	0.171	0.194
	4	9510171138-1150	4.50	2.07	97.93	0.118	0.144	0.170
	5	9510171202-1216	6.20	2.30	97.70	0.111	0.138	0.166
	6	9510171329-1431	7.20	4.72	95.28	0.093	0.113	0.142
	7	9510171229-1240	7.20	1.02	98.98	0.136	0.159	0.185
2	1	9510161123-1134	5.90	7.06	92.94	0.113	0.141	0.168
	2	9510161147-1200	6.50	0.32	99.68	0.159	0.178	0.200
	3	9510161259-1309	7.80	4.09	95.91	0.091	0.108	0.132
	4	9510161324-1423	11.90	2.89	97.11	0.132	0.155	0.182
	5	9510161447-1457	9.00	41.21	58.79	-	0.071	0.088
	6	9510161512-1523	6.80	2.47	97.53	0.133	0.154	0.179
	7	9510161533-1544	10.10	6.25	93.75	0.101	0.129	0.158
	8	9510161559-1610	7.00	1.89	98.11	0.136	0.158	0.185
	1	9510161123-1134	5.90	9.84	90.16	0.108	0.138	0.166
	2	9510161147-1200	6.50	1.97	98.03	0.145	0.166	0.190
	3	9510161259-1309	7.80	5.32	94.68	0.085	0.100	0.116
	4	9510161324-1423	11.90	9.92	90.08	0.083	0.099	0.117
	5	9510161447-1457	9.00	27.92	72.08	0.068	0.081	0.097
	6	9510161512-1523	6.80	2.51	97.49	0.135	0.157	0.182
	7	9510161533-1544	10.10	4.57	95.43	0.103	0.130	0.160
	8	9510161559-1610	7.00	2.54	97.46	0.131	0.153	0.180

Table 5.2 : Grain sizes of near bed load

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<p>Commission of the European Communities</p>		<p>Location 3 : Jamuna River, Aricha</p>		
<p>Date : 28 Feb 1996</p>		<p>Grain size distributions</p>	<p>page</p>	
<p>Init : mk/ss</p>				
		<p>5.1</p>		

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Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9510170856-0904 9510170907-0915 9510171449-1457 9510171459-1507	A5AH1T01 * A5AH1T02 A5AH1T06 A5AH1T07
	2	9510160912-0932 9510160950-1011 9510161626-1649 9510161650-1710	A5AG1T03 A5AG1T05 A5AG1T10 * A5AG1T11

Table 6.1: ADCP & EMF transects

* : transect in PSD 24 data base and presented in Sections 3 and 4

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	File name
Vertical current & turbidity profiles (ADCP/S4/MEX)	1	1	9510171034-1046	476618	641050	4.70	A5AH1P01 *
		2	9510171057-1107	476512	641055	4.50	A5AH1P02 *
		3	9510171117-1128	476376	641051	3.90	A5AH1P03 *
		4	9510171138-1150	476281	641050	4.50	A5AH1P04 *
		5	9510171202-1216	476155	641052	6.20	A5AH1P05 *
		6	9510171329-1431	476077	641053	7.20	A5AH1P07 **
		7	9510171229-1240	475896	641054	7.20	A5AH1P06 *
	2	1	9510161123-1134	469293	642039	5.90	A5AG1P03 *
		2	9510161147-1200	468937	641755	6.50	A5AG1P05 *
		3	9510161259-1309	468748	641601	7.80	A5AG1P06 *
		4	9510161324-1423	468459	641359	11.90	A5AG1P08 **
		5	9510161447-1457	468134	641094	9.00	A5AG1P11 *
		6	9510161512-1523	467907	640924	6.80	A5AG1P12 *
		7	9510161533-1544	467644	640706	10.10	A5AG1P13 *
		8	9510161559-1610	467439	640539	7.00	A5AG1P14 *


Table 6.2: Vertical profiles

** MEX not available

* S4 & MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	6	6	9510171329-1431	476077	641053	7.20
	2	4	6	9510161324-1423	468459	641359	11.90

Table 6.3: Suspended sediment - point sample


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	<div>Date : 28 Feb 1996</div> <div>Init : mk/ss</div>	<div>Collected data and their storage (1)</div> <div>page 61</div>		

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9510171034-1046	476618	641050	4.70
		2	1	9510171057-1107	476512	641055	4.50
		3	1	9510171117-1128	476376	641051	3.90
		4	1	9510171138-1150	476281	641050	4.50
		5	1	9510171202-1216	476155	641052	6.20
		6	1	9510171329-1431	476077	641053	7.20
		7	1	9510171229-1240	475896	641054	7.20
	2	1	1	9510161123-1134	469293	642039	5.90
		2	1	9510161147-1200	468937	641755	6.50
		3	1	9510161259-1309	468748	641601	7.80
		4	1	9510161324-1423	468459	641359	11.90
		5	1	9510161447-1457	468134	641094	9.00
		6	1	9510161512-1523	467907	640924	6.80
		7	1	9510161533-1544	467644	640706	10.10
		8	1	9510161559-1610	467439	640539	7.00

Table 6.4: Suspended sediment - depth integrated



Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley-Smith Sample	1	6	9510171329-1431	476077	641053	7.20	A0057
	2	4	9510161324-1423	468459	641359	11.90	A0346

Table 6.5: Bed load

<div><div><div>FAP 24</div><div></div><div>DELFT - DHI</div></div><div><div>RIVER SURVEY PROJECT</div><div>Flood Plan Coordination Organization</div><div>Commission of the European Communities</div></div></div>		Survey Bulletin 211 : 16-17 October, 1995	
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	Init : mk/ss		


Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft-Bottle Sample	1	1	9510171034-1046	476618	641050	4.70	A970
		2	9510171057-1107	476512	641055	4.50	A1039
		3	9510171117-1128	476376	641051	3.90	A203
		4	9510171138-1150	476281	641050	4.50	A168
		5	9510171202-1216	476155	641052	6.20	A167
		6	9510171329-1431	476077	641053	7.20	A382
		7	9510171229-1240	475896	641054	7.20	A223
		1	9510171034-1046	476618	641050	4.70	A1040
		2	9510171057-1107	476512	641055	4.50	A1056
		3	9510171117-1128	476376	641051	3.90	A438
		4	9510171138-1150	476281	641050	4.50	A189
		5	9510171202-1216	476155	641052	6.20	A237
		6	9510171329-1431	476077	641053	7.20	A682
		7	9510171229-1240	475896	641054	7.20	A4010
	2	1	9510161123-1134	469293	642039	5.90	A968
		2	9510161147-1200	468937	641755	6.50	A1003
		3	9510161259-1309	468748	641601	7.80	A178
		4	9510161324-1423	468459	641359	11.90	A752
		5	9510161447-1457	468134	641094	9.00	A969
		6	9510161512-1523	467907	640924	6.80	A794
		7	9510161533-1544	467644	640706	10.10	A990
		8	9510161559-1610	467439	640539	7.00	A781
		1	9510161123-1134	469293	642039	5.90	A1041
		2	9510161147-1200	468937	641755	6.50	A1060
		3	9510161259-1309	468748	641601	7.80	A4026
		4	9510161324-1423	468459	641359	11.90	A952
		5	9510161447-1457	468134	641094	9.00	A944
		6	9510161512-1523	467907	640924	6.80	A780
		7	9510161533-1544	467644	640706	10.10	A1005
		8	9510161559-1610	467439	640539	7.00	A1011

Table 6.6: Near bed load

 FAP 24  RIVER SURVEY PROJECT <small>Flood Plan Coordination Organization</small> <small>Commission of the European Communities</small>		Survey Bulletin 211 : 16-17 October, 1995	
		Location 3 : Jamuna River, Aricha	
	Date : 28 Feb 1996	Collected data and their storage (3)	page
	Init : mk/ss		6.3

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	A5AH1T01 .ase
ADCP/S4/EMF data	2	QUATTRO	A5AG1T10 .ase
Echosounder data	1	QUATTRO	A5AH1T01 .ech
Echosounder data	2	QUATTRO	A5AG1T10 .ech
Sediment transport data	1	QUATTRO	A5AH1T01 .sed
Sediment transport data	2	QUATTRO	A5AG1T10 .sed
Susp. sed. conc. analysis	1	QUATTRO	A5AH1T01 .ssc
Susp. sed. conc. analysis	2	QUATTRO	A5AG1T10 .ssc
Bedload sediment analysis	1	QUATTRO	A5AH1T01 .bdl
Bedload sediment analysis	2	QUATTRO	A5AG1T10 .bdl
Transect plot data	1	QUATTRO	A5AH1T01 .trs
Transect plot data	2	QUATTRO	A5AG1T10 .trs
Iso-velocity plot data	1	MIKE21 MIKE21	A5AH1T01 .ct2 A5AH1T01 .dt2
Iso-velocity plot data	2	MIKE21 MIKE21	A5AG1T10 .ct2 A5AG1T10 .dt2

Table 7.1 PSD 24 Database file description

 FAP 24 DELFT - DHI		Survey Bulletin 211 : 16-17 October, 1995	
RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Location 3 : Jamuna River, Aricha	
	Date : 28 Feb 1996	PSD 24 Database file description	page
	Init : mk/ss		7.1

