

FAP24

Government of
the People's
Republic of
Bangladesh

Water Resources
Planning
Organization

European
Commission

Delft
Hydraulics



FAP- 24

B.N-784

Acc-935

6

S.N-8

Hydroland
Approtech
Osiris

RIVER SURVEY PROJECT

Special
Report
No.22

River Data Book
January 1993 - March 1995

Part B.2: Sirajgonj

October 1996

Special Report 22

**River Data Book
January 1993 - March 1995**

Part B.2: Sirajganj

October 1996

Contents of entire Data Book**Part A: Text volume**

1	Introduction	1
1.1	The River Survey Project	1
1.2	Use of this Data Book	1
1.3	Summary of survey programme	2
1.4	Positioning and datum	2
2	Summary of collected data	3
3	Water levels	8
3.1	Measuring stations	8
3.2	Hydrographs	11
4	Routine transect gauging	24
4.1	Location of transects	24
4.2	Description of the measurements	25
4.3	Tidal effects and backwater	26
4.4	Sediment properties and sediment transport	27
4.5	Rating curves	27
5	Bathymetric surveys	51
6	Special surveys	52
6.1	Flow measurements at Bahadurabad	52
6.2	Bedform inventory programme	52
6.3	Other special surveys	53
	References	56

Part B: Routine gauging January 1993 - March 1995

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

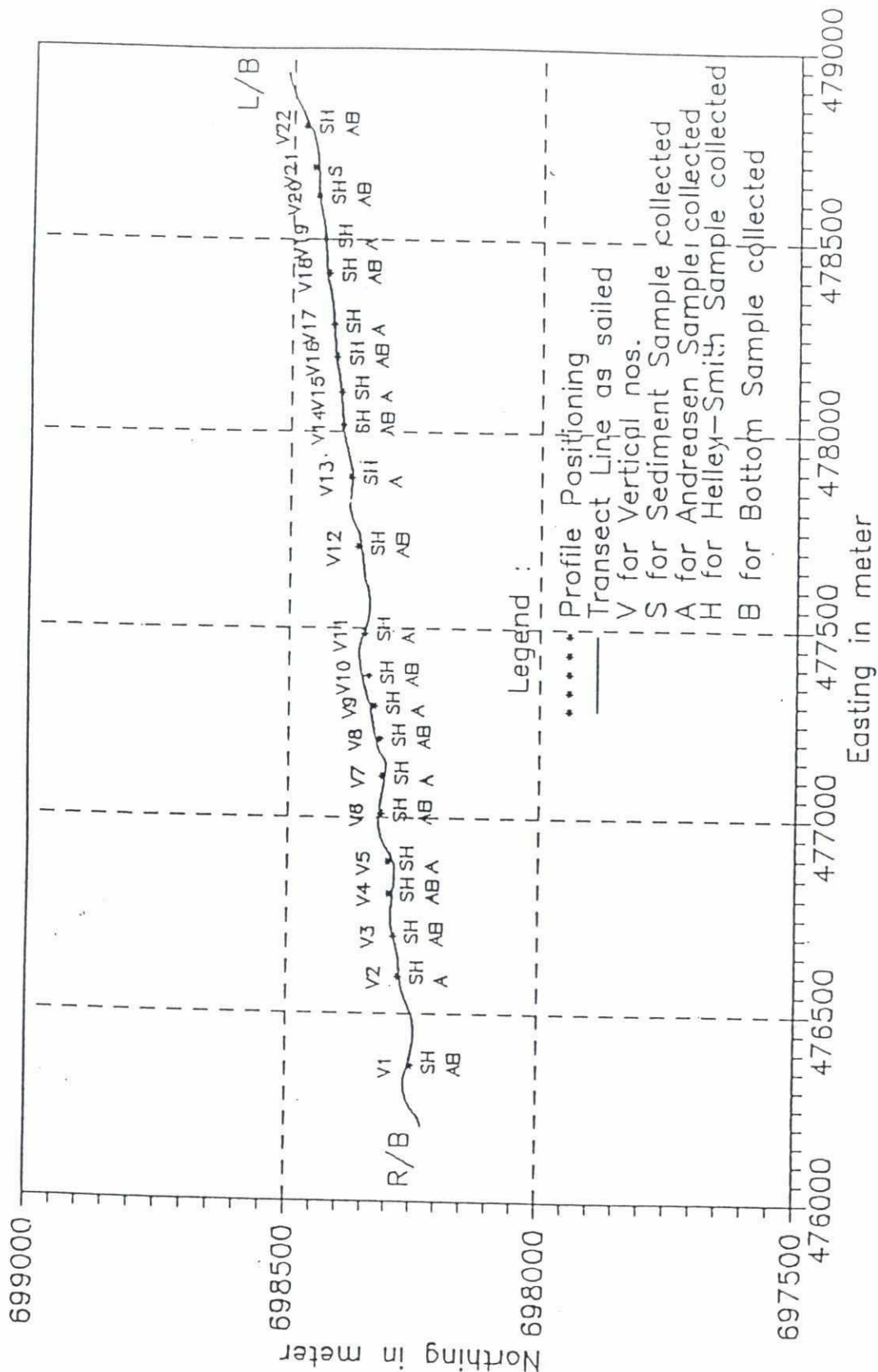
Part C: Special surveys June 1994 - March 1995

8

Contents of Part B.2

Survey No.	Time
8	23-29/7 93
12	17/9 93
23	24-27/10 93
26	7-8/12 93
30	3/2 94
41	18-19/3 94
49	5-7/4 94
55	29/4-1/5 94
62	8-12/6 94
72	1-3/7 94
82	18-20/7 94
94	25-31/8 94
99	2-5/10 94
111	26-29/10 94
118	10-12/11 94
127	15-16/12 94
133	11-13/2 95
142	24-25/3 95

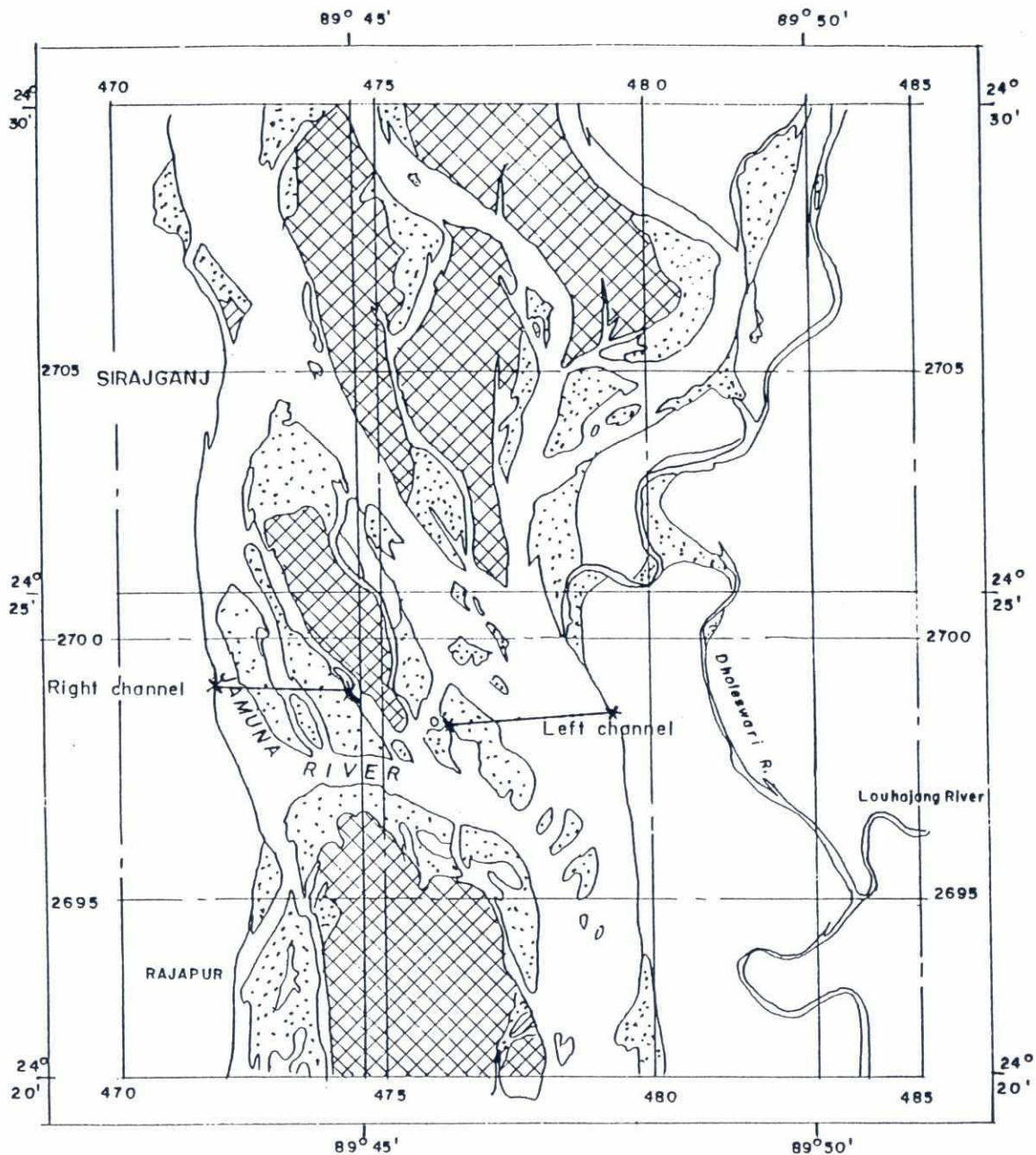
A



Date :

Init :

Location of Measurements



LEGEND:

- X—X Measurement cross section
- High land
- Unstable/low char
- BWDB Embankment



5000m 2500m 0

Map is based on most recent
Satellite image of March 1993



RIVER SURVEY PROJECT

Delft Hydraulics/Danish Hydraulic Institute
in association with Osim/Approtech/Hydroland

Survey Bulletin No. 8 - July , 1993

Location No. 2 : Jamuna River at Sirajganj

File:

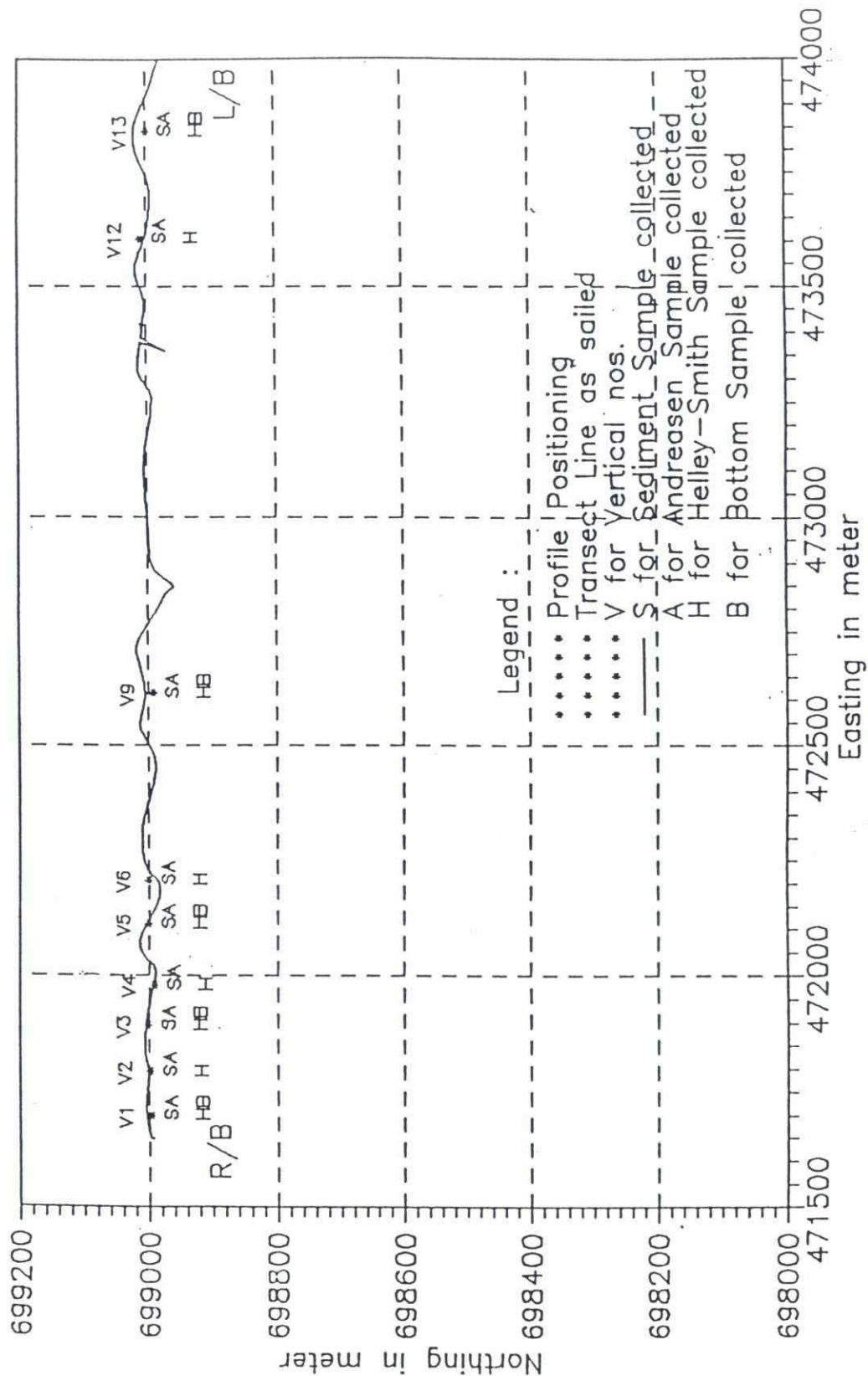
Date:

Scale:

Init:

KEY PLAN

Fig.



Date :

Init :

Location of Measurements

River :Brahmaputra-Jamuna
ADCP/EMF Discharge

Date of Survey : 23 - 27 July 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Date	Transect	Bank		Water Level	Total Width	Area	Discharge
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)
23-07-93	S37N1T01	Right	Left	13.73	3022	23574	36579
26-07-93	S37Q1T01	Right	Left	13.50	2785	21907	32388
29-07-93	S37T1T01	Left	Right	13.12	2868	21673	27300

Date of Survey : 23 - 29 July 1993

Location : Jumuna River at Sirajganj (Right channel)

Date	Transect	Bank		Water Level	Total Width	Area	Discharge
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)
23-07-93	S37N1T01	Right	Left	13.73	2711	13954	15681
24-07-93	S37O1T01	Right	Left	13.75	2703	14030	14417
26-07-93	S37Q1T01	Right	Left	13.5	2723	13641	12034
27-07-93	S37R1T06	Left	Right	13.41	2691	13469	10701

Table 3.1 SUMMARY OF RESULTS (ADCP/EMF Discharge)

River : Brahmaputra-Jamuna
S4 velocity

Date of survey : 23-30 July 1993

Location : Sirajganj (Left Channel)

Vertical 1 Total depth = 2.90 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.86</td></tr><tr><td>1.70</td><td>1.36</td></tr><tr><td>2.30</td><td>1.24</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.86	1.70	1.36	2.30	1.24	Vertical 2 Total depth = 4.90 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.52</td></tr><tr><td>0.95</td><td>1.49</td></tr><tr><td>2.80</td><td>1.57</td></tr><tr><td>3.83</td><td>1.49</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.52	0.95	1.49	2.80	1.57	3.83	1.49	Vertical 3 Total depth = 6.50 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.69</td></tr><tr><td>1.33</td><td>1.90</td></tr><tr><td>2.72</td><td>2.03</td></tr><tr><td>4.20</td><td>1.81</td></tr><tr><td>5.39</td><td>1.71</td></tr><tr><td>6.20</td><td>1.56</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.69	1.33	1.90	2.72	2.03	4.20	1.81	5.39	1.71	6.20	1.56	Vertical 4 Total depth = 7.70 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.11</td></tr><tr><td>0.77</td><td>1.86</td></tr><tr><td>1.49</td><td>2.35</td></tr><tr><td>2.95</td><td>2.22</td></tr><tr><td>4.40</td><td>2.12</td></tr><tr><td>5.79</td><td>2.02</td></tr><tr><td>7.43</td><td>1.48</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.11	0.77	1.86	1.49	2.35	2.95	2.22	4.40	2.12	5.79	2.02	7.43	1.48	Vertical 5 Total depth = 8.15 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>1.44</td><td>2.46</td></tr><tr><td>3.16</td><td>2.41</td></tr><tr><td>4.80</td><td>2.25</td></tr><tr><td>6.29</td><td>2.03</td></tr><tr><td>7.55</td><td>1.77</td></tr></table>	Depth	Velocity	[m]	[m/s]	1.44	2.46	3.16	2.41	4.80	2.25	6.29	2.03	7.55	1.77										
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.86																																																																																			
1.70	1.36																																																																																			
2.30	1.24																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.52																																																																																			
0.95	1.49																																																																																			
2.80	1.57																																																																																			
3.83	1.49																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.69																																																																																			
1.33	1.90																																																																																			
2.72	2.03																																																																																			
4.20	1.81																																																																																			
5.39	1.71																																																																																			
6.20	1.56																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.11																																																																																			
0.77	1.86																																																																																			
1.49	2.35																																																																																			
2.95	2.22																																																																																			
4.40	2.12																																																																																			
5.79	2.02																																																																																			
7.43	1.48																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
1.44	2.46																																																																																			
3.16	2.41																																																																																			
4.80	2.25																																																																																			
6.29	2.03																																																																																			
7.55	1.77																																																																																			
Vertical 6 Total depth = 9.10 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>2.22</td></tr><tr><td>1.86</td><td>2.56</td></tr><tr><td>3.52</td><td>2.60</td></tr><tr><td>5.74</td><td>2.38</td></tr><tr><td>7.41</td><td>2.01</td></tr><tr><td>8.32</td><td>1.87</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	2.22	1.86	2.56	3.52	2.60	5.74	2.38	7.41	2.01	8.32	1.87	Vertical 7 Total depth = 10.50 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>2.34</td></tr><tr><td>0.50</td><td>1.83</td></tr><tr><td>2.13</td><td>2.69</td></tr><tr><td>6.21</td><td>2.39</td></tr><tr><td>8.48</td><td>2.14</td></tr><tr><td>10.06</td><td>1.90</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	2.34	0.50	1.83	2.13	2.69	6.21	2.39	8.48	2.14	10.06	1.90	Vertical 8 Total depth = 12.80 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>2.38</td></tr><tr><td>0.70</td><td>1.85</td></tr><tr><td>2.41</td><td>2.60</td></tr><tr><td>4.61</td><td>2.72</td></tr><tr><td>7.47</td><td>2.36</td></tr><tr><td>9.78</td><td>2.14</td></tr><tr><td>12.19</td><td>1.74</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	2.38	0.70	1.85	2.41	2.60	4.61	2.72	7.47	2.36	9.78	2.14	12.19	1.74	Vertical 9 Total depth = 14.70 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>2.61</td></tr><tr><td>2.96</td><td>2.48</td></tr><tr><td>5.81</td><td>2.16</td></tr><tr><td>9.53</td><td>2.01</td></tr><tr><td>11.96</td><td>1.78</td></tr><tr><td>13.48</td><td>1.50</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	2.61	2.96	2.48	5.81	2.16	9.53	2.01	11.96	1.78	13.48	1.50	Vertical 10 Total depth = 9.70 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.44</td></tr><tr><td>1.91</td><td>1.93</td></tr><tr><td>4.13</td><td>1.62</td></tr><tr><td>5.85</td><td>1.60</td></tr><tr><td>8.26</td><td>1.29</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.44	1.91	1.93	4.13	1.62	5.85	1.60	8.26	1.29
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	2.22																																																																																			
1.86	2.56																																																																																			
3.52	2.60																																																																																			
5.74	2.38																																																																																			
7.41	2.01																																																																																			
8.32	1.87																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	2.34																																																																																			
0.50	1.83																																																																																			
2.13	2.69																																																																																			
6.21	2.39																																																																																			
8.48	2.14																																																																																			
10.06	1.90																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	2.38																																																																																			
0.70	1.85																																																																																			
2.41	2.60																																																																																			
4.61	2.72																																																																																			
7.47	2.36																																																																																			
9.78	2.14																																																																																			
12.19	1.74																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	2.61																																																																																			
2.96	2.48																																																																																			
5.81	2.16																																																																																			
9.53	2.01																																																																																			
11.96	1.78																																																																																			
13.48	1.50																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.44																																																																																			
1.91	1.93																																																																																			
4.13	1.62																																																																																			
5.85	1.60																																																																																			
8.26	1.29																																																																																			
Vertical 11 Total depth = 6.10 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.28</td></tr><tr><td>0.48</td><td>1.05</td></tr><tr><td>1.30</td><td>1.43</td></tr><tr><td>2.47</td><td>1.47</td></tr><tr><td>3.66</td><td>1.39</td></tr><tr><td>5.29</td><td>1.35</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.28	0.48	1.05	1.30	1.43	2.47	1.47	3.66	1.39	5.29	1.35	Vertical 12 Total depth = 7.90 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.02</td></tr><tr><td>1.57</td><td>1.59</td></tr><tr><td>3.08</td><td>1.60</td></tr><tr><td>4.73</td><td>1.59</td></tr><tr><td>6.09</td><td>1.51</td></tr><tr><td>7.13</td><td>1.31</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.02	1.57	1.59	3.08	1.60	4.73	1.59	6.09	1.51	7.13	1.31	Vertical 13 Total depth = 10.50 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.86</td></tr><tr><td>1.83</td><td>1.77</td></tr><tr><td>4.13</td><td>1.70</td></tr><tr><td>5.89</td><td>1.65</td></tr><tr><td>7.86</td><td>1.45</td></tr><tr><td>9.10</td><td>1.33</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.86	1.83	1.77	4.13	1.70	5.89	1.65	7.86	1.45	9.10	1.33	Vertical 14 Total depth = 10.60 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.77</td></tr><tr><td>2.07</td><td>1.86</td></tr><tr><td>4.38</td><td>1.73</td></tr><tr><td>6.24</td><td>1.54</td></tr><tr><td>8.57</td><td>1.30</td></tr><tr><td>9.27</td><td>1.35</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.77	2.07	1.86	4.38	1.73	6.24	1.54	8.57	1.30	9.27	1.35	Vertical 15 Total depth = 10.70 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>2.10</td><td>1.91</td></tr><tr><td>4.30</td><td>1.75</td></tr><tr><td>6.40</td><td>1.56</td></tr><tr><td>8.60</td><td>1.36</td></tr><tr><td>10.20</td><td>1.24</td></tr></table>	Depth	Velocity	[m]	[m/s]	2.10	1.91	4.30	1.75	6.40	1.56	8.60	1.36	10.20	1.24		
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.28																																																																																			
0.48	1.05																																																																																			
1.30	1.43																																																																																			
2.47	1.47																																																																																			
3.66	1.39																																																																																			
5.29	1.35																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.02																																																																																			
1.57	1.59																																																																																			
3.08	1.60																																																																																			
4.73	1.59																																																																																			
6.09	1.51																																																																																			
7.13	1.31																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.86																																																																																			
1.83	1.77																																																																																			
4.13	1.70																																																																																			
5.89	1.65																																																																																			
7.86	1.45																																																																																			
9.10	1.33																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.77																																																																																			
2.07	1.86																																																																																			
4.38	1.73																																																																																			
6.24	1.54																																																																																			
8.57	1.30																																																																																			
9.27	1.35																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
2.10	1.91																																																																																			
4.30	1.75																																																																																			
6.40	1.56																																																																																			
8.60	1.36																																																																																			
10.20	1.24																																																																																			
Vertical 16 Total depth = 11.70 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>1.83</td></tr><tr><td>2.44</td><td>1.89</td></tr><tr><td>4.77</td><td>1.75</td></tr><tr><td>6.81</td><td>1.67</td></tr><tr><td>9.25</td><td>1.45</td></tr><tr><td>10.88</td><td>1.06</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	1.83	2.44	1.89	4.77	1.75	6.81	1.67	9.25	1.45	10.88	1.06	Vertical 17 Total depth = 12.00 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>2.60</td><td>2.32</td></tr><tr><td>4.80</td><td>2.03</td></tr><tr><td>7.20</td><td>2.07</td></tr><tr><td>9.60</td><td>1.80</td></tr><tr><td>11.00</td><td>1.61</td></tr></table>	Depth	Velocity	[m]	[m/s]	2.60	2.32	4.80	2.03	7.20	2.07	9.60	1.80	11.00	1.61	Vertical 18 Total depth = 10.60 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>2.18</td><td>1.17</td></tr><tr><td>4.27</td><td>1.20</td></tr><tr><td>6.37</td><td>1.20</td></tr><tr><td>8.60</td><td>1.18</td></tr><tr><td>10.22</td><td>0.73</td></tr></table>	Depth	Velocity	[m]	[m/s]	2.18	1.17	4.27	1.20	6.37	1.20	8.60	1.18	10.22	0.73	Vertical 19 Total depth = 9.60 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>1.90</td><td>1.72</td></tr><tr><td>3.80</td><td>1.63</td></tr><tr><td>5.80</td><td>1.58</td></tr><tr><td>7.80</td><td>1.37</td></tr><tr><td>9.20</td><td>1.30</td></tr></table>	Depth	Velocity	[m]	[m/s]	1.90	1.72	3.80	1.63	5.80	1.58	7.80	1.37	9.20	1.30	Vertical 20 Total depth = 6.80 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>0.90</td></tr><tr><td>0.39</td><td>0.51</td></tr><tr><td>1.28</td><td>1.15</td></tr><tr><td>2.77</td><td>0.89</td></tr><tr><td>3.93</td><td>0.99</td></tr><tr><td>5.48</td><td>0.92</td></tr><tr><td>6.31</td><td>0.95</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	0.90	0.39	0.51	1.28	1.15	2.77	0.89	3.93	0.99	5.48	0.92	6.31	0.95				
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	1.83																																																																																			
2.44	1.89																																																																																			
4.77	1.75																																																																																			
6.81	1.67																																																																																			
9.25	1.45																																																																																			
10.88	1.06																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
2.60	2.32																																																																																			
4.80	2.03																																																																																			
7.20	2.07																																																																																			
9.60	1.80																																																																																			
11.00	1.61																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
2.18	1.17																																																																																			
4.27	1.20																																																																																			
6.37	1.20																																																																																			
8.60	1.18																																																																																			
10.22	0.73																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
1.90	1.72																																																																																			
3.80	1.63																																																																																			
5.80	1.58																																																																																			
7.80	1.37																																																																																			
9.20	1.30																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	0.90																																																																																			
0.39	0.51																																																																																			
1.28	1.15																																																																																			
2.77	0.89																																																																																			
3.93	0.99																																																																																			
5.48	0.92																																																																																			
6.31	0.95																																																																																			
Vertical 21 Total depth = 6.50 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.50</td><td>0.66</td></tr><tr><td>1.30</td><td>0.58</td></tr><tr><td>2.40</td><td>0.65</td></tr><tr><td>3.85</td><td>0.53</td></tr><tr><td>5.15</td><td>0.42</td></tr><tr><td>6.40</td><td>0.22</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.50	0.66	1.30	0.58	2.40	0.65	3.85	0.53	5.15	0.42	6.40	0.22	Vertical 22 Total depth = 1.30 <table><tr><th>Depth</th><th>Velocity</th></tr><tr><th>[m]</th><th>[m/s]</th></tr><tr><td>0.80</td><td>0.66</td></tr><tr><td>1.30</td><td>0.58</td></tr><tr><td>2.50</td><td>0.65</td></tr></table>	Depth	Velocity	[m]	[m/s]	0.80	0.66	1.30	0.58	2.50	0.65	Qw = 35974(m3/s)																																																								
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.50	0.66																																																																																			
1.30	0.58																																																																																			
2.40	0.65																																																																																			
3.85	0.53																																																																																			
5.15	0.42																																																																																			
6.40	0.22																																																																																			
Depth	Velocity																																																																																			
[m]	[m/s]																																																																																			
0.80	0.66																																																																																			
1.30	0.58																																																																																			
2.50	0.65																																																																																			

Table 3.2 SUMMARY OF RESULTS (S4 Current)

20

River : Brahmaputra-Jamuna
S4 velocity

Date of survey : 29-30 July 1993
Location : Sirajganj (Right Channel)

Vertical 1	
Total depth = 7.90	
Depth	Velocity
[m]	[m/s]
0.50	1.64
1.41	1.72
3.01	1.77
4.41	1.75
5.91	1.67
6.90	1.55

Vertical 2	
Total depth = 7.50	
Depth	Velocity
[m]	[m/s]
0.50	1.51
1.45	1.55
2.92	1.57
4.35	1.57
5.74	1.58
6.38	1.48

Vertical 3	
Total depth = 7.20	
Depth	Velocity
[m]	[m/s]
1.50	1.53
3.00	1.52
4.40	1.45
5.90	1.44
6.50	1.30

Vertical 4	
Total depth = 9.90	
Depth	Velocity
[m]	[m/s]
0.50	1.47
0.66	1.08
1.84	1.59
4.11	1.42
5.79	1.36
7.73	1.12
9.25	0.84

Vertical 5	
Total depth = 8.60	
Depth	Velocity
[m]	[m/s]
0.50	1.10
0.64	0.78
1.62	1.32
3.42	1.41
5.25	1.26
7.00	1.05
8.00	0.73

Vertical 6	
Total depth = 8.95	
Depth	Velocity
[m]	[m/s]
0.50	0.80
0.86	0.72
1.67	1.00
3.26	1.05
5.05	1.12
6.76	1.14
8.40	0.63

Vertical 9	
Total depth = 2.00	
Depth	Velocity
[m]	[m/s]
0.53	1.71
1.39	1.26

Vertical 12	
Total depth = 3.40	
Depth	Velocity
[m]	[m/s]
0.62	0.68
1.90	0.68
2.84	0.52

Vertical 13	
Total depth = 2.90	
Depth	Velocity
[m]	[m/s]
0.54	0.88
1.71	0.83
2.31	0.70

$Q_w = 14185 \text{ (m}^3/\text{s)}$

3.3 SUMMARY OF RESULTS (S4 Current)

River : Brahmaputra-Jamuna
Concentration

Date of Survey : 23-30 July 1993
Location : Si rajganj (left Channel)

Vertical 1 Total depth = 2.90 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>829.00</td></tr><tr><td>1.70</td><td>546.00</td></tr><tr><td>2.30</td><td>693.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	829.00	1.70	546.00	2.30	693.00	Vertical 2 Total depth = 4.80 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>1.00</td><td>750.00</td></tr><tr><td>2.90</td><td>770.00</td></tr><tr><td>3.80</td><td>856.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	1.00	750.00	2.90	770.00	3.80	856.00	Vertical 3 Total depth = 6.80 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>1213.00</td></tr><tr><td>1.36</td><td>844.00</td></tr><tr><td>2.70</td><td>841.00</td></tr><tr><td>4.10</td><td>908.00</td></tr><tr><td>5.40</td><td>1069.00</td></tr><tr><td>6.30</td><td>1318.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	1213.00	1.36	844.00	2.70	841.00	4.10	908.00	5.40	1069.00	6.30	1318.00	Vertical 4 Total depth = 7.60 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>863.00</td></tr><tr><td>1.52</td><td>1073.00</td></tr><tr><td>3.04</td><td>902.00</td></tr><tr><td>4.56</td><td>1142.00</td></tr><tr><td>6.08</td><td>1218.00</td></tr><tr><td>7.38</td><td>2338.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	863.00	1.52	1073.00	3.04	902.00	4.56	1142.00	6.08	1218.00	7.38	2338.00	Vertical 5 Total depth = 8.00 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>596.00</td></tr><tr><td>1.60</td><td>776.00</td></tr><tr><td>3.20</td><td>1020.00</td></tr><tr><td>4.80</td><td>1011.00</td></tr><tr><td>6.40</td><td>1101.00</td></tr><tr><td>7.50</td><td>1515.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	596.00	1.60	776.00	3.20	1020.00	4.80	1011.00	6.40	1101.00	7.50	1515.00												
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	829.00																																																																																			
1.70	546.00																																																																																			
2.30	693.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
1.00	750.00																																																																																			
2.90	770.00																																																																																			
3.80	856.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	1213.00																																																																																			
1.36	844.00																																																																																			
2.70	841.00																																																																																			
4.10	908.00																																																																																			
5.40	1069.00																																																																																			
6.30	1318.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	863.00																																																																																			
1.52	1073.00																																																																																			
3.04	902.00																																																																																			
4.56	1142.00																																																																																			
6.08	1218.00																																																																																			
7.38	2338.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	596.00																																																																																			
1.60	776.00																																																																																			
3.20	1020.00																																																																																			
4.80	1011.00																																																																																			
6.40	1101.00																																																																																			
7.50	1515.00																																																																																			
Vertical 6 Total depth = 9.00 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>547.00</td></tr><tr><td>1.80</td><td>849.00</td></tr><tr><td>3.60</td><td>1008.00</td></tr><tr><td>5.40</td><td>1288.00</td></tr><tr><td>7.20</td><td>1865.00</td></tr><tr><td>8.50</td><td>2361.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	547.00	1.80	849.00	3.60	1008.00	5.40	1288.00	7.20	1865.00	8.50	2361.00	Vertical 7 Total depth = 10.50 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>566.91</td></tr><tr><td>2.10</td><td>421.74</td></tr><tr><td>4.20</td><td>458.82</td></tr><tr><td>6.30</td><td>555.00</td></tr><tr><td>8.40</td><td>745.00</td></tr><tr><td>9.98</td><td>2561.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	566.91	2.10	421.74	4.20	458.82	6.30	555.00	8.40	745.00	9.98	2561.00	Vertical 8 Total depth = 12.20 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>795.00</td></tr><tr><td>2.44</td><td>818.00</td></tr><tr><td>4.88</td><td>848.00</td></tr><tr><td>7.32</td><td>1047.00</td></tr><tr><td>9.76</td><td>1536.00</td></tr><tr><td>11.90</td><td>1913.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	795.00	2.44	818.00	4.88	848.00	7.32	1047.00	9.76	1536.00	11.90	1913.00	Vertical 9 Total depth = 14.40 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>688.00</td></tr><tr><td>3.00</td><td>806.00</td></tr><tr><td>6.00</td><td>854.00</td></tr><tr><td>9.00</td><td>1259.00</td></tr><tr><td>12.00</td><td>1696.00</td></tr><tr><td>13.50</td><td>5705.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	688.00	3.00	806.00	6.00	854.00	9.00	1259.00	12.00	1696.00	13.50	5705.00	Vertical 10 Total depth = 10.00 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>734.00</td></tr><tr><td>2.00</td><td>913.00</td></tr><tr><td>4.00</td><td>802.00</td></tr><tr><td>6.00</td><td>780.00</td></tr><tr><td>8.00</td><td>1801.00</td></tr><tr><td>9.50</td><td>1444.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	734.00	2.00	913.00	4.00	802.00	6.00	780.00	8.00	1801.00	9.50	1444.00
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	547.00																																																																																			
1.80	849.00																																																																																			
3.60	1008.00																																																																																			
5.40	1288.00																																																																																			
7.20	1865.00																																																																																			
8.50	2361.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	566.91																																																																																			
2.10	421.74																																																																																			
4.20	458.82																																																																																			
6.30	555.00																																																																																			
8.40	745.00																																																																																			
9.98	2561.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	795.00																																																																																			
2.44	818.00																																																																																			
4.88	848.00																																																																																			
7.32	1047.00																																																																																			
9.76	1536.00																																																																																			
11.90	1913.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	688.00																																																																																			
3.00	806.00																																																																																			
6.00	854.00																																																																																			
9.00	1259.00																																																																																			
12.00	1696.00																																																																																			
13.50	5705.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	734.00																																																																																			
2.00	913.00																																																																																			
4.00	802.00																																																																																			
6.00	780.00																																																																																			
8.00	1801.00																																																																																			
9.50	1444.00																																																																																			
Vertical 11 Total depth = 6.20 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>625.00</td></tr><tr><td>1.20</td><td>747.00</td></tr><tr><td>2.50</td><td>637.00</td></tr><tr><td>3.70</td><td>705.00</td></tr><tr><td>5.00</td><td>787.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	625.00	1.20	747.00	2.50	637.00	3.70	705.00	5.00	787.00	Vertical 12 Total depth = 7.60 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>866.20</td></tr><tr><td>1.60</td><td>969.92</td></tr><tr><td>3.10</td><td>1048.34</td></tr><tr><td>4.70</td><td>1110.30</td></tr><tr><td>6.20</td><td>1252.90</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	866.20	1.60	969.92	3.10	1048.34	4.70	1110.30	6.20	1252.90	Vertical 13 Total depth = 10.00 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>725.00</td></tr><tr><td>2.00</td><td>843.00</td></tr><tr><td>4.00</td><td>773.00</td></tr><tr><td>6.00</td><td>954.00</td></tr><tr><td>8.00</td><td>898.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	725.00	2.00	843.00	4.00	773.00	6.00	954.00	8.00	898.00	Vertical 14 Total depth = 10.70 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>931.00</td></tr><tr><td>2.10</td><td>998.00</td></tr><tr><td>4.30</td><td>1099.00</td></tr><tr><td>6.40</td><td>1292.00</td></tr><tr><td>8.60</td><td>1299.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	931.00	2.10	998.00	4.30	1099.00	6.40	1292.00	8.60	1299.00	Vertical 15 Total depth = 10.70 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>956.00</td></tr><tr><td>2.10</td><td>891.00</td></tr><tr><td>4.30</td><td>976.00</td></tr><tr><td>6.40</td><td>1171.00</td></tr><tr><td>8.60</td><td>1214.00</td></tr><tr><td>10.20</td><td>1057.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	956.00	2.10	891.00	4.30	976.00	6.40	1171.00	8.60	1214.00	10.20	1057.00								
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	625.00																																																																																			
1.20	747.00																																																																																			
2.50	637.00																																																																																			
3.70	705.00																																																																																			
5.00	787.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	866.20																																																																																			
1.60	969.92																																																																																			
3.10	1048.34																																																																																			
4.70	1110.30																																																																																			
6.20	1252.90																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	725.00																																																																																			
2.00	843.00																																																																																			
4.00	773.00																																																																																			
6.00	954.00																																																																																			
8.00	898.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	931.00																																																																																			
2.10	998.00																																																																																			
4.30	1099.00																																																																																			
6.40	1292.00																																																																																			
8.60	1299.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	956.00																																																																																			
2.10	891.00																																																																																			
4.30	976.00																																																																																			
6.40	1171.00																																																																																			
8.60	1214.00																																																																																			
10.20	1057.00																																																																																			
Vertical 16 Total depth = 11.50 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.60</td><td>998.00</td></tr><tr><td>2.30</td><td>1082.00</td></tr><tr><td>4.60</td><td>1183.00</td></tr><tr><td>7.00</td><td>1529.00</td></tr><tr><td>9.30</td><td>1355.00</td></tr><tr><td>11.00</td><td>1724.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.60	998.00	2.30	1082.00	4.60	1183.00	7.00	1529.00	9.30	1355.00	11.00	1724.00	Vertical 17 Total depth = 12.00 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.60</td><td>825.00</td></tr><tr><td>2.40</td><td>1034.00</td></tr><tr><td>4.80</td><td>1255.00</td></tr><tr><td>7.20</td><td>1263.00</td></tr><tr><td>9.60</td><td>1492.00</td></tr><tr><td>11.00</td><td>1907.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.60	825.00	2.40	1034.00	4.80	1255.00	7.20	1263.00	9.60	1492.00	11.00	1907.00	Vertical 18 Total depth = 10.60 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>1082.00</td></tr><tr><td>2.10</td><td>1417.00</td></tr><tr><td>4.20</td><td>1359.00</td></tr><tr><td>6.40</td><td>1591.00</td></tr><tr><td>8.50</td><td>1731.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	1082.00	2.10	1417.00	4.20	1359.00	6.40	1591.00	8.50	1731.00	Vertical 19 Total depth = 9.60 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>1397.00</td></tr><tr><td>1.90</td><td>1585.00</td></tr><tr><td>3.80</td><td>1876.00</td></tr><tr><td>5.80</td><td>2641.00</td></tr><tr><td>7.70</td><td>2317.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	1397.00	1.90	1585.00	3.80	1876.00	5.80	2641.00	7.70	2317.00	Vertical 20 Total depth = 7.00 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>1303.00</td></tr><tr><td>1.30</td><td>864.00</td></tr><tr><td>2.70</td><td>2021.00</td></tr><tr><td>4.00</td><td>2159.00</td></tr><tr><td>5.40</td><td>2702.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	1303.00	1.30	864.00	2.70	2021.00	4.00	2159.00	5.40	2702.00						
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.60	998.00																																																																																			
2.30	1082.00																																																																																			
4.60	1183.00																																																																																			
7.00	1529.00																																																																																			
9.30	1355.00																																																																																			
11.00	1724.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.60	825.00																																																																																			
2.40	1034.00																																																																																			
4.80	1255.00																																																																																			
7.20	1263.00																																																																																			
9.60	1492.00																																																																																			
11.00	1907.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	1082.00																																																																																			
2.10	1417.00																																																																																			
4.20	1359.00																																																																																			
6.40	1591.00																																																																																			
8.50	1731.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	1397.00																																																																																			
1.90	1585.00																																																																																			
3.80	1876.00																																																																																			
5.80	2641.00																																																																																			
7.70	2317.00																																																																																			
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	1303.00																																																																																			
1.30	864.00																																																																																			
2.70	2021.00																																																																																			
4.00	2159.00																																																																																			
5.40	2702.00																																																																																			
Vertical 21 Total depth = 6.50 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.50</td><td>775.00</td></tr><tr><td>1.30</td><td>715.00</td></tr><tr><td>2.40</td><td>1661.00</td></tr><tr><td>3.85</td><td>1280.00</td></tr><tr><td>5.15</td><td>no</td></tr><tr><td>6.40</td><td>Samples</td></tr><tr><td colspan="2">Pump Disturbed</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.50	775.00	1.30	715.00	2.40	1661.00	3.85	1280.00	5.15	no	6.40	Samples	Pump Disturbed		Vertical 22 Total depth = 3.30 <table><tr><th>Depth</th><th>Conc.</th></tr><tr><th>(m)</th><th>(mg/l)</th></tr><tr><td>0.80</td><td>1700.00</td></tr><tr><td>1.30</td><td>606.00</td></tr><tr><td>2.45</td><td>1033.00</td></tr></table>	Depth	Conc.	(m)	(mg/l)	0.80	1700.00	1.30	606.00	2.45	1033.00	Ss = 40746(Kg/s)																																																						
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.50	775.00																																																																																			
1.30	715.00																																																																																			
2.40	1661.00																																																																																			
3.85	1280.00																																																																																			
5.15	no																																																																																			
6.40	Samples																																																																																			
Pump Disturbed																																																																																				
Depth	Conc.																																																																																			
(m)	(mg/l)																																																																																			
0.80	1700.00																																																																																			
1.30	606.00																																																																																			
2.45	1033.00																																																																																			

Table 3.4 SUMMARY OF RESULTS (Suspended Sediment Concentration)

River : Brahmaputra-Jamuna
Concentration

Date of survey : 29-30 July 1993

Location : Sirajganj (Right Channel)

Vertical 1	
Total depth = 7.50	
Depth	Conc.
(m)	(mg/l)
0.50	603.00
1.50	677.00
3.00	694.00
4.40	681.00
5.90	718.00
7.00	926.00

Vertical 2	
Total depth = 7.20	
Depth	Conc.
(m)	(mg/l)
0.50	665.00
1.40	744.00
2.90	806.00
4.30	902.00
5.80	945.00
6.40	1110.00

Vertical 3	
Total depth = 7.20	
Depth	Conc.
(m)	(mg/l)
0.50	803.00
1.50	817.00
3.00	858.00
4.40	839.00
5.90	886.00
6.50	948.00

Vertical 4	
Total depth = 9.80	
Depth	Conc.
(m)	(mg/l)
0.50	621.00
1.96	699.00
3.92	861.00
5.88	1061.00
7.84	1067.00
9.14	1146.00

Vertical 5	
Total depth = 8.60	
Depth	Conc.
(m)	(mg/l)
0.50	518.00
1.72	589.00
3.44	945.00
5.16	1184.00
6.88	1414.00
8.03	1677.00

Vertical 6	
Total depth = 8.60	
Depth	Conc.
(m)	(mg/l)
0.50	746.85
1.72	891.03
3.44	
5.16	
6.88	
8.40	

Vertical 9	
Total depth = 2.00	
Depth	Conc.
(m)	(mg/l)
0.50	1092.00
1.50	2156.00

Vertical 12	
Total depth = 3.40	
Depth	Conc.
(m)	(mg/l)
0.60	725.00
1.85	783.00
2.75	1009.00

Vertical 13	
Total depth = 2.80	
Depth	Conc.
(m)	(mg/l)
0.60	789.00
1.70	806.00
2.30	1194.00

$S_s = 13639(\text{Kg/s})$

Table 3.5 SUMMARY OF RESULTS (Suspended Sediment Concentration)

River :Brahmaputra-Jamuna
Bed load

Date of Survey : 29-30 July 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
1	0.14590	0.13618
2	0.12906	0.08608
3	0.16519	0.24282
4	0.26075	0.01446
5	0.01667	0.06118
6	0.00961	0.00151
9	0.16524	0.12489
12	0.00034	0.00025
13	0.07237	0.05439

Date of Survey : 23-29 July 1993

Location : Jumuna River at Sigajganj (Left channel)

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
1	0.02895	0.25877
2	0.09408	0.06404
3	0.11754	0.12325
4	0.20110	0.17719
5	0.19320	0.06645
6	0.19189	0.14123
7	0.13728	0.23882
9	0.19013	0.13597
10	0.69627	0.74540
11	0.01669	0.09002
12	0.19452	0.18651
13	0.07447	0.13805
14	0.18509	0.13601
15	0.18553	0.03969
16	0.18377	0.32643
17	0.11842	0.25136
18	0.03712	0.07341
19	0.00650	0.04759
20	0.00299	0.02604

Table 3.6 Summary of results(sediment transport, bed load)

76
River :Brahmaputra-Jamuna

Grain size of bed material

Date of Survey : 29-30 July 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Sample No	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
DHA-1	30/07/93	09:50	0.148	0.167	0.191	0.367	1.431
DHA-3	29/07/93	15:40	0.137	0.160	0.182	0.282	1.329
DHA-4	29/07/93	18:05	0.055	0.080	0.095	0.350	2.443
DHC-2	30/07/93	12:05	0.138	0.154	0.175	0.243	1.334
DHC-1	30/07/93	09:00	0.083	0.120	0.145	0.231	1.605

Date of Survey : 23-29 July 1993

Location : Jumuna River at Sirajganj (Left channel)

Sample No	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
DHC-1(1)	28/07/93	11:30	0.076	0.101	0.125	0.218	1.626
DHA-1(1)	28/07/93	10:15	0.083	0.126	0.151	0.242	1.647
DHA-2(1)	27/07/93	15:55	0.103	0.145	0.167	0.243	1.451
DHA-1(2)	27/07/93	11:08	0.084	0.129	0.151	0.230	1.600
DHA-3	26/07/93	16:20	0.080	0.115	0.142	0.224	1.638
DHA-2(2)	26/07/93	11:51	0.132	0.164	0.196	0.400	1.634
DHA-1(3)	26/07/93	09:15	0.147	0.161	0.182	0.258	1.324
DHA-2(3)	24/07/93	14:01	0.143	0.159	0.179	0.243	1.315
DHA-1(4)	24/07/93	09:55	0.163	0.191	0.233	0.412	1.626
DHA-2(4)	29/07/93	11:15	0.273	0.304	0.344	0.492	1.328
DHA-1(5)	29/07/93	09:48	0.055	0.070	0.080	0.130	1.477
DHC-1(2)	29/07/93	10:15	0.014	0.024	0.029	0.065	1.846

Table 3.7 SUMMARY of RESULTS (grain size bed material)

River :Brahmaputra-Jamuna
Grain size of Suspended Sediment

Date of Survey : 29 - 30 July 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Sample No	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
613	30/07/93	11:17	0.015	0.030	0.042	0.195	3.186
612	30/07/93	09:52	0.015	0.035	0.060	0.225	3.667
800	30/07/93	08:22	0.027	0.045	0.054	0.130	1.926
609	29/07/93	15:40	0.006	0.020	0.032	0.200	5.010
610	29/07/93	17:06	0.010	0.027	0.041	0.210	4.184
700	30/07/93	12:08	0.030	0.060	0.075	0.165	2.117
34	30/07/93	10:00	0.005	0.015	0.020	0.045	3.000
32	30/07/93	09:00	0.004	0.013	0.021	0.050	3.696

Date of Survey : 23 - 29 July 1993

Location : Jumuna River at Sirajganj (Left channel)

Sample No	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
33	28/07/93	11:29	0.015	0.045	0.075	0.180	3.500
604	28/07/93	11:42	0.005	0.017	0.029	0.150	4.969
603	28/07/93	10:15	0.014	0.035	0.060	0.120	3.393
602	27/07/93	15:56	0.035	0.070	0.095	0.215	2.331
601	27/07/93	14:42	0.028	0.075	0.092	0.212	2.621
600	27/07/93	11:08	0.017	0.045	0.075	0.185	3.272
523	26/07/93	17:32	0.040	0.075	0.093	0.200	2.130
522	26/07/93	16:20	0.029	0.068	0.085	0.200	2.524
520	26/07/93	11:51	0.025	0.075	0.110	0.250	3.164
519	26/07/93	10:41	0.006	0.017	0.030	0.180	5.000
518	26/07/93	09:12	0.015	0.035	0.043	0.200	3.526
517	24/07/93	15:16	0.015	0.035	0.051	0.230	3.661
516	24/07/93	14:02	0.017	0.035	0.050	0.150	2.721
515	24/07/93	12:18	0.200	0.040	0.052	0.185	2.742
514	24/07/93	09:56	0.045	0.090	0.160	0.400	2.871
513	23/07/93	17:36	0.017	0.035	0.052	0.110	2.490
608	29/07/93	11:13	0.020	0.038	0.061	0.120	2.344
605	28/07/93	12:42	0.018	0.040	0.050	0.065	2.034
606	29/07/93	09:48	0.020	0.035	0.042	0.095	2.002

Table 3.8 SUMMARY of RESULTS (grain size suspended sediment)

W
River :Brahmaputra-Jamuna

Grain size of Bed load

Date of Survey : 29 - 30 July 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
1068	30/07/93	11:15	0.161	0.185	0.213	1.418
1069	30/07/93	11:15	0.163	0.189	0.219	1.486
1066	30/07/93	09:50	0.168	0.194	0.224	1.502
1067	30/07/93	09:50	0.170	0.198	0.231	1.548
1063	30/07/93	08:22	0.168	0.193	0.222	1.475
1064	30/07/93	08:22	0.170	0.196	0.225	1.484
1056	29/07/93	15:40	0.168	0.194	0.224	1.500
1057	29/07/93	15:40	0.287	0.327	0.373	1.416
1058	29/07/93	17:06	0.302	0.340	0.382	1.307
1059	29/07/93	17:06	0.191	0.237	0.296	1.651
1061	29/07/93	18:06	0.305	0.343	0.384	1.298
1062	29/07/93	18:06	0.082	0.125	0.180	--
1202	30/07/93	12:02	0.139	0.162	0.188	1.536
1203	30/07/93	12:02	0.133	0.157	0.185	1.598
1200	30/07/93	10:02	0.144	0.183	0.232	2.389
1201	30/07/93	10:02	0.112	0.149	0.187	--
88	30/07/93	09:00	0.116	0.143	0.172	1.641
97	30/07/93	09:00	0.122	0.146	0.174	1.612

Table 3.9 SUMMARY OF RESULTS (grain size bed load)

29
River :Brahmaputra-Jamuna

Grain size of Bed load

Date of Survey : 23 - 29 July 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
50	28/07/93	11:29	0.170	0.210	0.261	1.697
86	28/07/93	11:29	0.120	0.146	0.174	1.633
1045	28/07/93	11:42	0.131	0.155	0.183	1.655
1046	28/07/93	11:42	0.123	0.150	0.182	1.699
1043	28/07/93	10:15	0.125	0.156	0.194	1.834
1044	28/07/93	10:15	0.132	0.161	0.196	1.699
1039	27/07/93	15:56	0.140	0.166	0.198	1.636
1040	27/07/93	15:56	0.137	0.162	0.192	1.625
1037	27/07/93	14:42	0.111	0.141	0.173	1.722
1038	27/07/93	14:42	0.114	0.145	0.179	1.736
1035	27/07/93	11:08	0.134	0.162	0.196	1.723
1036	27/07/93	11:08	0.129	0.156	0.189	1.732
1032	26/07/93	17:32	0.096	0.122	0.154	1.700
1033	26/07/93	17:32	0.102	0.130	0.161	1.674
1029	26/07/93	14:56	0.163	0.191	0.224	1.553
1030	26/07/93	14:56	0.143	0.170	0.203	1.672
1027	26/07/93	11:51	0.187	0.229	0.287	1.644
1028	26/07/93	11:51	0.176	0.210	0.250	1.616
1024	26/07/93	10:42	0.283	0.323	0.369	1.446
1025	26/07/93	10:42	0.156	0.179	0.206	1.368
1022	26/07/93	09:12	0.164	0.188	0.215	1.399
1023	26/07/93	09:12	0.166	0.191	0.220	1.465
1019	24/07/93	15:16	0.307	0.344	0.387	1.304
1020	24/07/93	15:16	0.177	0.212	0.256	1.627
1016	24/07/93	14:02	0.211	0.267	0.325	1.661
1017	24/07/93	14:02	0.173	0.207	0.247	1.627
1015	24/07/93	12:18	0.308	0.346	0.389	1.305
1014	24/07/93	12:18	0.207	0.262	0.319	1.642
1012	24/07/93	09:56	0.225	0.280	0.334	1.650
1013	24/07/93	09:56	0.262	0.305	0.355	1.576
1008	23/07/93	17:36	0.313	0.352	0.397	1.309
1009	23/07/93	17:36	0.261	0.305	0.356	1.609
1052	29/07/93	11:13	0.091	0.119	0.188	2.310
1053	29/07/93	11:13	0.266	0.309	0.356	1.871
1047	28/07/93	12:42	0.110	0.213	0.298	--
1048	28/07/93	12:42	0.087	0.113	0.159	--
1049	29/07/93	09:48	0.071	0.091	0.116	--
1050	29/07/93	09:48	0.066	0.080	0.096	--

Table 3.10 SUMMARY OF RESULTS (grain size bed load)

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING				SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	15:52:47	16:15:55	S37N1T01*													

transect in PSD 24 data base

Date of Survey : 23 July 1993

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING				SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	07:44:28	08:21:10	S37O1T01													

Date of Survey : 24 July 1993

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING				SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	07:34:42	07:58:16	S37Q1T01													

Date of Survey : 26 July 1993

Location : Jumuna River at Sirajganj (Right channel)
Station No.2

Table 2.1 SURVEY PROGRAMME AS MADE

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To														
Transect	19:17:26	19:39:02	S37R1T06				ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples

Date of Survey : 27 July 1993

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To														
Profile	15:37:43	16:30:38	S37T1P03	4	471980	698991	ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Profile	17:06:53	17:40:05	S37T1P04	5	472112	699000										
Profile	18:05:00	18:42:22	S37T1P05	6	472208	699000										

Date of Survey : 29 July 1993

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To														
Profile	08:22:00	08:53:00	S37U1P01	3	471894	699000	ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Profile	09:52:07	10:59:23	S37U1P02	2	471794	698998										
Profile	11:17:00	12:00:20	S37U1P03	1	471700	698996										
Profile	09:00:39	09:27:46	S37U2P01	13	473840	698999										
Profile	09:59:14	10:19:15	S37U2P02	12	473604	699008										
Profile	12:08:39	12:19:51	S37U2P03	9	472614	698992										

Date of Survey : 30 July 1993

Table 2.2 SURVEY PROGRAMME AS MADE

Location : Jumuna River at Sirajganj (Right channel)
Station No.2

32

DISCHARGE GAUGING										SEDIMENT TRANSPORT GAUGING						
Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
	From	To														
Transect	16:40:17	16:59:14	S37N1T02*				T	T	T							
Profile	17:36:00	18:03:00	S37N1P01	17	478277	698417	P	P	P		P	6	1	2		

* transect in PSD 24 data base

Date of Survey : 23 July 93

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
							ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
	From	To														
IProfile	09:47:48	11:13:23	S37O1P01	16	478196	698409	P	P	P	P	P	6	1	2	1	1
IProfile	12:18:00	12:53:00	S37O1p02	15	478104	698400	P	P	P		P	6	1	2		
IProfile	14:02:17	14:54:57	S37O1P05	14	478016	698397	P	P	P	P	P	6	1	2	1	1
IProfile	15:14:02	16:14:10	S37O1P06	13	477885	698380	P	P	P	P	P	6	1	2		

Date of Survey : 24 July 93

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples	
Transect	18:31:13	18:54:02	S37Q1T03				T	T	T								
Profile	09:10:11	10:05:40	S37Q1P01	12	477710	698362	P	P	P	P	P	6	1	2	1		1
Profile	11:51:22	11:20:36	S37Q1P02	11	477377	698341	P	P	P	P	P	6	1	2			
Profile	11:51:22	12:31:14	S37Q1P03	10	477377	698341	P	P	P	P	P	6	1	2	1		1
Profile	14:56:27	15:42:28	S37Q1P04	9	477293	698330	P	P	P	P	P	6	1	2			
Profile	16:10:30	16:55:45	S37Q1P05	8	477213	698299	P	P	P	P	P	6	1		1		1
Profile	17:32:12	18:12:16	S37Q1P06	7	477108	698312	P	P	P	P	P	6	1	2			

Date of Survey : 26 July 93

Location : Jamuna River at Sirajganj (Left channel)
Station No. 2

Table 2.3 SURVEY PROGRAMME AS MADE

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreassen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples	
Profile	11:08:00	11:38:00	S37R1P01	6	477010	698314	P	P	P	P	P	6	1	2	1	1	
Profile	15:56:00	16:30:00	S37R1P04	4	476809	698297	P	P	P	P	P	6	1	2	1	1	
Profile	14:42:00	15:08:00	S37R1P02	5	476888	698299	P	P	P	P	P	6	1	2			

Date of Survey : 27 July 93

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Profile	12:31:40	13:06:31	S37S2P08	1	476362	698250	P	P	P		P	3	1	2		1
Profile	10:12:53	10:57:40	S37S1P01	3	476701	698288	P	P	P	P	P	6	1	2	1	1
Profile	11:25:16	11:54:54	S37S1P02	2	476595	698277	P	P	P	P	P	3	1	2		
Profile	12:42:00	13:30:00	S37S1P04	19	478500	698435	P	P	P		P	6	1	2		

Date of Survey : 28 July 93

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples	
Transect	08:54:57	09:16:37	S37T1T02				T	T	T								
Profile	10:12:00	10:32:00	S37T2P01	22	478796	698475											
Profile	11:22:15	12:28:33	S37T2P04	21	478686	698457	P	P	P			3	1	2			1
Profile	09:48:26	10:36:48	S37T1P01	20	478613	698449	P	P	P	P		4					
Profile	11:19:29	11:53:42	S37T1P02	18	478411	698427	P	P	P	P	P	6	1	2	1	1	1
							P	P	P	P	P	6	1	2	1	1	1

Date of Survey : 29 July 93

Location : Jamuna River at Sirajganj (Left channel)
Station No. 2

Table 2.4 SURVEY PROGRAMME AS MADE

62

22

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
Point Integrated Samples	04,01,07	3	1
	1124,1125,1126	3	2
	1118,1119,1120,1121,1122,1123	6	3
	1112,1113,1114,1115,1116,1117	6	4
	1106,1107,1108,1109,1110,1111	6	5
	1100,1101,1102,1103,1104,1105	6	6
	1078,1079,1080,1081,1082,1083	6	7
	1072,1073,1074,1075,1076,1077	6	8
	1066,1067,1068,1069,1070,1071	6	9
	1060,1061,1062,1063,1064,1065	6	10
	1054,1055,1056,1057,1058,1059	6	11
	1048,1049,1050,1051,1052,1053	6	12
	1042,1043,1044,1045,1046,1047	6	13
	1036,1037,1038,1039,1040,1041	6	14
	1030,1031,1032,1033,1034,1035	6	15
	1024,1025,1026,1027,1028,1029	6	16
	1018,1019,1020,1021,1022,1023	6	17
	1139,1140,1141,1142,1143,1144	6	18
	1127,1128,1129,1130,1131,1132	6	19
	1133,1134,1135,1136,1137,1138	6	20
	15,20,21,57	4	21
	08,12,14	3	22
Depth Integrated Samples	1042	1	3
	1041	1	4
	1031	1	8
	1026	1	10
	1021	1	12
	1018	1	14
	1111	1	16
	1054	1	18
Andersen Tube Sample	1051	1	20
	33	1	1
	604	1	2
	603	1	3
	602	1	4
	601	1	5
	600	1	6
	523	1	7
	522	1	8
	520	1	10
	519	1	11
	518	1	12
	517	1	13
	516	1	14
	515	1	15
	514	1	16
	513	1	17
	608	1	18
Helley-Smith Samples	605	1	19
	606	1	20
	86,50,	2	1
	1045,1046,	2	2
	1043,1044	2	3
	1039,1040	2	4
	1037,1038	2	5
	1035,1036	2	6
	1032,1033	2	7
	1029,1030	2	9
	1027,1028	2	10
	1024,1025	2	11
	1022,1023	2	12
	1019,1020	2	13
	1016,1017	2	14
Vanveen Samples	1015,1014	2	15
	1012,1013	2	16
	1008,1009	2	17
	1052,1053	2	18
	1047,1048	2	19
	1049,1050	2	20
	DHC-1(1)	1	1
	DHA-1(1)	1	3
	DHA-2(1)	1	4
	DHA-1(2)	1	6
	DHA-3	1	8
	DHA-2(2)	1	10
	DHA-1(3)	1	12
	DHA-2(3)	1	14
	DHA-1(4)	1	16
	DHA-2(4)	1	18
	DHA-1(5)	1	20
	DHC-1(2)	1	22

Date of Survey : 23-29 July 1993

Location : Jumuna River at Sirajganj (Left channel)

Table 2.5 List of sediment samples

26

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
Point Integrated Samples	1171,1172,1173,1174,1175,1176	6	1
	1165,1166,1167,1168,1169,1170	6	2
	1159,1160,1161,1162,1163,1164	6	3
	1145,1146,1147,1148,1149,1150	6	4
	1151,1152,1153,1154,1155,1156	6	5
	1159,1158,19,18,191,156	6	6
	174,182	2	9
	88,115,138	3	12
	63,66,86	3	13
Depth Integrated Samples	1065	1	2
	1055	1	4
	1060	1	6
Andersen Tube Sample	613	1	1
	612	1	2
	800	1	3
	609	1	4
	610	1	5
	700	1	9
	34	1	12
	32	1	13
Helley-Smith Samples	1068,1069	2	1
	1066,1067	2	2
	1063,1064	2	3
	1056,1057	2	4
	1058,1059	2	5
	1061,1062	2	6
	1202,1203	2	9
	1200,1201	2	12
Vanveen Samples	97,88	2	13
	DHA-1	1	2
	DHA-3	1	4
	DHA-4	1	6
	DHC-2	1	9
	DHC-1	1	13

Date of Survey : 29-30 July 1993

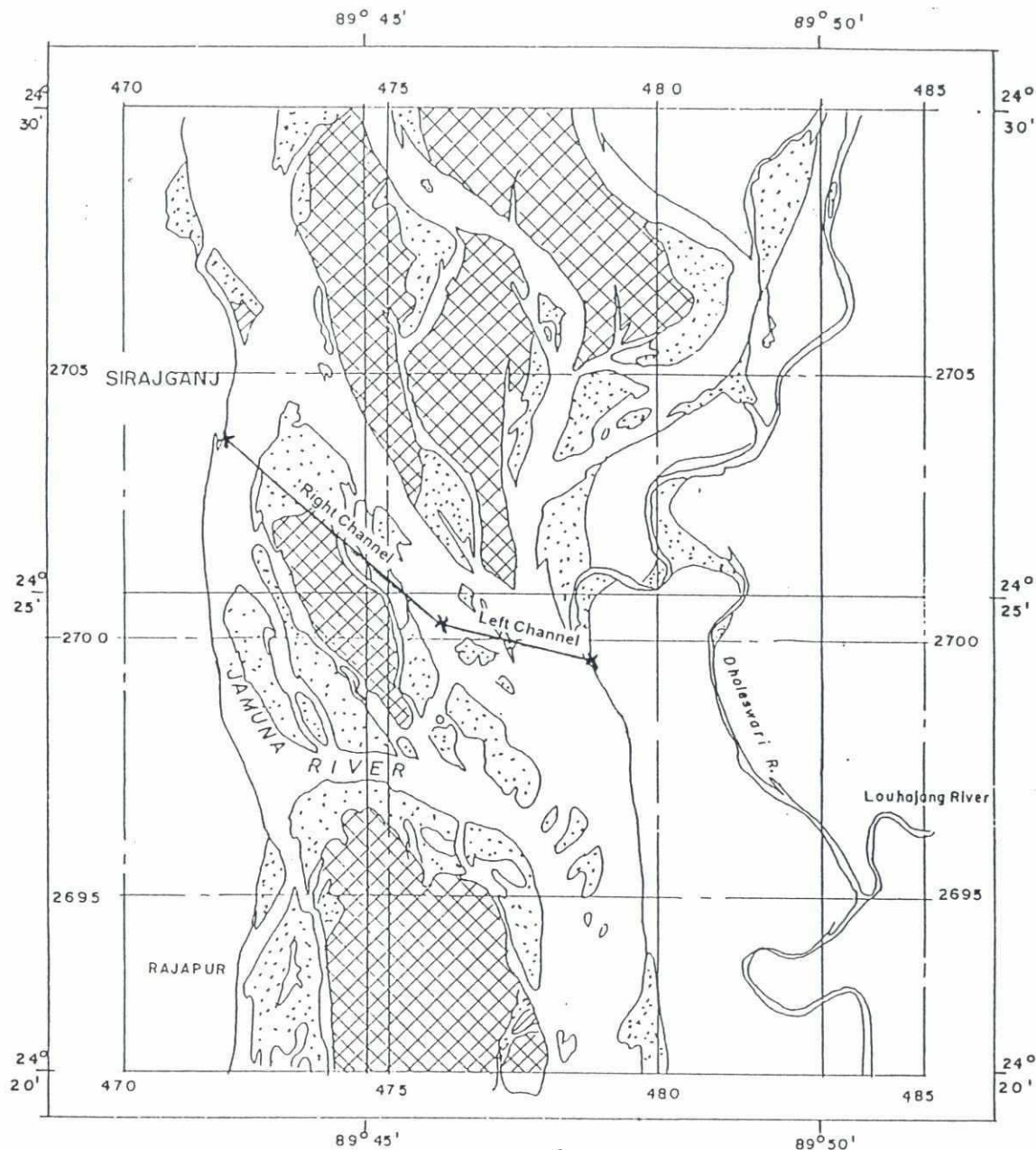
Location : Jumuna River at Sirajganj (Right channel)

Table 2.6 List of Sediment Samples

28

Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S37N1T02 .ase
ADCP/S4/EMF	2	QUATTRO	S37N1T01 .ase
Echosounder	1	QUATTRO	S37N1T02 .ech
Echosounder	2	QUATTRO	S37N1T01 .ech
Sediment transport data	1	QUATTRO	S37N1T02 .sed
Sediment transport data	2	QUATTRO	S37N1T01 .sed
Bed load sediment analysis	1	QUATTRO	S37N1T02 .bdl
Bed load sediment analysis	2	QUATTRO	S37N1T01 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S37N1T02 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S37N1T01 .ssc
Transect plot data	1	QUATTRO	S37N1T02 .trs
Transect plot data	2	QUATTRO	S37N1T01 .trs
Iso-velocity plot data	1	MIKE 21	S37N1T02 .ct2
		MIKE 21	S37N1T02 .dt2
Iso-velocity plot data	2	MIKE 21	S37N1T01 .ct2
		MIKE 21	S37N1T01 .dt2

Table 5.1 PSD 24 Database file description



LEGEND:

- X—X Measurement cross section
- High land
- Unstable/low char
- BWDB Embankment



5000m 2500m 0

Map is based on most recent
Satellite image of March 1993



RIVER SURVEY PROJECT

Delft Hydraulics/Danish Hydraulic Institute
in association with Osiris/Approtech/Hydroland

Survey Bulletin No. 12 - Sep. , 1993

Location No 2 : Jamuna River at Sirajganj

File:

Date:

Scale:

Init:

KEY PLAN

Fig.

23

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	14:43:00	15:16:45	S39H1T01				T	T	T							
Transect	16:00:12	16:18:12	S39H1T05*				T	T	T							
Transect	15:20:57	15:40:28	S39H1T03*				T	T	T							
Transect	15:50:57	16:15:23	S39H1T04				T	T	T							

* transect in PSD 24 data base

Date of Survey : 17 September 1993

Location : Jamuna River at Siraiganj

Station No.2

Tabel 2.1 SURVEY PROGRAMME AS MADE

River : Brahmaputra-Jamuna
ADCP/EMF Discharge

Date of Survey : 17 September 1993
Location : Jamuna River at Sirajganj (Left channel)
Station No. 2

Date	Transect	Bank		Water-level (m+PWD)	Width (m)	Area (sq.m)	Discharge (cumec)
		From	To				
17-09-93	S39H1T03	Right	Left	12.84	2895	23599	18533
17-09-93	S39H1T04	Left	Right	12.84	2873	23366	18461

Table 3.1 SUMMARY OF RESULTS (ADCP/EMF-Discharge)

Date of Survey : 17 September 1993
Location : Jamuna River at Sirajganj (Right channel)

Date	Transect	Bank		Water-level (m+PWD)	Width (m)	Area (sq.m)	Discharge (cumec)
		From	To				
17-09-93	S39H1T01	Right	Left	12.84	5695	49186	14072
17-09-93	S39H1T05	Left	Right	12.84	5559	47199	14057

Table 3.2 SUMMARY OF RESULTS (ADCP/EMF-Discharge)

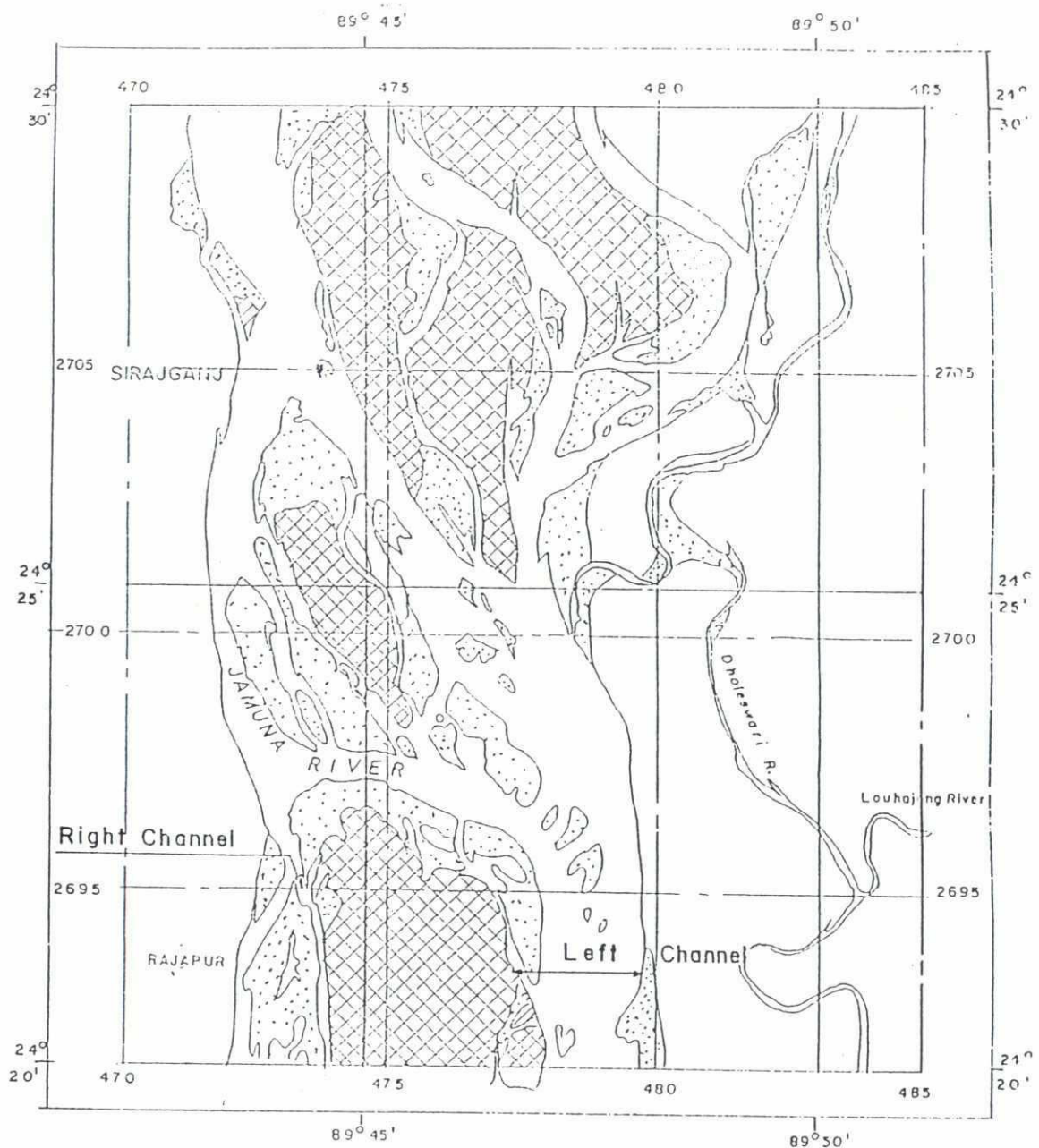


28

Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S39H1T03 .ase
ADCP/S4/EMF	2	QUATTRO	S39H1T05 .ase
Echosounder	1	QUATTRO	S39H1T03 .ech
Echosounder	2	QUATTRO	S39H1T05 .ech
Sediment transport data	1	QUATTRO	S39H1T03 .sed
Sediment transport data	2	QUATTRO	S39H1T05 .sed
Bed load sediment analysis	1	QUATTRO	S39H1T03 .bdl
Bed load sediment analysis	2	QUATTRO	S39H1T05 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S39H1T03 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S39H1T05 .ssc
Transect plot data	1	QUATTRO	S39H1T03 .trs
Transect plot data	2	QUATTRO	S39H1T05 .trs
Iso-velocity plot data	1	MIKE 21	S39H1T03 .cl2
Iso-velocity plot data	1	MIKE 21	S39H1T03 .dt2
Iso-velocity plot data	2	MIKE 21	S39H1T05 .cl2
Iso-velocity plot data	2	MIKE 21	S39H1T05 .dt2

Table 5.1 PSD 24 Database file description





LEGEND:

- X—X Measurement cross section
- High land
- Unstable/low char
- BWDB Embankment



5000m 2500m 0

Map is based on most recent
Satellite image of March 1993



RIVER SURVEY PROJECT

Delft Hydraulics/Danish Hydraulic Institute
in association with Churni Approtech/Hydroland

Survey Bulletin No. 23 - Oct. , 1993

Location No 2 : Jamuna River at Sirajganj

File:

Date:

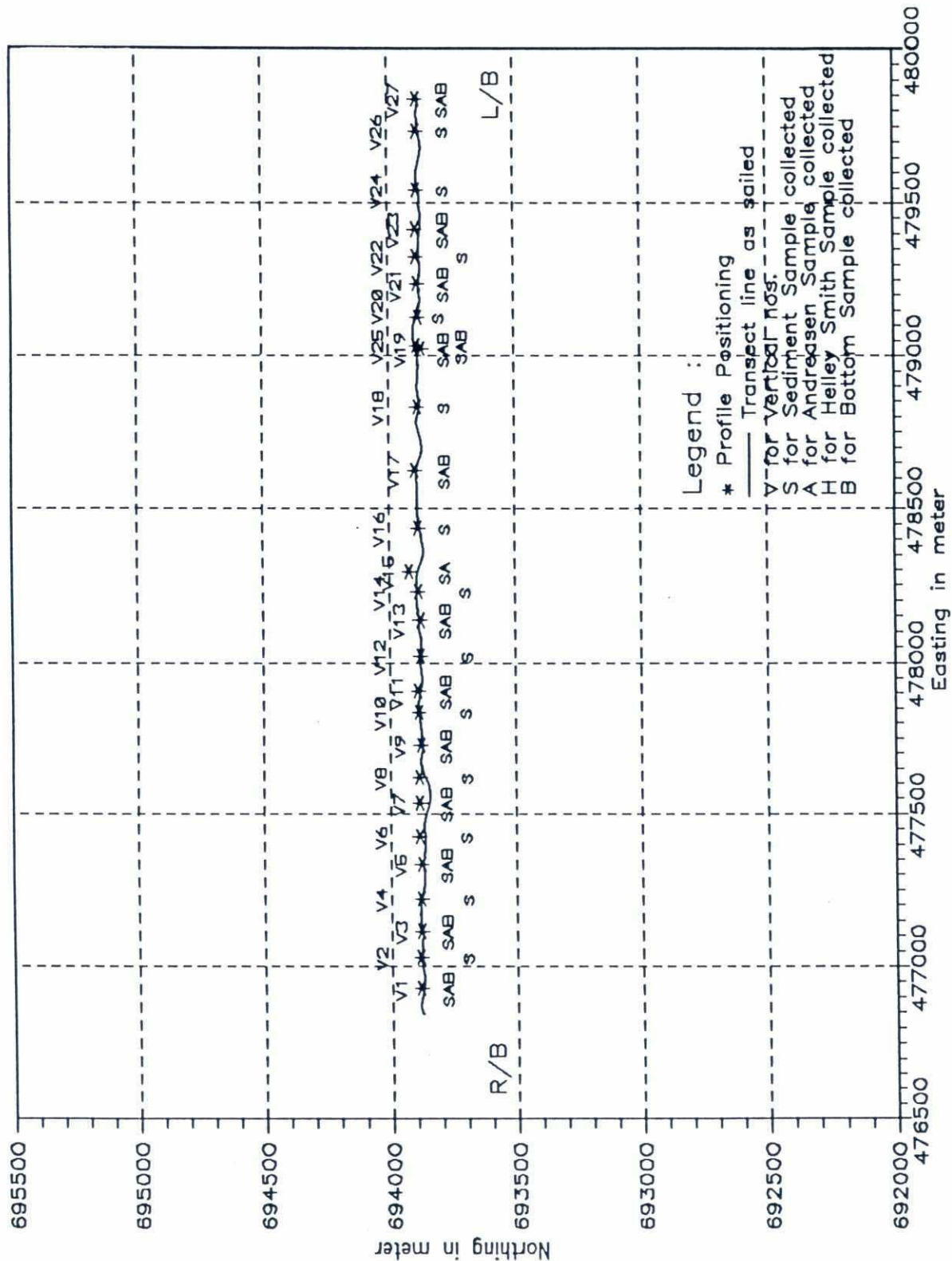
Scale:

Init:

KEY PLAN

Fig.

00



FAP 24
DELFT - DHI

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

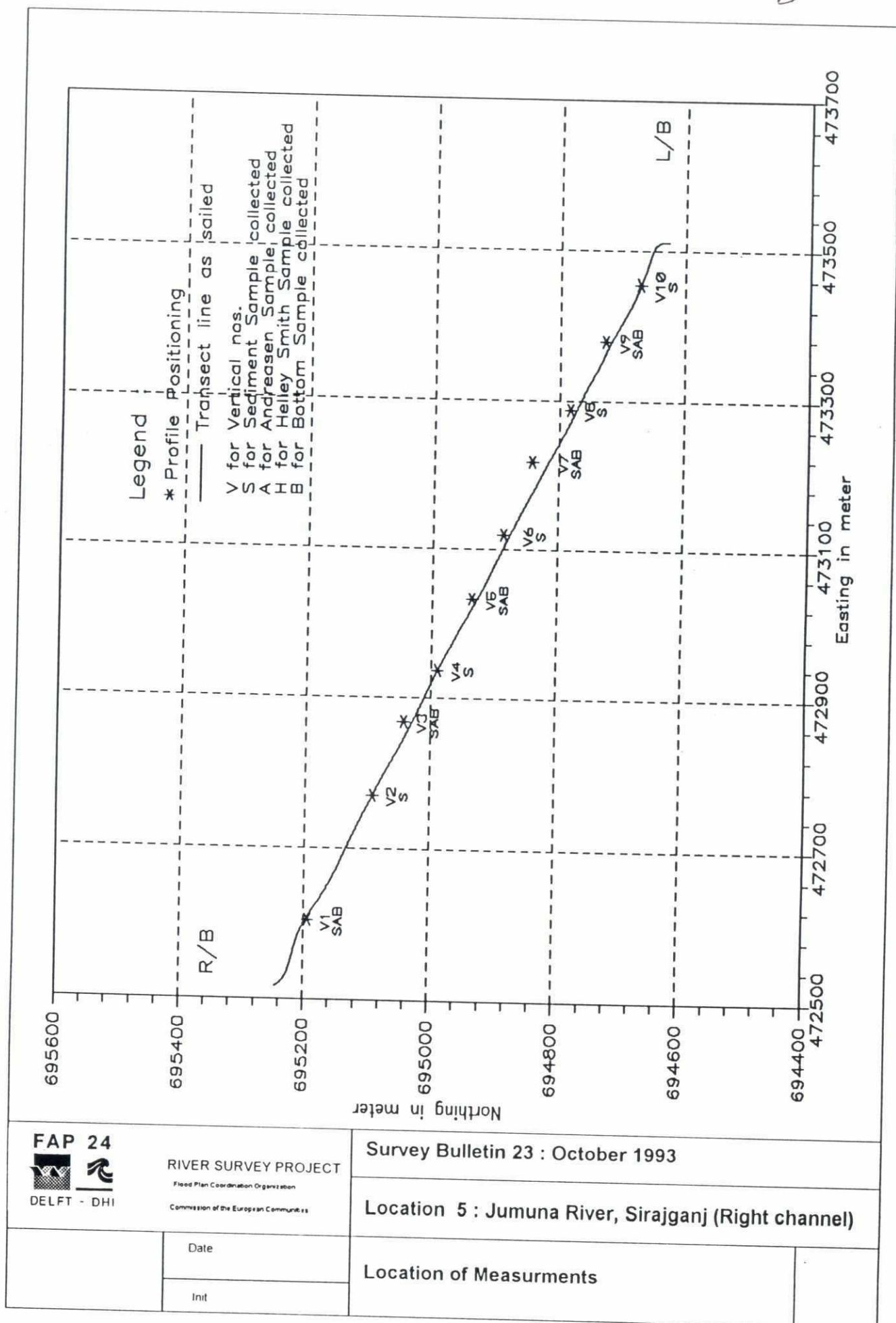
Survey Bulletin 23 : October 1993

Location 5 : Jumuna River, Sirajganj (Left channel)

Date :

Init :

Location of Measurements



FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 23 : October 1993

Location 5 : Jumuna River, Sirajganj (Right channel)

Location of Measurements

Date

Init

32

River : Jamuna
ADCP/EMF Discharge

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Date	Transect	Bank		Water Level	Total Width	Area	Discharge
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)
24/10/93	S3AO1T01	Left	Right	11.66	3546	21770	18846
24/10/93	S3AO1T02	Right	Left	11.66	3020	19117	18172
25/10/93	S3AP1T01	Left	Right	11.56	3583	21707	18579
25/10/93	S3AP1T02	Right	Left	11.56	3013	18582	17724
25/10/93	S3AP1T03	Left	Right	11.52	3020	18496	18090
25/10/93	S3AP1T04	Right	Left	11.51	3019	18505	17554
26/10/93	S3AQ1T01	Left	Right	11.43	3024	18229	15603
26/10/93	S3AQ1T02	Right	Left	11.42	3020	18170	16472
26/10/93	S3AQ1T03	Left	Right	11.39	3024	17997	17279
26/10/93	S3AQ1T04	Right	Left	11.36	3015	18413	16488

Table 3.1 SUMMARY OF RESULTS (ADCP/EMF-discharge)

66

River : Jamuna
ADCP/EMF Discharge

Date of Survey : 27 October 1993
Location : Jumuna River at Sirajganj (Right channel)
Station No. 2

Date	Transect	Bank		Water Level	Total Width	Area	Discharge
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)
27/10/93	S3AR1T01	Right	Left	11.30	956	4783	3021
27/10/93	S3AR1T02	Left	Right	11.29	1186	5667	3201
27/10/93	S3AR1T03	Right	Left	11.29	1180	5707	3125
27/10/93	S3AR1T04	Right	Left	11.26	1173	5640	3213
27/10/93	S3AR1T05	Left	Right	11.26	1177	5647	3490

Table 3.2 SUMMARY OF RESULTS (ADCP/EMF-discharge)

08

River : Jamuna

S4 - Velocity

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Vertical 1		Vertical 2		Vertical 3		Vertical 5	
Total depth = 4.75 m		Total depth = 6.60 m		Total depth = 7.70 m		Total depth = 3.90 m	
Depth	Velocity	Depth	Velocity	Depth	Velocity	Depth	Velocity
[m]	[m/s]	[m]	[m/s]	[m]	[m/s]	[m]	[m/s]
1.04	1.05	1.32	1.10	1.54	0.83	1.00	1.04
2.07	1.01	2.65	1.01	3.08	0.74	2.40	0.94
3.11	0.86	3.95	0.89	4.63	0.78	3.40	0.72
4.17	0.74	5.31	0.76	6.16	0.61	3.58	0.65
4.65	0.66	6.28	0.59	7.25	0.52		

Vertical 6		Vertical 7		Vertical 8		Vertical 12	
Total depth = 5.40 m		Total depth = 8.50 m		Total depth = 12.64 m		Total depth = 7.50 m	
Depth	Velocity	Depth	Velocity	Depth	Velocity	Depth	Velocity
[m]	[m/s]	[m]	[m/s]	[m]	[m/s]	[m]	[m/s]
1.10	1.18	1.52	1.92	2.34	1.63	1.52	1.22
2.15	1.18	3.03	1.76	4.68	1.65	3.07	1.25
3.23	1.05	4.53	1.56	7.09	1.55	4.55	1.13
4.34	0.87	6.15	1.25	9.35	1.35	6.07	1.04
5.21	0.76	8.06	0.92	12.12	0.85	7.00	0.89

Vertical 13		Vertical 14		Vertical 15		Qw = 15,963 (m³/s)
Total depth = 6.20 m		Total depth = 6.10 m		Total depth = 5.20 m		
Depth	Velocity	Depth	Velocity	Depth	Velocity	
[m]	[m/s]	[m]	[m/s]	[m]	[m/s]	
1.25	0.92	1.20	0.22	1.03	0.09	
2.49	0.89	2.39	0.17	2.09	0.02	
3.72	0.81	3.69	0.18	3.10	0.14	
4.96	0.66	4.86	0.19	4.16	0.16	
5.86	0.51	6.04	0.12	5.07	0.28	

Table 3.3 SUMMARY OF RESULTS (S4 Current)

River : Jamuna
S4 - Velocity

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)
Station No. 2

Vertical 16		Vertical 17		Vertical 18		Vertical 19	
Total depth = 4.00 m		Total depth = 4.00 m		Total depth = 3.20 m		Total depth = 4.10 m	
Depth	Velocity	Depth	Velocity	Depth	Velocity	Depth	Velocity
[m]	[m/s]	[m]	[m/s]	[m]	[m/s]	[m]	[m/s]
0.81	0.38	0.78	0.26	1.89	0.54	0.81	0.59
2.37	0.50	2.28	0.21	2.64	0.51	2.40	0.58
3.23	0.37	3.00	0.11	2.80	0.52	3.20	0.52
3.83	0.42	3.77	0.12			3.81	0.43

Vertical 20		Vertical 21		Vertical 22		Vertical 23	
Total depth = 5.75 m		Total depth = 6.00 m		Total depth = 8.60 m		Total depth = 9.20 m	
Depth	Velocity	Depth	Velocity	Depth	Velocity	Depth	Velocity
[m]	[m/s]	[m]	[m/s]	[m]	[m/s]	[m]	[m/s]
1.22	0.81	1.97	0.99	1.59	1.15	1.99	1.45
2.37	0.78	2.20	0.94	3.33	1.16	3.52	1.41
3.59	0.71	3.66	0.88	4.91	1.01	5.26	1.36
5.01	0.61	4.86	0.79	6.57	0.85	6.95	1.19
		5.94	0.64	7.94	0.66	8.71	1.02

Vertical 24		Vertical 25		Qw = 15,963 (m³/s)
Total depth = 9.70 m		Total depth = 6.90 m		
Depth	Velocity	Depth	Velocity	
[m]	[m/s]	[m]	[m/s]	
1.81	1.27	2.00	0.24	
3.60	1.27	2.79	0.37	
5.42	1.13	4.13	1.19	
7.18	1.02	5.52	1.03	
9.23	0.44	6.69	0.85	

Table 3.4 SUMMARY OF RESULTS (S4 Current)

River : Jamuna
S4 - Velocity

Date of Survey : 27 October 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Vertical 1	
Total depth = 3.30 m	
Depth	Velocity
[m]	[m/s]
1.00	0.74
1.94	0.64
2.75	0.59

Vertical 2	
Total depth = 4.10 m	
Depth	Velocity
[m]	[m/s]
0.99	0.73
2.53	0.64
3.63	0.44

Vertical 3	
Total depth = 4.30 m	
Depth	Velocity
[m]	[m/s]
0.99	0.67
2.10	0.60
3.59	0.51
4.26	0.37

Vertical 4	
Total depth = 5.10 m	
Depth	Velocity
[m]	[m/s]
1.03	0.72
2.09	0.69
3.15	0.64
4.17	0.58
4.93	0.38

Vertical 5	
Total depth = 5.90 m	
Depth	Velocity
[m]	[m/s]
1.19	0.64
2.39	0.71
3.54	0.69
4.70	0.59

Vertical 6	
Total depth = 5.95 m	
Depth	Velocity
[m]	[m/s]
1.11	0.51
2.30	0.72
3.40	0.69
4.63	0.58

Vertical 7	
Total depth = 6.60 m	
Depth	Velocity
[m]	[m/s]
1.29	0.68
2.60	0.71
3.80	0.64
5.08	0.59

Vertical 8	
Total depth = 6.40 m	
Depth	Velocity
[m]	[m/s]
1.20	0.54
2.26	0.65
3.70	0.61
4.98	0.58

Vertical 9	
Total depth = 5.25 m	
Depth	Velocity
[m]	[m/s]
0.98	0.42
2.00	0.59
3.01	0.58
3.98	0.51

Vertical 10	
Total depth = 5.40 m	
Depth	Velocity
[m]	[m/s]
1.04	0.42
2.00	0.52
2.99	0.51
3.96	0.41

Qw = 3,461 (m³/s)

Table 3.5 SUMMARY OF RESULTS (S4 Current)

River : Jamuna
Concentration

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Vertical 1		Vertical 2		Vertical 3		Vertical 5	
Total depth = 4.75 m		Total depth = 6.60 m		Total depth = 7.70 m		Total depth = 3.90 m	
Depth	Conc.	Depth	Conc.	Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]
0.50	601.22	0.50	324.22	0.50	296.53	0.50	371.92
1.04	632.63	1.32	376.92	1.54	284.60	1.00	374.24
2.07	672.88	2.65	529.42	3.08	254.33	2.40	444.21
3.11	626.02	3.95	759.28	4.63	423.12	3.40	433.75
4.17	742.86	5.31	837.02	6.16	653.63	3.58	781.13
4.65	1258.20	6.28	9214.50	7.25	976.32		

Vertical 6		Vertical 7		Vertical 8		Vertical 12	
Total depth = 5.40 m		Total depth = 8.50 m		Total depth = 12.64 m		Total depth = 7.50 m	
Depth	Conc.	Depth	Conc.	Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]
0.50	446.91	0.50	405.01	0.51	324.82	0.50	403.13
1.10	388.62	1.52	512.88	2.34	420.09	1.52	438.75
2.15	488.07	3.03	545.11	4.68	562.28	3.07	514.83
3.23	546.62	4.53	601.95	7.09	659.35	4.55	623.84
4.34	693.03	6.15	1309.89	9.35	1040.41	6.07	821.58
5.21	1236.81	8.06	3308.90	12.12	1885.42	7.00	1437.60

Vertical 13		Vertical 14		Vertical 15		Qs = 10,198 (Kg/s)
Total depth = 6.20 m		Total depth = 6.10 m		Total depth = 5.20 m		
Depth	Conc.	Depth	Conc.	Depth	Conc.	
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]	
0.50	330.23	0.50	233.81	0.50	200.81	
1.25	354.88	1.20	235.69	1.03	255.70	
2.49	487.98	2.39	220.67	2.09	218.16	
3.72	548.30	3.69	388.29	3.10	284.80	
4.96	578.49	4.86	417.82	4.16	291.77	
5.86	1438.14			5.07	1138.96	

Table 3.6 SUMMARY OF RESULTS (Suspended Sediment Concentration)

River : Jamuna
Concentration

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Vertical 16	
Total depth = 4.00 m	
Depth	Conc.
[m]	[mg/l]
0.50	236.80
0.81	338.97
2.37	306.76
3.23	413.69
3.83	1356.52

Vertical 17	
Total depth = 4.00 m	
Depth	Conc.
[m]	[mg/l]
0.50	251.70
0.78	166.44
2.28	282.64
3.00	430.12
3.77	419.67

Vertical 18	
Total depth = 3.20 m	
Depth	Conc.
[m]	[mg/l]
0.50	570.51
1.89	706.61
2.64	841.56
2.80	6353.19

Vertical 19	
Total depth = 4.10 m	
Depth	Conc.
[m]	[mg/l]
0.50	448.31
0.81	440.79
2.40	564.47
3.20	636.10
3.81	848.25

Vertical 20	
Total depth = 5.75 m	
Depth	Conc.
[m]	[mg/l]
0.50	599.20
1.22	436.00
2.37	495.00
3.59	520.35
5.01	615.40
5.30	869.75

Vertical 21	
Total depth = 6.00 m	
Depth	Conc.
[m]	[mg/l]
0.50	612.98
1.97	620.20
3.66	363.58
4.86	433.97
5.94	1084.88

Vertical 22	
Total depth = 8.60 m	
Depth	Conc.
[m]	[mg/l]
1.59	388.70
3.33	303.49
4.91	313.84
6.57	315.12
7.94	381.73

Vertical 23	
Total depth = 9.20 m	
Depth	Conc.
[m]	[mg/l]
0.50	228.58
1.99	687.19
3.52	882.50
5.26	1015.74
6.95	557.53
8.71	520.75

Vertical 24	
Total depth = 9.70 m	
Depth	Conc.
[m]	[mg/l]
0.50	
1.81	
5.42	
7.18	
9.23	

Vertical 25	
Total depth = 6.90 m	
Depth	Conc.
[m]	[mg/l]
0.50	431.73
2.00	443.52
2.79	336.23
4.14	359.04
5.52	337.31
6.69	328.17

Qs = 10,198 (Kg/s)

Table 3.7 SUMMARY OF RESULTS (Suspended Sediment Concentration)

River : Jamuna
Concentration

Date of Survey : 27 October 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Vertical 1		Vertical 2		Vertical 3		Vertical 4	
Total depth = 3.30 m		Total depth = 4.10 m		Total depth = 4.30 m		Total depth = 5.10 m	
Depth	Conc.	Depth	Conc.	Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]
0.50	649.96	0.50	509.60	0.50	430.23	0.50	489.65
1.00	586.26	0.99	522.57	0.99	412.04	1.03	381.42
1.94	657.01	2.53	572.23	2.71	445.20	2.09	393.70
2.75	638.52	3.63	744.45	2.59	603.81	3.15	404.32
2.95	403.13	3.79	917.00	4.26	905.03	4.17	627.35

Vertical 5		Vertical 6		Vertical 7		Vertical 8	
Total depth = 5.90 m		Total depth = 5.95 m		Total depth = 6.60 m		Total depth = 6.40 m	
Depth	Conc.	Depth	Conc.	Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]
0.50	548.16	0.50	714.00	1.29	286.25	1.20	308.14
1.19	391.26	1.11	494.75	2.60	300.27	2.23	266.89
2.39	344.42	2.30	321.12	3.80	343.69	3.70	286.74
4.70	408.58	4.63	392.03	5.08	378.89	4.98	339.78
5.60	388.25	5.70	447.58	6.60	331.75	6.20	372.30

Vertical 9		Vertical 10	
Total depth = 5.25 m		Total depth = 5.40 m	
Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]
0.50	343.61	1.04	454.02
0.98	225.73	2.00	321.72
2.00	270.32	2.99	346.58
3.01	298.61	3.96	343.90
3.98	323.65	5.40	494.12
5.10	380.34		

Qw = 1,550 (Kg/s)

Table 3.8 SUMMARY OF RESULTS (Suspended Sediment Concentration)

80
River : Jamuna
Grain size of bed material

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Sample No	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
DHC-2	26/10/93	10:15	0.148	0.188	0.227	0.433	1.628
DHC-3	26/10/93	11:57	0.144	0.198	0.253	0.438	1.677
DHC-4	26/10/93	13:37	0.152	0.196	0.241	0.432	1.614
DHC-5	26/10/93	15:18	0.137	0.167	0.194	0.379	1.535
DHA-2	26/10/93	14:43	0.139	0.176	0.213	0.418	1.642
DHA-1	26/10/93	12:12	0.079	0.105	0.131	0.221	1.608
DHC-1	26/10/93	08:26	0.089	0.131	0.152	0.227	1.555
DHC-3	25/10/93	16:12	0.028	0.047	0.056	0.108	1.866
DHC-2	25/10/93	14:41	0.036	0.055	0.068	0.120	1.753
DHC-1	25/10/93	12:24	0.081	0.125	0.147	0.227	1.632
DHA-4	25/10/93	14:34	0.138	0.160	0.179	0.245	1.299
DHA-3	25/10/93	12:43	0.248	0.296	0.338	0.482	1.357
DHA-2	25/10/93	11:16	0.177	0.260	0.303	0.455	1.562
DHA-1	25/10/93	09:11	0.056	0.088	0.120	0.221	1.913

Date of Survey : 27 October 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Sample No.	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
DHC-1	27/10/93	09:35	0.138	0.163	0.185	0.312	1.338
DHC-2	27/10/93	11:10	0.134	0.164	0.191	0.376	1.543
DHA-3	27/10/93	15:45	0.165	0.253	0.296	0.452	1.613
DHA-2	27/10/93	13:39	0.130	0.153	0.175	0.248	1.345
DHA-1	27/10/93	11:07	0.078	0.106	0.135	0.248	1.702

Table 3. 9 SUMMARY of RESULTS (grain size bed material)

River : Jamuna

Grain size of Suspended sediment

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Sample No	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
A1076	26/10/93	10:20	0.023	0.078	0.134	0.246	3.749
A1069	26/10/93	12:02	0.016	0.036	0.052	0.155	2.760
A1065	26/10/93	13:42	0.016	0.042	0.106	0.232	4.303
A1066	26/10/93	15:24	0.009	0.020	0.029	0.113	3.111
A1068	26/10/93	14:50	0.018	0.038	0.069	0.153	2.786
A929	26/10/93	12:20	0.066	0.108	0.143	0.278	1.905
A1070	26/10/93	08:32	0.026	0.072	0.094	0.205	2.776
A1064	25/10/93	15:17	0.024	0.042	0.052	0.097	1.862
A1075	25/10/93	14:50	0.014	0.027	0.038	0.100	2.462
A1073	25/10/93	12:24	0.018	0.039	0.069	0.158	2.801
A930	25/10/93	14:34	0.010	0.022	0.034	0.204	3.994
A469	25/10/93	12:48	0.015	0.031	0.043	0.207	3.201
A726	25/10/93	11:16	0.008	0.016	0.024	0.093	2.958
A859	25/10/93	09:05	0.006	0.014	0.021	0.059	2.845

Date of Survey : 27 October 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Sample No.	Date	Time	D16 (mm)	D35 (mm)	D50 (mm)	D90 (mm)	Standard Deviation
A927	27/10/93	09:41	0.011	0.022	0.033	0.170	3.485
A928	27/10/93	11:15	0.029	0.111	0.153	0.353	3.569
A1077	27/10/93	15:50	0.008	0.017	0.027	0.095	2.910
A1063	27/10/93	13:46	0.004	0.013	0.021	0.074	3.696
A737	27/10/93	11:05	0.006	0.015	0.021	0.067	2.821

Table 3.10 SUMMARY OF RESULTS (grain size suspended sediment)

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	16:05:26	16:33:46	S3A01T01 *				T	T	T							
Transect	16:36:02	17:04:00	S3A01T02				T	T	T							

transect in PSD 24 data base

* transect in PSD 24 data base

Date of Survey : 24 October 1993

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	07:34:13	08:03:15	S3AP1T01				T	T	T							
Transect	08:06:50	08:33:58	S3AP1T02				T	T	T							
Transect	15:10:56	15:39:03	S3AP1T03				T	T	T							
Transect	15:41:34	16:09:20	S3AP1T04				T	T	T							
Profile	08:53:02	09:22:26	S3AP1P01	27	479837	693886	P	P	P	P	P	4	1	-	-	1
Profile	10:52:30	11:13:25	U3AP2P01	26	479734	693884		P		P		5	-	-	-	1
Profile	10:39:15	11:41:21	S3AP1P02	25	479034	693888	P	P	P	P	P	6	1	-	-	1
Profile	12:16:26	13:03:36	S3AP1P03	23	479414	693889	P	P	P	P	P	6	1	-	-	1
Profile	14:10:26	14:50:44	S3AP1P05	21	479237	693883	P	P	P	P	P	6	-	-	-	-
Profile	11:32:04	11:59:00	U3AP2P02	20	479127	693882		P		P		5	1	-	-	1
Profile	12:15:19	12:32:50	U3AP2P03	19	479024	693867		P		P		4	-	-	-	-
Profile	14:02:57	14:14:59	S3AP2P01	18	478833	693886		P		P		5	1	-	-	1
Profile	14:39:56	14:55:22	S3AP2P02	17	478624	693895		P		P		5	-	-	-	-
Profile	15:16:00	15:34:31	S3AP2P03	16	478437	693883		P		P		6	-	-	-	-
Profile	15:58:58	16:28:44	S3AP2P04	15	478293	693919		P		P		6	-	-	-	-
Profile	16:47:12	17:10:50	S3AP2P05	14	478229	693885		P		P		6	-	-	-	-

Date of Survey : 25 October 1993
Location : Jumuna River at Sirajganj (Left channel)
Station No. 2

Table 2.1 SURVEY PROGRAMME AS MADE

Type	Time		File Name	Var. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	07:46:39	08:14:35	S3AQ1T01				T	T	T							
Transect	08:17:45	08:44:38	S3AQ1T02				T	T	T							
Transect	15:25:11	15:50:56	S3AQ1T03				T	T	T							
Transect	16:05:27	16:33:23	S3AQ1T04				T	T	T							
Profile	09:03:07	09:49:03	S3AQ1P01	24	479542	693883	P	P	P	P	P	6	-	-	-	-
Profile	10:08:08	11:00:21	S3AQ1P02	22	479325	693888	P	P	P	P	P	6	-	-	-	-
Profile	11:38:22	12:33:03	S3AQ1P03	11	477909	393888	P	P	P		P	6	1	-	-	1
Profile	13:16:09	13:58:37	S3AQ1P04	10	477837	393885	P	P	P		P	6	-	-	-	-
Profile	14:16:26	14:56:11	S3AQ1P05	9	477726	393877	P	P	P		P	6	1	-	-	1
Profile	08:05:41	08:39:13	S3AQ2P01	13	478137	393878		P		P		6	1	-	-	1
Profile	08:59:10	09:39:38	S3AQ2P02	12	478022	393878		P		P		6	-	-	-	-
Profile	09:54:21	10:28:12	S3AQ2P03	1	476929	393883		P		P		6	1	-	-	1
Profile	10:50:54	11:24:00	S3AQ2P04	2	477029	393883		P		P		6	-	-	-	-
Profile	11:34:16	12:10:36	S3AQ2P05	3	477115	393880		P		P		6	1	-	-	1
Profile	12:26:14	12:50:30	S3AQ2P06	4	477220	393879		P		P		6	-	-	-	-
Profile	13:23:37	13:47:13	S3AQ2P07	5	477335	393878		P		P		5	1	-	-	1
Profile	14:11:32	14:45:47	S3AQ2P08	6	477425	392886		P		P		6	-	-	-	-
Profile	14:56:37	15:31:05	S3AQ2P09	7	477534	393883		P		P		6	1	-	-	1
Profile	15:53:28	16:31:20	S3AQ2P10	8	477619	393883		P		P		6	-	-	-	-

Date of Survey : 26 October 1993
Location : Jumuna River at Sirajganj (Left channel)
Station No. 2

Table 2.2 SURVEY PROGRAMME AS MADE

88

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples	
Transect	07:54:32	08:02:50	S3AR1T01 *				T	T	T								
Transect	08:12:55	08:25:24	S3AR1T02				T	T	T								
Transect	09:03:00	09:13:55	S3AR1T03				T	T	T								
Transect	16:17:13	16:28:00	S3AR1T04				T	T	T								
Transect	16:29:36	16:40:18	S3AR1T05				T	T	T								
Profile	09:17:31	09:46:26	S3AR2P01	1	472604	695194		P		P		5	1	-	-	1	
Profile	10:08:03	10:33:10	S3AR2P02	2	472771	695092		P		P		5	-	-	-	-	
Profile	10:57:25	11:21:22	S3AR2P03	3	472868	695044		P		P		5	1	-	-	1	
Profile	11:34:46	14:07:22	S3AR2P04	4	472937	694990		P		P		6	-	-	-	-	
Profile	15:21:01	15:57:41	S3AR1P07	5	473033	694936		P		P		6	1	-	-	1	
Profile	14:20:28	14:59:27	S3AR1P06	6	473119	694888		P		P		6	-	-	-	-	
Profile	13:17:02	13:59:48	S3AR1P04	7	473218	694843		P		P		6	1	-	-	1	
Profile	11:49:38	12:25:34	S3AR1P03	8	473288	694783		P		P		6	-	-	-	-	
Profile	10:44:34	11:20:27	S3AR1P02	9	473379	694727		P		P		6	1	-	-	1	
Profile	09:37:10	10:14:04	S3AR1P01	10	473455	694672		P		P		6	-	-	-	-	

* transect in PSD 24 data base

Date of Survey : 27 October 1993

Location : Jumuna River at Sirajganj (Right channel)

Station No. 2

Table 2.3 SURVEY PROGRAMME AS MADE

88

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
0.5 Liter Pump Bottle Samples (Point Integrated)	A215,A225,A528,A529,A207,A572	6	1
	A597,A601,A478,A588,A586,A584	6	2
	A486,A477,A500,A604,A593,A501	6	3
	A483,A481,A493,A503,A450	5	4
	A600,A515,A495,A210,A518	5	5
	A448,A541,A544,A555,A421,A592	6	6
	A576,A585,A578,A589,A554,A599	6	7
	A603,A581,A560,A543,A562,A423	6	8
	A1026,A497,A507,A490,A180,A540	6	9
	A513,A511,A583,A488,A595,A527	6	10
	A440,A529,A502,A491,A513,A520	6	11
	A449,A219,A218,A224,A490,A217	6	12
	A598,A523,A476,A480,A216,A437	6	13
	A639,A551,A557,A548,A634,A558	6	14
	A494,A647,A630,A542,A545,A547	6	15
	A678,A519,A214,A223,A625	5	16
	A508,A484,A485,A524,A227	5	17
	A621,A626,A590,A162	4	18
	A198,A512,A662,A624,A609	5	19
	A231,A221,A514,A441,A194,A222	6	20
	A205,A235,A140,A145,A137,A139	6	21
	A959,A138,A144,A142,A212,A525	6	22
	A842,A579,A220,A236,A492,A211	6	23
	A134,A937,A943,A934,A996,A956	6	24
	A226,A843,A204,A229,A841,A230	6	25
	A653,A591,A516,A487,A164	5	26
	A190,A186,A376,A375	4	27
25 Liter Pump Bottle Samples (Andreasen Tube)	A1076	1	1
	A1069	1	3
	A1065	1	5
	A1066	1	7
	A1068	1	9
	A929	1	11
	A1070	1	13
	A1064	1	15
	A1075	1	17
	A1073	1	19
	A930	1	21
	A469	1	23
	A726	1	25
	A859	1	27
Bed Material Samples (Vanveen)	DHC-2	1	1
	DHC-3	1	3
	DHC-4	1	5
	DHC-5	1	7
	DHA-2	1	9
	DHA-1	1	11
	DHC-1	1	13
	DHC-3	1	15
	DHC-2	1	17
	DHC-1	1	19
	DHA-4	1	21
	DHA-3	1	23
	DHA-2	1	25
	DHA-1	1	27

Date of Survey : 24 - 26 October 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Table 2.4 List of Sediment Samples

84

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
0.5 Liter Pump Bottle Samples (Point Integrated)	A521,A474,A237,,A445,A499	5	1
	A498,A510,A475,A506,A522	5	2
	A165,A482,A479,A232,A489	5	3
	A517,A208,A577,A526,A559,A550	6	4
	A575,A580,A412,A406,A420,A418	6	5
	A561,A574,A602,A419,A402,A563	6	6
	A596,A587,A552,A556,A549,A573	6	7
	A671,A616,A637,A619,A623,A646	6	8
	A658,A672,A670,A682,A673,A408	6	9
	A629,A640,A654,A655,A656,A608	6	10
25 Liter Pump Bottle Samples (Andreasen Tube)	A927	1	1
	A928	1	3
	A1077	1	5
	A1063	1	7
	A737	1	9
Bed Material Samples (Vanveen)	DHC-1	1	1
	DHC-2	1	3
	DHA-3	1	5
	DHA-2	1	7
	DHA-1	1	9

Date of Survey : 27 October 1993

Location : Jumuna River at Sirajganj (Right channel)

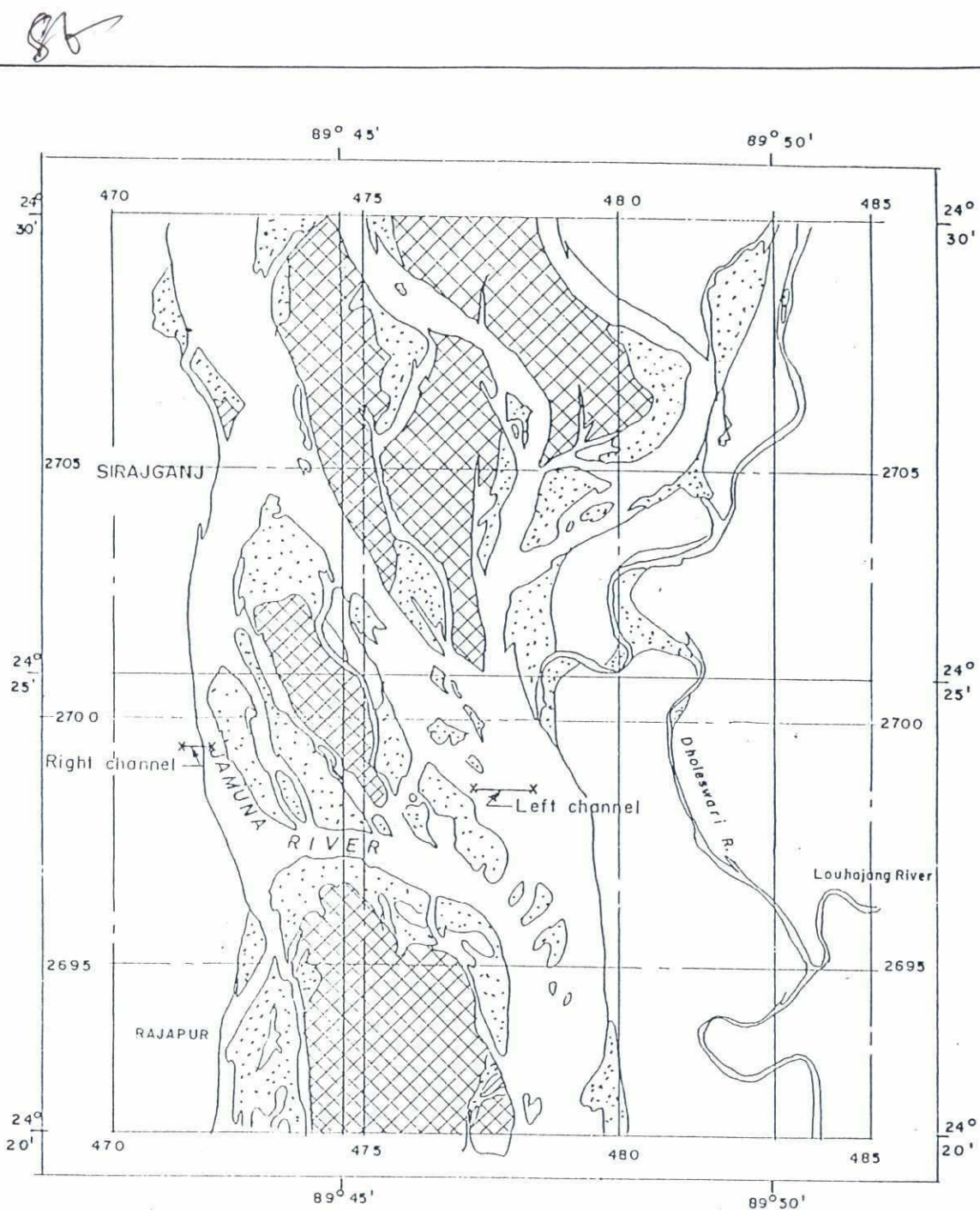
Station No. 2

Table 2.5 List of Sediment Samples

59

Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S3AO1T01 .ase
ADCP/S4/EMF	2	QUATTRO	S3AR1T01 .ase
Echosounder	1	QUATTRO	S3AO1T01 .ech
Echosounder	2	QUATTRO	S3AR1T01 .ech
Sediment transport data	1	QUATTRO	S3AO1T01 .sed
Sediment transport data	2	QUATTRO	S3AR1T01 .sed
Bed load sediment analysis	1	QUATTRO	S3AO1T01 .bdl
Bed load sediment analysis	2	QUATTRO	S3AR1T01 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S3AO1T01 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S3AR1T01 .ssc
Transect plot data	1	QUATTRO	S3AO1T01 .trs
Transect plot data	2	QUATTRO	S3AR1T01 .trs
Iso-velocity plot data	1	MIKE 21	S3AO1T01 .ct2
		MIKE 21	S3AO1T01 .dt2
Iso-velocity plot data	2	MIKE 21	S3AR1T01 .ct2
		MIKE 21	S3AR1T01 .dt2

Table 5.1 PSD 24 Database file description



LEGEND:

- X—X Measurement cross section
- High land
- Unstable/low char
- BWDB Embankment



5000m 2500m 0

Map is based on most recent
Satellite image of March 1993

FAP 24



DELFT-DHI

RIVER SURVEY PROJECT

Delft Hydraulics/Danish Hydraulic Institute
in association with Oosters/Approptech/Hydroland

Survey Bulletin No. 26 - Dec , 1993

Location No 2 : Jamuna River at Sirajganj

File:

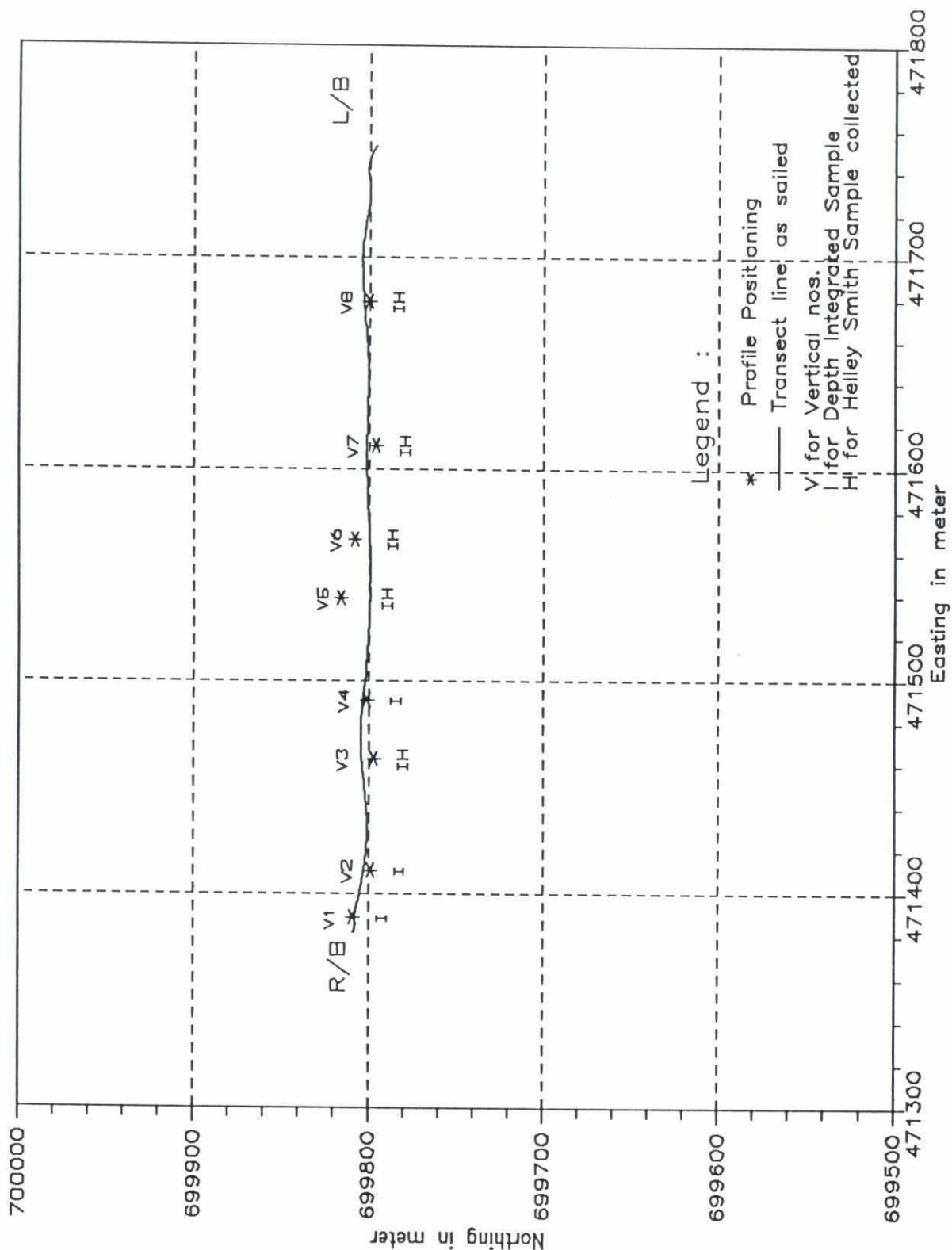
Date:

Scale:

Init:

KEY PLAN

Fig.



FAP 24



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

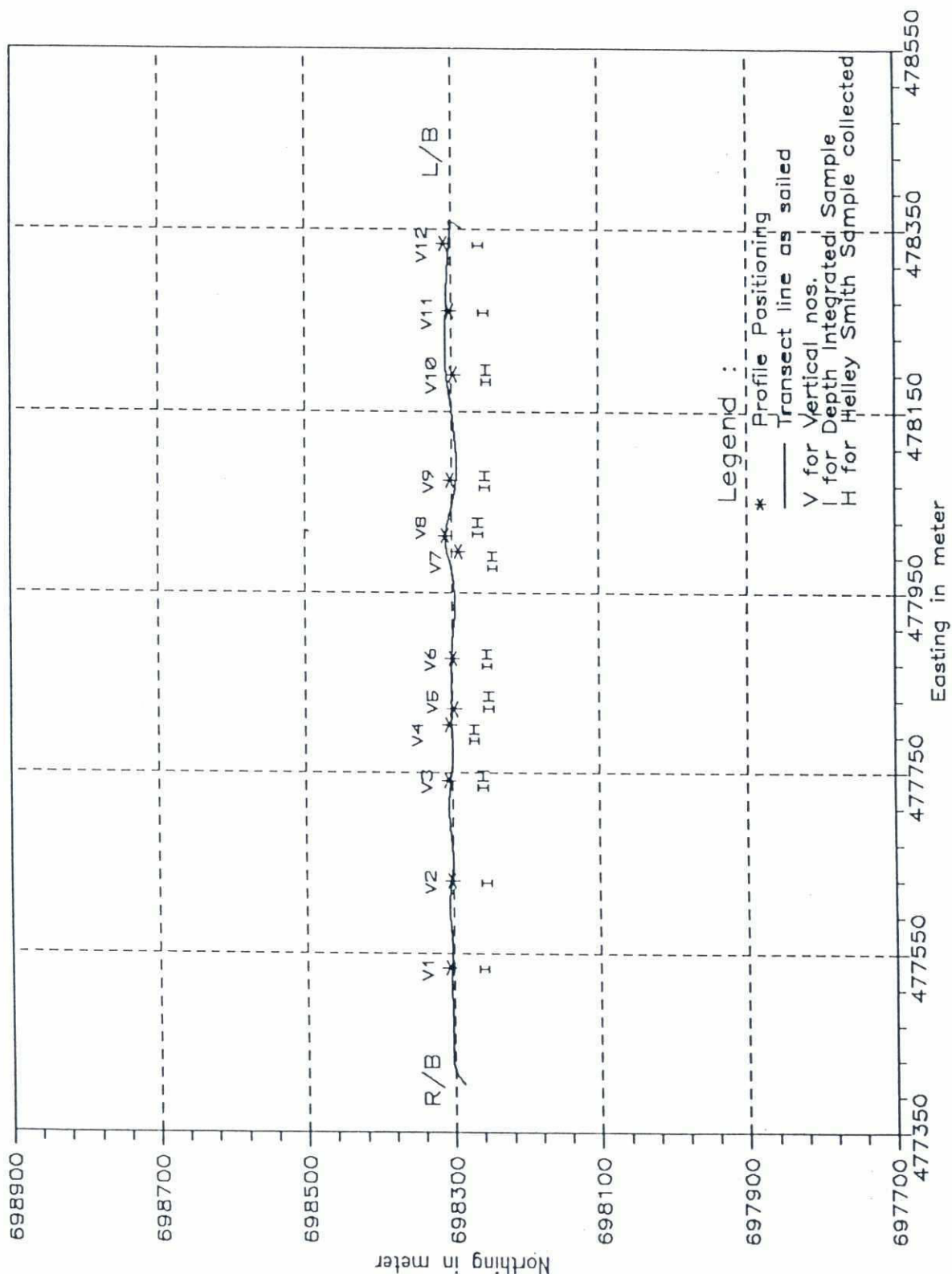
Survey Bulletin 26 : December 1993

Location 2 : Jumuna River, Sirajganj (Right channel)

Date :

Init :

Location of Measurements



FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plain Coordination Organization

Commission of the European Communities

Survey Bulletin 26 : December 1993

Location 2 : Jumuna River, Sirajganj (Left channel)

Date

Init

Location of Measurements

River : Jamuna
ADCP/EMF Discharge

Date of Survey : 07 December 1993
Location : Jamuna River at Sirajganj (Right channel)
Station No. 2

Date	Transect	Bank		Water Level	Total Width	Area	Discharge	Sediment Discharge
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)	(cumec)
07/12/93	S3C71T01	Right	Left	8.81	442	2427	741	1765
07/12/93	S3C71T03	Right	Left	8.81	444	2431	737	2074
07/12/93	S3C71T05	Left	Right	8.81	313	2162	872	1991
07/12/93	S3C71T06	Right	Left	8.81	426	2401	651	1453

Table 3.1 SUMMARY OF RESULTS (ADCP/EMF-discharge)

Date of Survey : 08 December 1993
Location : Jamuna River at Sirajganj (Left channel)

Date	Transect	Bank		Water Level	Total Width	Area	Discharge	Sediment Discharge
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)	(cumec)
08/12/93	S3C81T05	Right	Left	8.78	1220	7586	5926	4589
08/12/93	S3C81T06	Left	Right	8.78	1277	7344	5889	5399

Table 3.2 SUMMARY OF RESULTS (ADCP/EMF-discharge)

02

Sample No.	Vertical No.	Date	Time	Total Depth (m)	Concentration (mg/l)
A710	1	07/12/93	12:28	6.70	167.68
A713	2	07/12/93	13:50	8.70	115.30
A79	3	07/12/93	14:20	10.70	100.30
A1071	4	07/12/93	14:36	11.40	109.35
A1074	5	07/12/93	15:36	11.00	176.61
A1075	6	07/12/93	15:52	3.20	21832.05*
A363	7	07/12/93	16:12	3.20	310.54

* : data invalid

Date of Survey : 07 December 1993

Location : Jumuna River at Sirajganj (Right channel)

Sample No.	Vertical No.	Date	Time	Total Depth (m)	Concentration (mg/l)
A341	1	08/12/93	11:00	4.10	118.54
A701	2	08/12/93	11:22	5.60	160.83
A344	3	08/12/93	11:55	3.90	330.68
A44	4	08/12/93	12:15	7.60	3676.76*
A34	5	08/12/93	12:40	9.30	1543.12*
A700	6	08/12/93	13:25	12.30	2102.18*
A460	7	08/12/93	14:56	16.30	314.79
A919	8	08/12/93	14:21	15.80	116.74
A40	9	08/12/93	15:10	12.50	228.76
A719	10	08/12/93	16:00	6.60	148.22
A35	11	08/12/93	16:20	4.50	160.65
A54	12	08/12/93	16:40	2.80	429.35

* : data invalid

Date of Survey : 08 December 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Table 3.3 SUMMARY OF RESULTS (depth integrated concentration)

96

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
3	0.008772	0.002306
5	0.001894	0.000127
6	0.023465	0.016118
7	0.040789	0.075110
8	0.016831	0.000193

Date of Survey : 07 December 1993

Location : Jumuna River at Sirajganj (Right channel)

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
3	0.013761	0.026590
4	0.052686	0.032950
5	0.133059	0.074068
6	0.096272	0.151151
7	0.006469	0.031524
8	0.006469	0.012171
9	0.007818	0.039145
10	0.000390	0.001621

Date of Survey : 08 December 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Table 3.4 SUMMARY OF RESULTS (sediment transport, bed load)



18

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
A369	07/12/93	14:15	0.302	0.342	0.387	1.325
A74	07/12/93	14:20	0.302	0.342	0.387	1.325
A611	07/12/93	13:35	0.302	0.344	0.392	1.343
A612	07/12/93	13:38	0.2	0.26	0.321	1.726
A610	07/12/93	15:50	0.257	0.301	0.352	1.573
A1072	07/12/93	15:55	0.295	0.334	0.378	1.326
A1070	07/12/93	16:09	0.268	0.309	0.357	1.529
A1010	07/12/93	16:14	0.273	0.315	0.362	1.512
A53	07/12/93	16:21	0.226	0.280	0.334	1.618
A716	07/12/93	16:30	0.213	0.267	0.326	1.635

Date of Survey : 07 December 1993

Location : Jumuna River at Sirajganj (Right channel)

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
A50	08/12/93	11:50	0.191	0.232	0.290	1.620
A52	08/12/93	11:55	0.191	0.232	0.290	1.623
A37	08/12/93	12:12	0.223	0.276	0.331	1.613
A38	08/12/93	12:20	0.212	0.267	0.323	1.633
A347	08/12/93	12:36	0.202	0.251	0.309	1.623
A126	08/12/93	12:44	0.184	0.221	0.272	1.617
A718	08/12/93	13:20	0.261	0.304	0.355	1.598
A905	08/12/93	13:35	0.253	0.297	0.348	1.610
A45	08/12/93	14:45	0.299	0.340	0.387	1.338
A739	08/12/93	14:53	0.311	0.350	0.394	1.302
A702	08/12/93	14:19	0.315	0.355	0.399	1.307
A352	08/12/93	14:28	0.298	0.337	0.381	1.321
A922	08/12/93	15:05	0.295	0.334	0.379	1.330
A747	08/12/93	15:12	0.171	0.211	0.264	1.694
A741	08/12/93	15:53	0.202	0.259	0.318	1.688
A742	08/12/93	16:05	0.248	0.294	0.346	1.628

Date of Survey : 08 December 1993

Location : Jumuna River at Sirajganj (Left channel)

Station No. 2

Table 3.5 SUMMARY of RESULTS (grain size bed load)



Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING				SEDIMENT TRANSPORT GAUGING						
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples	
Transect	10:57:05	11:03:34	S3C71T01					T	T	T							
Transect	11:19:24	11:25:29	S3C71T03					T	T	T							
Transect	11:29:02	11:33:52	S3C71T04					T	T	T							
Transect	16:37:16	16:41:14	S3C71T05*					T	T	T							
Transect	16:44:57	16:49:44	S3C71T06					T	T	T							
Profile	12:24	12:43	S3C71P02	1	471389	699809		P	P	P			-	-	-	1	-
Profile	13:41	14:01	S3C71P03	2	471411	699799		P	P	P			-	-	-	1	-
Profile	14:07	14:20	S3C71P04	3	471463	699797		P	P	P			-	-	2	1	-
Profile	14:30	14:43	S3C71P05	4	471491	699801		P	P	P			-	-	-	1	-
Profile	15:32	15:43	S3C71P06	5	471539	699816		P	P	P			-	-	2	1	-
Profile	15:50	15:55	S3C71P07	6	471567	699808		P	P	P			-	-	2	1	-
Profile	16:09	16:14	S3C71P08	7	471611	699796		P	P	P			-	-	2	1	-
Profile	16:21	16:30	S3C71P09	8	471679	699800		P	P	P			-	-	2	1	-

* transect in PSD 24 data base

Date of Survey : 07 December 1993
Location : Jumuna River at Sirajganj (Right channel)
Station No. 2

Table 2.1 SURVEY PROGRAMME AS MADE

2

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples	
Transect	09:16:55	09:24:42	S3C81T02				T	T	T								
Transect	09:29:02	09:37:03	S3C81T03				T	T	T								
Transect	16:59:23	17:08:15	S3C81T05*				T	T	T								
Transect	17:10:22	17:18:54	S3C81T06				T	T	T								
Profile	10:58	11:06	S3C81P01	1	477535	698307	P	P	P				-	-	-	1	-
Profile	11:19	11:26	S3C81P02	2	477630	698302	P	P	P				-	-	-	1	-
Profile	11:55	11:56	S3C81P05	3	477742	698306	P	P	P				-	-	2	1	-
Profile	12:12	12:20	S3C81P07	4	477804	698305	P	P	P				-	-	2	1	-
Profile	12:36	12:44	S3C81P08	5	477821	698298	P	P	P				-	-	2	1	-
Profile	13:20	13:38	S3C81P09	6	477877	698300	P	P	P				-	-	2	1	-
Profile	14:53	14:58	S3C81P11	7	477996	698292	P	P	P				-	-	2	1	-
Profile	14:19	14:28	S3C81P10	8	478014	698309	P	P	P				-	-	2	1	-
Profile	15:05	15:12	S3C81P12	9	478075	698302	P	P	P				-	-	2	1	-
Profile	15:53	16:14	S3C81P14	10	478190	698298	P	P	P				-	-	-	2	1
Profile	16:19	16:26	S3C81P15	11	478259	698303	P	P	P				-	-	-	1	-
Profile	16:36	16:43	S3C81P16	12	478334	698310	P	P	P				-	-	-	1	-

transect in PSD 24 data base

* transect in PSD 24 data base

Date of Survey : 08 December 1993
 Location : Jumuna River at Sirajganj (Left channel)
 Station No. 2

Table 2.2 SURVEY PROGRAMME AS MADE

99

Type Of Samples	Sample	Total	Vertical
	Nos.	Sample Nos.	No.
Depth Integrated samples	A710	1	1
	A713	1	2
	A79	1	3
	A1071	1	4
	A1074	1	5
	A1075	1	6
	A363	1	7
Helley-Smith Samples	A369,A74	2	3
	A611,A612	2	5
	A610,A1072	2	6
	A1070,A1010	2	7
	A53,A716	2	8

Date of Survey : 07 December 1993

Location : Jumuna River at Sirajganj (Right channel)

Type Of Samples	Sample	Total	Vertical
	Nos.	Sample Nos.	No.
Depth Integrated samples	A341	1	1
	A701	1	2
	A344	1	3
	A44	1	4
	A34	1	5
	A700	1	6
	A460	1	7
	A919	1	8
	A40	1	9
	A719	1	10
	A35	1	11
	A54	1	12
Helley-Smith Samples	A50,A52	2	3
	A37,A38	2	4
	A347,A126	2	5
	A718,A905	2	6
	A45,A739	2	7
	A702,A353	2	8
	A922,A747	2	9
	A741,A742	2	10

Date of Survey : 08 December 1993

Location : Jumuna River at Sirajganj (Left channel)

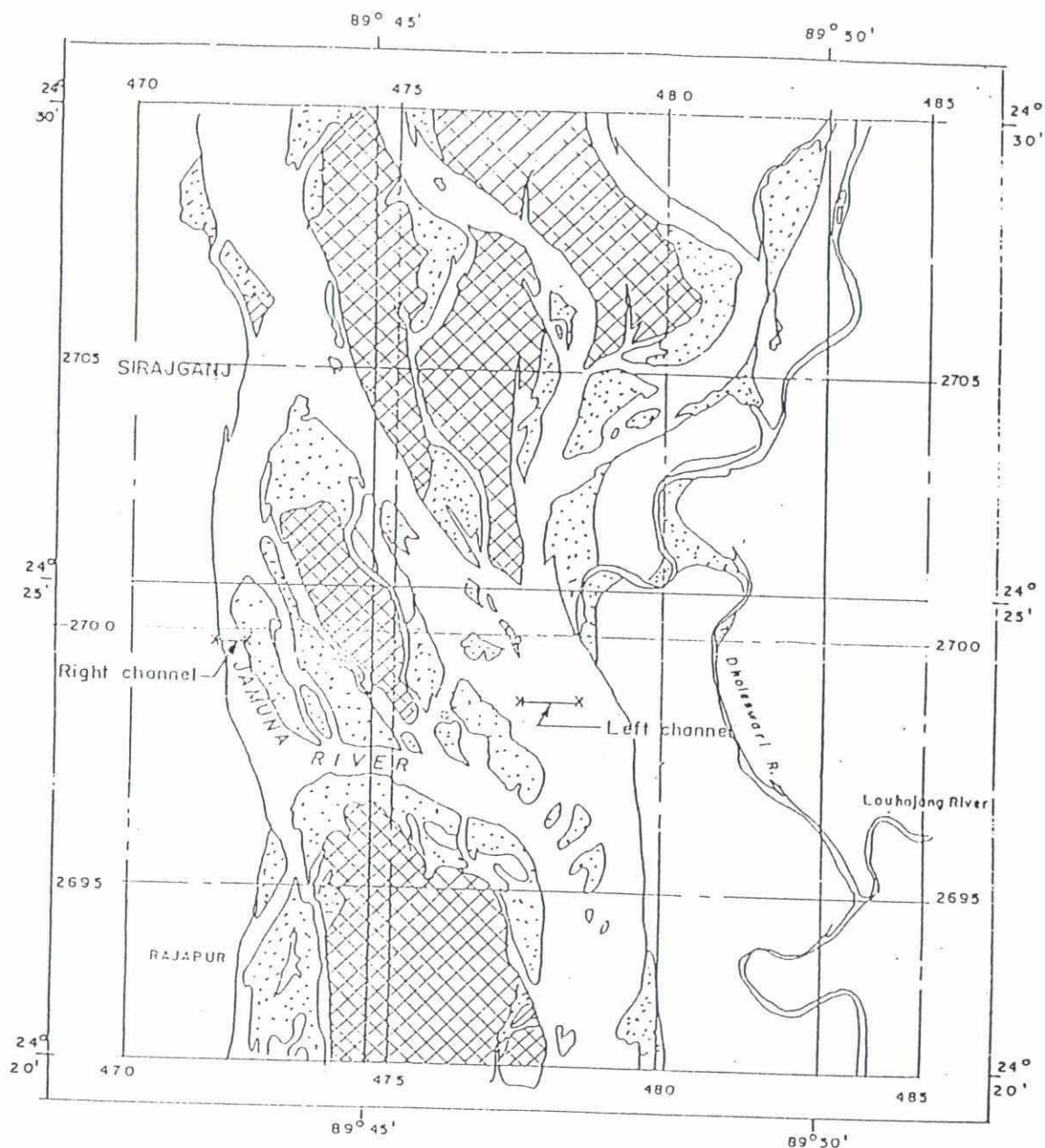
Station No. 2

Table 2.3 List of Sediment Samples

86

Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S3C81T05 .ase
ADCP/S4/EMF	2	QUATTRO	S3C71T05 .ase
Echosounder	1	QUATTRO	S3C81T05 .ech
Echosounder	2	QUATTRO	S3C71T05 .ech
Sediment transport data	1	QUATTRO	S3C81T05 .sed
Sediment transport data	2	QUATTRO	S3C71T05 .sed
Bed load sediment analysis	1	QUATTRO	S3C81T05 .bdl
Bed load sediment analysis	2	QUATTRO	S3C71T05 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S3C81T05 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S3C71T05 .ssc
Transect plot data	1	QUATTRO	S3C81T05 .trs
Transect plot data	2	QUATTRO	S3C71T05 .trs
Iso-velocity plot data	1	MIKE 21	S3C81T05 .ct2
Iso-velocity plot data	1	MIKE 21	S3C81T05 .dt2
Iso-velocity plot data	2	MIKE 21	S3C71T05 .ct2
Iso-velocity plot data	2	MIKE 21	S3C71T05 .dt2

Table 5.1 PSD 24 Database file description



LEGEND:

- X—X Measurement cross section
- [Cross-hatched box] High land
- [Dotted box] Unstable / low char
- [Line with triangles] BWDB Embankment



5000m 2500m 0

Map is based on most recent
Satellite image of March 1993



RIVER SURVEY PROJECT

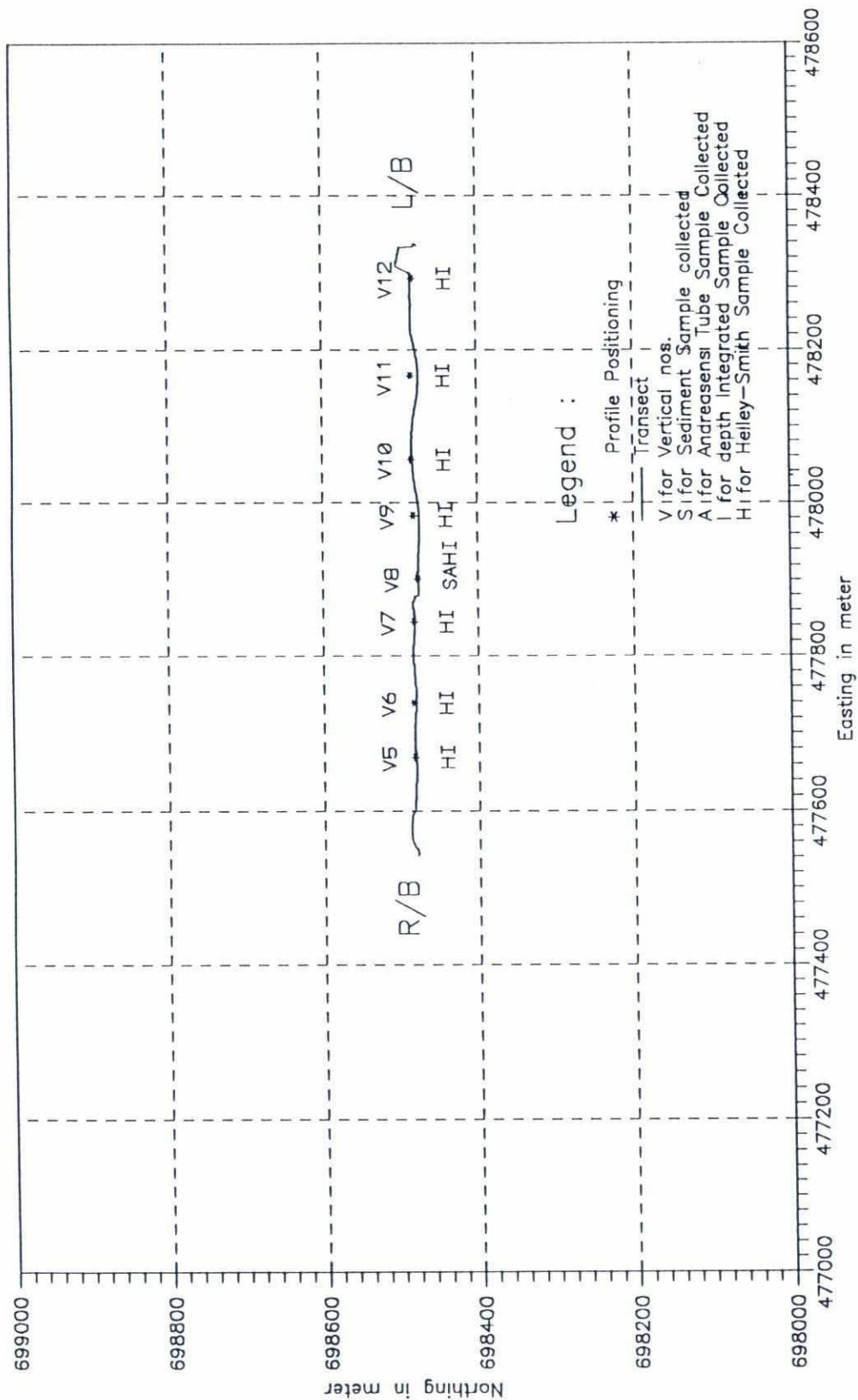
Delft Hydraulics/Danish Hydraulic Institute
in association with Osiris/Appropres h/Hydroland

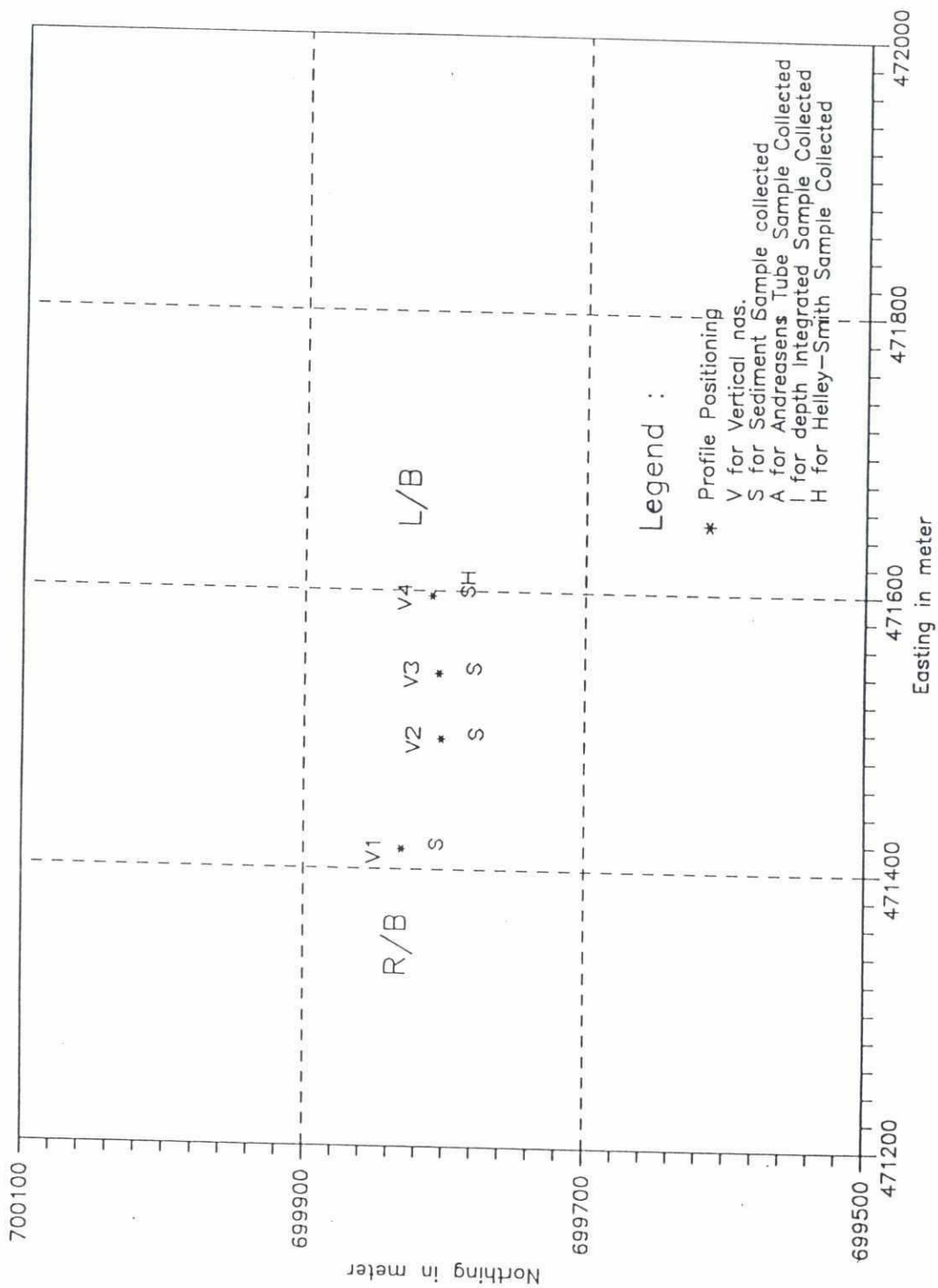
Survey Bulletin No. 30 - Feb , 1994

Location No 2 : Jamuna River at Sirajganj

File:	Date:	KEY PLAN	Fig.
Scale:	Init:		

40





FAP 24



RIVER SURVEY PROJECT

Field Plan Coordination Organisation

Commission of the European Communities

Survey Bulletin 30 : February 1994

Location 2 : Jamuna River, Sirajganj (Right channel)

Location of Measurments

Date

Init

92 ✓
River : Jamuna
ADCP/EMF Discharge

Date of Survey : 03 February 1994
Location : Jamuna River at Sirajganj (Left Channel)
Location No : 2

Date	Transect	Bank		Level	Width	Area	Discharge	Sediment
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)	Transport (Kg/s)
03-02-94	S4231T01	Right	Left	7.65	902	5010	4371	1569
03-02-94	S4231T02	Left	Right	7.65	895	4982	4214	2063
03-02-94	S4231T03	Right	Left	7.65	881	4990	4005	1601
03-02-94	S4231T04	Left	Right	7.65	890	5030	4076	1588
03-02-94	S4231T05	Right	Left	7.65	878	4980	4290	1686
03-02-94	S4231T09	Left	Right	7.65	850	4650	3948	1556

Table 3.1 SUMMARY OF RESULTS (ADCP/EMF-discharge)

Date of Survey : 03 February 1994
Location : Jamuna River at Sirajganj (Right Channel)

Date	Profile File	Bathy File	Level	Width	Area	Discharge	Sediment
			(m+PWD)	(m)	(sq.m)	(cumec)	Transport (Kg/s)
03-02-94	S4232P01	S4232B04	7.65	370	1700	426	31
03-02-94	S4232P03						
03-02-94	S4232P04						
03-02-94	S4232P05						

Table 3.2 SUMMARY OF RESULTS (S4-discharge)

River : Jamuna
S4 Velocity

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Left Channel)

Location No : 2

Vertical 8	
Total depth = 9.60 m	
Depth	Velocity
[m]	[m/s]
0.50	-
1.90	0.88
3.80	0.76
5.80	0.80
7.70	0.70
9.10	0.55

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Right Channel)

Vertical 1	
Total depth = 8.30 m	
Depth	Velocity
[m]	[m/s]
0.50	0.03
1.70	0.05
3.30	0.04
5.00	0.02
6.60	0.04
7.20	0.05

Vertical 2	
Total depth = 10.20 m	
Depth	Velocity
[m]	[m/s]
0.50	0.18
2.00	0.13
4.10	0.12
6.10	0.19
8.20	0.17
9.22	0.12

Vertical 3	
Total depth = 9.20 m	
Depth	Velocity
[m]	[m/s]
0.50	0.53
1.80	0.57
3.70	0.43
5.50	0.33
7.40	0.35
8.80	0.37

Vertical 4	
Total depth = 2.10 m	
Depth	Velocity
[m]	[m/s]
0.30	0.58
1.30	0.70
1.70	0.65

Qw= 426 (m³/s)

Table 3.2 SUMMARY OF RESULTS (S4 Current)

28

River : Jamuna
Concentration

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Left Channel)

Location No : 2

Vertical 8	
Total depth = 9.60 m	
Depth	Conc.
[m]	[mg/l]
0.50	181.48
1.90	299.91
3.80	362.89
5.80	306.79
7.70	398.73
9.10	565.25

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Right Channel)

Vertical 1	
Total depth = 8.30 m	
Depth	Conc.
[m]	[mg/l]
0.50	35.66
1.70	44.23
3.30	45.77
5.00	48.49
6.60	49.74
7.20	55.41

Vertical 2	
Total depth = 10.20 m	
Depth	Conc.
[m]	[mg/l]
0.50	55.22
2.00	56.33
4.10	63.30
6.10	66.12
8.20	66.49
9.22	75.84

Vertical 3	
Total depth = 9.20 m	
Depth	Conc.
[m]	[mg/l]
0.50	57.80
1.80	67.60
3.70	68.58
5.50	72.34
7.40	77.14
8.80	81.05

Vertical 4	
Total depth = 2.10 m	
Depth	Conc.
[m]	[mg/l]
0.30	68.58
1.30	93.15
1.70	96.14

$Q_s = 31.00 \text{ (kg/s)}$

Table 3.3 SUMMARY OF RESULTS (Suspended Sediment Concentration)

River : Jamuna
Depth integrated concentration

Date of Survey : 03 February 1994
Location : Jamuna River at Sirajganj (Left Channel)
Location No : 2

Sample No.	Vertical No.	Date	Time	Total Depth (m)	Concentration (mg/l)
A465	5	03/02/94	17:10	5.70	250.14
A340	6	03/02/94	16:38	5.60	77.17
A46	7	03/02/94	15:50	7.50	786.79
A38	8	03/02/94	16:12	9.60	455.25
A335	9	03/02/94	15:26	11.00	107.59
A1161	10	03/02/94	14:55	6.80	108.09
A904	11	03/02/94	14:34	5.20	1236.60*
A333	12	03/02/94	13:55	2.60	155.63

* : data invalid

Table 3.4 SUMMARY OF RESULTS (depth integrated concentration)

29

River : Jamuna

Bed load

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Left Channel)

Location No : 2

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
5	0.061458	0.051480
6	0.038816	0.035088
7	0.002097	0.001238
8	0.000623	0.001398
9	0.000271	0.000307
10	0.001876	0.024232
11	0.000270	0.001055
12	0.000446	0.000503

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Right Channel)

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
4	0.001521	0.000561

Table 3.5 SUMMARY of RESULTS (sediment transport, bed load)

29

River : Jamuna

Grain size of bed load

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Left Channel)

Location No : 2

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
A747	03/02/94	17:09	0.150	0.173	0.201	1.406
A718	03/02/94	17:25	0.166	0.192	0.223	1.516
A109	03/02/94	13:40	0.140	0.164	0.192	1.562
A364	03/02/94	16:33	0.133	0.157	0.185	1.598
A48	03/02/94	15:45	0.175	0.204	0.238	1.571
A130	03/02/94	15:50	0.150	0.175	0.205	1.462
A739	03/02/94	16:22	0.218	0.278	0.338	1.721
A126	03/02/94	16:02	0.252	0.298	0.352	1.710
A43	03/02/94	15:24	0.169	0.199	0.234	1.600
A346	03/02/94	15:30	0.174	0.213	0.267	1.703
A1145	03/02/94	14:54	0.162	0.185	0.212	1.388
A1163	03/02/94	15:00	0.178	0.209	0.245	1.582
A1134	03/02/94	14:29	0.161	0.186	0.215	1.463
A711	03/02/94	14:35	0.202	0.255	0.318	1.672
A355	03/02/94	13:53	0.139	0.165	0.196	1.623
A903	03/02/94	14:00	0.136	0.161	0.192	1.627

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Right Channel)

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
A922	03/02/94	13:36	0.286	0.326	0.372	1.409
A42	03/02/94	13:50	0.250	0.294	0.345	1.607

Table 3.6 SUMMARY OF RESULTS (grain size bed load)

28

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING									
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andraesen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples					
Transect	10:51:48	10:58:27	S4231T01*				T	T	T												
Transect	11:02:06	11:10:39	S4231T02				T	T	T												
Transect	11:17:54	11:23:50	S4231T03				T	T	T												
Transect	11:28:11	11:37:00	S4231T04				T	T	T												
Transect	17:01:09	17:07:06	S4231T05				T	T	T												
Profile	13:53:00	14:12:00	S4231P01	12	478292	698483	P	P	P			-					2		1		-
Profile	14:29:00	14:41:00	S4231P02	11	478166	698485	P	P	P			-					2		1		-
Profile	14:54:00	15:03:00	S4231P03	10	478055	698483	P	P	P			-					2		1		-
Profile	15:26:00	15:29:00	S4231P04	9	477983	698483	P	P	P			-					2		1		-
Profile	16:02:00	16:28:00	S4232P06	8	477902	698478	P	P	P	P		6					2		1		-
Profile	15:45:00	00:00:00	S4231P05	7	477845	698483	P	P	P			-					2		1		-
Profile	16:33:00	16:43:00	S4231P06	6	477739	698484	P	P	P			-					2		1		-
Profile	17:09:00	17:36:00	S4232P07	5	477669	698483	P	P	P			-					2		1		-

* transect in FAP 24 data base

Date of Survey : 03 February 1994
Location : Jamuna River at Sirajganj (Left Channel)
Location No : 2

Table 2.1 SURVEY PROGRAMME AS MADE

Type	Time		File Name	Ver. No	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING									
							ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andraesen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples					
Echo-sounding	14:13	14:18	S4232B04*																		
Profile	10:22:00	10:50:00	S4232P01	1	471414	699830															
Profile	11:25:00	11:56:00	S4232P03	2	471493	699802															
Profile	12:36:00	13:05:00	S4232P04	3	471540	699804															
Profile	13:36:00	13:55:00	S4232P05	4	471596	699809															

* echo-sounding in PSD 24 data base

Date of Survey : 03 February 1994
Location : Jamuna River at Sirajganj (Right Channel)

Table 2.2 SURVEY PROGRAMME AS MADE

262

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
Point Integrated Samples	A1205,A1206,A1211,A1202,A1201,A1189	6	8
Depth Integrated samples	A465	1	5
	A340	1	6
	A46	1	7
	A38	1	8
	A335	1	9
	A1161	1	10
	A904	1	11
	A333	1	12
Helley-Smith Samples	A747,A718	2	5
	A364,A109	2	6
	A48,A130	2	7
	A126,A739	2	8
	A346,A43	2	9
	A1145,A1163	2	10
	A1134,A711	2	11
	A335,A903	2	12

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Left Channel)

Location No : 2

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
Point Integrated Samples	A1173,A1181,A1179,A1170,A1174,A1180	6	1
	A1184,A1185,A1207,A1165,A1169,A1177	6	2
	A1188,A1187,A1190,A1168,A1167,A1186	6	3
	A1166,A1182,A1204	3	4
Helley-Smith Samples	A922,A42	2	4

Date of Survey : 03 February 1994

Location : Jamuna River at Sirajganj (Right Channel)

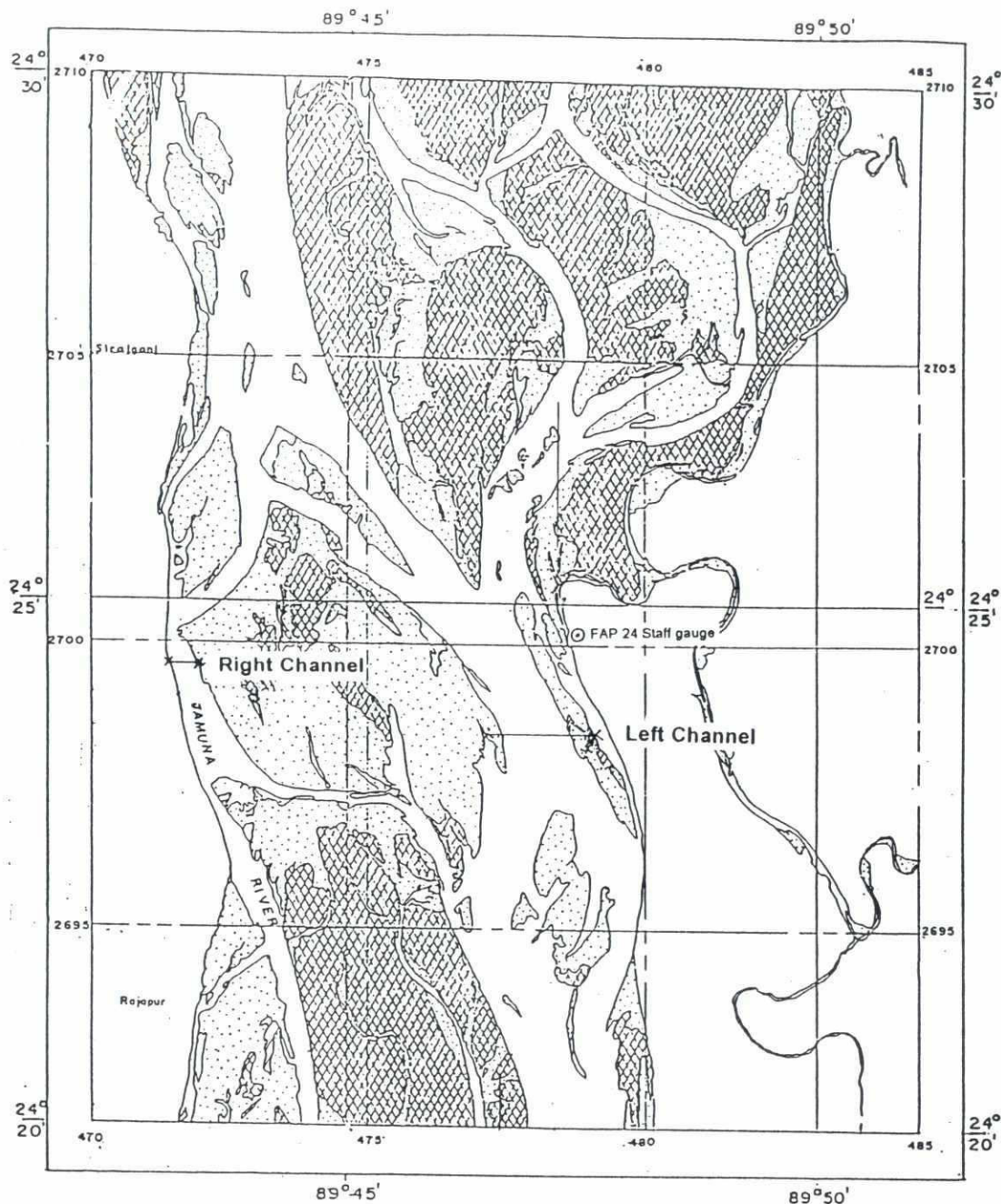
Location No : 2

Table 2.3 List of Sediment Samples

QD

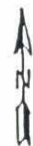
Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S4231T01 .ase
ADCP/S4/EMF	2	QUATTRO	S4232B04 .ase
Echosounder	1	QUATTRO	S4231T01 .ech
Echosounder	2	QUATTRO	S4232B04 .ech
Sediment transport data	1	QUATTRO	S4231T01 .sed
Sediment transport data	2	QUATTRO	S4232B04 .sed
Bed load sediment analysis	1	QUATTRO	S4231T01 .bdl
Bed load sediment analysis	2	QUATTRO	S4232B04 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S4231T01 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S4232B04 .ssc
Transect plot data	1	QUATTRO	S4231T01 .trs
Transect plot data	2	QUATTRO	S4232B04 .trs
Iso-velocity plot data	1	MIKE 21	S4231T01 .ct2
Iso-velocity plot data	1	MIKE 21	S4231T01 .dt2
Iso-velocity plot data	2	MIKE 21	S4232B04 .ct2
Iso-velocity plot data	2	MIKE 21	S4232B04 .dt2

Table 5.1 PSD 24 Database file description



LEGEND:-

- X-X Measurement cross section
- High land
- Unstable/low char
- BWDB Embankment
- FAP 24 Staff gauge



Map is based on satellite images of March 1994



RIVER SURVEY PROJECT

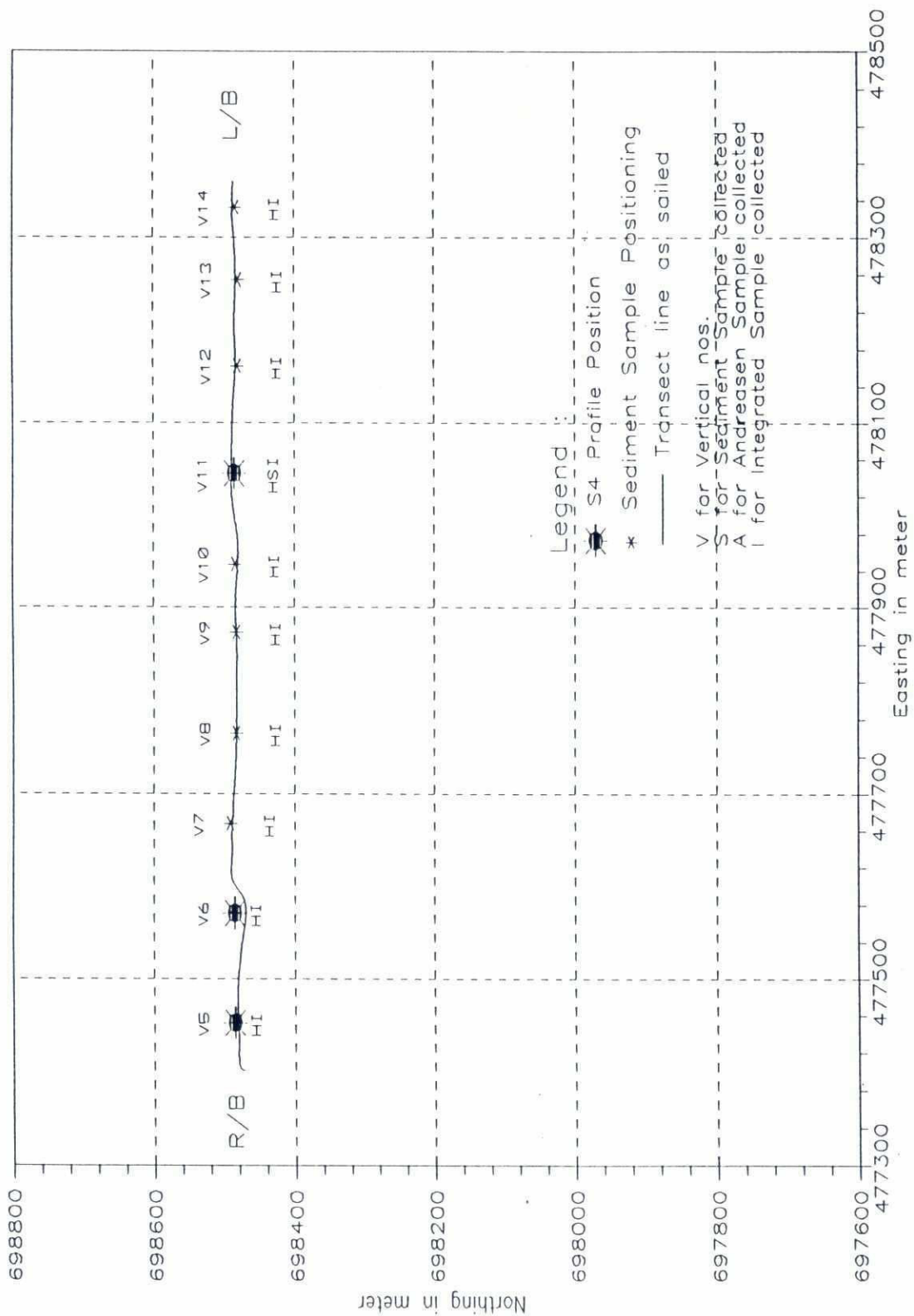
Delft Hydraulics/Danish Hydraulic Institute
in association with Osiris/Protech/Hydroland

Survey Bulletin No. 41 - March, 1994

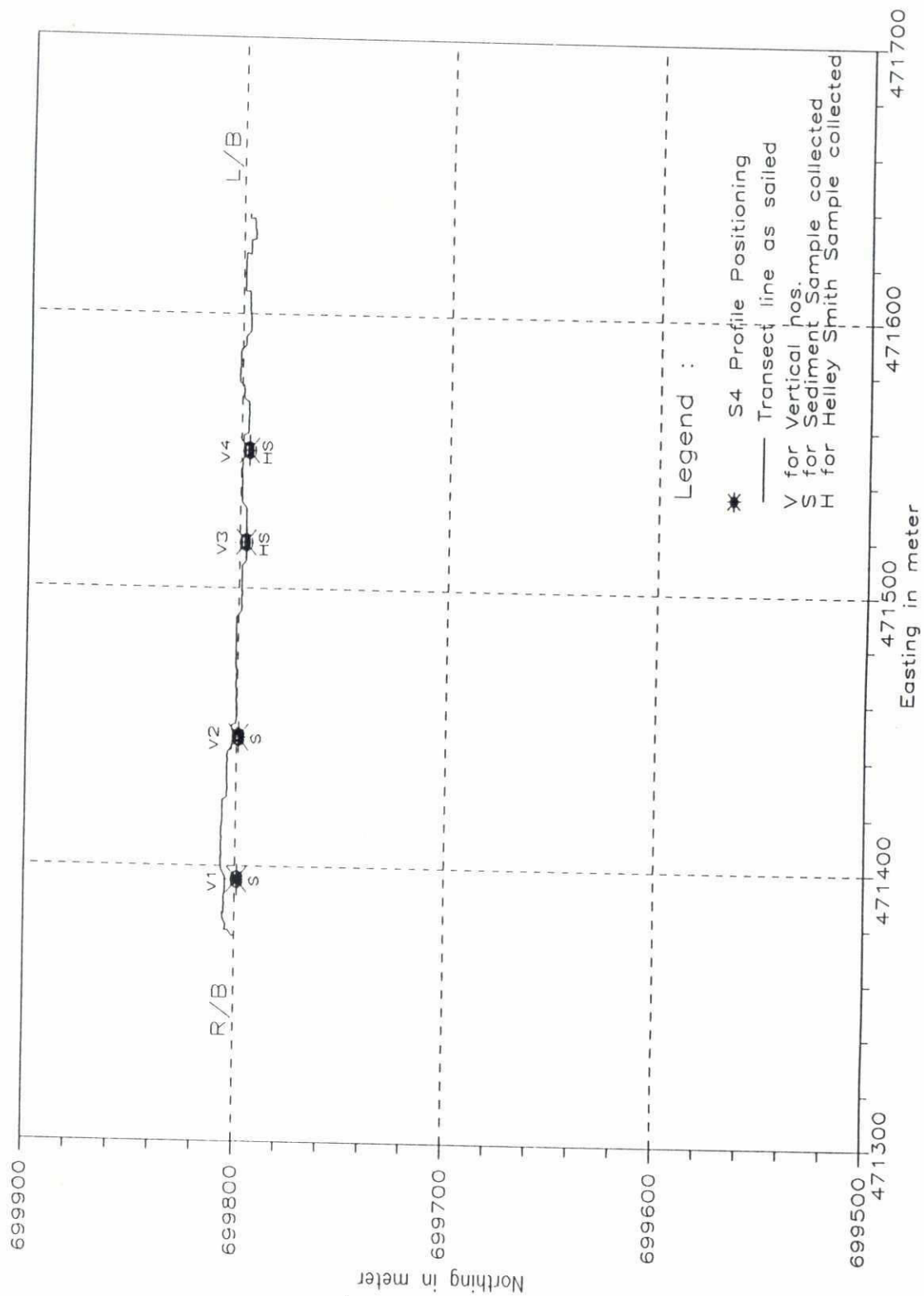
Location No.2 : Jamuna River at Sirajganj

File:	Date:	KEY PLAN	Fig.
Scale:	Init:		

92



96



FAP 24



DELFT · DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 41 : 19 March 1994

Location 2 : Jumuna River, Sirajganj (Right Channel)

Location of Measurements

Date

Init

98

River : Jamuna
ADCP/EMF Discharge

Date of Survey : 19 March 1994
Location : Jumuna River at Sirajganj (Left Channel)
Station No. 2

Date	Transect	Bank		Water Level	Total Width	Area	Discharge	Sediment Transport
		From	To	(m+PWD)	(m)	(sq.m)	(cumec)	(Kg/S)
19/03/94	S43J1T01	Left	Right	7.57	1069	5346	3964	292
19/03/94	S43J1T03	Right	Left	7.57	1083	5443	4018	300
19/03/94	S43J1T04	Right	Left	7.57	1099	5493	4054	293
19/03/94	S43J1T05	Left	Right	7.58	1107	5487	4355	318
19/03/94	S43J1T06	Right	Left	7.58	1105	5462	4245	319

Table 3.1 SUMMARY OF RESULTS (ADCP/EMF-discharge)

98

River : Jamuna
S4 Discharge

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Right Channel)

Station No. 2

Date	Profile File	Bathy File	Water Level	Total Width	Area	Discharge	Sediment Transport
			(m+PWD)	(m)	(sq.m)	(cumec)	(Kg/s)
19/03/94	S43J2P01	S43J2T01	7.57	300	1824	239	16
19/03/94	S43J2P02	S43J2T02	7.57	313	1907	285	20
19/03/94	S43J2P04	S43J2T04	7.58	307	1761	251	16
19/03/94	S43J2P05		7.58				

Table 3.2 SUMMARY OF RESULTS (S4-discharge)



93

River : Jamuna
S4 Velocity

Date of Survey : 19 March 1994
Location : Jumuna River at Sirajganj (Right Channel)
Station No. 2

Vertical 1		Vertical 2		Vertical 3		Vertical 4	
Total depth = 6.10 m		Total depth = 9.70 m		Total depth = 10.30 m		Total depth = 3.20 m	
Depth	Vel.	Depth	Vel.	Depth	Vel.	Depth	Vel.
[m]	[m/s]	[m]	[m/s]	[m]	[m/s]	[m]	[m/s]
1.18	0.05	1.85	0.18	2.10	0.42	0.66	0.56
2.38	0.06	3.87	0.14	4.07	0.38	1.86	0.49
3.68	0.07	5.75	0.12	6.20	0.38	2.62	0.44
4.92	0.04	7.84	0.09	8.17	0.35		
5.70	0.05	8.77	0.04	9.60	0.26		

Qw = 258 (m³/s)

Table 3.3 SUMMARY OF RESULTS (S4 Current)

Date of Survey : 19 March 1994
Location : Jumuna River at Sirajganj (Left Channel)
Station No. 2

Vertical 5		Vertical 6		Vertical 11	
Total depth = 4.00 m		Total depth = 5.50 m		Total depth = 7.80 m	
Depth	Conc.	Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]
1.05	0.98	0.53	1.32	0.50	0.44
2.45	0.93	1.57	1.20	1.56	0.74
3.49	0.72	2.71	1.09	3.12	0.76
		3.73	0.98	4.68	0.66
		4.41	0.99	6.24	0.55
				6.82	0.52

Qw = 3,747 (m³/s)

Table 3.4 SUMMARY OF RESULTS (S4 Current)



River : Jamuna
Concentration

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Right Channel)

Station No. 2

Vertical 1		Vertical 2		Vertical 3		Vertical 4	
Total depth = 6.10 m		Total depth = 9.70 m		Total depth = 10.30 m		Total depth = 3.20 m	
Depth	Conc.	Depth	Conc.	Depth	Conc.	Depth	Conc.
[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]	[m]	[mg/l]
0.50	31.99	0.50	30.56	0.50	70.87	0.66	40.97
1.18	29.52	1.85	31.99	2.10	60.53	1.86	93.37
2.38	29.98	3.87	38.12	4.07	60.38	2.62	104.27
3.68	31.28	5.75	40.58	6.20	70.88		
4.92	33.61	7.84	42.97	8.17	73.78		
5.70	34.75	8.77	70.89				

Qs = 17.31 (Kg/s)

Table 3.5 SUMMARY OF RESULTS (Suspended Sediment Concentration)

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Left Channel)

Station No. 2

Vertical 11	
Total depth = 7.80 m	
Depth	Conc.
[m]	[mg/l]
0.50	44.34
1.56	64.00
3.12	72.04
4.68	95.29
6.24	125.97
6.82	80.62

Qs = 387.96 (Kg/s)

Table 3.6 SUMMARY OF RESULTS (Suspended Sediment Concentration)

98
River : Jamuna

Depth integrated concentration

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Left Channel)

Station No. 2

Sample No.	Vertical No.	Date	Time	Total Depth (m)	Concentration (mg/l)
A1156	5	19/03/94		4.00	77.40
A704	6	19/03/94	16:55	5.50	142.89
A34	7	19/03/94	17:22	5.30	119.26
A37	8	19/03/94		5.40	101.67
A696	9	19/03/94	15:54	5.70	95.06
A690	10	19/03/94	15:32	6.20	109.07
A340	11	19/03/94	14:13	7.80	72.67
A699	12	19/03/94	12:57	6.70	60.31
A461	13	19/03/94	12:33	6.90	47.09
A1144	14	19/03/94	11:55	3.90	23.05

Table 3.7 SUMMARY OF RESULTS (depth integrated concentration)

River : Jamuna

Bed load

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Left Channel)

Station No. 2

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
5	0.004237	0.005482
6	0.057127	0.003673
7	0.001042	0.002865
8	0.002846	0.006283
9	0.024836	0.024836
10	0.000317	0.000296
11	0.000067	0.000358
12	0.000149	0.000590
13	0.000424	0.002102
14	0.012116	0.017050

Table 3.8 SUMMARY OF RESULTS(sediment transport, bed load)

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Right Channel)

Station No. 2

Helley-Smith samples		
Vertical no.	Bed load sb in Kg/ms	
	1	2
3	0.000257	-
4	0.008169	0.000398

Table 3.9 SUMMARY OF RESULTS(sediment transport, bed load)

River : Jamuna
Grain size of bed load

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Left Channel)

Station No. 2

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
A53	19/03/94	14:10	0.255	0.299	0.351	1.578
A75	19/03/94	14:20	0.182	0.216	0.259	1.600
A1154	19/03/94	16:50	0.165	0.190	0.220	1.493
A881	19/03/94	17:00	0.275	0.317	0.365	1.516
A1142	19/03/94	17:15	0.176	0.208	0.246	1.595
A924	19/03/94	17:20	0.183	0.219	0.268	1.615
A352	19/03/94	16:50	0.221	0.274	0.328	1.605
A1158	19/03/94	16:55	0.209	0.260	0.317	1.613
A695	19/03/94	15:54	0.176	0.204	0.238	1.559
A695	19/03/94	15:54	0.176	0.204	0.238	1.559
A350	19/03/94	16:00	0.173	0.200	0.232	1.537
A353	19/03/94	15:32	0.170	0.201	0.236	1.596
A349	19/03/94	15:40	0.163	0.189	0.219	1.491
A354	19/03/94	14:13	0.179	0.222	0.280	1.689
A697	19/03/94	14:30	0.256	0.301	0.354	1.608
A355	19/03/94	12:57	0.194	0.251	0.311	1.705
A1141	19/03/94	13:05	0.296	0.338	0.386	1.348
A35	19/03/94	12:33	0.166	0.191	0.221	1.501
A904	19/03/94	12:38	0.185	0.222	0.274	1.633
A459	19/03/94	11:53	0.118	0.146	0.178	1.674
A51	19/03/94	12:03	0.143	0.167	0.194	1.506

Table 3.10 SUMMARY OF RESULTS (grain size bed load)

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Right Channel)

Station No. 2

Sample No	Date	Time	D35 (mm)	D50 (mm)	D65 (mm)	Standard Deviation
A32	19/03/94	12:25	0.218	0.274	0.333	1.652
A31	19/03/94	13:27	0.199	0.246	0.304	1.617
A693	19/03/94	13:31	0.266	0.311	0.364	1.581

Table 3.11 SUMMARY OF RESULTS (grain size bed load)

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING					SEDIMENT TRANSPORT GAUGING				
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Transect	08:19:09	08:27:26	S43J1T01				T	T	T							
Transect	08:32:26	08:35:45	S43J1T02				T	T	T							
Transect	08:45:13	08:53:32	S43J1T03				T	T	T							
Transect	09:01:41	09:10:27	S43J1T04*				T	T	T							
Transect	16:44:29	16:54:11	S43J1T05				T	T	T							
Transect	16:58:52	17:07:33	S43J1T06				T	T	T							
Profile	15:52:30	16:20:32	S43J2P07	5	477452	698485	P	P	P	P		-	-	2	1	-
Profile	16:50:38	17:18:50	S43J2P08	6	477571	698485	P	P	P	P		-	-	2	1	-
Profile	17:18:22	17:23:06	S43J1P08	7	477668	698491	P	P	P			-	-	2	1	-
Profile	16:19:00	16:31:57	S43J1P07	8	477765	698482	P	P	P			-	-	2	1	-
Profile	15:54:33	16:08:21	S43J1P06	9	477873	698482	P	P	P			-	-	2	1	-
Profile	15:32:14	15:42:16	S43J1P05	10	477947	698484	P	P	P			-	-	2	1	-
Profile	14:13:24	15:06:43	S43J1P04	11	478044	698485	P	P	P	P		6	-	2	1	-
Profile	12:56:46	13:09:33	S43J1P03	12	478162	698480	P	P	P			-	-	2	1	-
Profile	12:33:07	12:44:33	S43J1P02	13	478254	698479	P	P	P			-	-	2	1	-
Profile	11:53:16	12:09:07	S43J1P01	14	478332	698483	P	P	P			-	-	2	1	-

* transect in PSD 24 data base

Date of Survey : 19 March 1994
Location : Jumuna River at Sirajganj (Left Channel)
Station No. 2

Table 2.1 (SURVEY PROGRAMME AS MADE)

Type	Time		File Name	Ver. No.	Easting (meter)	Northing (meter)	DISCHARGE GAUGING				SEDIMENT TRANSPORT GAUGING					
	From	To					ADCP	HYDRO	EMF	S4	MEX	Suspended Sediment Samples	Andreasen Tube Samples	Helley Smith Samples	Integrated Sediment Samples	Bottom Samples
Echo - sounding	08:07:00	08:10:00	S43J2T01*					B								
Profile	09:38:29	10:07:31	S43J2P01	1	471395	699799		P		P		6	-	-	-	-
Profile	10:57:02	11:28:30	S43J2P02	2	471446	699799		P		P		6	-	-	-	-
Profile	12:14:35	12:52:12	S43J2P04	3	471517	699797		P		P		6	-	1	-	-
Profile	13:16:58	13:42:45	S43J2P05	4	471550	699796		P		P		3	-	2	-	-

* transect in PSD 24 data base

Date of Survey : 19 March 1994
Location : Jumuna River at Siraiganj (Right Channel)
Station No. 2

Table 2.2 (SURVEY PROGRAMME AS MADE)

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
Point Integrated Samples	A1333,A1305,A1340,A1320,A1246,A1274	6	11
Depth Integrated samples	A1156	1	5
	A704	1	6
	A34	1	7
	A37	1	8
	A696	1	9
	A690	1	10
	A340	1	11
	A699	1	12
	A461	1	13
	A1144	1	14
Helley-Smith Samples	A53,A75	2	5
	A1154,A881	2	6
	A1142,A924	2	7
	A352,A1158	2	8
	A695,A350	2	9
	A353,A343	2	10
	A354,A697	2	11
	A355,A1141	2	12
	A35,A904	2	13
	A459,A51	2	14

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Left Channel)

Station No. 2

Table 2.3 List of Sediment Samples

Type Of Samples	Sample Nos.	Total Sample Nos.	Vertical No.
Point Integrated Samples	A1203,A1233,A1300,A1234,A1215,A1216	6	1
	A1210,A1220,A1232,A1289,A1245,A1230	6	2
	A1241,A1208,A1183,A1257,A1331,A1244	6	3
	A1273,A1248,A1342	3	4
Helley-Smith Samples	A32	1	3
	A31,A693	2	4

Date of Survey : 19 March 1994

Location : Jumuna River at Sirajganj (Right Channel)

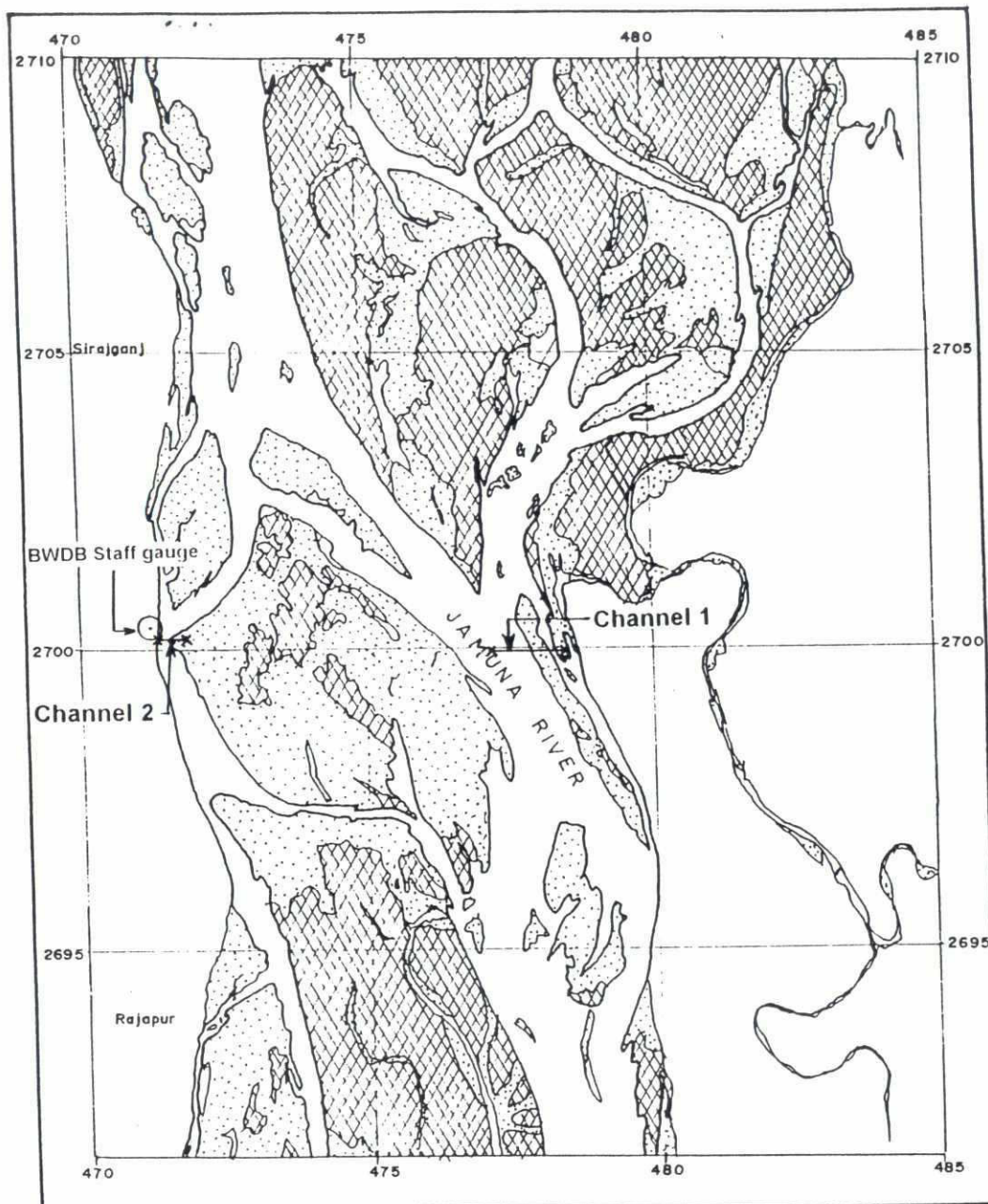
Station No. 2

Table 2.4 List of Sediment Samples

68

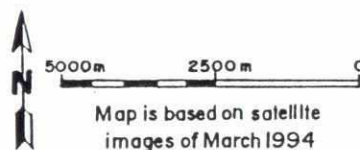
Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S43J1T04 .ase
ADCP/S4/EMF	2	QUATTRO	S43J2T01 .ase
Echosounder	1	QUATTRO	S43J1T04 .ech
Echosounder	2	QUATTRO	S43J2T01 .ech
Sediment transport data	1	QUATTRO	S43J1T04 .sed
Sediment transport data	2	QUATTRO	S43J2T01 .sed
Bed load sediment analysis	1	QUATTRO	S43J1T04 .bdl
Bed load sediment analysis	2	QUATTRO	S43J2T01 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S43J1T04 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S43J2T01 .ssc
Transect plot data	1	QUATTRO	S43J1T04 .trs
Transect plot data	2	QUATTRO	S43J2T01 .trs
Iso-velocity plot data	1	MIKE 21	S43J1T04 .ct2
Iso-velocity plot data	1	MIKE 21	S43J1T04 .dt2
Iso-velocity plot data	2	MIKE 21	S43J2T01 .ct2
Iso-velocity plot data	2	MIKE 21	S43J2T01 .dt2

Table 5.1 PSD 24 Database file description



LEGEND :

- ✕—✕ Measurement cross section
- ▨ High land
- ▤ Unstable / low char
- ⊙ BWDB Staff gauge



FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 49 : 06 - 07 April, 1994

Location 2 : Jamuna River, Sirajganj

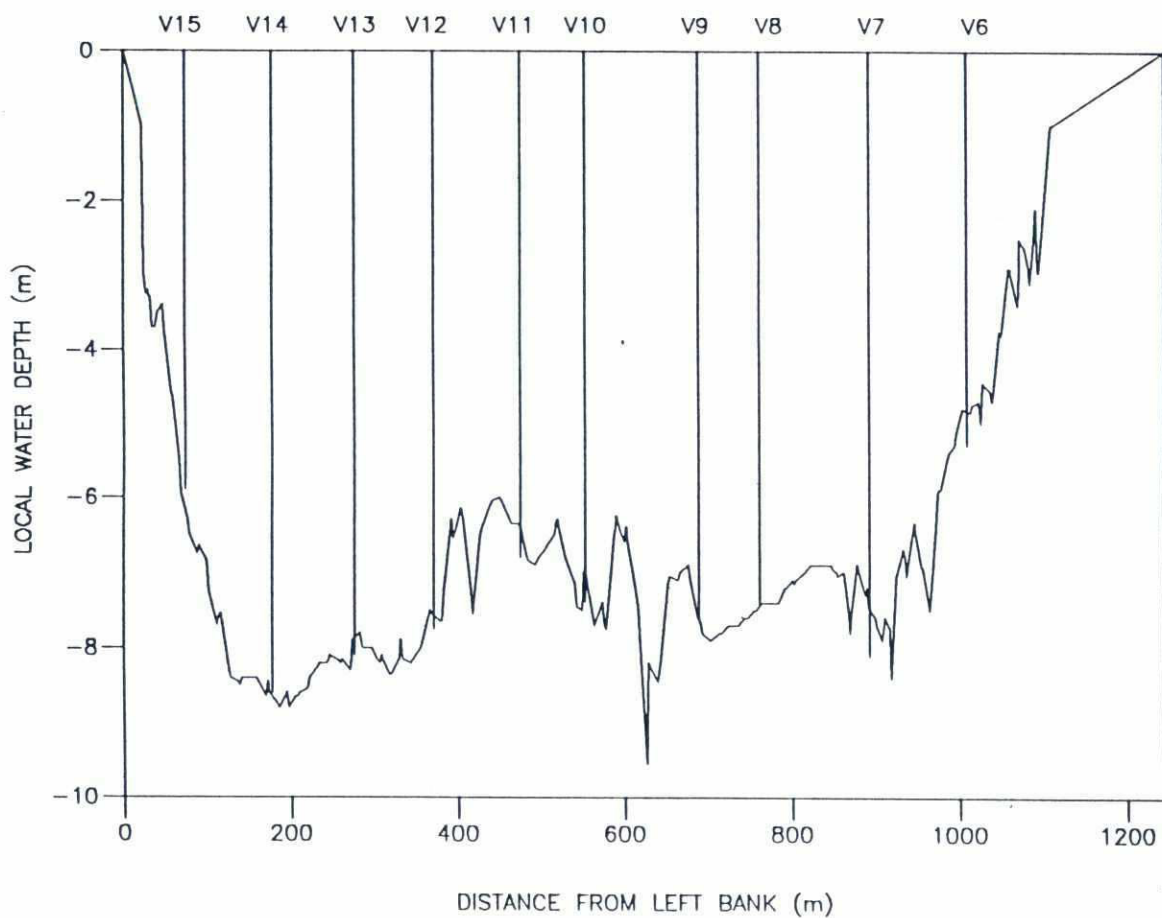
Date : 07 Aug 1994

Init : sjr

Location map

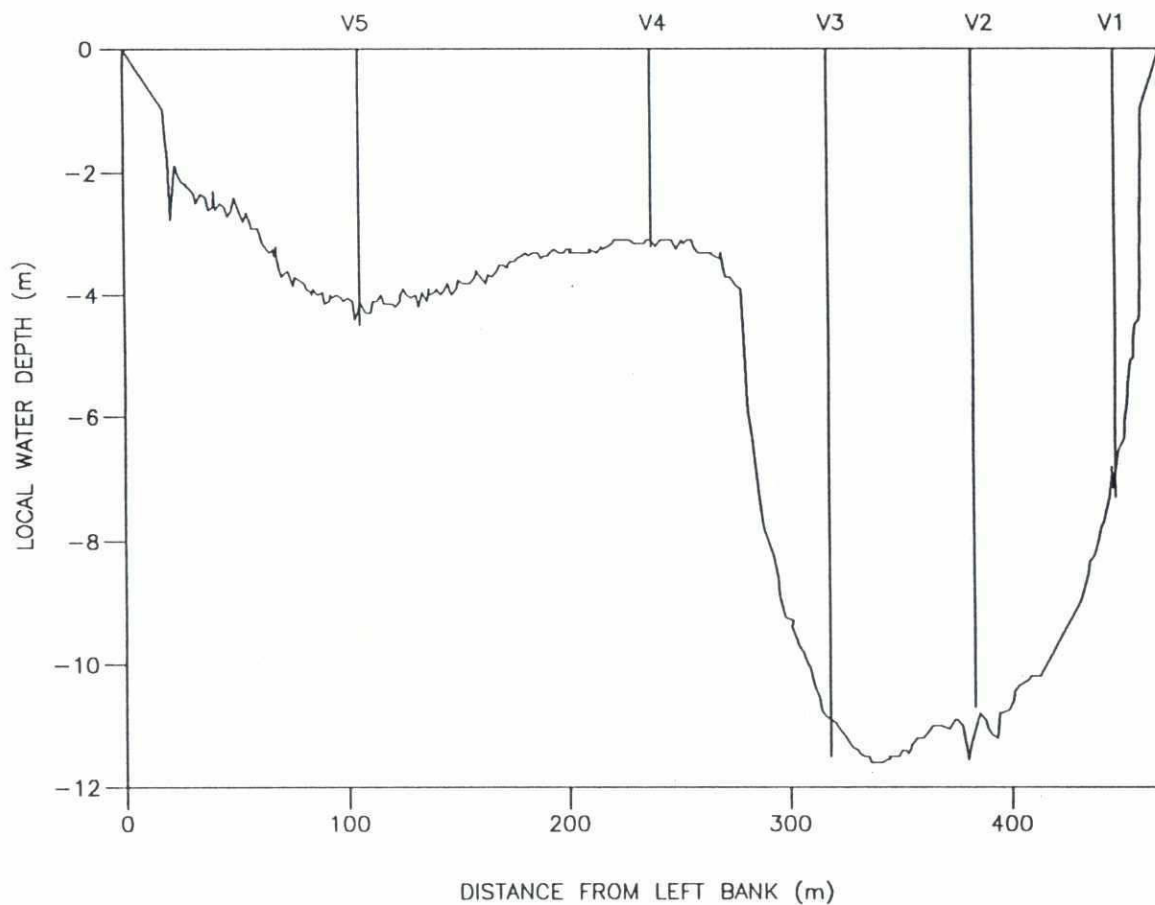
page

1.1



Water level : 9.24 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 49 : 06-07 April, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4471T02	Date : 07 Aug 1994	Cross-sections and measured verticals Channel 1	page
	Init : sjr		1.2



Water level : 9.32 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 49 : 06-07 April, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4462B01	Date : 07 Aug 1994	Cross-sections and measured verticals Channel 2	page
	Init : sjr		1.3

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	4	-	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	3	-	-
Vertical current profile	No. of verticals in channel	10	5	-	-
	ADCP	10	-	-	-
	S4 current meter	1	5	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	24	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	1	-	-	-
	Integrated bottle sampling	10	-	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	20	10	-	-
	Delft Bottle	-	-	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made

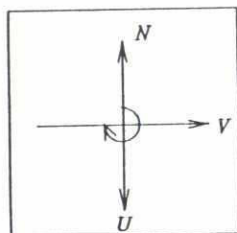
	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1245	7539	9.24	7032	49	2066
Channel 2	469	2674	9.32	1402	4	598

Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Sirajganj	Channel 1	07 Apr 94	9.24	BWDB
	Channel 2	06 Apr 94	9.32	

Table 2.3: Water-levels

 FAP 24 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 49 : 06-07 April , 1994	
				Location 2 : Jamuna River, Sirajganj	
Files :	Date : 07 Aug 1994	Survey programme as made and key figures			page 2.1
S4471T02					
S4462B01	Init : sjr				

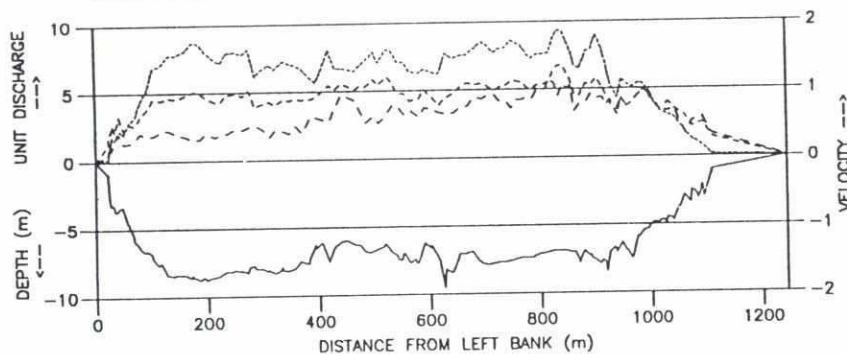


TRANSECT AZIMUTH = 270°

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)

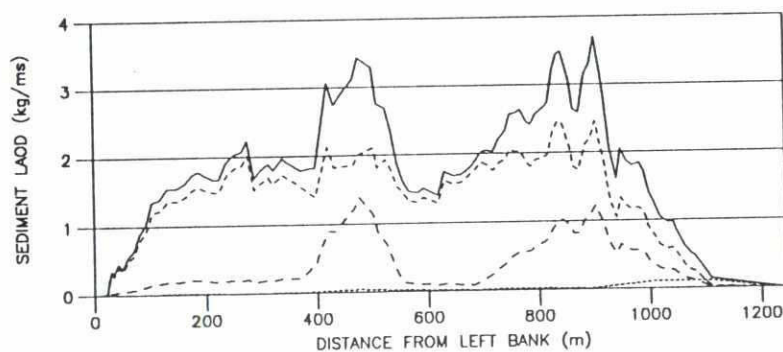
... U (m/s)

-.- V (m/s)

STAGE = 9.24 (m+PWD)

A = 7539 (m³)

Q = 7032 (m³/s)



SEDIMENT TRANSPORT

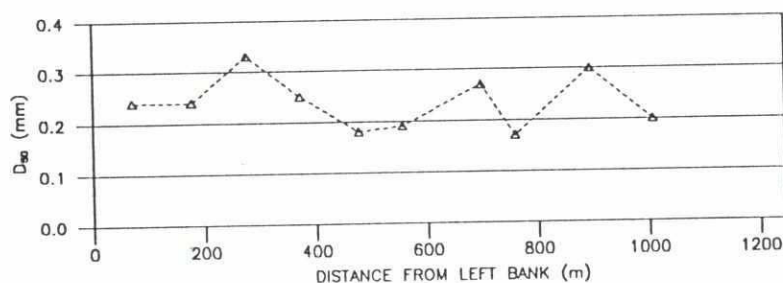
LEGEND :

— S_{TOTAL} 2115 (kg/s)

--- S_{WASH LOAD} 1613 (kg/s)

-.- S_{SUSP. BED} 453 (kg/s)

... S_{BED LOAD} 49 (kg/s)



GRAIN SIZE

LEGEND :

— D₅₀ SUSP. (mm)

△△△△ D₅₀ BED LOAD (mm)

-.- D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 49 : 06-07 April, 1994

Location 2 : Jamuna River, Sirajganj

File : S4471T02

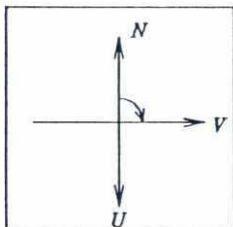
Date : 07 Aug 1994

Init : sjr

Horizontal distribution of flow and sediments
Channel 1

page

3.1

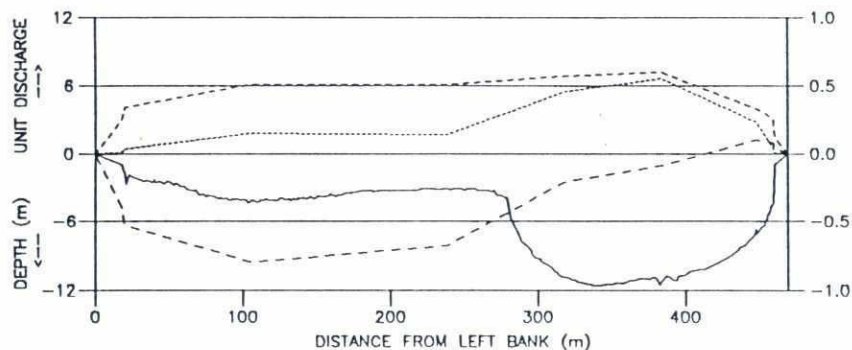


TRANSECT AZIMUTH = 90°

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 ($\text{m}^3/\text{s.m}$)

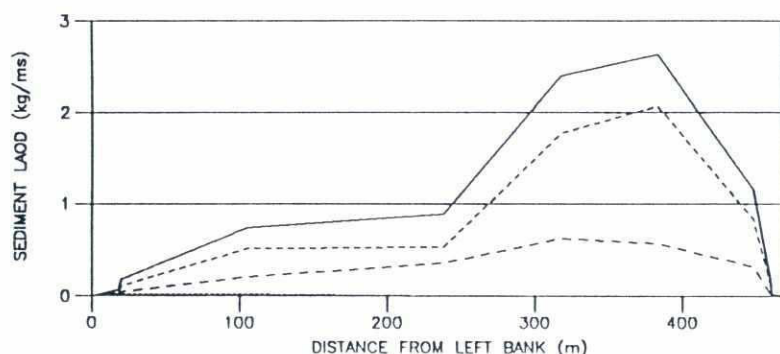
... U (m/s)

-.- V (m/s)

STAGE = 9.32 (m+PWD)

A = 2674 (m^2)

Q = 1402 (m^3/s)



SEDIMENT TRANSPORT

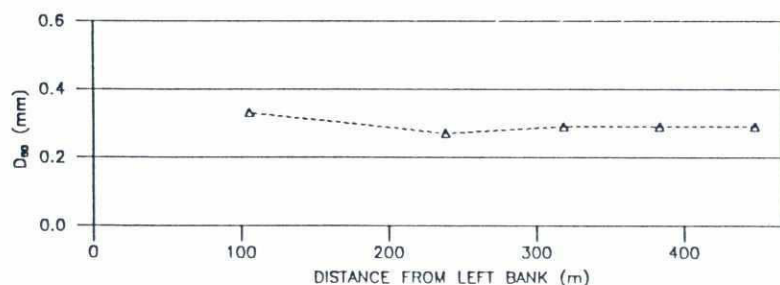
LEGEND :

— S_{TOTAL} 602 (kg/s)

--- $S_{WASH LOAD}$ 433 (kg/s)

-.- $S_{SUSP. BED}$ 165 (kg/s)

... $S_{BED LOAD}$ 4 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ $D_{50 SUSP.}$ (mm)

△△△△△ $D_{50 BED LOAD}$ (mm)

□□□□□ $D_{50 BED MAT.}$ (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 49 : 06-07 April, 1994

Location 2 : Jamuna River, Sirajganj

File : S4462B01

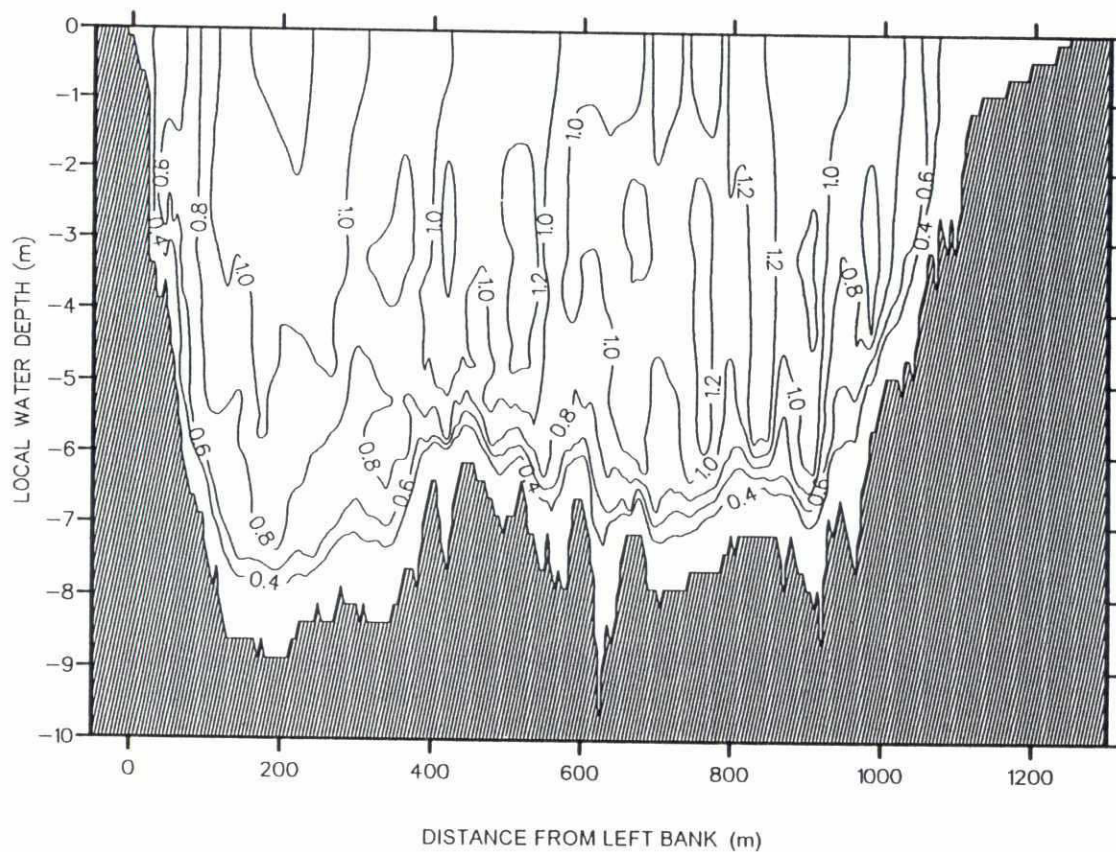
Date : 07 Aug 1994

Init : sjr

Horizontal distribution of flow and sediments
Channel 2

page

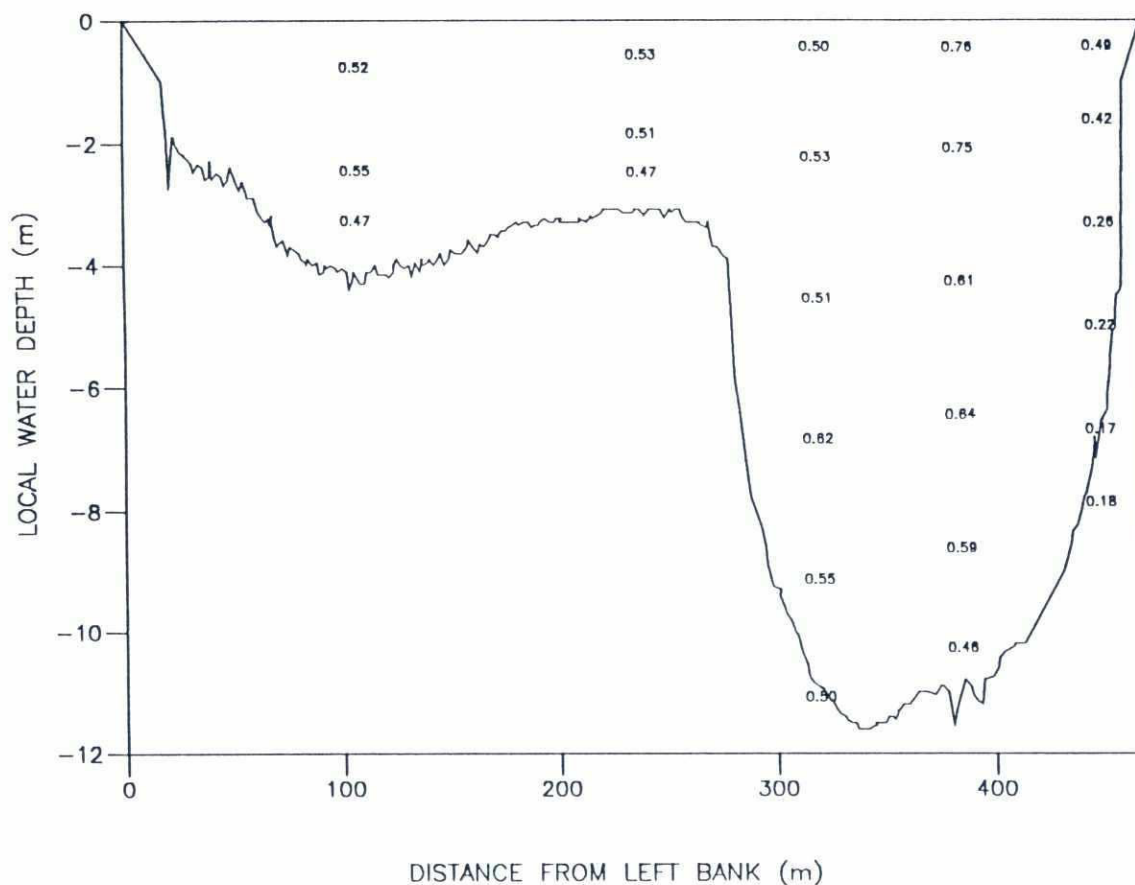
3.2



Iso-velocity contours (m/s)

Water-level : 9.24 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 49 : 06 - 07 April, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4471T02	Date : 07 Aug, 1994	Cross-sectional distribution of flow velocity Channel 1	page 4.1
	Init : sjr		



Water level : 9.32 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 49 : 06-07 April, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4462B01	Date : 07 Aug 1994	Cross-sectional distribution of flow velocity Channel 2	page 4.2
	Init : sjr		

208

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	940471624	5.30	0.396	99.604	0.178	0.208	0.244
	6	940471626	5.30	0.220	99.780	0.174	0.201	0.232
	7	940471537	8.10	0.153	99.847	0.227	0.280	0.334
	7	940471539	8.10	0.152	99.848	0.276	0.317	0.364
	8	940471509	7.40	1.619	98.381	0.138	0.164	0.193
	8	940471511	7.40	2.133	97.867	0.140	0.165	0.195
	9	940471440	7.60	0.414	99.586	0.214	0.270	0.328
	9	940471442	7.60	0.397	99.603	0.216	0.273	0.330
	10	940471358	7.40	0.391	99.609	0.163	0.186	0.212
	10	940471400	7.40	0.422	99.578	0.164	0.189	0.217
	11	940471330	6.80	1.031	98.969	0.153	0.175	0.199
	11	940471332	6.80	0.740	99.260	0.162	0.187	0.217
	12	940471232	7.75	0.403	99.597	0.284	0.324	0.370
	12	940471234	7.75	0.417	99.583	0.154	0.172	0.193
	13	940471154	8.10	0.311	99.689	0.284	0.326	0.374
	13	940471156	8.10	0.756	99.244	0.291	0.332	0.379
	14	940471033	8.60	0.172	99.828	0.226	0.280	0.336
	14	940471035	8.60	0.148	99.852	0.175	0.203	0.236
	15	940470952	5.90	4.452	95.548	0.186	0.242	0.308
	15	940470954	5.90	3.832	96.168	0.182	0.231	0.295
2	1	940460938	7.30	7.442	92.558	0.263	0.306	0.357
	1	940460940	7.30	6.956	93.044	0.203	0.265	0.323
	2	940461041	10.70	7.809	92.191	0.240	0.292	0.346
	2	940461043	10.70	5.258	94.742	0.217	0.281	0.339
	3	940461146	11.50	0.423	99.577	0.275	0.316	0.363
	3	940461148	11.50	6.986	93.014	0.196	0.264	0.324
	4	940461326	3.20	1.696	98.304	0.209	0.265	0.322
	4	940461328	3.20	5.595	94.405	0.207	0.268	0.325
	5	940461406	4.50	0.264	99.736	0.294	0.333	0.377
	5	940461408	4.50	0.303	99.697	0.287	0.327	0.372
Table 5.3 : Grain sizes of bed load								

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 49 : 06 - 07 April , 1994	
		Location 2 : Jamuna river, Sirajganj	
	Date : 07 Aug 1994	Grain size distributions	page 5.2
	Init : sjr		

28

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9404070736-0745	S4471T02*
		9404070753-0801	S4471T03
		9404071655-1704	S4471T04
		9404071706-1715	S4471T05
	2	9404060744-0749	S4462B01*
		9404060753-0756	S4462B02
		9404060758-0803	S4462B03

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	6	9404071628-1642	477419.6	698477.4	5.30	S4471P10 *
		7	9404071541-1555	477535.6	698485.3	8.10	S4471P09 *
		8	9404071513-1524	477664.6	698479.9	7.40	S4471P08 *
		9	9404071444-1459	477737.9	698476.1	7.60	S4471P07 *
		10	9404071402-1415	477871.8	698479.4	7.40	S4471P06 *
		11	9404071334-1348	477949.3	698480.5	6.80	S4471P05 *
		12	9404071236-1247	478056.4	698480.6	7.75	S4471P04 *
		13	9404071158-1222	478153.1	698482.6	8.10	S4471P03 *
		14	9404071037-1133	478247.3	698480.7	8.60	S4471P02
		15	9404070956-1005	478352.0	698487.9	5.90	S4471P01 *
	2	1	9404060942-1020	471383.6	699797.3	7.30	S4462P01**
		2	9404061045-1122	471456.3	699797.1	10.70	S4462P02**
		3	9404061150-1226	471510.7	699798.9	11.50	S4462P03**
		4	9404061330-1346	471594.8	699802.4	3.20	S4462P04**
		5	9404061410-1430	471725.3	699805.8	4.50	S4462P05**

Table 6.2: Vertical profiles

* S4 & MEX not available

** ADCP & MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	14	6	9404071037-1133	478247.3	698480.7	8.60
	2	1	6	9404060942-1020	471383.6	699797.3	7.30
		2	6	9404061045-1122	471456.3	699797.1	10.70
		3	6	9404061150-1226	471510.7	699798.9	11.50
		4	3	9404061330-1346	471594.8	699802.4	3.20
		5	3	9404061410-1430	471725.3	699805.8	4.50

Table 6.3: Suspended sediment - point sampled

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 49 : 06-07 April , 1994		
	Location 2 : Jamuna river, Sirajganj		
	Date : 07 Aug 1994	Collected data and their storage (1)	page 6.1
	SJR		

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	6	1	9404071628-1642	477419.6	698477.4	5.30
		7	1	9404071541-1555	477535.6	698485.3	8.10
		8	1	9404071513-1524	477664.6	698479.9	7.40
		9	1	9404071444-1459	477737.9	698476.1	7.60
		10	1	9404071402-1415	477871.8	698479.4	7.40
		11	1	9404071334-1348	477949.3	698480.5	6.80
		12	1	9404071236-1247	478056.4	698480.6	7.75
		13	1	9404071158-1222	478153.1	698482.6	8.10
		14	1	9404071037-1133	478247.3	698480.7	8.60
		15	1	9404070956-1005	478352.0	698487.9	5.90
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	9404071624	477419.6	698477.4	5.30	A1374
		6	9404071626	477419.6	698477.4	5.30	A713
		7	9404071537	477535.6	698485.3	8.10	A114
		7	9404071539	477535.6	698485.3	8.10	A107
		8	9404071509	477664.6	698479.9	7.40	A1138
		8	9404071511	477664.6	698479.9	7.40	A354
		9	9404071440	477737.9	698476.1	7.60	A49
		9	9404071442	477737.9	698476.1	7.60	A745
		10	9404071358	477871.8	698479.4	7.40	A748
		10	9404071400	477871.8	698479.4	7.40	A917
		11	9404071330	477949.3	698480.5	6.80	A697
		11	9404071332	477949.3	698480.5	6.80	A693
		12	9404071232	478056.4	698480.6	7.75	A1364
		12	9404071234	478056.4	698480.6	7.75	A1160
		13	9404071154	478153.1	698482.6	8.10	A351
		13	9404071156	478153.1	698482.6	8.10	A901
		14	9404071033	478247.3	698480.7	8.60	A52
		14	9404071035	478247.3	698480.7	8.60	A918
		15	9404070952	478352.0	698487.9	5.90	A45
		15	9404070954	478352.0	698487.9	5.90	A31
	2	1	9404060938	471383.6	699797.3	7.30	A905
		1	9404060940	471383.6	699797.3	7.30	A345
		2	9404061041	471456.3	699797.1	10.70	A91
		2	9404061043	471456.3	699797.1	10.70	A93
		3	9404061146	471510.7	699798.9	11.50	A92
		3	9404061148	471510.7	699798.9	11.50	A919
		4	9404061326	471594.8	699802.4	3.20	A95
		4	9404061328	471594.8	699802.4	3.20	A98
		5	9404061406	471725.3	699805.8	4.50	A38
		5	9404061408	471725.3	699805.8	4.50	A342
Table 6.5: Bed load							

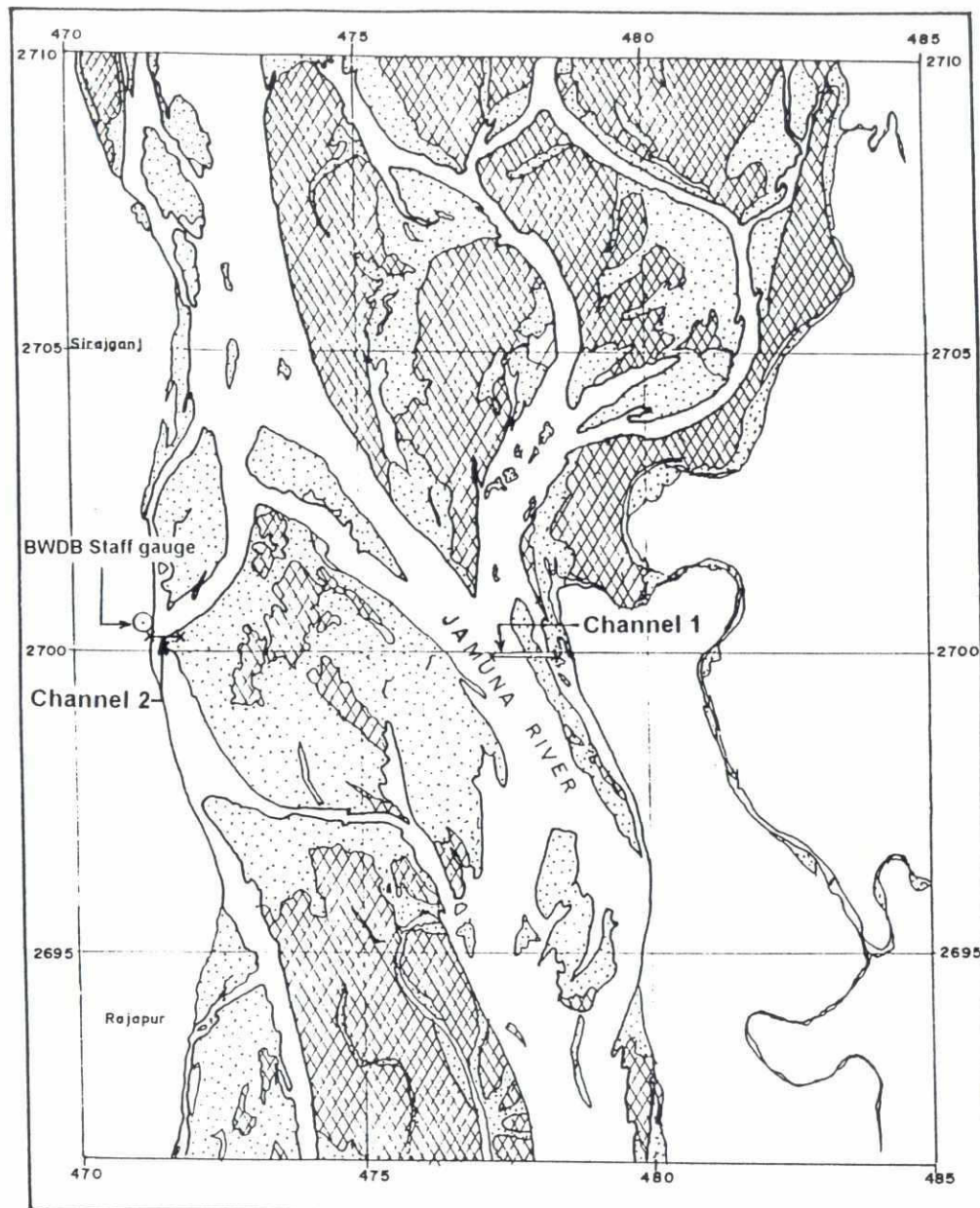
 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization DELFT - DHI Commission of the European Communities		Survey Bulletin 49 : 06-07 April , 1994	
		Location 2 : Jamuna river, Sirajganj	
	Date : 07 Aug 1994	Collected data and their storage (2)	page
	Init : sjr		6.2

77

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S4471T02 .ase
ADCP/S4/EMF data	2	QUATTRO	S4462B01 .ase
Echosounder data	1	QUATTRO	S4471T02 .ech
Echosounder data	2	QUATTRO	S4462B01 .ech
Sediment transport data	1	QUATTRO	S4471T02 .sed
Sediment transport data	2	QUATTRO	S4462B01 .sed
Bed load sediment analysis	1	QUATTRO	S4471T02 .bdl
Bed load sediment analysis	2	QUATTRO	S4462B01 .bdl
Susp.sed.conc. analysis	1	QUATTRO	S4471T02 .ssc
Susp.sed.conc. analysis	2	QUATTRO	S4462B01 .ssc
Transect plot data	1	QUATTRO	S4471T02 .trs
Transect plot data	2	QUATTRO	S4462B01 .trs
Iso-velocity plot data	1	MIKE 21	S4471T02 .cl2
		MIKE 21	S4471T02 .dt2

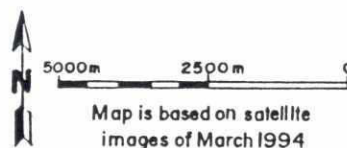
Table 7.1 PSD 24 Database file description

 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 49 : 06-07 April, 1994	
			Location 2 : Jamuna River, Sirajganj	
	Date : 07 Aug 1994 Init : sjr	PSD 24 Database file description		page 7.1



LEGEND :

- x—x Measurement cross section
- High land
- Unstable/low char
- BWDB Staff gauge



FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 55 : 30 Apr - 01 May, 1994

Location 2 : Jamuna River, Sirajganj

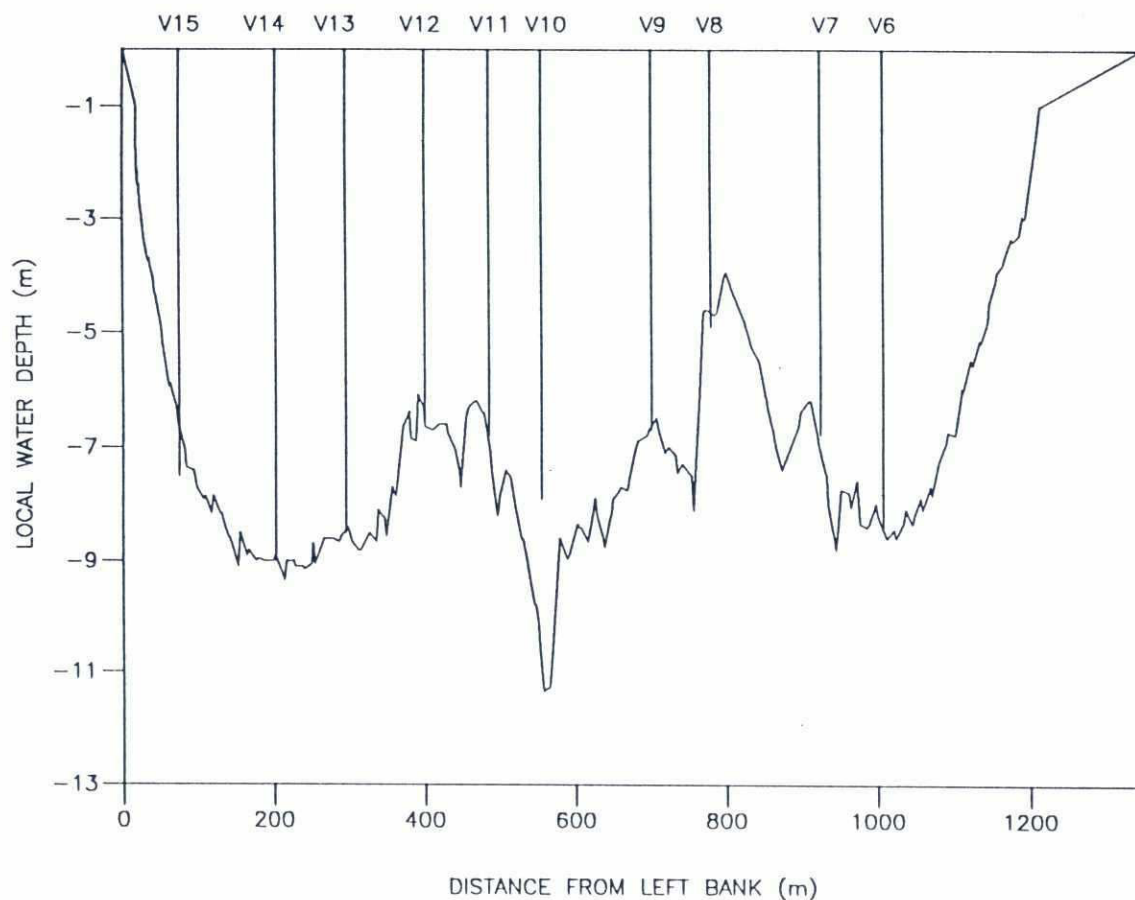
Date : 13 Aug 1994

Init : mzh

Location map

page

1.1



Water level : 9.69 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 55 : 30 Apr - 01 May, 1994

Location 2 : Jamuna River, Sirajganj

File : S44U1T01

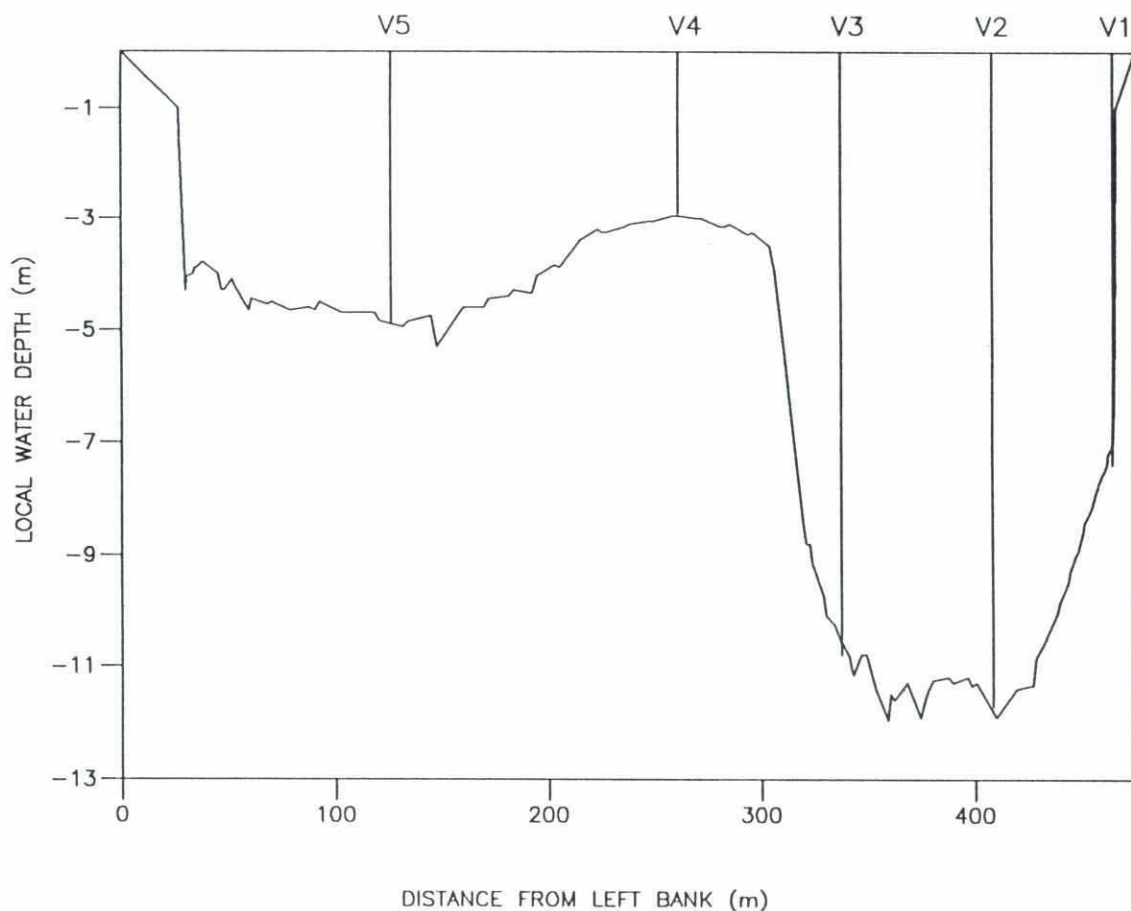
Date : 13 Aug 1994

Init : mzh

Cross-sections and measured verticals
Channel 1

page

1.2



Water level : 9.68 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 55 : 30 Apr - 01 May, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4511T01	Date : 13 Aug 1994	Cross-sections and measured verticals Channel 2	page 1.3
	Init : mzh		

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	3	4	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	10	5	-	-
	ADCP	10	5	-	-
	S4 current meter	1	2	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	12	11	-	-
	Integrated bottle sampling	10	5	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	19	10	-	-
	Delft Bottle	-	-	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made

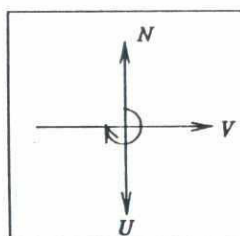
	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1349	8755	9.69	8327	65.80	2840
Channel 2	476	2762	9.68	1853	4.80	517

Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Sirajganj	Channel 1	30 Apr 94	9.69	BWDB
	Channel 2	01 May 94	9.68	

Table 2.3: Water-levels

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 55 : 30 Apr - 01 May, 1994	
				Location 2 : Jamuna River, Sirajganj	
File :	Date : 13 Aug 1994	Survey programme as made and key figures			page 2.1
S44U1T01					
S4511T01	Init : mzh				

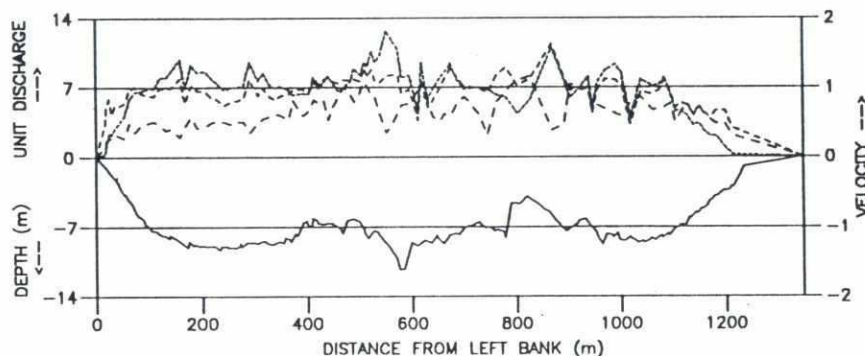


TRANSECT AZIMUTH = 270°

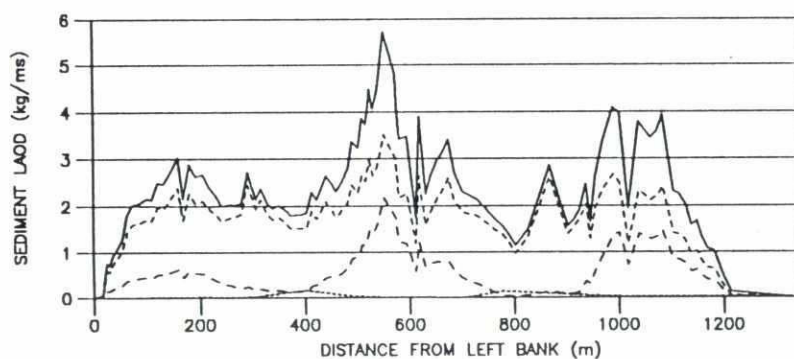
U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

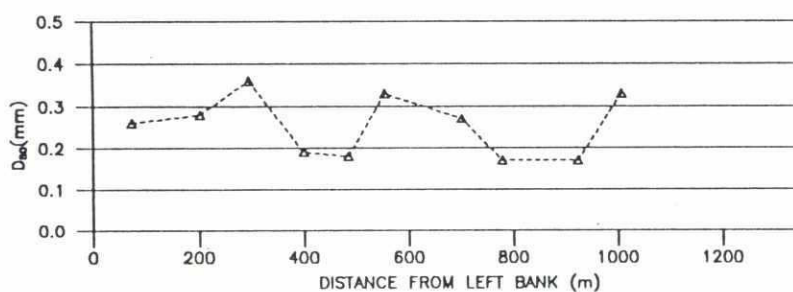
N - MAGNETIC NORTH



FLOW



SEDIMENT TRANSPORT



GRAIN SIZE

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 55 : 30 Apr - 01 May, 1994

Location 2 : Jamuna River, Sirajganj

File : S44U1T01

Date : 13 Aug 1994

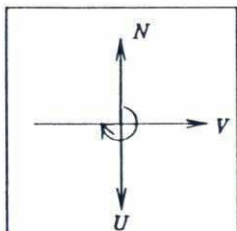
Init : mzh

Horizontal distribution of flow and sediments

Channel 1

page

3.1

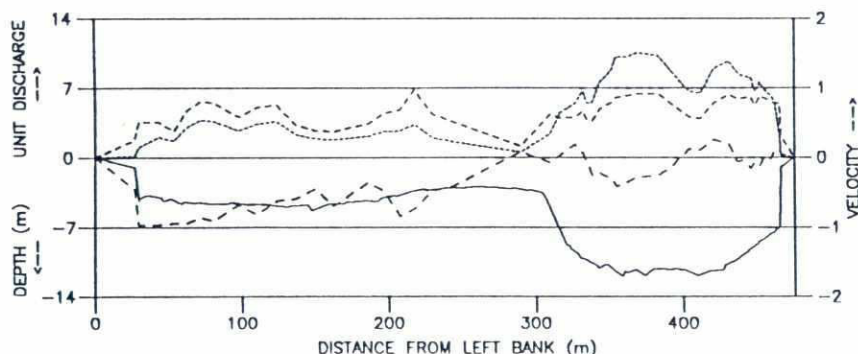


TRANSECT AZIMUTH = 270°

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)

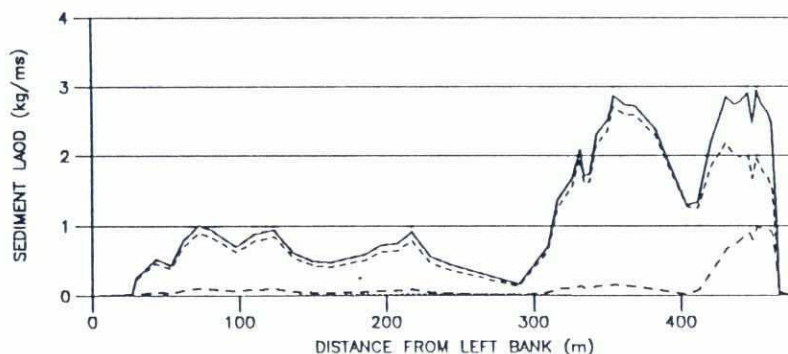
... U (m/s)

-.- V (m/s)

STAGE = 9.68 (m+PWD)

A = 2762 (m³)

Q = 1853 (m³/s)



SEDIMENT TRANSPORT

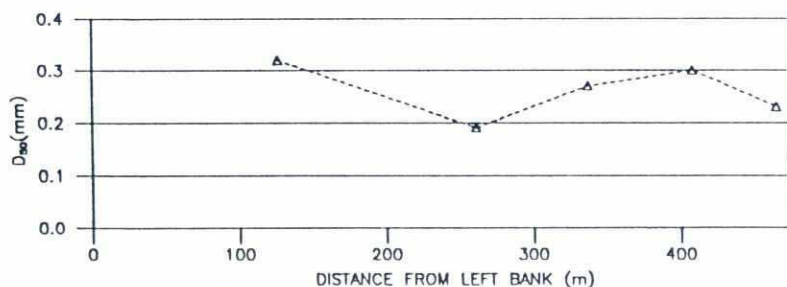
LEGEND :

— S_{TOTAL} 622 (kg/s)

--- S_{WASH LOAD} 450 (kg/s)

... S_{SUSP. BED} 67 (kg/s)

-.- S_{BED LOAD} 5 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)

△△△△△ D₅₀ BED LOAD (mm)

□□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 55 : 30 Apr - 01 May, 1994

Location 2 : Jamuna River, Sirajganj

File : S4511T01

Date : 13 Aug 1994

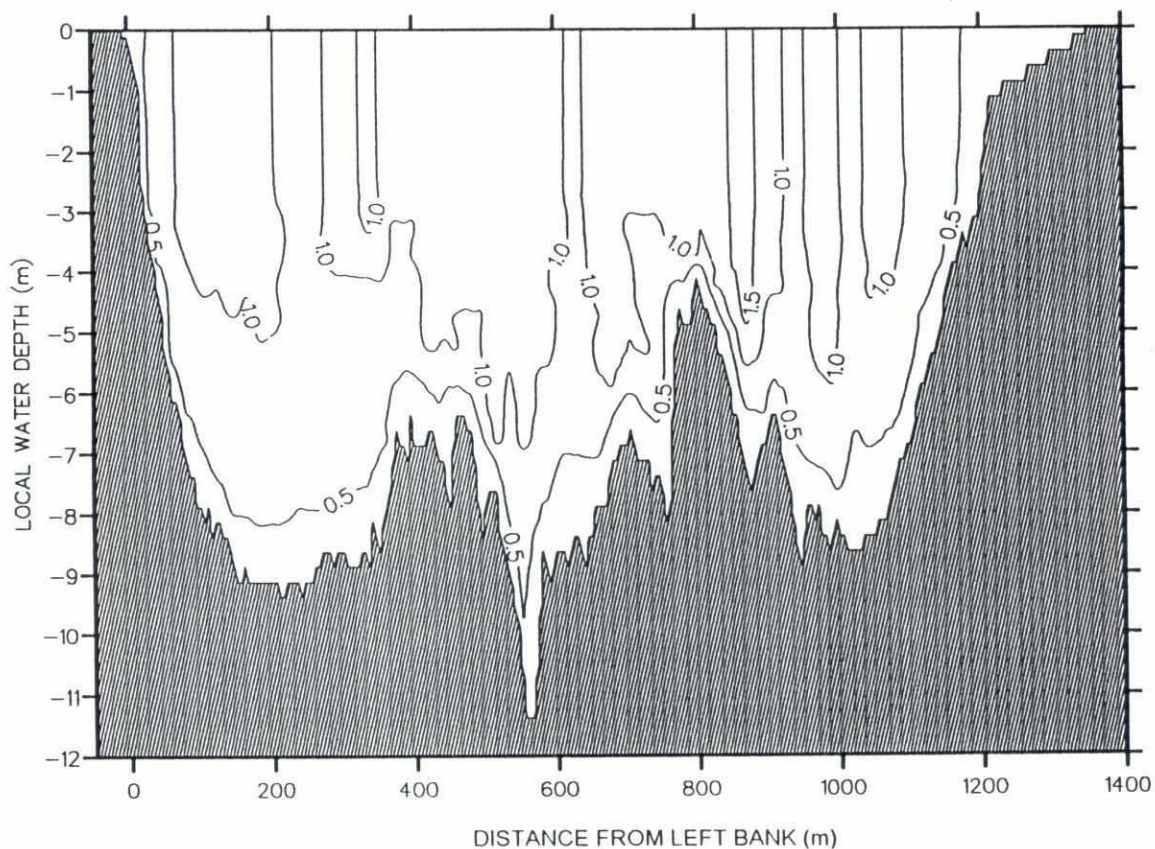
Init : mzh

Horizontal distribution of flow and sediments

Channel 2

page

3.2



Iso-velocity contours (m/s)

Water level : 9.69 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 55 : 30 Apr - 01 May, 1994

Location 2 : Jamuna River, Sirajganj

File : S44U1T01

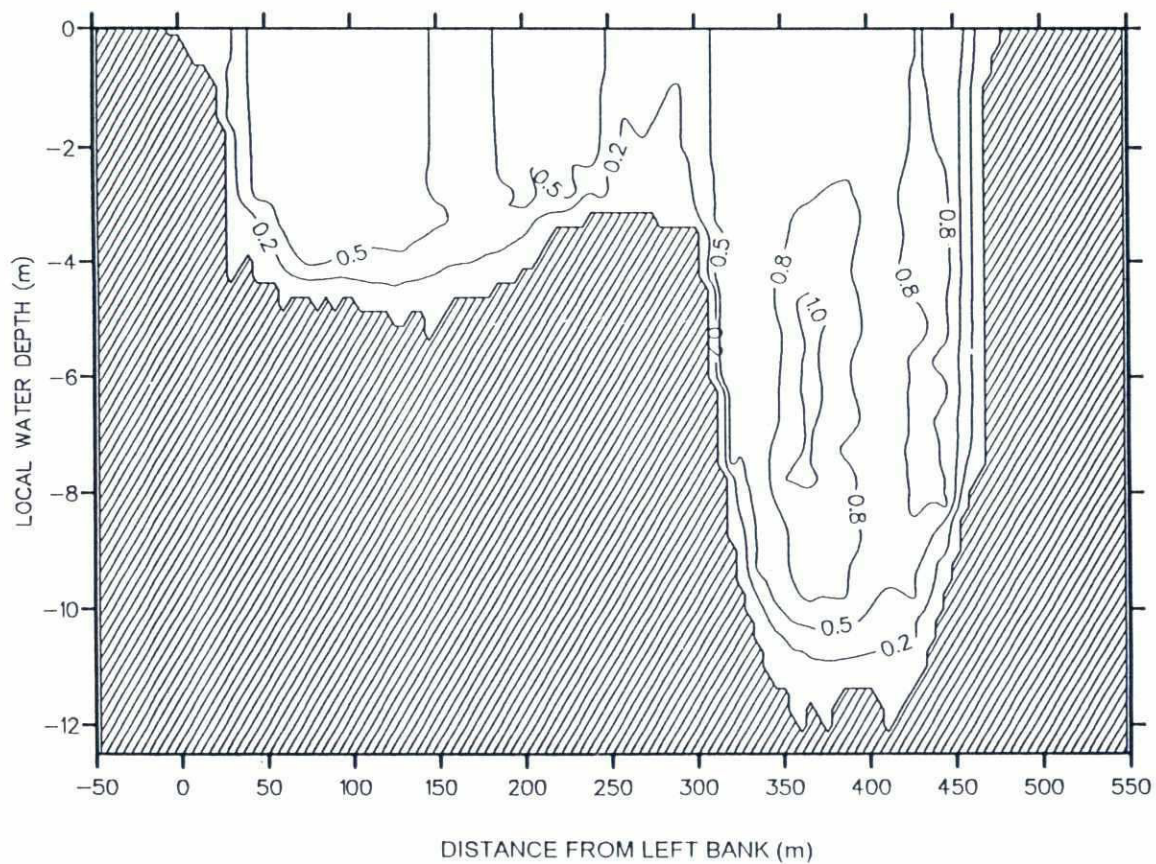
Date : 13 Aug 1994

Init : mzh

**Cross-sectional distribution of flow velocity
Channel 1**

page

4.1



Iso-velocity contours (m/s)

Water level : 9.68 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 55 : 30 Apr - 01 May, 1994

Location 2 : Jamuna River, Sirajganj

File : S4511T01

Date : 13 Aug 1994

Init : mzh

Cross-sectional distribution of flow velocity
Channel 2

page

4.2

208

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	9404301725-1732	8.40	0.142	99.858	0.295	0.334	0.379
	7	9404301629-1640	6.80	0.463	99.537	0.153	0.174	0.197
	8	9404301604-1617	4.90	0.710	99.290	0.155	0.175	0.197
	9	9404301543-1555	6.70	0.408	99.592	0.193	0.243	0.306
	10	9404301512-1530	7.90	0.090	99.910	0.287	0.327	0.372
	11	9404301447-1500	6.80	0.328	99.672	0.167	0.192	0.221
	12	9404301414-1429	6.60	0.814	99.186	0.165	0.191	0.220
	13	9404301348-1402	8.50	0.054	99.946	0.321	0.363	0.410
	14	9404301141-1303	9.00	0.119	99.881	0.211	0.265	0.322
	15	9404301111-1116	7.50	0.490	99.510	0.204	0.261	0.321
	6	9404301725-1732	8.40	0.207	99.793	0.283	0.324	0.369
	7	9404301629-1640	6.80	0.376	99.624	0.151	0.172	0.196
	8	9404301604-1617	4.90	0.507	99.493	0.154	0.175	0.198
	9	9404301543-1555	6.70	0.331	99.669	0.255	0.300	0.354
	11	9404301447-1500	6.80	1.108	98.892	0.154	0.175	0.199
	12	9404301414-1429	6.60	0.808	99.192	0.163	0.187	0.215
	13	9404301348-1402	8.50	0.121	99.879	0.319	0.361	0.409
	14	9404301141-1303	9.00	0.154	99.846	0.257	0.302	0.354
	15	9404301111-1116	7.50	0.344	99.656	0.211	0.266	0.325
2	1	9405010956-1007	7.40	2.545	97.455	0.164	0.206	0.261
	2	9405011016-1034	11.70	2.660	97.340	0.227	0.286	0.347
	3	9405011051-1215	10.80	1.748	98.252	0.215	0.273	0.334
	4	9405011222-1247	2.90	0.523	99.477	0.166	0.191	0.220
	5	9405011258-1309	4.90	0.540	99.460	0.277	0.319	0.366
	1	9405010956-1007	7.40	5.388	94.612	0.188	0.243	0.304
	2	9405011016-1034	11.70	0.756	99.244	0.278	0.323	0.376
	3	9405011051-1215	10.80	3.609	96.391	0.197	0.258	0.320
	4	9405011222-1247	2.90	0.505	99.495	0.170	0.196	0.227
	5	9405011258-1309	4.90	0.241	99.759	0.274	0.314	0.361
Table 5.3 : Grain sizes of bed load								

FAP 24  DELFT - DHI		Survey Bulletin 55 : 30 Apr - 01 May, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 13 Aug 1994	Grain size distributions	page
	Init : mzh		5.2

209

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9404300839-0849	S44U1T01*
		9404300854-0903	S44U1T02
		9404301743-1751	S44U1T03
	2	9405010834-0839	S4511T01*
		9405010841-0846	S4511T02
		9405011318-1322	S4511T03
		9405011324-1330	S4511T04

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	6	9404301725-1732	477441	698485	8.40	S44U1P11 *
		7	9404301629-1640	477524	698478	6.80	S44U1P10 *
		8	9404301604-1617	477669	698481	4.90	S44U1P09 *
		9	9404301543-1555	477747	698476	6.70	S44U1P08 *
		10	9404301512-1530	477894	698492	7.90	S44U1P07 *
		11	9404301447-1500	477963	698485	6.80	S44U1P06 *
		12	9404301414-1429	478048	698480	6.60	S44U1P05 *
		13	9404301348-1402	478153	698483	8.50	S44U1P04 *
		14	9404301141-1303	478246	698480	9.00	S44U1P03
		15	9404301111-1116	478375	698487	7.50	S44U1P02 *
	2	1	9405010956-1007	471386	699803	7.40	S4511P01 *
		2	9405011016-1034	471443	699797	11.70	S4511P02 *
		3	9405011051-1215	471514	699797	10.80	S4511P04
		4	9405011222-1247	471590	699808	2.90	S4511P05 **
		5	9405011258-1309	471725	699808	4.90	S4511P06 *

Table 6.2: Vertical profiles

* ADCP, S4 & MEX not available

** ADCP & MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	14	6	9404301141-1303	478246	698480	9.00
	2	3	6	9405010956-1007	471386	699803	10.80

Table 6.3: Suspended sediment - point sampled

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 55 : 30 Apr - 01 May, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 13 Aug 1994	Collected data and their storage (1)	page 6.1
	Init : mzh		

207

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	6	1	9404301725-1732	477441	698485	8.40
		7	1	9404301629-1640	477524	698478	6.80
		8	1	9404301604-1617	477669	698481	4.90
		9	1	9404301543-1555	477747	698476	6.70
		10	1	9404301512-1530	477894	698492	7.90
		11	1	9404301447-1500	477963	698485	6.80
		12	1	9404301414-1429	478048	698480	6.60
		13	1	9404301348-1402	478153	698483	8.50
		14	1	9404301141-1303	478246	698480	9.00
		15	1	9404301111-1116	478375	698487	7.50
	2	1	1	9405010956-1007	471386	699803	7.40
		2	1	9405011016-1034	471443	699797	11.70
		3	1	9405011051-1215	471514	699797	10.80
		4	1	9405011222-1247	471590	699808	2.90
		5	1	9405011258-1309	471725	699808	4.90

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	9404301725-1732	477441	698485	8.40	A1135
		7	9404301629-1640	477524	698478	6.80	A1379
		8	9404301604-1617	477669	698481	4.90	A1384
		9	9404301543-1555	477747	698476	6.70	A1148
		10	9404301512-1530	477894	698492	7.90	A710
		11	9404301447-1500	477963	698485	6.80	A882
		12	9404301414-1429	478048	698480	6.60	A923
		13	9404301348-1402	478153	698483	8.50	A105
		14	9404301141-1303	478246	698480	9.00	A80
		15	9404301111-1116	478375	698487	7.50	A360
	2	6	9404301725-1732	477441	698485	8.40	A362
		7	9404301629-1640	477524	698478	6.80	A883
		8	9404301604-1617	477669	698481	4.90	A1133
		9	9404301543-1555	477747	698476	6.70	A1381
		11	9404301447-1500	477963	698485	6.80	A112
		12	9404301414-1429	478048	698480	6.60	A885
		13	9404301348-1402	478153	698483	8.50	A880
		14	9404301141-1303	478246	698480	9.00	A712
		15	9404301111-1116	478375	698487	7.50	A908
		1	9405010956-1007	471386	699803	7.40	A893
		2	9405011016-1034	471443	699797	11.70	A89
		3	9405011051-1215	471514	699797	10.80	A881
		4	9405011222-1247	471590	699808	2.90	A73
		5	9405011258-1309	471725	699808	4.90	A121
		1	9405010956-1007	471386	699803	7.40	A896
		2	9405011016-1034	471443	699797	11.70	A90
		3	9405011051-1215	471514	699797	10.80	A1375
		4	9405011222-1247	471590	699808	2.90	A117
		5	9405011258-1309	471725	699808	4.90	A743

Table 6.5: Bed load

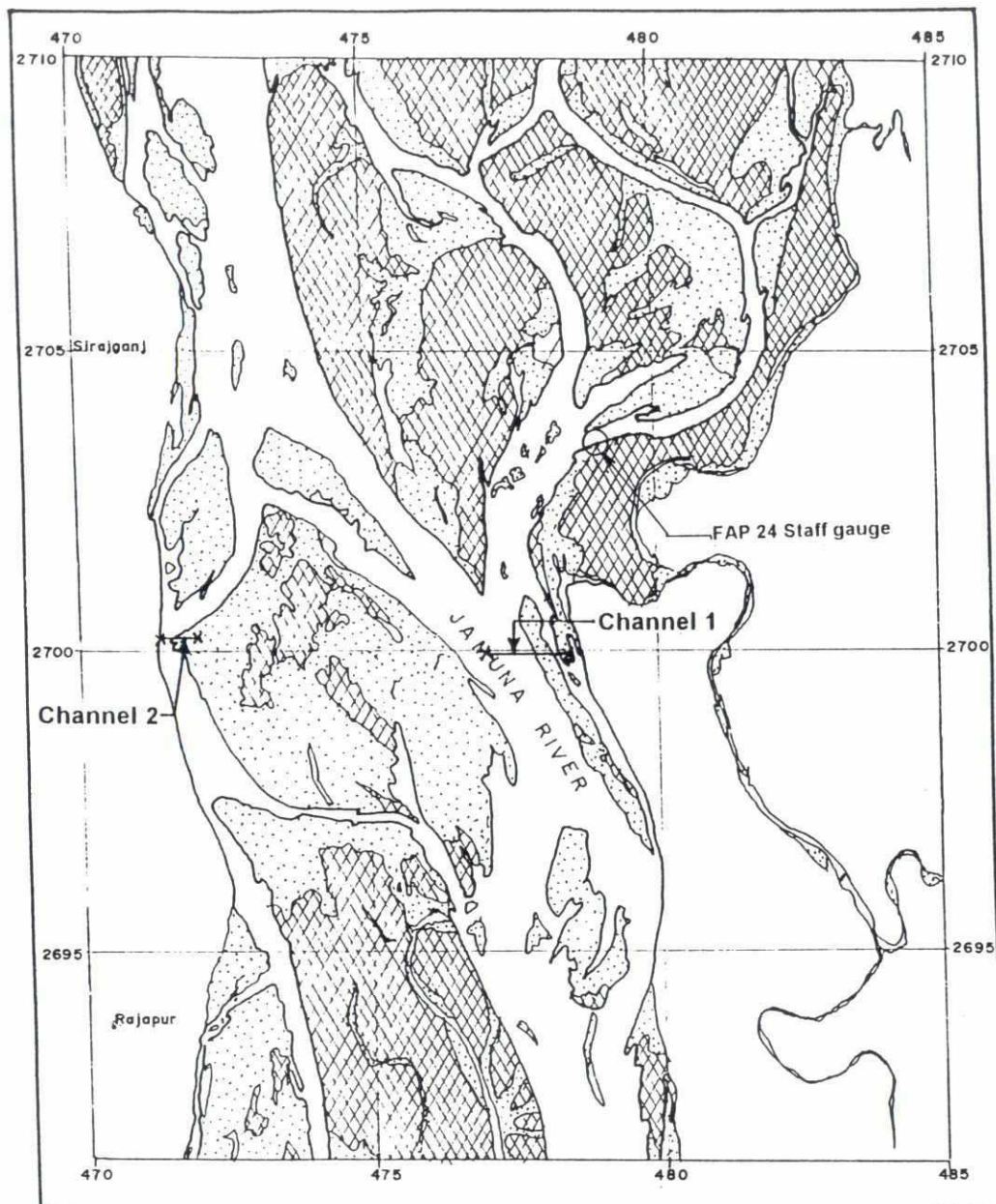
 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 55 : 30 Apr - 01 May, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 13 Aug 1994	Collected data and their storage (2)	page
	Init : mzh		6.2

206

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S44U1T01 .ase
ADCP/S4/EMF data	2	QUATTRO	S4511T01 .ase
Echosounder data	1	QUATTRO	S44U1T01 .ech
Echosounder data	2	QUATTRO	S4511T01 .ech
Sediment transport data	1	QUATTRO	S44U1T01 .sed
Sediment transport data	2	QUATTRO	S4511T01 .sed
Bed load sediment analysis	1	QUATTRO	S44U1T01 .bdl
Bed load sediment analysis	2	QUATTRO	S4511T01 .bdl
Susp.sed.conc. analysis	1	QUATTRO	S44U1T01 .ssc
Susp.sed.conc. analysis	2	QUATTRO	S4511T01 .ssc
Transect plot data	1	QUATTRO	S44U1T01 .trs
Transect plot data	2	QUATTRO	S4511T01 .trs
Iso-velocity plot data	1	MIKE 21	S44U1T01 .ct2
		MIKE 21	S44U1T01 .dt2
Iso-velocity plot data	2	MIKE 21	S4511T01 .ct2
		MIKE 21	S4511T01 .dt2

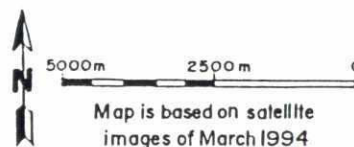
Table 7.1 PSD 24 Database file description

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 55 : 30 Apr - 01 May, 1994 Location 2 : Jamuna River, Sirajganj	
	Date : 13 Aug 1994 Init : mzh	PSD 24 Database file description	page 7.1



LEGEND :

- x-x Measurement cross section
-  High land
-  Unstable / low char
-  FAP 24 Staff gauge



FAP 24



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

Survey Bulletin 62 : 10 - 12 June, 1994

Location 2 : Jamuna River, Sirajganj

Date : 30 Aug 1994

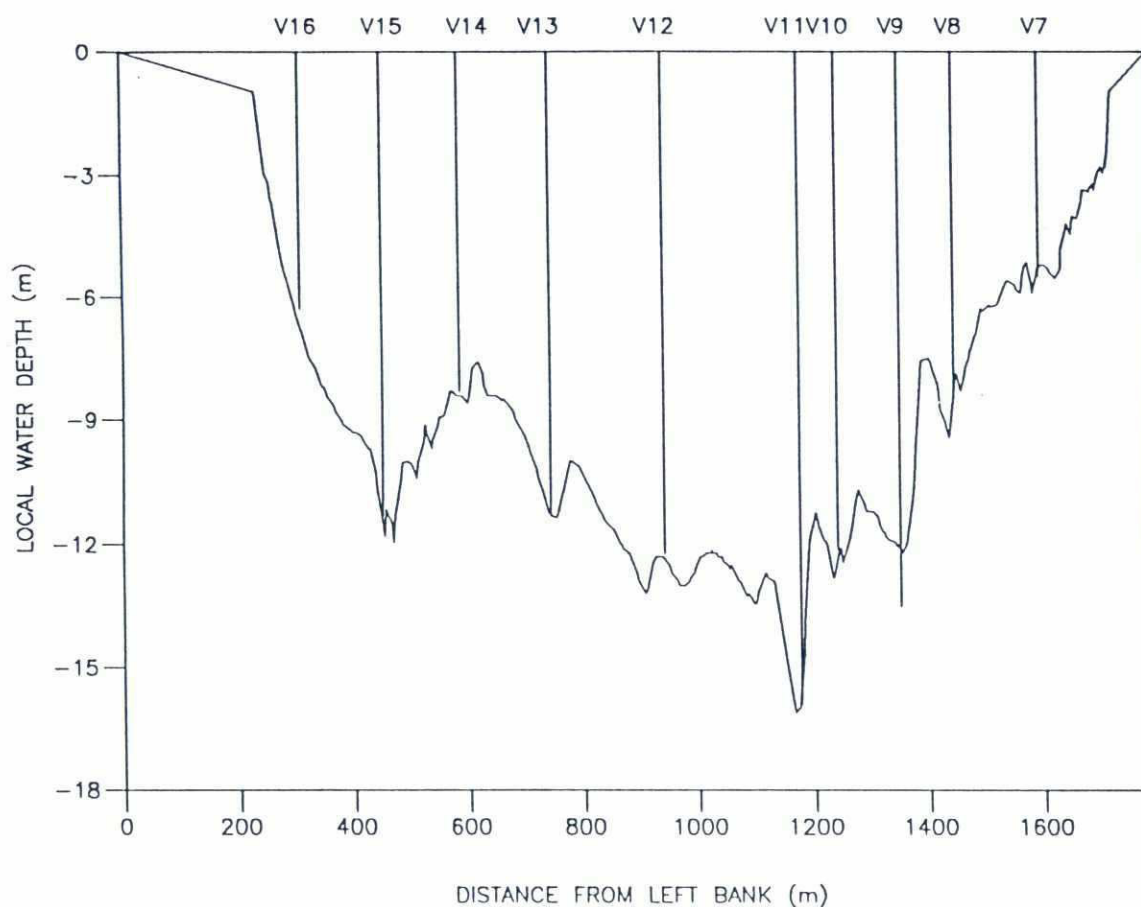
Init : sjr

Location map

page

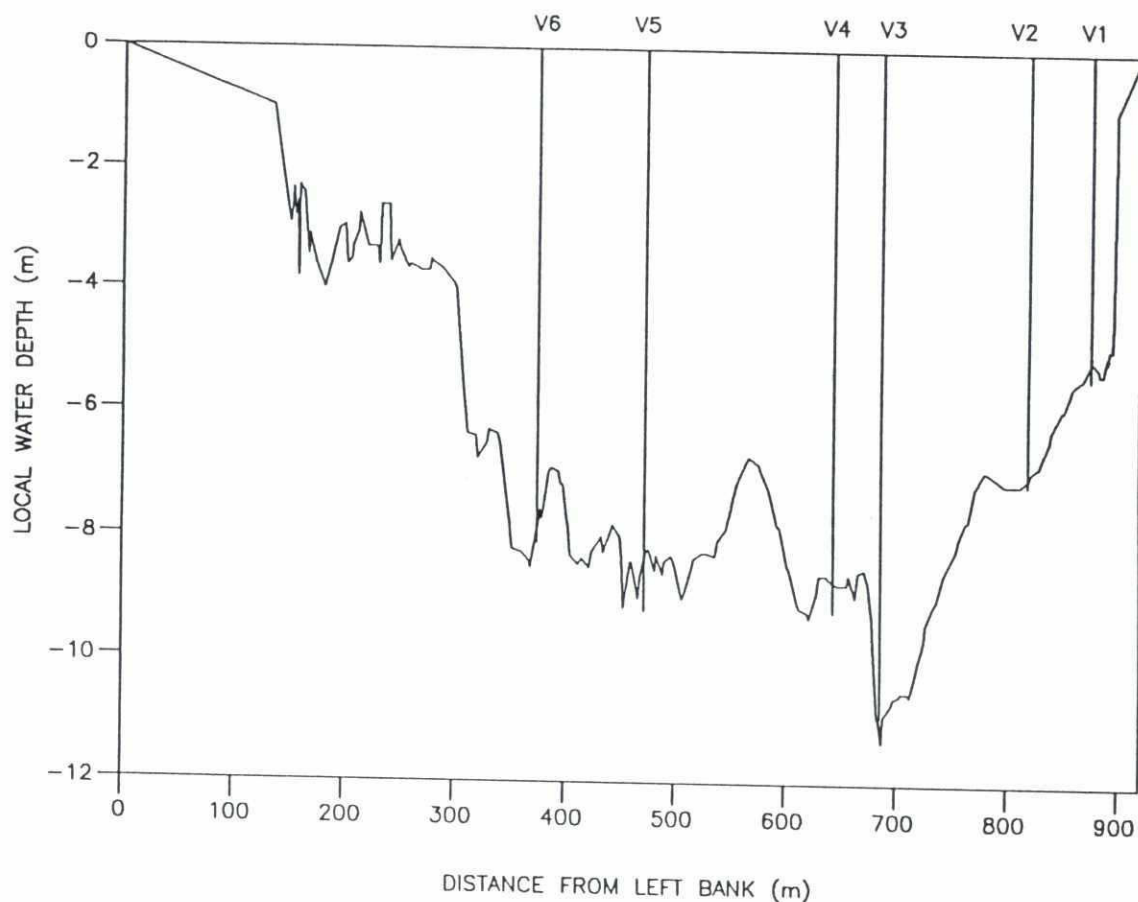
1.1

220



Water level : 11.42 m + PWD measured at station indicated on page 1.1

FAP 24  DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 62 : 10 - 12 June, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S46B1T02	Date : 30 Aug 1994	Cross-sections and measured verticals Channel 1	page
	Init : sjr		1.2



Water level : 11.55 m + PWD measured at the station indicated on page 1.1

FAP 24 DELFT - DHI		Survey Bulletin 62 : 10 - 12 June, 1994	
RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Location 2 : Jamuna River, Sirajganj	
File : S46A1T01	Date : 30 Aug 1994	Cross-sections and measured verticals Channel 2	page 1.3
	Init : sjr		

222

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	10	6	-	-
	ADCP	10	6	-	-
	S4 current meter	1	1	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	4	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	10	12	-	-
	Integrated bottle sampling	10	6	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	20	12	-	-
	Delft Bottle	-	-	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made

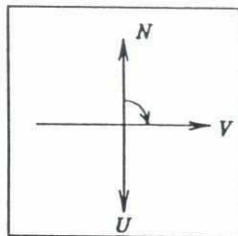
	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1785	14269	11.42	21921	170	12170
Channel 2	920	5259	11.55	6004	50	4079

Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (m+PWD) (Daily average)	Gauge
Sirajganj	Channel 1	11 June 94	11.42	FAP 24
	Channel 2	10 June 94	11.55	FAP 24
		12 June 94	11.29	FAP 24

Table 2.3: Water-levels

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 62 : 10 - 12 June, 1994	
				Location 2 : Jamuna River, Sirajganj	
File :	Date : 30 Aug 1994	Survey programme as made and key figures			page 2.1
S46B1T02					
S46A1T01	Init : sjr				

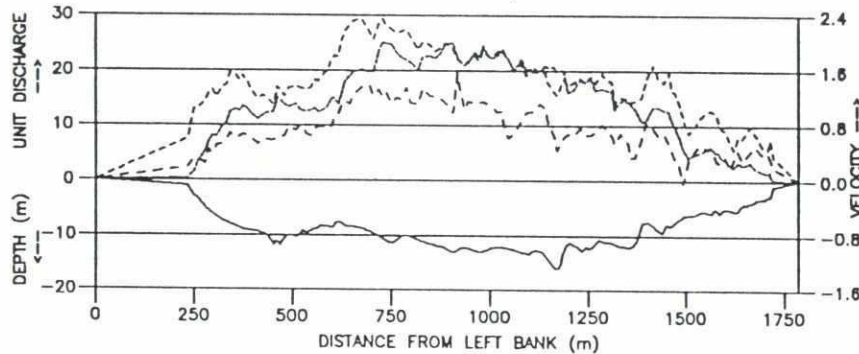


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

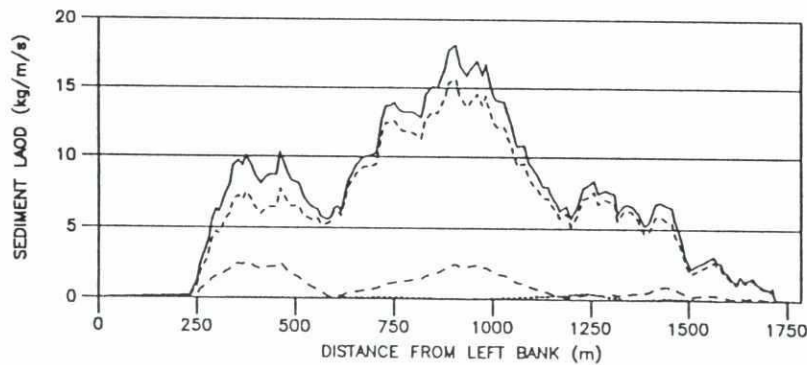
LEGEND :

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

STAGE = 11.42 (m+PWD)

A = 14269 (m³)

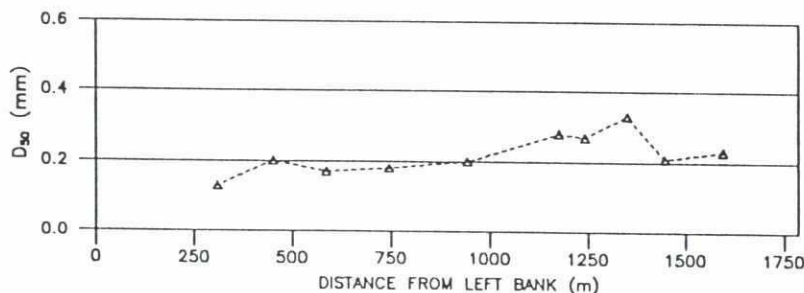
Q = 21921 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

- S_{TOTAL} 12340 (kg/s)
- S_{WASH LOAD} 10640 (kg/s)
- S_{SURF. BED} 1530 (kg/s)
- .-.- S_{BED LOAD} 170 (kg/s)



GRAIN SIZE

LEGEND :

- ♦♦♦♦♦ D₅₀ SUSP. (mm)
- △△△△△ D₅₀ BED LOAD (mm)
- D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 62 : 10 - 12 June, 1994

Location 2 : Jamuna River, Sirajganj

File : S46B1T02

Date : 30 Aug 1994

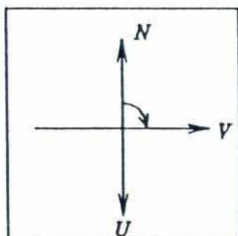
Init : sjr

Horizontal distribution of flow and sediments
Channel 1

page

3.1

228

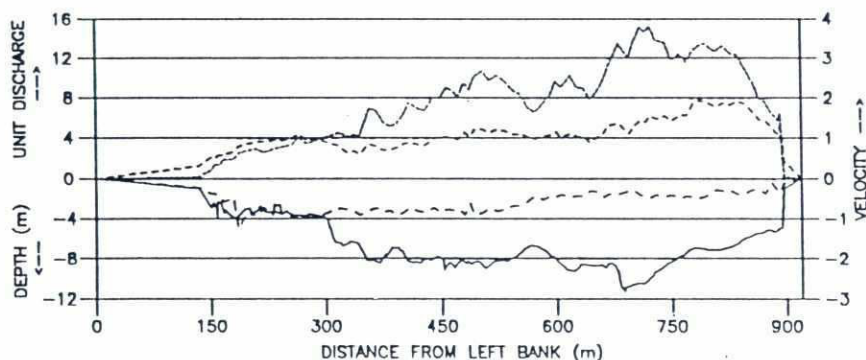


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

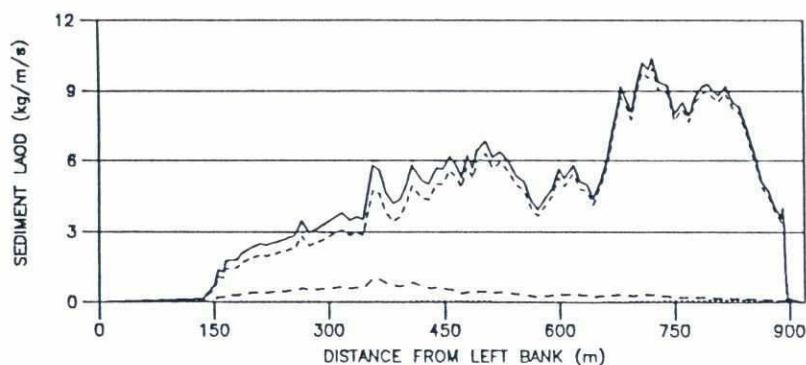
N - MAGNETIC NORTH



FLOW

LEGEND :

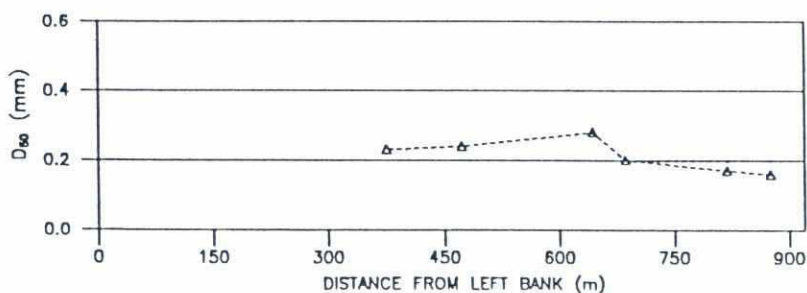
— WATER DEPTH (m below STAGE)
 --- UNIT DISCHARGE (m³/s.m)
 ... U (m/s)
 -.- V (m/s)
 STAGE = 11.55 (m+PWD)
 A = 5259 (m²)
 Q = 6004 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 4129 (kg/s)
 --- $S_{WASH\ LOAD}$ 3773 (kg/s)
 ... $S_{SUSP.\ BED}$ 306 (kg/s)
 -.- $S_{BED\ LOAD}$ 50 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ $D_{50\ SUSP.}$ (mm)
 △△△△△ $D_{50\ BED\ LOAD}$ (mm)
 □□□□□ $D_{50\ BED\ MAT.}$ (mm)

FAP 24



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

Survey Bulletin 62 : 10 - 12 June, 1994

Location 2 : Jamuna River, Sirajganj

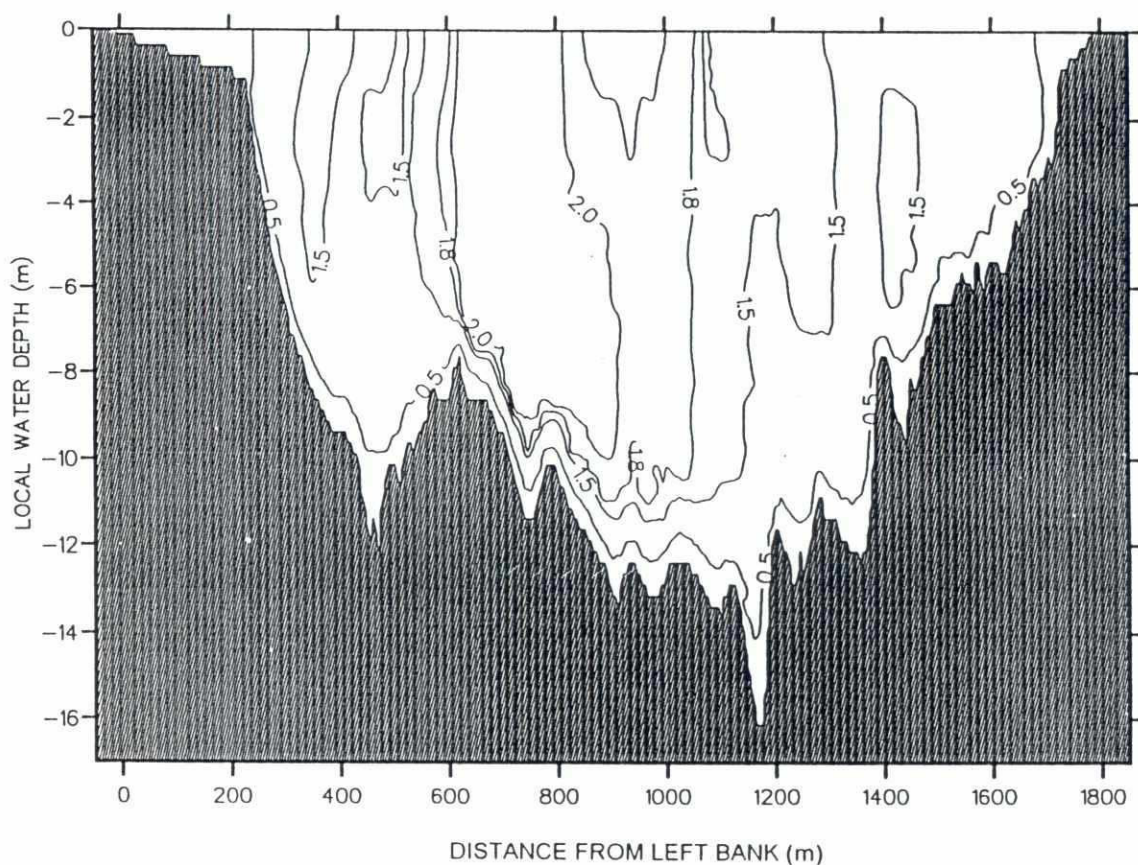
File : S46A1T01

Date : 30 Aug 1994

Init : sjr

Horizontal distribution of flow and sediments
 Channel 2

page
 3.2

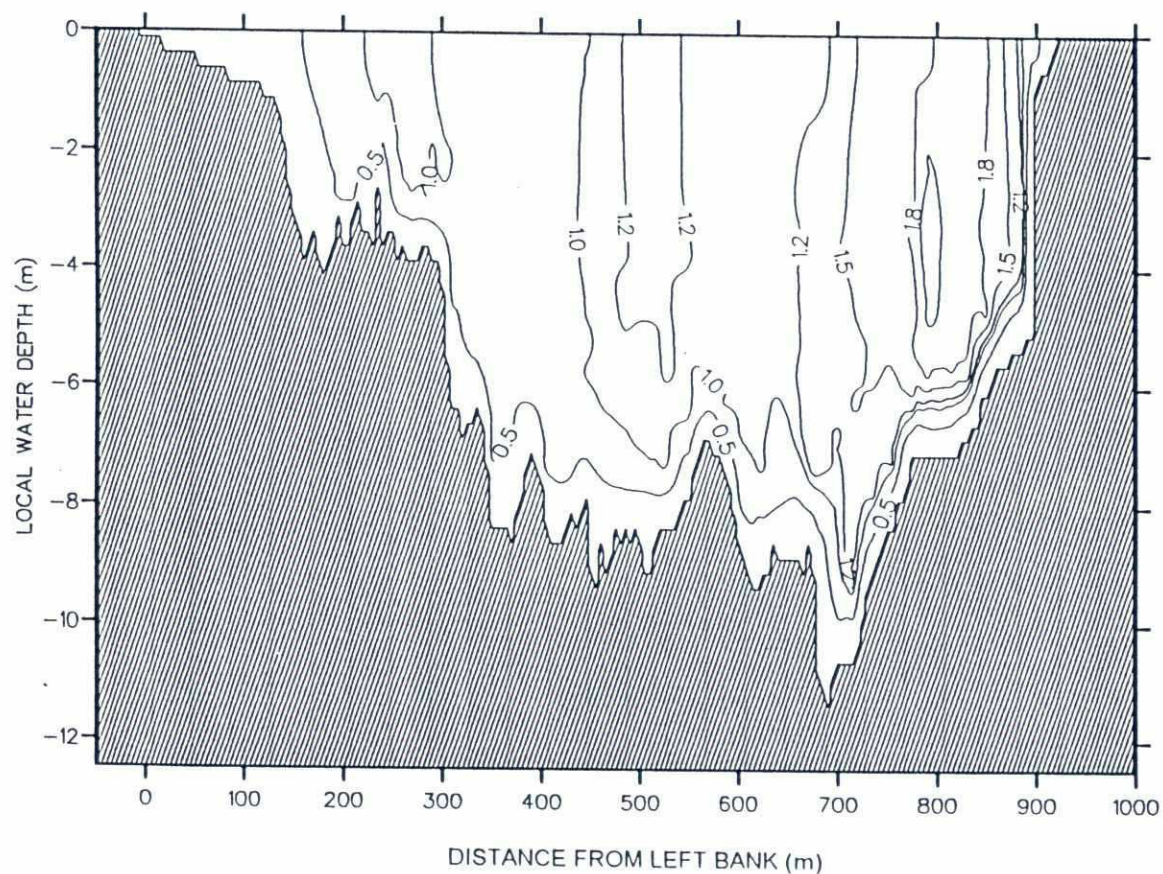


Iso-velocity contours (m/s)

Water level : 11.42 m + PWD measured at the station indicated on Page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 62 : 10 - 12 June, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S46B1T02	Date : 30 Aug 1994	Cross-sectional distribution of flow velocity Channel 1	page 4.1
	Init : sjr		

207



Iso-velocity contours (m/s)

Water level : 11.55 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 62 : 10 - 12 June, 1994

Location 2 : Jamuna River, Sirajganj

File : S46A1T01

Date : 30 Aug 1994

Init : sjr

Cross-sectional distribution of flow velocity
Channel 2

page

4.2

229

Helley - Smith								
Channel	Vertical	time (YYMMDDHHMM)	Depth (m)	Weight percent		D35	D50	D65
				< 0.06 mm > 0.06 mm		(mm)	(mm)	(mm)
1	7	9406111646-1650	5.50	1.888	98.112	0.182	0.227	0.287
	8	9406111600-1604	8.50	0.924	99.076	0.183	0.225	0.282
	9	9406111521-1525	13.50	0.353	99.647	0.290	0.331	0.378
	10	9406111431-1435	12.10	0.602	99.398	0.221	0.276	0.331
	11	9406121026-1030	15.90	0.991	99.009	0.218	0.276	0.331
	12	9406111211-1215	12.20	2.695	97.305	0.160	0.199	0.247
	13	9406111145-1149	11.30	0.032	99.968	0.158	0.178	0.200
	14	9406111119-1123	8.30	2.000	98.000	0.155	0.176	0.200
	15	9406111055-1059	11.30	1.782	98.218	0.161	0.188	0.220
	16	9406111029-1033	6.30	6.749	93.251	0.097	0.122	0.154
	7	9406111646-1650	5.50	2.007	97.993	0.186	0.235	0.297
	8	9406111600-1604	8.50	0.622	99.378	0.170	0.202	0.239
	9	9406111521-1525	13.50	0.324	99.676	0.293	0.333	0.378
	10	9406111431-1435	12.10	0.738	99.262	0.208	0.264	0.320
	11	9406121026-1030	15.90	1.187	98.813	0.217	0.275	0.330
	12	9406111211-1215	12.20	4.231	95.769	0.157	0.191	0.233
	13	9406111145-1149	11.30	1.474	98.526	0.156	0.176	0.199
	14	9406111119-1123	8.30	2.207	97.793	0.144	0.166	0.192
	15	9406111055-1059	11.30	2.607	97.393	0.169	0.211	0.267
	16	9406111029-1033	6.30	7.099	92.901	0.101	0.130	0.165
2	1	9406100918-0922	5.40	1.780	98.220	0.134	0.155	0.180
	2	9406100950-0954	7.10	1.267	98.733	0.145	0.165	0.188
	3	9406101108-1112	10.90	1.436	98.564	0.162	0.186	0.215
	4	9406101250-1254	9.20	0.574	99.426	0.234	0.285	0.338
	5	9406101331-1335	9.20	0.802	99.198	0.210	0.264	0.320
	6	9406101409-1413	8.10	1.328	98.672	0.171	0.201	0.237
	1	9406100918-0922	5.40	1.685	98.315	0.135	0.157	0.182
	2	9406100950-0954	7.10	0.835	99.165	0.148	0.168	0.191
	3	9406101108-1112	10.90	1.020	98.980	0.176	0.208	0.246
	4	9406101250-1254	9.20	0.361	99.639	0.234	0.285	0.338
	5	9406101331-1335	9.20	1.840	98.160	0.177	0.215	0.267
	6	9406101409-1413	8.10	0.669	99.331	0.203	0.257	0.315
Table 5.1 : Grain sizes of bed load								

 FAP 24 DELFT - DHI.		Survey Bulletin 62 : 10 - 12 June, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Aug 1994	Grain size distributions	page 5.1
	Init : sjr		

226

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9406110742-0754 9406110758-0810 9406111712-1724 9406111727-1740	S46B1T01 S46B1T02 * S46B1T03 S46B1T04
	2	9406100739-0747 9406100754-0800 9406101435-1441 9406101443-1451	S46A1T01 * S46A1T02 S46A1T03 S46A1T04

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	7	9406111650-1657	477094	698483	5.50	S46B1P10*
		8	9406111604-1614	477243	698483	8.50	S46B1P09*
		9	9406111525-1546	477338	698482	13.50	S46B1P08*
		10	9406111435-1446	477448	698471	12.10	S46B1P07*
		11	9406121030-1213	477513	698486	15.90	S46C1P01
		12	9406111215-1229	477746	698488	12.20	S46B1P05*
		13	9406111149-1158	477944	698481	11.30	S46B1P04*
		14	9406111123-1132	478103	698482	8.30	S46B1P03*
		15	9406111059-1108	478238	698485	11.30	S46B1P02*
		16	9406111033-1045	478380	698483	6.30	S46B1P01*
	2	1	9406100922-0936	471388	699804	5.40	S46A1P01*
		2	9406100954-1012	471445	699802	7.10	S46A1P02*
		3	9406101112-1214	471577	699797	10.90	S46A1P03
		4	9406101254-1312	471617	699793	9.20	S46A1P04*
		5	9406101335-1354	471788	699804	9.20	S46A1P05*
		6	9406101413-1426	471900	699802	8.10	S46A1P06*

Table 6.2: Vertical profiles * S4 & MEX not available

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 62 : 10 - 12 June, 1994		
	Location 2 : Jamuna River, Sirajganj		
	Date : 30 Aug 1994	Collected data and their storage (1)	page 6.1
	Init : sjr		

222

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	11	4	9406121030-1213	477513	698486	15.90
	2	3	6	9406101112-1214	471577	699797	10.90

Table 6.3: Suspended sediment - point sampled

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	7	1	9406111650-1657	477094	698483	5.50
		8	1	9406111604-1614	477243	698483	8.50
		9	1	9406111525-1546	477338	698482	13.50
		10	1	9406111435-1446	477448	698471	12.10
		11	1	9406121030-1213	477513	698486	15.90
		12	1	9406111215-1229	477746	698488	12.20
		13	1	9406111149-1158	477944	698481	11.30
		14	1	9406111123-1132	478103	698482	8.30
		15	1	9406111059-1108	478238	698485	11.30
		16	1	9406111033-1045	478380	698483	6.30
	2	1	1	9406100922-0936	471388	699804	5.40
		2	1	9406100954-1012	471445	699802	7.10
		3	1	9406101112-1214	471577	699797	10.90
		4	1	9406101254-1312	471617	699793	9.20
		5	1	9406101335-1354	471788	699804	9.20
		6	1	9406101413-1426	471900	699802	8.10

Table 6.4: Suspended sediment - depth integrated

 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 62 : 10 - 12 June, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Aug 1994	Collected data and their storage (2)	page 6.2
	Init : sjr		

720

Method	Channel	Vertical	Time (YYMMDDHHMM-HH)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley Smith Sample	1	7	9406111646-1650	477094	698483	5.50	A700
		8	9406111600-1604	477243	698483	8.50	A692
		9	9406111521-1525	477338	698482	13.50	A124
		10	9406111431-1435	477448	698471	12.10	A348
		11	9406121026-1030	477513	698486	15.90	A1160
		12	9406111211-1215	477746	698488	12.20	A1382
		13	9406111145-1149	477944	698481	11.30	A68
		14	9406111119-1123	478103	698482	8.30	A1374
		15	9406111055-1059	478238	698485	11.30	A1385
		16	9406111029-1033	478380	698483	6.30	A1141
		7	9406111646-1650	477094	698483	5.50	A335
		8	9406111600-1604	477243	698483	8.50	A919
		9	9406111521-1525	477338	698482	13.50	A47
		10	9406111431-1435	477448	698471	12.10	A886
		11	9406121026-1030	477513	698486	15.90	A49
		12	9406111211-1215	477746	698488	12.20	A1589
		13	9406111145-1149	477944	698481	11.30	A1691
		14	9406111119-1123	478103	698482	8.30	A114
		15	9406111055-1059	478238	698485	11.30	A338
		16	9406111029-1033	478380	698483	6.30	A1145
	2	1	9406100918-0922	471388	699804	5.40	A697
		2	9406100950-0954	471445	699802	7.10	A55
		3	9406101108-1112	471577	699797	10.90	A903
		4	9406101250-1254	471617	699793	9.20	A714
		5	9406101331-1335	471788	699804	9.20	A341
		6	9406101409-1413	471900	699802	8.10	A364
		1	9406100918-0922	471388	699804	5.40	A39
		2	9406100950-0954	471445	699802	7.10	A65
		3	9406101108-1112	471577	699797	10.90	A905
		4	9406101250-1254	471617	699793	9.20	A460
		5	9406101331-1335	471788	699804	9.20	A352
		6	9406101409-1413	471900	699802	8.10	A1378

Table 6.5: Bed load

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 62 : 10 - 12 June, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Aug 1994	Collected data and their storage (3)	page 6.3
	Init : sjr		

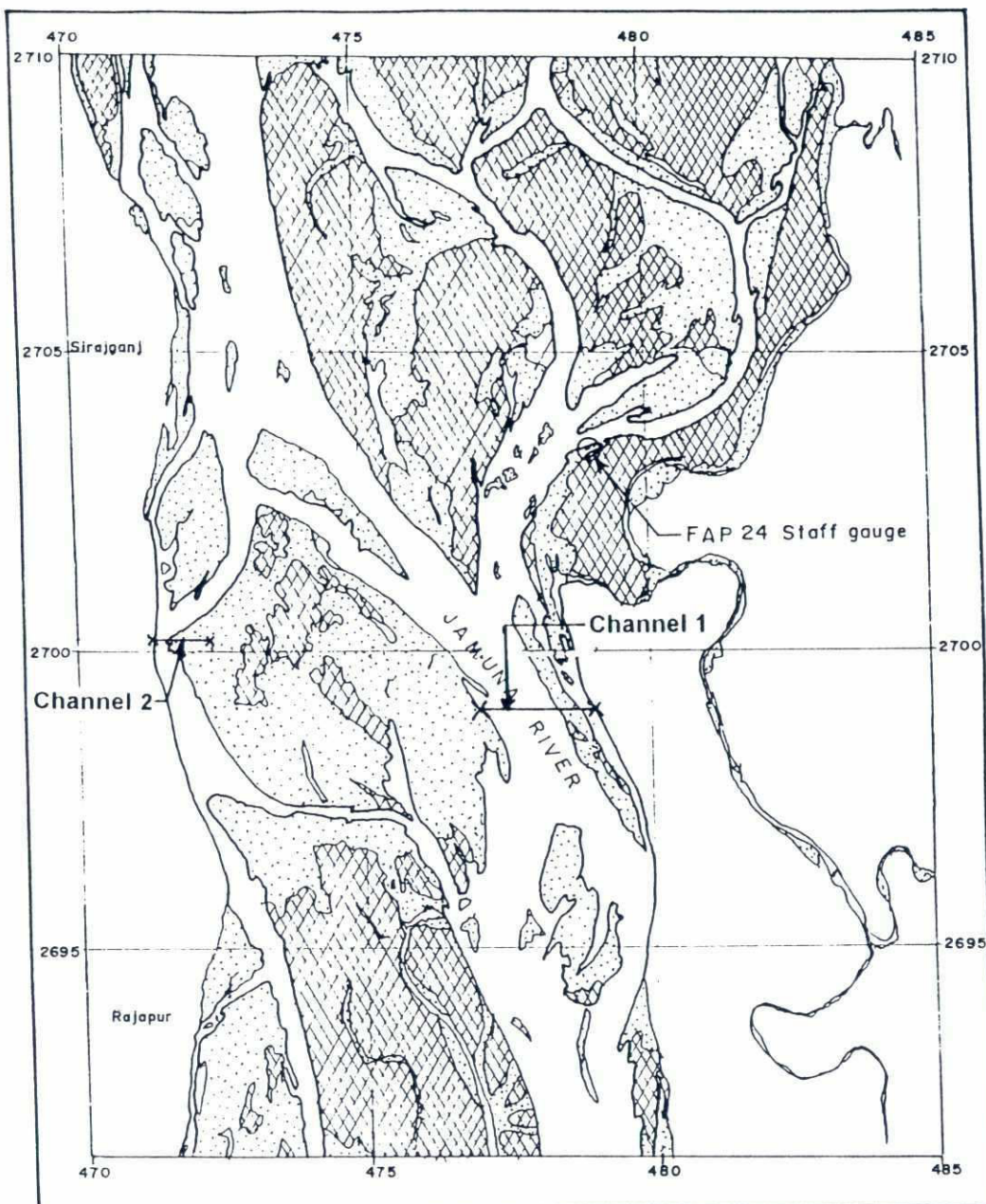
22

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S46B1T02 .ase
ADCP/S4/EMF data	2	QUATTRO	S46A1T01 .ase
Echosounder data	1	QUATTRO	S46B1T02 .ech
Echosounder data	2	QUATTRO	S46A1T01 .ech
Sediment transport data	1	QUATTRO	S46B1T02 .sed
Sediment transport data	2	QUATTRO	S46A1T01 .sed
Bed load sediment analysis	1	QUATTRO	S46B1T02 .bdl
Bed load sediment analysis	2	QUATTRO	S46A1T01 .bdl
Susp. sed. conc. analysis	1	QUATTRO	S46B1T02 .ssc
Susp. sed. conc. analysis	2	QUATTRO	S46A1T01 .ssc
Transect plot data	1	QUATTRO	S46B1T02 .trs
Transect plot data	2	QUATTRO	S46A1T01 .trs
Iso-velocity plot data	1	MIKE 21	S46B1T02 .ct2
		MIKE 21	S46B1T02 .dt2
Iso-velocity plot data	2	MIKE 21	S46A1T01 .ct2
		MIKE 21	S46A1T01 .dt2

Table 7.1 PSD 24 Database file description

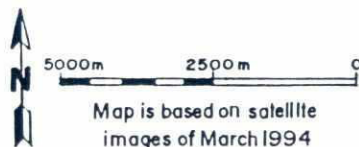
 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 62 : 10 - 12 June, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Aug 1994	PSD 24 Database file description	page
	Init : sjr		7.1

222



LEGEND :

- ✕—✕ Measurement cross section
- ▨ High land
- ░ Unstable/low char
- ⊙ FAP 24 Staff gauge



FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 72 : 01 - 03 July, 1994

Location 2 : Jamuna River, Sirajganj

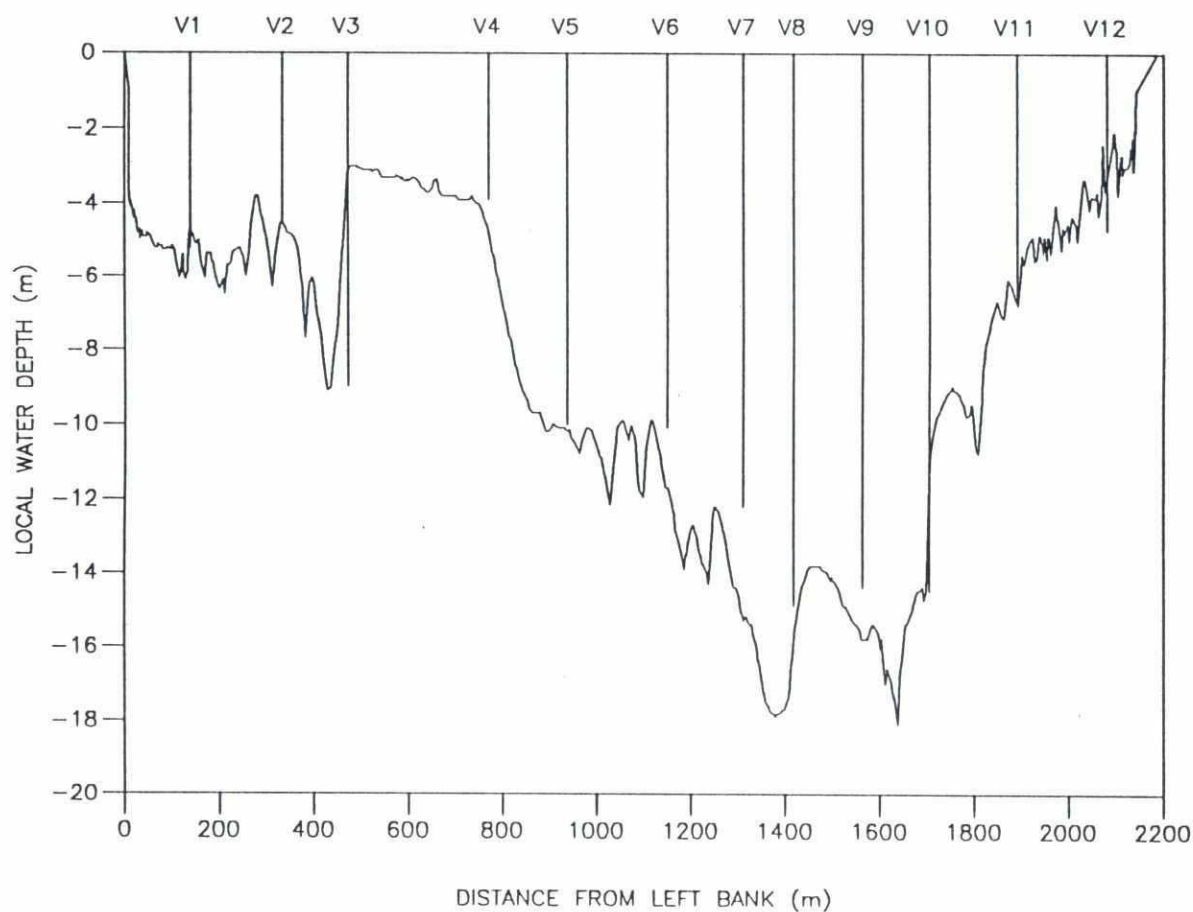
Date : 14 Sep 1994

Init : mua

Location map

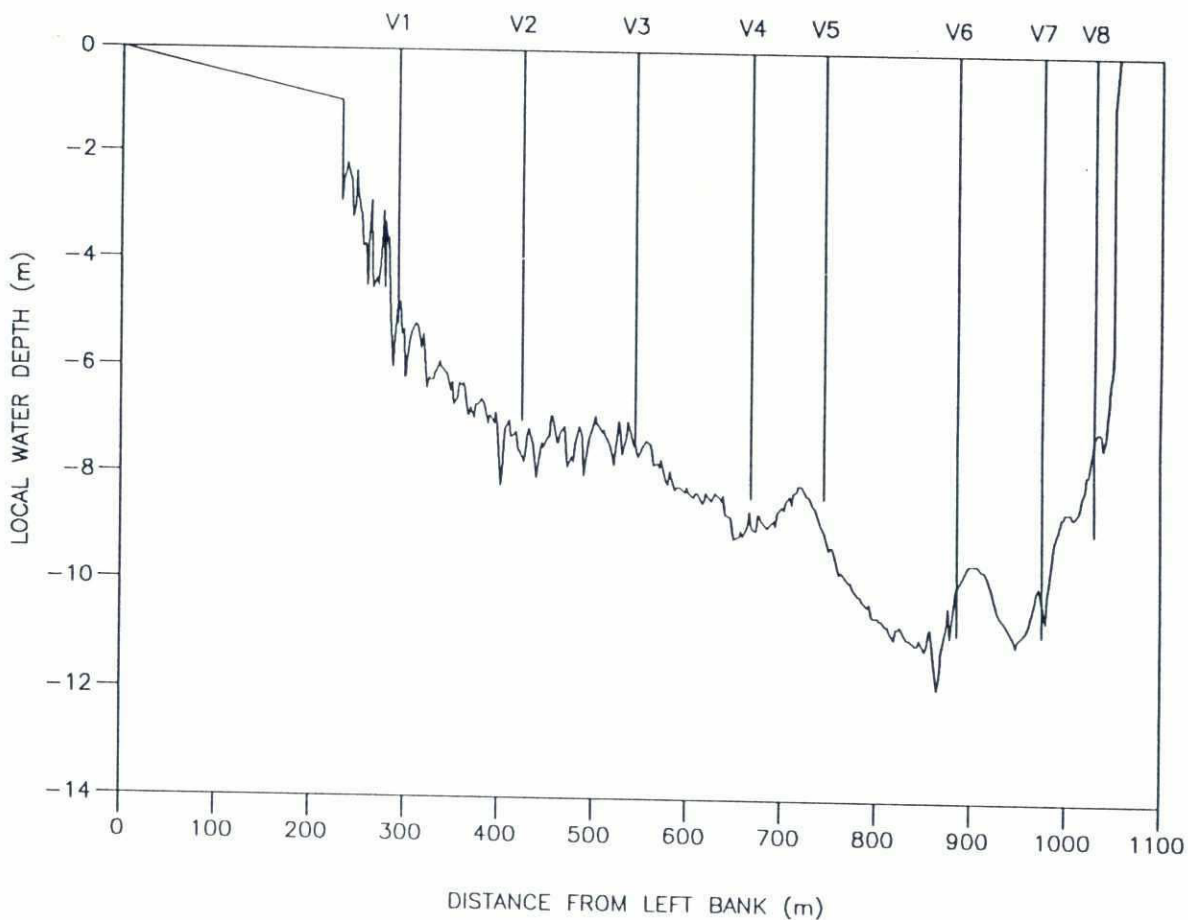
page

1.1



Water-level : 12.13 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4721T02	Date : 14 Sep 1994	Cross-sections and measured verticals Channel 1	page 1.2
	Init : mk/mua		



Water-level : 12.15 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4711T04	Date : 14 Sep 1994	Cross-sections and measured verticals Channel 2	page 1.3
	Init : mk/mua		

22

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	6	4	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	12	8	-	-
	ADCP	12	8	-	-
	S4 current meter	1	-	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	5	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	10	12	-	-
	Integrated bottle sampling	12	8	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	24	16	-	-
	Delft Bottle	-	-	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made

	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	2188	18300	12.13	26520	195	16666
Channel 2	1072	6805	12.15	7150	26	4842

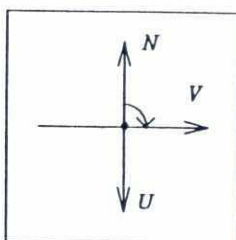
Table 2.2: Key figures

Gauge Location	Channe 1	Date	Water level (Daily average) (m+PWD)	Gauge
Bhuyapur	Channel 1	02 Jul 94	12.13	FAP 24
		03 Jul 94	12.02	FAP 24
	Channel 2	01 Jul 94	12.15	FAP 24

Table 2.3: Water-levels



 FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj		
File : S4721T02 S4711T04	Date : 14 Sep 1994	Survey programme as made and key figures	page 2.1	
	Init : mua/mk			

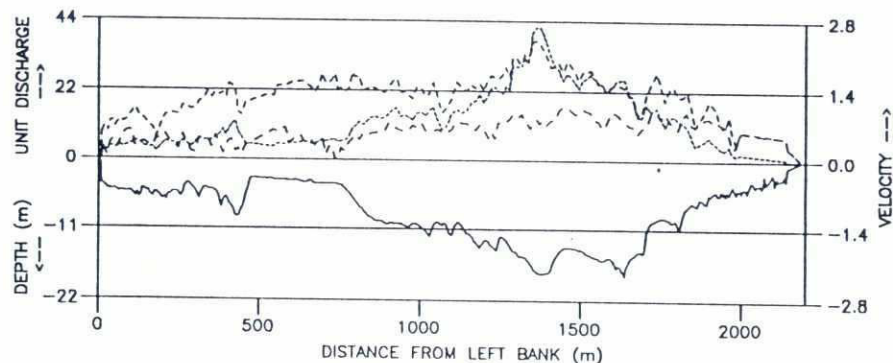


TRANSECT AZIMUTH = 90°

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)

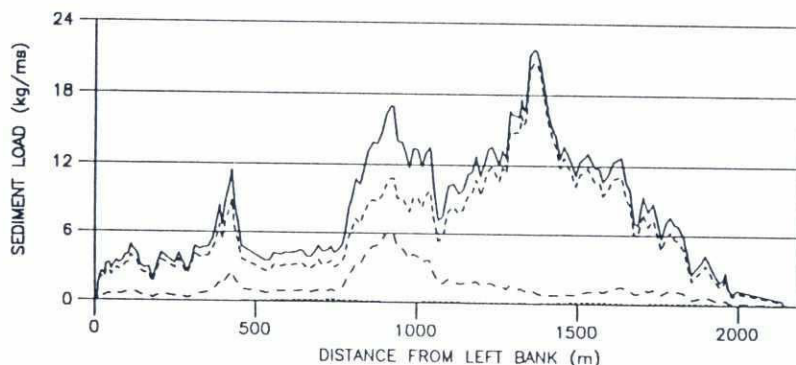
--- U - (m/s)

-.- V - (m/s)

STAGE = 12.13 (m+PWD)

A = 18300 (m²)

Q = 26520 (m³/s)



SEDIMENT TRANSPORT

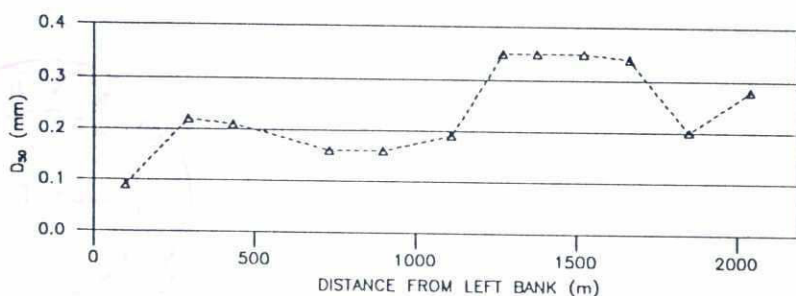
LEGEND :

— S_{TOTAL} 16861 (kg/s)

--- S_{WASH LOAD} 13746 (kg/s)

-.- S_{SUSP. BED} 2920 (kg/s)

..... S_{BED LOAD} 195 (kg/s)



GRAIN SIZE

LEGEND :

◆◆◆◆ D₅₀ SUSP. (mm)

▲▲▲▲ D₅₀ BED LOAD (mm)

□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 72 : 01 - 03 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S4721T02

Date : 14 Sep 1994

Init : mk/mua

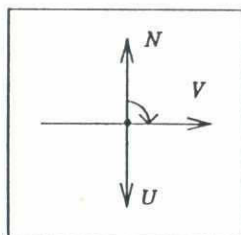
Horizontal distribution of flow and sediments

Channel 1

page

3.1

229

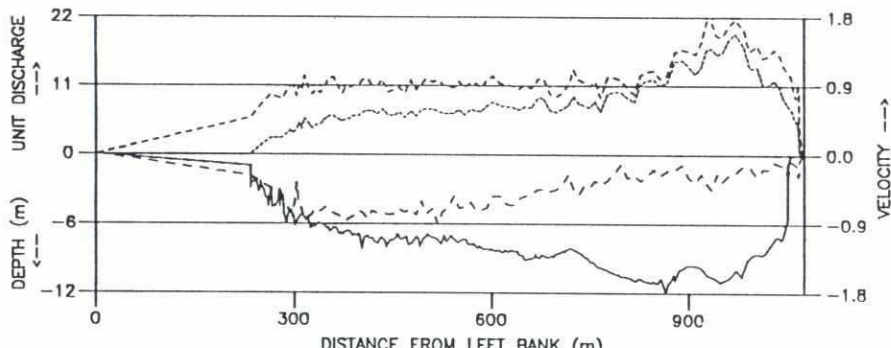


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

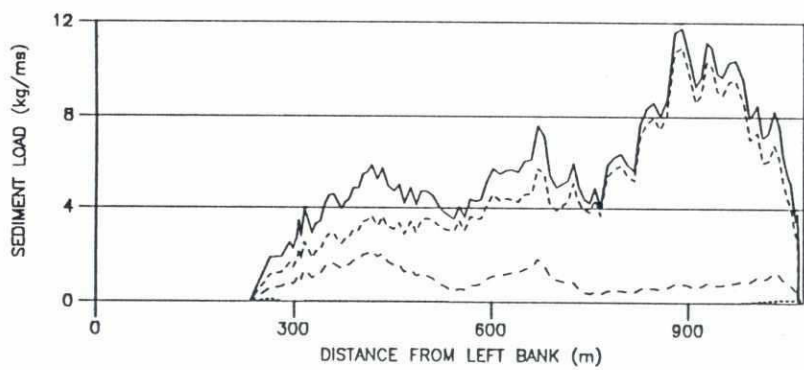
LEGEND :

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

STAGE = 12.15 (m+PWD)

A = 6805 (m²)

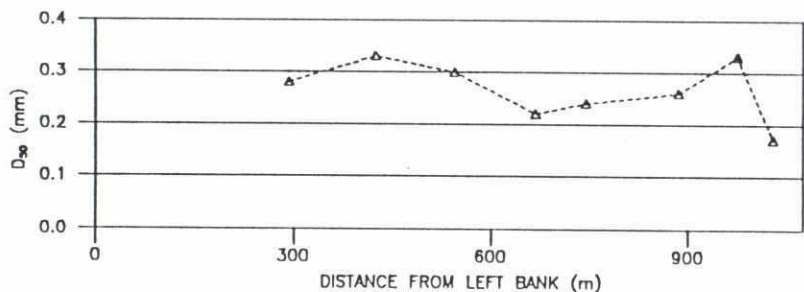
Q = 7150 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

- S_{TOTAL} 4868 (kg/s)
- S_{WASH LOAD} 4006 (kg/s)
- .- S_{SUSP. BED} 836 (kg/s)
- S_{BED LOAD} 26 (kg/s)



GRAIN SIZE

LEGEND :

- ♦♦♦♦♦ D₅₀ SUSP. (mm)
- △△△△△ D₅₀ BED LOAD (mm)
- D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 72 : 01 - 03 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S4711T04

Date : 14 Sep 1994

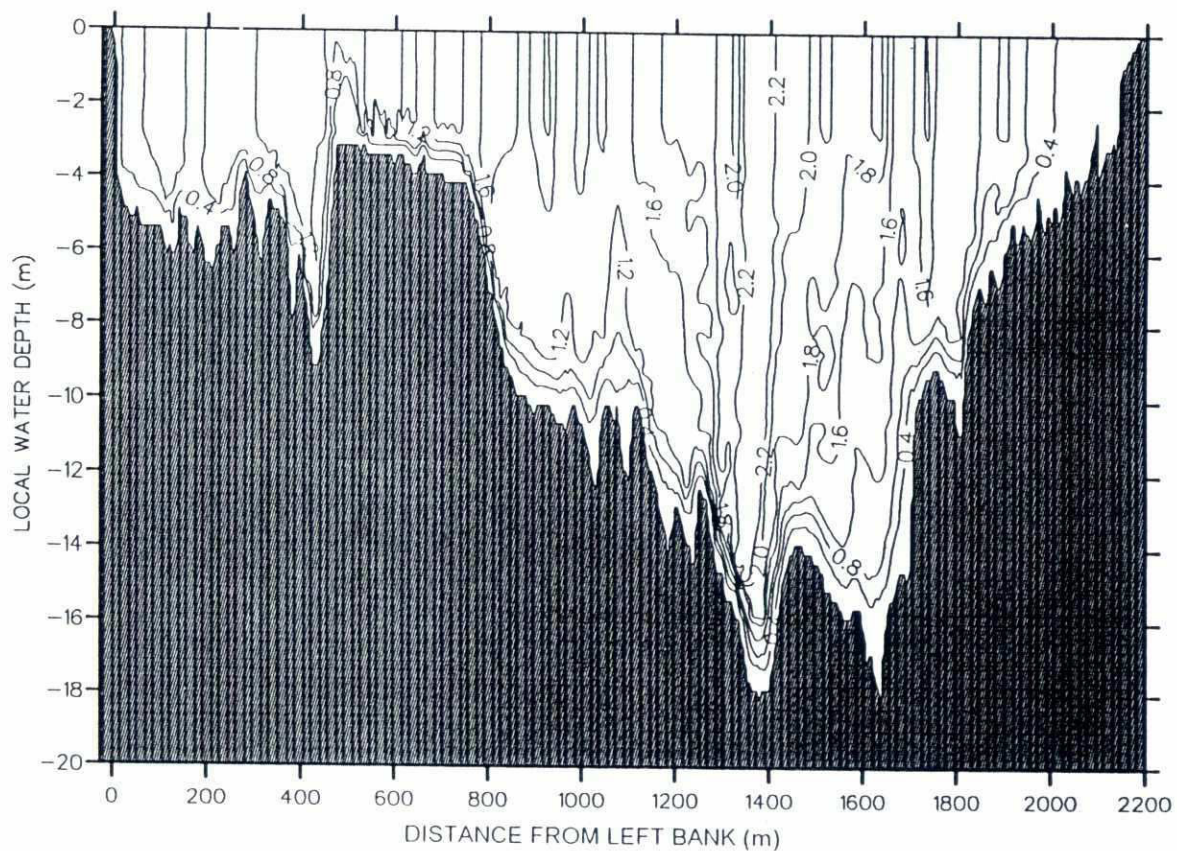
Init : mk/mua

Horizontal distribution of flow and sediments
Channel 2

page

3.2

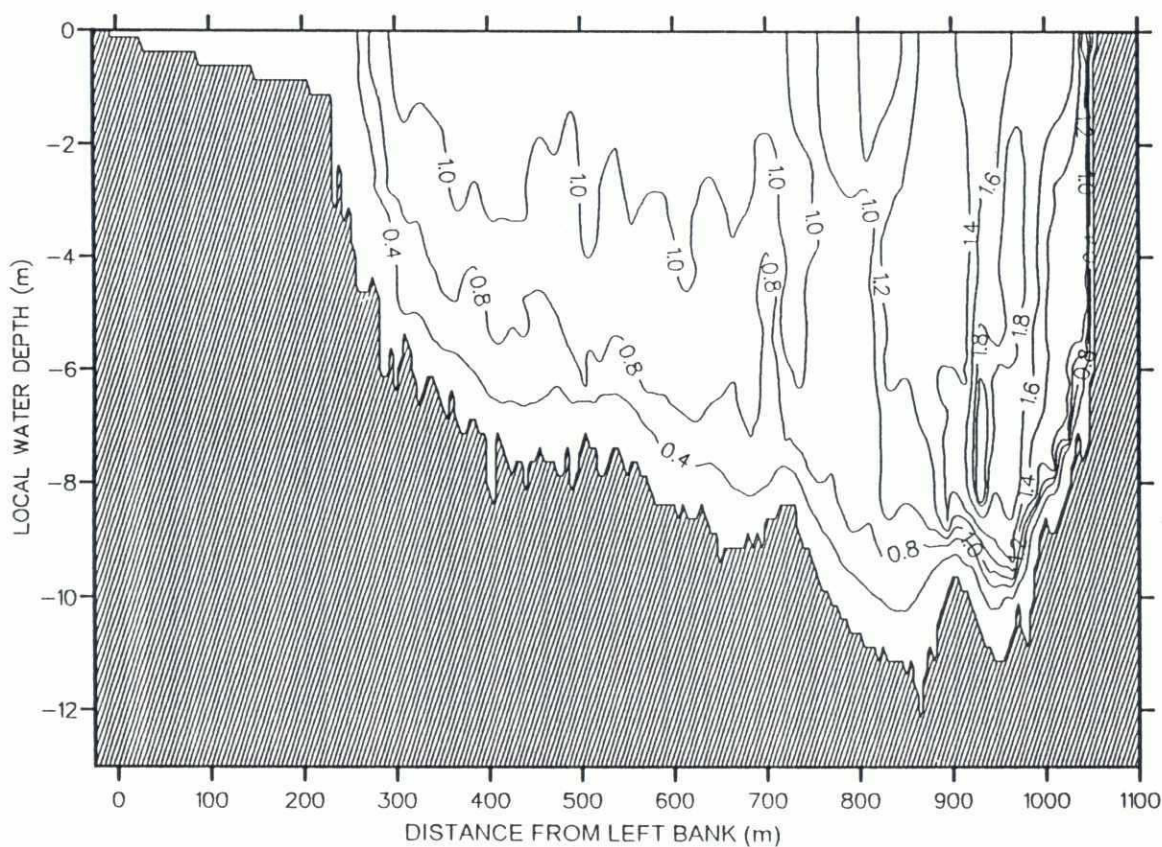
725



Iso-velocity contours (m/s)

Water-level : 12.13 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4721T02	Date : 14 Sep 1994	Cross-sectional distribution of flow velocity Channel 1	page 4.1
	Init : mk/mua		



Iso-velocity contours (m/s)

Water-level : 12.15 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 72 : 01 - 03 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S4711T04

Date : 14 Sep 1994

Init : mk/mua

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	1	9407021150-1202	5.20	22.294	77.706	0.074	0.089	0.108
	1	9407021150-1202	5.20	23.816	76.184	0.074	0.091	0.111
	2	9407021229-1237	4.50	0.867	99.133	0.203	0.257	0.318
	2	9407021229-1237	4.50	4.027	95.973	0.145	0.180	0.224
	3	9407021253-1302	9.00	7.531	92.469	0.130	0.171	0.226
	3	9407021253-1302	9.00	3.813	96.187	0.176	0.247	0.309
	4	9407021323-1329	3.90	2.528	97.472	0.139	0.160	0.184
	4	9407021323-1329	3.90	1.606	98.394	0.146	0.167	0.190
	5	9407021425-1434	10.0	3.889	96.111	0.118	0.152	0.193
	5	9407021425-1434	10.0	3.875	96.125	0.142	0.167	0.197
	6	9407021504-1512	10.1	2.159	97.841	0.155	0.181	0.212
	6	9407021504-1512	10.1	1.654	98.346	0.169	0.202	0.241
	7	9407021539-1548	12.2	0.264	99.736	0.308	0.346	0.389
	7	9407021539-1548	12.2	0.245	99.755	0.310	0.347	0.390
	8	9407031020-1116	14.9	0.244	99.756	0.309	0.347	0.389
	8	9407031020-1116	14.9	0.267	99.733	0.308	0.345	0.387
	9	9407031202-1210	14.4	0.150	99.850	0.311	0.348	0.389
	9	9407031202-1210	14.4	0.075	99.925	0.313	0.350	0.392
	10	9407031243-1254	14.5	0.209	99.791	0.302	0.340	0.384
	10	9407031243-1254	14.5	0.190	99.810	0.309	0.347	0.390
	11	9407031335-1345	6.70	0.403	99.597	0.183	0.217	0.264
	11	9407031335-1345	6.70	0.841	99.159	0.161	0.184	0.209
	12	9407031424-1434	4.70	0.344	99.656	0.223	0.276	0.331
	12	9407031424-1434	4.70	0.323	99.677	0.235	0.285	0.338
2	1	9407011558-1607	5.20	0.303	99.697	0.265	0.307	0.356
	1	9407011558-1607	5.20	0.299	99.701	0.208	0.261	0.320
	2	9407011526-1536	7.00	0.373	99.627	0.270	0.313	0.363
	2	9407011526-1536	7.00	0.219	99.781	0.297	0.337	0.381
	3	9407011505-1517	7.40	0.419	99.581	0.261	0.305	0.357
	3	9407011505-1517	7.40	0.231	99.769	0.255	0.299	0.350
	4	9407011448-1456	8.40	5.828	94.172	0.158	0.197	0.247
	4	9407011448-1456	8.40	13.624	86.376	0.175	0.234	0.300
	5	9407011419-1430	8.40	18.524	81.476	0.133	0.195	0.274
	5	9407011419-1430	8.40	1.132	98.868	0.235	0.287	0.340
	6	9407011208-1300	10.9	0.667	99.333	0.169	0.197	0.230
	6	9407011208-1300	10.9	0.244	99.756	0.275	0.316	0.363
	7	9407011135-1143	10.9	0.977	99.023	0.285	0.332	0.387
	7	9407011135-1143	10.9	0.475	99.525	0.295	0.335	0.381
	8	9407011052-1102	9.00	1.484	98.516	0.134	0.158	0.188
	8	9407011052-1102	9.00	1.339	98.661	0.149	0.172	0.198

Table 5.3 : Grain sizes of bed load

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 14 Sep 1994	Grain size distributions	page 5.2
	init : mua/mk		

265

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9407020845-0903	S4721T01
		9407020908-0925	S4721T02*
		9407021619-1636	S4721T03
		9407021639-1658	S4721T04
		9407031457-1513	S4731T03
		9407031519-1539	S4721T04
	2	9407010834-0844	S4711T01
		9407010850-0858	S4711T02
		9407011619-1627	S4711T03
		9407011630-1640	S4711T04*

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	9407021150-1202	478957	698485	5.20	S4721P01 *
		2	9407021229-1237	478762	698478	4.50	S4721P02 *
		3	9407021253-1302	478624	698473	9.00	S4721P03 *
		4	9407021323-1329	478325	698469	3.90	S4721P05 *
		5	9407021425-1434	478158	698486	10.0	S4721P06 *
		6	9407021504-1512	477946	698481	10.1	S4721P07 *
		7	9407021539-1548	477785	698479	12.2	S4721P08 *
		8	9407031020-1116	477678	698492	14.9	S4731P01
		9	9407031202-1210	477532	698482	14.4	S4731P02 *
		10	9407031243-1254	477391	698484	14.5	S4731P03 *
		11	9407031335-1345	477206	698489	6.70	S4731P04 *
		12	9407031424-1434	477016	698491	4.70	S4731P05 *
	2	1	9407011558-1607	472142	699801	5.20	S4711P09 *
		2	9407011526-1536	472010	699800	7.00	S4711P08 *
		3	9407011505-1517	471890	699801	7.40	S4711P07 *
		4	9407011448-1456	471767	699792	8.40	S4711P06 *
		5	9407011419-1430	471690	699796	8.40	S4711P05 *
		6	9407011208-1300	471552	699805	10.9	S4711P03 **
		7	9407011135-1143	471461	699808	10.9	S4711P02 *
		8	9407011052-1102	471405	699802	9.00	S4711P01 *

Table 6.2: Vertical profiles

* * S4 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	8	5	9407031020-1116	477678	698492	14.9
	2	6	6	9407011208-1300	471552	699805	10.9

Table 6.3: Suspended sediment - point sampled

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 72 : 01 - 03 July, 1994	
				Location 2 : Jamuna River, Sirajganj	
		Date 14 Sep 1994 Init mua/mk		Collected data and their storage (1)	
				page 6.1	

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	1	1	9407021150-1202	478957	698485	5.20
		2	1	9407021229-1237	478762	698478	4.50
		3	1	9407021253-1302	478624	698473	9.00
		4	1	9407021323-1329	478325	698469	3.90
		5	1	9407021425-1434	478158	698486	10.0
		6	1	9407021504-1512	477946	698481	10.1
		7	1	9407021539-1548	477785	698479	12.2
		8	1	9407031020-1116	477678	698492	14.9
		9	1	9407031202-1210	477532	698482	14.4
		10	1	9407031243-1254	477391	698484	14.5
		11	1	9407031335-1345	477206	698489	6.70
		12	1	9407031424-1434	477016	698491	4.70
	2	1	1	9407011558-1607	472142	699801	5.20
		2	1	9407011526-1536	472010	699800	7.00
		3	1	9407011505-1517	471890	699801	7.40
		4	1	9407011448-1456	471767	699792	8.40
		5	1	9407011419-1430	471690	699796	8.40
		6	1	9407011208-1300	471552	699805	10.9
		7	1	9407011135-1143	471461	699808	10.9
		8	1	9407011052-1102	471405	699802	9.00

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	1	9407021150-1202	478957	698485	5.20	A1619
		1	9407021150-1202	478957	698485	5.20	A71
		2	9407021229-1237	478762	698478	4.50	A1368
		2	9407021229-1237	478762	698478	4.50	A1665
		3	9407021253-1302	478624	698473	9.00	A117
		3	9407021253-1302	478624	698473	9.00	A69
		4	9407021323-1329	478325	698469	3.90	A110
		4	9407021323-1329	478325	698469	3.90	A82
		5	9407021425-1434	478158	698486	10.0	A1618
		5	9407021425-1434	478158	698486	10.0	A874
		6	9407021504-1512	477946	698481	10.1	A1593
		6	9407021504-1512	477946	698481	10.1	A120
		7	9407021539-1548	477785	698479	12.2	A915
		7	9407021539-1548	477785	698479	12.2	A361
		8	9407031020-1116	477678	698492	14.9	A1656
		8	9407031020-1116	477678	698492	14.9	A568
		9	9407031202-1210	477532	698482	14.4	A570
		9	9407031202-1210	477532	698482	14.4	A897
		10	9407031243-1254	477391	698484	14.5	A706
		10	9407031243-1254	477391	698484	14.5	A1690
		11	9407031335-1345	477206	698489	6.70	A103
		11	9407031335-1345	477206	698489	6.70	A1606
		12	9407031424-1434	477016	698491	4.70	A372
		12	9407031424-1434	477016	698491	4.70	A87

Table 6.5: Bed load

(Continued)

 FAP 24 DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date 14 Sep 1994	Collected data and their storage (2)	page 62
	Init : mua/mk		

206

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley-Smith Sample	2	1	9407011558-1607	472142	699801	5.20	A881
		1	9407011558-1607	472142	699801	5.20	A884
		2	9407011526-1536	472010	699800	7.00	A1381
		2	9407011526-1536	472010	699800	7.00	A85
		3	9407011505-1517	471890	699801	7.40	A1335
		3	9407011505-1517	471890	699801	7.40	A90
		4	9407011448-1456	471767	699792	8.40	A893
		4	9407011448-1456	471767	699792	8.40	A75
		5	9407011419-1430	471690	699796	8.40	A1647
		5	9407011419-1430	471690	699796	8.40	A79
		6	9407011208-1300	471552	699805	10.9	A70
		6	9407011208-1300	471552	699805	10.9	A862
		7	9407011135-1143	471461	699808	10.9	A362
		7	9407011135-1143	471461	699808	10.9	A89
		8	9407011052-1102	471405	699802	9.00	A1359
		8	9407011052-1102	471405	699802	9.00	A1616

Table 6.5: Bed load

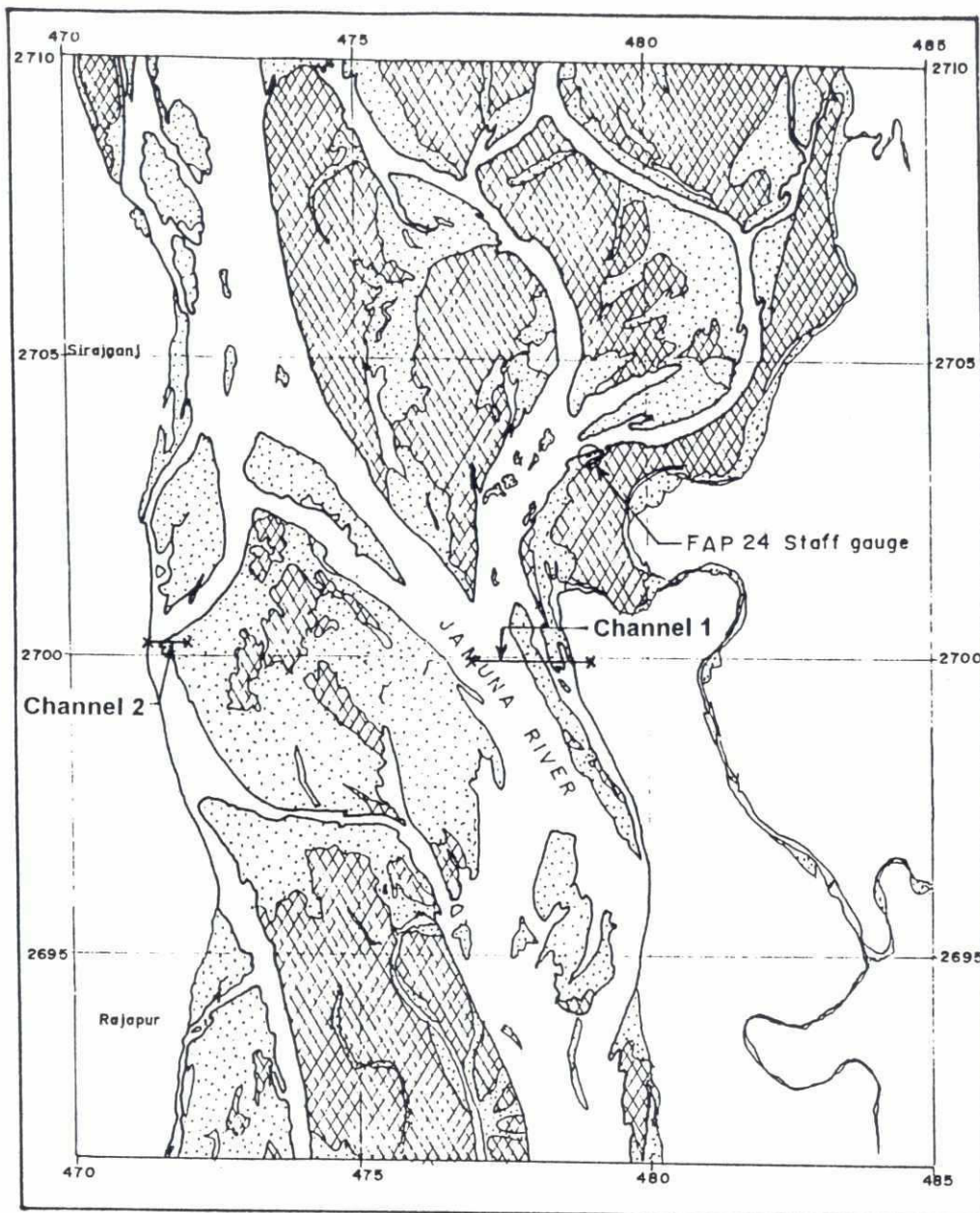
FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 14 Sep 1994	Collected data and their storage (3)	page 6.3
	Init : mua/mk		

268

Types of Data	Channel	Format	Filename
ADCP/S4/EMF	1	QUATTRO	S4721T02 .ase
ADCP/S4/EMF	2	QUATTRO	S4711T04 .ase
Echosounder	1	QUATTRO	S4721T02 .ech
Echosounder	2	QUATTRO	S4711T04 .ech
Sediment transport	1	QUATTRO	S4721T02 .sed
Sediment transport	2	QUATTRO	S4711T04 .sed
Bed load sieve size	1	QUATTRO	S4721T02 .bdl
Bed load sieve size	2	QUATTRO	S4711T04 .bdl
Suspended sediment conc.	1	QUATTRO	S4721T02 .ssc
Suspended sediment conc.	2	QUATTRO	S4711T04 .ssc
Transect plot data	1	QUATTRO	S4721T02 .trs
Transect plot data	2	QUATTRO	S4711T04 .trs
Iso-velocity plot data	1	MIKE 21	S4721T02 .ct2
		MIKE 21	S4721T02 .dt2
Iso-velocity plot data	2	MIKE 21	S4711T04 .ct2
		MIKE 21	S4711T04 .dt2

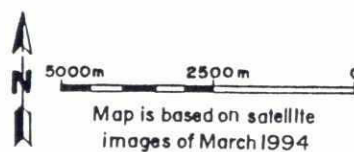
Table 7.1 PSD 24 Database file description

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 72 : 01 - 03 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
Date : 14 Sep 1994 Init : mua/mk		PSD 24 Database file description	
		page 7.1	



LEGEND :

- x—x— Measurement cross section
- ▨ High land
- ░ Unstable/low char
- FAP 24 Staff gauge



FAP 24

 DELFT - DHI

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

Survey Bulletin 82 : 18 - 20 July, 1994

Location 2 : Jamuna River, Sirajganj

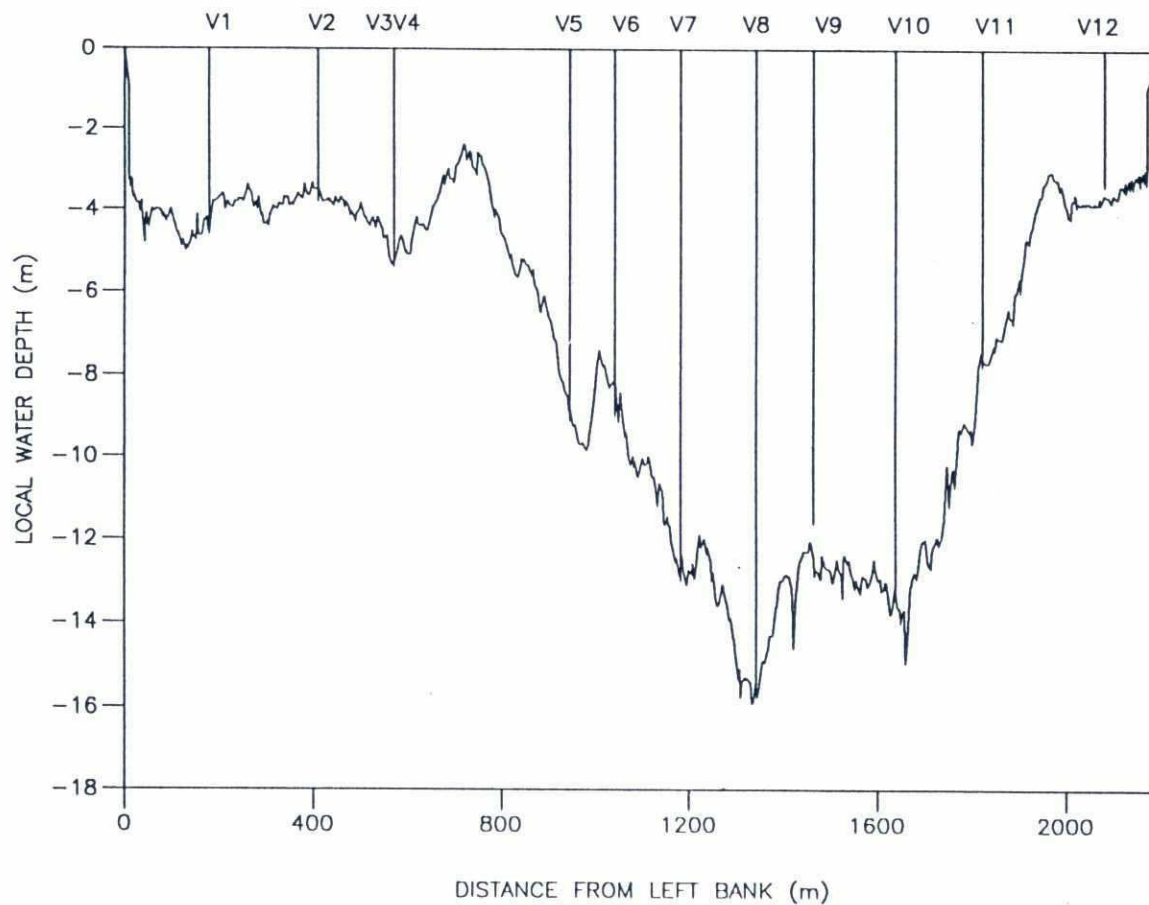
Date : 16 Oct 1994

Init : mzh

Location map

page

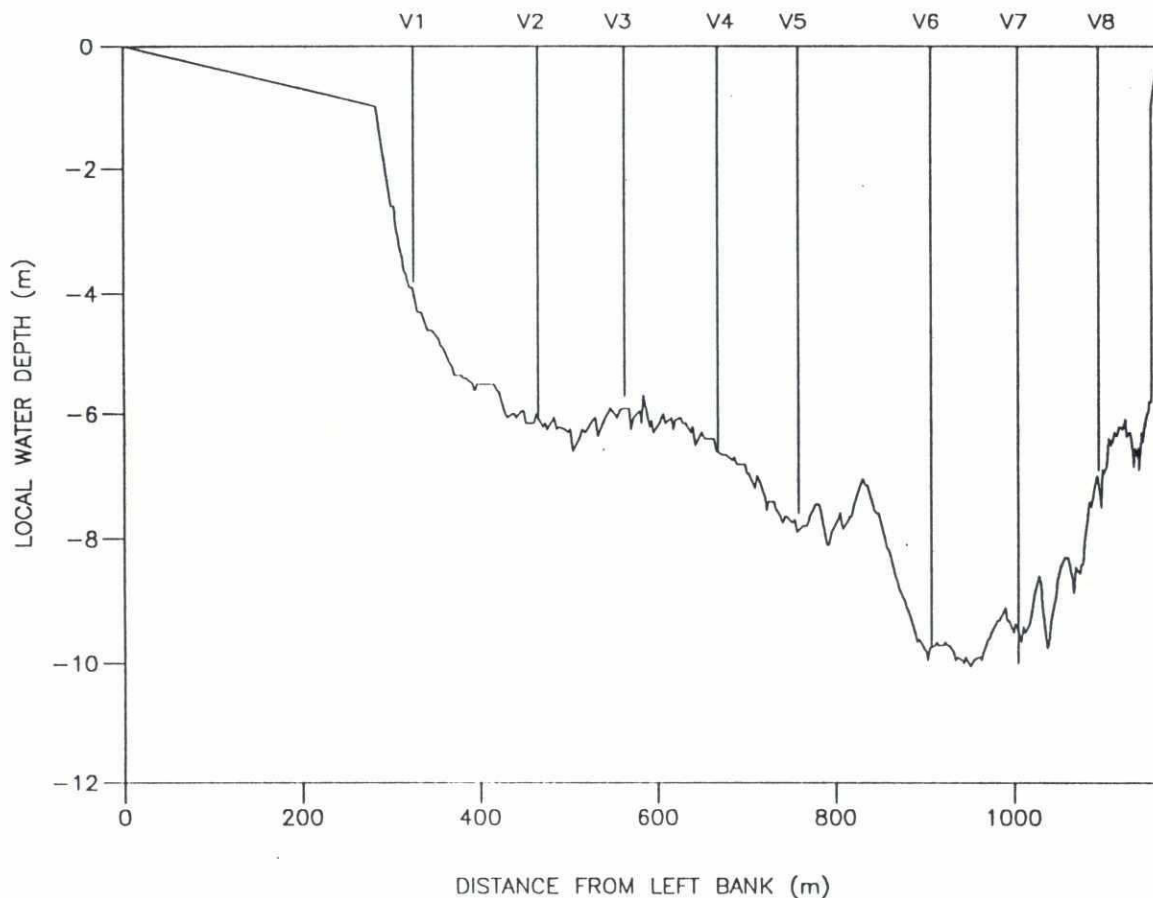
1.1



Water level : 11.33 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S47J1T01	Date : 16 Oct 1994	Cross-sections and measured verticals Channel 1	page
	Init : mzh		1.2

209



Water level : 11.47 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 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4711T04	Date : 16 Oct 1994	Cross-sections and measured verticals Channel 2	page 1.3
	Init : mzh		

208

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	8	4	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	12	8	-	-
	ADCP	12	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	12	8	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	24	16	-	-
	Delft Bottle	-	-	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made

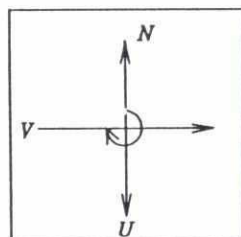
	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	2200	16101	11.33	16507	71	6667
Channel 2	1164	6238	11.47	5081	43	2386

Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Sirajganj	Channel 1	19 Jul 94	11.33	FAP 24
		20 Jul 94	11.20	FAP 24
	Channel 2	18 Jul 94	11.47	FAP 24

Table 2.3: Water-levels

FAP 24  DELFT - DHI		Survey Bulletin 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
File :	Date : 16 Oct 1994	Survey programme as made and key figures	page 2.1
S47J1T01			
S47I1T04	Init : mzh		

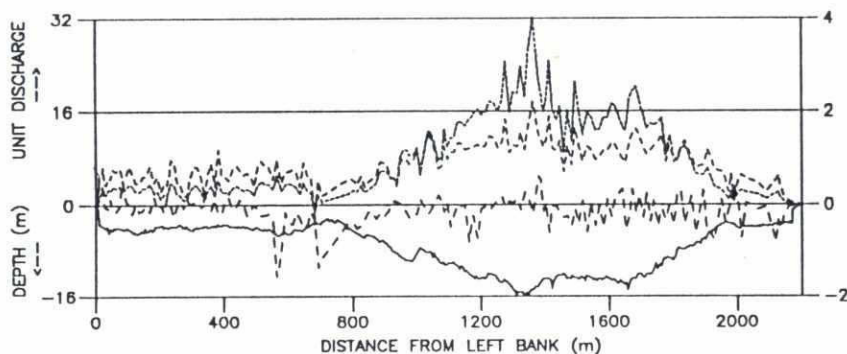


TRANSECT AZIMUTH = 270°

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)

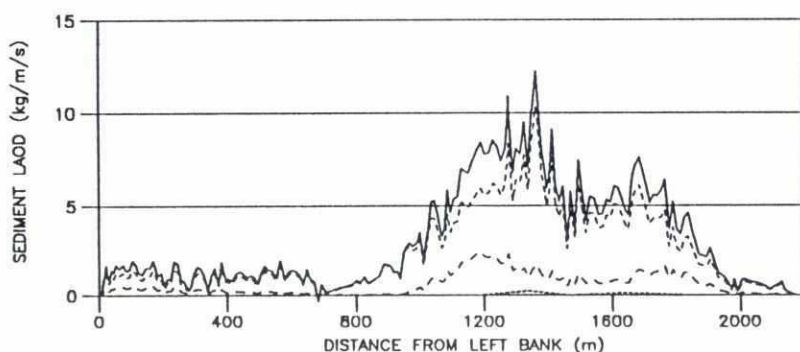
--- U (m/s)

--- V (m/s)

STAGE = 11.33 (m+PWD)

A = 16101 (m³)

Q = 16507 (m³/s)



SEDIMENT TRANSPORT

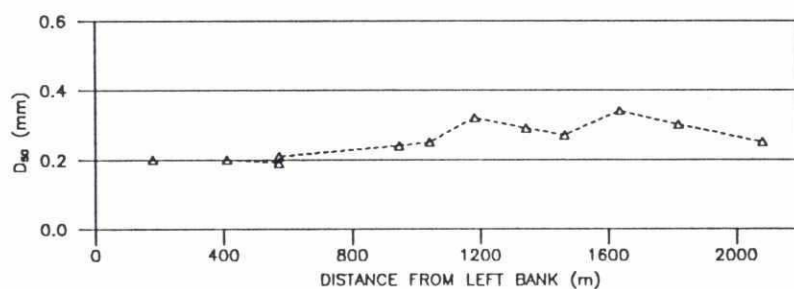
LEGEND :

— S_{TOTAL} 6738 (kg/s)

--- S_{WASH LOAD} 5371 (kg/s)

--- S_{SUSP. BED} 1296 (kg/s)

--- S_{BED LOAD} 71 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)

△△△△△ D₅₀ BED LOAD (mm)

□□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 82 : 18 - 20 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S47J1T01

Date : 16 Oct 1994

Init : mzh

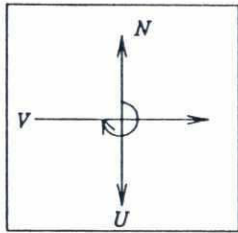
Horizontal distribution of flow and sediments

Channel 1

page

3.1

280

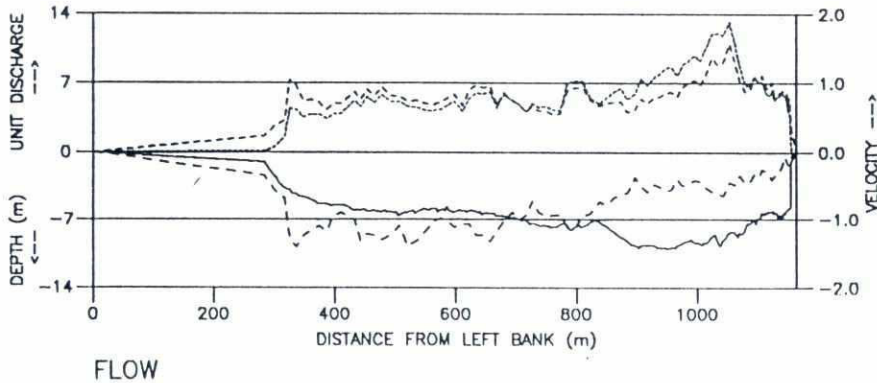


TRANSECT AZIMUTH = 270°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



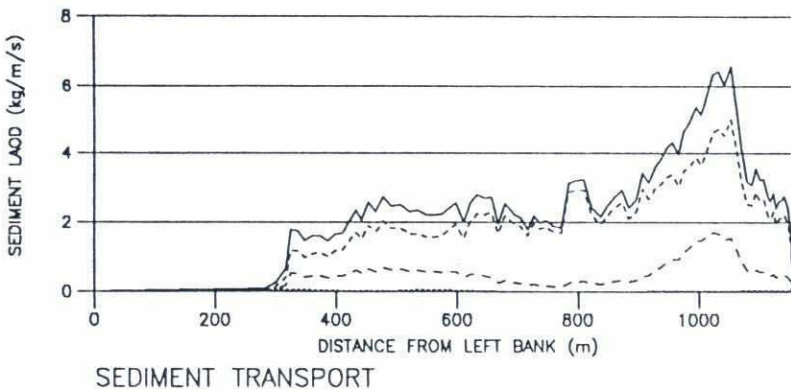
LEGEND :

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

STAGE = 11.47 (m+PWD)

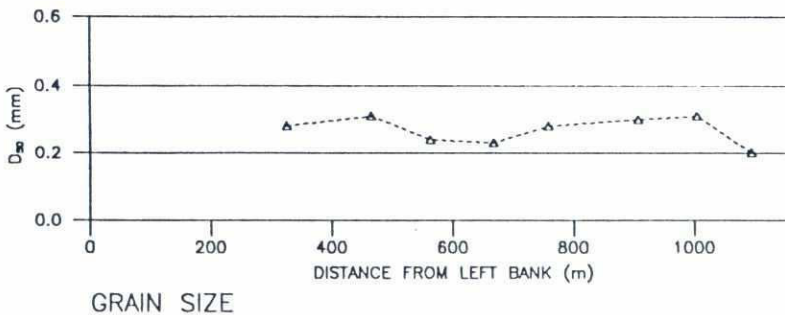
A = 6238 (m²)

Q = 5081 (m³/s)



LEGEND :

— S_TOTAL 2429 (kg/s)
 --- S_WASH LOAD 1900 (kg/s)
 ... S_SUSP. BED 486 (kg/s)
 -.- S_BED LOAD 43 (kg/s)



LEGEND :

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

FAP 24



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

Survey Bulletin 82 : 18 - 20 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S4711T04

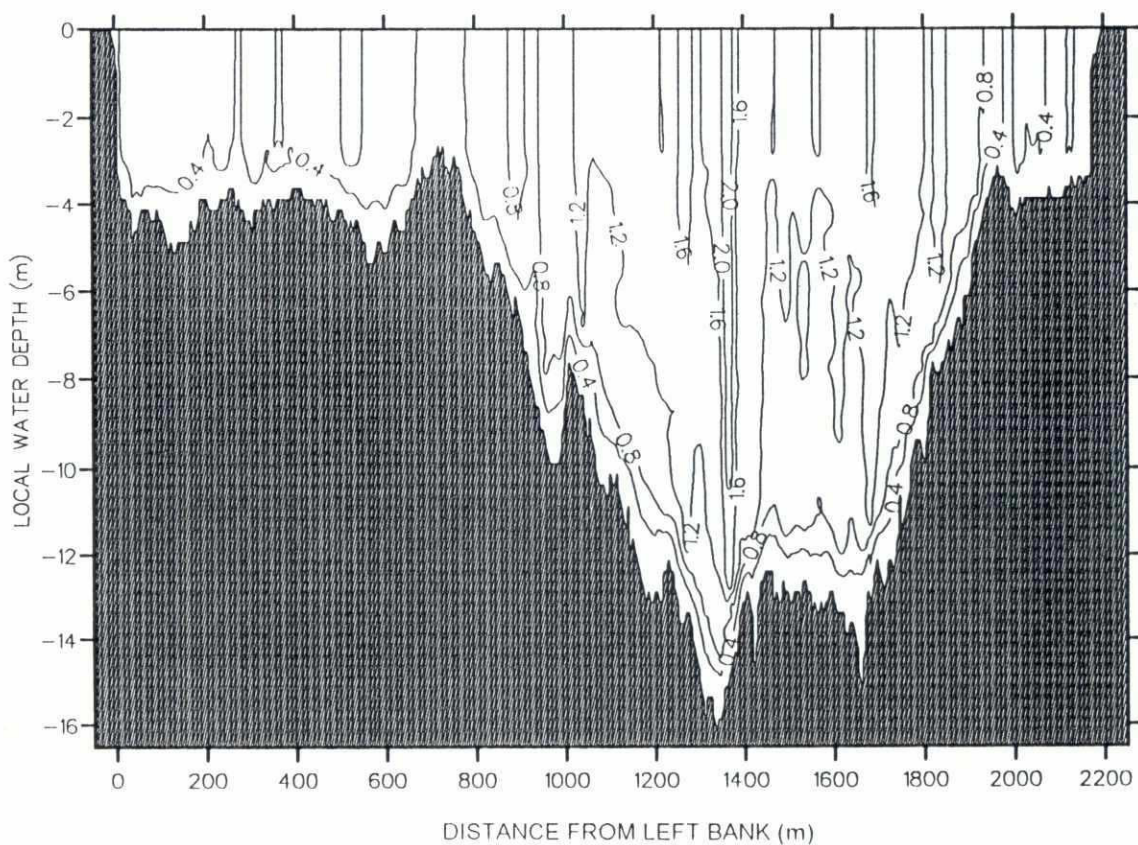
Date : 16 Oct 1994

Init : mzh

Horizontal distribution of flow and sediments
 Channel 2

page

3.2



Iso-velocity contours (m/s)

Water level : 11.33 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 82 : 18 - 20 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S47J1T01

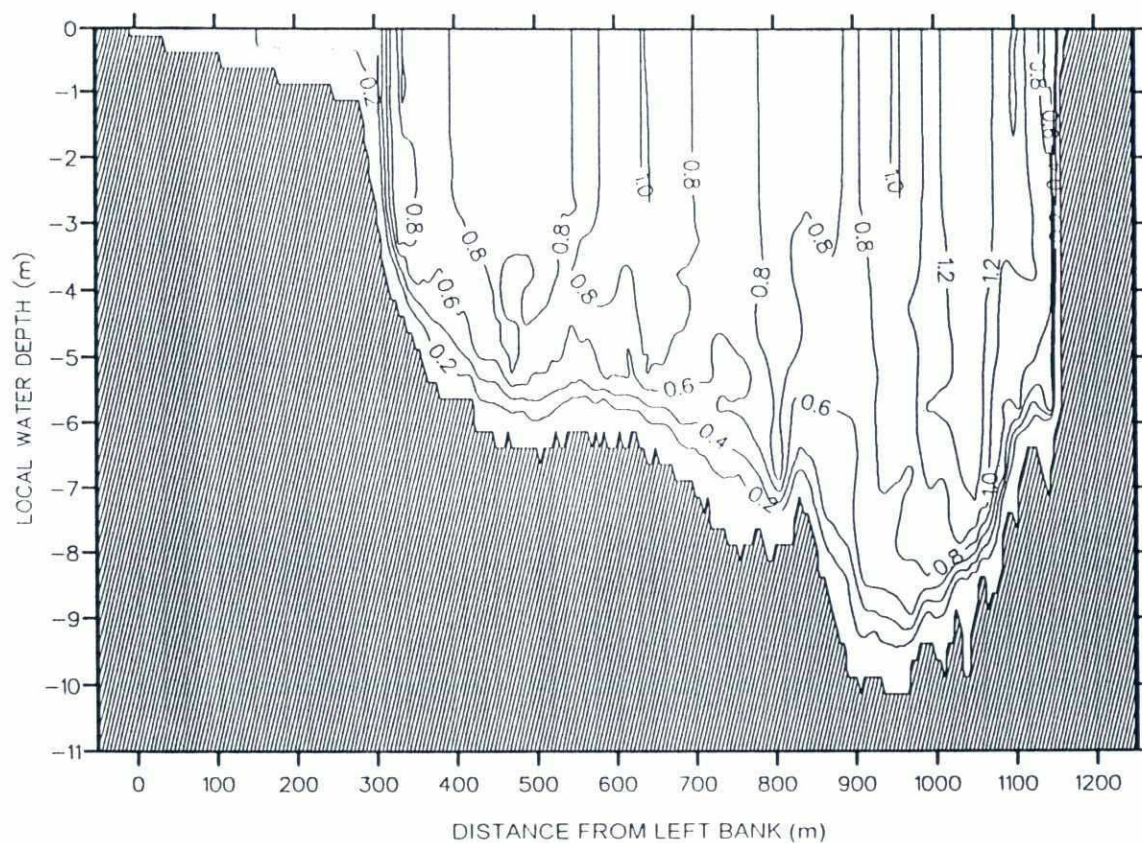
Date : 16 Oct 1994

Init : mzh

Cross-sectional distribution of flow velocity
Channel 1

page

4.1



Iso-velocity contours (m/s)

Water level : 11.47 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 82 : 18 - 20 July, 1994

Location 2 : Jamuna River, Sirajganj

File : S47I1T04

Date : 16 Oct 1994

Init : mzh

Cross-sectional distribution of flow velocity
Channel 2

page

4.2

286

Helley - Smith								
Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	1	9407191108-1115	4.60	2.371	97.629	0.162	0.201	0.251
	2	9407191147-1202	3.80	0.452	99.548	0.178	0.209	0.245
	3	9407191215-1224	5.40	5.385	94.615	0.175	0.214	0.268
	4	9407191239-1247	5.20	2.600	97.400	0.177	0.213	0.260
	5	9407191327-1344	9.10	0.630	99.370	0.198	0.244	0.305
	6	9407191406-1418	9.00	1.481	98.519	0.184	0.254	0.312
	7	9407191447-1502	13.0	0.319	99.681	0.285	0.325	0.371
	8	9407190917-1028	15.4	0.417	99.583	0.266	0.308	0.356
	9	9407191108-1115	11.6	0.695	99.305	0.243	0.291	0.344
	10	9407191141-1151	13.2	0.181	99.819	0.310	0.346	0.387
	11	9407191215-1230	7.80	0.818	99.182	0.227	0.280	0.335
	12	9407191247-1300	3.40	1.912	98.088	0.197	0.248	0.307
	1	9407191108-1115	4.60	4.261	95.739	0.161	0.203	0.259
	2	9407191147-1202	3.80	0.874	99.126	0.166	0.190	0.218
	3	9407191215-1224	5.40	16.755	83.245	0.139	0.171	0.212
	4	9407191239-1247	5.20	6.388	93.612	0.171	0.210	0.259
	5	9407191327-1344	9.10	1.157	98.843	0.197	0.246	0.307
	6	9407191406-1418	9.00	2.705	97.295	0.197	0.248	0.307
	7	9407191447-1502	13.0	0.313	99.687	0.279	0.321	0.368
	8	9407190917-1028	15.4	0.481	99.519	0.219	0.273	0.328
	9	9407191108-1115	11.6	2.329	97.671	0.195	0.243	0.304
	10	9407191141-1151	13.2	0.087	99.913	0.304	0.341	0.383
	11	9407191215-1230	7.80	0.124	99.876	0.275	0.316	0.364
	12	9407191247-1300	3.40	1.149	98.851	0.203	0.258	0.315
2	1	9407181516-1523	3.80	0.430	99.570	0.227	0.280	0.334
	2	9407181446-1459	6.10	0.191	99.809	0.289	0.329	0.373
	3	9407181426-1435	5.70	0.426	99.574	0.206	0.257	0.315
	4	9407181407-1417	6.60	1.029	98.971	0.164	0.191	0.222
	5	9407181345-1358	7.60	2.827	97.173	0.216	0.275	0.332
	6	9407181327-1333	9.70	0.289	99.711	0.272	0.314	0.362
	7	9407181116-1242	10.0	0.340	99.660	0.266	0.309	0.358
	8	9407181050-1059	6.90	0.418	99.582	0.171	0.200	0.233
	1	9407181516-1523	3.80	0.275	99.725	0.227	0.281	0.335
	2	9407181446-1459	6.10	0.130	99.870	0.254	0.297	0.348
	3	9407181426-1435	5.70	0.345	99.655	0.181	0.216	0.263
	4	9407181407-1417	6.60	0.521	99.479	0.222	0.276	0.332
	5	9407181345-1358	7.60	1.964	98.036	0.229	0.284	0.339
	6	9407181327-1333	9.70	0.148	99.852	0.236	0.286	0.338
	7	9407181116-1242	10.0	0.330	99.670	0.274	0.317	0.367
	8	9407181050-1059	6.90	0.175	99.825	0.173	0.201	0.233

Table 5.3 : Grain sizes of bed load

 FAP 24 DELFT - DHI		Survey Bulletin 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 16 Oct 1994	Grain size distributions	page 5.2
	Init : mzh		

288

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9407190821-0839	S47J1T01 *
		9407190845-0904	S47J1T02
		9407191535-1553	S47J1T03
		9407191556-1614	S47J1T04
		9407200816-0835	S47K1T01
		9407200840-0858	S47K1T02
		9407201348-1405	S47K1T03
		9407201408-1432	S47K1T04
	2	9407180840-0851	S47I1T01
		9407180916-0925	S47I1T03
		9407181529-1536	S47I1T04 *
		9407181539-1549	S47I1T05

Table 6.1: ADCP & EMF transects

* : transect in Engineering 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	9407191108-1115	478881	698438	4.60	S47J1P01 *
		2	9407191147-1202	478645	698487	3.80	S47J1P02 *
		3	9407191215-1224	478483	698484	5.40	S47J1P03 *
		4	9407191239-1247	478483	698483	5.20	S47J1P04 *
		5	9407191327-1344	478108	698486	9.10	S47J1P05 *
		6	9407191406-1418	478013	698488	9.00	S47J1P06 *
		7	9407191447-1502	477872	698482	13.00	S47J1P07 *
		8	9407200917-1028	477712	698481	15.40	S47K1P01 **
		9	9407201108-1115	477591	698485	11.60	S47K1P02 *
		10	9407201141-1151	477418	698487	13.20	S47K1P03 *
		11	9407201215-1230	477234	698486	7.80	S47K1P04 *
		12	9407201247-1300	476974	698485	3.40	S47K1P05 *
	2	1	9407181516-1523	472207	699801	3.80	S47I1P09 *
		2	9407181446-1459	472061	699799	6.10	S47I1P07 *
		3	9407181426-1435	471969	699795	5.70	S47I1P06 *
		4	9407181407-1417	471863	699801	6.60	S47I1P05 *
		5	9407181345-1358	471764	699807	7.60	S47I1P04 *
		6	9407181327-1333	471622	699805	9.70	S47I1P03 *
		7	9407181116-1242	471521	699801	10.00	S47I1P02 **
		8	9407181050-1059	471436	699805	6.90	S47I1P01 *

Table 6.2: Vertical profiles

* S4 & MEX not available

** MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	8	6	9407190917-1028	477712	698481	15.4
	2	7	6	9407181116-1242	471521	699801	10.0

Table 6.3: Suspended sediment - point sampled

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 16 Oct 1994	Collected data and their storage (1)	page 6.1
	Init : mzh		

289

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9407191108-1115	478881	698438	4.60
		2	1	9407191147-1202	478645	698487	3.80
		3	1	9407191215-1224	478483	698484	5.40
		4	1	9407191239-1247	478483	698483	5.20
		5	1	9407191327-1344	478108	698486	9.10
		6	1	9407191406-1418	478013	698488	9.00
		7	1	9407191447-1502	477872	698482	13.00
		8	1	9407200917-1028	477712	698481	15.40
		9	1	9407201108-1115	477591	698485	11.60
		10	1	9407201141-1151	477418	698487	13.20
		11	1	9407201215-1230	477234	698486	7.80
		12	1	9407201247-1300	476974	698485	3.40
	2	1	1	9407181516-1523	472207	699801	3.80
		2	1	9407181446-1459	472061	699799	6.10
		3	1	9407181426-1435	471969	699795	5.70
		4	1	9407181407-1417	471863	699801	6.60
		5	1	9407181345-1358	471764	699807	7.60
		6	1	9407181327-1333	471622	699805	9.70
		7	1	9407181116-1242	471521	699801	10.00
		8	1	9407181050-1059	471436	699805	6.90

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	9407191108-1115	478881	698438	4.60	A1827
		2	9407191147-1202	478645	698487	3.80	A1983
		3	9407191215-1224	478483	698484	5.40	A1854
		4	9407191239-1247	478483	698483	5.20	A1826
		5	9407191327-1344	478108	698486	9.10	A745
		6	9407191406-1418	478013	698488	9.00	A900
		7	9407191447-1502	477872	698482	13.00	A339
		8	9407200917-1028	477712	698481	15.40	A344
		9	9407201108-1115	477591	698485	11.60	A338
		10	9407201141-1151	477418	698487	13.20	A114
		11	9407201215-1230	477234	698486	7.80	A1156
		12	9407201247-1300	476974	698485	3.40	A118
		1	9407191108-1115	478881	698438	4.60	A1833
		2	9407191147-1202	478645	698487	3.80	A1823
		3	9407191215-1224	478483	698484	5.40	A1844
		4	9407191239-1247	478483	698483	5.20	A1832
		5	9407191327-1344	478108	698486	9.10	A901
		6	9407191406-1418	478013	698488	9.00	A714
		7	9407191447-1502	477872	698482	13.00	A50
		8	9407200917-1028	477712	698481	15.40	A336
		9	9407201108-1115	477591	698485	11.60	A688
		10	9407201141-1151	477418	698487	13.20	A1589
		11	9407201215-1230	477234	698486	7.80	A1684
		12	9407201247-1300	476974	698485	3.40	A67

Table 6.5: Bed load

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 82 : 18 - 20 July, 1994		
	Location 2 : Jamuna River, Sirajganj		
	Date : 16 Oct 1994	Collected data and their storage (2)	page 6.2
	Init : mzh		

283

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley-Smith Sample	2	1	9407181516-1523	472207	699801	3.80	A1640
		2	9407181446-1459	472061	699799	6.10	A117
		3	9407181426-1435	471969	699795	5.70	A75
		4	9407181407-1417	471863	699801	6.60	A90
		5	9407181345-1358	471764	699807	7.60	A1873
		6	9407181327-1333	471622	699805	9.70	A1972
		7	9407181116-1242	471521	699801	10.00	A1804
		8	9407181050-1059	471436	699805	6.90	A1903
		1	9407181516-1523	472207	699801	3.80	A1637
		2	9407181446-1459	472061	699799	6.10	A860
		3	9407181426-1435	471969	699795	5.70	A743
		4	9407181407-1417	471863	699801	6.60	A1155
		5	9407181345-1358	471764	699807	7.60	A1812
		6	9407181327-1333	471622	699805	9.70	A1980
		7	9407181116-1242	471521	699801	10.00	A1859
		8	9407181050-1059	471436	699805	6.90	A1910

Table 6.5: Bed load

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities DELFT - DHI		Survey Bulletin 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 16 Oct 1994	Collected data and their storage (3)	page 6.3
	Init : mzh		

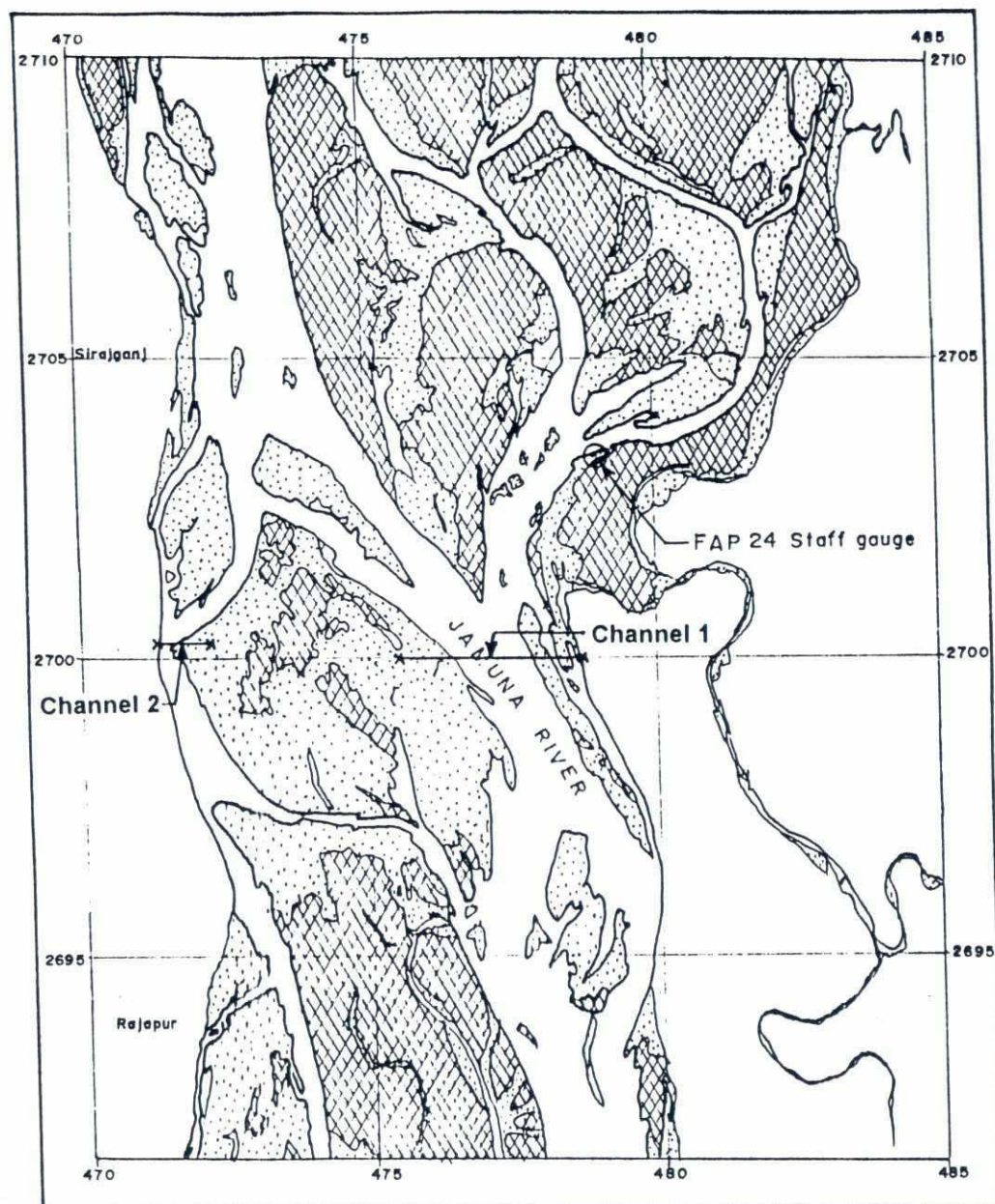
289

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S47J1T01 .ase
ADCP/S4/EMF data	2	QUATTRO	S47I1T04 .ase
Echosounder data	1	QUATTRO	S47J1T01 .ech
Echosounder data	2	QUATTRO	S47I1T04 .ech
Sediment transport data	1	QUATTRO	S47J1T01 .sed
Sediment transport data	2	QUATTRO	S47I1T04 .sed
Susp. sed. conc. analysis	1	QUATTRO	S47J1T01 .ssc
Susp. sed. conc. analysis	2	QUATTRO	S47I1T04 .ssc
Bed load sediment analysis	1	QUATTRO	S47J1T01 .bdl
Bed load sediment analysis	2	QUATTRO	S47I1T04 .bdl
Transect plot data	1	QUATTRO	S47J1T01 .trs
Transect plot data	2	QUATTRO	S47I1T04 .trs
Iso-velocity plot data	1	MIKE 21	S47J1T01 .ct2 S47J1T01 .dt2
Iso-velocity plot data	2	MIKE 21	S47I1T04 .ct2 S47I1T04 .dt2

Table 7.1 PSD 24 Database file description



 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 82 : 18 - 20 July, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 16 Oct 1994	PSD 24 Database file description	page
	Init : mzh		7.1



LEGEND :

- x—x Measurement cross section
- High land
- Unstable/low char
- FAP24 Staff gauge



5000m 2500m 0

Map is based on satellite
Images of March 1994

FAP 24



DELFT - DHI

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

Survey Bulletin 94 : 25 - 30 August, 1994

Location 2 : Jamuna River, Sirajganj

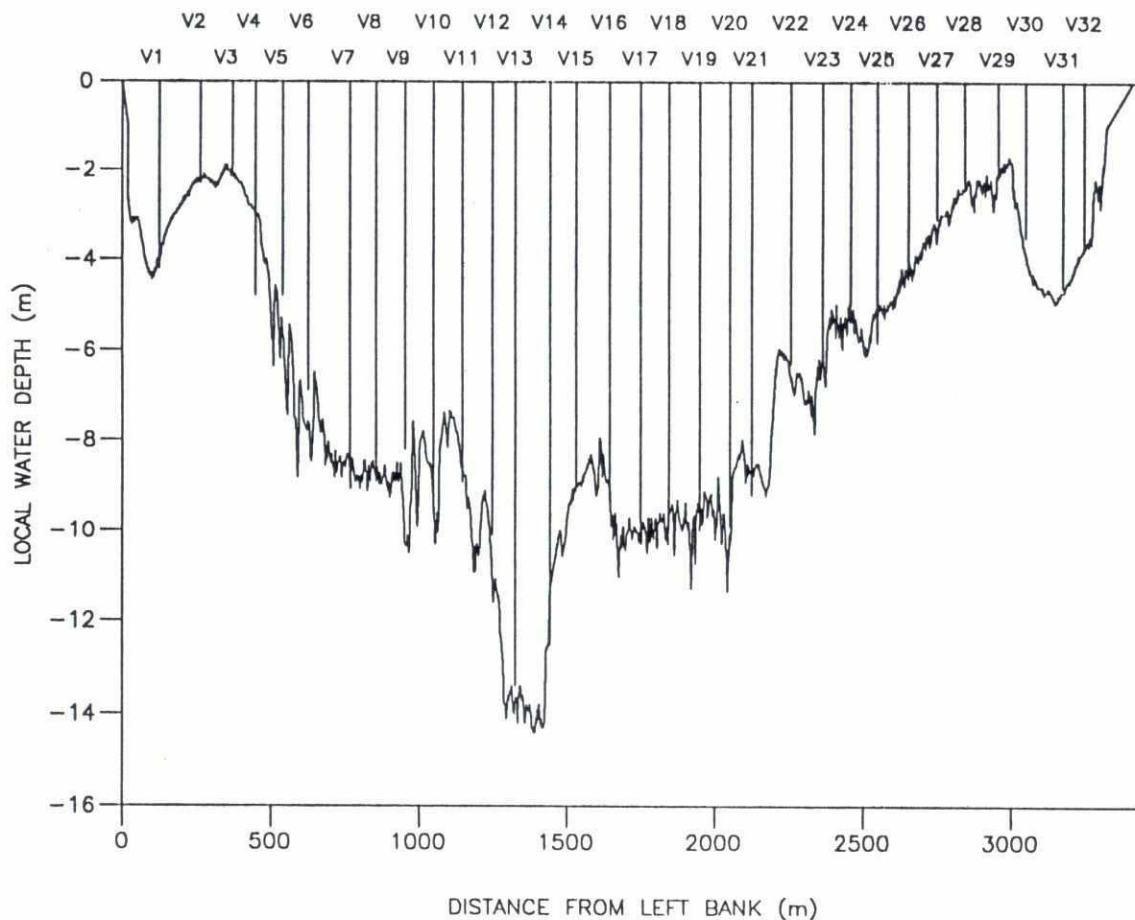
Date : 05 Dec 1994

Init : mk

Location map

page

1.1



Water level : 12.23 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 94 : 25 - 30 August, 1994

Location 2 : Jamuna River, Srirajganj

File : S48P3T02

Date : 05 Dec 1994

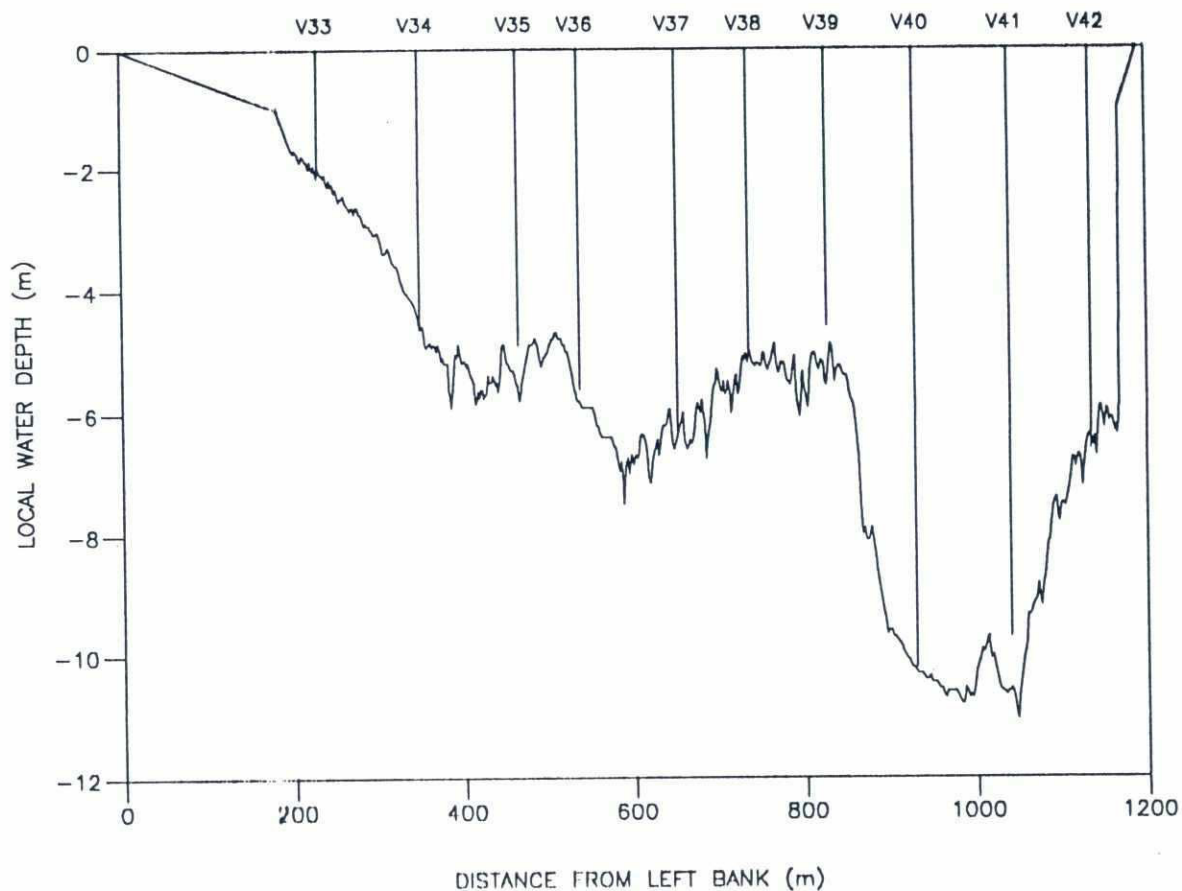
Init : mk

Cross-sections and measured verticals

Channel 1

page

1.2



Water-level : 12.11 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 94 : 25 - 30 August, 1994	
		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	
S48T2T01	Date : 05 Dec 1994	Cross-sections and measured verticals Channel 2	page
	Init : mk		1.3

285

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	-	-	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	2	2	-	-
Vertical current profile	No. of verticals in channel	32	10	-	-
	ADCP	-	-	-	-
	S4 current meter	32	10	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	147	42	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	32	10	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	52	20	-	-
	Delft Bottle	-	-	-	-
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)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	3411	22327	12.23	23515	130	11784
Channel 2	1191	6193	12.11	6395	36	3901

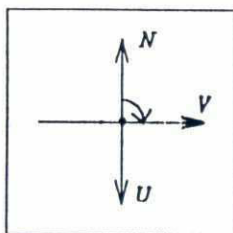
Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Sirajganj	Channel 1	25 Aug 94	12.23	FAP 24
		26 Aug 94	12.23	
		27 Aug 94	12.23	
		28 Aug 94	12.18	
	Channel 2	29 Aug 94	12.11	
		30 Aug 94	12.07	

Table 2.3: Water-levels

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S48P3T02 S48T2T01	Date : 05 Dec 1994	Survey programme as made and key figures	page
	Init : mk		2.1

202

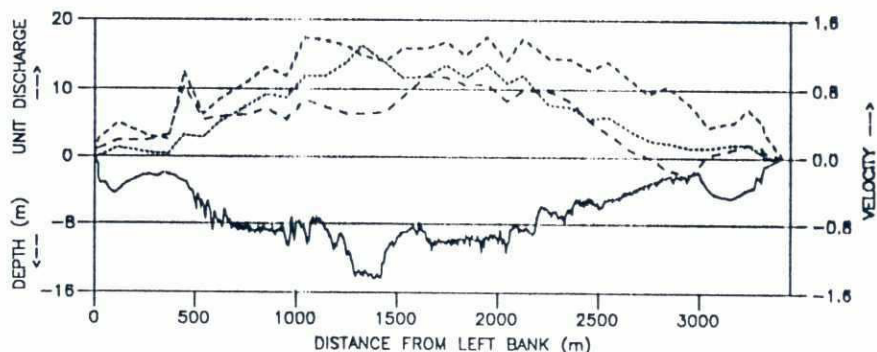


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

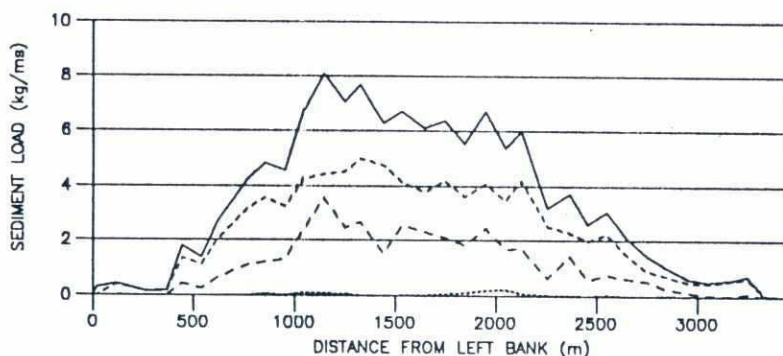
LEGEND :

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

STAGE = 12.23 (m+PWD)

A = 22327 (m³)

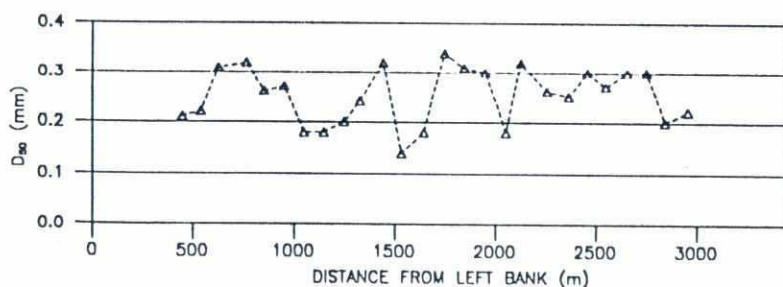
Q = 23515 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 11914 (kg/s)
 --- S_{WASH LOAD} 8063 (kg/s)
 -.- S_{SUSP. BED} 3731 (kg/s)
 S_{BED LOAD} 130 (kg/s)



GRAIN SIZE

LEGEND :

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

FAP 24



RIVER SURVEY PROJECT
 Flood Plain Control Organization

Contribution of the European Communities

Survey Bulletin 94 : 25 - 30 August, 1994

Location 2 : Jamuna River, Sirajganj

File : S48P3T02

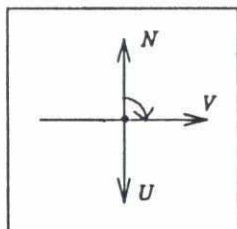
Date : 05 Dec 1994

Init : mk

Horizontal distribution of flow and sediments
 Channel 1

page

3.1

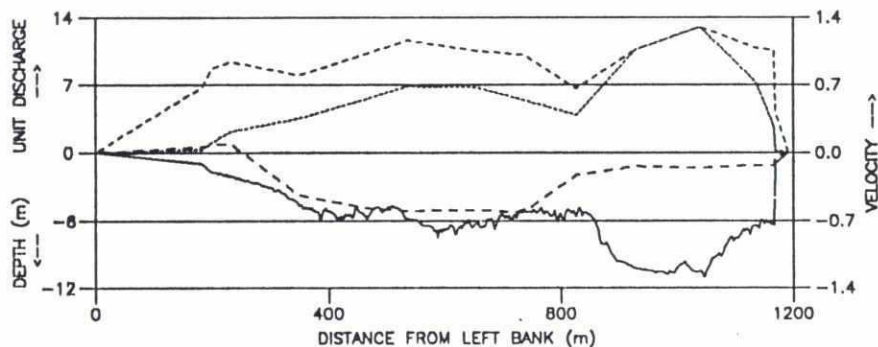


TRANSECT AZIMUTH = 90°

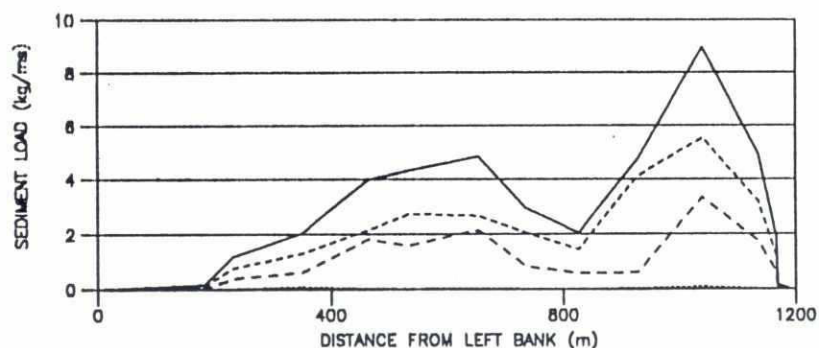
U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

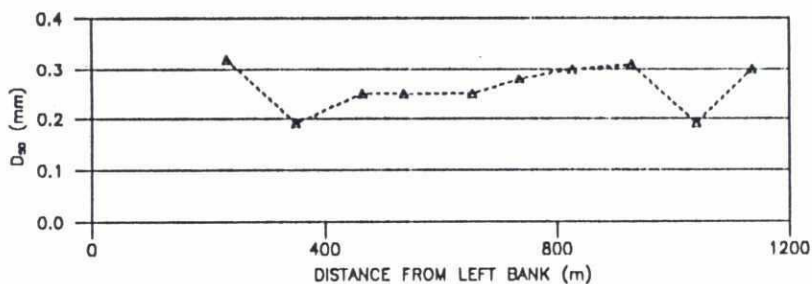
N - MAGNETIC NORTH



FLOW



SEDIMENT TRANSPORT



GRAIN SIZE

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 94 : 25 - 30 August, 1994

Location 2 : Jamuna River, Sirajganj

S48T2T01

Date : 05 Dec 1994

Init : mk

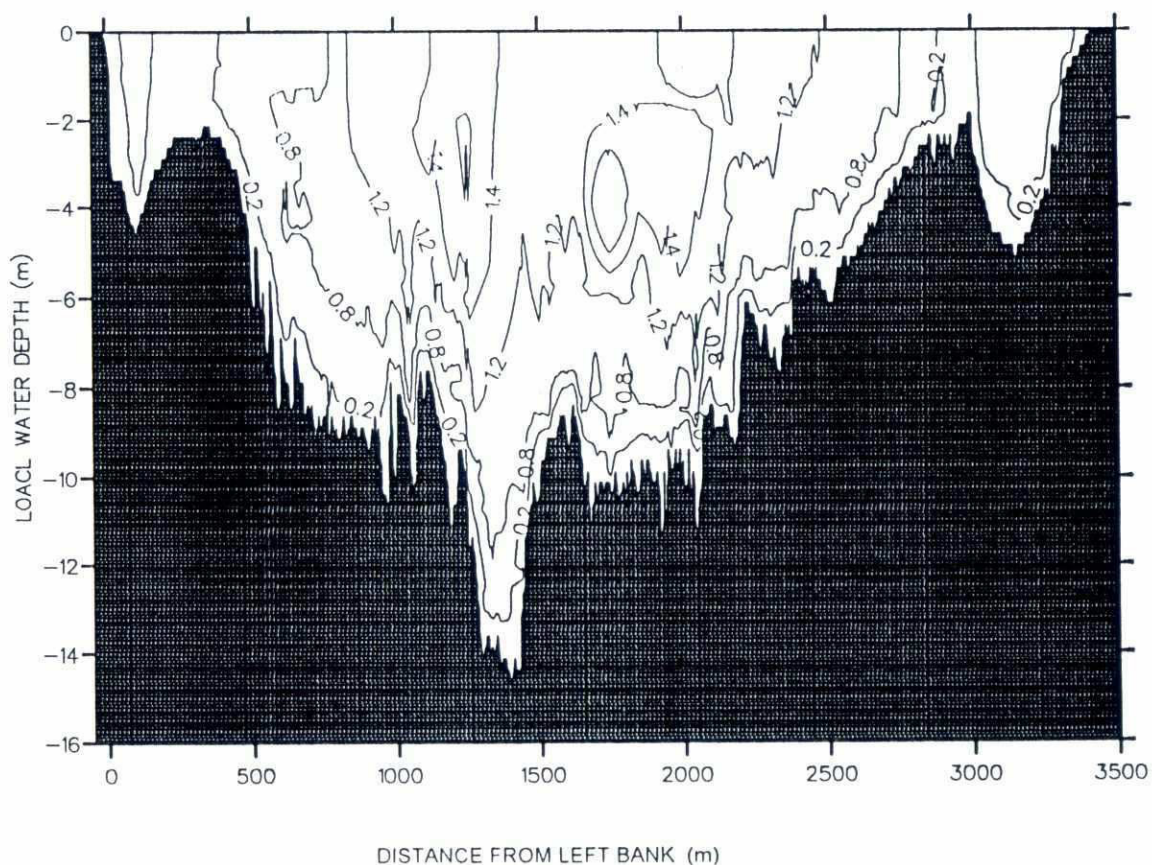
Horizontal distribution of flow and sediments

Channel 2

page

3.2

VDS



Iso-velocity contours (m/s)

Water level : 12.23 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 94 : 25 - 30 August, 1994

Location 2 : Jamuna River, Sirajganj

File : S48P3T02

Date : 05 Dec 1994

Init : mk

Cross-sectional distribution of flow velocity
Channel 1

page

4.1

203

Andreasen settling tube							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.1: Grain size of near bed suspended sediment (0.3 m above river bed)							

US BM-54 bed samples							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.2 : Grain size of bed material							

Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	4	9408251217-1228	4.80	11.76	88.240	0.146	0.196	0.262
	4	9408251217-1228	4.80	8.320	91.680	0.171	0.232	0.299
	5	9408251410-1422	4.80	10.21	89.790	0.155	0.222	0.294
	5	9408251410-1422	4.80	12.79	87.210	0.164	0.224	0.294
	6	9408251511-1529	6.90	1.050	98.950	0.289	0.331	0.378
	6	9408251511-1529	6.90	1.427	98.570	0.239	0.290	0.345
	7	9408251619-1637	8.70	0.303	99.700	0.285	0.326	0.374
	7	9408251619-1637	8.70	2.821	97.180	0.262	0.307	0.359
	8	9408260920-0936	8.90	0.220	99.780	0.277	0.318	0.366
	8	9408260920-0936	8.90	0.316	99.680	0.168	0.195	0.226
	9	9408261022-1045	8.20	0.204	99.800	0.180	0.213	0.251
	9	9408261022-1045	8.20	0.173	99.830	0.288	0.329	0.376
	10	9408261127-1149	9.60	0.848	99.150	0.155	0.175	0.199
	10	9408261127-1149	9.60	0.996	99.000	0.155	0.176	0.199
	11	9408261229-1254	8.90	0.409	99.590	0.157	0.178	0.201
	11	9408261229-1254	8.90	0.454	99.550	0.158	0.179	0.203
	12	9408261344-1406	10.1	0.369	99.630	0.173	0.210	0.259
	12	9408261344-1406	10.1	0.657	99.340	0.156	0.186	0.223
	13	9408261448-1510	13.4	0.565	99.440	0.295	0.335	0.382
	13	9408261448-1510	13.4	1.786	98.210	0.119	0.148	0.181
	14	9408261546-1608	12.5	2.272	97.730	0.272	0.315	0.364
	14	9408261546-1608	12.5	2.214	97.790	0.279	0.321	0.369
Table 5.3 : Grain sizes of bed load								Continued.

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plain Coordination Organization Commission of the European Communities	Survey Bulletin 94 : 25 - 30 August, 1994	
			Location 2 : Jamuna River, Sirajganj	
	Date 05 Dec 1994	Grain size distributions		page 5.1
	init : mk			

Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35 (mm)	D50 (mm)	D65 (mm)
				< 0.06 mm	> 0.06 mm			
1	15	9408261657-1719	9.10	3.599	96.400	0.114	0.144	0.176
	15	9408261657-1719	9.10	2.863	97.140	0.101	0.125	0.158
	16	9408270904-0926	9.30	2.969	97.030	0.151	0.180	0.214
	16	9408270904-0926	9.30	0.619	99.380	0.160	0.189	0.224
	17	9408271010-1035	10.2	0.070	99.930	0.296	0.335	0.379
	17	9408271010-1035	10.2	0.067	99.930	0.311	0.348	0.389
	18	9408271114-1144	10.0	0.137	99.860	0.264	0.306	0.355
	18	9408271114-1144	10.0	0.102	99.900	0.268	0.310	0.358
	19	9408271300-1336	10.0	0.330	99.670	0.238	0.288	0.340
	19	9408271300-1336	10.0	0.272	99.730	0.264	0.307	0.357
	20	9408271632-1656	9.20	0.237	99.760	0.238	0.287	0.340
	20	9408271632-1656	9.20	0.088	99.910	0.306	0.343	0.385
	21	9408271505-1536	9.90	0.387	99.610	0.157	0.179	0.203
	21	9408271505-1536	9.90	0.638	99.360	0.155	0.175	0.199
	22	9408281217-1238	6.30	1.140	98.860	0.294	0.336	0.383
	22	9408281217-1238	6.30	0.306	99.690	0.165	0.191	0.220
	23	9408281326-1348	6.30	0.217	99.780	0.221	0.275	0.330
	23	9408281326-1348	6.30	0.202	99.800	0.181	0.216	0.260
	24	9408281418-1430	5.00	0.125	99.880	0.293	0.332	0.376
	24	9408281418-1430	5.00	1.605	98.390	0.221	0.277	0.331
	25	9408281506-1528	5.80	0.136	99.860	0.204	0.307	0.356
	25	9408281506-1528	5.80	0.293	99.710	0.188	0.230	0.287
	26	9408281553-1607	4.30	0.878	99.120	0.251	0.295	0.348
	26	9408281553-1607	4.30	0.629	99.370	0.271	0.314	0.364
	27	9408290927-1005	3.10	0.172	99.830	0.251	0.295	0.347
	27	9408290927-1005	3.10	0.646	99.350	0.273	0.315	0.363
	28	9408291020-1042	2.40	0.147	99.850	0.176	0.205	0.239
	28	9408291020-1042	2.40	0.163	99.840	0.170	0.196	0.226
	29	9408291122-1126	2.10	4.976	95.020	0.178	0.226	0.289
	29	9408291122-1126	2.10	0.287	99.710	0.185	0.221	0.271
2	33	9408300752-0800	2.10	0.736	99.260	0.266	0.309	0.358
	33	9408300752-0800	2.10	0.304	99.700	0.291	0.331	0.376
	34	9408300848-0910	4.60	0.469	99.530	0.162	0.186	0.212
	34	9408300848-0910	4.60	0.269	99.730	0.165	0.188	0.215
	35	9408300946-1008	4.90	0.744	99.260	0.154	0.177	0.203
	35	9408300946-1008	4.90	0.606	99.390	0.280	0.322	0.369
	36	9408301040-1128	5.60	0.282	99.720	0.145	0.169	0.197
	36	9408301040-1128	5.60	0.386	99.610	0.280	0.322	0.371
	37	9408301157-1238	6.30	0.091	99.910	0.273	0.315	0.363
	37	9408301157-1238	6.30	0.117	99.880	0.162	0.187	0.216
	38	9408301320-1338	5.00	0.117	99.880	0.241	0.290	0.344
	38	9408301320-1338	5.00	0.093	99.910	0.214	0.268	0.325
	39	9408301426-1442	4.60	0.446	99.550	0.275	0.319	0.369
	39	9408301426-1442	4.60	1.235	98.770	0.217	0.276	0.333
	40	9408301500-1554	10.2	0.090	99.910	0.270	0.312	0.360
	40	9408301500-1554	10.2	0.213	99.790	0.209	0.312	0.361
	41	9408301632-1706	9.70	0.264	99.740	0.170	0.199	0.233
	41	9408301632-1706	9.70	0.759	99.240	0.160	0.187	0.219
	42	9408301739-1754	6.60	0.185	99.810	0.208	0.310	0.359
	42	9408301739-1754	6.60	2.237	97.760	0.249	0.294	0.347
Table 5.3 : Grain sizes of bed load								

 FAP 24 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj			
		Date : 05 Dec 1994	Grain size distributions		page 52
		init : mk			

786

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
Echo Soundings	1	9408250843-0912 9408250941-1010	S48P3T02 * S48P3T03
	2	9408291633-1642 9408291644-1650	S48T2T01 * S48T2T02

Table 6.1: Echo Soundings

* : 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	9408250959-1011	478623	699452	4.20	S48P2P01 *
		2	9408251045-1057	478479	699474	2.30	S48P2P02 *
		3	9408251138-1150	478375	699474	2.10	S48P2P03 *
		4	9408251217-1228	478295	699480	4.80	S48P2P04 *
		5	9408251410-1422	478202	699505	4.80	S48P2P05 *
		6	9408251511-1529	478116	699507	6.90	S48P2P06 *
		7	9408251619-1637	477977	699476	8.70	S48P2P07 *
		8	9408260920-0936	477889	699476	8.90	S48Q2P01 *
		9	9408261022-1045	477790	699476	8.20	S48Q2P02 *
		10	9408261127-1149	477694	699462	9.60	S48Q2P03 *
		11	9408261229-1254	477595	699484	8.90	S48Q2P04 *
		12	9408261344-1406	477493	699483	10.1	S48Q2P05 *
		13	9408261448-1510	477415	699459	13.4	S48Q2P06 *
		14	9408261546-1608	477299	699486	12.5	S48Q2P07 *
		15	9408261657-1719	477210	699470	9.10	S48Q2P08 *
		16	9408270904-0926	477098	699477	9.30	S48R2P01 *
		17	9408271010-1035	476994	699485	10.2	S48R2P02 *
		18	9408271114-1144	476896	699483	10.0	S48R2P03 *
		19	9408271300-1336	476792	699481	10.0	S48R2P04 *
		20	9408271632-1656	476690	699519	9.20	S48R2P06 *
		21	9408271505-1536	476616	699482	9.90	S48R2P05 *
		22	9408281217-1238	476485	699485	6.30	S48S2P01 *
		23	9408281326-1348	476378	699475	6.30	S48S2P02 *
		24	9408281418-1430	476284	699486	5.00	S48S2P03 *
		25	9408281506-1528	476194	699485	5.80	S48S2P04 *
		26	9408281553-1607	476089	699485	4.30	S48S2P05 *
		27	9408290927-1005	475992	699479	3.10	S48T2P01 *
		28	9408291020-1042	475899	699474	2.40	S48T2P02 *
		29	9408291122-1126	475786	699484	2.10	S48T2P03 *
		30	9408291223-1228	475694	699484	3.50	S48T2P04 *
		31	9408291249-1320	475568	699485	4.60	S48T2P05 *
		32	9408291343-1408	475497	699481	3.70	S48T2P06 *
	2	33	9408300752-0800	472306	699800	2.10	S48U2P01 *
		34	9408300848-0910	472188	699801	4.60	S48U2P02 *
		35	9408300946-1008	472072	699807	4.90	S48U2P03 *
		36	9408301040-1128	472000	699799	5.60	S48U2P04 *
		37	9408301157-1238	471886	699798	6.30	S48U2P05 *
		38	9408301320-1338	471802	699801	5.00	S48U2P06 *
		39	9408301426-1442	471710	699807	4.60	S48U2P07 *
		40	9408301500-1554	471608	699803	10.2	S48U2P08 *
		41	9408301632-1706	471497	699801	9.70	S48U2P09 *
		42	9408301739-1754	471403	699802	6.60	S48U2P10 *

Table 6.2: Vertical profiles

* ADCP and MEX not available

 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date: 05 Dec 1994	Collected data and their storage (1)	page 6.1
	init mk		

282

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	1	2	9408250959-1011	478623	699452	4.20
		2	3	9408251045-1057	478479	699474	2.30
		3	3	9408251138-1150	478375	699474	2.10
		4	3	9408251217-1228	478295	699480	4.80
		5	3	9408251410-1422	478202	699505	4.80
		6	6	9408251511-1529	478116	699507	6.90
		7	6	9408251619-1637	477977	699476	8.70
		8	6	9408260920-0936	477889	699476	8.90
		9	6	9408261022-1045	477790	699476	8.20
		10	6	9408261127-1149	477694	699462	9.60
		11	6	9408261229-1254	477595	699484	8.90
		12	6	9408261344-1406	477493	699483	10.1
		13	6	9408261448-1510	477415	699459	13.4
		14	6	9408261546-1608	477299	699486	12.5
		15	6	9408261657-1719	477210	699470	9.10
		16	6	9408270904-0926	477098	699477	9.30
		17	5	9408271010-1035	476994	699485	10.2
		18	6	9408271114-1144	476896	699483	10.0
		19	6	9408271300-1336	476792	699481	10.0
		20	6	9408271632-1656	476690	699519	9.20
		21	6	9408271505-1536	476616	699482	9.90
		22	6	9408281217-1238	476485	699485	6.30
		23	5	9408281326-1348	476378	699475	6.30
		24	3	9408281418-1430	476284	699486	5.00
		25	6	9408281506-1528	476194	699485	5.80
		26	2	9408281553-1607	476089	699485	4.30
		27	3	9408290927-1005	475992	699479	3.10
		28	3	9408291020-1042	475899	699474	2.40
		29	2	9408291122-1126	475786	699484	2.10
		30	3	9408291223-1228	475694	699484	3.50
		31	3	9408291249-1320	475568	699485	4.60
		32	3	9408291343-1408	475497	699481	3.70
	2	33	2	9408300752-0800	472306	699800	2.10
		34	3	9408300848-0910	472188	699801	4.60
		35	3	9408300946-1008	472072	699807	4.90
		36	6	9408301040-1128	472000	699799	5.60
		37	6	9408301157-1238	471886	699798	6.30
		38	3	9408301320-1338	471802	699801	5.00
		39	3	9408301426-1442	471710	699807	4.60
		40	6	9408301500-1554	471608	699803	10.2
		41	6	9408301632-1706	471497	699801	9.70
		42	4	9408301739-1754	471403	699802	6.60

Table 6.3: Suspended sediment - point sampled

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	1	1	9408250959-1011	478623	699452	4.20
		2	1	9408251045-1057	478479	699474	2.30
		3	1	9408251138-1150	478375	699474	2.10
		4	1	9408251217-1228	478295	699480	4.80
		5	1	9408251410-1422	478202	699505	4.80

Table 6.4: Suspended sediment - depth integrated

Continued.

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 05 Dec 1994 init : mk	Collected data and their storage (2)	page 62

230

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	6	1	9408251511-1529	478116	699507	6.90
		7	1	9408251619-1637	477977	699476	8.70
		8	1	9408260920-0936	477889	699476	8.90
		9	1	9408261022-1045	477790	699476	8.20
		10	1	9408261127-1149	477694	699462	9.60
		11	1	9408261229-1254	477595	699484	8.90
		12	1	9408261344-1406	477493	699483	10.1
		13	1	9408261448-1510	477415	699459	13.4
		14	1	9408261546-1608	477299	699486	12.5
		15	1	9408261657-1719	477210	699470	9.10
		16	1	9408270904-0926	477098	699477	9.30
		17	1	9408271010-1035	476994	699485	10.2
		18	1	9408271114-1144	476896	699483	10.0
		19	1	9408271300-1336	476792	699481	10.0
		20	1	9408271632-1656	476690	699519	9.20
		21	1	9408271505-1536	476616	699482	9.90
		22	1	9408281217-1238	476485	699485	6.30
		23	1	9408281326-1348	476378	699475	6.30
		24	1	9408281418-1430	476284	699486	5.00
		25	1	9408281506-1528	476194	699485	5.80
		26	1	9408281553-1607	476089	699485	4.30
		27	1	9408290927-1005	475992	699479	3.10
		28	1	9408291020-1042	475899	699474	2.40
		29	1	9408291122-1126	475786	699484	2.10
		30	1	9408291223-1228	475694	699484	3.50
		31	1	9408291249-1320	475568	699485	4.60
		32	1	9408291343-1408	475497	699481	3.70
	2	33	1	9408300752-0800	472306	699800	2.10
		34	1	9408300848-0910	472188	699801	4.60
		35	1	9408300946-1008	472072	699807	4.90
		36	1	9408301040-1128	472000	699799	5.60
		37	1	9408301157-1238	471886	699798	6.30
		38	1	9408301320-1338	471802	699801	5.00
		39	1	9408301426-1442	471710	699807	4.60
		40	1	9408301500-1554	471608	699803	10.2
		41	1	9408301632-1706	471497	699801	9.70
		42	1	9408301739-1754	471403	699802	6.60

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	4	9408251217-1228	478295	699480	4.8	A96
		4	9408251217-1228	478295	699480	4.8	A1800
		5	9408251410-1422	478202	699505	4.8	A1878
		5	9408251410-1422	478202	699505	4.8	A870
		6	9408251511-1529	478116	699507	6.9	A1882
		6	9408251511-1529	478116	699507	6.9	A3000
		7	9408251619-1637	477977	699476	8.7	A113
		7	9408251619-1637	477977	699476	8.7	A911
		8	9408260920-0936	477889	699476	8.9	A109
		8	9408260920-0936	477889	699476	8.9	A895

Table 6.5: Bed load

Continued.

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the Biosphere Communities		Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj	
Date: 05 Dec 1994 Init : mk		Collected data and their storage (3)	page 6.3

230

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley -Smith Sample	1	9	9408261022-1045	477790	099476	8.20	A912
		9	9408261022-1045	477790	099476	8.20	A2136
		10	9408261127-1149	477694	099462	9.60	A2164
		10	9408261127-1149	477694	099462	9.60	A1964
		11	9408261229-1254	477595	099484	8.90	A887
		11	9408261229-1254	477595	099484	8.90	A1384
		12	9408261344-1406	477493	099483	10.1	A1604
		12	9408261344-1406	477493	099483	10.1	A1949
		13	9408261448-1510	477415	099459	13.4	A1930
		13	9408261448-1510	477415	099459	13.4	A1597
		14	9408261546-1608	477299	099486	12.5	A1839
		14	9408261546-1608	477299	099486	12.5	A1958
		15	9408261657-1719	477210	099470	9.10	A1377
		15	9408261657-1719	477210	099470	9.10	A1987
		16	9408270904-0926	477098	099477	9.30	A1525
		16	9408270904-0926	477098	099477	9.30	A1000
		17	9408271010-1035	476994	099485	10.2	A1565
		17	9408271010-1035	476994	099485	10.2	A1562
		18	9408271114-1144	476896	099483	10.0	A1820
		18	9408271114-1144	476896	099483	10.0	A2165
		19	9408271300-1336	476792	099481	10.0	A1770
		19	9408271300-1336	476792	099481	10.0	A1760
		20	9408271632-1656	476690	099519	9.20	A1510
		20	9408271632-1656	476690	099519	9.20	A1521
		21	9408271505-1536	476616	099482	9.90	A1165
		21	9408271505-1536	476616	099482	9.90	A1212
		22	9408281217-1238	476485	099485	6.30	A106
		22	9408281217-1238	476485	099485	6.30	A69
		23	9408281326-1348	476378	099475	6.30	A1966
		23	9408281326-1348	476378	099475	6.30	A1806
		24	9408281418-1430	476284	099486	5.00	A2184
		24	9408281418-1430	476284	099486	5.00	A1870
		25	9408281506-1528	476194	099485	5.80	A1137
		25	9408281506-1528	476194	099485	5.80	A710
		26	9408281553-1607	476089	099485	4.30	A1647
		26	9408281553-1607	476089	099485	4.30	A1817
		27	9408290927-1005	475992	099479	3.10	A1938
		27	9408290927-1005	475992	099479	3.10	A1859
		28	9408291020-1042	475899	099474	2.40	A1867
		28	9408291020-1042	475899	099474	2.40	A2179
		29	9408291122-1126	475786	099484	2.10	A1927
		29	9408291122-1126	475786	099484	2.10	A1956
	2	33	9408300752-0800	472306	099800	2.10	A2182
		33	9408300752-0800	472306	099800	2.10	A2186
		34	9408300848-0910	472188	099801	4.60	A2109
		34	9408300848-0910	472188	099801	4.60	A2008
		35	9408300946-1008	472072	099807	4.90	A1921
		35	9408300946-1008	472072	099807	4.90	A1638
		36	9408301040-1128	472000	099799	5.60	A2169
		36	9408301040-1128	472000	099799	5.60	A1816
		37	9408301157-1238	471886	099798	6.30	A1862
		37	9408301157-1238	471886	099798	6.30	A1961
		38	9408301320-1338	471802	099801	5.00	A1654
		38	9408301320-1338	471802	099801	5.00	A2202
		39	9408301426-1442	471710	099807	4.60	A1974
		39	9408301426-1442	471710	099807	4.60	A2213
		40	9408301500-1554	471608	099803	10.2	A1851
		40	9408301500-1554	471608	099803	10.2	A2203
		41	9408301632-1706	471497	099801	9.70	A2214
		41	9408301632-1706	471497	099801	9.70	A2212
		42	9408301739-1754	471403	099802	6.60	A2206
		42	9408301739-1754	471403	099802	6.60	A2207

Table 6.5: Bed load

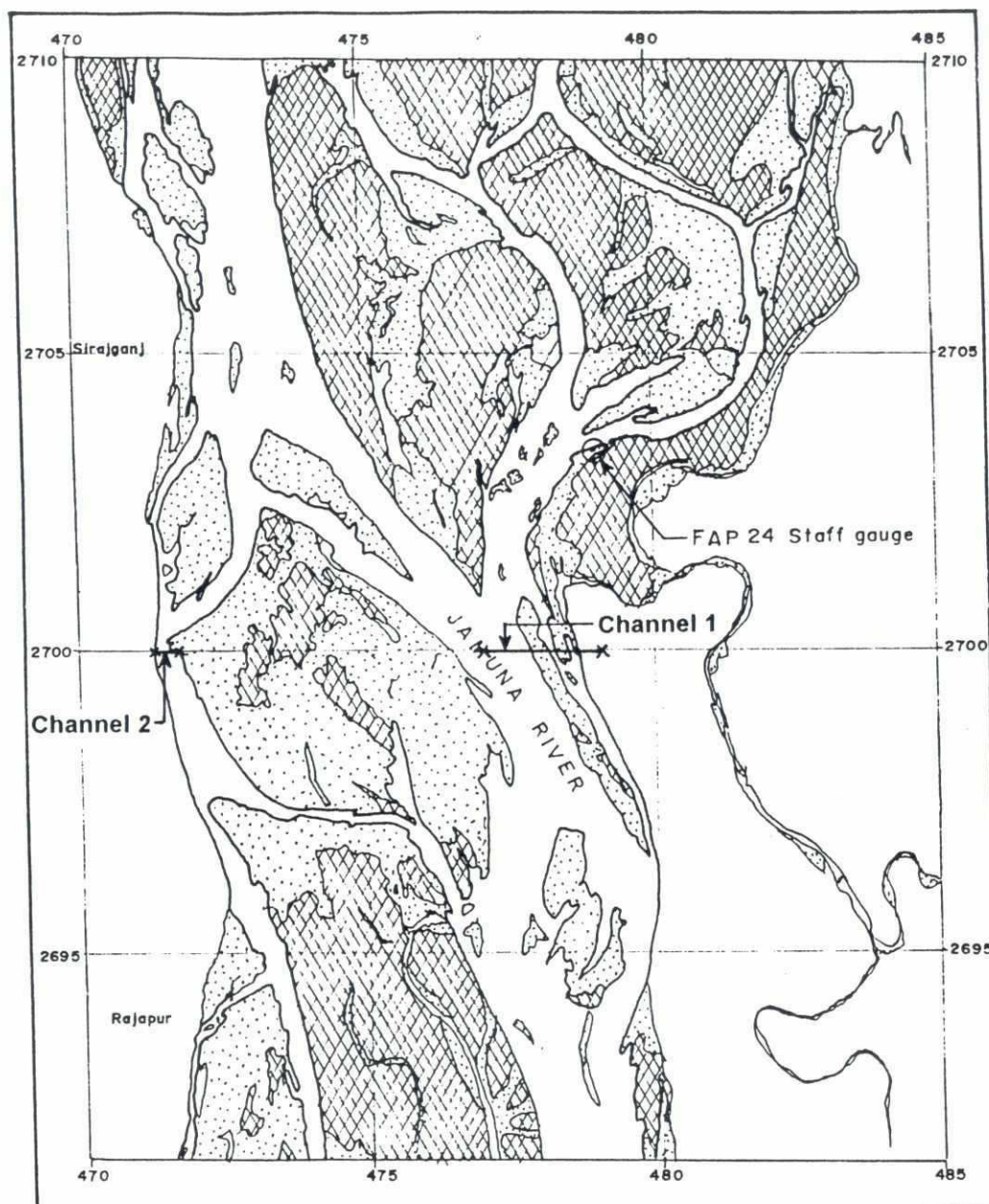
FAP 24  DELFT · DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 05 Dec 1994	Collected data and their storage (3)	page 6.4
	init : mk		

B2

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S48P3T02 .ase
	2	QUATTRO	S48T2T01 .ase
Echosounder data	1	QUATTRO	S48P3T02 .ech
	2	QUATTRO	S48T2T01 .ech
Sediment transport data	1	QUATTRO	S48P3T02 .sed
	2	QUATTRO	S48T2T01 .sed
Sus. sed. conc. analysis	1	QUATTRO	S48P3T02 .ssc
	2	QUATTRO	S48T2T01 .ssc
Bed load sediment analysis	1	QUATTRO	S48P3T02 .bdl
	2	QUATTRO	S48T2T01 .bdl
Transect plot data	1	QUATTRO	S48P3T02 .trs
	2	QUATTRO	S48T2T01 .trs
Iso-velocity plot data	1	MIKE 21	S48P3T02 .ct2
			S48P3T02 .dt2
Iso-velocity plot data	2	MIKE 21	S48T2T01 .ct2
			S48T2T01 .dt2

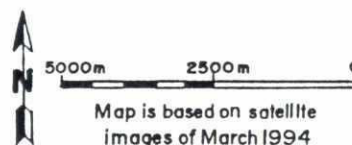
Table 7.1 PSD 24 Database file description

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 94 : 25 - 30 August, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 05 Dec 1994	PSD 24 Database file description	page 7.1
	Init : mk		



LEGEND :

- ×—× Measurement cross section
-  Highland
-  Unstable / low char
- FAP 24 Staff gauge



FAP 24



DELFT - DH1

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

Survey Bulletin 99 : 02 - 05 October, 1994

Location 2 : Jamuna River, Sirajganj

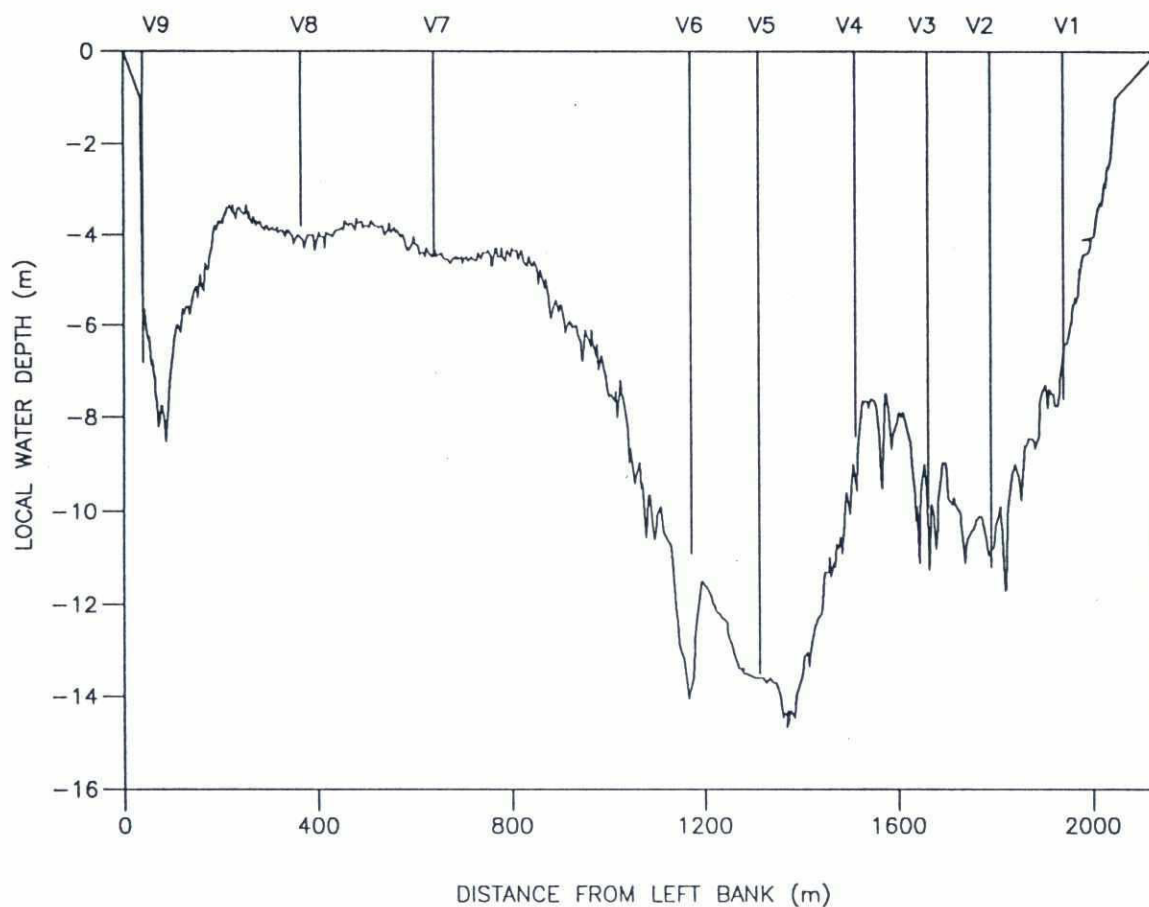
Date : 18 Jan 1995

Init : mzh/sjr

Location map

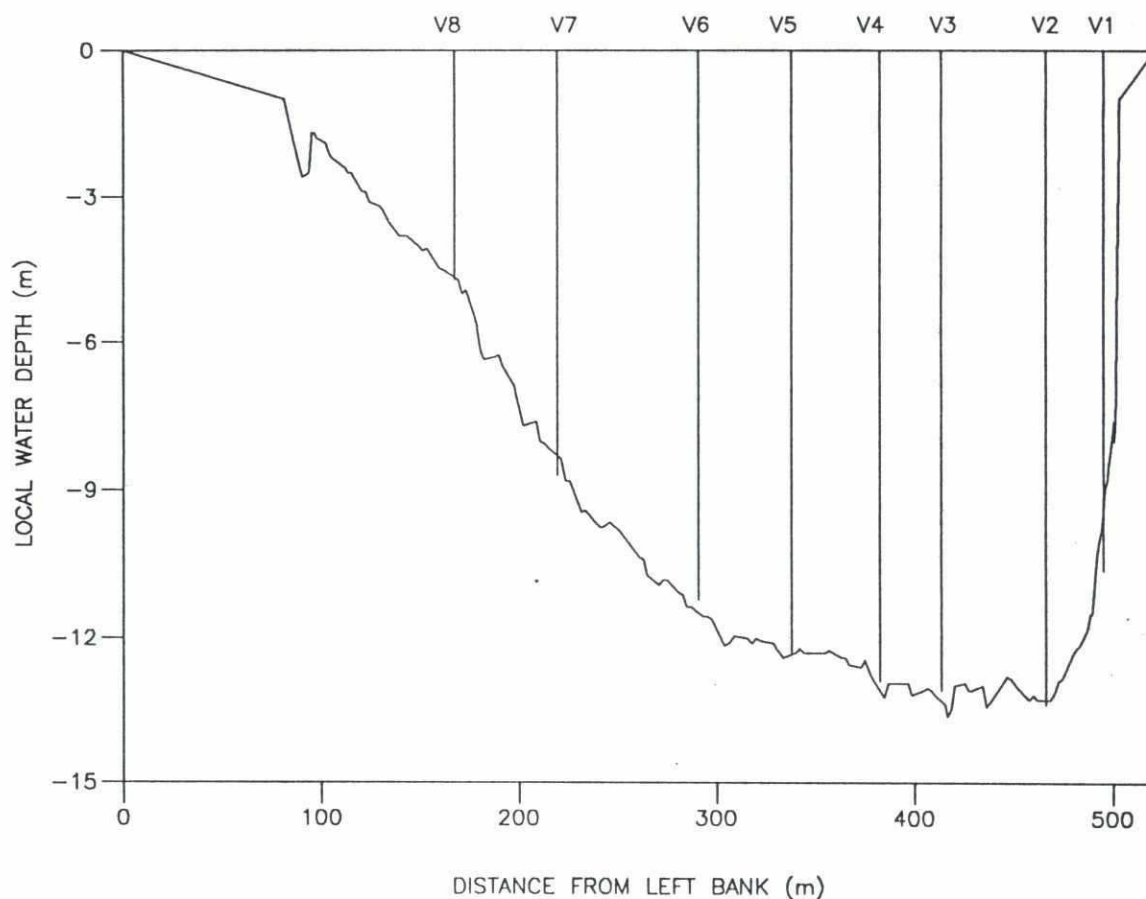
page

1.1



Water level : 10.89 m + PWD measured at the station indicated on Page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 99: 02 - 05 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4A41T02	Date : 18 Jan 1994	Cross-sections and measured verticals Channel 1	page 1.2
	Init : mzh/sjr		



Water level : 10.91 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 99: 02 - 05 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4A31T01

Date : 18 Jan 1994

Init : mzh/sjr

**Cross-sections and measured verticals
 Channel 2**

page
 1.3

33

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	7	8	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	9	8	-	-
	ADCP	9	8	-	-
	S4 current meter	-	-	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	1	-	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	9	8	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	16	16	-	-
	Delft Bottle	18	16	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-

Table 2.1: Survey programme as made

	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	2139	14990	10.89	15467	215	6274
Channel 2	521	4014	10.91	3882	7	2298

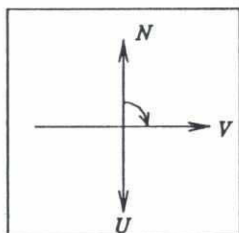
Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Bhuyanpur	Channel 1	03 Oct 94	10.91	FAP 24
		04 Oct 94	10.89	FAP 24
		05 Oct 94	10.74	FAP 24
	Channel 2	02 Oct 94	10.99	FAP 24
		03 Oct 94	10.91	FAP 24
				FAP 24

Table 2.3: Water-levels

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 99: 02 - 05 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
Files :	Date : 18 Jan 1994	Survey programme as made and key figures	page
S4A41T02			
S4A31T01	Init : mzh/sjr		2.1

839

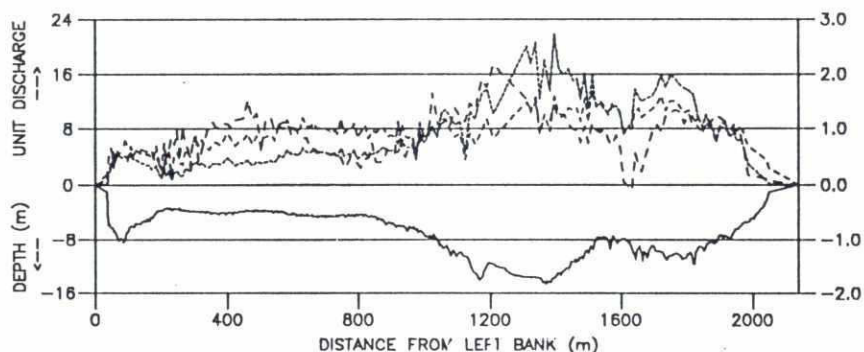


TRANSECT AZIMUTH = 90°

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)

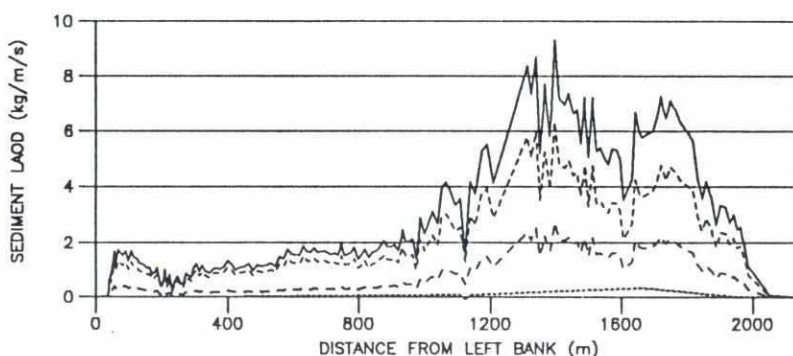
... U (m/s)

- . - V (m/s)

STAGE = 10.89 (m+PWD)

A = 14990 (m²)

Q = 15487 (m³/s)



SEDIMENT TRANSPORT

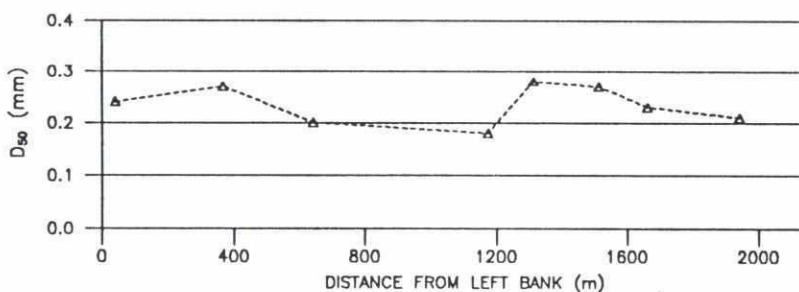
LEGEND :

— S_{TOTAL} 6489 (kg/s)

- - - S_{WASH LOAD} 4530 (kg/s)

- . - S_{SUSP. BED} 1744 (kg/s)

... S_{BED LOAD} 215 (kg/s)



GRAIN SIZE

LEGEND :

◆◆◆◆ D₅₀ SUSP. (mm)

△△△△ D₅₀ BED LOAD (mm)

□□□□ D₅₀ BED MAT. (mm)

FAP 24



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

Survey Bulletin 99: 02 - 05 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4A41T02

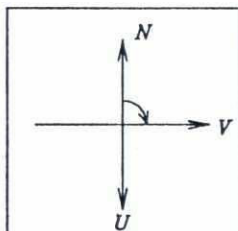
Date : 18 Jan 1994

Init : mzf/sjr

Horizontal distribution of flow and sediments
Channel 1

page

3.1

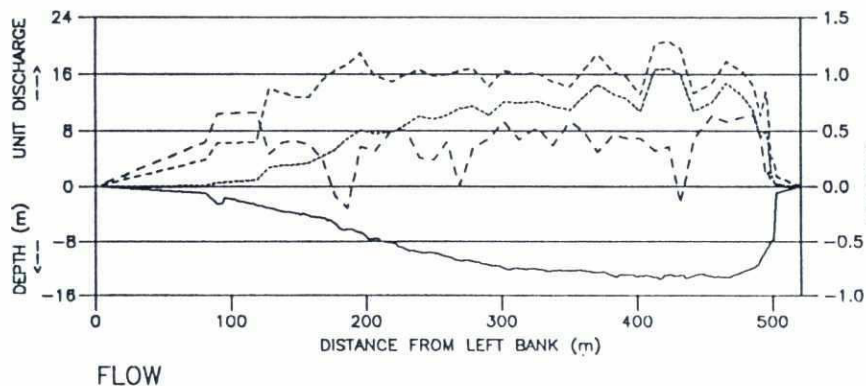


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



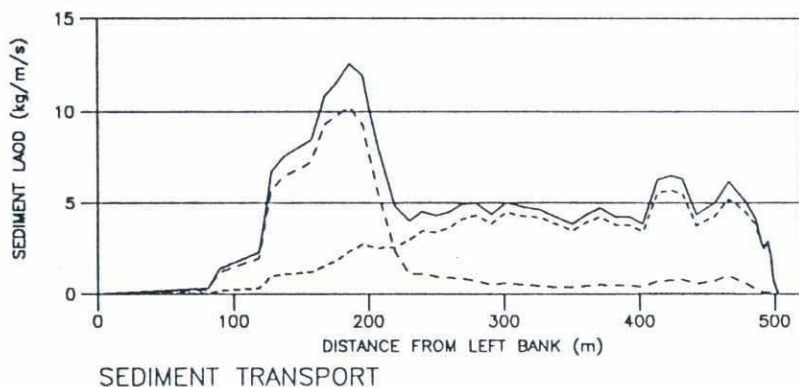
LEGEND :

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

STAGE = 10.91 (m+PWD)

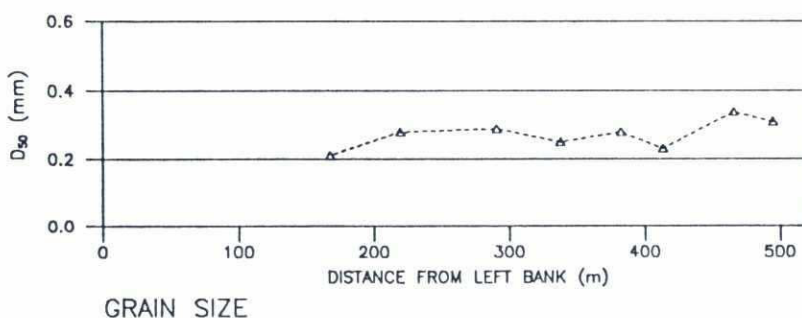
A = 4014 (m²)

Q = 3882 (m³/s)



LEGEND :

— S_{TOTAL} 2306 (kg/s)
 --- S_{WASH LOAD} 1311 (kg/s)
 ... S_{SUSP. BED} 987 (kg/s)
 -.- S_{BED LOAD} 7 (kg/s)



LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)
 △△△△△ D₅₀ BED LOAD (mm)
 ▢▢▢▢▢ D₅₀ BED MAT. (mm)

FAP 24



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

Survey Bulletin 99: 02 - 05 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4A31T01

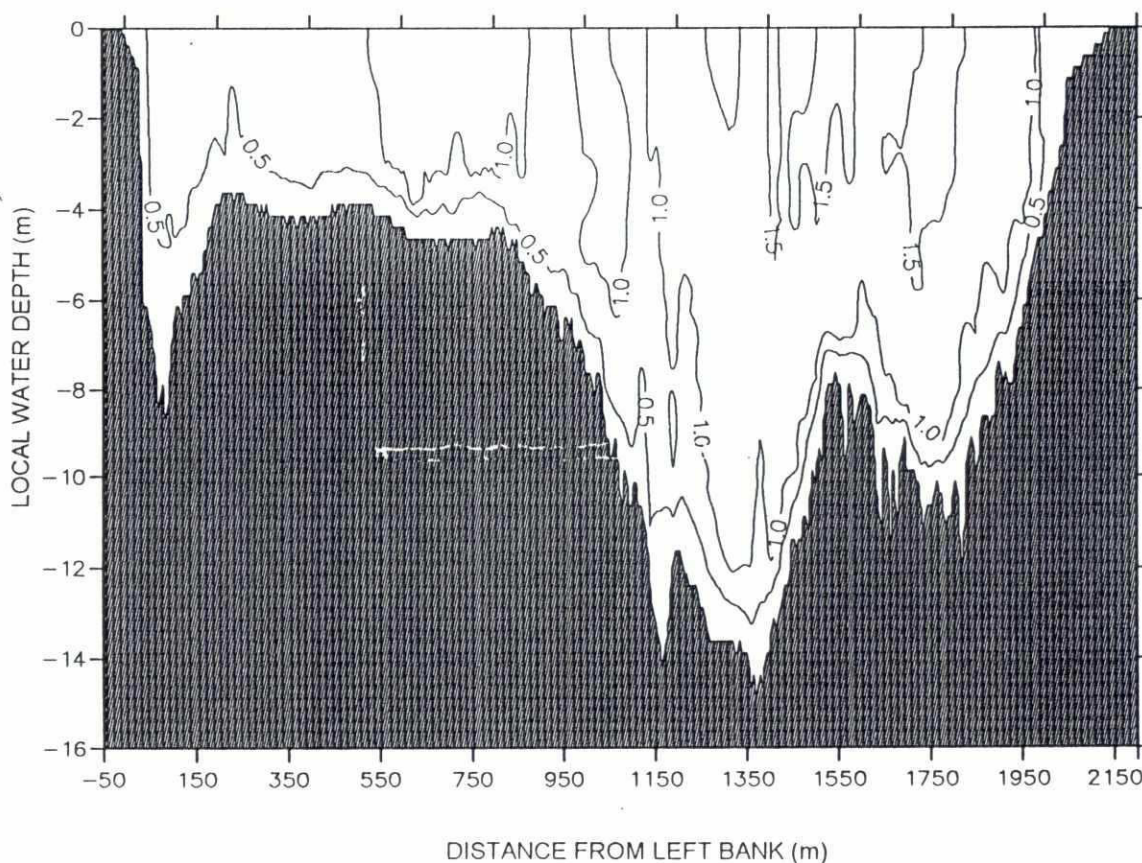
Date : 18 Jan 1994

Init : mzh/sjr

Horizontal distribution of flow and sediments
 Channel 2

page

3.2



Iso-velocity contours (m/s)

Water-level : 10.89 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 99: 02 - 05 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4A41T02

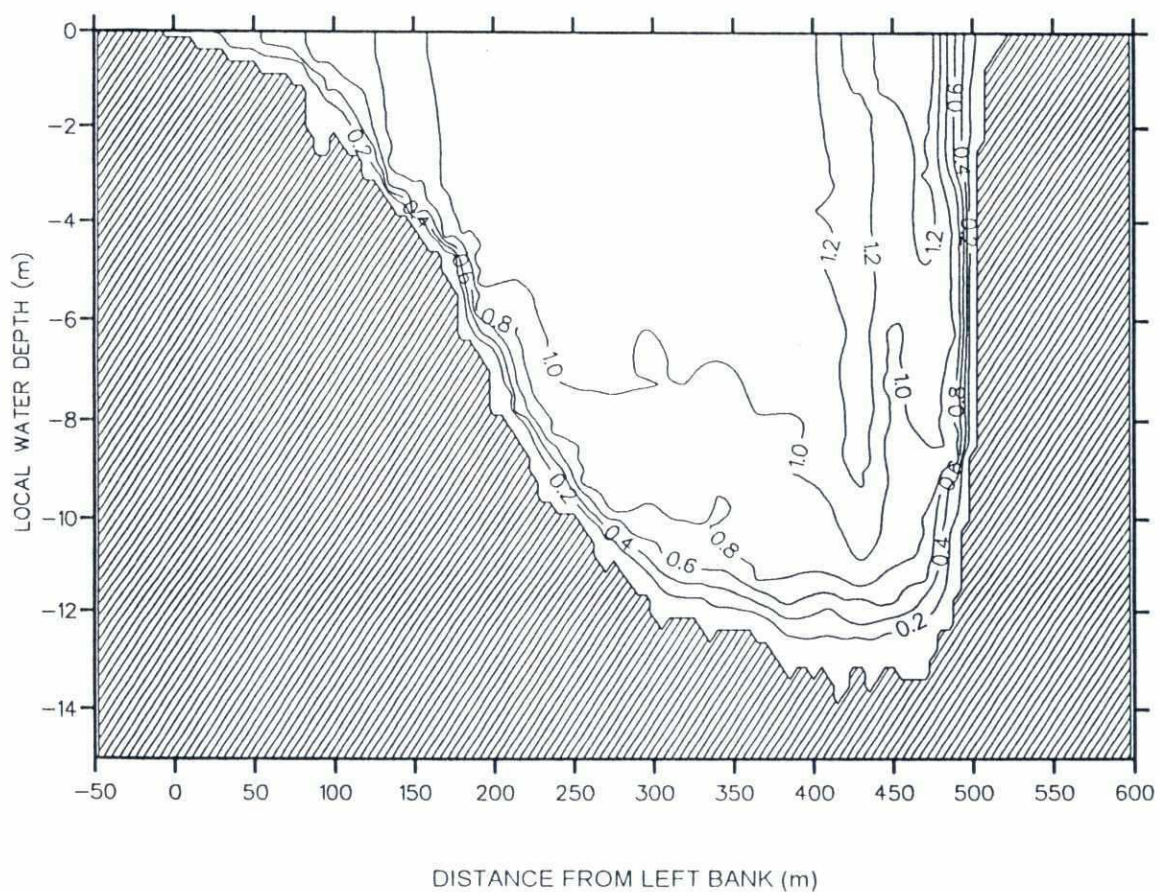
Date : 18 Jan 1994

Init : mzh/sjr

Cross-sectional distribution of flow velocity
Channel 1

page

4.1



Iso-velocity contours (m/s)

Water level : 10.91 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 99: 02 - 05 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4A31T01

Date : 18 Jan 1994

Init : mzh/sjr

Cross-sectional distribution of flow velocity
Channel 2

page

4.2

292

Andreasen settling tube							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm	D35 (mm)	D50 (mm)	D65 (mm)
Sample not collected							
Table 5.1: Grain size of near bed suspended sediment (0.3 m above river bed)							

US BM-54 bed samples							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm	D35 (mm)	D50 (mm)	D65 (mm)
Sample not collected							
Table 5.2 : Grain size of bed material							

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	9410041226-1303	7.60	0.171	99.829	0.194	0.237	0.295
	3	9410041506-1526	9.90	0.363	99.637	0.185	0.224	0.278
	4	9410041545-1602	8.40	0.188	99.812	0.224	0.277	0.331
	5	9410051048-1112	13.50	0.738	99.262	0.250	0.294	0.345
	6	9410051226-1310	10.90	0.426	99.574	0.157	0.176	0.197
	7	9410051415-1440	4.50	0.259	99.741	0.171	0.197	0.227
	8	9410051503-1530	3.80	0.825	99.175	0.221	0.276	0.333
	9	9410051544-1604	6.80	2.964	97.036	0.186	0.235	0.297
	1	9410041226-1303	7.60	0.751	99.249	0.163	0.190	0.221
	3	9410041506-1526	9.90	0.350	99.650	0.195	0.242	0.301
	4	9410041545-1602	8.40	0.146	99.854	0.204	0.255	0.312
	5	9410051048-1112	13.50	1.348	98.652	0.182	0.259	0.316
	6	9410051226-1310	10.90	0.324	99.676	0.157	0.176	0.197
	7	9410051415-1440	4.50	0.174	99.826	0.173	0.200	0.230
	8	9410051503-1530	3.80	0.730	99.270	0.212	0.266	0.323
	9	9410051544-1604	6.80	2.783	97.217	0.188	0.239	0.300
2	1	9410021420-1438	10.60	1.199	98.801	0.251	0.296	0.347
	2	9410021451-1538	13.40	0.192	99.808	0.301	0.341	0.385
	3	9410021559-1625	13.10	0.203	99.797	0.229	0.282	0.338
	4	9410030909-0939	12.90	0.955	99.045	0.237	0.288	0.343
	5	9410030957-1020	12.30	3.689	96.311	0.200	0.257	0.316
	6	9410031042-1104	11.20	3.240	96.760	0.222	0.280	0.336
	7	9410031137-1206	8.70	0.239	99.761	0.229	0.282	0.336
	8	9410031221-1246	4.70	0.174	99.826	0.177	0.216	0.270
Table 5.3 : Grain sizes of bed load (continued)								

 FAP 24 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 99: 02 - 05 October, 1994	
			Location 2 : Jamuna River, Sirajganj	
	Date : 18 Jan 1995	Grain size distributions		page 5.1
	Init : mzh/sjr			

372

Helley - Smith								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35	D50	D65
				< 0.06 mm	> 0.06 mm	(mm)	(mm)	(mm)
2	1	9410021420-1438	10.60	2.240	97.760	0.279	0.321	0.371
	2	9410021451-1538	13.40	0.163	99.837	0.296	0.335	0.380
	3	9410021559-1625	13.10	0.821	99.179	0.157	0.179	0.205
	4	9410030909-0939	12.90	0.367	99.633	0.218	0.272	0.329
	5	9410030957-1020	12.30	2.583	97.417	0.196	0.248	0.308
	6	9410031042-1104	11.20	1.246	98.754	0.265	0.308	0.357
	7	9410031137-1206	8.70	0.618	99.382	0.237	0.288	0.342
	8	9410031221-1246	4.70	0.330	99.670	0.172	0.207	0.251

Table 5.3 : Grain sizes of bed load

Delft Bottle								
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth (m)	Weight percent		D35	D50	D65
				< 0.06 mm	> 0.06 mm	(mm)	(mm)	(mm)
1	1	9410041226-1303	7.60	0.233	99.767	0.163	0.185	0.210
	2	9410041413-1441	11.20	0.543	99.457	0.161	0.187	0.216
	3	9410041506-1526	9.90	1.160	98.840	0.151	0.173	0.199
	4	9410041545-1602	8.40	1.132	98.868	0.152	0.175	0.202
	5	9410051048-1112	13.50	4.532	95.468	0.084	0.096	0.111
	6	9410051226-1310	10.90	0.802	99.198	0.148	0.168	0.190
	7	9410051415-1440	4.50	9.165	90.835	0.137	0.159	0.184
	8	9410051503-1530	3.80	11.963	88.037	0.097	0.127	0.158
	9	9410051544-1604	6.80	11.282	88.718	0.086	0.104	0.126
	1	9410041226-1303	7.60	0.705	99.295	0.158	0.170	0.194
	2	9410041413-1441	11.20	1.943	98.057	0.133	0.156	0.181
	3	9410041506-1526	9.90	2.666	97.334	0.139	0.164	0.194
	4	9410041545-1602	8.40	6.213	93.787	0.143	0.168	0.198
	5	9410051048-1112	13.50	6.881	93.119	0.081	0.093	0.107
	6	9410051226-1310	10.90	5.177	94.823	0.125	0.147	0.174
	7	9410051415-1440	4.50	8.069	91.931	0.137	0.159	0.184
	8	9410051503-1530	3.80	8.127	91.873	0.078	0.087	0.098
	9	9410051544-1604	6.80	3.937	96.063	0.135	0.156	0.182
2	1	9410021420-1438	10.60	23.545	76.455	0.074	0.091	0.113
	2	9410021451-1538	13.40	2.400	97.600	0.170	0.210	0.264
	3	9410021559-1625	13.10	2.731	97.269	0.131	0.153	0.180
	4	9410030909-0939	12.90	3.158	96.842	0.134	0.158	0.185
	5	9410030957-1020	12.30	2.764	97.236	0.131	0.153	0.179
	6	9410031042-1104	11.20	2.404	97.596	0.109	0.137	0.169
	7	9410031137-1206	8.70	2.073	97.927	0.119	0.145	0.173
	8	9410031221-1246	4.70	7.213	92.787	0.090	0.110	0.137
	1	9410021420-1438	10.60	11.658	88.342	0.088	0.109	0.139
	2	9410021451-1538	13.40	5.036	94.964	0.125	0.153	0.187
	3	9410021559-1625	13.10	5.353	94.647	0.117	0.144	0.171
	4	9410030909-0939	12.90	11.156	88.844	0.093	0.119	0.150
	5	9410030957-1020	12.30	16.070	83.930	0.075	0.086	0.099
	6	9410031042-1104	11.20	7.794	92.206	0.085	0.101	0.119
	7	9410031137-1206	8.70	4.128	95.872	0.099	0.123	0.153
	8	9410031221-1246	4.70	7.428	92.572	0.089	0.107	0.132

Table 5.4 : Grain sizes of bed load

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 99: 02 - 05 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
Date : 18 Jan 1995		Grain size distributions	page
Init : mzh/sjr			

5.2

290

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9410031531-1554	S4A31T06
		9410040843-0900	S4A41T01
		9410040906-0921	S4A41T02 *
		9410050955-1011	S4A51T01
		9410051015-1029	S4A51T02
		9410051622-1639	S4A51T04
		9410051642-1655	S4A51T05
	2	9410021141-1145	S4A21T05
		9410021154-1159	S4A21T07
		9410021647-1651	S4A21T12
		9410021655-1659	S4A21T13
		9410030840-0844	S4A31T01 *
		9410030853-0857	S4A31T02
		9410031355-1400	S4A31T03
		9410031404-1408	S4A31T04

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	9410041226-1303	477115	698480	7.60	S4A41P01 *
		2	9410041413-1441	477265	698480	11.20	S4A41P02 *
		3	9410041506-1526	477395	698482	9.90	S4A41P03 *
		4	9410041545-1602	477549	698483	8.40	S4A41P04 *
		5	9410051048-1112	477739	698479	13.50	S4A51P01 *
		6	9410051226-1310	477885	698472	10.90	S4A51P05 *
		7	9410051415-1440	478415	698485	4.50	S4A51P06 *
		8	9410051503-1530	478697	698420	3.80	S4A51P07 *
		9	9410051544-1604	479018	698512	6.80	S4A51P08 *
	2	1	9410021420-1438	471314	698806	10.60	S4A21P01 *
		2	9410021451-1538	471340	698800	13.40	S4A21P03 *
		3	9410021559-1625	471392	698803	13.10	S4A21P04 *
		4	9410030909-0939	471429	698805	12.90	S4A31P01 *
		5	9410030957-1020	471475	698805	12.30	S4A31P03 *
		6	9410031042-1104	471521	698806	11.20	S4A31P05 *
		7	9410031137-1206	471585	698804	8.70	S4A31P06 *
		8	9410031221-1246	471640	698803	4.70	S4A31P08 *

Table 6.2: Vertical profiles

* S4 & MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	2	1	9410041413-1441	477265	698480	11.20

Table 6.3: Suspended sediment - point sampled

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 99: 02 - 05 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 18 Jan 1995	Collected data and their storage (1)	page 6.1
	Init : mzh/sjr		

948

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9410041226-1303	477115	698480	7.60
		2	1	9410041413-1441	477265	698480	11.20
		3	1	9410041506-1526	477395	698482	9.90
		4	1	9410041545-1602	477549	698483	8.40
		5	1	9410051048-1112	477739	698479	13.50
		6	1	9410051226-1310	477885	698472	10.90
		7	1	9410051415-1440	478415	698485	4.50
		8	1	9410051503-1530	478697	698420	3.80
		9	1	9410051544-1604	479018	698512	6.80
	2	1	1	9410021420-1438	471314	698806	10.60
		2	1	9410021451-1538	471340	698800	13.40
		3	1	9410021559-1625	471392	698803	13.10
		4	1	9410030909-0939	471429	698805	12.90
		5	1	9410030957-1020	471475	698805	12.30
		6	1	9410031042-1104	471521	698806	11.20
		7	1	9410031137-1206	471585	698804	8.70
		8	1	9410031221-1246	471640	698803	4.70

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	9410041226-1303	477115	698480	7.60	A2282
		3	9410041506-1526	477395	698482	9.90	A2342
		4	9410041545-1602	477549	698483	8.40	A2337
		5	9410051048-1112	477739	698479	13.50	A2334
		6	9410051226-1310	477885	698472	10.90	A2033
		7	9410051415-1440	478415	698485	4.50	A3040
		8	9410051503-1530	478697	698420	3.80	A2265
		9	9410051544-1604	479018	698512	6.80	A2270
		1	9410041226-1303	477115	698480	7.60	A2335
		3	9410041506-1526	477395	698482	9.90	A2224
		4	9410041545-1602	477549	698483	8.40	A2242
		5	9410051048-1112	477739	698479	13.50	A1155
		6	9410051226-1310	477885	698472	10.90	A1888
		7	9410051415-1440	478415	698485	4.50	A2230
		8	9410051503-1530	478697	698420	3.80	A3001
		9	9410051544-1604	479018	698512	6.80	A3027
	2	1	9410021420-1438	471314	698806	10.60	A93
		2	9410021451-1538	471340	698800	13.40	A2153
		3	9410021559-1625	471392	698803	13.10	A77
		4	9410030909-0939	471429	698805	12.90	A1648
		5	9410030957-1020	471475	698805	12.30	A1674
		6	9410031042-1104	471521	698806	11.20	A2211
		7	9410031137-1206	471585	698804	8.70	A1627
		8	9410031221-1246	471640	698803	4.70	A1801

Table 6.5: Bed load (continued)

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 99: 02 - 05 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 18 Jan 1995	Collected data and their storage (2)	page
	Init : mzh/sjr		6.2

29

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Helley-Smith Sample		1	9410021420-1438	471314	698806	10.60	A740
		2	9410021451-1538	471340	698800	13.40	A2201
		3	9410021559-1625	471392	698803	13.10	A2163
		4	9410030909-0939	471429	698805	12.90	A1375
		5	9410030957-1020	471475	698805	12.30	A1383
		6	9410031042-1104	471521	698806	11.20	A1894
		7	9410031137-1206	471585	698804	8.70	A569
		8	9410031221-1246	471640	698803	4.70	A1684

Table 6.5: Bed load

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft Bottle Sample	1	1	9410041226-1303	477115	698480	7.60	A752
		2	9410041413-1441	477265	698480	11.20	A998
		3	9410041506-1526	477395	698482	9.90	A963
		4	9410041545-1602	477549	698483	8.40	A969
		5	9410051048-1112	477739	698479	13.50	A954
		6	9410051226-1310	477885	698472	10.90	A794
		7	9410051415-1440	478415	698485	4.50	A948
		8	9410051503-1530	478697	698420	3.80	A944
		9	9410051544-1604	479018	698512	6.80	A138
		1	9410041226-1303	477115	698480	7.60	A952
		2	9410041413-1441	477265	698480	11.20	A1041
		3	9410041506-1526	477395	698482	9.90	A793
		4	9410041545-1602	477549	698483	8.40	A994
		5	9410051048-1112	477739	698479	13.50	A996
		6	9410051226-1310	477885	698472	10.90	A1003
		7	9410051415-1440	478415	698485	4.50	A1004
		8	9410051503-1530	478697	698420	3.80	A983
		9	9410051544-1604	479018	698512	6.80	A1011
	2	1	9410021420-1438	471314	698806	10.60	A2114
		2	9410021451-1538	471340	698800	13.40	A2078
		3	9410021559-1625	471392	698803	13.10	A2099
		4	9410030909-0939	471429	698805	12.90	A2050
		5	9410030957-1020	471475	698805	12.30	A2108
		6	9410031042-1104	471521	698806	11.20	A2046
		7	9410031137-1206	471585	698804	8.70	A2059
		8	9410031221-1246	471640	698803	4.70	A2112
		1	9410021420-1438	471314	698806	10.60	A2058
		2	9410021451-1538	471340	698800	13.40	A2052
		3	9410021559-1625	471392	698803	13.10	A2053
		4	9410030909-0939	471429	698805	12.90	A1232
		5	9410030957-1020	471475	698805	12.30	A1231
		6	9410031042-1104	471521	698806	11.20	A2119
		7	9410031137-1206	471585	698804	8.70	A2113
		8	9410031221-1246	471640	698803	4.70	A1778

Table 6.6: Bed load

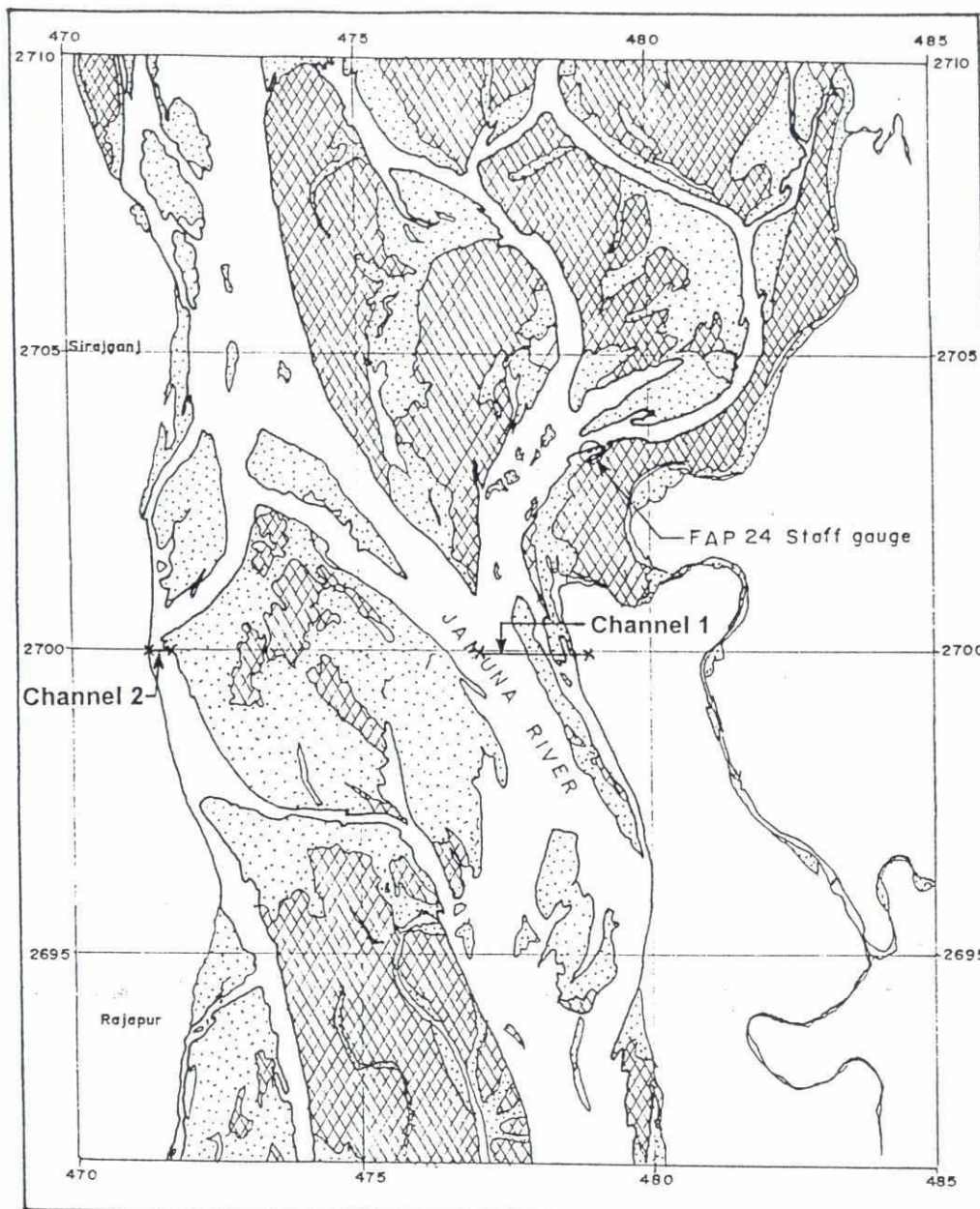
FAP 24  DELFT - DHI		RIVER SURVEY PROJEC Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 99: 02 - 05 October, 1994	
				Location 2 : Jamuna River, Sirajganj	
		Date : 18 Jan 1995		Collected data and their storage (3)	
		Init : mzh/sjr			
				page 6.3	

29

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S4A41T02 .ase
ADCP/S4/EMF data	2	QUATTRO	S4A31T01 .ase
Echosounder data	1	QUATTRO	S4A41T02 .ech
Echosounder data	2	QUATTRO	S4A31T01 .ech
Sediment transport data	1	QUATTRO	S4A41T02 .sed
Sediment transport data	2	QUATTRO	S4A31T01 .sed
Bed load sed. analysis	1	QUATTRO	S4A41T02 .bdl
Bed load sed. analysis	2	QUATTRO	S4A31T01 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S4A41T02 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S4A31T01 .ssc
Transect plot data	1	QUATTRO	S4A41T02 .trs
Transect plot data	2	QUATTRO	S4A31T01 .trs
Iso-velocity plot data	1	MIKE 21	S4A41T02 .ct2
		MIKE 21	S4A41T02 .dt2
Iso-velocity plot data	2	MIKE 21	S4A31T01 .ct2
		MIKE 21	S4A31T01 .dt2

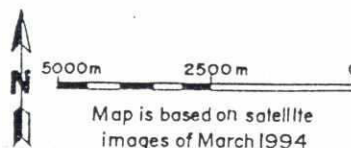
Table 7.1 PSD 24 Database file description

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 99: 02 - 05 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 18 Jan 1995	PSD 24 Database file description	page
	Init : mzh/sjr		7.1



LEGEND :

- x-x Measurement cross section
- High land
- Unstable/low char
- FAP24 Staff gauge



FAP 24

 DELFT - DHI

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

Survey Bulletin 111 : 26 - 29 October, 1994

Location 2 : Jamuna River, Sirajganj

Date : 30 Jan 1995

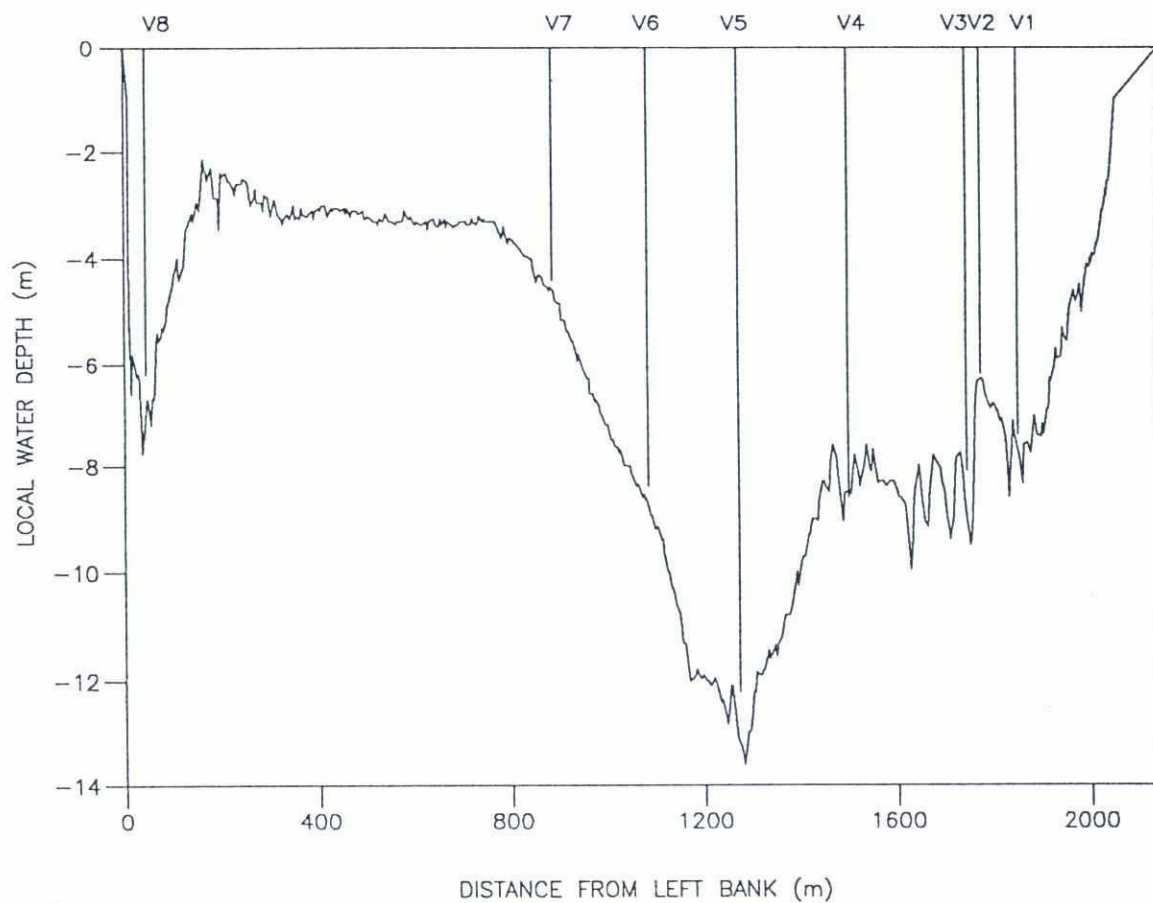
Init : mzh/sjr

Location map

page

1.1

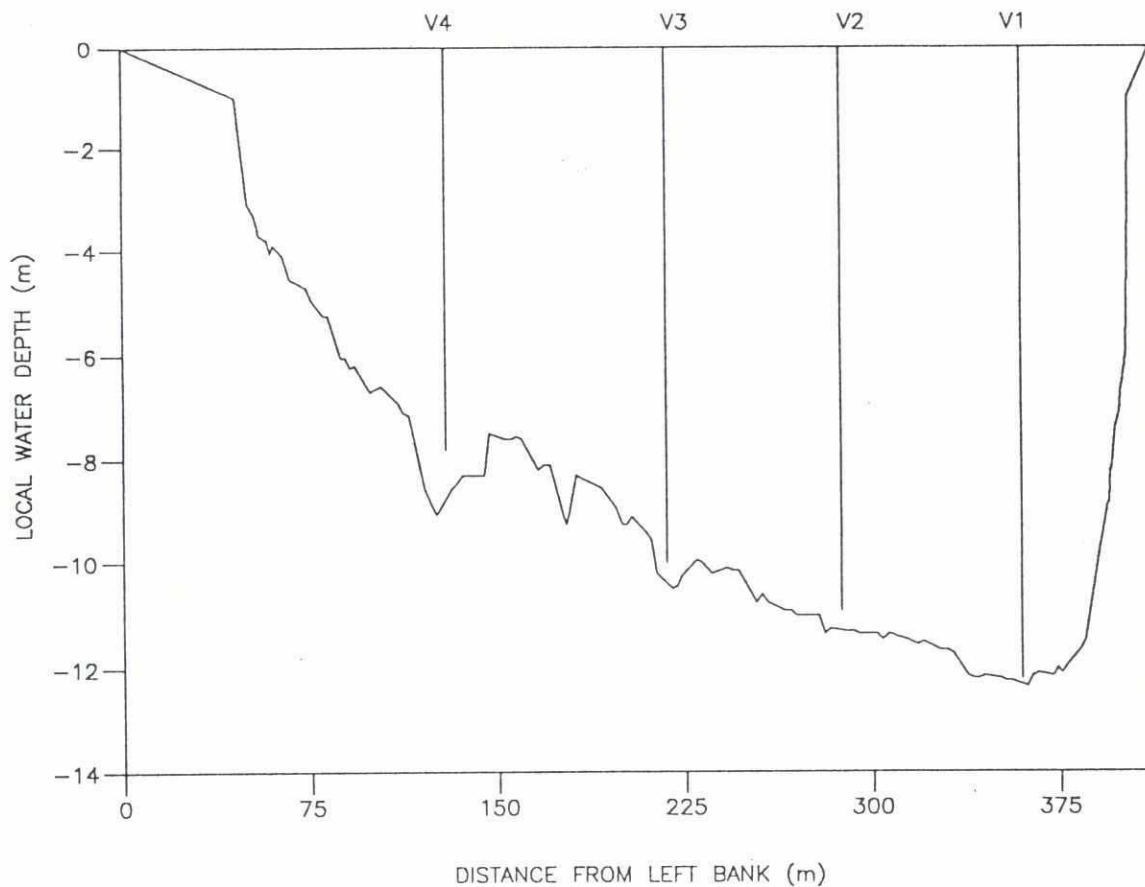
296



Water-level : 9.58 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 111: 26 - 29 October , 1994	
File : S4AS1T02		Location 2 : Jamuna River, Sirajganj	
Date : 30 Jan 1995 Init : mzh/sjr		Cross-sections and measured verticals Channel 1	
		page 1.2	

292



Water-level : 9.73 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 111: 26 - 29 October , 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4AR1T01	Date : 30 Jan 1995	Cross-sections and measured verticals Channel 2	page 1.3
	Init : mzh/sjr		

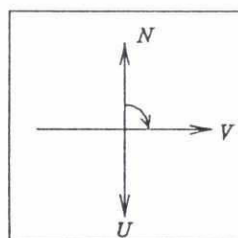
Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	8	6	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	8	4	-	-
	ADCP	8	4	-	-
	S4 current meter	1	1	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	6	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	8	4	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	16	8	-	-
	Delft Bottle	16	8	-	-
Bed material	US BM-54 bed sampler	-	-	-	-
	Van Veen bed sampler	-	-	-	-
Table 2.1: Survey programme as made					

	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	2143	12895	9.58	11251	119	5668
Channel 2	412	3299	9.73	2486	1	865
Table 2.2: Key figures						

Gauge Location	Channel	Date	Water level (Daily average) (m+PWD)	Gauge
Bhuyanpur	Channel 1	28 Oct 94	9.58	FAP 24
		29 Oct 94	9.47	FAP 24
	Channel 2	26 Oct 94	9.89	FAP 24
		27 Oct 94	9.73	FAP 24

Table 2.3: Water-levels

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 111: 26 - 29 October , 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4AS1T02 S4AR1T01	Date : 30 Jan 1995 Init : mzh/sjr	Survey programme as made and key figures	page 2.1

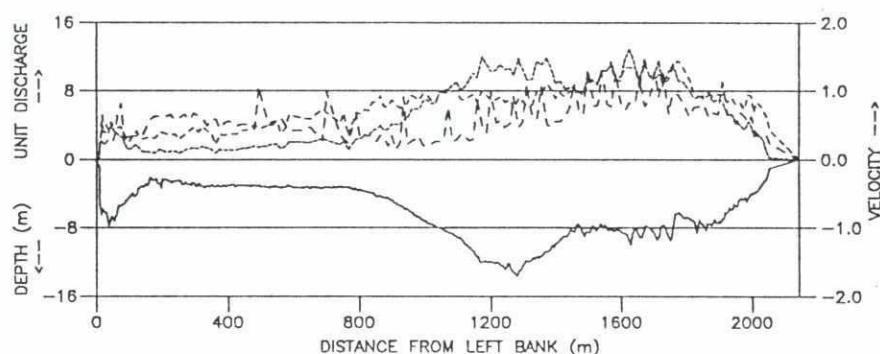


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

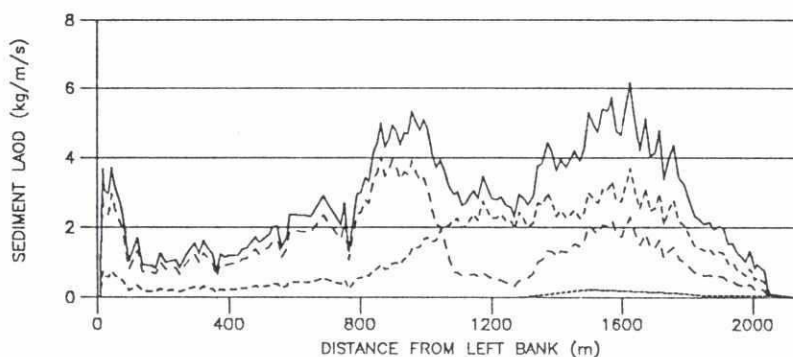
LEGEND :

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

STAGE = 9.58 (m+PWD)

A = 12895 (m³)

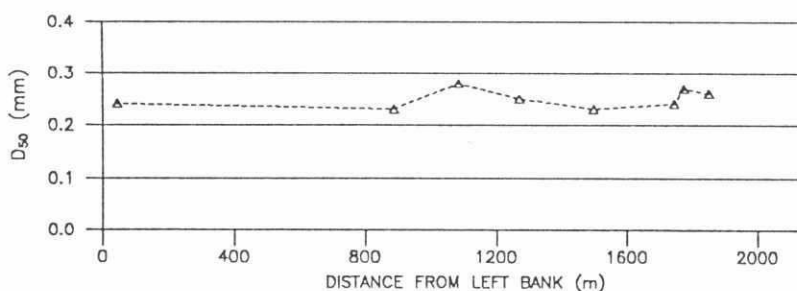
Q = 11251 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 5787 (kg/s)
 --- S_{WASH LOAD} 2702 (kg/s)
 ... S_{SUSP. BED} 2966 (kg/s)
 -.- S_{BED LOAD} 119 (kg/s)



GRAIN SIZE

LEGEND :

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

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
 Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 111: 26 - 29 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4AS1T02

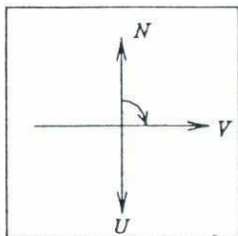
Date : 30 Jan 1995

Init : mzh/sjr

Horizontal distribution of flow and sediments
 Channel 1

page

3.1

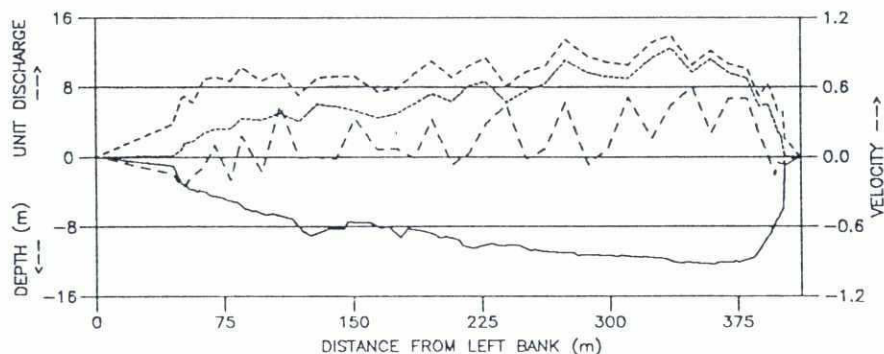


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

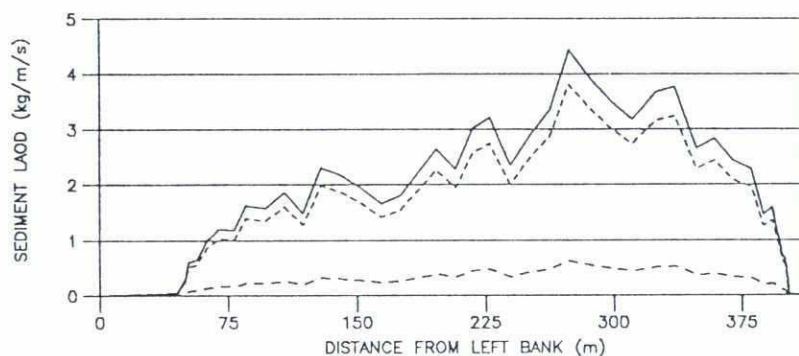
LEGEND :

— WATER DEPTH (m below STAGE)
— UNIT DISCHARGE ($\text{m}^3/\text{s.m}$)
--- U (m/s)
--- V (m/s)

STAGE = 9.73 (m+PWD)

A = 3299 (m^2)

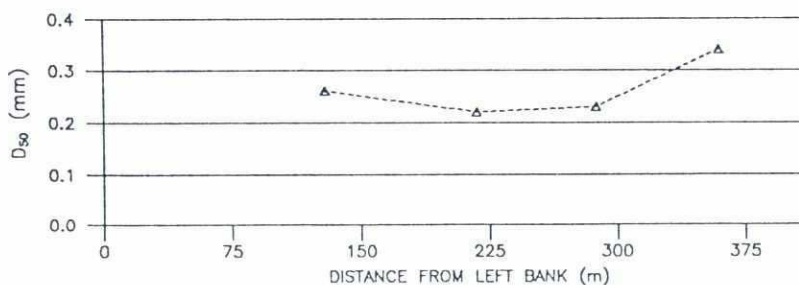
Q = 2486 (m^3/s)



SEDIMENT TRANSPORT

LEGEND :

— S_{TOTAL} 866 (kg/s)
--- S_{WASH_LOAD} 743 (kg/s)
... S_{SUSP_LOAD} 122 (kg/s)
-.- S_{BED_LOAD} 1 (kg/s)



GRAIN SIZE

LEGEND :

◆◆◆◆◆ $D_{50\ SUSP.}$ (mm)
▲▲▲▲▲ $D_{50\ BED\ LOAD}$ (mm)
□□□□□ $D_{50\ BED\ MAT.}$ (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 111: 26 - 29 October, 1994

Location 2 : Jamuna River, Sirajganj

File : S4AR1T01

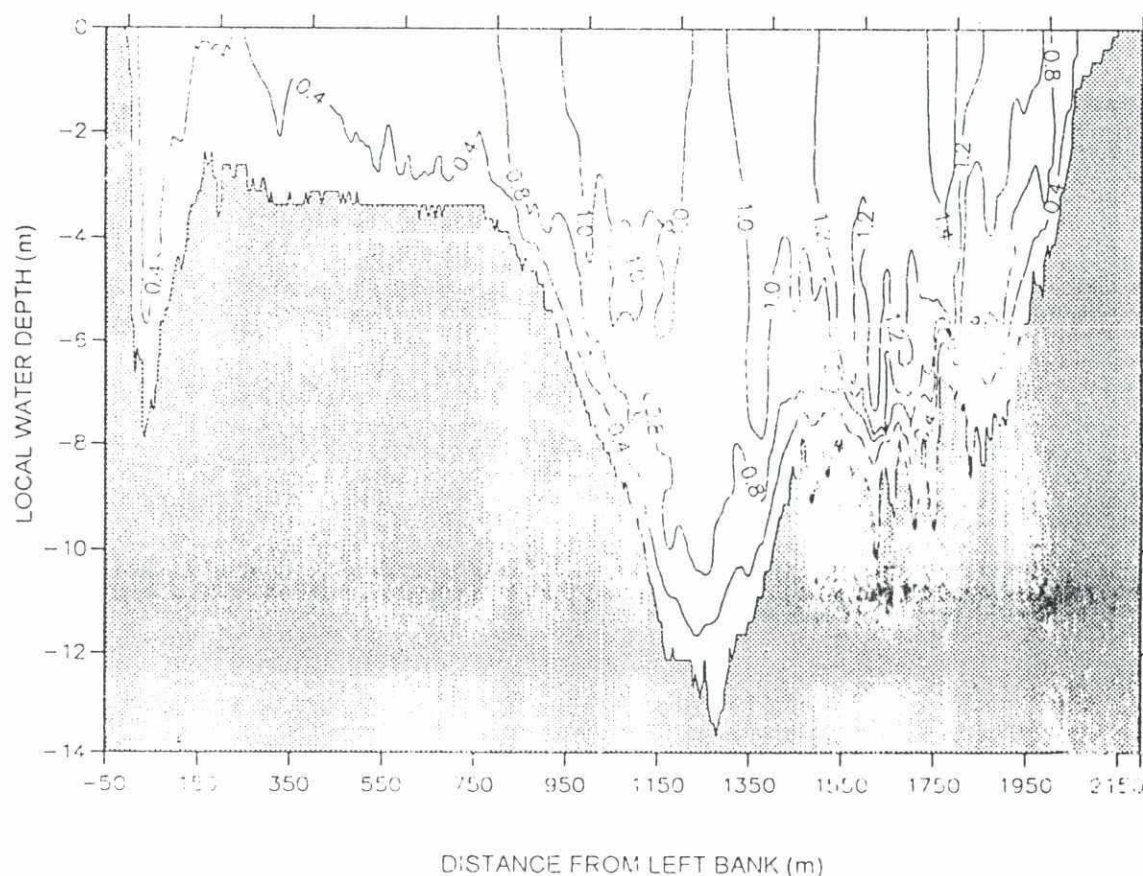
Date : 30 Jan 1995

Init : mzh/sjr

Horizontal distribution of flow and sediments
Channel 2

page

3.2

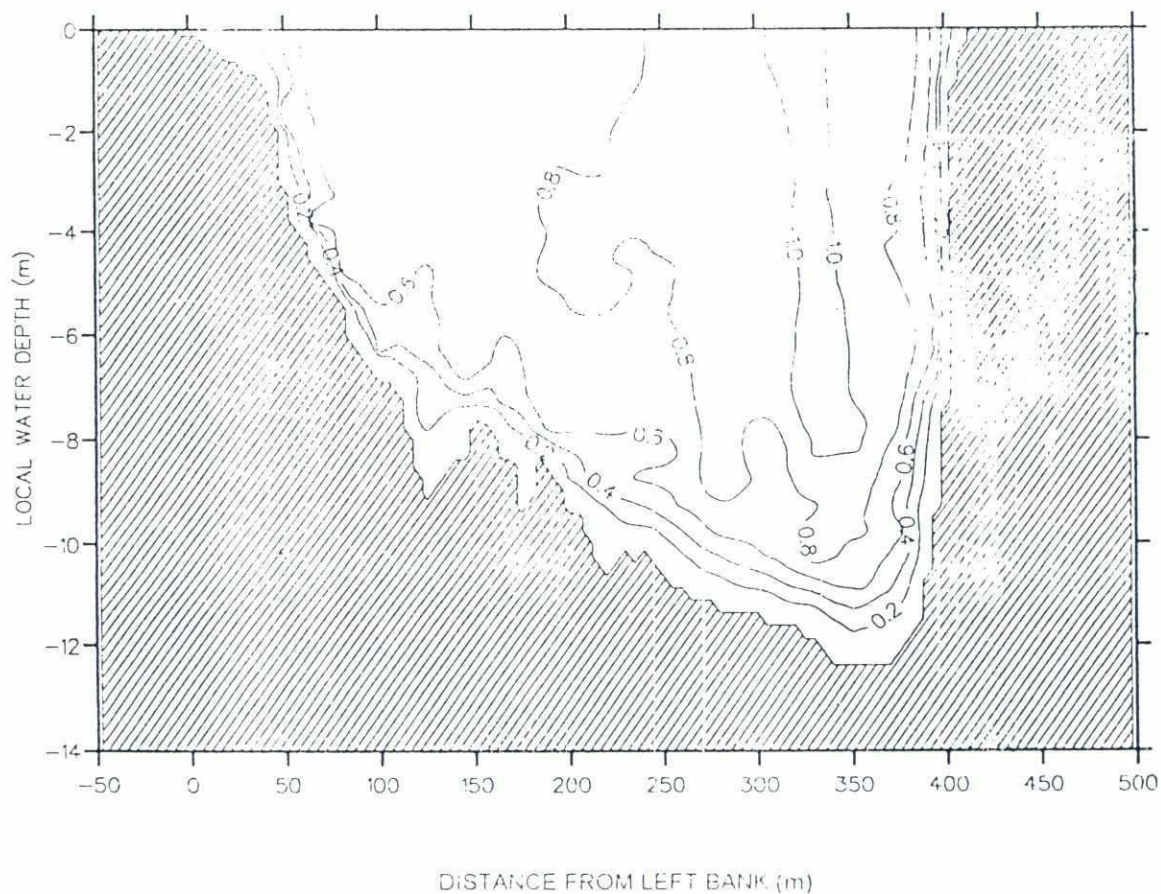


Iso-velocity contours (m/s)

Water-level : 9.58 m + PWD measured at the station indicated on Page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 111: 26 - 29 October, 1994	
		Location 2 : Jamuna River, Sirajganj	
File : S4AS1T02	Date : 30 Jan 1995	Cross-sectional distribution of flow velocity Channel 1	page
	Init : mzh/sjr		4.1

78



Iso-velocity contours (m/s)

Water-level : 9.73 m + PWD measured at the station indicated on Page 1.1

FAP 24 DELT - DHI RIVER SURVEY PROJECT <i>Flood Plan Coordination Organization</i> Commission of the European Communities		Survey Bulletin 111: 26 - 29 October , 1994	
File : S4AR1T01 Date : 30 Jan 1995 IPR : mzh/sjr		Location 2 : Jamuna River, Sirajganj	
		Cross-sectional distribution of flow velocity Channel 2	
		page 4.2	

M8

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9410280845-0900	S4AS1T01
		9410280906-0920	S4AS1T02 *
		9410281529-1546	S4AS1T06
		9410281551-1604	S4AS1T07
		9410290900-0916	S4AT1T01
		9410290922-0936	S4AT1T02
		9410291403-1419	S4AT1T03
		9410291425-1440	S4AT1T04
	2	9410261035-1038	S4AQ1T01
		9410261041-1044	S4AQ1T02
		9410270851-0854	S4AR1T01 *
		9410270903-0907	S4AR1T02
		9410271620-1625	S4AR1T06
		9410271628-1632	S4AR1T07

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	9410281049-1125	477192	698479	7.40	S4AS1P04 *
		2	9410281154-1222	477275	698474	6.20	S4AS1P06 *
		3	9410281323-1340	477354	698475	8.10	S4AS1P07 *
		4	9410281358-1431	477548	698479	8.60	S4AS1P11 *
		5	9410290958-1129	477770	698484	12.20	S4AT1P01 **
		6	9410281453-1512	477964	698481	8.40	S4AS1P12 *
		7	9410291154-1218	478158	698483	4.40	S4AT1P02 *
		8	9410291251-1317	479005	698481	6.20	S4AT1P03 *
	2	1	9410271129-1309	471338	698805	12.20	S4AR1P01 **
		2	9410271411-1435	471413	698804	10.90	S4AR1P03 *
		3	9410271451-1515	471480	698804	10.00	S4AR1P06 *
		4	9410271535-1601	471570	698807	7.80	S4AR1P07 *

Table 6.2: Vertical profiles

* S4 & MEX not available

** MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	5	6	9410290958-1129	477770	698484	12.20
	2	1	6	9410271129-1309	471338	698805	12.20

Table 6.3: Suspended sediment - point sampled

 FAP 24 DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 111: 26 - 29 October , 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Jan 1995	Collected data and their storage (1)	page 6.1
	Init : mzh/sjr		

203

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9410281049-1125	477192	698479	7.40
		2	1	9410281154-1222	477275	698474	6.20
		3	1	9410281323-1340	477354	698475	8.10
		4	1	9410281358-1431	477548	698479	8.60
		5	1	9410290958-1129	477770	698484	12.20
		6	1	9410281453-1512	477964	698481	8.40
		7	1	9410291154-1218	478158	698483	4.40
		8	1	9410291251-1317	479005	698481	6.20
	2	1	1	9410271129-1309	471338	698805	12.20
		2	1	9410271411-1435	471413	698804	10.90
		3	1	9410271451-1515	471480	698804	10.00
		4	1	9410271535-1601	471570	698807	7.80

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	9410281049-1125	477192	698479	7.40	A1898
		2	9410281154-1222	477275	698474	6.20	A1807
		3	9410281323-1340	477354	698475	8.10	A2325
		4	9410281358-1431	477548	698479	8.60	A1135
		5	9410290958-1129	477770	698484	12.20	A2241
		6	9410281453-1512	477964	698481	8.40	A2204
		7	9410291154-1218	478158	698483	4.40	A2279
		8	9410291251-1317	479005	698481	6.20	A3024
		1	9410281049-1125	477192	698479	7.40	A2313
		2	9410281154-1222	477275	698474	6.20	A2314
		3	9410281323-1340	477354	698475	8.10	A2222
		4	9410281358-1431	477548	698479	8.60	A2324
		5	9410290958-1129	477770	698484	12.20	A1319
		6	9410281453-1512	477964	698481	8.40	A2218
		7	9410291154-1218	478158	698483	4.40	A2034
		8	9410291251-1317	479005	698481	6.20	A1658
	2	1	9410271129-1309	471338	698805	12.20	A2162
		2	9410271411-1435	471413	698804	10.90	A1918
		3	9410271451-1515	471480	698804	10.00	A2341
		4	9410271535-1601	471570	698807	7.80	A3019
		1	9410271129-1309	471338	698805	12.20	A2244
		2	9410271411-1435	471413	698804	10.90	A1967
		3	9410271451-1515	471480	698804	10.00	A2263
		4	9410271535-1601	471570	698807	7.80	A2205

Table 6.5: Bed load

 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 111: 26 - 29 October , 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Jan 1995	Collected data and their storage (2)	page
	Init : mzh/sjr		6.2

289

Method	Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)	Sample No.
Delft Bottle Sample	1	1	9410281049-1125	477192	698479	7.40	A487
		2	9410281154-1222	477275	698474	6.20	A665
		3	9410281323-1340	477354	698475	8.10	A222
		4	9410281358-1431	477548	698479	8.60	A196
		5	9410290958-1129	477770	698484	12.20	A227
		6	9410281453-1512	477964	698481	8.40	A237
		7	9410291154-1218	478158	698483	4.40	A163
		8	9410291251-1317	479005	698481	6.20	A499
		1	9410281049-1125	477192	698479	7.40	A440
		2	9410281154-1222	477275	698474	6.20	A503
		3	9410281323-1340	477354	698475	8.10	A235
		4	9410281358-1431	477548	698479	8.60	A590
		5	9410290958-1129	477770	698484	12.20	A380
		6	9410281453-1512	477964	698481	8.40	A214
		7	9410291154-1218	478158	698483	4.40	A841
		8	9410291251-1317	479005	698481	6.20	A965
	2	1	9410271129-1309	471338	698805	12.20	A223
		2	9410271411-1435	471413	698804	10.90	A386
		3	9410271451-1515	471480	698804	10.00	A475
		4	9410271535-1601	471570	698807	7.80	A161
		1	9410271129-1309	471338	698805	12.20	A477
		2	9410271411-1435	471413	698804	10.90	A680
		3	9410271451-1515	471480	698804	10.00	A382
		4	9410271535-1601	471570	698807	7.80	A512

Table 6.6: Bed load

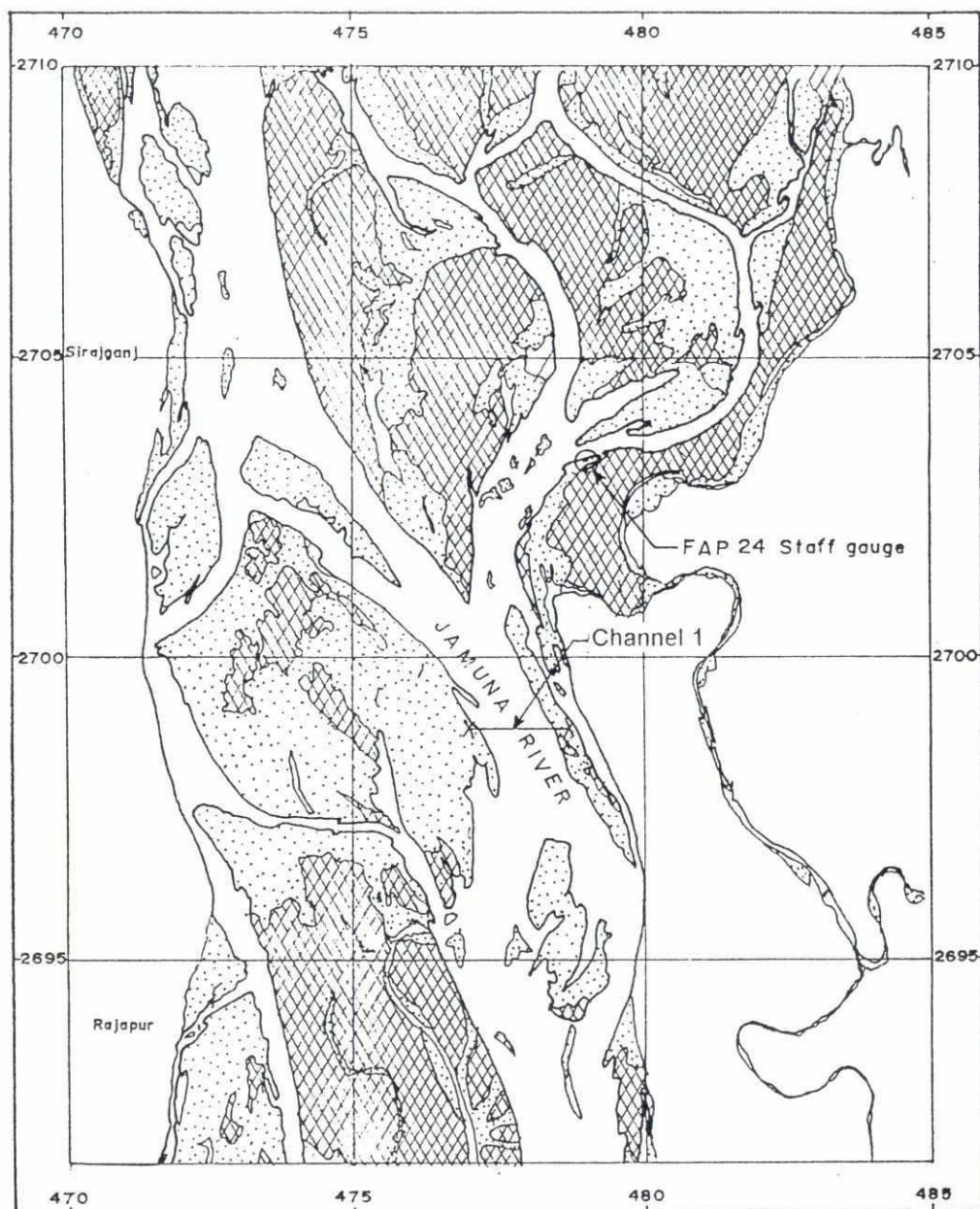
 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 111: 26 - 29 October , 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Jan 1995	Collected data and their storage (3)	page 6.3
	Init : mzh/sjr		

704

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S4AS1T02 .ase
ADCP/S4/EMF data	2	QUATTRO	S4AR1T01 .ase
Echosounder data	1	QUATTRO	S4AS1T02 .ech
Echosounder data	2	QUATTRO	S4AR1T01 .ech
Sediment transport data	1	QUATTRO	S4AS1T02 .sed
Sediment transport data	2	QUATTRO	S4AR1T01 .sed
Bed load sed. analysis	1	QUATTRO	S4AS1T02 .bdl
Bed load sed. analysis	2	QUATTRO	S4AR1T01 .bdl
Suspended sed. conc. analysis	1	QUATTRO	S4AS1T02 .ssc
Suspended sed. conc. analysis	2	QUATTRO	S4AR1T01 .ssc
Transect plot data	1	QUATTRO	S4AS1T02 .trs
Transect plot data	2	QUATTRO	S4AR1T01 .trs
Iso-velocity plot data	1	MIKE 21	S4AS1T02 .ct2
		MIKE 21	S4AS1T02 .dt2
Iso-velocity plot data	2	MIKE 21	S4AR1T01 .ct2
		MIKE 21	S4AR1T01 .dt2

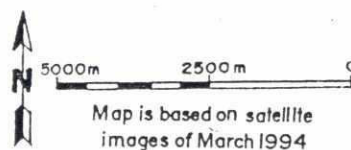
Table 7.1 PSD 24 Database file description

 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 111: 26 - 29 October , 1994	
		Location 2 : Jamuna River, Sirajganj	
	Date : 30 Jan 1995	PSD 24 Database file description	page
	Init : mzh/sjr		7.1



LEGEND :

- x-x Measurement cross section
- High land
- Unstable/low char
- ⊙ FAP24 Staff gauge .



FAP 24



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

Survey Bulletin 118 : 11 November, 1994

Location 02 : Jamuna River, Sirajganj

Date : 12 Feb 1995

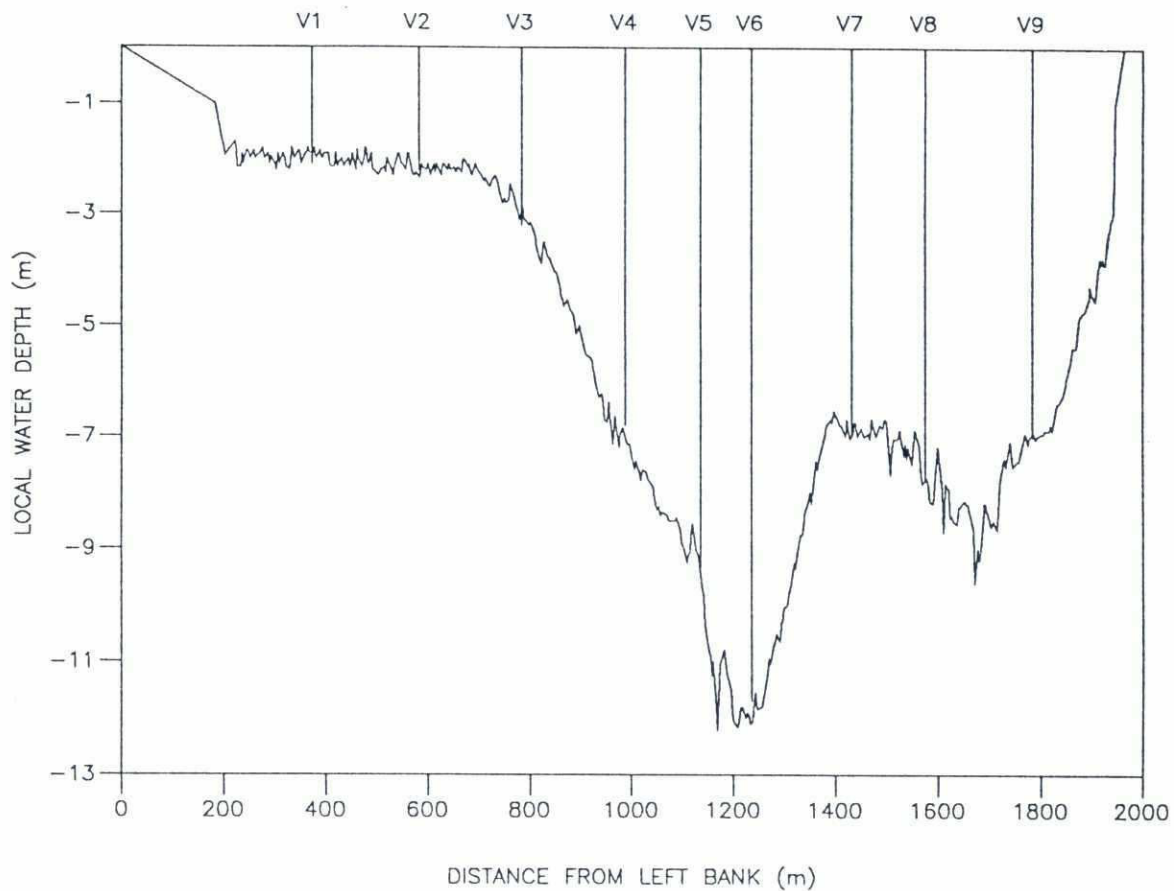
Location map

Init : mk / tr

page

1.1

27/2/95
m20



Water level : 8.49 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 118 : 11 November, 1994	
		Location 02 : Jamuna River, Sirajganj	
File : S4BB1T05	Date : 12 Feb 1995	Cross-sections and measured verticals Channel 1	page 1.2
	Init : mk / tr		

Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	3	-	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	1	-	-	-
Vertical current profile	No. of verticals in channel	9	-	-	-
	ADCP	8	-	-	-
	S4 current meter	1	-	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	-	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	8	-	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	16	-	-	-
	Delft Bottle	-	-	-	-
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)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1963	10043	8.49	7729	63	1822

Table 2.2: Key figures

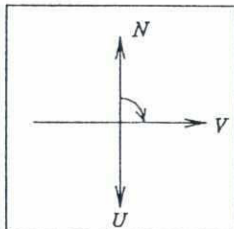
Gauge Location	Channel	Date	Water level (Daily average) (m + PWD)	Gauge
Sirajganj	Channel 1	11 Nov 94	8.49	FAP 24

Table 2.3: Water-levels



 FAP 24 DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 118 : 11 November, 1994	
		Location 02 : Jamuna River, Sirajganj	
File : S4BB1T05	Date : 12 Feb 1995	Survey programme as made and key figures	page 2.1
	Init : mk / tr		

722

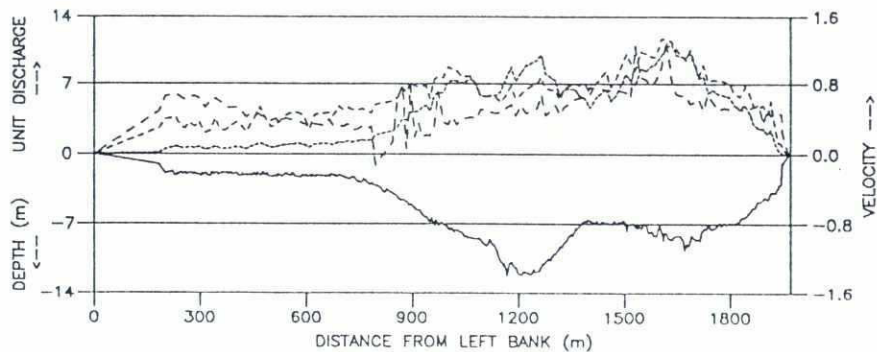


TRANSECT AZIMUTH = 90°

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)

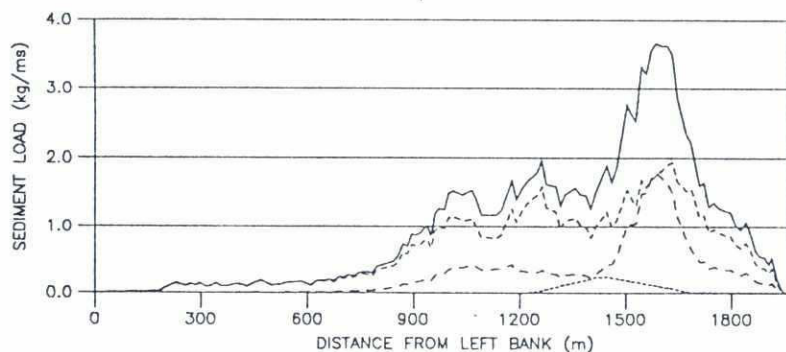
--- U - (m/s)

--- V - (m/s)

STAGE = 8.49 (m+PWD)

A = 10043m²

Q = 7729 (m³/s)



SEDIMENT TRANSPORT

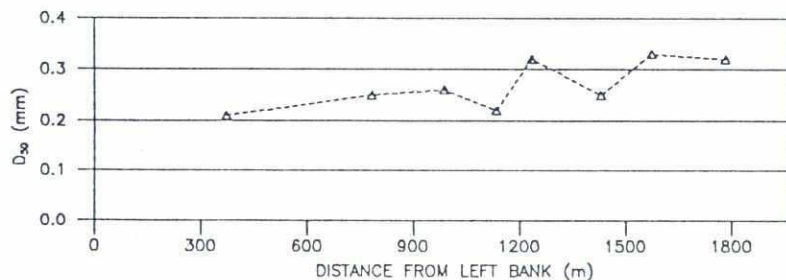
LEGEND :

— S_{TOTAL} 1886 (kg/s)

--- S_{WASH LOAD} 1280 (kg/s)

... S_{SUSP. BED} 542 (kg/s)

-.- S_{BED LOAD} 63 (kg/s)



GRAIN SIZE

LEGEND :

◇◇◇◇◇ D₅₀ SUSP. (mm)

△△△△△ D₅₀ BED LOAD (mm)

□□□□□ D₅₀ BED MAT. (mm)

FAP 24



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

Survey Bulletin 118 : 11 November, 1994

Location 02 : Jamuna River, Sirajganj

File : S4BB1T05

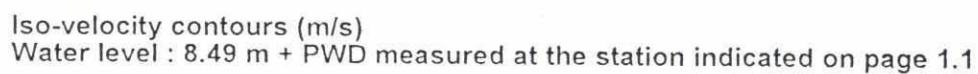
Date : 12 Feb 1995

Init : mk / tr

Horizontal distribution of flow and sediments
Channel 1

page

3.1



 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 118 : 11 November, 1994	
File : S4BB1T05		Date : 12 Feb 1995 Init : mk / tr		Location 02 : Jamuna River, Sirajganj	
				Cross-sectional distribution of flow velocity Channel 1	
				page 4.1	

228
Andreasen settling tube

Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.1: Grain size of near bed suspended sediment (0.3 m above river bed)							

US BM-54 bed samples

Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.2: Grain size of bed material							

Helley-Smith

Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	1	9411111556-1604	2.10	0.612	99.388	0.182	0.215	0.256
	3	9411111509-1517	3.20	0.107	99.893	0.214	0.266	0.323
	4	9411111448-1454	6.80	0.056	99.944	0.223	0.276	0.333
	5	9411111310-1430	9.30	0.447	99.553	0.192	0.233	0.292
	6	9411111206-1215	11.7	0.074	99.926	0.303	0.342	0.385
	7	9411111143-1153	7.00	0.023	99.977	0.203	0.252	0.309
	8	9411111120-1128	7.80	0.347	99.653	0.284	0.325	0.371
	9	9411111101-1108	7.00	0.192	99.808	0.271	0.312	0.360
	1	9411111556-1604	2.10	0.138	99.862	0.178	0.207	0.241
	3	9411111509-1517	3.20	0.205	99.795	0.197	0.240	0.299
	4	9411111448-1454	6.80	0.072	99.928	0.200	0.245	0.304
	5	9411111310-1430	9.30	0.475	99.525	0.177	0.215	0.267
	6	9411111206-1215	11.7	0.235	99.765	0.263	0.306	0.356
	7	9411111143-1153	7.00	0.087	99.913	0.200	0.246	0.306
	8	9411111120-1128	7.80	0.132	99.868	0.298	0.337	0.381
	9	9411111101-1108	7.00	0.252	99.748	0.285	0.325	0.370
Table 5.3: Grain sizes of bed load								

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT

Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 118 : 11 November, 1994

Location 02 : Jamuna River, Sirajganj

Date : 12 Feb 1995

Init : mk / tr

Grain size distributions

page

5.1

225

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9411110909-0925 9411111638-1650 9411111717-1728	S4BB1T01 S4BB1T05 * S4BB1T07
Echo-sounding		9411110932-0945	S4BB1T02

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	9411111556-1604	478612	698480	2.10	S4BB1P11 *
		2	9411111527-1541	478401	698483	2.20	S4BB1P10 *
		3	9411111509-1517	478198	698484	3.20	S4BB1P08 *
		4	9411111448-1454	477998	698480	6.80	S4BB1P07 *
		5	9411111310-1430	477849	698483	9.30	S4BB1P06 **
		6	9411111206-1215	477746	698476	11.7	S4BB1P04 *
		7	9411111143-1153	477548	698477	7.00	S4BB1P03 ***
		8	9411111120-1128	477402	698479	7.80	S4BB1P02 *
		9	9411111101-1108	477202	698284	7.00	S4BB1P01 *

Table 6.2: Vertical profiles * S4 and MEX not available ** MEX not available *** ADCP, S4 and MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	5	6	9411111310-1430	477849	698483	9.30

Table 6.3: Suspended sediment - point sampled

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 118 : 11 November, 1994	
		Location 02 : Jamuna River, Sirajganj	
	Date : 12 Feb 1995	Collected data and their storage (1)	page 6.1
	Init : mk / tr		

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9411111556-1604	478612	698480	2.10
		2	1	9411111527-1541	478401	698483	2.20
		3	1	9411111509-1517	478198	698484	3.20
		5	1	9411111310-1430	477849	698483	9.30
		6	1	9411111206-1215	477746	698476	11.7
		7	1	9411111143-1153	477548	698477	7.00
		8	1	9411111120-1128	477402	698479	7.80
		9	1	9411111101-1108	477202	698284	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	1	9411111556-1604	478612	698480	2.10	A357
		3	9411111509-1517	478198	698484	3.20	A1847
		4	9411111448-1454	477998	698480	6.80	A1370
		5	9411111310-1430	477849	698483	9.30	A1855
		6	9411111206-1215	477746	698476	11.7	A3005
		7	9411111143-1153	477548	698477	7.00	A2185
		8	9411111120-1128	477402	698479	7.80	A1979
		9	9411111101-1108	477202	698284	7.00	A883
		1	9411111556-1604	478612	698480	2.10	A1819
		3	9411111509-1517	478198	698484	3.20	A104
		4	9411111448-1454	477998	698480	6.80	A717
		5	9411111310-1430	477849	698483	9.30	A1916
		6	9411111206-1115	477746	698476	11.7	A3013
		7	9411111143-1153	477548	698477	7.00	A1381
		8	9411111120-1128	477402	698479	7.80	A3003
		9	9411111101-1108	477202	698284	7.00	A1935

Table 6.5: Bed load

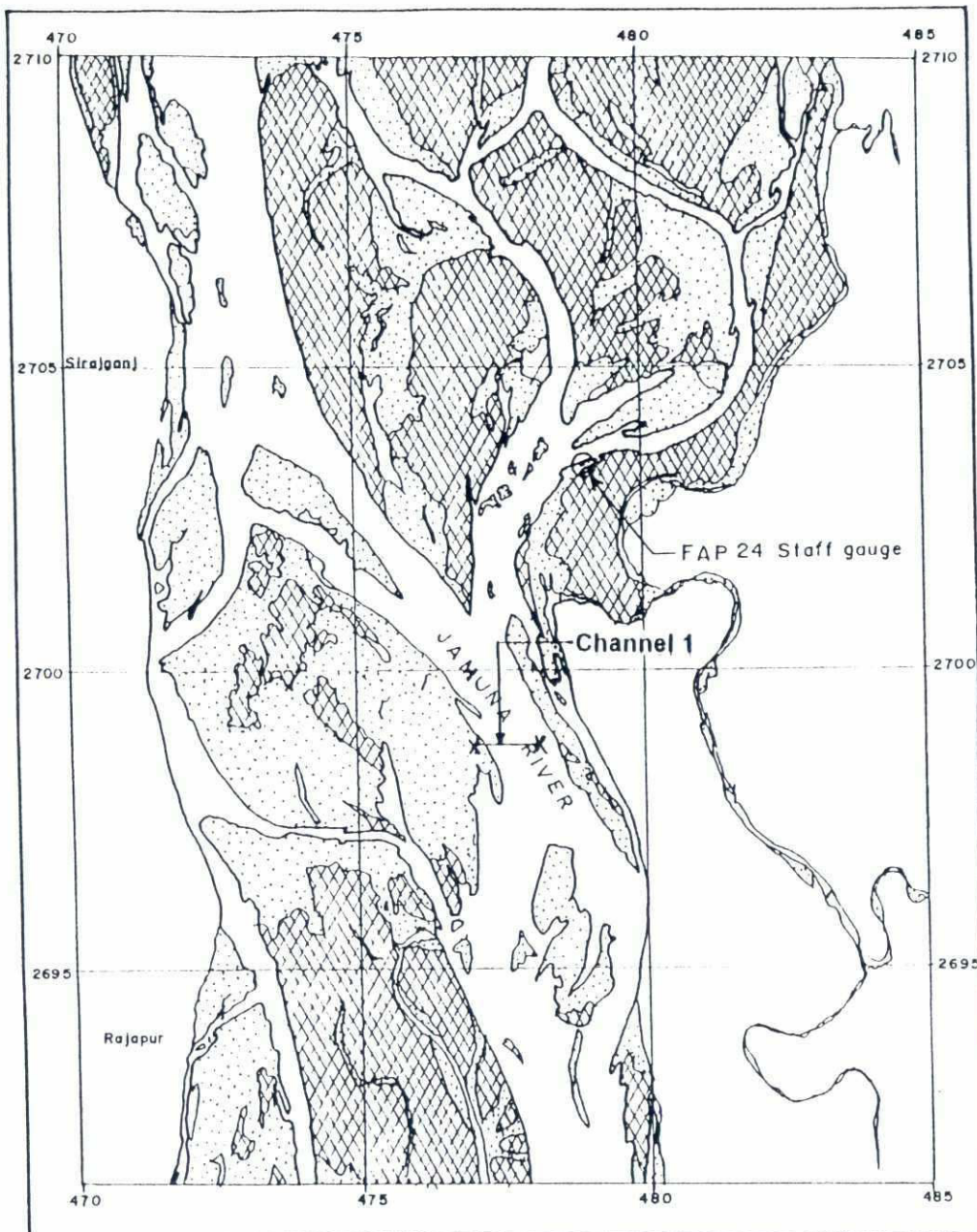
FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 118 : 11 November, 1994	
		Location 02 : Jamuna River, Sirajganj	
	Date : 12 Feb 1995	Collected data and their storage (2)	page 6.2
	Init : mk / tr		

229

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S4BB1T05 .ase
Echosounder data	1	QUATTRO	S4BB1T05 .ech
Sediment transport data	1	QUATTRO	S4BB1T05 .sed
Bed load sed. analysis	1	QUATTRO	S4BB1T05 .bdl
Sus. sed. conc. analysis	1	QUATTRO	S4BB1T05 .ssc
Transect plot data	1	QUATTRO	S4BB1T05 .trs
Iso-velocity plot data	1	MIKE 21	S4BB1T05 .ct2 S4BB1T05 .dt2

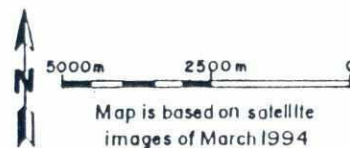
Table 7.1 PSD 24 Database file description

 FAP 24 DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 118 : 11 November, 1994	
		Location 02 : Jamuna River, Sirajganj	
	Date : 12 Feb 1995	PSD 24 Database file description	page
	Init : mk / tr		7.1



LEGEND :

- x—x Measurement cross section
- High land
- Unstable/low char
- FAP 24 Staff gauge



FAP 24



DELFT - DHI

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

Survey Bulletin 127 : 15 December, 1994

Location 2 : Jamuna River, Serajganj

Date : 06 Feb 1995

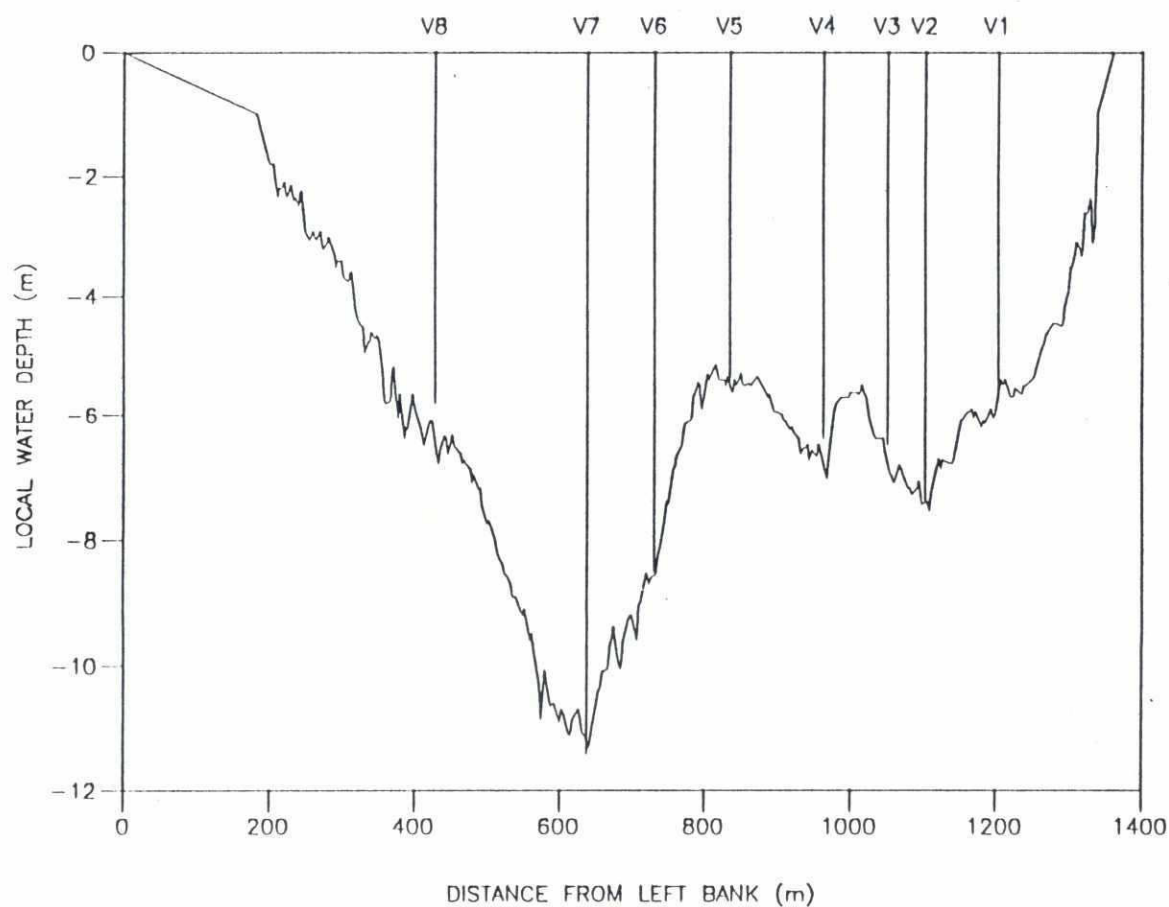
Init : mk/tr

Location map

page

11

222



Water-level : 7.23 m + PWD measured at the station indicated on page 1.1

FAP 24  DELFT - DHI		Survey Bulletin 127 : 15 December, 1994	
RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Location 02 : Jamuna River, Sirajganj	
File : S4CF1T02	Date : 06 Feb 1995	Cross-sections and measured verticals Channel 1	page 1.2
	Init : mk / tr		

200

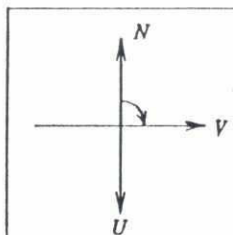
Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	4	-	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No of verticals in channel	8	-	-	-
	ADCP	8	-	-	-
	S4 current meter	1	-	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	-	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	8	-	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	16	-	-	-
	Delft Bottle	-	-	-	-
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)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1360	7380	7.23	5260	8	1041
Table 2.2: Key figures						

Gauge Location	Channel	Date	Water level (Daily average) (m + PWD)	Gauge
Sirajganj	Channel 1	15 Dec 94	7.23	FAP 24
Table 2.3: Water-levels				

FAP 24  DELFT - DHI		Survey Bulletin 127 : 15 December, 1994	
RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Location 02 : Jamuna River, Sirajganj	
File : S4CF1T02	Date : 06 Feb 1995	Survey programme as made and key figures	page 21
	Init : mk / tr		

202

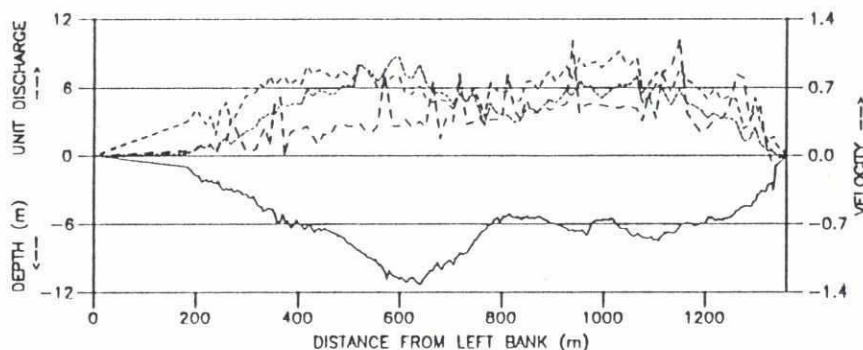


TRANSECT AZIMUTH = 90°

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)

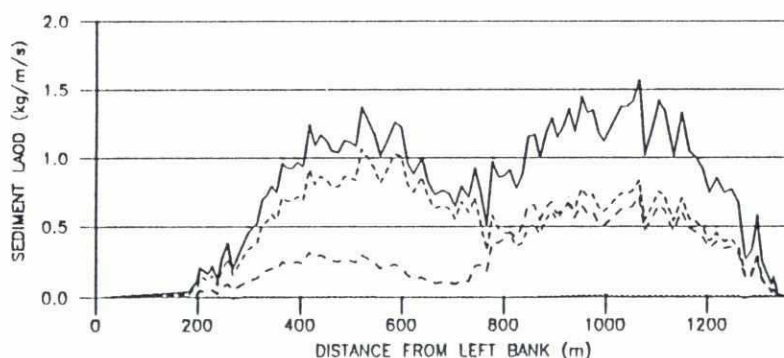
--- U (m/s)

--- V (m/s)

STAGE = 7.23 (m+PND)

A = 7380 (m³)

Q = 5260 (m³/s)



SEDIMENT TRANSPORT

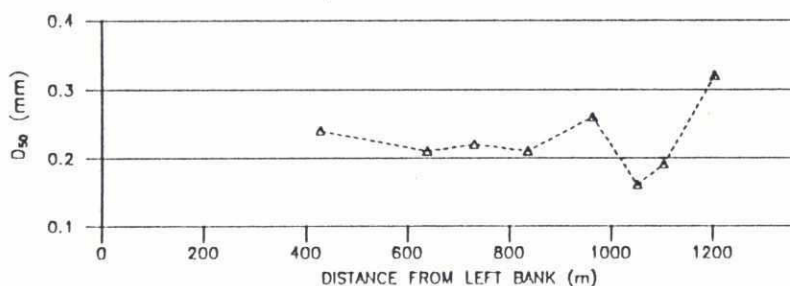
LEGEND :

— S_{TOTAL} 1049 (kg/s)

--- S_{WASH LOAD} 668 (kg/s)

... S_{SUSP. BED} 373 (kg/s)

-.- S_{BED LOAD} 8 (kg/s)



GRAIN SIZE

LEGEND :

◆◆◆◆ D₅₀ SUSP. (mm)

▲▲▲▲ D₅₀ BED LOAD (mm)

□□□□ D₅₀ BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 127 : 15 December, 1994

Location 02 : Jamuna River, Sirajganj

File : S4CF1T02

Date : 06 Feb 1995

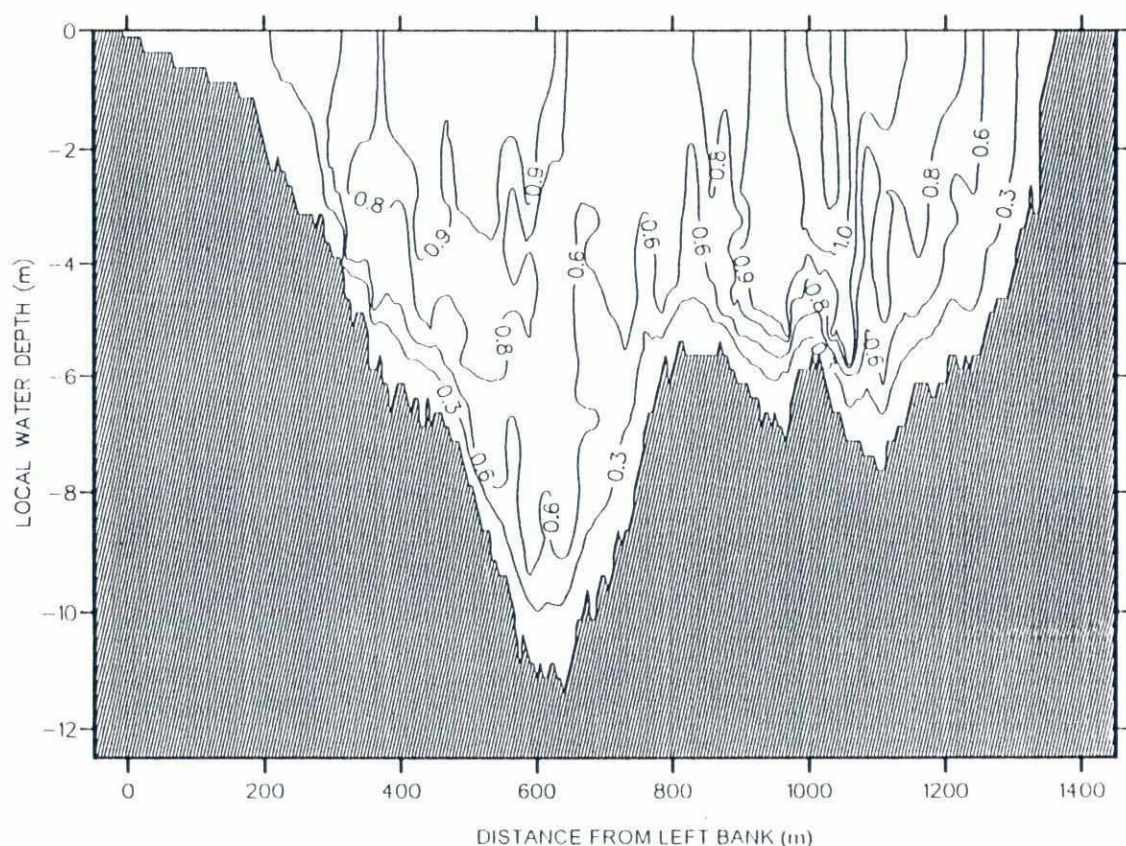
Init : mk/ss

Horizontal distribution of flow and sediments
Channel 1

page

3.1

202



Iso-velocity contours (m/s)

Water level : 7.23 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 127 : 15 December, 1994

Location 02 : Jamuna River, Sirajganj

File : S4CF1T02

Date : 06 Feb 1995

Unit : m/s

Cross-sectional distribution of flow velocity
Channel 1

page

41

206

Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.1 : Grain size of near bed suspended sediment (0.3 m above river bed)							

US BM-54 bed samples							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.2 : Grain size of bed material							

Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	1	9412151054-1059	5.60	0.372	99.628	0.265	0.308	0.357
	2	9412151112-1126	7.40	0.251	99.749	0.166	0.194	0.227
	3	9412151132-1151	6.50	0.426	99.574	0.132	0.155	0.182
	4	9412151226-1238	6.35	0.128	99.872	0.236	0.286	0.339
	5	9412151247-1258	5.40	1.635	98.365	0.171	0.205	0.247
	6	9412151309-1318	8.50	2.554	97.446	0.194	0.245	0.305
	7	9412151341-1432	11.40	0.253	99.747	0.286	0.326	0.371
	8	9412151526-1536	5.80	0.173	99.827	0.202	0.251	0.309
	1	9412151054-1059	5.60	0.130	99.870	0.285	0.325	0.370
	2	9412151112-1126	7.40	0.395	99.605	0.156	0.182	0.212
	3	9412151132-1151	6.50	0.596	99.404	0.138	0.161	0.187
	4	9412151226-1238	6.35	0.143	99.857	0.193	0.237	0.297
	5	9412151247-1258	5.40	2.970	97.030	0.176	0.218	0.275
	6	9412151309-1318	8.50	4.871	95.129	0.158	0.187	0.223
	7	9412151341-1432	11.40	4.440	95.560	0.083	0.095	0.109
	8	9412151526-1536	5.80	0.162	99.838	0.189	0.229	0.285
Table 5.3 : Grain sizes of bed load								

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organisation Commission of the European Communities		Survey Bulletin 127 : 15 December, 1994	
		Location 02 : Jamuna River, Sirajganj	
	Date 06 Feb 1995	Grain size distributions	page
	Init mk / lr		51

208

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9412150910-0919 9412150928-0937 9412151548-1557 9412151559-1607	S4CF1T02 * S4CF1T03 S4CF1T07 S4CF1T08

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	9412151054-1059	477198	698483	5.60	S4CF1P01 *
		2	9412151112-1126	477297	698483	7.40	S4CF1P03 *
		3	9412151132-1151	477349	698482	6.50	S4CF1P05 *
		4	9412151226-1238	477439	698483	6.35	S4CF1P06 *
		5	9412151247-1258	477557	698483	5.40	S4CF1P07 *
		6	9412151309-1318	477668	698481	8.50	S4CF1P08 *
		7	9412151341-1432	477756	698482	11.4	S4CF1P09 **
		8	9412151526-1536	477970	698483	5.80	S4CF1P12 *

Table 6.2: Vertical profiles * S4 and MEX not available ** 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	9412151341-1432	477756	698482	11.40

Table 6.3: Suspended sediment - point sampled

FAP 24  DELFT - DHI	RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 127 : 15 December, 1994	
		Location 02 : Jamuna River, Sirajganj	
	Date : 06 Feb 1995	Collected data and their storage (1)	page 61
	Init : mk / tr		

208

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9412151054-1059	477198	698483	5.60
		2	1	9412151112-1126	477297	698483	7.40
		3	1	9412151132-1151	477349	698482	6.50
		4	1	9412151226-1238	477439	698483	6.35
		5	1	9412151247-1258	477557	698483	5.40
		6	1	9412151309-1318	477668	698481	8.50
		7	1	9412151341-1432	477756	698482	11.4
		8	1	9412151526-1536	477970	698483	5.80

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	9412151054-1059	477198	698483	5.60	A1873
		2	9412151112-1126	477297	698483	7.40	A3035
		3	9412151132-1151	477349	698482	6.50	A2298
		4	9412151226-1238	477439	698483	6.35	A2170
		5	9412151247-1258	477557	698483	5.40	A1851
		6	9412151309-1318	477668	698481	8.50	A1884
		7	9412151341-1432	477756	698482	11.4	A1812
		8	9412151526-1536	477970	698483	5.80	A3049
		1	9412151054-1059	477198	698483	5.60	A3012
		2	9412151112-1126	477297	698483	7.40	A2028
		3	9412151132-1151	477349	698482	6.50	A2327
		4	9412151226-1238	477439	698483	6.35	A1958
		5	9412151247-1258	477557	698483	5.40	A2109
		6	9412151309-1318	477668	698481	8.50	A78
		7	9412151341-1432	477756	698482	11.4	A2190
		8	9412151526-1536	477970	698483	5.80	A2149

Table 6.5: Bed load

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organisation Commission of the European Communities	Survey Bulletin 127 : 15 December, 1994	
	Location 02 : Jamuna River, Sirajganj	
	Collected data and their storage (2)	page
	Date: 06 Feb 1995	6.2
Unit: m ³ /hr		

207

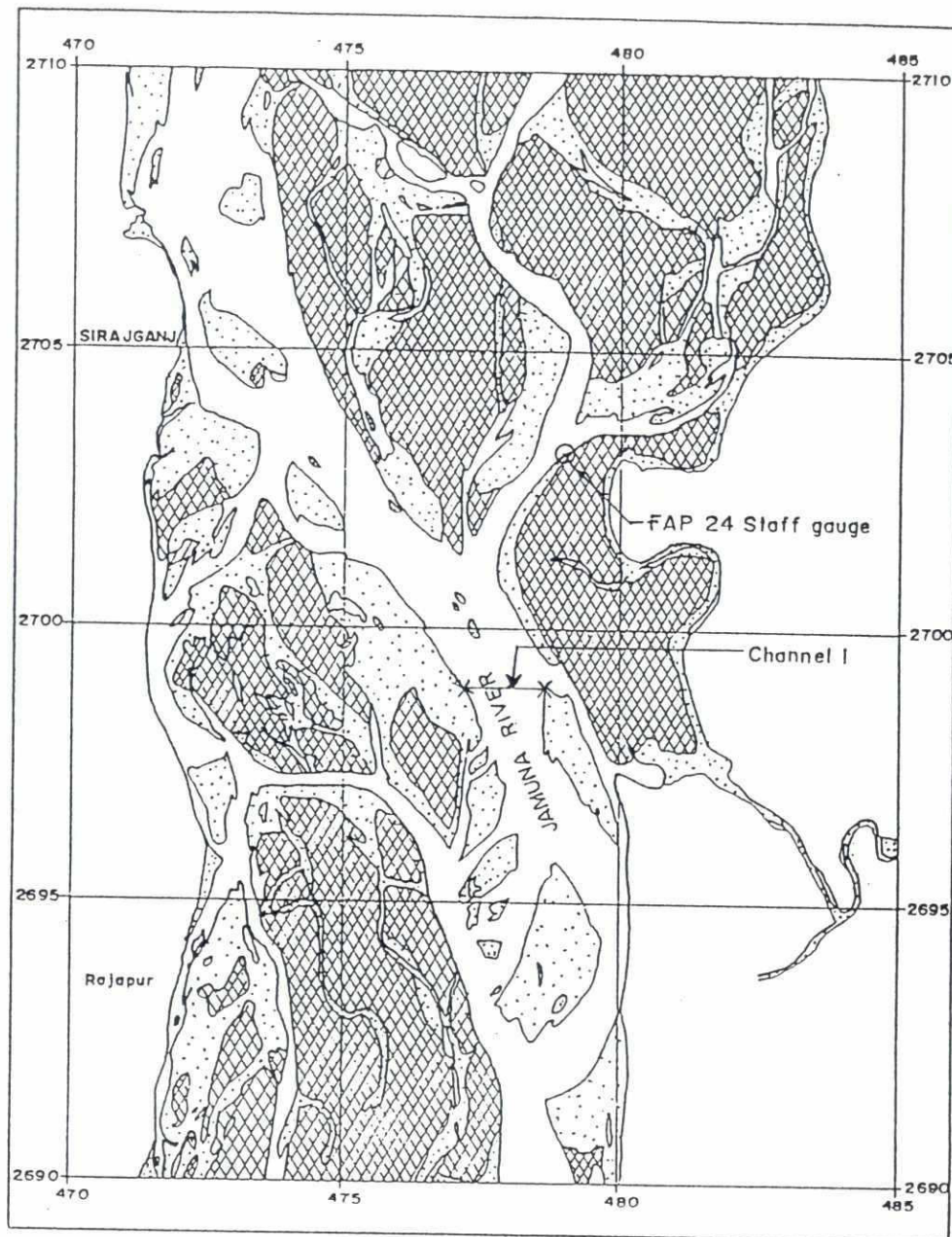
Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S4CF1T02 .ase
Echosounder data	1	QUATTRO	S4CF1T02 .ech
Sediment transport data	1	QUATTRO	S4CF1T02 .sed
Bed load sed. analysis	1	QUATTRO	S4CF1T02 .bdl
Sus. sed. conc. analysis	1	QUATTRO	S4CF1T02 .ssc
Transect plot data	1	QUATTRO	S4CF1T02 .trs
Iso-velocity plot data	1	MIKE 21	S4CF1T02 .cl2 S4CF1T02 .dt2

Table 7.1 PSD 24 Database file description

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 127 : 15 December, 1994	
		Location 02 : Jamuna River, Sirajganj	
Date : 06 Feb 1995 Init : mk / tr		PSD 24 Database file description	page 71

207

209



LEGEND:

High land.

Unstable/low char.

Measurement cross-section.

FAP 24 Staff gauge.



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 133 : 13 February, 1995

Location 02 : Jamuna River, Sirajganj

Date : 06 Feb 1995

Init : mk

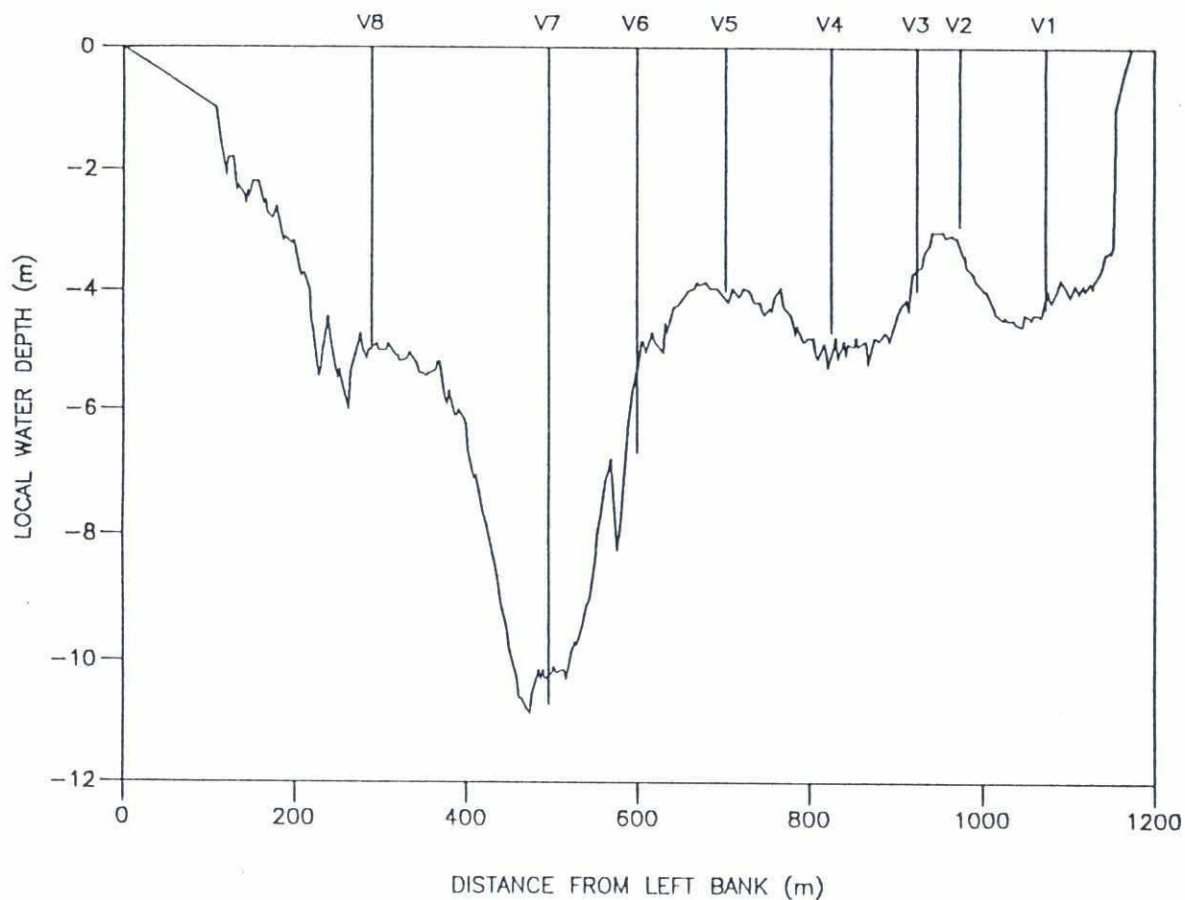
Location map

page

1.1

206

208



Water-level : 6.27 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 133 : 13 February, 1995

Location 02 : Jamuna River, Sirajganj

File : S52D1T02

Date : 06 Feb 1995

Init : mk

Cross-sections and measured verticals
Channel 1

page

1.2

202

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

Table 2.1: Survey programme as made

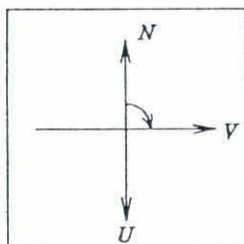
Channel	Width (m)	Area (m ²)	Stage h (m+PWD)	Discharge Q (m ³ /s)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1170	5417	6.27	3683	7	544

Table 2.2: Key figures

Gauge Location	Channel	Date	Water level (Daily average) (m + PWD)	Gauge
Bhuyapur	Channel 1	13 Feb 95	6.27	FAP 24

Table 2.3: Water-levels

FAP 24  DELFT - DHI RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 133 : 13 February, 1995	
		Location 02 : Jamuna River, Sirajganj	
File : S52D1T02	Date : 06 Feb 1995	Survey programme as made and key figures	page
	Init : mk		2.1

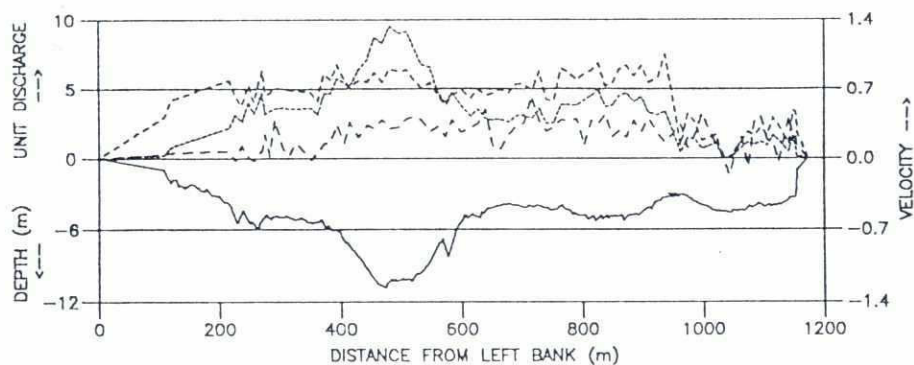


TRANSECT AZIMUTH = 90°

U - VELOCITY NORMAL TO TRANSECT (m/s)

V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



FLOW

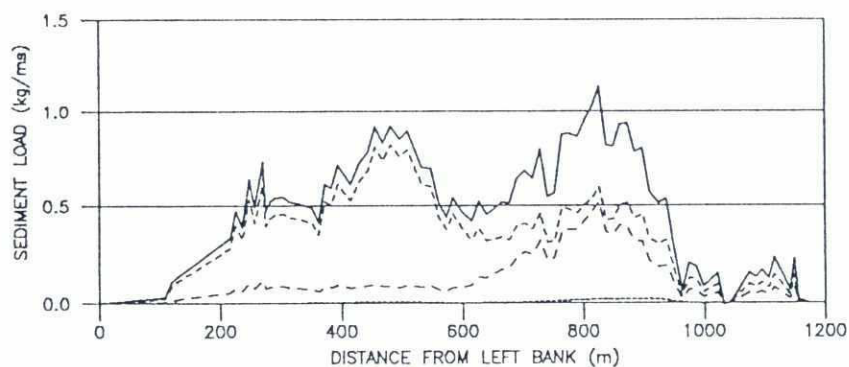
LEGEND :

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

STAGE = 6.27 (m+PWD)

A = 5417 (m³)

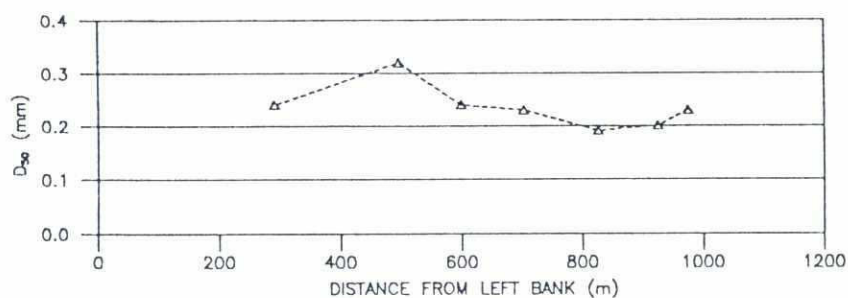
Q = 3683 (m³/s)



SEDIMENT TRANSPORT

LEGEND :

— S_TOTAL 551 (kg/s)
 --- S_WASH LOAD 399 (kg/s)
 -.- S_SUSP. BED 145 (kg/s)
 S_BED LOAD 7 (kg/s)



GRAIN SIZE

LEGEND :

◆◆◆◆ D50 SUSP. (mm)
 ▲▲▲▲ D50 BED LOAD (mm)
 □□□□ D50 BED MAT. (mm)

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
 Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 133 : 13 February, 1995

Location 02 : Jamuna River, Sirajganj

File : S52D1T02

Date : 06 Feb 1995

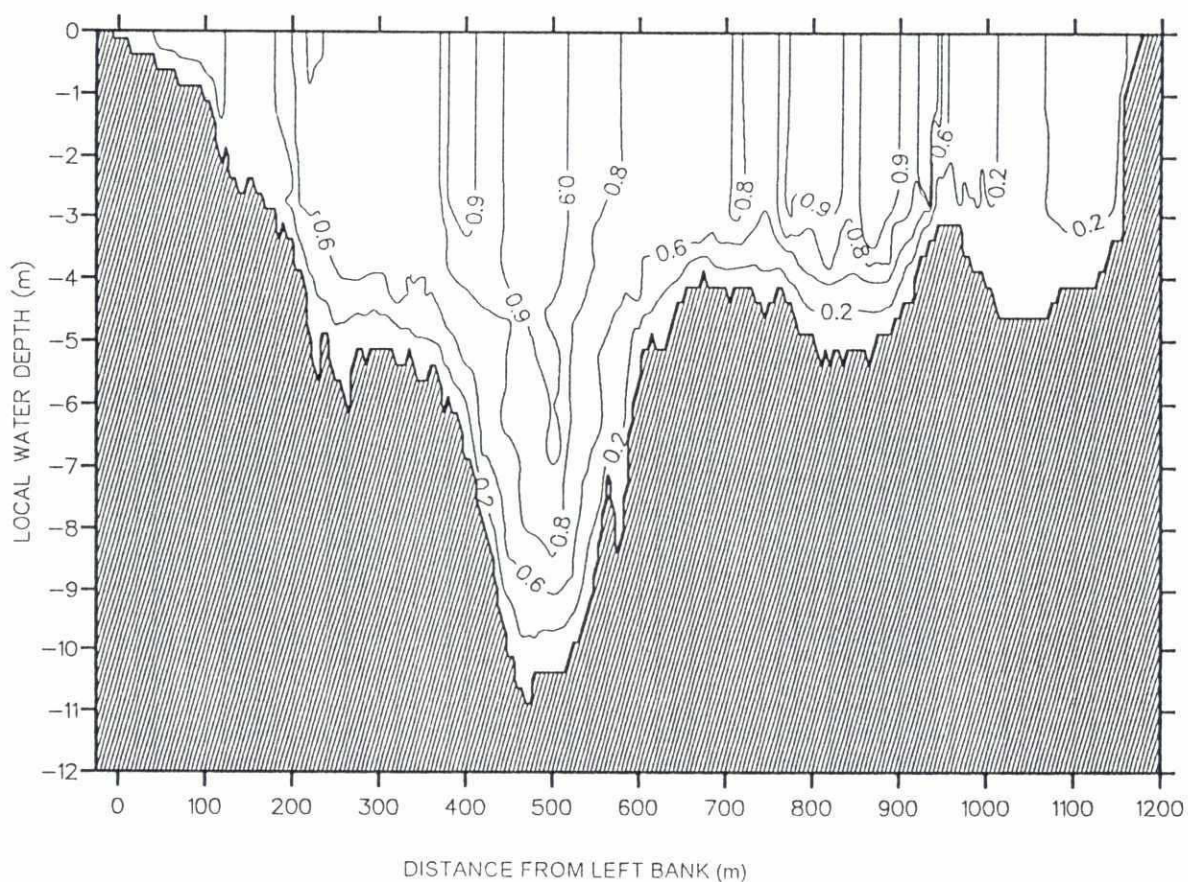
Init : mk

Horizontal distribution of flow and sediments

Channel 1

page

3.1



Iso-velocity contours (m/s)

Water-level : 6.27 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 133 : 13 February, 1995

Location 02 : Jamuna River, Sirajganj

File : S52D1T02

Date : 06 Feb 1995

Init : mk

Cross-sectional distribution of flow velocity
Channel 1

page

4,1

222

Andreasen settling tube							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.1: Grain size of near bed suspended sediment (0.3 m above river bed)							

US BM-54 bed samples							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.2: Grain size of bed material							

Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	2	9502131538-1546	2.90	0.878	99.122	0.197	0.245	0.307
	2	9502131538-1546	2.90	0.208	99.792	0.177	0.207	0.243
	3	9502131525-1530	4.00	0.080	99.920	0.174	0.202	0.235
	3	9502131525-1530	4.00	0.071	99.929	0.176	0.206	0.242
	4	9502131505-1513	4.70	0.079	99.921	0.170	0.196	0.226
	4	9502131505-1513	4.70	0.070	99.930	0.161	0.182	0.206
	5	9502131447-1454	4.00	0.138	99.862	0.182	0.216	0.260
	5	9502131447-1454	4.00	0.315	99.685	0.195	0.238	0.299
	6	9502131425-1435	6.70	2.352	97.648	0.188	0.235	0.296
	6	9502131425-1435	6.70	4.560	95.440	0.194	0.254	0.319
	7	9502131246-1331	10.70	0.112	99.888	0.279	0.320	0.367
	7	9502131246-1331	10.70	0.067	99.933	0.269	0.311	0.359
	8	9502131405-1408	5.00	2.726	97.274	0.195	0.254	0.317
	8	9502131405-1408	5.00	0.776	99.224	0.182	0.230	0.293
Table 5.3: Grain sizes of bed load								

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 133 : 13 February, 1995	
		Location 02 : Jamuna River, Sirajganj		
	Date: 06 Feb 1995	Grain size distributions		page
	Init: mk			5.1

220

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9502131113-1122 9502131124-1132 9502131609-1617 9502131618-1627	S52D1T01 S52D1T02 * S52D1T08 S52D1T09

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	9502131600-1603	477189	698511	4.30	S52D1P00 *
		2	9502131538-1546	477287	698481	2.90	S52D1P07 *
		3	9502131525-1530	477339	698485	4.00	S52D1P06 *
		4	9502131505-1513	477441	698481	4.70	S52D1P05 *
		5	9502131447-1454	477563	698483	4.00	S52D1P04 *
		6	9502131425-1435	477669	698486	6.70	S52D1P03 *
		7	9502131246-1331	477771	698483	10.7	S52D1P01 **
		8	9502131405-1408	477967	698479	5.00	S52D1P02 *

Table 6.2: Vertical profiles

* S4 and MEX not available

** 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	9502131246-1331	477771	698483	10.70

Table 6.3: Suspended sediment - point sampled

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 133 : 13 February, 1995	
			Location 02 : Jamuna River, Sirajganj	
	Date : 06 Feb 1995		Collected data and their storage (1)	page 8.1
	Init : mk			

288

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9502131600-1603	477189	698511	4.30
		2	1	9502131538-1546	477287	698481	2.90
		3	1	9502131525-1530	477339	698485	4.00
		4	1	9502131505-1513	477441	698481	4.70
		5	1	9502131447-1454	477563	698483	4.00
		6	1	9502131425-1435	477669	698486	6.70
		7	1	9502131246-1331	477771	698483	10.7
		8	1	9502131405-1408	477967	698479	5.00

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	2	9502131538-1546	477287	698481	2.90	A2338
		3	9502131525-1530	477339	698485	4.00	A1875
		4	9502131505-1513	477441	698481	4.70	A2169
		5	9502131447-1454	477563	698483	4.00	A1656
		6	9502131425-1435	477669	698486	6.70	A566
		7	9502131246-1331	477771	698483	10.7	A2270
		8	9502131405-1408	477967	698479	5.00	A1860
		2	9502131538-1546	477287	698481	2.90	A1674
		3	9502131525-1530	477339	698485	4.00	A2334
		4	9502131505-1513	477441	698481	4.70	A895
		5	9502131447-1454	477563	698483	4.00	A99
		6	9502131425-1435	477669	698486	6.70	A1969
		7	9502131246-1331	477771	698483	10.7	A1894
		8	9502131405-1408	477967	698479	5.00	A2141

Table 6.5: Bed load

FAP 24  DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 133 : 13 February, 1995	
				Location 02 : Jamuna River, Sirajganj	
		Date : 06 Feb 1995		Collected data and their storage (2)	page 6.2
		Init : mk			

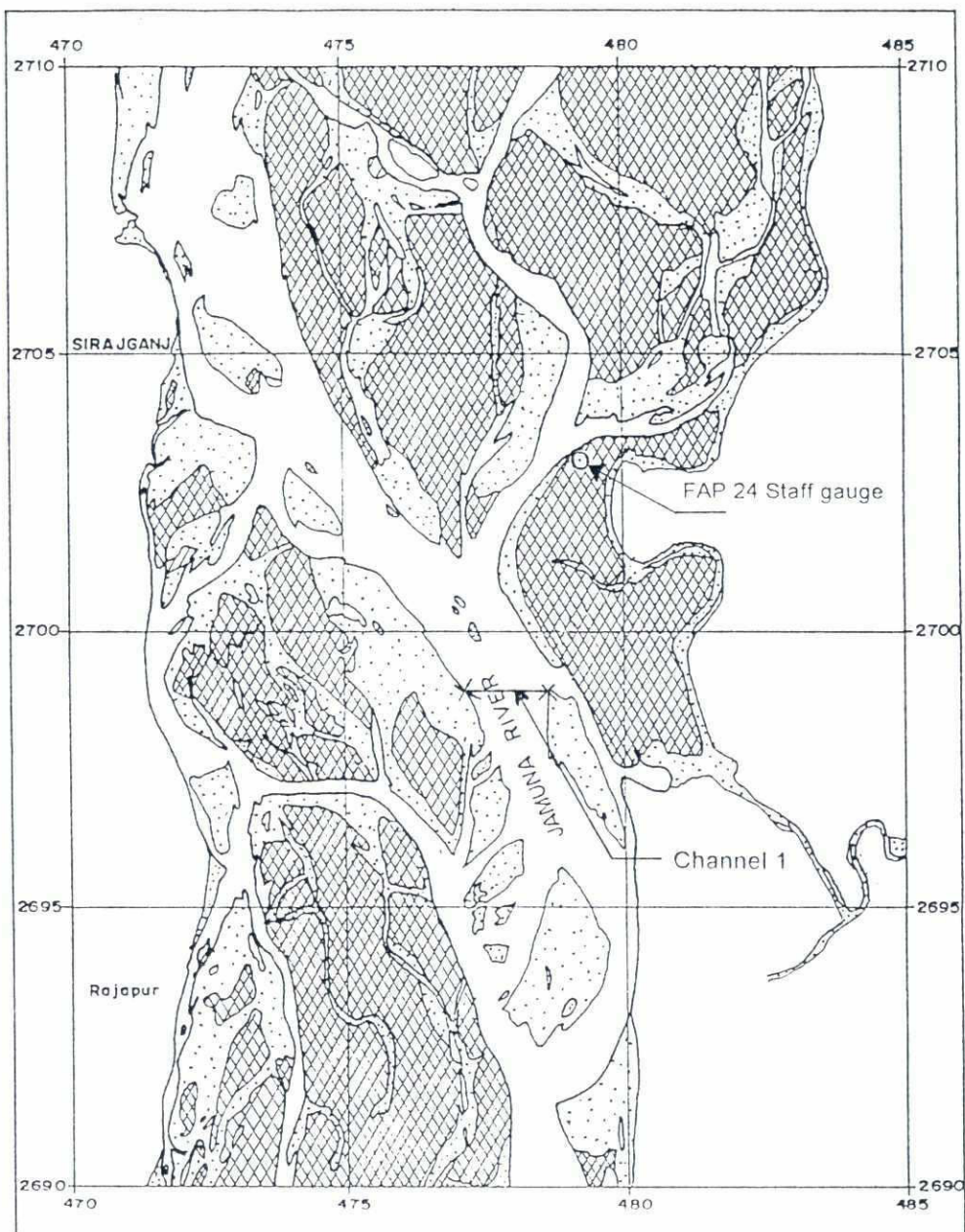
227

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S52D1T02 .ase
Echosounder data	1	QUATTRO	S52D1T02 .ech
Sediment transport data	1	QUATTRO	S52D1T02 .sed
Bed load sed. analysis	1	QUATTRO	S52D1T02 .bdl
Sus. sed. conc. analysis	1	QUATTRO	S52D1T02 .ssc
Transect plot data	1	QUATTRO	S52D1T02 .trs
Iso-velocity plot data	1	MIKE 21	S52D1T02 .ct2 S52D1T02 .dt2

Table 7.1 PSD 24 Database file description

FAP 24  DELFT - DHI		Survey Bulletin 133 : 13 February, 1995	
RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Location 02 : Jamuna River, Sirajganj	
	Date : 06 Feb 1995	PSD 24 Database file description	page 7.1
	Init : mk		

287



LEGEND:

-  High land.
-  Unstable/low char.

—x—x— Measurement cross-section.

○ FAP 24 Staff gauge.



Map is based on satellite images of march 1995.



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

Survey Bulletin 142 : 25 March, 1995

Location 02 : Jamuna River, Sirajganj

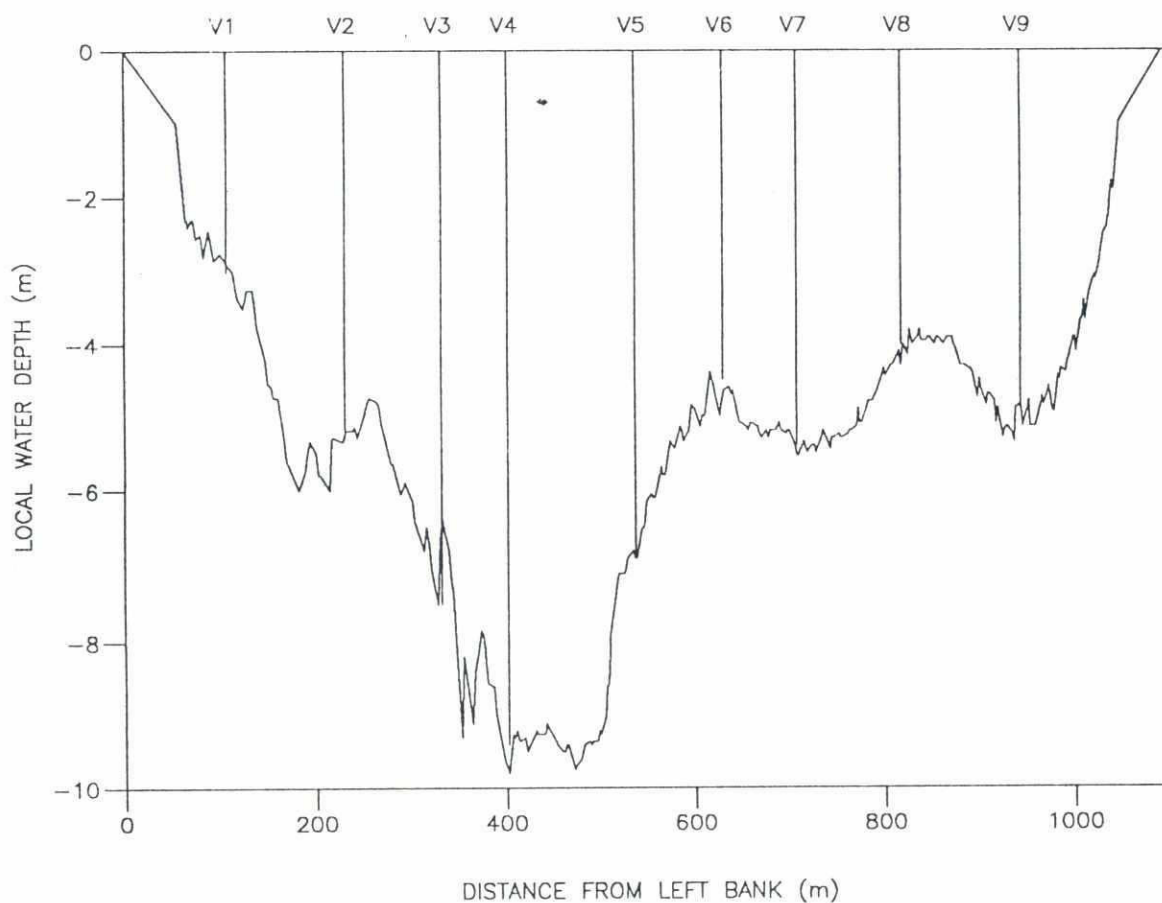
Date : 13 Aug 1995

Location map

Init : mk

page

1.1



Water-level : 6.59 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 142 : 25 March, 1995

Location 02 : Jamuna River, Sirajganj

File : S53P1T05

Date : 13 Aug 1995

Init : mk

Cross-sections and measured verticals
Channel 1

page

1.2

228

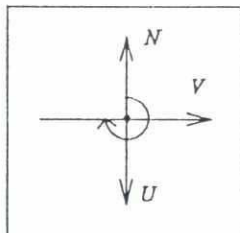
Type of measurement	Method	No. of measurements in channel			
		1	2	3	4
Discharge	ADCP transect	4	-	-	-
	EMF transect	-	-	-	-
	Echo-Sounding	-	-	-	-
Vertical current profile	No. of verticals in channel	9	-	-	-
	ADCP	9	-	-	-
	S4 current meter	1	-	-	-
	Ott current meter	-	-	-	-
Vertical sediment profile	Pump bottle sampling	6	-	-	-
	Andreasen settling tube	-	-	-	-
	MEX turbidity meter	-	-	-	-
	Integrated bottle sampling	9	-	-	-
	Collapsible bag	-	-	-	-
Bed load	Dune tracking	-	-	-	-
	Helley-Smith sampler	18	-	-	-
	Delft Bottle	-	-	-	-
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)	Bed load transport Sb (kg/s)	Suspended Sediment transport Ss total (kg/s)
Channel 1	1092	5550	6.59	3966	7	398
Table 2.2: Key figures						

Gauge Location	Channel	Date	Water level (Daily average) (m + PWD)	Gauge
Sirajganj	Channel 1	25 Mar 95	6.59	FAP 24
Table 2.3: Water-levels				

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization DELFT - DHI Commission of the European Communities		Survey Bulletin 142 : 25 March, 1995	
		Location 02 : Jamuna River, Sirajganj	
File : S53P1T05	Date : 13 Aug 1995	Survey programme as made and key figures	page
	Init : mk		2.1

222

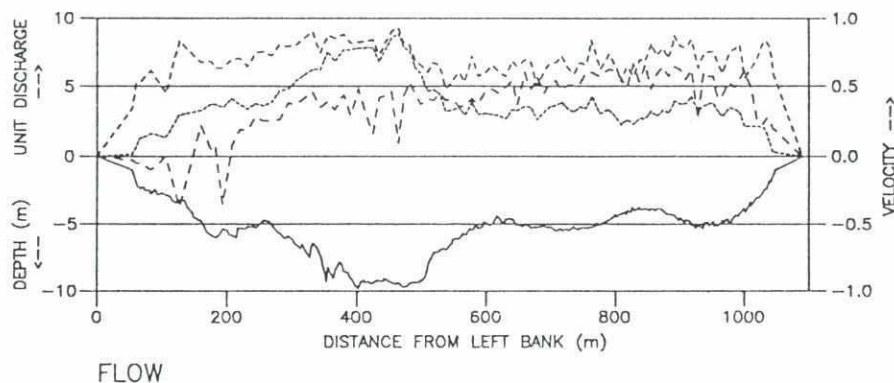


TRANSECT AZIMUTH = 270°

U - VELOCITY NORMAL TO TRANSECT (m/s)

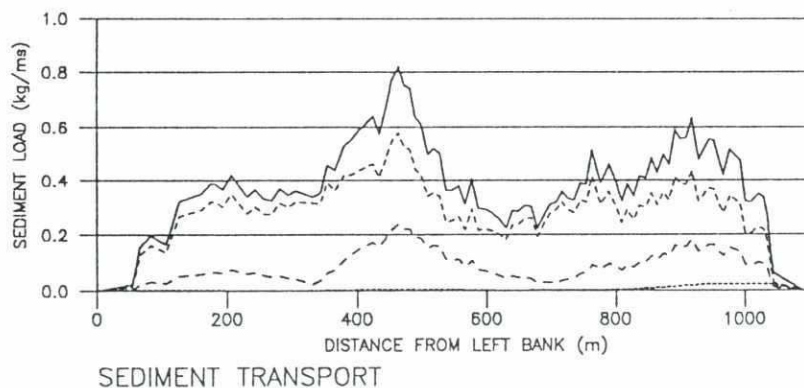
V - VELOCITY PARALLEL TO TRANSECT (m/s)

N - MAGNETIC NORTH



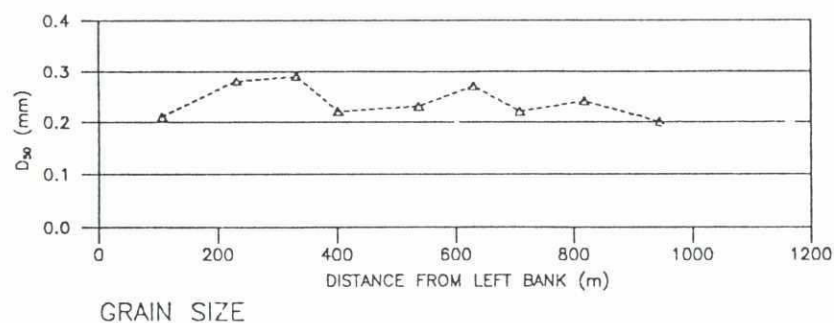
LEGEND :

- WATER DEPTH (m below STAGE)
- UNIT DISCHARGE (m³/s.m)
- U - (m/s)
- .- V - (m/s)
- STAGE = 6.59 (m+PWD)
- A = 5550 (m²)
- Q = 3966 (m³/s)



LEGEND :

- S_{TOTAL} 405 (kg/s)
- S_{WASH LOAD} 307 (kg/s)
- .- S_{SUSP. BED} 91 (kg/s)
- S_{BED LOAD} 7 (kg/s)



LEGEND :

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

FAP 24



DELFT - DHI

RIVER SURVEY PROJECT
Flood Plan Coordination Organization

Commission of the European Communities

Survey Bulletin 142 : 25 March, 1995

Location 02 : Jamuna River, Sirajganj

File : S53P1T05

Date : 13 Aug 1995

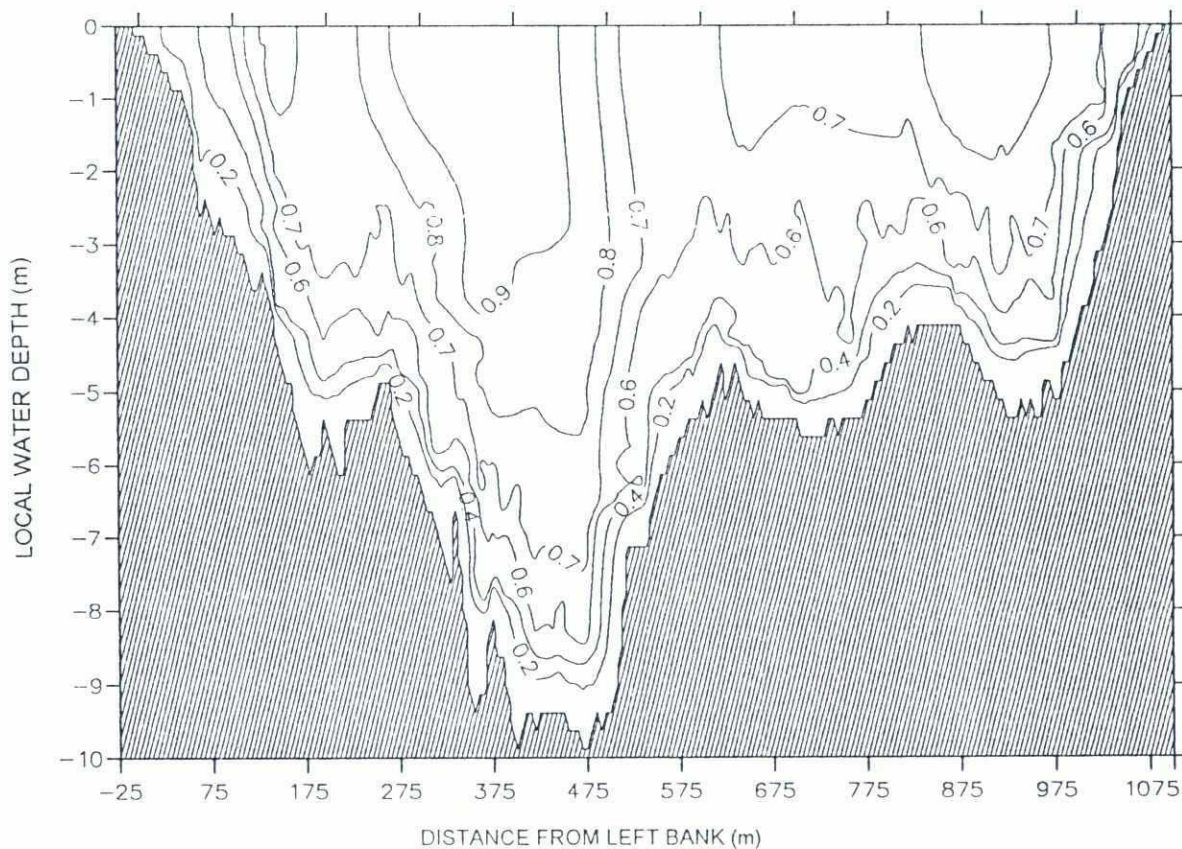
Init : mk

Horizontal distribution of flow and sediments
Channel 1

page

3.1

220



Iso-velocity contours (m/s)

Water-level : 6.59 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 142 : 25 March, 1995

Location 02 : Jamuna River, Sirajganj

File : S53P1T05

Date : 13 Aug 1995

Init : mk

Cross-sectional distribution of flow velocity
Channel 1

page

4.1

222

Andreasen settling tube							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.1: Grain size of near bed suspended sediment (0.3 m above river bed)							

US BM-54 bed samples							
Channel	Vertical	Time (YYMMDDHHMM-HHMM)	Depth	Weight percent < 0.06 mm > 0.06 mm	D10 (mm)	D50 (mm)	D90 (mm)
Sample not collected							
Table 5.2 : Grain size of bed material							

Helley-Smith								
Channel	Vertical	Time (YYMMDDHHMM)	Depth (m)	Weight percent < 0.06 mm > 0.06 mm		D35 (mm)	D50 (mm)	D65 (mm)
1	1	9503250946-1005	3.00	0.203	99.797	0.178	0.209	0.245
	1	9503250946-1005	3.00	0.254	99.746	0.175	0.204	0.238
	2	9503251019-1029	5.30	0.862	99.138	0.231	0.286	0.344
	2	9503251019-1029	5.30	0.840	99.160	0.211	0.266	0.327
	3	9503251046-1055	7.50	0.622	99.378	0.222	0.276	0.331
	3	9503251046-1055	7.50	0.573	99.427	0.250	0.299	0.213
	4	9503251110-1206	9.40	0.214	99.786	0.157	0.183	0.213
	4	9503251110-1206	9.40	0.058	99.942	0.205	0.255	0.313
	5	9503251259-1311	6.90	0.118	99.882	0.177	0.206	0.240
	5	9503251259-1311	6.90	0.045	99.955	0.211	0.263	0.319
	6	9503251321-1330	4.50	0.882	99.118	0.188	0.226	0.280
	6	9503251321-1330	4.50	0.238	99.762	0.260	0.303	0.353
	7	9503251342-1350	5.40	0.148	99.852	0.191	0.231	0.290
	7	9503251342-1350	5.40	0.271	99.729	0.175	0.205	0.239
	8	9503251404-1413	4.00	0.063	99.937	0.189	0.226	0.280
	8	9503251404-1413	4.00	0.200	99.800	0.206	0.259	0.320
	9	9503251425-1439	4.90	0.063	99.937	0.177	0.207	0.242
	9	9503251425-1439	4.90	0.082	99.918	0.174	0.203	0.237
Table 5.3 : Grain sizes of bed load								

 FAP 24 DELFT - DHI		RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities	Survey Bulletin 142 : 25 March, 1995	
			Location 02 : Jamuna River, Sirajganj	
		Date : 13 Aug 1995	Grain size distributions	
		Init : mk		
				page 5.1

222

Method	Channel	Time (YYMMDDHHMM-HHMM)	File name
ADCP & EMF transect	1	9503250811-0819 9503250822-0831 9503251452-1500 9503251506-1516	S53P1T01 S53P1T02 S53P1T04 S53P1T05*

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	9503250946-1005	478080	698483	3.00	S53P1P01 *
		2	9503251019-1029	477952	698481	5.30	S53P1P02 *
		3	9503251046-1055	477855	698484	7.50	S53P1P03 *
		4	9503251110-1206	477785	698483	9.40	S53P1P04 **
		5	9503251259-1311	477654	698484	6.90	S53P1P05 *
		6	9503251321-1330	477558	698484	4.50	S53P1P06 *
		7	9503251342-1350	477479	698482	5.40	S53P1P07 *
		8	9503251404-1413	477367	698486	4.00	S53P1P08 *
		9	9503251425-1439	477247	698480	4.90	S53P1P09 *

Table 6.2: Vertical profiles

* S4 and MEX not available

** MEX not available

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments (pump bottle)	1	4	6	9503251110-1206	477785	698483	9.40

Table 6.3: Suspended sediment - point sampled

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 142 : 25 March, 1995	
		Location 02 : Jamuna River, Sirajganj	
	Date : 13 Aug 1995	Collected data and their storage (1)	page 6.1
	Init : mk		

226

Method	Channel	Vertical	No. of samples	Time (YYMMDDHHMM-HHMM)	Easting (m)	Northing (m)	Depth (m)
Suspended sediments	1	1	1	9503250946-1005	478080	698483	3.00
		2	1	9503251019-1029	477952	698481	5.30
		3	1	9503251046-1055	477855	698484	7.50
		4	1	9503251110-1206	477785	698483	9.40
		5	1	9503251259-1311	477654	698484	6.90
		6	1	9503251321-1330	477558	698484	4.50
		7	1	9503251342-1350	477479	698482	5.40
		8	1	9503251404-1413	477367	698486	4.00
		9	1	9503251425-1439	477247	698480	4.90

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	9503250946-1005	478080	698483	3.00	A66
		2	9503251019-1029	477952	698481	5.30	A688
		3	9503251046-1055	477855	698484	7.50	A63
		4	9503251110-1206	477785	698483	9.40	A1591
		5	9503251259-1311	477654	698484	6.90	A2182
		6	9503251321-1330	477558	698484	4.50	A703
		7	9503251342-1350	477479	698482	5.40	A695
		8	9503251404-1413	477367	698486	4.00	A463
		9	9503251425-1439	477247	698480	4.90	A356
		1	9503250946-1005	478080	698483	3.00	A96
		2	9503251019-1029	477952	698481	5.30	A1159
		3	9503251046-1055	477855	698484	7.50	A689
		4	9503251110-1206	477785	698483	9.40	A462
		5	9503251259-1311	477654	698484	6.90	A1134
		6	9503251321-1330	477558	698484	4.50	A42
		7	9503251342-1350	477479	698482	5.40	A349
		8	9503251404-1413	477367	698486	4.00	A49
		9	9503251425-1439	477247	698480	4.90	A355

Table 6.5: Bed load

 FAP 24 RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 142 : 25 March, 1995	
		Location 02 : Jamuna River, Sirajganj	
	Date : 13 Aug 1995	Collected data and their storage (2)	page 6.2
	Init : mk		

228

Types of Data	Channel	Format	Filename
ADCP/S4/EMF data	1	QUATTRO	S53P1T05 .ase
Echosounder data	1	QUATTRO	S53P1T05 .ech
Sediment transport data	1	QUATTRO	S53P1T05 .sed
Bed load sed. analysis	1	QUATTRO	S53P1T05 .bdl
Sus. sed. conc. analysis	1	QUATTRO	S53P1T05 .ssc
Transect plot data	1	QUATTRO	S53P1T05 .trs
Iso-velocity plot data	1	MIKE 21 MIKE 21	S53P1T05 .ct2 S53P1T05 .dt2

Table 7.1 PSD 24 Database file description

 FAP 24  RIVER SURVEY PROJECT Flood Plan Coordination Organization Commission of the European Communities		Survey Bulletin 142 : 25 March, 1995	
		Location 02 : Jamuna River, Sirajganj	
	Date : 13 Aug 1995	PSD 24 Database file description	page
	Init : mk		7.1

