

SIDERURGIA NACIONAL EP

# Terminal do Seixal Hydro - Morphological Study

additional sediment transport measurements

March 1982 / P457

PORT AND WATERWAY ENGINEERS

  
hydronamic<sup>bv</sup>

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## 1. INTRODUCTION

The calculations of bottom changes presented in our report "Terminal do Seixal Hydro-morphological study", February 1982 were based on a calibrated sediment transport formula. This formula was calibrated with the results of measurements made by Hydronamic in September 1981. These measurements were executed during one of the driest summers Portugal ever have had.

Because of this exceptional summer there was some doubt on the reliability of the calibrated formula for winter situations. From a theoretical point of view one can justify that the influence of the sediments transported by the Tagus river is negligible in the Seixal area, because of the large distance between the point where the river enters the estuary (Vila Franca de Xira) and the Seixal area.

But in theories one makes always certain assumptions and it is therefore better to make additional measurements in winter. Hydronamic b.v. was commissioned by Siderurgia E.P. by telex nr. 1004/gc on January 29th, 1982 to execute an additional measurement campaign in winter.

This report deals with these additional measurements which were executed in the period from February 2nd until February 9th, 1982. The backbone of the equipment was the Hydronamic Sediment Transport Meter which encompasses a frame with sensors and a calculator-unit.

The survey-vessel and the crew were supplied by Hidrotop Lta. Mr. A.C. Starink from Hydronamic supervised the operation.

Because in our report of February 1982 the principles of the Hydronamic Sediment Transport Meter and the calibration method were discussed extensively, this discussion is not repeated in this report.

All 90 profiles are registered. These profiles were measured each half hour during 9-10 hours a day, so almost one tidal cycle could be covered.

For calibration purposes every day one watersample was taken out at a water depth of -2.5 m from the water surface.

All measurements were executed according the planning.

#### 4. DISCUSSION OF THE RESULTS

The results of the measurements show that the water in wintertime is much clearer than it is in summer. This is in contradiction with the usual visual observation of the estuary.

For location 5 three measurements have been made on three different dates:

date	concentration grams/m <sup>3</sup>
81 09 04	46.1
81 11 13	17.8
82 02 04	3.3

We have checked if these values were correct or that an error in the sediment-meter did occur. It proved that the same tendency to clearer water was also found in the samples we have taken and tested in the laboratory.

Also interesting are two measurements in the Cala do Montijo:

data	concentration grams/m <sup>3</sup>
81 11 11	51.9
82 02 09	49.6

It can be seen that at that location there is not very much difference in concentration.

In fig. 7 the concentration and the velocity is given, both as functions of time. The concentration is constantly decreasing until the velocity reaches the value of approx. 0.5 m/sec. Then stirring up will start again. On the tidal flats (points 1 and 2) the maximum velocities are respectively 0.48, and 0.41 m/s.

Point 5 shows values between these two groups.

## 5. CONCLUSIONS AND RECOMMENDATIONS

Due to seasonal influences the total siltation in the new channel will be less than calculated in the main report. It has been shown that in the Siderurgia area the concentration is lower in winter than it is in summer.

All measurements were made during calm weather, thus the influence of the waves has not been measured.

It is therefore still advisable to do some measurements during waves conditions.



## LIST OF FIGURES

Fig. 1 : Location of measurements

Fig. 2 : Correlation graph

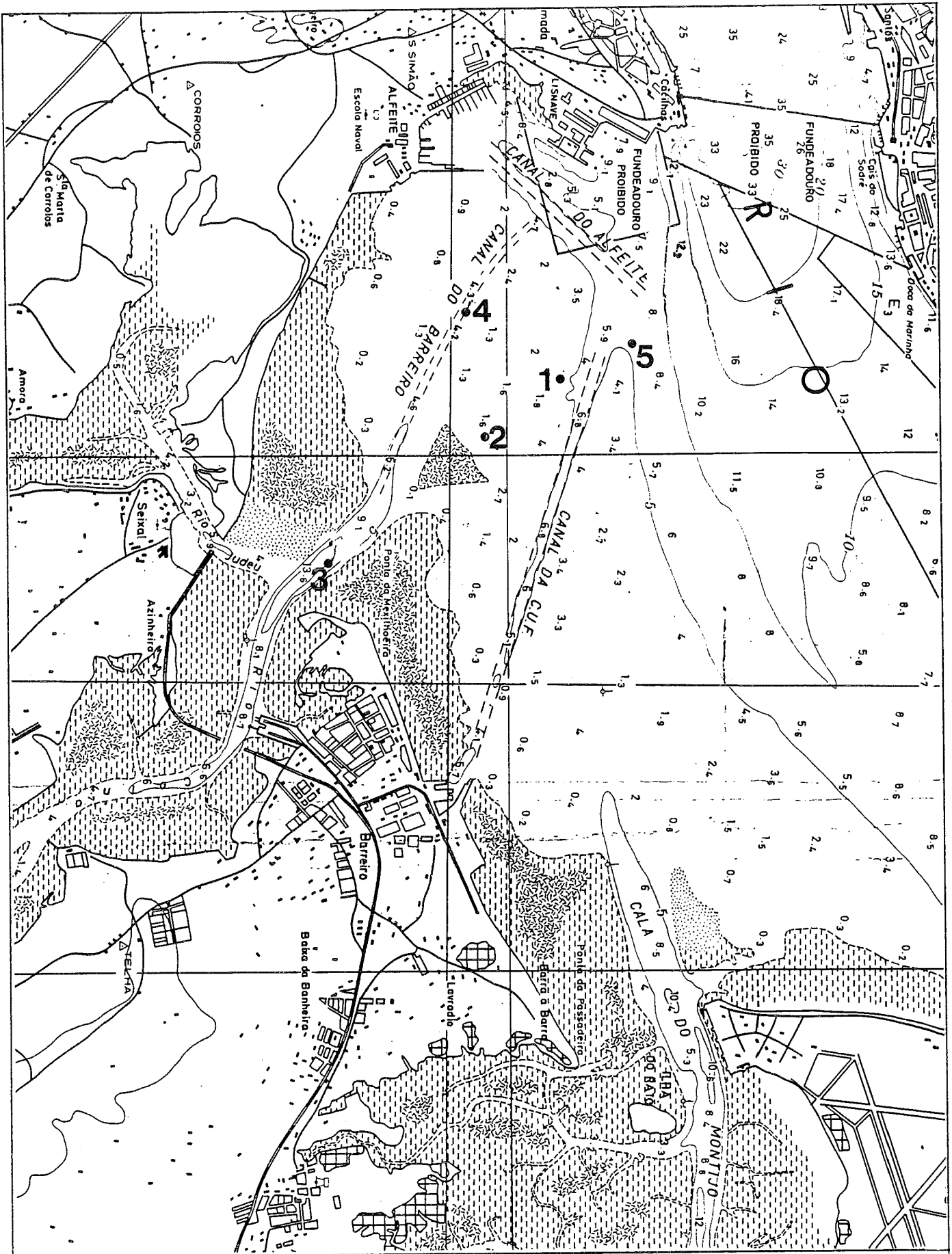
Fig. 3 : Velocity versus transport (all formulae)

Fig. 4 : Velocity versus transport - Byker/Einstein formula

Fig. 5 : Velocity versus transport (point 4)

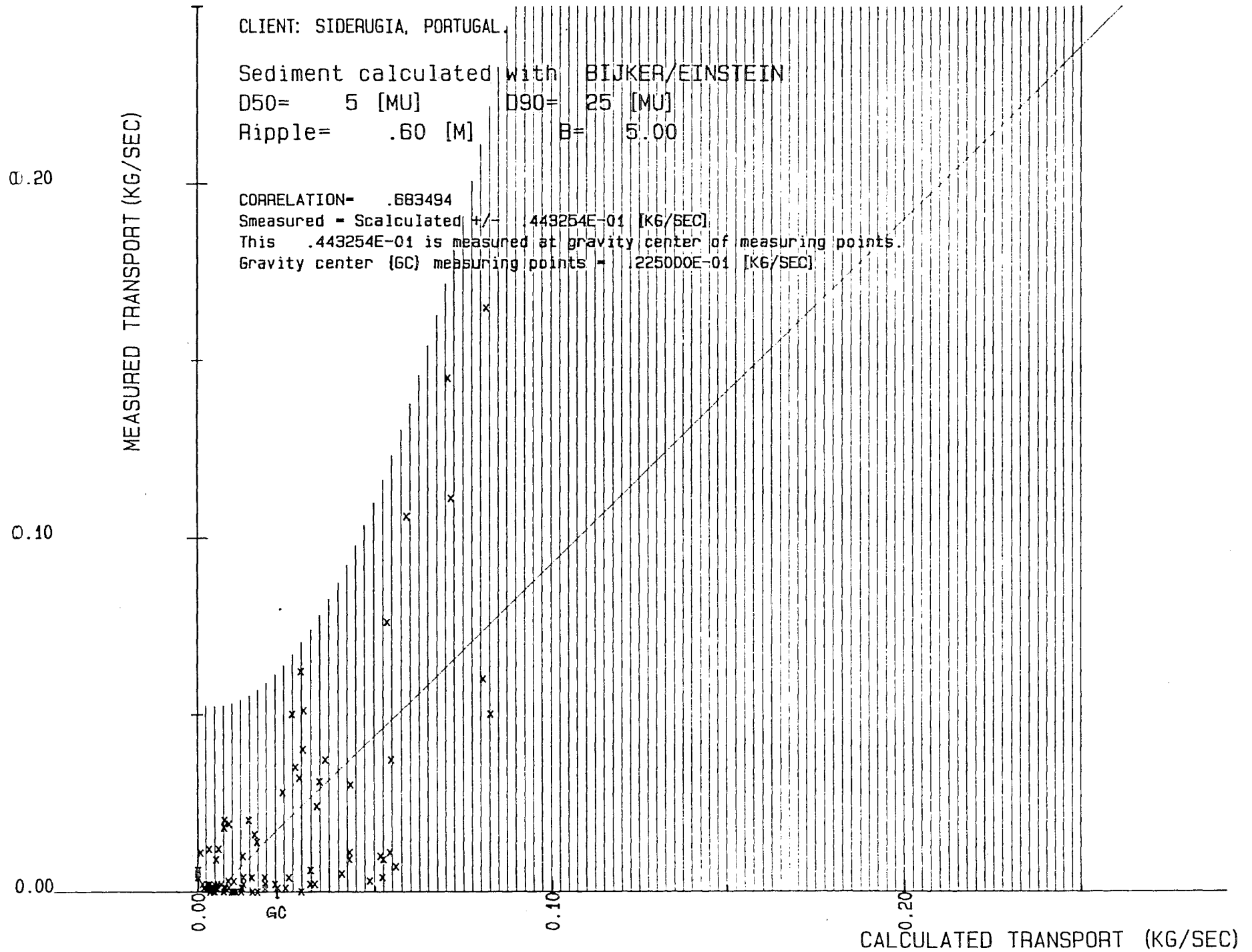
Fig. 6 : Correlation graph for point 4

Fig. 7 : Velocity and concentration diagram for point 4



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<p>hydrodynamic bv slidrecht holland</p>	<p>CALIBRATION MEASUREMENTS LOCATION OF MEASUREMENTS</p>	
<p>P457</p>	<p>SCALE 1: 60000</p>	<p>FIG.: 1.</p>

Fig. 2 : Correlation graph



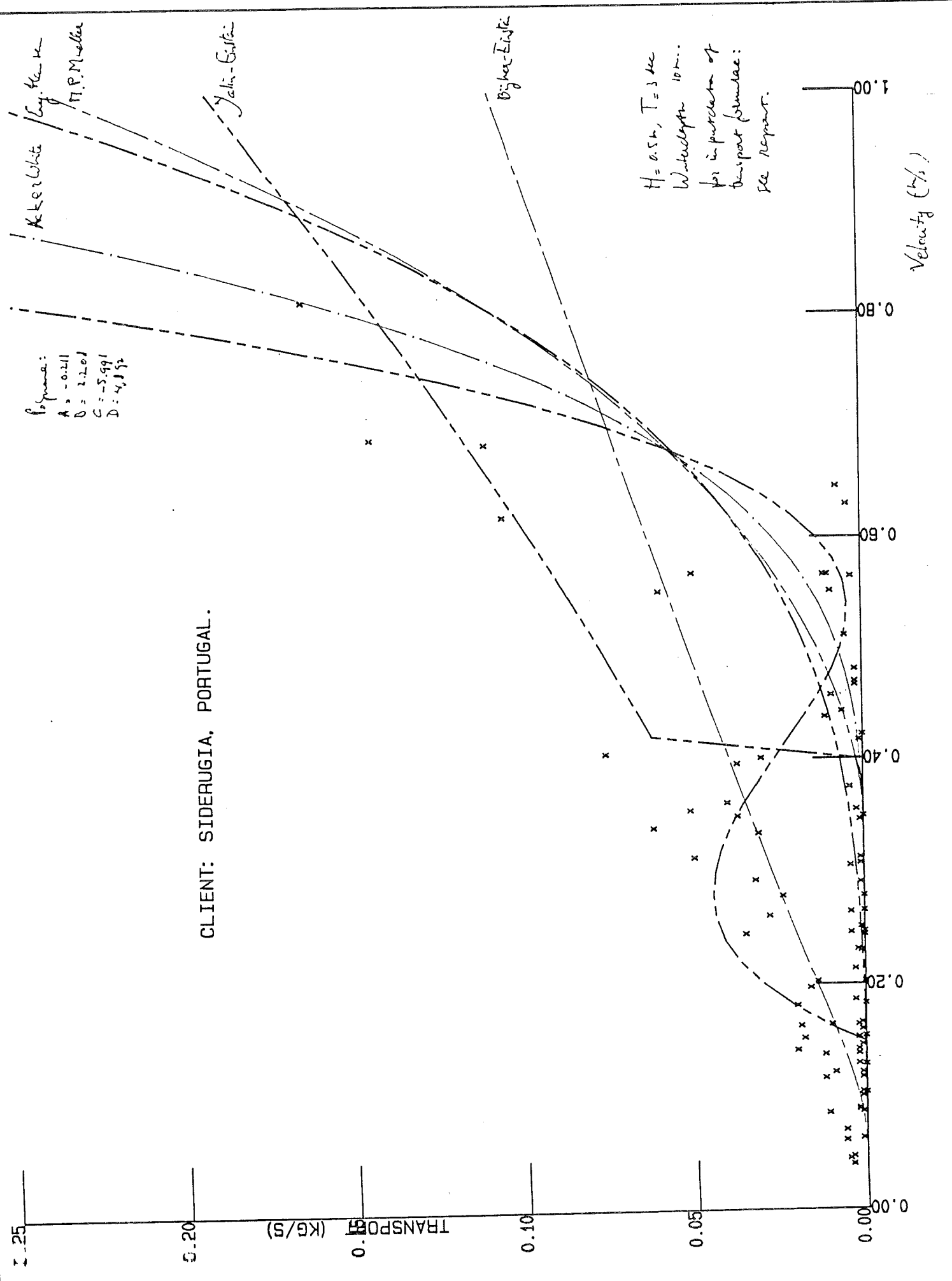


Fig. 3 : Velocity versus transport (all formulae)

CLIENT: SIDERUGIA, PORTUGAL.

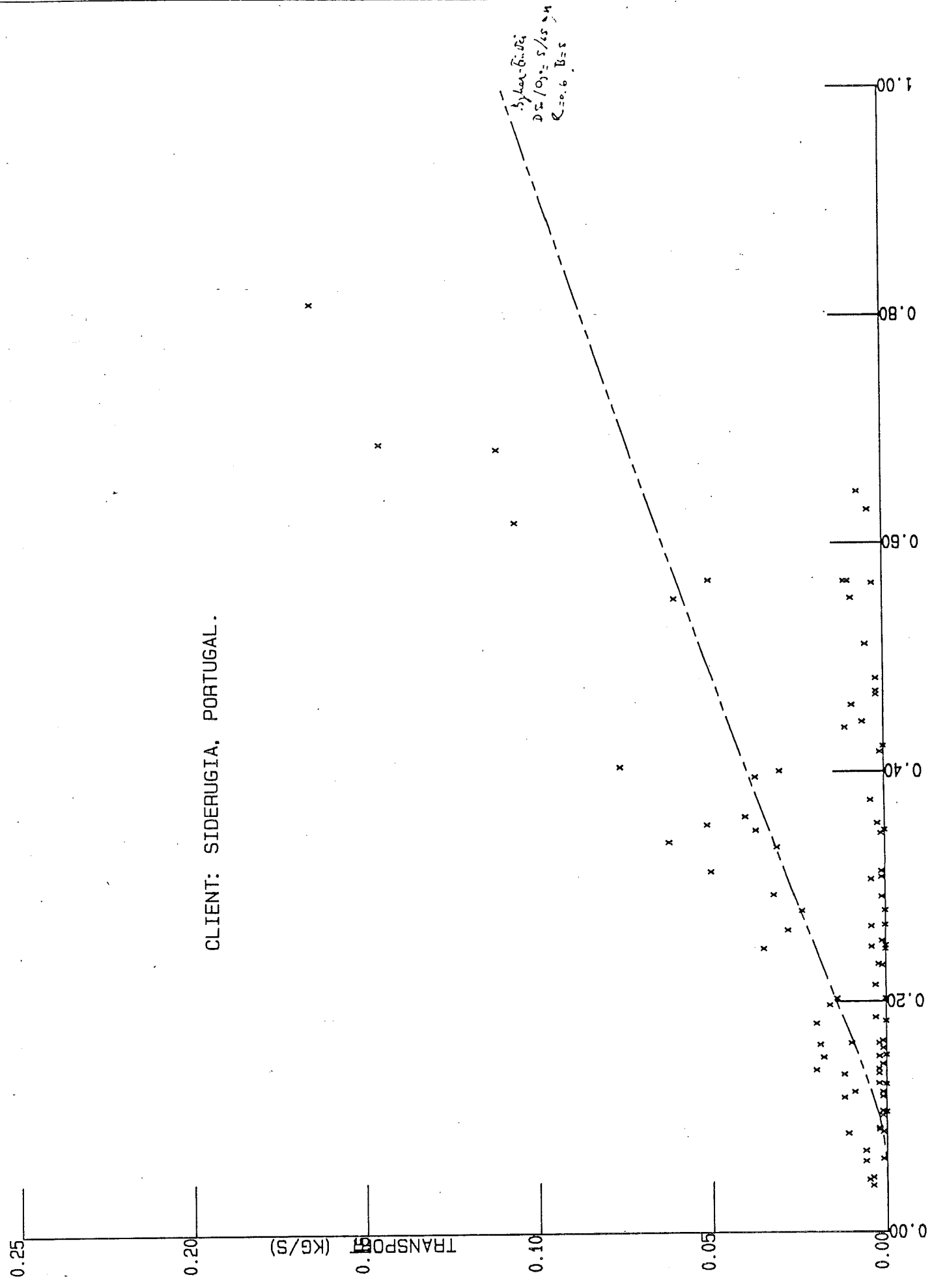


Fig. 4 : Velocity versus transport - Byker/Eistein formula

Fig. 5 : Velocity versus transport (point 4)

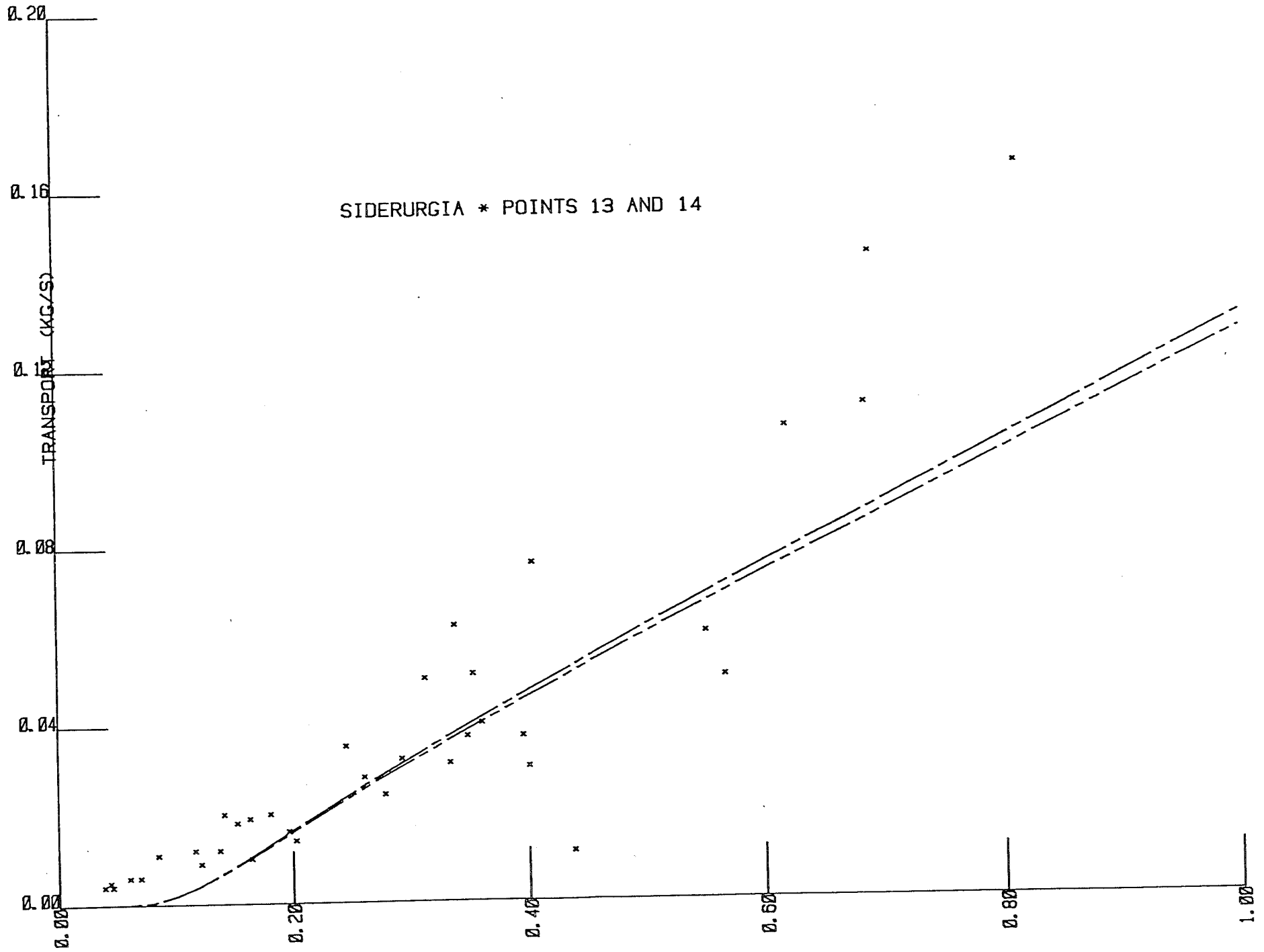
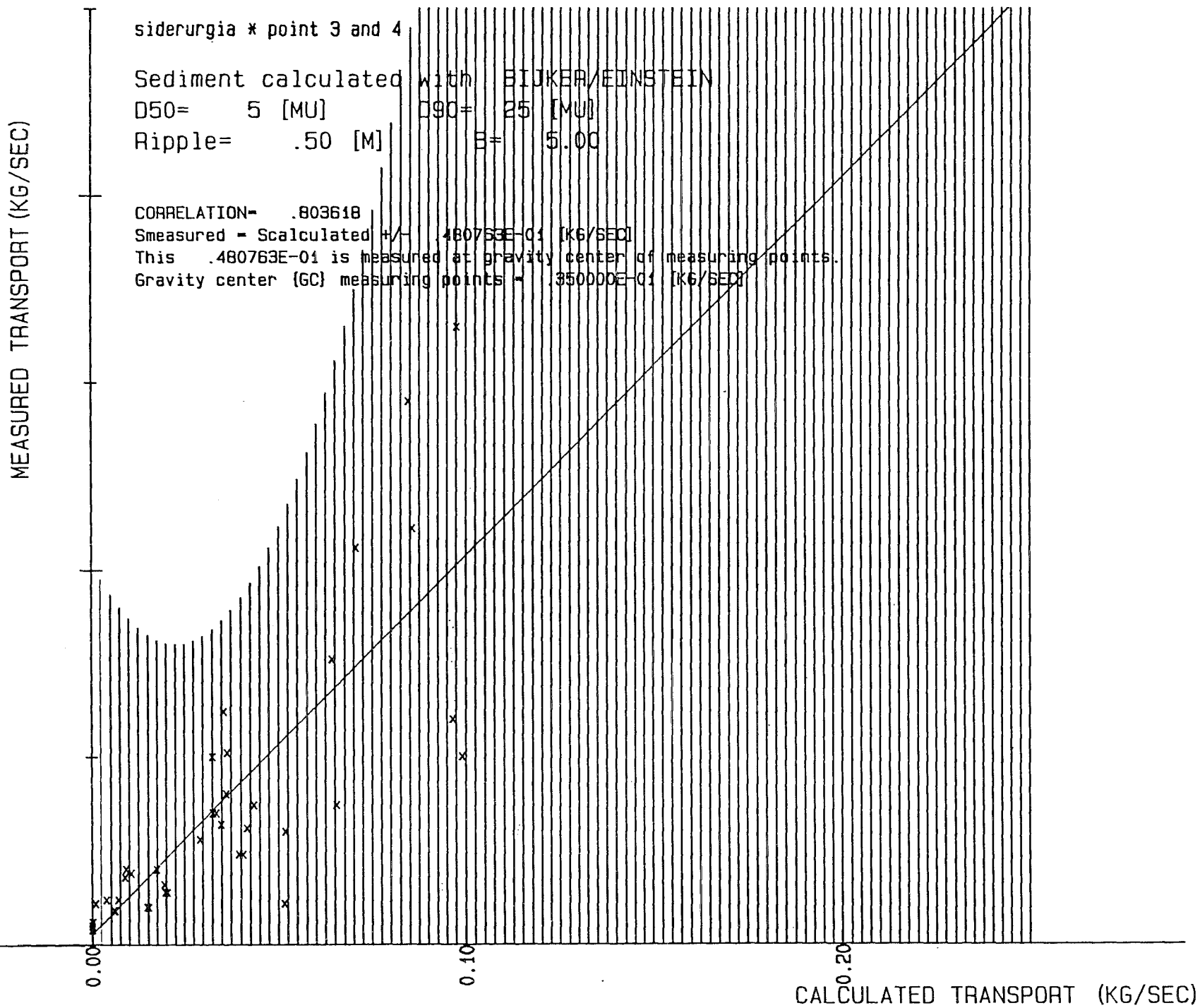


Fig. 6 : Correlation graph for point 4



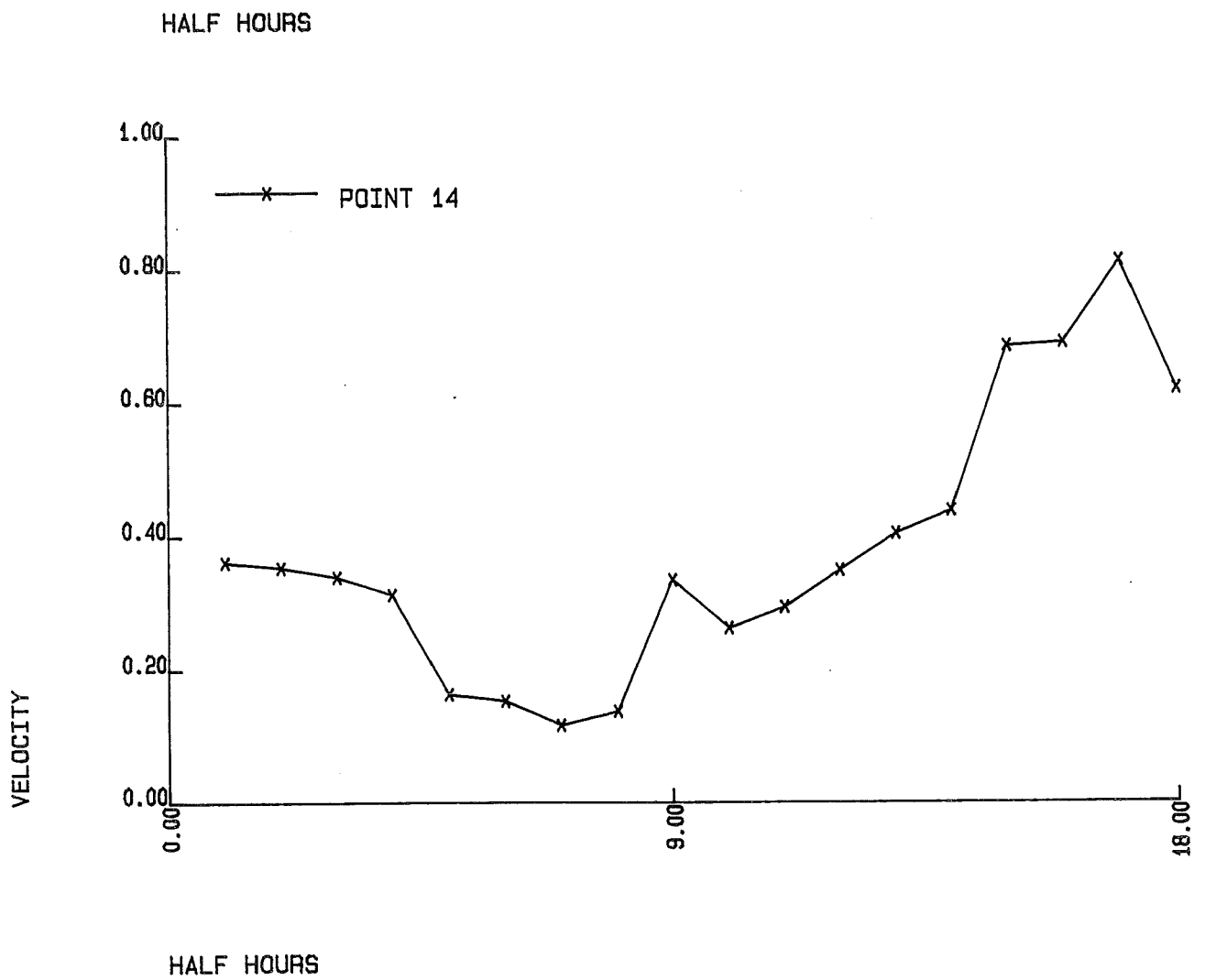
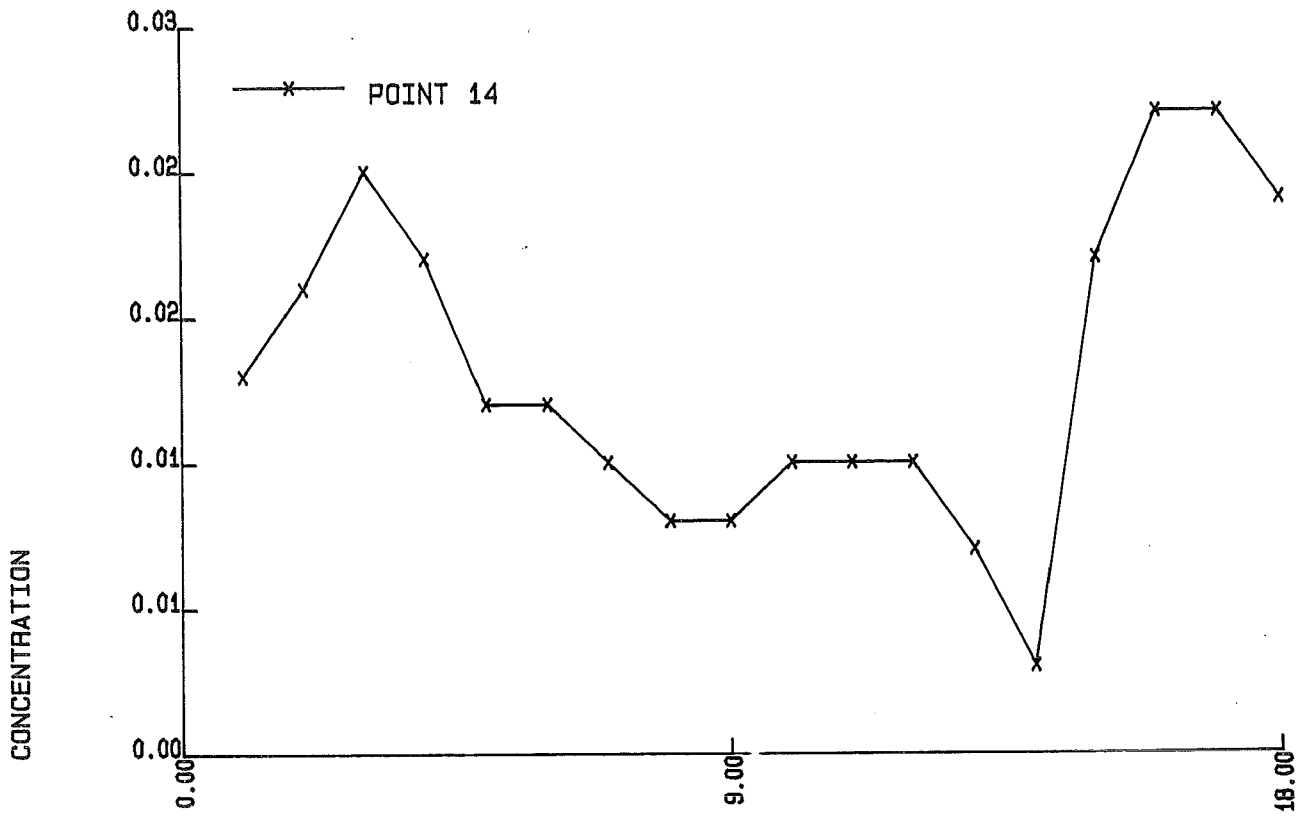


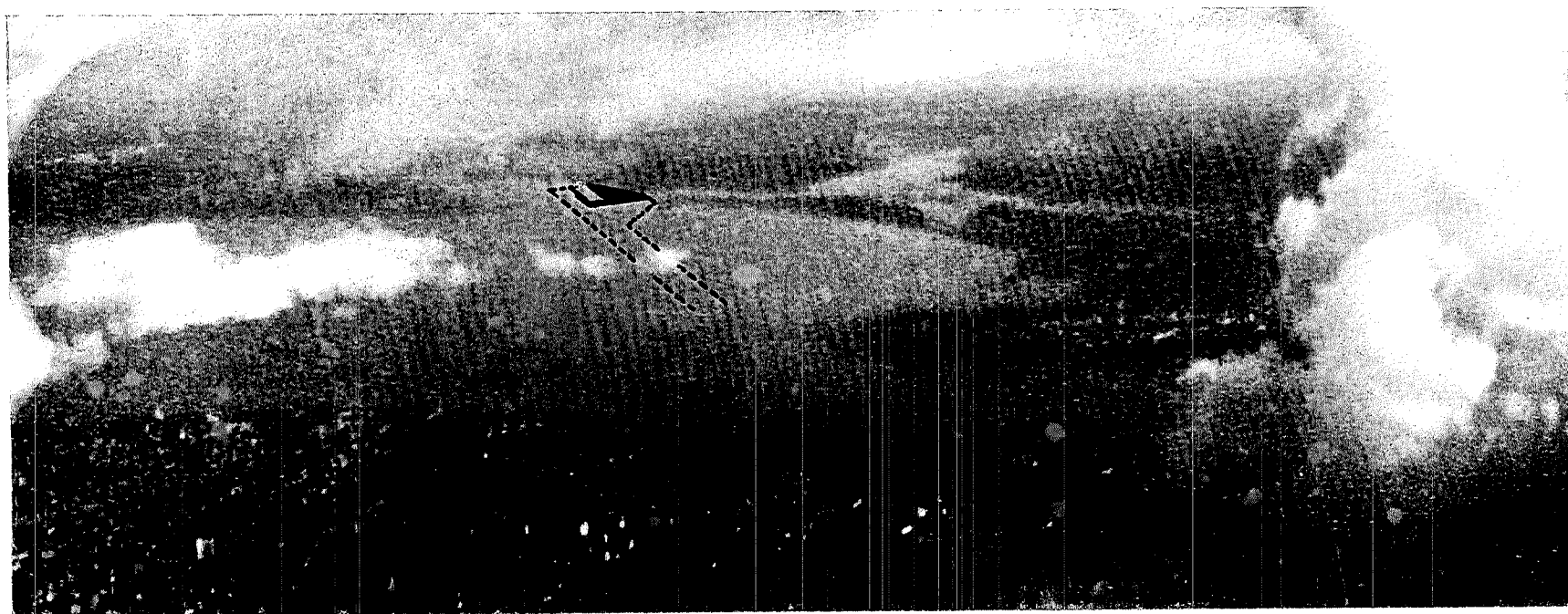
Fig. 7 : Velocity and concentration diagram for point 4



**SIDERURGIA NACIONAL EP**

# **Terminal do Seixal Hydro - Morphological Study**

**datasheets**



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# Terminal do Seixal Hydro - Morphological Study

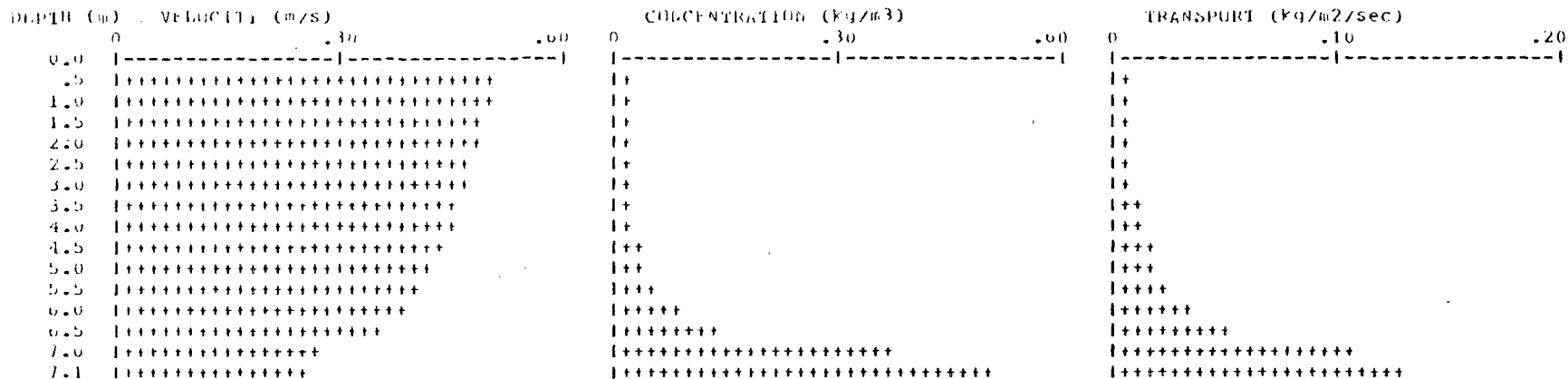
datasheets

February 1982 / P457

PORT AND WATERWAY ENGINEERS

  
hydronamic<sup>bv</sup>  
sliedrecht holland

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*



INPUT VALUES: VELOCITY .15 M/SEC  
 WAVE HEIGHT .50 M  
 WAVE PERIOD 2.00 SEC  
 WATERDEPTH 7.28 M  
 RIPPLE .20 M  
 GRAINSIZES 100 200 MU (D50/D90)

BEDLOAD TRANSPORT .0186 KG/SEC  
 SUSPENDED TRANSPORT .0194 KG/SEC  
 TOTAL TRANSPORT .0381 KG/SEC  
 SUSPENDED TRANSPORT IS 51 % OF TOTAL TRANSPORT

example 1

datasheet 4.1.1.

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*

DEPTH (M)	VELOCITY (M/S)	CONCENTRATION (KG/M <sup>3</sup> )	TRANSPORT (KG/M <sup>2</sup> /SEC)
0	.30	.00	0
0.0	----- -----	----- -----	----- -----
0.5	+++++	+	+
1.0	+++++	+	+
1.5	+++++	+	+
2.0	+++++	+	+
2.5	+++++	+	+
3.0	+++++	+	+
3.5	+++++	+	++
4.0	+++++	+	++
4.5	+++++	++	+++
5.0	+++++	++	+++
5.5	+++++	+++	++++
6.0	+++++	++++	++++
6.5	+++++	+++++	+++++
7.0	+++++	+++++	+++++
7.1	+++++	+++++	+++++

DEPT VALUES: VELOCITY .15 M/SEC  
 WAVE HEIGHT 1.00 M  
 WAVE PERIOD 2.00 SEC  
 WATERDEPTH 7.28 M  
 PIPEL. .20 M  
 GRAINSIZES 100 200 MU (D50/D90)

BEDLOAD TRANSPORT .0186 KG/SEC  
 SUSPENDED TRANSPORT .0195 KG/SEC  
 TOTAL TRANSPORT .0381 KG/SEC  
 SUSPENDED TRANSPORT IS 51 % OF TOTAL TRANSPORT

exemple 2

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*

DEPTH (m)	VELOCITY (m/s)	CONCENTRATION (kg/m <sup>3</sup> )	TRANSPORT (kg/m <sup>2</sup> /sec)
0.0	0	0	0
0.5		+	+
1.0		+	+
1.5		+	+
2.0		+	+
2.5		+	+
3.0		+	+
3.5		+	++
4.0		+	++
4.5		++	+++
5.0		++	+++
5.5		+++	++++
6.0		++++	++++
6.5		+++++	+++++
7.0		+++++	+++++
7.1		+++++	+++++

DEPTH VALUES: VELOCITY .45 M/SEC  
 WAVE HEIGHT 2.00 M  
 WAVE PERIOD 2.00 SEC  
 WATERDEPTH 7.28 M  
 RIPPLE .20 M  
 GRAIN SIZES 100 200 MU (D50/D90)

BEDLOAD TRANSPORT .0186 KG/SEC  
 SUSPENDED TRANSPORT .0196 KG/SEC  
 TOTAL TRANSPORT .0382 KG/SEC  
 SUSPENDED TRANSPORT IS 51 % OF TOTAL TRANSPORT

exemple 3

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*

DEPTH (M)	VELOCITY (M/S)	CONCENTRATION (KG/M <sup>3</sup> )	TRANSPORT (kg/m <sup>2</sup> /sec)
0	0	0	0
0.5	----- ----- -----	----- ----- -----	----- ----- -----
1.0	+++++	+	+
1.5	+++++	+	+
2.0	+++++	+	+
2.5	+++++	+	+
3.0	+++++	+	+
3.5	+++++	+	+
4.0	+++++	+	++
4.5	+++++	+	++
5.0	+++++	++	+++
5.5	+++++	++	+++
6.0	+++++	+++	++++
6.5	+++++	++++	+++++
7.0	+++++	+++++	+++++
7.4	+++++	+++++	+++++

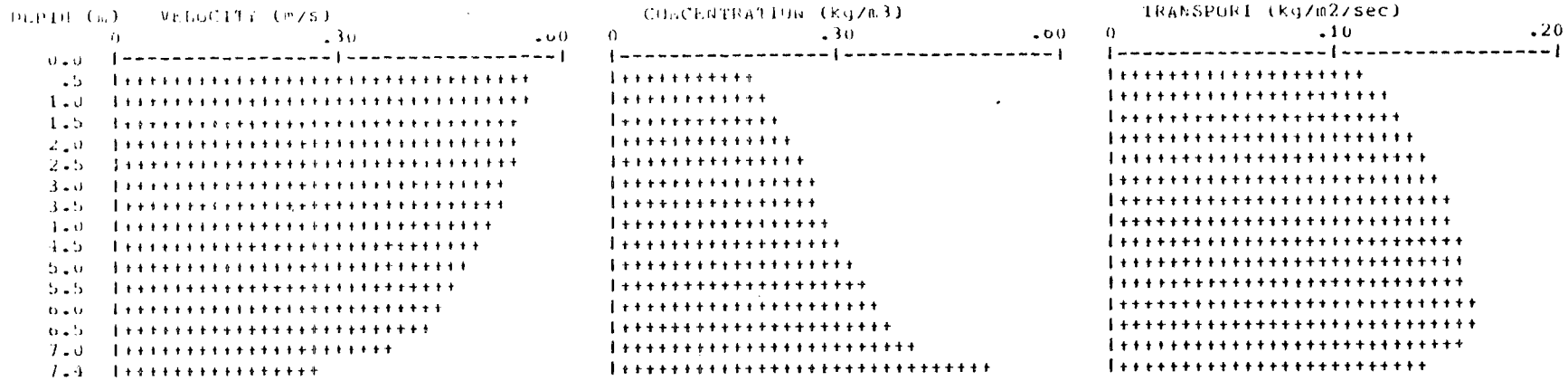
INPUT VALUES: VELOCITY .50 M/SEC  
 WAVE HEIGHT .00 M  
 WAVE PERIOD 2.00 SEC  
 WATERDEPTH 7.65 M  
 RIPPLE .20 M  
 GRAIN SIZES 100 200 (D50/D90)

BEDLOAD TRANSPORT .0137 KG/SEC  
 SUSPENDED TRANSPORT .0528 KG/SEC  
 TOTAL TRANSPORT .0665 KG/SEC  
 SUSPENDED TRANSPORT IS 79 % OF TOTAL TRANSPORT

exemple 4

datasheet 4.1.4.

\*\*\*\*\*  
 \* BEDLOAD TRANSPORT CALCULATION \*  
 \*\*\*\*\*



INPUT VALUES: VELOCITY .50 M/SEC  
 WAVE HEIGHT 2.00 M  
 WAVE PERIOD 5.00 SEC  
 WATERDEPTH 7.05 M  
 RIPPLE .20 M  
 GRAINSIZES 100 200 μm (D50/D90)

BEDLOAD TRANSPORT .0203 KG/SEC  
 SUSPENDED TRANSPORT 1.1207 KG/SEC  
 TOTAL TRANSPORT 1.1411 KG/SEC  
 SUSPENDED TRANSPORT IS 98 % OF TOTAL TRANSPORT

exemple 5

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*

DEPTH (m)	VELOCITY (m/s)		CONCENTRATION (kg/m <sup>3</sup> )		TRANSPORT (kg/m <sup>2</sup> /sec)	
	0	.60	0	.10	0	.50
0.0	-----	-----	-----	-----	-----	-----
.25	+++++	+++++	+++++	+++++	+++	+++
1.0	+++++	+++++	+++++	+++++	+++	+++
1.25	+++++	+++++	+++++	+++++	+++	+++
2.0	+++++	+++++	+++++	+++++	+++	+++
2.25	+++++	+++++	+++++	+++++	+++	+++
3.0	+++++	+++++	+++++	+++++	++	++
3.25	+++++	+++++	+++++	+++++	++	++
4.0	+++++	+++++	+++++	+++++	++	++
4.25	+++++	+++++	+++++	+++++	++	++
5.0	+++++	+++++	+++++	+++++	++	++
5.25	+++++	+++++	+++++	+++++	++	++
6.0	+++++	+++++	+++++	+++++	++	++
6.25	+++++	+++++	+++++	+++++	++	++
7.0	+++++	+++++	+++++	+++++	++	++
7.4	+++++	+++++	+++++	+++++	+	+

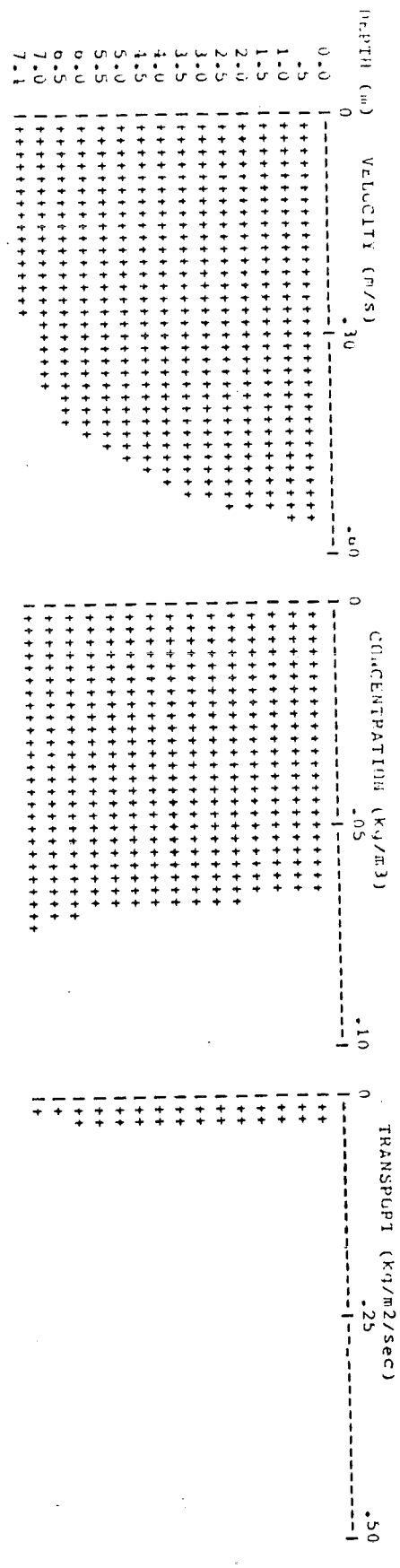
INPUT VALUES: VELOCITY .50 m/SEC  
 WAVE HEIGHT 2.00 M  
 WAVE PERIOD 5.00 SEC  
 WATERDEPTH 7.05 M  
 RIPPLE .20 M  
 GRAIN SIZES 15 100 BU (D50/D90)

BEDLOAD TRANSPORT .0031 KG/SEC  
 SUSPENDED TRANSPORT .2965 KG/SEC  
 TOTAL TRANSPORT .2996 KG/SEC  
 SUSPENDED TRANSPORT IS 99 % OF TOTAL TRANSPORT

example 6



\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*



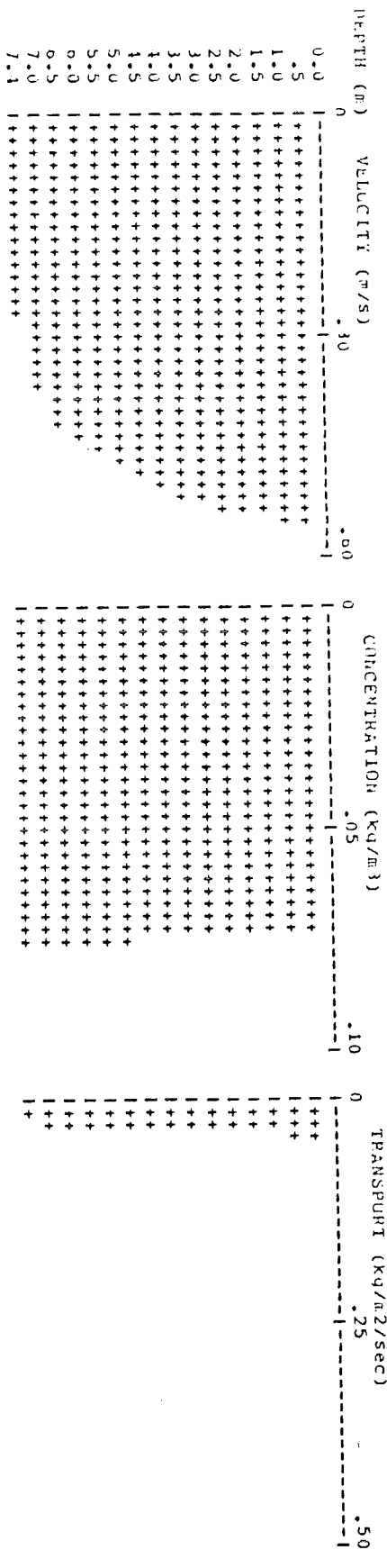
INPUT VALUES: VELOCITY .50 M/SEC  
 WAVE HEIGHT .00 M  
 WAVE PERIOD 1.00 SEC  
 WATERDEPTH 7.65 M  
 RIPPLE .20 M  
 GRAINSIZES 15 100 F11 (0.50/0.90)

BEADLOAD TRANSPORT .0029 KG/SEC  
 SUSPENDED TRANSPORT .2300 KG/SEC  
 TOTAL TRANSPORT .2335 KG/SEC

SUSPENDED TRANSPORT IS 99 % OF TOTAL TRANSPORT

example 7

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*



INPUT VALUES: VELOCITY .50 M/SEC  
 WAVE HEIGHT .50 M  
 WAVE PERIOD 5.00 SEC  
 WATERDEPTH 7.65 M  
 RIPPLE .20 M  
 GRAINSIZES 15 100 MU (D50/D90)

HEADLOAD TRANSPORT .0031 KG/SEC  
 SUSPENDED TRANSPORT .2745 KG/SEC  
 TOTAL TRANSPORT .2770 KG/SEC

SUSPENDED TRANSPORT IS 99 % OF TOTAL TRANSPORT

example 8

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*

DEPTH (m)	VELOCITY (m/s)	CONCENTRATION (kg/m <sup>3</sup> )	TRANSPORT (kg/m <sup>2</sup> /sec)
0	0	0	0
0.5	0.38	0.0023	0.00115
1.0	0.38	0.0023	0.00115
1.5	0.38	0.0023	0.00115
2.0	0.38	0.0023	0.00115
2.5	0.38	0.0023	0.00115
3.0	0.38	0.0023	0.00115
3.5	0.38	0.0023	0.00115
4.0	0.38	0.0023	0.00115
4.5	0.38	0.0023	0.00115
5.0	0.38	0.0023	0.00115
5.5	0.38	0.0023	0.00115
6.0	0.38	0.0023	0.00115
6.1	0.38	0.0023	0.00115

INPUT VALUES: VELOCITY 0.38 m/SEC  
 WAVE HEIGHT 2.00 M  
 WAVE PERIOD 1.00 SEC  
 WATERDEPTH 6.61 M  
 PIPE DIAMETER 0.20 M  
 GRAIN SIZES 15 100 mm (D50/D90)

BEDLOAD TRANSPORT 0.0023 KG/SEC  
 SUSPENDED TRANSPORT 0.1290 KG/SEC  
 TOTAL TRANSPORT 0.1312 KG/SEC

SUSPENDED TRANSPORT IS 98 % OF TOTAL TRANSPORT

of datafile 11000105

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
 \*\*\*\*\*

DEPTH (m)	VELOCITY (M/S)	CONCENTRATION (kg/m <sup>3</sup> )		TRANSPORT (kg/m <sup>2</sup> /sec)	
		0	.20	0	.20
0.5	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----	----- ----- -----
0.5	+++++	+++++	+++++	+++++	+++++
1.0	+++++	+++++	+++++	+++++	+++++
1.5	+++++	+++++	+++++	+++++	+++++
2.0	+++++	+++++	+++++	+++++	+++++
2.5	+++++	+++++	+++++	+++++	+++++
3.0	+++++	+++++	+++++	+++++	+++++
3.5	+++++	+++++	+++++	+++++	+++++
4.0	+++++	+++++	+++++	+++++	+++++
4.5	+++++	+++++	+++++	+++++	+++++
5.0	+++++	+++++	+++++	+++++	+++++
5.5	+++++	+++++	+++++	+++++	+++++
6.0	+++++	+++++	+++++	+++++	+++++
6.5	+++++	+++++	+++++	+++++	+++++
7.0	+++++	+++++	+++++	+++++	+++++
7.5	+++++	+++++	+++++	+++++	+++++
8.0	+++++	+++++	+++++	+++++	+++++

INPUT VALUES: VELOCITY .50 M/SEC      BEDLOAD TRANSPORT .0031 KG/SEC  
 WAVE HEIGHT .50 M                      SUSPENDED TRANSPORT .2837 KG/SEC  
 WAVE PERIOD 4.50 SEC                    TOTAL TRANSPORT .2868 KG/SEC  
 WATERDEPTH 3.20 M  
 RIPPLE .20 M  
 GRAIN SIZES 15 100 MU (050/090)  
 SUSPENDED TRANSPORT IS 99 % OF TOTAL TRANSPORT

cf. datafile SID00114

datasheet 4.1.10.

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 Port & Waterway Engineers  
 Miedrecht - holland

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 \* SEDIMENT TRANSPORT CALCULATION \*  
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DEPTH (m)	VELOCITY (m/s)	CONCENTRATION (kg/m <sup>3</sup> )	TRANSPORT (kg/m <sup>2</sup> /sec)
0.0	0	0	0
0.5	1+++++	+++++	1+
1.0	1+++++	+++++	1+
1.5	1+++++	+++++	1+
2.0	1++++	+++++	1+
2.4	1+++	+++++	1+

INPUT VALUES: VELOCITY .13 M/SEC  
 WAVE HEIGHT .10 M  
 WAVE PERIOD 2.00 SEC  
 WATERDEPTH 2.63 M  
 RIPPLE .20 M  
 GRAINSIZES 15 100 30 (050/090)

BEDLOAD TRANSPORT .0011 KG/SEC  
 SUSPENDED TRANSPORT .0040 KG/SEC  
 TOTAL TRANSPORT .0051 KG/SEC

SUSPENDED TRANSPORT IS 79 % OF TOTAL TRANSPORT

cf datafile S10203

datasheet 4.1.11.

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
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DEPTH (M)	VELOCITY (M/S)	CONCENTRATION (KG/M <sup>3</sup> )	TRANSPORT (KG/M <sup>2</sup> /SEC)
0	0	0	0
0.0	----- ----- -----	----- ----- -----	----- ----- -----
0.5	+++++	+++++	+++++
1.0	+++++	+++++	+++++
1.5	+++++	+++++	+++++
2.0	+++++	+++++	+++++
2.5	+++++	+++++	+++++
3.0	+++++	+++++	+++++
3.5	+++++	+++++	+++++
4.0	+++++	+++++	+++++
4.5	+++++	+++++	+++++
5.0	+++++	+++++	+++++
5.5	+++++	+++++	+++++
6.0	+++++	+++++	+++++
6.5	+++++	+++++	+++++
7.0	+++++	+++++	+++++
7.5	+++++	+++++	+++++
8.0	+++++	+++++	+++++
8.5	+++++	+++++	+++++
9.0	+++++	+++++	+++++
9.5	+++++	+++++	+++++
10.0	+++++	+++++	+++++
10.5	+++++	+++++	+++++
11.0	+++++	+++++	+++++
11.5	+++++	+++++	+++++
12.0	+++++	+++++	+++++
12.5	+++++	+++++	+++++
13.0	+++++	+++++	+++++
13.1	+++++	+++++	+++++

INPUT VALUES: VELOCITY .37 M/SEC  
 WAVE HEIGHT .10 M  
 WAVE PERIOD 2.00 SEC  
 WATERDEPTH 13.11 M  
 PIPEL .20 M  
 GRAINSIZES 15 100 BH (D50/D90)

BEDLOAD TRANSPORT .0021 KG/SEC  
 SUSPENDED TRANSPORT .2311 KG/SEC  
 TOTAL TRANSPORT .2332 KG/SEC  
 SUSPENDED TRANSPORT IS 99 % OF TOTAL TRANSPORT

datasheet 4.1.12.

\*\*\*\*\*  
 \* SEDIMENT TRANSPORT CALCULATION \*  
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DEPTH (m)	VELOCITY (m/S)			CONCENTRATION (kg/m <sup>3</sup> )			TRANSPORT (kg/m <sup>2</sup> /sec)		
	0	.50	1.00	0	.10	.20	0	.10	.20
0.0	----- ----- -----			----- ----- -----			----- ----- -----		
.25	+++++			+++++			++		
1.0	+++++			+++++			++		
1.5	+++++			+++++			++		
2.0	+++++			+++++			++		
2.5	+++++			+++++			++		
3.0	+++++			+++++			++		
3.5	+++++			+++++			++		
4.0	+++++			+++++			++		
4.5	+++++			+++++			++		
5.0	+++++			+++++			++		
5.5	+++++			+++++			++		
6.0	+++++			+++++			++		
6.5	+++++			+++++			++		
7.0	+++++			+++++			+		
7.5	+++++			+++++			+		
8.0	+++++			+++++			+		
8.3	++++			+++++			+		

INPUT VALUES: VELOCITY .18 M/SEC      BEDLOAD TRANSPORT .0011 KG/SEC  
 WAVE HEIGHT .10 M                      SUSPENDED TRANSPORT .0190 KG/SEC  
 WAVE PERIOD 1.00 SEC                    TOTAL TRANSPORT .0201 KG/SEC  
 WATERDEPTH 8.37 M  
 RIPPLE .20 M                              SUSPENDED TRANSPORT IS 94 % OF TOTAL TRANSPORT  
 GRAIN SIZES 15 100 60 (0.50/0.90)

cf. datafile SID00413

hydraulic by  
 Port & Waterway Engineers  
 Slidrecht - holland

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 \* SEDIMENT TRANSPORT CALCULATION \*  
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DEPTH (m)	VELOCITY (m/s)			CONCENTRATION (kg/m <sup>3</sup> )			TRANSPORT (kg/m <sup>2</sup> /sec)		
	0	.50	1.00	0	.10	.20	0	.10	.20
0.0	-----	-----	-----	-----	-----	-----	-----	-----	-----
.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
1.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
1.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
2.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
2.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
3.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
3.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
4.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
4.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
5.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
5.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
6.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
6.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
7.0	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
7.5	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++
7.8	+++++	+++++	+++++	+++++	+++++	+++++	+++	+++	+++

INPUT VALUES: VELOCITY .29 M/SEC  
 WAVE HEIGHT .00 M  
 WAVE PERIOD .00 SEC  
 WATERDEPTH 8.00 M  
 PIPEL .20 M  
 GRAIN SIZES 15 100 mm (D50/D90)

BELOAD TRANSPORT .0017 KG/SEC  
 SUSPENDED TRANSPORT .0878 KG/SEC  
 TOTAL TRANSPORT .0895 KG/SEC  
 SUSPENDED TRANSPORT IS 98 % OF TOTAL TRANSPORT

cf. datafile SID 00507

datasheet 4.1.14.





Table with multiple rows and columns of numerical values, including a column of large negative integers at the bottom.

Large column of negative integers: -6, -10, -14, -18, -22, -26, -30, -34, -38, -42, -46, -50, -54, -58, -62, -66, -70, -74, -78, -82, -86, -90, -94, -98, -102, -106, -110, -114, -118, -122, -126, -130, -134, -138, -142, -146, -150, -154, -158, -162, -166, -170, -174, -178, -182, -186, -190, -194, -198, -202, -206, -210, -214, -218, -222, -226, -230, -234, -238, -242, -246, -250, -254, -258, -262, -266, -270, -274, -278, -282, -286, -290, -294, -298, -302, -306, -310, -314, -318, -322, -326, -330, -334, -338, -342, -346, -350, -354, -358, -362, -366, -370, -374, -378, -382, -386, -390, -394, -398, -402, -406, -410, -414, -418, -422, -426, -430, -434, -438, -442, -446, -450, -454, -458, -462, -466, -470, -474, -478, -482, -486, -490, -494, -498, -502, -506, -510, -514, -518, -522, -526, -530, -534, -538, -542, -546, -550, -554, -558, -562, -566, -570, -574, -578, -582, -586, -590, -594, -598, -602, -606, -610, -614, -618, -622, -626, -630, -634, -638, -642, -646, -650, -654, -658, -662, -666, -670, -674, -678, -682, -686, -690, -694, -698, -702, -706, -710, -714, -718, -722, -726, -730, -734, -738, -742, -746, -750, -754, -758, -762, -766, -770, -774, -778, -782, -786, -790, -794, -798, -802, -806, -810, -814, -818, -822, -826, -830, -834, -838, -842, -846, -850, -854, -858, -862, -866, -870, -874, -878, -882, -886, -890, -894, -898, -902, -906, -910, -914, -918, -922, -926, -930, -934, -938, -942, -946, -950, -954, -958, -962, -966, -970, -974, -978, -982, -986, -990, -994, -998, -1000

Table with 20 columns and 20 rows of numerical data. The first column contains row indices (e.g., 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62). The remaining 19 columns contain numerical values, some of which are negative. The data appears to be organized in a grid-like structure with some rows having multiple values in a single column.

12 m channel \*heap tide (yearly siltation in cm)

Table with 22 columns and 67 rows. Headers: 74, 52, 100.000. Data values range from 0 to -86. Rows are indexed on the left from 2 to 67.

Table with 25 columns and 62 rows, containing numerical data. The table is rotated 90 degrees counter-clockwise in the image. Row indices are 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62. Column indices are 1 through 25. The data consists of integers, many of which are 0, with some negative values ranging down to -659.



12 m channel + middle tide Cyearty siltation in cm)

Table with 22 columns and 62 rows of numerical data representing siltation measurements. The data shows values ranging from -100 to 163 across various depths and locations.

Table with 30 columns and 30 rows. The first column contains row indices from 2 to 30. Each row contains a sequence of numerical values, many of which are negative and some are zero. The values appear to be generated from a mathematical or statistical process. The table is oriented vertically on the page.















