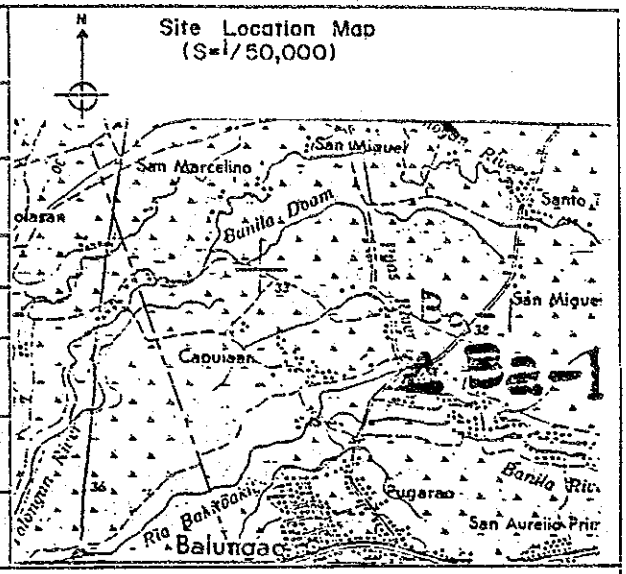
DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Ba-1	
River / Irrigation Canal	BANILA RIVER	
Location	Pugaro-San Miguel Balungao, Pangasinan	
Date of Sampling	May 31, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	50 m
	Bed Materials	Gravel, Sand
	Others	

Site Location Map (S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	mm

Characteristics Observed by the Eyes

1) Materials : Gravel, Sand

2) Shape :

3) Colour : Gray

4) Others :

DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Ba-1

Date of Test: June 6, 1989

Tested by : J.C. Muya

2-i Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 2,324 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	0 gr.	0 %	100 %	100 %	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	32	1.37	98.6	98.6	
19.1 (3/4")	116	5.0	93.6	93.6	
9.52 (3/8")	374	16.09	77.5	77.5	
4.76 (No.4)	723	31.11	46.4	46.4	
2.00 (No.10)	736	31.67	14.8	14.8	
1.18 (No.16)	203	8.73	6.0	6.0	
0.42 (No.40)	85	3.65	2.4	2.4	
0.297 (No.50)	25	1.1	1.3	1.3	
0.150(No.100)	20	.86	.4	4	
0.074(No.200)	6	.25	.2	2	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Ba-1
Date of Test: June 7, 1989
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1)	Weight of Bottle Filled with Water	gr.
(2)	Weight of Oven-dry Particles	gr.
(3)	Weight of Bottle Filled with Particles and Water	gr.
(4)	Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	325 gr.	323 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.86	2.82	2.84

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	gr.	gr.	-
(2) Weight of Saturated Sample in Water	gr.		-
(3) Specific Gravity (Saturated Surface-dry Basis)			

(3) = (1)/((1) - (2))

DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. REMARK

Sample no.	Ba-1	River/Canal	BANILA	Location	Pugaro, San Miguel
Date of Sampling	May 31, 1989	Date of Granulometric Analysis	June 6, 1989	Date of Specific Gravity test	June 7, 1989

(1) Specific Gravity

Range of Particle Size	less than 0.074 mm	0.074 mm - 5.54 mm	Greater than 5.54 mm
Specific Gravity		2.84	

(2) Granulometric

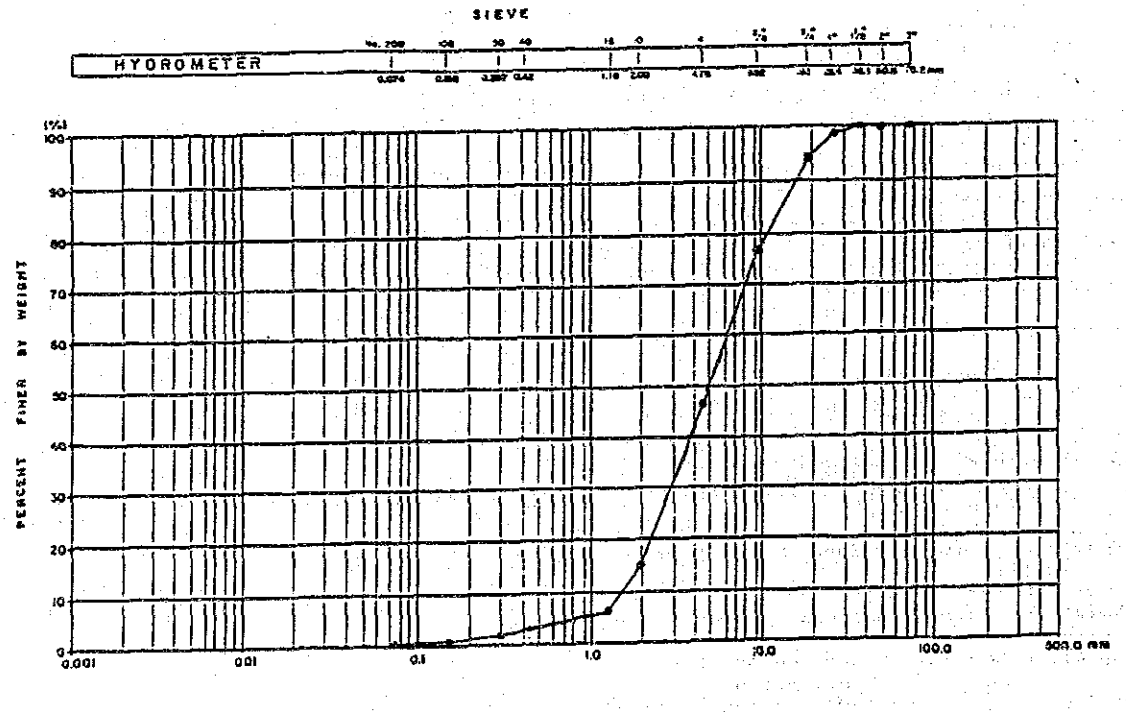
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm)	Percentage of Passing (%)
	76.2	100	2.00	14.8	
	50.8	100	1.18	6.0	
	19.1	100	0.42	2.4	
	25.1	98.6	0.297	1.3	
	19.1	93.6	0.149	.4	
	9.52	77.5	0.074	.2	
	4.76	46.4	-		

Percentage according to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	%	fine sand	0.074 - 0.42 mm	2.2
Cobbles	76.2 ~ 300 mm		silt	0.005 - 0.074 mm	
Gravel	2.0 - 76.2 mm	85.2	clay	0.001 - 0.005 mm	
Coarse Sand	0.42 - 2.0 mm	12.4	colloids	Smaller than 0.001mm	

10% Particle Size D_{10} = 1.6 mm 50% Particle Size D_{50} = .5 mm

90% Particle Size D_{90} = 6.4 mm Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 4.00

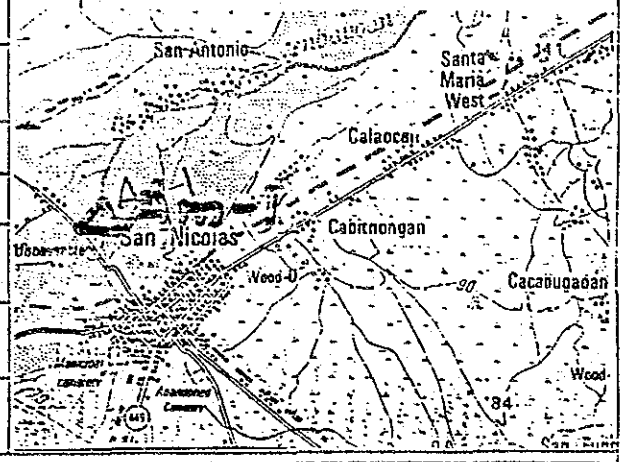


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Am-1	
River / Irrigation Canal	AMEAYAOAN RIVER	
Location	San Nicolas Pangasinan	
Date of Sampling	May 31, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	500 m
	Bed Materials	Cobble, Gravel, Sand
	Others	

Site Location Map (S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	150 mm

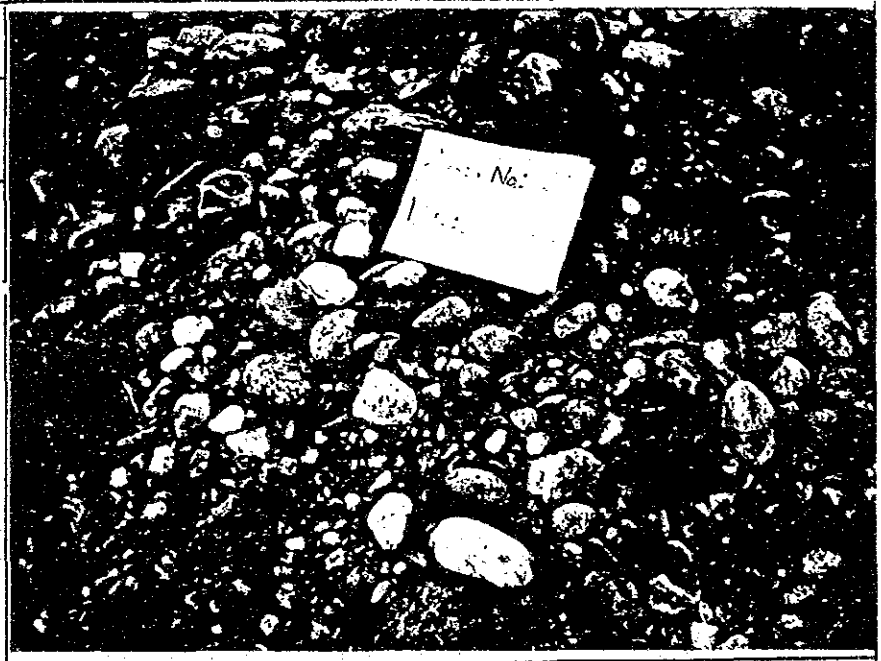
Characteristics Observed by the Eyes

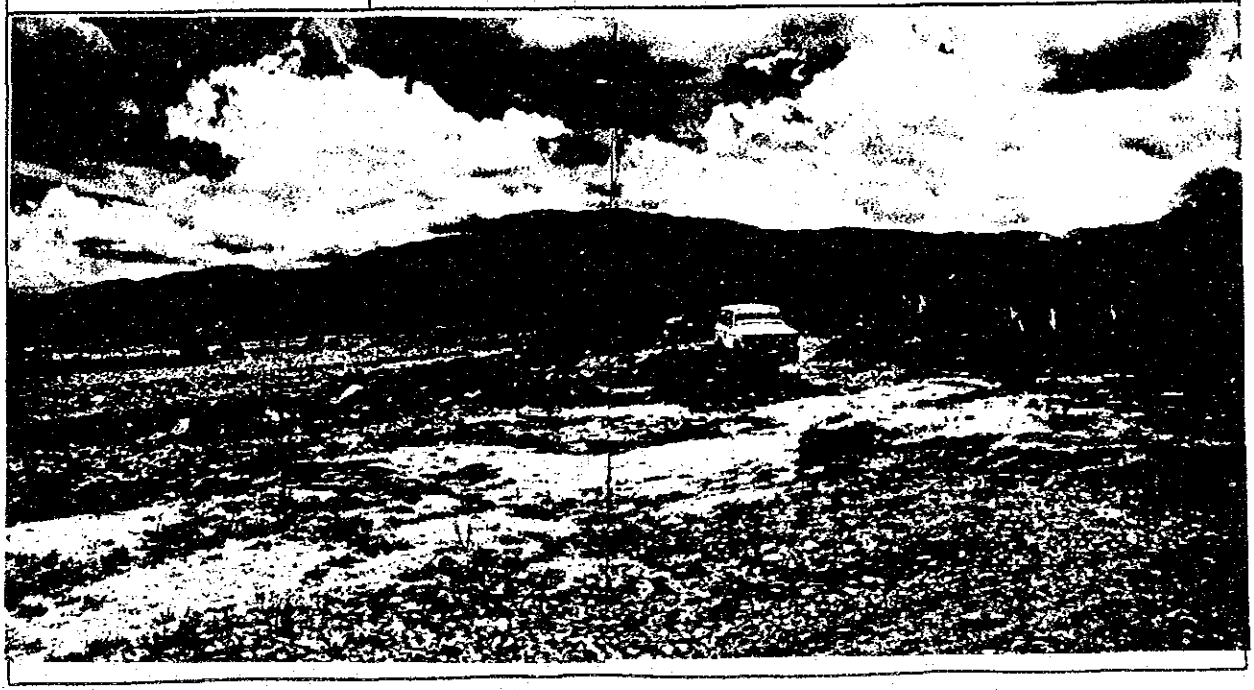
1) Materials : Cobble, Gravel, Sand

2) Shape : Round

3) Colour : Gray

4) Others :





DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Am-1

Date of Test: June 6, 1989

Tested by : J.C. Muya

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = 50.0 kg.

Total Weight of Materials Greater than 100 mm. Wg = 14.1 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
220 mm.	11.0 kg.	64.1 kg.	100 %	270	250	170
105	1.6	53.1	82.8	130	100	70
100	1.5	51.1	80.3	120	90	80

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 21,536 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	1,473	6.8	93.2	72.7	
38.1 (1 1/2")	2,267	10.5	82.7	64.5	
25.4 (1")	2,996	13.9	68.8	53.7	
19.1 (3/4")	1,863	8.6	60.2	46.9	
9.52 (3/8")	3,270	15.2	45.0	35.1	
4.76 (No.4)	2,203	10.2	34.8	27.1	
2.00 (No.10)	2,151	9.9	24.9	19.4	
1.18 (No.16)	1,386	6.4	18.5	14.4	
0.42 (No.40)	2,705	12.6	5.9	4.6	
0.297 (No.50)	818	3.8	2.1	1.6	
0.150(No.100)	332	1.5	0.6	0.5	
0.074(No.200)	40	0.20	0.4	0.3	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Am-1
Date of Test: _____
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	319 gr.	313 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.76	2.67	2.715

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	5,917 gr.	5,980 gr.	-
(2) Weight of Saturated Sample in Water	3,771 gr.	3,817	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.76	2.76	2.76

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample no.	Am-1	River/Canal	AMBAYAOAN	Location	San Nicolas
Date of Sampling	May 31, 1989	Date of Granation Analysis	June 6, 1989	Date of Specific Gravity test	June 7, 1989

(-1 Specific Gravity

Range of Particle Sizes	Less than 0.074 mm.	0.074 mm.~5.54 mm.	Greater than 5.54 mm.
Specific Gravity		2.715	2.76

(-2 Granation

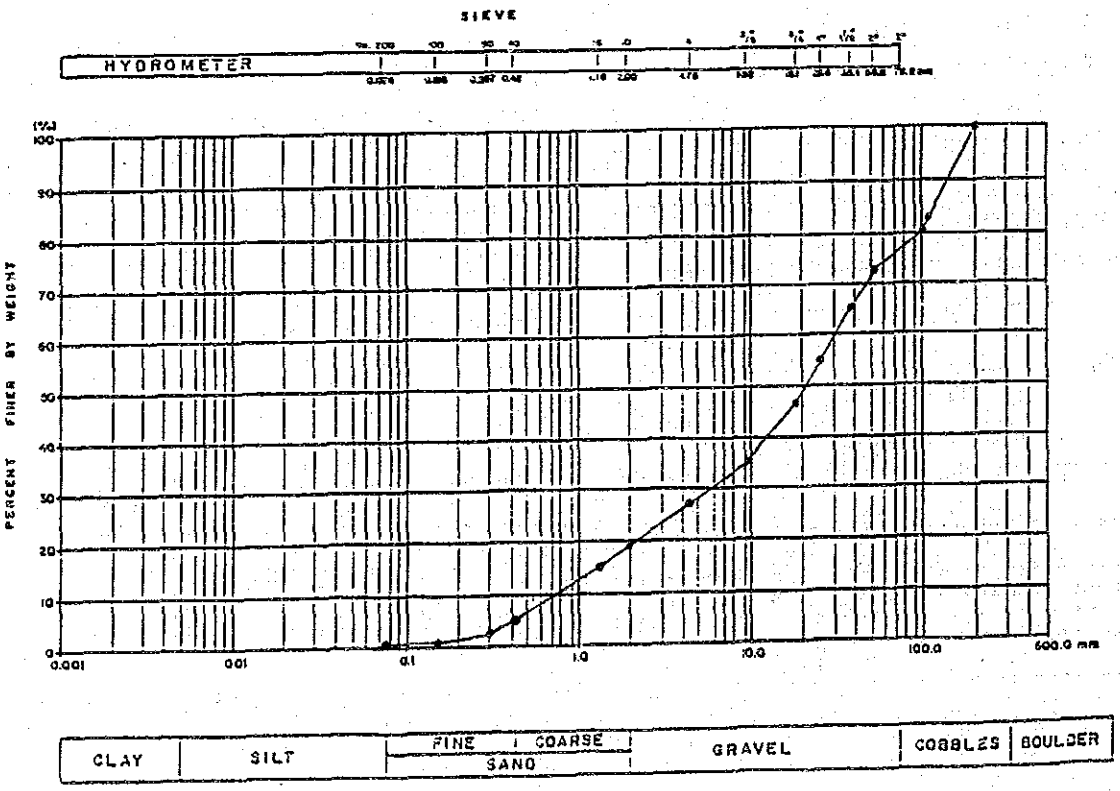
Particle Size	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
#200	100	0.52	-	0.25	19.4		
#105	82.8	0.3	72.7	1/4"	14.4		
#100	80.3	0.1	64.5	1/8"	4.6		
		0.1	53.7	1/16"	1.6		
		0.1	46.9	0.156	0.5		
		0.02	35.1	0.074	0.3		
		0.01	27.1	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	4.3 %
Cobbles	76.2 ~300 mm	22.0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	58.6	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	14.8	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.8 mm. 50% Particle Size D_{50} = 21 mm.

60% Particle Size D_{60} = 30 mm. Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 37.5

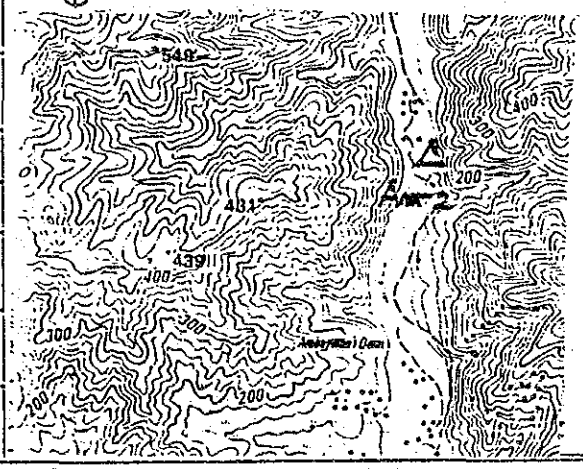


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Am-2	
River / Irrigation Canal	AMBAYAOAN RIVER	
Location	Ambayaoan, Sn.Nicolas Pangasinan	
Date of Sampling	May 31, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	50 m
	Bed Materials	Cobbles, Gravel Sand
	Others	

Site Location Map
(S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	150 mm

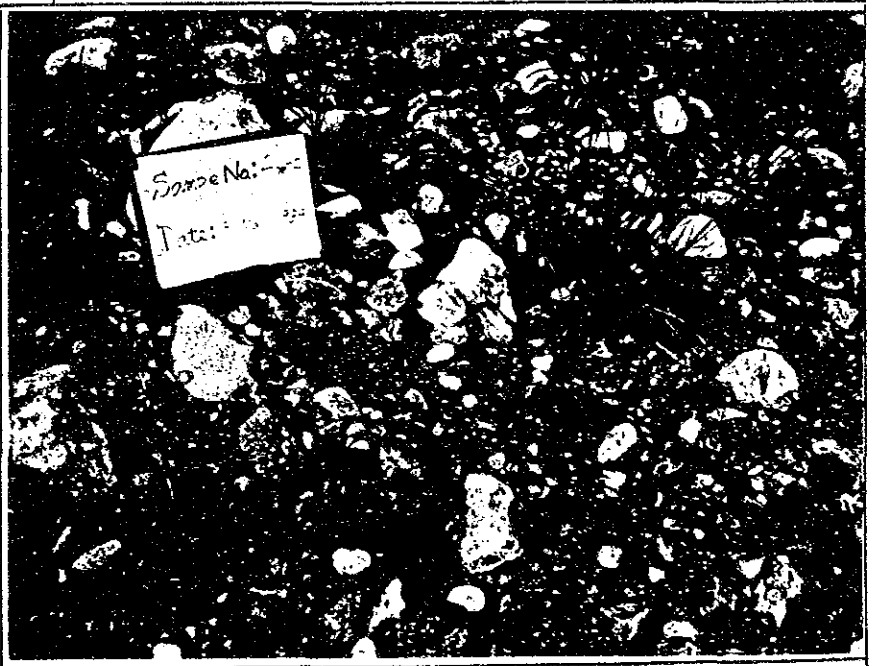
Characteristics Observed by the Eyes

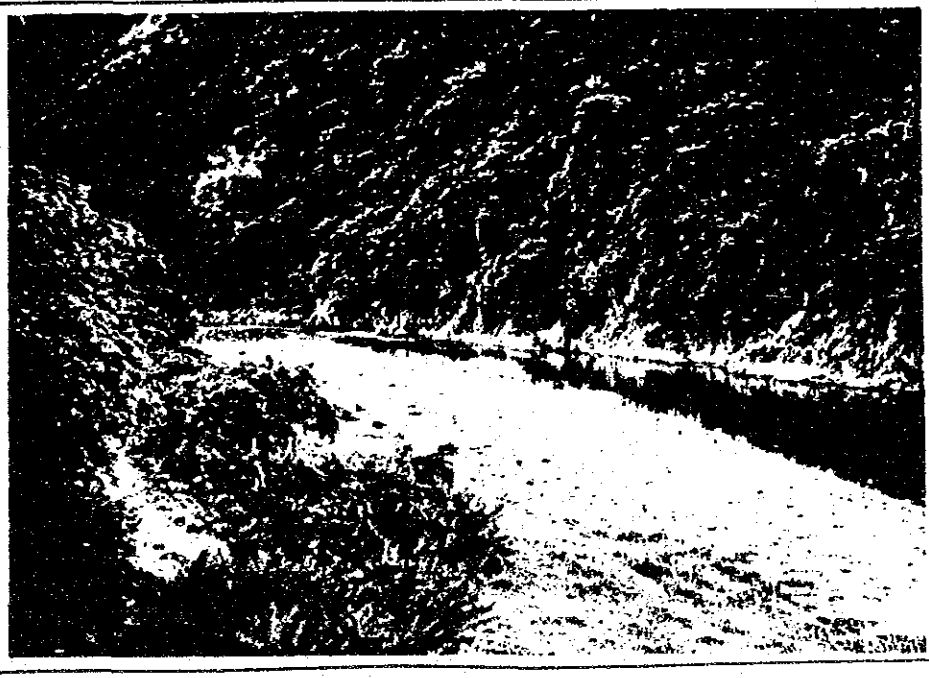
1) Materials : Cobbles, Gravel

2) Shape : Round

3) Colour : Gray

4) Others :





DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Am-2

Date of Test: June 6, 1989

Tested by : J.C. Muya

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = 50 kg.

Total Weight of Materials Greater than 100 mm. Wg = 1.5 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
100 mm.	1.5 kg.	51.5 kg.	100 %	140	80	70

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 24,667 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	5254	21.29	78.71	76.42	
38.1 (1 1/2")	2537	10.28	68.43	66.43	
25.4 (1")	3055	12.38	56.05	54.42	
19.1 (3/4")	1982	8.03	48.02	46.62	
9.52 (3/8")	2796	11.33	36.69	35.62	
4.76 (No.4)	1832	7.42	29.27	28.42	
2.00 (No.10)	2132	8.64	20.63	20.03	
1.18 (No.16)	2118	8.58	12.05	11.70	
0.42 (No.40)	2395	9.71	2.34	2.27	
0.297 (No.50)	260	1.05	1.29	.25	
0.150(No.100)	195	0.79	0.50	0.24	
0.074(No.200)	75	0.30	0.20	0.19	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Am-2
Date of Test: June 7, 1984
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	315 gr.	312 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.70	2.66	2.68

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	7687 gr.	7839 gr.	-
(2) Weight of Saturated Sample in Water	4870 gr.	4981	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.72	2.74	2.73

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	Am-2	River/Canal	Ambayaoan	Location	Ambayaoan, Sn. Nicolas
Date of Sampling	May 31, 1989	Date of Granulation Analysis	June 6 1989	Date of Specific Gravity test	June 7, 1989

(-1 Specific Gravity

Name of Particle Size	Less than 0.074 mm	0.074 mm - 5.54 mm	Greater than 5.54 mm
Specific Gravity		2.68	2.73

(-2 Granulation

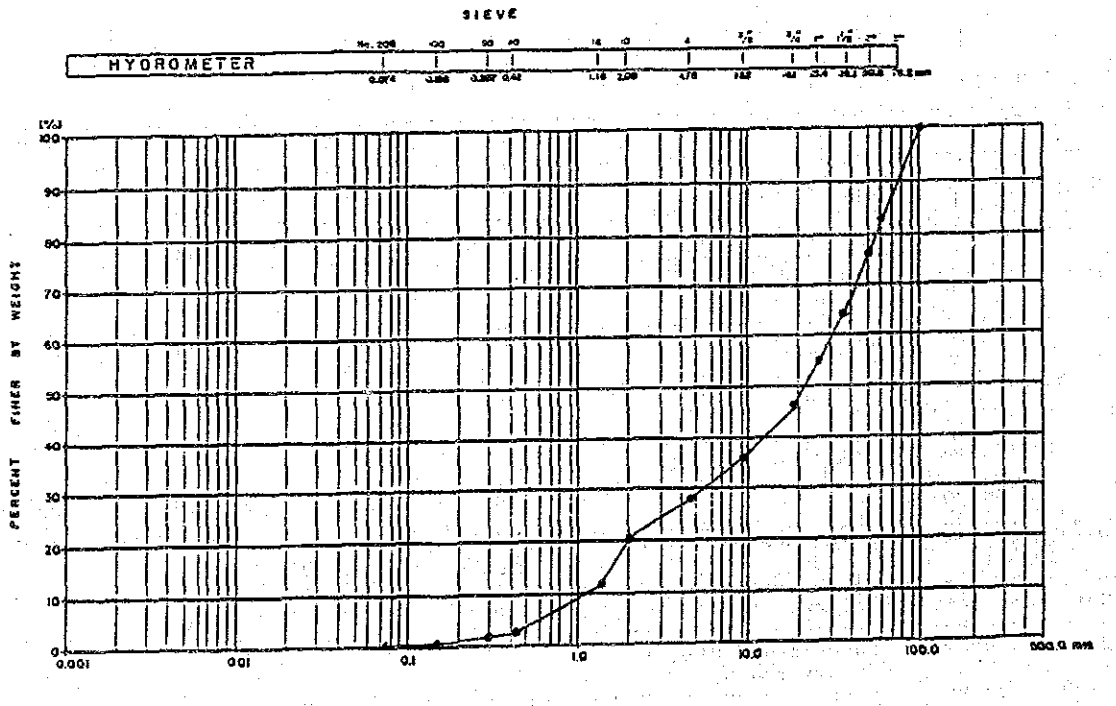
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm)	Percentage of Passing (%)
100	100	76.2		2.00	20.03		
		38.1	76.42	1.19	11.70		
		19.1	66.43	0.42	2.27		
		9.51	54.42	0.297	1.25		
		4.76	46.62	0.149	0.24		
		2.38	35.62	0.074	0.19		
		1.19	28.42	-			

Percentage according to Classification of Materials

Classification	Name of Particle Size	Percentage	Classification	Name of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm	2.1 %
Cobbles	76.2 ~ 300 mm	12.0	silt	0.005 - 0.074 mm	
Gravel	2.0 - 76.2 mm	68.0	clay	0.001 - 0.005 mm	
Coarse Sand	0.42 - 2.0 mm	17.8	colloids	Smaller than 0.001 mm	

10% Particle Size D_{10} = 1.1 mm. 50% Particle Size D_{50} = 21 mm.

60% Particle Size D_{60} = 30 mm. Uniformity Coefficient $C_c = D_{60}/D_{10}$ = 27.3

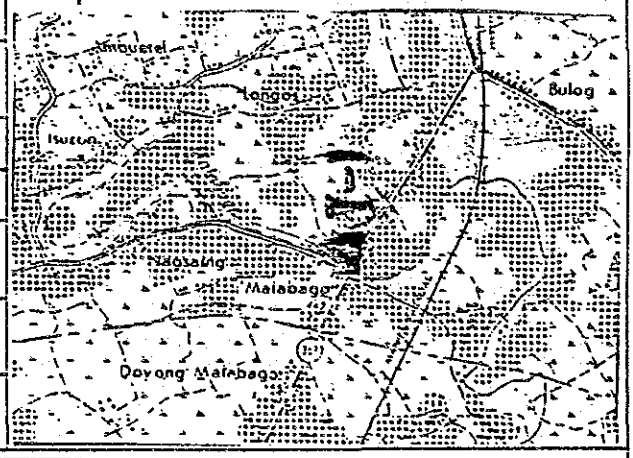


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	I-1		
River / Irrigation Canal	INGLATERA RIVER		
Location	Malabago, Calasiao, Pangasinan		
Date of Sampling	June 1, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	40 m	
	Bed Materials	Coarse Sand	
	Others		

Site Location Map
(S=1/50,000)



Discription of Sample

Average Size of Armour Coats: mm

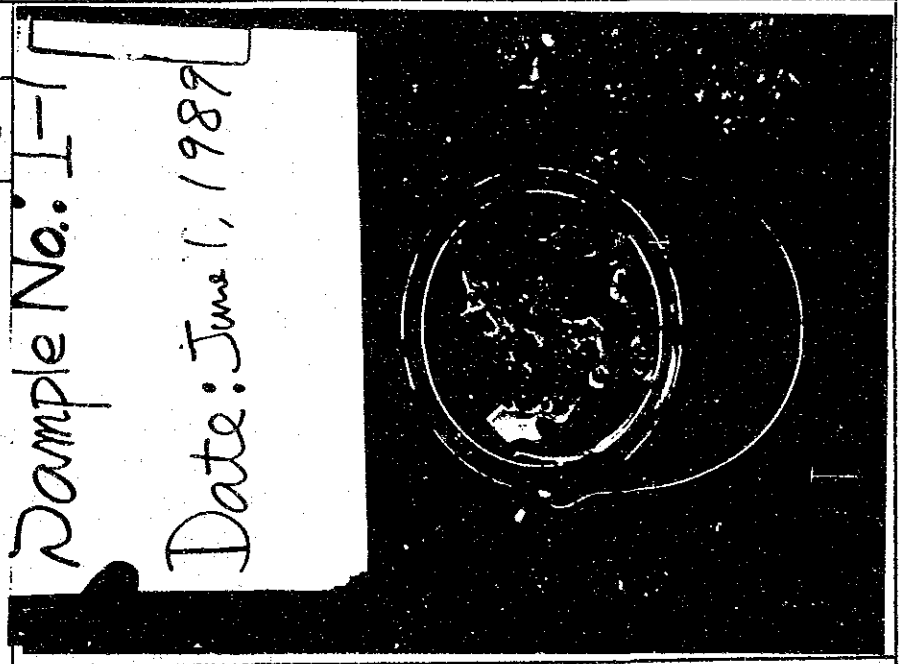
Characteristics Observed by the Eyes

1) Materials : Coarse Sand

2) Shape :

3) Colour : Gray

4) Others :



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : I-1

Date of Test: June 9, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 1000 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	0	0	100	100	
19.1 (3/4")	0	0	100	100	
9.52 (3/8")	0	0	100	100	
4.76 (No.4)	0	0	100	100	
2.00 (No.10)	8.5	.85	99.15	99.15	
1.18 (No.16)	43.0	4.3	94.85	94.85	
0.42 (No.40)	837.0	83.7	11.15	11.15	
0.297 (No.50)	77.5	7.75	3.4	3.4	
0.150(No.100)	27.9	2.79	.61	.61	
0.074(No.200)	3.0	.30	.31	.31	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : I-1
Date of Test: June 10, 1989
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1)	Weight of Bottle Filled with Water	gr.
(2)	Weight of Oven-dry Particles	gr.
(3)	Weight of Bottle Filled with Particles and Water	gr.
(4)	Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	313 gr.	315 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.67	2.70	2.685

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	gr.	gr.	-
(2) Weight of Saturated Sample in Water	gr.		-
(3) Specific Gravity (Saturated Surface-dry Basis)			

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	: I-1	River/Canal	INGALERA	Location	Malabago, Nagsaing
Date of Sampling	: June 1, 1989	Date of Granulometric Analysis	June 9, 1989	Date of Specific Gravity test	: June 10, 1989

1-1 Specific Gravity

Range of Particle Size	Less than 0.074 mm	0.074 mm.-4.76 mm.	Greater than 4.76 mm.
Specific Gravity		2.685	

1-2 Granulation

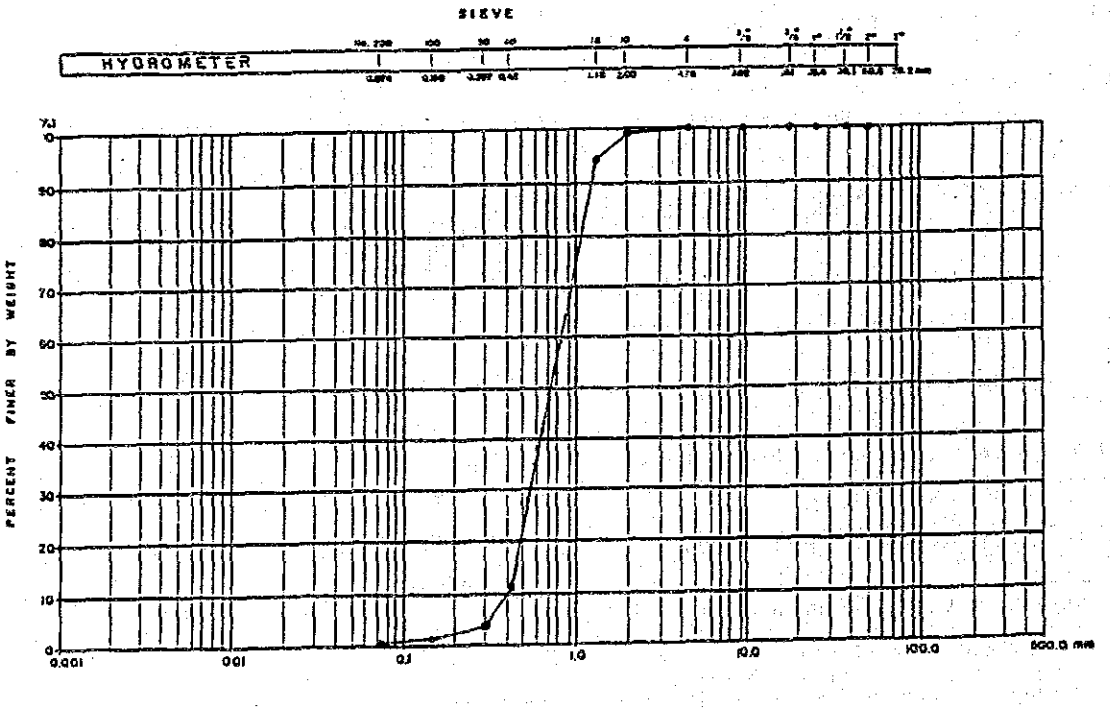
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2		2.00	99.15		
Lime Mud		38.1	100	1.18	94.85	Coarse Silt	
		19.1	100	0.42	11.15		
Clay		9.52	100	0.297	3.4	Fine Silt	
		4.76	100	0.149	61		
		2.00	100	0.074	.31		
		1.19	100	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	10.84 %
Cobbles	76.2 ~ 300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	0.85	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	88.0	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.4 mm. 50% Particle Size D_{50} = 0.7 mm.

60% Particle Size D_{60} = 0.8 mm. Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 2.03

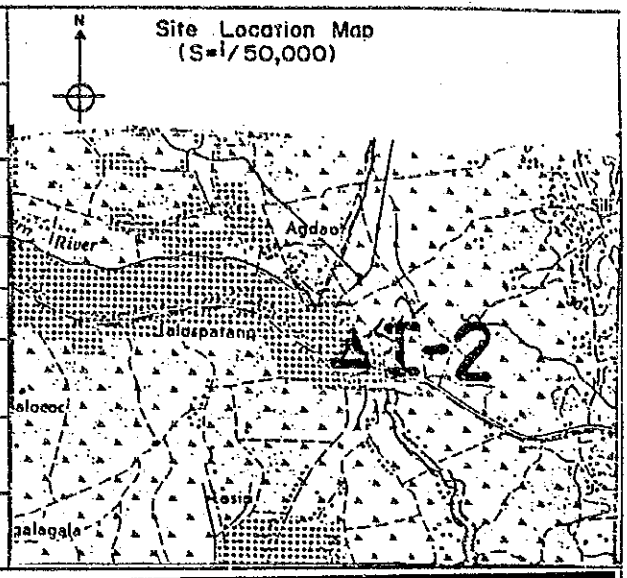


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	I-2	
River / Irrigation Canal	INGLATERA RIVER	
Location	Talospatang, Malasiqui Pangasinan	
Date of Sampling	June 2, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	30 m
	Bed Materials	Sand
	Others	

Site Location Map (S=1/50,000)



Discription of Sample

Average Size of Armour Coats	mm

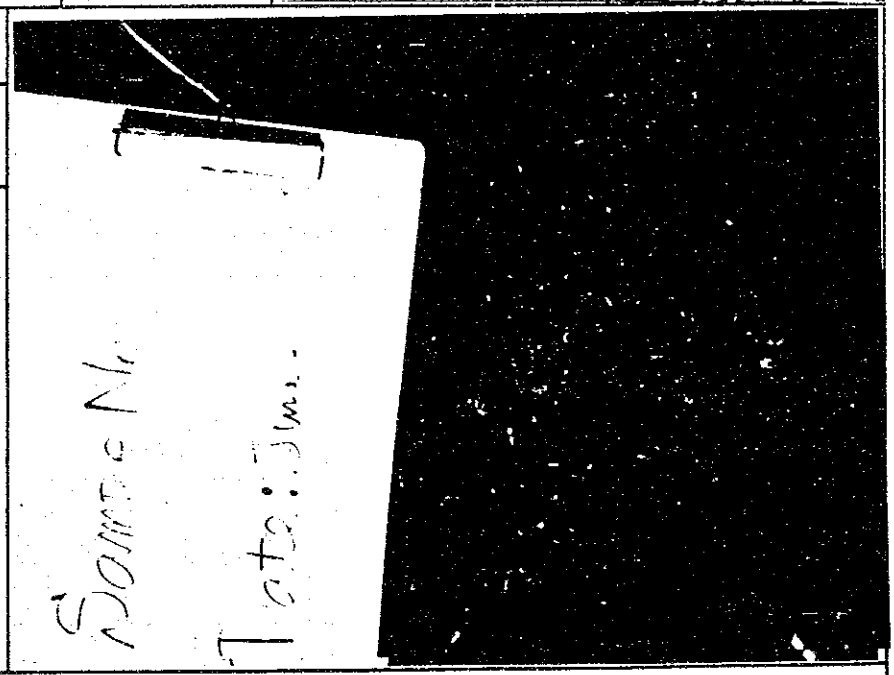
Characteristics Observed by the Eyes

1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : T-2

Date of Test: June 5, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____ kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 1,000 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	0	0	100	100	
19.1 (3/4")	0	0	100	100	
9.52 (3/8")	0	0	100	100	
4.76 (No.4)	0	0	100	100	
2.00 (No.10)	101	10.1	89.9	89.9	
1.18 (No.16)	107	10.7	79.2	79.2	
0.42 (No.40)	518	51.8	27.4	27.4	
0.297 (No.50)	113	11.3	16.1	16.1	
0.150(No.100)	118	11.8	4.3	4.3	
0.074(No.200)	30.7	3.07	1.23	1.23	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : T-2
Date of Test: June 6, 1989
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	312 gr.	313 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.66	2.67	2.665

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	gr.	gr.	-
(2) Weight of Saturated Sample in Water	gr.		-
(3) Specific Gravity (Saturated Surface-dry Basis)			

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample no.	T-2	River/Canal	INGALERA	Location	Talos Patang, Malasique
Date of Sampling	June 2 1989	Date of Creation Analysis	June 5 1989	Date of Specific Gravity test	June 6, 1989

1-1 Specific Gravity

Name of Particle Sizeless than 0.074	19.074 mm.-5.51 mm.	Greater than 9.51 mm.
Specific Gravity	2.665	

1-2 Gradation

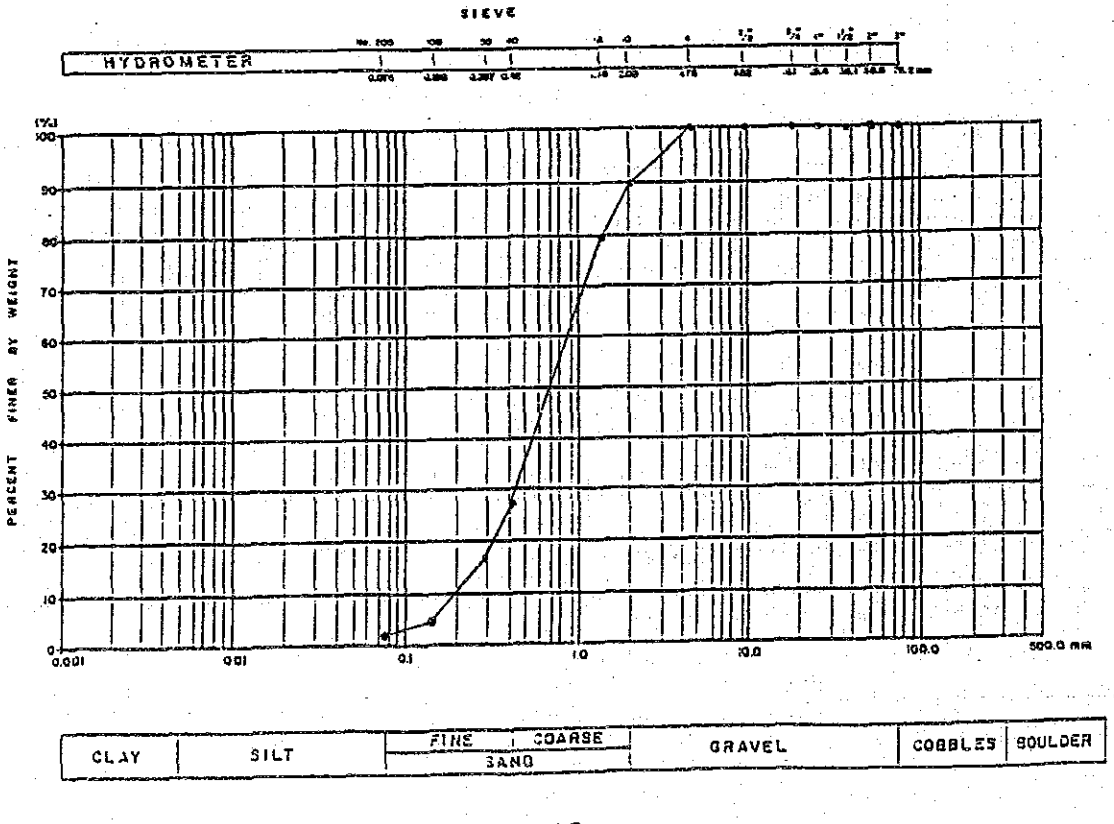
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		7.62	100	2.00	89.9		
		38.0	100	1.18	79.2		
		32.1	100	0.42	27.4		
		25.4	100	0.250	16.1		
		19.1	100	0.150	4.3		
		9.52	100	0.074	1.23		
		4.76	100	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	%	fine sand	0.074 - 0.42 mm.	26.17 %
Cobbles	76.2 ~ 300 mm		silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	10.1	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	62.5	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.2 mm. 50% Particle Size D_{50} = 0.70 mm.

60% Particle Size D_{60} = 0.88 Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 4.40

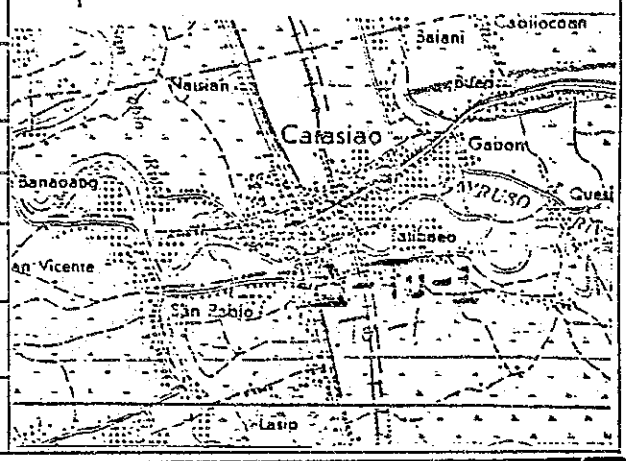


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Tu-1	
River / Irrigation Canal	MARUSAY RIVER (Tuboy)	
Location	Calasiao, Pangasinan	
Date of Sampling	June 1, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	50 m
	Bed Materials	Coarse Sand
	Others	

Site Location Map (S=1/50,000)



Discription of Sample

Average Size of Armour Coats: mm

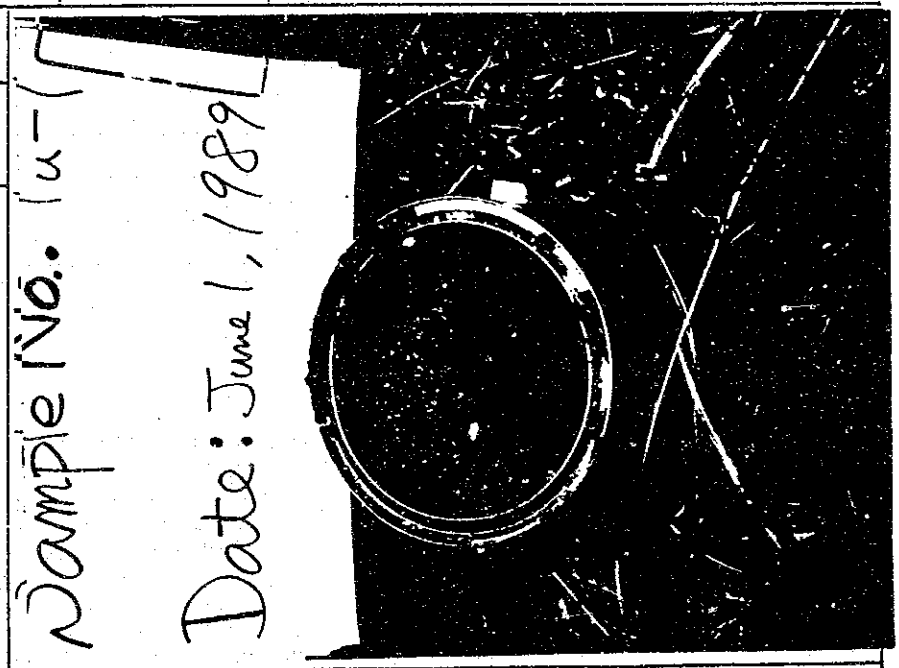
Characteristics Observed by the Eyes

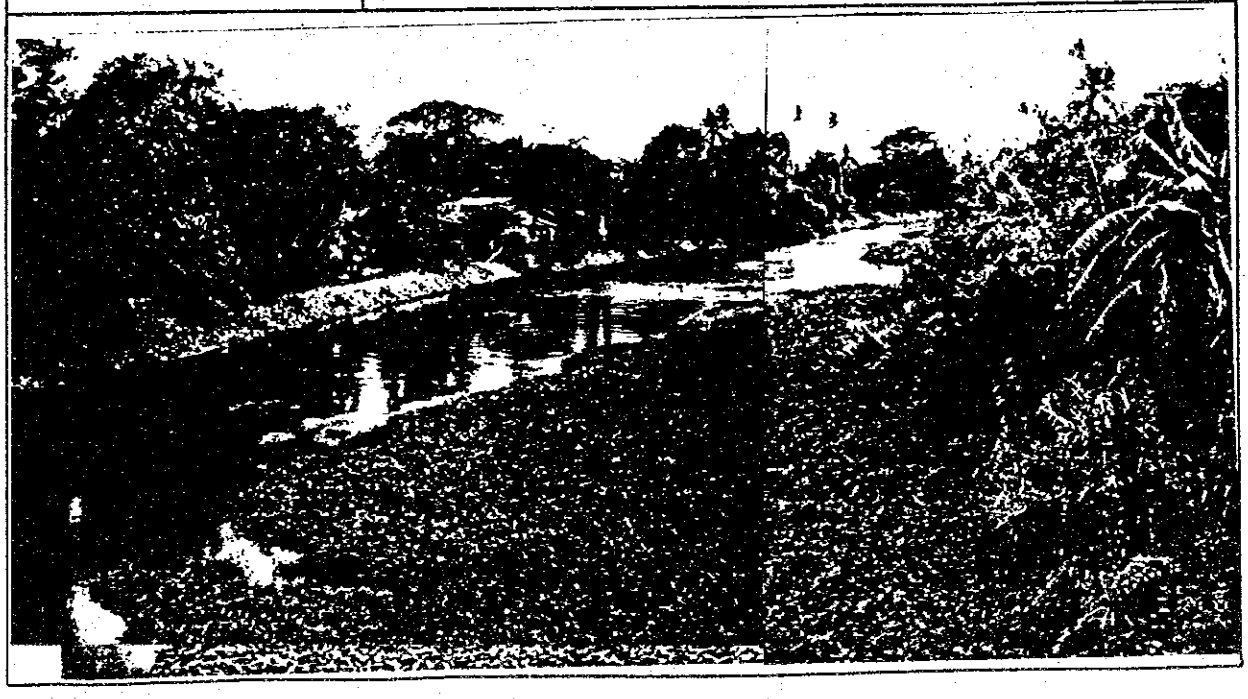
1) Materials : Coarse Sand

2) Shape :

3) Colour : Gray

4) Others :





DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Tu-1

Date of Test: June 9, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____ kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 1,000 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	0	0	100	100	
19.1 (3/4")	0	0	100	100	
9.52 (3/8")	0	0	100	100	
4.76 (No.4)	0	0	100	100	
2.00 (No.10)	3.7	.37	99.63	99.63	
1.18 (No.16)	14.5	1.45	98.18	98.18	
0.42 (No.40)	686.0	68.6	29.58	29.58	
0.297 (No.50)	202.3	20.23	9.35	9.35	
0.150(No.100)	83.0	8.3	1.05	1.05	
0.074(No.200)	4.3	.43	.62	.62	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Tu-1
Date of Test: June 10, 1989
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	313 gr.	314 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.67	2.69	268

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	gr.	gr.	-
(2) Weight of Saturated Sample in Water	gr.		-
(3) Specific Gravity (Saturated Surface-dry Basis)			

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	Tu-1	River/Canal	TAYRUSO	Location	Calasiano
Date of Sampling	June 1, 1989	Date of Grading Analysis	June 9, 1989	Date of Specific Gravity test	June 10, 1989

1-1 Specific Gravity

Range of Particle Sizes	Greater than 0.074 mm.	0.074 mm.~2.36 mm.	Greater than 2.36 mm.
Specific Gravity		2.68	

1-2 Gradation

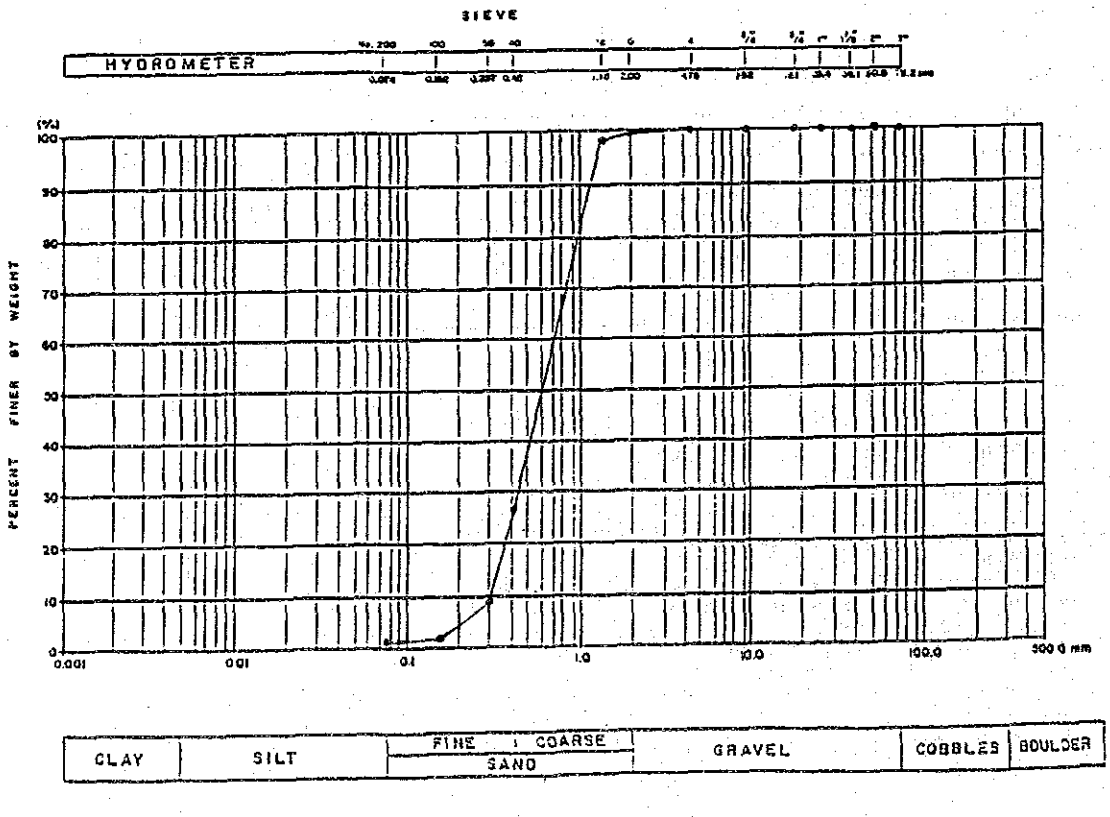
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		7.52	100	2.00	99.63		
		38.8	100	1.18	98.18		
		38.1	100	0.42	25.58		
		25.4	100	0.297	9.35		
		12.7	100	0.149	1.05		
		9.52	100	0.074	0.62		
		4.76	100				

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 ~ 0.42 mm.	24.96 %
Cobbles	76.2 ~ 300 mm	0	silt	0.005 ~ 0.074 mm.	
Gravel	2.0 ~ 76.2 mm	0.37	clay	0.001 ~ 0.005 mm.	
Coarse Sand	0.42 ~ 2.0 mm.	74.05	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.3 mm. 50% Particle Size D_{50} = 0.60 mm.

60% Particle Size D_{60} = 0.72 Uniformity Coefficient $C_c = D_{60}/D_{10}$ = 2.40

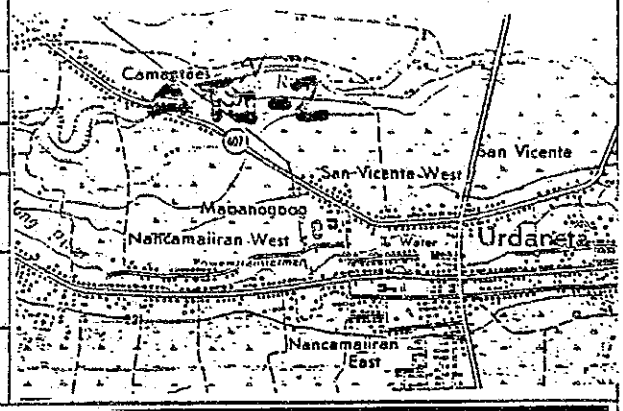


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Tu-2	
River / Irrigation Canal	MITURA RIVER (Turboy)	
Location	Camantiles, Urdaneta Pangasinan	
Date of Sampling	June 2, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	30 m
	Bed Materials	Sand
	Others	

Site Location Map
(S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	mm

Characteristics by the Eyes — Observed

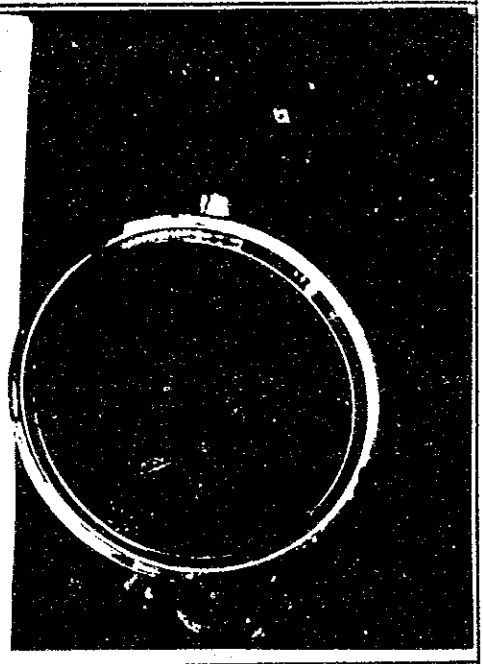
1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :

Sample No.: Tu-2
Date: June 2, 1989



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Tu-2

Date of Test: June 9, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____ kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.)		
				Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 1,000 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr	%	%	%	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	0	0	100	100	
19.1 (3/4")	0	0	100	100	
9.52 (3/8")	0	0	100	100	
4.76 (No.4)	0	0	100	100	
2.00 (No.10)	17.0	1.7	98.3	98.3	
1.18 (No.16)	25.6	2.56	95.74	95.74	
0.42 (No.40)	526.0	52.60	43.14	43.14	
0.297 (No.50)	199.2	19.92	23.22	23.22	
0.150(No.100)	183.7	18.37	4.85	4.85	
0.074(No.200)	27.2	2.72	2.13	2.13	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Tu-2
Date of Test: June 10, 1969
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1)	Weight of Bottle Filled with Water	gr.
(2)	Weight of Oven-dry Particles	gr.
(3)	Weight of Bottle Filled with Particles and Water	gr.
(4)	Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	311 gr.	312 gr.	-
(2) Volume of Flask	500 ml.	ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.63	2.66	2.645

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	gr.	gr.	-
(2) Weight of Saturated Sample in Water	gr.		-
(3) Specific Gravity (Saturated Surface-dry Basis)			

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

I. REPORT

Sample No.	:Tu-2	River/Canal	MITURA	Location	:Camantiles
Date of Sampling	:June 2, 1989	Date of Granulometric Analysis	June 9, 1989	Date of Specific Gravity test	: June 10, 1989

I-1 Specific Gravity

Range of Particle Size	Less than 0.074 mm	0.074 mm.~2.54 mm.	Greater than 2.54 mm.
Specific Gravity		2.645	

I-2 Granulometric Analysis

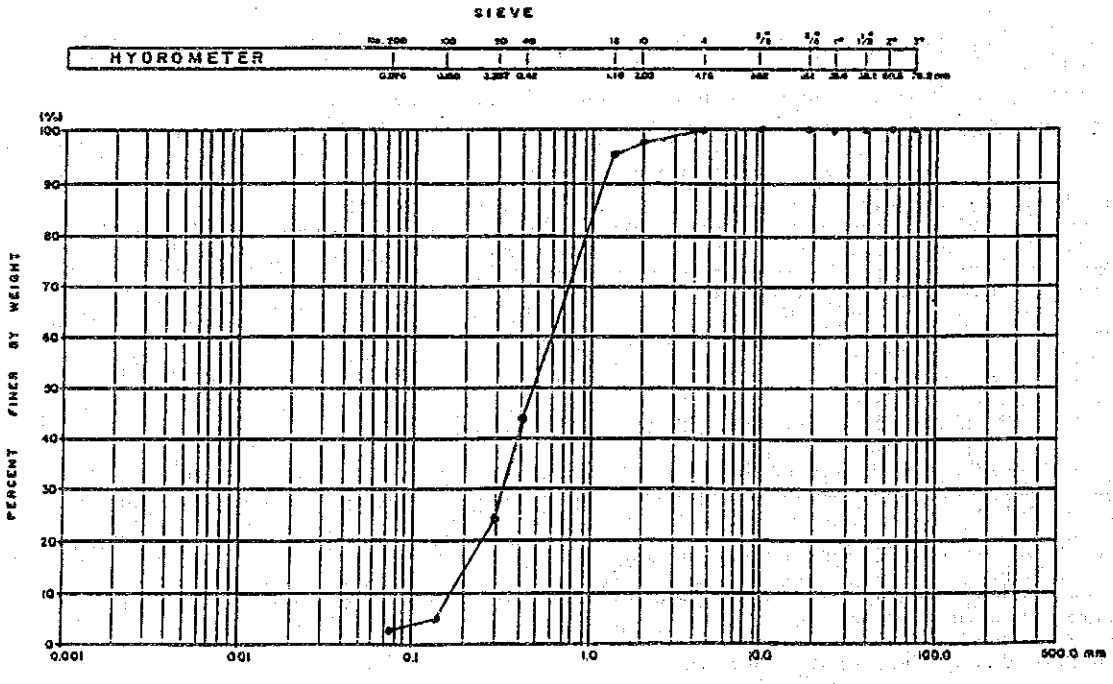
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2		2.00	98.3		
50.8	100	50.8	100	1.18	95.74	#50	
38.1	100	38.1	100	0.42	43.14	#100	
25.4	100	25.4	100	0.297	23.22	#200	
19.1	100	19.1	100	0.149	4.85		
9.52	100	9.52	100	0.074	2.13		
		4.76	100	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	41.01 %
Cobbles	76.2 ~300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	1.7	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	55.16	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.2 mm. 50% Particle Size D_{50} = 0.5 mm.

60% Particle Size D_{60} = .61 mm. Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 3.05



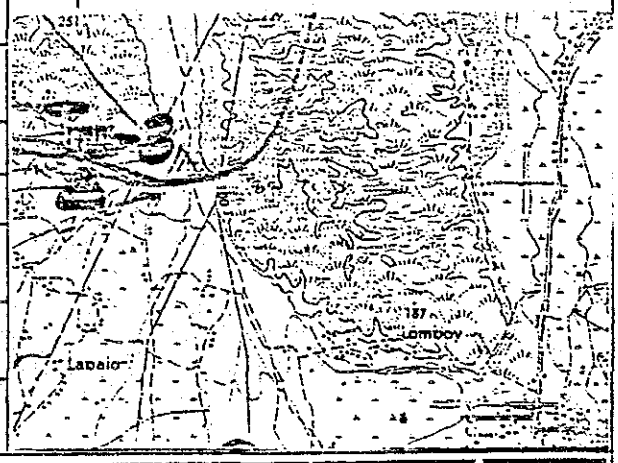
CLAY	SILT	FINE SAND	COARSE SAND	GRAVEL	COBBLES	BOULDER

DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	TU-3	
River / Irrigation Canal	TUBOY RIVER	
Location	Lapalo, San Manuel Pangasinan	
Date of Sampling	June 2, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	200 m
	Bed Materials	Cobble, Gravel
	Others	

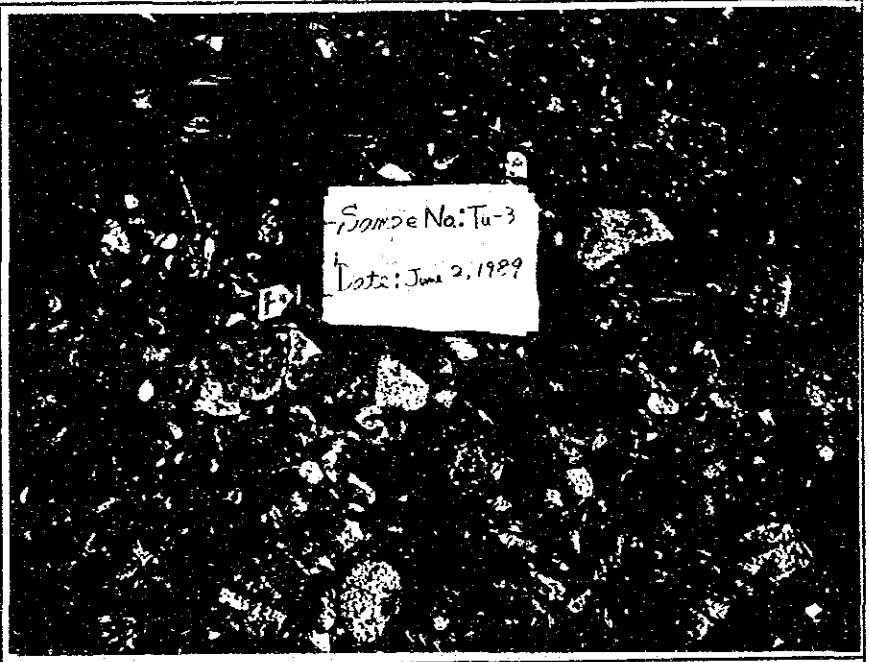
Site Location Map (S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	100 mm

Characteristics Observed by the Eyes

1) Materials : Cobble, Gravel, Sand
2) Shape : Round
3) Colour : Gray
4) Others :



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Tu-3

Date of Test: June 16, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 22,200 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	2739	12.34	87.66	87.66	
38.1 (1 1/2")	922	4.15	83.51	83.51	
25.4 (1")	2698	12.15	71.36	71.36	
19.1 (3/4")	1350	6.08	65.28	65.28	
9.52 (3/8")	2837	12.78	52.50	52.50	
4.76 (No.4)	1609	7.25	45.25	45.25	
2.00 (No.10)	1870	8.42	36.83	36.83	
1.18 (No.16)	1400	6.30	30.53	30.53	
0.42 (No.40)	4408	19.86	10.67	10.67	
0.297 (No.50)	1783	8.03	2.64	2.64	
0.150(No.100)	402	1.81	.83	.83	
0.074(No.200)	106	.48	.35	.35	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Tu-3
Date of Test: June 17, 1969
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	320 gr.	317 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.78	2.73	2.755

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	5650 gr.	4873 gr.	-
(2) Weight of Saturated Sample in Water	3528 gr.	3038	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.66	2.65	2.655

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	Tu-3	River/Canal	MUBAY	Location	Lapalo, Sn. Manuel
Date of Sampling	June 2, 1989	Date of Granulometric Analysis	June 16, 1989	Date of Specific Gravity test	June 17, 1989

1-1 Specific Gravity

Range of Particle Sizes	less than 0.074 mm.	0.074 mm. ~ 4.76 mm.	Greater than 4.76 mm.
Specific Gravity		2.755	2.655

1-2 Granulation

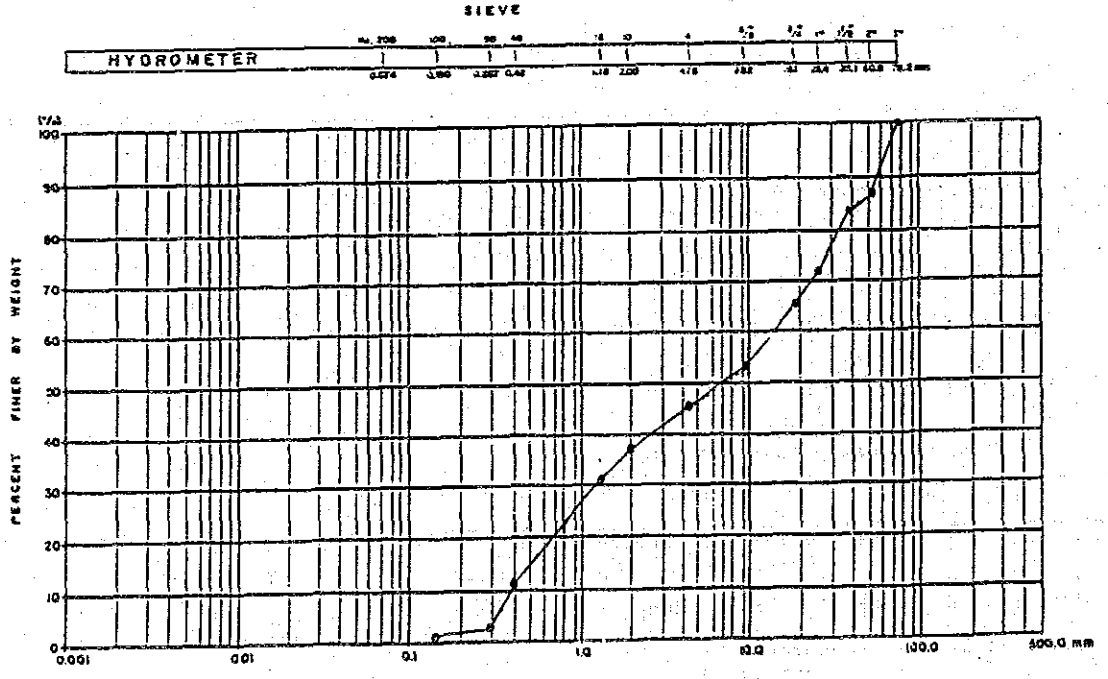
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		7.52		2.00	36.83		
		5.66	87.66	1.18	30.53		
		4.76	83.51	0.42	10.67		
		2.54	71.36	0.250	2.64		
		2.38	65.28	0.150	.83		
		1.52	52.50	0.074			
		0.78	45.25	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 ~ 0.42 mm.	10.32 %
Cobbles	76.2 ~ 300 mm	5.0	silt	0.005 ~ 0.074 mm.	
Gravel	2.0 ~ 76.2 mm	58.17	clay	0.001 ~ 0.005 mm.	
Course Sand	0.42 ~ 2.0 mm.	26.16	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = .40 mm. 50% Particle Size D_{50} = 8.0 mm.

60% Particle Size D_{60} 30.5 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 76.25

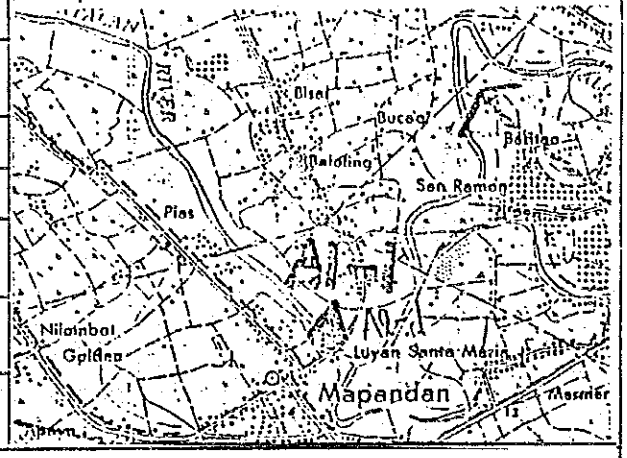


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A1-1	
River / Irrigation Canal	PATALAN RIVER (Aloragat)	
Location	Mapandan Pangasinan	
Date of Sampling	June 1, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	100 m
	Bed Materials	Sand
	Others	

Site Location Map (S=1/50,000)



Discription of Sample

Average Size of Armour Coats	mm

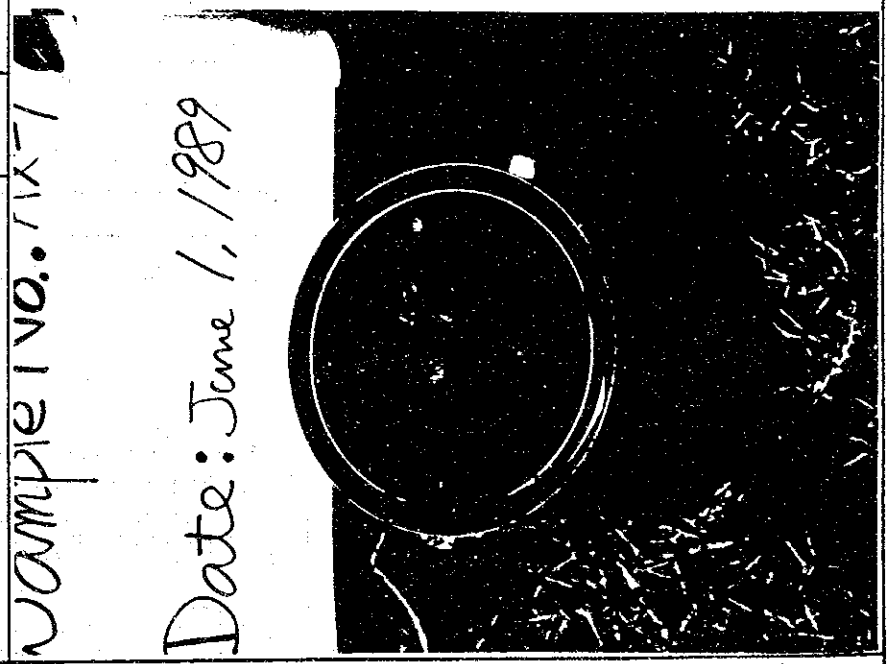
Characteristics Observed by the Eyes

1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : A1-1

Date of Test: June 7, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 1,000 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	0	0	100	10 0	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	0	0	100	100	
19.1 (3/4")	0	0	100	100	
9.52 (3/8")	0	0	100	100	
4.76 (No.4)	0	0	100	100	
2.00 (No.10)	0.2	.02	99.98	99.98	
1.18 (No.16)	2.4	.24	99.74	99.74	
0.42 (No.40)	427.0	42.70	57.04	57.04	
0.297 (No.50)	284.60	28.46	28.58	28.58	
0.150(No.100)	268.4	26.84	1.74	1.74	
0.074(No.200)	12.5	1.25	.49	49	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : A1-1
Date of Test: June 8, 1969
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1)	Weight of Bottle Filled with Water	gr.
(2)	Weight of Oven-dry Particles	gr.
(3)	Weight of Bottle Filled with Particles and Water	gr.
(4)	Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	313 gr.	312 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.67	2.66	2.665

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	gr.	gr.	-
(2) Weight of Saturated Sample in Water	gr.		-
(3) Specific Gravity (Saturated Surface-dry Basis)			

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No. AL-1	River/Canal Patalan	Location Mapandan	
Date of Sampling June 1, 1989	Date of Creation of Analysis June 7'89	Date of Specific Gravity test	JUNE 8,1989

(-1 Specific Gravity

Range of Particle Sizes	Less than 0.074 mm.	0.074 mm.-2.54 mm.	Greater than 2.54 mm.
Specific Gravity		2.665	

(-2 Gradation

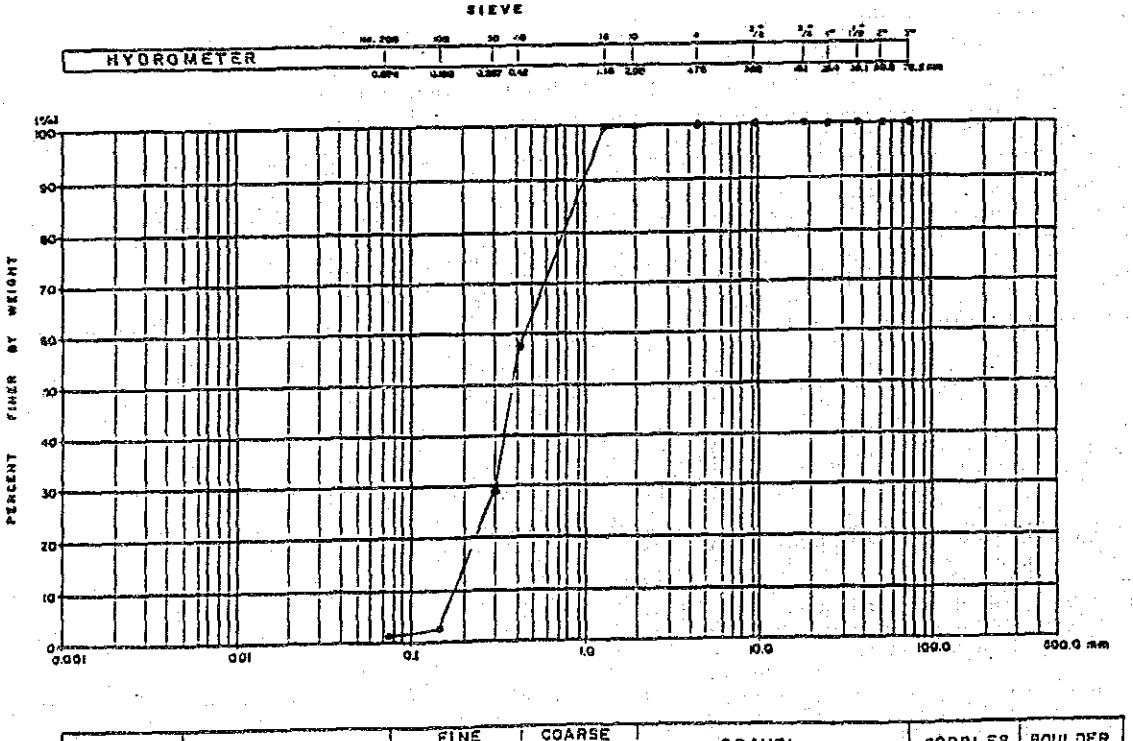
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2	100	2.00	99.98		
		38.1	100	1.18	99.97		
		19.1	100	0.42	57.04		
		12.7	100	0.297	28.58		
		9.52	100	0.149	1.74		
		4.76	100	0.074	0.49		

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	56.59 %
Cobbles	76.2 ~300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	0.02	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	42.94	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} 0.19 mm. 50% Particle Size D_{50} 0.4 mm.

60% Particle Size D_{60} 0.5 mm. Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 2.63

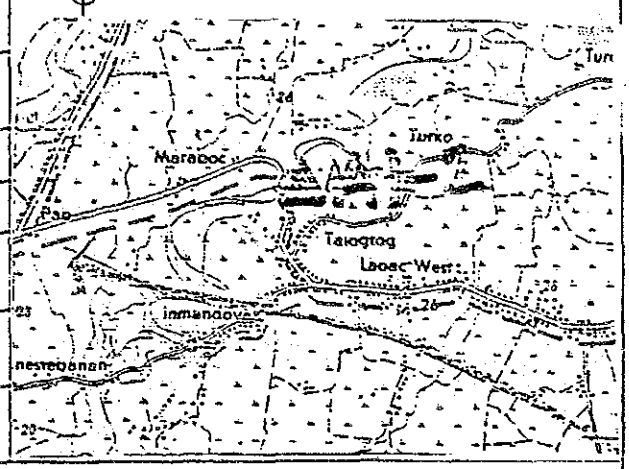


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A1-2		
River / Irrigation Canal	INMANDUYAN RIVER (Aloragat)		
Location	Talogtog, Laoac, Pangasinan		
Date of Sampling	June 2, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	80	m
	Bed Materials	Gravel	
	Others		

Site Location Map (Scale 1/50,000)



Discription of Sample

Average Size of Armour Coats	mm

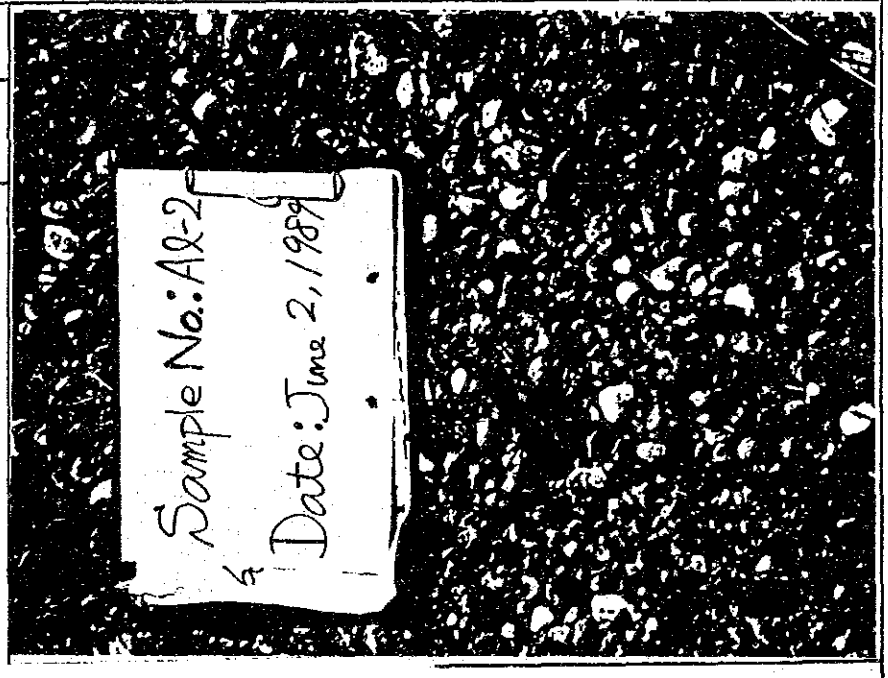
Characteristics Observed by the Eyes

1) Materials : Gravel, Sand

2) Shape :

3) Colour : Gray

4) Others :



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : A1-2

Date of Test: June 16, 1980

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 2,500 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	274	10.96	89.94	89.04	
19.1 (3/4")	223	8.92	80.12	80.12	
9.52 (3/8")	520	20.8	59.32	59.32	
4.76 (No.4)	404	16.16	43.16	43.16	
2.00 (No.10)	317	12.68	30.48	30.48	
1.18 (No.16)	149	5.96	24.52	24.52	
0.42 (No.40)	332	13.28	11.24	11.24	
0.297 (No.50)	106	4.24	7.0	7.0	
0.150(No.100)	100	4.0	3.0	3.0	
0.074(No.200)	73	2.92	.08	.08	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : A1-2
Date of Test: June 17, 1989
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	317 gr.	316 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.73	2.72	2725

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	1078 gr.	1083 gr.	-
(2) Weight of Saturated Sample in Water	692 gr.	697	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.79	2.80	2.795

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	A1-2	River/Canal	INMANDUYAN	Location	Talogtog, Laoac
Date of Sampling	June 2, 1989	Date of Gradation Analysis	June 16, 1989	Date of Specific Gravity test	June 17, 1989

1-1 Specific Gravity

Range of Particle Size	less than 0.074	0.074 mm.-4.76 mm.	Greater than 4.76 mm.
Specific Gravity		2.725	2.795

1-2 Gradation

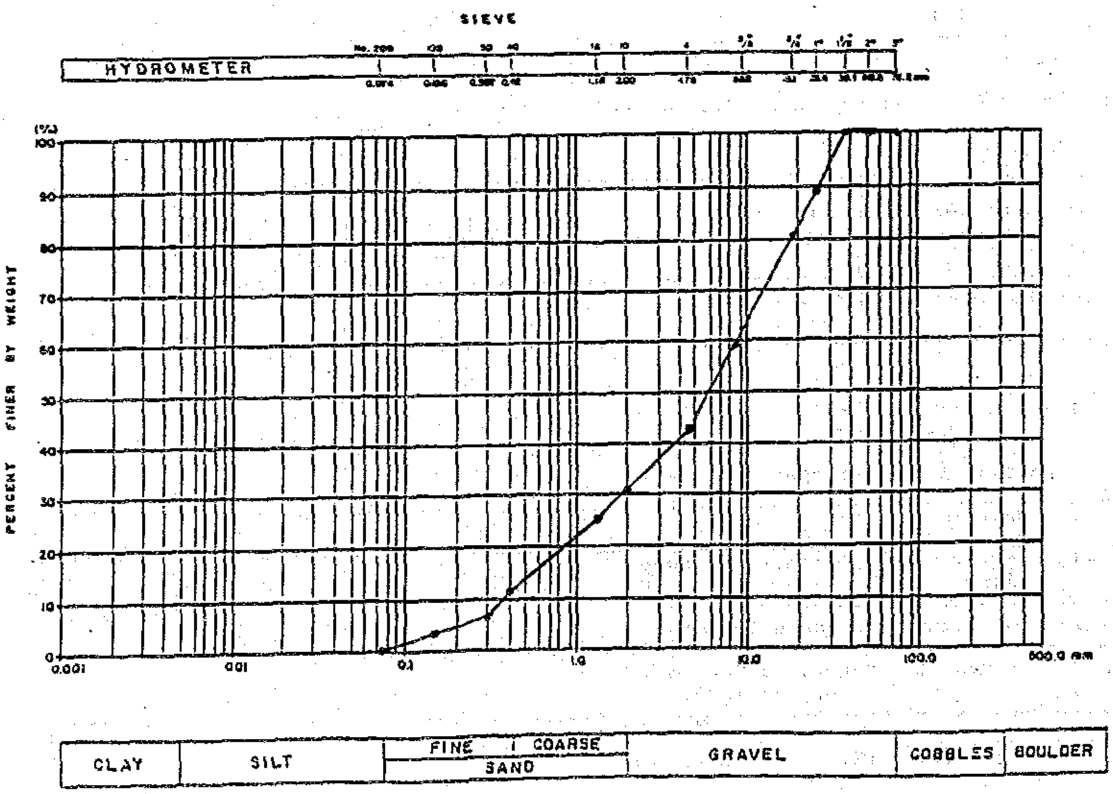
	Particle Size (mm)	Percentage of Passing (%)		Particle Size (mm.)	Percentage of Passing (%)		Particle Size (mm.)	Percentage of Passing (%)		Particle Size (mm.)	Percentage of Passing (%)
Greater than 300 mm.			Sieve test	76.2	100	Sieve test	2.00	30.48	Hydrometer test		
				50.8	100		1.18	25.52			
				38.1	100		0.42	11.24			
				25.4	89.04		0.25	7.0			
				19.1	80.12		0.150	3.0			
				9.52	59.32		0.074	0.08			
				4.76	43.16		-				

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	11.16 %
Cobbles	76.2 ~ 300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	69.52	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	11.24	colloids	Smaller than 0.001mm.	

10% Particle Size D10 = 0.38   50% Particle Size D50 = 6.0 mm.

60% Particle Size D60 = 10.0   Uniformity Coefficient Uc = D60/D10 = 2.63

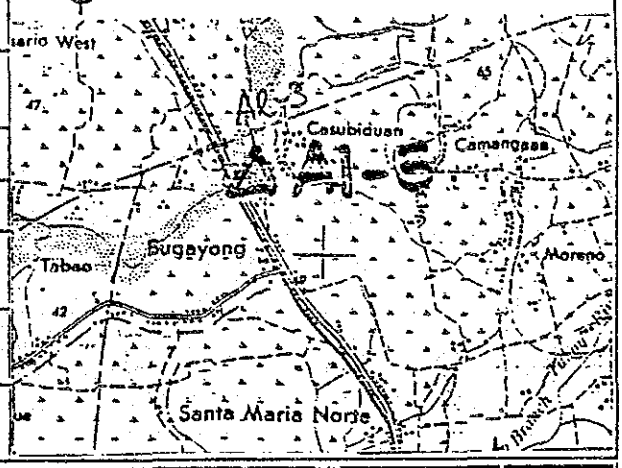


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A1-3	
River / Irrigation Canal	ALORAGAT RIVER	
Location	Bugayong, Pozorrubio Pangasinan	
Date of Sampling	June 2, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	100 m
	Bed Materials	Cobble, Gravel
	Others	

Site Location Map (S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	100 mm

Characteristics Observed by the Eyes

1) Materials : Cobble, Gravel

2) Shape : Round

3) Colour : Gray

4) Others :

DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : A1-3

Date of Test: June 8, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____ kg.

Total Weight of Materials Greater than 100 mm. Wg = 0 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 22,200 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	3,605	16.24	83.76	83.76	
38.1 (1 1/2")	1,373	6.18	77.58	77.58	
25.4 (1")	2,908	13.09	64.49	64.49	
19.1 (3/4")	1,670	7.52	56.97	56.97	
9.52 (3/8")	2,915	13.13	43.84	43.84	
4.76 (No.4)	2,599	11.71	32.13	32.13	
2.00 (No.10)	2,133	9.61	22.52	22.52	
1.18 (No.16)	963	4.34	18.18	18.18	
0.42 (No.40)	2,530	11.40	6.78	6.78	
0.297 (No.50)	875	3.94	2.84	2.84	
0.150(No.100)	542	2.44	.4	.4	
0.074(No.200)	68	.31	.09	.09	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : A1-3
Date of Test: June 9, 1969
Tested by :

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	321 gr.	315 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.79	2.70	2.745

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	4820 gr.	5245 gr.	-
(2) Weight of Saturated Sample in Water	3010 gr.	3306	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.66	2.71	2.685

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	: A1-3	River/Canal	ALORAGAT	Location	Burayong, Poz.
Date of Sampling	: June 2, 1989	Date of Granulation Analysis	: June 8, 1989	Date of Specific Gravity test	: June 9, 1989

1-1 Specific Gravity

Range of Particle Size	less than 0.074 mm	0.074 mm.-2.36 mm.	Greater than 2.36 mm.
Specific Gravity		2.745	2.685

1-2 Granation

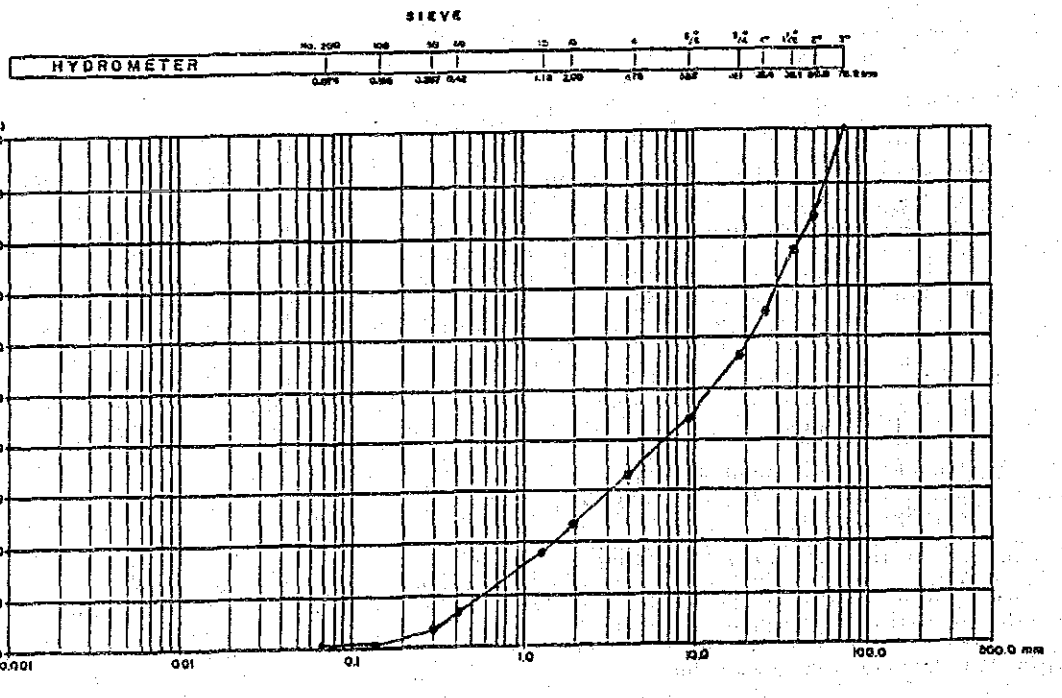
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		75.0		2.00	22.52		
3 inch		19.0	83.76	1.18	18.18	coal	
1½ inch		38.1	77.58	0.42	6.78	Sand	
¾ inch		25.4	64.49	0.297	2.84	Sand	
⅜ inch		19.1	56.97	0.150	0.40	Sand	
Gravel		9.52	43.84	0.074	0.09		
		4.76	32.13	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	%	Fine Sand	0.074 - 0.42 mm.	6.69 %
Cobbles	76.2 ~ 300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	6.0	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	69.48	colloids	Smaller than 0.001mm.	
		15.74			

10% Particle Size D_{10} 0.60 mm. 50% Particle Size D_{50} 13.0 mm.

60% Particle Size D_{60} 21.0 Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 35.0

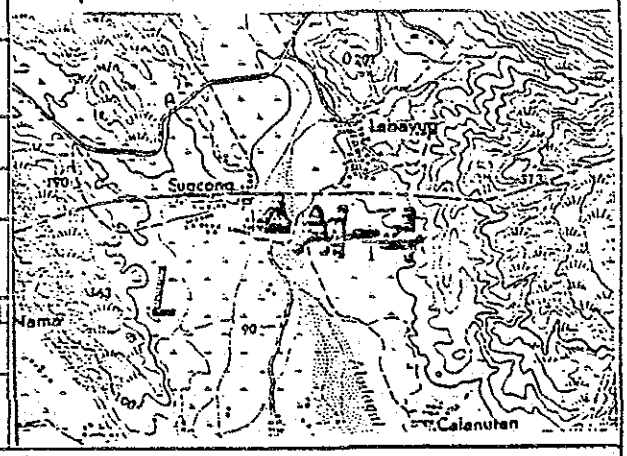


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A1-4	
River / Irrigation Canal	ALORAGAT RIVER	
Location	Sugcong, Pozorrubio, Pang.	
Date of Sampling	June 2, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	80 m
	Bed Materials	Cobble, Gravel Sand
	Others	

Site Location Map
(S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	100 mm

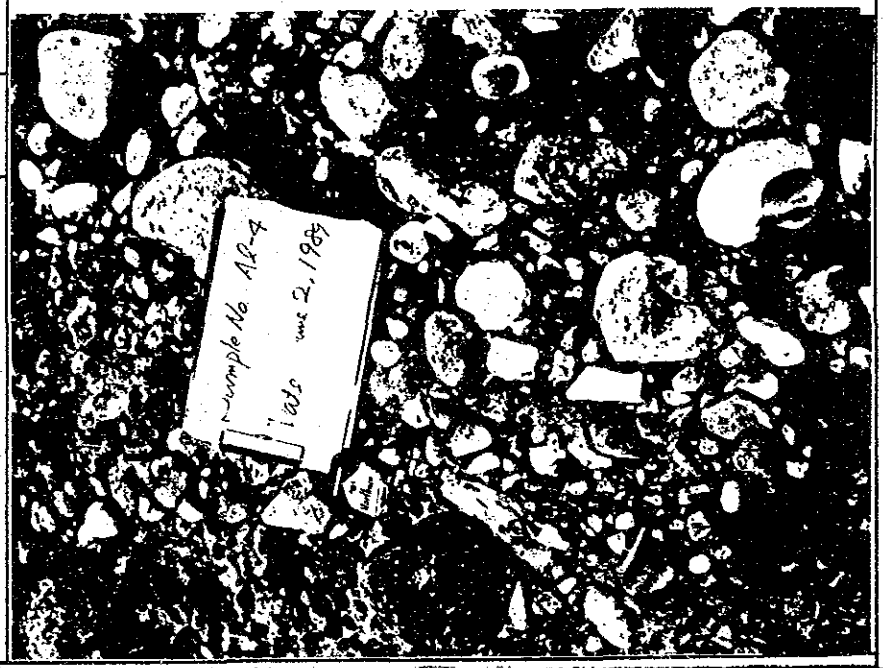
Characteristics Observed by the Eyes

1) Materials: Cobble, Gravel Sand

2) Shape : Round

3) Colour : Gray

4) Others :



DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : A1-4

Date of Test: June 16, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = 51.0 kg.

Total Weight of Materials Greater than 100 mm. Wg = 6.9 kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
130 mm.	2.7 kg.	57.9 kg.	100 %	140	130	80
110	1.6	55.2	95.3	130	100	80
105	1.4	53.8	92.9	130	90	70
100	1.2	52.6	90.8	140	100	40

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 23,109 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	2,620	11.33	88.67	78.1	
38.1 (1 1/2")	1,837	7.95	80.72	71.1	
25.4 (1")	3,342	14.46	66.26	58.4	
19.1 (3/4")	1,570	6.79	59.47	52.4	
9.52 (3/8")	3,402	14.72	44.75	39.4	
4.76 (No.4)	2,113	9.14	35.61	31.4	
2.00 (No.10)	2,129	9.21	26.4	23.3	
1.18 (No.16)	1,413	6.11	20.29	17.9	
0.42 (No.40)	2,903	12.56	7.73	6.8	
0.297 (No.50)	990	4.28	3.45	3.00	
0.150(No.100)	620	2.68	.77	.67	
0.074(No.200)	109	.47	.30	.26	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : A1-4
Date of Test: June 17, 1989
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1) Weight of Bottle Filled with Water	gr.
(2) Weight of Oven-dry Particles	gr.
(3) Weight of Bottle Filled with Particles and Water	gr.
(4) Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	313 gr.	309 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.67	2.62	2.62

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	6211 gr.	6202 gr.	-
(2) Weight of Saturated Sample in Water	3823 gr.	3810	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.60	2.59	2.60

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	: A1-4	River/Canal	ALORAGAT	Location	: Sugcong, Poz.
Date of Sampling	: June2, 1989	Date of Granulometric Analysis	June16, 1989	Date of Specific Gravity test	: June 17, 1989

(-1 Specific Gravity

Range of Particle Size	Less than 0.074 mm.	0.074 mm.-4.76 mm.	Greater than 4.76 mm.
Specific Gravity		2.65	2.60

(-2 Granulometric Analysis

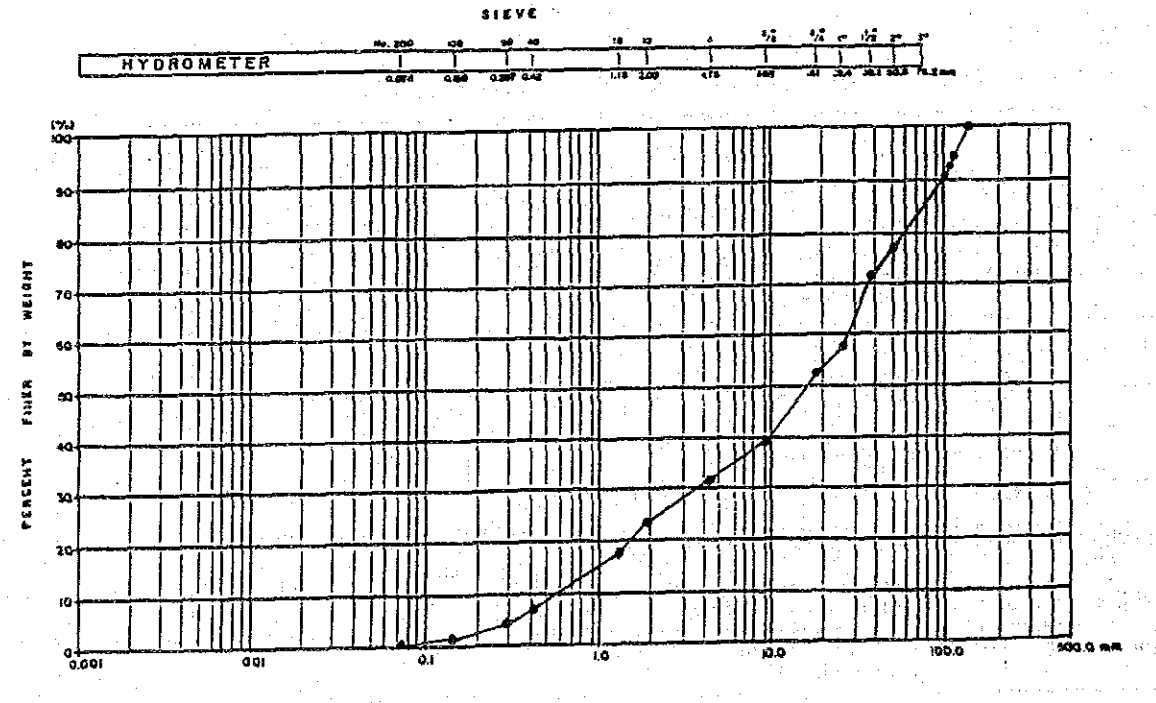
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
130	100	76.2		2.00	23.3		
110	95.3	50.8	78.1	1.18	17.9		
105	92.9	38.1	71.1	0.42	6.8		
100	90.8	25.4	58.4	0.297	3.0		
		19.1	52.4	0.149	0.67		
		9.52	39.4	0.074	0.26		
		4.76	31.4	-			

Percentage According to Classification of Materials

Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	6.54 %
Cobbles	76.2 ~300mm	14	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	62.7	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	16.5	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.6 mm. 10% Particle Size D_{50} = 17 mm.

50% Particle Size D_{50} = 30.0 Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 50.0

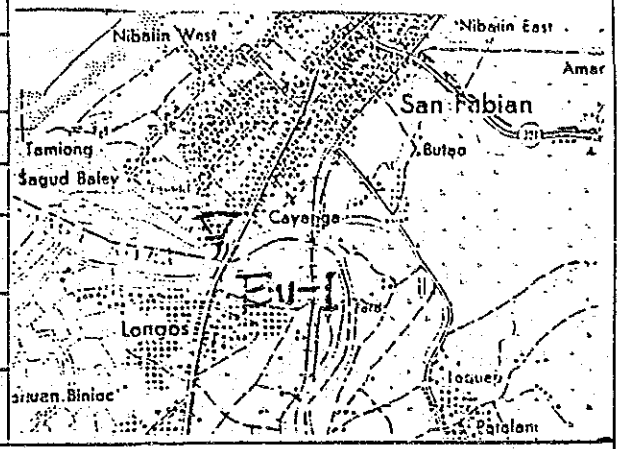


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Bu-1		
River / Irrigation Canal	CAYANGA RIVER (Bued)		
Location	Cayanga, San Fabian Pangasinan		
Date of Sampling	June 1, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	300 m	
	Bed Materials	Fine Sand Silt, Clay	
	Others		

Site Location Map (S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	mm

Characteristics Observed by the Eyes

1) Materials : Fine Sand Silt, Clay

2) Shape :

3) Colour : Gray

4) Others :

Sample No. Bu-1
Date: June 1, 1989

Republic of the Philippine
Department of Public Works and Highways
BUREAU OF RESEARCH AND STANDARDS
Sta. Lucia St., Intramuros, Metro Manila

BRS Form No. 12
Nov. 1952
8-45-89

Lab. Report No. _____

TEST REPORT ON SOIL — 23 August 1989

Project Agno River Basin Flood Control Study — Pangasinan
(Number) (Name) (City/Province)

Kind of material River Bed Sample

Sample identification BU-1 — Quantity represented -

Sampled at -

Original source Agno River

Supplied by JICA/DPWH Study Team

Proposed use Sedimentation Analysis — Spec's. Item No. -

Sampled by Mr. Katayama, Sediment Analyst — not stated — not stated
(Name and designation) (Office) (Date)

Submitted by E. Fano, not stated — PMO-Major Flood Control Project — 8-2-89
(Name and designation) (Office) (Date received)

Lab. No. 5940-89 (Paid under OR # 8733139)

TEST RESULTS

Particle Size Analysis:

Sieve Analysis (% Passing)

Sieve Size	
4.75 mm	100
2.00 mm	99
0.425 mm	96
0.075 mm	54

Hydrometer Analysis (%) smaller than

0.05 mm	38
0.02 mm	14
0.005 mm	6
0.002 mm	1
0.001 mm	0
Liquid Limit	NP
Plasticity Index	NP
Specific Gravity	2.81

Checked by:

PURA V. REVILLAME
Chief, Materials Testing Division

ATTESTED:

JOSE H. ESPIRITU
Director

Tested by:
N. Abarca
A. Ponce de Leon
L. de Jesus
C. Pinto
B. Villanueva

Witnessed by:
M. Marquez

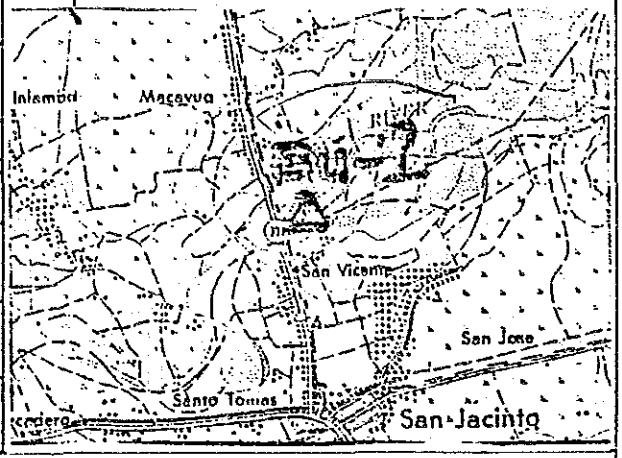
/lma

DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	Bu-2	
River / Irrigation Canal	BUED RIVER	
Location	San.Vicente, San Jacinto, Pangasinan	
Date of Sampling	June 1, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	200 m
	Bed Materials	Cobble, Gravel
	Others	

Site Location Map
(S=1/50,000)



Discription of Sample	
Average Size of Armour Coats	100 mm

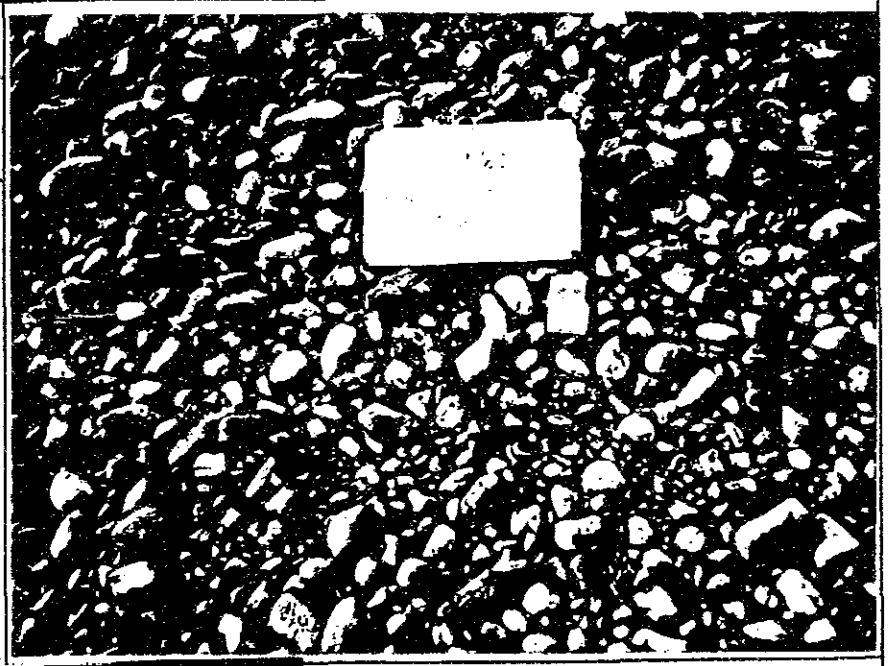
Characteristics Observed by the Eyes

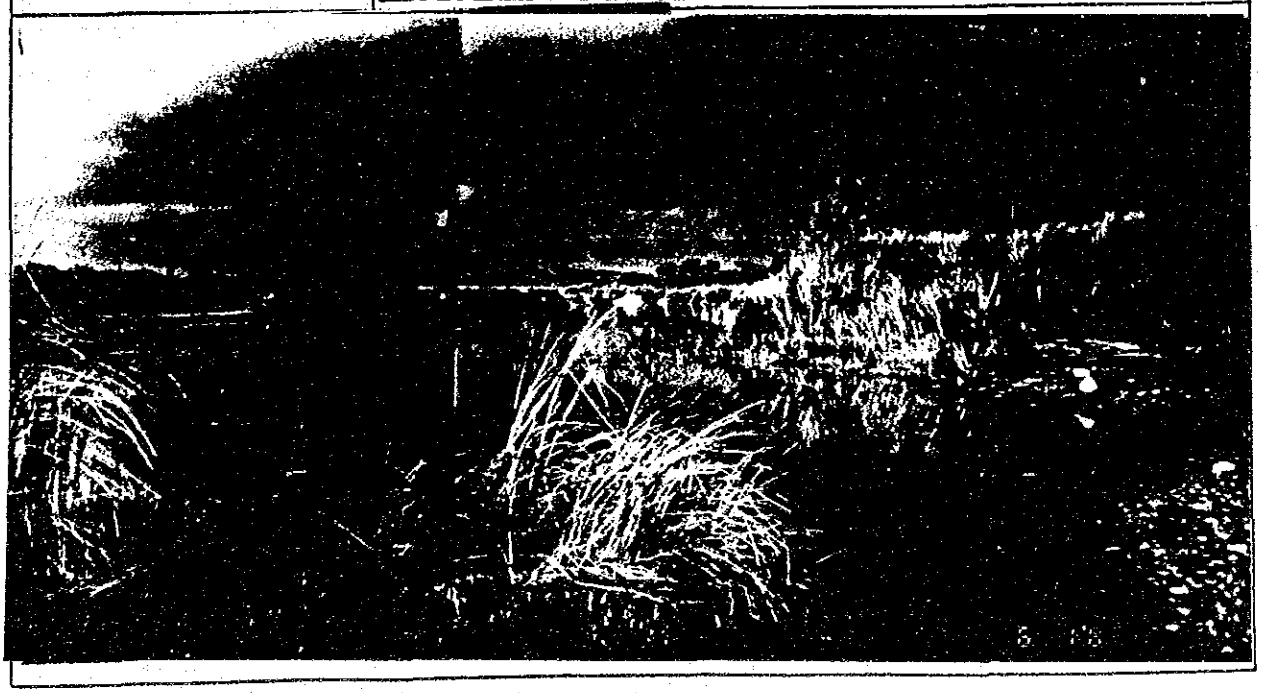
1) Materials : Cobble, Gravel Sand

2) Shape : Round

3) Colour : Gray

4) Others :





DATA SHEET (2/4) FOR RIVER BED MATERIALS SURVEY

2. GRADATION ANALYSIS

Sample No. : Bu-2

Date of Test: June 9, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = _____kg.

Total Weight of Materials Greater than 100 mm. Wg = _____kg.

(1) Particle Size (Diameter) d	(2) Particle Weight w (d)	(3) Total Weight of Particles Smaller than d wt(d)	(4) Percentage of Particles Smaller than d Pt(d)	Dimensions (mm.) Length	Width	Thickness
mm.	kg.	kg.	%			

(4) = Wt(d)/(Ws + Wg) x 100

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 22,000 gr.

(1) Sieve Size Ds	(2) Weight of Particles Retained on Sieve W(Ds)	(3) Percentage of Particles Retained on Sieve Ds Pr(Ds)	(4) Percentage of Particles Passing Sieve Ds Pp(Ds)	(5) Percentage of Total Particles Passing Sieve Ds Pt(Ds)	Remarks
76.2 mm.(3")	gr.	%	%	%	
50.8 (2")	6,784	30.83	69.17	69.17	
38.1 (1 1/2")	1,582	7.19	61.98	61.98	
25.4 (1")	1,641	7.46	54.52	54.52	
19.1 (3/4")	1,078	4.90	46.62	49.62	
9.52 (3/8")	2,355	10.70	38.92	38.92	
4.76 (No.4)	1,679	7.63	31.29	31.29	
2.00 (No.10)	1,281	5.82	25.47	25.47	
1.18 (No.16)	770	3.5	21.97	21.97	
0.42 (No.40)	3,154	14.34	7.63	7.63	
0.297 (No.50)	789	3.58	4.05	4.05	
0.150(No.100)	830	3.77	0.28	0.28	
0.074(No.200)	23	0.10	0.18	0.18	

(5) = (4) x Ws/(Ws+Wg)

DATA SHEET (3/4) FOR RIVER BED MATERIALS SURVEY

Sample No. : Bu-2
Date of Test: June 10, 1969
Tested by : _____

2-3 Hydrometer Test

Weight of Sample for Hydrometer test : Wh = _____ gr.
Specific Gravity : Gs = _____
Percentage of Total Particles Passing 0.074 mm. Sieve: Pt (0.074) = ____%

(1) Period of Sedimentation	(2) Maximum Diameter of Particles in Suspension	(3) Percentage of Particles in Suspension	(4) Percentage of Particles Suspension out of Total Sample	Remarks
2 min.	mm.	%	%	
5				
15				
30				
60				
240				
1440				

(4) = (3) x Pt (0.074)/100

3. SPECIFIC GRAVITY TEST

3-1 Particles Smaller than 0.074 mm.

(1)	Weight of Bottle Filled with Water	gr.
(2)	Weight of Oven-dry Particles	gr.
(3)	Weight of Bottle Filled with Particles and Water	gr.
(4)	Specific Gravity	

$$(4) = \frac{(3)}{(1) + (2) - (3)}$$

3-2 Particles Greater than 0.074 mm. and Smaller than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Water Added to Flask	318 gr.	317 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.75	2.73	2.74

$$(3) = \frac{500}{(2) - (1)}$$

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	7811 gr.	7779 gr.	-
(2) Weight of Saturated Sample in Water	4876 gr.	4918	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.66	2.72	2.69

(3) = (1)/((1) - (2))

DATA SHEET (4/4) FOR RIVER BED MATERIALS SURVEY

1. REPORT

Sample No.	: Bu-2	River/Canal	: BUED	Location	: San Vicente
Date of Sampling	: June 1, 1989	Date of Granulation Analysis	: June 9, 1989	Date of Specific Gravity test	: June 10, 1989

1-1 Specific Gravity

Name of Particle Size	Less than 0.074	0.074 mm.~5.54 mm.	Greater than 5.54 mm.
Specific Gravity		2.74	2.69

1-2 Granation

Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		7.52		2.00	25.47		
		19.1	69.17	1.18	21.97		
		13.1	61.98	0.42	7.63		
		15.4	54.52	0.255	4.05		
		13.1	49.62	0.150	0.28		
		9.52	38.92	0.075	0.18		
		4.76	31.29	-			

Percentage According to Classification of Materials

Classification	Name of Particle Size	Percentage	Classification	Name of Particle Size	Percentage
Boulder	Greater than 300 mm	0 %	fine sand	0.074 - 0.42 mm.	7.45 %
Cobbles	76.2 ~ 300 mm	14.0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	60.53	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	17.84	colloids	Smaller than 0.001mm.	

10% Particle Size D10 = 0.30 mm 50% Particle Size D50 = 20.0 mm

30% Particle Size D30 = 31.0 mm. Uniformity Coefficient Cu = D60/D10 = 62.0