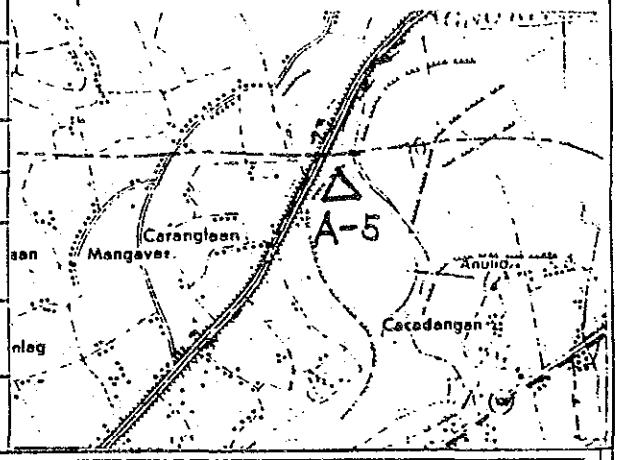
DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A-5		
River / Irrigation Canal	AGNO RIVER		
Location	Laoac, Alcala Pangasinan		
Date of Sampling	June 1, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	2,000	m
	Bed Materials	Sand	
	Others		

Site Location Map
(Scale 1/50,000)



Discription of Sample	
Average Size of Armour Coats	mm

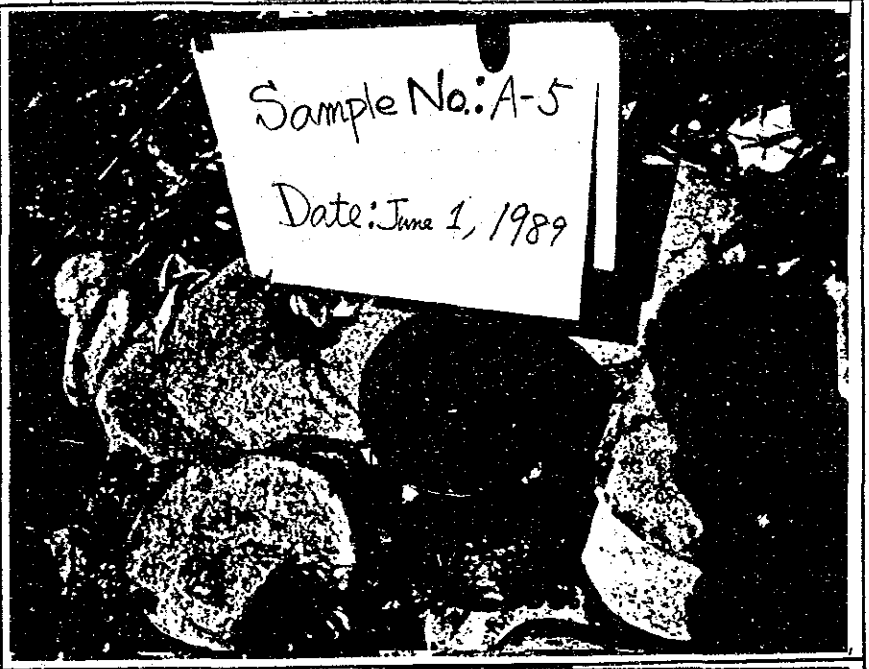
Characteristics Observed by the Eyes

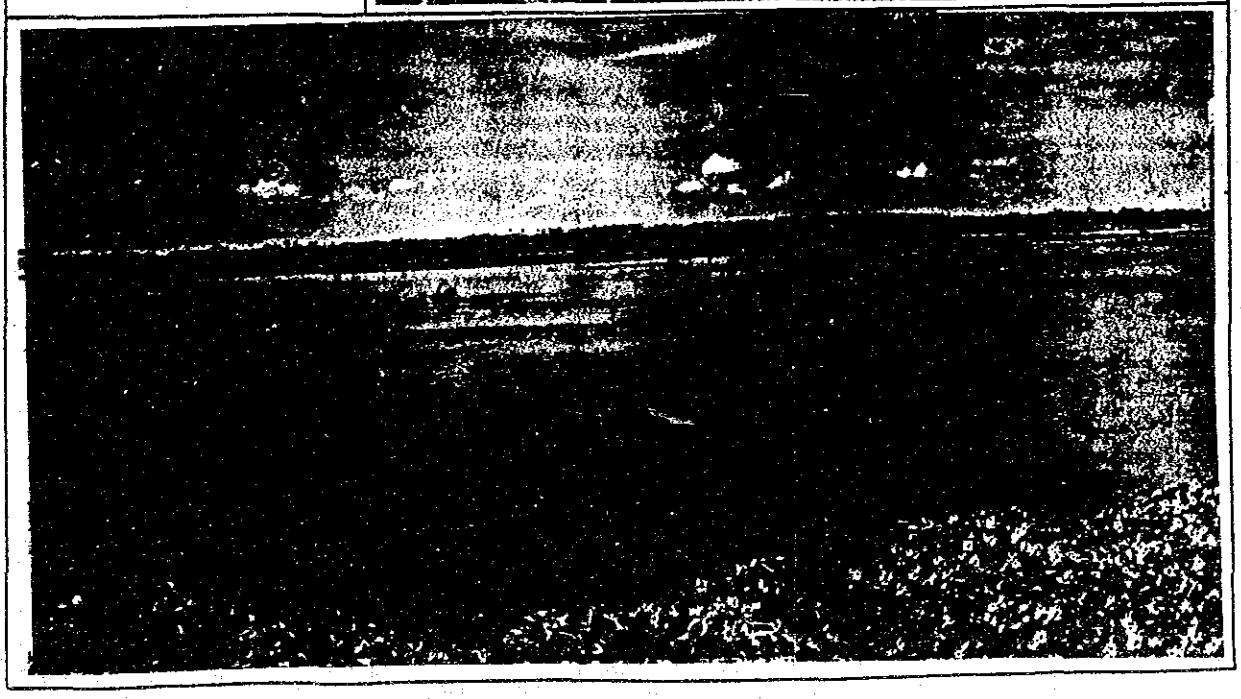
1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :





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

2. GRADATION ANALYSIS

Sample No. : A-5

Date of Test: June 9, 1989

Tested by : J.C. Muya

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)	.5	.05	99.95	99.95	
1.18 (No.16)	1.10	.11	99.84	99.84	
0.42 (No.40)	362.0	36.2	63.64	63.64	
0.297 (No.50)	341.0	34.1	28.54	29.54	
0.150(No.100)	265.9	26.59	2.95	2.95	
0.074(No.200)	19.5	1.95	1.0	1.0	

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

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

Sample No. : A-5
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	323 gr.	307 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.82	2.60	2.71

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

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.	A-5	River/Canal	AGNO	Location	Loac, Alcala
Date of Sampling	June 1, 1989	Date of Granulometric Analysis	June 9, 1989	Date of Specific Gravity test	June 10, 1989

(-) Specific Gravity

Range of Particle Size	less than 0.074 mm	0.074 mm.~4.76 mm.	Greater than 4.76 mm.
Specific Gravity		2.71	

(-) Granulation

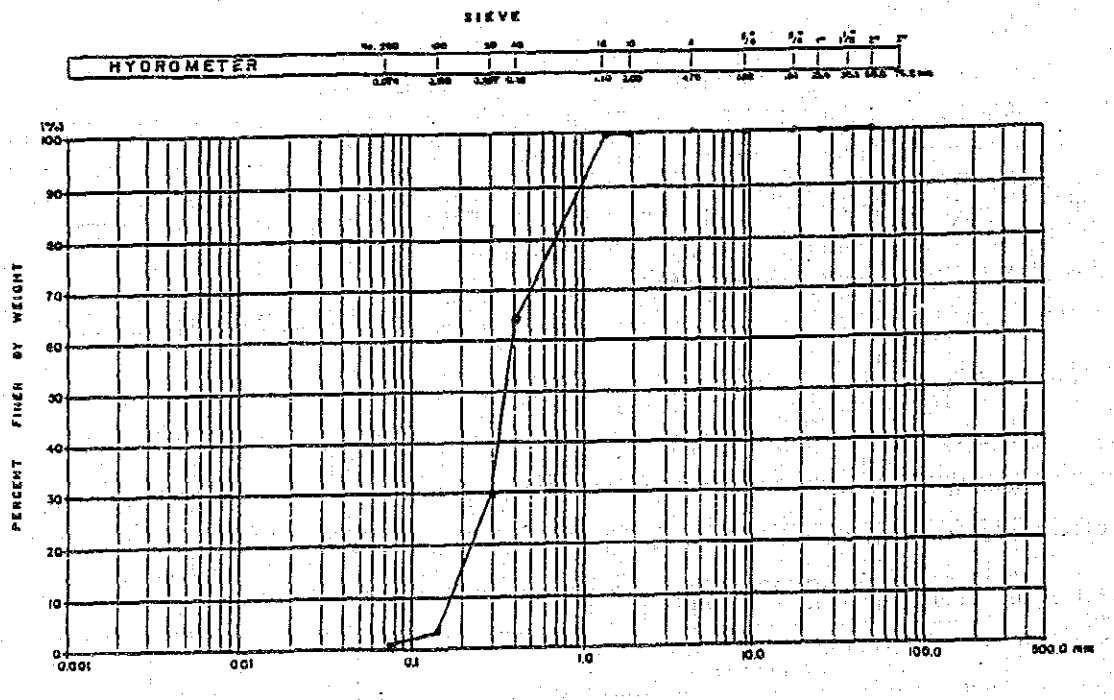
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2		2.00	99.95		
		38.1	100	1.18	99.84		
		19.1	100	0.42	63.64		
		9.51	100	0.297	29.54		
		4.76	100	0.250	2.95		
		2.00	100	0.074	1.0		
		0.42	100	-			

Percentage Occurring in 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.	62.64
Cobbles	76.2 ~ 300 mm		silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	0.05	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	36.31	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.18 mm. 30% Particle Size D_{30} = 0.36 mm.

50% Particle Size D_{50} = 0.4 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 2.22

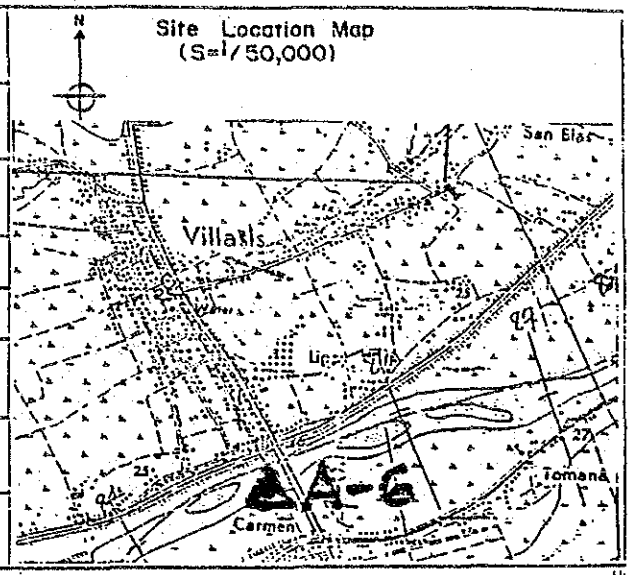


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A-6		
River / Irrigation Canal	AGNO RIVER		
Location	Carmen; Rosales Pangasinan		
Date of Sampling	May 31, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	500 m	
	Bed Materials	Sand	
	Others		

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



Discription of Sample

Average Size of Armour Coats	mm

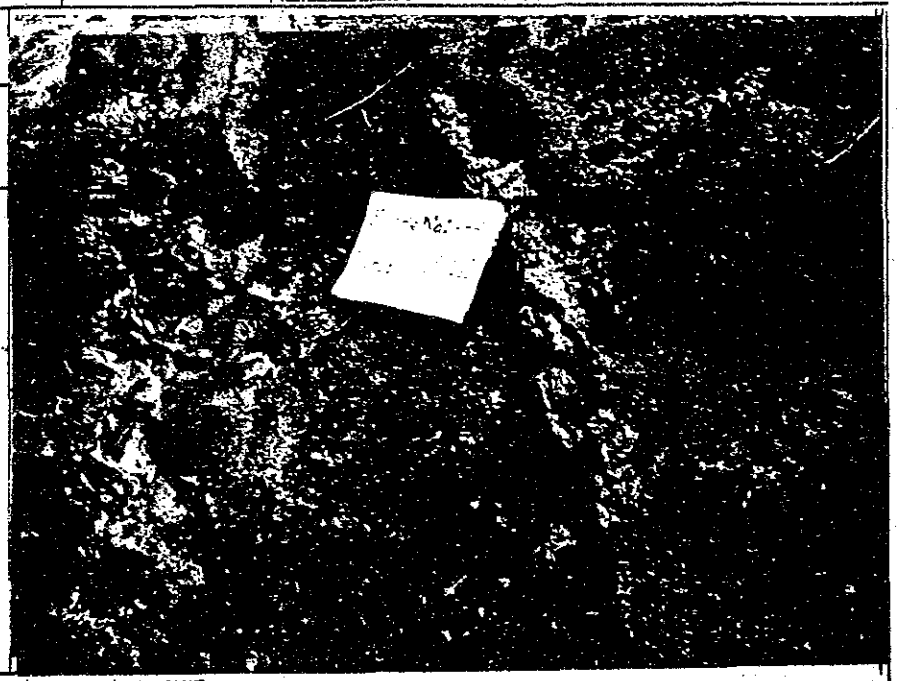
Characteristics Observed by the Eyes

1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :



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

2. GRADATION ANALYSIS

Sample No. : A-6

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 = 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	0	0	
38.1 (1 1/2")	0	0	0	0	
25.4 (1")	0	0	0	0	
19.1 (3/4")	0	0	0	0	
9.52 (3/8")	0	0	0	0	
4.76 (No.4)	0.50	0.05	99.95	99.95	
2.00 (No.10)	1.80	0.18	99.77	99.77	
1.18 (No.16)	1.50	0.15	99.62	99.62	
0.42 (No.40)	232.00	23.20	76.42	76.42	
0.297 (No.50)	664.0	66.40	10.02	10.02	
0.150(No.100)	63.5	6.35	3.67	3.67	
0.074(No.200)	28.0	2.80	0.87	0.87	

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

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

Sample No. : A-6
Date of Test: June 9, 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	314 gr.	313 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.688	2.67	2.679

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

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. REPORT

Sample no.	: A-6	River/Coast	: AGNO	Location	Carmen, Rosales
Date of Sampling	May 31, 1989	Date of Gradation Analysis	June 8, 1989	Date of Specific Gravity test	June 9, 1989

1-1 Specific Gravity

Name of Particle Size	Less than 0.074 mm.	0.074 mm.-2.38 mm.	Greater than 2.38 mm.
Specific Gravity		2.679	

1-2 Gradation

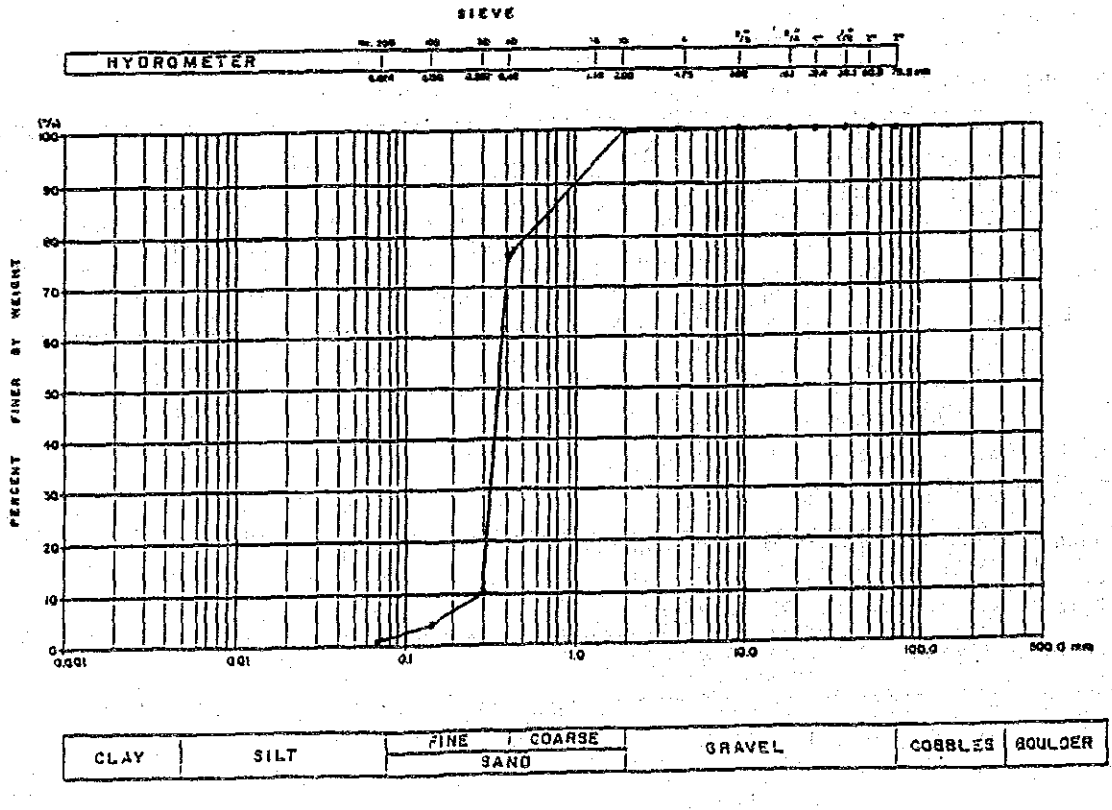
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2	100	2.00	99.77		
Upper limit		38.1	100	1.19	99.62	Lower limit	
		19.1	100	0.42	76.42		
		9.51	100	0.297	10.02		
Gravel		4.76	100	0.149	3.67	Sand	
		2.38	100	0.074	.87		
		2.00	99.95	-			

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.	75.55
Cobbles	76.2 ~300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	0.23	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	23.35	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.3 mm. 50% Particle Size D_{50} = 0.36 mm.

60% Particle Size D_{60} = 0.4 mm. Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 1.33

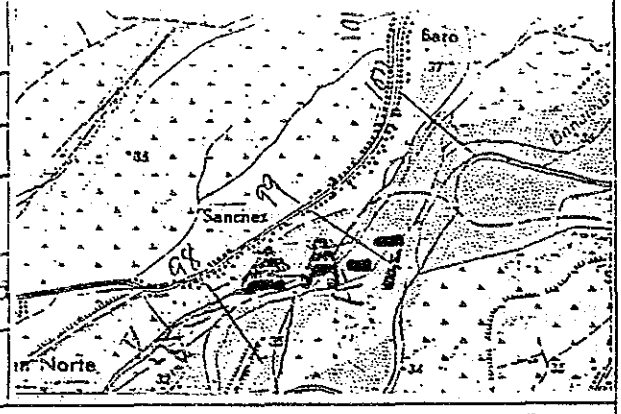


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

I. SAMPLING

Sample No.	A-7	
River / Irrigation Canal	AGNO RIVER	
Location	Sanchez, Asingan Pangasinan	
Date of Sampling	May 31, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	1,000 m
	Bed Materials	Coarse Sand
	Others	

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



Discription of Sample

Average Size of Armour Coats	mm

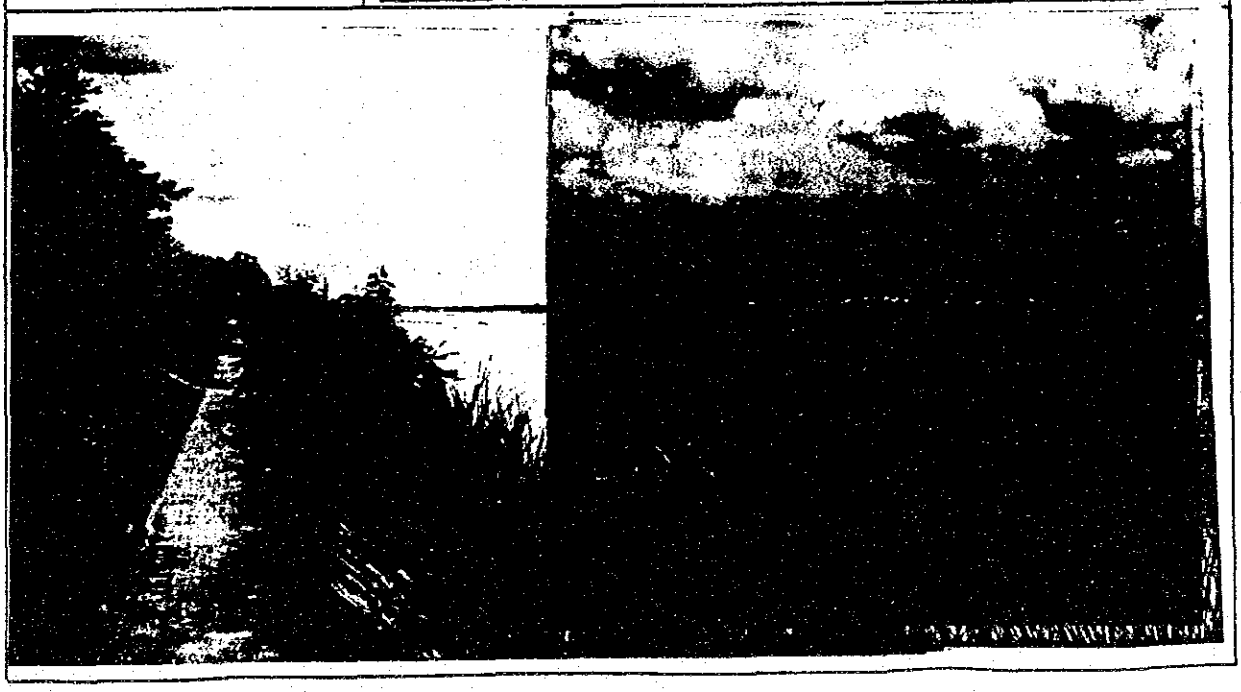
Characteristics Observed by the Eyes

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. : A-7

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 = 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")	0 gr.	0 %	100 %	100 %	
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)	20	2.00	98.00	98.00	
2.00 (No.10)	23	2.30	95.70	95.70	
1.18 (No.16)	60	6.00	89.70	89.70	
0.42 (No.40)	731	73.10	16.60	16.60	
0.297 (No.50)	101	10.10	6.50	6.50	
0.150(No.100)	57	5.70	0.80	0.80	
0.074(No.200)	4	0.40	0.40	0.40	

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

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

Sample No. : A-7
Date of Test: June 9, 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.	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

I. REPORT

Sample no.	: A-7	River/Canal	: AGNO	Location	Brgy. Sanchez, Asingan
Date of Sampling	: May31, 1989	Date of Granulation Analysis	: June 8, 1989	Date of Specific Gravity test	: June 9, 1989

I-1 Specific Gravity

Range of Particle Sizeless than 0.074 mm.-2.36 mm.		Greater than 2.36 mm.
Specific Gravity	2.67	

I-2 Granation

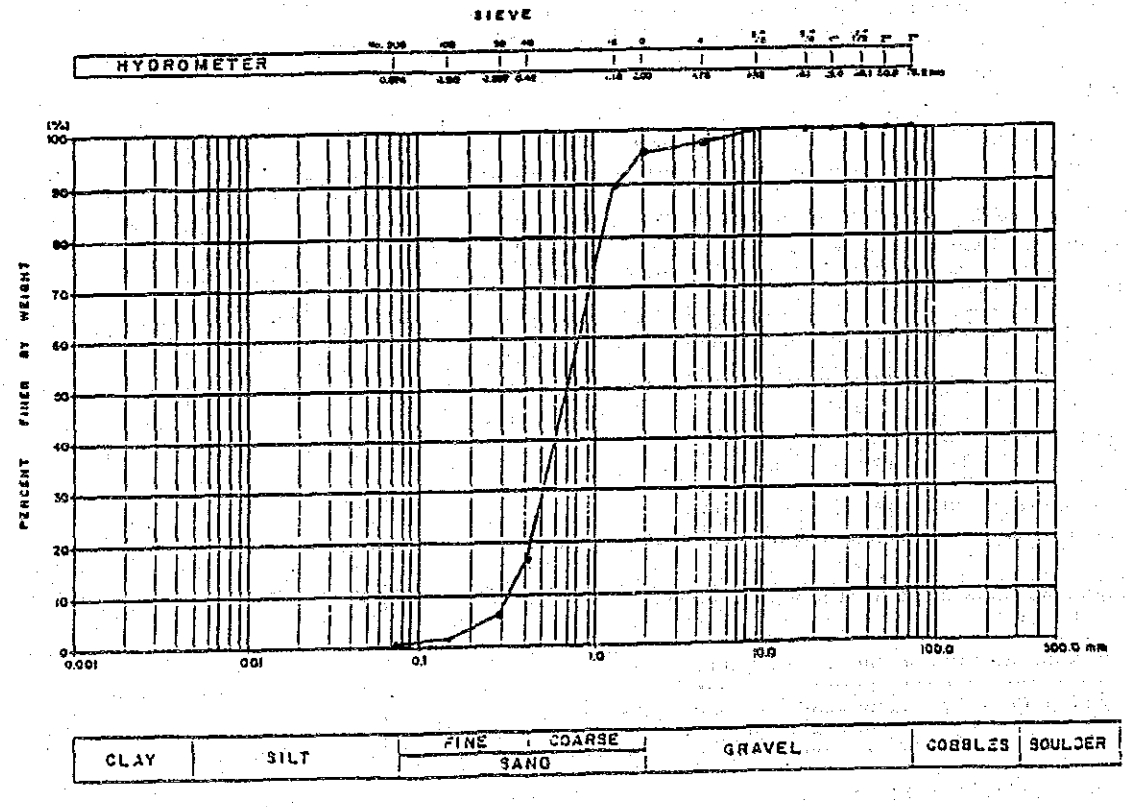
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		7.53	100	0.29	95.70		
		50.8	100	0.15	89.70		
		25.4	100	0.42	16.60		
		25.4	100	0.297	6.50		
		19.1	100	0.150	.80		
		9.53	100	0.074	40		
		4.75	98	-			

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.	16.2 %
Cobbles	76.2 ~ 300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	4.3	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	79.1	colloids	Smaller than 0.001mm.	

10% Particle Size D10 = 0.38 mm. 50% Particle Size D50 = 0.72 mm.

60% Particle Size D60 = 0.86 mm. Uniformity Coefficient Uc = D60/D10 = 2.60

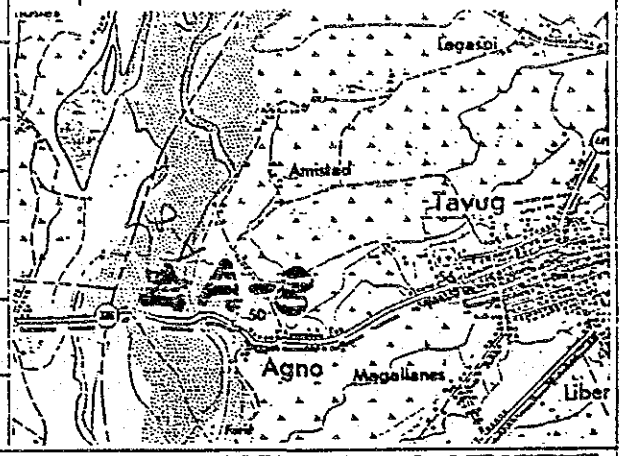


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A-8	
River / Irrigation Canal	AGNO RIVER	
Location	Tayug Pangasinan	
Date of Sampling	May 31, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	1,000 m
	Bed Materials	Cobble, Gravel, Sand
	Others	

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



Discription of Sample	
Average Size of Armour Coats	100 mm

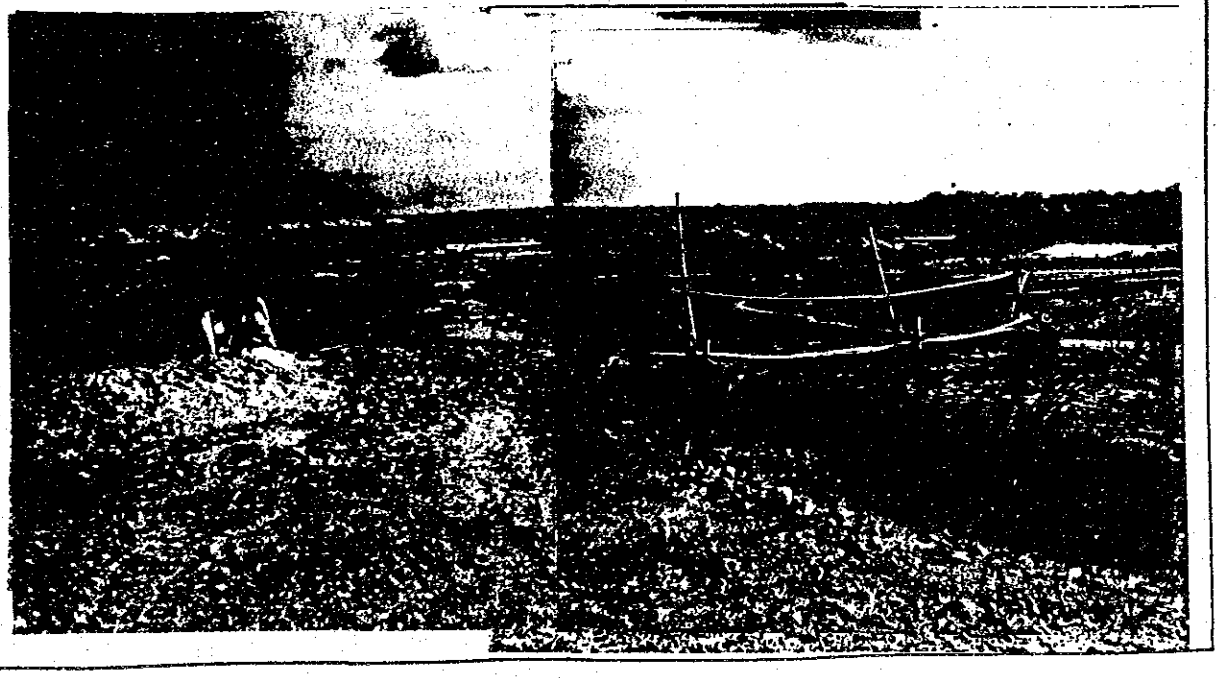
Characteristics Observed by the Eyes

1) Materials : Gravel, Sand

2) Shape : Round

3) Colour : Gray

4) Others :



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

2. GRADATION ANALYSIS

Sample No. : A-8

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 = 24,921 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")	1596	6.40	93.60	93.60	
38.1 (1 1/2")	1653	6.63	86.97	86.97	
25.4 (1")	1669	6.70	80.27	80.27	
19.1 (3/4")	1221	4.90	75.37	75.37	
9.52 (3/8")	1708	6.85	68.52	68.52	
4.76 (No.4)	1987	7.97	60.55	60.55	
2.00 (No.10)	3907	15.68	44.87	44.87	
1.18 (No.16)	5103	20.48	24.39	24.39	
0.42 (No.40)	4683	18.79	5.60	5.60	
0.297 (No.50)	542	2.17	3.43	3.43	
0.150(No.100)	577	2.31	1.12	1.12	
0.074(No.200)	239	0.96	0.16	0.16	

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

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

Sample No. : A-8
Date of Test: June 6, 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	324 gr.	321 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.84	2.79	2.81

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

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	4410 gr.	3848 gr.	-
(2) Weight of Saturated Sample in Water	2820 gr.	2450	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.77	2.75	2.76

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

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

1. REPORT

Sample no.	A-6	River/Canal	AGNO	Location	
Date of Sampling	May 31, 1989	Date of Granulation Analysis	June 7, 1989	Date of Specific Gravity test	June 8, 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		2.81	2.76

1-2 Granation

Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
	7.52	100	2.59	44.87	
	50.8	93.60	1.18	24.39	
	38.1	86.97	0.42	5.60	
	25.4	80.27	0.297	3.43	
	19.1	75.37	0.149	1.12	
	9.51	68.52	0.074	0.16	
	4.76	60.55	"		

Percentage Governing to Classification of Materials

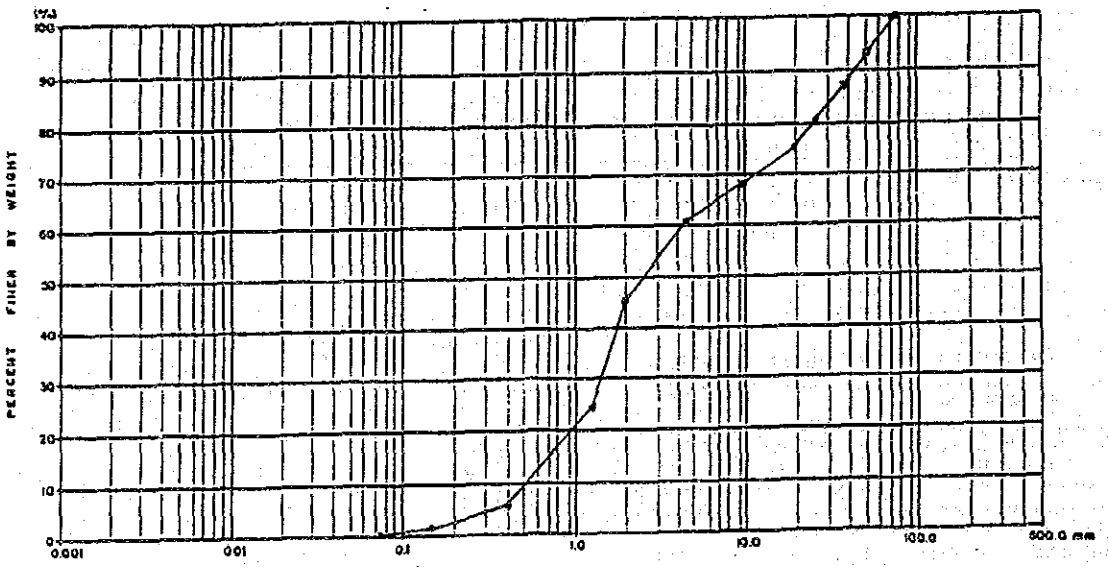
Classification	Range of Particle Size	Percentage	Classification	Range of Particle Size	Percentage
Boulder	Greater than 300 mm	0	fine sand	0.074 - 0.42 mm.	5.44
Cobbles	76.2 ~ 300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	55.1	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	39.27	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} 0.51mm. 50% Particle Size D_{50} = 2.5mm.

60% Particle Size D_{60} 4.0 mm. Uniformity Coefficient U_c = D_{60}/D_{10} = 7.84

SIEVE

HYDROMETER



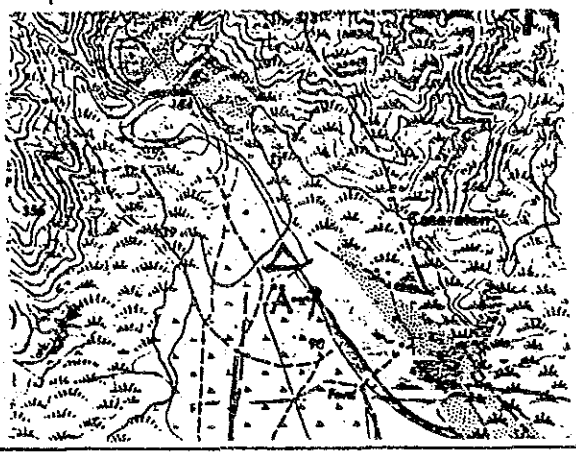
CLAY	SILT	FINE SAND	COARSE SAND	GRAVEL	COBBLES	BOULDER

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

1. SAMPLING

Sample No.	A-9	
River / Irrigation Canal	AGNO RIVER	
Location	San Roque, San Manuel, Pangasinan	
Date of Sampling	May 31, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	200 m
	Bed Materials	Cobble, Gravel, Sand
	Others	

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

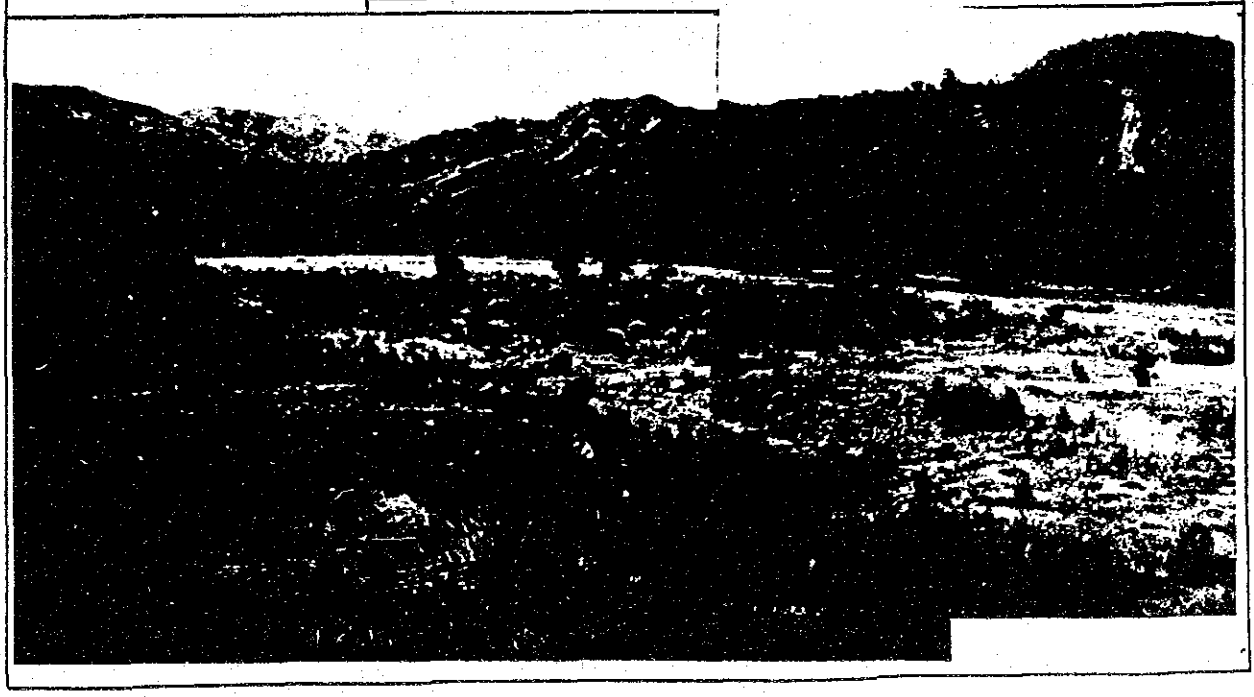


Discription of Sample

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. : 4-9

Date of Test: June 8, 1989

Tested by : _____

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = 43.0 kg.

Total Weight of Materials Greater than 100 mm. Wg = 3.5 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
140 mm.	3.5 kg.	46.5 kg.	100 %			

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

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 22,605 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 %	%	%	
50.8 (2")	7691	34.02	65.98	61.01	
38.1 (1 1/2")	2241	9.91	56.07	51.85	
25.4 (1")	2425	10.72	45.35	41.93	
19.1 (3/4")	927	4.10	41.25	38.14	
9.52 (3/8")	1697	7.51	33.74	31.20	
4.76 (No.4)	1150	5.09	28.65	26.49	
2.00 (No.10)	1096	4.84	23.81	22.02	
1.18 (No.16)	962	4.25	19.56	18.09	
0.42 (No.40)	2798	12.38	7.18	6.64	
0.297 (No.50)	624	2.76	4.42	4.09	
0.150(No.100)	605	2.67	1.75	1.62	
0.074(No.200)	228	1.00	0.75	0.69	

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

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

Sample No. : A-9
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	316 gr.	318 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.72	2.74	2.73

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

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	7764 gr.	7105 gr.	-
(2) Weight of Saturated Sample in Water	4859 gr.	4461	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.67	2.68	2.675

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

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

1. REPORT

Sample No.	A-9	River/Coast	AGNO	Location	San Roque, San Manuel
Date of Sampling	May 31, 1989	Date of Granulometric Analysis	June 6, 1989	Date of Specific Gravity test	June 9, 1989

(-1 Specific Gravity

Name of Particle Sizes	Greater than 0.074 to 19.074 mm. - 0.51 mm.	Smaller than 0.54 mm.
Specific Gravity	2.73	2.68

(-2 Granulometric Analysis

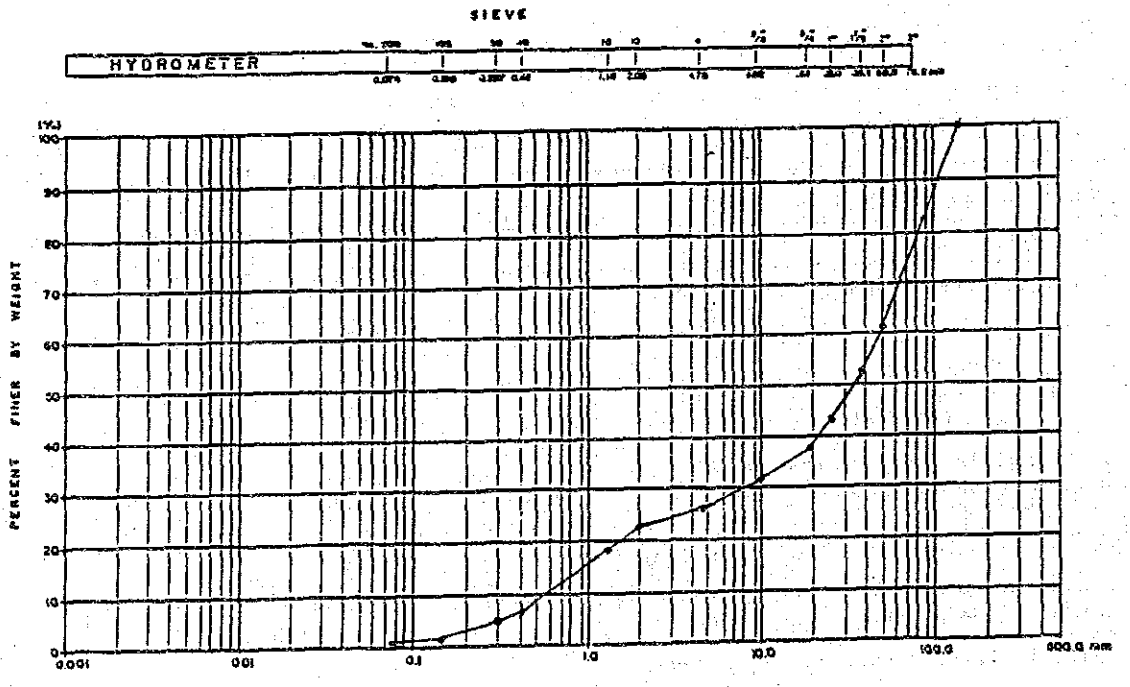
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
140	100	19.8	61.01	1.19	22.02
		13.1	51.85	0.42	18.09
		9.5	41.93	0.177	6.64
		4.76	38.14	0.074	4.09
		2.38	31.20	0.037	1.62
		1.19	26.49	-	0.69

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.	5.95 %
Cobbles	76.2 ~ 300 mm	26.00	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	51.98	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	15.38	colloid	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.6 mm. 60% Particle Size D_{60} = 33 mm.

30% Particle Size D_{30} = 50 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 83.33

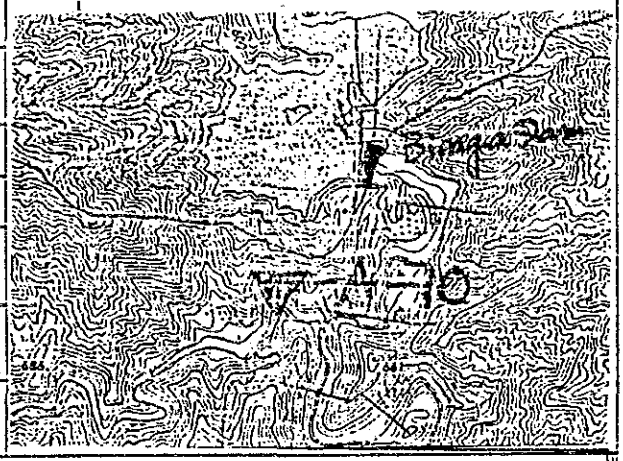


DATA SHEET (1/—) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	A-10	
River / Irrigation Canal	AMBALANGA RIVER	
Location	Baloy; Itogon Benguet	
Date of Sampling	June 8, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	40 m
	Bed Materials	Cobble, Gravel Sand
	Others	

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



Discription of Sample

Average Size of Armour Coats	100 mm

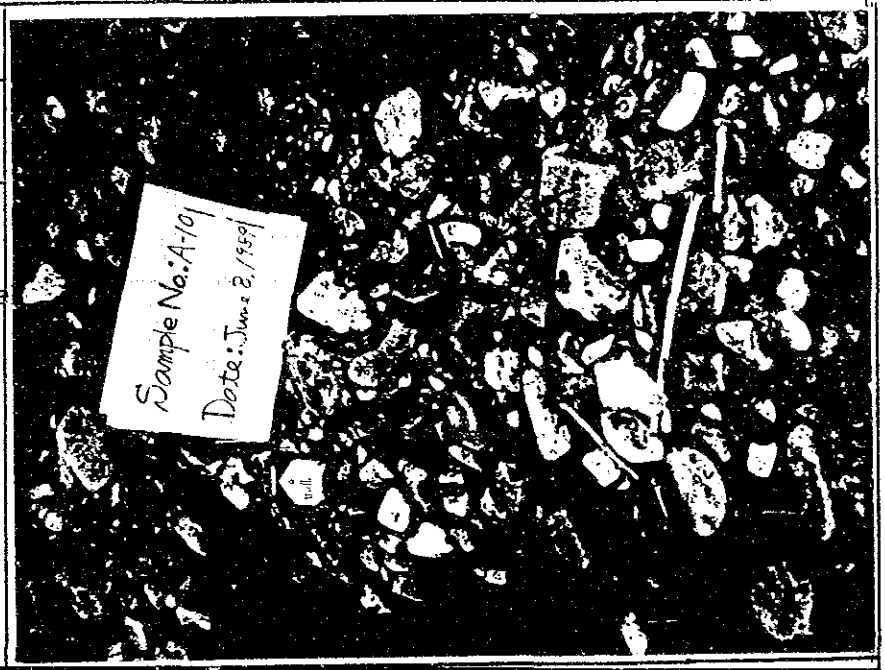
Characteristics Observed by the Eyes

1) Materials : Cobble, Gravel Sand

2) Shape : Round

3) Colour : Gray, Brown

4) Others :



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

2. GRADATION ANALYSIS

Sample No. : A-10

Date of Test: June 21, 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")	1490	6.71	93.29	93.29	
38.1 (1 1/2")	1580	7.12	86.17	86.17	
25.4 (1")	4422	19.92	66.25	66.25	
19.1 (3/4")	1942	8.75	57.50	57.50	
9.52 (3/8")	3985	17.95	39.55	39.55	
4.76 (No.4)	2715	12.23	27.32	27.32	
2.00 (No.10)	1642	7.40	19.92	19.92	
1.18 (No.16)	477	2.15	17.77	17.77	
0.42 (No.40)	1633	7.36	10.41	10.41	
0.297 (No.50)	955	4.30	6.11	6.11	
0.150(No.100)	1030	4.64	1.47	1.47	
0.074(No.200)	198.4	.89	.58	.58	

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

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

Sample No. : A-10
Date of Test: June 22, 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	318 gr.	316 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.75	2.72	2.735

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

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	6750 gr.	6670 gr.	-
(2) Weight of Saturated Sample in Water	4218 gr.	4145	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.66	2.64	2.65

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

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

1. REPORT

Sample no.	: A-10	River/Canal	: AGNO	Location	: Baloy, Itogon
Date of Sampling	: June 8, 1989	Date of Granulation Analysis	: June 22, 1989	Date of Specific Gravity test	: June 23, 1989

1-1 Specific Gravity

Range of Particle Size	Less than 0.074 mm.	19.074 mm.-4.51 mm.	Greater than 4.51 mm.
Specific Gravity	-	2.74	2.65

1-2 Granulation

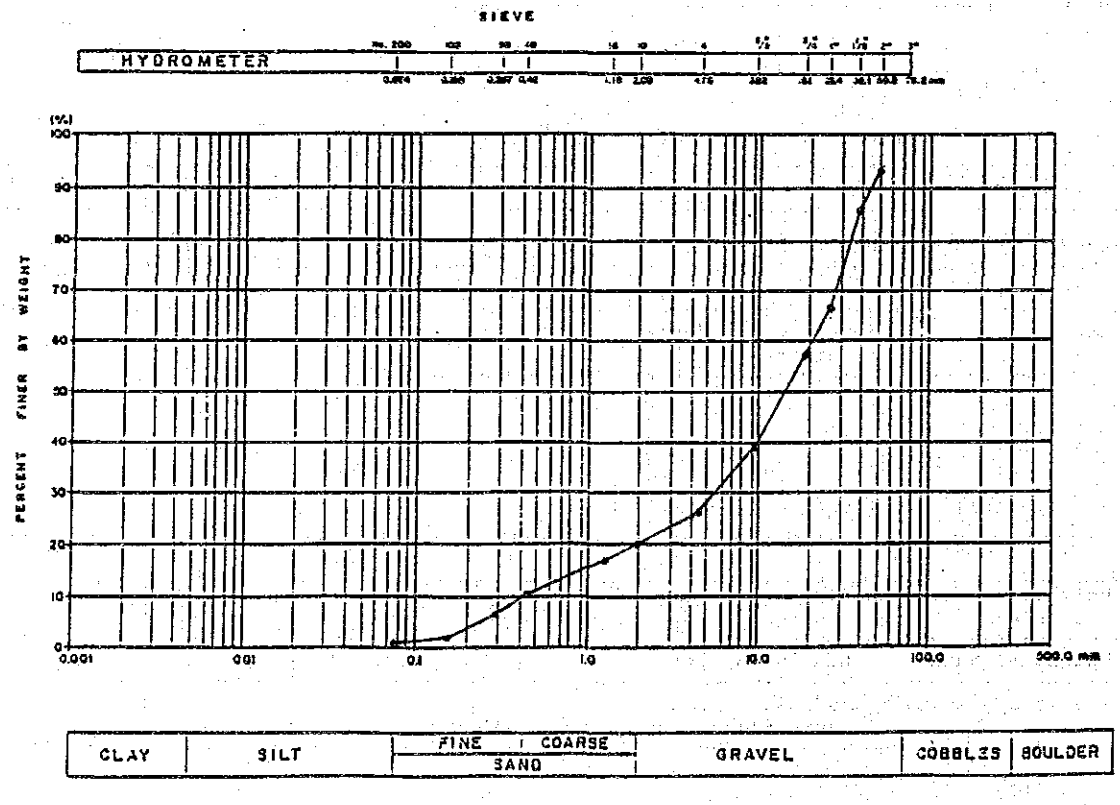
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2		2.00	19.92		
		50.8	93.29	1.18	17.77		
		38.1	86.17	0.42	10.41		
		25.4	66.25	0.297	6.11		
		19.1	57.50	0.149	1.47		
		9.52	39.55	0.074	.58		
		4.76	27.32	-			

Percentage Accordint 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.	9.83
Cobbles	76.2 ~300 mm	3.00	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	77.08	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	9.51	Colloids	Smaller than 0.001mm.	

10% Particle Size D10 = 38 mm. 50% Particle Size D50 = 13.0 mm.

60% Particle Size D60 = 20 mm. Uniformity Coefficient Cu = D60/D10 = 52.63



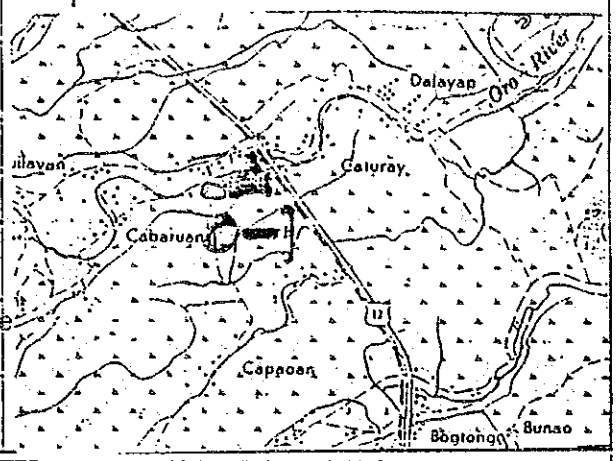
CLAY	SILT	FINE SAND	COARSE SAND	GRAVEL	COBBLES	BOULDER

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

1. SAMPLING

Sample No.	0-1	
River / Irrigation Canal	OLO RIVER	
Location	Olo, Nangatarem Pangasinan	
Date of Sampling	June 1, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	30 m
	Bed Materials	Gravel, Coarse Sand
	Others	

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



Discription of Sample	
Average Size of Armour Coats	mm

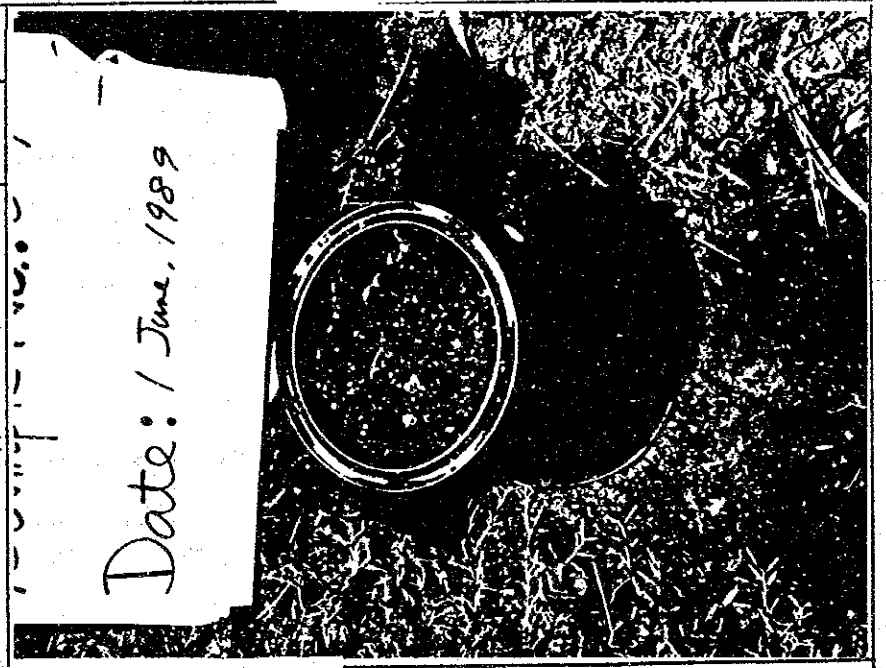
Characteristics Observed by the Eyes

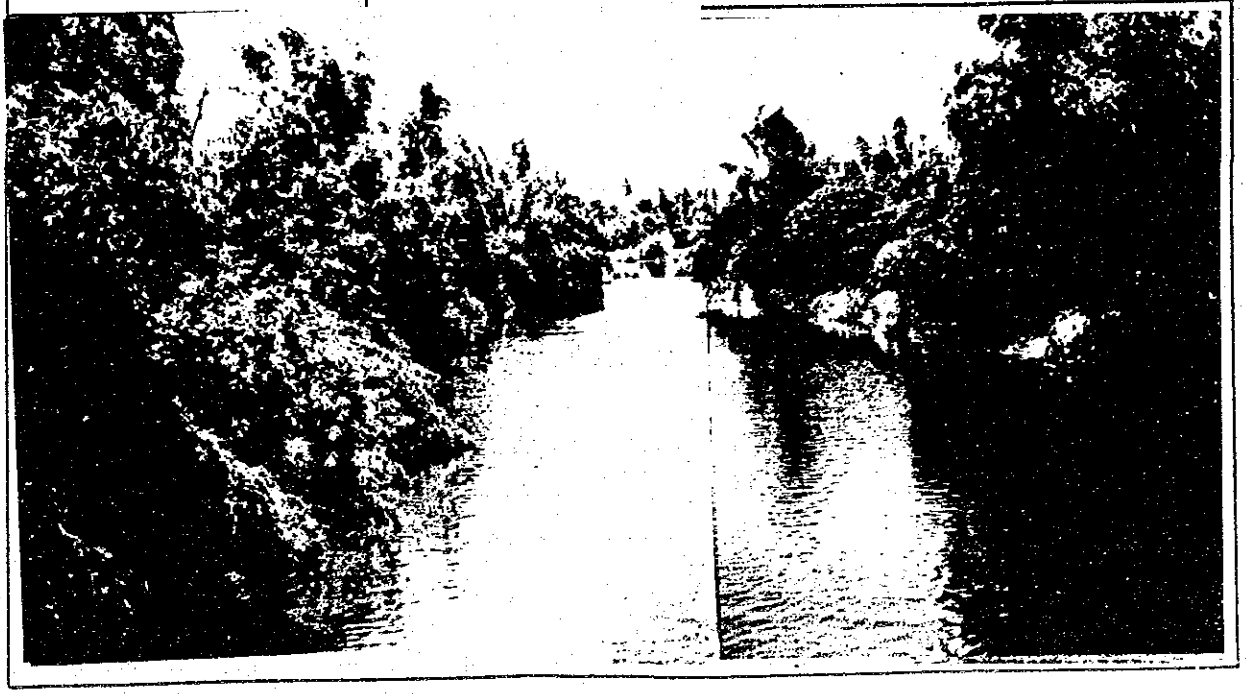
1) Materials : Gravel, Coarse Sand

2) Shape :

3) Colour : Gray, Black

4) Others :





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

2. GRADATION ANALYSIS

Sample No. : 0-1

Date of Test: June 15, 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")	0 gr.	0 %	100 %	100 %	
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)	189.80	18.98	81.02	81.02	
2.00 (No.10)	170.40	17.04	63.98	63.98	
1.18 (No.16)	281.20	28.12	35.86	35.86	
0.42 (No.40)	291.30	29.13	6.73	6.73	
0.297 (No.50)	36.50	3.65	3.08	3.08	
0.150(No.100)	23.30	2.53	.75	.75	
0.074(No.200)	0.40	.04	.71	.71	

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

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

Sample No. : O-1
Date of Test: June 16, 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	321 gr.	320 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.79	2.78	2.785

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

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.	: 0-1	River/Canal	: OLO	Location	Olo, Tangatarem
Date of Sampling	: June 1, 1989	Date of Granulation Analysis	: June15, 1989	Date of Specific Gravity test	: June 16, 1989

1-1 Specific Gravity

Name of Particle Sizeless than 0.074 (0.074 mm.-9.51 mm.		Greater than 9.51 mm.
Specific Gravity	2.79	

1-2 Granation

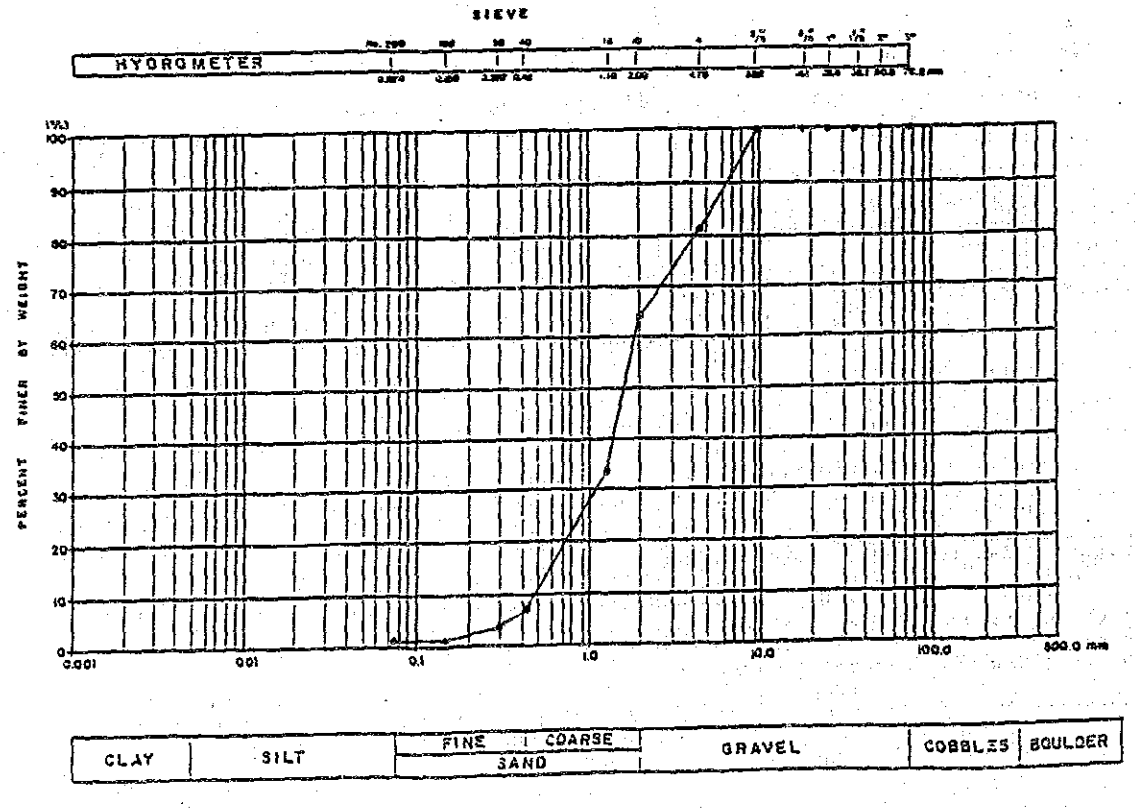
Particle Size (mm)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2	100	2.38	63.98		
		19.1	100	1.19	35.86		
		9.51	100	0.42	6.73		
		4.76	100	0.297	3.08		
		2.38	100	0.150	0.75		
		1.19	100	0.074	0.71		
		0.42	81.02	-			

Percentage Conversion 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.	6.02 %
Cobbles	76.2 ~ 300 mm	0	Silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	36.02	Clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	57.25	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.50 mm. 30% Particle Size D_{30} = 1.5 mm.

60% Particle Size D_{60} = 2.0 mm. Uniformity Coefficient U_c = D_{60}/D_{10} = 4.00

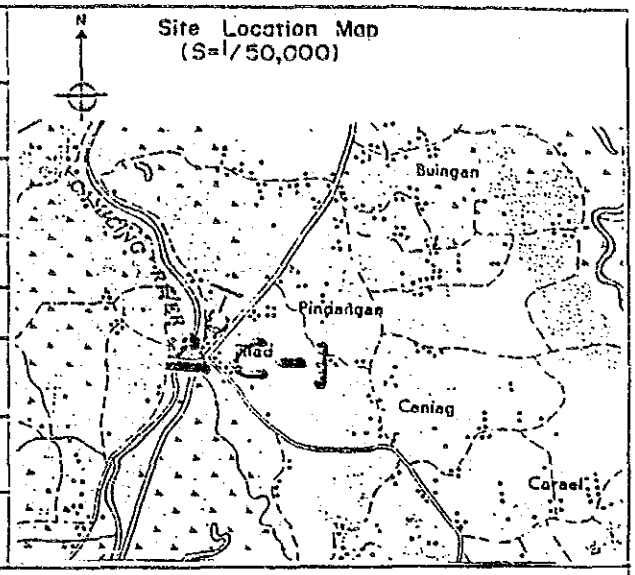


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	C-1	
River / Irrigation Canal	CAMILING RIVER	
Location	Bilad, Camiling Tarlac	
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

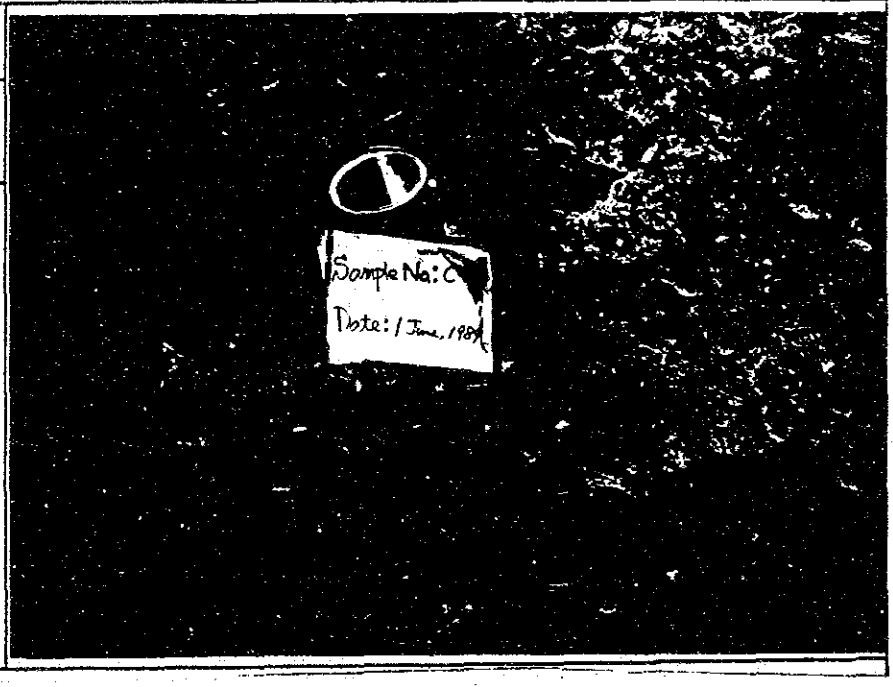
Characteristics Observed by the Eyes

1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :



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

2. GRADATION ANALYSIS

Sample No. :C C-1

Date of Test: June 9, 1989

Tested by : J.C. Muya

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)	0.8	.08	99.72	99.72	
1.18 (No.16)	2.1	.21	99.71	99.71	
0.42 (No.40)	390.5	39.05	60.66	60.66	
0.297 (No.50)	412.0	41.20	19.46	19.46	
0.150(No.100)	181.0	18.10	1.36	1.36	
0.074(No.200)	7.5	.75	.61	.61	

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

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

Sample No. : C-1
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	326 gr.	323 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.87	2.82	2.845

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

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.	C-1	River/Canal	CAMILING	Location	Bilad, Camiling
Date of Sampling	June 1, 1989	Date of Grain Size Analysis	June 9, 1989	Date of Specific Gravity test	June 10, 1989

1-1 Specific Gravity

Range of Particle Sizes	Smaller than 0.074 mm.	0.074 mm.-4.76 mm.	Greater than 4.76 mm.
Specific Gravity			

1-2 Gradation

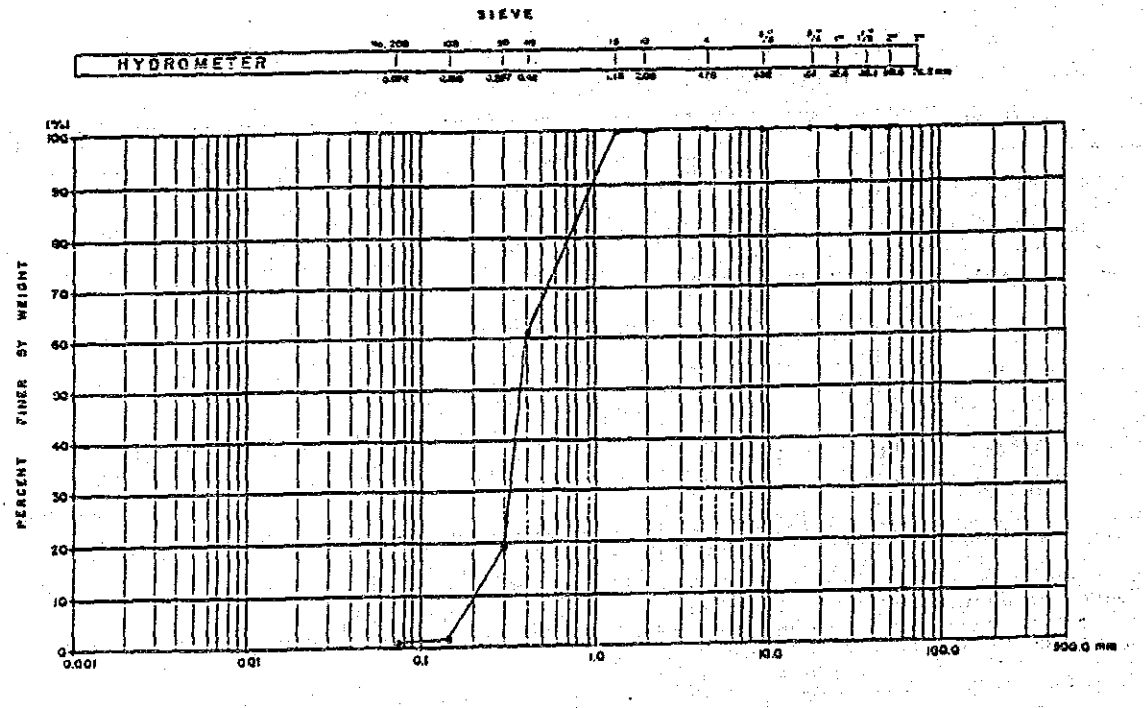
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		9.52		2.00	99.92		
		38.1	100	1.18	99.71		
		19.1	100	0.42	60.66		
		15.4	100	0.297	19.46		
		13.1	100	0.149	1.36		
		9.52	100	0.074	.61		
		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.	60.05 %
Cobbles	76.2 ~ 300 mm.	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm.	0.08	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	39.26	Colloids	Smaller than 0.001mm.	

10% Particle Size D10 = 0.20 mm. 50% Particle Size D50 = 0.36 mm.

60% Particle Size D60 = 0.4 mm. Uniformity Coefficient Cu = D60/D10 = 2.0

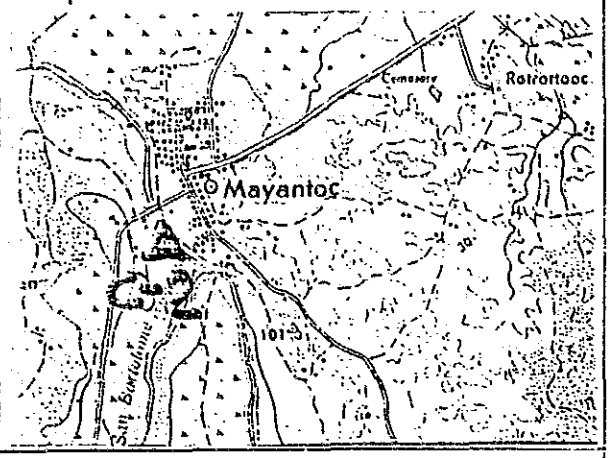


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	C-2	
River / Irrigation Canal	CAMILLING RIVER	
Location	Mayantoc, Tarlac	
Date of Sampling	May 30, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	100 m
	Bed Materials	Gravel, Sand Cobble
	Others	

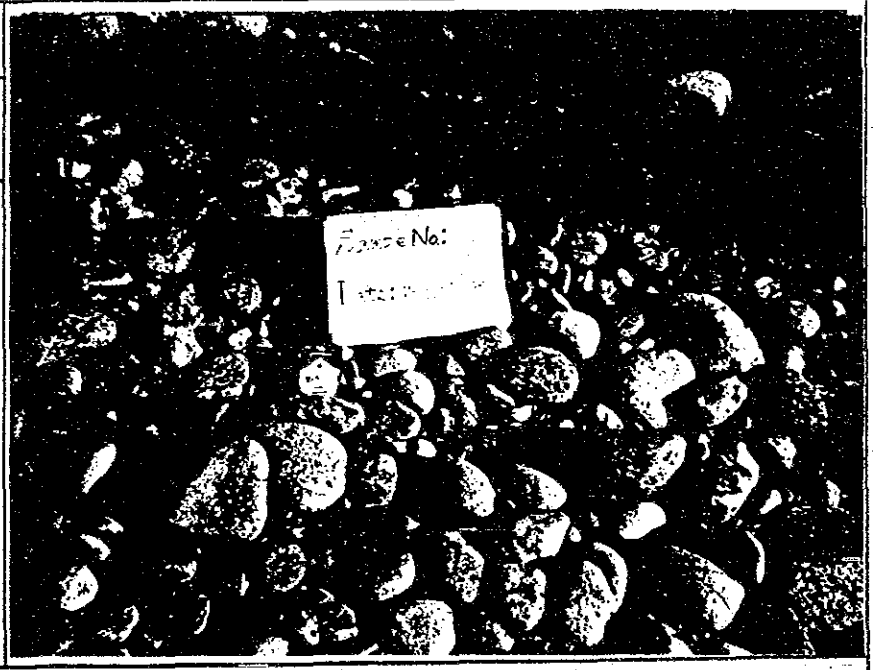
Site Location Map
(S=1/50,000)

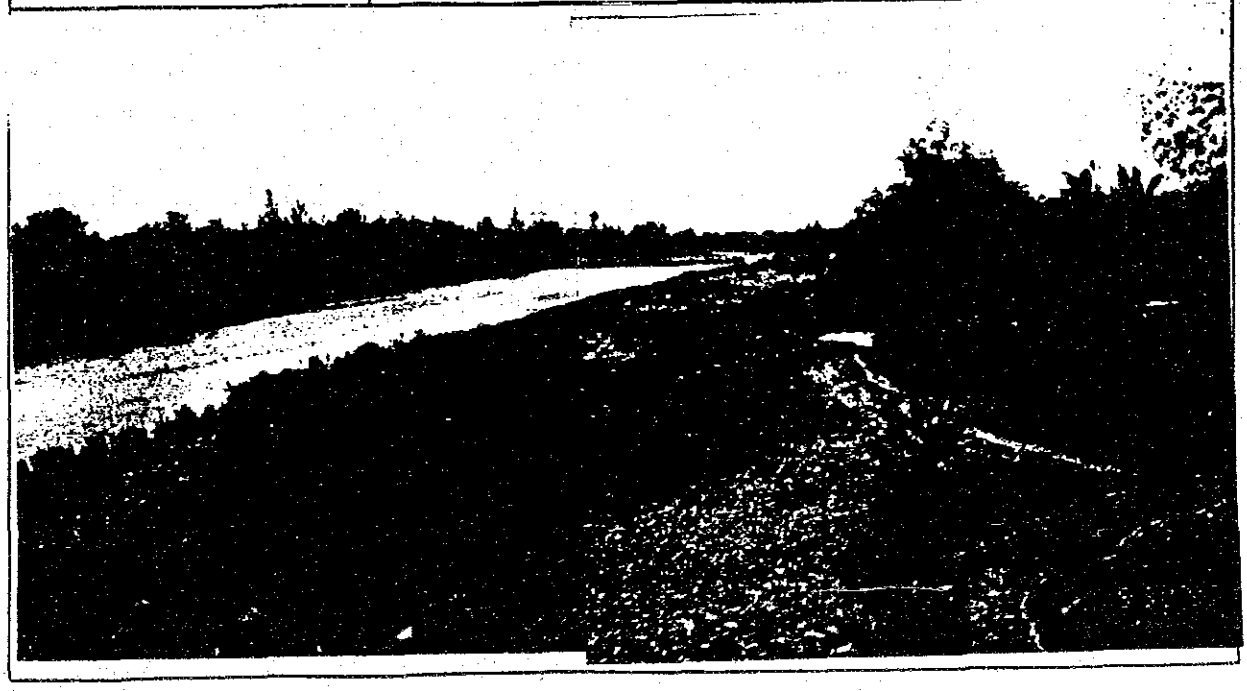


Discription of Sample	
Average Size of Armour Coats	150 mm

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. : C-2

Date of Test: June 3, 1989

Tested by : Jesus C. Muya

2-1 Particles Greater than 100 mm.

Total Weight of Materials Smaller than 100 mm. WS = 30.0 kg.

Total Weight of Materials Greater than 100 mm. Wg = 7.6 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
140 mm.	4.1 kg.	37.6 kg.	100.0 %	150	130	110
120	3.5	33.5	89.1	170	130	80

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

2-2 Sieve Test

Total Weight of Sample for Sieve Test Wt = 15,230 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")	3,552	23.3	76.7	61.2	
38.1 (1 1/2")	1,255	8.2	68.5	54.6	
25.4 (1")	2,160	14.2	54.3	43.3	
19.1 (3/4")	620	4.1	50.2	40.1	
9.52 (3/8")	1,229	8.1	42.1	35.6	
4.76 (No.4)	927	6.1	36.0	28.7	
2.00 (No.10)	1,273	8.4	27.6	22.0	
1.18 (No.16)	1,112	7.3	20.3	16.2	
0.42 (No.40)	1,791	11.7	8.6	6.9	
0.297 (No.50)	604	3.9	4.7	3.7	
0.150(No.100)	557	3.6	1.1	0.9	
0.074(No.200)	167	1.1	0	0	

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

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

Sample No. : C-2
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	322 gr.	320 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.81	2.78	2.795

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

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	4805 gr.	3853 gr.	-
(2) Weight of Saturated Sample in Water	3105 gr.	2506	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.83	2.86	2.845

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

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

1. REPORT

Sample No.	C-2	River/Canal	Camiling	Location	Mayantoc, Tarlac
Date of Sampling	May 30, 1989	Date of Granulometric Analysis	June 3, 1989	Date of Specific Gravity Test	June 5, 1989

1-1 Specific Gravity

Name of Particle Sizeless than 0.074 mm.	0.074 mm.-4.56 mm.	Greater than 4.56 mm.
Specific Gravity	2.795	2.845

1-2 Granulometric Analysis

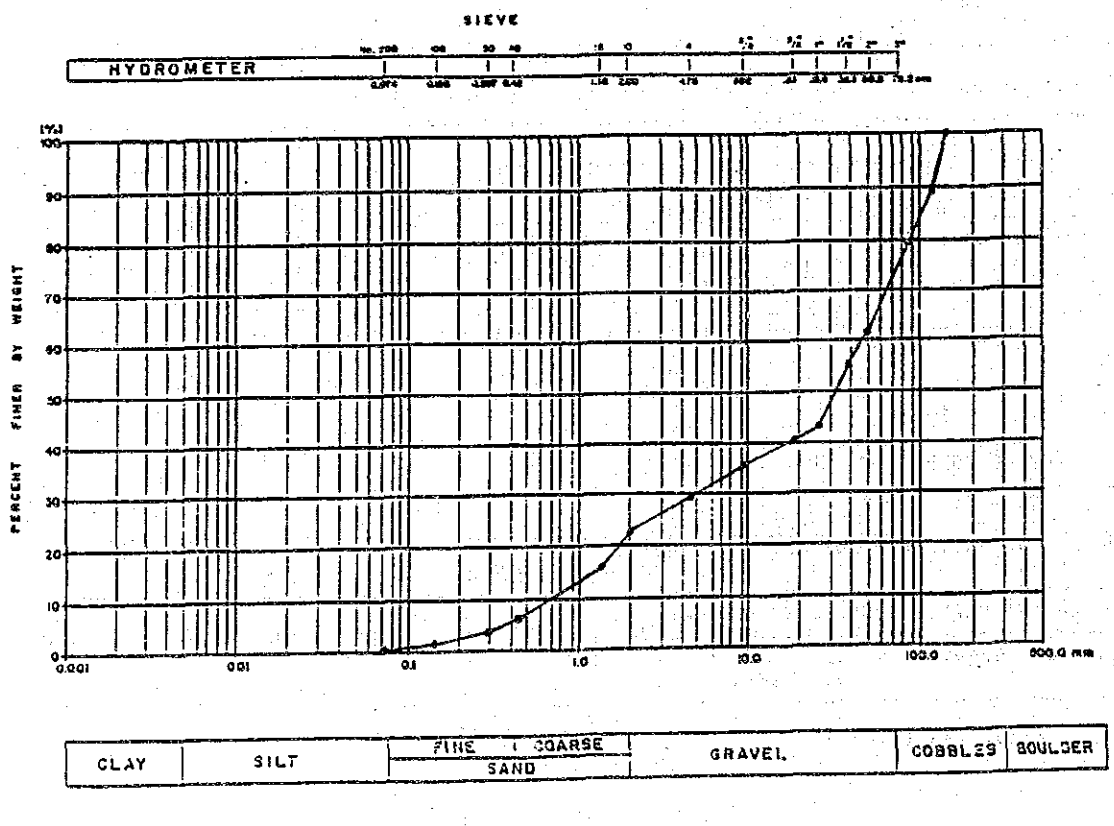
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
140	100.0	7.32	-	2.38	22.0
120	89.1	10.8	61.2	1.18	16.2
		13.3	54.6	0.42	6.9
		15.4	43.3	0.297	3.7
		19.1	40.1	0.150	0.9
		9.52	35.6	0.074	0
		6.78	28.7	-	

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.	6.9 %
Cobbles	76.2 ~ 300 mm	30.0	silt	0.005 - 0.074 mm.	0
Gravel	2.0 - 76.2 mm	48.0	clay	0.001 - 0.005 mm.	0
Coarse Sand	0.42 - 2.0 mm.	15.1	Colloids	Smaller than 0.001mm.	0

10% Particle Size d10 = 0.6 mm. 50% Particle Size d50 = 32.8 mm.

60% Particle Size d60 = 50.0 Uniformity Coefficient Cu = d60/d10 = 83.3

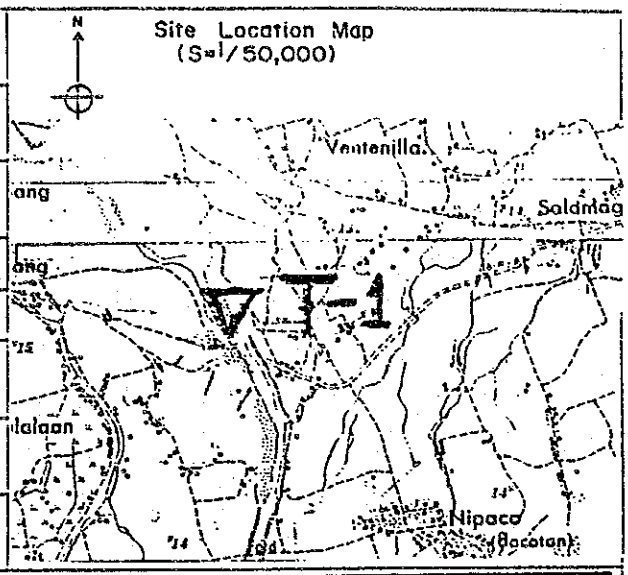


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	T-1	
River / Irrigation Canal	TARLAC RIVER	
Location	Rang-Ayan Paniqui, Tarlac	
Date of Sampling	May 30, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	500 m
	Bed Materials	Sand
	Others	

Site Location Map (Scale 1/50,000)



Discription of Sample

Average Size of Armour Coats	mm

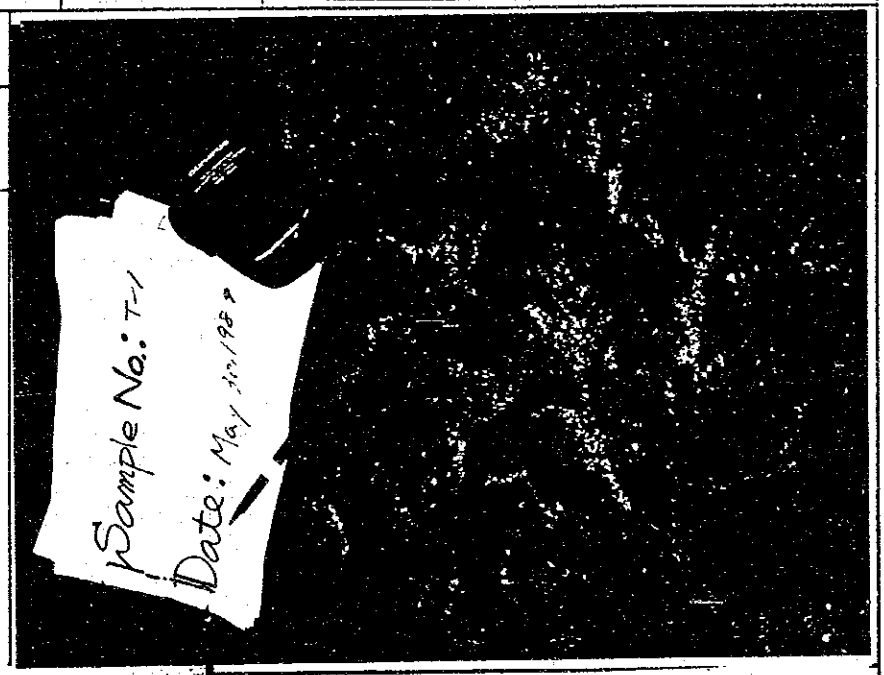
Characteristics Observed by the Eyes

1) Materials : Sand

2) Shape : Gray

3) Colour :

4) Others :



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

2. GRADATION ANALYSIS

Sample No. : T-1

Date of Test: June 5, 1989

Tested by : Jesus C. Muya

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")	0 gr.	0 %	100 %	100 %	
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")	0.8	.08	99.92	99.92	
4.76 (No.4)	1.5	.15	99.77	99.77	
2.00 (No.10)	8.7	.87	98.9	98.9	
1.18 (No.16)	21.7	2.17	96.73	96.73	
0.42 (No.40)	360.2	36.02	60.71	60.71	
0.297 (No.50)	260.9	26.09	34.62	34.62	
0.150(No.100)	314.2	31.42	3.2	3.2	
0.074(No.200)	29.0	2.9	0.3	0.3	

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

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

Sample No. : T-1
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	313.0 gr.	314 gr.	-
(2) Volume of Flask	500.0 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.67	2.69	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	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.	T-1	River/Canal	TARLAC	Location	Rang-ayan, Paniqui
Date of Sampling	May 30, 1989	Date of Grading Analysis	June 5, 1989	Date of Specific Gravity test	June 6, 1989

I-1 Specific Gravity

Name of Particle Size	Less than 4.816 (0.074 mm.)~2.00 mm.	Greater than 2.00 mm.
Specific Gravity	2.68	

I-2 Gradation

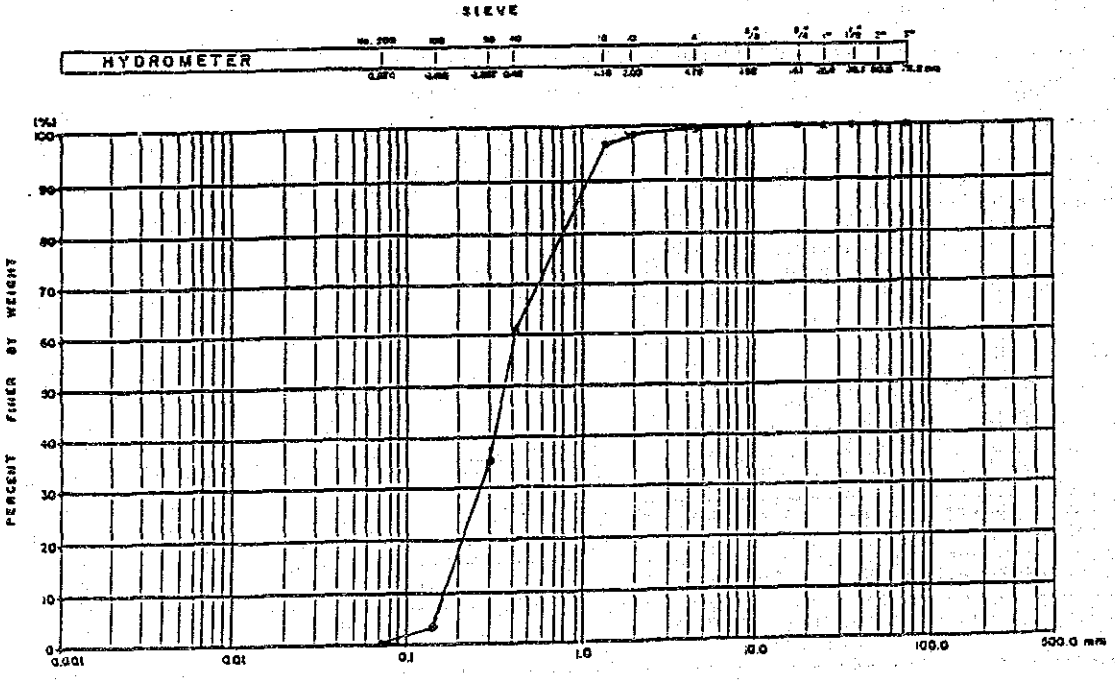
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
	7.52	100.0	1.20	98.9	
	50.8	100.0	1.18	96.73	
	38.1	100.0	0.42	60.71	
	25.4	100.0	0.297	34.62	
	19.1	100.0	0.150	3.2	
	9.51	99.92	0.074	0.3	
	4.76	99.77	-		

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.	60.40
Cobbles	76.2 ~ 300 mm	0	silt	0.005 ~ 0.074 mm.	
Gravel	2.0 ~ 76.2 mm	1.1	clay	0.001 ~ 0.005 mm.	
Coarse Sand	0.42 ~ 2.0 mm.	38.19	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} : 15 mm. 50% Particle Size D_{50} 0.35 mm.

30% Particle Size D_{30} 0.40 mm. Uniformity Coefficient $U_c = D_{60}/D_{10}$ = 2.7

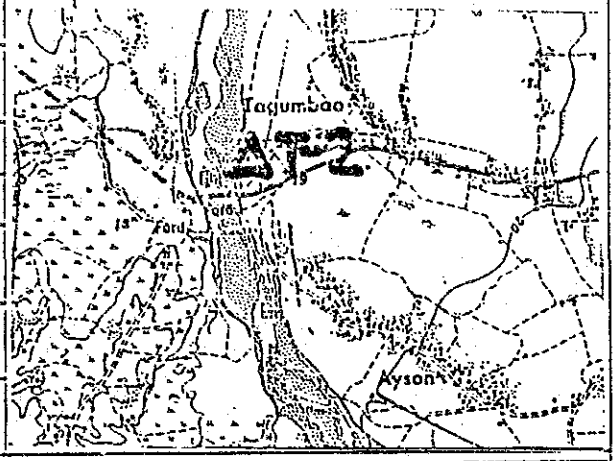


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	T - 2		
River / Irrigation Canal	TARLAC RIVER		
Location	Ayson, Gerona, Tarlac		
Date of Sampling	May 30, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	500 m	
	Bed Materials	Sand	
	Others		

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



Discription of Sample

Average Size of Armour Coats	mm

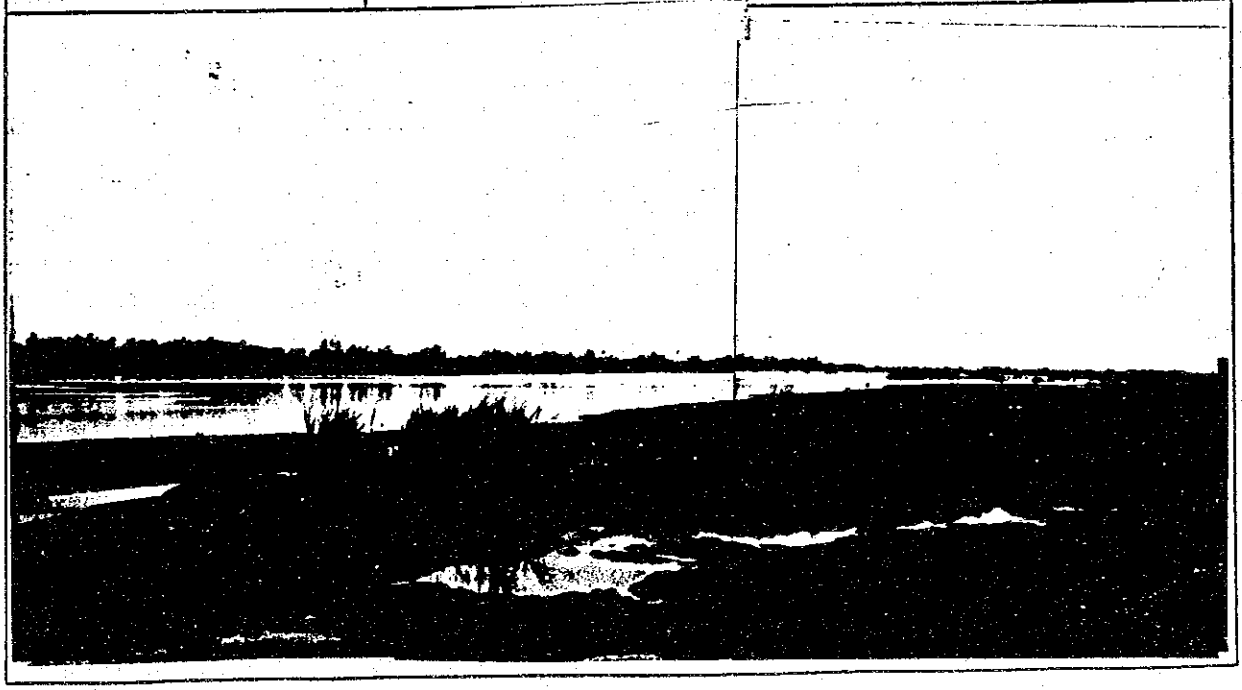
Characteristics Observed by the Eyes

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 : J.C. Muya

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")	0 gr.	0 %	100 %	100 %	
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)	0.5	.05	99.75	99.95	
2.00 (No.10)	1.8	.18	99.77	99.77	
1.18 (No.16)	24.5	2.45	97.32	97.32	
0.42 (No.40)	203.9	20.39	76.93	76.93	
0.297 (No.50)	464.1	46.41	30.52	30.52	
0.150(No.100)	281.7	28.17	2.35	2.35	
0.074(No.200)	20.2	2.02	0.33	0.33	

(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	326 gr.	324 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.87	2.84	2.855

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

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.	: T-2	River/Canal	TARLAC	Location	: Ayson, Gerona
Date of Sampling	: May 30, 1989	Date of Granulometric Analysis	June 5, 1989	Date of Specific Gravity test	: June 6, 1989

I-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		2.855	

I-2 Granulation

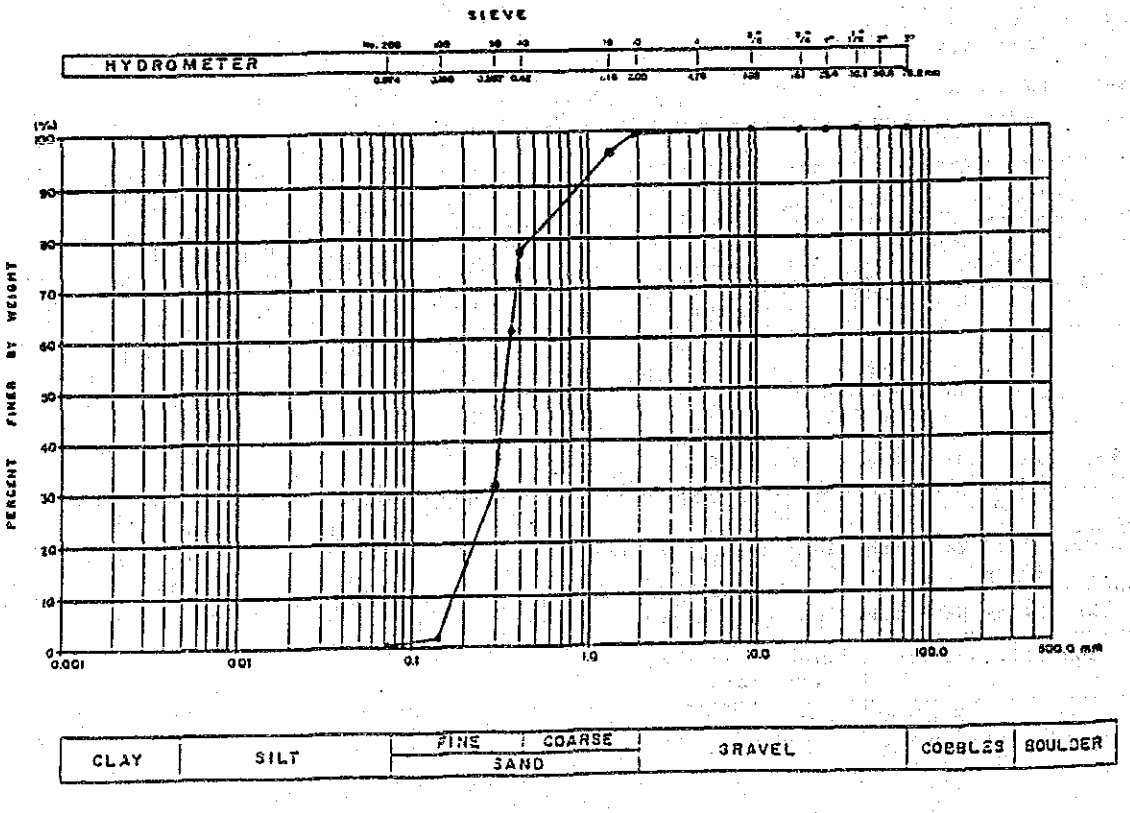
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		76.2	100	2.00	99.77		
		50.8	100	1.19	97.32		
		38.1	100	0.42	76.93		
		25.4	100	0.177	30.52		
		19.1	100	0.149	2.35		
		9.52	100	0.074	0.33		
		4.76	99.99				

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.	76.6 %
Cobbles	76.2 ~ 300 mm	0	Silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	0.23	Clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	22.84	Colloids	Smaller than 0.001 mm.	

10% Particle Size D_{10} = 0.16 mm. 60% Particle Size D_{60} = 0.31 mm.

50% Particle Size D_{50} = .34 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 2.125

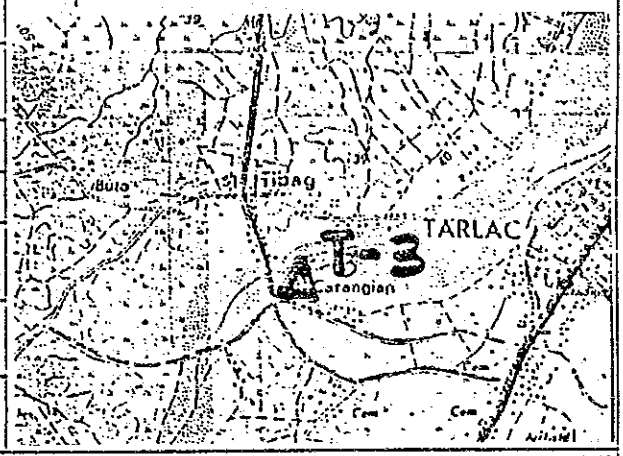


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	T-3		
River / Irrigation Canal	TARLAC RIVER		
Location	Tibag, Tarlac Tarlac		
Date of Sampling	May 30, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	200	m
	Bed Materials	Sand	
	Others		

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



Discription of Sample	
Average Size of Armour Coats	mm

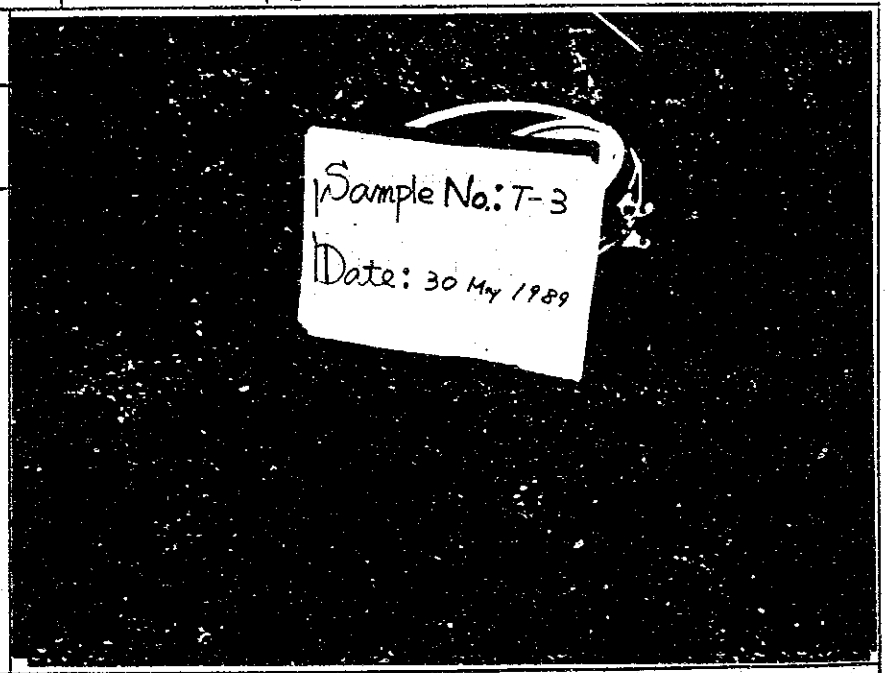
Characteristics by the Eyes — Observed

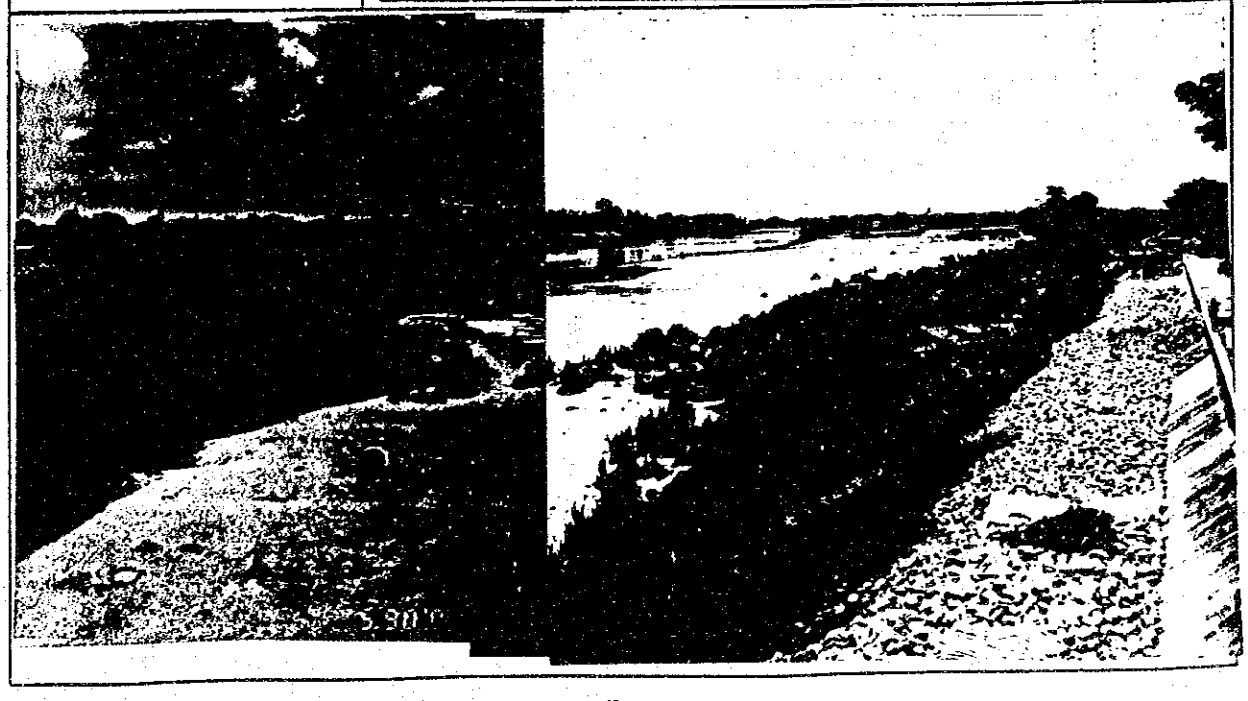
1) Materials : Sand

2) Shape :

3) Colour : Gray

4) Others :





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

2. GRADATION ANALYSIS

Sample No. : T-3

Date of Test: June 5, 1989

Tested by : J.C. Muya

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 = 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")	0 gr.	0 %	100 %	100 %	
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)	2.3	.23	99.77	99.77	
2.00 (No.10)	16.2	1.62	98.15	98.15	
1.18 (No.16)	45.5	4.55	96.3	96.3	
0.42 (No.40)	663.0	66.3	27.3	27.3	
0.297 (No.50)	195.4	19.54	7.76	7.76	
0.150(No.100)	72.7	7.27	0.49	0.49	
0.074(No.200)	3.7	0.37	0.12	0.12	

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

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

Sample No. : T-3
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	315 gr.	313 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.70	2.67	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

I. REPORT

Sample no.	T-3	River/Creek	TARLAC	Location	
Date of Sampling	May 30, 1989	Date of Grading Analysis	June 5, 1989	Date of Specific Gravity test	June 6, 1989

(-) 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	

(-) Gradation

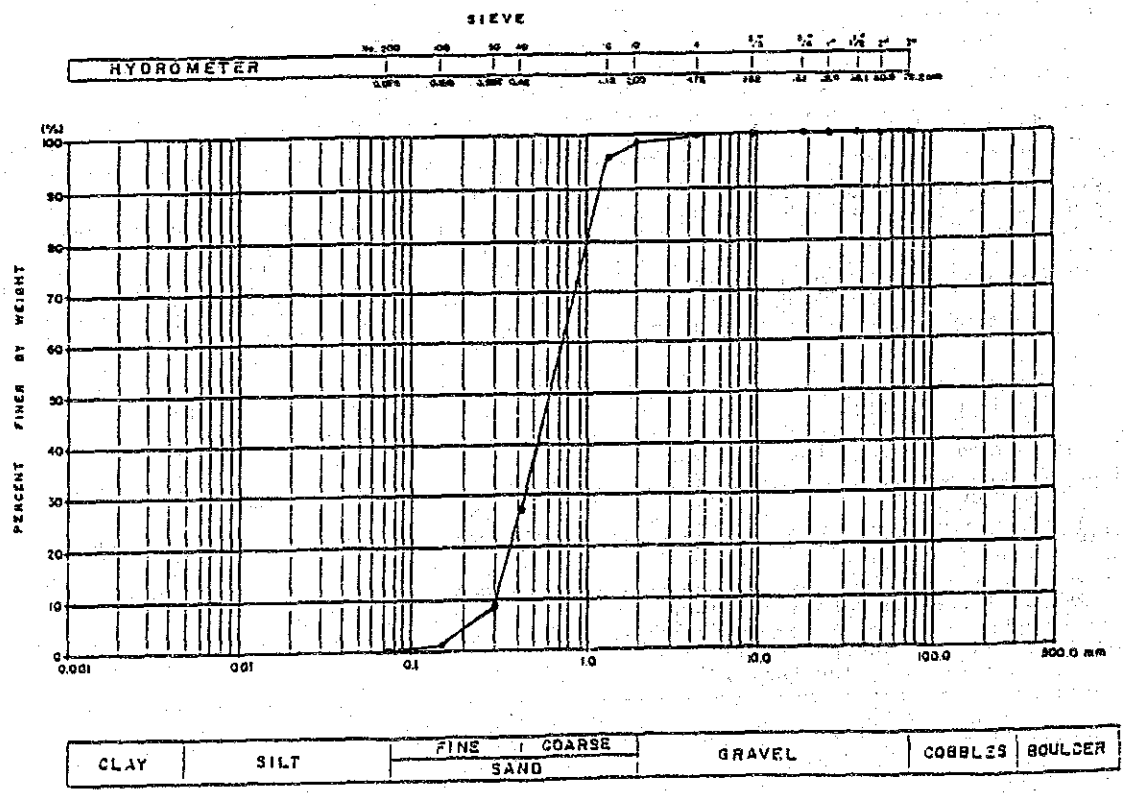
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
1	100	0.59	98.15		
0.50	100	0.18	96.3		
0.25	100	0.12	27.3		
0.125	100	0.037	7.76		
0.063	100	0.059	0.49		
0.031	100	0.074	0.12		
	99.77	-			

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.	27.18 %
Cobbles	76.2 ~ 300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	1.85	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	70.85	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.3 mm. 50% Particle Size D_{50} = .63 mm.

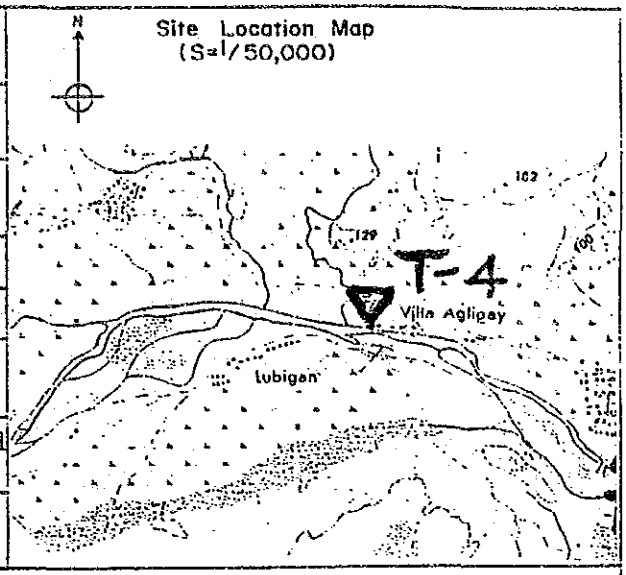
60% Particle Size D_{60} = .8 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 2.66



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

1. SAMPLING

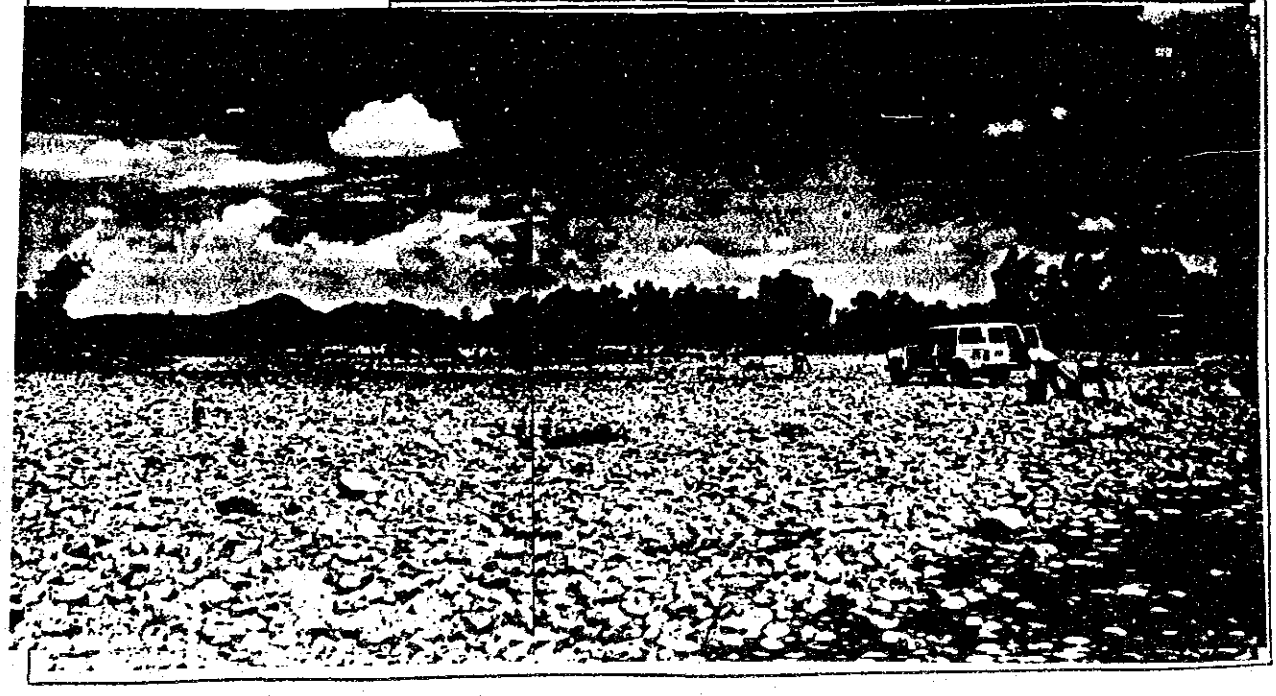
Sample No.	T-4		
River / Irrigation Canal	MORIONES RIVER		
Location	Villa Aglipay Capas, Tarlac		
Date of Sampling	May 30, 1989		
Sampled by	M. KATAYAMA		
Condition of Sampling of Site	Breadth (Bank to Bank)	200 m	
	Bed Materials	Cobble, Gravel Sand	
	Others		



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. : T-4

Date of Test: June 5, 1989

Tested by : J.C. Muya

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 = 10586 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")	845	7.9	92.1	92.1	
38.1 (1 1/2")	1200	11.3	80.8	80.8	
25.4 (1")	1,945	18.4	62.4	62.4	
19.1 (3/4")	889	8.4	54	54	
9.52 (3/8")	1,763	16.6	37.4	37.4	
4.76 (No.4)	1,100	10.4	27	27	
2.00 (No.10)	700	6.6	20.4	20.4	
1.18 (No.16)	325	3.1	17.3	17.3	
0.42 (No.40)	842	7.9	9.4	9.4	
0.297 (No.50)	574	5.4	4	4	
0.150(No.100)	264	2.5	1.5	1.5	
0.074(No.200)	98	0.9	0.6	0.6	

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

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

Sample No. : T-4
Date of Test: June 5, 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	323 gr.	323 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.82	2.82	2.82

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

3-3 Particles Greater than 9.52 mm.

Case No.	1	2	Average
(1) Weight of Saturated Surface-Dry Sample in Air	3120 gr.	3605 gr.	-
(2) Weight of Saturated Sample in Water	1985 gr.	2359	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.80	2.89	2.845

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

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

1. REPORT

Sample No.	: T-4	River/Canal	: MORIONES	Location	: Villa Aglipay
Date of Sampling	: May 30 1989	Date of Granulometric Analysis	: June 5 1989	Date of Specific Gravity Test	: June 6, 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		2.82	2.845

1-2 Granulation

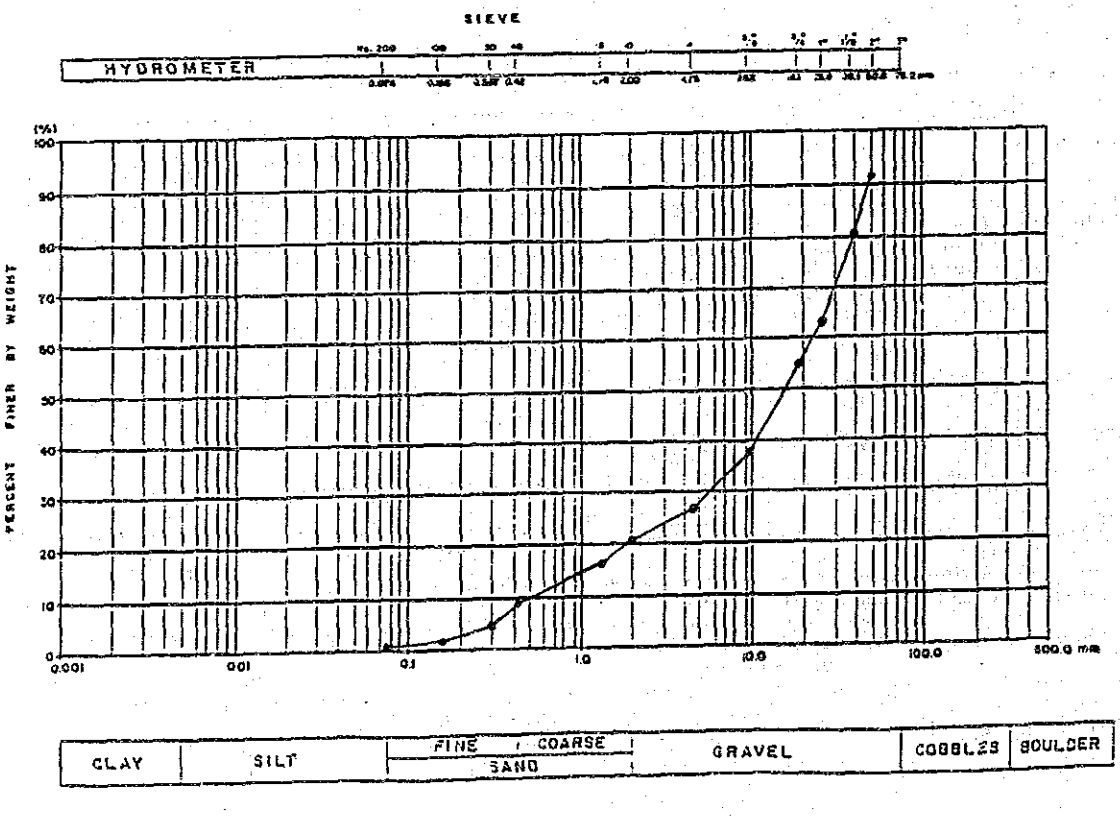
Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
		7.62		2.38	20.4		
		50.8	92.1	1.19	17.3		
		38.1	80.8	0.42	9.4		
		25.4	62.4	0.297	4		
		19.1	54	0.149	1.5		
		9.52	37.4	0.074	0.6		
		4.76	27	-			

Percentage Accordint 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.	8.8 %
Cobbles	76.2 ~300 mm	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm	79.6	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	11.0	Colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = 0.6 mm. 60% Particle Size D_{60} = 16 mm.

30% Particle Size D_{30} = 23 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 38.3

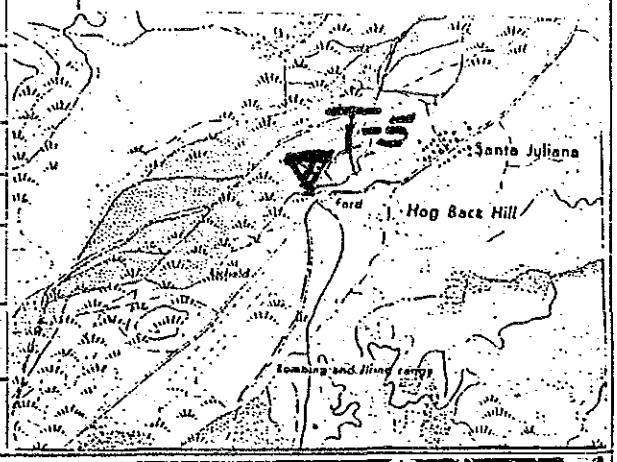


DATA SHEET (1/4) FOR RIVER BED MATERIALS SURVEY

1. SAMPLING

Sample No.	T-5	
River / Irrigation Canal	O'DONNEL RIVER	
Location	Umbac, Capas Tarlac	
Date of Sampling	May 30, 1989	
Sampled by	M. KATAYAMA	
Condition of Sampling of Site	Breadth (Bank to Bank)	1,000 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. : T-5

Date of Test: June 5, 1989

Tested by : J.C.Muya

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 = 2515 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 %	1000 %	100 %	
50.8 (2")	0	0	100	100	
38.1 (1 1/2")	0	0	100	100	
25.4 (1")	137	5.4	94.6	94.6	
19.1 (3/4")	27	1.1	93.5	93.5	
9.52 (3/8")	155	6.2	87.3	87.3	
4.76 (No.4)	277	11.0	76.3	76.3	
2.00 (No.10)	510	20.3	56	56	
1.18 (No.16)	290	11.5	44.5	44.5	
0.42 (No.40)	783	31.1	13.4	13.4	
0.297 (No.50)	185	7.4	6	6	
0.150(No.100)	129	5.1	0.9	0.9	
0.074(No.200)	16	.60	0.3	0.3	

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

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

Sample No. : T-5
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	318 gr.	312 gr.	-
(2) Volume of Flask	500 ml.	500 ml.	-
(3) Specific Gravity (Saturated Surface-dry Basis)	2.75	2.66	2.70

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

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-5	River/Coast	O'DONNEL	Location	Umbac, Capas
Date of Sampling	May 30, 1989	Date of Grain Size Analysis	June 5, 1989	Date of Specific Gravity Test	June 6, 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		2.70	

(-2 Gradation

Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)	Particle Size (mm.)	Percentage of Passing (%)
76.2 mm.	100	2.00	56		
50.8 mm.	100	1.19	44.5		
38.1 mm.	100	0.42	13.4		
25.4 mm.	94.6	0.297	6		
19.1 mm.	93.5	0.149	0.9		
9.52 mm.	87.3	0.074	0.3		
4.76 mm.	76.3	-			

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.	13.1 %
Cobbles	76.2 ~ 300 mm.	0	silt	0.005 - 0.074 mm.	
Gravel	2.0 - 76.2 mm.	44.0	clay	0.001 - 0.005 mm.	
Coarse Sand	0.42 - 2.0 mm.	42.6	colloids	Smaller than 0.001mm.	

10% Particle Size D_{10} = .38 mm. 50% Particle Size D_{50} = 1.7 mm.

60% Particle Size D_{60} = 2.5 mm. Uniformity Coefficient $C_u = D_{60}/D_{10}$ = 6.58