資料2.4.1.3-7 岩級区分

報告書で使用した岩級区分は、次の基準（電研式）で行った。

ダム基礎岩盤分類基準（田中）

名称	特徴
A	きわめて新鮮なもので造岩鉱物及び粒子は風化、変質を受けていない。亀裂、節理はよく密着し、それらの面に沿って風化の跡は見られないもの。 ハンマによって打診すれば澄んだ音を出す。
B	岩質堅硬で開口した（たとえ1㎜でも）亀裂あるいは節理はなく、よく密着している。 ただし造岩鉱物及び粒子は部分的に多少風化、変質が見られる。 ハンマによって打診すれば澄んだ音を出す。
C_H	造岩鉱物及び粒子は石英を除けば風化作用を受けてはいるが岩質は比較的堅硬である。 一般に褐鉄鉱等に汚染せられ、節理あるいは亀裂の間の粘着力はわずかに減少しており、ハンマの強打によって割れ目に沿って岩塊が剝脱面には粘土質物質の薄層が残留することがある。 ハンマによって打診すれば少し濁った音を出す。
C_M	造岩鉱物および粒子は石英を除けば風化作用を受けて多少軟質化しており、岩質も多少軟らかくなっている。 節理あるいは亀裂の間の粘着力は多少減少しておりハンマの普通程度の打撃によって、割れ目に沿って岩塊が剝脱し、剝脱面には粘土質物質の層が残留することがある。 ハンマによって打診すれば多少濁った音を出す。
C_L	造岩鉱物及び粒子は風化作用を受けて軟質化しており岩質も軟らかくなっている。 節理あるいは亀裂の間の粘着力は減少しており、ハンマの軽打によって割れ目に沿って岩塊が剝脱し、剝脱面には粘土質物質が残留する。 ハンマによって打診すれば濁った音を出す。
D	岩石鉱物及び粒子は風化作用を受けて著しく軟質化しており岩質も著しく軟らかい。 節理あるいは亀裂の間の粘着力はほとんどなく、ハンマによってわずかな打撃を与えるだけでくずれ落ちる。剝脱面には粘土質物質が残留する。 ハンマによって打診すれば著しく濁った音を出す。

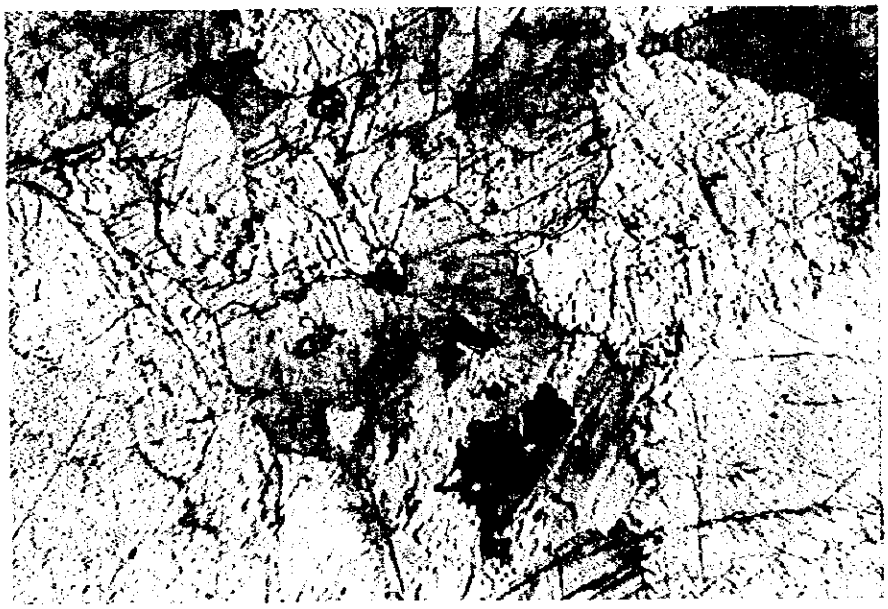
Classification criteria for rock foundation of dam (by Tanaka)

Category	Characteristics
A	Very fresh rock, no weathering nor alteration observed in rock-formation minerals and particles. Fissures and joints are well closed and no weathering is observed on the planes. thereof. Sound of hammering is metallic.
B	Very hard rock, well closed with no opened (even 1 mm) fissures or joints, and well closed. However, partial and slight weathering and alteration are observed. Sound of hammering is metallic.
C_H	Relatively hard rock, though rock-forming minerals and particles except quarts are weathered. Generally chemically compounded with limonite, etc. Cohesive strength at joints and fissures is slightly reduced. Rock fragments are flaked at joints by strong hit with hammer, and clayey material may be observed on the stripped face. Sound of hammering is slightly dull.
C_M	Rock, rock-forming minerals and particles except quartz are slightly softened by weathering. Cohesive strength at joints and fissures is slightly reduced. Rock fragments are flaked at joints by normal hit with hammer, and clayey material may be observed at the stripped face. Sound of hammering is slightly dull.
C_L	Rock, rock-forming minerals and particles are softened. Cohesive strength at joints and fissures are reduced. Rock fragment are flaked at joints by light hit with hammer, and clayey material is observed at stripped face. Sound of hammering is dull.
D	Rock, rock-forming minerals and particles are remarkably softened by weathering. Cohesive strength at joints and fissures is almost completely lost. Rock is easily destroyed by slight hit with hammer, and clayey material is observed at stripped face. Sound of hammering is very dull.

UBH-3(フィリッピン産の岩石)

斜長石（斜長石の単成分である灰長石Anorthite・・CaAl2Si2O8)・角閃石・斜方輝石・単斜輝石からなり，等粒状組織をもつ粗粒両輝石斑糲岩(Two-pyroxene Gabbro)と思われる.

上：単ニコル　　下：直交ニコル　　写真の横幅＝約4.5mm



2.4.1.4-1 材料調査項目一覧表

1991年調査（BSWM）	1996年B／D調査	1997年B／D調査
土質材調査	土質材調査	土質材調査
テストピット　4カ所	テストピット　7カ所	テストピット　7か所
室内試験	室内試験　14試料	室内試験　14試料
比重	比重	比重
粒度分析	粒度分析	粒度分析
含水量	含水量	含水量
標準突固め	標準突固め	含有機物量
コンシステンシィ	コンシステンシィ	コンシステンシィ
透水試験	透水試験	一次混合試験　18ケース
一軸圧縮試験	有機物含有量	含水量
河床材調査	一軸圧縮試験	粒度
テストピット　1カ所	ランダム材調査	突固め
比重	ボーリング　4本	二次混合試験　6ケース
粒度分析	河床材調査	比重
透水試験	テストピット4か所	粒度分析
一軸圧縮試験	室内試験　8試料	突固め
	比重	圧密
	粒度分析	三軸圧縮
	含水量	透水試験
	一軸圧縮試験	シルト岩調査
		ボーリング　4本
		物理試験　1式
		一軸圧縮試験　8個
		スレーキング試験　8個
		乾湿繰り返し試験　8個
		大型三軸圧縮試験　2試料
		大型突固め試験　2試料
		大型透水試験　2試料
		河床材調査
		テストピット　9か所
		物理試験　1式
		大型三軸圧縮試験　3試料
		大型突固め試験　3試料
		大型透水試験　3試料

Data 2.4.1.4-1-①

2.4.1.4-2 材料室内試験結果

コア材試料の室内試験結果一覧表（ダムサイト地区）(1996年度)
コア材試料の室内試験結果一覧表（その他の地区）(1996年度)
フィルター／ランダム材試料の室内試験結果一覧表(1996年度)
コア材試料の粒度分析図（ダムサイト地区）(1996年度)
コア材試験の粒度分析図（その他の地区）(1996年度)
フィルター／ランダム材試料の粒度分析図(1996年度)
ナヨム川河床砂礫物理試験結果表（ＴＰ－１２，１３）(1997年度)
ダムサイト上流地域河床砂礫物理試験結果表（ＴＰ－２１，２２）(1997年度)
ダムサイト下流地域河床砂礫物理試験結果表(TP-16,17,18,19)(1997年度)
河床材大型室内試験結果表(1997年度)
一軸圧縮圧縮強度結果表(1997年度)
スレーキング試験結果表(1997年度)
乾湿繰り返し試験結果表(1997年度)
シルト岩大型室内試験結果表(1997年度)
パンガシナン州立大学裏山室内試験結果表(1997年度)
ダムサイト右岸及び入植地室内試験結果表(1997年度)
第一次混合コア材試験結果表(1997年度)
第二次混合コア材試験結果表(1997年度)
粒度分布曲線図（河床砂礫）(1997年度)
粒度分布曲線図（土質材）(1997年度)
粒度分布曲線図（コア材／混合材）(1997年度)

Data 2.4.1.4-2-①

コア材試料の室内試験結果一覧表（ダムサイト地区）（1996年）

Locality	Sample No.	Specific Gravity	Grain size Analysis					Max. dry density	Moisture content		Atterberg Limits			Permeability coefficient at 20° C	Organic content	Maximum compression strength
			max.grain size	-0.074 (mm)	-4.8 (mm)	-12.7 (mm)	-38.1 (mm)		Natural	Optimum	Liquid limit	Plastic limit	Plasticity index			
			mm	%	%	%	%	gf/cm³	%	%	%	%	%	cm/s	%	kg.f/cm²
Dam site area	TP-3 1.0 to 1.5 m	2.62	12.7	89	92	100	....	1.441	44.00	43.75	68	30	38	5.672×10^{-6}	2.96	*0.133
	3.5 to 4.0 m	2.67	4.8	93	100	....	....	....	60.00	.....	57	27	30	8.044×10^{-6}	4.65	*0.222
	TP-4 1.5 to 2.0 m	2.62	2.0	98	....	....	....	1.721	52.00	29.00	56	27	29	1.012×10^{-5}	2.98	*0.075
	2.5 to 3.0 m	2.63	9.5	78	98	....	....	....	32.00	.....	31	20	11	8.358×10^{-6}	0.73	*0.296
	ITP-2		38.1	14	25	28	100	....	7.98	.....	.....	....	.....	.....	.....	.....
	ITP-3	2.77	12.7	37	89	100	....	1.705	21.28	16.50	53	28	25	7.699×10^{-6}	.....	4.135
	ITP-4	2.45	2.0	92	....	....	....	1.760	25.99	19.00	58	30	28	.....	.....	3.384
	ITP-5	2.52	9.5	82	98	....	....	1.535	29.81	27.00	62	32	30	6.710×10^{-7}	.....	4.454
	ITP-6	2.49	4.8	92	100	....	....	1.650	22.81	20.00	56	27	29	.....	.....	4.424

Note: * = Remolded sample

コア材試料の室内試験結果一覧表（その他の地区）（1996年度）

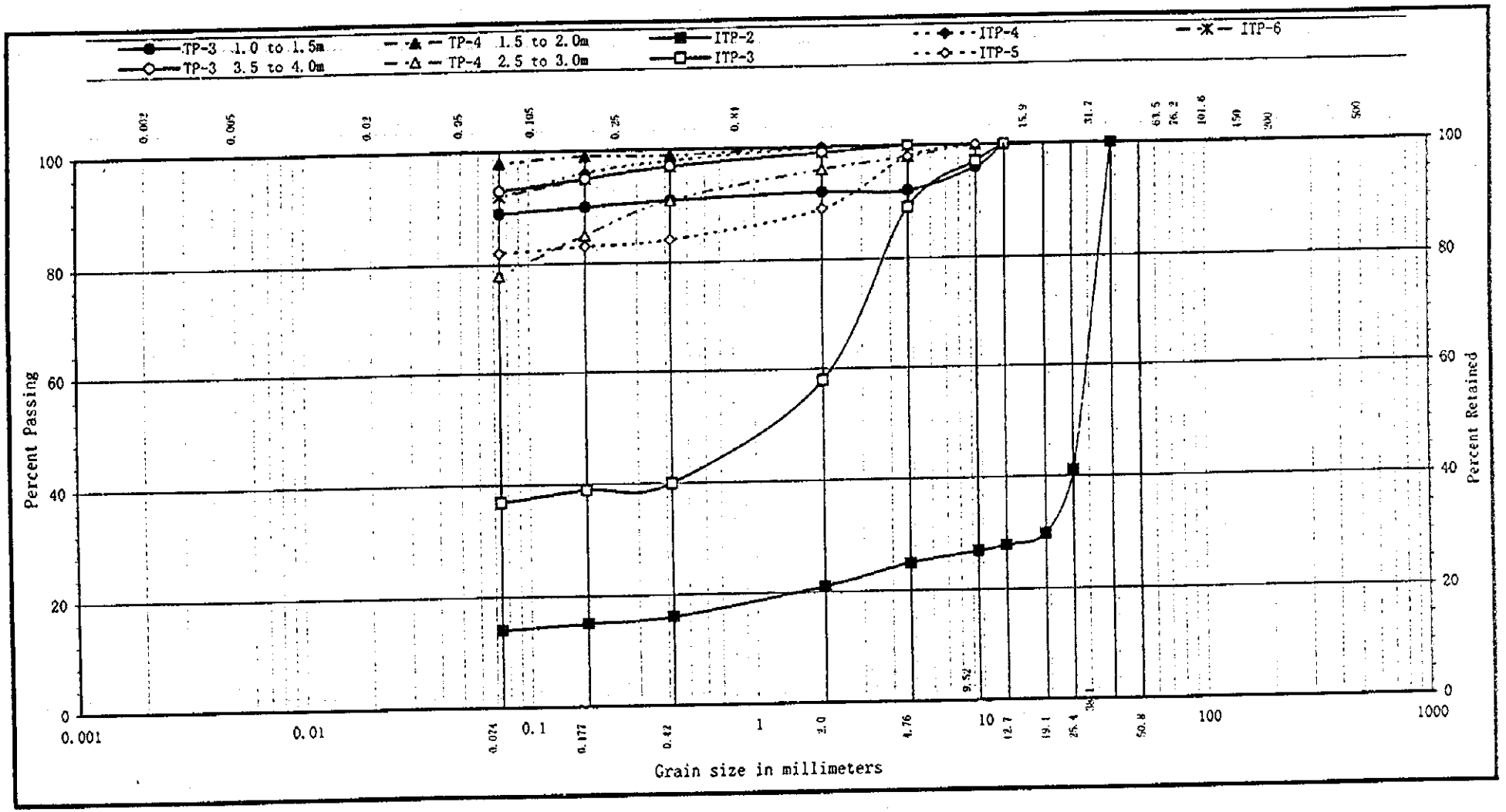
Locality	Sample No.	Specific Gravity	Grain size Analysis					Max. dry density	Moisture content		Atterberg Limits			Permeability coefficient at 20° C	Organic content	Maximum compression strength
			max.grain size	-0.074 (mm)	-4.8 (mm)	-12.7 (mm)	-38.1 (mm)		Natural	Optimum	Liquid limit	Plastic limit	Plasticity index			
			mm	%	%	%	%	gf/cm^3	%	%	%	%	%	cm/s	%	kg.f/cm^2
Others area	TP-1 1.0 to 1.5 m	2.61	9.5	87	97	....	....	1.540	29.00	31.50	58	28	30	9.332×10^{-6}	1.29	*0.523
	4.5 to 5.0 m	2.62	0.4	99	....	....	....	....	38.00	.....	46	20	26	9.120×10^{-6}	0.54	*0.197
	TP-2 1.0 to 1.5 m	2.62	12.7	85	98	....	....	1.742	30.00	27.50	69	30	39	9.019×10^{-6}	1.83	*0.548
	2.5 to 3.0 m	2.69	25.4	53	67	71	....	....	22.00	.....	53	24	29	2.453×10^{-5}	1.66	*0.826
	TP-7 2.5 to 3.0 m	2.82	4.8	92	100	....	....	....	55.00	.....	57	28	29	1.220×10^{-7}	0.22	*0.110
	4.5 to 5.0 m	2.58	19.1	57	66	81	....	1.540	36.00	33.50	62	29	33	1.650×10^{-7}	2.20	*0.263
	TP-8 1.0 to 1.5 m	2.65	9.5	69	93	....	....	1.475	37.00	29.00	70	31	39	1.086×10^{-6}	2.19	*0.353
	3.0 to 3.5 m	2.67	9.5	72	91	....	....	....	36.00	.....	68	32	36	4.840×10^{-7}	0.22	*0.326
	TP-11 1.0 to 1.5 m	2.69	9.5	68	95	....	....	1.475	30.00	25.00	51	25	26	1.412×10^{-6}	1.71	*0.518
	2.5 to 3.0 m	2.68	4.8	94	100	....	....	....	74.00	.....	61	29	32	6.977×10^{-6}	7.12	*0.095

Note: * = Remolded sample

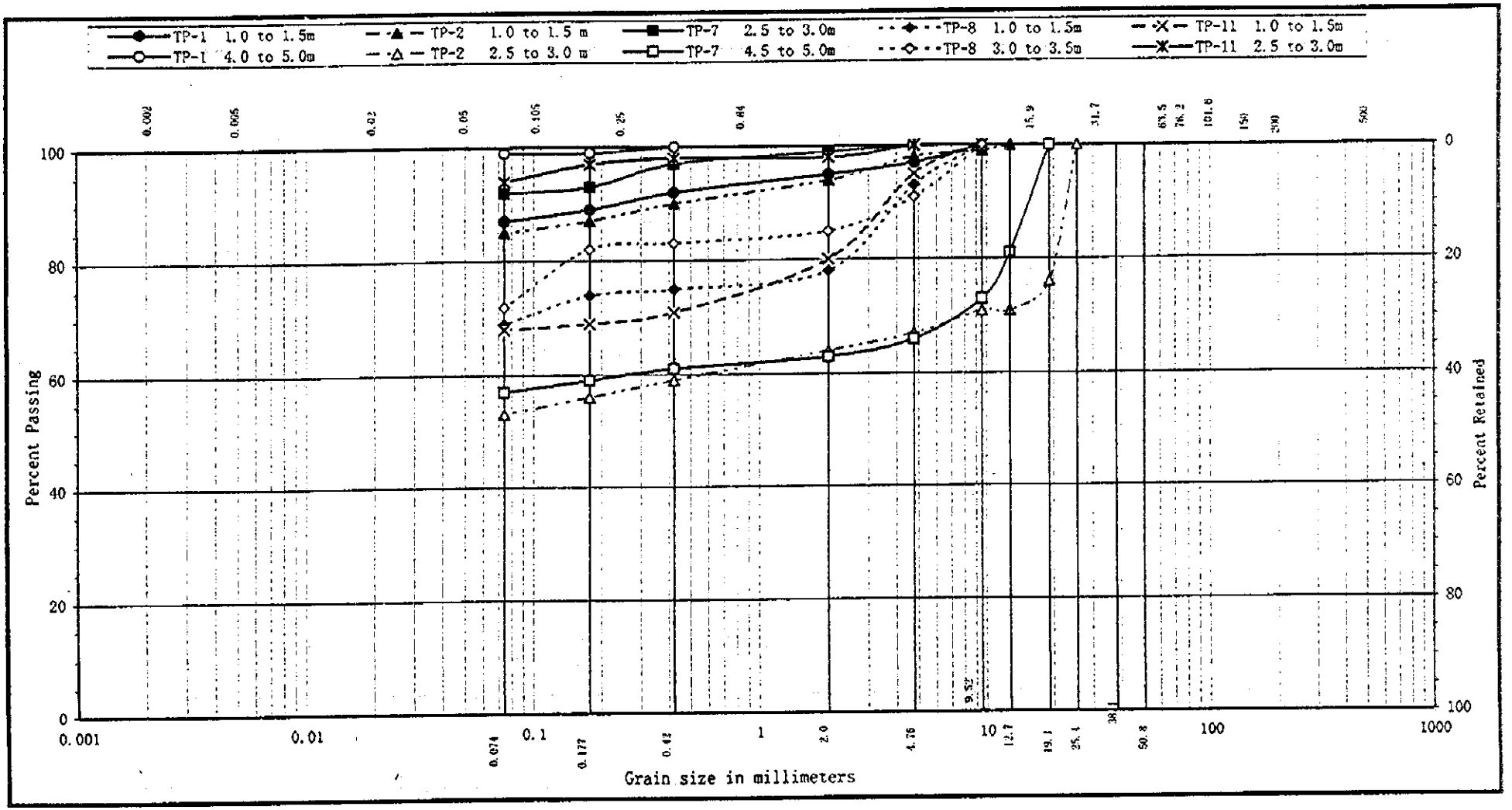
フィルター／ランダム材試料の室内試験結果一覧表(1996年)

Locality	Sample No.	Specific Gravity	Grain size Analysis					Moisture content (Natural)	Permeability coefficient	Maximum compression strength
			Max.grain size	-0.074 (mm)	-4.8 (mm)	-12.8 (mm)	-38.1 (mm)			
			mm	%	%	%	%	%	cm/s	kg.f/cm²
Lower stream side from dam-site										
	TP-5 0.5 to 1.0 m	2.80	4.8	46	100	....	....	27.80		*0.142
	1.5 to 2.0 m	2.81	38.1	9	54	65	100	7.00		*0.230
	TP-6 0.5 to 1.0 m	2.91	50.8	2	37	46	68	4.00		*0.093
	1.5 to 2.0 m	2.85	50.8	6	24	37	69	2.00		*0.049
Upper stream side from dam-site										
	TP-9 0.5 to 1.0 m	2.84	38.1	12	57	68	100	13.00		*0.239
	1.5 to 2.0 m	2.80	38.1	8	50	65	100	10.00		*0.058
	TP-10 0.5 to 1.0 m	2.82	50.8	5	35	49	73	5.00		*0.218
	1.5 to 2.0 m	2.72	38.1	7	38	64	100	7.00		*0.232
Dam-site										
	ITP-1	2.89	50.8	0	37	54	83		1.658×10^{-1}	

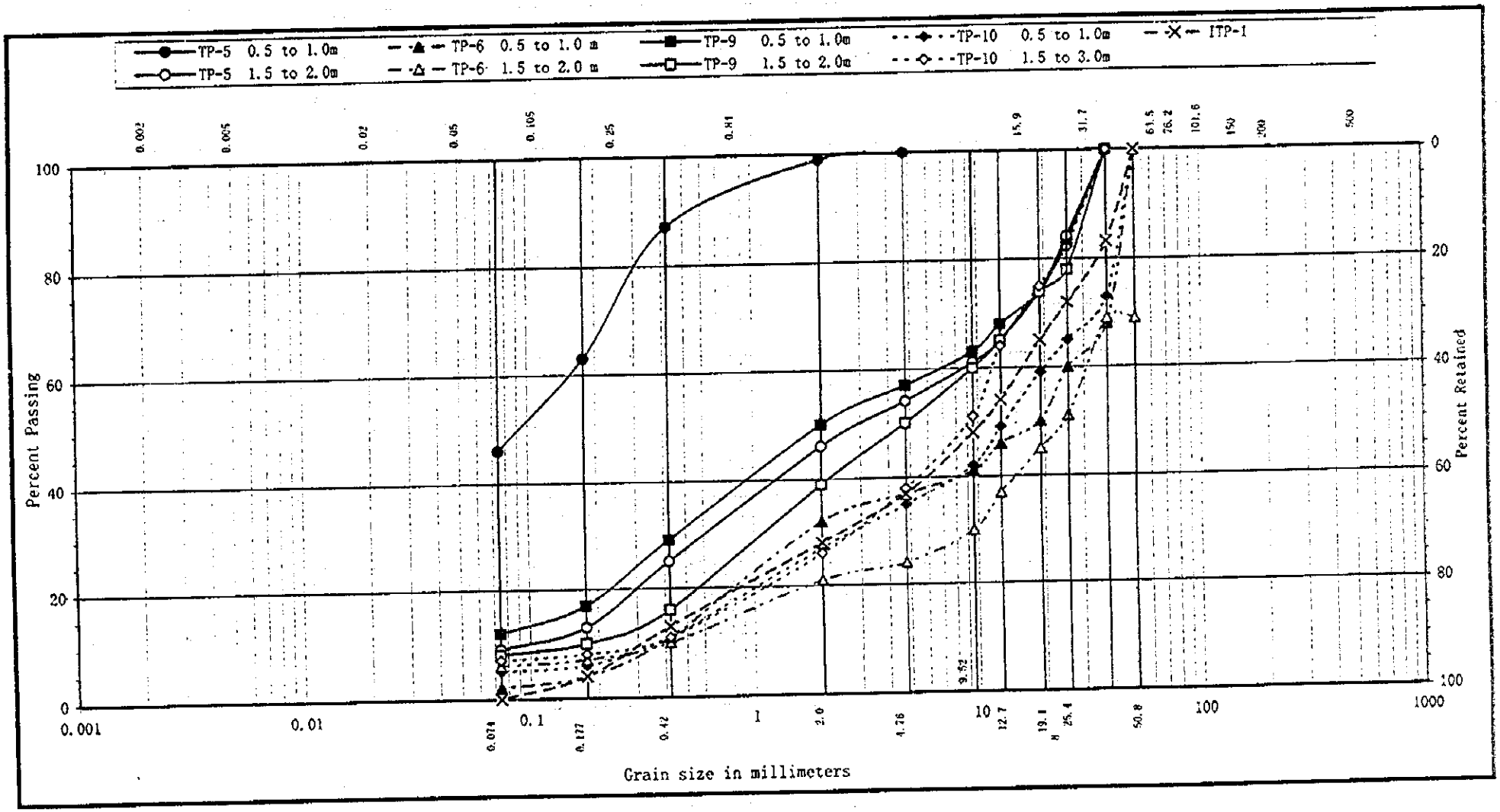
Note: * = Remolded sample



コア材試料の粒度分析図（ダムサイト地区）（1996年度）



コア材試験の粒度分析図（その他の地区）（1996年）



フィルター／ランダム材試料の粒度分析図(1996年度)

ナヨム川河床砂礫物理試験結果表（ＴＰ－１２，１３）（1997年度）

	試料深度(m)	自然含水比%	細粒			粗粒				有機含有量%	土質分類	粒度分布												
			真比重	絶乾比重	吸水率	真比重	絶乾比重	表乾比重	吸水率			3	2	3/2	1	3/4	3/8	4	10	20	40	60	140	200
TP－12	1.00	4	2.85	2.68	3.21	2.94	2.90	2.91	0.49	0.02	GW	-	-	96	91	88	81	74	67	58	50	37	26	25
	3.00	4	2.95	2.78	3.31	2.96	2.98	2.91	0.86	0.03	GP	-	81	75	62	49	40	33	28	22	14	10	6	5
TP－13	1.00	6	3.11	2.62	5.97	2.96	2.94	2.94	0.27	0.13	GP	-	93	81	66	89	48	37	30	26	14	4	2	1
	3.00	8	3.12	2.86	4.60	2.93	2.87	2.89	0.66	0.05	GP	-	-	96	91	80	60	49	39	27	14	7	3	2

ダムサイト上流地域河床砂礫物理試験結果表（ＴＰ－２１，２２）（1997年度）

	試料深度(m)	自然含水比%	細粒			粗粒				有機含有量%	土質分類	粒度分布												
			真比重	絶乾比重	吸水率	真比重	絶乾比重	表乾比重	吸水率			3	2	3/2	1	3/4	3/8	4	10	20	40	60	140	200
TP－21	1.00	21	2.64	2.26	6.45	2.97	2.91	2.90	0.68	0.06	SM	86	71	62	53	46	35	28	22	15	8	3	2	1
	3.00	8	3.07	2.62	9.17	2.99	2.94	2.96	0.59	0.03	GW	-	61	54	51	45	36	28	20	12	5	3	2	1
TP－22	1.00	4	2.94	2.60	4.38	7.95	2.90	2.91	0.61	0.04	GP	-	96	86	72	65	50	40	31	18	10	7	6	4
	3.00	7	3.19	2.99	3.09	2.96	2.91	2.93	0.51	0.28	GP	-	-	94	77	69	50	40	30	18	10	7	5	4

ダムサイト下流地域河床砂礫物理試験結果表(TP-16.17.18.19)(1997年度)

	試料深度(m)	自然含水比%	細粒			粗粒				有機含有量%	土質分類	粒度分布												
			真比重	絶乾比重	吸水率	真比重	絶乾比重	表乾比重	吸水率			3	2	3/2	1	3/4	3/8	4	10	20	40	60	140	200
TP-16	1.00	6	3.29	2.41	11.15	2.95	2.92	2.93	0.03	0.08	GP	-	94	77	56	43	24	16	13	11	9	7	5	4
	3.00	8	3.05	2.55	6.38	2.98	2.89	2.93	0.97	0.06	GP	83	71	55	46	39	31	25	20	15	10	8	5	5
TP-17	1.00	6	3.26	2.50	9.33	2.96	2.92	2.94	0.44	0.02	GP	-	-	88	75	61	42	32	25	15	11	8	7	6
	3.00	6	3.03	2.57	5.93	2.99	2.88	2.92	1.18	0.10	GW	-	-	82	55	45	29	22	18	15	11	9	6	5
TP-18	1.00	8	3.20	2.68	6.09	2.96	2.91	2.93	0.54	0.05	GP	-	-	89	74	66	55	47	40	30	19	13	7	6
	3.00	9	2.99	2.45	7.30	3.00	2.93	2.96	0.71	0.00	GW	-	-	99	89	82	64	53	43	31	20	16	14	13
TP-19	1.00	9	3.16	2.74	4.83	2.94	2.91	2.92	0.46	0.09	GP	-	81	78	64	57	44	38	32	22	11	8	7	6
	3.00	6	3.30	2.69	6.84	2.96	2.89	2.92	0.70	0.12	GP	-	93	70	60	55	46	40	34	22	11	8	7	6

河床材大型室内試験結果表(1997年)

テストピット番号	ＴＰ－１３	ＴＰ－１６	ＴＰ－２２
地　　区	ナヨム川	ダム下流	ダム上流
比重(絶乾)	2.883	2.744	2.855
吸　水　率	0.91	2.27	1.37
最大粒径(mm)	53	53	53
細粒分含有%	0	7	0
0.5Ec乾燥密度	2.078	2.209	1.986
1.0Ec乾燥密度	2.134	2.256	2.082
2.0Ec乾燥密度	2.175	2.294	2.126
粘　着　力	0.49	0.56	0.79
内部摩擦角	42.14°	40.62°	41.84°
0.5Ec透水係数	4.38×10^{0}	9.06×10^{-3}	1.90×10^{0}
1.0Ec透水係数	1.25×10^{0}	5.04×10^{-3}	1.83×10^{0}
2.0Ec透水係数	9.24×10^{-1}	1.51×10^{-3}	5.22×10^{-1}

一軸圧縮圧縮強度結果表(1997年)

ボーリング番号	採取深度	岩　種	破壊圧力 Kg／cm2	ひずみ率 (%)	含水率 (%)
	1.53	細粒砂岩	27.88	0.9	14.3
	3.48	〃	30.99	1.2	8.6
ＭＢＨ－６	9.42	〃	31.25	1.2	16.2
	1.80	細粒砂岩	29.70	2.3	14.8
	3.09	〃	22.29	0.8	17.8
ＭＢＨ－７	7.50	〃	29.77	1.7	16.3
	0.28	細粒砂岩	38.37	1.5	12.2
	3.27	シルト岩	68.08	2.1	9.3
ＭＢＨ－８	7.21	〃	72.31	2.6	8.3
	2.20	〃	52.02	1.7	11.0
	3.14	〃	40.39	1.3	6.9
ＭＢＨ－９	9.30	〃	59.12	2.3	9.4

スレーキング試験結果表(1997年)

ボーリング番号	試料深度 m	吸水率%	スレーキング指数 %	タイプⅠ：ほとんど崩壊ない タイプⅡ：少し崩壊 タイプⅢ：大部分崩壊
	3.48-3.65	35	71.66	タイプⅠ
MBH－6	9.45-9.70	29	78.52	タイプⅠ
	3.09-3.26	37	82.55	タイプⅠ
MBH－7	7.50-7.82	21	78.13	タイプⅠ
	2.20-2.47	31	87.97	タイプⅠ
MBH－8	9.30-9.49	34	87.56	タイプⅠ
	0.28-0.50	23	83.56	タイプⅠ
MBH－9	3.27-3.43	23	88.48	タイプⅠ

乾湿繰り返し試験結果表(1997年)

ボーリング番号	試料深度m	自然含水比%	吸水量増加率 %／回	限界吸水量 Wf %	記載
	3.35	26.01	26.00	109.00	8回で崩壊
	6.70	35.11	26.33	100.00	7回で崩壊
MBH－6	6.70	28.99	29.00	110.00	7回で崩壊
	1.38	33.00	19.80	109.00	8回で崩壊
	14.43	37.00	20.80	114.00	10回で1%の吸水量
MBH－7	14.43	21.00	27.00	102.00	7回で1%の吸水量
	6.50	31.00	19.67	78.00	8回で1%の吸水量
	12.68	5.00	15.00	67.00	6回で1%の吸水量
MBH－8	12.68	31.00	17.33	64.00	6回で崩壊
	0.18	7.00	11.67	19.00	10回で1%の吸水量
	12.50	23.00	18.25	77.00	6回で崩壊
MBH－9	12.50	27.00	24.00	76.00	6回で崩壊

シルト岩大型室内試験結果表(1997年度)

ボーリング番号	ＭＢＨ-６＆７	ＭＢＨ－８＆９	
地　　区	入植予定地	バンバン村	
比重(絶乾)	1.662	1.647	
吸　水　率	22.72	23.26	
0.5Ec乾燥密度	1.305	1.451	
1.0Ec乾燥密度	1.461	1.521	
2.0Ec乾燥密度	1.536	1.579	
粘　着　力	0.29	0.29	
内部摩擦角	36.23	35.59	
0.5Ec透水係数	3.07×10^{-4}	1.69×10^{-4}	
1.0Ec透水係数	8.70×10^{-5}	3.17×10^{-5}	
2.0Ec透水係数	4.57×10^{-5}	1.44×10^{-5}	

バンガシナン州立大学裏山室内試験結果表(1997年度)

	ＴＰ－１４		ＴＰ－１５		ＴＰ－２６	
試料深度(m)	1.50	4.00	1.00	3.00	0.50	3.50
自然含水比%	32	35	32	37	40	47
比　　重	2.68	2.73	2.68	2.60	2.68	2.59
最大粒径(mm	20	10	20	20	10	3
細粒分含有量%	70	82	65	80	88	92
液性限界	71	65	82	89	81	89
塑性限界	44	40	48	51	42	39
塑性指数	27	25	34	38	39	43
有機物含有量	0.21	0.23	0.38	0.40	0.54	0.33
土質分類	ＭＨ	ＭＨ	ＭＨ	ＭＨ	ＭＨ	ＭＨ

ダムサイト右岸及び入植地室内試験結果表(1997年)

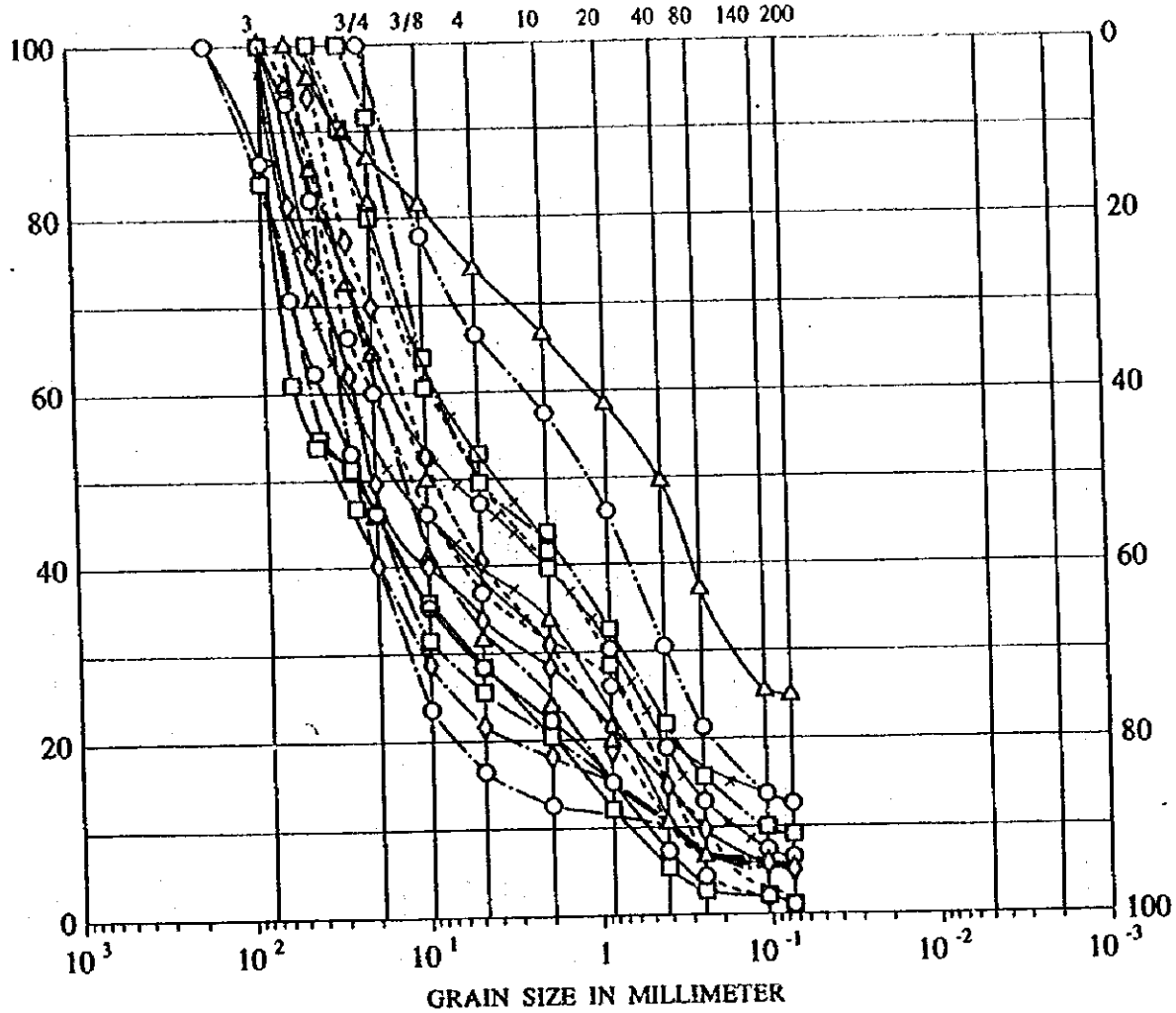
	ダムサイトの右岸						入植地	
ピット番号	TP-23		TP-24		TP-25		TP-27	
試料深度(m)	1.00	2.50	1.50	3.00	2.00	3.00	1.00	2.00
自然含水比%	35	19	54	44	35	39	27	21
比重	2.60	2.75	2.68	2.63	2.68	2.58	2.79	2.70
最大粒径(mm)	10	20	10	20	10	3	20	10
細粒分含有量	83	67	86	72	94	83	29	62
液性限界	73	57	78	64	72	68	35	71
塑性限界	41	28	32	28	40	30	33	29
塑性指数	32	29	46	36	32	38	2	42
有機物含有量	0.27	0.19	0.57	0.18	0.16	0.52	0.02	0.32
土質分類	CH	CH	CH	CH	MH	CH	ML	CH

第一次混合コア材試験結果表(1997年)

テストピット番号	混合割合	自然含水比(%)	細粒分 0.074mm(%)	最大乾燥密度(g/cc)	最適含水比(%)
	1 : 2	11	21	1.93	13.87
	1 : 3	9	27	1.89	10.42
TP15&13	1 : 4	7	13	1.87	10.65
	1 : 2	12	24	1.91	11.25
	1 : 3	11	5	1.88	9.50
TP15&17	1 : 4	10	16	1.85	10.20
	1 : 2	16	29	1.86	12.00
	1 : 3	14	20	1.85	9.75
TP15&21	1 : 4	14	21	1.82	11.00
	1 : 2	13	18	1.89	12.50
	1 : 3	12	12	1.87	12.37
TP24&13	1 : 4	8	10	1.81	11.94
	1 : 2	16	23	1.90	12.20
	1 : 3	15	17	1.87	10.75
TP24&17	1 : 4	12	16	1.83	11.80
	1 : 2	19	24	1.94	14.87
	1 : 3	16	22	1.92	15.78
TP24&21	1 : 4	14	18	1.90	15.48

第二次混合コア材試験結果表(1997年)

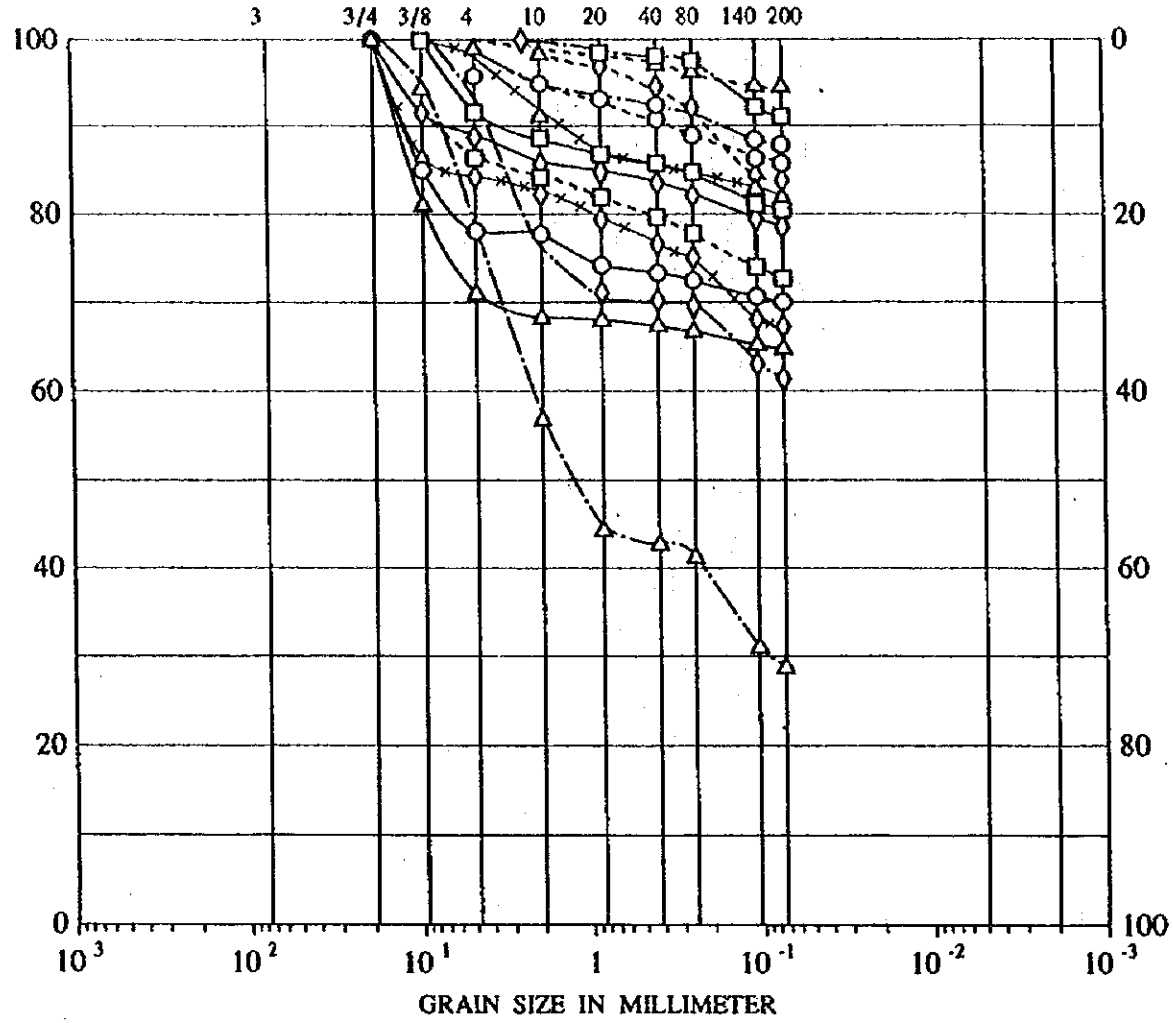
テストピット番号		TP-15&17		TP-24 & 13		TP-24 & 17	
混合割合		1 : 2	1 : 3	1 : 2	1 : 3	1 : 2	1 : 3
含水比 (%)		15.1	14.5	15.9	15.4	17.4	13.6
比重	細粒分	2.61	2.60	2.67	2.70	2.62	2.59
	粗粒分	2.84	2.81	2.85	3.37	2.80	2.81
最大粒径 (mm)		40	40	60	40	50	40
細粒分含有量 (%)		20	15	16	11	7	16
最大乾燥密度 g/cc		1.90	1.86	1.92	1.91	1.94	1.86
最適含水比 (%)		12.00	10.75	13.35	11.50	13.75	9.50
三軸圧縮強度,粘着力		0.37	0.31	0.78	0.80	0.42	0.43
内部摩擦角		31°	32°	27°	22°	32°	33°
透水係数(cm/sec)		1.79 x10^{-5}	1.95 x10^{-5}	1.78 x10^{-5}	1.78 x10^{-5}	1.63 x10^{-5}	1.95 x10^{-6}



SYMBOL	TEST PIT	DEPTH (m)
—○—	TP-12 S1	1.00
—□—	TP-12 S2	3.00
—△—	TP-21 S1	1.00
—◇—	TP-21 S2	3.00
---○---	TP-13 S1	1.00
---□---	TP-13 S2	3.00
---△---	TP-22 S1	1.00
---◇---	TP-22 S2	3.00
—·○·—	TP-16 S1	1.00
—·□·—	TP-16 S2	3.00

SYMBOL	TEST PIT	DEPTH (m)
—·△·—	TP-25 S1	1.00
—·◇·—	TP-25 S2	3.00
—··○··—	TP-26 S1	0.50
—··□··—	TP-26 S2	1.20
-*-○-*-	TP-27 S1	1.00
-*-□-*-	TP-27 S2	3.00
-*-△-*-	TP-27 S1	1.00
-*-◇-*-	TP-27 S2	3.00

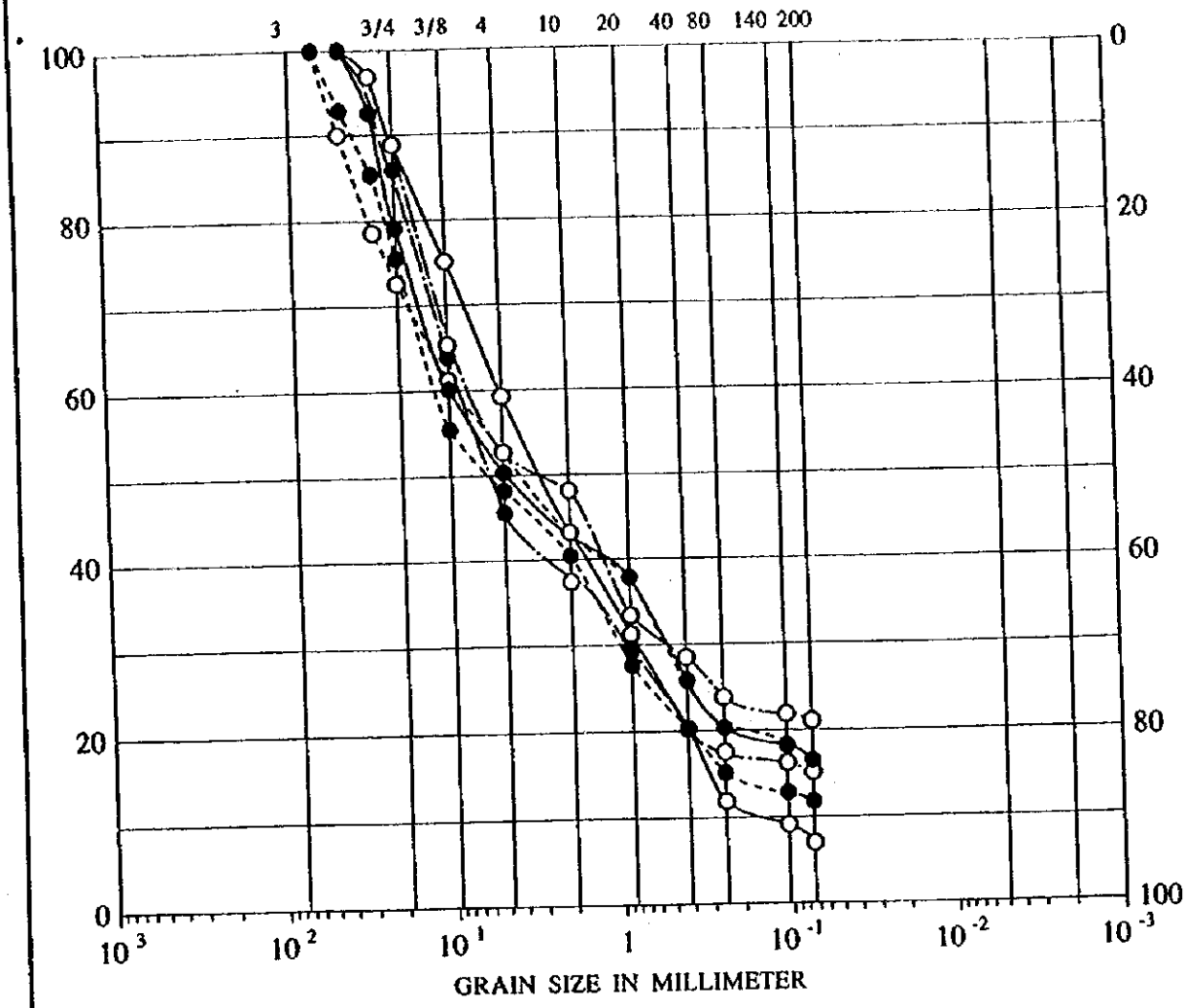
インファンタ地区天水農業 環境整備計画基本設計調査 国際協力事業団	粒度分布曲線図（河床砂礫）（1997年）



SYMBOL	TEST PIT	DEPTH (m)
—○—	TP-14 S1	1.50
—□—	TP-14 S2	4.00
—△—	TP-15 S1	1.00
—◇—	TP-15 S2	3.00
-*-△-*-	TP-23 S1	1.00
-*-◇-*-	TP-23 S2	2.50
---○---	TP-24 S1	1.50
---□---	TP-24 S2	3.00

SYMBOL	TEST PIT	DEPTH (m)
---△---	TP-25 S1	2.00
---◇---	TP-25 S2	3.00
—·○·—	TP-26 S1	0.50
—·□·—	TP-26 S2	3.50
—·△·—	TP-27 S1	1.00
—·◇·—	TP-27 S2	2.00

インファンタ地区天水農業 環境整備計画基本設計調査	粒度分布曲線図（土質材）（1997年）
国際協力事業団	



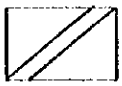
SYMBOL	TEST PIT	RATIO
—○—	TP 15,17	R 1:2
—●—	TP 15,17	R 1:3
- - -○- - -	TP 15,17	R 1:2
- - -●- - -	TP 15,17	R 1:3
—·○·—	TP 15,17	R 1:2
—·●·—	TP 15,17	R 1:3

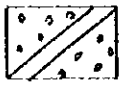
インファンタ地区天水農業 環境整備計画基本設計調査 国際協力事業団	粒度分布曲線図（コア材／混合材）（1997年度）

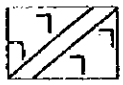
資料2.4.1.4-3テストピット柱状図

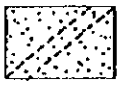
Geological Explanation for Test Pit Log

Overburden


Residial soil
(mainly red clay)

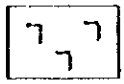

Clay including
rock fragments

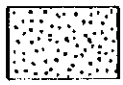

Totally weathered gabbro
(clay and argillized
gabbro fragments)


Totally weathered silt-
stone (clay and argillized
siltstone)


Recent river deposits
(gravel and sand)

Basement rock

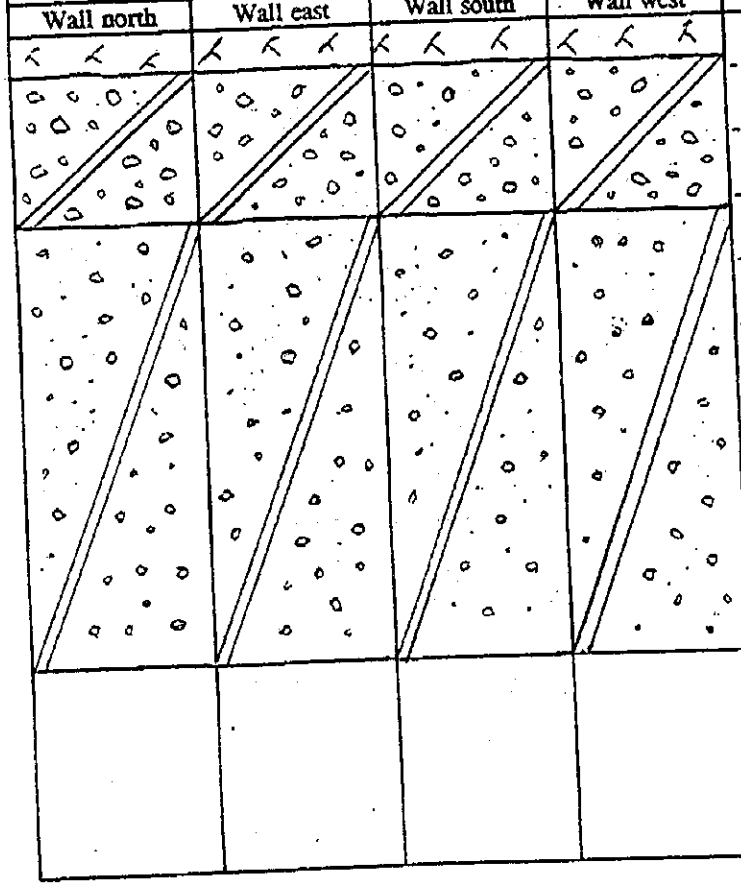

Gabbro (its rock facies
partly change to fine
gabbro, basalt and
anorthosite)


Calcareous siltstone

TEST PIT LOG (T.P. NO. 1)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 1 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:



Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
	0.00-0.40m Top Soil, Silty Clay with slight amt. of organic materials, medium plastic, reddish brown color **0.40-1.60m** Gravelly silty clay, medium plastic, w/ about 30% gravel to boulder rock fragments **1.60-5.00m** Silty clay soil, medium plastic to high plastic when moist, reddish color			N

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TEST PIT LOG (T.P. NO. 2)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 2 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				-	**0.00-0.60m** Top Soil with gravel to cobble rock fragments binded with silty clay soil, brownish color			N
				- 1.00	**0.60-1.80m** Silty clay soil, firm when dry, medium plastic when moist, yellowish red color			
				-				
				- 2.00	**1.80-3.00m** Bouldery clay soil, colluvial deposit, 40% rock fragments			
				-				
				- 3.00				
				-				
				- 4.00				
				-				
				- 5.00				
				-				
				- 6.00				

2.4.1.3-4(3)

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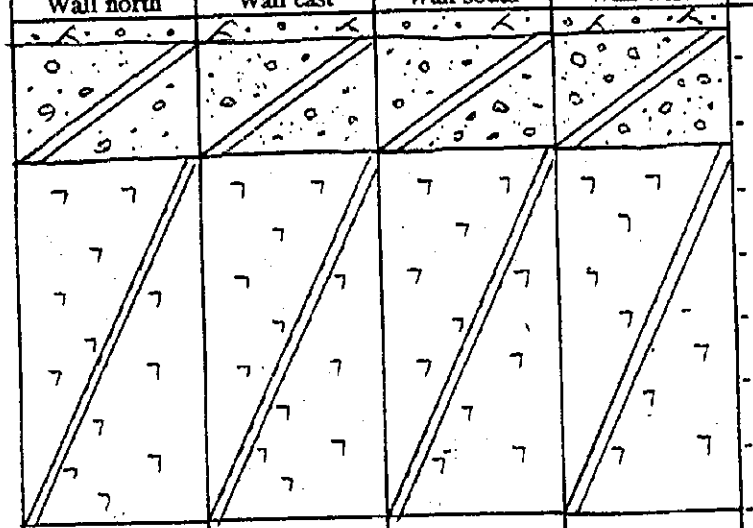
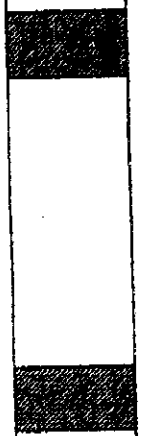
TEST PIT LOG (T.P. NO. 3)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 3 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				1.00 2.00 3.00 4.00 5.00 6.00	**0.00-0.20m** Top Soil, with organic materials, medium plastic, reddish color **0.20-1.20m** Silty clay, medium plastic with deeply weathered gravel rock fragments, reddish soil **1.20-4.00m** Argillized gabbro or totally weathered clayey silt, slightly plastic dark red color			N

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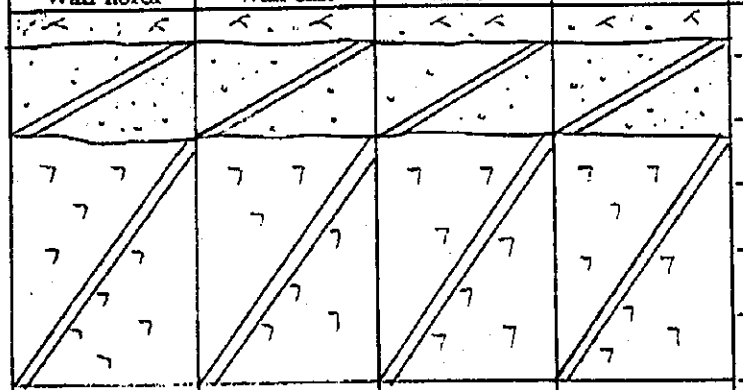
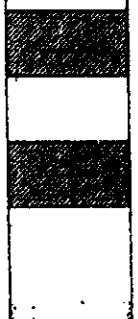
2.4.1.3-4 ④

TEST PIT LOG (T.P. NO. 4)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 4 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-0.30m** Top Soil, silty clay with few organic materials, reddish soil **0.30-1.20m** Silty clay soil, medium plastic, firm when dry, reddish color **1.20-3.00m** Totally weathered gabbro, clayey silt, slightly plastic with weathered gravel fragments			N

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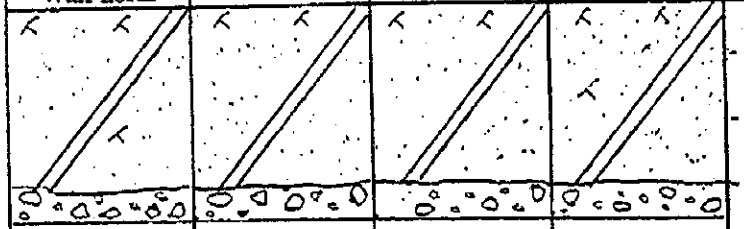
TEST PIT LOG (T.P. NO. 5)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 5 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-1.70m** Silty sand deposits, friable with organic materials, with boulder rock fragments at section 1.50-1.70m			

2.4.1.3-4 ⑥

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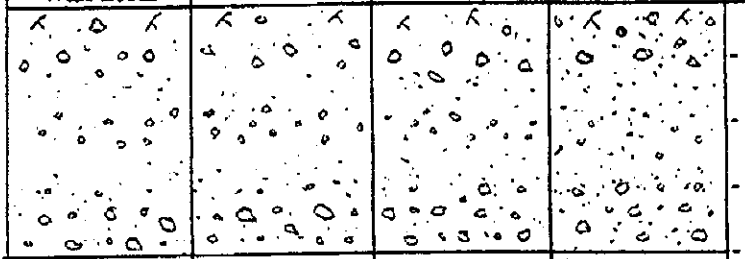
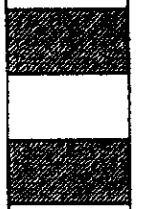
TEST PIT LOG (T.P. NO. 6)

THE INFANTA IMPOUNDING AND ENVIRONMENTAL IMPROVEMNT PROJECT

（1996年度調査）

Test Pit No.: 6 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-2.00m** Alluvial deposit consist of sand to boulder rock fragments.			

24.1.3-4 ①

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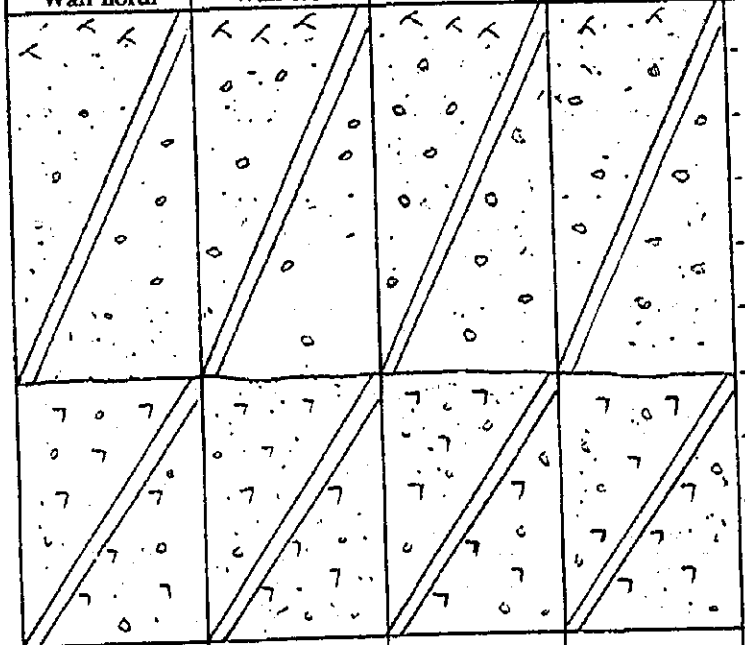
TEST PIT LOG (T.P. NO. 7)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 7 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-0.30m** Top soil, silty clay with few amount organic material **0.30-3.00m** Silty clay soil, medium to high plastic when moist, with few totally weathered rock fragments, reddish color **3.00-5.00m** Totally weathered gabbro almost silty clay, medium plastic with several weathered rock fragments			N

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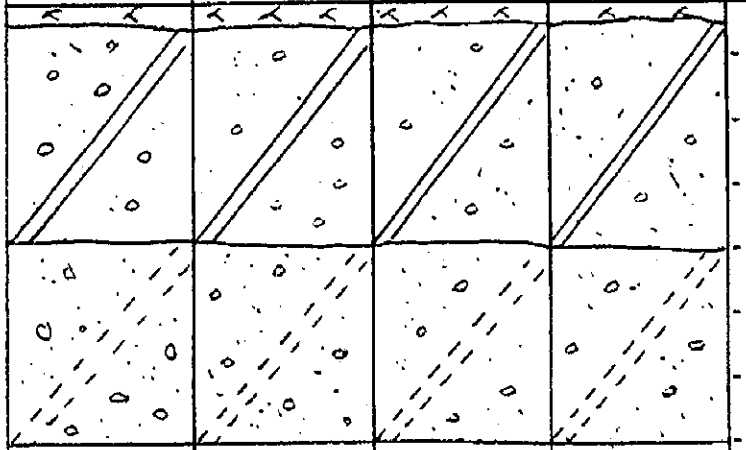
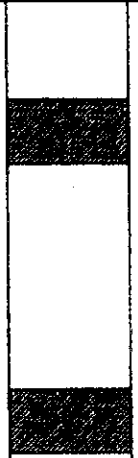
TEST PIT LOG (T.P. NO. 8)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT （1996年度調査）

Test Pit No.: 8 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-2.20m** Top soil, clayey silt, slightly plastic with organic materials **0.20-2.00m** Silty clay soil, medium plastic, with few deeply weathered siltstone fragments, reddish soil. **2.00-3.50m** Deeply to totally weathered siltstone fragments, clayey silt, bluish red color.			N

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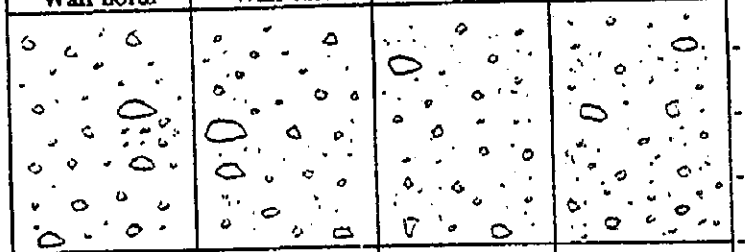
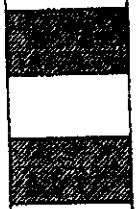
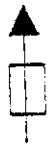
TEST PIT LOG (T.P. NO. 9)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 9 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-2.00m** Alluvial deposit, consist generally of sand to boulder rock fragments, ultramafic rocks			

2.4.1.3-4(9)

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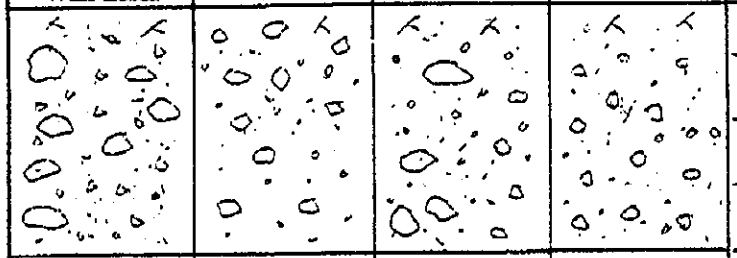
TEST PIT LOG (T.P. NO. 10)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 10 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				1.00 2.00	**0.00-2.00m** Alluvial deposit, consist of gravel to boulder rock fragments			N
				3.00 4.00 5.00 6.00				

2.4.1.3-4 (11)

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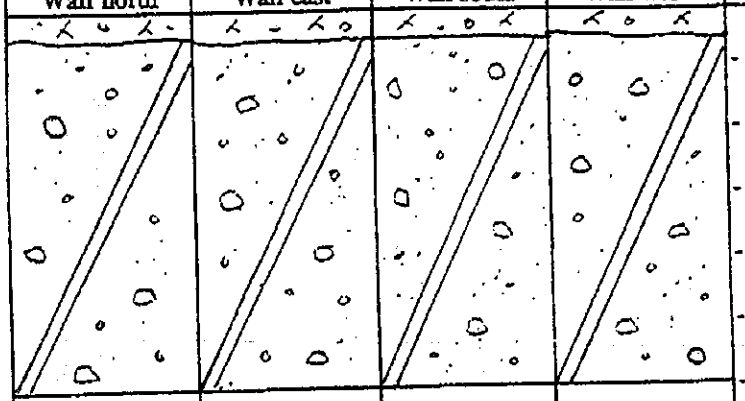
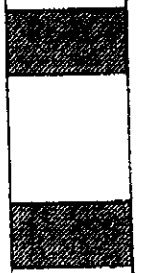
TEST PIT LOG (T.P. NO. 11)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT (1996年度調査)

Test Pit No.: 11 Location: Longitude: Latitude: Elevation: Log scale: 1:50 Geologist:

Log				Depth (m)	Description	Ground Water Level	Sampling Depth	Remark
Wall north	Wall east	Wall south	Wall west					
				- 1.00 - 2.00 - 3.00 - 4.00 - 5.00 - 6.00	**0.00-0.30m** Top soil, clayey silt with organic materials **0.30-3.00m** Silty clay, medium plastic with 20% gravel & boulders			N

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TEST PIT LOG

(1997年度調査)

Test Pit No.: 27 Location: Bgy. Barakbak Resettlement Area Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 – 2.00 m Alluvial deposit, consist generally of sand to boulder rock fragments, ultramafic rocks			
			Sampling 1.00 m	1.00				
				2.00				
			Sampling 3.00 m	3.00		3.20 m ▼		
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN
CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 26	Location: (IIIL) Downstream	Longitude:	Latitude:	Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 0.50 m dark red in color, including small amoun of gravel			
Sampling 1.00 m				1.00	1.00 ~ 5.00 m varicolored of red and yellow. red colored gravel is decayed			
				2.00				
				3.00				
Sampling 3.50 m				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 25 Location: (IRLL) Downstream Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
		30 cm		0.50	0.00 ~ 0.80 m dark red in color, breccia with maximum 10 cm.			
				1.00	0.80 ~ 2.50 m yellowish brown in color, gravel is black gabbro 0.50 - 10 cm gravel size			
			Sampling 2.00 m	2.00				
					2.50 ~ 5.00 m gray in color gravel is whitish in color, very soft, slicken side can be seen			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN

CLIENT. : INA CORPORATION

(15)

TEST PIT LOG

(1997年度調査)

Test Pit No.: 24 Location: (HH.L) Upstream · Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 2.00 m yellowish brown, gravel is black gabbro gravel size: 5 - 10 cm			
				1.00				
Sampling 1.50 m								
				2.00	2.00 ~ 3.00 m rate of gravel is rather small amount			
20 cm Sampling 3.00 m				3.00				
40 cm	50 cm			4.00				
40 cm			30 cm					
	20 cm			5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

（1997年度調査）

Test Pit No.: 23 Location: (HILL) Upstream Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
15 cm Sampling 1.00 m Sampling 2.50 m	Onion Weathering	30 cm	50 cm	0.50 1.00 2.00 3.00 4.00 5.00	0.00 ~ 1.00 m including big boulder (15-30 cm) 1.00 ~ 2.50 m red in color, with some gravel 2.50 ~ 5.00 m 10 - 20 cm size gravel			

AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 22 Location: River Bed (Upstream) Felipe River Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 1.00 m Poorly graded SAND and GRAVEL.	0.40 m ▼		
			Sampling 1.00 m	1.00				
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL.			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

（1997年度調査）

Test Pit No.: 21	Location: River Bed (Upstream) Felipe River	Longitude:	Latitude:	Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00～1.00 m Silty Clayey SAND and GRAVEL.	0.50 m ▼		
			Sampling 1.00 m	1.00				
				2.00	1.00～5.00 m Poorly graded SAND and GRAVEL.			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 20	Location: Near Irrigation Dam	Longitude:	Latitude:	Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 0.30 m yellowish brown fine grained sand 0.30 ~ 2.10 m Sand and gravel with 3-5 cm diameter maximum gravel: 15 cm	1.50 m ▼		
			Sampling 0.50 m	1.00				
			Sampling 0.50 m	2.00				
				3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN
CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 19 Location: Felipe River (Downstream) River Bed Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 1.00 m Poorly graded SAND and GRAVEL.	0.30 m ▼		
			Sampling 1.00 m	1.00				
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL.			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN
CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 18 Location: Felipe River (Downstream) River Bed Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
					0.00 ~ 1.00 m Poorly graded SAND and GRAVEL.	▼ 0.20 m		
				0.50				
			Sampling 1.00 m	1.00				
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL.			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 17 Location: Felipe River (Downstream) River Bed Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.00	0.00 ~ 1.00 m Well graded SAND and GRAVEL.	0.40 m ▼		
				0.50				
				1.00	Sampling 1.00 m			
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL.			
				3.00	Sampling 3.00 m			
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN
CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 16 Location: Felipe River (Downstream) River Bed Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 1.00 m Poorly graded SAND and GRAVEL	0.30 m ▼		
			Sampling @1.00 m	1.00				
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 15 Location: PSU Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 1.00 m dark red color			
			Sampling 1.00 m	1.00	1.00 ~ 5.00 m varicolor of red and yellow 1.00 ~ 2.00 m CLAY, reddish brown with white spots, with occasional cobbles interbedded (5 - 10 cm ø)			
	decayed gravel			2.00	2.00 ~ 5.00 m CLAY, yellow			
	Sampling 3.00 m			3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN
CLIENT : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: I4 Location: PSU Longitude: Latitude: Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
					0.00 ~ 0.50 m dark red in color			
				0.50	0.50 ~ 2.00 m transition zone			
				1.00	CLAY, reddish brown with white spots, with occasional cobbles interbedded (5 - 10 cm ø)			
			Sampling 1.50 m					
				2.00	2.00 ~ 5.00 m varicolored of red and yellow. Red gravel are decayed ones.			
				3.00				
			Sampling 4.00 m	4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT. : INA CORPORATION

TEST PIT LOG

(1997年度調査)

Test Pit No.: 13	Location: Nayon River (Downstream) River Bed	Longitude:	Latitude:	Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 1.00 m Poorly graded SAND and GRAVEL.	0.40 m ▼		
			Sampling 1.00 m	1.00				
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL.			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT
LOCATION : INFANTA, PANGASINAN
CLIENT. : INA CORPORATION

TEST PIT LOG

（1997年度調査）

Test Pit No.: 12　　Location: Nayom River (Downstream) River Bed　　Longitude:　　Latitude:　　Elevation:

Log				Depth (m)	Description	Ground Water Level	Sample Depth	Remarks
Wall North	Wall East	Wall South	Wall West					
				0.50	0.00 ~ 1.00 m Well graded SAND and GRAVEL.	0.55 m ▼		
			Sampling 1.00 m	1.00				
				2.00	1.00 ~ 5.00 m Poorly graded SAND and GRAVEL.			
			Sampling 3.00 m	3.00				
				4.00				
				5.00				

PROJECT : THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL PROJECT

LOCATION : INFANTA, PANGASINAN

CLIENT : INA CORPORATION

2.4.1.4-4 ボーリング柱状図 (材料調査)

DRILLING LOG (DRILL HOLE NO. MBH-1)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT

Drill Hole NO. MBH-1
Longitude
Latitude
Collar Elevation
Direction · Dip 90°

Location 2 km to the South from proposed dam site
Drilling Term from Oct 15
Last Ground Water Level in Hole 0.60 m
Last Hole Diameter 10.0 cm

Total Drilling Length 10.00 m
Total Core Lenght 8.46 m
Total Core Recovery 85 %
Drilling Machine ACKER
Pump BEAN ROYAL 525

Depth (m)	Core Color	Geologic Unite	Core Description and Geological Observation	RQD (%)	Max. Core Length (cm)	Core Recovery (%)
0.56	Dark brown	Weathered siltstone	Weathered siltstone, Color change to brownish white.			
1.00	Gray	Siltstone	Calcareous siltstone including argillized parts (10 to 20%), Moderately indurated to slightly indurated, Slighly hard, massive and Slighly dense	53	24	90
	Dark gray			25	54	70
3.00				55	30	72
3.50	Gray			81	67	81
	Dark gray			85	85	88
6.00				95	39	95
6.30	Gray			90	60	90
	Dark gray			95	72	95
				49	49	98
10.00				67	47	67

Standard Penetration Test: Depth (m); Blow Per Each 10cm (0 – 10 – 20 – 30); Blow / Total Penetration Length (cm); N-Value

Diagram: RQD (%); Max. Core Length (cm); Core Recovery (CR) (cm %); N – Value (20, 40, 60, 80, 100)

Field Permeability Test: Depth (m); Lugeon Value; Coefficient of Permeability (cm/sec)

Ground Water Level in Hole (m): 0.60

Drilling Date

①

DRILLING LOG (DRILL HOLE NO. MBH-2)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT

Drill Hole NO. MBH-2
Longitude
Latitude
Collar Elevation
Direction · Dip 90°

Location 800m to the South from proposed dam site
Drilling Term from Oct. 21
Last Ground Water Level in Hole 11.00 m
Last Hole Diameter 10.0 cm

Total Drilling Length 15.00 m
Total Core Lenght 0.20 m
Total Core Recovery 1 %
Drilling Machine ACKER
Pump BEAN ROYAL

Depth (m)	Core Color	Geologic Unite	Core Description and Geological Observation	RQD (%)	Max. Core Length (cm)	Core Recovery (%)
0 – 7.00	Red-dish brown (clay)	Weathered gabbro (clay)	Reddish brown clay, which is weathered gabbro. Lateritic soil (red clay). Highly plastic, moist in place.	0	0	0
7.00 – 8.00	Brown gray (clay)					
8.00 – 14.00	Brown-ish gray (sludge)	Weathered gabbro (clay and fragments of argillized gabbro)	Brownish gray clay, which is weathered gabbro. Some fragments of the argillized gabbro are included in the clay. Deeply to totally weathered. Slight to non plastic when moist. Friable, when dry.			
14.00 – 15.00	Gray	Argillized gabbro, by weathering	Argillized gabbro in which white color spots of the argillized feldspar are obvious.	0	5	20

Standard Penetration Test — Blows Per Each 10cm — Blows / Total Penetration Length — N-Value

Diagram — R Q D — Max. Core Length — Core Recovery (CR) — N – Value

Field Permeability Test — Depth (m) — Lugeon Value — Coefficient of Permeability (cm/sec)

Ground Water Level in Hole (m): 11.00 m

Drilling Date: 15 / 21

DRILLING LOG (DRILL HOLE NO. MBH-3)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT

Drill Hole NO. MBH-3
Longitude
Latitude
Collar Elevation
Direction · Dip 90°

Location 700m to the South from proposed dam site
Drilling Term from Oct. 22 . up to Oct. 23 .
Last Ground Water Level in Hole 10.00 m
Last Hole Diameter 10.0 cm
Geologist

Total Drilling Length 20.00 m
Total Core Lenght 0.35 m
Total Core Recovery 1.8 %
Drilling Machine ACKER
Pump BEAN ROYAL

Scale (m)	Elevation (m)	Depth (m)	Core Color	Geologic Unite	Geologic Column	Core Description and Geological Observation	Classification of Core for Rock Foundation	RQD (%)	Max. Core Length (cm)	Core Recovery (%)	Standard Penetration Test: Depth (m)	Blow Per Each 10cm: 0–10	10–20	20–30	Blow / Each Penetrate Length N-Value (cm)	Diagram: RQD, Max. Core Length, Core Recovery (CR), N-Value (20 40 60 80 100)	Field Permeability Test: Depth (m)	Lugeon Value	Coefficient of Permeability (cm/s)	Ground Water Level in Hole (m)	Drilling Date
1			Reddish brown gray	Weathered gabbro (clay)		Reddish brown clay which is weathered gabbro. Lateritic (Red clay) soil. High to moderate plastic.	D	0	0	0											10/22
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																				10.00M	
11																					
12		12.00	Brownish gray (clay)																		10/23
13																					
14		14.00																			
15			Brown gray (sludge)	Weathered gabbro (clay and fragments of argillized gabbro)		Brownish gray clay, which is weathered gabbro. The fragments of the argillized gabbro are included in the clay. Deeply to totally weathered bedrock. Slightly plastic when moist. Friable when dry.															
16																					
17																					
18		18.00																			
19			Gray	Argillized gabbro by weathering		Argillized gabbro, consisted by the white spots where feldspars had been argillized.		0	5	15											
20		20.00		Argillized gabbro (solid) by weathering		Argillized gabbro become partly solid core, including white spots of feldspar.	Cl	0	6	20											
21																					
22																					
23																					
24																					
25																					
26																					
27																					
28																					
29																					

DRILLING LOG (DRILL HOLE NO. MBH-4)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT

Drill Hole NO. MBH-4
Longitude
Latitude
Collar Elevation
Direction · Dip 90°

Location Bambam Barangay, 2.3 km WSW from proposed dam site.
Drilling Term from Nov. 17 up to Nov. 18
Last Ground Water Level in Hole m
Last Hole Diameter 10.0 cm

Total Drilling Length 10.00 m
Total Core Lenght 9.75 m
Total Core Recovery 97.5 %
Drilling Machine ACKER
Pump BEAN ROYAL

Scale (m)	Elevation (m)	Depth (m)	Core Color	Geologic Unite	Geologic Column	Core Description and Geological Observation	RQD (%)	Max. Core Length (cm)	Core Recovery (%)	Standard Penetration Test Depth (m)	Standard Penetration Test Blow Per Each 10cm	Standard Penetration Test Blow / Total Penetration Length N-Value (cm)	Diagram RQD / Max. Core Length / Core Recovery (CR) / N-Value	Field Permeability Test Depth (m)	Lugeon Value	Coefficient of Permeability (cm/sec)	Ground Water Level in Hole (m)	Drilling Date
1			Dark gray	Siltstone		Calcareous siltstone, Slightly weathered, Moderate indurated, Slightly hard, Massive and Slightly dense.	56	30	100									11
2							0	4	100									12
3							30	16	100									
4							100	45	100									
5							63	25	100									
6							45	30	100									
7							70	15	100									11
8							73	22	100									18
9							67	32	85									
10		10.00					40	20	90									
11																		
12																		
13																		
14																		
15																		
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DRILLING LOG (DRILL HOLE NO. MBH-5)

THE INFANTA IMPOUNDING IRRIGATION AND ENVIRONMENTAL IMPROVEMENT PROJECT

Drill Hole NO. MBH-5
Longitude
Latitude
Collar Elevation
Direction · Dip 90°

Location On the ridge, 800m WNW from proposed dam site
Drilling Term from Nov. 17. up to Nov. 18.
Last Ground Water Level in Hole m
Last Hole Diameter 10.0 cm

Total Drilling Length 15.00 m
Total Core Lenght 7.73 m
Total Core Recovery 52 %
Drilling Machine ACKER
Pump BEAN ROYAL

Depth (m)	Core Color	Geologic Unite	Core Description and Geological Observation	RQD (%)	Max. Core Length (cm)	Core Recovery (%)
0	Brownish gray (sludge)	Weathered gabbro (clay and fragments of argillized gabbro)	Brownish gray clay, which is weathered gabbro. The clay include fragments of argillized gabbro. Slighily plastic when moist, Friable when dry.	D		40
1						40
2						45
3						40
4						47
5						17
6.00						
6	Gray	Argillized gabbro, by weathering	Argillized gabbro, Deeply weathered, Soft, easily broken by finger pressure.	D	5	60
7					4	60
8					3	50
9					6	55
10					6	63
11					8	63
12					8	58
13					9	65
14					9	70
15.00						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						

Standard Penetration Test — Depth (m); Blows Per Each 10cm (0~10, 10~20, 20~30); Blows/Total Penetration Length (cm); N-Value

Diagram — RQD ···X··· %; Max. Core Length —•— cm; Core Recovery (CM) ═══ cm %; N - Value 20 40 60 80 100

Field Permeability Test — Depth (m); Lugeon Value; Coefficient of Permeability (cm/s)

Ground Water Level in Hole (m)

Drilling Date: 11/17, 11/18

DRILLING LOG

PROPOSED BOUTIQUE HOTEL

Drill Hole No.	MBH - 06	Location	Resettlement Area (Bgy. Barakbak)	Total Drilling Length	15.00 m
Longitude		Drilling Term from	7.13.97 up to 7.14.97	Total Core Length	13.50 m
Latitude		Last Ground Water Level in Hole	3.00 m	Total Core Recovery	90.00 %
Collar Elevation		Last Hole Diameter	cm	Drilling Machine	BELL Machine
Direction · Dip	Vertical	Geologist		Pump	535

Scale (m)	Elevation (m)	Depth (m)	Core Color	Geologic Unit	Geologic Column	Core Description and Geological Observation	Sampling or In Situ Test	RQD (%)	Max. Core Length (cm)	Core Recovery (%)	Standard Penetration Test: Depth (m)	Blows per Each 10 cm (10 / 20 / 30)	Blows/Foot	Remarks	Diagram: RQD, Max. Core Length, Core Recovery (CR), N-Value	Field Permeability Test: Depth (m)	Lugeon Value	Coefficient of Permeability (cm/s)	Water Level	Date
			brownish gray	Weathered SILTSTONE		SILTSTONE, calcareous, with some of crushed shells	DT	0	135	83										
		1.50	gray	SILTSTONE		SILTSTONE, moderately fractured, with trace of crushed shells, chloritized	CY	0	135	90									3.00	
								0	135	90										
		4.50						0	135	90										
								0	135	83										
		7.50						0	135	90										
			gray	SILTSTONE		SILTSTONE, moderately fractured, with trace of crushed shells, chloritized	CY	0	135	90										
		10.50						0	135	90										
								0	135	90										
		13.50						0	150	100										
		15.00				END OF BORING AT 15.00 M		0	140	93										7/13

LEGEND: CLAY, SAND, SANDSTONE, SILTSTONE, LIMESTONE, SILT, GRAVEL, TUFF, BOULDER, BEDROCK

DRILLING LOG

PROPOSED BOUTIQUE HOTEL

Drill Hole No.	MBH - 07	Location	Resettlement Area (Bgy. Barakbak)			Total Drilling Length	15.00 m
Longitude		Drilling Term from	7.14.97	up	to 7.15.97	Total Core Length	13.30 m
Latitude		Last Ground Water Level in Hole		2.65	m	Total Core Recovery	89.00 %
Collar Elevation		Last Hole Diameter			cm	Drilling Machine	BELL Machine
Direction · Dip	Vertical	Geologist				Pump	535

Scale (m)	Elevation (m)	Depth (m)	Core Color	Geologic Unit	Geologic Column	Core Description and Geological Observation	Core Recovery (%)	RQD (%)	Max. Core Length (cm)	Core Recovery (%)	Standard Penetration Test: Depth (m)	Blows per Each 10 cm: 0~10	11~20	21~30	31~	Remarks	Water Loss	Diagram: RQD — R — %	Max. Core Length ___ cm	Core Recovery (CR) CR %	N-Value	Field Permeability Test: Depth (m)	Lugeon Value	Coefficient of Permeability (cm/sec)	Water Level	Date
			brownish	Weathered		SILTSTONE, with some shells																				
		4.50	gray	SILTSTONE			CL	65	135	90															2.65	
			gray	SILTSTONE		SILTSTONE, with trace of pent, chloritized grains, highly fractured	CL	0	130	87																
		9.50	gray					0	130	87																
			gray					0	130	87																
		13.50	gray					0	135	90																
								0	140	93																7/1
		15.00						0	125	83																
								0	135	90																
								0	135	90																
								0	140	93																7/1
						END OF BORING AT 15.00 M																				

LEGEND: CLAY | SAND | SANDSTONE | SILTSTONE | LIMESTONE | SILT | GRAVEL | TUFF | BOULDER | BEDROCK

DRILLING LOG

PROPOSED BOUTIQUE HOTEL

Drill Hole No.	MBH - 08	Location	Near Barangay Hall			Total Drilling Length	15.00 m
Longitude		Drilling Term from	7.09.97	up	to 7.10.97	Total Core Length	14.05 m
Latitude		Last Ground Water Level in Hole		3.82	m	Total Core Recovery	94.00 %
Collar Elevation		Last Hole Diameter			cm	Drilling Machine	BELL Machine
Direction · Dip	Vertical	Geologist				Pump	535

Scale (m)	Elevation (m)	Depth (m)	Core Color	Geologic Unit	Geologic Column	Core Description and Geological Observation	Core Sample Number	RQD (%)	Max. Core Length (cm)	Core Recovery (%)	Depth (m)	Standard Penetration Test: Blows per Each 15 cm (10 / 20 / 30)	Standard Penetration Test: Blows/Unit Penetration Length	Standard Penetration Test: N-Value	Diagram: RQD —●— %	Diagram: Max. Core Length ___ cm	Diagram: Core Recovery (CR) CR %	Diagram: N-Value —○—	Field Permeability Test: Depth (m)	Field Permeability Test: Vertical Section	Field Permeability Test: Coefficient of Permeability (cm/s)	Field Permeability Test: Water Level	Field Permeability Test: Date
			yellowish brown	Weathered SILTSTONE		SILTSTONE																	
		1.50					CL	0	115	76													
			gray	SILTSTONE		SILTSTONE, with some chloritized grains	CL	0	150	100												3.82	
		4.50						0	150	100													
								0	150	100													
			light brown	SILTSTONE		SILTSTONE, calcareous, slightly oxidized	CM																
		7.50						0	150	100													
			gray																				
				SILTSTONE		SILTSTONE, with some chloritized grains and embedded calcareous material	CL	0	150	100													
		10.50						0	135	90													
								0	140	93													
		13.50						0	139	96													
		15.00						0	133	90													
						END OF BORING AT 15.00 M																	

LEGEND: CLAY | SAND | SANDSTONE | SILTSTONE | LIMESTONE | SILT | GRAVEL | TUFF | BOULDER | BEDROCK

DRILLING LOG

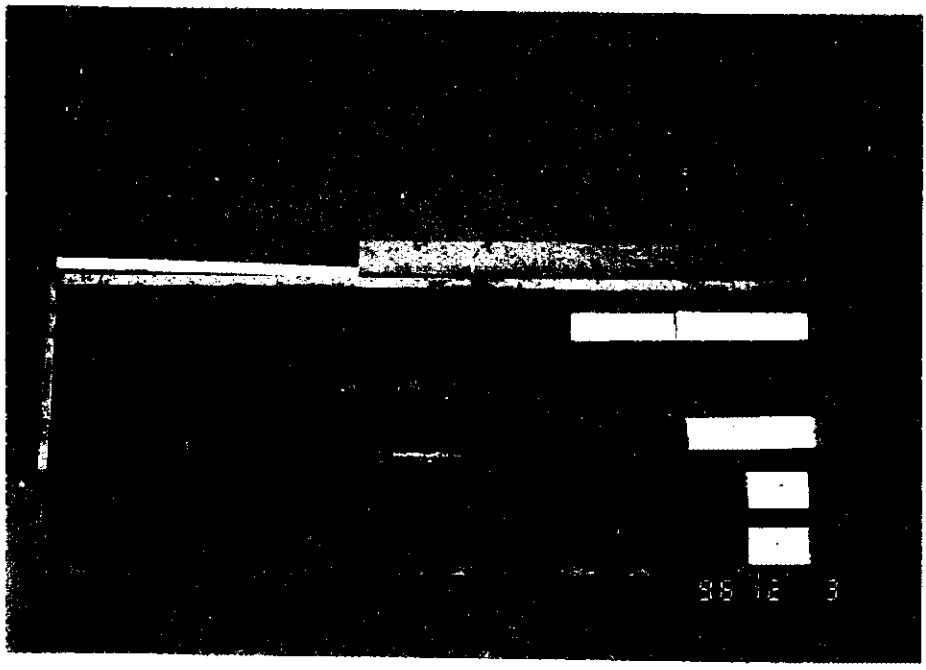
PROPOSED BOUTIQUE HOTEL

Drill Hole No.	MBH - 09	Location	Near Barangay Hall		Total Drilling Length	15.00	m
Longitude		Drilling Term from	7.10.97	up to 7.11.97	Total Core Length	9.36	m
Latitude		Last Ground Water Level in Hole		3.80 m	Total Core Recovery	62.40	%
Collar Elevation		Last Hole Diameter		cm	Drilling Machine	BELL Machine	
Direction · Dip	Vertical	Geologist			Pump	535	

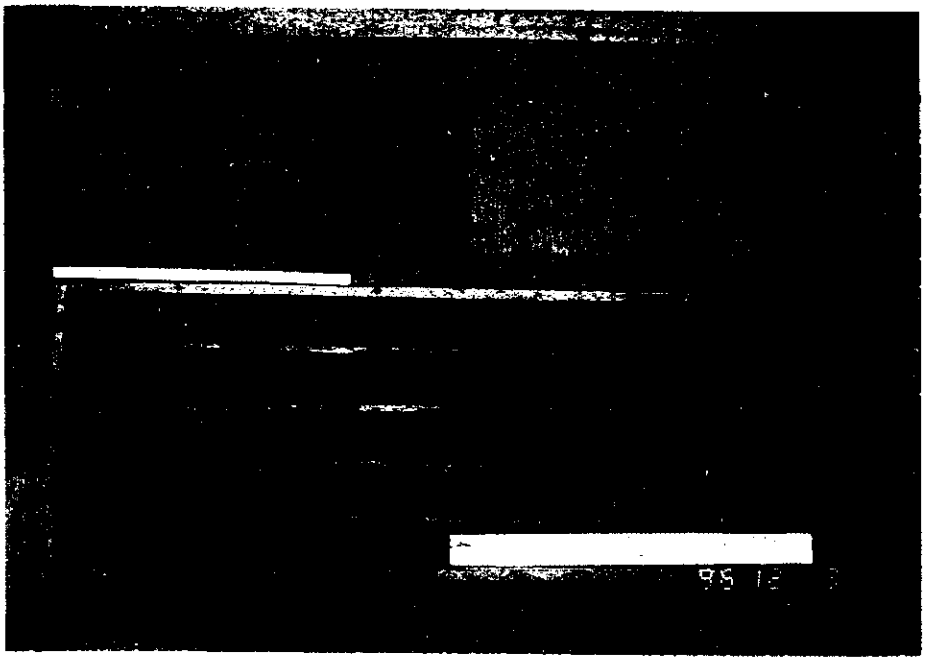
Scale (m)	Elevation (m)	Depth (m)	Core Color	Geologic Unit	Geologic Column	Core Description and Geological Observation	Sample Number & Test Number	RQD (%)	Max. Core Length (cm)	Core Recovery (%)	Standard Penetration Test: Depth (m)	Blow per Each 10 cm: 0~10	10~20	20~30	Blow/Foot	Penetration Length (cm)	Water Loss	Diagram: RQD — % / Max. Core Length ___ cm / Core Recovery (CR) CR % / N-Value	Field Permeability Test: Depth (m)	Lugeon Value	Coefficient of Permeability (cm/s)	Water Level	Date
		1.00	light brown	Weathered SILTSTONE		SILTSTONE, with some shells		0	55	55													
								0	60	60													
						SILTSTONE, apparently calcareous, moderately fractured, with trace of chloritization		0	85	85												3.80	
			grey	SILTSTONE																			
		4.50						0	135	90													
								0	135	90													7/7
		7.50						0	135	90													
								0	140	93												7/14	
		10.50						0	150	100													
								0	140	93													
		13.50						0	135	90													
								0	135	90												7/15	
		15.00				END OF BORING AT 15.00 M																	

LEGEND: CLAY, SAND, SANDSTONE, SILTSTONE, LIMESTONE, SILT, GRAVEL, TUFF, BOULDER, BEDROCK

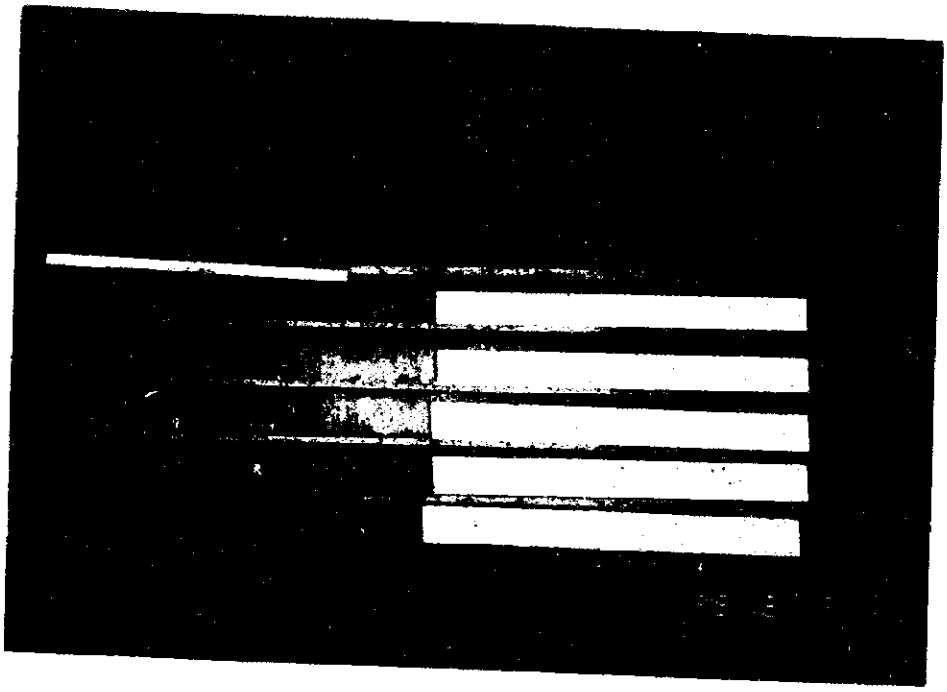
2.4.1.4-5 材料調査写真



MBH-1　(0~5.0m)



MBH-1　(5.0~10.0m)



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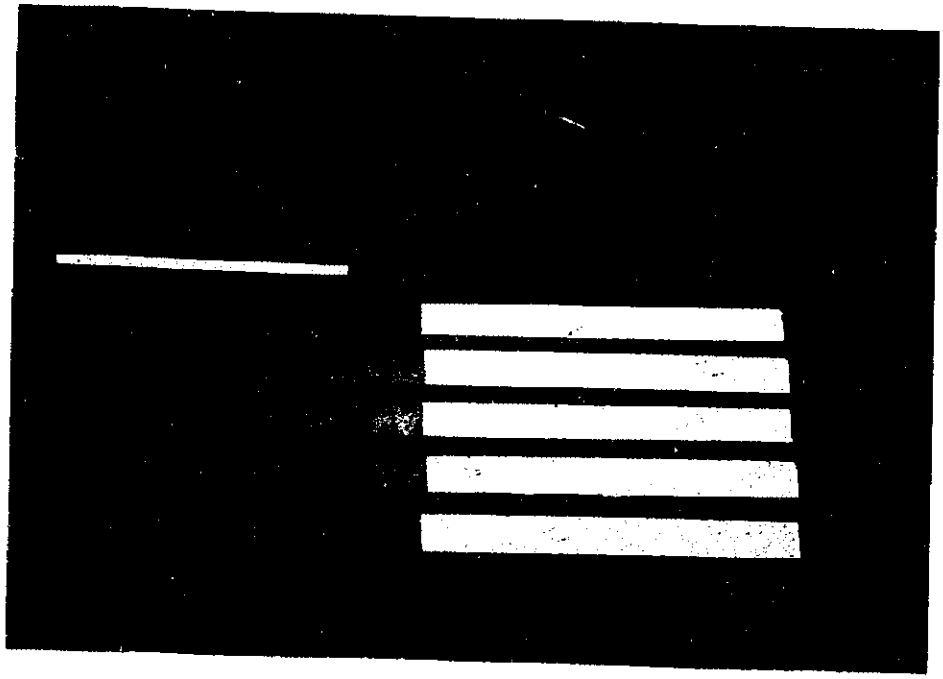
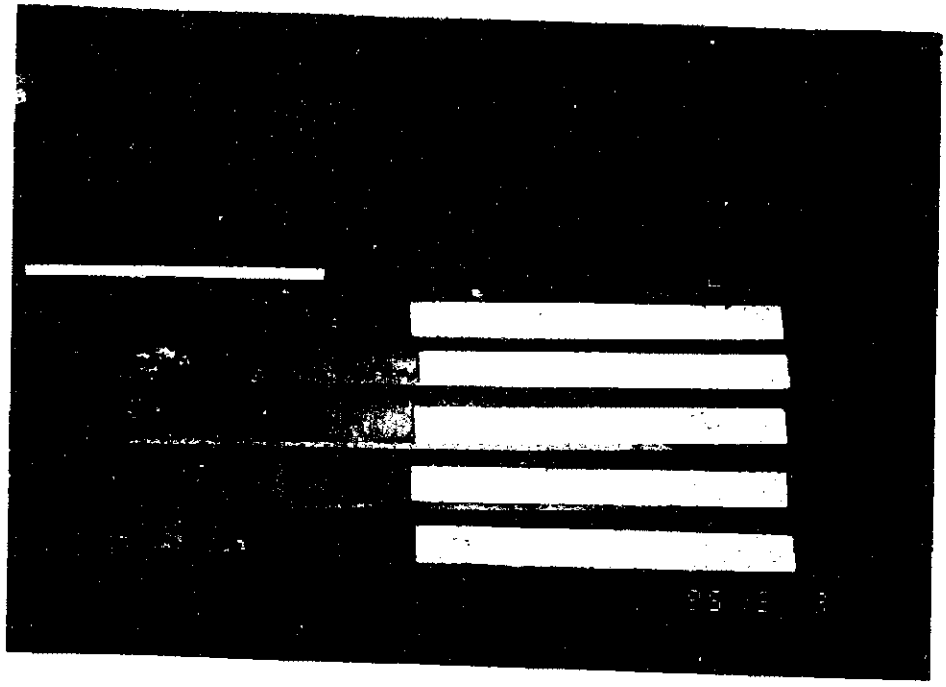
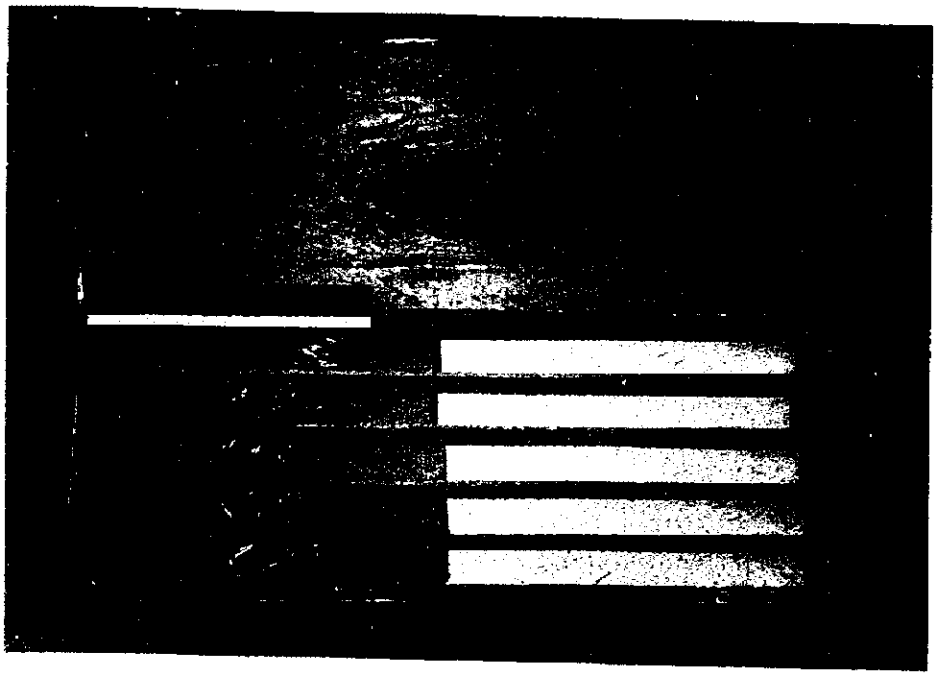


MBH-2　(5.0~10.0m)



MBH-2　(10.0~15.0m)



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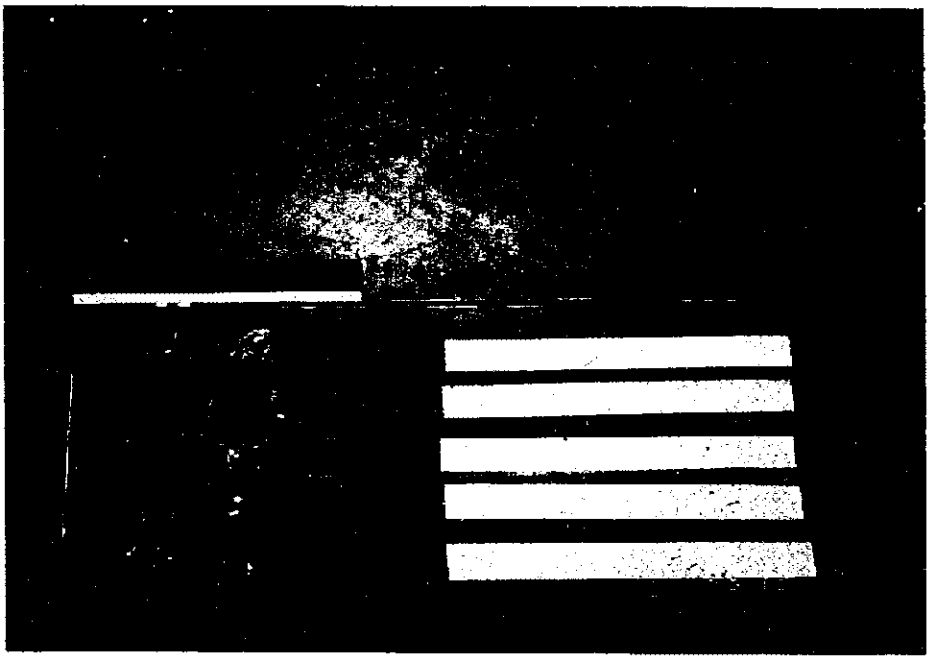
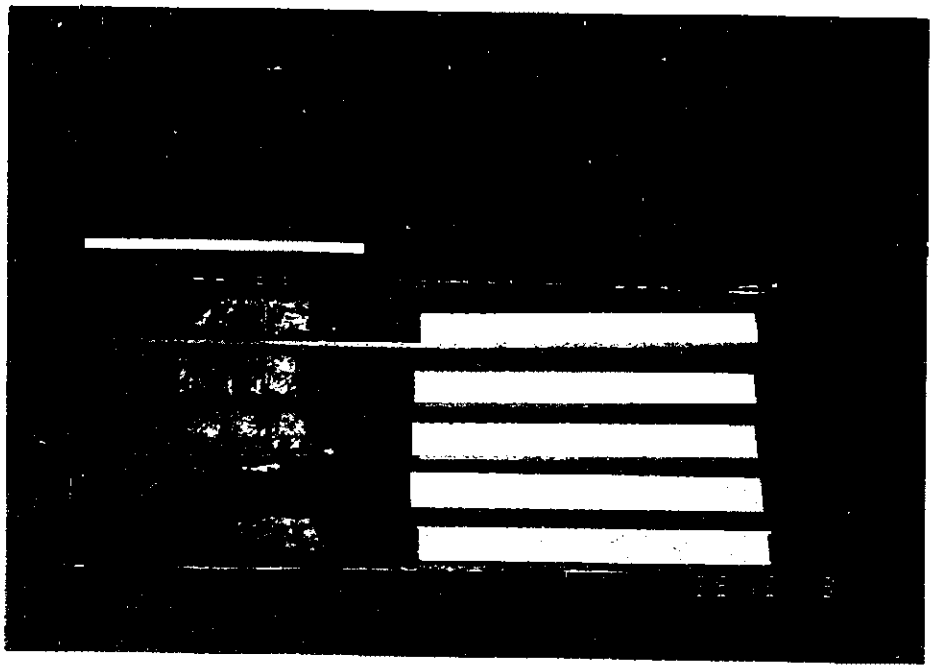
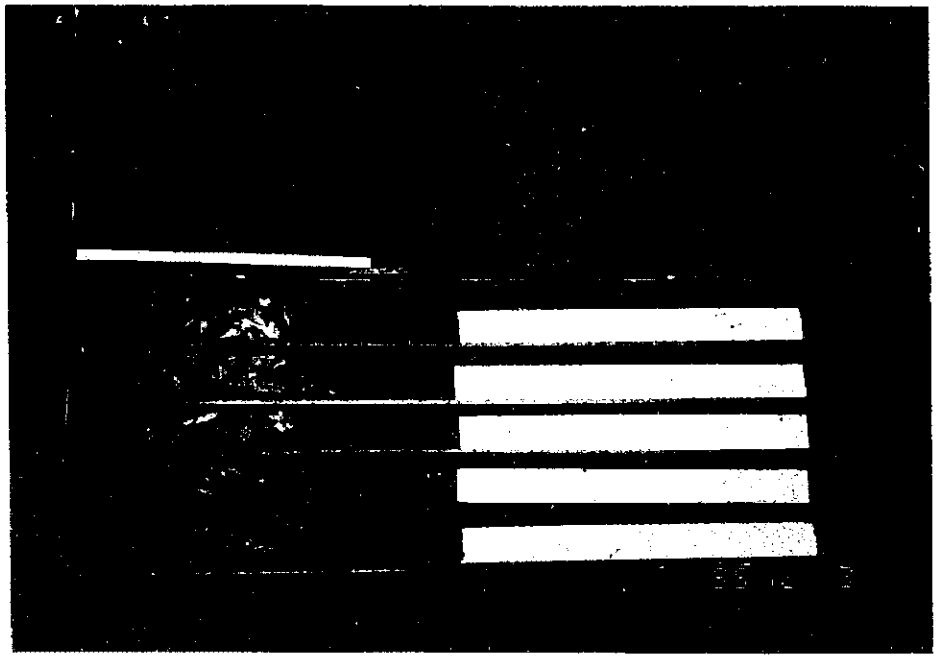


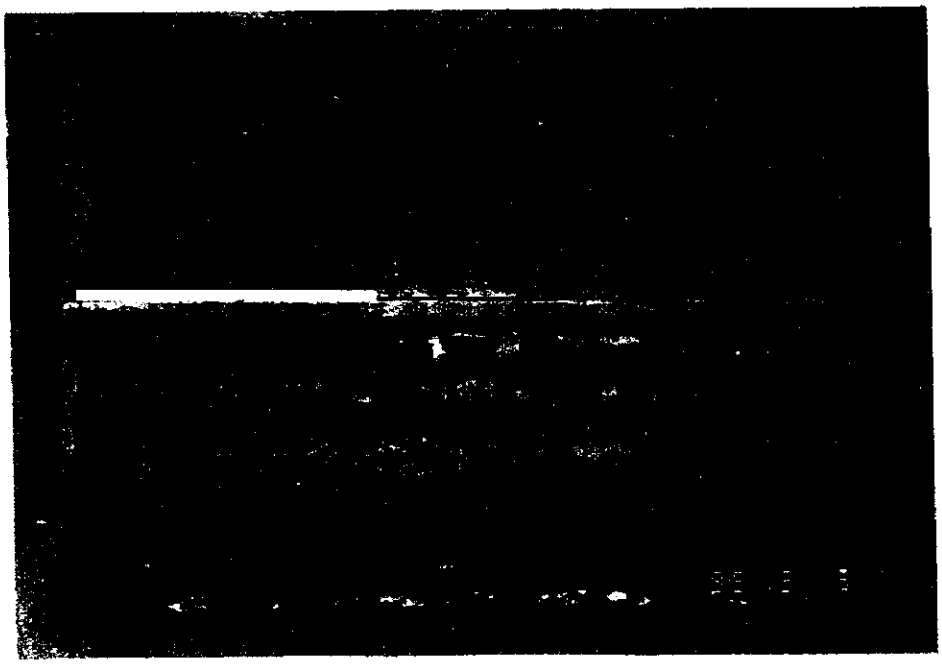
MBH-3　(5.0~10.0m)



MBH-3　(10.0~15.0m)



MBH-3　(15.0~20.0m)



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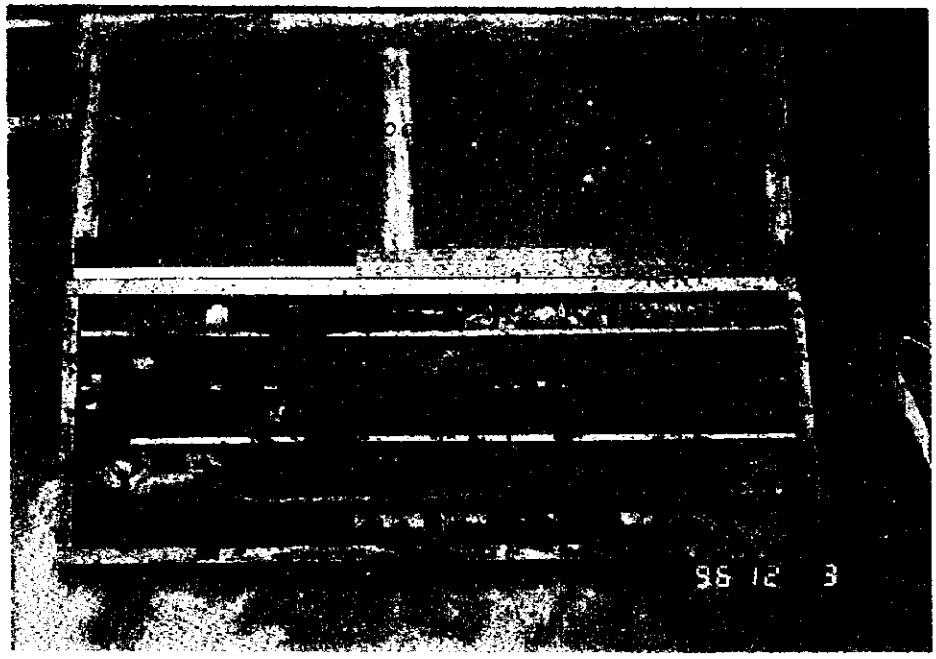
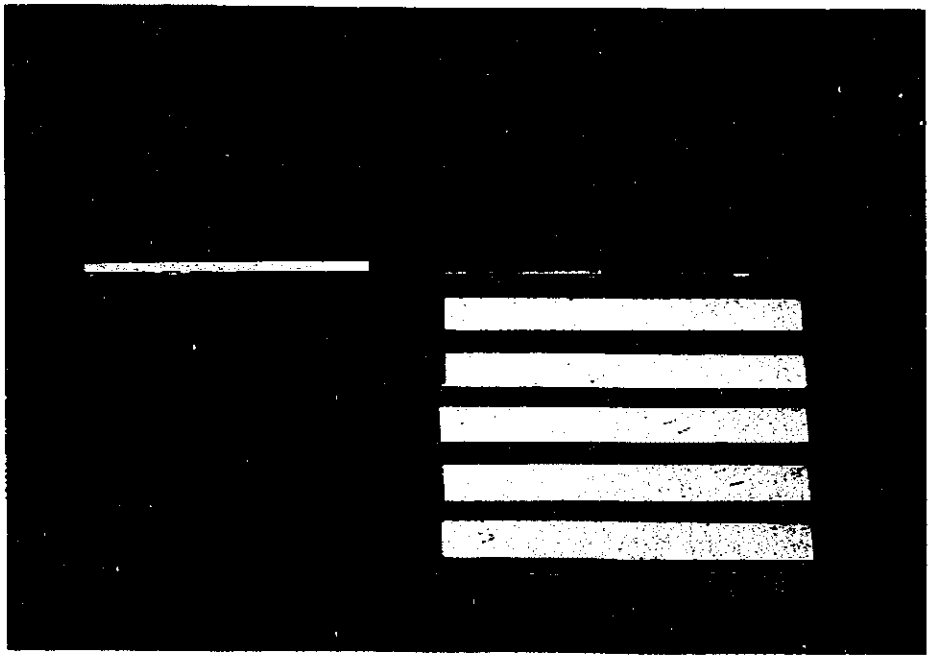


MBH-4　(5.0~10.0m)



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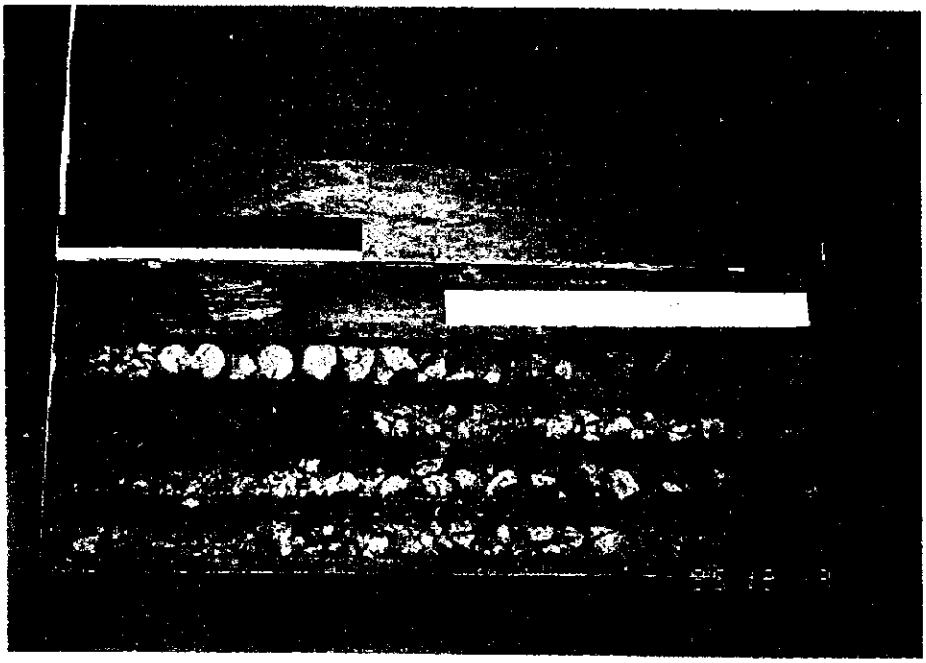
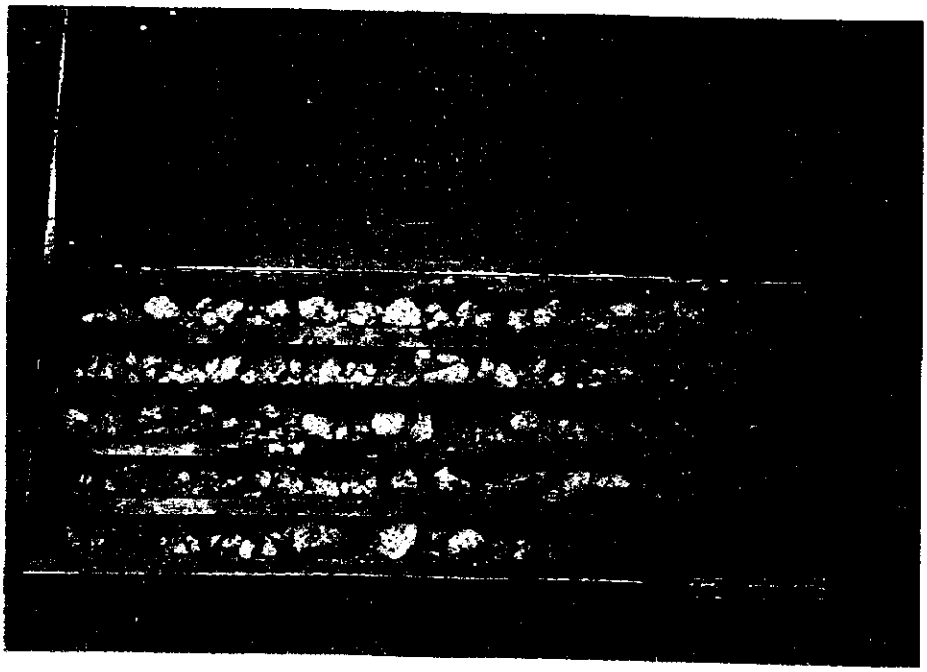
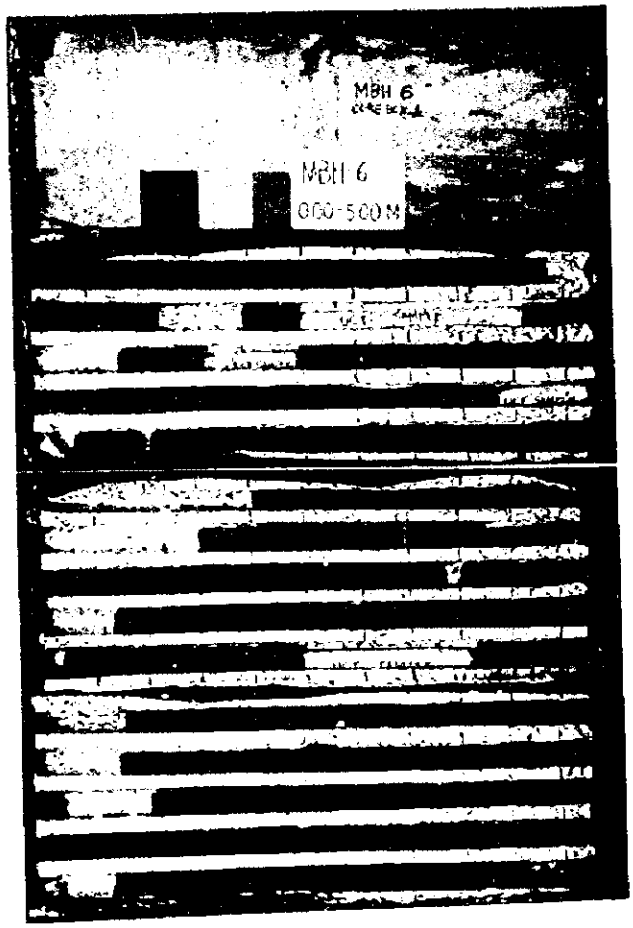


MBH-5　(5.0~10.0m)



MBH-5　(10.0~15.0m)

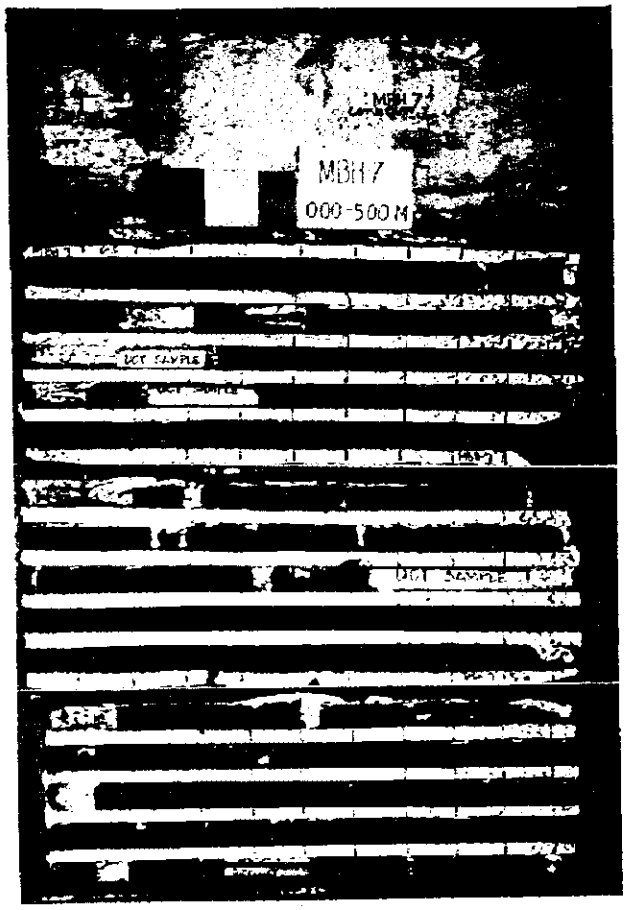


MBH-6

0．00～5．00m

5．00～10．00m

10．00～15．00m

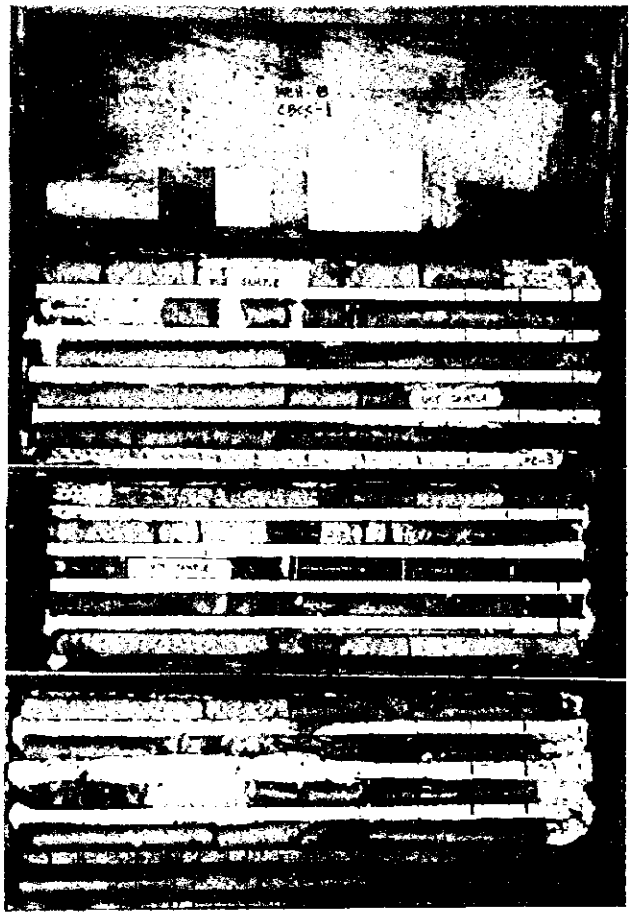


MBH-7

0．00～5．00m

5．00～10．00m

10．00～15．00m

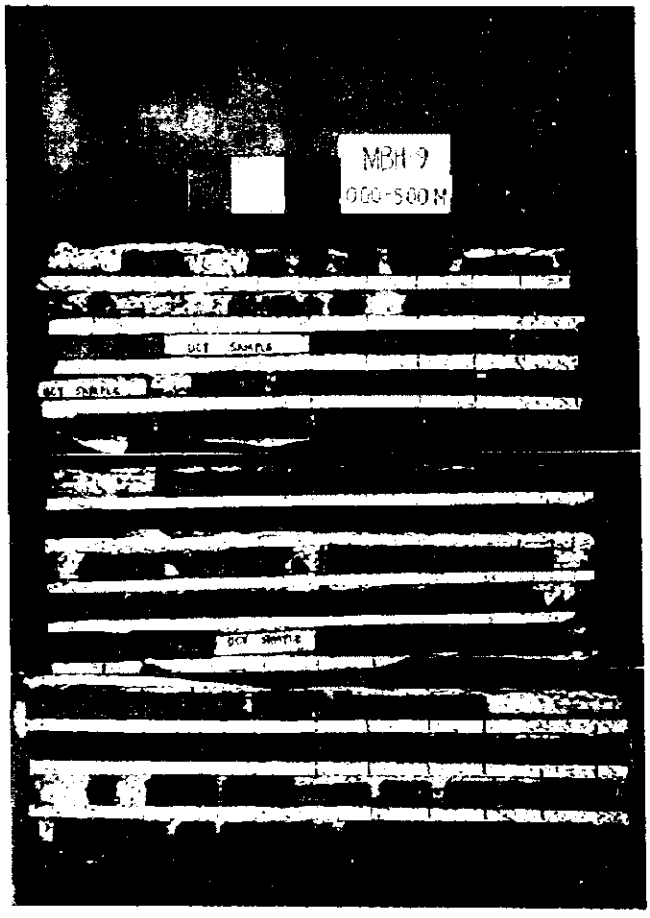


MBH-8

0．00～5．00m

5．00～10．00m

10．00～15．00m



MBH-9

0．00～5．00m

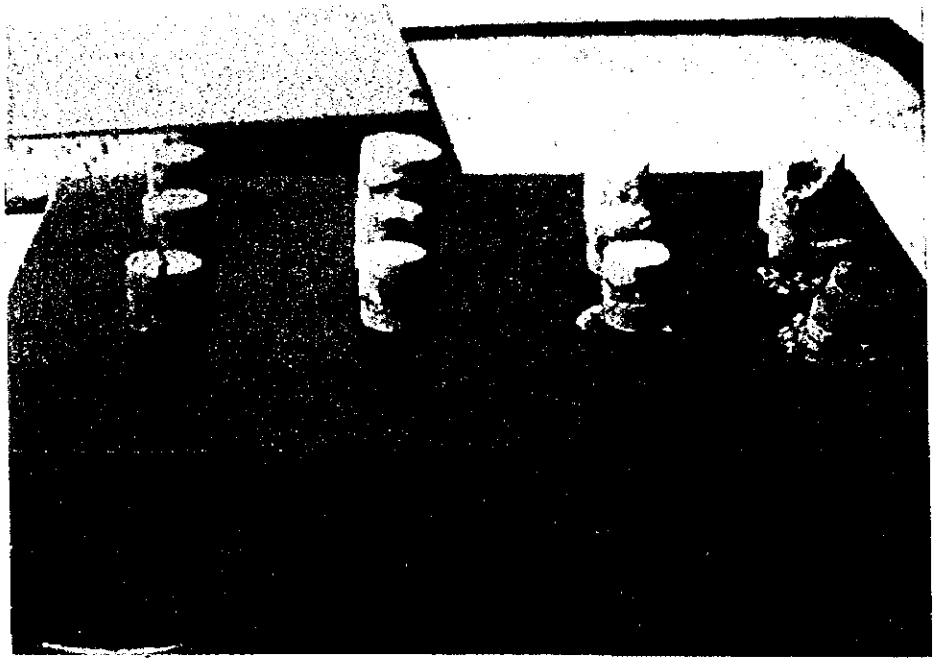
5．00～10．00m

10．00～15．00m

DRY-WET REPEATED TEST

SOAKED IN WATER
(1st. Time)

FINAL PHOTO OF SAMPLE



土壌分析結果　1　(乾物中)

試坑番号	資料番号	深さ cm	pH		有効態リン	有機炭素	有機物	電気伝導度 EC(1:1)
			H_2O (1:1)	$CaCl_2$ (1:2)	ppm	%	%	mmhos/cm
1	4410	0～10	6.4	5.4	0.6	1.06	1.82	0.01
	4411	10～30	6.2	5.4	0.8	0.80	1.38	0.03
2	4412	0～12	6.3	5.3	0.9	0.65	1.12	0.01
	4413	12～24	6.4	5.5	0.4	0.56	0.96	0.01
3	4414	0～ 9	6.1	5.2	0.7	0.56	0.96	0.01
	4415	9～20	6.2	5.4	0.7	0.50	0.86	0.01
4	4416	0～11	5.9	4.9	0.9	0.99	1.70	0.01
	4417	11～31	6.0	5.1	0.5	0.97	1.67	0.01
	4418	31～63	6.3	5.7	0.4	0.55	0.95	0.01
5	4419	0～20	6.7	6.0	1.5	1.01	1.74	0.10
	4420	20～50	6.7	6.0	0.8	0.97	1.67	0.06
	4421	50～80	7.6	7.1		0.37	0.64	0.21
6	4422	0～20	6.2	5.4	1.4	1.47	2.53	0.10

土壌分析結果　2　(乾物中)

試坑番号	資料番号	深さ cm	交換性塩基 me (A)					交換性酸 (B)	CEC (C) A+B	飽和度 % A/C	CEC *) (D)	飽度度 % A/D
			Ca	Mg	Na	K	計					
1	4410	0～10	2.2	2.1	tr	tr	4.3	10.6	14.9	29	10.0	43
	4411	10～30	3.4	3.3	0.1	tr	6.8	9.7	16.5	41	13.1	52
2	4412	0～12	1.4	1.0	tr	tr	2.4	6.7	9.1	26	5.3	45
	4413	12～24	1.5	1.4	tr	tr	2.9	6.3	9.2	31	5.6	52
3	4414	0～ 9	0.9	0.8	tr	0.1	1.8	8.4	10.2	18	5.3	34
	4415	9～20	1.4	1.2	tr	tr	2.6	10.6	13.2	20	7.3	36
4	4416	0～11	0.6	0.5	tr	tr	1.1	10.4	11.5	10	5.9	19
	4417	11～31	1.5	0.9	tr	tr	2.4	8.5	10.9	22	6.7	36
	4418	31～63	2.8	1.9	tr	tr	4.7	7.6	12.3	38	8.1	58
5	4419	0～20	6.3	8.3	0.1	tr	14.7	8.5	23.2	63	19.8	74
	4420	20～50	5.3	6.9	0.1	tr	12.3	9.1	21.4	57	18.2	68
	4421	50～80	12.0	15.6	0.1	tr	27.7	7.7	35.4	78	34.6	80
6	4422	0～20	0.7	0.6	tr	tr	1.4	11.6	13.0	11	7.0	20

注) CEC　：塩基交換容量(me)
CEC *)：酢酸アンモン法により測定した CEC

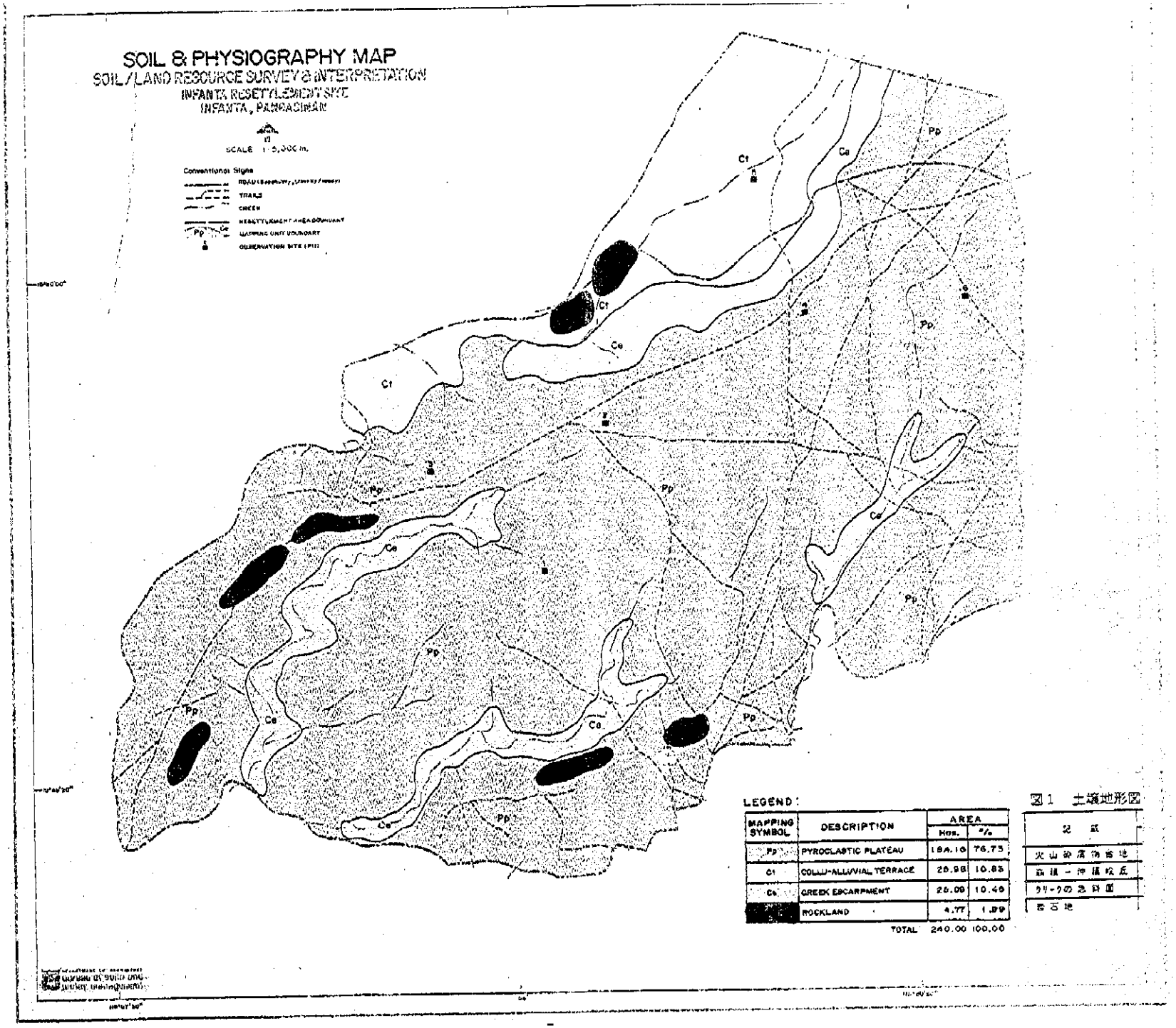
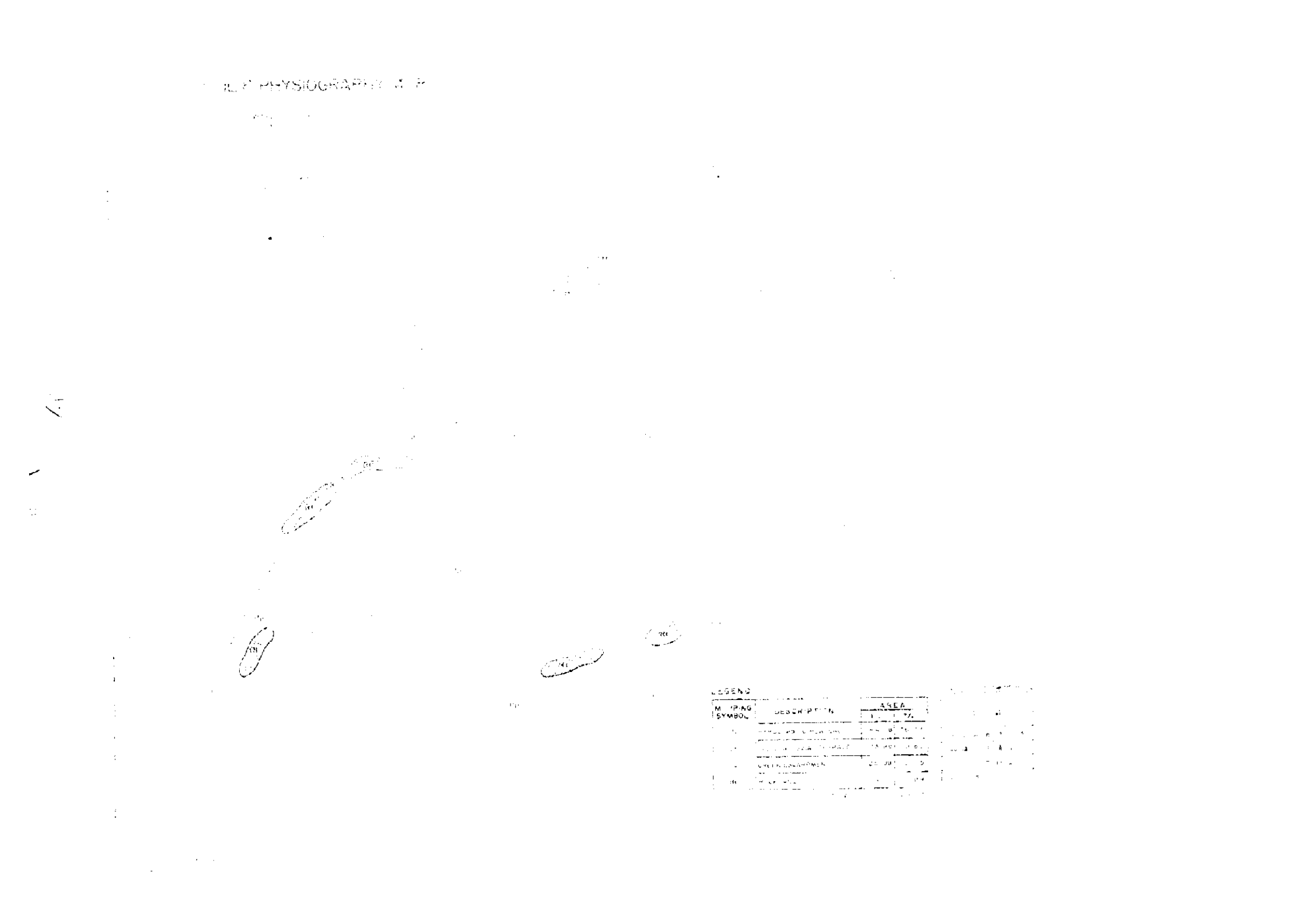


図1 土壌地形図

記号	
火山砕屑物台地	
段丘 - 沖積段丘	
クリークの急斜面	
岩石地	

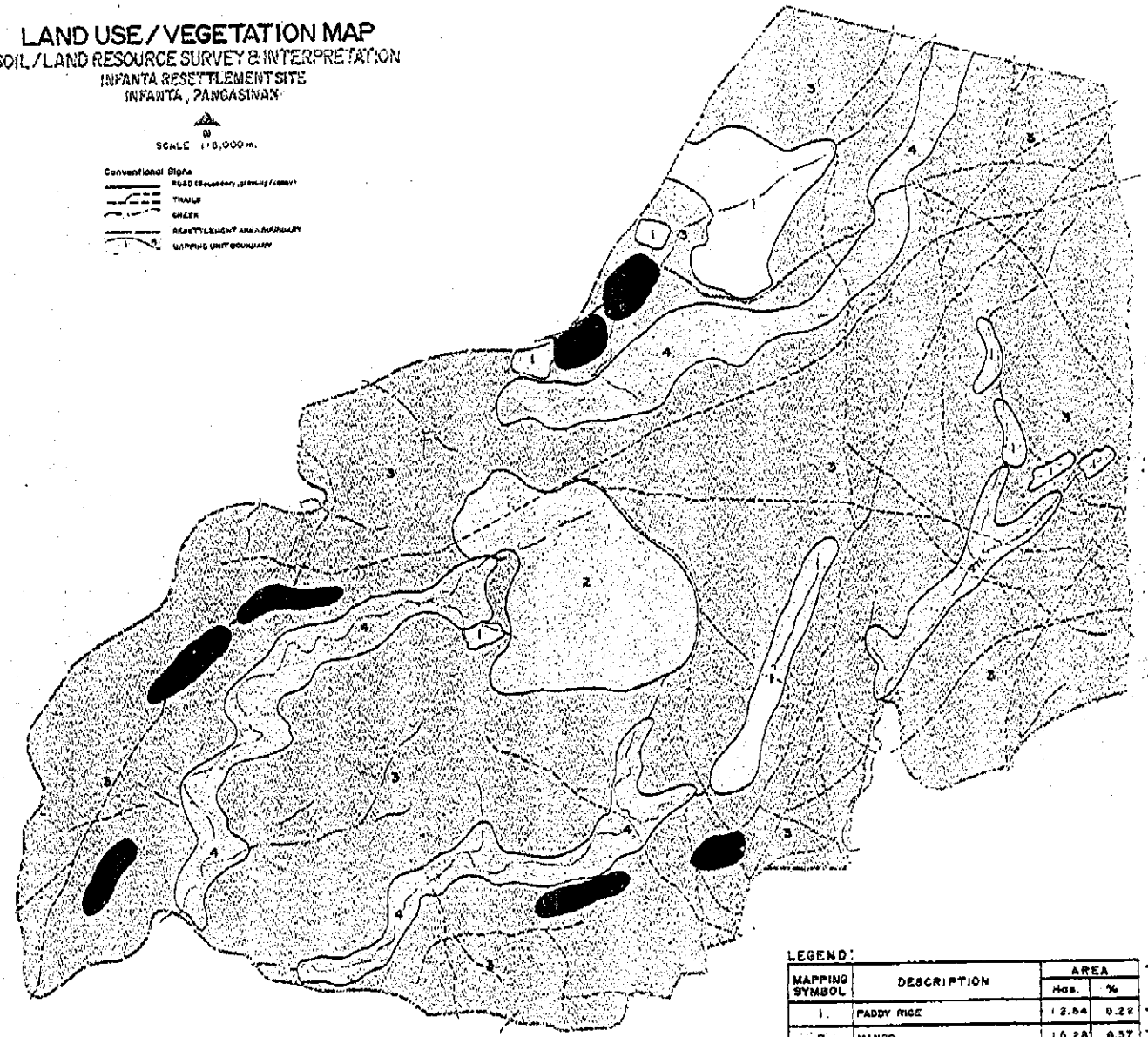

LEGEND
MAPPING SYMBOL
DESCRIPTION
AREA

LAND USE / VEGETATION MAP

SOIL / LAND RESOURCE SURVEY & INTERPRETATION
INFANTA RESETTLEMENT SITE
INFANTA, PANGASINAN

SCALE 1:5,000 m.

Conventional Signs
- ROAD (Secondary, Provincial / Feeder)
- TRAILS
- CREEK
- RESETTLEMENT AREA BOUNDARY
- MAPPING UNIT BOUNDARY



LEGEND:

MAPPING SYMBOL	DESCRIPTION	AREA Has.	AREA %
1	PADDY RICE	12.84	0.22
2	MANGO	18.28	8.57
3	Grasses 85% and low density forest 5%	182.32	75.97
4	LOW DENSITY FOREST TREES	25.09	10.45
	ROCKLAND	4.77	1.99
	TOTAL	240.00	100.00

Bureau of Soils and Water Management

図2　土地利用／植生図

記号	名称
1	水稲
2	果樹（マンゴー）、畑作物
3	草・灌木（95%）、森林（5%）
4	疎林
	岩石地

LAND USE / VEGETATION MAP

LEGEND

MAPPING SYMBOL	DESCRIPTION	AREA

SLOPE MAP

SOIL/LAND RESOURCE SURVEY & INTERPRETATION

INFANTA RESETTLEMENT SITE

INFANTA, PANGASINAN

N

SCALE 1:5,000 m.

Conventional Signs

- ROAD
- TRAILS
- CREEK
- RESETTLEMENT AREA BOUNDARY
- A B MAPPING UNIT BOUNDARY

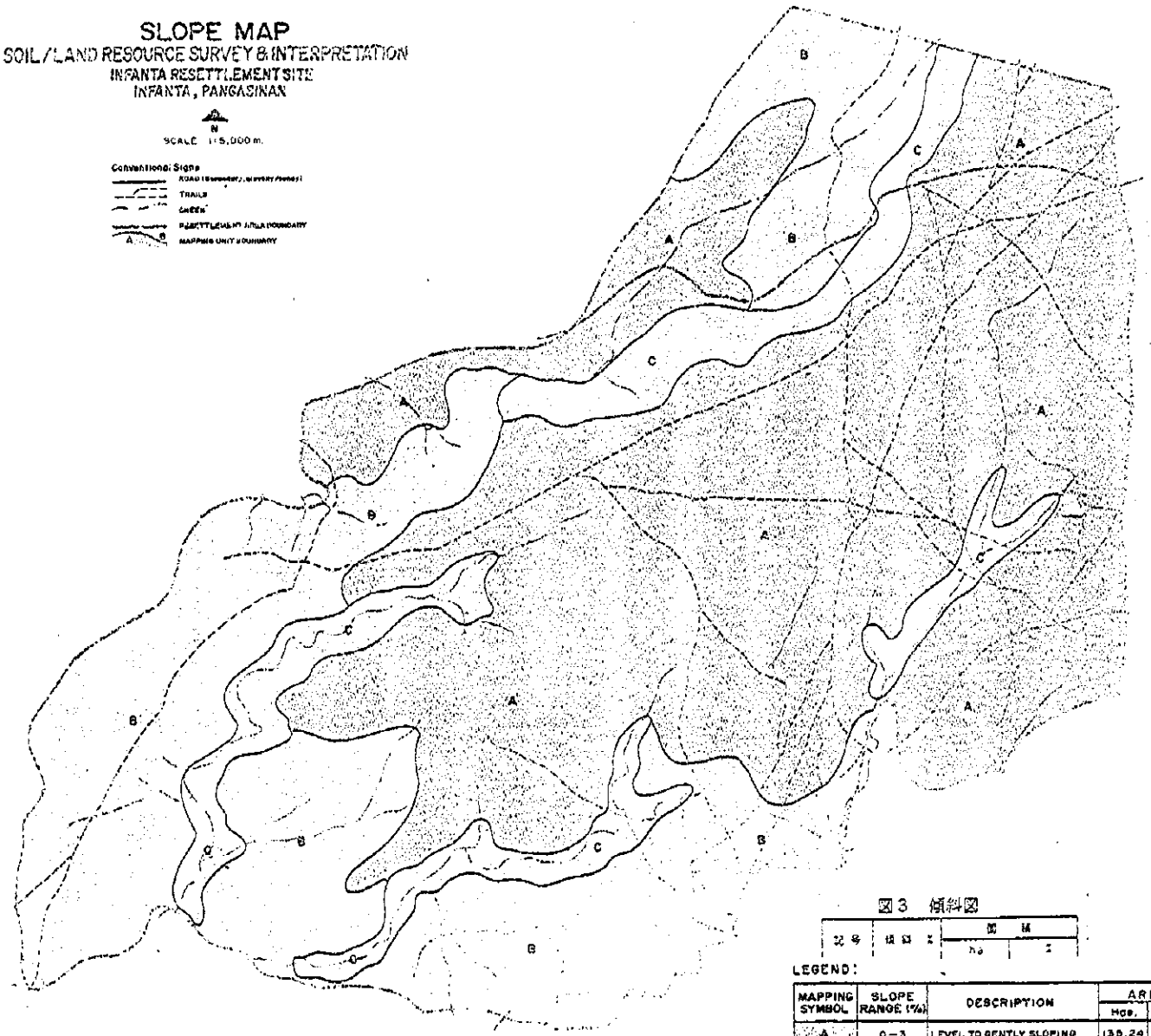
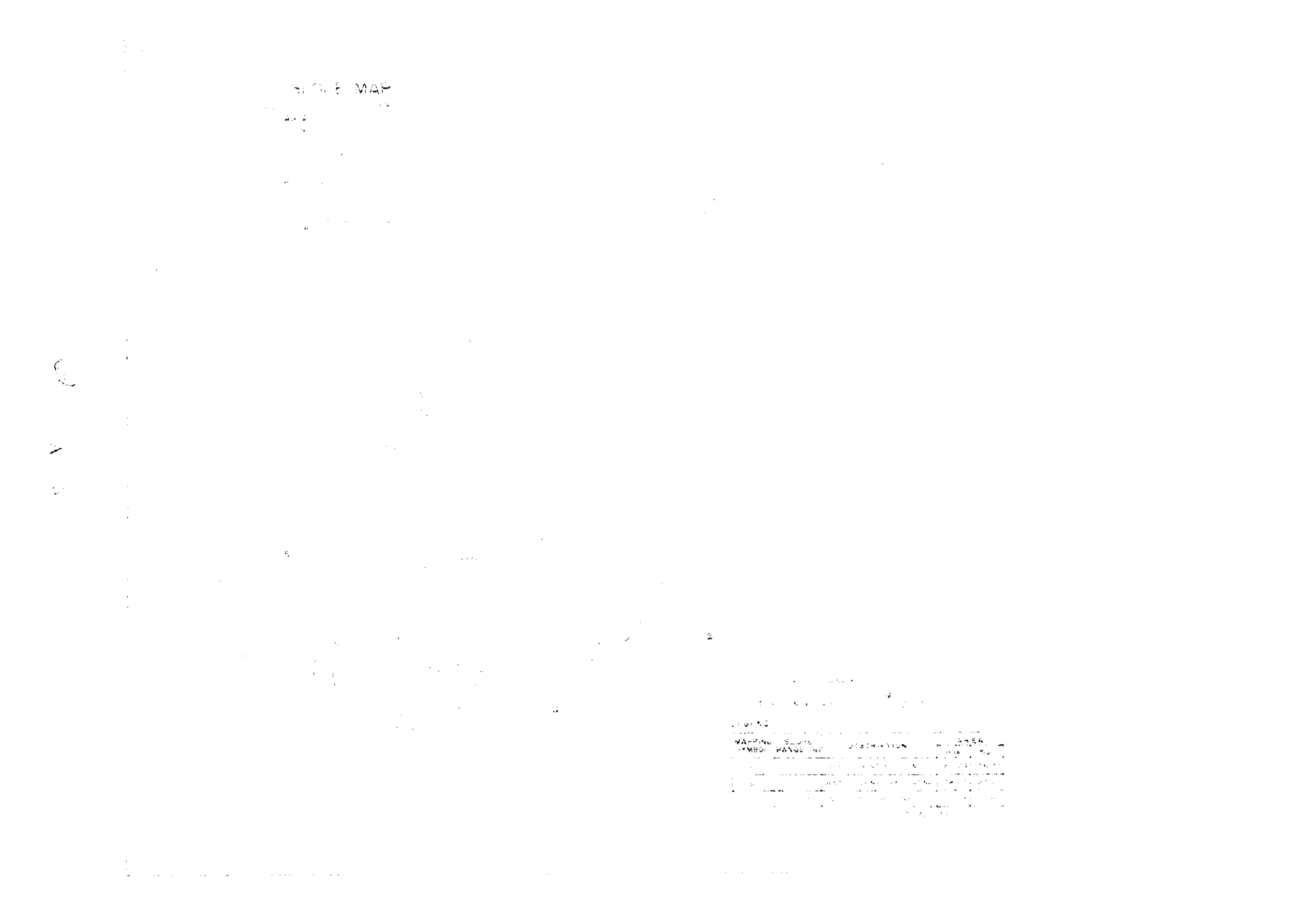


図3 傾斜図

記号	傾斜区分	面積 ha	面積 %

LEGEND:

MAPPING SYMBOL	SLOPE RANGE (%)	DESCRIPTION	AREA Hos.	AREA %
A	0-3	LEVEL TO GENTLY SLOPING	136.24	56.36
B	3-8	GENTLY SLOPING TO UNDULATING	79.67	33.20
C	8-18	UNDULATING TO ROLLING	25.09	10.40
		TOTAL	240.00	100.00



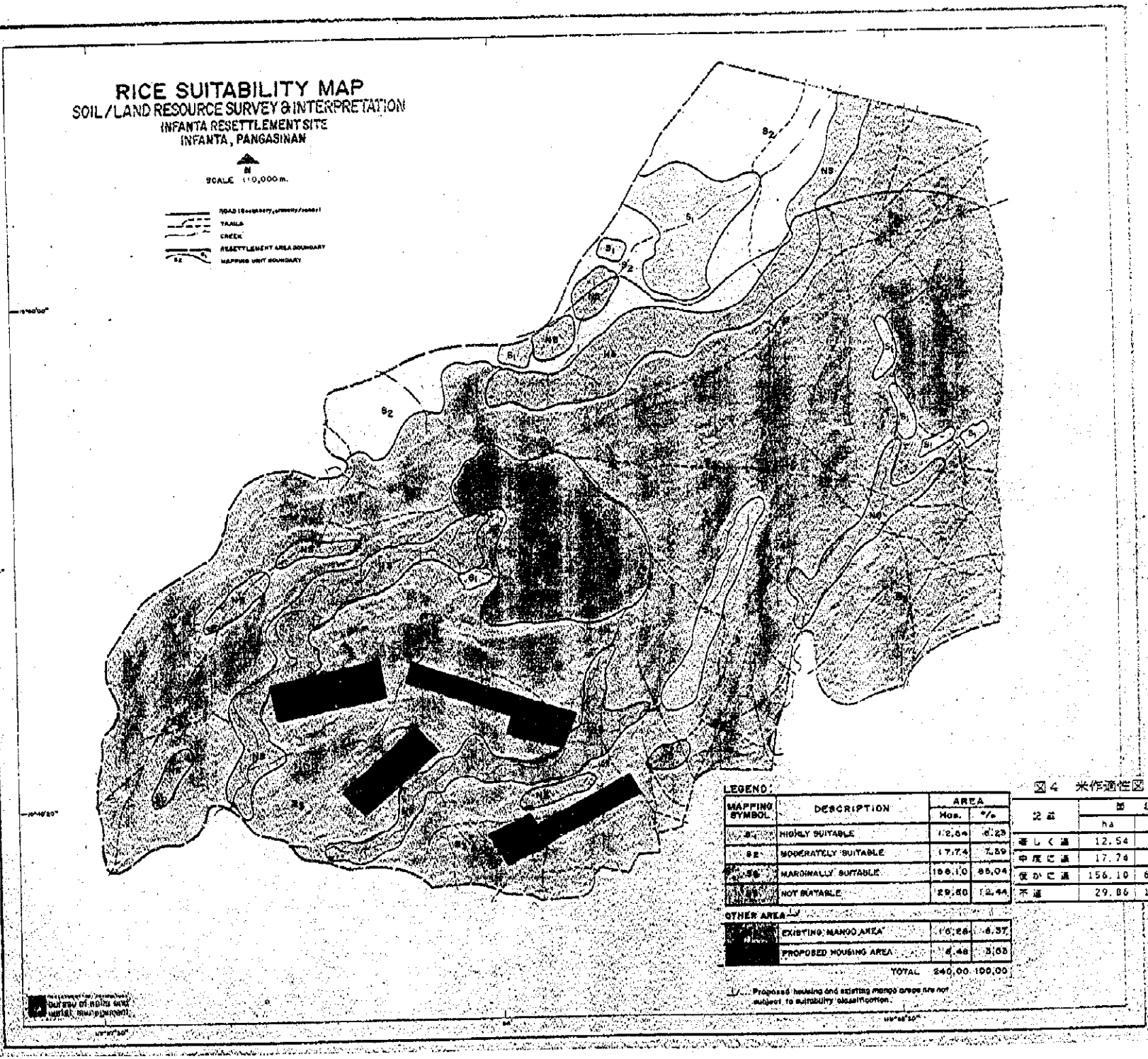
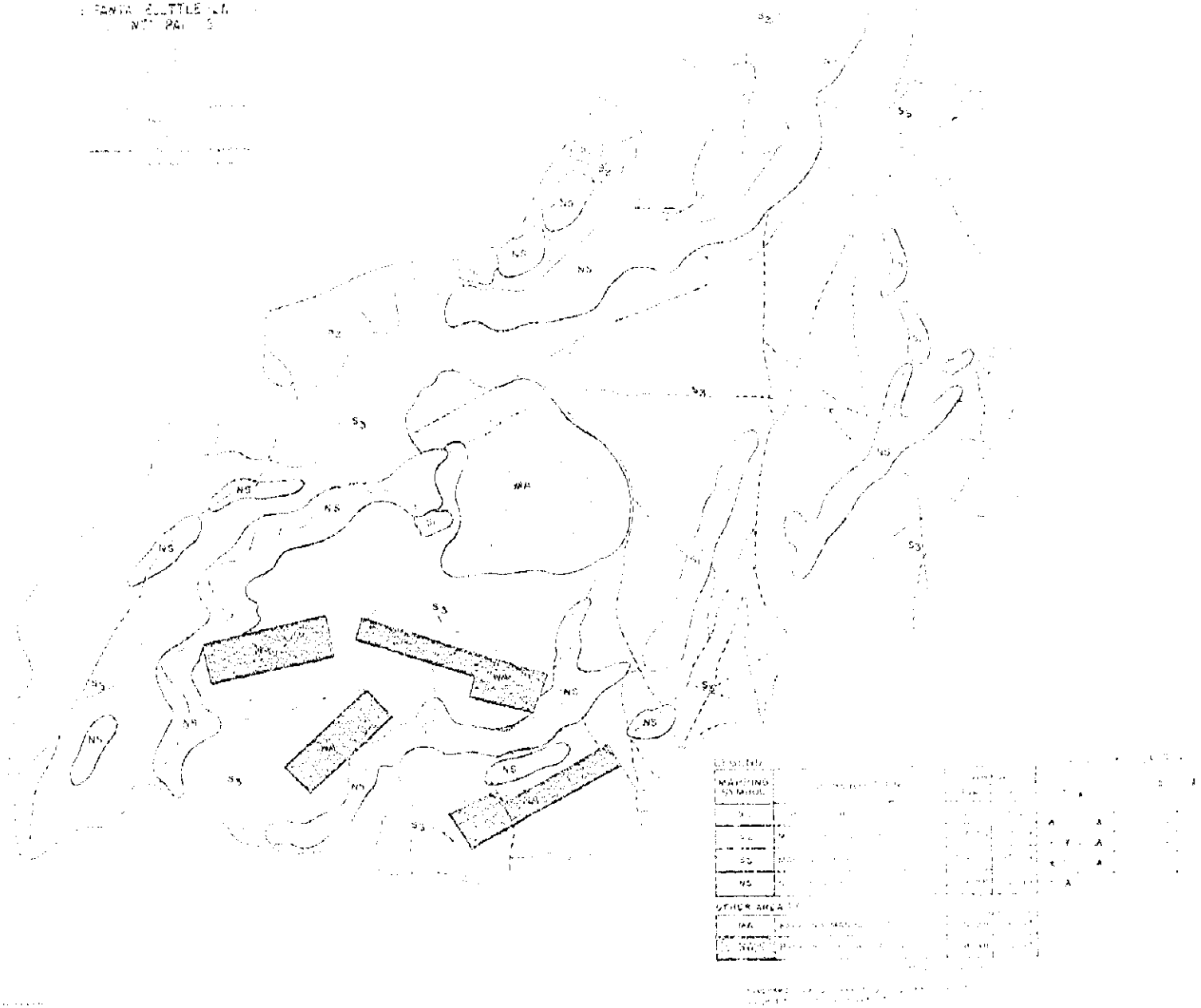


図4 米作適性図

区分	面積	
	ha	%
適しく適	12.54	5.23
中度に適	17.74	7.39
僅かに適	156.10	65.04
不適	29.86	12.44

RICE SUITABILITY MAP



FRUIT TREES & UPLAND CROPS SUITABILITY MAP

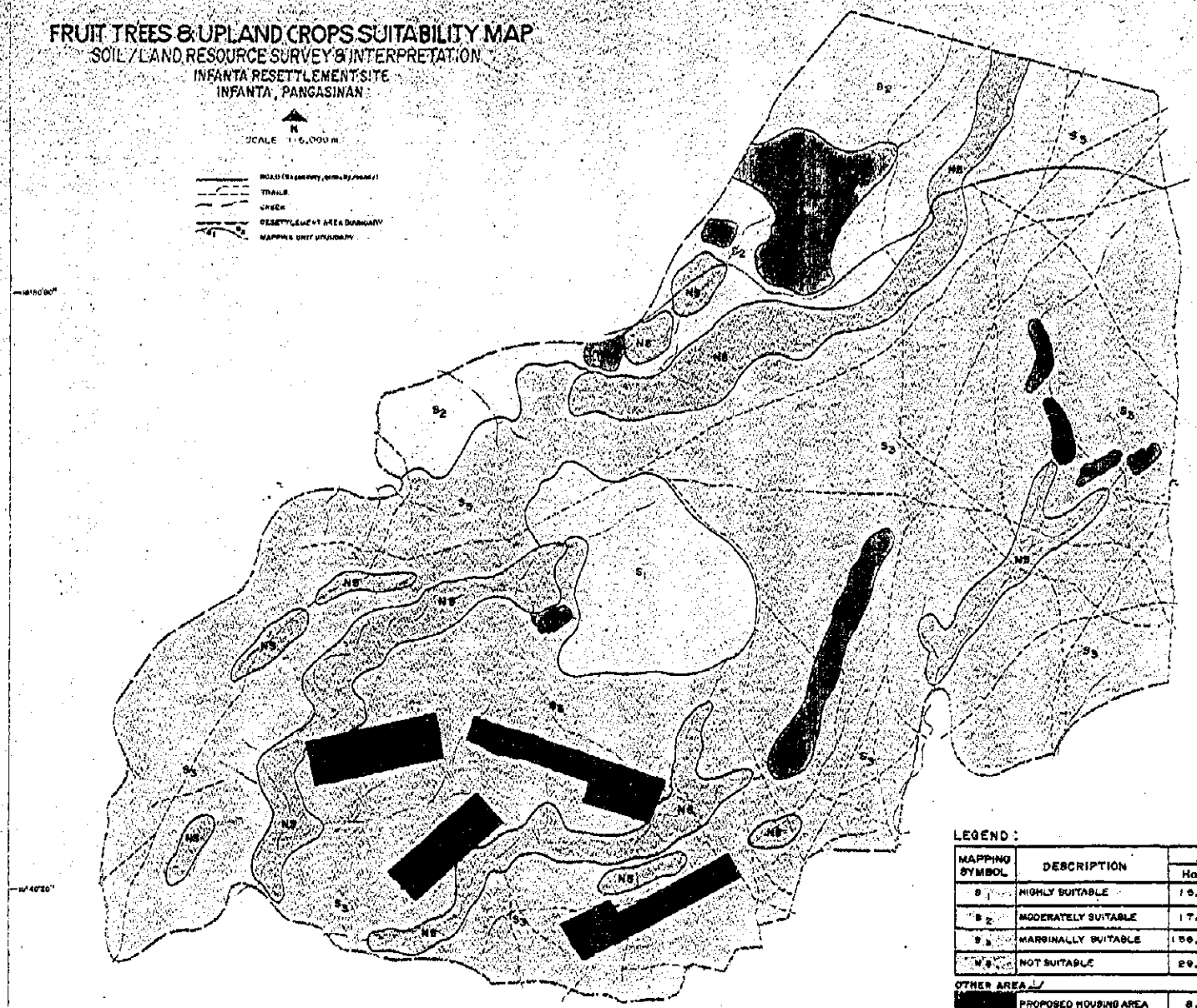
SOIL / LAND RESOURCE SURVEY & INTERPRETATION

INFANTA RESETTLEMENT SITE

INFANTA, PANGASINAN

N

SCALE 1 : 6,000 m



LEGEND :

MAPPING SYMBOL	DESCRIPTION	AREA Has.	AREA %
S_1	HIGHLY SUITABLE	15.28	6.37
S_2	MODERATELY SUITABLE	17.74	7.39
S_3	MARGINALLY SUITABLE	156.10	65.04
NS	NOT SUITABLE	29.86	12.44
OTHER AREA 1/			
	PROPOSED HOUSING AREA	8.48	3.53
	EXISTING RICE AREA	12.04	5.23
	TOTAL	240.00	100.00

1/... Proposed housing and existing rice areas are not subject to suitability classification.

図5 果樹類及び畑作物適性図

区分	面積 ha	面積 %
適しく適	15.28	6.37
中度に適	17.74	7.39
僅かに適	156.10	65.04
不適	29.86	12.44

LEGEN

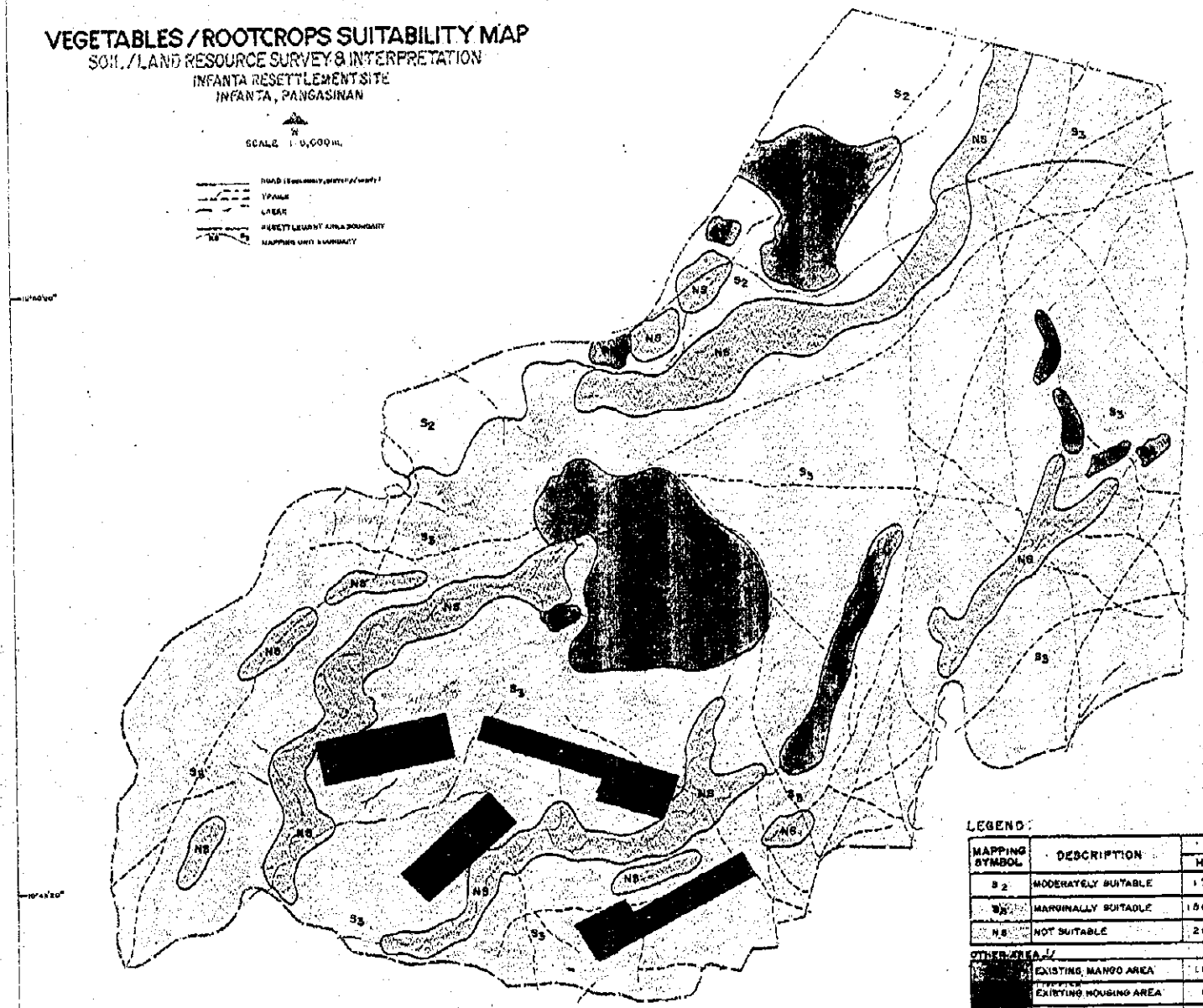
MAPPIN SY BO	DESCRIPTIO	ACRE	%

VEGETABLES / ROOTCROPS SUITABILITY MAP

SOIL / LAND RESOURCE SURVEY & INTERPRETATION

INFANTA RESETTLEMENT SITE

INFANTA, PANGASINAN



LEGEND:

MAPPING SYMBOL	DESCRIPTION	AREA Has.	AREA %
S2	MODERATELY SUITABLE	17.74	7.39
S3	MARGINALLY SUITABLE	156.10	65.04
NS	NOT SUITABLE	29.86	12.44
OTHER AREA 1/	EXISTING MANGO AREA	15.28	6.37
	EXISTING HOUSING AREA	8.46	3.52
	EXISTING RICE AREA	12.64	5.25
	TOTAL	240.00	100.00

1/ ... Proposed housing and existing agricultural areas are not subject to suitability classification.

記号	面積 ha	%
中度に適	17.74	7.39
僅かに適	156.10	65.04
不適	29.86	12.44

VEGETABLES/ROOTCROPS SUITABILITY MAP

BSWMの報告（1997年11月４日）の概要と所見

1997年11月４日付けの文書によりBSWMの所長からPangasinan州知事宛てに回報のあった同州Infanta、Barangay Dolimanの再定住地域に係る土壌及び土地資源の調査並びに説明は、1997年８月27、28の両日にBSWM、農地管理評価部の職員により実施された現地調査及び現地調査の際に採取した土壌の分析結果に基づいて作成されたものである。

調査対象範囲は当該再定住地域を含む約240haで、調査地点は地域のほぼ中央に位置するマンゴー園内（試坑１）、地域の北西部を通過する道路沿線の草地（試坑２、試坑３、試坑４）、地域の北東部を通過する道路沿線の草地（試坑６）及び地域の北部に位置する水田（試坑５）の６地点である。

報告書の本文は地域の地形、土壌、、土地利用現況、開発の可能性、生産の可能性と制限因子及び今後の調査（必要な対策）等について記載されていて、付属資料として土壌地形図、土地利用／植生現況図、傾斜度別区分図、作物の栽培適性図（米作、果樹類／畑作物、野菜／根菜類）、土壌断面の記載、土壌分析結果が添付されている。

地域の地形は火山砕屑物（非固結火成岩）台地、崩積－沖積段丘、クリークの急斜面、岩石地の４種に、土壌タクソノミーはアエリックなトロパクエプト(Aeric Tropaquept)を伴うアクイックなユートロペプト(Aquic Eutropept)(水田）とリィシックなアストロペプト(Lithic Ustropept)（水田以外）の２種に、土地利用現況は水稲、果樹（マンゴー）及び畑作物、草類、灌木及び低密度林（草類、灌木が95%)、低密度林の４種に区分され、それぞれの面積が示されている。

注）Tropaquept:湿潤熱帯地方の多湿なインセプティソル(Inceptisol)
Eutropept: 湿潤熱帯地方のインセプティソル、塩基飽和度が高い
Ustropept: 湿潤熱帯地方のインセプティソル、塩基飽和度が高い、乾燥、夏期に高温
Inceptisol:他の目に分類されない、中程度に発達した土壌
Aeric、Aquic:土壌水分環境を表す接頭語
Lithic:土層が浅い（50cm以下）ことを示す接頭語

作物の栽培適性は３種の図面（米作、果樹類／畑作物、野菜／根菜類）により示されている。いずれの場合にも不適地は、傾斜度が8%以上のクリークの急斜面(25.09ha)と数種の草類以外の植生が存在しない岩石地(4.77ha)のみで、その面積は29.86haで、全地域面積に占める割合は12.44%に過ぎず、その他の地域は作物の栽培が可能であると評価されている。作物の栽培が可能であると評価された地域はさらに３段階、S1(著しく適)、S2(中度に適)、S3(僅かに適）に区分されているが、S1(著しく適）は現況の土地利用がそのまま当てはめられていて、米作では12.54ha(面積比5.23%)、果樹類／畑作物では12.54ha(面積比6.37%)、S2(中度に適）はいずれの作物の場合にも、崩積－沖積段丘の中の水田以外の地域17.74ha(面積比7.39%)、S3(僅かに適、またはやや適）は火山砕屑物（非固結火成岩）台地(184.16ha)から住宅区域(8.48ha)、現況果樹類／畑作物(12.54ha)及び現況水田(7.04ha)を除いた区域156.10ha(面積比65.04%)となっている。なお住宅区域(8.48ha)は火山砕屑物（非固結火成岩）台地の中にあるので、作物の栽培適性ではS3の区域に含まれている。

(文責　前野、97.12.08)

参考添付：改良に必要な肥料（米作かんがい）

MIXED ORGANIC-INORGANIC FERTILIZER GROUP 1				
IRRIGATED RICE				
Gintong Ani Balanced Fertilization				
	Region 1	Region 2	Region 3	Region 5
Note: (a) - add 10-20 kg ZnS04/ha	Ilocos Norte (a) Ilocos Sur La Union Pangasinan (a)	Isabela	Tarlac (a) Pampanga	Albay
Required Number Bags/ Hectare				
Recommendations (bags/ha)	Wet Season		Dry Season	
	Heavy/Medium	Light	Heavy/Medium	Light
Option 1				
Basal Application				
Commercial Organic	5	5	6	6
14-14-14	3	3	2	2
16-20-0 or (20-20-0)	0	0	1 or (1)	1 or (1)
Top Dress				
Urea or (Ammosul)	2 or (4)	3 or (6)	3 or (6)	4 or (8)
TOTAL				
ORGANIC FERTILIZERS	5	5	6	6
INORGANIC FERTILIZERS	5 (7)	6 (9)	6 (9)	7 (11)
Option 2				
Basal Application				
Compost/Manures	20	20	30	30
14-14-14	3	3	2	2
16-20-0 or (20-20-0)	0	0	1 or (1)	1 or (1)
Top Dress				
Urea or (Ammosul)	2 or (4)	3 or (6)	3 or (6)	4 or (8)
TOTAL				
ORGANIC FERTILIZERS	20	20	30	30
INORGANIC FERTILIZERS	5 (7)	6 (9)	6 (9)	7 (11)

（BSWM）

改良に必要な肥料（コーン）

MIXED ORGANIC-INORGANIC FERTILIZER GROUP 2

Corn

Gintong Ani Balanced Fertilization

Region 1
Pangasinan

Region 2
N. Viscaya

Region 3
Tarlac (a0
Bataan
Zambalez

Region 4
Batangas
Palawan
Mindoro Oriental
Mindoro Occidental
Quezon

Region 5
Catanduanes
Camarines Norte
Camarines Sur
Masbate
Sorsogon

Region 6
Aklan
Antique
Capiz
Iloilo Occ
Negros ~~Oriental~~

Region 7
Bohol
Negros Oriental

Region 9
Zamboanga Norte/Sur
Basilan

ARMM
Lanao Norte
Maguindanao

Region 12
Lanao del Norte
Cotabato
North Cotabato
Sultan Kudarat

Recommendations (bags/ha)	Wet Season		Dry Season	
	HYV	OPV	HYV	OPV
Option 1				
Basal Application				
1. commercial organic	6	6	5	5
2. 14-14-14	1	1	2	1
3. 16-20-0 or (20-20-0)	2	2	3	2
Top Dress				
Urea or (Ammosul)	3 (6)	2 (4)	3 (6)	3 (6)
TOTAL FERTILIZER MIX.				
ORGANIC FERTILIZERS	6	6	5	5
INORGANIC FERTILIZERS	6	5	8	6
Option 2				
Basal Application				
1. Compost/Manures	30	30	20	20
2. 14-14-14	1	1	2	1
3. 16-20-0 or (20-20-0)	2	2	3	2
Top Dress				
Urea or (Ammosul)	3 (6)	2 (4)	3 (6)	3 (6)
TOTAL FERTILIZER MIX				
1. ORGANIC FERTILIZERS	30	30	20	20
2. INORGANIC FERTILIZERS	6	5	8	6

(BSWM)