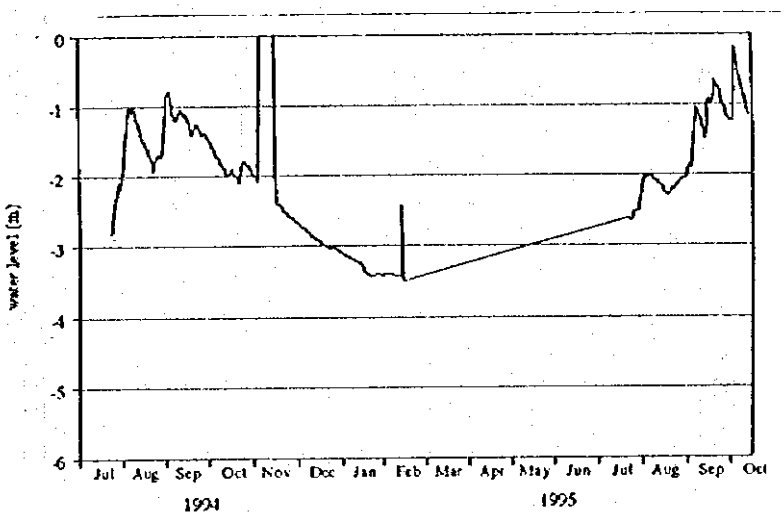
GROUNDWATER LEVEL

GROUNDWATER LEVEL

Station : Mabalacat E.S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		1.60	0.85	1.50	2.00	2.68	3.10	3.40						2.01	1.85	1.23
2		1.53	0.82	1.58	2.02	2.70	3.12	3.40					o	2.00	1.86	0.18
3		1.40	0.80	1.60	2.06	2.72	3.13	3.40					u	2.03	1.88	0.33
4		1.00	1.00	1.65	no	2.74	3.14	3.40					t	2.02	1.50	0.45
5		1.04	1.09	1.70		2.76	3.15	3.40	o					2.00	1.13	0.51
6		1.01	1.13	1.70	p	2.78	3.16	3.40	u				o	2.02	1.05	0.66
7		1.09	1.20	1.75		2.79	3.18	3.41	t				f	2.05	1.10	0.77
8		1.00	1.15	1.80	a	2.81	3.19	3.41						2.07	1.16	0.86
9		1.10	1.19	1.82		2.83	3.20	3.42	o				o	2.08	1.22	0.93
10		1.18	1.11	1.89	p	2.85	3.21	3.42	f				r	2.08	1.28	0.90
11		1.22	1.05	1.90		2.86	3.22	3.43		o			d	2.11	1.34	1.06
12		1.30	1.10	1.93	e	2.88	3.23	3.43	o	u			e	2.13	1.48	1.14
13		1.35	1.15	1.99		2.90	3.22	2.43	r	t		o	r	2.15	1.32	
14		1.40	1.10	2.00	r	2.91	3.25	3.49	d			u		2.18	0.99	
15		1.49	1.11	1.95	2.36	2.92	3.26	3.49	e	o		t		2.21	0.93	
16		1.51	1.20	1.90	2.37	2.94	3.37	o	r	f	o			2.24	1.00	
17		1.59	1.25	1.94	2.40	2.96	3.37	u			u	o		2.26	0.96	
18		1.60	1.30	1.99	2.41	2.98	3.40	t		o	t	f		2.26	0.85	
19		1.65	1.40	2.00	2.44	3.00	3.40			r				2.25	0.64	
20		1.70	1.35	2.05	2.46	3.00	3.41	o		d	o	o		2.22	0.73	
21		1.75	1.30	2.09	2.49	3.02	3.41	f		e	f	r	2.61	2.18	0.73	
22	2.80	1.80	1.25	2.00	2.51	3.03	3.41			r		d	2.63	2.19	0.81	
23	2.78	1.92	1.25	1.80	2.53	3.04	3.41	o			o	e	2.63	2.14	0.90	
24	2.69	1.80	1.30	1.80	2.55	3.01	3.41	r			r	r	2.57	2.12	0.98	
25	2.50	1.70	1.38	1.79	2.57	3.02	3.40	d			d		2.52	2.12	1.01	
26	2.35	1.69	1.40	1.85	2.59	3.04	3.40	e			e		2.50	2.08	1.07	
27	2.28	1.69	1.40	1.85	2.61	3.05	3.40	r			r		2.50	2.05	1.12	
28	2.20	1.70	1.37	1.89	2.62	3.06	3.40						2.50	2.05	1.18	
29	2.10	1.70	1.40	1.90	2.64	3.07	3.41						2.46	2.05	1.22	
30	2.18	1.40	1.48	1.95	2.66	3.09	3.41						2.26	2.05	1.23	
31	1.98	1.10		1.99		3.10	3.40						2.07	1.88		
Average	2.39	1.45	1.20	1.86	2.44	2.92	3.30	3.36					2.48	2.11	1.15	0.75



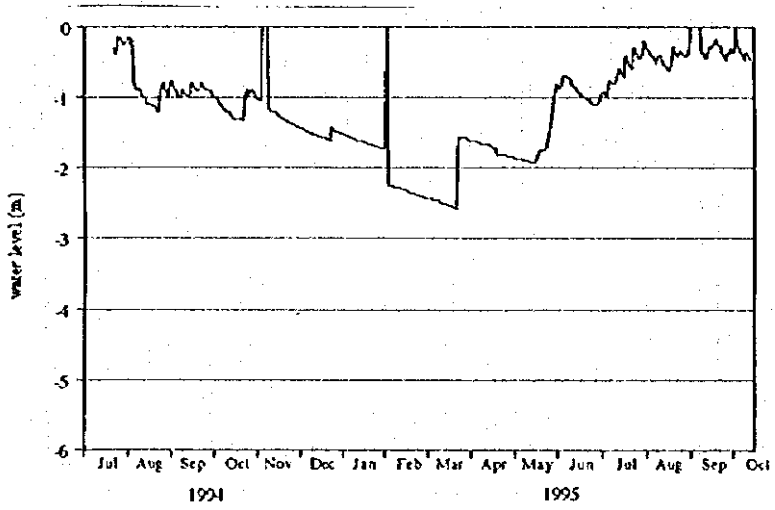
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Magalang E/S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		0.19	0.76	1.00	1.01	1.42	1.51	no data	2.43	1.60	1.86	0.88	0.93	0.32	no paper	0.36
2		0.25	0.85	1.05	1.05	1.44	1.52	2.24	2.43	1.61	1.86	0.85	0.97	0.32	no paper	0.02
3		0.19	0.90	1.10	no paper	1.46	1.53	2.24	2.44	1.62	1.86	0.69	0.99	0.39	no paper	0.25
4		0.80	0.95	1.10	no paper	1.47	1.55	2.25	2.45	1.62	1.87	0.68	0.80	0.42	no paper	0.31
5		0.85	0.98	1.11	no paper	1.47	1.56	2.25	2.45	1.63	1.87	0.69	0.77	0.45	no paper	0.34
6		0.90	0.99	1.18	no paper	1.49	1.56	2.26	2.45	1.63	1.88	0.71	0.79	0.49	no paper	0.38
7		0.89	1.00	1.18	no paper	1.50	1.57	2.27	2.46	1.64	1.88	0.72	0.79	0.50	no paper	0.41
8		0.88	0.90	1.20	1.15	1.50	1.58	2.28	2.47	1.65	1.89	0.74	0.80	0.42	0.36	0.45
9		0.90	0.90	1.20	1.20	1.51	1.59	2.28	2.48	1.65	1.89	0.78	0.78	0.40	0.37	0.39
10		0.95	0.95	1.21	1.19	1.53	1.60	2.28	2.50	1.65	1.90	0.81	0.68	0.41	0.39	0.37
11		0.99	0.97	1.25	1.19	1.54	1.61	2.29	2.50	1.65	1.91	0.84	0.60	0.47	0.43	0.40
12		1.00	0.99	1.26	1.20	1.53	1.62	2.30	2.50	1.66	1.91	0.87	0.60	0.50	0.44	0.45
13		1.01	1.00	1.29	1.21	1.55	1.60	2.30	2.51	1.67	1.92	0.89	0.65	0.54	0.29	
14		1.09	0.88	1.30	1.25	1.56	1.61	2.31	2.52	1.68	1.92	0.91	0.69	0.58	0.31	
15		1.10	0.78	1.30	1.26	1.56	1.62	2.32	2.52	1.69	1.91	0.94	0.68	0.60	0.27	
16		1.10	0.85	1.30	1.27	1.57	1.63	2.33	2.53	1.70	1.80	0.96	0.46	0.61	0.28	
17		1.11	0.89	1.30	1.28	1.56	1.64	2.34	2.54	1.70	1.80	0.98	0.42	0.60	0.23	
18		1.12	0.90	1.30	1.30	1.55	1.64	2.35	2.55	1.70	1.77	0.99	0.51	0.40	0.19	
19		1.12	0.90	1.31	1.31	1.58	1.65	2.35	2.55	1.80	1.73	1.00	0.55	0.27	0.17	
20		1.12	0.90	1.32	1.33	1.59	1.67	2.36	2.55	1.80	1.73	1.02	0.58	0.33	0.25	
21	0.30	1.19	0.80	1.32	1.35	1.59	1.67	2.37	2.58	1.81	1.73	1.04	0.41	0.38	0.26	
22	0.39	1.20	0.80	1.00	1.36	1.60	1.68	2.37	1.55	1.81	1.71	1.05	0.31	0.40	0.31	
23	0.30	1.20	0.85	0.89	1.36	1.43	1.68	2.38	1.55	1.82	1.65	1.08	0.36	0.37	0.37	
24	0.15	0.90	0.90	0.92	1.36	1.44	1.68	2.39	1.55	1.82	1.58	1.09	0.39	0.34	0.40	
25	0.15	0.82	0.90	1.00	1.38	1.47	1.69	2.40	1.56	1.82	1.40	1.10	0.44	0.37	0.44	
26	0.20	0.80	0.90	0.90	1.39	1.47	1.70	2.40	1.56	1.83	1.24	1.10	0.44	0.38	0.46	
27	0.25	0.90	0.90	0.90	1.41	1.48	1.70	2.41	1.57	1.83	1.24	1.11	0.43	0.41	0.37	
28	0.21	0.92	0.90	0.95	1.41	1.49	1.70	2.42	1.58	1.84	1.01	1.08	0.27	0.40	0.41	
29	0.22	0.98	0.98	1.00	1.41	1.50	1.71		1.59	1.85	0.82	1.00	0.21	0.39	0.31	
30	0.21	0.79	1.00	1.02	1.42	1.51	1.71		1.60	1.85	0.82	0.94	0.23	0.39	0.35	
31	0.15	0.81		1.02		1.50	1.70		1.60		0.85		0.31	no paper		
Average	0.23	0.91	0.91	1.13	1.28	1.51	1.63	2.32	2.20	1.72	1.65	0.92	0.58	0.43	0.33	0.34



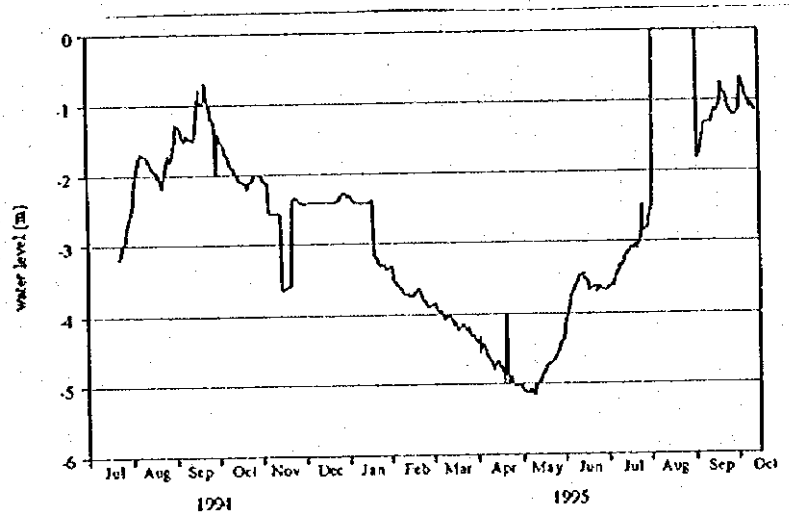
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : San Bartolome E.S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		2.35	1.28	1.50	2.09	2.40	2.33	3.35	3.85	4.35	5.11	4.06	3.63		o order	1.10
2		2.22	1.29	1.52	2.10	2.40	2.30	3.54	3.96	4.57	5.10	3.93	3.61		1.80	0.69
3		2.01	1.30	1.60	2.11	2.41	2.37	3.55	3.97	4.44	5.12	3.85	3.62		1.77	0.74
4		1.83	1.40	1.61	2.13	2.41	2.41	3.58	3.99	4.46	5.11	3.79	3.59		1.67	0.85
5		1.85	1.43	1.70	2.55	2.40	2.40	3.61	3.95	4.58	5.09	3.71	3.46		1.44	0.89
6		1.75	1.49	1.72	2.55	2.40	2.40	3.62	4.03	4.59	5.14	3.65	3.42	o	1.35	0.97
7		1.68	1.50	1.80	2.55	2.40	2.40	3.65	4.05	4.63	5.09	3.59	3.40	o	1.32	1.03
8		1.70	1.42	1.82	2.55	2.40	2.41	3.65	4.09	4.68	5.16	3.55	3.33	t	1.31	1.09
9		1.70	1.42	1.88	2.56	2.40	2.41	3.71	4.06	4.70	5.09	3.51	3.35		1.29	1.08
10		1.70	1.48	1.90	2.55	2.40	2.42	3.73	4.03	4.78	5.03	3.48	3.32	o	1.30	1.04
11		1.70	1.45	1.95	2.55	2.40	2.41	3.74	4.02	4.80	5.00	3.47	3.28	f	1.29	1.11
12		1.79	1.47	2.00	2.55	2.40	2.40	3.70	4.09	4.76	4.98	3.45	3.21		1.30	1.16
13		1.80	1.50	2.00	2.56	2.39	2.41	3.75	4.09	4.71	4.94	3.52	3.17	o	1.16	
14		1.84	1.50	2.03	3.64	2.39	2.42	3.79	4.15	4.69	4.91	3.53	3.15	r	1.13	
15		1.89	1.30	2.09	3.65	2.40	2.40	3.75	4.14	4.78	4.86	3.56	3.11	d	1.12	
16		1.92	1.05	2.09	3.64	2.40	2.39	3.70	4.17	4.76	4.83	3.65	3.08	e	1.15	
17		1.95	0.80	2.10	3.62	2.40	2.37	3.75	4.23	4.83	4.78	3.67	3.07	r	1.08	
18		2.00	0.99	2.10	3.60	2.40	2.37	3.69	4.22	4.87	4.74	3.65	3.09		0.95	
19		2.01	0.99	2.12	3.61	2.41	3.20	3.66	4.18	4.98	4.73	3.65	3.05		0.77	
20		2.02	0.98	2.19	3.60	2.40	3.19	3.64	4.15	4.00	4.73	3.62	3.08		0.86	
21		2.11	0.89	2.20	3.58	2.39	3.25	3.67	4.16	5.01	4.71	3.63	3.04		0.89	
22	3.20	2.15	0.70	2.12	2.34	2.40	3.28	3.74	4.24	4.93	4.66	3.69	3.04		0.96	
23	3.12	2.17	0.90	2.10	2.34	2.40	3.32	3.82	4.25	4.89	4.66	3.68	2.91		1.03	
24	3.09	1.98	1.01	2.09	2.33	2.38	3.29	3.84	4.19	4.96	4.61	3.63	2.48		1.10	
25	3.00	1.80	1.10	2.05	2.33	2.35	3.31	3.82	4.21	5.02	4.57	3.65	2.83		1.15	
26	2.98	1.72	1.19	2.02	2.37	2.30	3.30	3.89	4.32	5.01	4.53	3.65	2.83		1.20	
27	2.82	1.75	1.20	2.00	2.40	2.28	3.34	3.91	4.31	5.02	4.49	3.67	2.81		1.18	
28	2.75	1.80	1.30	2.00	2.41	2.26	3.37	3.87	4.34	5.01	4.41	3.68	2.79		1.21	
29	2.70	1.75	2.00	2.00	2.41	2.28	3.35		4.38	5.01	4.39	3.68	2.71		1.19	
30	2.61	1.63	1.40	2.01	2.42	2.32	3.34		4.40	5.02	4.27	3.64	2.59		1.18	
31	2.50	1.49		2.02		2.31	3.33		4.41		4.15		2.47		1.21	0.97
Average	2.88	1.87	1.26	1.95	2.72	2.38	2.77	3.70	4.15	4.76	4.81	3.65	3.11		1.21	0.97



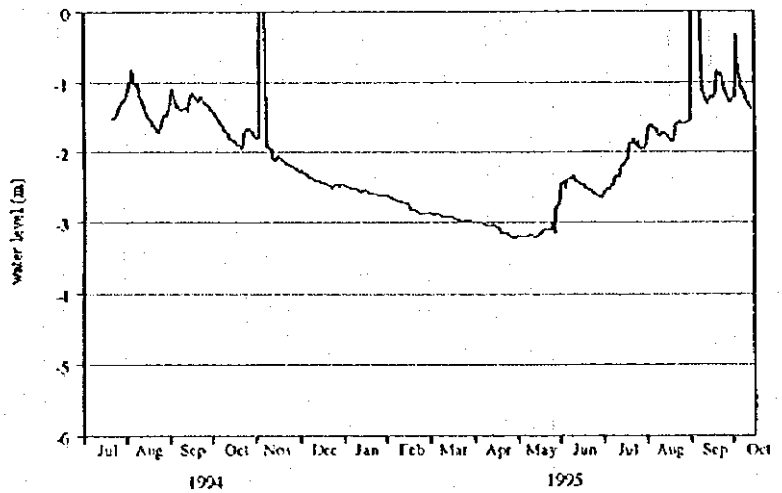
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : San Jose, Mag E/S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		1.05	1.20	1.42	1.79	2.25	2.46	2.61	2.87	3.00	3.20	2.42	2.53	1.62	no paper	1.20
2		1.09	1.11	1.47	1.79	2.28	2.47	2.62	2.88	3.00	3.18	2.41	2.51	1.62	no paper	0.34
3		1.02	1.20	1.50	no paper	2.29	2.48	2.63	2.88	3.00	3.18	2.51	2.51	1.61	no paper	0.86
4		0.82	1.35	1.52	no paper	2.30	2.48	2.64	2.86	3.00	3.20	2.44	2.52	1.63	no paper	0.94
5		0.95	1.30	1.57	no paper	2.30	2.49	2.65	2.87	3.00	3.20	2.38	2.46	1.66	no paper	1.10
6		1.01	1.32	1.60	no paper	2.34	2.50	2.66	2.88	3.00	3.20	2.37	2.44	1.69	no paper	1.07
7		1.05	1.38	1.61	no paper	2.35	2.50	2.67	2.89	3.01	3.18	2.36	2.32	1.72	no paper	1.14
8		1.00	1.39	1.65	1.92	2.36	2.50	2.68	2.90	3.03	3.17	2.36	2.33	1.75	1.12	1.21
9		1.10	1.38	1.69	1.92	2.37	2.51	2.68	2.90	3.03	3.16	2.32	2.33	1.75	1.16	1.24
10		1.20	1.38	1.70	1.95	2.38	2.52	2.69	2.90	3.04	3.17	2.39	2.34	1.71	1.21	1.28
11		1.22	1.35	1.73	1.96	2.39	2.54	2.70	2.90	3.05	3.18	2.40	2.32	1.70	1.26	1.32
12		1.30	1.37	1.78	2.10	2.40	2.55	2.70	2.90	3.05	3.18	2.42	2.21	1.70	1.29	1.37
13		1.33	1.40	1.80	2.10	2.41	2.55	2.70	2.90	3.04	3.19	2.42	2.17	1.73	1.22	
14		1.40	1.30	1.81	2.11	2.41	2.54	2.70	2.91	3.05	3.18	2.44	2.16	1.76	1.20	
15		1.43	1.20	1.85	2.03	2.42	2.54	2.70	2.91	3.05	3.17	2.46	2.12	1.78	1.19	
16		1.50	1.15	1.85	2.04	2.42	2.54	2.79	2.92	3.06	3.14	2.46	2.11	1.80	1.23	
17		1.53	1.18	1.87	2.08	2.43	2.55	2.80	2.93	3.07	3.13	2.47	2.09	1.83	1.17	
18		1.59	1.20	1.90	2.09	2.43	2.55	2.80	2.93	3.10	3.11	2.49	1.87	1.83	0.95	
19		1.60	1.22	1.90	2.12	2.45	2.58	2.80	2.94	3.14	3.10	2.51	1.86	1.74	0.84	
20		1.62	1.28	1.91	2.13	2.46	2.59	2.81	2.95	3.14	3.10	2.53	1.87	1.64	0.89	
21	1.50	1.65	1.25	1.93	2.14	2.47	2.59	2.82	2.95	3.15	3.10	2.54	1.80	1.58	0.88	
22	1.50	1.69	1.21	1.91	2.16	2.48	2.58	2.83	2.96	3.14	3.09	2.56	1.90	1.57	0.94	
23	1.50	1.70	1.20	1.70	2.17	2.49	2.58	2.85	2.96	3.16	3.08	2.57	1.88	1.57	1.03	
24	1.50	1.70	1.25	1.68	2.18	2.48	2.59	2.85	2.97	3.15	3.08	2.59	1.84	1.59	1.10	
25	1.40	1.60	1.30	1.67	2.19	2.45	2.60	2.85	2.97	3.18	3.00	2.60	1.94	1.59	1.16	
26	1.35	1.51	1.30	1.69	2.20	2.44	2.60	2.86	2.97	3.19	3.14	2.60	1.95	1.58	1.22	
27	1.31	1.45	1.31	1.67	2.21	2.45	2.60	2.87	2.97	3.20	2.83	2.61	1.93	1.56	1.23	
28	1.30	1.45	1.33	1.70	2.22	2.47	2.61	2.86	2.97	3.21	2.76	2.62	1.93	1.56	1.27	
29	1.26	1.49	1.39	1.70	2.25	2.46	2.60		2.98	3.21	2.72	2.63	1.95	1.57	1.25	
30	1.25	1.40	1.40	1.75	2.26	2.45	2.60		2.99	3.20	2.53	2.60	1.88	1.55	1.22	
31	1.20	1.29		1.79		2.45	2.60		3.00		2.45		1.68	no paper		
Average	1.37	1.35	1.29	1.72	2.08	2.40	2.55	2.74	2.93	3.09	3.07	2.48	2.12	1.67	1.13	1.09



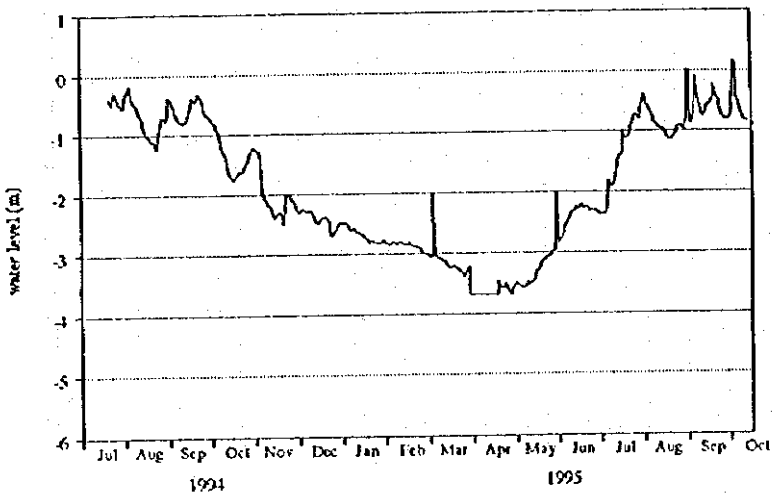
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station: San Francisco E.S
Year: Jul 1994 - Sept 1995
Agency: JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		0.28	0.40	0.78	1.25	2.30	2.51	2.82	3.05	3.69	3.50	2.78	2.38	0.48	no paper	0.73
2		0.33	0.40	0.81	1.28	2.29	2.50	2.83	3.05	3.69	3.52	2.74	2.36	0.55	0.87	0.14 agl
3		0.32	0.48	0.85	1.32	2.25	2.50	2.83	2.00	3.69	3.54	2.65	2.34	0.59	0.88	0.10
4		0.18	0.55	0.90	1.28	2.27	2.53	2.83	3.02	3.68	3.56	2.56	2.33	0.65	0.77	0.31
5		0.30	0.62	0.95	2.00	2.28	2.58	2.82	3.05	3.68	3.56	2.53	1.82	0.72	0.10	0.47
6		0.40	0.68	1.05	2.02	2.28	2.60	2.80	3.08	3.67	3.56	2.48	1.89	0.78	0.23	0.58
7		0.45	0.72	1.15	2.07	2.30	2.59	2.80	3.08	3.69	3.55	2.43	1.92	0.84	0.39	0.67
8		0.48	0.78	1.22	2.11	2.28	2.58	2.83	3.10	3.69	3.47	2.38	1.91	0.88	0.54	0.75
9		0.52	0.79	1.28	2.18	2.28	2.61	2.82	3.10	3.68	3.53	2.34	1.88	0.92	0.64	0.81
10		0.56	0.80	1.35	2.20	2.30	2.62	2.82	3.11	3.69	3.50	2.33	1.81	0.93	0.70	0.83
11		0.63	0.81	1.44	2.25	2.38	2.62	2.81	3.15	3.69	3.49	2.30	1.63	0.94	0.75	0.82
12		0.70	0.79	1.56	2.26	2.45	2.66	2.83	3.17	3.69	3.47	2.26	1.50	0.96	0.76	0.84
13		0.75	0.79	1.66	2.37	2.48	2.65	2.84	3.21	3.69	3.43	2.27	1.43	0.98	0.63	
14		0.85	0.80	1.70	2.39	2.48	2.65	2.84	3.22	3.68	3.39	2.27	1.39	1.00	0.59	
15		0.92	0.70	1.75	2.38	2.45	2.68	2.83	3.23	3.68	3.28	2.24	1.39	1.04	0.55	
16		1.00	0.58	1.76	2.33	2.42	2.72	2.82	3.22	3.69	3.29	2.22	1.03	1.09	0.58	
17		1.02	0.40	1.75	2.30	2.40	2.75	2.82	3.21	3.69	3.23	2.24	1.08	1.13	0.53	
18		1.05	0.39	1.70	2.30	2.40	2.76	2.85	3.24	3.69	3.19	2.27	1.10	1.14	0.41	
19		1.08	0.43	1.68	2.41	2.40	2.80	2.86	3.24	3.47	3.13	2.26	1.10	1.15	0.25	
20		1.10	0.46	1.63	2.48	2.39	2.79	2.86	3.24	3.57	3.10	2.25	1.06	1.13	0.36	
21	0.40	1.12	0.30	1.63	2.50	2.42	2.77	2.88	3.28	3.55	3.07	2.27	1.03	1.09	0.45	
22	0.48	1.17	0.33	1.65	2.01	2.48	2.78	2.88	3.29	3.57	3.05	2.30	0.91	1.06	0.50	
23	0.50	1.20	0.35	1.61	2.01	2.60	2.80	2.90	3.32	3.50	3.04	2.32	0.82	1.00	0.60	
24	0.40	1.22	0.40	1.53	2.01	2.68	2.80	2.90	3.35	3.49	3.04	2.31	0.72	0.95	0.67	
25	0.30	0.98	0.50	1.52	2.04	2.65	2.81	2.98	3.37	3.58	3.03	2.30	0.72	0.93	0.75	
26	0.38	0.80	0.58	1.48	2.11	2.60	2.81	2.98	3.31	3.65	3.00	2.30	0.74	0.92	0.79	
27	0.45	0.73	0.64	1.37	2.14	2.56	2.80	3.00	3.27	3.69	2.98	2.31	0.78	0.95	0.81	
28	0.48	0.72	0.68	1.30	2.17	2.51	2.80	3.00	3.23	3.64	2.93	2.35	0.80	0.97	0.80	
29	0.50	0.73	0.70	1.25	2.20	2.49	2.79		3.69	3.55	2.04	2.38	0.65	0.96	0.82	
30	0.55	0.80	0.73	1.22	2.28	2.49	2.78		3.69	3.53	2.84	2.37	0.52	0.80	0.79	
31	0.55	0.68		1.22		2.50	2.81		3.69		2.81		0.40	no paper		
Average	0.45	0.73	0.59	1.38	2.09	2.42	2.69	2.86	3.20	3.61	3.23	2.37	1.34	0.92	0.60	0.55



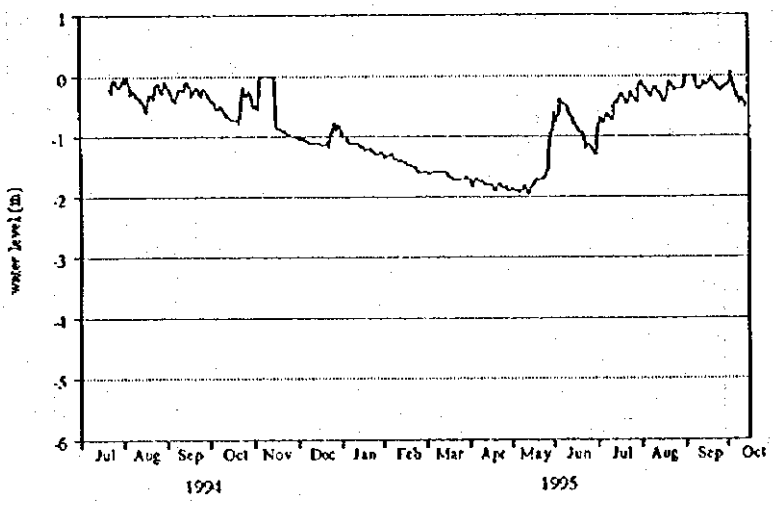
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Telapayung Arayat
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		0.04	0.15	0.41	0.50	1.01	0.99	1.36	1.60	1.70	1.87	0.77	0.70	0.17	no paper	0.13
2		0.12	0.22	0.43	0.53	1.05	1.00	1.32	1.62	1.78	1.89	0.68	0.73	0.20	no paper	0.06 agl
3		0.03	0.29	0.47	0.56	1.06	1.00	1.32	1.61	1.82	1.88	0.60	0.76	0.20	no paper	0.09
4		0.11	0.35	0.51	no	1.04	1.01	1.32	1.60	1.72	1.89	0.40	0.79	0.25	no paper	0.19
5		0.23	0.40	0.54		1.06	1.05	1.31	1.60	1.71	1.92	0.45	0.70	0.30	no paper	0.23
6		0.31	0.40	0.56	p	1.09	1.10	1.30	1.60	1.72	1.92	0.45	0.64	0.30	no paper	0.32
7		0.29	0.44	0.49	a	1.09	1.12	1.31	1.60	1.75	1.90	0.48	0.65	0.34	0.18	0.41
8		0.24	0.30	0.49	p	1.10	1.11	1.35	1.60	1.75	1.89	0.50	0.66	0.29	0.20	0.46
9		0.30	0.27	0.55	e	1.10	1.10	1.39	1.60	1.75	1.82	0.55	0.69	0.19	0.21	0.39
10		0.33	0.23	0.61	r	1.12	1.11	1.38	1.60	1.75	1.83	0.61	0.72	0.18	0.22	0.38
11		0.35	0.23	0.65	no paper	1.12	1.11	1.40	1.60	1.78	1.90	0.67	0.63	0.20	0.23	0.43
12		0.37	0.25	0.67	no paper	1.10	1.12	1.40	1.60	1.79	1.94	0.70	0.46	0.29	0.18	0.47
13		0.40	0.26	0.68	no paper	1.11	1.15	1.39	1.60	1.80	1.89	0.80	0.44	0.29	0.11	0.52
14		0.42	0.14	0.70	no paper	1.10	1.17	1.40	1.60	1.80	1.85	0.80	0.47	0.33	0.12	
15		0.41	0.11	0.73	0.82	1.11	1.17	1.40	1.61	1.80	1.82	0.84	0.35	0.40	0.13	
16		0.52	0.17	0.74	0.88	1.12	1.18	1.42	1.64	1.80	1.80	0.87	0.38	0.44	0.16	
17		0.60	0.20	0.74	0.89	1.15	1.22	1.48	1.69	1.80	1.74	0.90	0.30	0.43	0.11	
18		0.37	0.34	0.74	0.89	1.15	1.23	1.48	1.69	1.88	1.72	0.93	0.35	0.30	0.05	
19		0.30	0.31	0.74	0.90	1.15	1.21	1.48	1.70	1.90	1.71	0.95	0.41	0.17	0.03	
20		0.31	0.25	0.76	0.90	1.15	1.20	1.49	1.70	1.88	1.70	1.00	0.46	0.10	0.11	
21	0.22	0.33	0.18	0.79	0.92	1.12	1.20	1.50	1.70	1.81	1.70	1.20	0.43	0.13	0.13	
22	0.26	0.36	0.18	0.46	0.93	1.12	1.22	1.50	1.70	1.80	1.70	1.10	0.42	0.18	0.16	
23	0.27	0.40	0.23	0.19	0.96	1.18	1.23	1.50	1.70	1.80	1.71	1.14	0.29	0.23	0.20	
24	0.14	0.17	0.30	0.24	0.96	0.98	1.25	1.59	1.70	1.83	1.68	1.14	0.28	0.25	0.23	
25	0.06	0.13	0.34	0.31	0.98	0.92	1.29	1.58	1.70	1.85	1.60	1.16	0.34	0.21	0.25	
26	0.12	0.13	0.21	0.33	0.99	0.80	1.30	1.59	1.71	1.85	1.53	1.18	0.36	0.21	0.24	
27	0.20	0.19	0.21	0.25	0.99	0.90	1.30	1.59	1.70	1.82	1.30	1.23	0.40	0.22	0.20	
28	0.15	0.28	0.25	0.31	1.00	0.91	1.30	1.60	1.70	1.89	0.97	1.30	0.43	0.23	0.21	
29	0.20	0.29	0.31	0.41	1.00	0.81	1.25		1.69	1.90	0.92	1.29	0.26	0.21	0.15	
30	0.16	0.11	0.38	0.49	1.02	0.82	1.28		1.70	1.90	0.60	1.04	0.13	0.20	0.15	
31	0.07	0.15		0.51		0.97	1.29		1.70		0.69		0.11	no paper		
Average	0.17	0.28	0.26	0.53	0.87	1.05	1.17	1.43	1.65	1.80	1.65	0.86	0.48	0.25	0.17	0.30



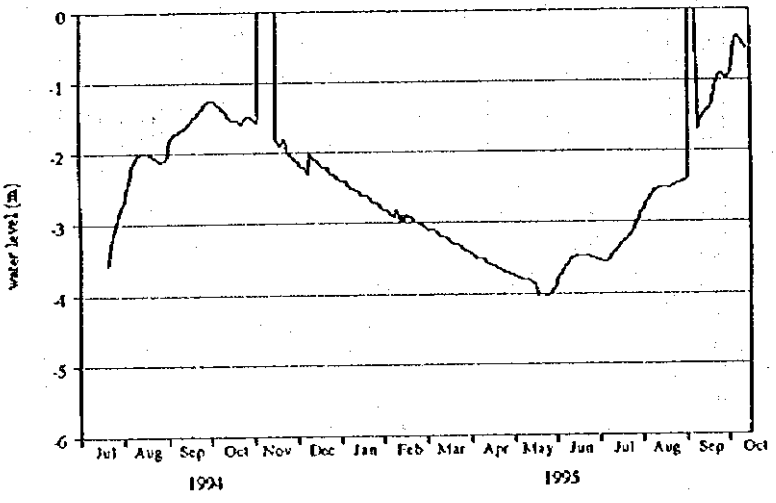
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Gueco E/S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		2.62	1.90	1.25	1.53	2.14	2.40	2.82	3.08	3.44	3.75	3.78	3.54	2.78	no	0.92
2		2.56	1.82	1.26	1.55	2.16	2.40	2.82	3.09	3.45	3.75	3.74	3.55	2.75		0.77
3		2.48	1.77	1.27	no	2.19	2.40	2.84	3.10	3.48	3.78	3.72	3.56	2.70	p	0.55
4		2.38	1.73	1.29		2.20	2.40	2.85	3.10	3.49	3.78	3.70	3.55	2.67	a	0.45
5		2.29	1.72	1.30	p	2.20	2.44	2.88	3.10	3.50	3.80	3.65	3.55	2.64	p	0.41
6		2.21	1.70	1.32		2.22	2.46	2.89	3.11	3.50	3.80	3.60	3.52	2.61	e	0.39
7		2.17	1.70	1.34	a	2.25	2.50	2.90	3.14	3.50	3.80	3.59	3.50	2.60	r	0.41
8		2.10	1.70	1.37		2.29	2.50	2.90	3.15	3.51	3.80	3.56	3.48	2.57	1.69	0.44
9		2.07	1.68	1.39	p	2.00	2.50	2.82	3.18	3.51	3.80	3.52	3.45	2.55	1.60	0.46
10		2.04	1.67	1.41		2.02	2.50	2.84	3.18	3.55	3.80	3.50	3.41	2.54	1.54	0.49
11		2.02	1.66	1.43	e	2.05	2.52	2.95	3.20	3.55	3.80	3.49	3.40	2.52	1.55	0.52
12		2.00	1.64	1.46		2.09	2.54	2.88	3.20	3.58	3.82	3.49	3.39	2.51	1.48	0.55
13		1.99	1.63	1.49	r	2.10	2.55	2.89	3.20	3.58	3.85	3.48	3.37	2.51	1.46	
14		1.99	1.62	1.51		2.10	2.58	3.00	3.22	3.59	3.85	3.47	3.32	2.50	1.41	
15		1.99	1.59	1.52		2.11	2.60	2.88	3.21	3.60	3.85	3.47	3.30	2.50	1.42	
16		2.00	1.55	1.53	1.80	2.15	2.60	2.89	3.25	3.60	3.88	3.47	3.29	2.50	1.40	
17		2.00	1.52	1.53	1.84	2.16	2.60	2.90	3.28	3.60	4.03	3.47	3.28	2.50	1.38	
18		2.00	1.50	1.53	1.88	2.19	2.60	2.90	3.29	3.62	4.02	3.47	3.24	2.50	1.33	
19		2.01	1.48	1.54	1.89	2.20	2.61	2.92	3.30	3.64	4.01	3.47	3.23	2.50	1.23	
20	3.58	2.02	1.47	1.55	1.90	2.20	2.64	2.94	3.30	3.65	4.02	3.48	3.20	2.49	1.22	
21	3.42	2.03	1.45	1.56	1.82	2.21	2.65	2.95	3.30	3.65	4.02	3.48	3.20	2.48	1.03	
22	3.28	2.05	1.43	1.58	1.85	2.24	2.68	2.98	3.30	3.68	4.03	3.48	3.16	2.47	0.99	
23	3.18	2.07	1.40	1.55	1.89	2.20	2.70	2.99	3.32	3.68	4.03	3.48	3.13	2.46	0.96	
24	3.13	2.08	1.38	1.52	2.00	2.29	2.70	3.00	3.35	3.70	4.02	3.50	3.10	2.45	0.93	
25	3.06	2.10	1.36	1.50	2.00	2.30	2.70	3.00	3.35	3.70	4.03	3.50	3.07	2.44	0.92	
26	3.00	2.11	1.33	1.49	2.04	2.30	2.71	3.01	3.38	3.70	4.01	3.51	3.05	2.44	0.93	
27	2.90	2.10	1.30	1.49	2.05	2.36	2.74	3.02	3.40	3.70	4.00	3.51	2.98	2.43	0.94	
28	2.83	2.09	1.27	1.49	2.09	2.32	2.75	3.05	3.40	3.72	3.97	3.52	2.90	2.42	0.95	
29	2.80	2.09	1.26	1.50	2.10	2.34	2.78		3.40	3.72	3.93	3.52	2.87	2.42	0.97	
30	2.75	2.08	1.23	1.51	2.10	2.38	2.80		3.40	3.72	3.89	3.53	2.85	2.41	0.94	
31	2.70	1.98		1.52		2.39	2.80		3.42		3.82		2.82	2.40		
Average	3.05	2.12	1.55	1.45	1.90	2.20	2.59	2.92	3.25	3.60	3.89	3.54	3.27	2.52	1.23	0.53



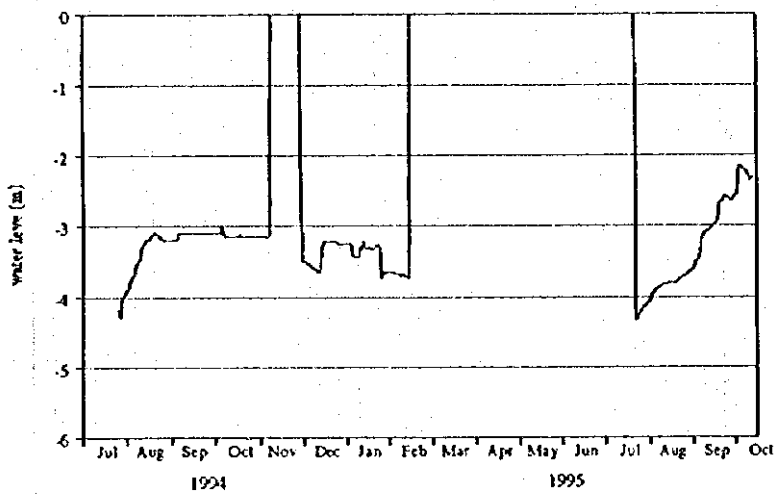
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Dau E/S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		3.89	3.20	3.09	3.15	3.50	3.23	3.64						4.01	3.55	2.55
2		3.80	3.20	3.09	3.15	3.51	3.25	3.64					o	3.97	3.51	2.18
3		3.78	3.19	3.09	3.15	3.52	3.25	3.65	o				u	3.96	3.49	2.14
4		3.70	3.19	3.02	3.15	3.54	3.42	3.68	u				t	3.91	3.46	2.16
5		3.69	3.11	3.03	3.15	3.56	3.42	3.67	t					3.88	3.30	2.17
6		3.61	3.09	3.15	3.15	3.57	3.42	3.68					o	3.87	3.20	2.19
7		3.55	3.09	3.15	3.15	3.59	3.42	3.68	o				f	3.86	3.14	2.23
8		3.50	3.09	3.15	no	3.60	3.42	3.68	f					3.85	3.09	2.26
9		3.45	3.09	3.15		3.61	3.42	3.69		o			o	3.84	3.08	2.28
10		3.35	3.09	3.15	p	3.62	3.30	3.68	o	u			r	3.83	3.07	2.35
11		3.30	3.09	3.15	a	3.64	3.32	3.71	r	t			d	3.82	3.06	2.32
12		3.25	3.09	3.15	p	3.65	3.22	3.71	d				e	3.82	3.04	2.30
13		3.20	3.09	3.15	e	3.29	3.32	3.71	e	o			r	3.81	3.02	
14		3.20	3.09	3.15	r	3.23	3.32	3.72	r	f	o			3.81	3.00	
15		3.19	3.09	3.15		3.22	3.31				u			3.81	2.98	
16		3.18	3.09	3.13		3.22	3.30			o	t			3.81	2.95	
17		3.12	3.09	3.12		3.22	3.30	o		r				3.81	2.93	
18		3.11	3.09	3.15		3.21	3.31	u		d	o			3.81	2.82	
19		3.10	3.09	3.15	no	3.21	3.32	t		e	f	o		3.80	2.69	
20		3.10	3.09	3.15		3.21	3.32			t		u		3.77	2.65	
21		3.11	3.09	3.15	p	3.21	3.28	o			o	t	4.32	3.75	2.62	
22		3.12	3.09	3.15	a	3.22	3.28	f			r		4.31	3.74	2.59	
23		3.17	3.09	3.15	p	3.22	3.28				d	o	4.26	3.72	2.58	
24		3.15	3.09	3.13	e	3.22	3.28	o			e	f	4.21	3.71	2.59	
25	4.19	3.19	3.09	3.14	r	3.23	3.74	r			r		4.19	3.70	2.61	
26	4.30	3.19	3.09	3.15		3.24	3.64	d				o	4.16	3.69	2.62	
27	4.30	3.19	3.09	3.15		3.24	3.65	e				r	4.14	3.67	2.62	
28	4.09	3.19	3.09	3.15		3.25	3.67	r				d	4.13	3.66	2.64	
29	4.00	3.20	3.09	3.15		3.25	3.65					e	4.12	3.64	2.61	
30	3.98	3.20	3.09	3.15	3.51	3.24	3.66					r	4.09	3.63	2.56	
31	3.90	3.20		3.15		3.24	3.65						4.06	3.59		
Average	4.11	3.32	3.10	3.13	3.20	3.36	3.40	3.68					4.18	3.79	2.94	2.26



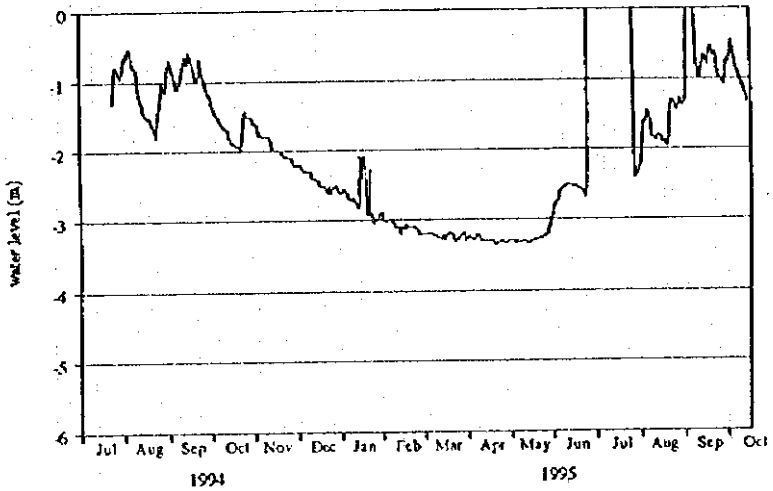
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Culubasa E.S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		0.60	0.70	1.40	1.60	2.20	2.60	3.00	3.20	3.21	3.30	2.79		1.58	no paper	0.63
2		0.70	0.81	1.48	1.79	2.22	2.55	3.01	3.20	3.25	3.30	2.73		1.59	no paper	0.47
3		0.58	0.92	1.50	1.72	2.28	2.60	2.98	3.18	3.28	3.31	2.72		1.60	no paper	0.66
4		0.53	1.02	1.50	1.76	2.30	2.62	3.00	3.18	3.28	3.30	2.64		1.46	no paper	0.78
5		0.70	1.10	1.56	1.78	2.30	2.68	3.00	3.20	3.26	3.31	2.59		1.50	no paper	0.82
6		0.75	1.05	1.61	no paper	2.30	2.69	3.00	3.22	3.22	3.31	2.56	o	1.72	no paper	0.93
7		0.78	1.11	1.64	no paper	2.30	2.70	3.05	3.22	3.22	3.31	2.53	u	1.80	no paper	0.98
8		0.78	0.97	1.67	no paper	2.30	2.70	3.01	3.22	3.22	3.30	2.52	t	1.80	0.81	1.10
9		0.95	0.99	1.67	no paper	2.30	2.68	3.10	3.23	3.30	3.30	2.51		1.83	0.88	1.05
10		1.05	0.81	1.69	no paper	2.39	2.71	3.10	3.25	3.30	3.30	2.50	o	1.86	0.97	1.11
11		1.20	0.65	1.71	1.91	2.40	2.75	3.10	3.25	3.30	3.32	2.50	f	1.83	1.00	1.19
12		1.31	0.75	1.78	1.91	2.40	2.80	3.20	3.28	3.30	3.32	2.49		1.79	0.82	1.28
13		1.35	0.77	1.80	2.00	2.42	2.78	3.10	3.22	3.30	3.32	2.50	o	1.82	0.66	1.34
14		1.41	0.60	1.90	2.00	2.42	2.10	3.10	3.28	3.30	3.32	2.52	r	1.80	0.66	
15		1.48	0.63	1.90	2.00	2.50	2.40	3.12	3.22	3.30	3.30	2.50	d	1.88	0.72	
16		1.50	0.75	1.90	2.00	2.50	2.10	3.12	3.21	3.30	3.29	2.52	e	1.87	0.80	
17		1.52	0.81	1.91	2.00	2.50	2.11	3.06	3.20	3.30	3.29	2.54	r	1.90	0.58	
18		1.51	0.90	1.92	2.00	2.50	2.10	3.08	3.20	3.30	3.28	2.55		1.94	0.55	
19		1.58	0.98	1.95	2.05	2.51	2.90	3.08	3.20	3.31	3.27	2.55		1.82	0.53	
20		1.62	0.96	1.97	2.05	2.58	2.90	3.10	3.20	3.34	3.27	2.58		1.50	0.67	
21		1.70	0.92	2.00	2.09	2.60	2.28	3.10	3.29	3.32	3.25	2.61		1.30	0.61	
22		1.69	0.70	1.78	2.08	2.50	2.90	3.10	3.30	3.31	3.27	2.67		1.29	0.75	
23		1.78	0.81	1.45	2.09	2.61	2.90	3.10	3.28	3.30	3.24	2.64		1.32	0.87	
24	1.31	1.50	0.93	1.42	2.10	2.60	3.05	3.12	3.26	3.31	3.24	out		1.37	0.97	
25	0.80	1.25	1.08	1.47	2.10	2.52	3.00	3.12	3.24	3.30	3.21			1.44	0.99	
26	0.79	1.00	1.00	1.50	2.10	2.50	3.00	3.20	3.22	3.31	3.21	of	2.41	1.37	1.05	
27	0.88	1.05	1.12	1.50	2.19	2.50	3.00	3.20	3.20	3.31	3.15		2.36	1.28	1.01	
28	0.90	1.12	1.21	1.50	2.20	2.52	2.90	3.20	3.20	3.32	3.10	order	2.32	1.34	1.07	
29	0.95	1.15	1.21	1.60	2.22	2.60	2.90		3.29	3.30	3.00		2.31	1.37	0.71	
30	0.90	0.78	1.35	1.59	2.20	2.60	2.88		3.28	3.30	2.89		2.23	1.35	0.76	
31	0.70	0.77		1.60		2.60	2.99		3.25		2.82		1.92	1.25		
Average	0.90	1.15	0.92	1.67	2.00	2.41	2.69	3.09	3.23	3.29	3.24	2.58	2.26	1.60	0.80	0.95



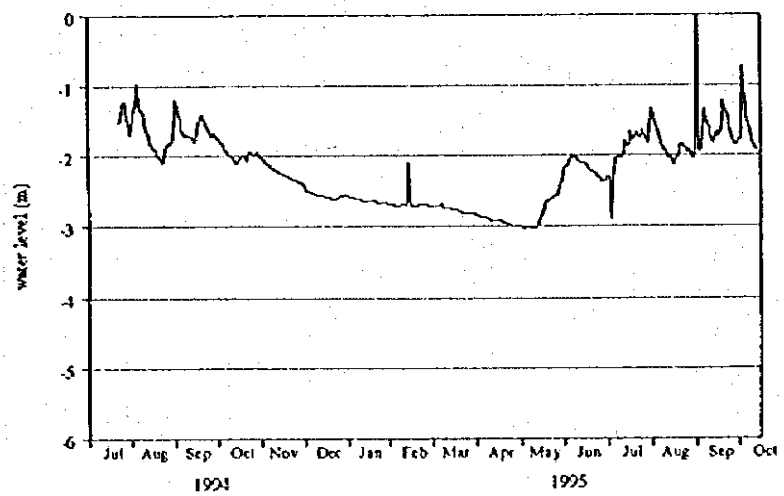
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Bamban E/S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		1.30	1.20	1.79	2.03	2.50	2.57	2.68	2.70	2.84	3.00	2.15	2.30	1.41	no paper	1.76
2		1.35	1.27	1.81	2.08	2.50	2.58	2.69	2.70	2.84	3.01	2.15	2.88	1.45	1.92	0.74
3		1.29	1.40	1.85	2.09	2.50	2.59	2.70	2.70	2.85	3.01	2.09	2.29	1.53	1.94	1.09
4		0.98	1.50	1.90	2.10	2.51	2.59	2.69	2.70	2.86	3.01	2.04	2.29	1.64	1.73	1.32
5		1.20	1.60	1.91	2.12	2.52	2.59	2.70	2.70	2.85	3.01	2.02	2.02	1.72	1.33	1.45
6		1.29	1.65	1.94	2.13	2.53	2.60	2.70	2.69	2.86	3.01	2.02	2.01	1.82	1.35	1.57
7		1.35	1.70	1.98	2.15	2.54	2.60	2.70	2.72	2.87	3.02	2.02	2.02	1.85	1.48	1.67
8		1.33	1.69	2.00	2.16	2.54	2.60	2.70	2.72	2.88	3.02	2.02	2.02	1.90	1.56	1.74
9		1.45	1.68	2.00	2.18	2.55	2.61	2.69	2.72	2.89	3.02	2.04	2.02	1.92	1.62	1.80
10		1.54	1.70	2.01	2.19	2.55	2.61	2.69	2.73	2.90	3.02	2.06	2.01	1.94	1.70	1.84
11		1.61	1.70	2.05	2.20	2.55	2.62	2.69	2.73	2.90	3.02	2.09	1.93	1.96	1.77	1.88
12		1.69	1.71	2.08	2.22	2.56	2.62	2.70	2.74	2.90	3.00	2.09	1.79	2.01	1.80	1.92
13		1.73	1.75	2.09	2.23	2.56	2.62	2.70	2.74	2.90	2.92	2.10	1.83	2.02	1.70	
14		1.80	1.78	2.10	2.24	2.58	2.63	2.10	2.75	2.90	2.89	2.10	1.87	2.05	1.69	
15		1.82	1.79	2.03	2.25	2.59	2.63	2.70	2.76	2.90	2.85	2.13	1.84	2.08	1.67	
16		1.89	1.58	2.00	2.25	2.58	2.63	2.69	2.76	2.91	2.75	2.15	1.66	2.11	1.72	
17		1.90	1.47	2.00	2.26	2.58	2.63	2.69	2.77	2.92	2.75	2.17	1.70	2.03	1.65	
18		1.95	1.47	2.00	2.27	2.59	2.63	2.70	2.77	2.92	2.65	2.20	1.76	2.02	1.51	
19		1.98	1.40	2.02	2.29	2.60	2.63	2.70	2.78	2.93	2.63	2.22	1.70	1.99	1.22	
20		2.00	1.45	2.05	2.30	2.60	2.64	2.70	2.78	2.93	2.62	2.23	1.67	1.86	1.34	
21		2.03	1.50	2.08	2.31	2.61	2.64	2.69	2.79	2.94	2.60	2.25	1.72	1.83	1.37	
22	1.51	2.05	1.52	1.93	2.32	2.61	2.65	2.69	2.80	2.95	2.60	2.21	1.72	1.87	1.44	
23	1.49	2.10	1.58	1.96	2.32	2.61	2.65	2.69	2.80	2.96	2.58	2.29	1.73	1.90	1.57	
24	1.45	2.05	1.62	1.95	2.32	2.60	2.65	2.69	2.80	2.97	2.57	2.31	1.64	1.90	1.67	
25	1.25	1.90	1.70	1.98	2.33	2.58	2.66	2.69	2.80	2.98	2.56	2.33	1.65	1.93	1.74	
26	1.23	1.80	1.72	2.00	2.34	2.56	2.66	2.69	2.80	2.98	2.55	2.34	1.70	1.92	1.80	
27	1.33	1.80	1.70	1.95	2.37	2.57	2.66	2.69	2.81	2.99	2.52	2.35	1.77	1.94	1.82	
28	1.43	1.81	1.65	1.95	2.36	2.57	2.66	2.70	2.82	2.99	2.41	2.36	1.82	1.96	1.85	
29	1.50	1.85	1.70	1.98	2.37	2.56	2.66		2.82	2.99	2.36	2.35	1.72	2.01	1.80	
30	1.68	1.72	1.73	2.00	2.37	2.56	2.67		2.82	3.00	2.20	2.30	1.52	2.00	1.75	
31	1.60	1.45		2.01		2.56	2.67		2.83		2.16		1.34	no paper		
Average	1.45	1.68	1.60	1.98	2.24	2.56	2.63	2.67	2.76	2.92	2.75	2.17	1.87	1.89	1.64	1.57



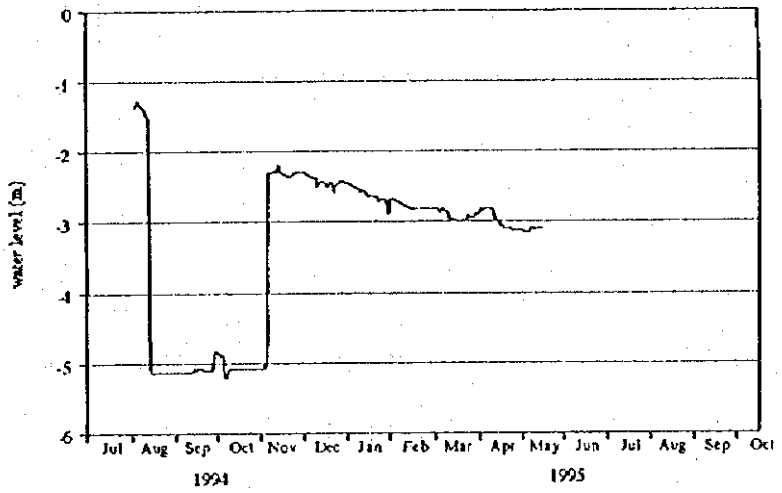
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : San Juan, Mexico E/S
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1			5.12	4.90	5.08	2.31	2.46	2.67	2.82	2.82	3.12					o
2			5.12	4.90	5.08	2.32	2.46	2.69	2.82	2.84	3.14				o	u
3		1.36	5.12	4.90	5.02	2.33	2.47	2.69	2.84	2.84	3.14				u	t
4		1.27	5.12	5.08	5.02	2.34	2.48	2.70	2.85	2.82	3.14				t	
5		1.28	5.12	5.20	2.30	2.35	2.49	2.70	2.82	2.82	3.14	o				o
6		1.31	5.12	5.20	2.30	2.36	2.51	2.70	2.84	2.80	3.10	u			o	f
7		1.35	5.12	5.08	2.30	2.38	2.52	2.72	2.85	2.80	3.10	t			f	
8		1.36	5.12	5.08	2.30	2.38	2.53	2.72	2.85	2.80	3.10					o
9		1.40	5.12	5.08	2.30	2.38	2.54	2.75	2.85	2.80	3.12	o			o	r
10		1.44	5.12	5.08	2.28	2.49	2.59	2.75	2.96	2.85	3.10	f	o		r	d
11		1.49	5.12	5.08	2.28	2.44	2.56	2.79	2.96	2.90	3.10		u		d	e
12		1.53	5.12	5.08	2.29	2.44	2.55	2.79	2.96	2.98	3.10	o	t		e	r
13		5.12	5.08	5.08	2.20	2.42	2.57	2.79	2.96	2.98	3.10	r			r	
14		5.12	5.08	5.08	2.30	2.44	2.58	2.80	2.95	3.00	3.10	d	o			
15		5.12	5.10	5.08	2.30	2.44	2.64	2.80	2.98	3.03	3.10	e	f	o		
16		5.12	5.08	5.08	2.30	2.45	2.62	2.80	2.98	3.05	o	r		u		
17		5.12	5.08	5.08	2.32	2.50	2.62	2.81	2.98	3.06	u		o	t		
18		5.12	5.09	5.08	2.32	2.47	2.62	2.81	2.98	3.08	t		r			
19		5.12	5.09	5.08	2.34	2.46	2.62	2.80	2.97	3.08			d	o		
20		5.12	5.10	5.08	2.34	2.46	2.62	2.80	2.98	3.08	o		e	f		
21		5.12	5.10	5.08	2.34	2.48	2.62	2.80	2.98	3.09	f		r			
22		5.12	5.10	5.08	2.34	2.57	2.63	2.81	2.98	3.10				o		
23		5.12	5.10	5.08	2.32	2.51	2.71	2.82	2.90	3.10	o			r		
24		5.12	5.10	5.08	2.32	2.47	2.67	2.81	2.94	3.12	r			d		
25		5.12	5.10	5.08	2.31	2.45	2.67	2.80	2.94	3.12	d			e		
26		5.12	5.10	5.08	2.31	2.43	2.68	2.81	2.94	3.11	e			f		
27		5.12	5.10	5.08	2.31	2.44	2.69	2.81	2.94	3.12	r					
28		5.12	4.85	5.08	2.30	2.43	2.69	2.80	2.90	3.12						
29		5.12	4.85	5.08	2.30	2.43	2.89		2.88	3.12						
30		5.12	4.85	5.08	2.30	2.44	2.85		2.88	3.12						
31		5.12		5.08		2.45	2.68		2.88							
Average		3.83	5.08	5.07	2.67	2.43	2.61	2.77	2.92	2.99	3.11					



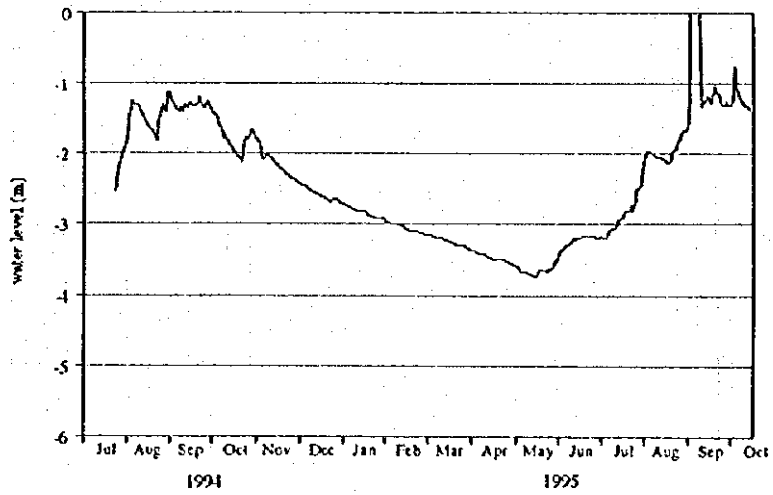
THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

GROUNDWATER LEVEL

Station : Sto Rosario, Mag
Year : Jul 1994 - Sept 1995
Agency : JICA

(Unit: m)

	1994						1995									
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1		1.62	1.13	1.42	1.81	2.44	2.71	2.95	3.14	3.38	3.59	3.38	3.18	2.00	no paper	1.22
2		1.50	1.25	1.46	1.84	2.44	2.73	2.97	3.15	3.38	3.60	3.38	3.18	1.97	no paper	0.76
3		1.40	1.30	1.50	1.87	2.45	2.74	2.98	3.16	3.39	3.68	3.34	3.19	1.96	no paper	1.06
4		1.25	1.33	1.55	2.07	2.46	2.75	2.98	3.17	3.40	3.67	3.32	3.17	1.97	no paper	1.15
5		1.30	1.36	1.60	2.06	2.48	2.75	3.00	3.18	3.41	3.68	3.30	3.08	2.00	no paper	1.18
6		1.30	1.38	1.64	2.04	2.50	2.75	3.00	3.19	3.42	3.67	3.29	3.06	2.00	no paper	1.23
7		1.30	1.41	1.78	2.01	2.51	2.78	3.00	3.19	3.42	3.68	3.26	3.07	2.02	no paper	1.28
8		1.30	1.33	1.72	2.00	2.52	2.78	3.00	3.19	3.42	3.69	3.25	3.07	2.03	no paper	1.32
9		1.33	1.35	1.76	2.03	2.53	2.79	3.00	3.20	3.43	3.70	3.23	3.06	2.05	1.31	1.30
10		1.37	1.40	1.80	2.05	2.54	2.80	3.01	3.20	3.44	3.70	3.20	3.04	2.05	1.34	1.31
11		1.40	1.30	1.83	2.07	2.55	2.80	3.01	3.21	3.45	3.71	3.21	2.98	2.04	1.28	1.34
12		1.45	1.32	1.86	2.09	2.56	2.81	3.01	3.22	3.46	3.72	3.20	2.94	2.05	1.26	1.38
13		1.50	1.35	1.90	2.12	2.58	2.81	3.01	3.22	3.47	3.72	3.19	2.94	2.06	1.18	
14		1.51	1.33	1.93	2.14	2.59	2.82	3.06	3.23	3.49	3.73	3.18	2.92	2.08	1.21	
15		1.56	1.28	1.96	2.15	2.60	2.82	3.06	3.23	3.49	3.73	3.18	2.90	2.10	1.22	
16		1.60	1.32	1.99	2.17	2.61	2.82	3.07	3.24	3.50	3.65	3.17	2.90	2.11	1.27	
17		1.64	1.31	2.01	2.20	2.61	2.83	3.08	3.25	3.50	3.65	3.16	2.82	2.12	1.16	
18		1.67	1.32	2.04	2.22	2.63	2.87	3.08	3.26	3.50	3.65	3.16	2.80	2.13	1.12	
19		1.67	1.29	2.07	2.23	2.64	2.88	3.08	3.27	3.50	3.65	3.16	2.80	2.03	1.04	
20		1.71	1.30	2.09	2.25	2.65	2.88	3.08	3.29	3.51	3.66	3.16	2.80	1.96	1.13	
21		1.75	1.21	2.11	2.28	2.66	2.88	3.09	3.29	3.50	3.66	3.16	2.74	1.94	1.14	
22	2.52	1.78	1.19	1.92	2.29	2.67	2.88	3.10	3.30	3.51	3.67	3.16	2.82	1.93	1.20	
23	2.48	1.82	1.29	1.76	2.31	2.66	2.90	3.10	3.30	3.52	3.63	3.16	2.74	1.84	1.25	
24	2.38	1.54	1.32	1.77	2.32	2.63	2.90	3.11	3.30	3.52	3.64	3.17	2.68	1.80	1.29	
25	2.22	1.40	1.35	1.79	2.34	2.65	2.90	3.12	3.30	3.53	3.63	3.17	2.51	1.80	1.29	
26	2.12	1.31	1.32	1.77	2.35	2.64	2.91	3.12	3.30	3.54	3.62	3.18	2.50	1.70	1.30	
27	2.02	1.34	1.26	1.66	2.36	2.65	2.91	3.12	3.34	3.55	3.58	3.18	2.48	1.66	1.25	
28	2.00	1.38	1.31	1.68	2.39	2.66	2.92	3.13	3.35	3.56	3.53	3.19	2.46	1.69	1.30	
29	1.96	1.40	1.36	1.72	2.40	2.70	2.92		3.36	3.57	3.52	3.18	2.36	1.68	1.29	
30	1.91	1.13	1.40	1.76	2.41	2.70	2.93		3.36	3.58	3.41	3.17	2.20	1.67	1.30	
31	1.82	1.20		1.79		2.70	2.95		3.36		3.39		2.04	1.51		
Average	2.14	1.47	1.31	1.79	2.16	2.59	2.84	3.05	3.25	3.48	3.64	3.21	2.82	1.93	1.23	1.21



THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

HYDROLOGICAL DATA IN AND AROUND THE STUDY AREA

SUMMARY OF CLIMATIC CONDITIONS

Climatic Element / Station	Years of Record	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
[1] MEAN TEMPERATURE (C)														
1. San Miguel, Tarlac		**	**	**	**	**	**	**	**	**	**	**	**	**
2. Baliwag, Bulacan	(1970-79)	24.6	25.3	26.5	27.4	27.4	27.6	27.2	26.9	27.0	26.7	26.4	25.6	26.6
3. Clark Air Base	(1945-83)	25.6	26.1	27.2	28.9	28.9	27.8	27.2	26.7	27.2	27.2	26.7	26.1	27.1
4. Floridablanca	(1985-87)	27.1	27.7	29.6	31.1	30.9	29.2	28.2	27.8	28.1	28.2	28.4	27.4	28.6
5. Magalang	(1988-91)	24.9	25.6	27.2	29.0	29.0	28.3	27.8	27.3	27.4	26.6	27.1	25.4	27.1
6. Basa Air Base	(1958-81)	25.6	26.0	27.1	28.6	28.7	27.8	27.3	26.8	27.1	27.0	26.7	26.2	27.1
[2] MEAN MAXIMUM TEMPERATURE (C)														
1. San Miguel, Tarlac	(1962-90)	31.9	32.7	34.3	35.6	35.3	33.5	32.7	31.7	32.5	32.6	32.5	31.8	33.1
2. Baliwag, Bulacan	(1970-79)	29.6	30.4	31.9	33.1	32.6	32.4	32.1	30.7	31.2	30.7	30.7	29.7	31.3
3. Clark Air Base	(1945-83)	29.5	31.1	32.2	33.9	33.3	31.7	30.6	30.0	30.6	30.6	30.0	29.5	31.1
4. Floridablanca	(1985-87)	31.2	32.7	34.9	35.7	35.5	32.7	32.1	31.4	32.1	32.4	32.5	31.7	32.9
5. Magalang	(1988-91)	32.1	31.6	34.1	36.4	34.0	33.3	32.7	32.1	32.5	32.0	31.9	31.0	32.8
6. Basa Air Base	(1963-81)	30.6	31.4	32.8	34.3	33.8	32.2	31.3	30.5	31.5	31.7	31.3	30.6	31.8
[3] MEAN MINIMUM TEMPERATURE (C)														
1. San Miguel, Tarlac	(1968-90)	18.9	19.1	20.0	22.1	23.0	23.1	22.7	22.7	22.4	21.9	20.9	19.9	21.4
2. Baliwag, Bulacan	(1970-79)	19.9	19.7	20.2	21.7	22.8	23.7	23.6	23.2	23.3	22.6	22.2	21.3	22.0
3. Clark Air Base	(1945-83)	21.1	21.1	22.2	23.9	24.4	23.9	23.3	23.3	23.3	23.3	22.8	21.7	22.9
4. Floridablanca	(1985-87)	23.0	22.7	24.3	26.6	26.4	25.7	24.2	24.3	24.0	24.0	24.2	23.2	24.4
5. Magalang	(1988-91)	20.7	20.8	22.0	24.1	25.0	24.4	24.1	24.3	24.2	23.6	24.0	19.8	23.1
6. Basa Air Base	(1963-81)	20.6	20.6	21.5	23.0	23.8	23.4	23.3	23.1	22.8	22.8	22.3	21.8	22.4
[4] MEAN RELATIVE HUMIDITY (%)														
1. San Miguel, Tarlac	(1968-90)	77.9	74.8	74.8	70.7	77.8	80.1	87.3	88.8	85.5	82.3	79.4	78.0	79.8
2. Baliwag, Bulacan	(1972-77)													
	(1985-87)	86.5	85.6	80.6	79.9	82.9	83.6	87.4	89.0	87.9	87.2	87.5	90.0	85.7
3. Clark Air Base	(1945-83)	74.0	73.0	70.0	70.0	75.0	78.0	82.0	85.0	81.0	77.0	75.0	75.0	76.3
4. Floridablanca		**	**	**	**	**	**	**	**	**	**	**	**	**
5. Magalang	(1988-91)	80.5	80.3	78.3	75.8	79.2	83.3	88.0	88.0	87.7	86.7	83.3	83.7	82.9
6. Basa Air Base	(1970-94)	67.1	67.9	67.9	66.7	70.9	78.8	82.9	82.5	79.0	78.8	73.0	72.5	74.0
[5] MEAN WIND SPEED (km/hr)														
1. San Miguel, Tarlac	(1968-90)	9.2	8.5	8.6	8.0	7.1	6.9	6.0	6.6	5.8	6.6	8.5	10.4	7.7
2. Baliwag, Bulacan		**	**	**	**	**	**	**	**	**	**	**	**	**
3. Clark Air Base	(1945-83)	9.3	9.3	9.3	7.4	7.4	7.4	7.4	7.4	5.6	7.4	9.3	9.3	8.0
4. Floridablanca	(1985-87)	5.4	4.4	4.8	4.2	4.3	4.5	3.4	4.0	2.9	3.6	3.9	4.8	4.2
5. Magalang		**	**	**	**	**	**	**	**	**	**	**	**	**
6. Basa Air Base		**	**	**	**	**	**	**	**	**	**	**	**	**
[6] MEAN SUNSHINE HOUR (hrs./day)														
1. San Miguel, Tarlac	(1968-90)	7.0	8.4	8.2	9.2	7.9	5.6	5.2	4.3	4.8	6.2	6.7	6.8	6.7
2. Baliwag, Bulacan		**	**	**	**	**	**	**	**	**	**	**	**	**
3. Clark Air Base		**	**	**	**	**	**	**	**	**	**	**	**	**
4. Floridablanca	(1985-87)	6.6	6.8	9.0	8.9	6.9	5.6	5.1	4.0	5.1	5.7	6.3	6.5	6.4
5. Magalang		**	**	**	**	**	**	**	**	**	**	**	**	**
6. Basa Air Base		**	**	**	**	**	**	**	**	**	**	**	**	**
[7] MEAN EVAPORATION (mm/mon.)														
1. San Miguel, Tarlac	(1968-90)	134.2	153.2	201.2	205.3	177.3	108.5	104.6	102.0	128.1	118.8	122.6	129.7	1,685.5
2. Baliwag, Bulacan	(1970-79)													
	(1986-87)	142.6	139.2	179.7	192.7	172.1	149.4	152.1	140.9	151.7	145.4	132.5	133.7	1,832.0
3. Clark Air Base		**	**	**	**	**	**	**	**	**	**	**	**	**
4. Floridablanca	(1985-87)	146.0	145.6	204.2	175.8	181.8	124.5	124.3	128.0	134.0	122.9	119.6	129.3	1,736.0
5. Magalang		**	**	**	**	**	**	**	**	**	**	**	**	**
6. Basa Air Base		**	**	**	**	**	**	**	**	**	**	**	**	**

Source : Mapping and Agricultural Potential Study for the Integrated Rural Development Program in Pampanga (Nov. 1992, JICA)

MONTHLY AVERAGE RAINFALL AT CLARK AIR BASE

(Unit : mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1946	9	5	1	5	7	340	224	288	330	165	***	6	***
1947	0	0	182	93	179	141	255	543	341	249	102	147	2,232
1948	12	13	0	99	116	90	512	537	375	142	27	80	2,003
1949	0	25	0	0	65	286	148	251	117	163	63	96	1,213
1950	10	5	57	46	97	165	397	542	316	340	44	132	2,151
1951	13	2	0	29	297	244	115	675	142	67	154	135	1,871
1952	2	8	14	44	176	228	137	534	340	179	3	91	1,756
1953	2	18	15	26	124	320	367	610	276	181	131	103	2,172
1954	0	22	25	5	79	92	170	438	279	78	131	6	1,325
1955	45	0	0	12	62	177	401	219	291	187	57	4	1,454
1956	8	68	6	38	171	60	202	343	488	151	94	37	1,665
1957	46	31	56	76	53	191	330	395	153	116	25	8	1,478
1958	16	22	27	19	24	344	411	277	454	104	7	4	1,708
1959	23	4	34	3	79	71	93	442	223	51	80	2	1,104
1960	5	30	4	148	108	378	174	1,009	296	199	11	1	2,365
1961	0	3	37	1	173	673	426	353	243	171	27	0	2,106
1962	73	5	15	100	63	166	622	335	611	40	85	0	2,114
1963	1	1	43	46	130	569	405	288	512	37	3	452	2,487
1964	1	2	5	2	198	297	278	354	279	215	202	132	1,966
1965	1	1	24	72	348	192	522	257	265	106	258	5	2,051
1966	5	2	63	77	825	284	243	275	633	92	243	32	2,772
1967	1	1	1	16	56	352	434	479	248	248	165	0	2,001
1968	12	0	0	27	151	93	350	786	244	58	24	0	1,744
1969	1	6	22	65	219	168	382	372	238	139	56	33	1,698
1970	0	0	6	67	99	340	372	389	653	285	94	36	2,340
1971	14	3	25	14	275	378	331	122	380	409	206	87	2,245
1972	34	8	64	55	188	326	2,276	873	255	18	18	27	4,143
1973	2	1	4	5	65	191	312	374	175	420	76	8	1,633
1974	4	33	17	194	107	405	226	756	145	327	361	75	2,649
1975	34	9	5	34	144	153	104	458	163	263	41	106	1,515
1976	16	6	41	15	858	664	274	327	507	45	2	17	2,772
1977	7	0	4	58	108	137	376	320	392	18	363	0	1,784
1978	0	9	10	23	152	144	261	754	394	474	31	99	2,350
1979	3	0	0	23	209	97	244	733	275	59	148	32	1,822
1980	24	0	110	4	131	64	534	255	296	185	115	24	1,743
1981	2	0	0	36	142	399	328	269	290	194	59	41	1,759
1982	0	46	27	44	125	99	457	316	175	41	93	22	1,443
1983	22	2	1	4	47	31	342	349	134	93	13	0	1,037
Ave.	12	10	25	43	170	246	369	445	314	166	98	55	1,964
Max.	73	68	182	194	858	673	2,276	1,009	653	474	363	452	4,143
Min.	0	0	0	0	7	31	93	122	117	18	2	0	1,037

Mean Monthly and Annual Rainfall(mm) for Stations in the Philippines (1951-1980

STATIONS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
LUZON													
Ambulong	23	11	17	32	156	226	246	329	270	226	166	107	1809
Aparri	133	82	39	31	93	152	195	232	273	354	386	198	2168
Aurora	58	20	30	23	91	188	230	202	191	215	174	167	1589
Baguio	11	8	29	96	339	457	739	838	613	339	163	26	3658
Baler	186	151	196	252	307	285	235	221	306	372	451	313	3275
Basco	171	129	101	82	130	262	258	425	392	342	335	291	2918
Cabanatuan	7	3	15	29	173	257	306	398	307	167	134	41	1840
Calapan	95	56	57	86	159	191	202	205	180	289	243	197	1960
Calayan	177	107	67	42	95	184	267	299	325	320	361	319	2563
Casiguran	218	164	206	134	229	247	247	249	294	375	649	443	3455
Clark Air Base	12	10	25	43	170	246	369	445	314	166	98	55	1953
Daet	320	189	163	131	148	181	220	235	261	511	593	625	3577
Dagupan	7	7	20	74	234	340	484	551	342	157	65	17	2298
Iba	3	2	9	31	320	528	768	1098	655	220	87	27	3748
Infanta	353	232	187	175	240	264	247	207	299	539	604	568	3915
Laoag	5	1	2	14	123	373	407	529	371	101	48	11	1985
Legaspi	305	201	202	168	192	232	246	278	254	328	475	520	3401
Los Banos	41	19	30	34	194	243	262	269	364	239	272	170	2137
Manila	13	4	6	54	112	240	335	428	323	192	128	55	1890
Pasacao	104	75	93	85	159	250	283	231	234	320	278	308	2420
Tayabas	142	84	88	110	287	279	246	191	287	257	536	697	3204
Tuguegarao	21	16	32	47	117	160	205	237	215	253	299	101	1703
Vigan	2	2	11	17	138	395	504	668	401	119	36	12	2305
Virac	223	134	120	123	199	234	218	186	239	400	478	435	2989
AVERAGE	110	71	73	80	184	267	322	373	321	283	294	238	2615
MAXIMUM	353	232	206	252	339	528	768	1098	655	539	649	697	3915
MINIMUM	2	1	2	14	91	152	195	186	180	101	36	11	1589

Mean Monthly and Annual Number of Rainy Days for Various Stations in the Philippines

STATIONS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
LUZON													
Ambulong	5	3	3	4	11	16	19	20	19	16	13	11	140
Aparri	15	10	6	5	8	13	12	15	16	18	21	19	158
Aurora	13	8	8	5	9	15	19	18	18	19	16	16	164
Baguio	3	2	4	9	19	23	26	28	25	17	9	5	170
Baler	15	15	16	19	19	18	18	18	18	18	18	17	209
Basco	19	15	13	10	11	15	17	21	20	20	20	21	202
Cabanatuan	2	1	2	3	11	17	20	21	21	12	9	5	124
Calapan	17	12	9	9	13	15	16	17	16	19	19	20	182
Calayan	19	13	9	6	7	10	12	17	17	19	21	23	173
Casiguran	18	14	15	14	16	15	16	18	18	18	19	19	200
Caron	3	2	1	2	10	19	22	22	20	16	9	6	132
Cuyo	2	1	2	2	13	21	22	22	20	17	8	4	134
Daet	24	18	15	13	12	15	17	18	18	23	24	27	224
Dagupan	2	1	2	5	13	18	21	24	20	12	6	2	126
Iba	1	1	2	4	12	18	24	25	22	13	7	4	133
Infanta	25	20	16	16	17	17	18	18	19	25	24	26	241
Laoag	1	1	1	1	8	15	19	21	17	7	5	2	98
Legaspi	22	17	16	15	15	19	19	20	20	20	20	24	227
Masbate	15	12	10	7	9	14	16	18	16	16	17	18	168
Manila	4	2	2	2	8	16	23	22	20	14	12	8	133
Pto. Princesa	4	2	3	5	13	15	16	18	16	17	14	9	132
Sc. Garden	4	2	3	4	12	18	23	24	22	13	13	9	147
Tayabas	17	14	10	9	15	18	19	18	19	24	24	15	202
Tuguegarao	6	4	5	5	10	13	14	15	15	14	15	11	127
Vigan	1	1	1	2	9	17	20	21	16	7	4	1	100
Virac	20	15	15	15	15	16	17	16	17	21	23	23	213
AVERAGE	11	8	7	7	12	16	19	20	19	17	15	13	164
MAXIMUM	25	20	16	19	19	23	26	28	25	25	24	27	241
MINIMUM	1	1	1	1	7	10	12	15	15	7	4	1	98

Mean Monthly and Annual Temperature (℃) for various Stations in the Philippines

STATIONS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
LUZON													
Ambulong	25.9	26.5	27.6	29.0	29.0	28.2	27.5	27.2	27.2	27.3	26.9	26.1	27.4
Aparri	23.4	24.1	25.8	27.7	29.0	29.2	28.9	28.5	27.7	27.0	25.5	24.1	26.7
Aurora	25.3	25.8	26.5	27.6	28.2	28.0	27.6	27.6	27.4	27.2	26.8	26.1	27.0
Baguio	17.8	18.3	19.4	20.3	20.4	20.0	19.5	18.9	19.2	19.4	18.9	18.4	19.2
Baler	24.4	24.8	25.7	27.0	28.1	28.3	28.3	28.1	27.9	27.1	26.1	25.1	26.7
Basco	22.0	22.6	24.2	26.2	27.8	28.3	28.3	27.8	27.5	26.4	24.7	22.9	25.7
Cabanatuan	25.8	26.3	27.6	29.1	29.5	28.5	27.9	27.4	27.6	27.6	26.9	26.2	27.5
Calapan	25.3	25.7	26.7	27.9	28.1	27.6	27.2	27.3	27.2	27.1	26.6	25.8	26.9
Calayan	23.1	23.9	25.2	27.0	28.3	28.5	28.4	28.0	27.6	27.1	25.6	24.0	26.4
Casiguran	23.7	23.7	24.9	26.4	27.6	27.9	27.7	27.6	27.3	26.5	25.4	24.4	26.1
Caron	26.8	26.8	27.7	28.5	28.6	27.4	26.6	26.7	26.8	27.1	27.2	27.0	27.3
Cuyo	26.9	26.6	27.6	28.8	28.9	28.1	27.7	27.7	27.6	27.8	27.9	27.5	27.8
Daet	25.3	25.5	26.2	27.4	28.3	28.5	28.0	28.0	27.7	27.2	26.7	25.9	27.1
Dagupan	26.0	26.6	28.1	29.6	29.5	28.7	28.3	27.6	27.9	28.1	27.3	26.5	27.9
Iba	25.6	25.8	26.9	28.2	28.4	27.6	27.0	26.6	26.9	27.3	27.1	26.3	27.0
Infanta	24.5	24.8	25.9	27.2	28.2	28.4	28.2	28.1	27.8	26.9	26.3	25.3	26.8
Laoag	24.4	24.8	26.3	28.0	28.9	28.2	27.7	26.9	27.3	29.4	26.5	25.4	27.0
Legaspi	25.3	25.6	26.1	27.1	28.0	28.1	27.6	27.6	27.4	27.1	26.6	25.8	26.9
Masbate	26.4	26.5	27.4	28.7	29.4	29.2	28.7	28.5	28.5	28.2	27.8	26.9	28.0
Manila	25.4	26.2	27.4	29.0	29.5	28.5	27.7	27.3	27.5	27.3	26.7	25.8	27.4
Pto. Princesa	26.7	27.0	27.6	28.6	28.5	27.6	27.3	27.0	27.2	27.3	27.2	27.0	27.4
Sc. Garden	25.1	25.6	26.9	28.5	28.9	27.9	27.1	26.8	26.9	26.7	26.1	25.4	26.8
Tayabas	24.2	24.3	25.5	27.0	27.7	27.3	26.8	26.8	26.7	26.4	25.8	24.8	26.1
Tuguegarao	24.4	25.3	27.4	29.3	30.4	29.3	29.2	28.9	28.5	27.4	25.9	24.7	27.6
Vigan	25.5	25.8	27.1	28.4	28.8	27.8	27.3	26.8	26.9	27.3	26.9	26.3	27.1
Virac	25.9	26.0	26.5	27.3	28.0	28.2	28.0	28.2	27.9	27.3	27.1	26.4	27.2
AVERAGE	24.8	25.2	26.3	27.7	28.3	27.9	27.5	27.2	27.2	27.0	26.3	25.4	26.7
MAXIMUM	26.9	27.0	28.1	29.6	30.4	29.3	29.2	28.9	28.5	29.4	27.9	27.5	28.0
MINIMUM	17.8	18.3	19.4	20.3	20.4	20.0	19.5	18.9	19.2	19.4	18.9	18.4	19.2

Monthly and Annual Relative Humidity for various Stations in the Philippines

STATIONS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
LUZON													
Ambulong	77	73	70	69	74	77	83	84	84	82	80	80	78
Aparri	84	82	81	80	78	79	80	82	83	84	86	87	82
Aurora	85	83	80	77	75	76	77	77	78	79	81	84	79
Baguio	79	77	78	80	84	87	89	91	90	86	82	79	84
Baler	82	82	81	81	81	81	80	81	82	82	83	82	82
Basco	82	81	82	82	83	83	83	85	84	82	81	82	83
Cabanatuan	69	68	66	64	71	80	83	86	85	81	78	74	75
Calapan	82	80	77	76	78	82	83	84	84	84	84	84	82
Calayan	83	83	83	82	81	83	84	85	86	84	84	85	84
Casiguran	85	86	87	85	85	85	86	87	88	87	85	89	86
Caron	78	76	72	74	78	81	83	84	84	84	79	80	79
Cuyo	80	79	79	78	80	83	84	84	84	80	79	81	81
Daet	83	81	80	80	80	81	82	83	84	85	84	85	82
Dagupan	73	72	70	69	75	80	81	85	84	79	77	75	77
Iba	75	74	73	73	77	73	86	83	87	82	79	76	78
Infanta	86	85	83	82	81	80	80	79	82	85	85	86	83
Laoag	73	72	71	71	74	81	84	85	85	78	75	73	77
Legaspi	84	83	82	82	81	82	83	84	85	84	85	84	83
Masbate	84	82	80	79	78	81	82	83	83	83	84	85	82
Manila	76	71	67	65	69	78	82	84	84	82	80	79	76
Pto. Princesa	83	81	80	79	82	85	86	86	86	86	86	85	84
Sc. Garden	75	69	67	64	72	82	83	85	86	83	82	79	77
Tayabas	80	76	71	69	70	75	77	79	80	82	84	84	77
Tuguegarao	80	76	71	69	70	75	77	79	80	82	84	84	77
Vigan	77	77	77	77	78	83	86	87	87	82	80	78	81
Virac	80	79	78	78	79	80	82	81	82	83	83	82	81
AVERAGE	80	78	76	76	77	81	83	84	84	83	82	82	80
MAXIMUM	86	86	87	85	85	87	89	91	90	87	86	89	86
MINIMUM	69	68	66	64	69	73	77	77	78	78	75	73	75

Mean Monthly and Annual Cloudiness for Various Stations in the Philippines

STATIONS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
LUZON													
Ambulong	5	4	4	3	3	5	6	7	7	6	6	5	5
Aparri	7	6	5	4	5	6	6	7	7	6	7	7	6
Aurora	7	6	6	6	7	8	8	9	8	8	7	7	7
Baguio	5	5	6	6	7	8	8	9	8	7	6	6	7
Baler	7	6	6	5	6	6	7	7	7	7	7	7	7
Basco	7	7	7	6	6	7	7	7	7	7	8	8	7
Cabanatuan	4	4	4	4	5	6	7	8	7	6	5	5	5
Calapan	7	7	6	5	6	7	8	8	8	7	8	8	7
Calayan	8	7	7	6	6	6	7	7	7	7	8	8	7
Casiguran	6	6	5	4	5	5	6	6	6	6	6	6	6
Caron	4	4	4	4	5	7	7	7	7	6	5	5	5
Cuyo	7	7	6	6	8	9	9	9	9	8	8	8	8
Daet	7	6	5	5	5	6	7	8	7	7	7	7	6
Dagupan	4	4	4	4	5	7	7	8	7	6	5	4	5
Iba	4	4	4	4	5	7	7	8	7	6	5	5	6
Infanta	8	8	7	7	8	8	8	8	8	8	8	8	8
Laoag	3	3	2	2	5	7	7	7	7	5	5	4	5
Legaspi	7	7	7	6	6	7	8	8	8	8	8	8	7
Masbate	7	7	6	5	6	8	8	9	8	8	8	8	7
Manila	6	5	4	4	6	8	8	8	9	7	7	6	7
Pto. Princesa	6	5	5	5	6	7	7	7	7	7	6	6	6
Sc. Garden	6	5	5	4	6	7	8	8	8	7	6	6	6
Tayabas	7	7	6	5	6	7	7	7	7	7	7	7	7
Tuguegarao	7	5	4	4	4	6	6	7	7	6	7	7	6
Vigan	3	3	3	2	4	6	7	7	6	4	4	3	4
Virac	7	7	6	6	6	7	8	8	8	7	7	8	7
AVERAGE	6	6	5	5	6	7	7	8	7	7	7	6	6
MAXIMUM	8	8	7	7	8	9	9	9	9	8	8	8	8
MINIMUM	3	3	2	2	4	5	6	6	6	4	4	3	4

DATABOOK

GEOTECHNICAL DATA

(DB.3)

DATABOOK (DB.3)

GEOTECHNICAL DATA

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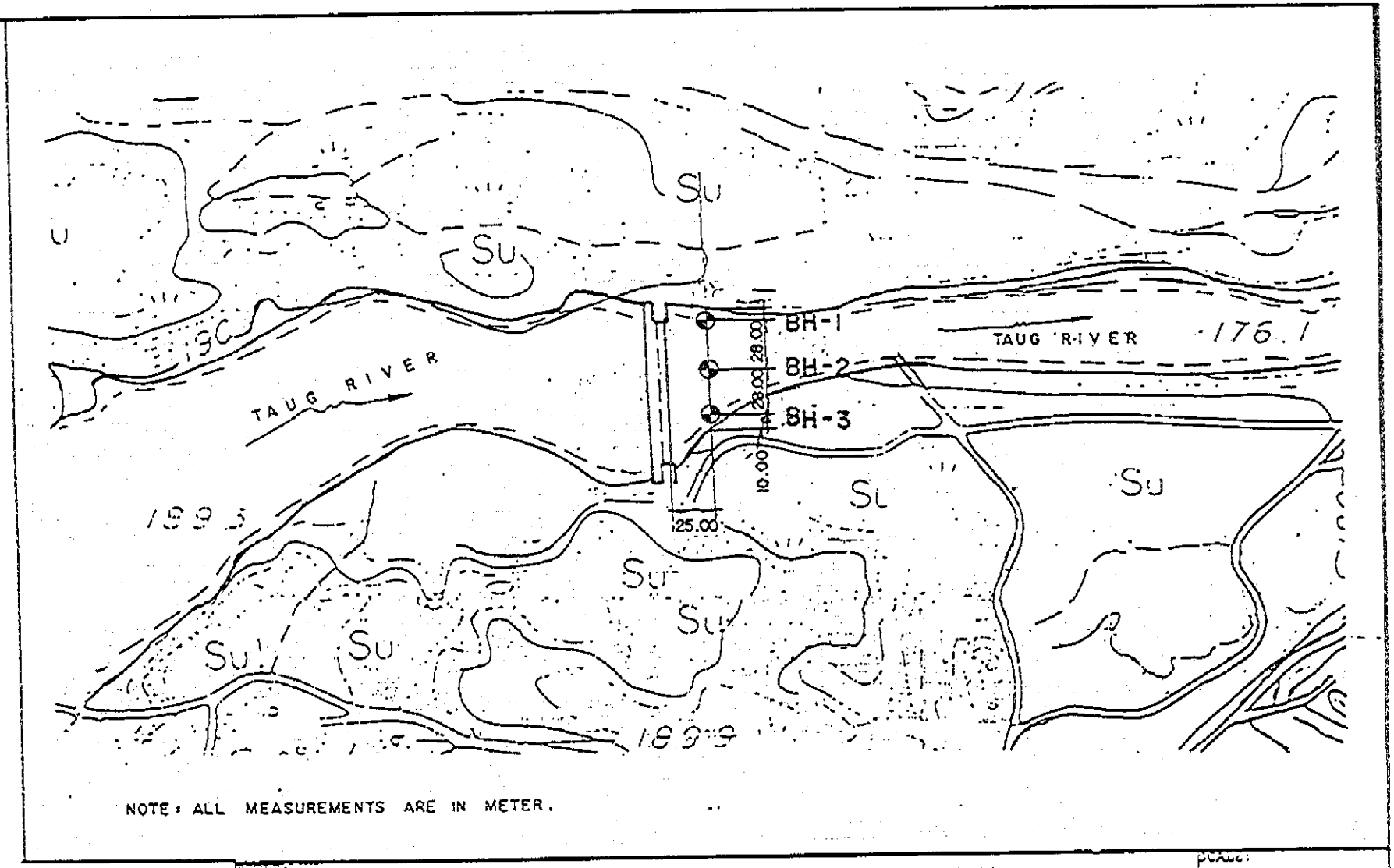
PART I

BOREHOLE LOCATION PLAN



THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL
FOR SACOBIA-BAMBAN/ABACAN RIVER
DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

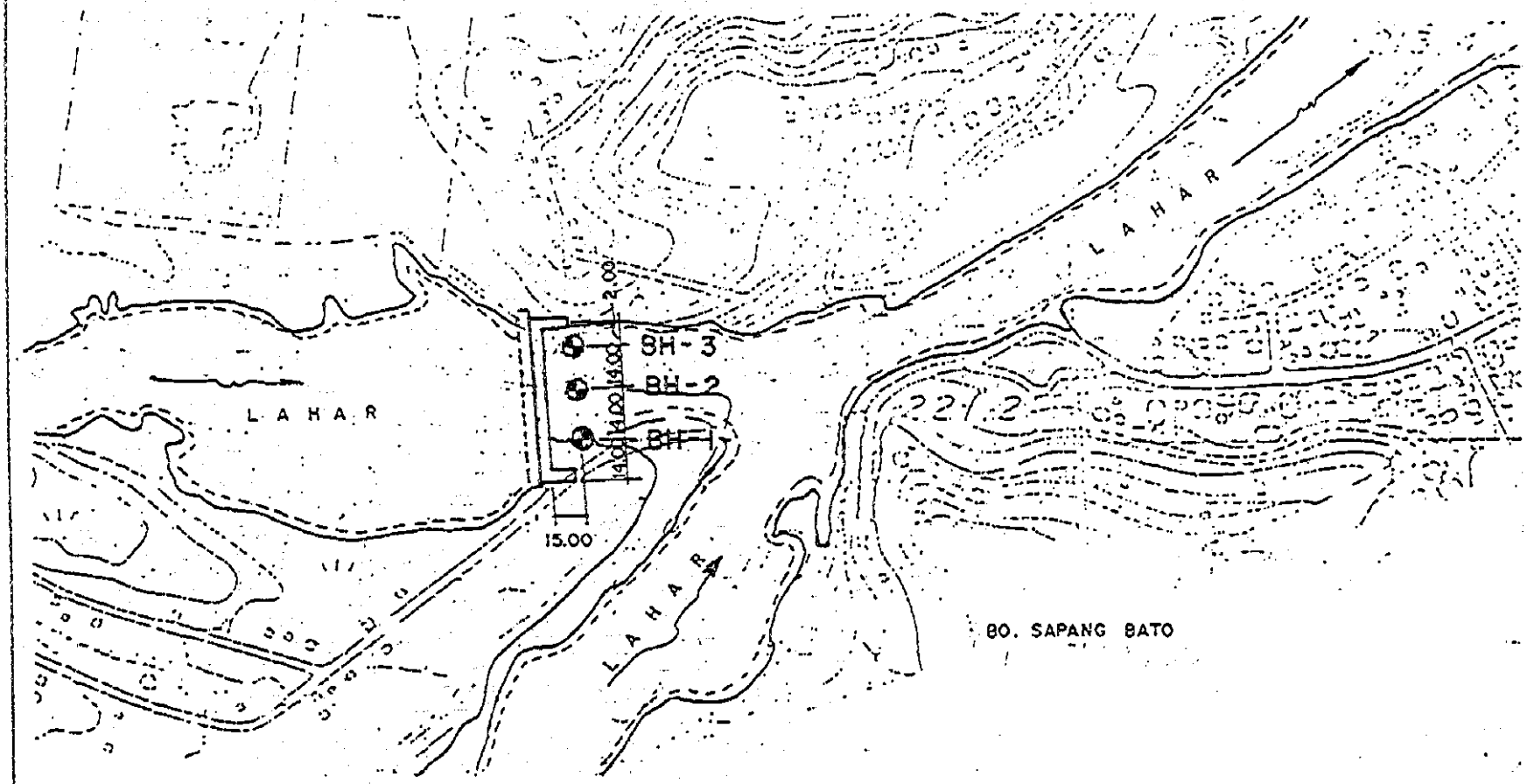
TITLE: **BOREHOLE LOCATION PLAN**

SCALE: not to scale

PROJECT: GEOMECHANICAL SURVEY FOR THE MOUNT PINATUBO PROJECT

LOCATION: TM-1 SABO DAM

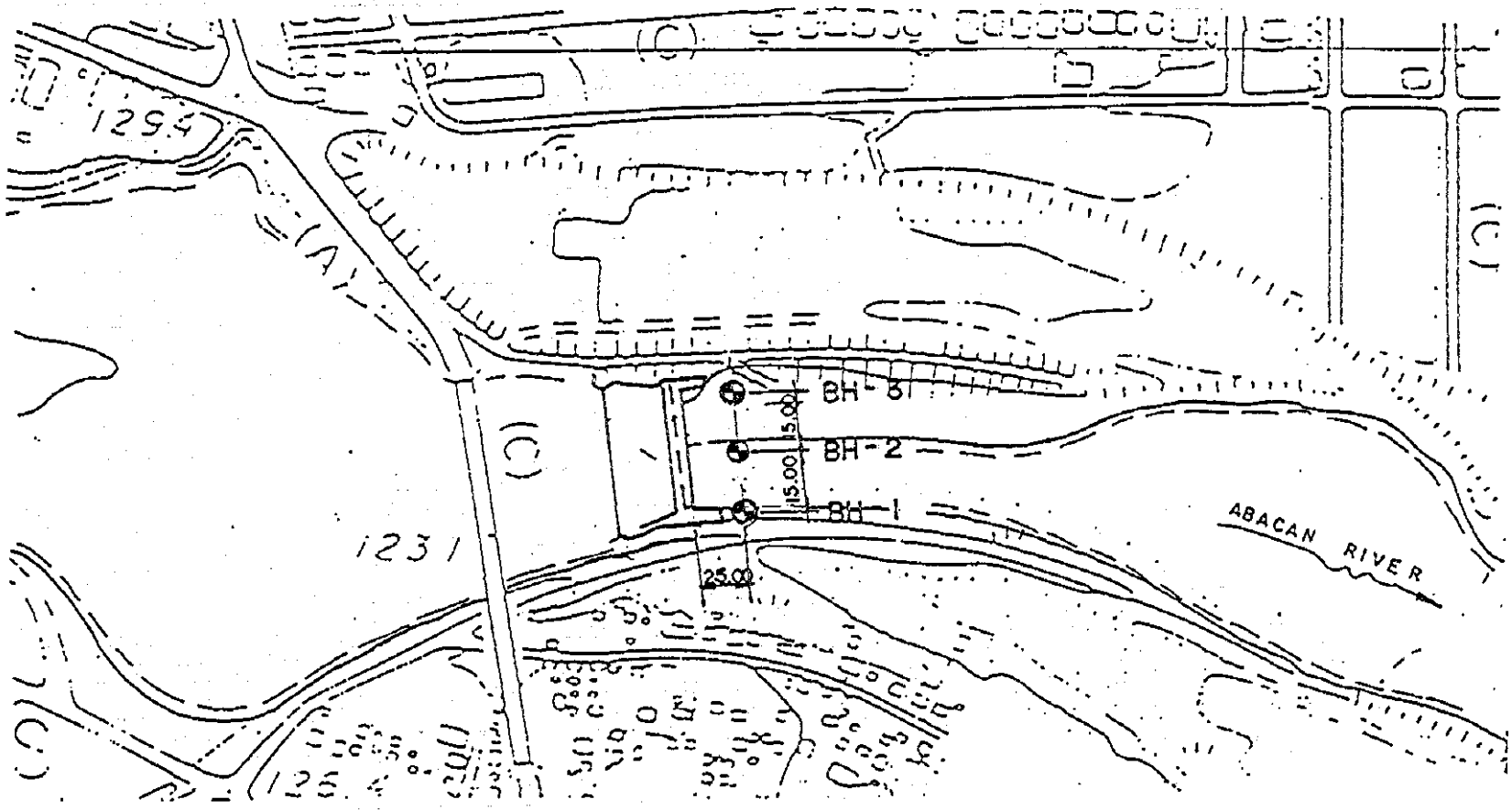
DATE: 07 - 05 - 95



NOTE : ALL MEASUREMENTS ARE IN METER.

THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL
FOR SACOBIA-BAMBAN/ABACAN RIVER
DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

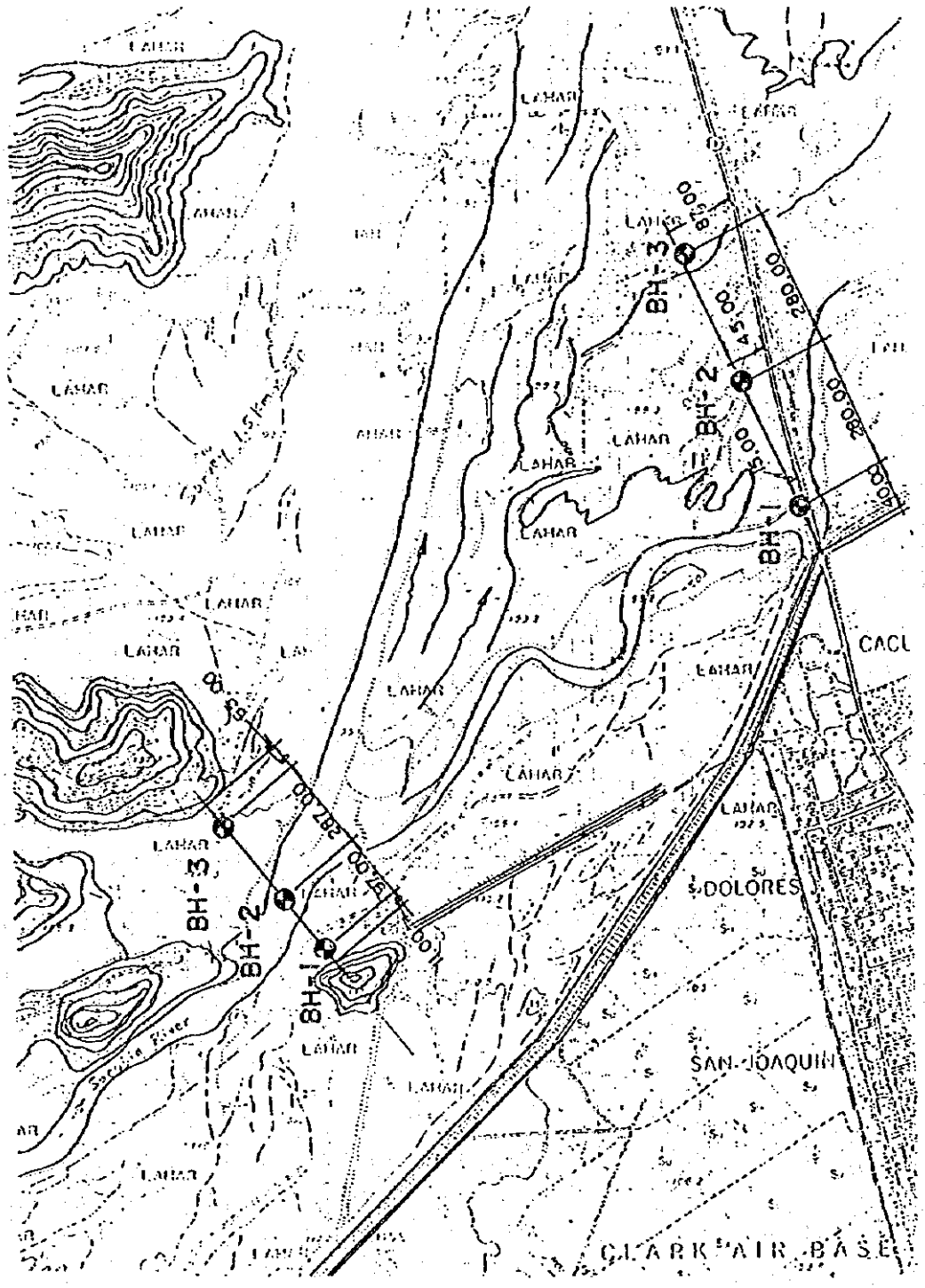
TITLE: BOREHOLE LOCATION PLAN			SCALE: not to scale
PROJECT: GEOMECHANICAL SURVEY FOR THE MOUNT PINATUBO PROJECT		LOCATION: SABO DAM NO. 6	DATE: 07 - 05 - 95



NOTE : ALL MEASUREMENTS ARE IN METER.

TITLE: BOREHOLE LOCATION PLAN			SCALE: not to scale
PROJECT: GEOMECHANICAL SURVEY FOR THE MOUNT PINATUBO PROJECT		LOCATION: SABO DAM NO. 9	DATE: 07 - 05 - 95

THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL
FOR SACOBIA-BAMBAN/ABACAN RIVER
DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY



BOREHOLE LOCATION PLAN

NOTE : ALL MEASUREMENTS ARE IN METER.

SCALE:	not to scale
DATE:	07 - 05 - 95
LOCATION:	DOLORES & MASKUP DAM
PROJECT:	GEOMECHANICAL SURVEY FOR THE MOUNT PINATUBO PROJECT

THE GOVERNMENT OF THE PHILIPPINES
THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE STUDY ON FLOOD AND MUDFLOW CONTROL FOR SACOBIA-BAMBAN/ABACAN RIVER DRAINING FROM MT.PINATUBO
JAPAN INTERNATIONAL COOPERATION AGENCY

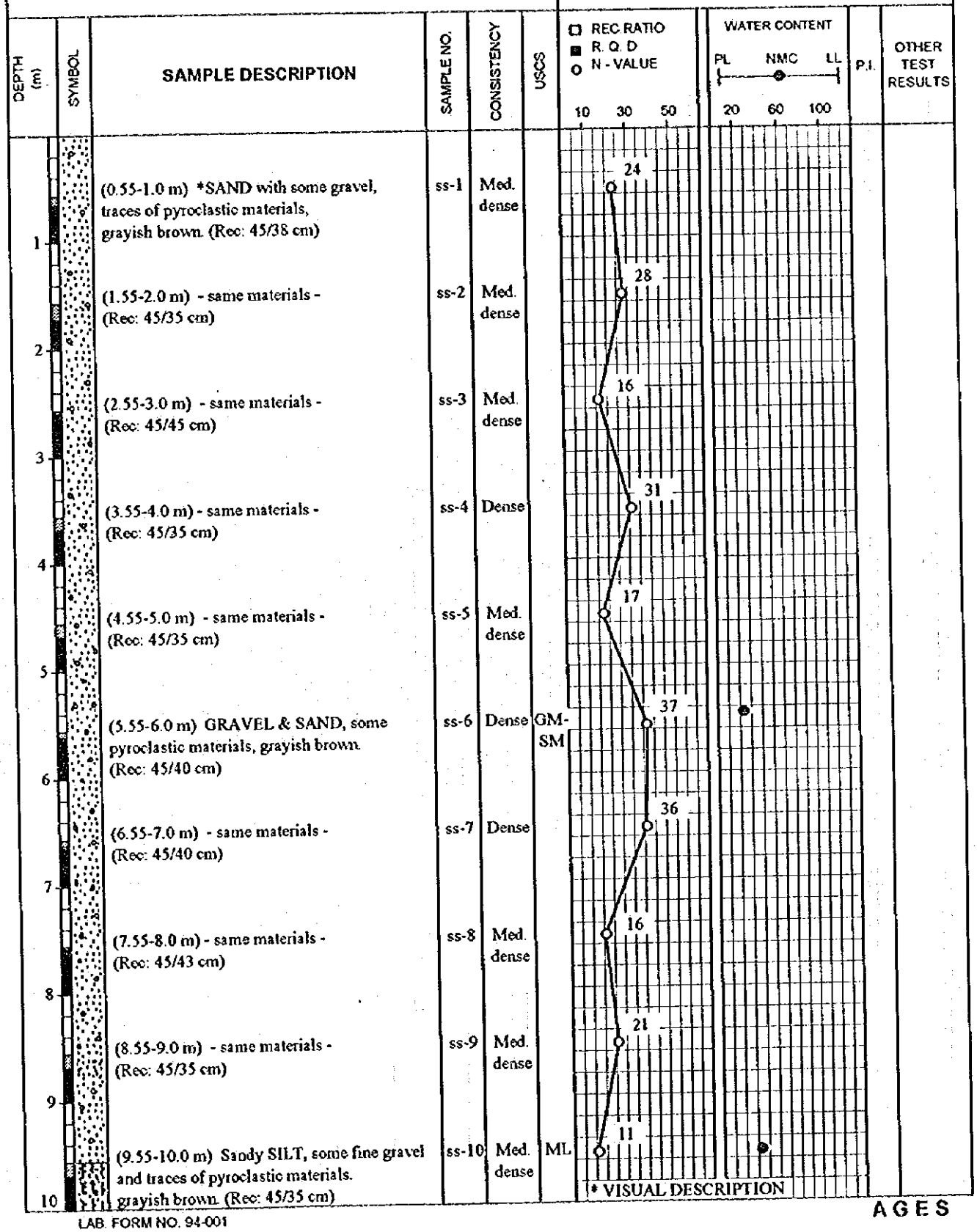
PART II

BOREHOLE LOGS

BOREHOLE LOG

LOCATION: TM-1 SABO DAM
BORING NO.: 1
FINAL DEPTH: 10.00 m
DEPTH OF GWT: not encountered
DATE STARTED: July 1, 1995
DATE FINISHED: July 2, 1995
SHEET NO. 1 of 1

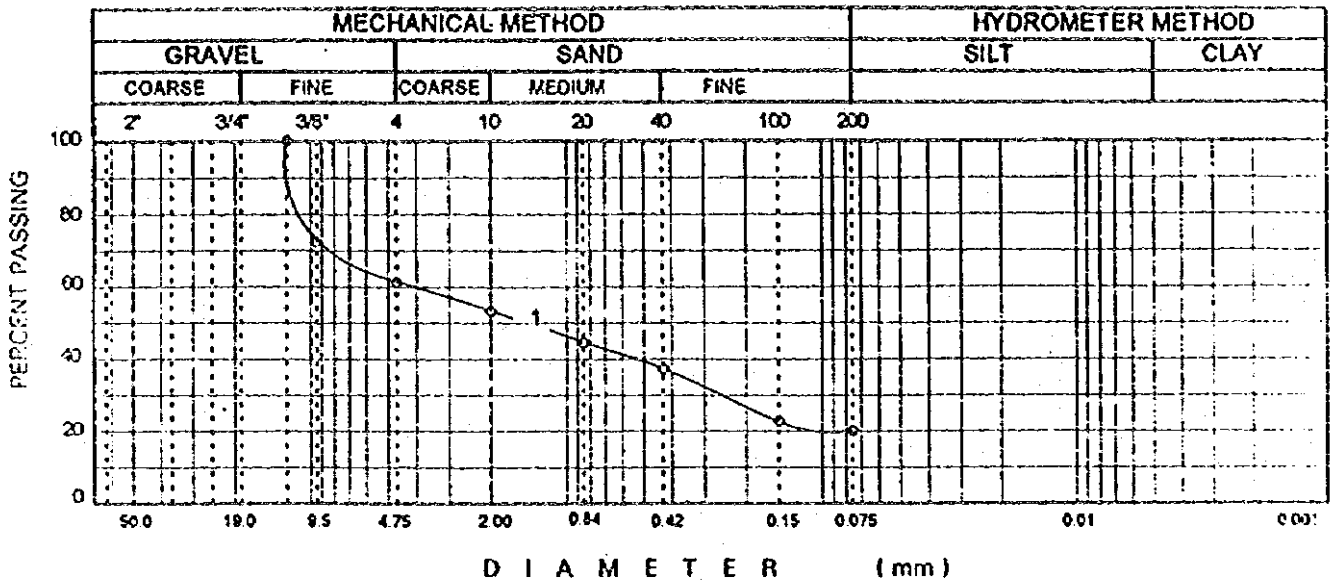
PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

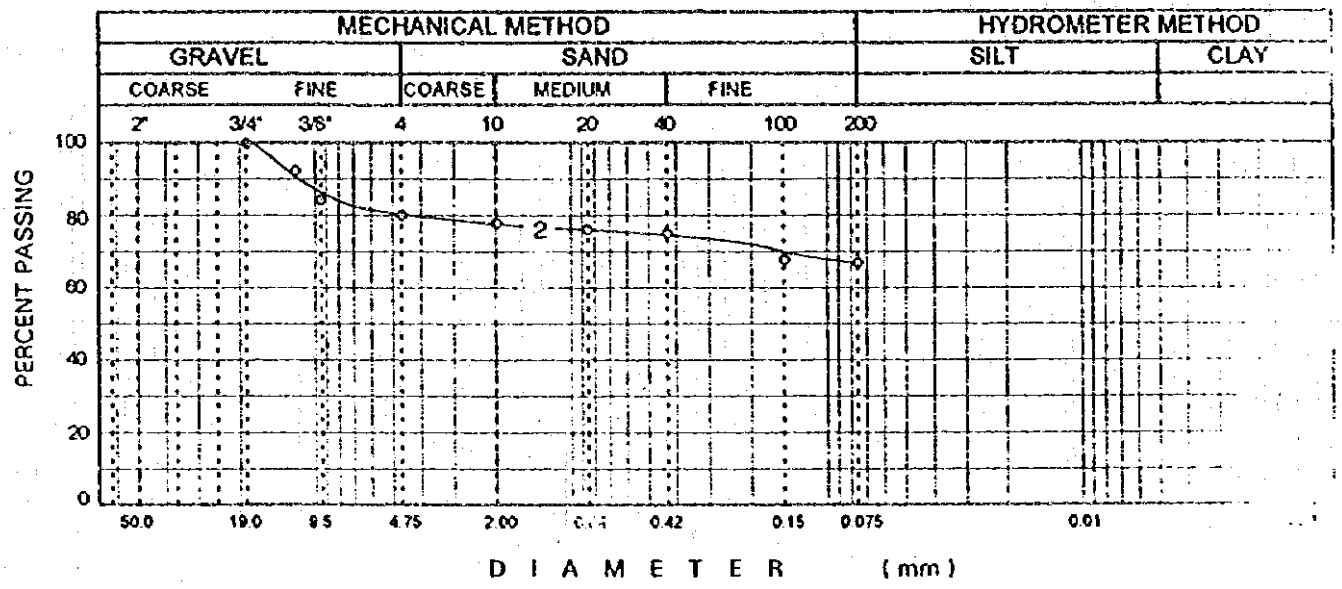


AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
1	6	5.55	1	24	-	NP	-	GM-SM	Grayish brown GRAVEL and
									SAND, coarse
1	10	9.55	2	34	-	NP	-	ML	Grayish brown SILT

FORM NO. 84-001A

AGES

BOREHOLE LOG

LOCATION: TM-1 SABO DAM
BORING NO.: 2
FINAL DEPTH: 10.00 m
DEPTH OF GWT: not encountered
DATE STARTED: July 1, 1995
DATE FINISHED: July 2, 1995
SHEET NO. 1 of 1

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

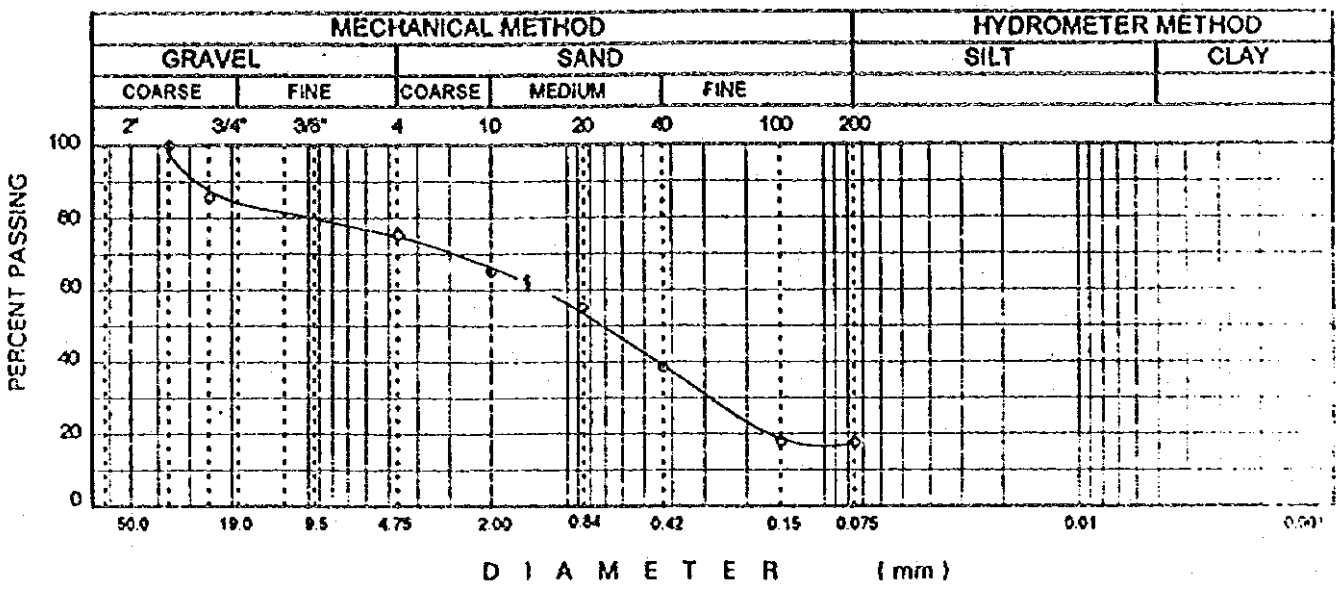
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R.Q.D / N-VALUE	WATER CONTENT (PL NMC LL)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, coarse to medium, traces of pyroclastic materials, gray. (Rec: 45/45 cm)	ss-1	Med. dense		20			
2		(1.55-2.0 m) - same materials - (Rec: 45/40 cm)	ss-2	Med. dense		19			
3		(2.55-3.0 m) *Silty SAND with some gravel, and traces of pyroclastic materials, gray. (Rec: 45/28 cm)	ss-3	Very loose		3			
4		(3.55-4.0 m) *SAND with some gravel, traces of pyroclastic materials, gray. (Rec: 45/40 cm)	ss-4	Med. dense		11			
5		(4.55-5.0 m) - same materials - (Rec: 45/45 cm)	ss-5	Med. dense		24			
6		(5.55-6.0 m) SAND with some gravel size pyroclastic materials, gray. (Rec: 45/45 cm)	ss-6	Med. dense	SM	29			
7		(6.55-7.0 m) - same materials - (Rec: 45/45 cm)	ss-7	Med. dense		29			
8		(7.55-8.0 m) - same materials - (Rec: 45/45 cm)	ss-8	Med. dense		24			
9		(8.55-9.0 m) - same materials - (Rec: 45/40 cm)	ss-9	Dense		37			
10		(9.55-9.95 m) SAND with traces of pyroclastic materials, grayish brown. (Rec: 40/40 cm)	ss-10	Very dense	SM	50/25 cm			

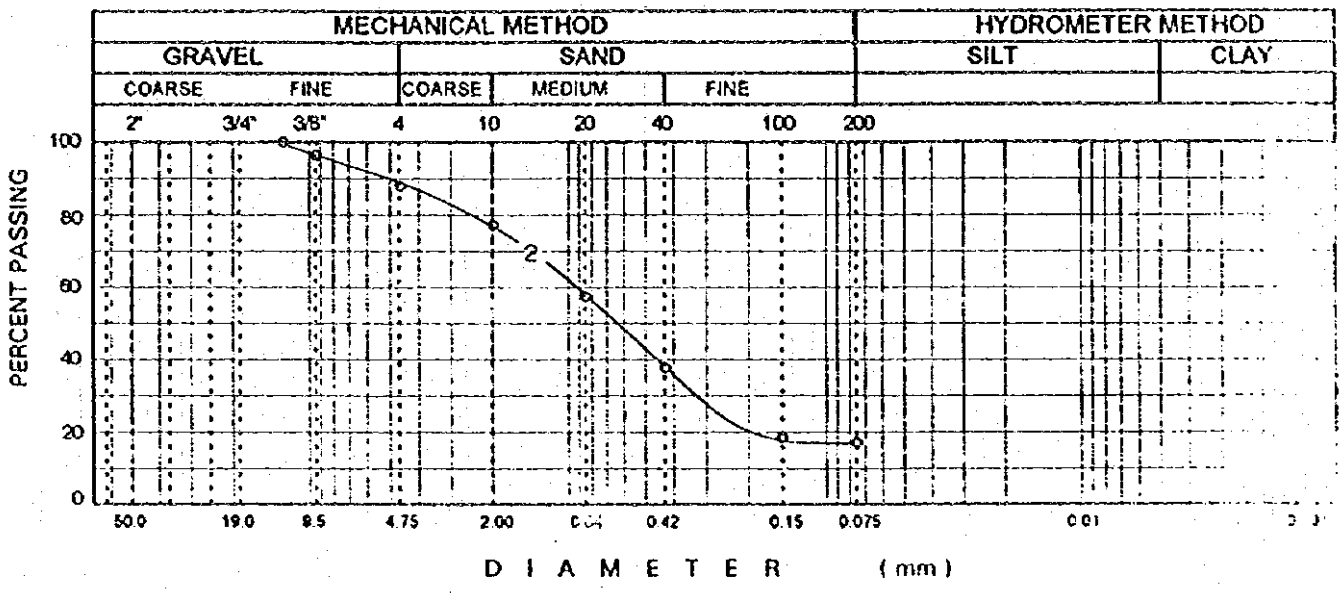
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
2	6	5.55	1	16	-	NP	-	SM	Gray SAND, coarse
2	10	9.55	2	13	-	NP	-	SM	Grayish brown SAND, coarse

FORM NO. 94-001A

AGES

BOREHOLE LOG

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

LOCATION: TM-1 SABO DAM
BORING NO.: 3
FINAL DEPTH: 10.00 m
DEPTH OF GWT: not encountered
DATE STARTED: July 3, 1995
DATE FINISHED: July 4, 1995
SHEET NO. 1 of 1

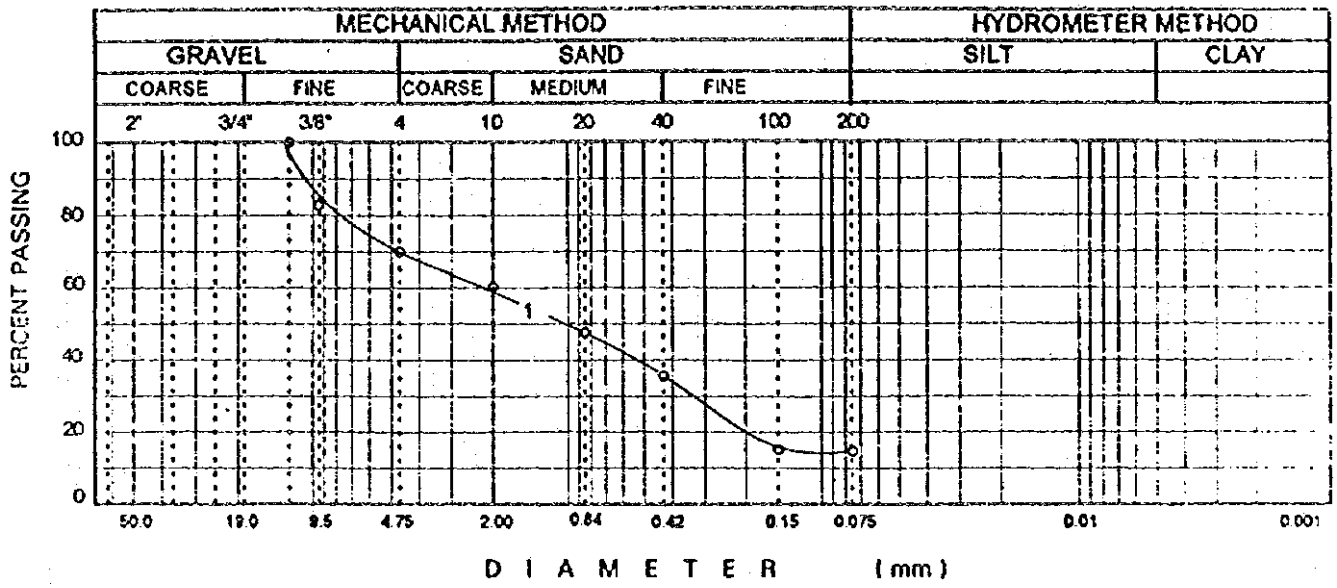
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC. RATIO / R. Q. D / N - VALUE (10 30 50)	WATER CONTENT (PL NMC LL; 20 60 100)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND with gravel, traces of pyroclastic materials, gray. (Rec: 45/35 cm)	ss-1	Med. dense		19			
2		(1.55-2.0 m) - same materials - (Rec: 45/38 cm)	ss-2	Med. dense		24			
3		(2.55-2.9 m) - same materials - (Rec: 35/35 cm)	ss-3	Very dense		50/20 cm			
4		(3.55-4.0 m) - same materials - (Rec: 45/40 cm)	ss-4	Dense		30			
5		(4.55-5.0 m) - same materials - (Rec: 45/35 cm)	ss-5	Dense		37			
6		(5.55-6.0 m) Gravelly SAND, coarse, some gravel size pyroclastic materials, fine, gray. (Rec: 45/45 cm)	ss-6	Dense	SM	44			
7		(6.55-7.0 m) - same materials - (Rec: 45/45 cm)	ss-7	Dense		41			
8		(7.55-8.0 m) - same materials - (Rec: 45/40 cm)	ss-8	Dense		44			
9		(8.55-9.0 m) - same materials - (Rec: 45/40 cm)	ss-9	Dense		41			
10		(9.55-10.0 m) - same materials - (Rec: 45/30 cm)	ss-10	Dense	SM	46			

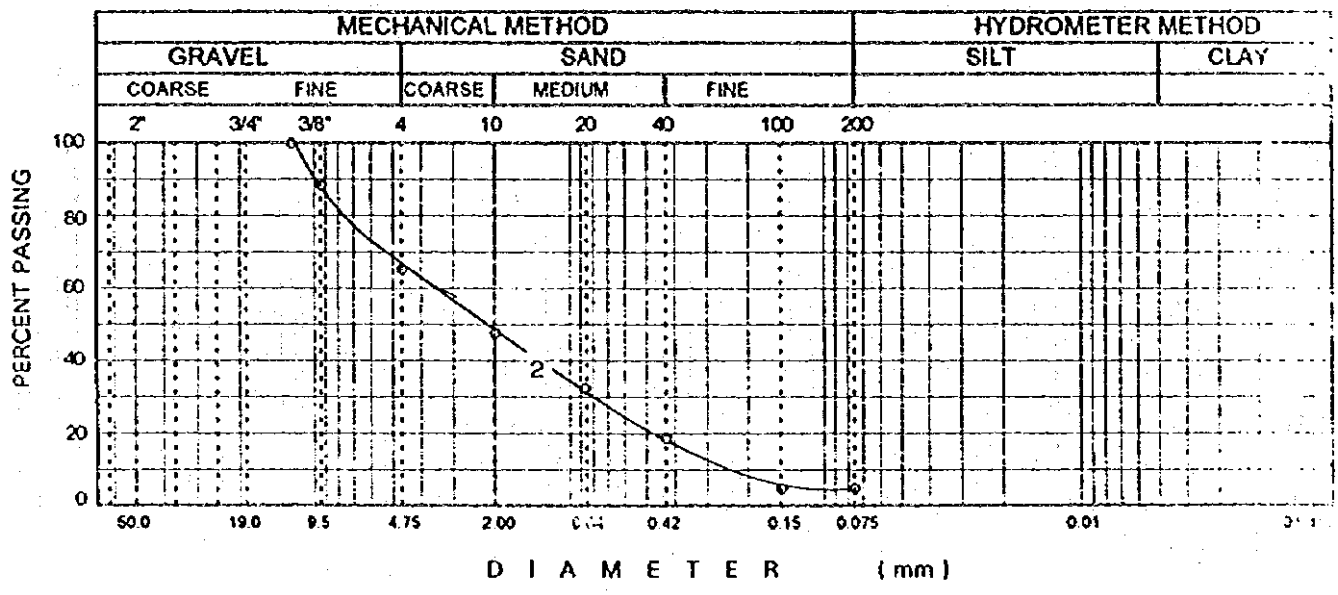
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
3	6	5.55	1	12	-	NP	-	SM	Gray gravelly SAND, coarse
3	10	9.55	2	10	-	NP	-	SM	- same -

FORM NO. 94-001A

AGES

BOREHOLE LOG

LOCATION: Sabo Dam #6
BORING NO.: 1
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 1.80 m
DATE STARTED: June 29, 1995
DATE FINISHED: June 30, 1995
SHEET NO. 1 of 1

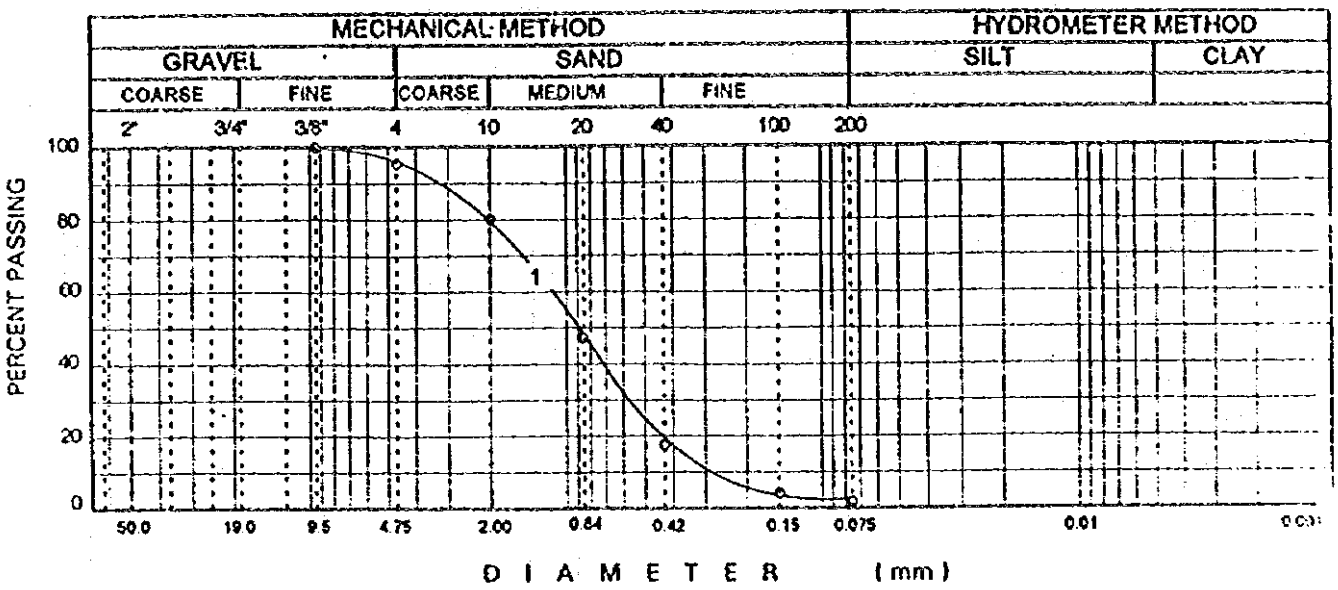
PROJECT : GEOMECHANICAL SURVEY FOR THE THE MT. PINATUBO PROJECT

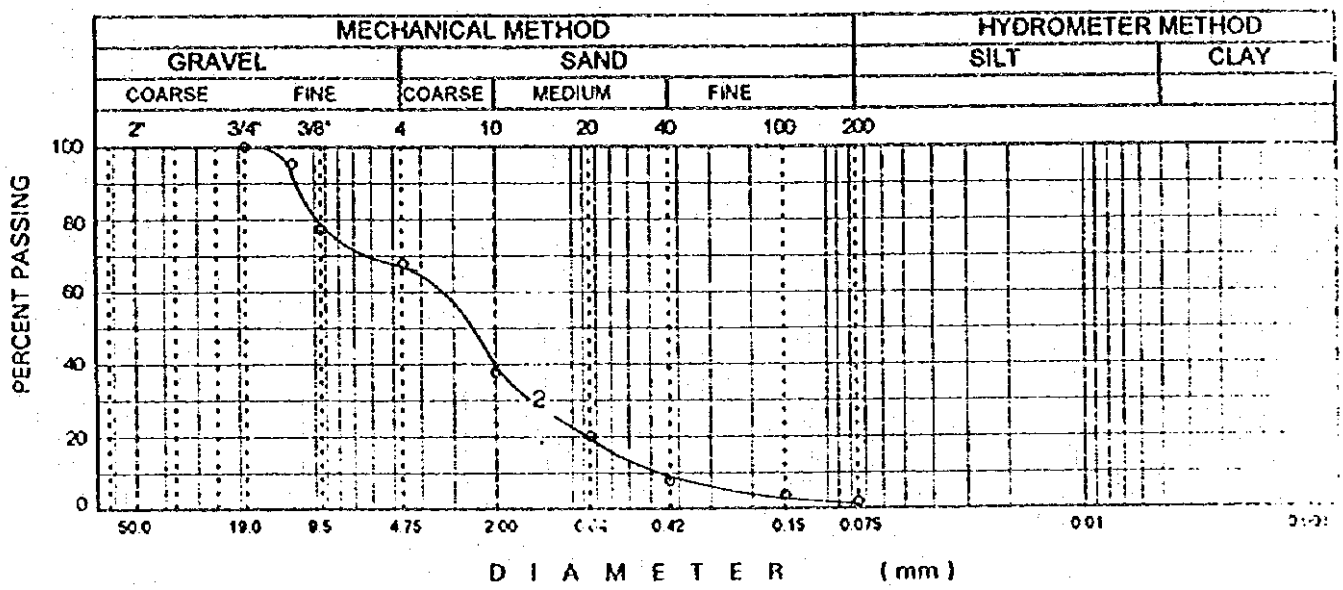
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC RATIO / R.Q.D / N-VALUE (10 30 50)	WATER CONTENT (PL NMC LL; 20 60 100)	P.I.	OTHER TEST RESULTS
		(0-0.5 m) *COBBLES. (Rec: 50/30/0 cm)	cs-1			coring			
1		(0.5-2.0 m) * BOULDERS. (Rec: 150/65/42 cm)	cs-2			coring			
2		(2.55-3.0 m) *GRAVEL and SAND with coarse to fine pyroclastic materials, gray. (Rec: 45/22 cm)	ss-1	Very dense		52			
3		(3.55-4.0 m) - same materials - (Rec: 45/26 cm)	ss-2	dense		44			
4		(4.55-5.0 m) - same materials - (Rec: 45/25 cm)	ss-3	Med. dense		27			
5		(5.55-6.0 m) SAND with gravel size pyroclastic materials, gray. (Rec: 45/28 cm)	ss-4	Med. dense	SP	21			
6		(6.55-7.0 m) - same materials - gray. (Rec: 45/30 cm)	ss-5	Med. dense		25			
7		(7.55-8.0 m) - same materials - (Rec: 45/30 cm)	ss-6	Very dense		52			
8		(8.55-9.0 m) - same materials - (Rec: 45/30 cm)	ss-7	Dense		43			
9		(9.55-10.0 m) Gravelly SAND, some coarse fine pyroclastic materials, gray. (Rec: 45/30 cm)	ss-8	Very dense	SP	51			
10						* VISUAL DESCRIPTION			

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
1	4	5.55	1	27	-	NP	-	SP	Gray SAND,medium
1	8	9.55	2	9	-	NP	-	SP	Gray gravelly SAND,medium

FORM NO. 84-001A

AGES

BOREHOLE LOG

PROJECT : GEOMECHANICAL SURVEY FOR THE THE MT. PINATUBO PROJECT

LOCATION: Sabo Dam #6
BORING NO.: 2
FINAL DEPTH: 10.00 m
DEPTH OF GWT: ground level
DATE STARTED: June 28, 1995
DATE FINISHED: June 29, 1995
SHEET NO. 1 of 1

DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	N-VALUE	WATER CONTENT (PL / NMC / LL)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, with traces of pyroclastic materials, light gray. (Rec: 45/32 cm)	ss-1	Med. dense		18			
2		(1.55-2.0 m) - same materials - (Rec: 45/32 cm)	ss-2	Med. dense		18			
3		(2.55-3.0 m) *SAND with fine gravel, light gray. (Rec: 45/27 cm)	ss-3	Med. dense		16			
4		(3.55-4.0 m) - same materials - (Rec: 45/30 cm)	ss-4	Dense		41			
5		(4.55-5.0 m) - same materials - (Rec: 45/45 cm)	ss-5	Dense		33			
6		(5.55-6.0 m) - same materials - (Rec: 45/38 cm)	ss-6	Med. dense	SP	23			
7		(6.55-7.0 m) - same materials - (Rec: 45/28 cm)	ss-7	Dense		47			
8		(7.55-7.7 m) - same materials - (Rec: 15/14 cm)	ss-8	Very dense		50/15 cm			
9		(8.55-9.0 m) *SAND, light gray. (Rec: 45/25 cm)	ss-9	Dense		31			
10		(9.55-10.0 m) - same materials - (Rec: 45/20 cm)	ss-10	Med. dense	SP	28			

REC.RATIO
R. Q. D
N - VALUE
10 30 50

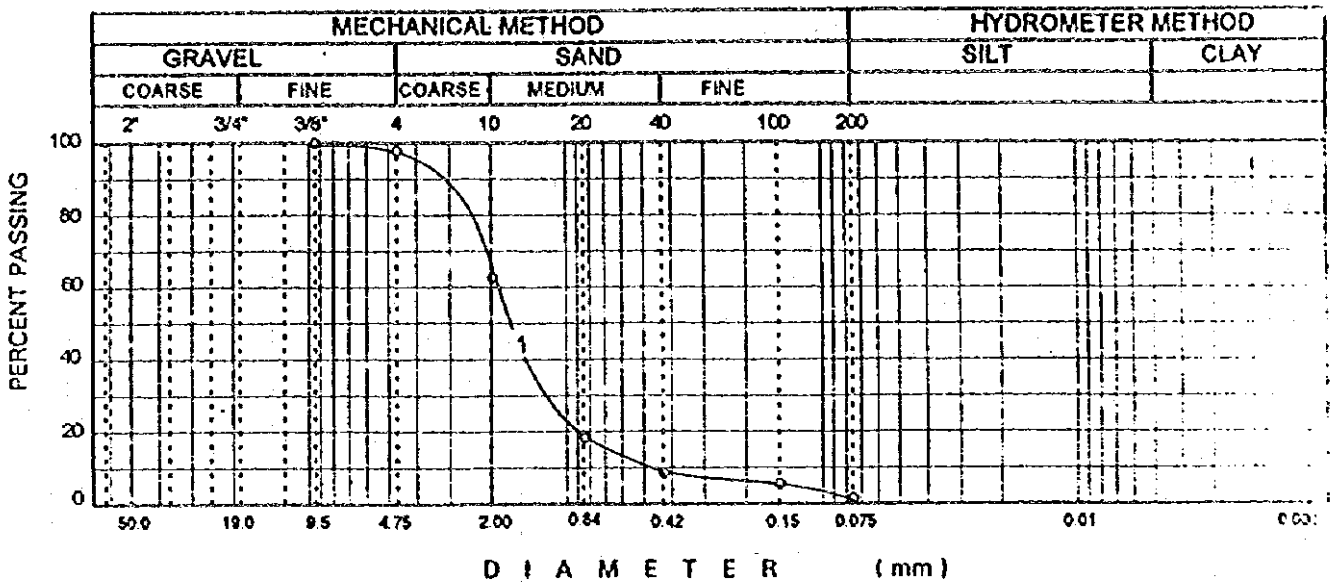
WATER CONTENT
PL NMC LL
20 60 100

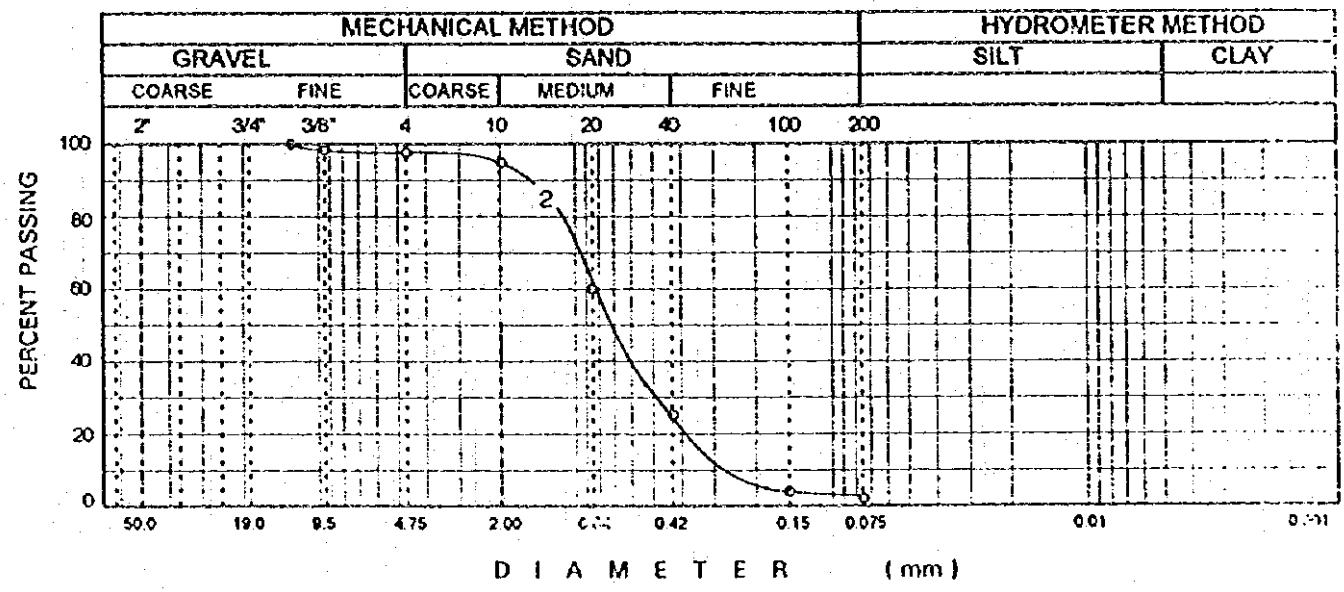
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
2	6	5.55	1	10	-	NP	-	SP	Light gray SAND,medium
2	10	9.55	2	14	-	NP	-	SP	Light gray SAND,medium

FORM NO. 94-001A

AGES

BOREHOLE LOG

LOCATION: Sabo Dam #6
BORING NO.: 3
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 5.60 m
DATE STARTED: June 29, 1995
DATE FINISHED: June 30, 1995
SHEET NO. 1 of 1

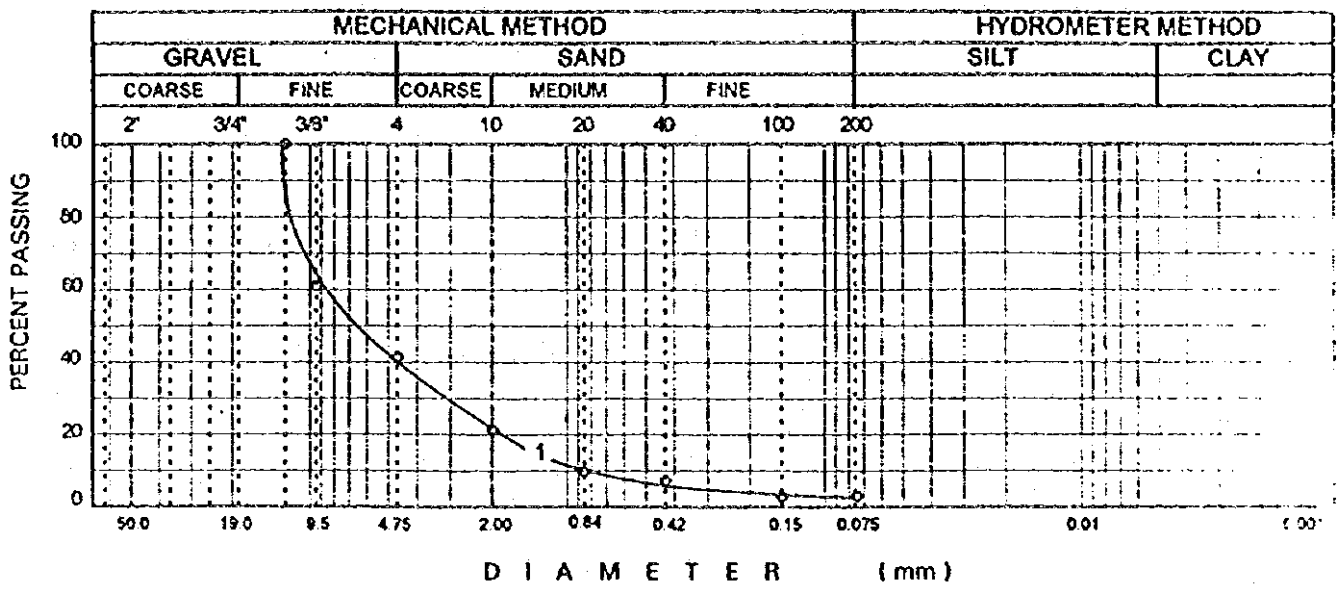
PROJECT : GEOMECHANICAL SURVEY FOR THE THE MT. PINATUBO PROJECT

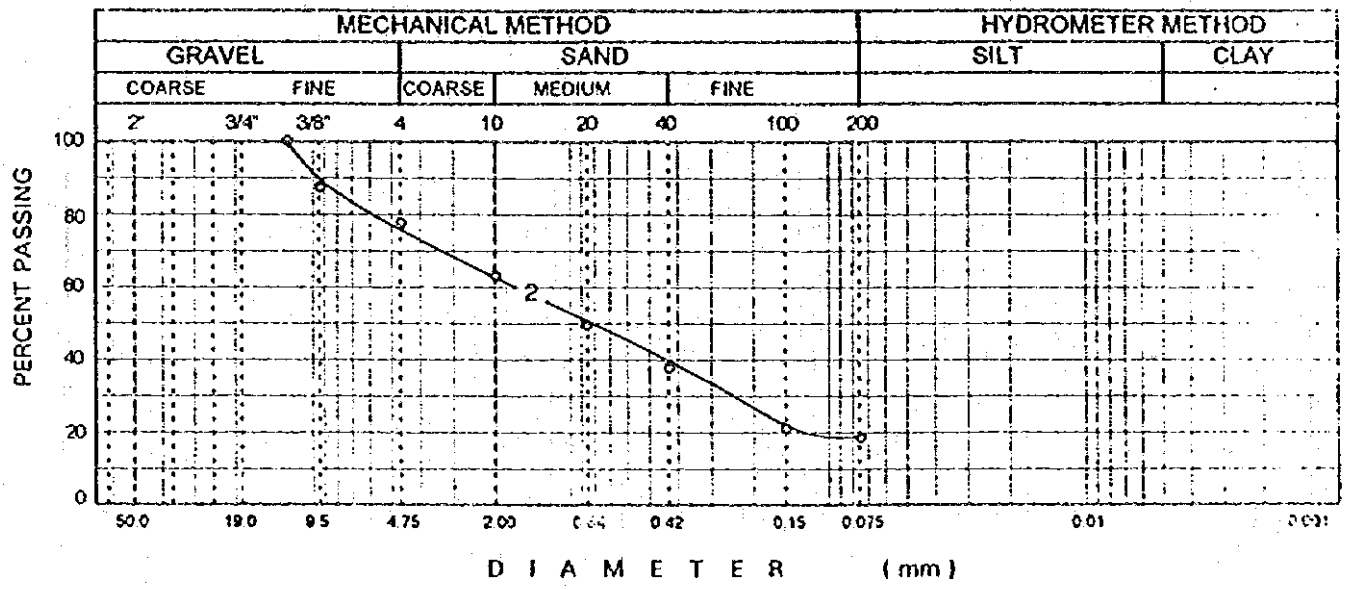
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R.Q.D / N-VALUE	WATER CONTENT (PL NMC LL)	P.I.	OTHER TEST RESULTS
		(0.55-1.0 m) *SAND with gravel, traces of pyroclastic materials, gray. (Rec: 45/40 cm)	ss-1	Very dense		54			
1		(1.0-1.5 m) *COBBLES and GRAVELS, gray. (Rec: 50/0/0 cm)	cs-1			coring			
		(1.5-2.0 m) - same materials - (Rec: 50/12/0 cm)	cs-2			coring			
2		(2.0-3.0 m) - same materials - (Rec: 100/100/90 cm)	cs-3			coring			
3		(3.55-4.0 m) *GRAVEL and SAND, light gray. (Rec: 45/32 cm)	ss-2	Very dense		53			
4		(4.55-5.0 m) - same materials - (Rec: 45/34 cm)	ss-3	Very dense		60			
5		(5.55-6.0 m) Sandy GRAVEL, traces of pyroclastic materials, light gray. (Rec: 45/32 cm)	ss-4	Very dense	GW	59			
6		(6.55-7.0 m) *SAND, some gravel size pyroclastic materials, gray.(Rec: 45/35 cm)	ss-5	Dense		42			
7		(7.55-8.0 m) - same materials - (Rec: 45/35 cm)	ss-6	Dense		47			
8		(8.55-9.0 m) - same materials - (Rec: 45/40 cm)	ss-7	Very dense		52			
9		(9.55-9.9 m) - same materials - with traces of silt. (Rec: 35/28 cm)	ss-8	Very dense	SM	50/20 cm			
10						* VISUAL DESCRIPTION			

LAB. FORM NO. 94-001

AGES

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
3	4	5.55	1	10	-	NP	-	GW	Light gray sandy GRAVEL
3	8	9.55	2	21	-	NP	-	SM	Grayish brown SAND,medium

FORM NO. 84-001A

AGES

BOREHOLE LOG

LOCATION: SABO DAM # 9
BORING NO.: 1
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 1.05 m
DATE STARTED: June 8, 1995
DATE FINISHED: June 9, 1995
SHEET NO. 1 of 1

PROJECT : GEOMECHANICAL SURVEY FOR THE THE MT. PINATUBO PROJECT

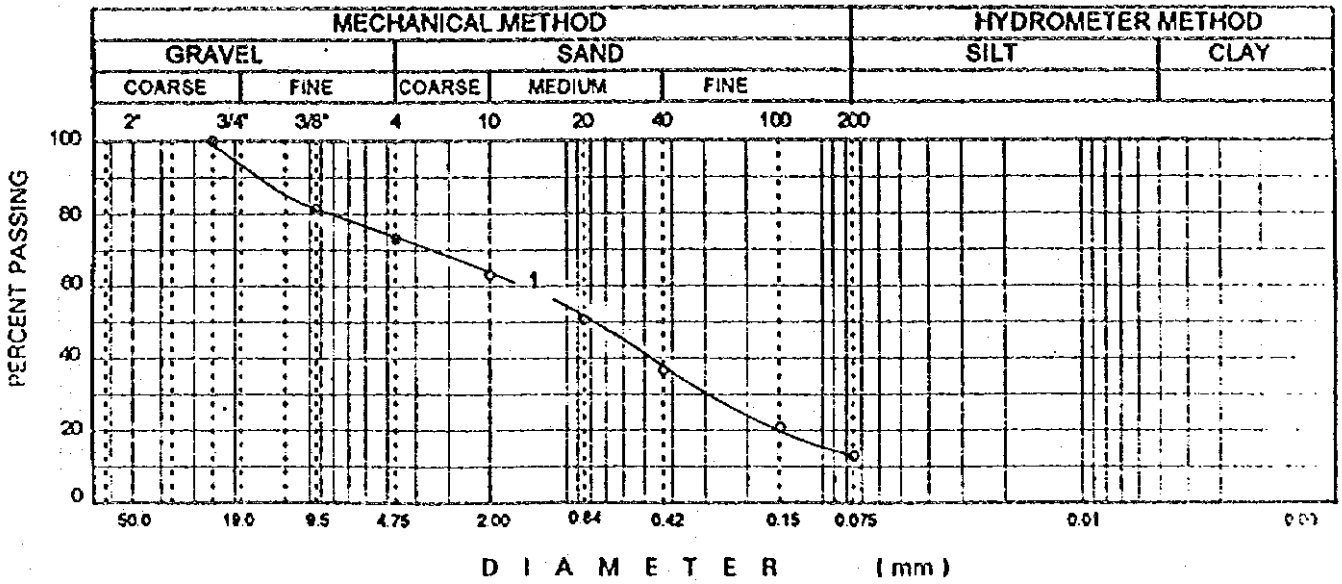
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R.Q.D / N-VALUE	WATER CONTENT (PL, NMC, LL)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *Clayey SILT with sand, traces of pyroclastic materials, medium , brown. (Rec: 45/45 cm)	ss-1	Stiff		12			
2		(1.55-2.0 m) *Silty SAND, traces of pyroclastic materials, gray. (Rec: 45/45 cm)	ss-2	Loose		8			
3		(2.55-3.0 m) *Silty SAND, some gravel, traces of pyroclastic materials, gray. (Rec: 45/35 cm)	ss-3	Med. dense		26			
4		(3.55-4.0 m) - same materials - (Rec: 45/35 cm)	ss-4	Med. dense		26			
5		(4.55-5.0 m) - same materials - (Rec: 45/35 cm)	ss-5	Med. dense		17			
6		(5.55-6.0 m) SAND, medium to fine, some gravel size broken sandstone, little amount of silt. (Rec: 45/35 cm)	ss-6	Med. dense	SM	22			
7		(6.55-7.0 m) *Gravelly SAND, coarse to medium sand, fine gravels, gray. (Rec: 45/45 cm)	ss-7	Med. dense		27			
8		(7.55-8.0 m) - same materials - (Rec: 45/45 cm)	ss-8	Loose		6			
9		(8.55-9.0 m) *SAND, coarse to fine, some silt, traces of pyroclastic materials, gray. (Rec: 45/40 cm)	ss-9	Med. dense		24			
10		(9.55-10.0 m) Silty SAND, medium to fine, some coarse to fine pyroclastic materials, gray. (Rec: 45/40 cm)	ss-10	Dense	SM	31			

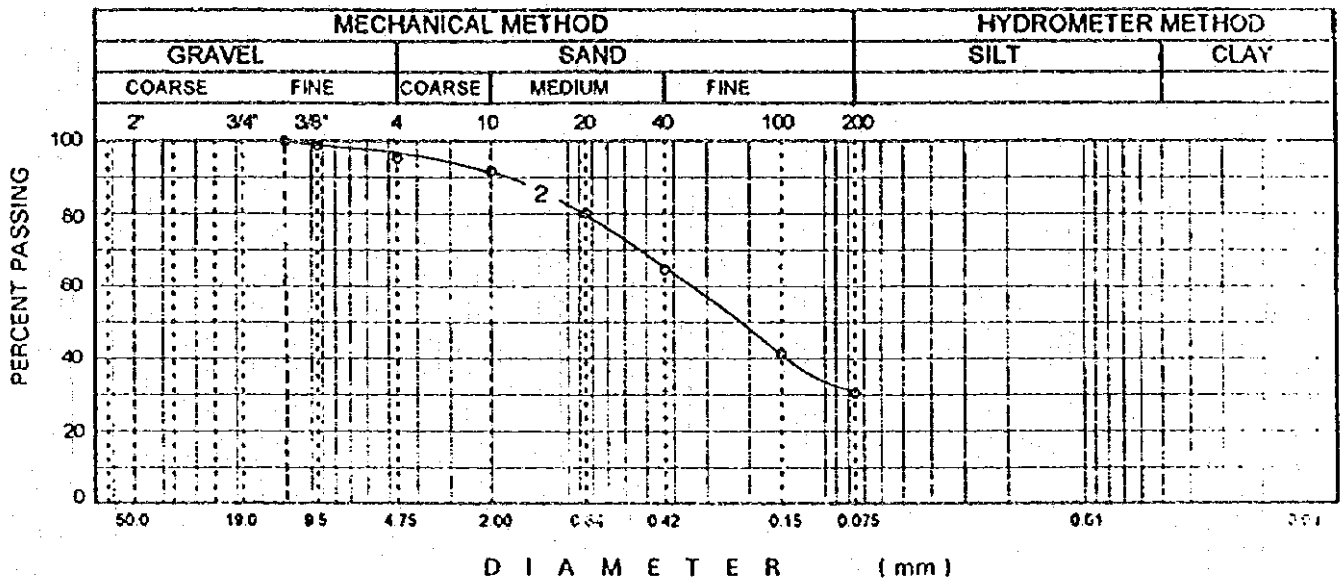
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
1	6	5.55	1	13	-	NP	-	SM	Gray SAND
1	10	9.55	2	26	-	NP	-	SM	Gray silty SAND

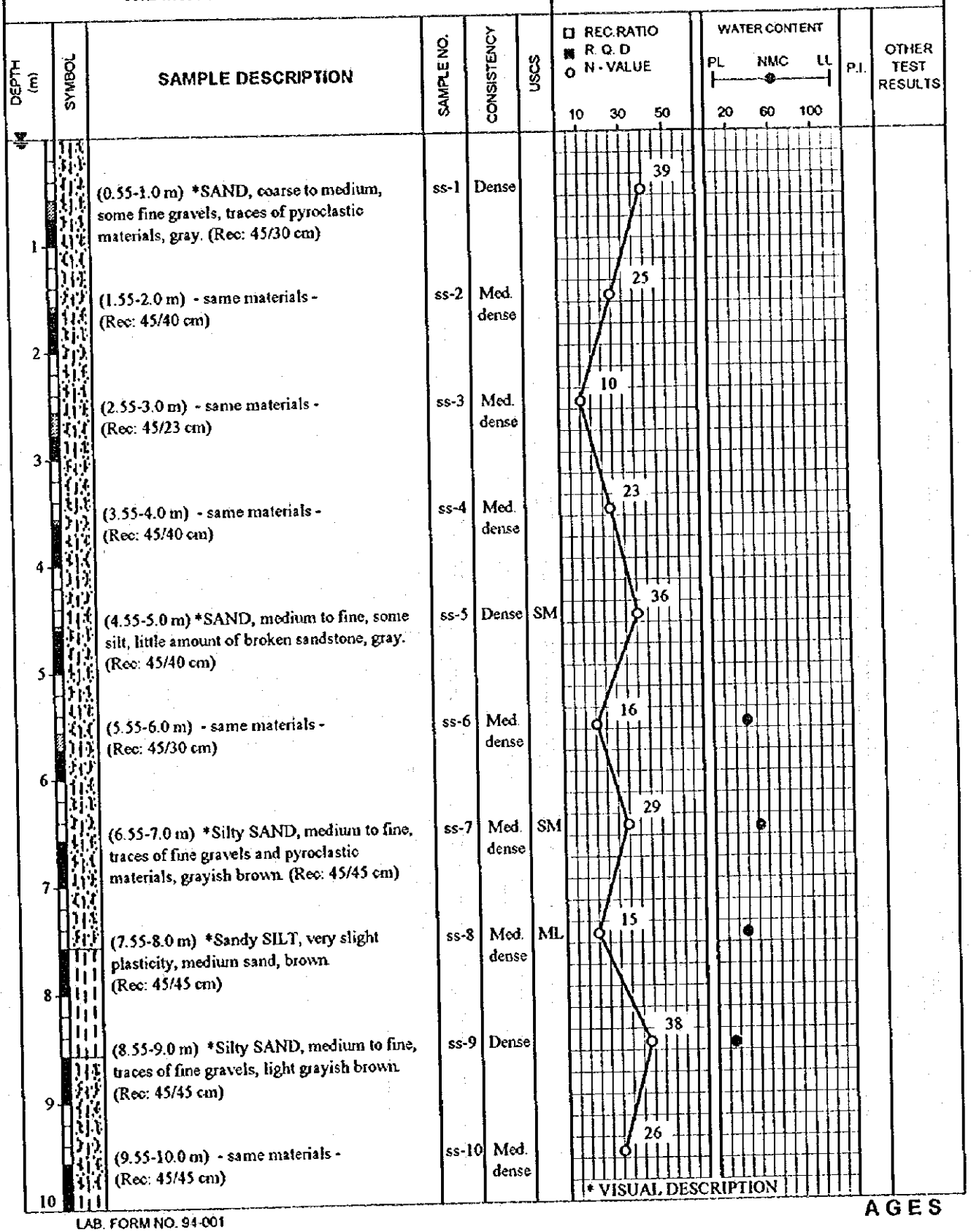
FORM NO. 94-001A

AGES

BOREHOLE LOG

LOCATION: SABO DAM # 9
BORING NO.: 2
FINAL DEPTH: 10.00 m
DEPTH OF GWT: at ground level
DATE STARTED: June 10, 1995
DATE FINISHED: June 13, 1995
SHEET NO. 1 of 1

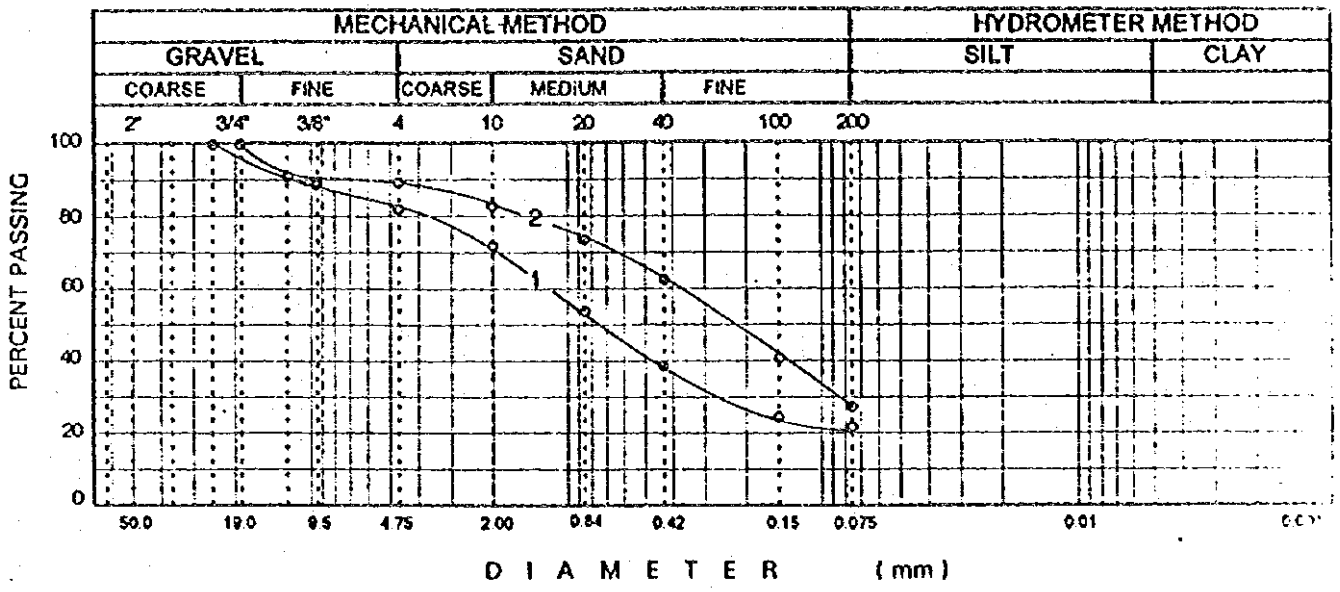
PROJECT : GEOMECHANICAL SURVEY FOR THE THE MT. PINATUBO PROJECT

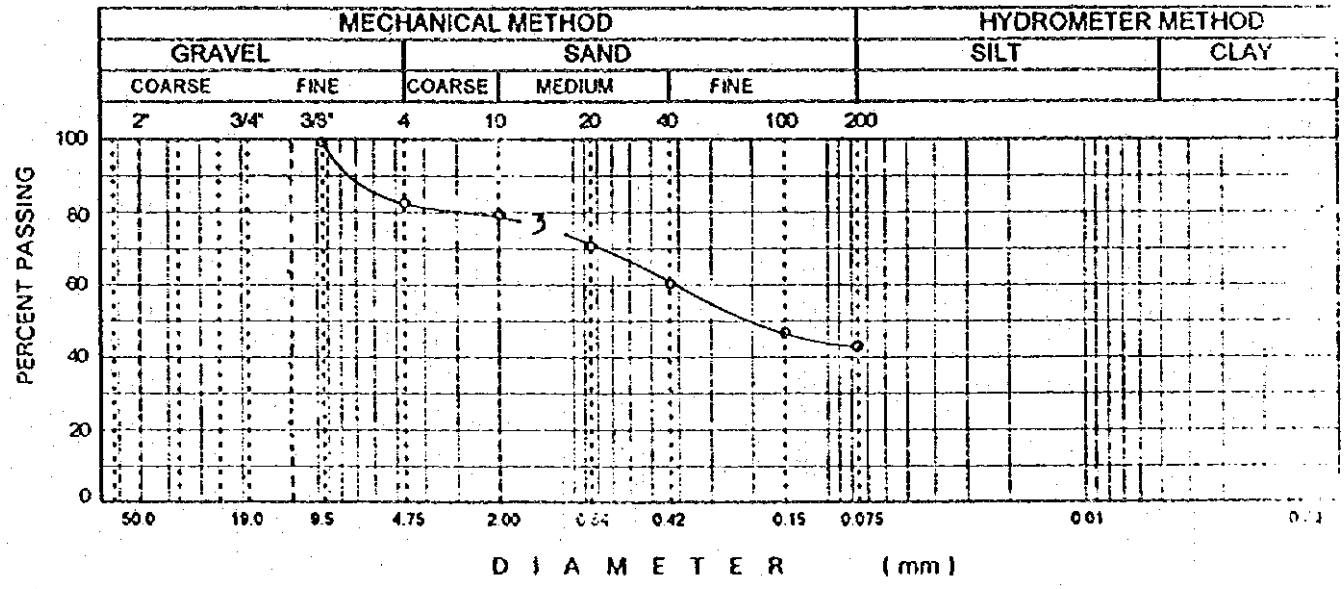


AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
2	6	5.55	1	31	-	NP	-	SM	Gray SAND
2	7	6.55	2	42	-	NP	-	SM	Grayish brown silty SAND
2	8	7.55	3	28	-	NP	-	ML	Grayish brown sandy SILT

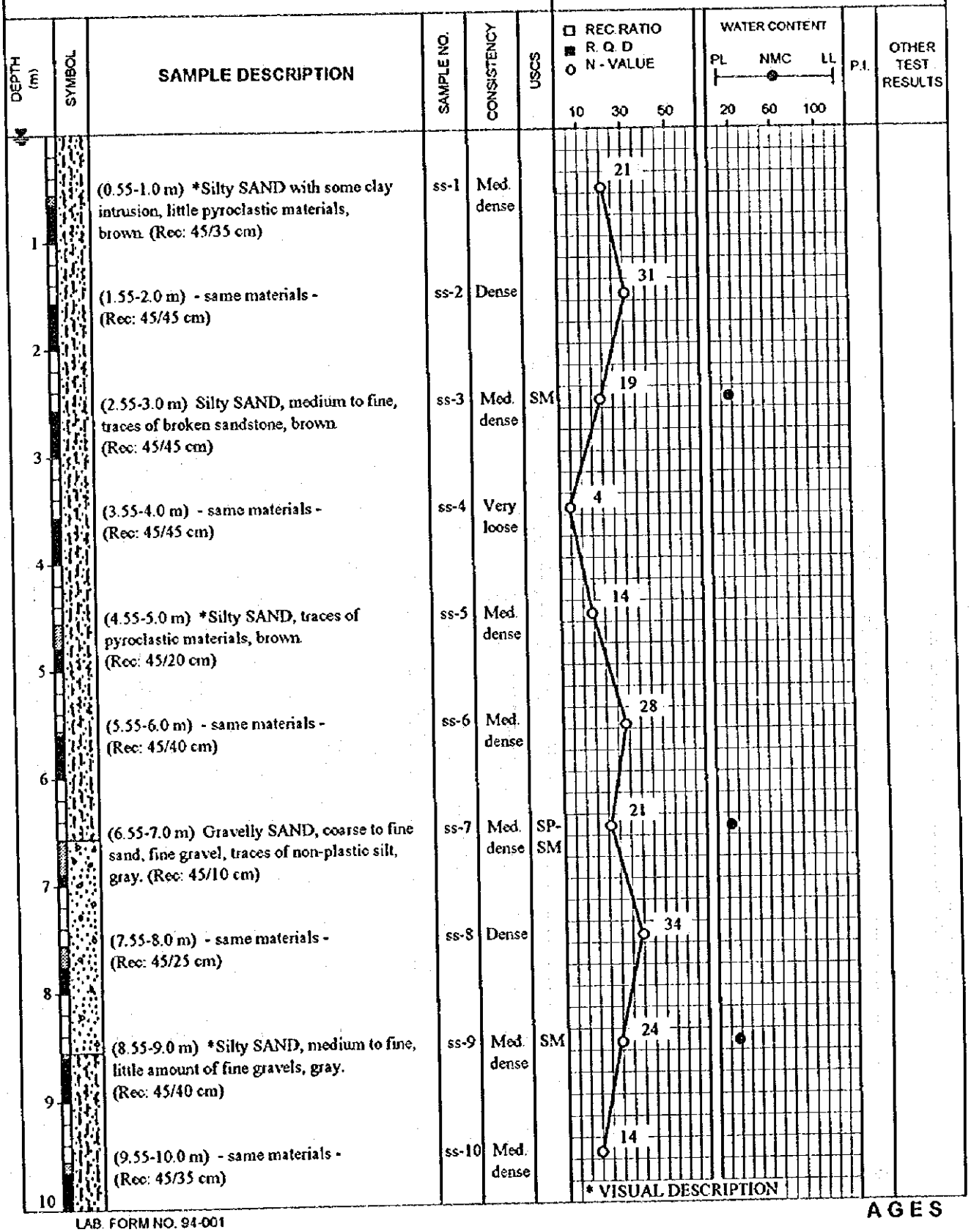
FORM NO. 94-001A

AGES

BOREHOLE LOG

LOCATION: SABO DAM # 9
BORING NO.: 3
FINAL DEPTH: 10.00 m
DEPTH OF GWT: at ground level
DATE STARTED: June 14, 1995
DATE FINISHED: June 15, 1995
SHEET NO. 1 of 1

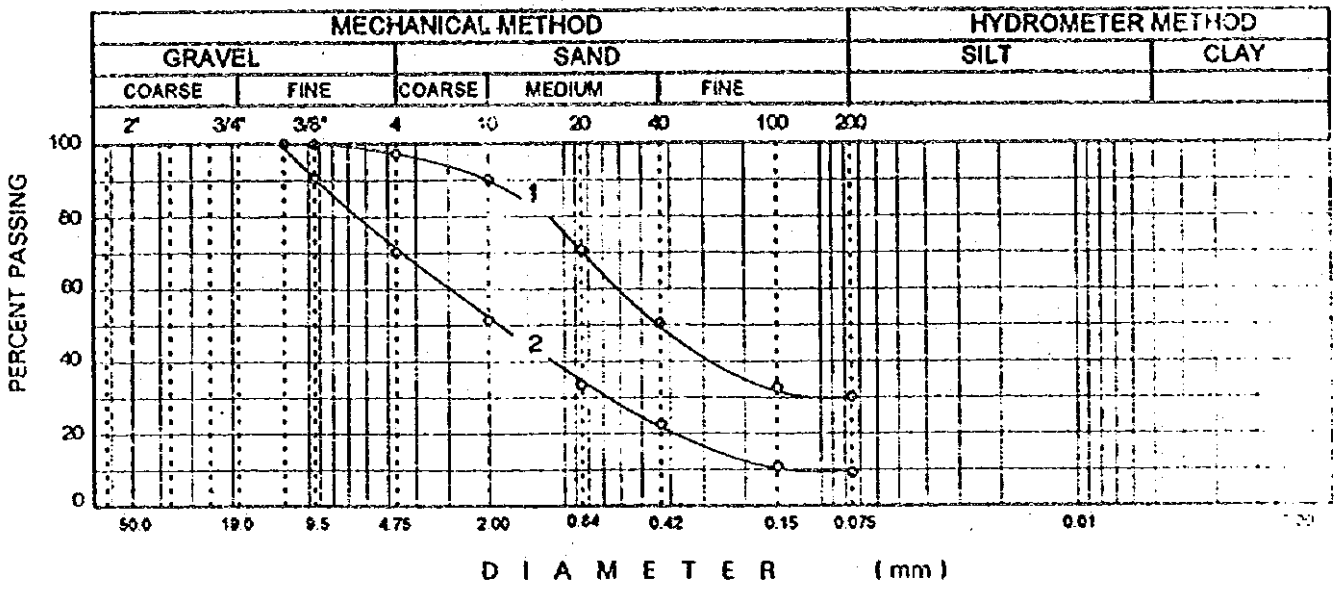
PROJECT : GEOMECHANICAL SURVEY FOR THE THE MT. PINATUBO PROJECT

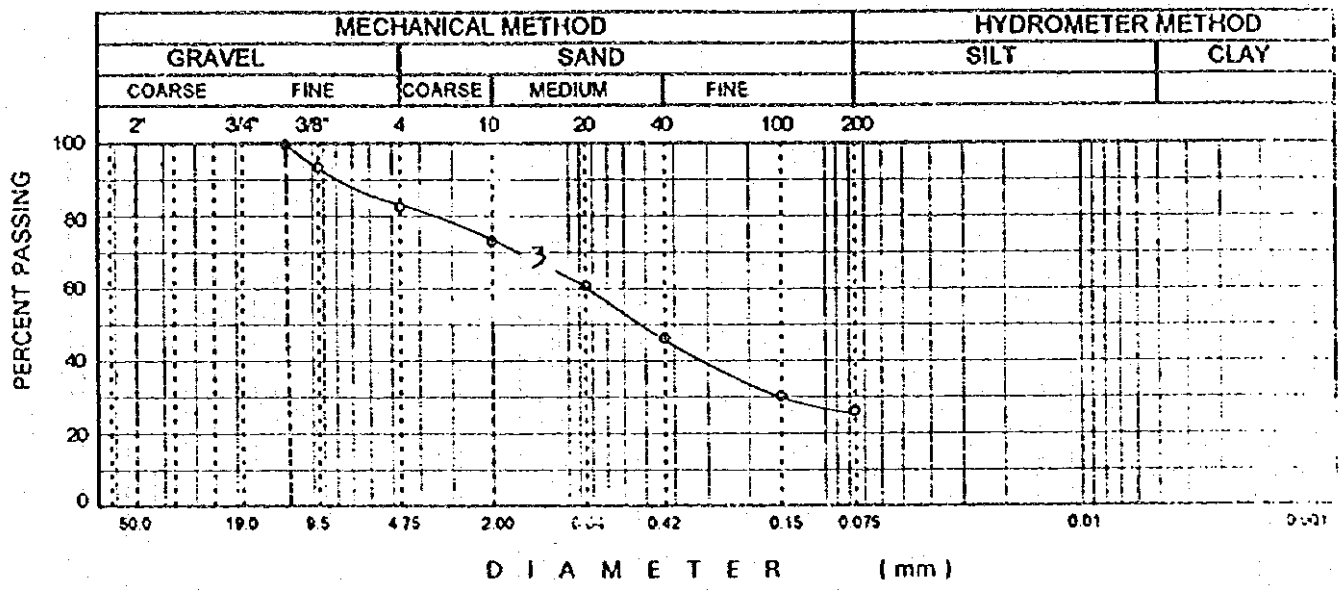


AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
3	3	2.55	1	16	-	NP	-	SM	Light gray silty SAND
3	7	6.55	2	14	-	NP	-	SW-SM	Grayish brown gravelly
									SAND
3	9	8.55	3	18	-	NP	-	SM	Grayish brown silty SAND

FORM NO. 94-001A

AGES

BOREHOLE LOG

LOCATION: Maskup Consolidation Dam
BORING NO.: 1
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 1.20 m
DATE STARTED: June 17, 1995
DATE FINISHED: June 19, 1995
SHEET NO. 1 of 1

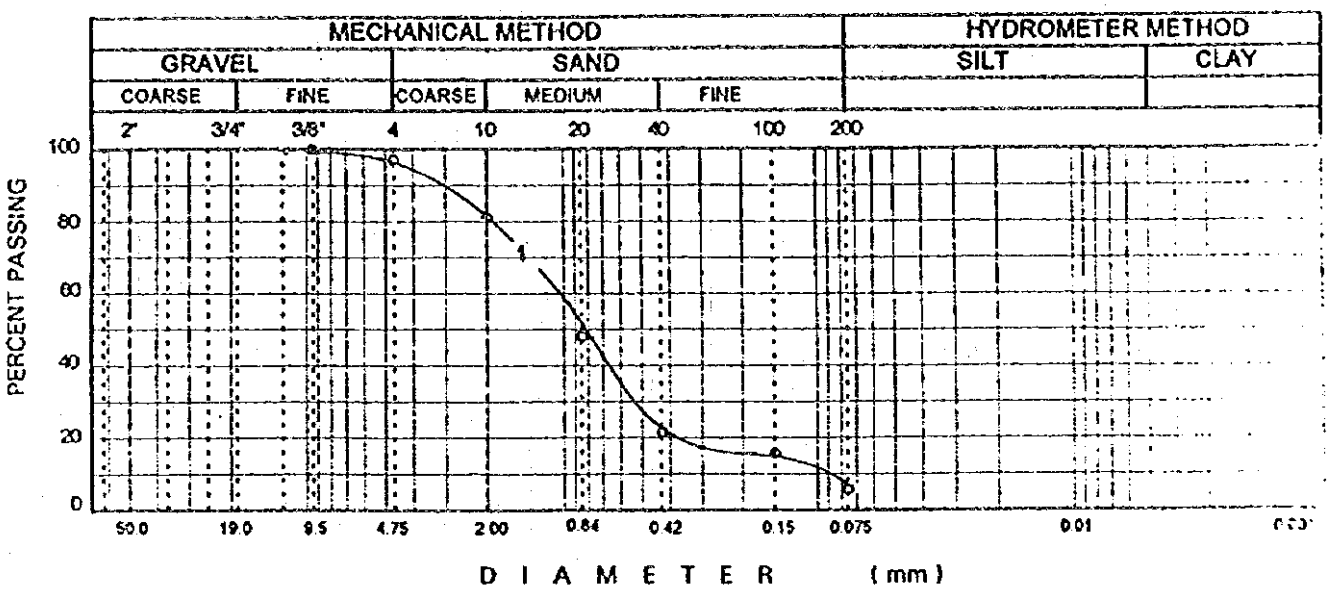
PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

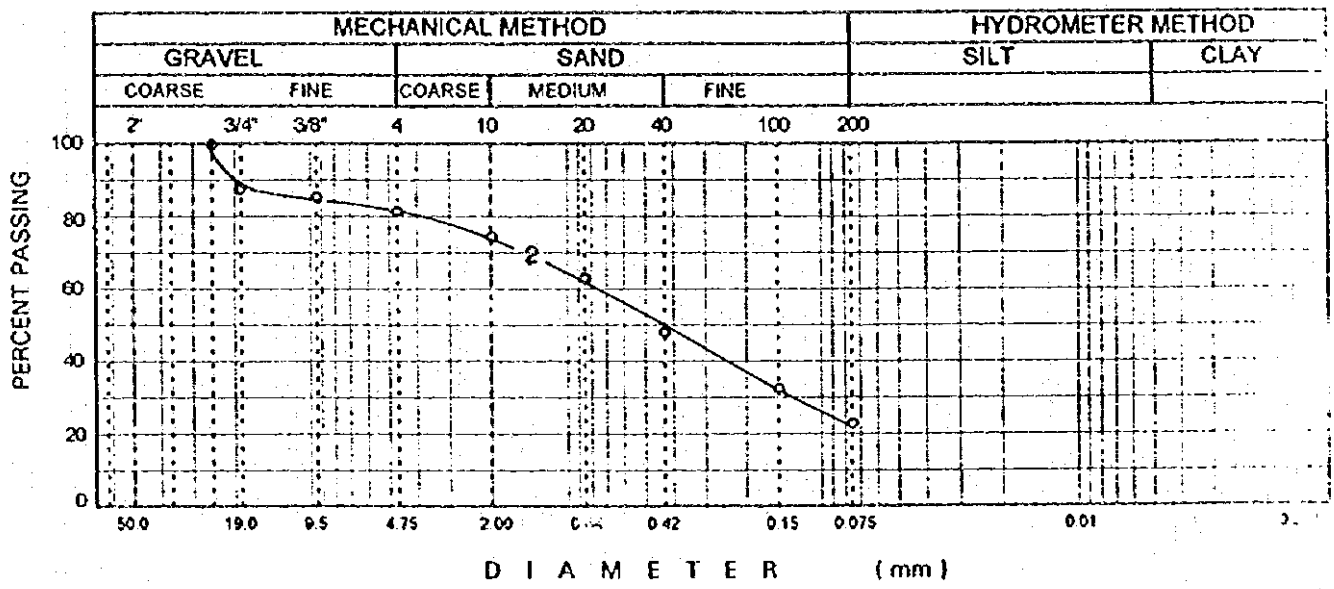
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R.Q.D / N-VALUE	WATER CONTENT (PL NMC LL)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) SAND, coarse to fine, traces of pyroclastic materials, gray. (Rec: 45/33 cm)	ss-1	Very loose		2			
2		(1.55-2.0 m) - same materials - (Rec: 45/30 cm)	ss-2	Med. dense		13			
3		(2.55-3.0 m) - same materials - (Rec: 45/35 cm)	ss-3	Loose		10			
4		(3.55-4.0 m) - same materials - (Rec: 45/35 cm)	ss-4	Loose		8			
5		(4.55-5.0 m) - same materials - (Rec: 45/33 cm)	ss-5	Loose		6			
6		(5.55-6.0 m) - same materials - (Rec: 45/40 cm)	ss-6	Very loose	SW SM	3			
7		(6.55-7.0 m) - same materials - (Rec: 45/35 cm)	ss-7	Loose		5			
8		(7.55-8.0 m) Silty CLAY, slightly plastic, brown. (Rec: 45/30 cm)	ss-8	Soft		4			
9		(8.55-9.0 m) SAND, coarse to fine, traces of pyroclastic materials, gray. (Rec: 45/28 cm)	ss-9	Med. dense		16			
10		(9.55-10.0 m) - same materials - (Rec: 45/30 cm)	ss-10	Med. dense	SM	14			

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
1	6	5.55	1	31	-	NP	-	SW-SM	Gray SAND
1	10	9.55	2	34	-	NP	-	SM	Brown to gray SAND

FORM NO. 94001A

AGES

BOREHOLE LOG

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

LOCATION: Maskup Consolidation Dam
BORING NO.: 2
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 4.80 m
DATE STARTED: June 20, 1995
DATE FINISHED: June 21, 1995
SHEET NO. 1 of 1

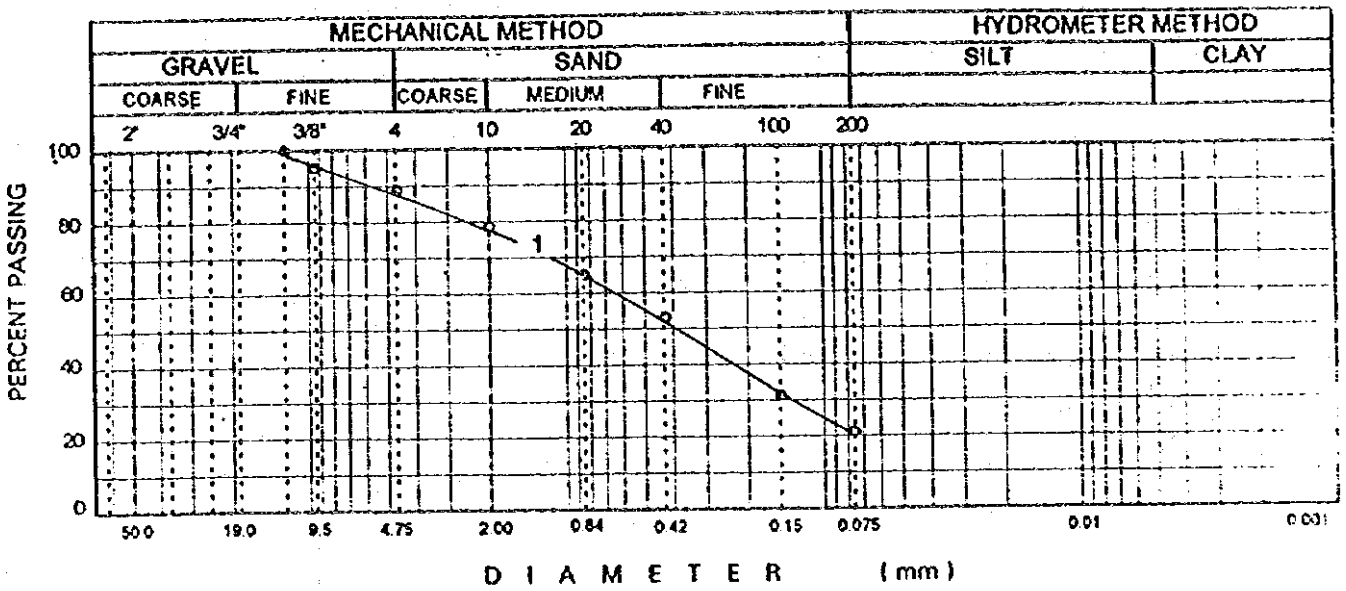
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC. RATIO / R.Q.D / N-VALUE (10 30 50)	WATER CONTENT (PL NMC LL; 20 60 100)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, traces of silt and pyroclastic materials, grayish brown. (Rec: 45/45 cm)	ss-1	Med dense		19			
2		(1.55-2.0 m) *Clayey SAND, brown. (Rec: 45/45 cm)	ss-2	Very stiff		16			
3		(2.55-3.0 m) *SAND, some silt, grayish brown. (Rec: 45/45 cm)	ss-3	Loose		6			
4		(3.55-4.0 m) *Silty SAND, brown. (Rec: 45/45 cm)	ss-4	Med. dense		19			
5		(4.55-5.0 m) - same materials- (Rec: 45/45 cm)	ss-5	Med. dense		20			
6		(5.55-6.0 m) SAND with little amount of fine pyroclastic materials. grayish brown. (Rec: 45/45 cm)	ss-6	Med. dense	SM	20			
7		(6.55-7.0 m) *Silty SAND, brown. (Rec: 45/38 cm)	ss-7	Med. dense		14			
8		(7.55-8.0 m) *Clayey SILT, some sand, brown. (Rec: 45/45 cm)	ss-8	Stiff		10			
9		(8.55-9.0 m) SAND & CLAY, slightly plastic, brown. (Rec: 45/45 cm)	ss-9	Very stiff	SC	30		11	
10		(9.55-10.0 m) - NO RECOVERY -	ss-10	Very dense		50/12 cm			

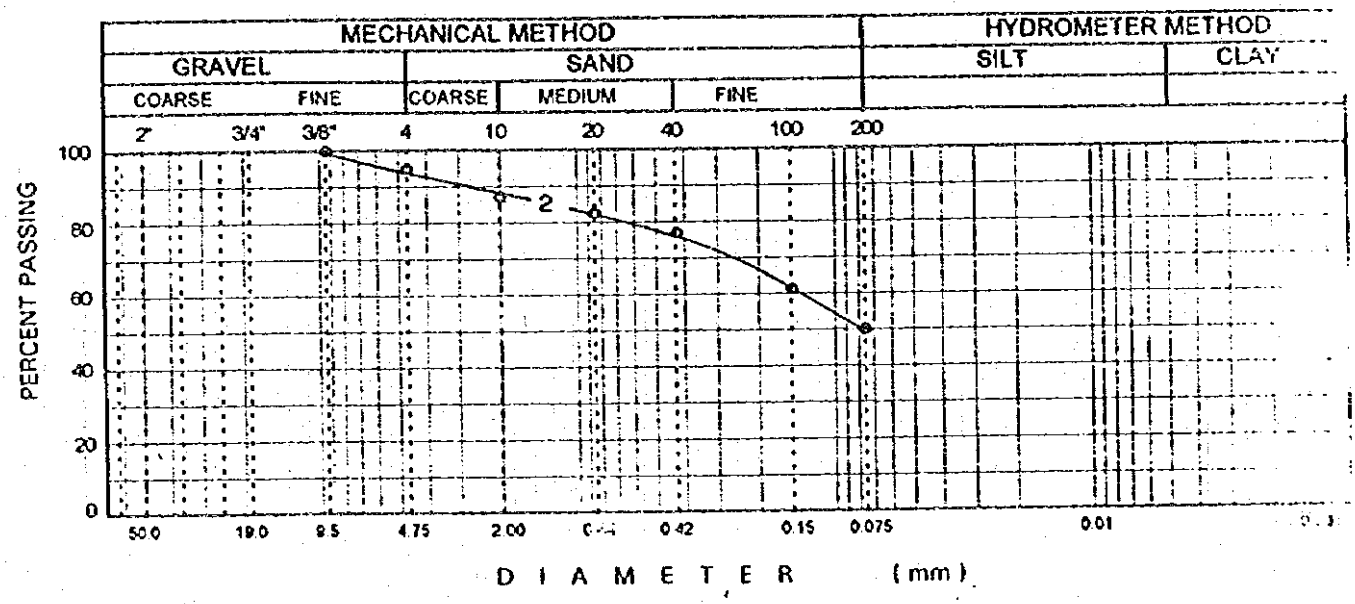
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
2	6	5.55	1	48	-	NP	-	SM	Grayish brown SAND
2	9	8.55	2	24	29	18	11	SC	Brown SAND and CLAY

FORM NO. 91-001A

AGES

BOREHOLE LOG

LOCATION: Maskup Consolidation Dam
BORING NO.: 3
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 6.40 m
DATE STARTED: June 19, 1995
DATE FINISHED: June 21, 1995
SHEET NO. 1 of 1

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R.Q.D / N-VALUE	WATER CONTENT (PL NMC LL)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, with traces of pyroclastic materials, gray. (Rec: 45/42 cm)	ss-1	Med. dense		12			
2		(1.55-2.0 m) - same materials - (Rec: 45/39 cm)	ss-2	Med. dense		21			
3		(2.55-3.0 m) - same materials - (Rec: 45/40 cm)	ss-3	Med. dense		14			
4		(3.55-4.0 m) - same materials - (Rec: 45/30 cm)	ss-4	Med. dense		22			
5		(4.55-5.0 m) *SAND with fine pyroclastic materials, gray. (Rec: 45/40 cm)	ss-5	Loose		10			
6		(5.55-6.0 m) - same materials - (Rec: 45/30 cm)	ss-6	Loose	SM	9			
7		(6.55-7.0 m) *SAND, fine to medium, traces of pyroclastic materials, gray. (Rec: 45/40 cm)	ss-7	Med. dense		13			
8		(7.55-8.0 m) - same materials - (Rec: 45/45 cm)	ss-8	Med. dense		22			
9		(8.55-9.0 m) - same materials - (Rec: 45/38 cm)	ss-9	Med. dense		21			
10		(9.55-10.0 m) - same materials - (Rec: 45/30 cm)	ss-10	Med. dense	SM	27			

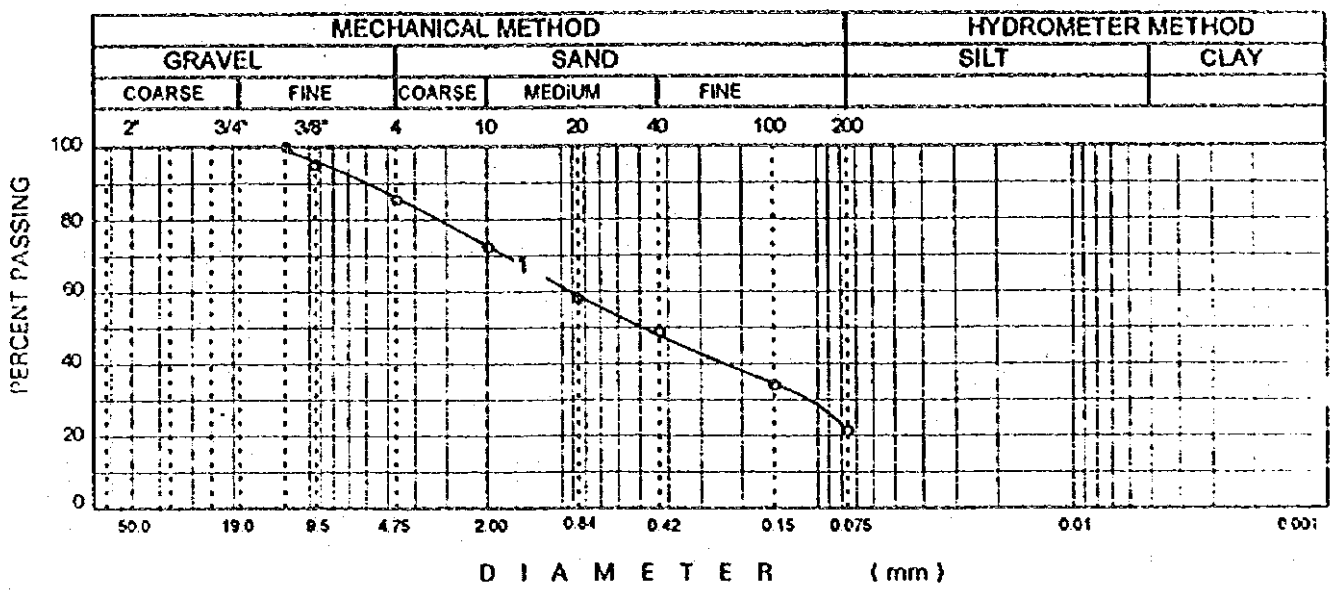
REC.RATIO ■ R.Q.D ○ N-VALUE; 10 30 50
WATER CONTENT: PL NMC LL; 20 60 100

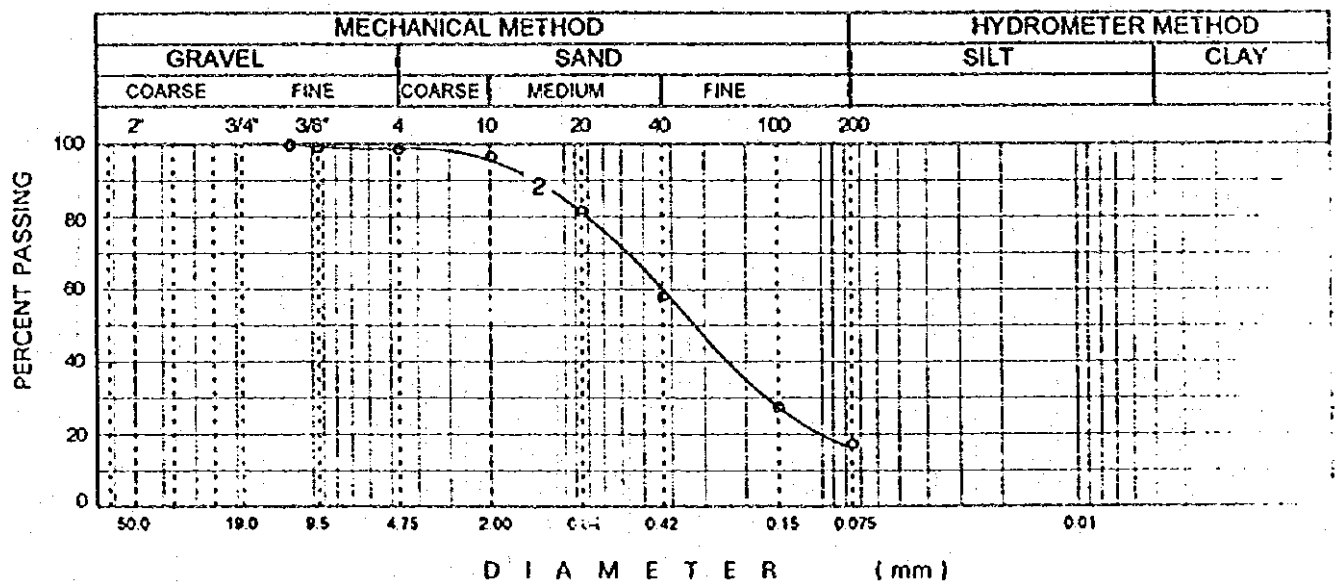
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
3	6	5.55	1	41	-	NP	-	SM	Gray SAND
3	10	9.55	2	16	-	NP	-	SM	Gray SAND

FORM NO. 94-001A

AGES

BOREHOLE LOG

LOCATION: Dolores Consolidation Dam
BORING NO.: 1
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 0.60 m
DATE STARTED: June 22, 1995
DATE FINISHED: June 23, 1995
SHEET NO. 1 of 1

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

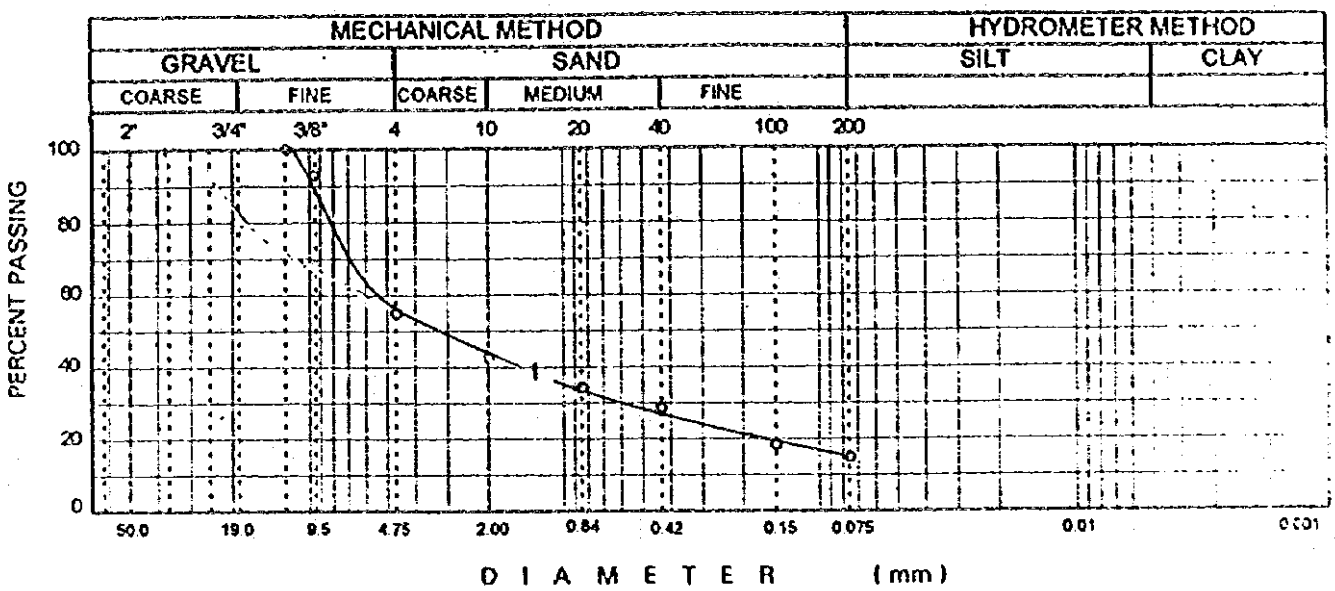
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R.Q.D / N-VALUE (10 30 50)	WATER CONTENT (PL NMC LL; 20 60 100)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, with traces of pyroclastic materials, gray. (Rec: 45/42 cm)	ss-1	Loose		5			
2		(1.55-2.0 m) - same materials - (Rec: 45/25 cm)	ss-2	Very loose		3			
3		(2.55-3.0 m) - same materials - (Rec: 45/42 cm)	ss-3	Very loose		1			
4		(3.55-4.0 m) - same materials - (Rec: 45/39 cm)	ss-4	Loose		5			
5		(4.55-5.0 m) - same materials - (Rec: 45/31 cm)	ss-5	Very loose		3			
6		(5.55-6.0 m) SAND, coare to fine, traces of fine gravel and pyroclastic materials, gray. (Rec: 45/34 cm)	ss-6	Loose	SM	8			
7		(6.55-7.0 m) SAND, traces of fine pyroclastic materials, gray. (Rec: 45/42 cm)	ss-7	Med. dense		14			
8		(7.55-8.0 m) - same materials - (Rec: 45/45 cm)	ss-8	Med. dense		20			
9		(8.55-9.0 m) - same materials - (Rec: 45/30 cm)	ss-9	Med. dense		21			
10		(9.55-10.0 m) - same materials - (Rec: 45/40 cm)	ss-10	Med. dense	SW	20			

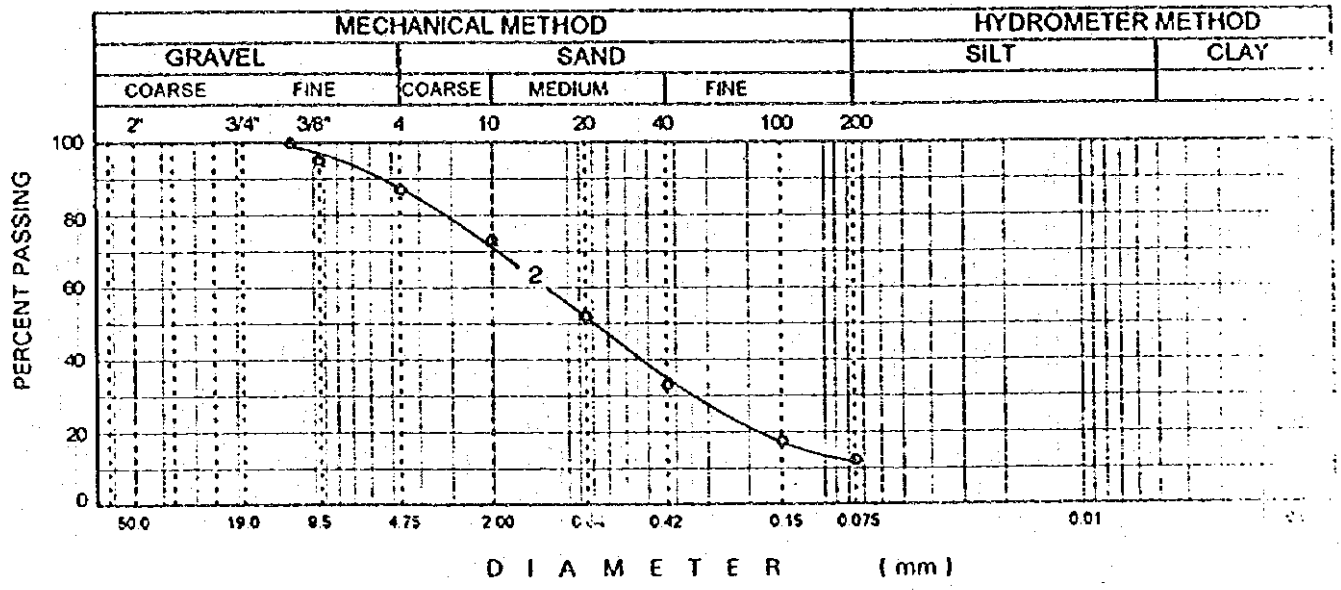
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
1	6	5.55	1	51	-	NP	-	SM	Gray SAND
1	10	9.55	2	20	-	NP	-	SW	Gray SAND

FORM NO. 94-001A

AGES

BOREHOLE LOG

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

LOCATION: Dolores Consolidation Dam
BORING NO.: 2
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 8.70 m
DATE STARTED: June 22, 1995
DATE FINISHED: June 23, 1995
SHEET NO. 1 of 1

DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC.RATIO / R. Q. D / N - VALUE	WATER CONTENT (PL NMC LL)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, traces of pyroclastic materials, gray. (Rec: 45/35 cm)	ss-1	Med. dense		26			
2		(1.55-2.0 m) - same materials - (Rec: 45/35 cm)	ss-2	Loose		10			
3		(2.55-3.0 m) - same materials - (Rec: 45/30 cm)	ss-3	Loose		7			
4		(3.55-4.0 m) - same materials - (Rec: 45/15 cm)	ss-4	Loose		7			
5		(4.55-5.0 m) * SAND with some brown silt gray. (Rec: 45/25 cm)	ss-5	Med. dense		26			
6		(5.55-6.0 m) SAND, traces of pyroclastic materials, gray. (Rec: 45/40 cm)	ss-6	Very loose	SM	3			
7		(6.55-7.0 m) - same materials - grayish brown. (Rec: 45/45 cm)	ss-7	Med. dense		11			
8		(7.55-8.0 m) - same materials - (Rec: 45/45 cm)	ss-8	Med. dense		17			
9		(8.55-9.0 m) - same materials - (Rec: 45/45 cm)	ss-9	Dense		31			
10		(9.55-10.0 m) - same materials - (Rec: 45/45 cm)	ss-10	Dense	SP	43			

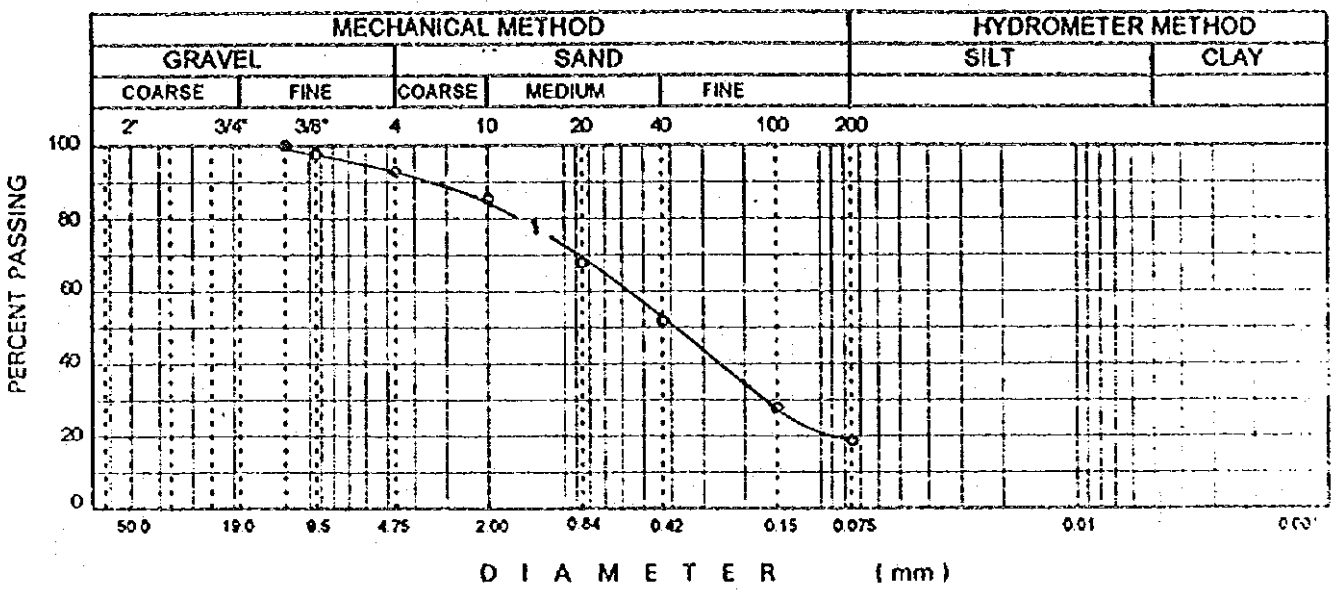
10 30 50 (N - VALUE) | 20 60 100 (WATER CONTENT)

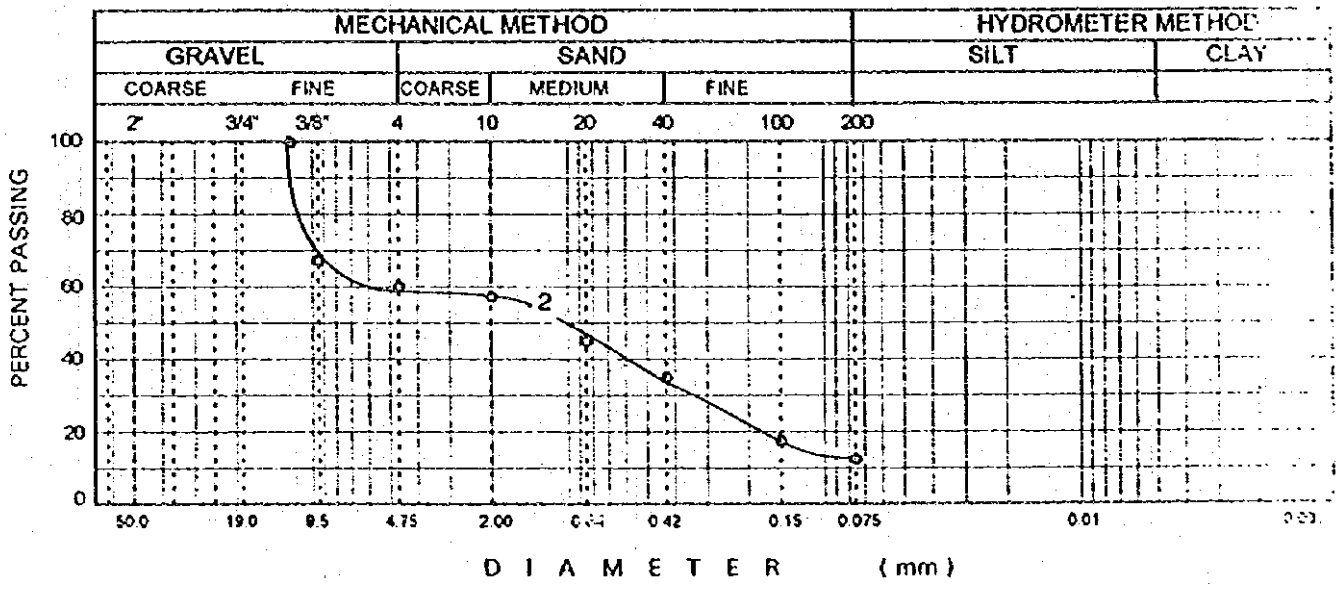
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
2	6	5.55	1	20	-	NP	-	SM	Gray SAND
2	10	9.55	2	37	-	NP	-	SP	Grayish brown SAND

FORM NO. 94001A

AGES

BOREHOLE LOG

LOCATION: Dolores Consolidation Dam
BORING NO.: 3
FINAL DEPTH: 10.00 m
DEPTH OF GWT: 5.60 m
DATE STARTED: June 24, 1995
DATE FINISHED: June 26, 1995
SHEET NO. 1 of 1

PROJECT : GEOMECHANICAL SURVEY FOR THE MT. PINATUBO PROJECT

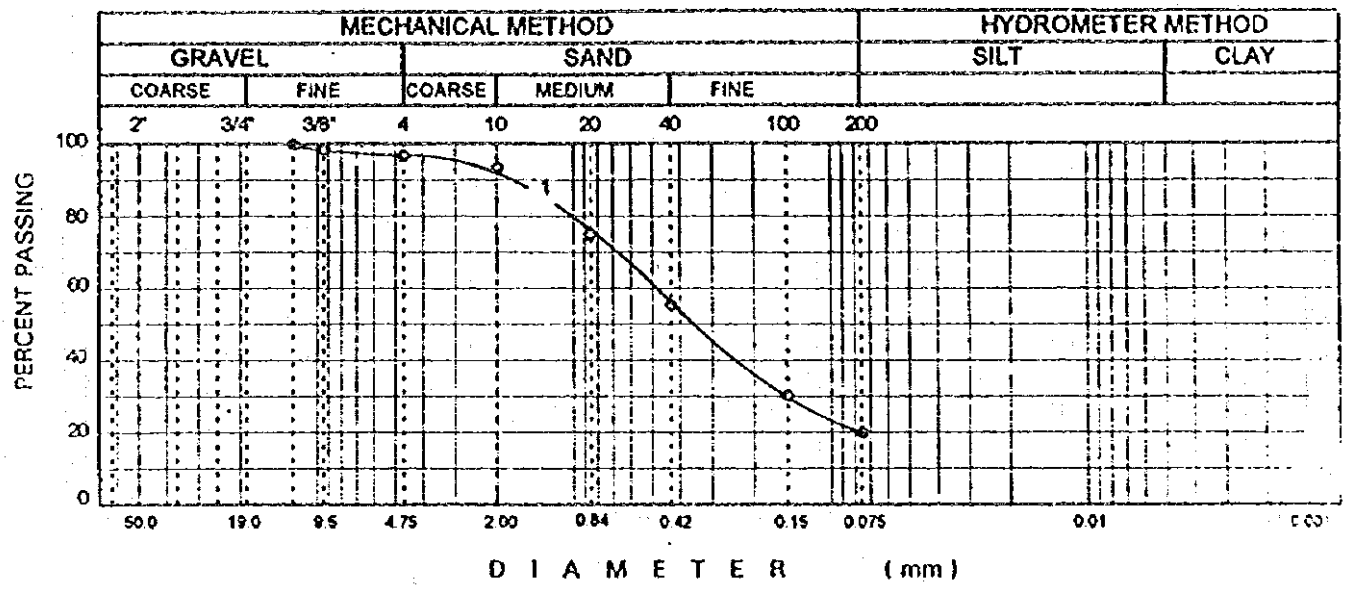
DEPTH (m)	SYMBOL	SAMPLE DESCRIPTION	SAMPLE NO.	CONSISTENCY	USCS	REC. RATIO / R.Q.D / N-VALUE (10 30 50)	WATER CONTENT (PL NMC LL; 20 60 100)	P.I.	OTHER TEST RESULTS
1		(0.55-1.0 m) *SAND, with traces of pyroclastic materials, light gray. (Rec: 45/32 cm)	ss-1	Loose		6			
2		(1.55-2.0 m) - same materials - (Rec: 45/35 cm)	ss-2	Loose		5			
3		(2.55-3.0 m) - same materials - (Rec: 45/30 cm)	ss-3	Loose		8			
4		(3.55-4.0 m) - same materials - (Rec: 45/32 cm)	ss-4	Loose		8			
5		(4.55-5.0 m) *SAND with silt, grayish brown. (Rec: 45/45 cm)	ss-5	Very loose		4			
6		(5.55-6.0 m) SAND, traces of pyroclastic materials, grayish brown. (Rec: 45/45 cm)	ss-6	Loose	SM	5			
7		(6.55-7.0 m) - same materials - gray. (Rec: 45/42 cm)	ss-7	Med. dense		13			
8		(7.55-8.0 m) - same materials - (Rec: 45/45 cm)	ss-8	Med. dense		14			
9		(8.55-9.0 m) - same materials - (Rec: 45/40 cm)	ss-9	Med. dense		13			
10		(9.55-10.0 m) Silty SAND, traces of pyroclastic materials, grayish brown. (Rec: 45/40 cm)	ss-10	Med. dense	SM	13			

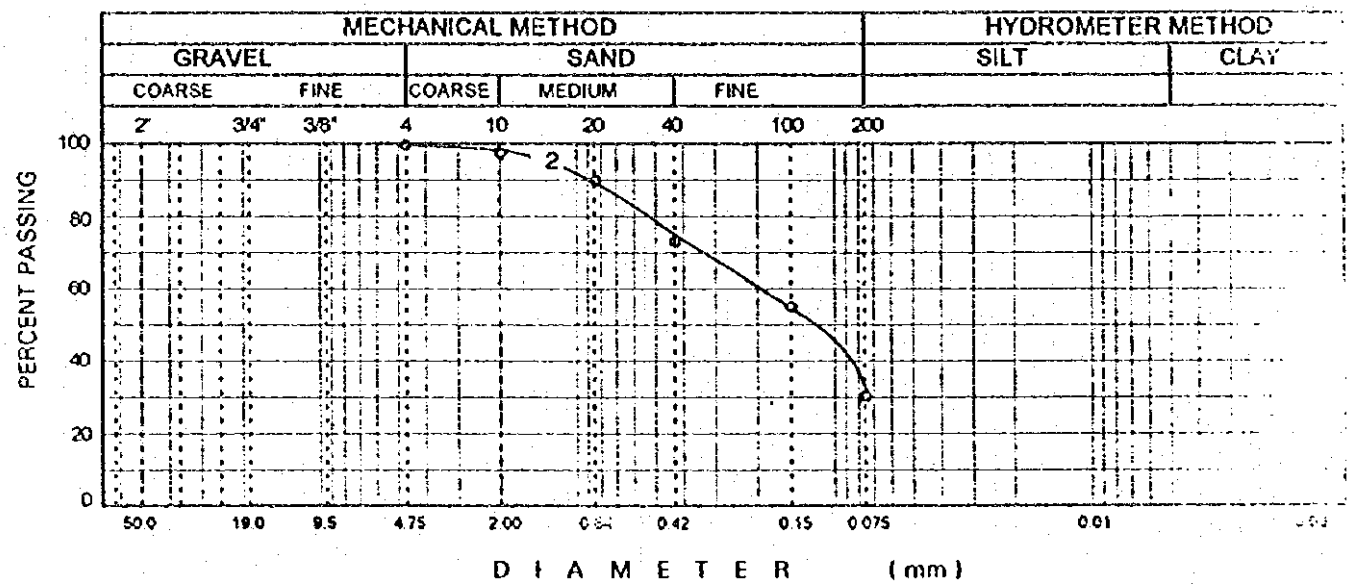
* VISUAL DESCRIPTION

AGES

LAB. FORM NO. 94-001

GRAIN - SIZE DISTRIBUTION CURVES





BH NO.	SAMPLE NO.	DEPTH (M)	CURVE NO.	NMC	LL	PL	PI	USCS	DESCRIPTION
3	6	5.55	1	17	-	NP	-	SM	Grayish brown SAND
3	10	9.55	2	17	-	NP	-	SM	Grayish brown silty SAND

FORM NO. 94-001A

AGES