

B4 Permeability Tests DA-6~DA-10

DA - 6

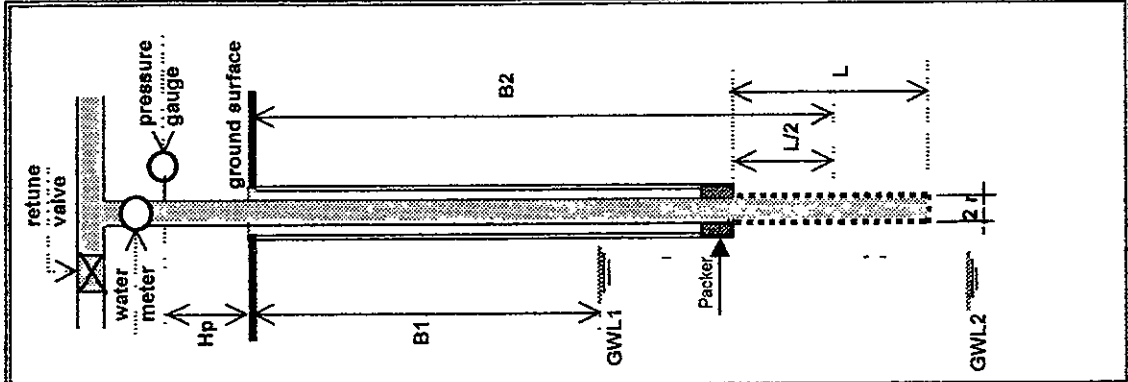
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE DEC, 18, 2005
 HOLE NO DA-6
 STAGE NO 2
 DIAMETER (mm) D 66
 (mm) r 33

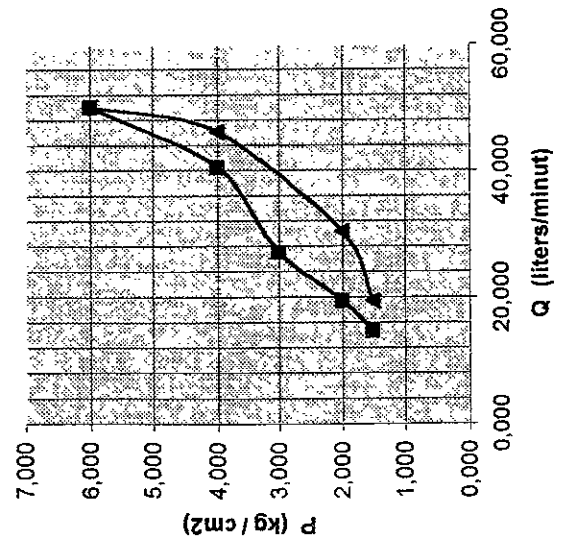
HOLE DEPTH 10,00 m
 TEST LENGTH 5,00 L
 GROUNDWATER LEVEL DEPTH GWL
 STATIC WATER HEAD B2
 PUMPING PRESSURE HEAD A
 HEIGHT OF WATER PRESSURE GAUGE Hp
 FRICTION ENERGY LOSS Hf
 WATER PRESSURE IN HEAD H2
 STATIC HEAD P1
 APPLIED EFFECTIVE PRESSURE P
 WATER INJECTION RATE Q
 COEFFICIENT OF PERMEABILITY k
 LUGEON VALUE Lu



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
0,500	1,010	1,510	10	147	14,700
1,000	1,010	2,010	10	195	19,500
2,000	1,010	3,010	10	271	27,100
3,000	1,010	4,010	10	405	40,500
5,000	1,010	6,010	10	501	50,100
3,000	1,010	4,010	10	461	46,100
1,000	1,010	2,010	10	303	30,300
0,500	1,010	1,510	10	194	19,400

P - Q GRAPH



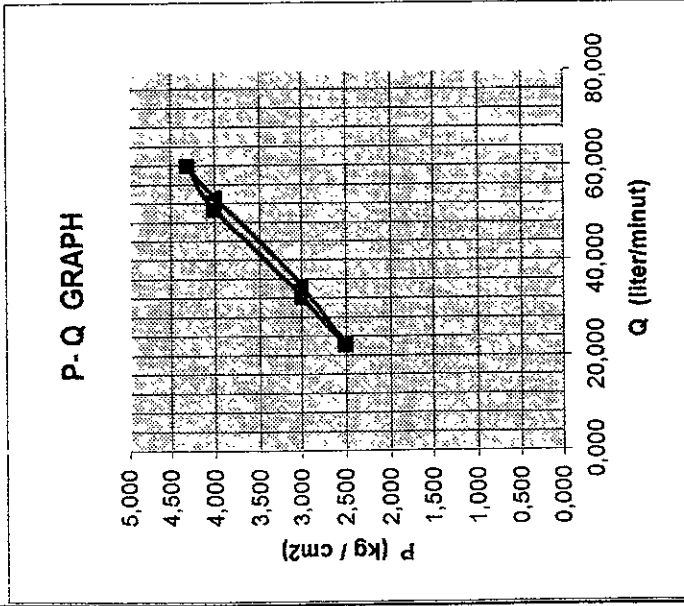
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

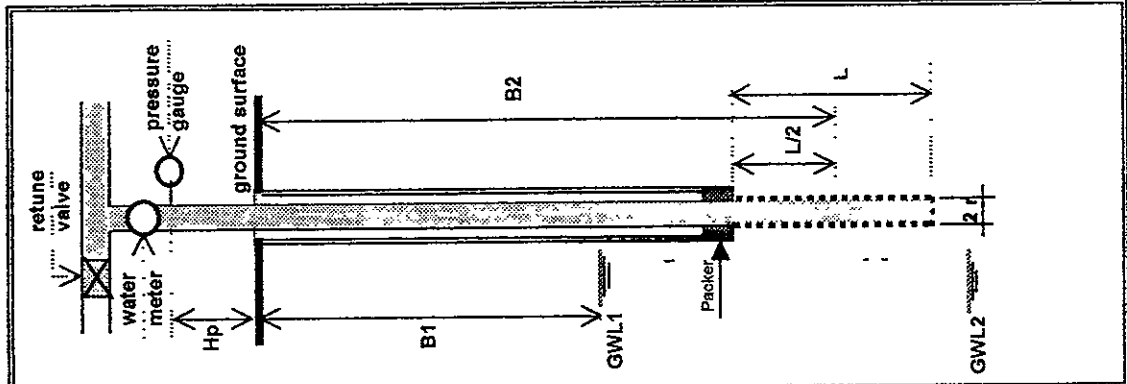
LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE DEC, 21, 2005
 HOLE NO DA-6
 STAGE NO 4
 DIAMETER (mm) D 66
 (mm) r 33

HOLE DEPTH 15,00 m
 TEST LENGTH L m
 GROUNDWATER LEVEL DEPTH GWL m
 STATIC WATER HEAD B2 none m
 PUMPING PRESSURE HEAD A 17,50 m
 HEIGHT OF WATER PRESSURE GAUGE Hp 0,00 m
 FRICTION ENERGY LOSS Hf 2,60 m
 WATER PRESSURE IN HEAD H2 0,00 m
 STATIC HEAD P1 20,10 m
 APPLIED EFFECTIVE PRESSURE P 2,010 kg/cm²
 WATER INJECTION RATE Q 4,010 kg/cm²
 COEFFICIENT OF PERMEABILITY k 50,700 ltr/min
 LUGEON VALUE Lu 6,72E-04 cm/sec
 50,45



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
0,500	2,010	2,510	10	222	22,200
1,000	2,010	3,010	10	323	32,300
2,000	2,010	4,010	10	507	50,700
2,300	2,010	4,310	10	599	59,900
2,000	2,010	4,010	10	533	53,300
1,000	2,010	3,010	10	346	34,600
0,500	2,010	2,510	10	226	22,600



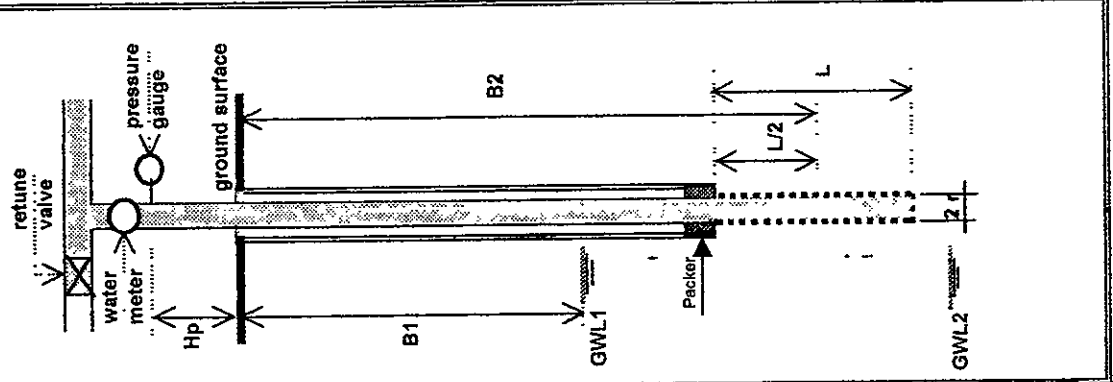
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : DEC, 23, 2005
 HOLE NO : DA-6
 STAGE NO : 5
 DIAMETER (mm) : D 66
 (mm) : r 33

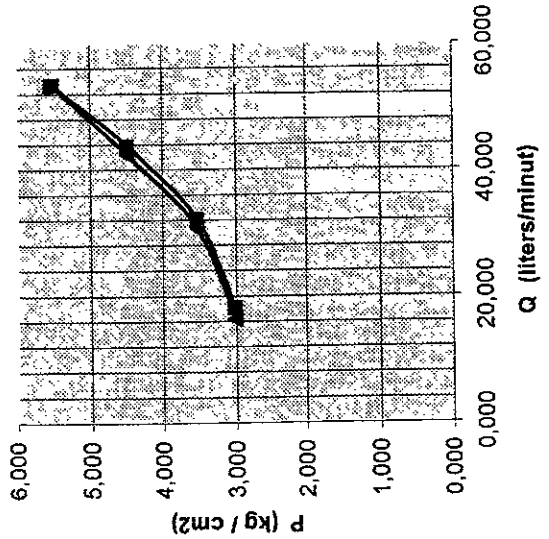
HOLE DEPTH : 20,00 m
 TEST LENGTH : L
 GROUNDWATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B2
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : Hp
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H2
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : Q
 COEFFICIENT OF PERMEABILITY : k
 LUGEOON VALUE : Lu



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, Q (liter)	UNIT TAKE, Q (l/min.)
0,500	2,510	3,010	10	182	18,200
1,000	2,510	3,510	10	322	32,200
2,000	2,510	4,510	10	438	43,800
3,000	2,510	5,510	10	534	53,400
2,000	2,510	4,510	10	424	42,400
1,000	2,510	3,510	10	307	30,700
0,500	2,510	3,010	10	163	16,300

P - Q GRAPH



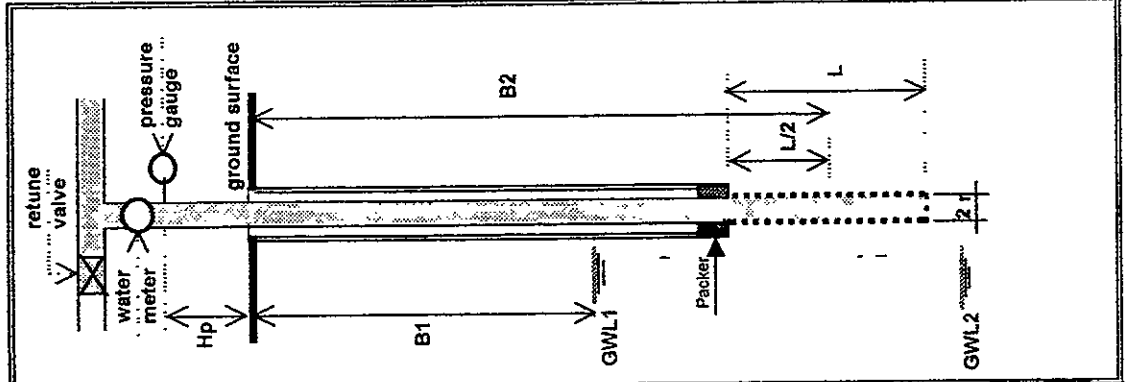
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

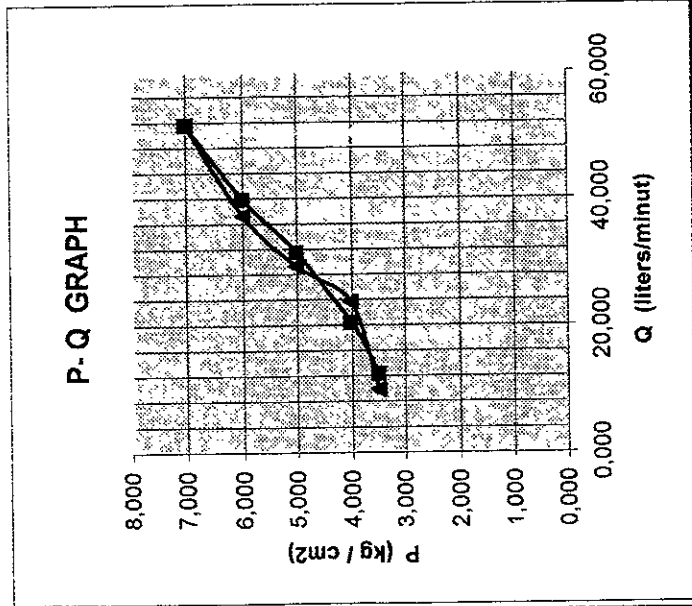
LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : DEC, 24, 2005
 HOLE NO : DA-6
 STAGE NO : 6
 DIAMETER : D 66 (mm)
 r 33 (mm)

HOLE DEPTH : 25,00 m
 TEST LENGTH : L
 GROUNDWATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B2
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : Hp
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H2
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : Q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
0,500	3,010	3,510	10	124	12,400
1,000	3,010	4,010	10	205	20,500
2,000	3,010	5,010	10	315	31,500
3,000	3,010	6,010	10	399	39,900
4,000	3,010	7,010	10	516	51,600
3,000	3,010	6,010	10	372	37,200
2,000	3,010	5,010	10	293	29,300
1,000	3,010	4,010	10	237	23,700
0,500	3,010	3,510	10	99	9,900



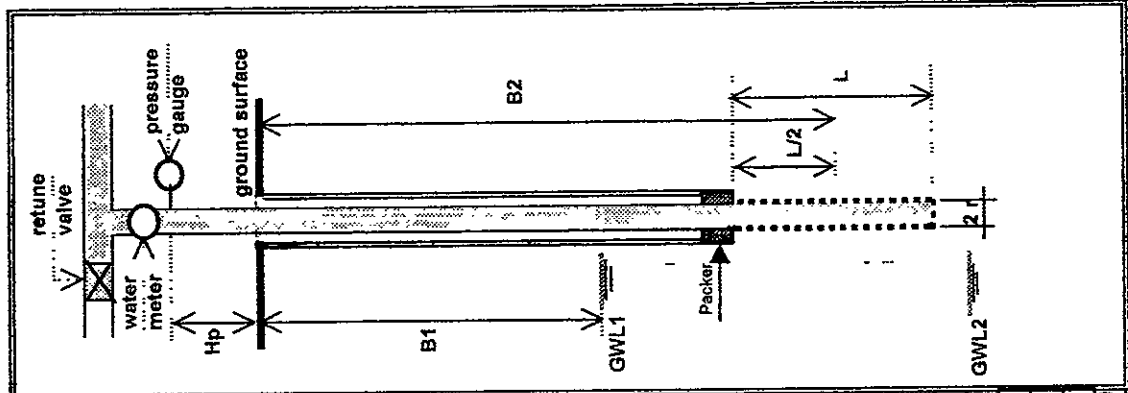
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

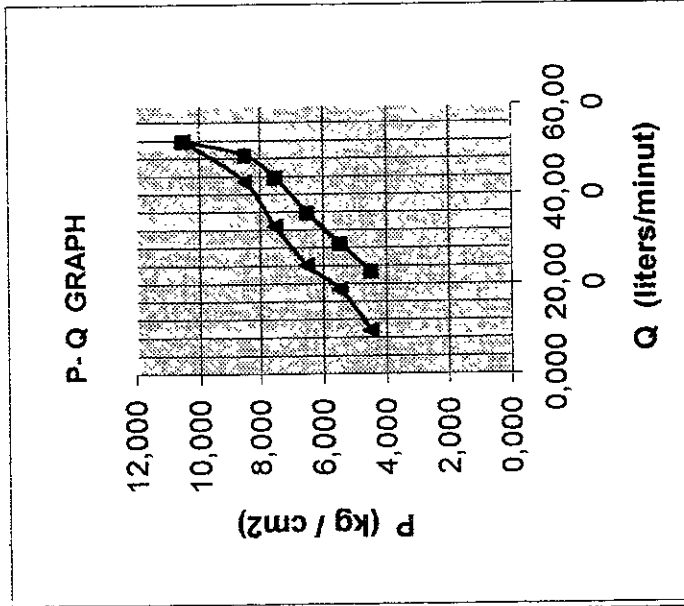
LOCATION . . . RIGHT/LEFT BANK (DAM SITE)
 DATE . . . DEC, 26, 2005
 HOLE NO . . . DA-6
 STAGE NO . . . 7
 DIAMETER (mm) . . . D 66
 (mm) . . . r 33

HOLE DEPTH . . . 30,00 m
 TEST LENGTH . . . L
 GROUNDWATER LEVEL DEPTH . . . GWL
 STATIC WATER HEAD . . . B2
 PUMPING PRESSURE HEAD . . . A
 HEIGHT OF WATER PRESSURE GAUGE . . . Hp
 FRICTION ENERGY LOSS . . . Hf
 WATER PRESSURE IN HEAD . . . H2
 STATIC HEAD . . . P1
 APPLIED EFFECTIVE PRESSURE . . . P
 WATER INJECTION RATE . . . Q
 COEFFICIENT OF PERMEABILITY . . . k
 LUGEON VALUE . . . Lu



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
1,000	3,510	4,510	10	228,10	22,810
2,000	3,510	5,510	10	289,10	28,910
3,000	3,510	6,510	10	358,50	35,850
4,000	3,510	7,510	10	436,90	43,690
5,000	3,510	8,510	10	487,00	48,700
7,000	3,510	10,510	10	518,00	51,800
5,000	3,510	8,510	10	428,00	42,800
4,000	3,510	7,510	10	328,30	32,830
3,000	3,510	6,510	10	240,60	24,060
2,000	3,510	5,510	10	187,30	18,730
1,000	3,510	4,510	10	96,00	9,600



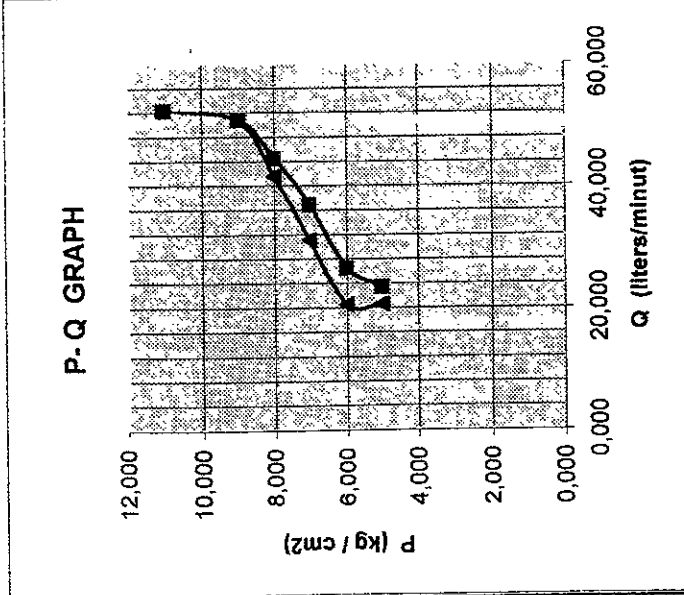
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

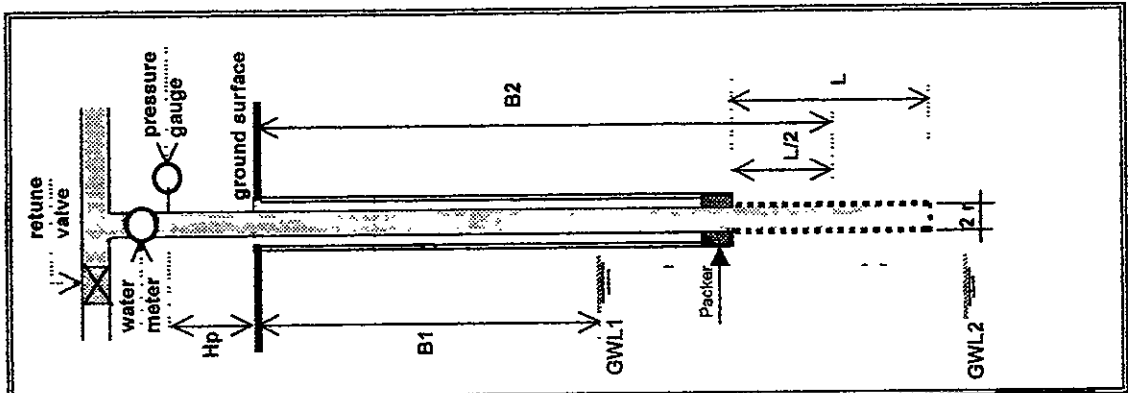
LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE DEC, 27, 2005
 HOLE NO DA-6
 STAGE NO 8
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH 35,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL none
 STATIC WATER HEAD B2 37,50 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,60 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H2 40,10 m
 STATIC HEAD P1 4,010 kg/cm2
 APPLIED EFFECTIVE PRESSURE P 9,010 kg/cm2
 WATER INJECTION RATE q 50,900 ltr/min
 COEFFICIENT OF PERMEABILITY k 3,38E-04 cm/sec
 LUGEON VALUE Lu 25,39



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, Q (liter)	UNIT TAKE, q (l/min.)
1,000	4,010	5,010	10	235,00	23,500
2,000	4,010	6,010	10	265,50	26,550
3,000	4,010	7,010	10	369,50	36,950
4,000	4,010	8,010	10	446,00	44,600
5,000	4,010	9,010	10	509,00	50,900
7,000	4,010	11,010	10	523,50	52,350
5,000	4,010	9,010	10	507,50	50,750
4,000	4,010	8,010	10	415,50	41,550
3,000	4,010	7,010	10	311,00	31,100
2,000	4,010	6,010	10	205,00	20,500
1,000	4,010	5,010	10	206,00	20,600



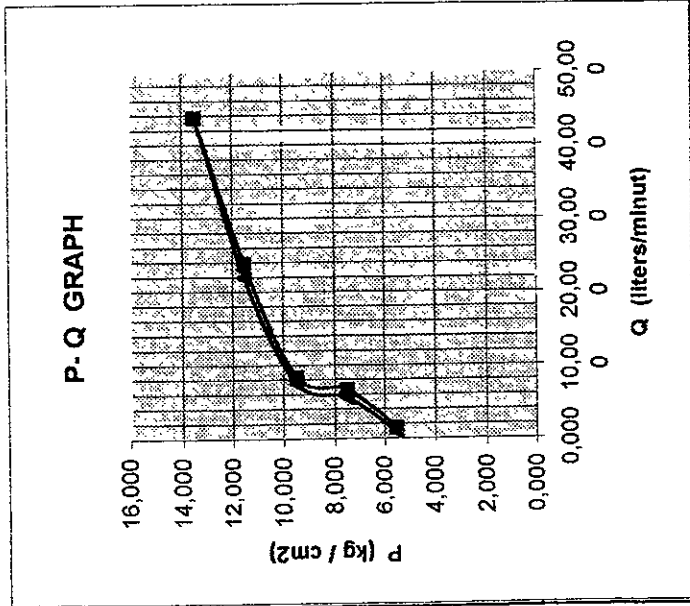
GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

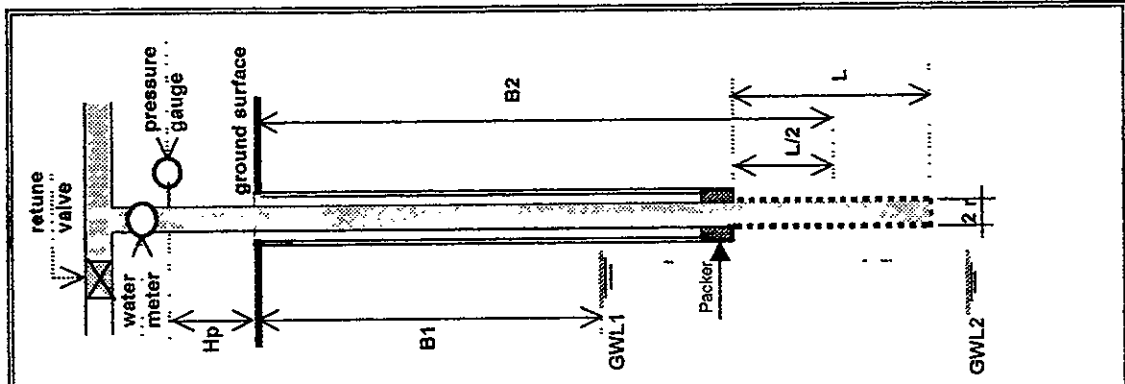
LOCATION: RIGHT/LEFT BANK (DAM SITE)
 DATE: DEC. 28, 2005
 HOLE NO: DA-6
 STAGE NO: 9
 HOLE DIAMETER: (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH: 40,00 m
 TEST LENGTH: L
 GROUNDWATER LEVEL DEPTH: GWL
 STATIC WATER HEAD: B2
 PUMPING PRESSURE HEAD: A
 HEIGHT OF WATER PRESSURE GAUGE: C(Hp)
 FRICTION ENERGY LOSS: Hf
 WATER PRESSURE IN HEAD: H2
 STATIC HEAD: P1
 APPLIED EFFECTIVE PRESSURE: P
 WATER INJECTION RATE: q
 COEFFICIENT OF PERMEABILITY: k
 LUGEON VALUE: Lu



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, Q (liter)	UNIT TAKE, q (l/min.)
1,000	4,510	5,510	10	15,00	1,500
3,000	4,510	7,510	10	66,10	6,610
5,000	4,510	9,510	10	83,70	8,370
7,000	4,510	11,510	10	239,00	23,900
9,000	4,510	13,510	10	437,00	43,700
7,000	4,510	11,510	10	219,00	21,900
5,000	4,510	9,510	10	75,30	7,530
3,000	4,510	7,510	10	55,40	5,540
1,000	4,510	5,510	10	9,60	0,960



GWL UP

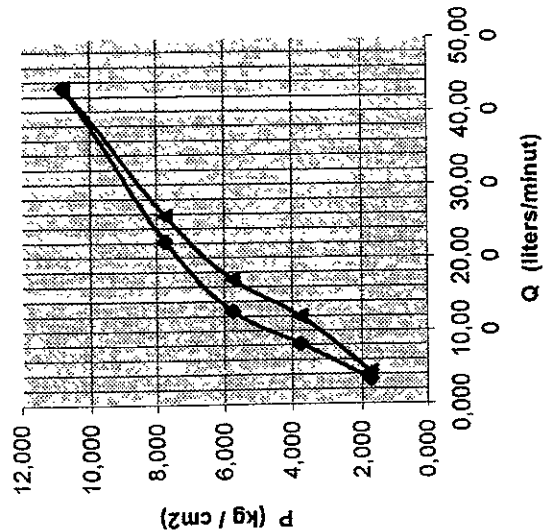
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : DEC, 28, 2005
 HOLE NO DA-6
 STAGE NO 10
 HOLE DIAMETER (cm) D 6.6
 (cm) r 3.3

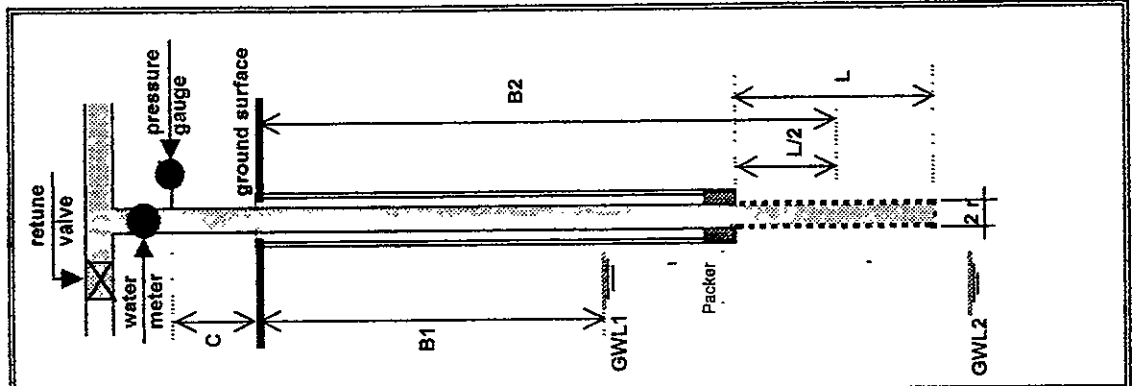
HOLE DEPTH 45,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH 45,00 m
 STATIC WATER HEAD B1 5,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,60 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 7,60 m
 STATIC HEAD P1 0,760 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 7,760 kg/cm²
 WATER INJECTION RATE q 22,200 ltr/min
 COEFFICIENT OF PERMEABILITY k 7,78E-04 cm/sec
 LUGEON VALUE Lu 58,42

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	0,760	1,760	10	32,50	3,250
3,000	0,760	3,760	10	81,80	8,180
5,000	0,760	5,760	10	127,00	12,700
7,000	0,760	7,760	10	222,00	22,200
10,000	0,760	10,760	10	432,00	43,200
7,000	0,760	7,760	10	257,00	25,700
5,000	0,760	5,760	10	170,00	17,000
3,000	0,760	3,760	10	119,00	11,900
1,000	0,760	1,760	10	42,00	4,200



GWL UP

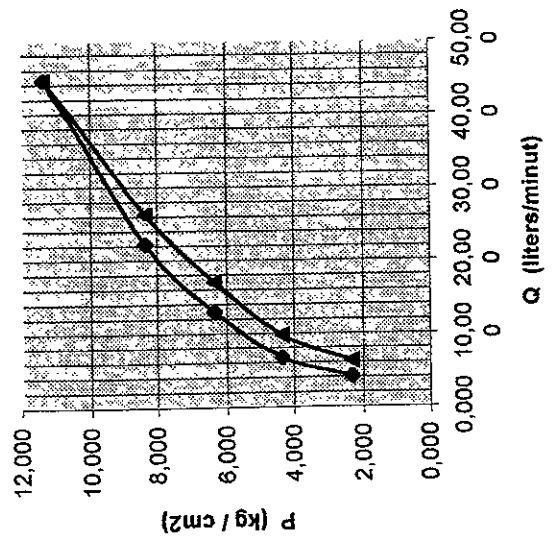
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE DEC. 29, 2005
 HOLE NO DA-6
 STAGE NO 11
 HOLE DIAMETER (cm) D 6.6
 (cm) r 3.3

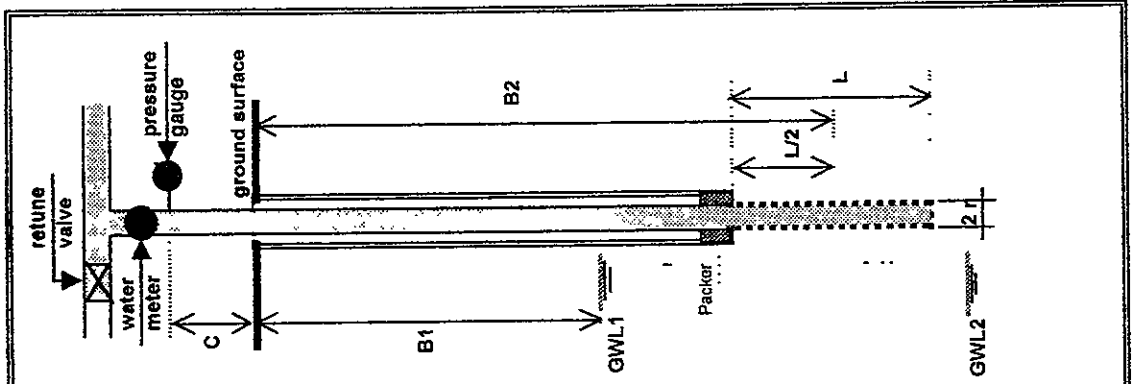
HOLE DEPTH 55,00 m
 TEST LENGTH 5,00 m
 GROUNDWATER LEVEL DEPTH 44,00 m
 STATIC WATER HEAD 11,00 m
 PUMPING PRESSURE HEAD 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,55 m
 FRICTION ENERGY LOSS 0,00 m
 WATER PRESSURE IN HEAD 13,55 m
 STATIC HEAD 1,355 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 8,355 kg/cm²
 WATER INJECTION RATE q 22,200 ltr/min
 COEFFICIENT OF PERMEABILITY k 4,37E-04 cm/sec
 LUGEOON VALUE Lu 32,77

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	1,355	2,355	10	41,00	4,100
3,000	1,355	4,355	10	67,00	6,700
5,000	1,355	6,355	10	129,00	12,900
7,000	1,355	8,355	10	222,00	22,200
10,000	1,355	11,355	10	446,00	44,600
7,000	1,355	8,355	10	263,00	26,300
5,000	1,355	6,355	10	170,00	17,000
3,000	1,355	4,355	10	98,00	9,800
1,000	1,355	2,355	10	62,00	6,200



GWL UP

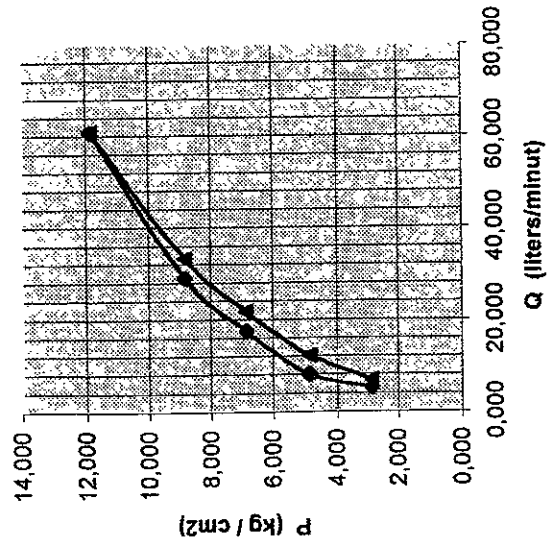
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE DEC, 29, 2005
 HOLE NO DA-6
 STAGE NO 12
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

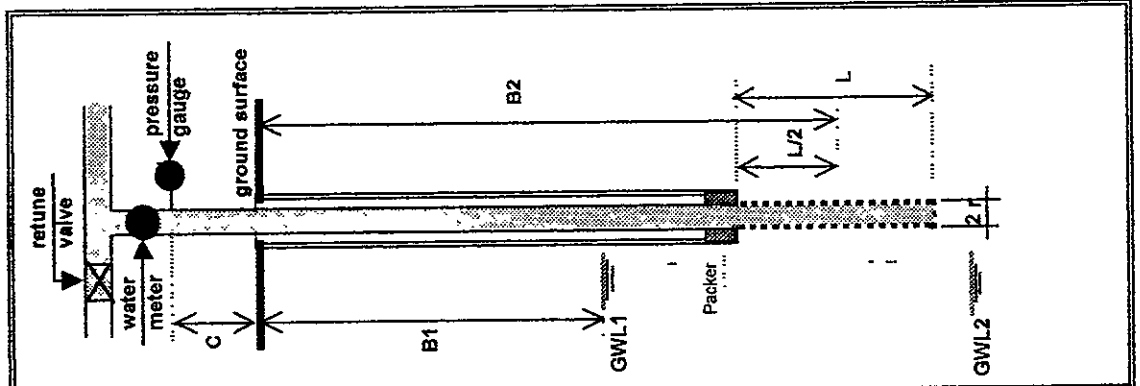
HOLE DEPTH 60,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 44,00 m
 STATIC WATER HEAD B1 16,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,60 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 18,60 m
 STATIC HEAD P1 1,860 kg/cm2
 APPLIED EFFECTIVE PRESSURE P 8,860 kg/cm2
 WATER INJECTION RATE q 29,100 ltr/min
 COEFFICIENT OF PERMEABILITY k 4,17E-04 cm/sec
 LUGEOON VALUE Lu 31,29 -

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	1,860	2,860	10	51,00	5,100
3,000	1,860	4,860	10	80,00	8,000
5,000	1,860	6,860	10	175,00	17,500
7,000	1,860	8,860	10	291,00	29,100
10,000	1,860	11,860	10	608,00	60,800
7,000	1,860	8,860	10	333,00	33,300
5,000	1,860	6,860	10	217,00	21,700
3,000	1,860	4,860	10	121,00	12,100
1,000	1,860	2,860	10	68,00	6,800



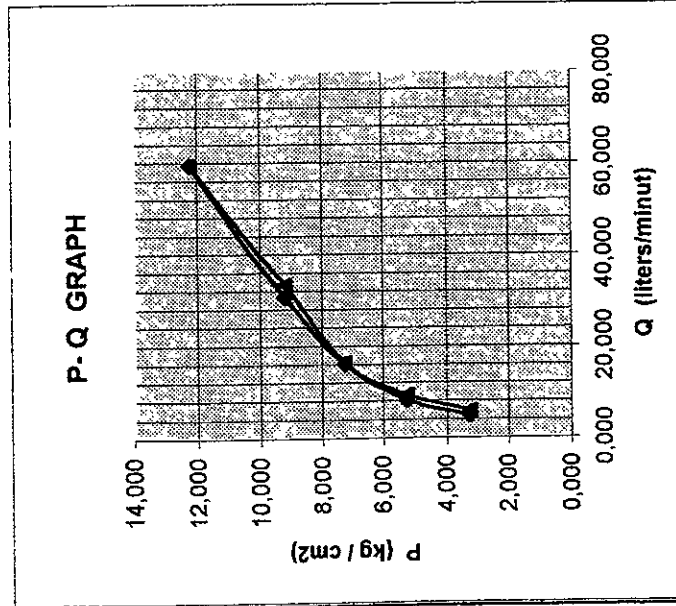
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

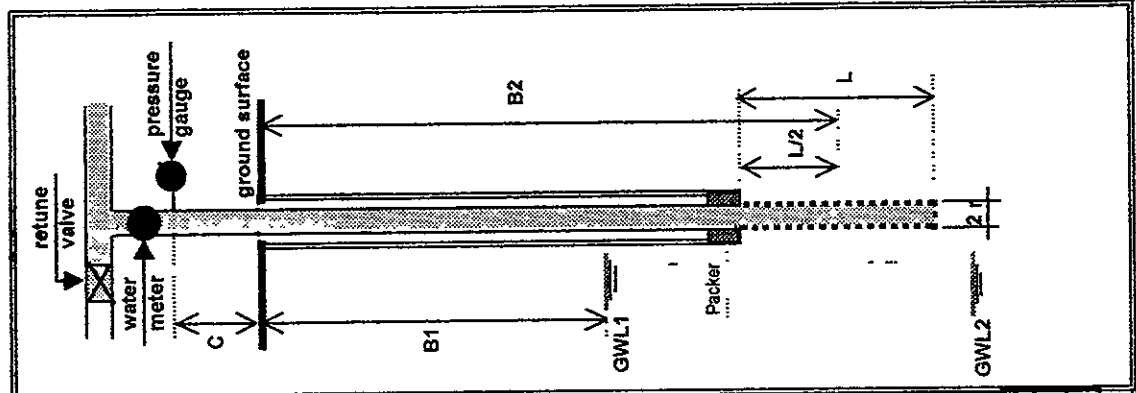
LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE DEC, 30, 2005
 HOLE NO DA-6
 STAGE NO 13
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH 60,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 45,00 m
 STATIC WATER HEAD B1 20,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,60 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 22,60 m
 STATIC HEAD P1 2,260 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 9,260 kg/cm²
 WATER INJECTION RATE q 30,700 ltr/min
 COEFFICIENT OF PERMEABILITY k 3,62E-04 cm/sec
 LUGEON VALUE Lu 27,17



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	2,260	3,260	10	47,50	4,750
3,000	2,260	5,260	10	82,00	8,200
5,000	2,260	7,260	10	161,00	16,100
7,000	2,260	9,260	10	307,00	30,700
10,000	2,260	12,260	10	594,00	59,400
7,000	2,260	9,260	10	334,00	33,400
5,000	2,260	7,260	10	164,00	16,400
3,000	2,260	5,260	10	93,00	9,300
1,000	2,260	3,260	10	58,30	5,830



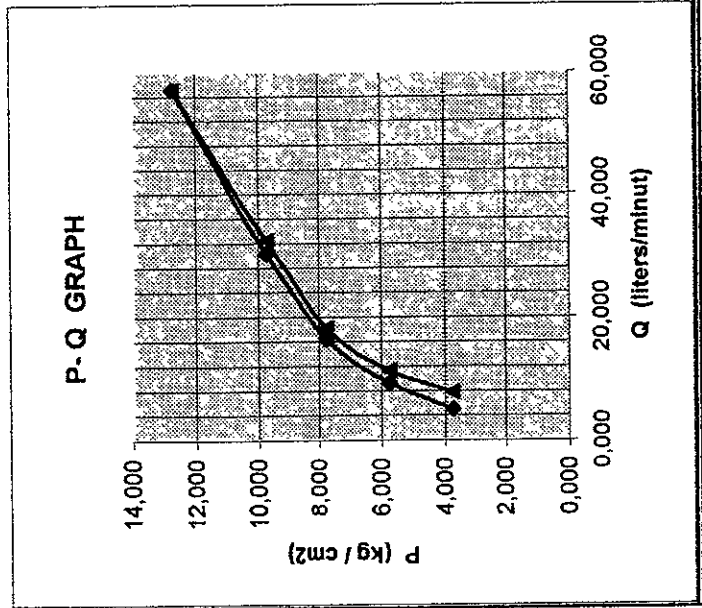
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

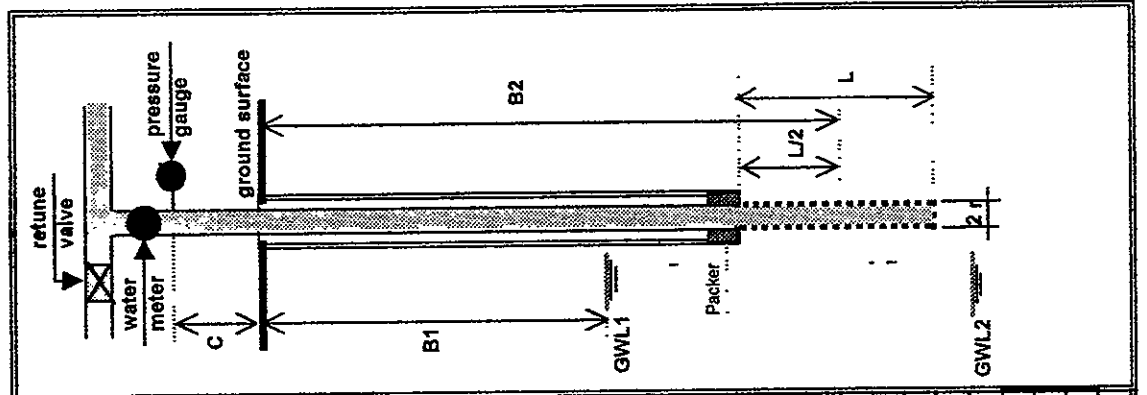
LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : DEC, 30, 2005
 HOLE NO : DA-6
 STAGE NO : 14
 HOLE DIAMETER (cm) : D 6,6
 (cm) r 3,3

HOLE DEPTH : 65,00 m
 TEST LENGTH : L 5,00 m
 GROUNDWATER LEVEL DEPTH : GWL 45,00 m
 STATIC WATER HEAD : B1 25,00 m
 PUMPING PRESSURE HEAD : A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp) 2,60 m
 FRICTION ENERGY LOSS : HF 0,00 m
 WATER PRESSURE IN HEAD : H1 27,60 m
 STATIC HEAD : P1 2,760 kg/cm2
 APPLIED EFFECTIVE PRESSURE : P 9,760 kg/cm2
 WATER INJECTION RATE : q 30,300 ltr/min
 COEFFICIENT OF PERMEABILITY : k 2,93E-04 cm/sec
 LUGEON VALUE : Lu 21,96



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	2,760	3,760	10	50,00	5,000
3,000	2,760	5,760	10	93,00	9,300
5,000	2,760	7,760	10	164,00	16,400
7,000	2,760	9,760	10	303,00	30,300
10,000	2,760	12,760	10	571,00	57,100
7,000	2,760	9,760	10	325,00	32,500
5,000	2,760	7,760	10	181,00	18,100
3,000	2,760	5,760	10	113,00	11,300
1,000	2,760	3,760	10	78,00	7,800



GWL UP

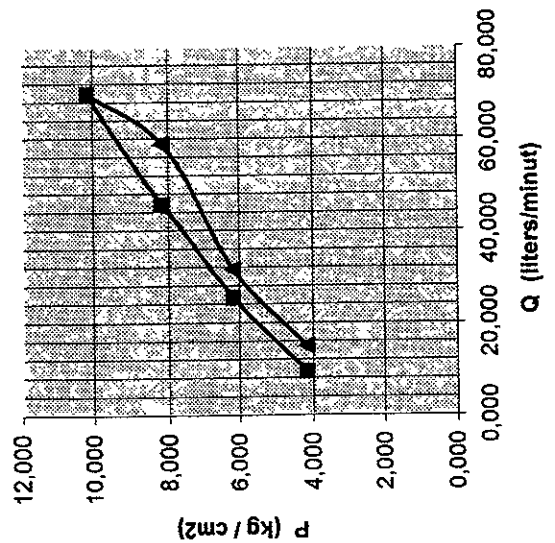
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION . . . RIGHT/LEFT BANK (DAM SITE)
 DATE . . . JAN, 18, 2006
 HOLE NO . . . DA-6
 STAGE NO. . . 15
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

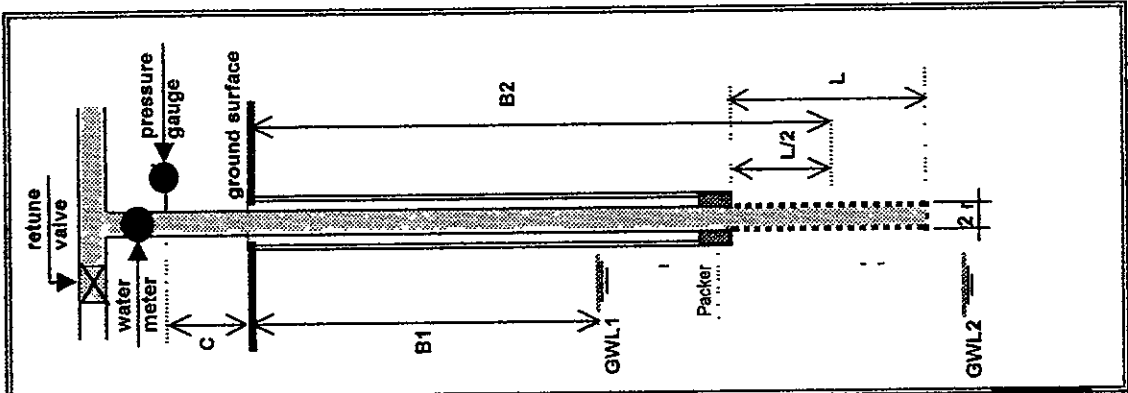
HOLE DEPTH 70,00 m
 TEST LENGTH L 5,00 m
 GROUND WATER LEVEL DEPTH GWL 46,00 m
 STATIC WATER HEAD B1 29,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,60 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 31,60 m
 STATIC HEAD P1 3,160 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 8,160 kg/cm²
 WATER INJECTION RATE q 45,700 ltr/min
 COEFFICIENT OF PERMEABILITY k 3,85E-04 cm/sec
 LUGEON VALUE Lu 28,92

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	3,160	4,160	10	94,50	9,450
3,000	3,160	6,160	10	254,10	25,410
6,000	3,160	8,160	10	457,00	45,700
7,000	3,160	10,160	10	698,00	69,800
5,000	3,160	8,160	10	589,00	58,900
3,000	3,160	6,160	10	315,00	31,500
1,000	3,160	4,160	10	150,00	15,000



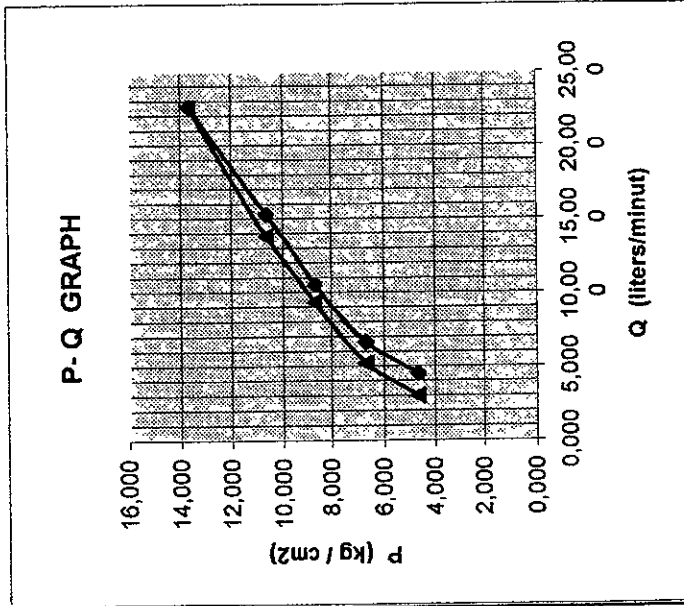
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

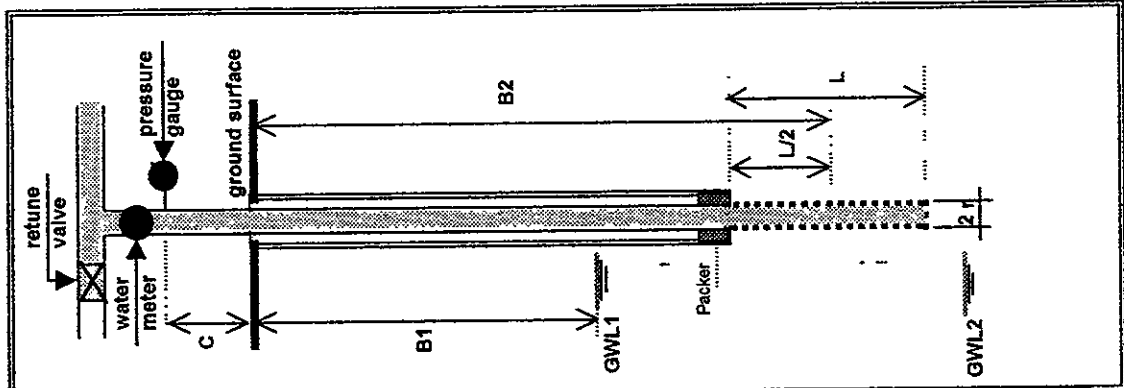
LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : JAN, 21, 2006
 HOLE NO : DA-6
 STAGE NO : 16
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 80,00 m
 TEST LENGTH : 5,00 m
 GROUND WATER LEVEL DEPTH : 46,00 m
 STATIC WATER HEAD : 34,00 m
 PUMPING PRESSURE HEAD : 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE : 2,60 m
 FRICTION ENERGY LOSS : 0,00 m
 WATER PRESSURE IN HEAD : 36,60 m
 STATIC HEAD : 3,660 kg/cm²
 APPLIED EFFECTIVE PRESSURE : 8,660 kg/cm²
 WATER INJECTION RATE : 10,500 ltr/min
 COEFFICIENT OF PERMEABILITY : **7,65E-05** cm/sec
 LUGEOON VALUE : **5,74**



TEST RECORDS :

PRESSURE GAUGE, P ₀ (kg/cm ²)	STATIC HEAD, P ₁ (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	3,660	4,660	10	45,00	4,500
3,000	3,660	6,660	10	66,00	6,600
5,000	3,660	8,660	10	105,00	10,500
7,000	3,660	10,660	10	153,00	15,300
10,000	3,660	13,660	10	226,00	22,600
7,000	3,660	10,660	10	138,00	13,800
5,000	3,660	8,660	10	93,00	9,300
3,000	3,660	6,660	10	52,00	5,200
1,000	3,660	4,660	10	30,00	3,000



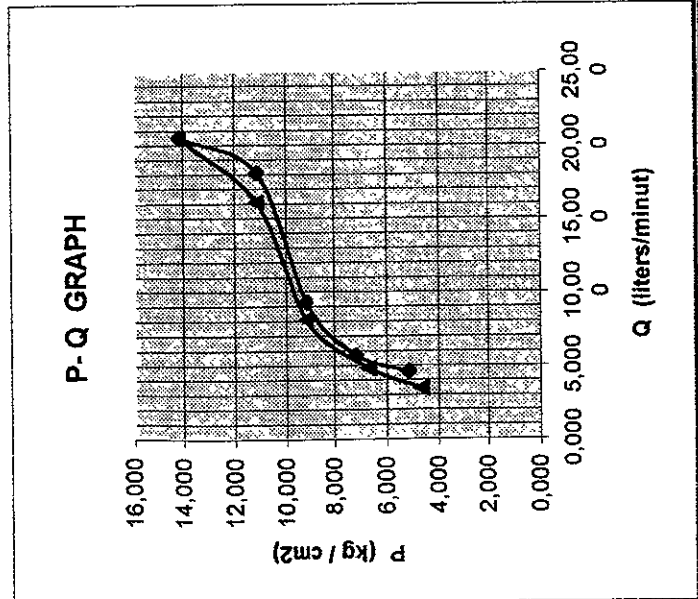
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

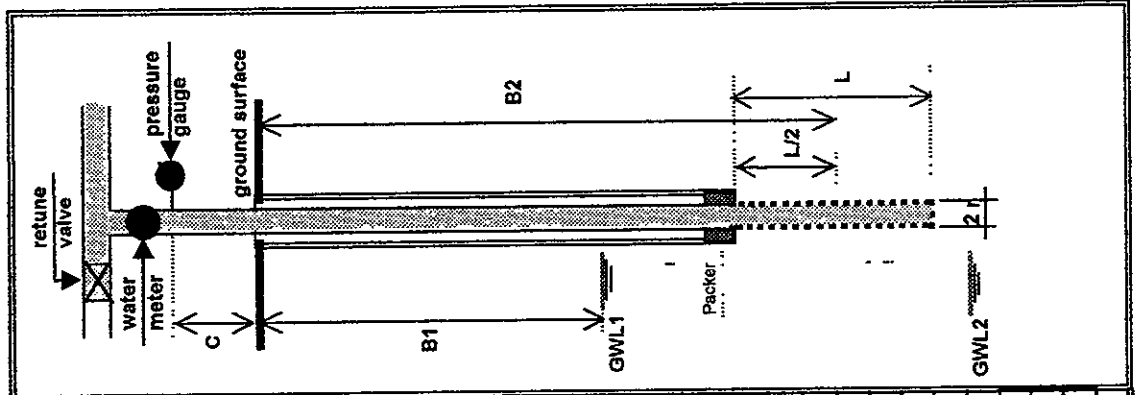
LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : JAN, 22, 2006
 HOLE NO : DA-6
 STAGE NO : 17
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 80,00 m
 TEST LENGTH : L
 GROUND WATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B1
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp)
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H1
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	4,160	5,160	10	45,90	4,590
3,000	4,160	7,160	10	57,00	5,700
5,000	4,160	9,160	10	93,00	9,300
7,000	4,160	11,160	10	181,00	18,100
10,000	4,160	14,160	10	205,00	20,500
7,000	4,160	11,160	10	161,00	16,100
5,000	4,160	9,160	10	81,00	8,100
3,000	3,660	6,660	10	48,00	4,800
1,000	3,660	4,660	10	34,30	3,430



GWL NONE

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

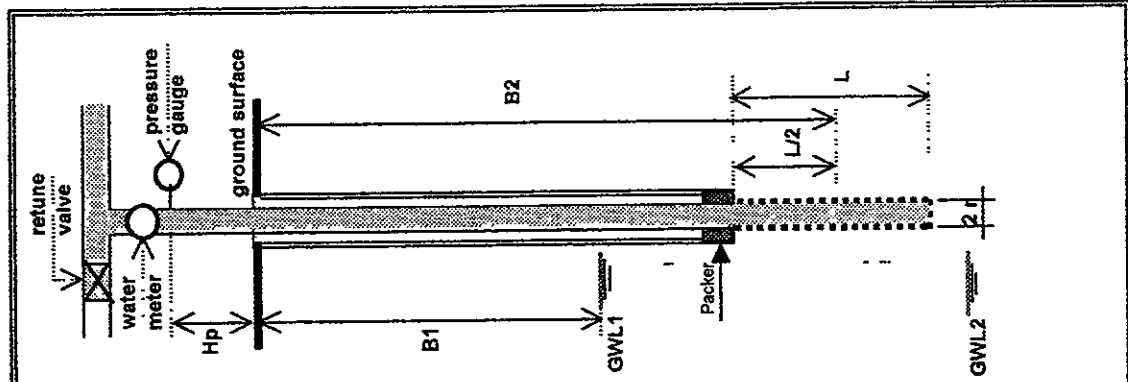
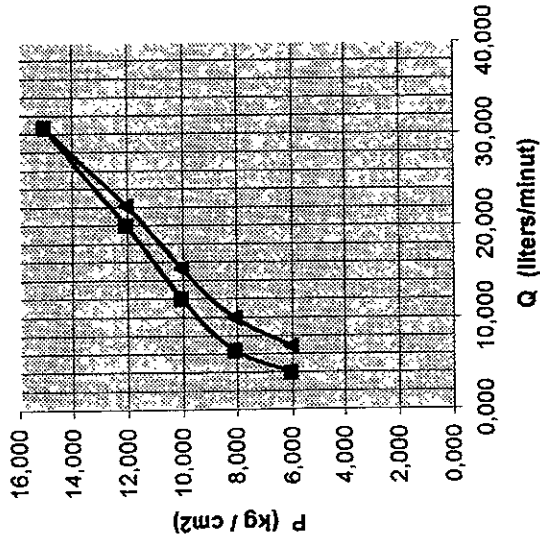
LOCATION RIGHT/LEFT BANK (DAM SITE)
 DATE JAN, 24, 2006
 HOLE NO DA-6
 STAGE NO 19
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH 90,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 47,00 m
 STATIC WATER HEAD B1 48,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 2,60 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 50,60 m
 STATIC HEAD P1 5,060 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 12,060 kg/cm²
 WATER INJECTION RATE q 20,000 ltr/min
 COEFFICIENT OF PERMEABILITY k 1,03E-04 cm/sec
 LUGHEON VALUE Lu 7,91

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, Q (liter)	UNIT TAKE, q (l/min.)
1,000	5,060	6,060	10	40	4,000
3,000	5,060	8,060	10	64	6,400
5,000	5,060	10,060	10	120	12,000
7,900	5,060	12,060	10	200	20,000
10,000	5,060	15,060	10	307	30,700
7,000	5,060	12,060	10	222	22,200
5,000	5,060	10,060	10	153	15,300
3,000	5,060	8,060	10	100	10,000
1,000	5,060	6,060	10	69	6,900

P - Q GRAPH



GWL NONE

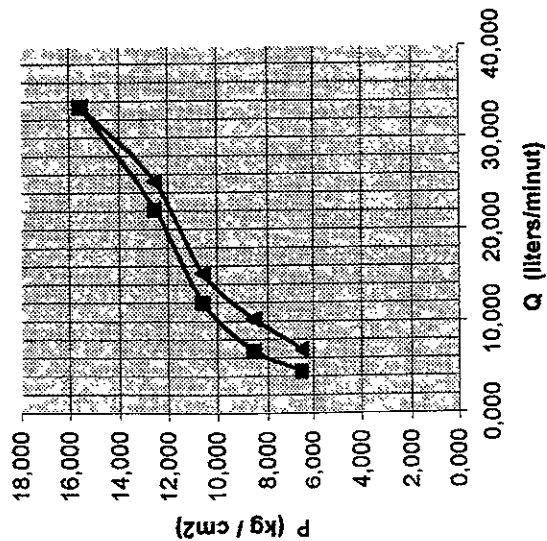
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIGHT/LEFT BANK (DAM SITE)
 DATE : JAN, 25, 2008
 HOLE NO. : DA-6
 STAGE NO. : 20
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

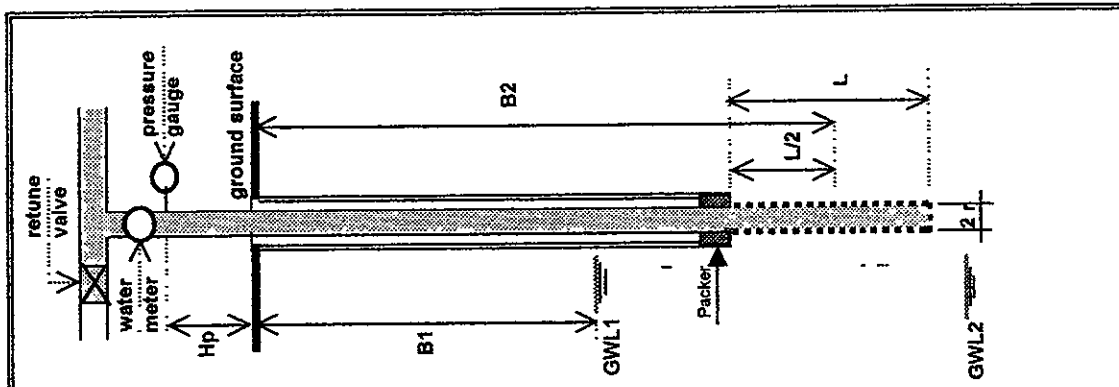
HOLE DEPTH : 100,00 m
 TEST LENGTH : 95,00 m
 GROUNDWATER LEVEL DEPTH : L
 STATIC WATER HEAD : B1
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp)
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H1
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu

P-Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm²)	STATIC HEAD, P1 (kg/cm²)	EFFECTIVE PRESSURE, P (kg/cm²)	INJECTION TIME, t (minute)	ABSORPTION, Q (liter)	UNIT TAKE, q (l/min.)
1,000	5,560	6,560	10	45,5	4,550
3,000	5,560	8,560	10	68	6,800
5,000	5,560	10,560	10	120	12,000
7,000	5,560	12,560	10	222	22,200
10,000	5,560	15,560	10	334	33,400
7,000	5,560	12,560	10	252	25,200
5,000	5,560	10,560	10	152	15,200
3,000	5,560	8,560	10	102	10,200
1,000	5,560	6,560	10	69	6,900



DA - 7

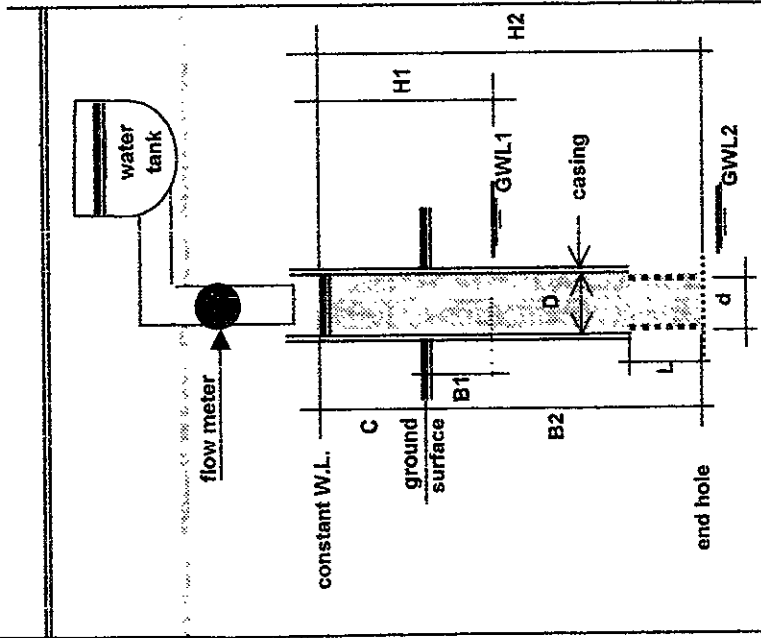
GWL NONE

CONSTANT HEAD TEST

GEOLOGICAL INVESTIGATION AYUNG DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : JANUARY, 9, 2006
 HOLE NO. : DA-7
 STAGE NO. : 1
 DIAMETER OF HOLE : 66

HOLE DIAMETER : 6,60 cm
 HOLE RADIUS : 3,30 cm
 CASING DIAMETER : 8,30 cm
 HOLE DEPTH : 3,00 m
 GROUND WATER LEVEL DEPTH : NONE
 HEIGHT OF CASING : 0,50 m
 LENGTH OF TEST SECTION : 0,00 m
 WATER LEVEL HEIGHT : 3,00 m
 CONSTANT WATER LEVEL HEIGHT : 3,50 m
 STATIC HEAD PRESSURE : 0,350 kg/cm²
 APPLIED EFFECTIVE PRESSURE : 0,350 kg/cm²
 APPLIED DISCHARGE : 3,14 ltr/min
 COEFFICIENT OF PERMEABILITY : 6,55E-03 cm/sec.
 LUGEON UNIT : 0,000



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
0,000	0,350	0,350	10,00	31,40	3,14

GWL NONE

CONSTANT HEAD TEST

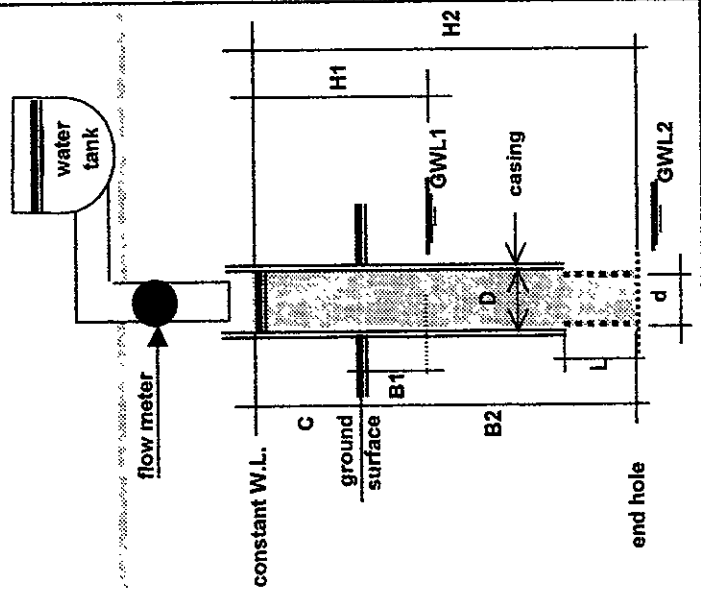
GEOLOGICAL INVESTIGATION AYUNG DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : JANUARY, 9, 2006
 HOLE NO. : DA-7
 STAGE NO. : 2
 DIAMETER OF HOLE : 66

HOLE DIAMETER : 6,60 cm
 HOLE RADIUS : 3,30 cm
 CASING DIAMETER : 8,30 cm
 HOLE DEPTH : 6,00 m
 GROUND WATER LEVEL DEPTH : NONE
 HEIGHT OF CASING : 1,00 m
 LENGTH OF TEST SECTION : 0,00 m
 WATER LEVEL HEIGHT : 6,00 m
 CONSTANT WATER LEVEL HEIGHT : 7,00 m
 STATIC HEAD PRESSURE : 0,700 kg/cm²
 APPLIED EFFECTIVE PRESSURE : 0,700 kg/cm²
 APPLIED DISCHARGE : 2,50 ltr/min
 COEFFICIENT OF PERMEABILITY : 2,61E-03 cm/sec.
 LUGEOON UNIT : 0,000

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
0,000	0,700	0,700	10,00	25,00	2,50



GWL NONE

CONSTANT HEAD TEST

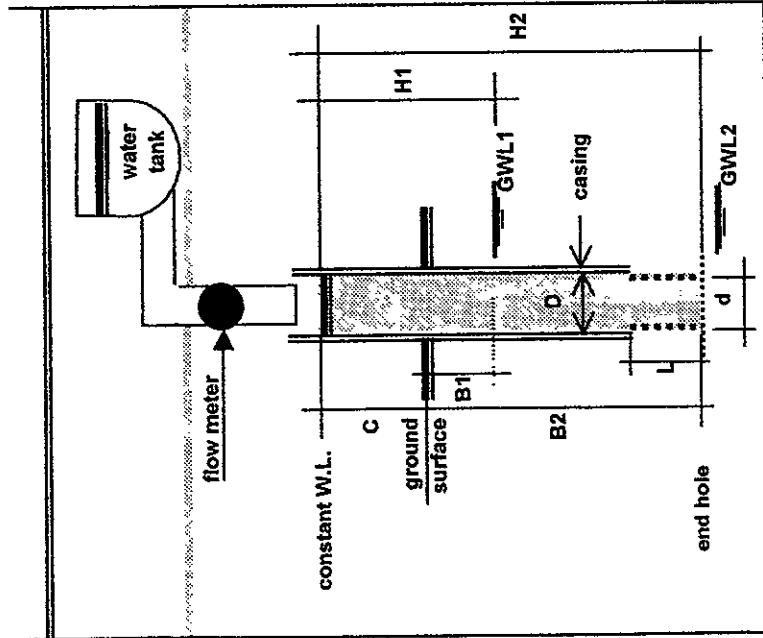
GEOLOGICAL INVESTIGATION AYUNG DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : JANUARY, 11, 2006
 HOLE NO. : DA-7
 STAGE NO. : 3
 DIAMETER OF HOLE : 66

HOLE DIAMETER : 6,60 cm
 HOLE RADIUS : 3,30 cm
 CASING DIAMETER : 8,30 cm
 HOLE DEPTH : 10,00 m
 GROUND WATER LEVEL DEPTH : NONE m
 HEIGHT OF CASING : 50,00 m
 LENGTH OF TEST SECTION : 3,00 m
 WATER LEVEL HEIGHT : 10,00 m
 CONSTANT WATER LEVEL HEIGHT : 60,00 m
 STATIC HEAD PRESSURE : P1 6,000 kg/cm²
 APPLIED EFFECTIVE PRESSURE : P 6,000 kg/cm²
 APPLIED DISCHARGE : Q 1,45 ltr/min
 COEFFICIENT OF PERMEABILITY : K 1,76E-04 cm/sec.
 LUGEOON UNIT : Lu 0,806

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, Q (l/min.)
0,000	6,000	6,000	10,00	14,50	1,45



GWL NONE

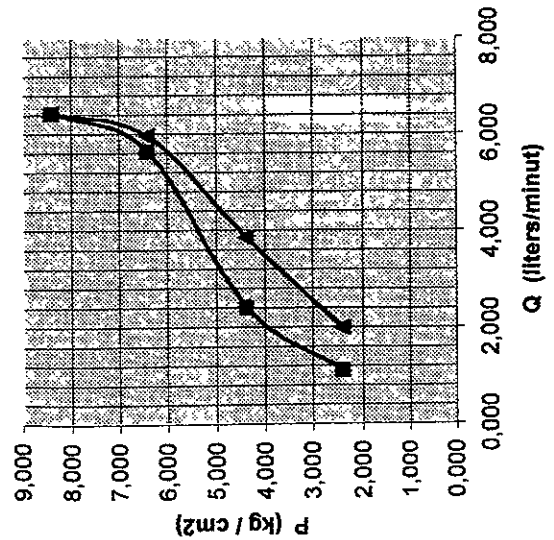
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : JANUARY, 11, 2008
 HOLE NO : DA-7
 STAGE NO : 4
 HOLE DIAMETER (cm) D 6.6
 (cm) r 3.3

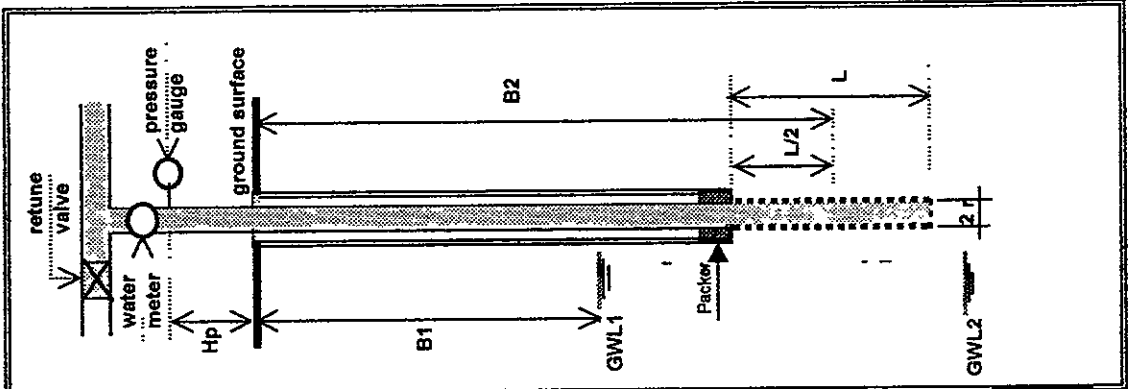
HOLE DEPTH : 15,00 m
 TEST LENGTH : 5,00 m
 GROUNDWATER LEVEL DEPTH : none
 STATIC WATER HEAD : 12,50 m
 PUMPING PRESSURE HEAD : 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE : 1,50 m
 FRICTION ENERGY LOSS : 0,00 m
 WATER PRESSURE IN HEAD : 14,00 m
 STATIC HEAD : 1,400 kg/cm²
 APPLIED EFFECTIVE PRESSURE : 6,400 kg/cm²
 WATER INJECTION RATE : 5,850 ltr/min
 COEFFICIENT OF PERMEABILITY : **1,08E-04** cm/sec
 LUGEOON VALUE : **8,07**

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P ₀ (kg/cm ²)	STATIC HEAD, P ₁ (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, Q (liter)	UNIT TAKE, q (l/min.)
1,000	1,400	2,400	10	11,10	1,110
3,000	1,400	4,400	10	24,10	2,410
6,000	1,400	6,400	10	56,50	5,650
7,000	1,400	8,400	10	64,40	6,440
5,000	1,400	6,400	10	59,60	5,960
3,000	1,400	4,400	10	38,50	3,850
1,000	1,400	2,400	10	19,90	1,990



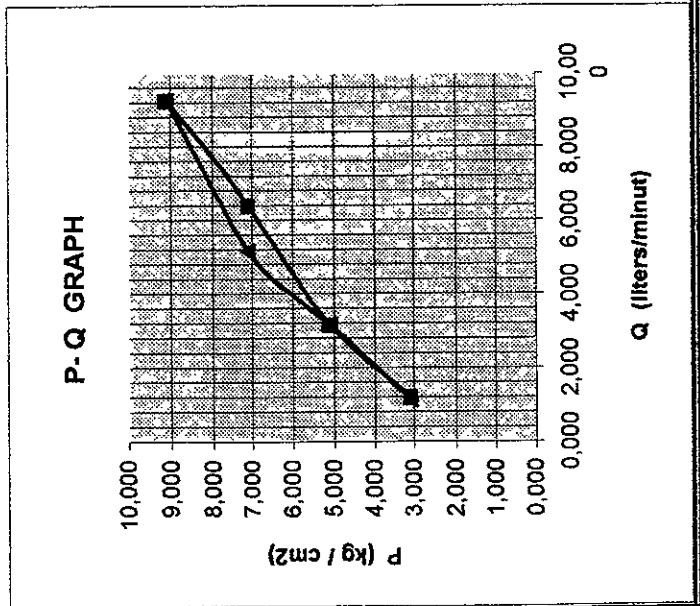
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

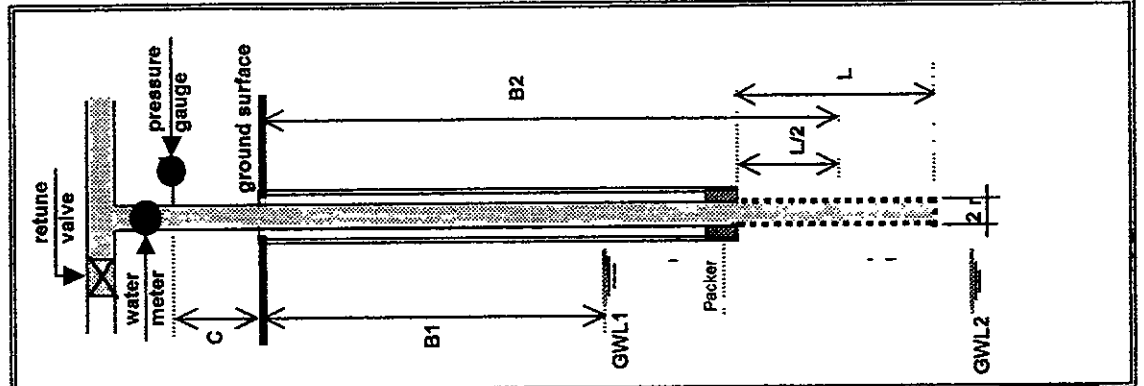
LOCATION RIVER BANK (DAM SITE)
 DATE January 12, 2006
 HOLE NO : DA-7
 STAGE NO. : 5
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH 15,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 0,50 m
 STATIC WATER HEAD B1 18,50 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,50 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 21,00 m
 STATIC HEAD P1 2,100 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 7,100 kg/cm²
 WATER INJECTION RATE q 6,400 ltr/min
 COEFFICIENT OF PERMEABILITY k 8,12E-05 cm/sec
 LUGEOON VALUE Lu 6,10



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	2,100	3,100	10	12,00	1,200
3,000	2,100	5,100	10	31,50	3,150
5,000	2,100	7,100	10	64,00	6,400
7,000	2,100	9,100	10	92,50	9,250
5,000	2,100	7,100	10	51,50	5,150
3,000	2,100	5,100	10	31,50	3,150
1,000	2,100	3,100	10	11,30	1,130



GWL UP

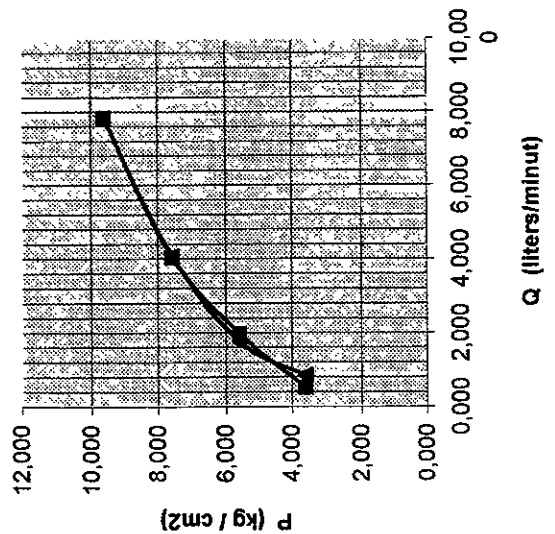
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIVER BANK (DAM SITE)
 DATE Januari 12, 2006
 HOLE NO DA-7
 STAGE NO. 6
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

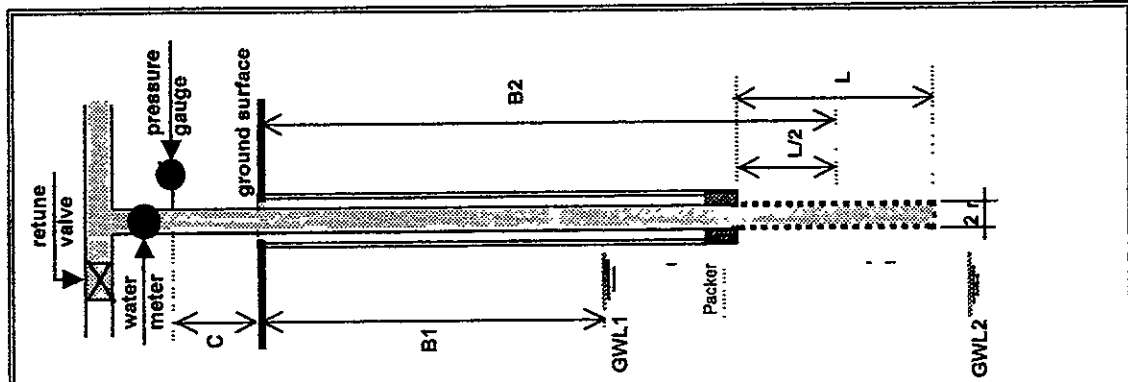
HOLE DEPTH 20,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 0,50 m
 STATIC WATER HEAD B1 24,50 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,50 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 26,00 m
 STATIC HEAD P1 2,600 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 7,600 kg/cm²
 WATER INJECTION RATE q 4,040 ltr/min
 COEFFICIENT OF PERMEABILITY k 4,14E-05 cm/sec
 LUGEON VALUE Lu 3,11

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	2,600	3,600	10	5,30	0,530
3,000	2,600	5,600	10	19,70	1,970
5,000	2,600	7,600	10	40,40	4,040
7,000	2,600	9,600	10	78,40	7,840
5,000	2,600	7,600	10	40,70	4,070
3,000	2,600	5,600	10	17,50	1,750
1,000	2,600	3,600	10	8,50	0,850



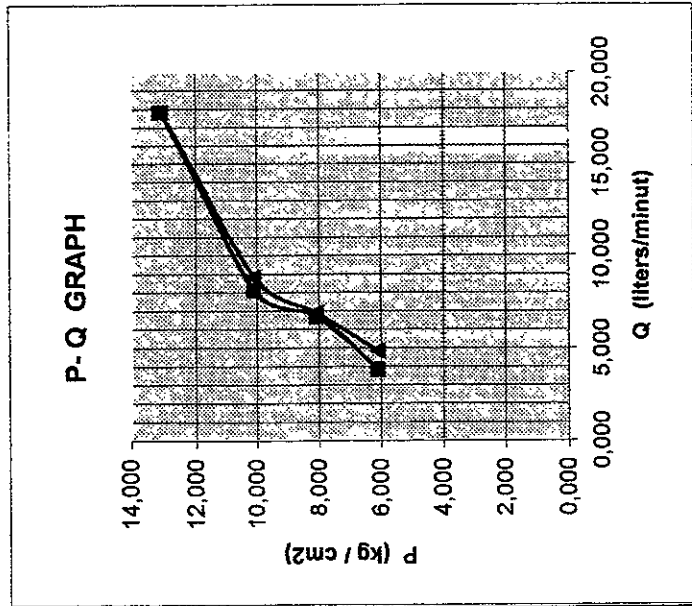
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

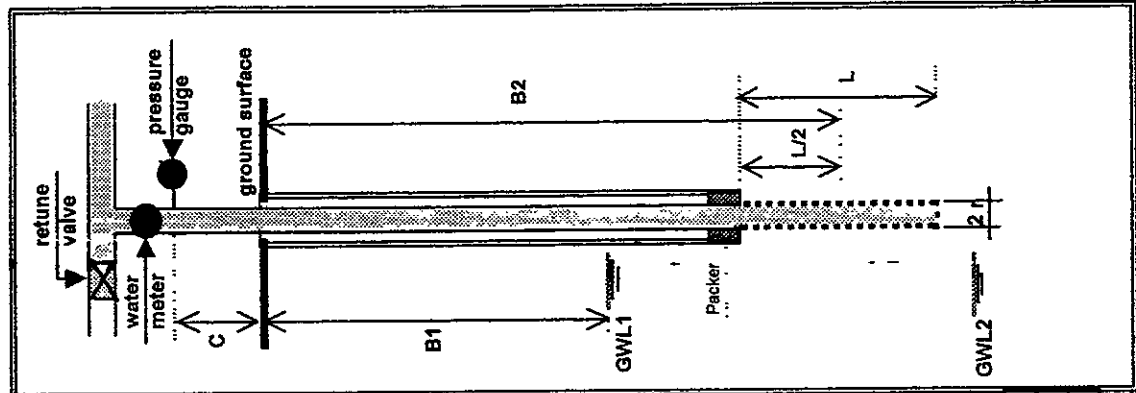
LOCATION : RIVER BANK (DAM SITE)
 DATE : Januari 13, 2008
 HOLE NO. : DA-7
 STAGE NO : 7
 HOLE DIAMETER : (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 25,00 m
 TEST LENGTH : L 5,00 m
 GROUNDWATER LEVEL DEPTH : GWL 0,50 m
 STATIC WATER HEAD : B1 29,50 m
 PUMPING PRESSURE HEAD : A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp) 1,50 m
 FRICTION ENERGY LOSS : Hf 0,00 m
 WATER PRESSURE IN HEAD : H1 31,00 m
 STATIC HEAD : P1 3,100 kg/cm2
 APPLIED EFFECTIVE PRESSURE : P 10,100 kg/cm2
 WATER INJECTION RATE : q 8,150 ltr/mlh
 COEFFICIENT OF PERMEABILITY : k **7,01E-05** cm/sec
 LUGEOON VALUE : Lu **5,26**



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
3,000	3,100	6,100	10	38,50	3,850
5,000	3,100	8,100	10	67,10	6,710
7,000	3,100	10,100	10	81,50	8,150
10,000	3,100	13,100	10	178,50	17,850
7,000	3,100	10,100	10	88,50	8,850
5,000	3,100	8,100	10	69,00	6,900
3,000	3,100	6,100	10	48,50	4,850



GWL UP

WATER PRESSURE TEST

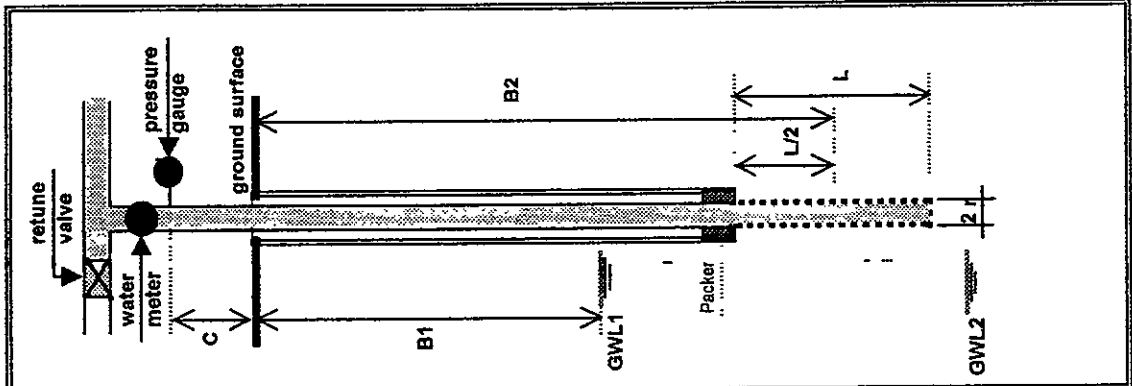
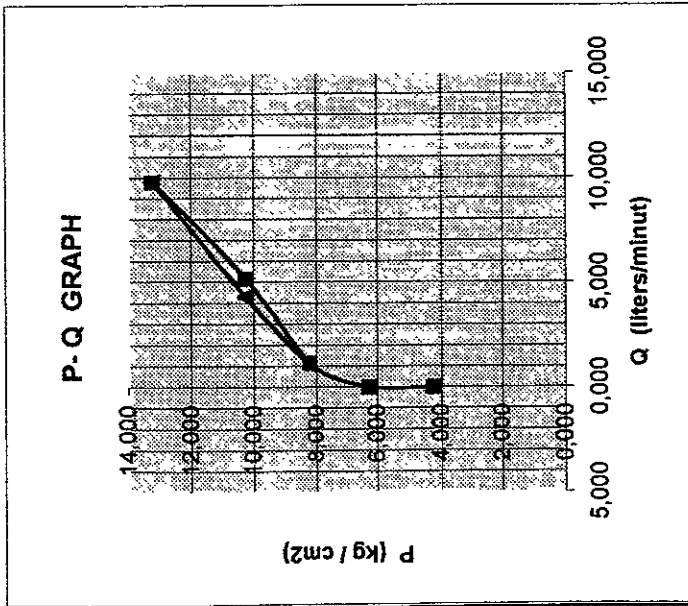
GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : Januari 14, 2006
 HOLE NO : DA-7
 STAGE NO. : 8
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 30,00 m
 TEST LENGTH : L
 GROUNDWATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B1
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp)
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H1
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minutes)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	3,250	4,250	10	0,00	0,000
3,000	3,250	6,250	10	0,00	0,000
5,000	3,250	8,250	10	11,50	1,150
7,000	3,250	10,250	10	52,00	5,200
10,000	3,250	13,250	10	98,00	9,800
7,000	3,250	10,250	10	43,00	4,300
5,000	3,250	8,250	10	11,00	1,100
3,000	3,250	6,250	10	0,00	0,000
1,000	3,250	4,250	10	0,00	0,000



GWL UP

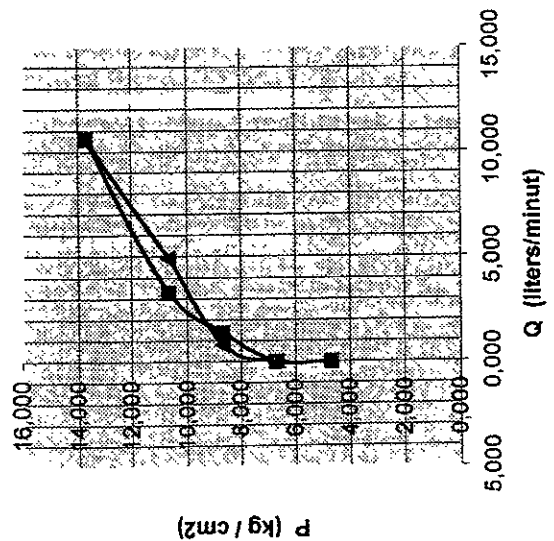
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIVER BANK (DAM SITE)
 DATE Januari 15, 2006
 HOLE NO DA-7
 STAGE NO 9
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

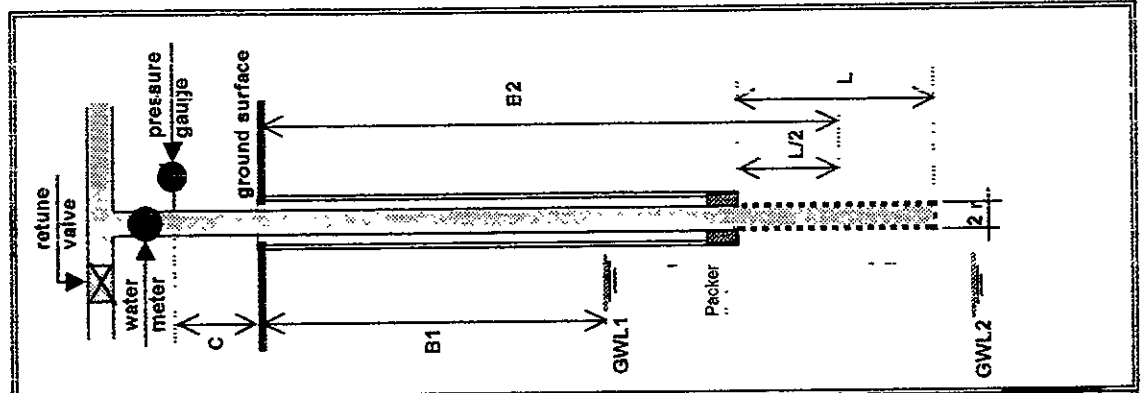
HOLE DEPTH 35,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 4,00 m
 STATIC WATER HEAD B1 36,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,00 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 37,00 m
 STATIC HEAD P1 3,700 kg/cm2
 APPLIED EFFECTIVE PRESSURE P 10,700 kg/cm2
 WATER INJECTION RATE q 3,300 ltr/min
 COEFFICIENT OF PERMEABILITY k 2,38E-05 cm/sec
 LUGEON VALUE Lu 1,78

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	3,700	4,700	10	0,00	0,000
3,000	3,700	6,700	10	0,00	0,000
5,000	3,700	8,700	10	13,80	1,380
7,000	3,700	10,700	10	33,00	3,300
10,000	3,700	13,700	10	106,00	10,600
7,000	3,700	10,700	10	49,00	4,900
5,000	3,700	8,700	10	8,00	0,800
3,000	3,700	6,700	10	0,00	0,000
1,000	3,700	4,700	10	0,00	0,000



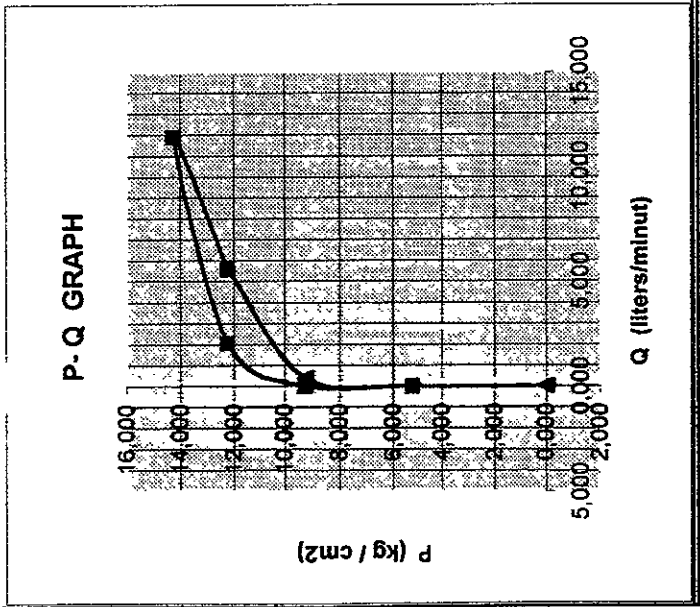
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

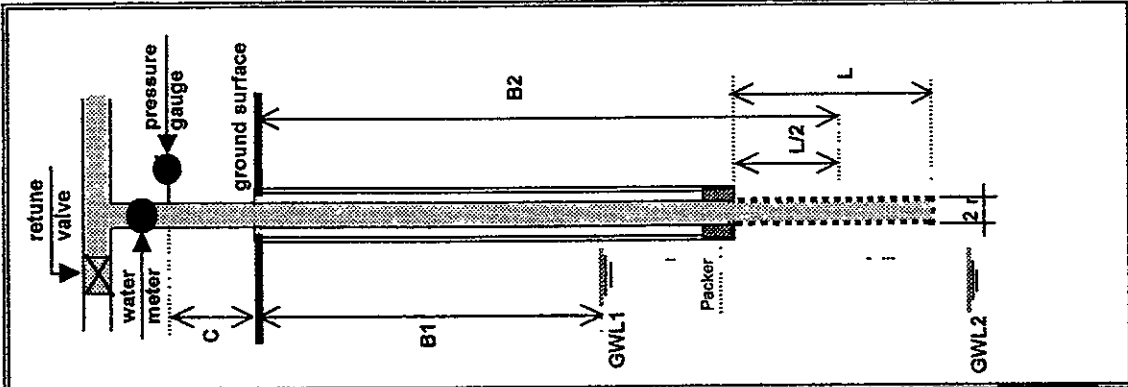
LOCATION RIVER BANK (DAM SITE)
 DATE Januari 16, 2006
 HOLE NO DA-7
 STAGE NO 10
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH 45,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 4,00 m
 STATIC WATER HEAD B1 41,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,50 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 42,50 m
 STATIC HEAD P1 4,250 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 12,250 kg/cm²
 WATER INJECTION RATE q 2,070 ltr/min
 COEFFICIENT OF PERMEABILITY k 1,30E-05 cm/sec
 LUGEON VALUE Lu 0,97



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	4,250	5,250	10	0,00	0,000
5,000	4,250	9,250	10	0,00	0,000
8,000	4,250	12,250	10	20,70	2,070
10,000	4,250	14,250	10	119,10	11,910
8,000	4,250	12,250	10	56,00	5,600
5,000	4,250	9,250	10	3,90	0,390
1,000	4,250	5,250	10	0,00	0,000



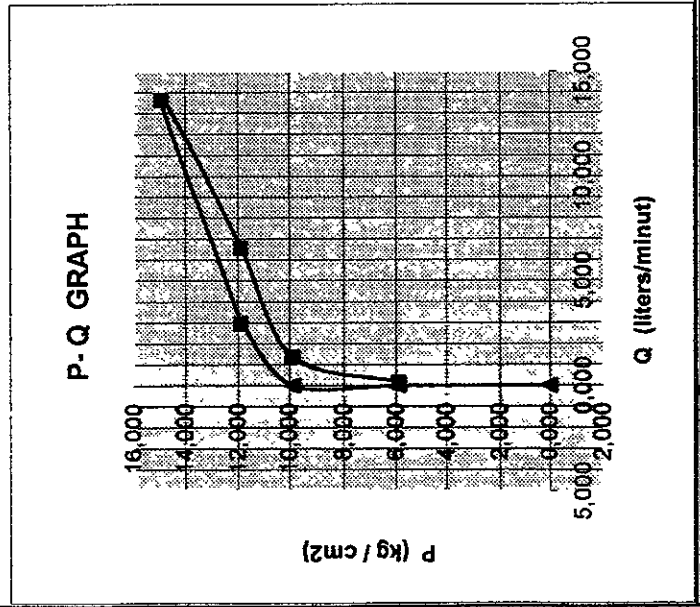
GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

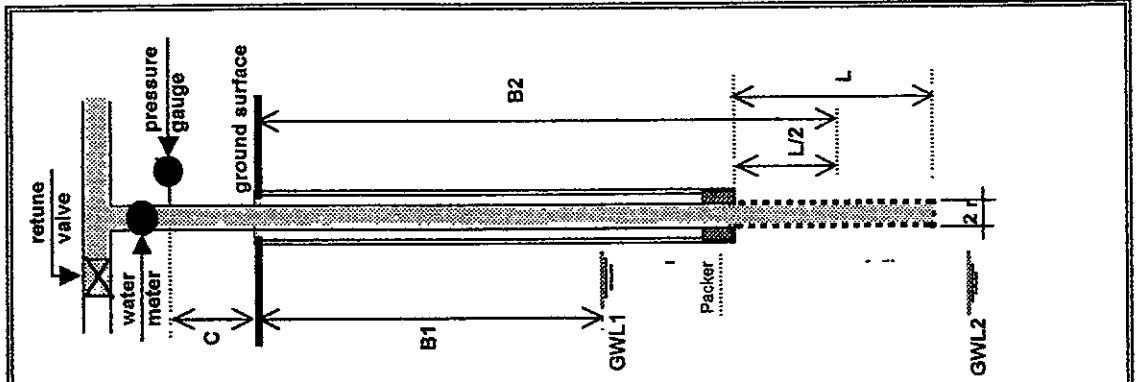
LOCATION RIVER BANK (DAM SITE)
 DATE Januari 17, 2006
 HOLE NO. DA-7
 STAGE NO. 11
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH 50,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 2,50 m
 STATIC WATER HEAD B1 47,50 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,50 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 49,00 m
 STATIC HEAD P1 4,900 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 11,900 kg/cm²
 WATER INJECTION RATE q 6,580 ltr/min
 COEFFICIENT OF PERMEABILITY k 3,58E-05 cm/sec
 LUGEON VALUE Lu 2,69



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	4,900	5,900	10	1,70	0,170
5,000	4,900	9,900	10	13,80	1,380
7,000	4,900	11,900	10	65,80	6,580
10,000	4,900	14,900	10	136,50	13,650
7,000	4,900	11,900	10	29,60	2,960
5,000	4,900	9,900	10	0,00	0,000
1,000	4,900	5,900	10	0,00	0,000



GWL UP

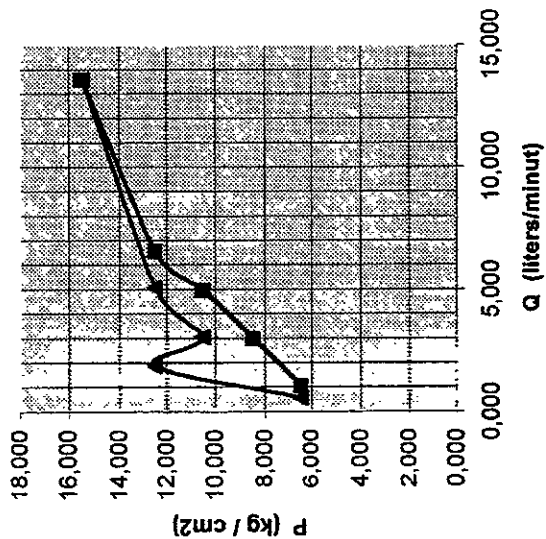
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : Januari 18, 2006
 HOLE NO : DA-7
 STAGE NO : 12
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

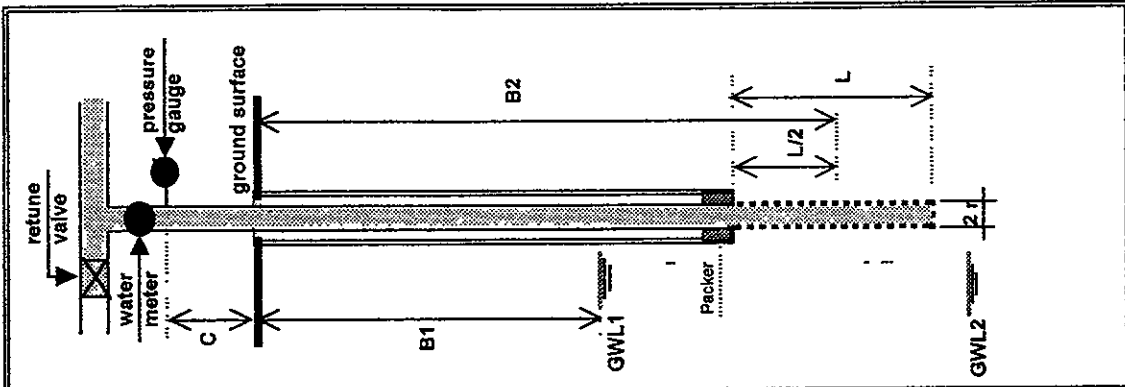
HOLE DEPTH 50,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 1,00 m
 STATIC WATER HEAD B1 54,00 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,00 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 55,00 m
 STATIC HEAD P1 5,500 kg/cm2
 APPLIED EFFECTIVE PRESSURE P 12,500 kg/cm2
 WATER INJECTION RATE q 6,560 ltr/min
 COEFFICIENT OF PERMEABILITY k 3,18E-05 cm/sec
 LUGEON VALUE Lu 2,39

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	5,500	6,500	10	10,50	1,050
3,000	5,500	8,500	10	30,00	3,000
5,000	5,500	10,500	10	49,60	4,960
7,000	5,500	12,500	10	65,60	6,560
10,000	5,500	15,500	10	136,00	13,600
7,000	5,500	12,500	10	50,60	5,060
5,000	5,500	10,500	10	30,50	3,050
3,000	5,500	12,500	10	18,60	1,860
1,000	5,500	6,500	10	5,40	0,540



GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

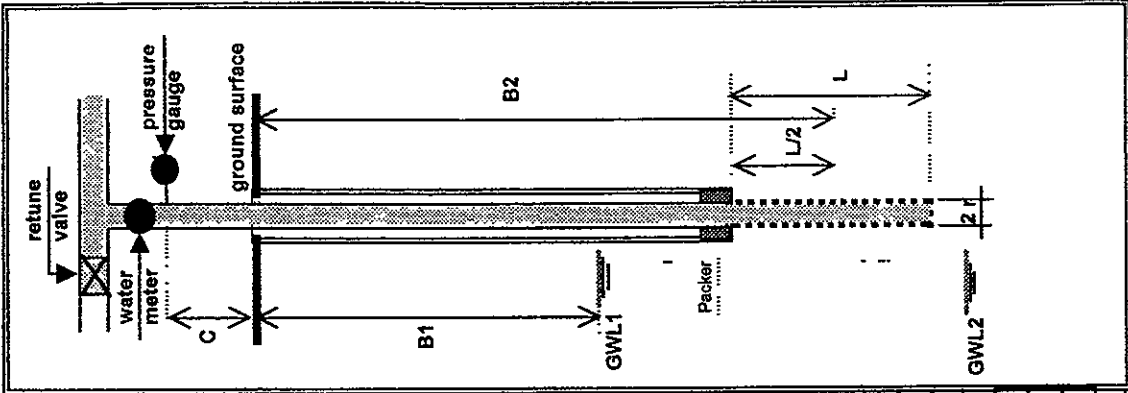
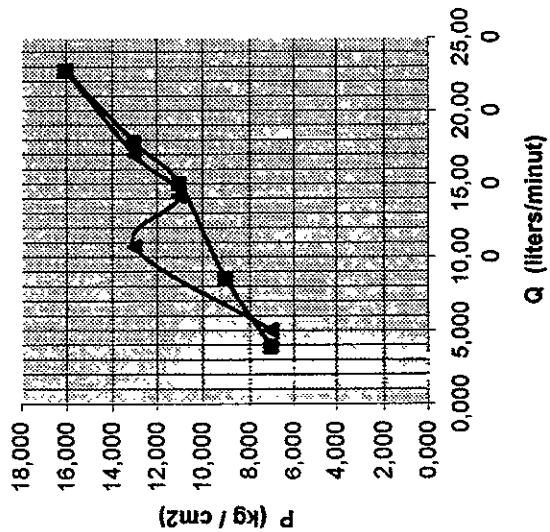
LOCATION : RIVER BANK (DAM SITE)
 DATE : Januari 19, 2006
 HOLE NO : DA-7
 STAGE NO : 13
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 55,00 m
 TEST LENGTH : L
 GROUNDWATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B1
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp)
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H1
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	6,050	7,050	10	39,00	3,900
3,000	6,050	9,050	10	85,00	8,500
5,000	6,050	11,050	10	150,50	15,050
7,000	6,050	13,050	10	178,60	17,860
10,000	6,050	16,050	10	227,40	22,740
7,000	6,050	13,050	10	169,60	16,960
5,000	6,050	11,050	10	141,50	14,150
3,000	6,050	13,050	10	107,00	10,700
1,000	6,050	7,050	10	50,00	5,000

P-Q GRAPH



GWL UP

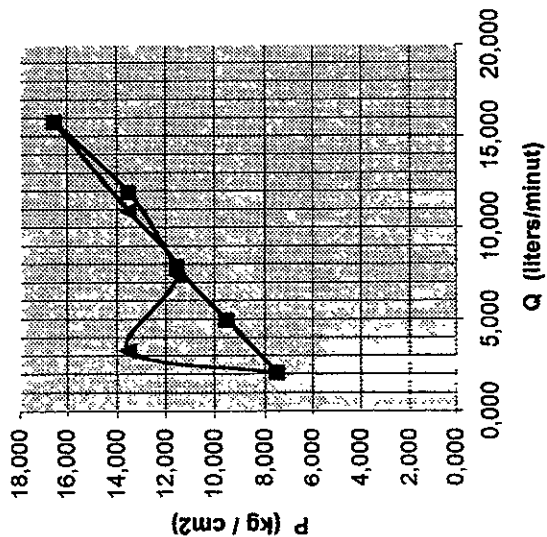
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIVER BANK (DAM SITE)
 DATE January 25, 2006
 HOLE NO. DA-7
 STAGE NO. 14
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

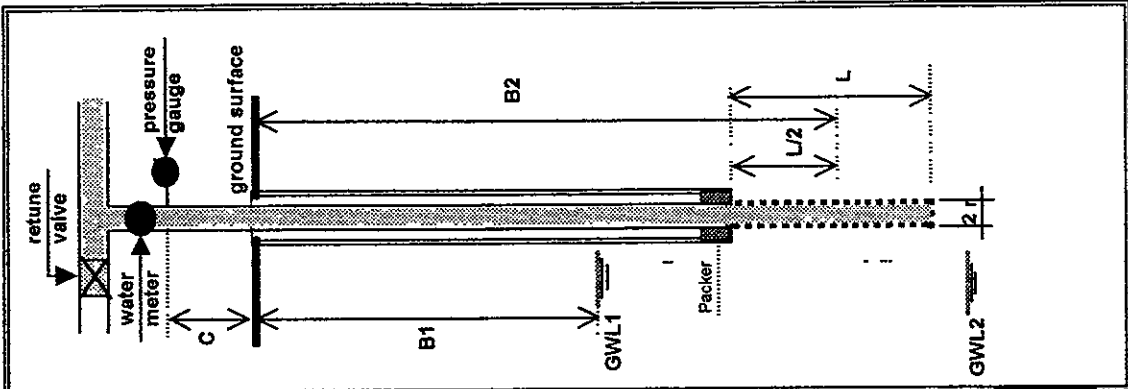
HOLE DEPTH 65,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 1,10 m
 STATIC WATER HEAD B1 63,90 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,50 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 65,40 m
 STATIC HEAD P1 6,540 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 13,540 kg/cm²
 WATER INJECTION RATE q 11,940 ltr/min
 COEFFICIENT OF PERMEABILITY k 4,87E-05 cm/sec
 LUGEON VALUE Lu 3,65

P-Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	6,540	7,540	10	21,00	2,100
3,000	6,540	9,540	10	49,50	4,950
5,000	6,540	11,540	10	78,80	7,880
7,000	6,540	13,540	10	119,40	11,940
10,000	6,540	16,540	10	158,10	15,810
7,000	6,540	13,540	10	109,00	10,900
5,000	6,540	11,540	10	74,50	7,450
3,000	6,540	9,540	10	32,80	3,280
1,000	6,540	7,540	10	20,80	2,080



GWL UP

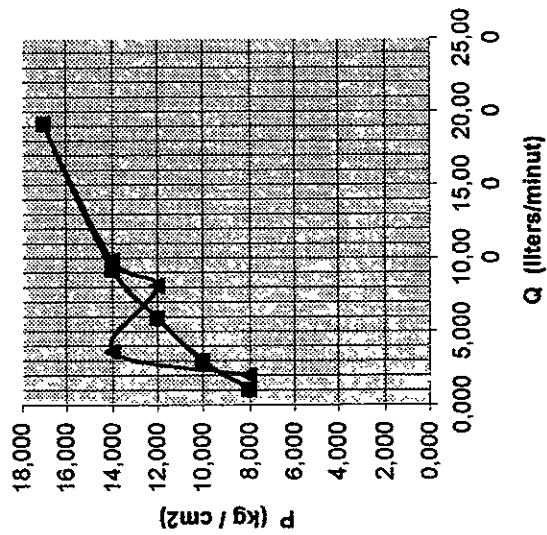
WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION RIVER BANK (DAM SITE)
 DATE Januari 26, 2006
 HOLE NO DA-7
 STAGE NO. 15
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

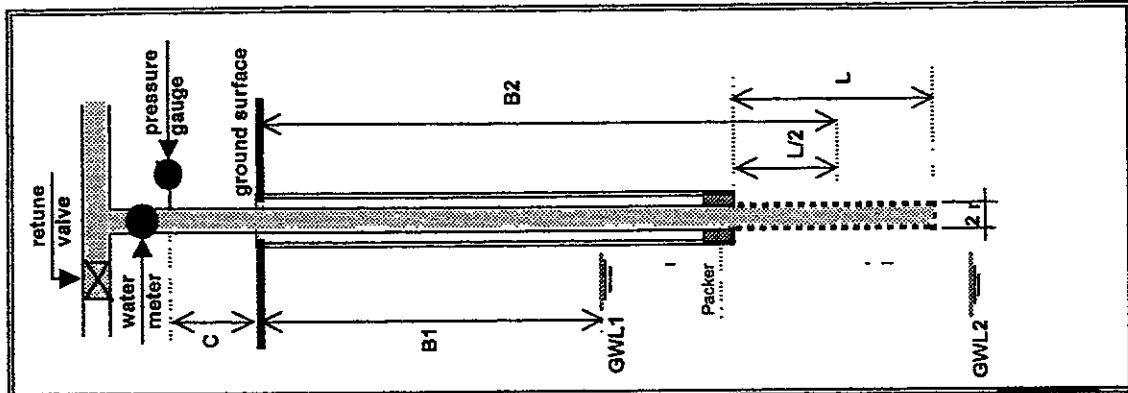
HOLE DEPTH 70,00 m
 TEST LENGTH L 5,00 m
 GROUNDWATER LEVEL DEPTH GWL 1,20 m
 STATIC WATER HEAD B1 68,80 m
 PUMPING PRESSURE HEAD A 0,00 m
 HEIGHT OF WATER PRESSURE GAUGE C(Hp) 1,50 m
 FRICTION ENERGY LOSS Hf 0,00 m
 WATER PRESSURE IN HEAD H1 70,30 m
 STATIC HEAD P1 7,030 kg/cm²
 APPLIED EFFECTIVE PRESSURE P 14,030 kg/cm²
 WATER INJECTION RATE q 9,250 ltr/min
 COEFFICIENT OF PERMEABILITY k 3,51E-05 cm/sec
 LUGEON VALUE Lu 2,63

P - Q GRAPH



TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
1,000	7,030	8,030	10	10,50	1,050
3,000	7,030	10,030	10	30,00	3,000
5,000	7,030	12,030	10	59,00	5,900
7,000	7,030	14,030	10	92,50	9,250
10,000	7,030	17,030	10	191,50	19,150
7,000	7,030	14,030	10	98,50	9,850
5,000	7,030	12,030	10	81,00	8,100
3,000	7,030	14,030	10	36,00	3,600
1,000	7,030	8,030	10	20,00	2,000



GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

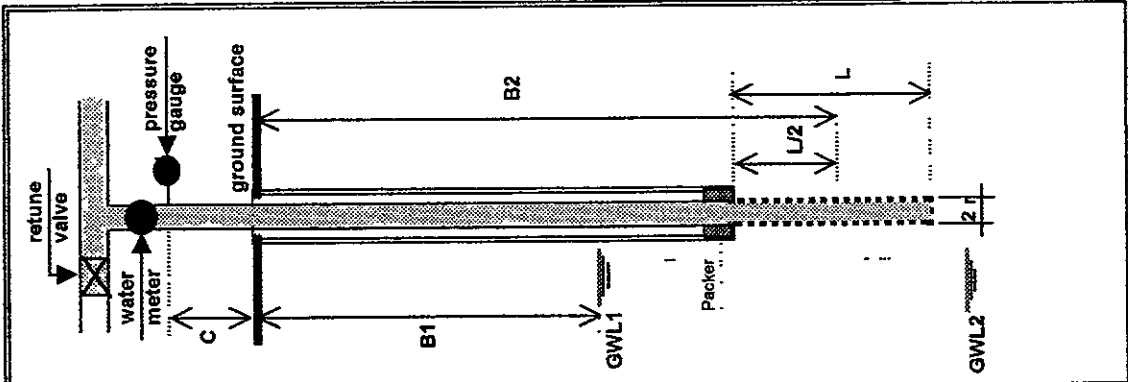
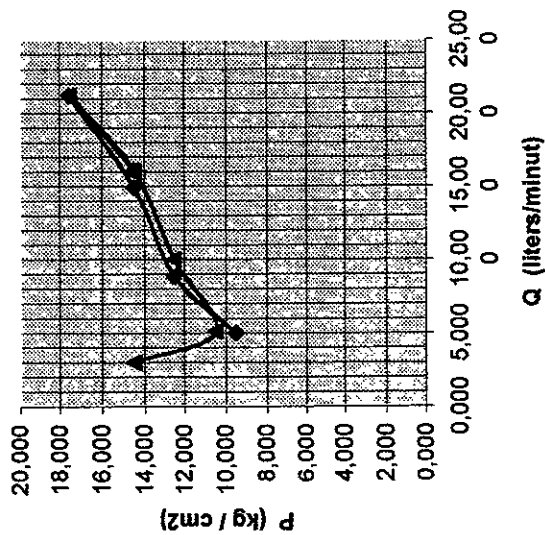
LOCATION : RIVER BANK (DAM SITE)
 DATE : January 27, 2006
 HOLE NO. : DA-7
 STAGE NO. : 16
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 70,00 m
 TEST LENGTH : L
 GROUNDWATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B1
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp)
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H1
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm ²)	STATIC HEAD, P1 (kg/cm ²)	EFFECTIVE PRESSURE, P (kg/cm ²)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
2,000	7,530	9,530	10	50,00	5,000
5,000	7,530	12,530	10	88,50	8,850
7,000	7,530	14,530	10	149,40	14,940
10,000	7,530	17,530	10	212,00	21,200
7,000	7,530	14,530	10	161,00	16,100
5,000	7,530	12,530	10	100,00	10,000
3,000	7,530	10,530	10	51,00	5,100
2,000	7,530	14,530	10	30,00	3,000

P - Q GRAPH



GWL UP

WATER PRESSURE TEST

GEOLOGICAL INVESTIGATION AYUNG - DAM

LOCATION : RIVER BANK (DAM SITE)
 DATE : Januari 28, 2006
 HOLE NO : DA-7
 STAGE NO : 17
 HOLE DIAMETER (cm) D 6,6
 (cm) r 3,3

HOLE DEPTH : 75,00 m
 TEST LENGTH : L
 GROUNDWATER LEVEL DEPTH : GWL
 STATIC WATER HEAD : B1
 PUMPING PRESSURE HEAD : A
 HEIGHT OF WATER PRESSURE GAUGE : C(Hp)
 FRICTION ENERGY LOSS : Hf
 WATER PRESSURE IN HEAD : H1
 STATIC HEAD : P1
 APPLIED EFFECTIVE PRESSURE : P
 WATER INJECTION RATE : q
 COEFFICIENT OF PERMEABILITY : k
 LUGEON VALUE : Lu

TEST RECORDS :

PRESSURE GAUGE, P0 (kg/cm2)	STATIC HEAD, P1 (kg/cm2)	EFFECTIVE PRESSURE, P (kg/cm2)	INJECTION TIME, t (minute)	ABSORPTION, q (liter)	UNIT TAKE, q (l/min.)
2,00	7,90	9,90	10	100,00	10,000
3,00	7,90	10,90	10	150,00	15,000
5,00	7,90	12,90	10	240,00	24,000
7,00	7,90	14,90	10	300,00	30,000
10,00	7,90	17,90	10	420,00	42,000
7,00	7,90	14,90	10	281,00	28,100
5,00	7,90	12,90	10	220,00	22,000
3,00	7,90	14,90	10	130,00	13,000
2,00	7,90	9,90	10	80,00	8,000

P - Q GRAPH

