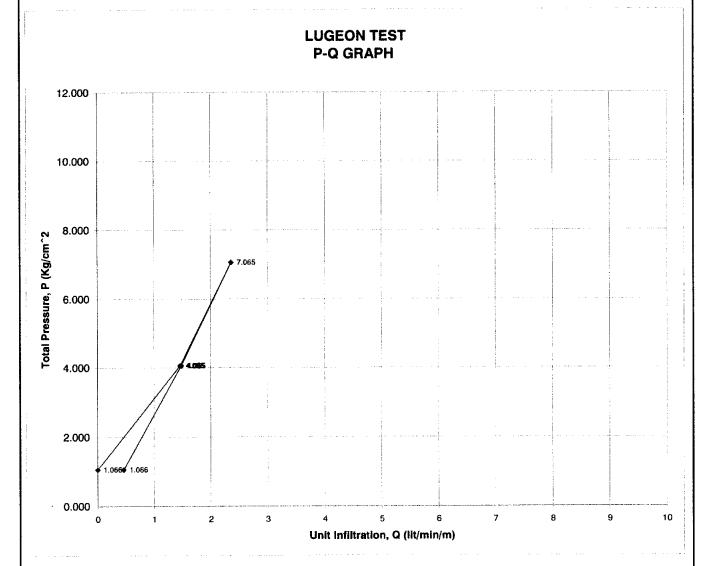
Project:	KULEKHANI-III HPP	STRUCTURE:	POWERH	OUSE
Drill Hole NO.:	BPV-1	Test Interval:	20-25	m
Water Level:	0.0 m	Gauge Height:	0.66	m
Radius of Hole:	0.038 m	Test Length:	5	m
Packer Type:	Mechnical Single	Injection pipe Diameter:	0.046	m
Lugeon Value:	3.400 lit/min/m/Mpa	Injection pipe Length (15+20):	35	m
Permeability:	5.100E-05 cm/sec	Hole Inclination:	Vertical	

				·			
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{I.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4	5.18E-05 5.366E-04 1.365E-03 5.222E-04 0.000E+00	1.066 4.065 7.065 4.065 1.066	1065.948 4065.463 7064.635 4065.478 1066.000	2.300 7.400 11.800 7.300 0.000	0.460 1.480 2.360 1.460 0.000	4.315 3.640 3.341 3.591 0.000	5.586E-05 4.712E-05 4.324E-05 4.648E-05 0.000E+00



Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injection Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-1				Test Interval:	25-30	m
Water Level:	0.0	m		Ì	Gauge Height:	0.66	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	ingle		ŀ	Injection pipe Diameter:	0.046	m
Lugeon Value:	5.692	lit/min/m/Mpa			Injection pipe Length (15+25):	40	m
Permeability:	8.538E-05	cm/sec			Hole Inclination:	Vertical	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4	2.80E-06 2.164E-03 6.133E-03 2.164E-03	1.066 4.064 7.060 4.064	1065.997 4063.836 7059.867 4063.836	0.500 13.900 23.400 13.900	0.100 2.780 4.680 2.780	0.938 6.841 6.629 6.841	1.214E-05 8.854E-05 8.580E-05 8.854E-05

0.000

0.000

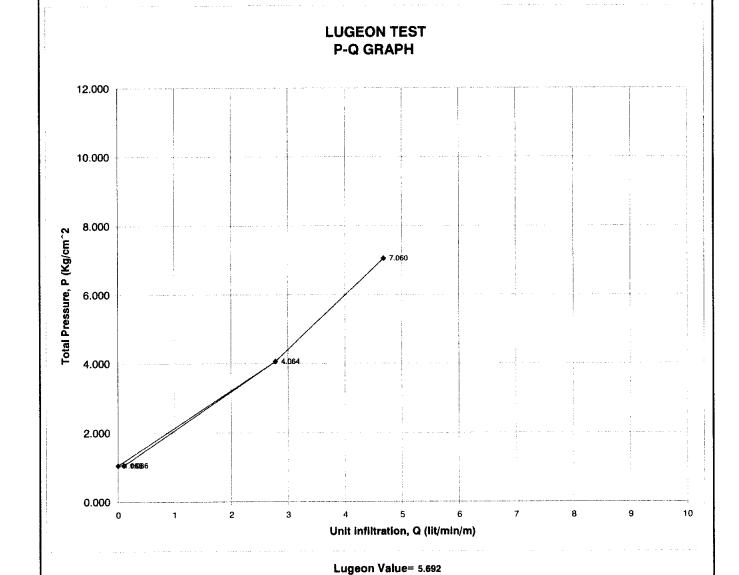
0.000

0.000E+00

0.000E+00

1.066

1066.000



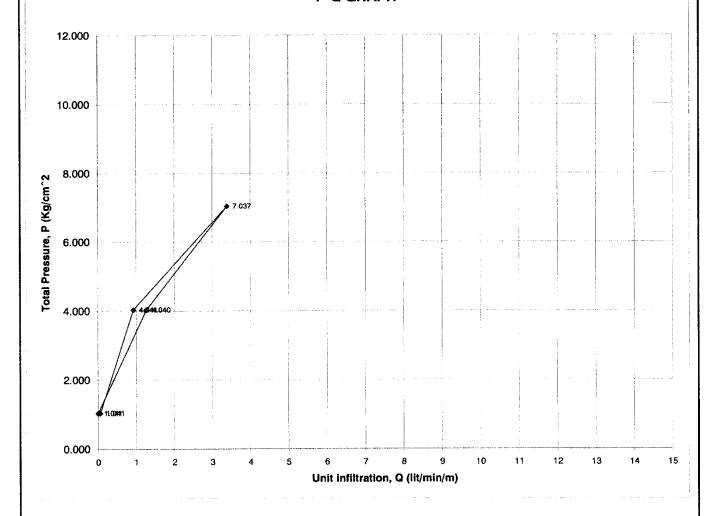
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec) Note: Length of Injection Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP	STRUCTURE:	POWERH	OUSE
Drill Hole NO.:	BPH-1		Test Interval:	30-35	m
Water Level:	0.0	m	Gauge Height:	0.41	m
Radius of Hole:	0.038	m	Test Length:	5	m
Packer Type:	Mechnical S	ingle	Injection pipe Diameter:	0.046	m
Lugeon Value:		lit/min/m/Mpa	Injection pipe Length (15+30):	45	m
Permeability:	8.760E-05	cm/sec	Hole Inclination:	Horizontal	
		•			

ł				L			
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Total Water Pressure Head, h≂P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4 1	1.13E-06 2.666E-04 3.599E-03 5.001E-04 0.000E+00	1.041 4.041 7.037 4.040 1.041	1040.999 4040.733 7037.401 4040.500 1041.000	0.300 4.600 16.900 6.300 0.000	0.060 0.920 3.380 1.260 0.000	0.576 2.277 4.803 3.118 0.000	7.460E-06 2.947E-05 6.217E-05 4.036E-05 0.000E+00

LUGEON TEST P-Q GRAPH

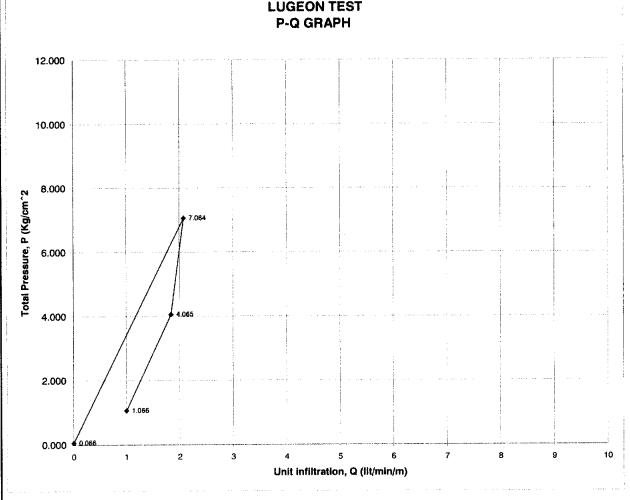


Lugeon Value= 5.84

Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

PV-1 0.0 m 038 m nical Single 923 lit/min/m/Mpa 5E-05 cm/sec			Test Interval: Gauge Height: Test Length: Injection pipe Diameter: Injection pipe Length (15+40): Hole Inclination:	0.66 5 0.046	m m m m
0.0 m 038 m nical Single 923 lit/min/m/Mpa 5E-05 cm/sec			Test Length: Injection pipe Diameter: Injection pipe Length (15+40):	5 0.046 55	m m
038 m nical Single 923 lit/min/m/Mpa 5E-05 cm/sec			Injection pipe Diameter: Injection pipe Length (15+40):	0.046 55	m
923 lit/min/m/Mpa 5E-05 cm/sec			Injection pipe Length (15+40):	55	
5E-05 cm/sec					m
	4		Hole Inclination:	Vertical	
					
ction Total Pressure, dloss, P=Po+H*0.1- (g/cm²) H ₁ (Kg/cm²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff, of Permeability, K, (cm/sec)
5E-04 1.066 03E-03 4.065	1065.615 4064.697	5.000 9.200	1.000 1.840	9.384 4.527	1.215E-04 5.859E-05
3E-03 4.065 6E-03 7.064	7064.334	10.400	2.080	2.944	3.811E-05
0E+00 0.066	66.000	0.000	0.000	0.000	0.000E+00
0.066	66.000	0.000	0.000	0.000	0.000E+00
		,			
)E+00	0.066				0.066 66.000 0.000 0.000 0.000 LUGEON TEST



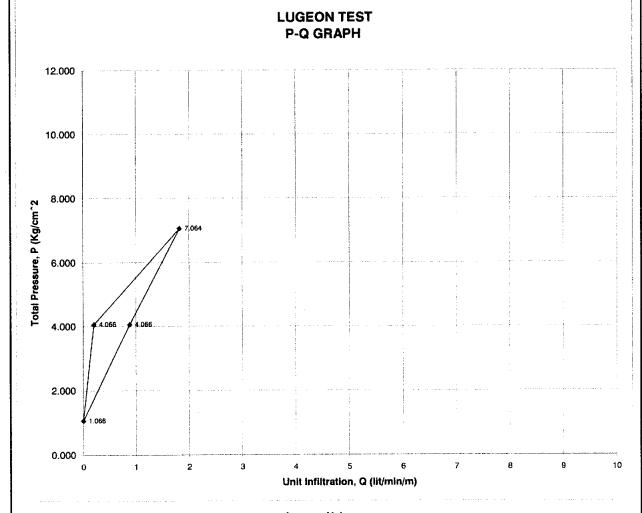
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.: Water Level: Radius of Hole: Packer Type: Lugeon Value: Permeability:	BPV-1 0.0 0.038 Mechnical S 3.423 5.135E-05	lit/min/m/Mpa			Test Interval: Gauge Height: Test Length: Injection pipe Diameter: Injection pipe Length (15+60): Hole Inclination:	0.66 5 0.046	m m m m
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _t (Kg/cm ²)	Total Water Pressure Head,	Average Infiltration Volume,	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value	Converted Coeff. of Permeability,

Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{I,} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1	0.00€+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00
4	4.066E-04	4.066	4065.593	4.400	0.880	2.165	2.802E-05
7	1.739E-03	7.064	7064.261	9.100	1.820	2.576	3.335E-05
4	2.100E-05	4.066	4065.979	1.000	0.200	0.492	6.367E-06
1	0.000E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00

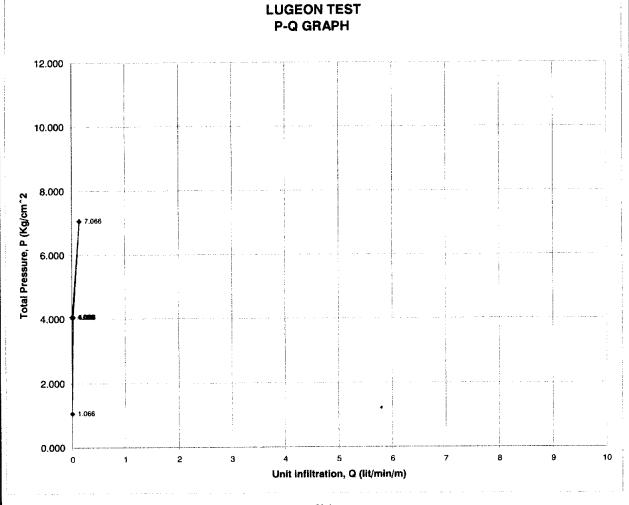


Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	I-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-1				Test Interval:	65-70	m
Water Level:	0.0	m			Gauge Height:	0.66	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	inale	,		Injection pipe Diameter:	0.046	m
Lugeon Value:	0.388	lit/min/m/Mpa			Injection pipe Length (15+65):	80	m
Permeability:	5.820E-06	cm/sec			Hole Inclination:	Vertical	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H ₁ (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4 1	0.00E+00 2.240E-07 1.098E-05 0.000E+00 0.000E+00	1.066 4.066 7.066 4.066 1.066	1066.000 4066.000 7065.989 4066.000 1066.000	0.000 0.100 0.700 0.000 0.000	0.000 0.020 0.140 0.000 0.000	0.000 0.049 0.198 0.000 0.000	0.000E+00 6.367E-07 2.565E-06 0.000E+00 0.000E+00



Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

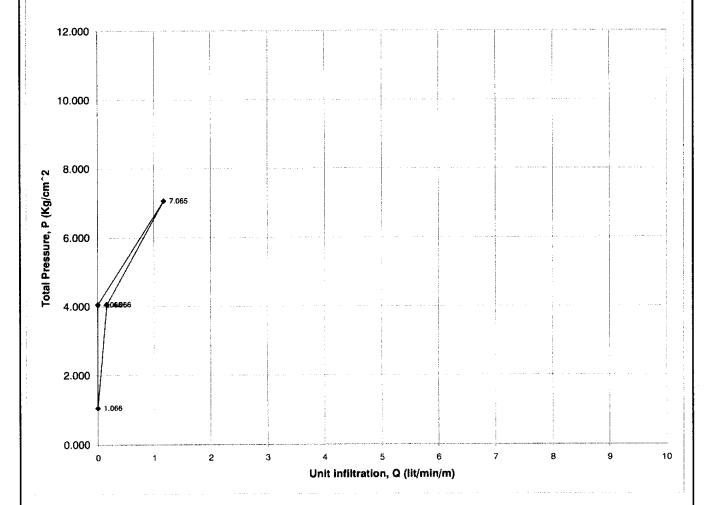
Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHANI-III HPP	STRUCTURE:	POWERH	OUSE
Drill Hole NO.:	BPV-1	Test Interval:	70-75	m
Water Level:	0.0 m	Gauge Height:	0.66	m
Radius of Hole:	0.038 m	Test Length:	5	m
Packer Type:	Mechnical Single	Injection pipe Diameter:	0.046	m
Lugeon Value:		Injection pipe Length (15+70):	85	m
Permeability:	3.510E-05 cm/sec	Hole Inclination:	Vertical	
1				

Pressure at Manometer po, (Kg/cm ²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)		Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1	0.00E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00
4	1.523E-05	4.066	4065.985	0.800	0.160	0.394	5.093E-06
7	8.145E-04	7.065	7065.186	5.850	1.170	1.656	2.143E-05
4	0.000E+00	4.066	4066.000	0.000	0.000	0.000	0.000E+00
1	0.000E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00

LUGEON TEST P-Q GRAPH



Lugeon Value≈ 2.34

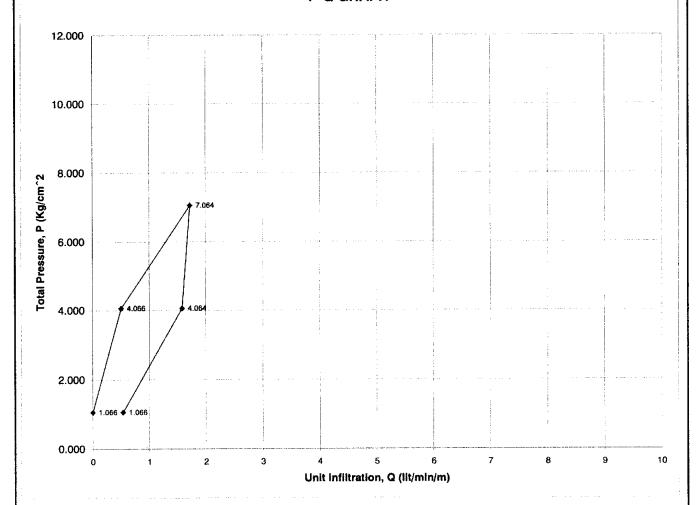
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project: KULEKHANI-III HPP	KHANI-III HPP STRUCTURE:		OUSE
Drill Hole NO.: BPV-1	Test Interval:	75-80	m
Water Level: 0.0 m	Gauge Height:	0.66	m
Radius of Hole: 0.038 m	Test Length:	5	m
Packer Type: Mechnical Single	Injection pipe Diameter:	0.046	m
Lugeon Value: 2.870 lit/min/m/Mpa	Injection pipe Length (15+75):	90	m
Permeability: 4.305E-05 cm/sec	Hole Inclination:	Vertical	

Friction eadloss, (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Pressure	Average Infiltration Volume,	Unit Infiltration Volume,	Converted Lugeon	Converted Coeff. of
	TH, (Ng/om /	h=P*1000 cm	,	Q,(lit/min/m)	Value (LU)	Permeability, K, (cm/sec)
1.78E-04	1.066	1065.822	2.660	0.532	4.991	6.461E-05 5.032E-05
			1			3.152E-05
.575E-04	4.066	4065.843	2.500	0.500	1.230	1.592E-05
.000E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00
.5 .8 .5	73E-03 64E-03 75E-04	73E-03 4.064 164E-03 7.064 175E-04 4.066	773E-03 4.064 4064.427 164E-03 7.064 7064.136 175E-04 4.066 4065.843	173E-03 4.064 4064.427 7.900 164E-03 7.064 7064.136 8.600 175E-04 4.066 4065.843 2.500	173E-03 4.064 4064.427 7.900 1.580 164E-03 7.064 7064.136 8.600 1.720 175E-04 4.066 4065.843 2.500 0.500	7/3E-03 4.064 4064.427 7.900 1.580 3.887 1/64E-03 7.064 7064.136 8.600 1.720 2.435 1/75E-04 4.066 4065.843 2.500 0.500 1.230

LUGEON TEST P-Q GRAPH



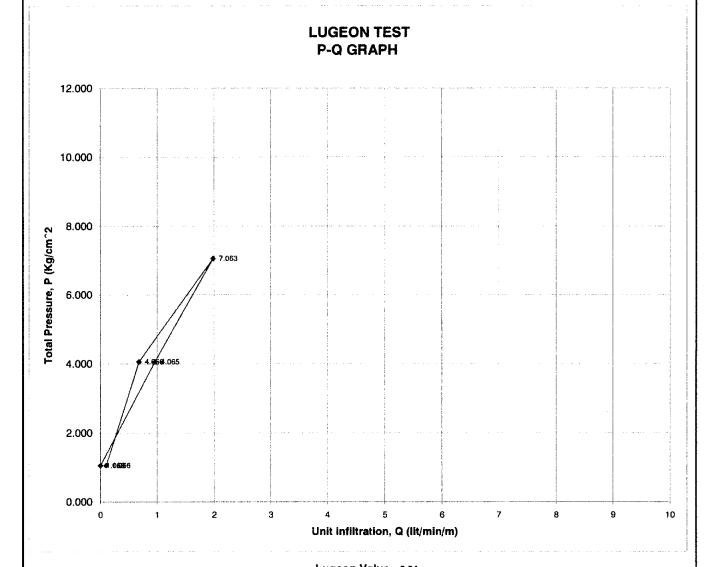
Lugeon Value= 2.87

Coeff. Of permeability, K= 1.5*10^-5*Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-1				Test Interval:	80-85	m
Water Level:	0.0	m			Gauge Height:	0.66	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	ingle			Injection pipe Diameter:	0.046	m
Lugeon Value:	3.340	lit/min/m/Mpa			Injection pipe Length (15+80):	95	m
Permeability:	5.010E-05	cm/sec			Hole Inclination:	Vertical	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4 1	0.00E+00 6.129E-04 2.607E-03 3.075E-04 6.650E-06	1.066 4.065 7.063 4.066 1.066	1066.000 4065.387 7063.393 4065.693 1065.993	0.000 4.800 9.900 3.400 0.500	0.000 0.960 1.980 0.680 0.100	0.000 2.361 2.803 1.673 0.938	0.000E+00 3.056E-05 3.628E-05 2.165E-05 1.214E-05

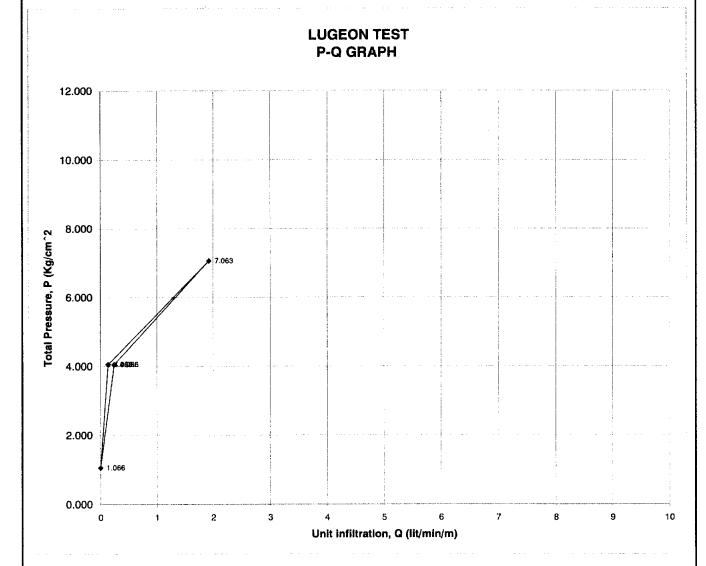


Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHANI-III HPP	STRUCTURE:	POWERH	OUSE
Drill Hole NO.:	BPV-1	Test Interval:	85-90	m
Water Level:	0.0 m	Gauge Height:	0.66	m
Radius of Hole:	0.038 m	Test Length:	5	m
Packer Type:	Mechnical Single	Injection pipe Diameter:	0.046	m
Lugeon Value:	3.730 lit/min/m/Mpa	Injection pipe Length (15+85):	100	m
Permeability:	5.595E-05 cm/sec	Hole Inclination:	Vertical	
1				

Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1	0.00E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00
4	4.032E-05	4.066	4065.960	1.200	0.240	0.590	7.640E-06
7	2.580E-03	7.063	7063.420	9.600	1.920	2.718	3.518E-05
4	1.246E-05	4.066	4065.988	0.667	0.133	0.328	4.247E-06
1	0.000E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00



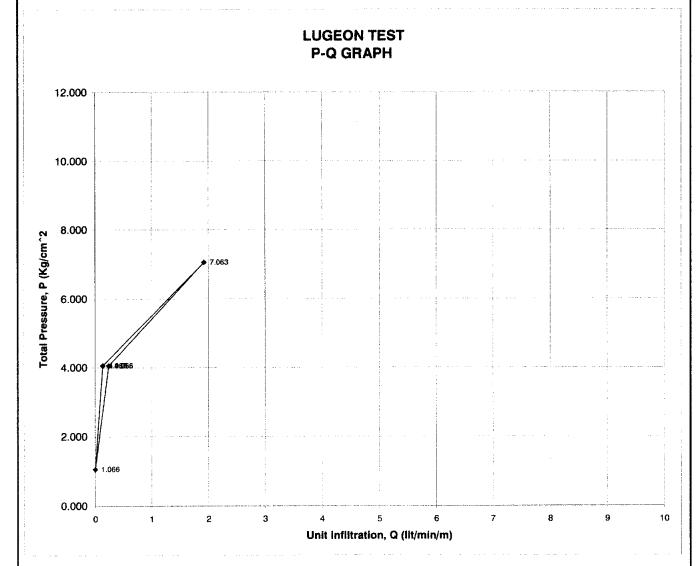
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	VI-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-1				Test Interval:	90-95	m
Water Level:	0.0	m			Gauge Height:	0.66	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	Single			Injection pipe Diameter:	0.046	m
Lugeon Value:	3.450	lit/min/m/Mpa			Injection pipe Length (15+90):	105	m
Permeability:	5.175 E-05	cm/sec			Hole Inclination:	Vertical	
Pressure at	Friction	Total Pressure,	Total Water	Average		Converted	Con

Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm²)	Total Pressure, P≖Po+H*0.1- H _{f.} (Kg/cm²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1	0.00E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00
4	4.234E-05	4.066	4065.958	1.200	0.240	0.590	7.640E-06
7	2.710E-03	7.063	7063.290	9.600	1.920	2.718	3.518E-05
4	1.308E-05	4.066	4065.987	0.667	0.133	0.328	4.247E-06
1	0.000E+00	1.066	1066.000	0.000	0.000	0.000	0.000E+00



Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

PROJECT:

KULEKANI III HYDROPOWER PROJECT

Sheet 1 of 8

DRILL HOLE NO:

BPV-2B

TEST INTERVAL:

38.40 to 43.40 m

WATER LEVEL:

76.80 m

GAUGE HEIGHT:

-0.50 m

HOLE DIAMETER: 76 mm

TEST LENGTH:

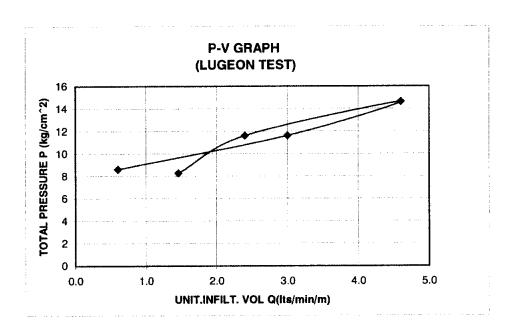
5.0 m

PACKER TYPE:

LUGEON VALUE: 2..0 lt/min/m/Mpa

HOLE INCLINATION: VERTICAL MECHANICAL DOUBLE

LOGEON VALUE.	E. O IGITINITINI INIDO			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm^2)	P=Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (I/min)	Q(I/min/m)	(LU)
1	8.63	7.30	1.5	1.69
4	11.63	12.00	2.4	2.06
7	14.63	23.00	4.6	3.14
4	11.63	15.00	3.0	2.58
1	8.63	3.00	0.6	0.70



Lugeon Value=2.0

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

EAST DRILLING COMPANY (P) LTD. WATER PRESSURE TEST

PROJECT:

KULEKANI III HYDROPOWER PROJECT

Sheet 2 of 8

DRILL HOLE NO:

BPV-2B

TEST INTERVAL:

41.20 to 46.20m

WATER LEVEL:

76.90 m

GAUGE HEIGHT:

-0.50 m

HOLE DIAMETER: 76 mm

TEST LENGTH:

5.0 m

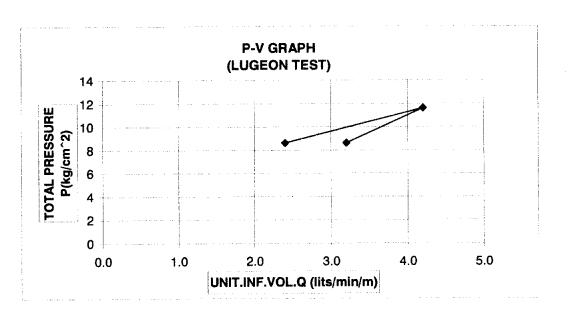
PACKER TYPE:

MECHANICAL DOUBLE

HOLE INCLINATION: VERTICAL

LUGEON VALUE: 3.15 lt/min/m/Mpa

LOGILOI VILLOL.	O. 10 19111019119119			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm^2)	P=Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(I/min/m)	(LU)
1	8.64	12.00	2.4	2.78
4	11.64	21.00	4.2	3.61
1	8.64	11.00	3.2	3.70



Lugeon Value=3.15

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

PROJECT: KULEKANI III HYDROPOWER PROJECT

Sheet 3 of 8

DRILL HOLE NO: BPV-2B

TEST INTERVAL:

46.0 to 51m

WATER LEVEL: 76.10 m

GAUGE HEIGHT:

-0.50 m

HOLE DIAMETER: 76 mm

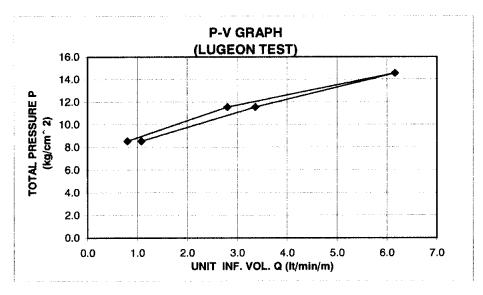
O IIIII

TEST LENGTH: 5.0 m

PACKER TYPE: MECHANICAL DOUBLE LUGEON VALUE: 2.1 lt/min/m/Mpa

HOLE INCLINATION: VERTICAL

PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm ²)	P=Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	8.56	5.40	1.1	1.26
4	11.56	16.80	3.4	2.91
7	14.56	30.80	6.2	4.23
4	11.56	14.00	2.8	2.42
1	8.56	4.00	0.8	0.93



Lugeon Value=2.10

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

KULEKANI III HYDROPOWER PROJECT PROJECT:

Sheet 4 of 8

DRILL HOLE NO: BPV-2B **TEST INTERVAL:**

50.0 to 55.0m

WATER LEVEL: 75.0 m **GAUGE HEIGHT:**

-0.50 m

HOLE DIAMETER: 76 mm

TEST LENGTH:

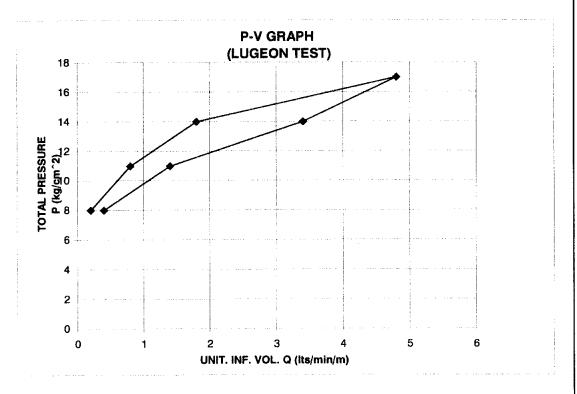
5.0 m

PACKER TYPE: MECHANICAL DOUBLE

HOLE INCLINATION: VERTICAL

LUGEON VALUE: 1.0 lt/min/m/Mpa

LOGICAL VALUE.	1.0 Million Million			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm^2)	P≖Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (I/min)	Q(l/min/m)	(LU)
1	8.00	1.00	0.2	0.25
4	11.00	4.00	0.8	0.73
7	14.00	9.00	1.8	1.29
10	17.00	24.00	4.8	2.82
7	14.00	17.00	3.4	2.43
4	11.00	7.00	1.4	1.27
1	8.00	2.00	0.4	0.50



Lugeon Value=1.0 Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

PROJECT:

KULEKANI III HYDROPOWER PROJECT

Sheet 5 of 8

DRILL HOLE NO:

BPV-2B

TEST INTERVAL:

56.5 to 61.50m

WATER LEVEL:

75.20 m

GAUGE HEIGHT:

-0.50 m

HOLE DIAMETER: 76 mm

TEST LENGTH:

5.0 m

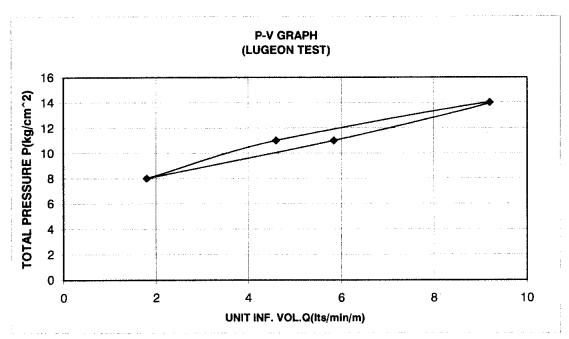
PACKER TYPE:

MECHANICAL DOUBLE

HOLE INCLINATION: VERTICAL

LUGEON VALUE: 4.20 lt/min/m/Mpa

LUCIEUM VALUE.	4.20 Millingingalpa			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm^2)	P=Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	8.02	9.00	1.8	2.24
4	11.02	29.20	5.8	5.30
7	14.02	46.00	9.2	6.56
4	11.02	23.00	4.6	4.17
1	8.02	9.00	1.8	2.24



Lugeon Value=4.2

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

PROJECT: KULEKANI III HYDROPOWER PROJECT Sheet 6 of 8

DRILL HOLE NO: BPV-2B TEST INTERVAL: 61.50 to 66.50m

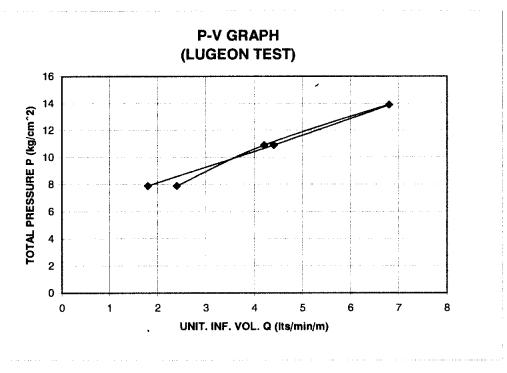
WATER LEVEL: 74.0 m GAUGE HEIGHT: -0.50 m

HOLE DIAMETER: 76 mm TEST LENGTH: 5.0 m

PACKER TYPE: MECHANICAL DOUBLE HOLE INCLINATION: VERTICAL

LUGEON VALUE: 3.5 lt/min/m/Mpa

	<u> </u>			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm ²)	P≖Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	7.90	12.00	2.4	3.04
4	10.90	21.00	4.2	3.85
7	13.90	34.00	6.8	4.89
4	10.90	22.00	4.4	4.04
1	7.90	9.00	1.8	2.28



Lugeon Value= 3.5

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

KULEKANI III HYDROPOWER PROJECT PROJECT:

Sheet 7 of 8

DRILL HOLE NO: BPV-2B TEST INTERVAL: 67 to 72.0m

WATER LEVEL: 74.0 m **GAUGE HEIGHT:**

-0.50 m

HOLE DIAMETER: 66 mm

TEST LENGTH:

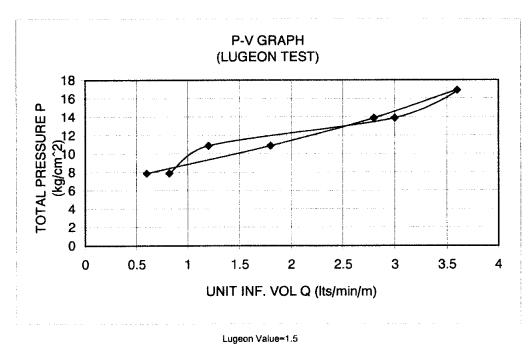
5.0 m

MECHANICAL DOUBLE PACKER TYPE:

HOLE INCLINATION: VERTICAL

LUGEON VALUE: 1.5 lt/min/m/Mpa

LOGICON VILOL.	1.0 191111111111111111111111111111111111			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm^2)	P≖Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	7.90	4.10	0.8	1.04
4	10.90	6.00	1.2	1.10
7	13.90	15.00	3.0	2.16
10	16.90	18.00	3.6	2.13
7	13.90	14.00	2.8	2.01
4	10.90	9.00	1.8	1.65
1	7.90	3.00	0.6	0.76



Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

KULEKANI III HYDROPOWER PROJECT PROJECT:

Sheet 8 of 8

DRILL HOLE NO: BPV-2B

TEST INTERVAL:

WATER LEVEL: 77.2 m

GAUGE HEIGHT:

73.30 to 78.30m -0.50 m

5.0 m

HOLE DIAMETER: 66 mm

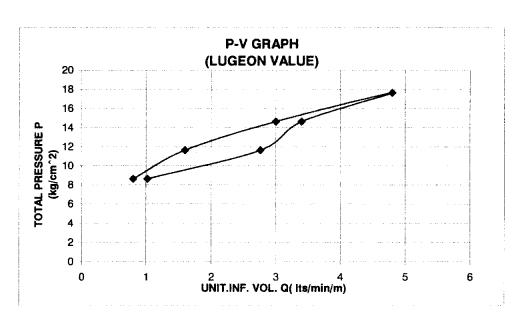
TEST LENGTH:

HOLE INCLINATION: VERTICAL

LUGEON VALUE: 2.7 lt/min/m/Mna

PACKER TYPE: MECHANICAL DOUBLE

LUGLON VALUE.	2.7 Igithiryinyivipa			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm ²)	P=Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	8.67	5.10	1.0	1.18
4	11.67	13.80	2.8	2.37
7	14.67	17.00	3.4	2.32
10	17.67	24.00	4.8	2.72
7	14.67	15.00	3.0	2.04
4	11.67	8.00	1.6	1.37
1	8.67	4.00	0.8	0.92

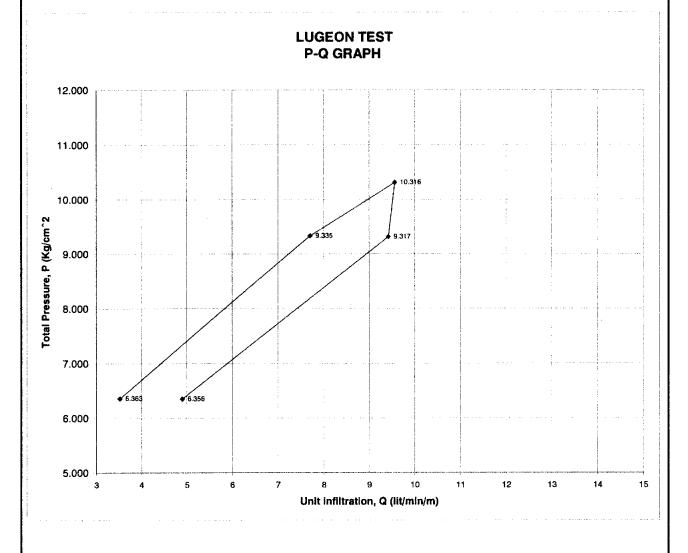


Lugeon Value=2.7

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

Project:	KULEKHA	VI-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-3			ł	Test Interval:	69.8-74.8	m
Water Level:	52.5	m			Gauge Height:	1.2	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	Single			Injection pipe Diameter:	0.046	m
Lugeon Value:	9.000	lit/min/m/Mpa		1	Injection pipe Length (15+69.8):	84.8	m
Permeability:	1.350E-04	cm/sec			Hole Inclination:	Vertical	
Pressure at	Friction	Total Pressure,	Total Water	Average	Linit Infiltration Valums	Converted	Conv

Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{t.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1	7.35E-03	6.363	6362.645	17.600	3.520	5.532	7.161E-05
4	3.519E-02	9.335	9334.805	38.500	7.700	8.249	1.068E-04
5	5.425E-02	10.316	10315.749	47.800	9.560	9.267	1.200E-04
4	5.267E-02	9.317	9317.326	47.100	9.420	10.110	1.309E-04
1	1.425E-02	6.356	6355.748	24.500	4.900	7.710	9.979E-05

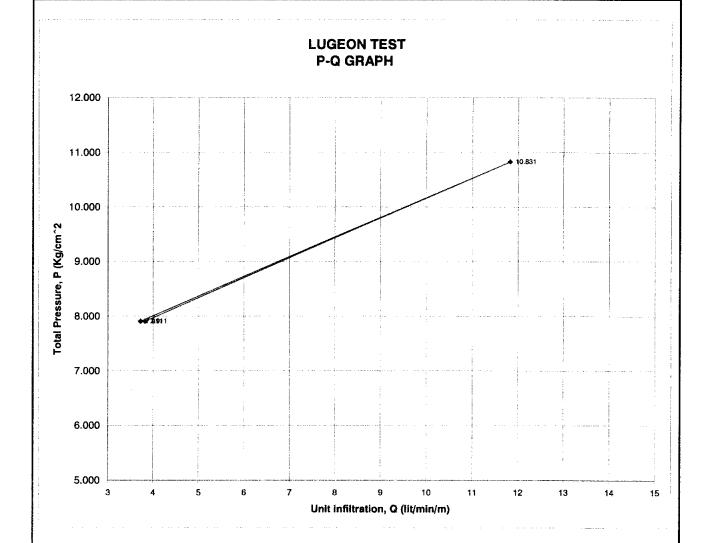


Lugeon Value= 9

Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-3				Test Interval:	75.7-80.7	m
Water Level:	68.0	m		•	Gauge Height:	1.2	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	ingle		1	Injection pipe Diameter:	0.046	m
Lugeon Value:	9.500	lit/min/m/Mpa			Injection pipe Length (15+75.7):	90.7	m
Permeability:	1.425E-04	cm/sec			Hole Inclination:	Vertical	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 1	8.79E-03 8.870E-02 9.265E-03	7.911 10.831 7.911	7911.214 10831.297 7910.735	18.600 59.100 19.100	3.720 11.820 3.820	4.702 10.913 4.829	6.086E-05 1.413E-04 6.250E-05

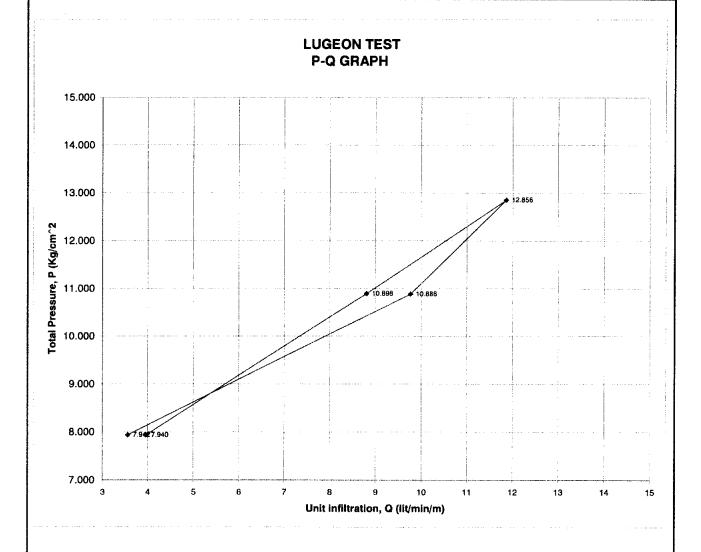


Lugeon Value= 9.5 Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHANI-III HPP		STRUCTURE:	POWERHO	DUSE
Drill Hole NO.:	BPV-3	i	Test Interval:	80.3-85.3	m
Water Level:	68.3 m		Gauge Height:	1.2	m
Radius of Hole:	0.038 m		Test Length:	5	m
Packer Type:	Mechnical Single		Injection pipe Diameter:	0.046	m
Lugeon Value:	7.370 lit/min/m/Mpa		Injection pipe Length (15+80.3):	95.3	m
Permeability:	1.106E-04 cm/sec		Hole Inclination:	Vertical	

<u> </u>							
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H ₁ (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q.(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 6 4 1	8.45E-03 6.355E-02 9:383E-02 5.166E-02 1.046E-02	7.942 10.886 12.856 10.898 7.940	7941.545 10886.454 12856.166 10898.340 7939.539	17.800 48.800 59.300 44.000 19.800	3.560 9.760 11.860 8.800 3.960	4.483 8.965 9.225 8.075 4.988	5.802E-05 1.160E-04 1.194E-04 1.045E-04 6.456E-05



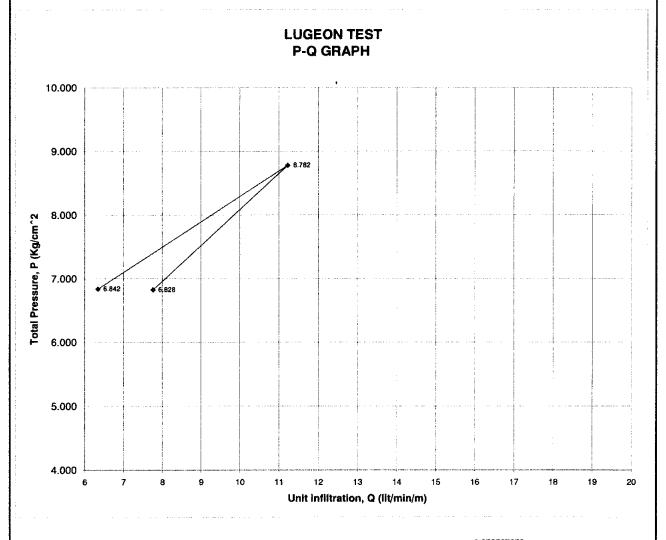
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHANI-III HPP	STRUCTURE:	POWERHOUSE
Drill Hole NO.:	BPV-3	Test Interval:	85.3-90.3 m
Water Level:	57.5 m	Gauge Height:	1.2 m
Radius of Hole:	0.038 m	Test Length:	5 m
Packer Type:	Mechnical Single	Injection pipe Diameter:	0.046 m
Lugeon Value:	14.300 lit/min/m/Mpa	Injection pipe Length (15+85.3):	100.3 m
Permeability:	2.145E-04 cm/sec	Hole Inclination:	Vertical
t officasimty.	attrom by difficult	71010 770111120011	7 0.17501

l								
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H ₁ (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{1.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)	
1 3 1	4.23E-02 8.839E-02 2.822E-02	6.828 8.782 6.842	6827.721 8781.614 6841.779	38.800 56.100 31.700	7.760 11.220 6.340	11.365 12.777 9.267	1.471E-04 1.654E-04 1.199E-04	



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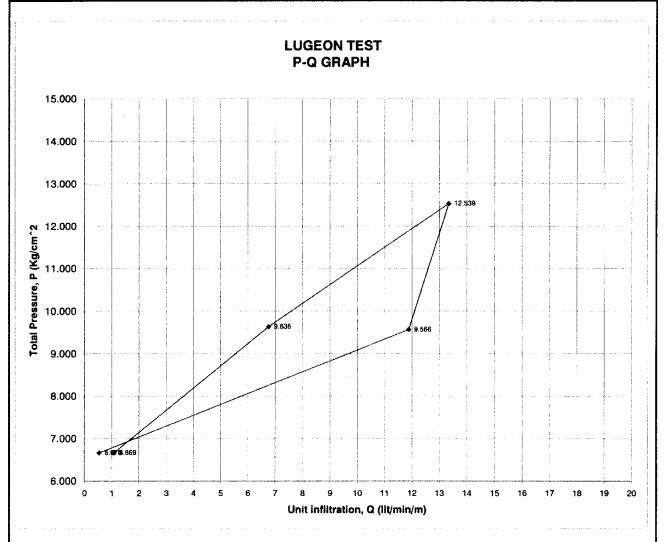
Lugeon Value= 14.3
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHANI-I	II HPP		STRUCTURE:	POWERH	DUSE
Drill Hole NO.:	BPV-3			Test Interval:	90.3-95.3	m
Water Level:	55.5 m	ı		Gauge Height:	1.2	m
Radius of Hole:	0.038 m	ı		Test Length:	5	m
Packer Type:	Mechnical Sing	gle		Injection pipe Diameter:	0.046	m
Lugeon Value:	7.600 lit	/min/m/Mpa	1	Injection pipe Length (15+90.3):	105.3	m
Permeability:	1.140E-04 cr	n/sec		Hole Inclination:	Vertical	
· ·						

L								
Pressure at Manometer po, (Kg/cm ²)	Friction Headloss, H ₁ (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)	
1 4 7 4 1	8.60E-04 3.368E-02 1.312E-01 1.040E-01 2.149E-04	6.669 9.636 12.539 9.566 6.670	6669.140 9636.316 12538.829 9565.970 6669.785	5.400 33.800 66.700 59.400 2.700	1.080 6.760 13.340 11.880 0.540	1.619 7.015 10.639 12.419 0.810	2.096E-05 9.080E-05 1.377E-04 1.607E-04 1.048E-05	



Lugeon Value≖ 7.6

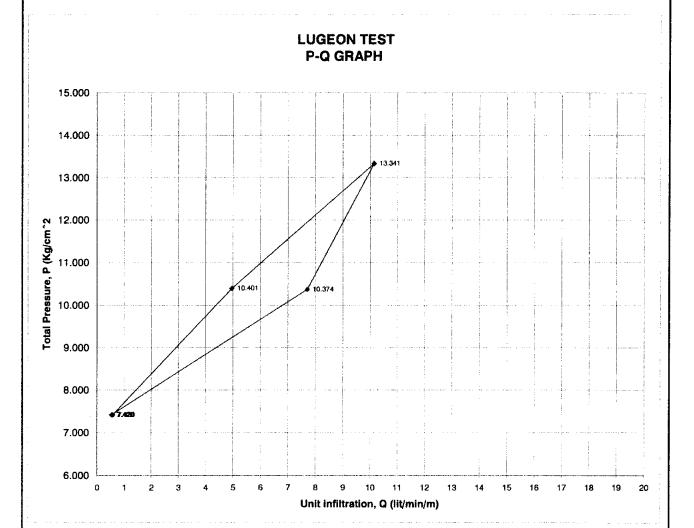
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHANI-III HPP	STRUCTURE:	POWERHOUSE
Drill Hole NO.:	BPV-3	Test Interval:	95-100 m
Water Level:	63.0 m	Gauge Height:	1.2 m
Radius of Hole	: 0.038 m	Test Length:	5 m
Packer Type:	Mechnical Single	Injection pipe Diameter:	0.046 m
Lugeon Value:	4.400 lit/min/m/Mpa	Injection pipe Length (15+95):	110 m
Permeability:	6.600E-05 cm/sec	Hole Inclination:	Vertical

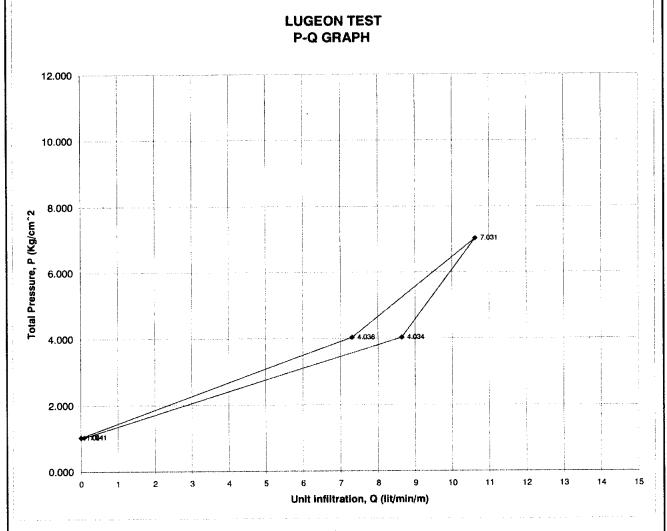
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H ₁ (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{t.} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)	
1 4 7 4 1	2.59E-04 1.894E-02 7.917E-02 4.565E-02 2.245E-04	7.420 10.401 13.341 10.374 7.420	7419.741 10401.057 13340.829 10374.347 7419.775	2.900 24.800 50.700 38.500 2.700	0.580 4.960 10.140 7.700 0.540	0.782 4.769 7.601 7.422 0.728	1.012E-05 6.172E-05 9.838E-05 9.607E-05 9.420E-06	



Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	HII HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPH-1			1	Test Interval:	11.8-15	m
Water Level:	0.0	m			Gauge Height:	0.41	m
Radius of Hole:	0.038	m			Test Length:	3.52	m
Packer Type:	Mechnical Si	ingle			Injection pipe Diameter:	0.046	m
Lugeon Value:	13.880	lit/min/m/Mpa	İ		Injection pipe Length (15+11.48):	26.48	m
Permeability:	1.804E-04	cm/sec		:	Hole Inclination:	Horizontal	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)		Dropoura Hond	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q.(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4 1	6.67E-07 6.852E-03 1.037E-02 4.897E-03 0.000E+00	1.041 4.034 7.031 4.036 1.041	1040.999 4034.148 7030.629 4036.103 1041.000	0.300 30.400 37.400 25.700 0.000	0.085 8.636 10.625 7.301 0.000	0.819 21.408 15.112 18.090 0.000	9.835E-06 2.572E-04 1.815E-04 2.173E-04 0.000E+00

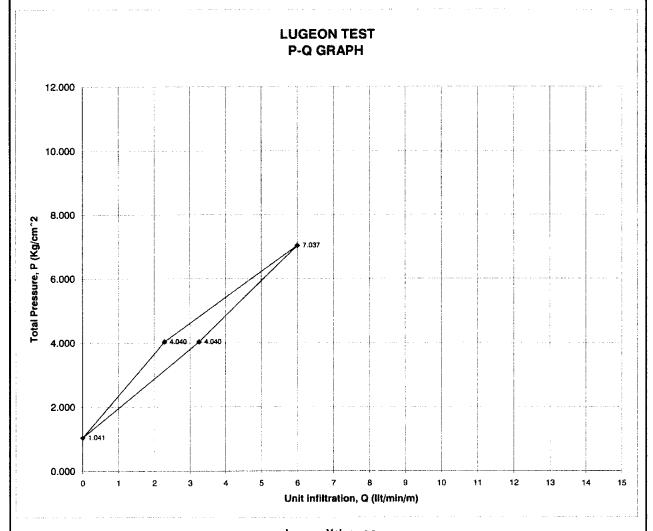


Coeff. Of permeability, K= 1.3*10*-5*Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPH-1				Test Interval:	15-18.5	m
Water Level:	0.0	m			Gauge Height:	0.41	m
Radius of Hole:	ole: 0.038 m				Test Length:	3.5	m
Packer Type: Mechnical Single			İ	Injection pipe Diameter:	0.046	m	
Lugeon Value: 9.600 lit/min/m/Mpa				Injection pipe Length (15+15):	30	m	
Permeability:	1.248E-04	cm/sec			Hole Inclination:	Horizontal	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)		Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1	0.00E+00	1.041	1041.000	0.000	0.000	0.000	0.000E+00
4	1.092E-03	4.040	4039.908	11.400	3.257	8.062	9.673E-05
7	3.704E-03	7.037	7037.296	21.000	6.000	8.526	1.023E-04
1 4	5.376E-04	4.040	4040.462	8.000	2.286	5.657	6.787E-05



Lugeon Value≖ 9.6

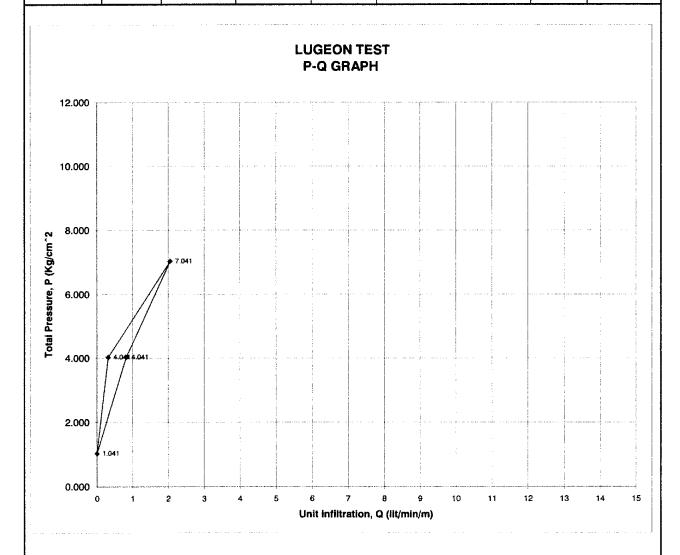
Coeff. Of permeability, K=1.3*10*-5*Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	I-III HPP			STRUCTURE:	POWERHO	OUSE
Drill Hole NO.:	BPH-1				Test Interval:	18-21.15	m
Water Level:	0.0	m			Gauge Height:	0.41	m
Radius of Hole:	0.038	m			Test Length:	3.52	m
Packer Type:	Mechnical Si	ingle			Injection pipe Diameter:	0.046	m
Lugeon Value:	3.839	lit/min/m/Mpa		į	Injection pipe Length (15+17.63):	32.63	m
Permeability:	4.991E-05	cm/sec			Hole Inclination:	Horizontal	
			Total Water	Average		Converted	Converted

Friction leadloss, (Kg/cm²)	P=Po+H*0.1-	Pressure Head,	Infiltration Volume,	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
0.00E+00 7.578E-05 4.736E-04 1.106E-05 0.000E+00	1.041 4.041 7.041 4.041 1.041	1041.000 4040.924 7040.526 4040.989 1041.000	0.000 2.880 7.200 1.100 0.000	0.000 0.818 2.045 0.313 0.000	0.000 2.025 2.905 0.773 0.000	0.000E+00 2.432E-05 3.490E-05 9.290E-06 0.000E+00
1	(Kg/cm ²) 0.00E+00 7.578E-05 1.736E-04 1.106E-05	eadloss, P=Po+H*0.1- (Kg/cm²) H _{1.} (Kg/cm²) 0.00E+00 1.041 7.578E-05 4.041 1.736E-04 7.041 1.106E-05 4.041	Pressure Peadloss, (Kg/cm²) H _{I.} (Kg/cm²) Peasure Head, h=P*1000 cm 1.041 1.041.000 1.578E-05 4.041 1.736E-04 1.106E-05 4.041 4040.989	Prection Pressure Pressure Pressure Head, Pressure Head, Pressure Head, Pressure Pressur	Pressure P=Po+H*0.1- Head, h=P*1000 cm Pressure Head, h=P*1000 cm V,(lit/min) Unit Infiltration Volume, Q,(lit/min/m) V,(lit/min) V,(lit/m	Pressure P=Po+H*0.1- Head, h=P*1000 cm N,(lit/min) N,(lit/mi

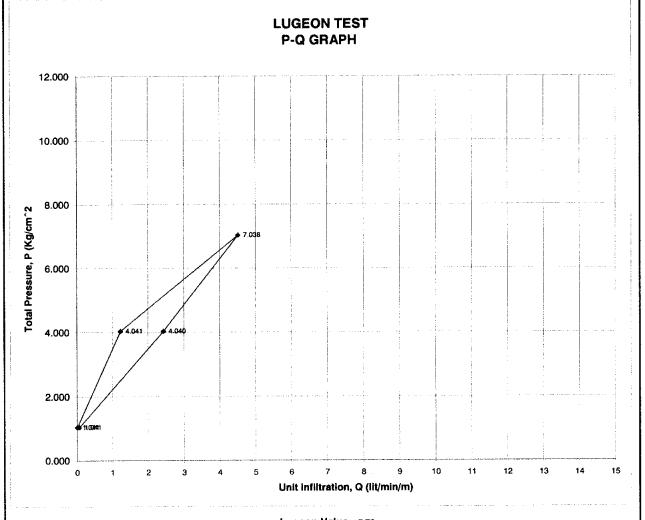


Coeff. Of permeability, K=1.3*10*-5*Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	I-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPH-1			ł	Test Interval:	21-24.5	m
Water Level:	0.0	m			Gauge Height:	0.41	m
Radius of Hole:				ŀ	Test Length:	3.5	m
Packer Type:	Mechnical S	ingle			Injection pipe Diameter:	0.046	m
Lugeon Value: 7.780 lit/min/m/Mpa					Injection pipe Length (15+21):	36	m
Permeability:	1.011E-04	cm/sec			Hole Inclination:	Horizontal	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H ₁ (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{I.} (Kg/cm ²)	Pressure Head,	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability K, (cm/sec)
1	4.03E-07	1.041	1041.000	0.200	0.057	0.549	6.586E-06
4	7.283E-04	4.040	4040.272	8.500	2.429	6.011	7.212E-05
7	2.516E-03	7.038	7038.484	15.800	4.514	6.414 3.019	7.695E-05 3.622E-05
A	1.838E-04	4.041	4040.816	4.270 0.000	1.220 0.000	0.000	0.000E+00

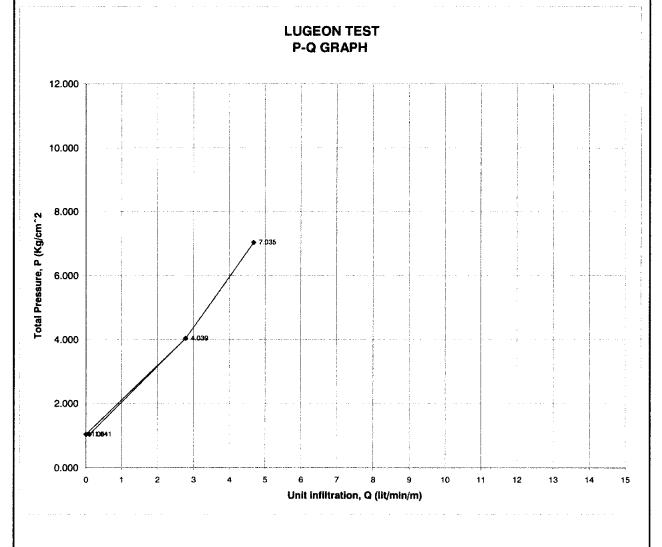


Coeff. Of permeability, K= 1.3*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	II-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPH-1				Test Interval:	25-30	m
Water Level:	0.0	m		ŀ	Gauge Height:	0.41	m
Radius of Hole:	0.038	m		ŀ	Test Length:	5	m
Packer Type: Mechnical Single				Injection pipe Diameter:	0.046	m	
Lugeon Value: 6.500 lit/min/m/Mpa				Injection pipe Length (15+25):	40	m	
Permeability:	9.750E-05	cm/sec			Hole Inclination:	Horizontal	
Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H _f (Kg/cm²)	Total Pressure, P=Po+H*0.1- H _{r.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4	2.80E-06 2.164E-03	1.041 4.039	1040.997 4038.836	0.500 13.900	0.100 2.780	0.961 6.883	1.243E-05 8.909E-05
	6.133E-03	7.035	7034.867	23.400	4.680	6.653	8.611E-05
7	2.164E-03	4.039	4038.836	13.900	2.780	6.883	8.909E-05



Lugeon Value= 6.5

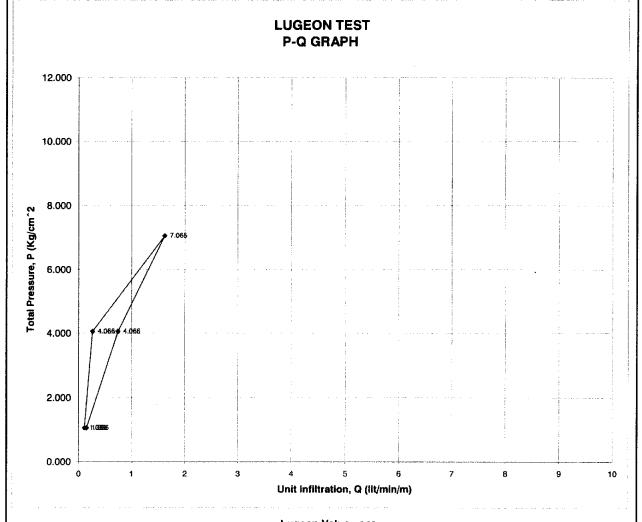
Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal djameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	VI-III HPP		1	STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPV-1			1	Test Interval:	30-35	m
Water Level:	0.0	m		1	Gauge Height:	0.66	m
Radius of Hole:	0.038	m		1	Test Length:	5	m
Packer Type:	Mechnical S	lingle		1	Injection pipe Diameter:	0.046	m
Lugeon Value:	2.980	lit/min/m/Mpa			Injection pipe Length (15+30):	45	m
Permeability:	4.470E-05	cm/sec			Hole Inclination:	Vertical	
Pressure at	Friction	Total Pressure,		Average		Converted	
Manometer po,	Headloss,	P=Po+H*0.1-	Pressure	Infiltration	Unit Infiltration Volume,	Lugeon	Coeff. of

Pressure at Manometer po, (Kg/cm²)	Friction Headloss, H ₁ (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Pressure	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)		
1 4 7 4 1	3.81E-06 2.129E-05 8.267E-04 1.725E-04 7.088E-06	1.066 4.066 7.065 4.066 1.066	1065.996 4065.979 7065.173 4065.828 1065.993	0.550 1.300 8.100 3.700 0.750	0.110 0.260 1.620 0.740 0.150	1.032 0.639 2.293 1.820 1.407	1.336E-05 8.277E-06 2.968E-05 2.356E-05 1.821E-05		

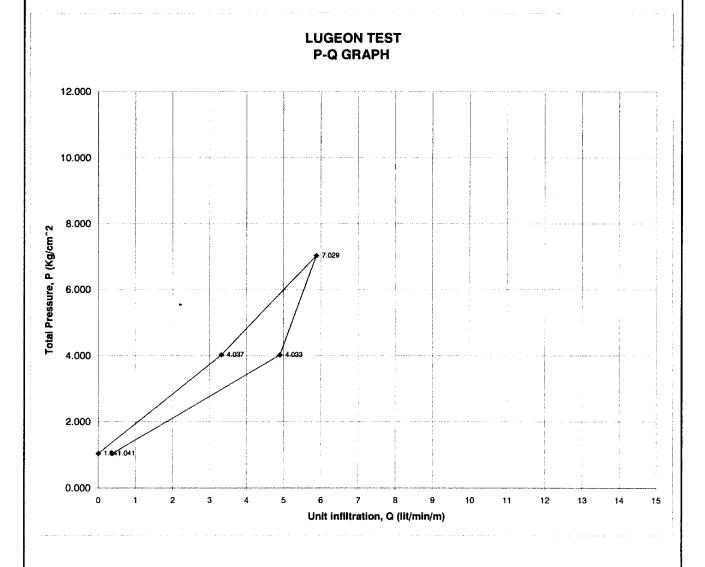


Coeff. Of Permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injection Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe.

Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

Project:	KULEKHAN	I-III HPP			STRUCTURE:	POWERHO	USE
Drill Hole NO.:	BPH-1				Test Interval:	35-40	m
Water Level:	0.0	m			Gauge Height:	0.41	m
Radius of Hole:	0.038	m			Test Length:	5	m
Packer Type:	Mechnical S	ingle			Injection pipe Diameter:	0.046	m
Lugeon Value:	8.450	lit/min/m/Mpa			Injection pipe Length (15+35):	50	m
Permeability:	1.268E-04	cm/sec			Hole Inclination:	Horizontal	
Pressure at Manometer po, (Kg/cm ²)	Friction Headloss, H ₁ (Kg/cm ²)	Total Pressure, P=Po+H*0.1- H _{f.} (Kg/cm ²)	Total Water Pressure Head, h=P*1000 cm	Average Infiltration Volume, V,(lit/min)	Unit Infiltration Volume, Q,(lit/min/m)	Converted Lugeon Value (LU)	Converted Coeff. of Permeability, K, (cm/sec)
1 4 7 4 1	5.05E-05 8.404E-03 1.210E-02 3.858E-03 0.000E+00	1.041 4.033 7.029 4.037 1.041	1040.949 4032.597 7028.899 4037.142 1041.000	1.900 24.500 29.400 16.600 0.000	0.380 4.900 5.880 3.320 0.000	3.651 12.151 8.365 8.224 0.000	4.725E-05 1.573E-04 1.083E-04 1.064E-04 0.000E+00



Coeff. Of permeability, K= 1.5*10^-5 *Lu (cm/sec)

Note: Length of Injuction Pipe above the top of Bore hole has been taken as 15 m and internal diameter has been assumed as that of drill pipe. Water from bore hole was coming out due to high water table, therefore water level (static water head) = 0.0 m.

PROJECT:

KULEKANI III HYDROPOWER PROJECT

Sheet 1 of 3

DRILL HOLE NO:

DHT-4

TEST INTERVAL:

35.0 to 40.0 m

WATER LEVEL:

2.20m

GAUGE HEIGHT:

-0.10m

HOLE DIAMETER: 66 mm

TEST LENGTH:

5.0 m

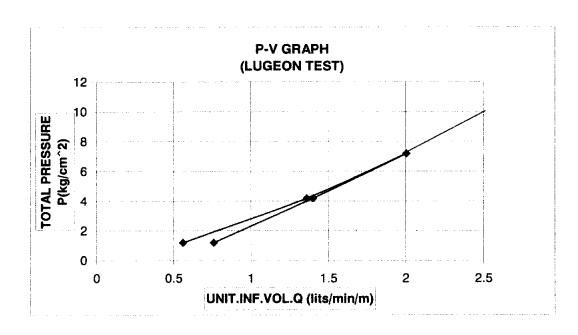
PACKER TYPE:

MECHANICAL SINGLE

HOLE INCLINATION: VERTICAL

LUGEON VALUE: 2.5 lt/min/m/Mpa

LOGLON VALUE.	E.O IGITALIATIVIPO			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm ²)	P=Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	1.21	3.80	0.8	6.28
4	4.21	7.00	1.40	3.33
7	7.21	10.02	2.00	2.78
4	4.21	6.80	1.36	3.23
1	1.21	2.80	0.56	4.63



Lugeon Value= 2.5

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

PROJECT:

KULEKANI III HYDROPOWER PROJECT

Sheet 2 of 3

DRILL HOLE NO:

DHT-4

TEST INTERVAL:

40.0 to 45.0 m

WATER LEVEL:

2.10 m

GAUGE HEIGHT:

-0.10m

HOLE DIAMETER: 66 mm

5.0 m

PACKER TYPE:

TEST LENGTH:

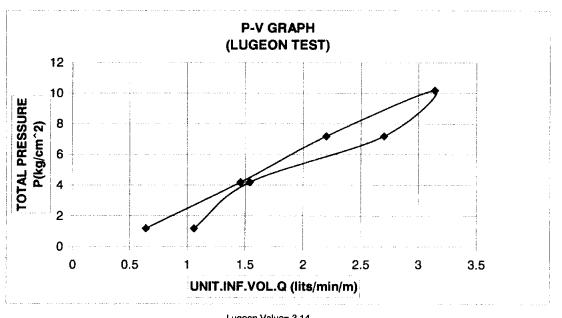
MECHANICAL SINGLE

3 14 lt/min/m/Mpa

HOLE INCLINATION: VERTICAL

LUGEUN VALUE:	3.14 lymin/m/wpa
PRESSURE AT	TOTAL

			, <u>''' </u>	····
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm ²)	P≖Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	1.20	3.20	0.6	5.33
4	4.20	7.30	1.5	3.48
7	7.20	11.00	2.2	3.06
10	10.20	15.70	3.1	3.08
7	7.20	13.50	2.7	3.75
4	4.20	7.70	1.5	3.67
1	1.20	5.30	1.1	8.83



Lugeon Value= 3.14

Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)

PROJECT:

KULEKANI III HYDROPOWER PROJECT

Sheet 3 of 3

DRILL HOLE NO:

DHT-4

TEST INTERVAL:

55.0 to 60 m

WATER LEVEL:

2.3m

GAUGE HEIGHT:

-0.10m

HOLE DIAMETER: NX

TEST LENGTH:

PACKER TYPE:

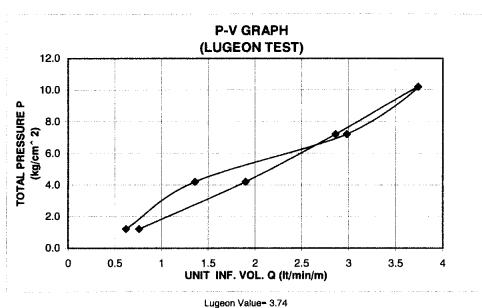
5.0 m

MECHANICAL SINGLE

HOLE INCLINATION: VERTICAL

3.74 lt/min/m/Mna

LUGEON VALUE:	3.74 lt/min/m/Mpa			
PRESSURE AT	TOTAL	AVERAGE	UNIT	CONVERTED
MANOMETER	PRESSURE	INFILTERATION	INFILTRATION	LUGEON
Po(Kg/cm ²)	P≖Po+H	VOLUME	VOLUME	VALUE
	(kg/cm^2)	V, (l/min)	Q(l/min/m)	(LU)
1	1.22	3.10	0.6	5.08
4	4.22	6.80	1.4	3.22
7	7.22	14.90	3.0	4.13
10	10.22	18.70	3.7	3.66
7	7.22	14.30	2.9	3.96
4	4.22	9.50	1.9	4.50
1	1.22	3.80	0.8	6.23



Coeff. Of permeability, K = 1.5* 10-5* L(cm/sec)