

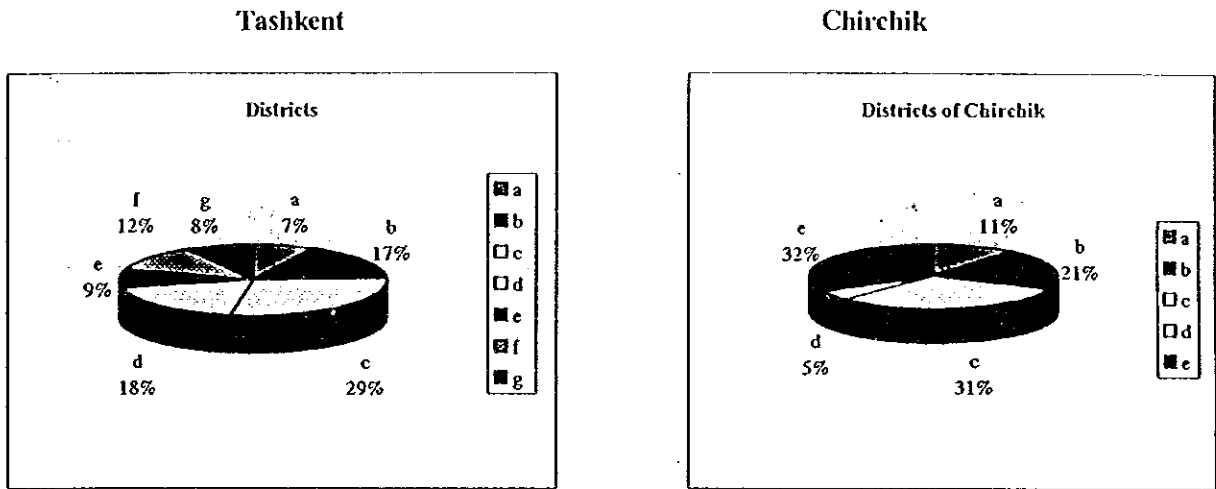
## D.5.1 Result of Questionnaire Survey

### D.5.1.1 First Questionnaire Survey

#### A General Information of Interviewed Users Collected

#### 1. Residential Users

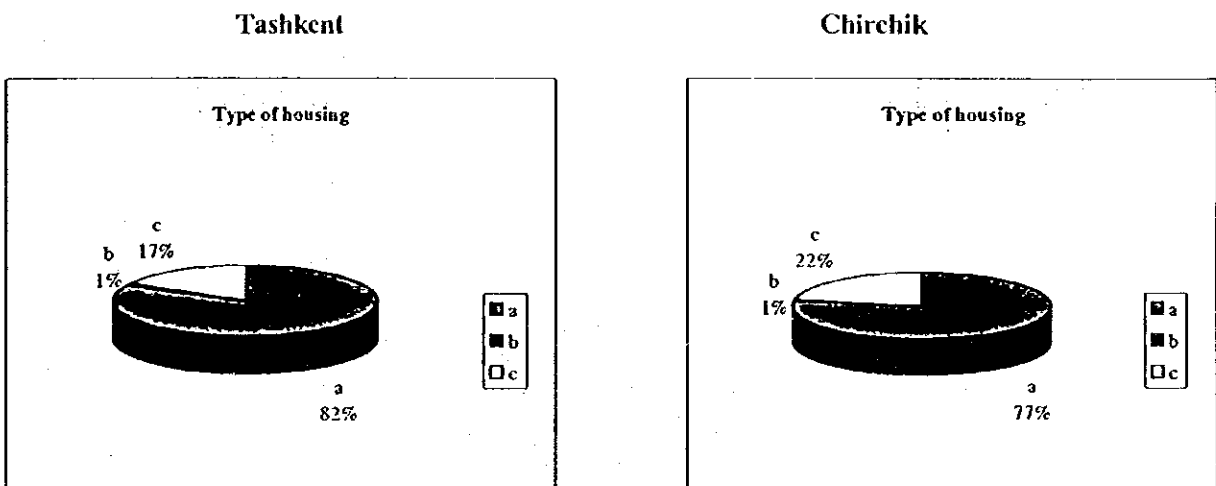
##### 1-1 District Component of Interviewed Residential Users



- a) Mirzo-Ulugbeksky district
- b) Yunusabadsky district
- c) Sergeliysky district
- d) Chilanzarsky&Akmal-Ikramovsky districts
- e) Khamzinsky district
- f) Sobir-Rakhimovsky&Shaikhantaursky districts
- g) Mirabadsky district

- a) 1st district
- b) 2nd district
- c) 3rd district
- d) 4th district
- e) 5th district

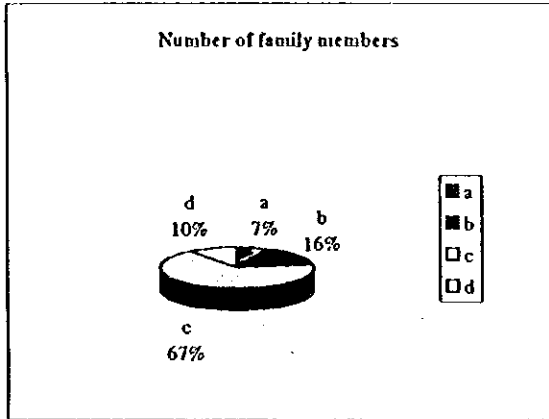
##### 1-2 Type of Residence of Interviewed Residential Users



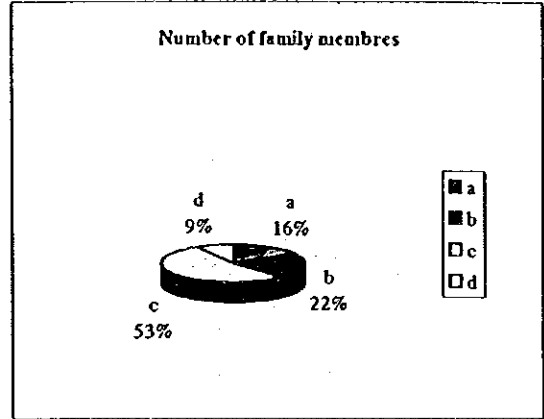
- a) apartment without water meter
- b) apartment with water meter
- c) private house

### 1-3 Number of Family Members of Interviewed Residential Users

#### Tashkent



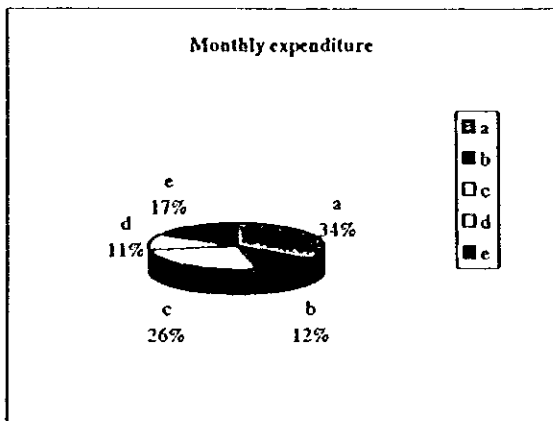
#### Chirchik



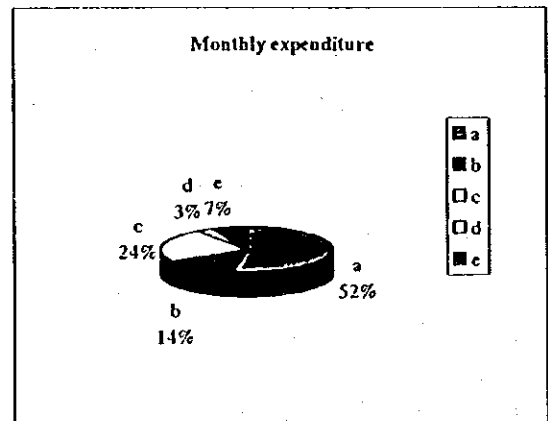
- a) 1 member
- b) 2 members
- c) 3-5 members
- d) 6 members and more

### 1-4 Average Monthly Expenditure of Interviewed Residential Users

#### Tashkent



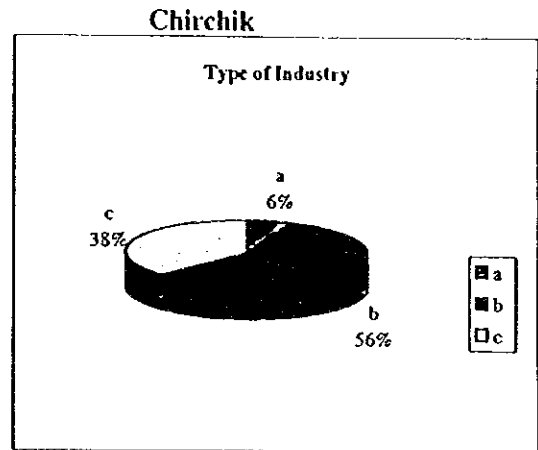
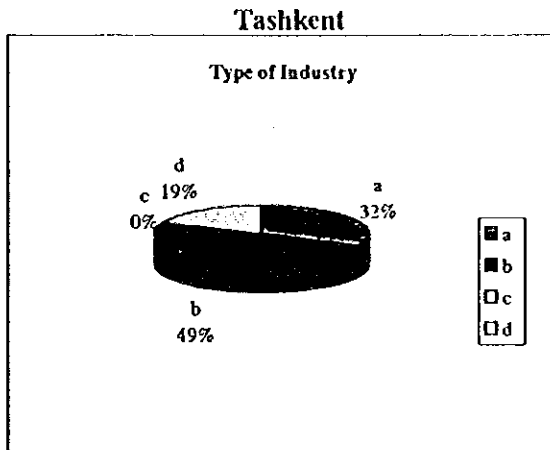
#### Chirchik



- a) 0-5.000 soums
- b) 5.001-10.000 soums
- c) 10.001-25.000 soums
- d) 25.001-35.000 soums
- e) more than 35.000 soums

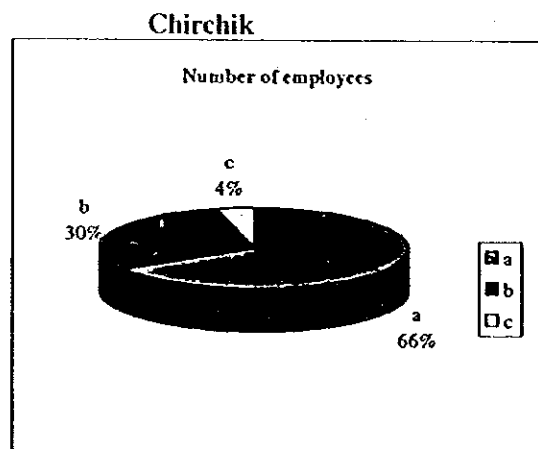
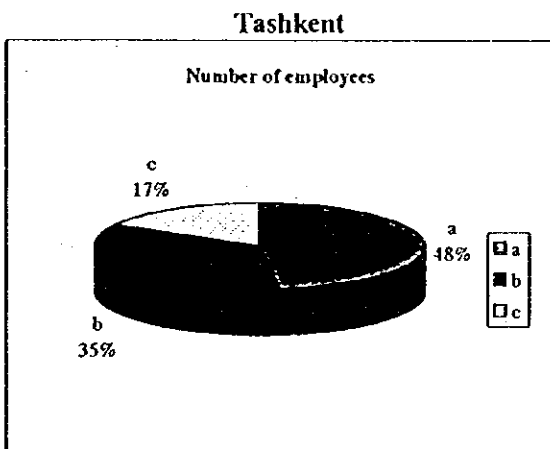
## 2. Corporate Users

### 2-1 Type of Industry of Interviewed Corporate Users

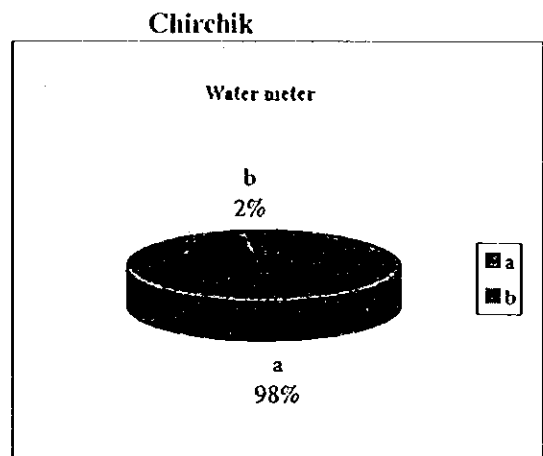
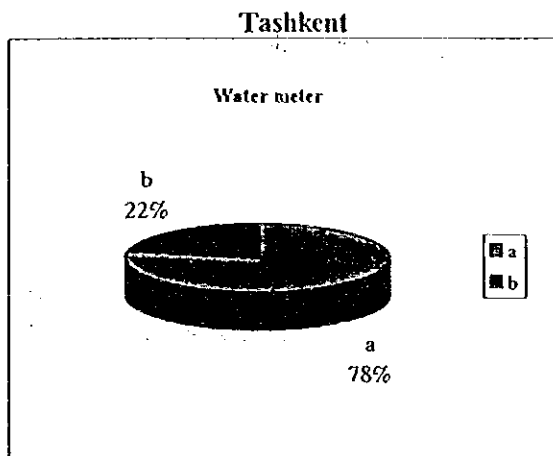


- a) Manufacturing Industry
- b) Commerce Industry
- c) Other Industries except for Communal Services

### 2-2 Number of Employees in Interviewed Corporate Users

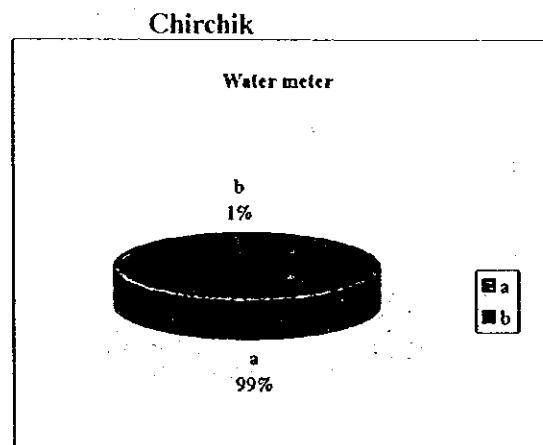
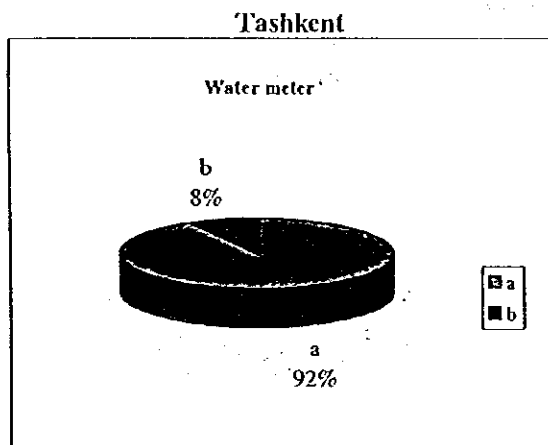


### 2-3 Ratio of Interviewed Corporate Users with Water Meters



- a) Corporate User with Water Meter
- b) Without water meter

### 2-4 Ratio Working Water Meter among Corporate User (2-3, "a")



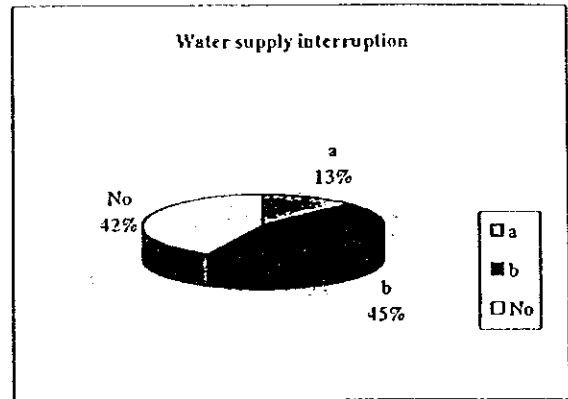
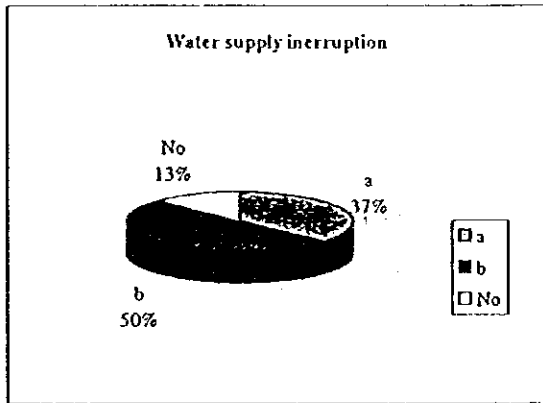
- a) Water Meter Works
- b) Water Meter does not Work

B Results of questionnaires

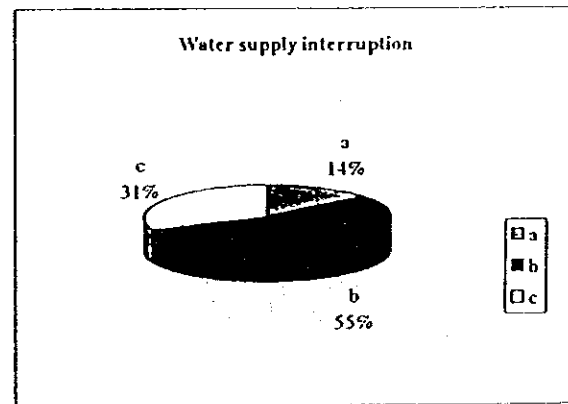
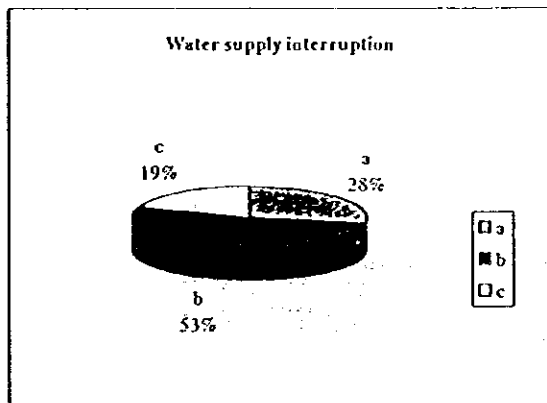
Question 1.

Do you encounter water supply interruption?

Tashkent



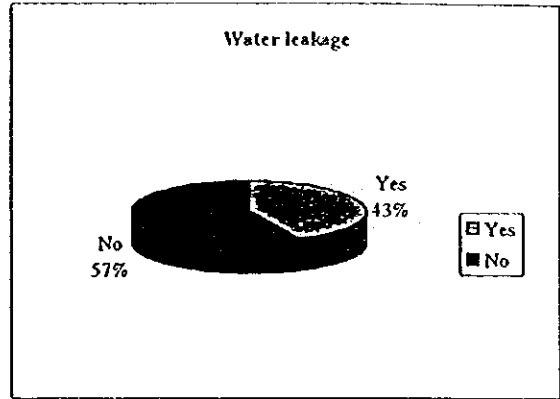
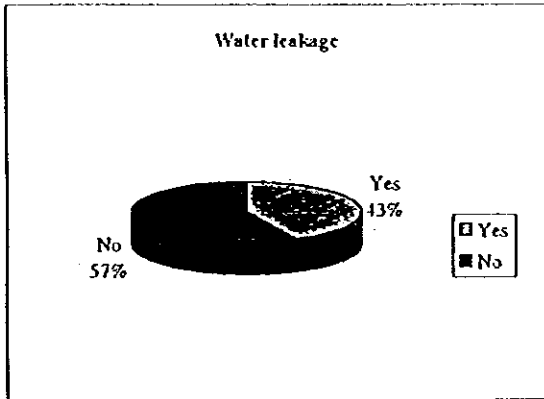
Chirchik



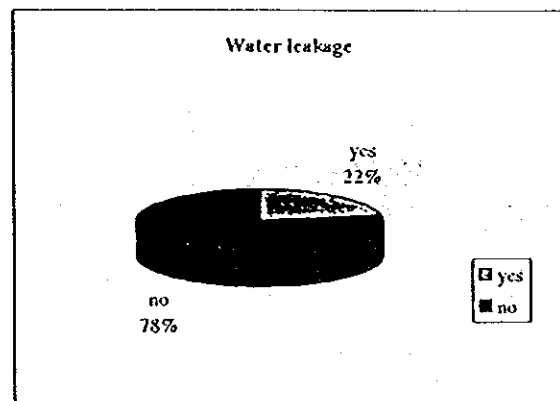
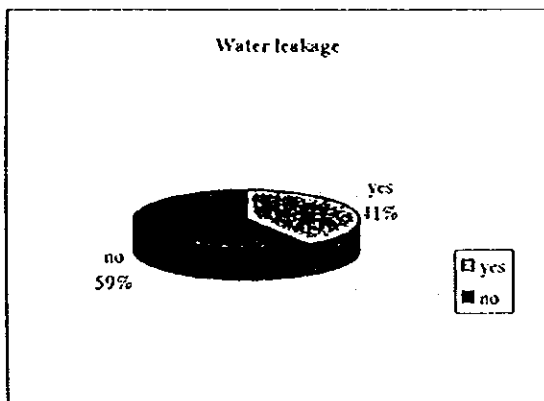
Question 2.

Did you notice water leakage from water distribution pipes in your house?  
(at your company or factories)

Tashkent



Chirchik

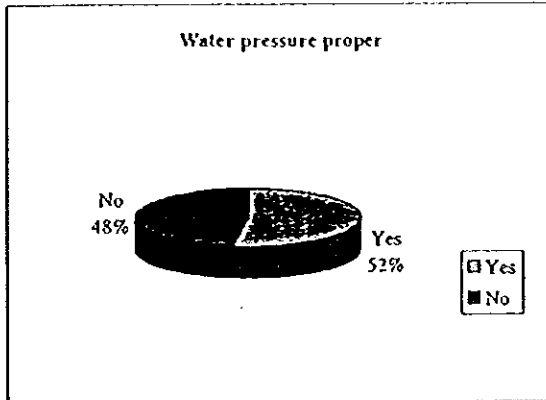


**Question 3.**

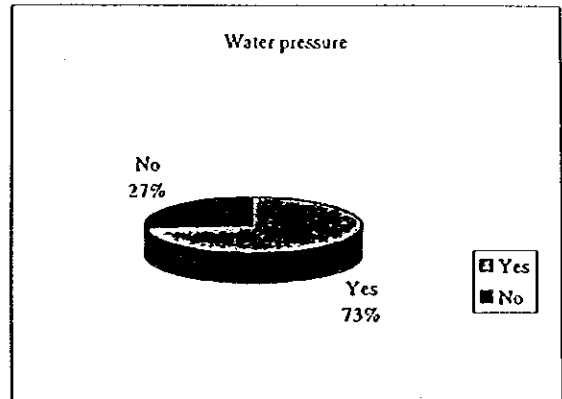
**Do you have proper water pressure?**

**Tashkent**

**Residential Users**

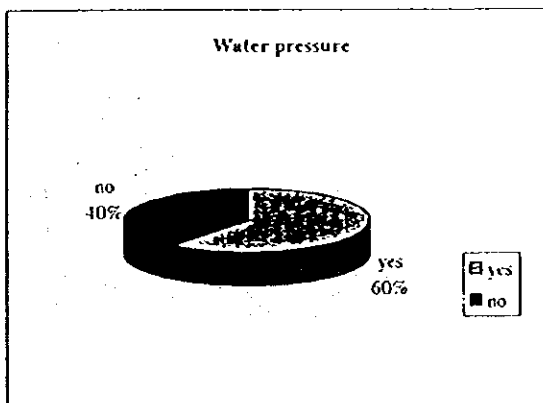


**Corporate Users**

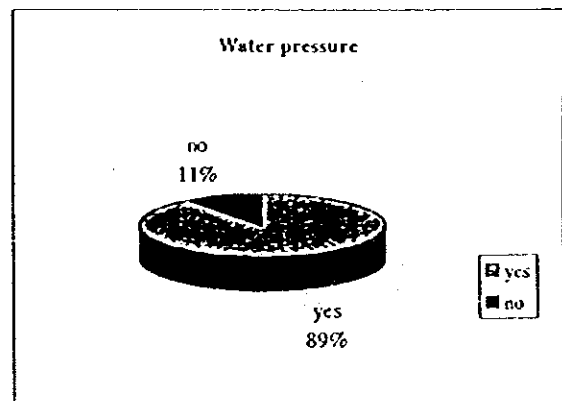


**Chirchik**

**Residential Users**



**Corporate Users**

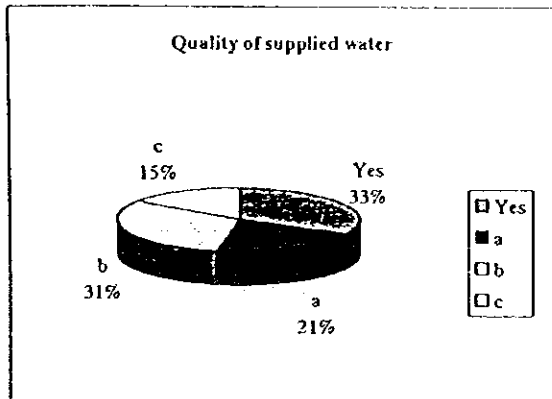


**Question 4.**

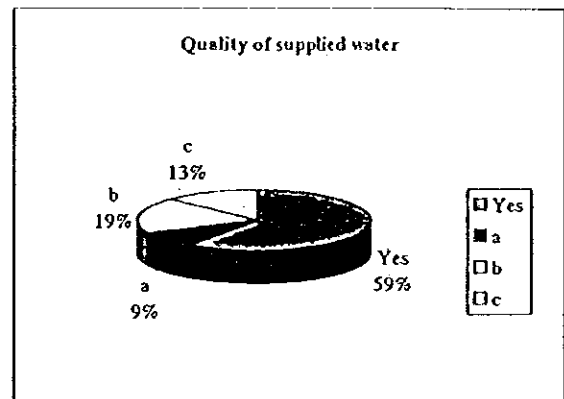
Are you content with quality of supplied water?  
If you answer is no, what is the reason?

**Tashkent**

**Residential Users**



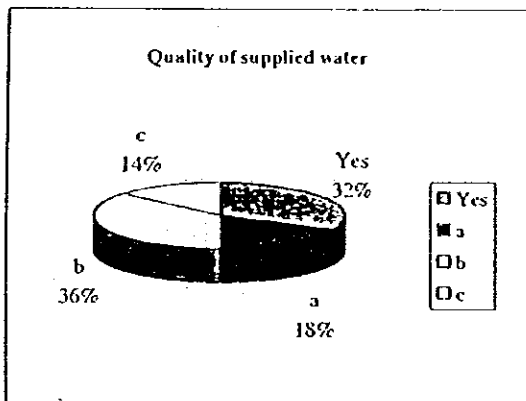
**Corporate Users**



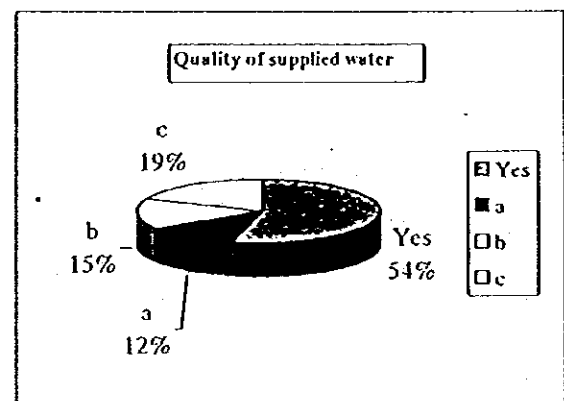
- a) No, Because of red water
- b) No, Because of turbidity
- c) No, Because of strange odor or taste

**Chirchik**

**Residential Users**



**Corporate Users**

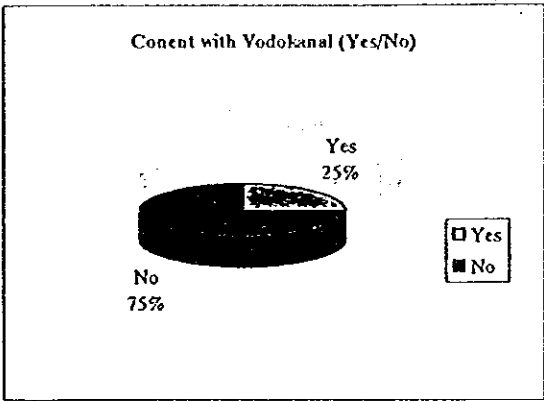




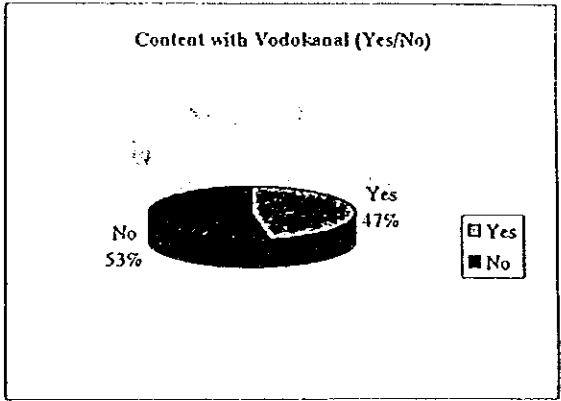
**Question 5-1.**  
**Are you content with the present Vodokanal?**

**Tashkent**

**Residential Users**

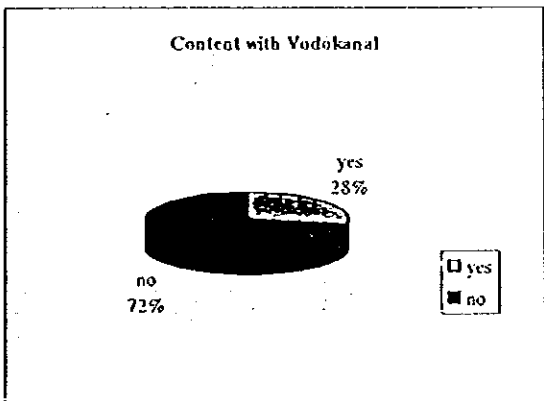


**Corporate Users**

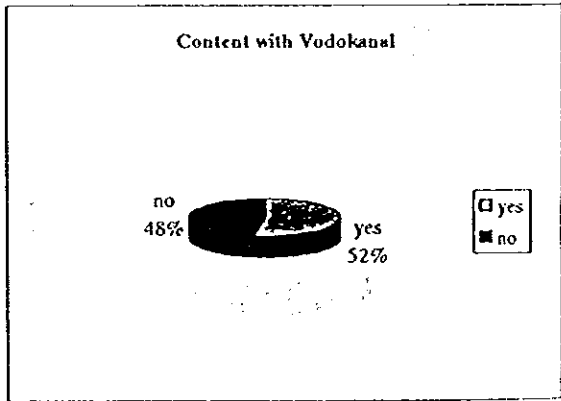


**Chirchik**

**Residential Users**



**Corporate Users**

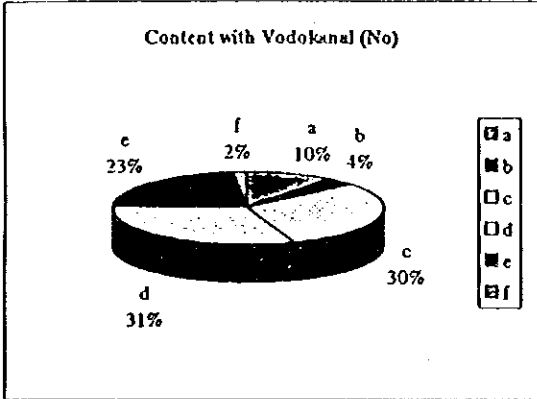


**Question 5-2.**

If you answer is "No" for Question 5-1, What is the reason why you are discontent with Vodokanal Services.

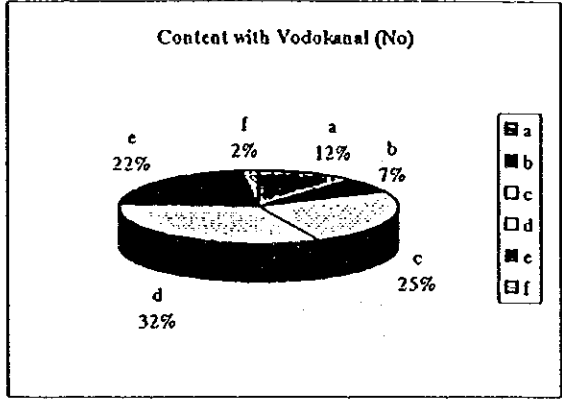
**Tashkent**

**Residential Users**



**D-5-2**

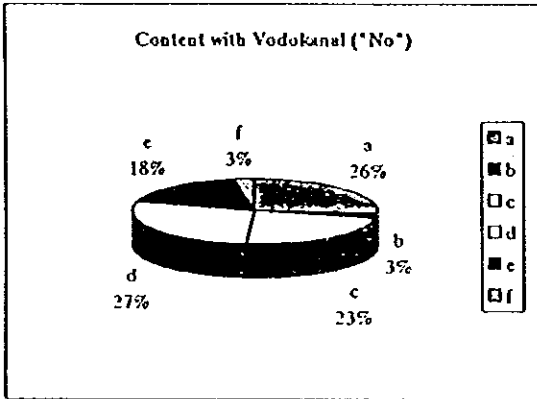
**Corporate Users**



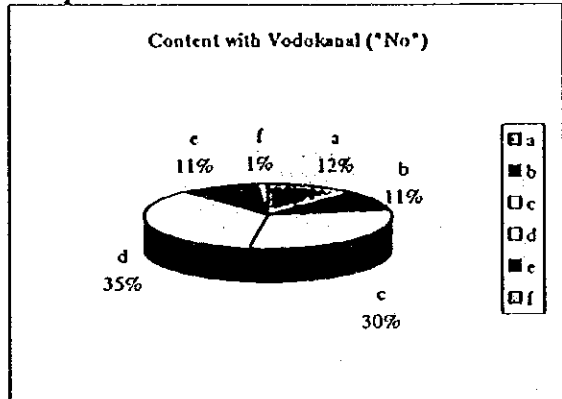
- a) water tariff
- b) water tariff collecting method
- c) water supply interruption
- d) water quality problem
- e) low water pressure
- f) other

**Chirchik**

**Residential Users**



**Corporate Users**

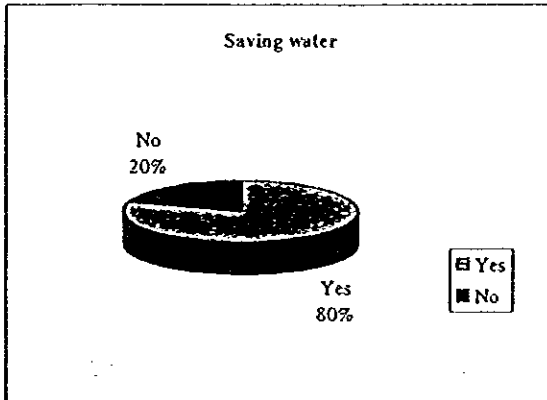


- a) water tariff
- b) water tariff collecting method
- c) water supply interruption
- d) water quality problem
- e) low water pressure
- f) other

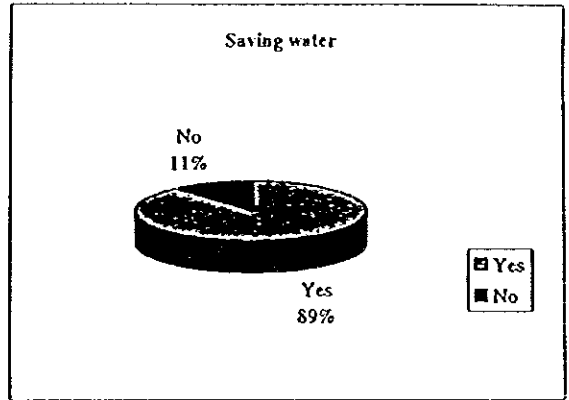
**Question 6.**  
Can your family (or company) save water?

**Tashkent**

**Residential Users**

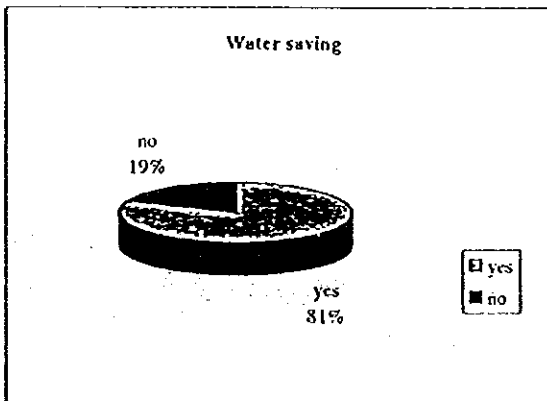


**Corporate Users**

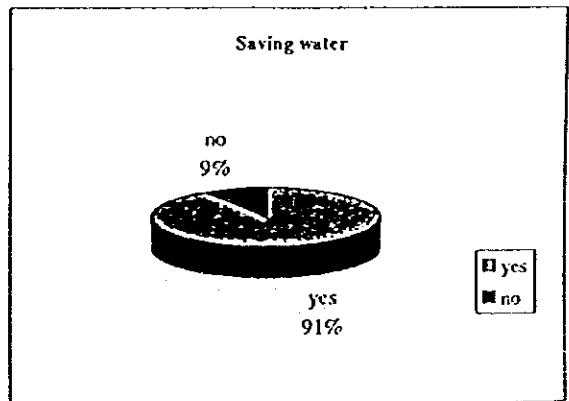


**Chirchik**

**Residential Users**



**Corporate Users**

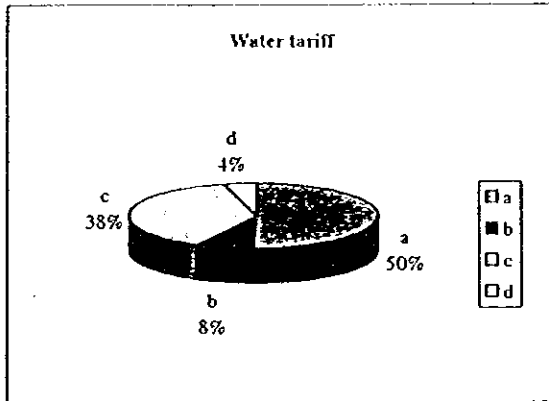


**Question 7.**

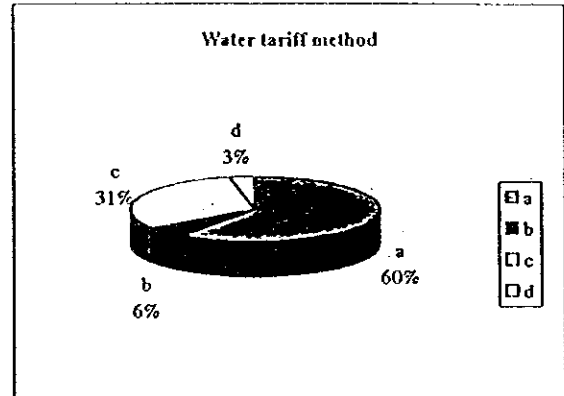
**What do you think about present water tariff?**

**Tashkent**

**Residential Users**



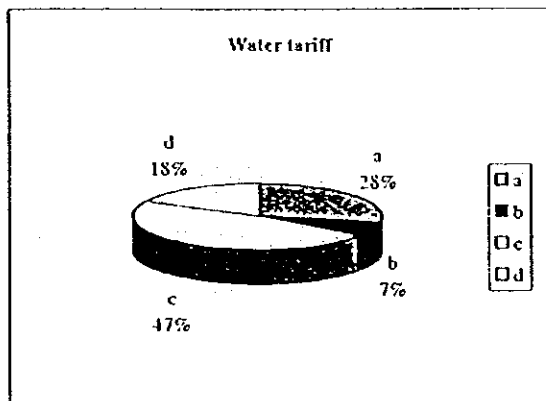
**Corporate Users**



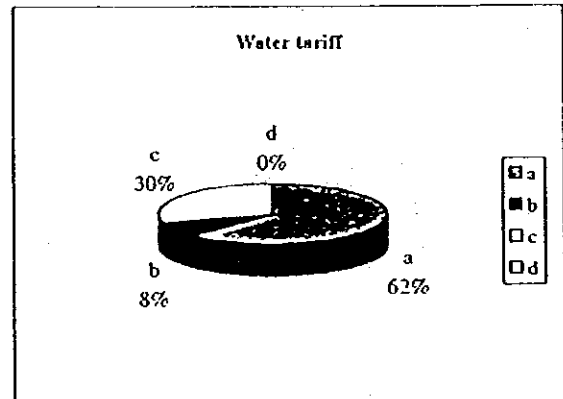
- a) proper level
- b) cheap
- c) expensive
- d) cannot pay

**Chirchik**

**Residential Users**



**Corporate Users**

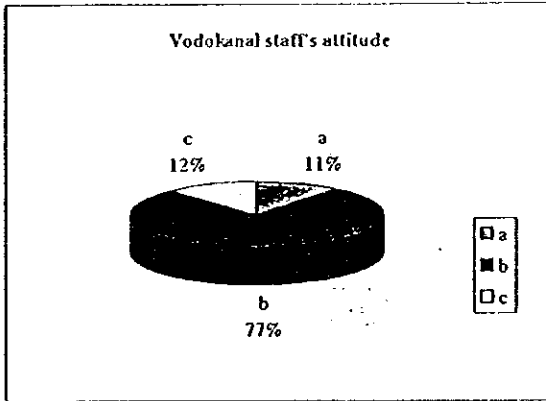


**Question 8.**

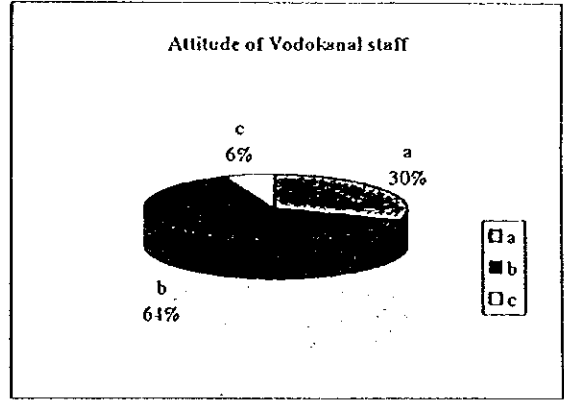
**How do you feel about the attitude of the Vodokanal staff?**

**Tashkent**

**Residential Users**



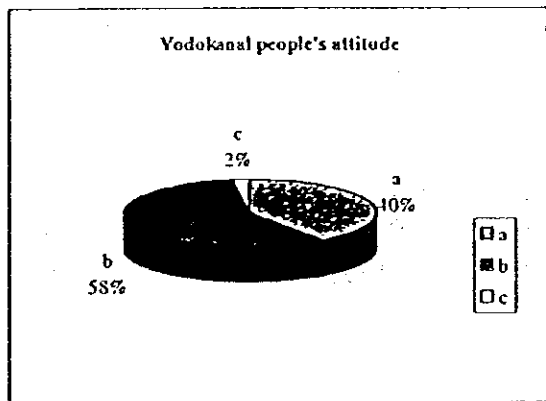
**Corporate Users**



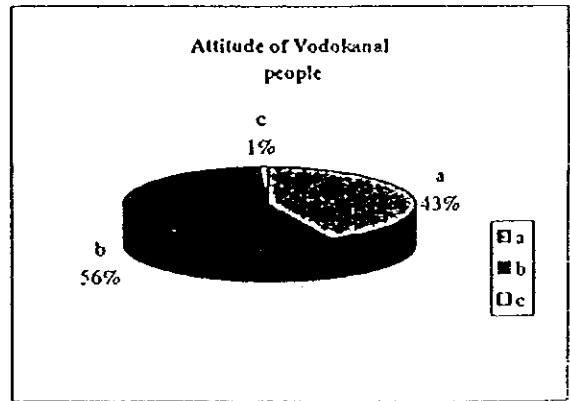
- a) Friendly
- b) Normal
- c) Impolite

**Chirchik**

**Residential Users**



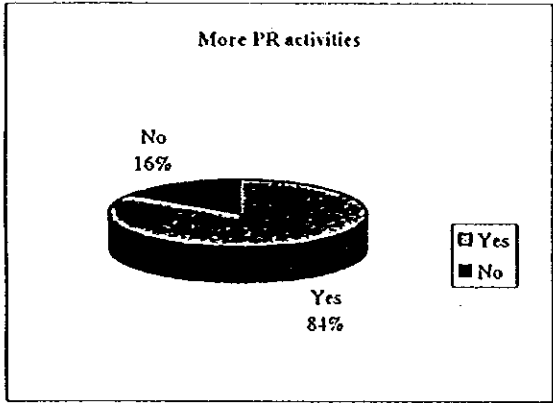
**Corporate Users**



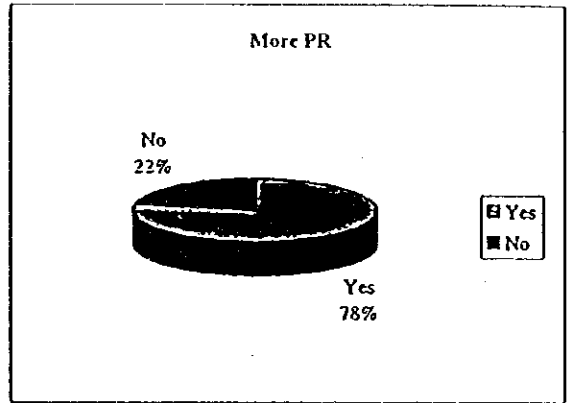
**Question 9.**  
Do you think that Vodokanal should emphasize more public relations activities?

**Tashkent**

**Residential Users**

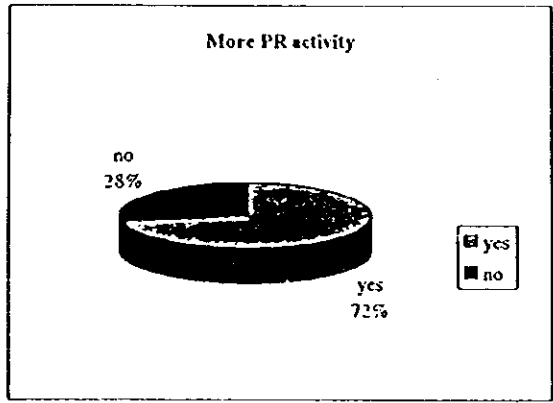


**Corporate Users**

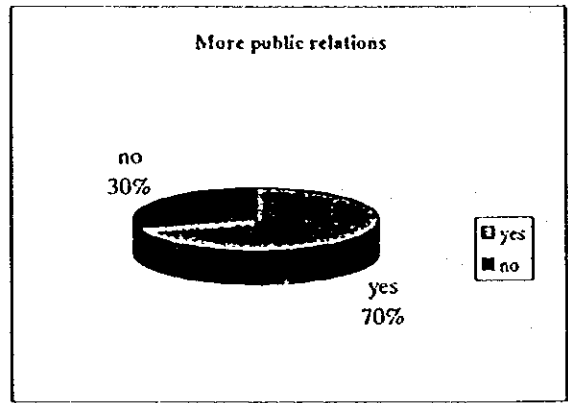


**Chirchik**

**Residential Users**



**Corporate Users**

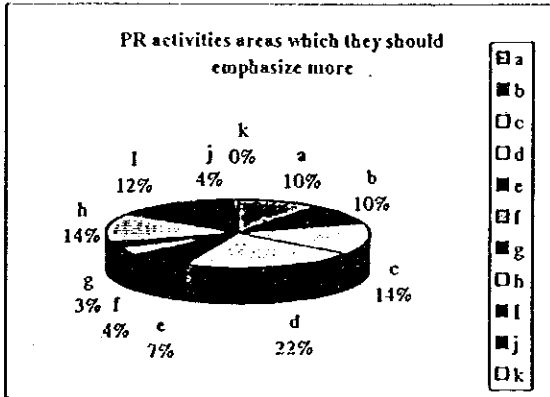


**Question 10.**

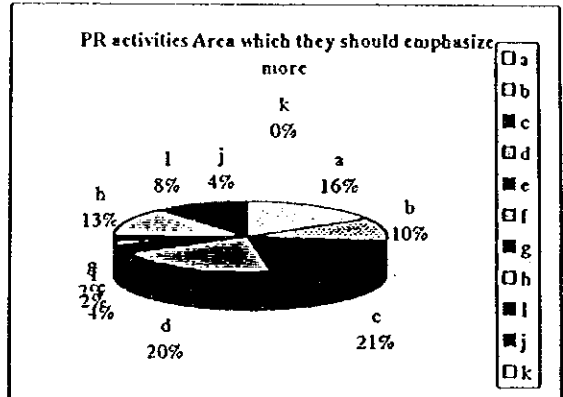
If Vodokanal conduct more public relations activities which areas should they emphasize?

**Tashkent**

**Residential Users**

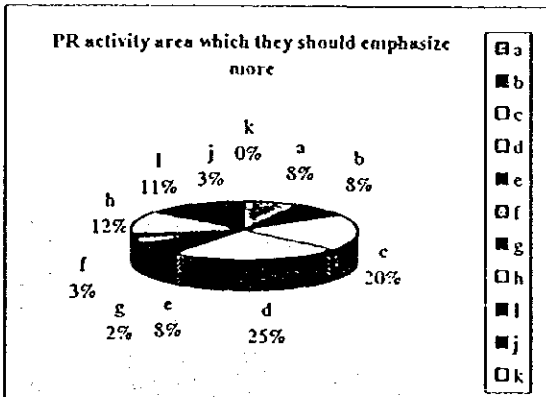


**Corporate Users**

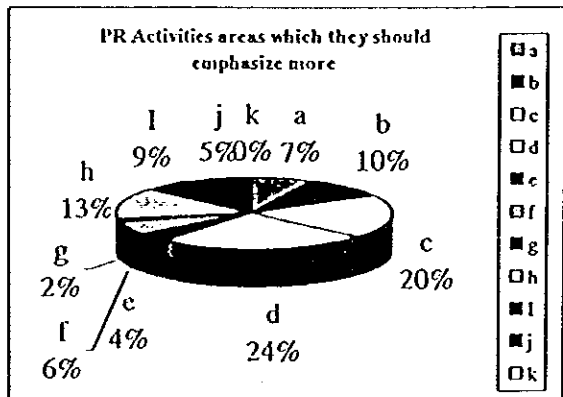


**Chirchik**

**Residential Users**



**Corporate Users**

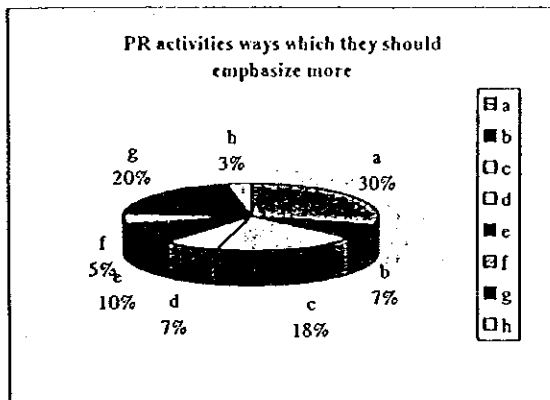


**Question 11.**

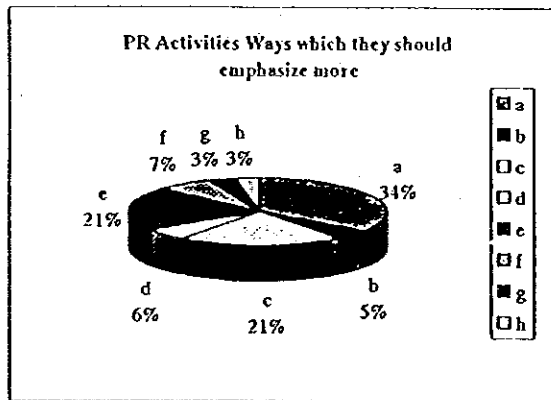
**If Vodokanal do more public relations activities, in which ways should they be conducted?**

**Tashkent**

**Residential Users**

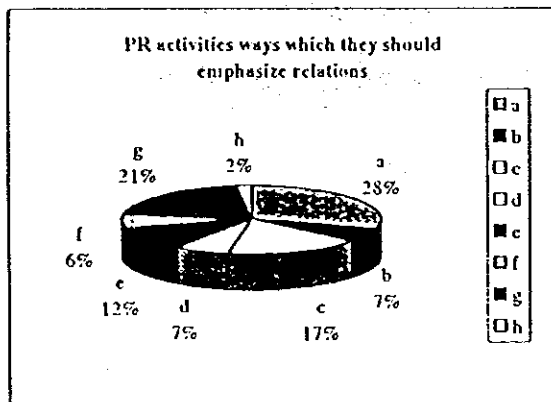


**Corporate Users**

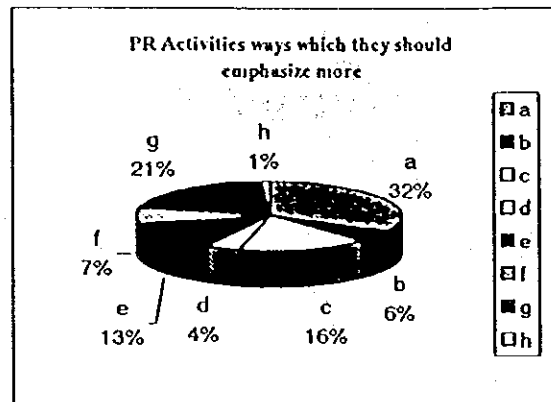


**Chirchik**

**Residential Users**



**Corporate Users**



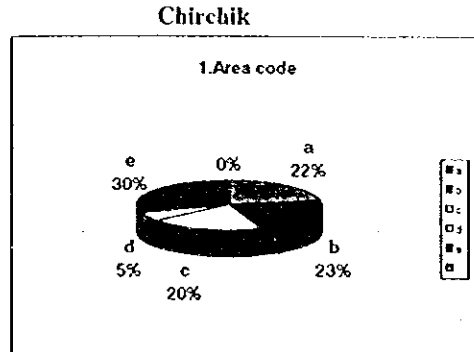
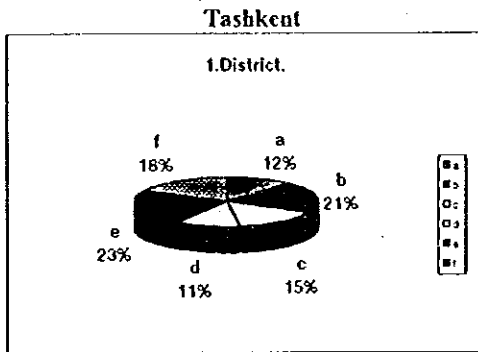


D.5.1.2 Second Questionnaire Survey

A General Information of Interviewed Users Collected

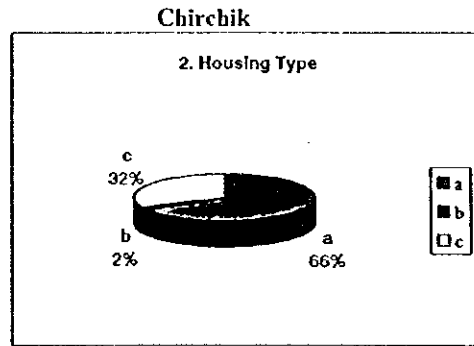
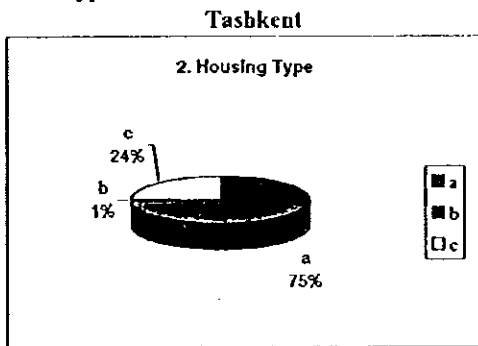
1. Residential Users

1-1 District Component of Total Interviewed Residential Users



- a) Mirzo-Ulugbekski & Mirabadsky District
  - b) Yunus-Abadski
  - c) Sergeliyski
  - d) Chilanzarski & Akmal-Ikramovski
  - e) Khamzurskiy
  - f) Sobir-Rakhimovskiy & Shaikhantaurski
- a) Rudaki, Chemical, Ak-Kavak, Arancha, Troitsk, Gorpark, Boz-5
  - b) 1-5 mikrorayons
  - c) 6-10 mikrorayons
  - d) Yumalak, Jalair, N.Komsomolsk, Morozova
  - e) kvartals, pos. Niyazbek, Kamolat, Azotchik, Beruni, Other

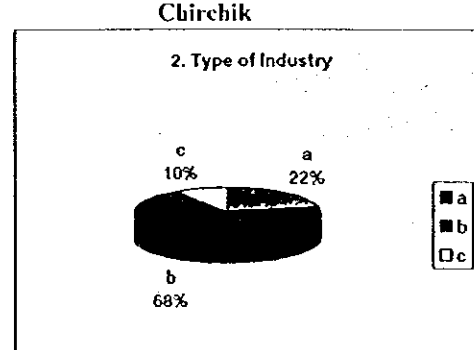
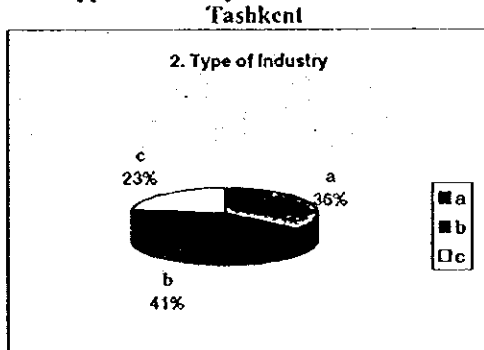
1-2 Type of Residence of Total Interviewed Residential Users



- a) apartment without water meter
- b) apartment with water meter
- c) private house

2. Corporate Users

2-1 Type of Industry of Total Interviewed Corporate Users



- a) Manufacturing Industry
- b) Commerce Industry
- c) Other Industries except for Communal Services

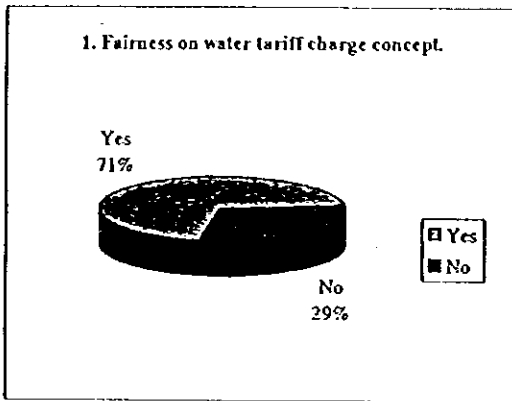
**B Results of questionnaires**

**Question 1.**

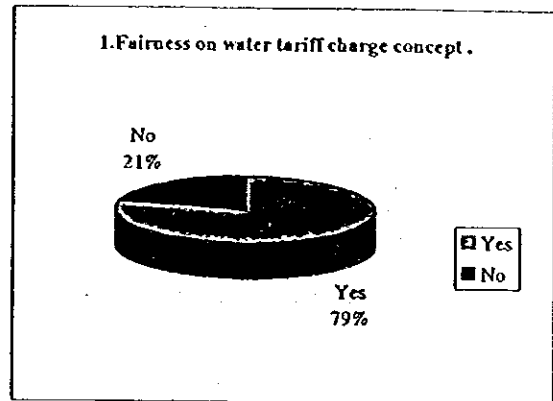
Do you think that it is fair in order to calculate and charge their water tariff that the more (or the less) water consumed, the more (or the less) they have to pay the water tariff?

**Tashkent**

**Residential Users**

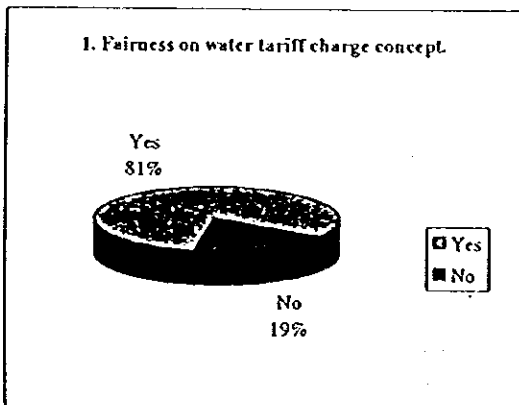


**Corporate Users**

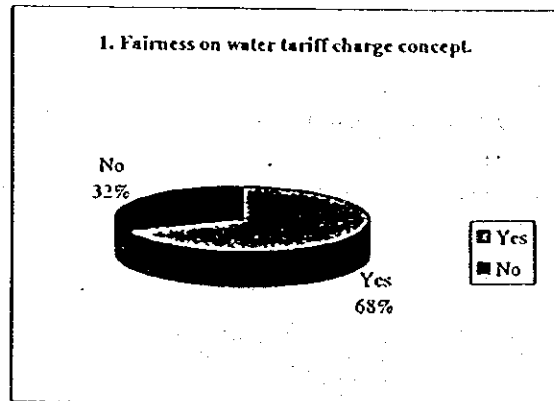


**Chirchik**

**Residential Users**



**Corporate Users**

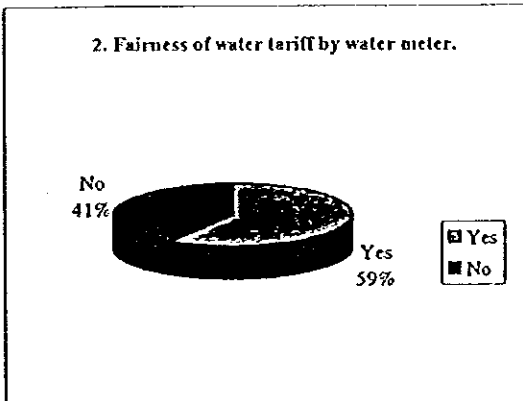


**Question 2.**

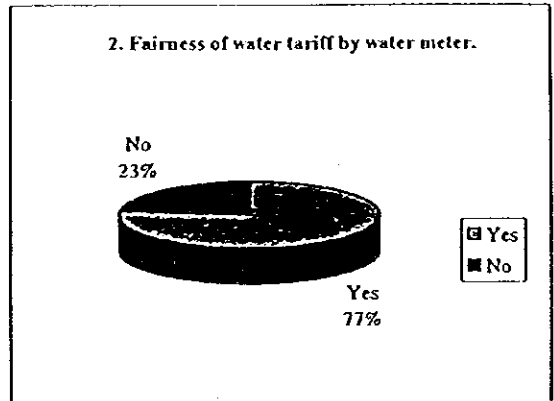
Do you agree that we had better have a tariff system by reading water meter to measure our actual water volume consumed and to pay the fair amount of water charge?

**Tashkent**

**Residential Users**

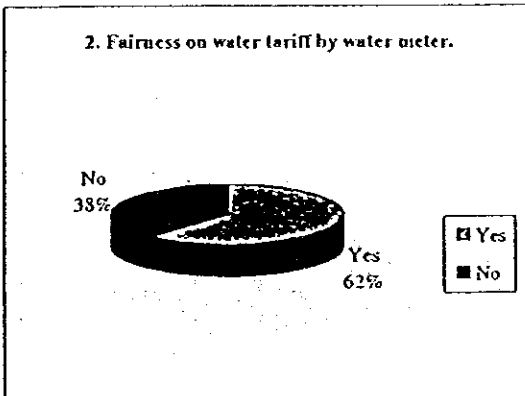


**Corporate Users**

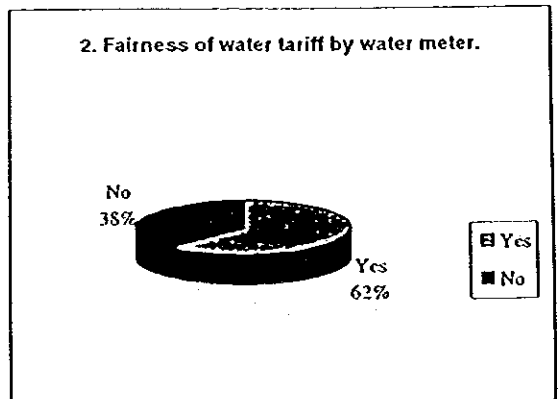


**Chirchik**

**Residential Users**



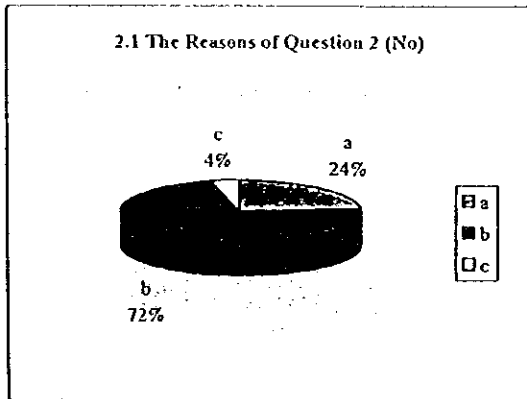
**Corporate Users**



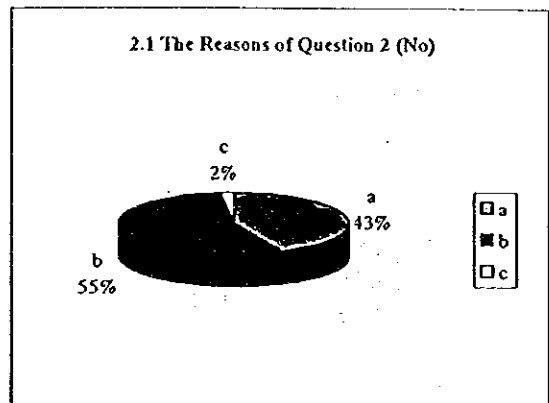
**Question 2-1. If answer "No",  
 In order for you (or your company) to agree to a tariff system by reading water meter to measure our actual watervolume consumed and to pay the fair amount of water charge what kind of condition do you need?**

**Tashkent**

**Residential Users**



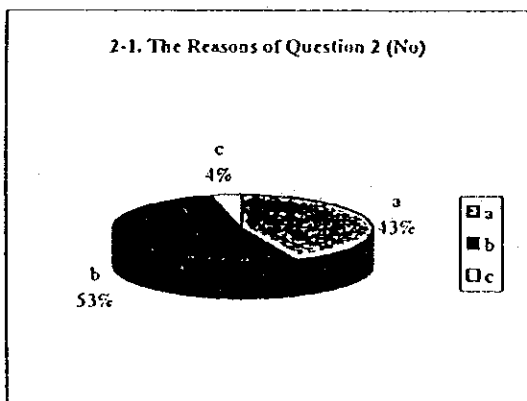
**Corporate Users**



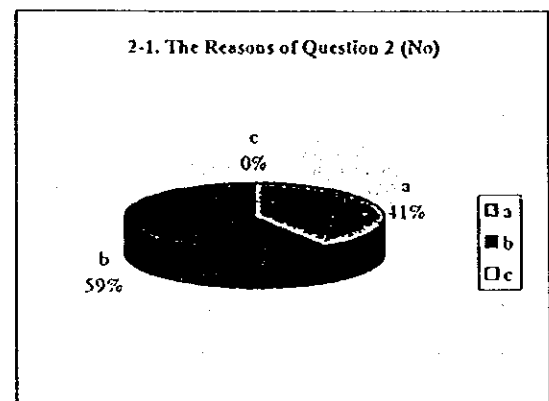
- a) Keep or reduce the present water tariff for standard living (or for ordinary business)
- b) A safety net for those who are poor or pensioner (or company doing priority business) to have a discounted water tariff
- c) Other

**Chirchik**

**Residential Users**



**Corporate Users**

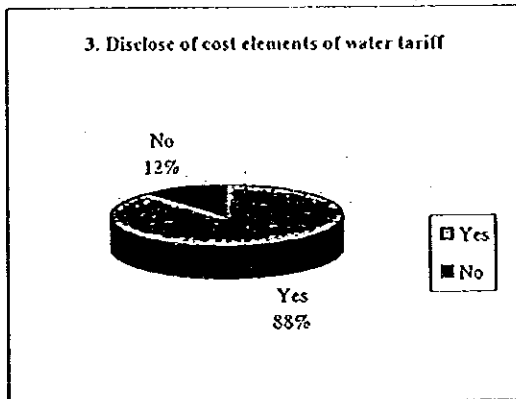


**Question 3.**

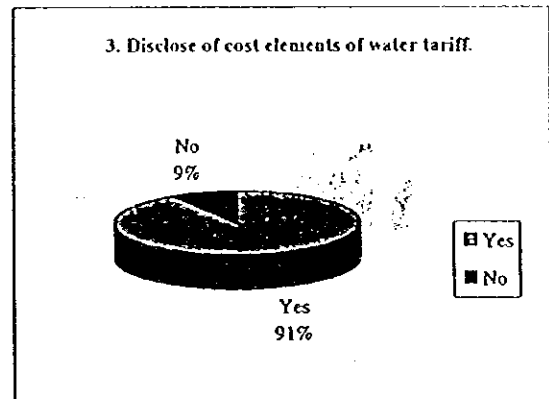
Do you think that the Vodokanal had better disclose the cost elements of water tariff which the users pay, or show to the public their management effort to attain business efficiency?

**Tashkent**

**Residential Users**

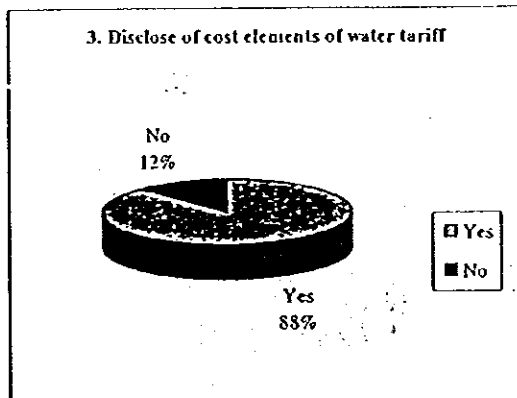


**Corporate Users**

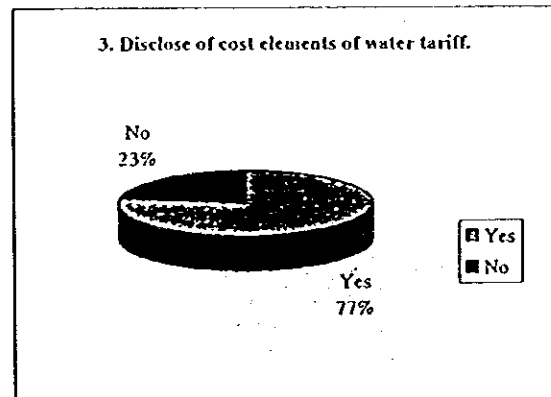


**Chirchik**

**Residential Users**



**Corporate Users**

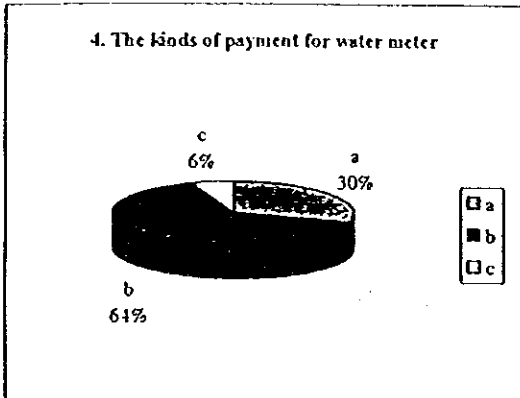


**Question 4.**

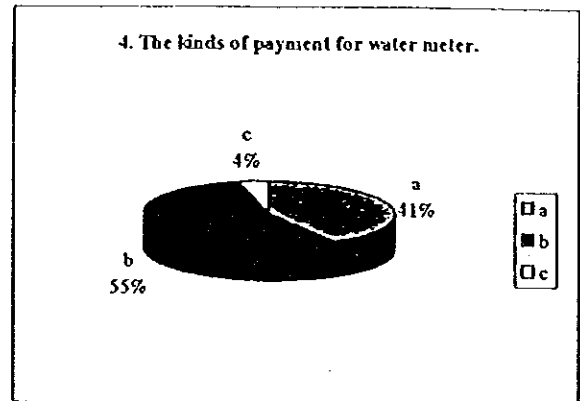
**If you have to pay the installation cost of the water meter, what kinds of payment do you prefer to choose?**

**Tashkent**

**Residential Users**



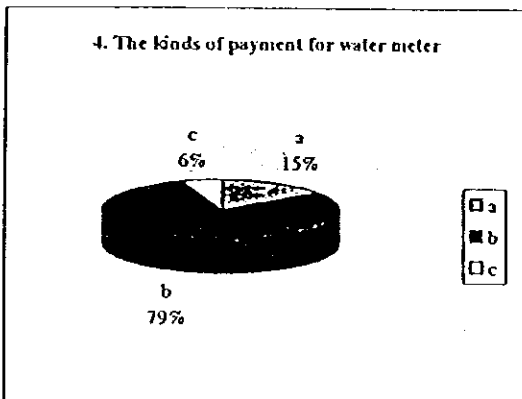
**Corporate Users**



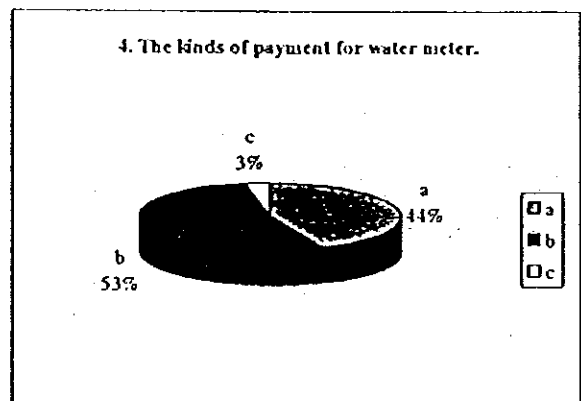
- a) To pay all the cost once at the time of the installation
- b) To pay the cost divided into the monthly water tariff after the installation
- c) Other

**Chirchik**

**Residential Users**



**Corporate Users**

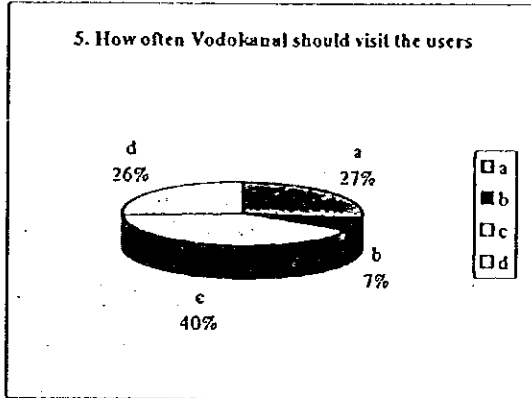


**Question 5.**

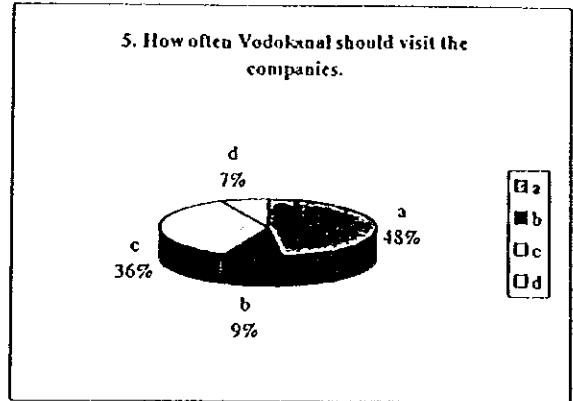
How do you think, how often should employees of Vodokanal visit you (or your company) for reading water meter?

**Tashkent**

**Residential Users**



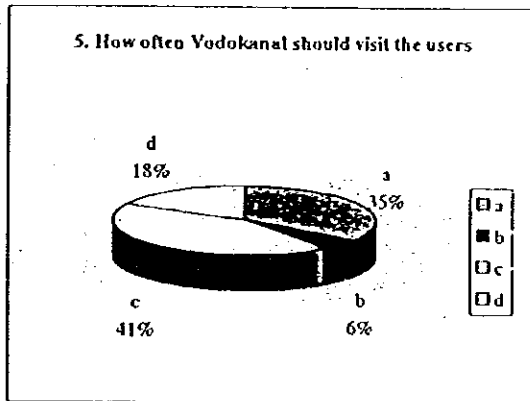
**Corporate Users**



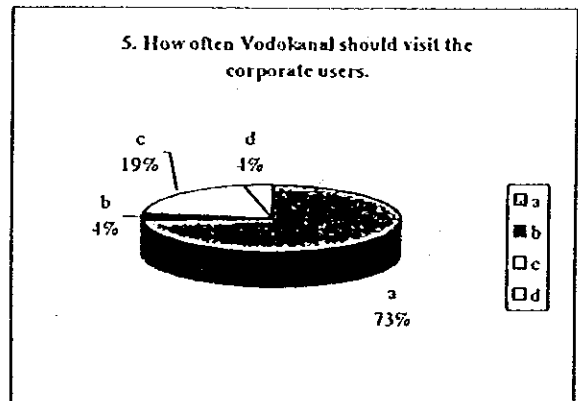
- a) monthly
- b) every 2 months
- c) every 3 months
- d) once a year

**Chirchik**

**Residential Users**



**Corporate Users**



**Question 6.**

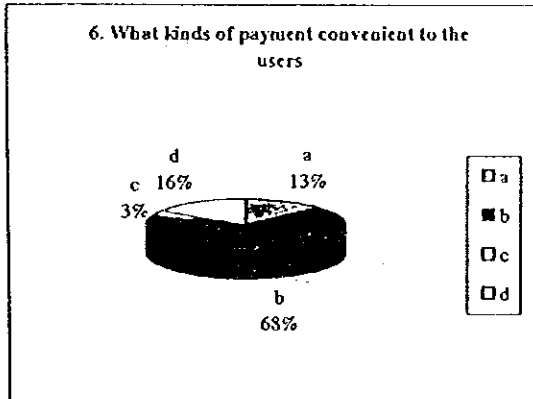
Which way do you think is the best to pay water tariff? Please choose one.

**Question 6.**

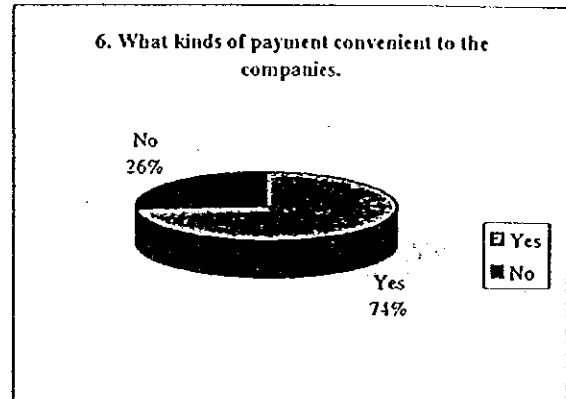
Do you think that it reasonable to pay from the bank account without acceptance.

**Tashkent**

**Residential Users**



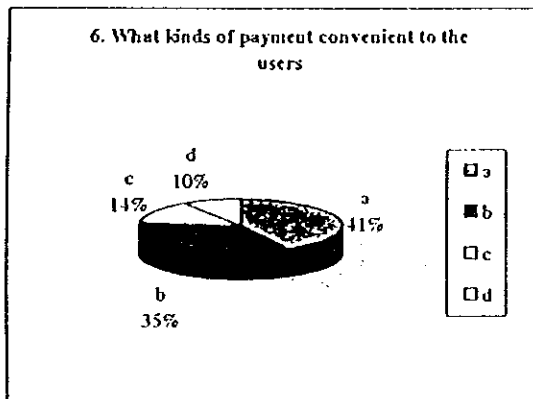
**Corporate Users**



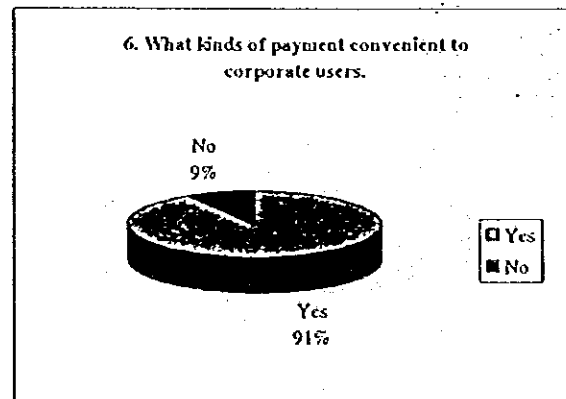
- a) Visit Vodokanal office to pay directly
- b) Visit bank or post office to pay
- c) Withdraw automatically from your bank account
- d) Other

**Chirchik**

**Residential Users**



**Corporate Users**



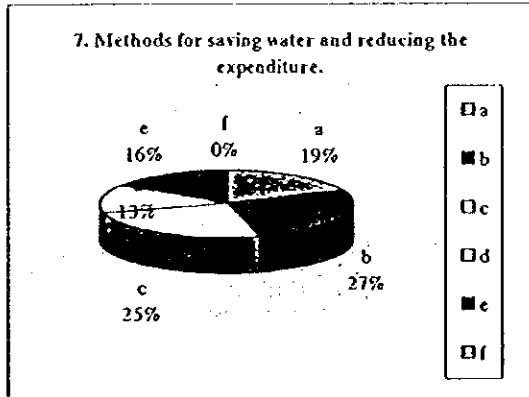


**Question 7.**

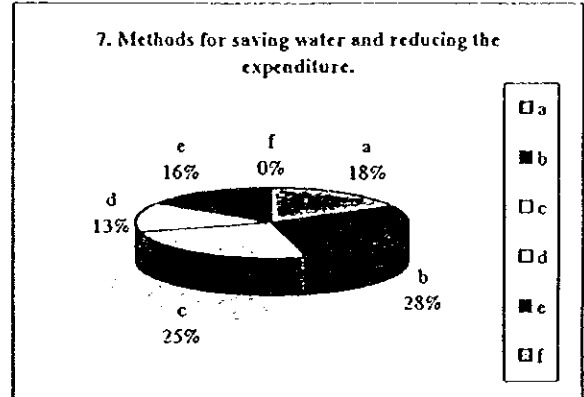
**If you have a water meter in your house and you decide to reduce your monthly water tariff, which methods would you prefer?**

**Tashkent**

**Residential Users**



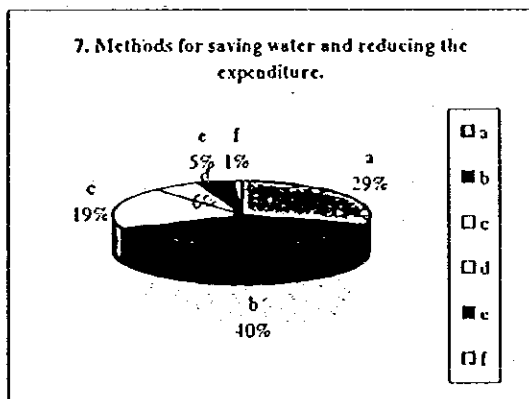
**Corporate Users**



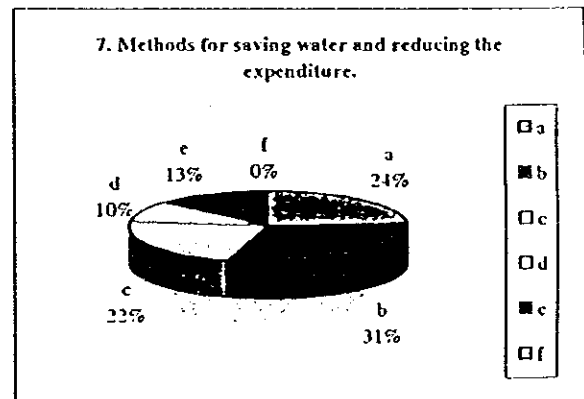
- a) Check water tariff
- b) Watch for leakage
- c) Keep all fauset closed
- d) Information about economy of the water
- e) Give instructions to family's members (or your company staffs)
- f) Other

**Chirchik**

**Residential Users**



**Corporate Users**

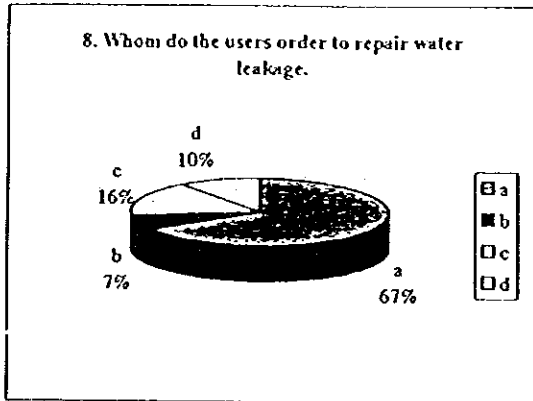


**Question 8.**

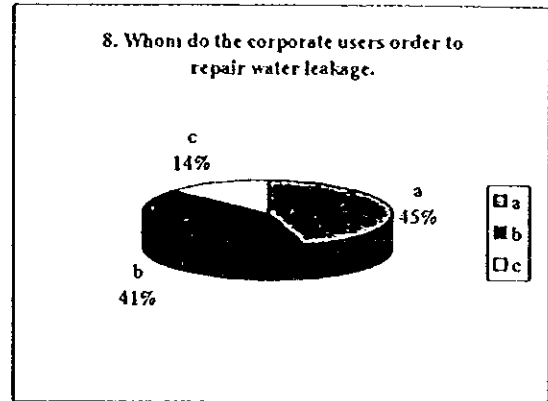
**Whom do you order to repair water leakage in your house, if you have the trouble?**

**Tashkent**

**Residential Users**



**Corporate Users**



**Residential Users**

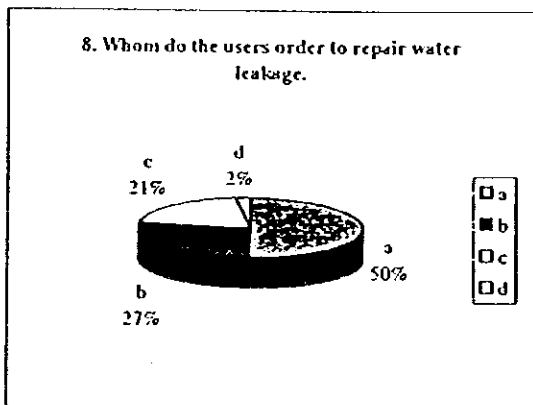
- a) JEK
- b) Ask Vodokanal to recommend a repair shop or specialist
- c) Go to specialist
- d) Other

**Corporate Users**

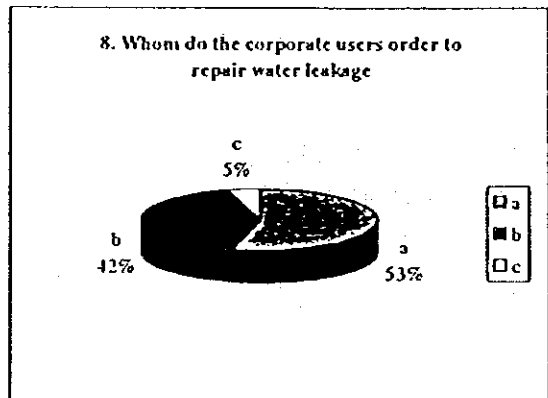
- a) ASK Vodokanal to recommend a repair shop or specialist
- b) Go to specialist
- c) Other

**Chirchik**

**Residential Users**



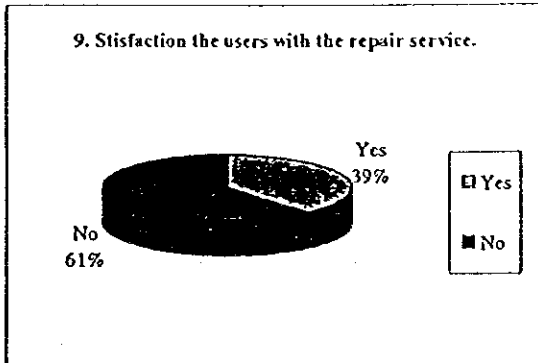
**Corporate Users**



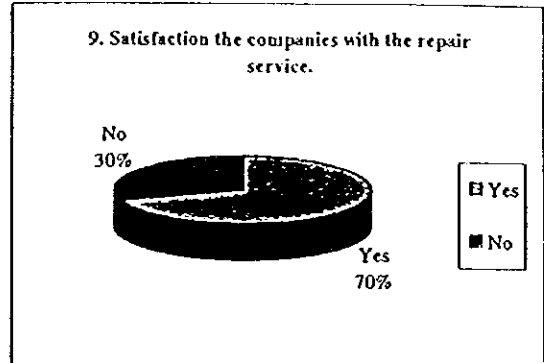
**Question 9.**  
**Are you satisfied with the repair service?**

**Tashkent**

**Residential Users**

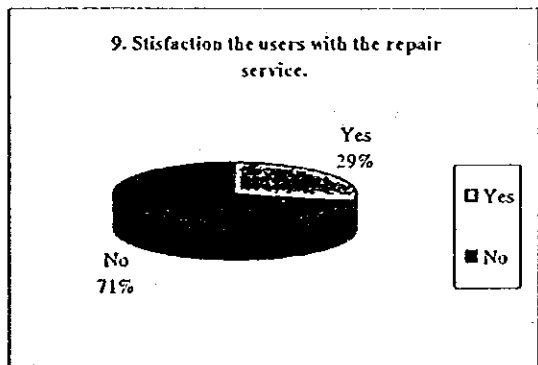


**Corporate Users**

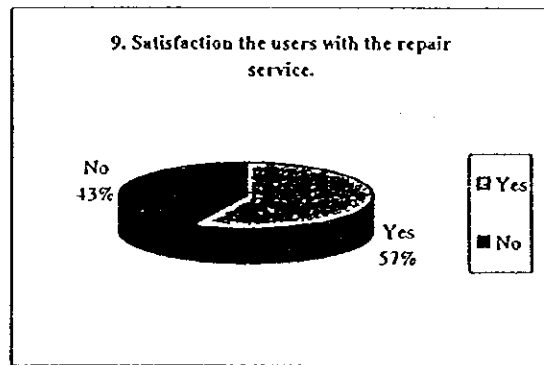


**Chirchik**

**Residential Users**



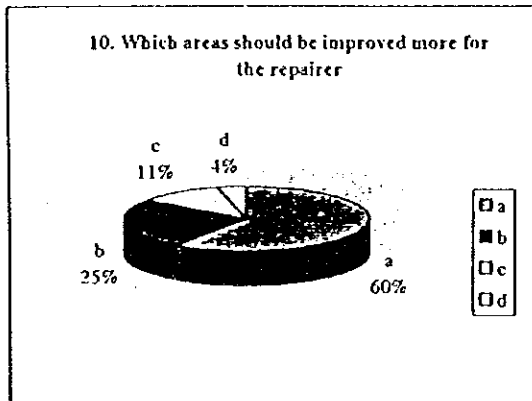
**Corporate Users**



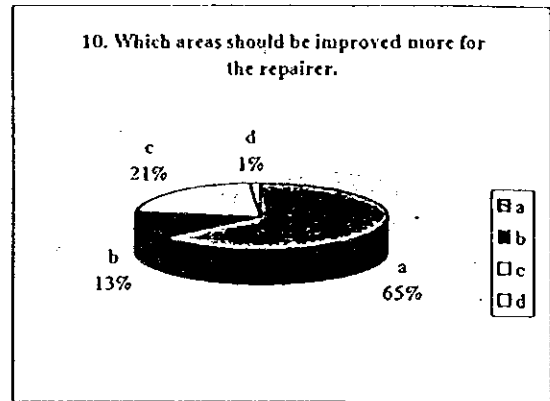
**Question 10.**  
**Which areas should be improved more for the repairer?**

**Tashkent**

**Residential Users**



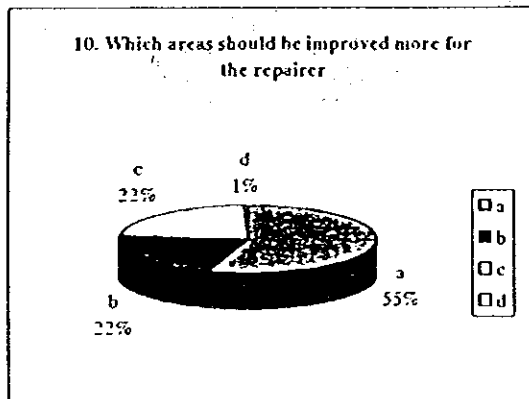
**Corporate Users**



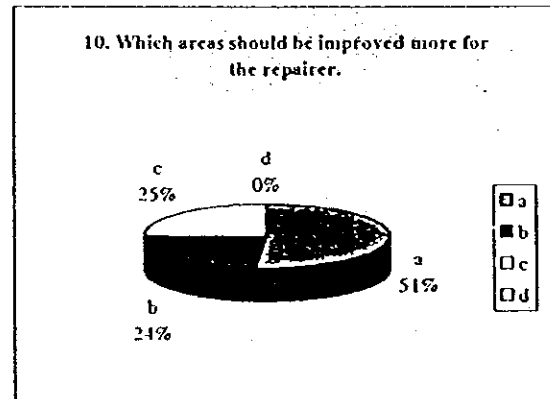
- a) The quality of the service
- b) The price of the service
- c) Time schedule to finish repair after ordering
- d) Other

**Chirchik**

**Residential Users**



**Corporate Users**

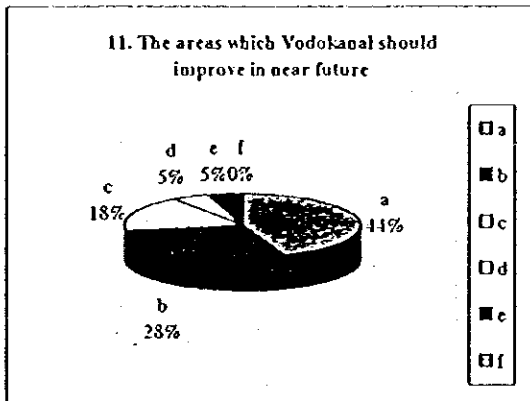


**Question 11.**

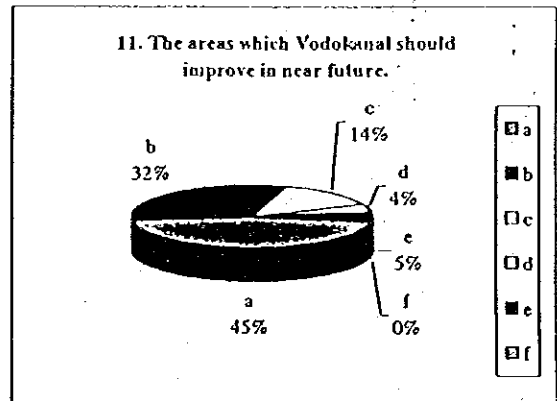
Which areas should be improved for the Vodokanal in near future?

**Tashkent**

**Residential Users**



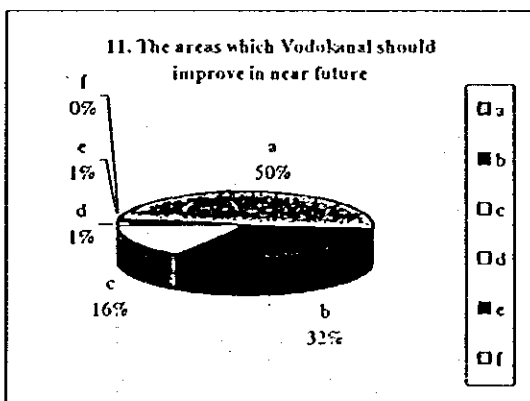
**Corporate Users**



- a) quality level of the water
- b) uninterrupted water supply
- c) decrease the charge or improve system of payment
- d) improve system of the collection money
- e) contact with users
- f) other

**Chirchik**

**Residential Users**



**Corporate Users**

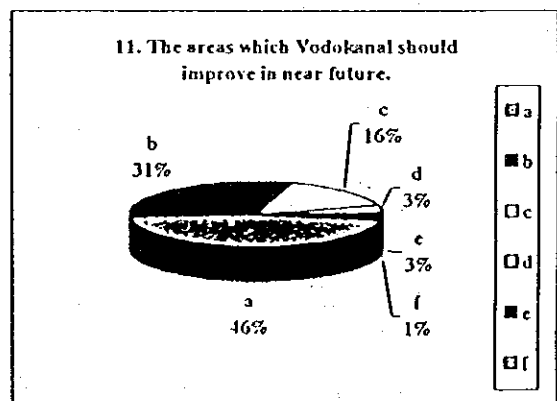


Table D.5.2.1 Data of Meter Installed Houses

No.	House No	Address	Number of occupan	Total Area(x100sq.m)			No of Taps	Presence		
				Total	House	Garden		Cars	Pools/ Fountain	Animals and Chickens
1	37	Adolat str.	5	6	2	1.5	2	+	-	-
2	128	Adolat str.	6	6	2	3	4	-	-	-
3	20	Adolat str.	4	6	1.5	1	3	+	-	cow:1
4	11	Adolat str.	3	6	2	-	2	+	-	-
5	19(129)	Adolat str.	1	6	1.5	2	4	+	-	-
6	2	Adolat str.	5	6	2.5	1.5	3	+	-	sheeps:6
7	4(54)	Adolat str.	6	6	2	1.5	3	-	-	-
8	7	Adolat str.	4	6	2	3	2	-	-	sheeps:2
9	8	Adolat str.	5	6	2	3	1	-	-	cow:1
10	9(38)	Adolat str.	8	6	2	2	3	-	-	-
11	12	Adolat str.	5	6	1.6	1.5	5	+	-	-
12	13	Adolat str.	4	6	2	1.5	2	-	-	-
13	16	Adolat str.	5	6	2	1	1	+	-	cow,horse:1
14	18	Adolat str.	5	6	1	4	1	-	-	hens:10
15	34	Adolat str.	5	6	2	2	1	-	-	-
16	3	Adolat str.	5	6	2	3	3	-	-	hens:10
17	21	Adolat str.	6	6	2	3	1	+	-	-
18	16	Adolat str.	4	6	1	1.5	3	-	-	hens:100
19	20	Adolat str.	6	6	2	2.5	1	-	-	cow:1
20	1	Feruza str	4	6	2	3	3	-	-	cow:1
21	2	Feruza str	1	6	3	3	5	-	900 cu.m	hens:34
22	23	Adolat str.	4	6	2	2	3	+	-	-
23	10	Feruza str	6	6	2	-	4	+	-	cows:2
34	11	Feruza str	9	6	2.5	2.5	1	+	-	-
25	17	Adolat str.	2	6	2	3	2	-	-	cows:2
26	8	Adolat str.	3	6.5	2	3	3	-	300 cu.m	-
27	21	Adolat str.	3	6	2	3	6	+	-	-
28	2	Adolat str.	5	6	1	2	3	+	-	hens:20
29	73	Adolat str.	7	6	2	2	1	-	-	-
30	79	Adolat str.	3	6	0.8	3	3	+	-	-
31	16	Adolat str.	6	6	2	3	3	+	-	-
32	126	Adolat str.	5	6	2	3	3	+	-	-
33	7	Adolat str.	6	6	2	3	3	-	-	-
34	9	Adolat str.	7	6	2	1.5	3	+	-	-
35	18	Adolat str.	5	6	2	3	2	+	-	cows:2
36	12	Adolat str.	5	6	2	2	2	+	-	-
37	2	Adolat str.	4	6	2	3	3	+	-	hens:10
38	9	Feruza str	7	6	2	2	5	+	-	-
39	6	Adolat str.	4	6	2	2	1	-	-	-
40	4	Feruza str	5	6	2	2	3	+	-	-
41	6	Feruza str	5	6	1.6	2	3	+	-	-
42	8	Feruza str	13	6	2.5	2.5	2	-	-	cows,bulls:2
43	20	Adolat str.	6	6	2	1	2	+	-	hens:10
44	21	Adolat str.	5	6	2	3	6	+	-	sheep,cow:1
45	2	Adolat str.	5	6	1	2	3	+	-	hens:20
46	73	Adolat str.	7	6	2	2	1	-	-	-
47	79	Adolat str.	3	6	3	3	3	+	-	-
48	16	Adolat str.	6	6	2	3	3	+	-	-
<b>Average</b>			5.1	6.0	1.9	2.3	2.7			

Table D.5.2.2 Data of Meter Installed Apartments

Apart. No.	Address	Stories	Numbers			Flat area sq.m	Dweller	Average Area/ person	Rooms	Presence	Flat	Dwelling Flat	Flat area sq.m	Dweller	Average Area/ person	
			Rooms	Presence	Flat											
4	Sergei -2	5	4	20	20	91	85	4.3	21.4	2	36	36	73	128	3.6	20.5
			5	20	20	109	103	5.2	21.2	3	20	20	111	95	4.8	23.4
			Total	40	40	100	188	4.7	21.3	4	18	15	125	73	4.9	25.7
			4	9	9	40	13	1.4	27.7	Total	72	71	95	296	4.2	22.8
5		4	2	7	7	58	17	2.4	23.9	2	18	18	62	45	2.5	24.8
			3	24	24	78	83	3.5	22.6	3	18	18	72	70	3.9	18.5
			4	16	16	91	66	4.1	22.1	4	18	27	94	135	5.0	18.8
			Total	58	58	73	179	3.2	22.9	Total	72	72	88	302	4.2	21.0
6		5	1	10	10	38	12	1.2	31.7	3	36	36	73	128	3.6	20.5
			2	10	10	52	24	2.4	21.7	5	20	20	111	95	4.8	23.4
			3	29	29	78	91	3.1	24.9	6	16	15	125	73	4.9	25.7
			4	21	21	91	96	4.6	19.9	Total	72	71	95	296	4.2	22.8
14		5	Total	70	70	72	223	3.2	22.7	9	3	36	78	112	3.1	25.1
			1	10	10	38	14	1.4	27.1	4	18	17	94	72	4.2	22.2
			2	10	10	52	26	2.6	20.0	5	18	18	118	86	4.8	24.7
			3	29	29	78	86	3.0	26.3	Total	72	71	92	270	3.8	24.2
21		5	4	31	20	91	62	3.1	29.4	9	3	18	18	64	3.6	20.3
			Total	80	70	75	193	2.8	27.1	5	18	18	108	86	4.8	22.6
			1	10	10	38	13	1.3	29.2	Total	36	36	90	150	4.2	21.6
			2	10	10	52	34	3.4	15.3	9	3	18	72	64	3.6	20.3
23		5	3	29	30	78	84	2.8	27.9	26	24	24	108	86	4.8	22.6
			4	31	20	91	62	3.1	29.4	30	30	36	90	150	4.2	21.6
			Total	80	70	75	193	2.8	27.1	3	3	36	78	112	3.1	25.1
			4	20	20	91	76	3.8	23.9	5	20	20	109	108	5.4	20.2
25		5	5	20	20	109	108	5.4	20.2	5	40	40	100	184	4.6	21.7
			Total	40	40	100	184	4.6	21.7	Total	40	40	100	159	4.0	25.0
			4	21	21	91	83	4.0	23.0	5	19	19	109	76	4.0	27.3
			5	19	19	109	76	4.0	27.3	5	2	11	58	42	3.8	15.2
26		5	2	11	11	58	42	3.8	15.2	2	14	14	62	41	2.9	21.2
			3	5	5	75	11	2.2	34.1	3	5	5	75	11	2.2	34.1
			Total	30	30	63	94	3.1	20.0	Total	40	40	100	159	4.0	25.0
			1	20	19	38	24	1.3	30.1	5	1	20	38	24	1.3	30.1
66		5	2	40	40	58	107	2.7	21.7	2	40	40	58	107	2.7	21.7
			3	30	30	76	111	3.7	20.5	3	30	30	76	111	3.7	20.5
			Total	90	89	80	242	2.7	21.9	Total	90	89	80	242	2.7	21.9
			1	9	9	43	14	1.6	27.6	5	1	9	43	14	1.6	27.6
67		5	2	36	36	58	88	2.4	23.7	2	36	36	58	88	2.4	23.7
			3	25	25	76	93	3.7	20.4	3	25	25	76	93	3.7	20.4
			4	10	10	90	46	4.6	19.6	4	10	10	90	46	4.6	19.6
			Total	80	80	66	247	3.0	21.9	Total	80	80	66	247	3.0	21.9

Table D.S.2.3 Survey Sheet for Detached House

Investigation of Private Houses

No of the house	Address	Areas(100 sq.m)		Numbers		Presence					
		General	House	Garden	House	Occupants	Taps	Cattle:kind and number	Cars	Pools /Fountains	Bathubs

Measurement of Water Volume

August

Date and time									
Indicated value									
Difference									

September

Date and time									
Indicated value									
Difference									

November

Date and time									
Indicated value									
Difference									

Measured person:Name \_\_\_\_\_



**Table D.5.2.4(1) Survey Sheet for Apartment Buildings**

Address \_\_\_\_\_  
 Apartment No. \_\_\_\_\_  
 Stories \_\_\_\_\_

Number of Units in the Apartment	Flat type				
	Number of Rooms	Floor Area	Units Number	Number of Occupants	Number of Taps

**Measurement of Water Volume**

**August**

Date							
Time							
Indicated value							
Difference							

**September**

Date							
Time							
Indicated value							
Difference							

**November**

Date							
Time							
Indicated value							
Difference							

Measured person: name \_\_\_\_\_



Table D.5.2.5 (1) Water Measurement Record (1)

No.	House No	Aug/7		Aug/8		Aug/9		Aug/10		Aug/11		Aug/12		Aug/13		Aug/14		Usage Volume cum	Usage days	Average Use cum/d	
		Time	Q	Time	Q cum	Time	Q cum	Time	Q cum	Time	Q cum	Time	Q cum	Time	Q cum	Time	Q cum				
1	37	13:30	78									9:00	89	9:00	90			12	6	2.00	
2	128	14:20	38									9:00	50		51			13	7	1.86	
3	20	13:45	100									9:00	105		106			6	6	1.00	
4	11	14:00	65									9:00	75		76			11	6	1.83	
5	129	14:00	94	14:00	95	14:00	95	14:00	96	14:00	97	14:00	99					99	5	7	0.71
6	2	11:45	107									9:00	117					118	11	7	1.57
7	4	11:35	47		48		49		49.7		50		54					55	8	7	1.14
8	7	11:40	36	11:40	37	11:40	38	11:40	39	11:40	40	11:40	41	11:40	43				7	6	1.17
9	8	11:50	78	21:00	84	20:00	84	20:00	85	20:00	85	20:00	87	20:00	87				9	6	1.50
10	9	11:30	65									9:00	73					73	8	7	1.14
11	12	11:15	7		78		113		145		184		215					216	209	7	29.86
12	13	11:10	23									9:00	33					34	11	7	1.57
13	16	11:10	65	11:10	66	11:10	69	11:10	71	11:10	172	9:00	74					75	10	7	1.43
14	13	11:20	59									9:00	66					67	8	7	1.14
15	34	11:05	44	11:05	44	11:05	45	11:05	46	11:05	47	11:05	47					48	4	7	0.57
16	3	12:00	93	13:00	94	13:00	95	13:00	96	13:00	97	13:00	98		98				5	6	0.83
17	21	14:00	22	14:20	22	14:20	22	14:20	22	14:20	22	8:00	22		23				1	6	0.17
18	16	9:52	109	9:52	111.5	9:52	114	9:52	116	9:52	119	9:52	123	9:52	127	10:20	127	18	7	2.57	
19	20	10:45	96													10:13	159	63	7	9.00	
20	1	10:45	45													10:10	150	105	7	15.00	
21	2	11:00	71													10:00	120	49	7	7.00	
22	23	9:40	66														72	6	7	0.86	
23	10	10:20	100	10:30	102	10:30	104	10:30	106	10:30	109	10:30	111	10:30	112	9:40	113	13	7	1.86	
34	11	10:40	67	11:00	70	12:00	72	15:00	73	12:00	75	11:00	78	12:00	79	9:30	80	13	7	1.86	
25	17	1:20	32		32		32		32									33	1	7	0.14
26	8	10:00	133		134		135		136		137		138		139	9:25	140	7	7	1.00	
27	21	12:40	30	13:00	33		36		35		36		37				38	8	7	1.14	
28	2	10:30	117	10:25	118	10:30	119	10:30	119.5	10:30	120	10:30	121	10:30	122	10:30	122	5	7	0.71	
29	73	12:05	86		82		88		89		90		91		92			93	7	7	1.00
30	79	12:00	31	12:00	33	12:00	35	12:00	37		38					9:20	39	8	7	1.14	
31	16	12:05	109	12:00	110	12:00	111	12:00	112	12:00	113	12:00	114	12:00	116	9:15	117	8	7	1.14	
32	126	12:20	52	12:40	52	1:50	53	1:00	53	2:00	53	14:30	54			9:20	54	2	7	0.29	
33	7	12:00	112		115		117		115		120		122			9:15	125	13	7	1.86	
34	9	13:40	75		75.5		76		77		80		81			9:00	82	7	7	1.00	
35	18	12:00	80	12:00	80	12:00	82	12:00	82	12:00	84	12:00	85	12:00	86	9:00	87	7	7	1.00	
36	12	13:20	76	13:20	80	14:00	81	14:00	82	14:00	83	13:00	84	13:30	85	9:00	85	9	7	1.29	
37	2	12:10	57													9:00	68	11	7	1.57	
38	9	10:09	34	11:30	36	15:11	38									9:30	43	9	7	1.29	
39	6	1:10	8	1:10	9	2:30	9		10		11					9:30	12	4	7	0.57	
40	4	10:56	55	11:00	59	11:00	62	9:30	63	Stopped water								8	4	2.00	
41	6	10:35	34													9:40	37	3	7	0.43	
42	8	10:30	26			20:00	27	20:30	28	20:35	29				20:00	30	9:35	31	5	7	0.71
43	20	10:00	61											11:00	70			9	6	1.50	
44	21	12:00	30	13:00	33		36		35		35		36		37		38	8	7	1.14	
45	2	10:00	17	10:30	18	10:30	19	10:30	19.5	10:30	20	10:30	21	10:30	22	9:30	22	5	7	0.71	
46	73	12:05	86		87		88		89		90		91		92	9:20	93	7	7	1.00	
47	79	12:00	31	12:00	33	12:00	35	12:00	37		38	Stopped water							7	5	1.40
48	16	12:05	9	12:00	10	12:00	11	12:00	12	12:00	13	12:00	14	12:00	16	9:15	17	8	7	1.14	

Table D.5.2.5 (2) Water Measurement Record (2)

No.	Street	House No	Sep./21	Sep./21	Sep./21	Sep./21	Sep./21	Sep./21	Sep./21	Sep./21	Usage	Usage	Average
			Q	Q	Q	Q	Q	Q	Q	Q	Q	Volume	days
				cu.m	cu.m	cu.m	cu.m	cu.m	cu.m	cu.m	cu.m	cu.m	cu.m/d
1	Adolat	37	150	152	154	156	158	160	162		12	6	2.00
2	Adolat	128	110	112	114	115	118	122	124		14	6	2.33
3	Adolat	20	117			120		124	125		8	6	1.33
4	Adolat	11	121	123	123	124	127	131	133		12	6	2.00
5	Adolat	129	120	120	121	122	123	125	126		6	6	1.00
6	Adolat	2	167	168	170	172	175	177	179		12	6	2.00
7	Adolat	4	87	88	89	91	93	95	96		9	6	1.50
8	Adolat	7	66	67	68	70	71	74	75		9	6	1.50
9	Adolat	8	124	126	128	130	131	133	134		10	6	1.67
10	Adolat	9	101	102	104	105	106	108	110		9	6	1.50
11	Adolat	12	347	377	405	443	491	525	560		213	6	35.50
12	Adolat	13	88	91	91	93	94	96	97		9	6	1.50
13	Adolat	16	108	110	112	114	116	118	120		12	6	2.00
14	Adolat	18	107	108	111	112	114	115	116		9	6	1.50
15	Adolat	34	166	167	168	168	169	170	171		5	6	0.83
16	Adolat	3	109	110	111	112	113	114	115		6	6	1.00
17	Adolat	21		70	75	81	89	97	102	107	37	6	6.17
18	Adolat	16		159	160	162	164	167	169	170	11	6	1.83
19	Adolat	20	152	159	169	182	192	203	211		59	6	9.83
20	Feruza	1	287	295	302	311	323	330	337		50	6	8.33
21	Feruza	2	197	203	209	216	223	232	239		42	6	7.00
22	Adolat	23	101	102	103	104	105	107	109		8	6	1.33
23	Feruza	10	273	274	276	279	283	285	287		14	6	2.33
34	Feruza	11	127	129	232	236	238	240	241		114	6	19.00
25	Adolat	17	41						43		2	6	0.33
26	Adolat	8	172	173	174	175	177	179	180		8	6	1.33
27	Adolat	21										6	0.00
28	Adolat	2		409	410	412	415	417	418	419	10	6	1.67
29	Adolat	73		315	316	317	318	319	320	322	7	6	1.17
30	Adolat	79		273	274	275	276	277	278	280	7	6	1.17
31	Adolat	16	158	160	162	165	169	171	173		15	6	2.50
32	Adolat	126	63	63	64	64	65	66	67		4	6	0.67
33	Adolat	7	167	169	171	174	175	178	180		13	6	2.17
34	Adolat	9	110	111	112	113	114	115	116		6	6	1.00
35	Adolat	18	112	112	114	115	117	119	120		8	6	1.33
36	Adolat	12	123	123	125	127	128	130	133		10	6	1.67
37	Adolat	2	106	107	108	110	113	115	117		11	6	1.83
38	Feruza	9	290	291	292	294	296	298	299		9	6	1.50
39	Adolat	6	30	30	31	31	33	34	35		5	6	0.83
40	Feruza	4	297	298.5	300	302	304	305.5	307		10	6	1.67
41	Feruza	6	157	157.5	158	158.4	159	159.5	160		3	6	0.50
42	Feruza	8	164						169		5	6	0.83
43	Adolat	20	209	210	212	213	215	218	220		11	6	1.83
44	Adolat	21		297	298	299	303	304	305	306	9	6	1.50
45	Adolat	2		307	308	310	312	313	315	316	9	6	1.50
46	Adolat	73		295	296	297	298	299	301	302	7	6	1.17
47	Adolat	79		213	215	216	216	217	219	220	7	6	1.17
48	Adolat	16		117	119	122	125	126	128	130	13	6	2.17

 Flow meter attached house

Table D.5.2.5 (3) Water Measurement Record(3)

No.	Street	House No	Nov./22 Q	Nov./30 Q cu.m	Usage Volume cu.m	Usage days	Average Use cu.m/d
1	Adolat	37	297	314	17	8	2.13
2	Adolat	128	354	359	5	8	0.63
3	Adolat	20	129	132	3	8	0.38
4	Adolat	11	Non working			8	
5	Adolat	129	Non working			8	
6	Adolat	2	Non working			8	
7	Adolat	4	110	116	6	8	0.75
8	Adolat	7	103	107	4	8	0.50
9	Adolat	8	268	274	6	8	0.75
10	Adolat	9	Non working			8	
11	Adolat	12	Non working			8	
12	Adolat	13	334	336	2	8	0.25
13	Adolat	16	226	229	3	8	0.38
14	Adolat	18	236	241	5	8	0.63
15	Adolat	34	386	390	4	8	0.50
16	Adolat	3			0	8	
17	Adolat	21	Non working			8	
18	Adolat	16	215	224	9	8	1.13
19	Adolat	20	360	369	9	8	1.13
20	Feruzza	1	452	503	51	8	6.38
21	Feruzza	2	227	244	17	8	2.13
22	Adolat	23	124	128	4	8	0.50
23	Feruzza	10	404	412	8	8	1.00
34	Feruzza	11	194	203	9	8	1.13
25	Adolat	17	51	53	2	8	0.25
26	Adolat	8	203	209	6	8	0.75
27	Adolat	21	310	315	5	8	0.63
28	Adolat	2	168	171	3	8	0.38
29	Adolat	73	255	259	4	8	0.50
30	Adolat	79	109	113	4	8	0.50
31	Adolat	16	288	294	6	8	0.75
32	Adolat	126	92	95	3	8	0.38
33	Adolat	7	666	681	15	8	1.88
34	Adolat	9	106	112	6	8	0.75
35	Adolat	18	651	656	5	8	0.63
36	Adolat	12	729	737	8	8	1.00
37	Adolat	2	355	363	8	8	1.00
38	Feruzza	9	331	337	6	8	0.75
39	Adolat	6	151	154	3	8	0.38
40	Feruzza	4	336	341	5	8	0.63
41	Feruzza	6	168	171	3	8	0.38
42	Feruzza	8	185	190	5	8	0.63
43	Adolat	20	253	258	5	8	0.63
44	Adolat	21	Non working			8	
45	Adolat	2	Non working			8	
46	Adolat	73					
47	Adolat	79					
48	Adolat	16					


 Flow meter attached house

Table D.5.2.6 Water Measurement Record

First Measurement																				
No.	Apart No	Sep./8		Sep./9		Sep./10		Sep./11		Sep./12		Sep./13		Aug./14		Usage	Usage	Average Usage		
		Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Volun	days		cu.m/d	
1	4	16:45	127	17:20	259	17:00	396	18:30	542	18:40	694	17:10	834	17:08	970	843	6	140.50		
2	5	16:52	211	17:30	313	17:00	397	17:10	507	17:10	614	17:25	716	17:00	821	610	6	101.67		
3	6	16:42	45	18:30	151	17:15	223	17:35	348	14:34	458	17:50	571	18:00	695	650	6	108.33		
4	14																			
5	21	18:00	380	17:25	532	17:00	691	17:25	853	16:55	1006	17:10	1176	17:00	1321	941	6	156.83		
6	23			17:00	220	17:00	310	17:15	410	17:10	510	17:00	610	17:20	710	490	5	98.00		
7	25																			
8	26																			
9	66	17:00	621	17:30	798	17:00	935	17:00	1092	17:00	1249	17:15	1443	17:20	1631	1010	6	168.33		
10	67	17:10	360	17:30	439	17:00	539	17:30	704	17:00	881	17:15	1003	17:25	1131	771	6	128.50		
11	2	15:55	100	16:34	243			15:20	524	18:45	687	19:00	840	17:15	998	898	6	149.67		
12	13	16:00	1029	17:25	1161			18:55	1462	18:40	1617	18:57	1768	17:50	1919	890	6	148.33		
13	24	15:15	238	16:49	401			19:50	686	19:05	875	19:40	1042	17:35	1208	970	6	161.67		
14	26	15:20	639	16:42	885			14:46	1334	19:02	1616	19:40	1859	17:30	2099	1460	6	243.33		
15	30	15:38	1040	17:05	1137			15:02	1318	19:17	1431	19:50	1536	17:40	1637	597	6	99.50		
Average																		142.06		
Second Measurement																				
No.	Apart No	Sep./21		Sep./22		Sep./23		Sep./24		Sep./25		Sep./26		Sep./27		Sep./28		Usage	Usage	Average Usage
		Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Volume	days	
1	4	16:32	2071	16:22	2205	16:17	2341	16:47	2481	17:22	2620	16:32	2758	16:37	2894	12:00	3025	954	7	136.29
2	5	16:30	1473	16:20	1568	16:15	1660	16:45	1758	17:20	1857	16:30	1952	16:35	2043			570	6	95.00
3	6	16:28	2505	16:18	2609	16:13	2720	16:42	2828	17:15	2947	16:21	3071	16:33	3167			662	6	110.33
4	14	17:17	72	17:18	177	17:22	298	17:10	406	17:15	513	17:30	624	17:15	728			656	6	109.33
5	21																			
6	23																			
7	25																			
8	26																			
9	66	16:20	125	16:12	305	16:07	491	16:32	680	17:05	877	16:15	1082	16:17	1262	11:05	1433	1308	7	186.86
10	67	16:00	1877	16:10	1991	16:05	2102	16:30	2225	17:00	2352	16:16	2471	16:15	2585	11:00	2670	793	7	113.29
11	2																			
12	13	10:30	3005	11:05	3147	10:45	3292	10:30	3442	10:55	3589	11:00	3732	10:25	3880	10:30	4025	1020	7	145.71
13	24		2308		2459		2615		2774		2932		3100		3255		3412	1104	7	157.71
14	26		3729		3950		4169		4398		4635		4874		5102		5335	1606	7	229.43
15	30	10:47	2348	10:32	2441	10:18	2536	10:15	2636	10:25	2732	10:27	2827	10:37	2923	10:12	3018	670	7	95.71
Average																				137.97
Third Measurement																				
No.	Apart No	Nov./24		Nov./25		Nov./26		Nov./27		Nov./28		Nov./29		Nov./30		1-Dec		Usage	Usage	Average Usage
		Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Time	Q	Volume	days	
1	4	16:32	4425	16:22	4555	16:17	4693	16:47	4830	17:22	4971	16:32	5107	16:37	5242			817	6	136.17
2	5	11:05	8169	10:30	8267	10:50	8364	10:55	8466	10:55	8569	11:00	8669	11:03	8768			599	6	99.83
3	6	11:10	12982	10:35	13120	10:55	13258	10:59	13398	11:00	13539	11:05	13681	11:09	13820			838	6	139.67
4	14	11:20	6690	10:45	6791	11:05	6891	11:10	6993	11:10	7099	11:15	7210	11:20	7310			620	6	103.33
5	21																			
6	23																			
7	25																			
8	26	11:30	2525	10:55	2592	11:15	2658	11:20	2722	11:20	2790	11:25	2860	11:30	2922			397	6	66.17
9	66	11:40	621		761		893		1034		1186		1328		1486		1631	1010	7	144.29
10	67	12:00	8687	11:25	8719	11:47	8758	11:50	8795	11:55	8839	11:55	8880	12:00	8915			228	6	38.00
11	2	14:00	9627	14:05	9693	14:05	9759	14:10	9834	13:55	9903	14:10	9967	14:00	10033			406	6	67.67
12	13																	0		
13	24	10:05	6585	10:10	6725	10:00	6863	10:15	7017	10:10	7167	10:00	7320	10:10	7478	10:05	7478	893	7	127.57
14	26	14:30	10466	14:35	10636	14:35	10807	14:40	10970	14:25	11152	14:40	11324	14:30	11494			1028	6	171.33
15	30	14:40	2348	14:45	2441	14:45	2536	14:50	2636	14:35	2732	14:50	2827	14:40	2923			575	6	95.83
Average																				108.17



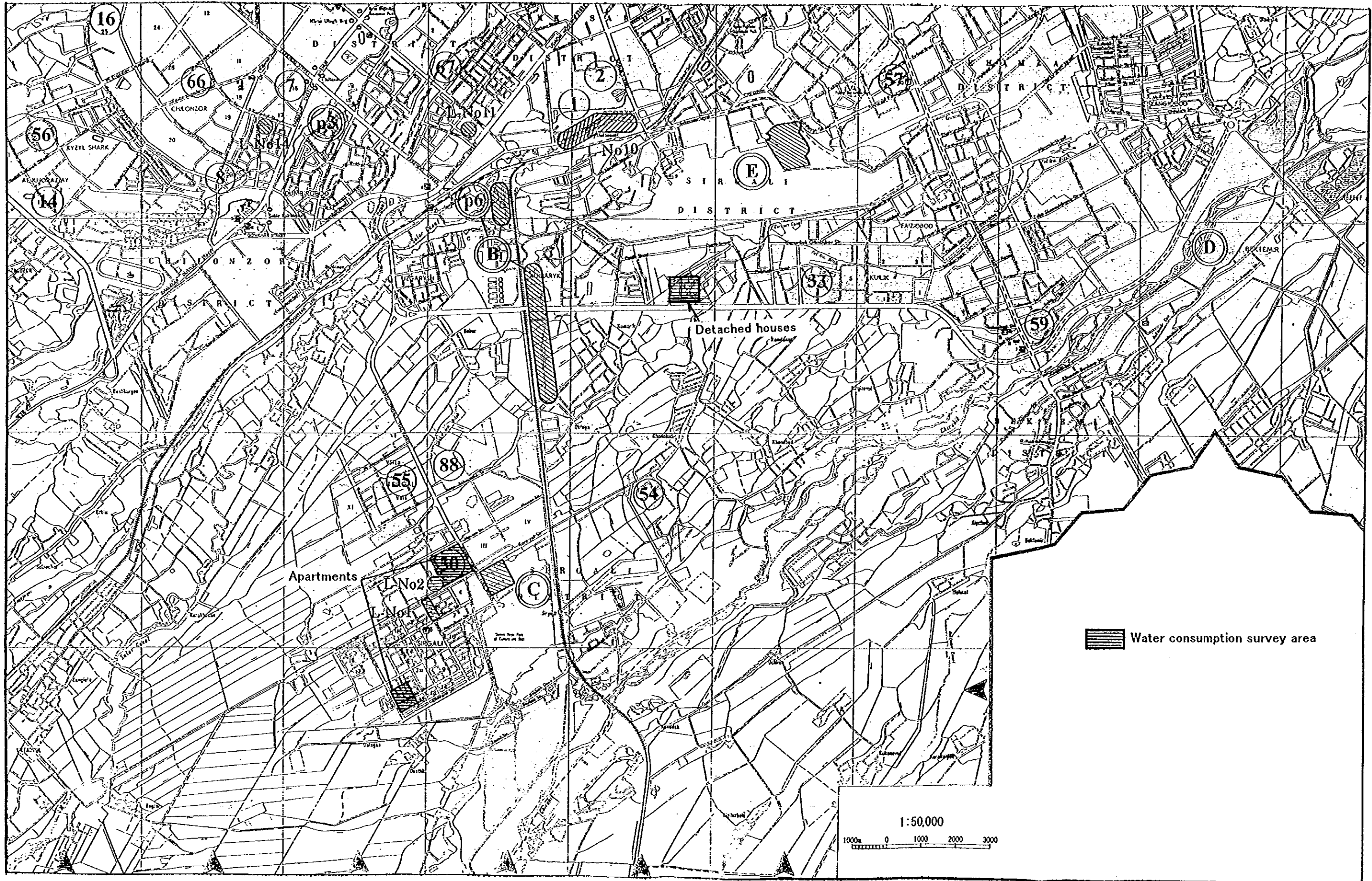


Figure D.5.2.1 Location of meter installed Detached houses and Apartments



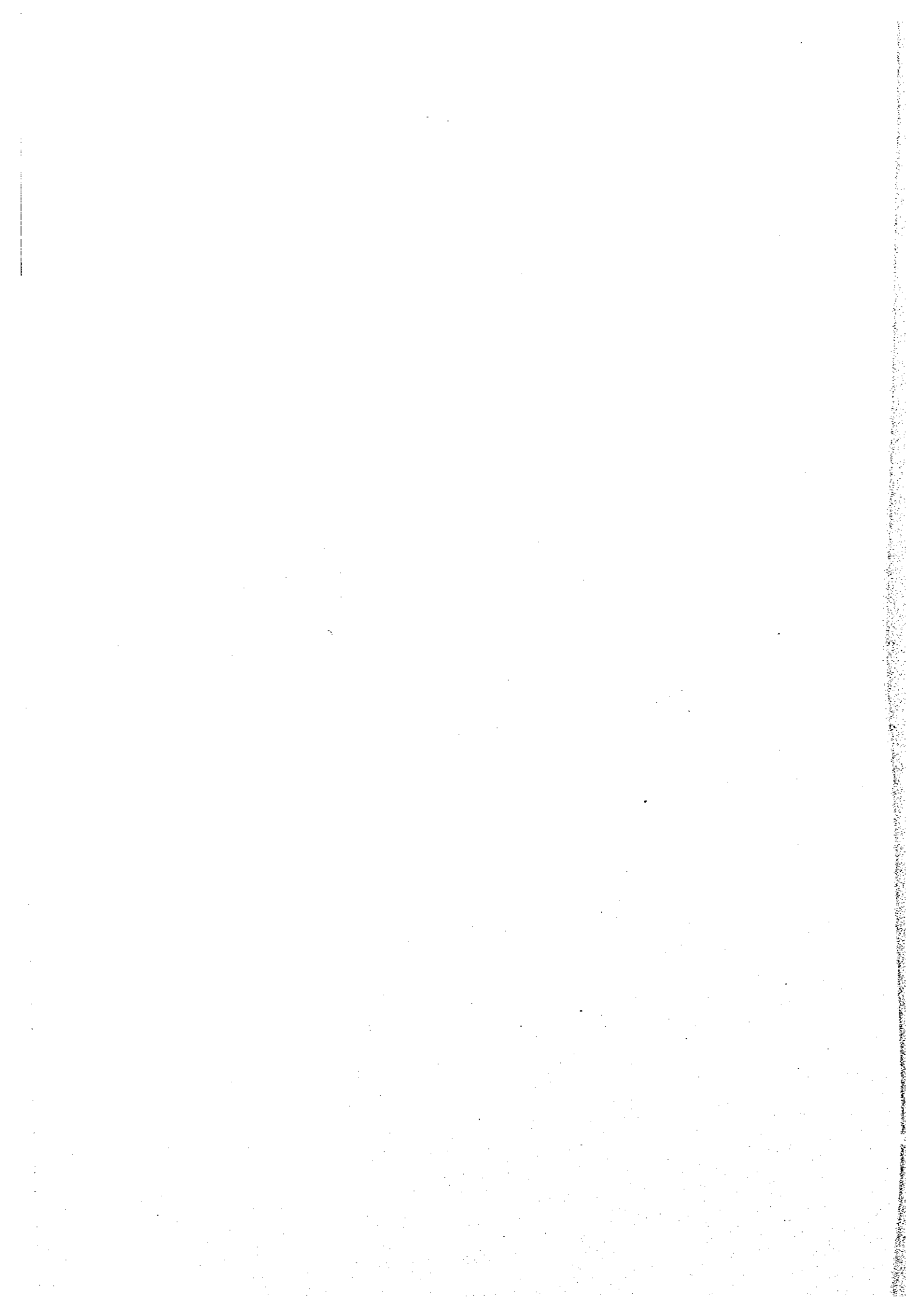


Figure D.5.2.2 Flow-data of Detached House

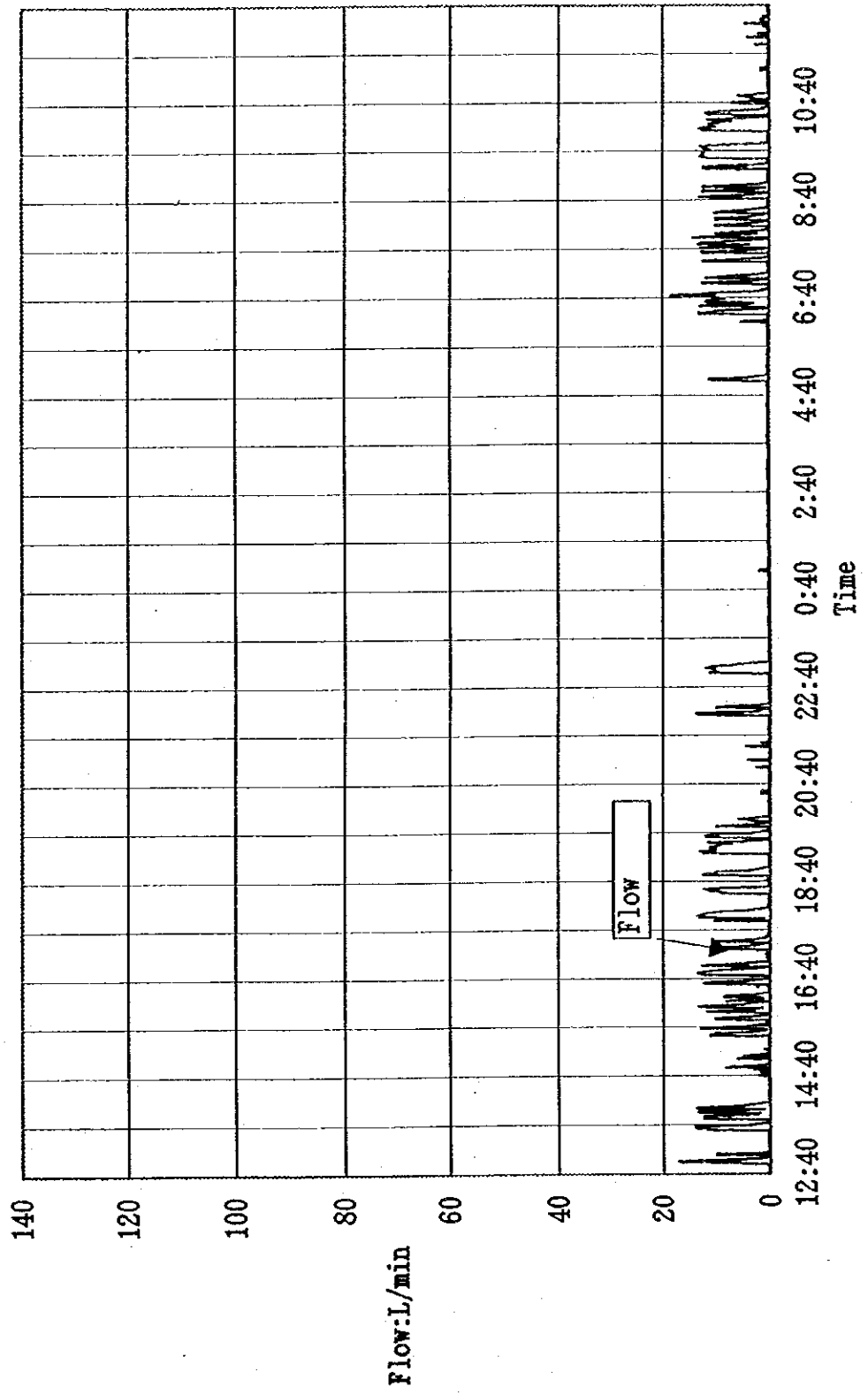


Figure D.5.2.3 Flow-data for Apartment Buildings

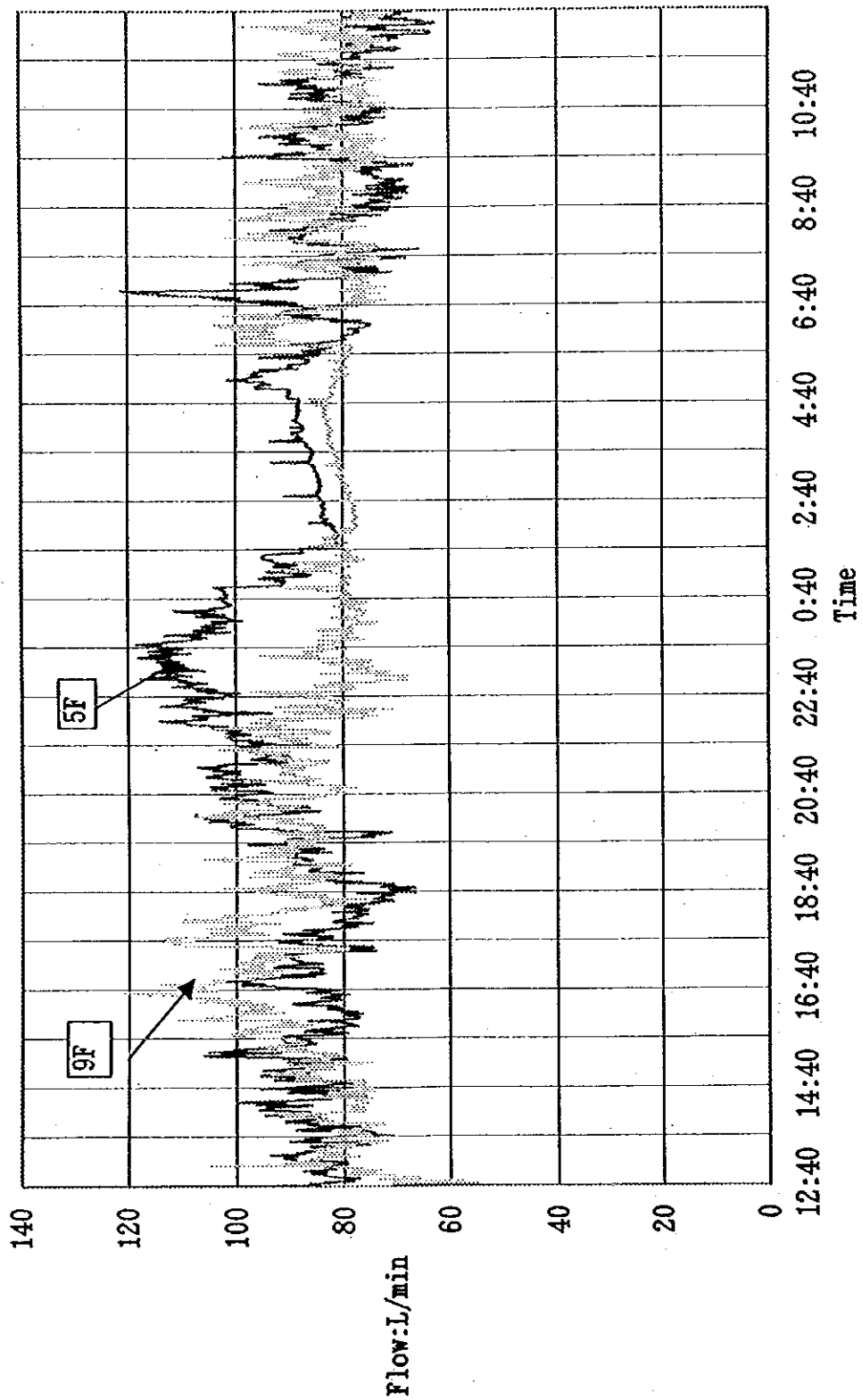
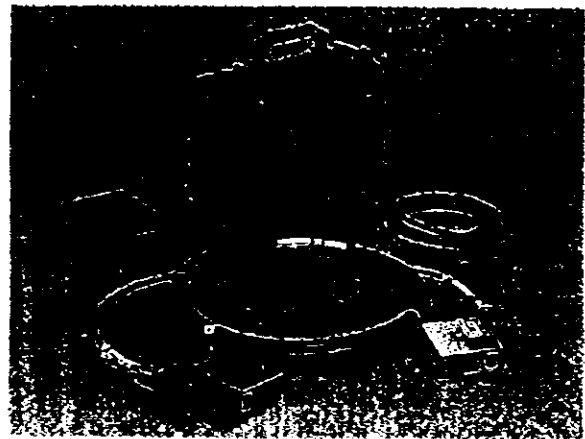
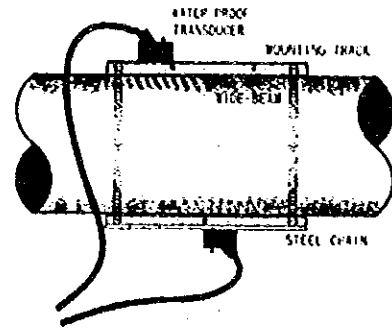


Table D.5.3.1 Specificatin of Ultra Sonic Flow Meter

# FUNCTIONS AND FEATURES

Tomas Flow offers a wide variety of unique functions and features to make it the most applicable and versatile flowmeter available.

- Submersible or Miniature Construction
- MultiPulse/AutoMark™ Accuracy
- Dual Channel/PathOperation
- Optional Thickness and Flow Gauges
- Optional Reflexor Flowmeter
- FastStart
- Graphics Help and Prompt Menus
- Remote PC Diagnostics and Data Access
- HandsFree MultiGraph Data Display
- Huge DataLogger Memory
- Diagnostics Menu
- SmartSlew
- PinStop Installation
- InLine Transducer Support



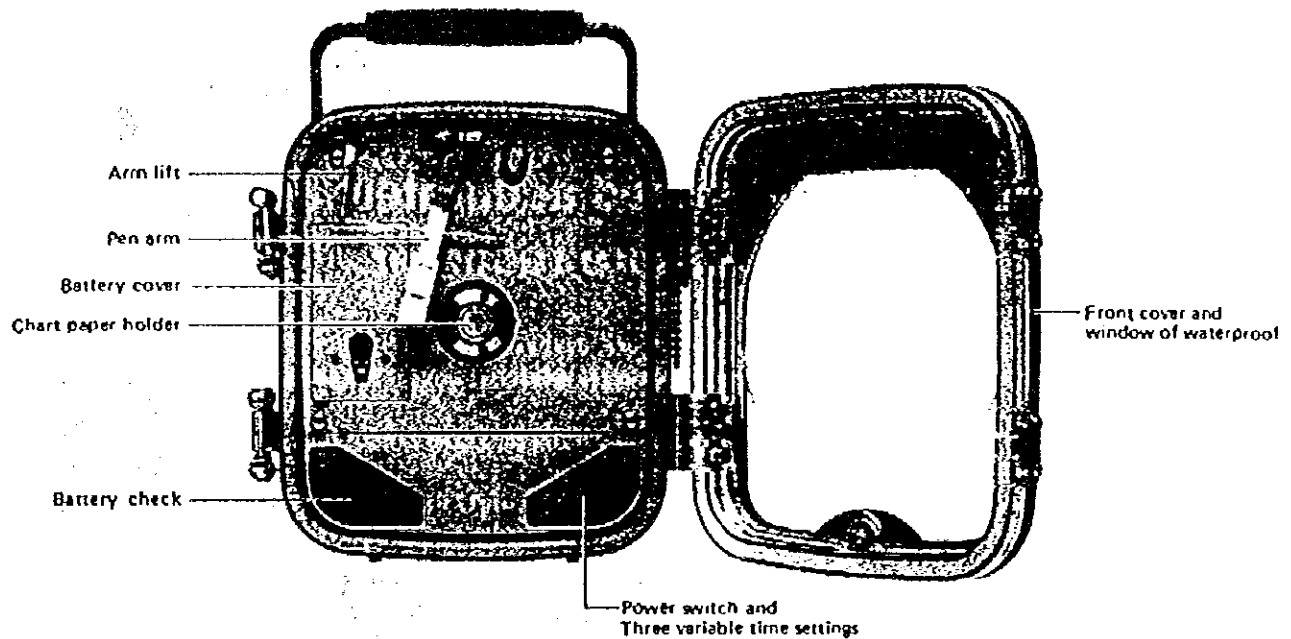
## SPECIFICATIONS

<p><b>APPLICABILITY</b></p> <p><b>LIQUIDS</b> Any sonically conductive liquid or compressed dense phase gas</p> <p><b>LIQUID (PIPE) TEMPERATURE:</b> -40 F to +250 F (-40 C to +120 C) Standard -80 F to +150 F (-60 C to +230 C) Optional</p> <p><b>PIPE MATERIAL:</b> Any sonically conductive pipe material Any sonically conductive pipe material</p> <p><b>PIPE WALL THICKNESS:</b> 0.02" to 3.00" (0.05 mm to 76 mm)</p> <p><b>LINER MATERIAL:</b> Any sonically conductive material, intimately bonded to the pipe interior</p> <p><b>LINER THICKNESS:</b> Up to 1" (25 mm), depended on material</p> <p><b>FLOW VELOCITY RANGE:</b> ± 40 fps ( ± 12m/sec), minimum</p> <p><b>TOMAS FLOW COMPUTER</b></p> <p><b>POWER:</b> 10.5-18.5 VDC, supplied with 90-240VAC charger</p> <p><b>TEMPERATURE:</b> Operate: 32 F to 122 F (0 C to 50 C) for LCD Display Storage: -4 F to 140 F (-20 C to 60 C)</p>	<p><b>TOMAS FLOW PERFORMANCE: Standard Conditions</b> (Greater than 15 diameters upstream &amp; 5 diameters downstream straight run, flowrate greater than 1 fps, non-aerated liquid, Newtonian liquids flowing at Reynolds numbers &lt; 2000 or &gt; 10000)</p> <p><b>ACCURACY INTRINSIC CALIBRATION:</b> 1%-2% of indicated or better</p> <p><b>ACCURACY CALIBRATION (BATCH):</b> 0.15% of indicated or better</p> <p><b>REPEATABILITY (Small Volume):</b> Better than 0.5%</p> <p><b>RESPONSE RATE (Damping):</b> Smart Slew effective from 0.2 sec to 5 min</p> <p><b>DATA UPDATE RATE:</b> 200 ms</p> <p><b>SLEW RATE:</b> 800/s (24M/s)</p> <p><b>ZERO DRIFT:</b> Less than 0.05 ft/sec (0.015m/sec)</p> <p><b>GRAPICS DISPLAY</b> 4.25" x 2.25" (108mm x 57mm), active area with 240 x 280 pixels</p> <p><b>OUTLINE DIMENSIONS</b></p> <p>"L": 216mm "H": 271mm "O": 477mm "W": 3.64kg</p>
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Japan PipeLine System Engineering, Inc  
4-2-14 NAKAOCHIAI SHINJUKU-KU TOKYO JAPAN 161-0032  
PHONE: (03) 5982-5121 FAX: (03) 5982-5125

# FUJI PORTABLE WATER PRESSURE RECORDER

Table D.5.3.2 Specificatin of Pressure Gage



## Features

- Three variable time settings.
- Three models of FJN-301 incorporating nine recording times in four pressure ranges.
- Automatic prevention of overlapped time charts.
- A battery life of 6-months if continuously used with the 180 chart discs supplied.
- Compact waterproof robust plastic housing weighs only 2kg and measures 180mm x 162mm x 96mm.

## Uses

- To measure the pressure necessary to maintain an effective water supply.
- To check pressure distribution in a pipe network to maintain the supply.
- Initial stage of leakage evaluation to assess likely areas of leakage.
- To check the performance of pumps and valves.
- To collect information for the prevention of damage caused by sudden changes of pressure.
- To test watertightness in pipes and fittings.

## Specifications

- Body : Robust plastic housing with completely waterproof front cover and window.
- Operation : Quartz clock.
- Pressure sensor : Helical bourdon tube.
- Recording method : Felt pen with cartridge ink supply (Red).
- Chart disc : 135mm diameter paper disc.
- Recording time : Type A = 24H, 72H, 168H. (H = Hour)  
Type B = 4H, 12H, 24H.  
Type C = 15M, 30M, 60M. (M = Minute)
- Pressure range : Type A = 5kg/cm<sup>2</sup>, 10kg/cm<sup>2</sup>, 14kg/cm<sup>2</sup>, 20kg/cm<sup>2</sup>.  
Type B = 5kg/cm<sup>2</sup>, 10kg/cm<sup>2</sup>, 14kg/cm<sup>2</sup>, 20kg/cm<sup>2</sup>.  
Type C = nil, nil, nil, 20kg/cm<sup>2</sup>.
- Connection : Hydrant and tap adapters with high pressure conduit tube.
- Power source : 3 Volts DC (SUM-3 x 2).
- Weight and size : Whole weight = 5kg.  
Recorder = Approx. 2kg (180mm x 162mm x 96mm).  
Accessories = Approx. 3kg.

We reserve the right to change specifications without prior notice.



Instruments for the location of underground utilities and water leaks

**FUJI TECOM INC.**

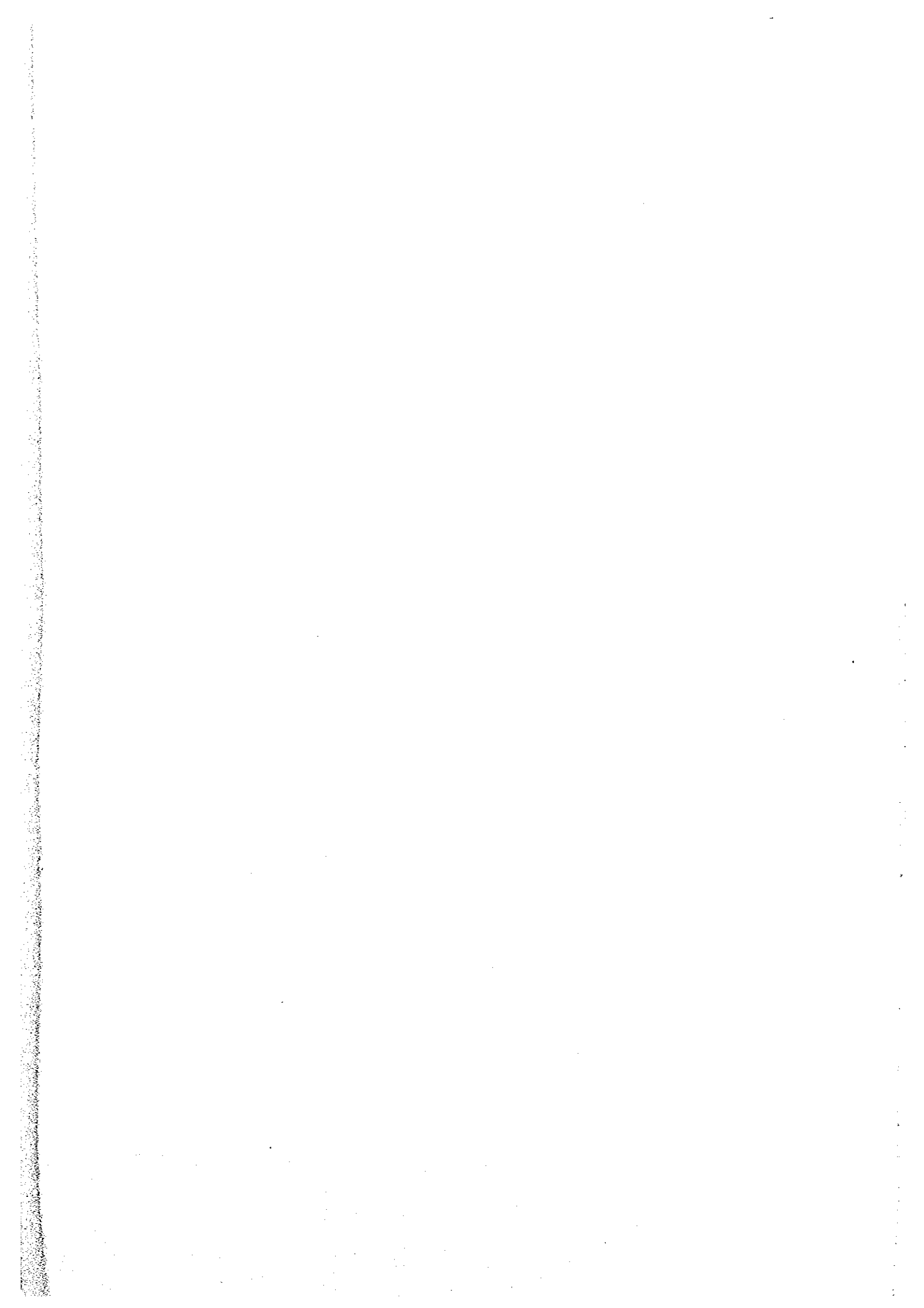
Head Office : 1-11-17 Iriwa-cho Kanisa, Chiyoda-ku, Tokyo, Japan  
Tel: 03(3262)-3736 Fax: 03(3266)-1979  
Telex: 02667444 DETECT J

Branch Office : Tokyo, Osaka, Kyushu, Saitama, Sapporo, Niigata, Hiroshima, Nagano

Technical Development Center : Niiza

AGENT

D5-3-2



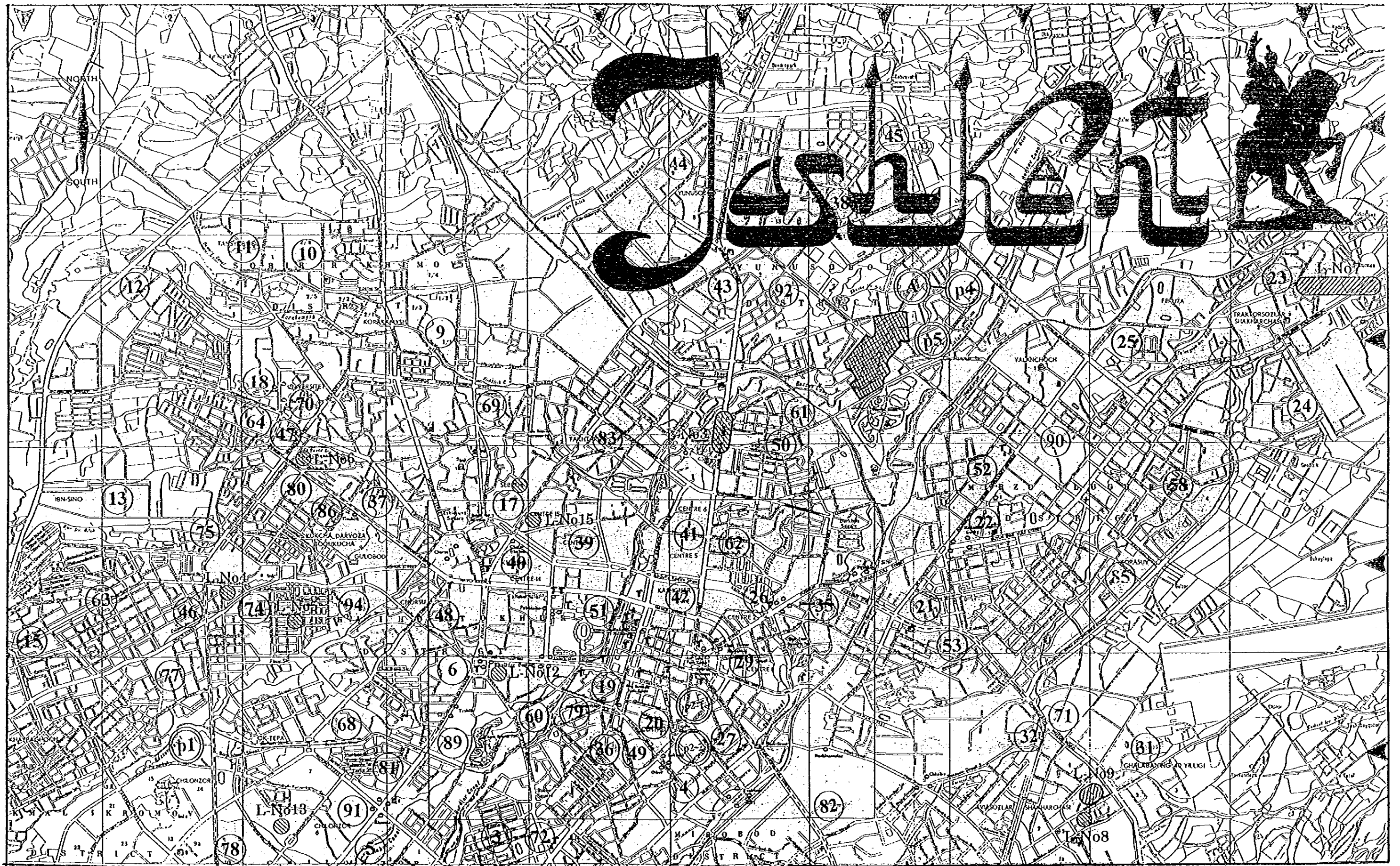
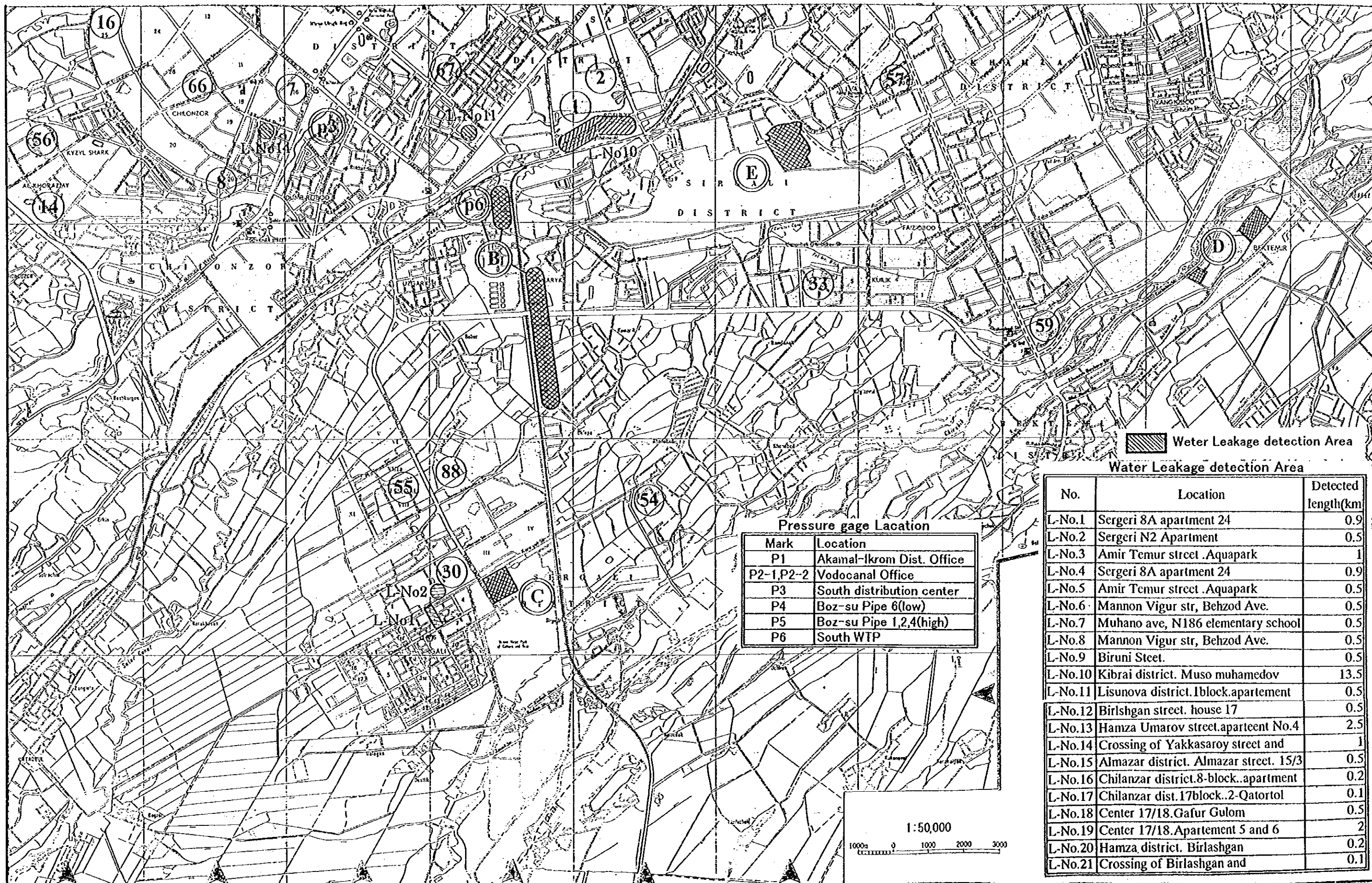


Figure D.5.3.1 (1) Location of Attached Pressure Gage and Target Area of Water Leakage Detection (1)



**Pressure gage Location**

Mark	Location
P1	Akamal-Ikrom Dist. Office
P2-1, P2-2	Vodocanal Office
P3	South distribution center
P4	Boz-su Pipe 6(low)
P5	Boz-su Pipe 1,2,4(high)
P6	South WTP

**Water Leakage detection Area**

No.	Location	Detected length(km)
L-No.1	Sergeri 8A apartment 24	0.9
L-No.2	Sergeri N2 Apartment	0.5
L-No.3	Amir Temur street .Aquapark	1
L-No.4	Sergeri 8A apartment 24	0.9
L-No.5	Amir Temur street .Aquapark	0.5
L-No.6	Mannon Vigur str, Behzod Ave.	0.5
L-No.7	Muhano ave, N186 elementary school	0.5
L-No.8	Mannon Vigur str, Behzod Ave.	0.5
L-No.9	Biruni Steet.	0.5
L-No.10	Kibrai district. Muso muhamedov	13.5
L-No.11	Lisunova district. Iblock.apartement	0.5
L-No.12	Birlshgan street. house 17	0.5
L-No.13	Hamza Umarov street.apartent No.4	2.5
L-No.14	Crossing of Yakkasaroy street and	1
L-No.15	Almazar district. Almazar street. 15/3	0.5
L-No.16	Chilanzar district.8-block.apartment	0.2
L-No.17	Chilanzar dist.17block..2-Qatortol	0.1
L-No.18	Center 17/18.Gafur Gulom	0.5
L-No.19	Center 17/18.Apartement 5 and 6	2
L-No.20	Hamza district. Birlashgan	0.2
L-No.21	Crossing of Birlashgan and	0.1

Figure D.5.3.1 (2) Location of Attached Pressure Gage ang Target Area of Water Leakage Detection (2)



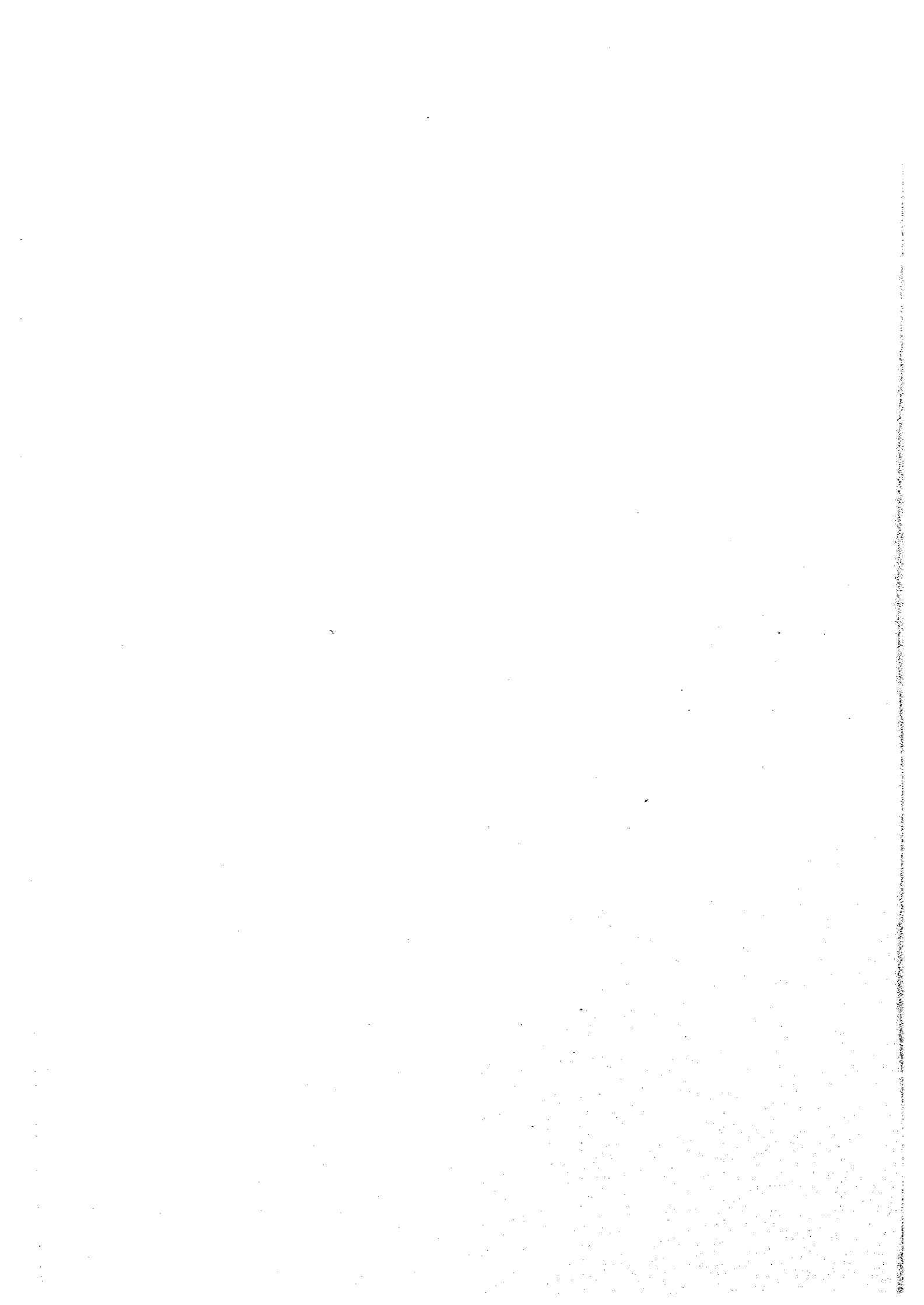


Figure D.5.3.2 Flow Data for the Boz-su and Kadirya WTPs

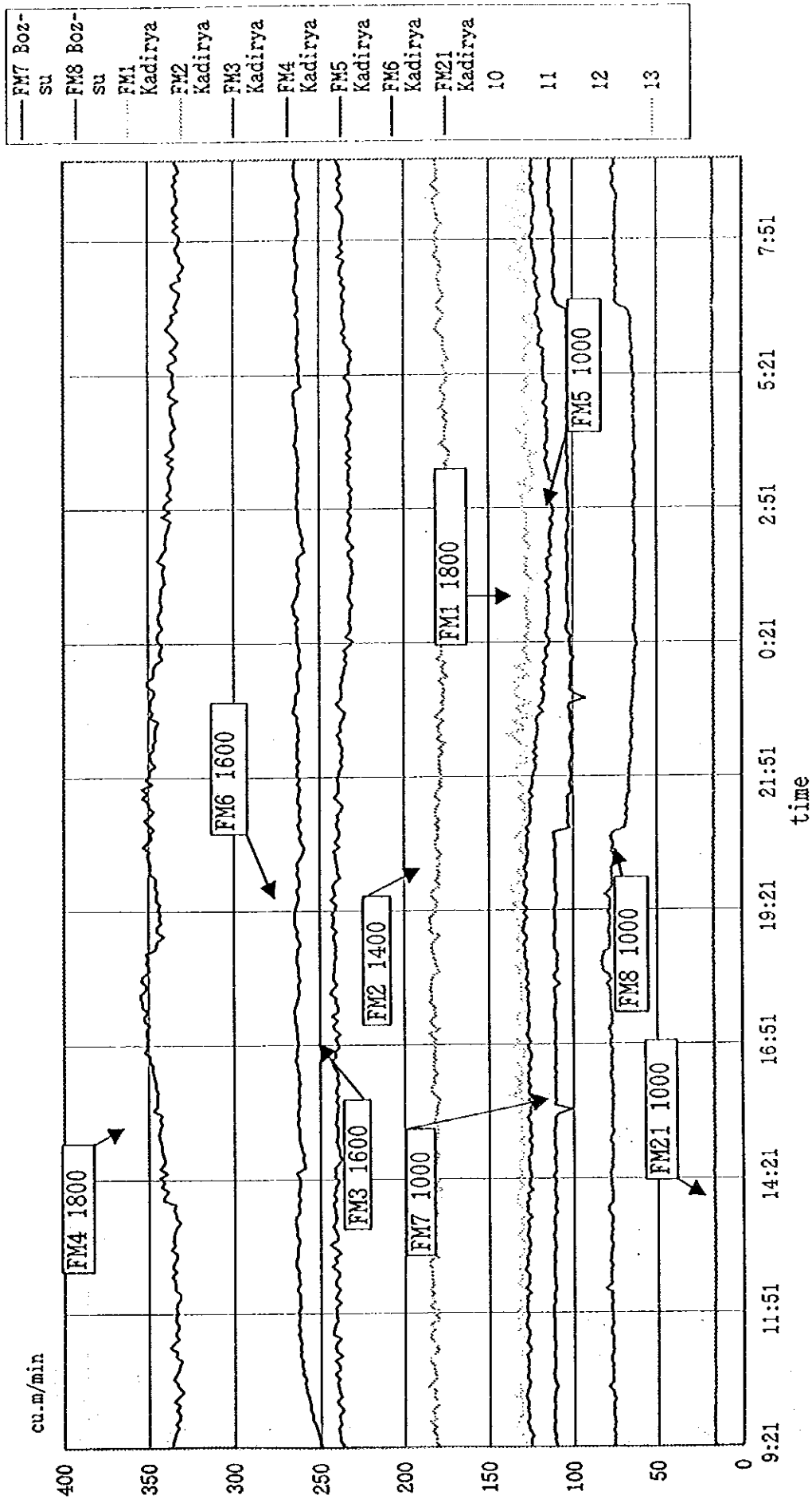


Figure D.5.3.3 Flow Data for the Total Volume of the Water Supply Boz-su and Kadirya WTPs

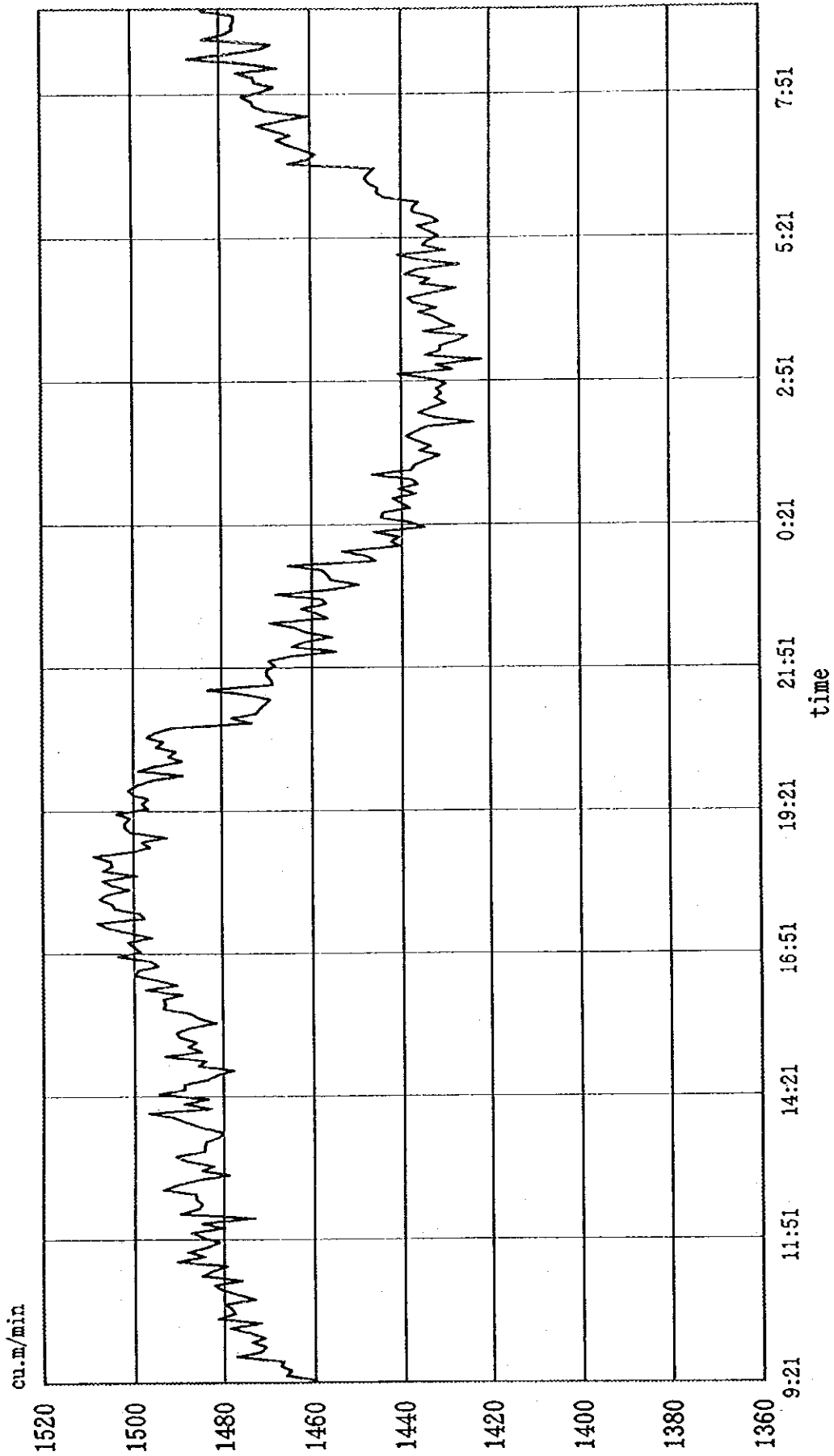


Figure D.5.3.4 Flow Data for the Kibray WTP

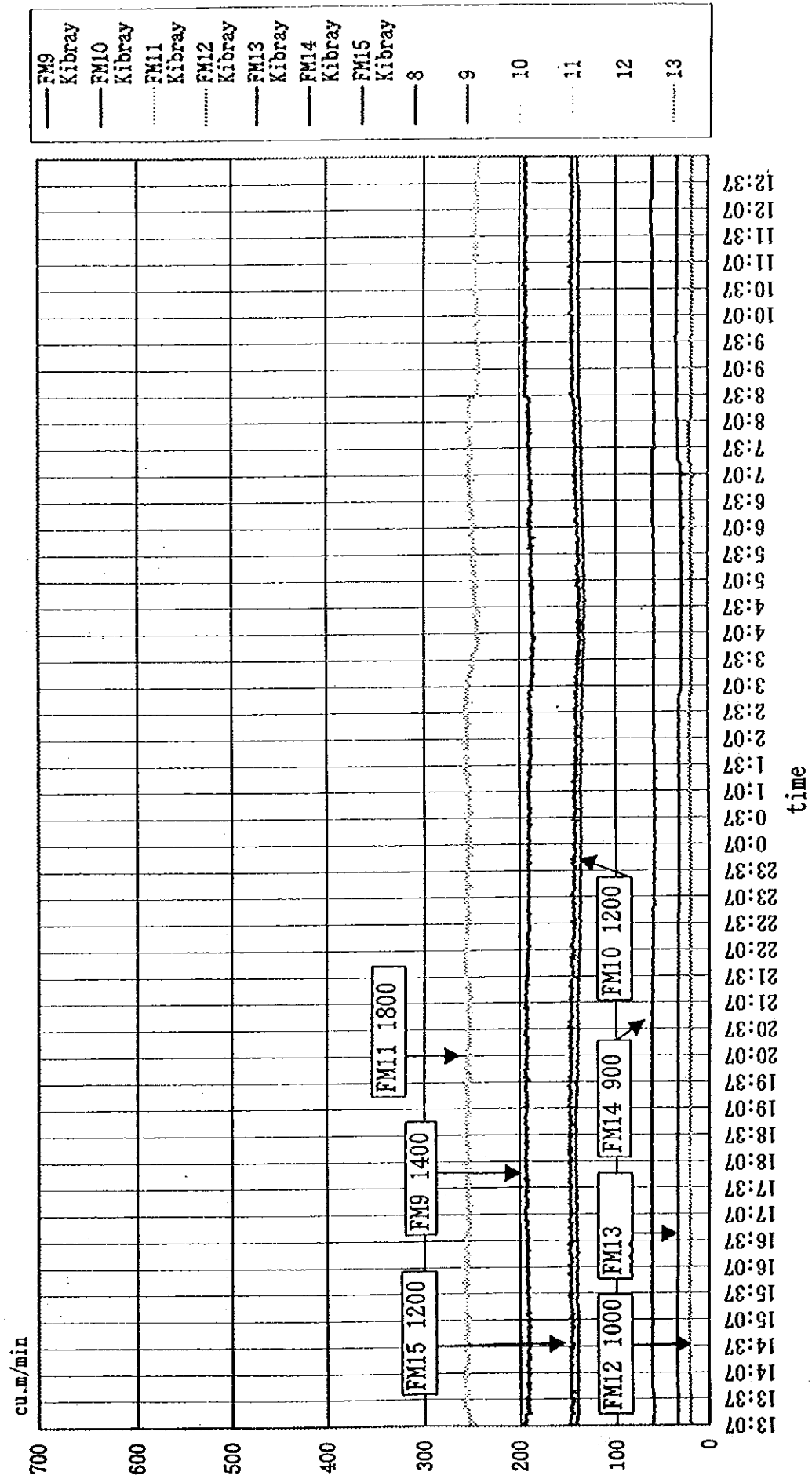


Figure D.5.3.5 Total Flow of the Kibray WTP

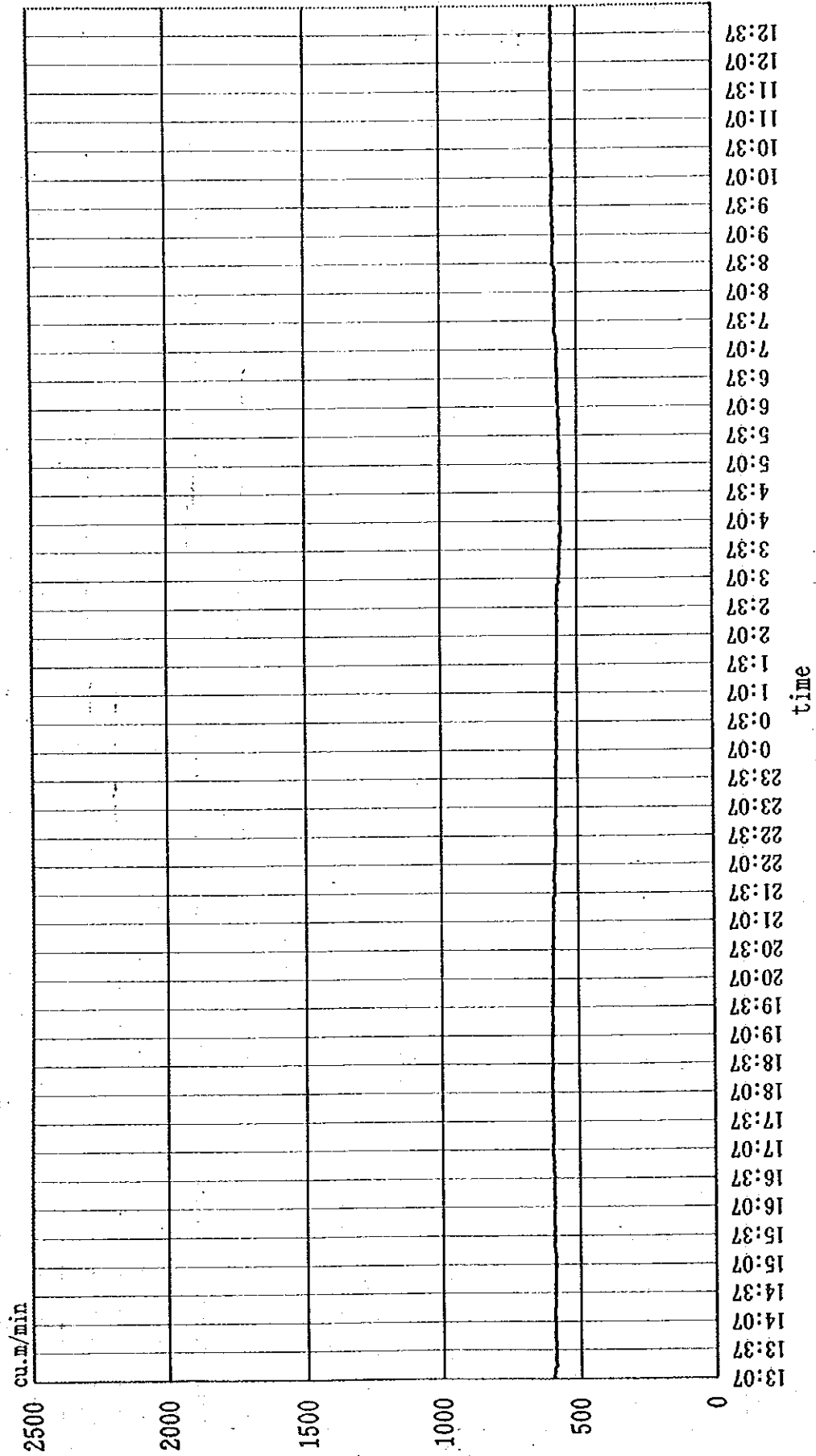


Table D.5.3.3.6 Flow Data for the South WTP

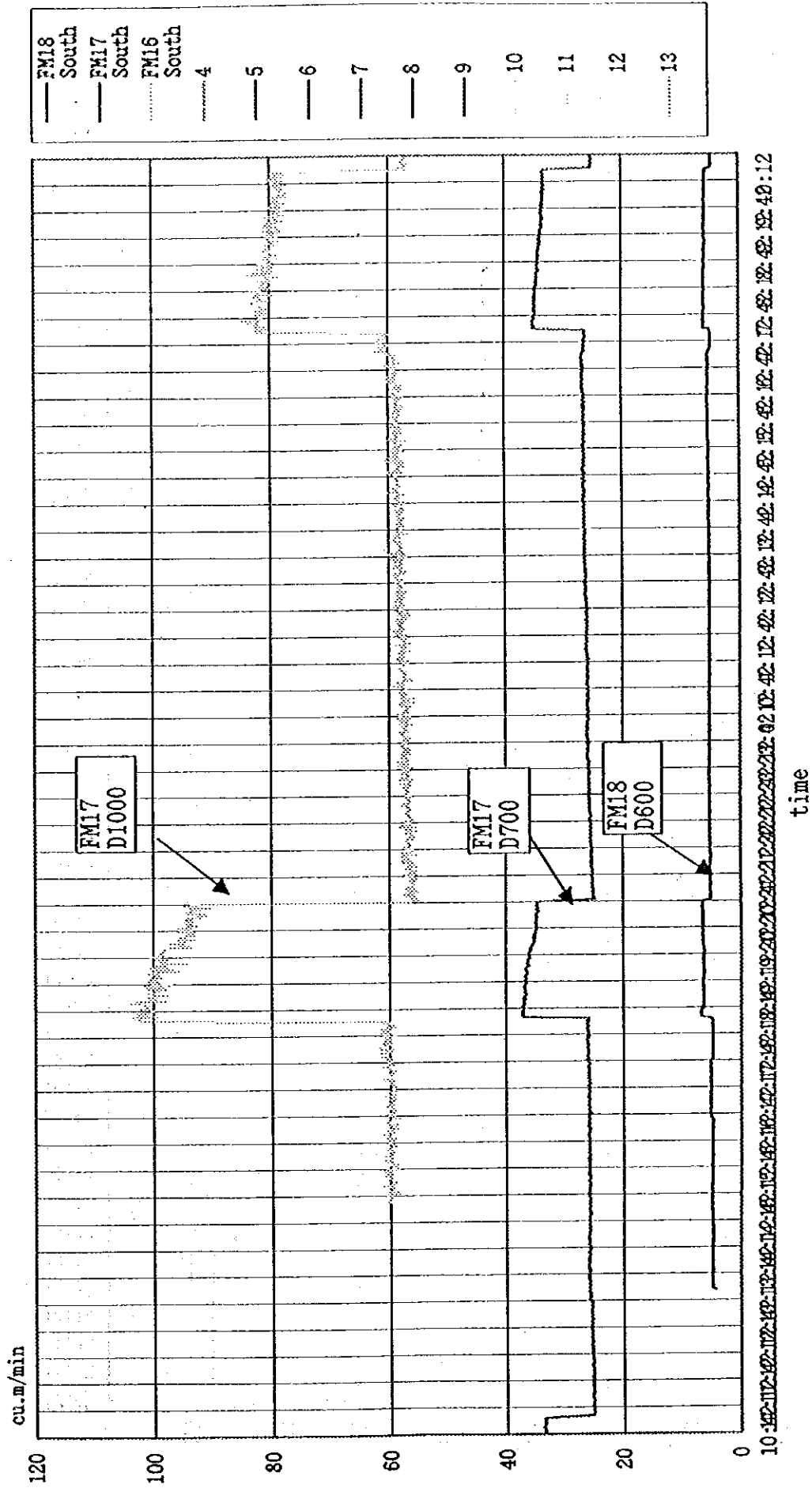
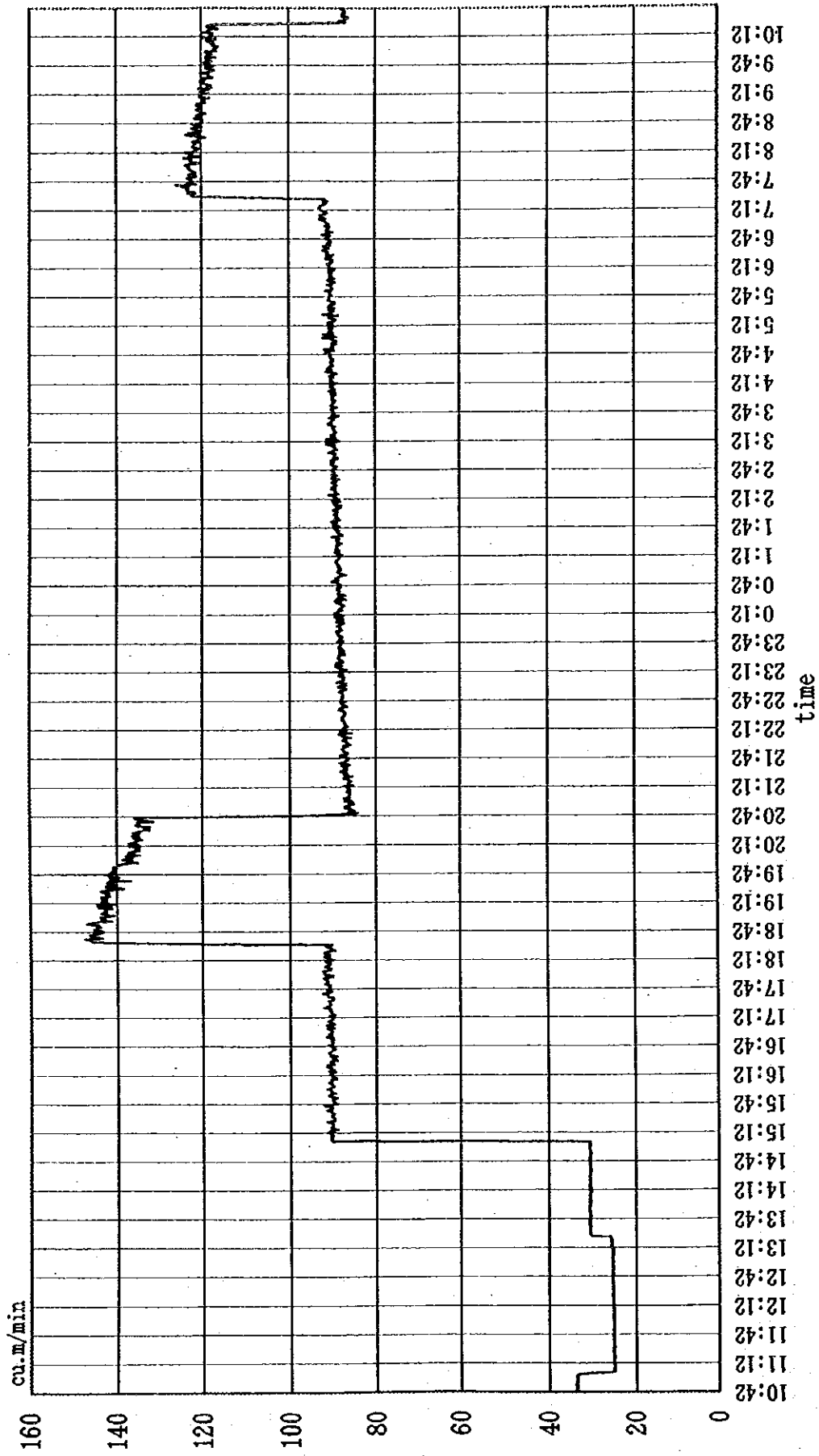


Figure D.5.3.7 Total Flow of the South WTP



**Table D.6.2.1(1) Data for Houses with Water Meter**

No.	House No.	Address	No. of Occupants	Total Area(x100sq.m)			No of Taps	Other	
				Total	House	Garden		Cars	Poos/ Fountains
1	2	Marshak Street	5	4	1	-	2	-	
2	4		3	4	1	1	2	-	
3	5		2	4	1	1	2	-	
4	6		2	4	0.8	1	2	-	
5	9		5	4	0.9	1	3	-	
6	11		5	4	1.2	1	2	-	
7	12		3	4	1	1	3	-	
8	13		7	4	0.9	-	1	-	
9	18		1	4	1	1	2	-	
10	20		2	6	1	0.3	2	-	
11	21		5	4	1.2	1	2	-	
12	23		2	4	1	1	2	-	
13	24		2	4	0.8	1	1	-	
14	28		5	4	1.2	1	2	-	
15	29		3	4	1.1	-	1	-	
16	32		6	4	1.2	-	5	-	
17	33		1	6	1	0.3	2	-	
18	36		4	6	1	0.3	2	-	
19	37		2	4	1	1	1	-	
20	39		2	4	1.1	1	2	-	
21	40		5	4	1	1	2	-	
22	42		1	4	1	1	2	-	
23	43		2	4	1	1	2	-	
24	45		2	4	0.9	1	2	-	
25	49	3	4	1	0.3	2	-		
26	2	Semashko Street	4	4	1	0.3	2	-	
27	3		6	7	1	0.36	3	1	
28	4		5	6	1	0.3	2	1	
29	5		2	6	1	0.29	2	-	
30	6		2	6	1	0.29	3	-	
31	7		7	6	1	0.3	3	-	
32	9		3	4	1	-	3	-	
33	11		3	4	1.2	-	2	-	
34	13		5	4	1	-	3	-	
35	16		3	6	1	0.29	1	-	
36	17		5	6	1	0.3	3	1	
37	21		5	6	1	0.3	3	1	
38	22		4	6	1	0.3	3	-	
39	24		6	6	1	0.3	2	-	
40	30		3	6	1	0.4	3	-	
41	31		11	6	1	0.3	2	-	
42	35		5	6	1	0.3	1	-	
43	14		Abdulla Kahor street	1	7	1	0.4	3	-
44	16	5		6	1	0.4	3	-	
45	24	1		6	1	0.3	1	-	
46	80	3		6	1	0.4	2	-	
Average			3.7	4.9	1.0	0.5	2.2	-	

**Table D.6.2.1(2) Data for Apartment Buildings with Water Meters**

No.	Adress	Stories	No. of Units		Number of occupants	
			All	Occupied	Total	Average
35	No.10	4	32	30	112	3.73
36		4	32	29	106	3.66
37		4	32	28	98	3.50
41		4	32	28	107	3.82
51		5	90	83	205	2.47
52		5	90	79	195	2.47
82		5	90	85	190	2.24
91		5	90	57	161	2.82
92		5	90	71	198	2.79
94		5	90	75	214	2.85
9	Constructi	12	48	48	101	2.10
Total				613	1687	
Average						2.75



Table D.6.2.2(1) Water Measured Record (First)

No.	Street	House No	cu.m																								Usage Volume cu.m	Average Use cu.m/d
			25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep											
1	Marshak	2	0	5	8	8	9	9	12	12	16	18	21	25	30	34	37	45	52	52	52	52	52	52	52	52	4.00	
2		4	0	0	5	5	11	11	13	13	17	20	23	28	32	35	39	43	47	47	47	47	47	47	47	47	3.62	
3		5												0	2	4	7	9	12	15	15	15	15	15	15	15	2.50	
4		6	0	1	2	2	3	3	4	4	5	6	6	8	9	10	11	12	12	12	12	12	12	12	12	12	0.92	
5		9			0	0	3	3	6	6	8	10	11	14	15	17	18	19	20	20	20	20	20	20	20	20	1.82	
6		11			0	0	1	1	2	2	3	4	5	6	7	8	9	10	11	11	11	11	11	11	11	11	1.00	
7		12	0	2	4	4	5	5	7	7	9	11	14	15	18	19	22	25	29	29	29	29	29	29	29	29	2.23	
8		13												0	1	2	3	4	5	6	6	6	6	6	6	6	1.00	
9		18	0	1	2	2	4	4	5	5	6	8	10	11	12	13	15	16	17	17	17	17	17	17	17	17	1.31	
10		21	0	2	5	5	8	8	9	9	12	16	21	23	25	29	33	39	45	45	45	45	45	45	45	45	3.46	
11		23	0	1	4	4	7	7	8	8	9	11	13	14	15	17	19	20	22	22	22	22	22	22	22	22	1.69	
12		24	0	1	2	2	3	3	4	4	5	6	7	8	8	9	10	11	12	12	12	12	12	12	12	12	0.92	
13		28	0	2	5	5	7	7	9	9	12	13	16	18	19	20	22	24	24	24	24	24	24	24	24	24	1.62	
14		29	0	1	3	3	4	4	5	5	7	8	10	11	13	14	15	17	18	18	18	18	18	18	18	18	1.38	
15		32	0	4	9	9	12	12	17	17	19	23	25	26	27	29	31	33	35	35	35	35	35	35	35	35	2.69	
16		37	0	1	2	2	2	2	3	3	4	5	5	6	7	8	9	10	11	11	11	11	11	11	11	11	0.85	
17		39	0	1	2	2	3	3	5	5	6	7	9	9	11	13	14	15	16	16	16	16	16	16	16	16	1.23	
18		40	0	1	3	3	4	4	5	5	7	9	10	12	15	17	21	22	25	25	25	25	25	25	25	25	1.92	
19		42	0	1	1	1	2	2	3	3	4	5	6	6	7	8	8	9	10	10	10	10	10	10	10	10	0.77	
20		43	0	1	2	2	4	4	5	5	6	7	7	10	11	12	13	14	15	17	17	17	17	17	17	17	1.21	
21		45	0	1	2	2	3	3	3	3	4	5	6	7	8	9	11	12	14	14	14	14	14	14	14	14	1.08	
22	Semashka	9	0	2	4	4	7	7	9	9	13	16	19	21	23	26	29	32	32	32	32	32	32	32	32	32	2.46	
23		11	0	2	4	4	5	5	8	8	9	13	15	18	19	22	25	26	29	29	29	29	29	29	29	29	2.23	
24		13	0	3	8	8	10	10	13	13	18	22	25	28	31	33	36	39	43	43	43	43	43	43	43	43	3.31	
Average																											1.88	

**Table D.6.2.2 (2) Water Measured Record (Second)**

No.	Street	House No.	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	Usage	Average
			cu.m							Volume	Use
			cu.m							cu.m	cu.m/d
1	Marshak	2	35	36	37	38	39	40	41	6	1.00
2		4	64	67	69	73	77	81	90	26	4.33
3		5	13	19	23	24	25	26	28	15	2.50
4		6	15	16	16	17	17	18	19	4	0.67
5		9	19	20	23	23	24	25	26	7	1.17
6		11	19	20	20	21	21	22	23	4	0.67
7		12	22	23	26	28	31	34	36	14	2.33
8		13	14	16	16	17	17	18	20	6	1.00
9		18	25	26	26	27	28	29	29	4	0.67
10		20	307	311	313	317	321	334	367	60	10.00
11		21	32	34	35	36	37	38	39	7	1.17
12		23	90	91	93	94	97	102	106	16	2.67
13		24	25	25	25	25	26	26	27	2	0.33
14		28	89	89	90	90	91	92	93	4	0.67
15		29	34	36	37	37	38	39	40	6	1.00
16		32	295	309	319	326	332	346	351	56	9.33
17		33	18	18	19	20	21	22	24	6	1.00
18		36	4	5	6	6	7	8	8	4	0.67
19		37	3	10	11	11	12	13	14	11	1.83
20		39	18	19	19	20	20	21	22	4	0.67
21		40	23	24	25	26	26	27	28	5	0.83
22		42	21	22	23	23	24	24	25	4	0.67
23		43	36	36	37	37	38	38	39	3	0.50
24		45	35	36	37	37	38	39	40	5	0.83
25		49	11	12	12	13	13	14	15	4	0.67
26	Semashk	2	27	27	29	29	29	30	31	4	0.67
27		3	11	12	15	17	19	24	27	16	2.67
28		4	11	12	13	14	15	16	17	6	1.00
29		5	57	60	63	66	69	71	76	19	3.17
30		6	10	10	11	11	11	12	12	2	0.33
31		7	8	9	10	11	11	12	12	4	0.67
32		9	30	32	34	37	41	48	51	21	3.50
33		11	24	27	29	33	37	41	52	28	4.67
34		13	41	43	44	45	46	47	48	7	1.17
35		16	84	109	111	135	148	156	162	78	13.00
36		17	73	87	97	99	101	108	116	43	7.17
37		21	33	40	44	54	61	68	71	38	6.33
38		22	2	3	4	4	5	6	6	4	0.67
39		24	4	5	6	7	8	9	9	5	0.83
40		30	20	23	25	25	26	27	28	8	1.33
41		31	6	7	9	10	11	12	12	6	1.00
42		35	0	1	1	1	1	2	2	2	0.33
43		Kohar	14	6	6	7	7	8	8	9	3
44	16		1	1	2	2	3	3	4	3	0.50
45	24		2	2	3	3	4	4	5	3	0.50
46	80		54	64	77	79	80	82	84	30	5.00
Average											1.99

Table D.6.2.2(3) Water Measured Record (Third)

No.	Street	House No.	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	Usage Volume cu.m	Average Use cu.m/d	
			cu.m									
1	Marshak	2	76	80	81	82	84	86	89	13	2.17	
2		4	147	149	150	150	150	152	154	7	1.17	
3		5	47	49	51	53	56	56	58	11	1.83	
4		6			Non working							
5		9	104	106	108	109	109	111	113	9	1.50	
6		11	75	78	80	82	83	84	87	12	2.00	
7		12	21	23	23	23	23	23	23	2	0.33	
8		13	41	44	44	45	46	48	50	9	1.50	
9		18	14	18	19	19	22	24	26	12	2.00	
10		20			Non working							
11		21	32	34	35	36	37	38	39	7	1.17	
12		23			Non working							
13		24			Non working							
14		28	79	81	82	84	86	86	89	10	1.67	
15		29	46	48	50	50	50	52	54	8	1.33	
16		32	570	571	571	572	574	576	578	8	1.33	
17		33	83	84	85	85	88	89	90	7	1.17	
18		36			Non working							
19		37	21	23	23	25	25	25	25	4	0.67	
20		39	28	30	33	33	36	38	40	12	2.00	
21		40	63	65	66	67	68	69	69	6	1.00	
22		42	21	22	23	23	24	24	24	3	0.50	
23		43	25	28	28	29	30	33	36	11	1.83	
24		45	46	48	50	50	50	52	54	8	1.33	
25		49	12	14	16	18	20	22	24	12	2.00	
26	Semashka	2	26	28	30	33	36	38	39	13	2.17	
27		3	69	71	73	76	78	79	80	11	1.83	
28		4	73	76	78	80	81	83	86	13	2.17	
29		5	717	718	719	719	720	722	726	9	1.50	
30		6			Non working							
31		7	53	55	56	58	60	63	66	13	2.17	
32		9	263	266	268	269	269	270	272	9	1.50	
33		11	118	120	121	122	124	126	128	10	1.67	
34		13	79	79	81	83	84	86	88	9	1.50	
35		16	400	401	403	406	408	409	410	10	1.67	
36		17	164	167	169	170	171	173	176	12	2.00	
37		21	105	106	109	109	109	109	110	5	0.83	
38		22			Non working							
39		24	43	44	46	48	50	53	56	13	2.17	
40		30			Non working							
41		31	48	50	51	53	56	58	59	11	1.83	
42		35			Non working							
43		Kohar	14		Non working							
44			16		Non working							
45			24		Non working							
46	80		293	294	296	297	299	300	301	8	1.33	
Average											1.47	

**Table D.6.2.3 Water Measured Record of Apartment**

First Measurement										
No.	Apart No	Aug.25	Aug.26	Aug.27	Aug.28	Aug.29	Aug.30	Usage Volume cu.m	Average Use cu.m/d	
		Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m			
1	35	0	98	195	300	397	503	503	100.60	
2	36	438	505	573	640	704	773	335	67.00	
3	37	870	930	990	1070	1120	1195	325	65.00	
4	41	2480		2630		2800	2880	400	80.00	
5	51	112	219	329	438	550	683	571	114.20	
6	52	3420	3500		3680		3863	443	88.60	
7	82	96	166	238	318	390	467	371	74.20	
8	91									
9	92	99	272	452	630	792	983	884	176.80	
10	94	50	258	458	662	877	1113	1063	212.60	
11	9	110	154	199	239	282	326	216	43.20	

Second Measurement										
No.	Apart No	Sep.23	Sep.24	Sep.25	Sep.26	Sep.27	Sep.28	Sep.29	Usage Volume cu.m	Average Use cu.m/d
		Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m		
1	35	2939	2968	2997	3027	3057	3084	3114	175	29.17
2	36	2440	2486	2533	2577	2619	2638	2765	325	54.17
3	37	2785	2852	2935	3015	3075	3140	3200	415	69.17
4	41	3724	3774	3803	3838	3875	3902	3927	203	33.83
5	51	3552	3642	3733	3831	3957	4098	4188	636	106.00
6	52									
7	82	3412	3538	3663	3797	3907	3998	4095	683	113.83
8	91	1920	1989	2065	2168	2265	2345	2407	487	81.17
9	92	4816	4971	5127	5334	5471	5581	5710	894	149.00
10	94	2231	2246	2261	2290	2315	2333	2350	119	19.83
11	9	2335	2353	2371	2398	2431	2455	2475	140	23.33

Third Measurement										
No.	Apart No	Nov.23	Nov.24	Nov.25	Nov.26	Nov.27	Nov.28	Nov.29	Usage Volume cu.m	Average Use cu.m/d
		Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m	Q cu.m		
1	35	4786	4889	4988	5088	5191	5291	5394	608	101.33
2	36	5615	5665	5716	5765	5815	5865	5916	301	54.17
3	37	5528	5653	5776	5898	5922	6043	6167	639	69.17
4	41	6159	6195	6232	6259	6395	6342	6380	221	33.83
5	51	5946	6045	6145	6243	6342	6444	6545	599	106.00
6	52	3269	3390	3507	3626	3744	3864	3986	717	106.00
7	82	4400	4510	4622	4737	4846	4964	5085	685	113.83
8	91	3049	3130	3212	3291	3373	3448	3526	477	81.17
9	92	1305	1419	1533	1647	1762	1876	1990	685	149.00
10	94	3342	3359	3377	3392	3409	3425	3442	100	19.83
11	9	4972	5018	5065	5107	5153	5191	5243	271	23.33

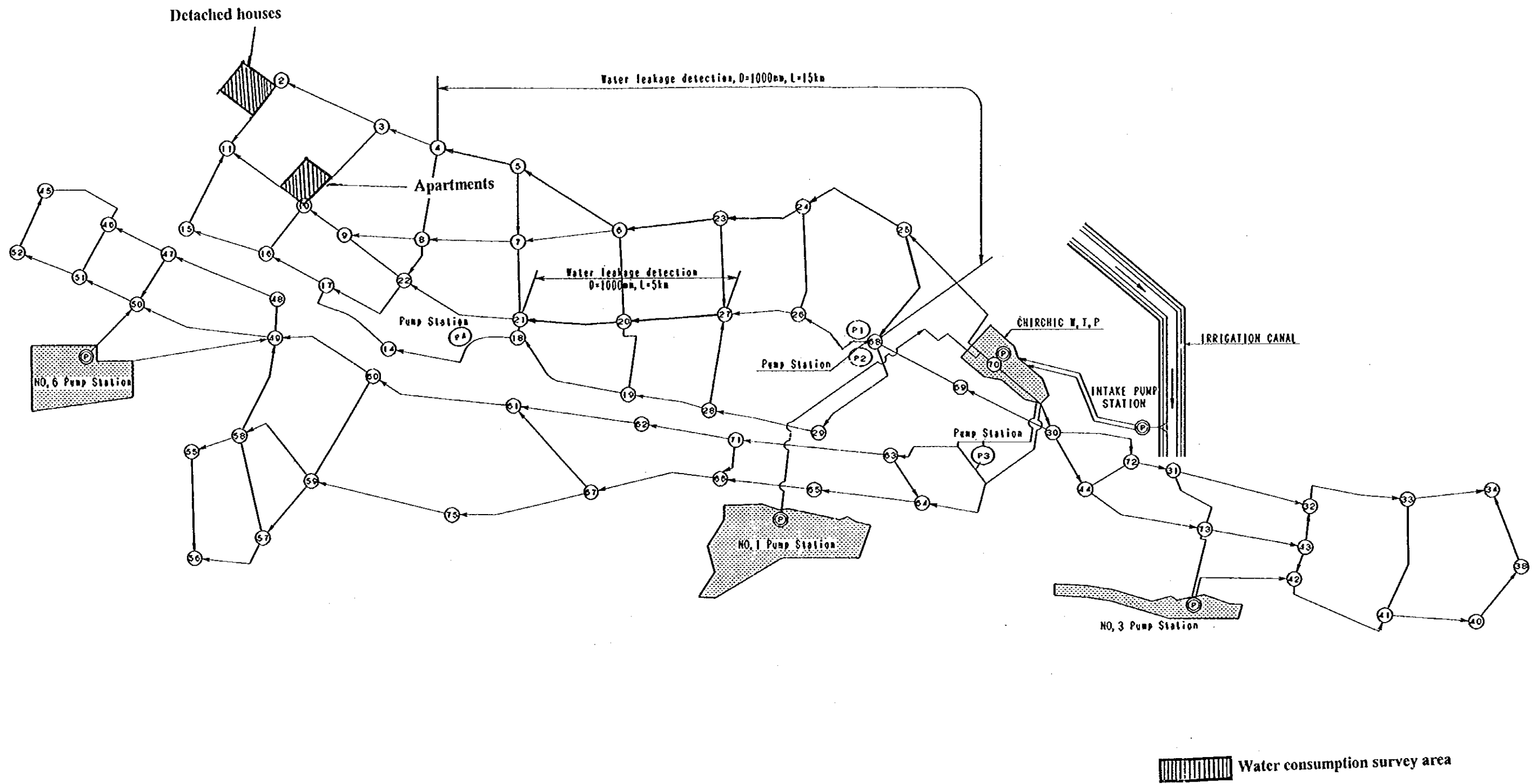


Figure D.6.2.1 Location of Meter Installed Detached House and Apartment

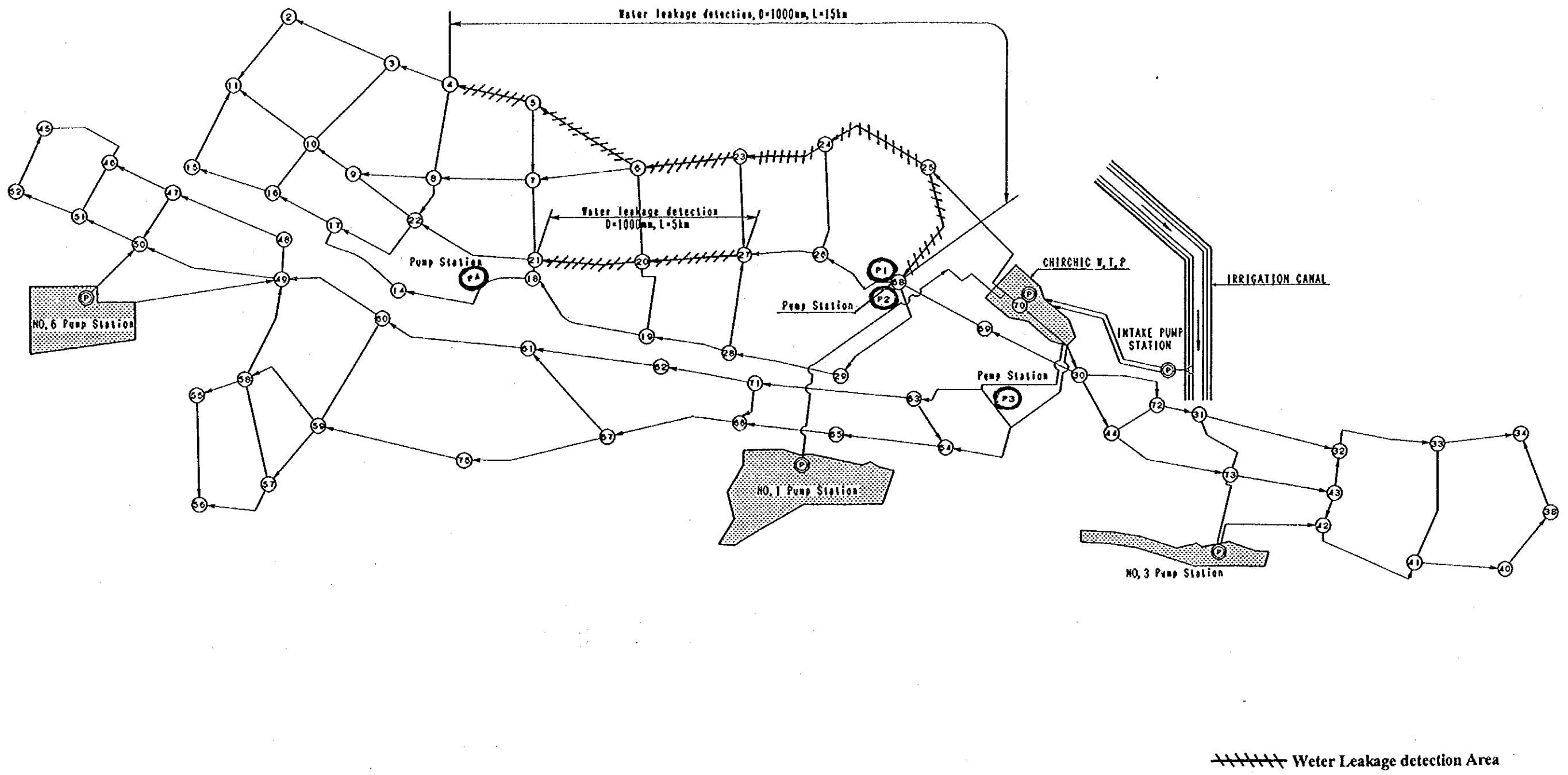


Figure D.6.3.1 Location of Attached Pressure Gage and Target Area of Water Leakage Detection

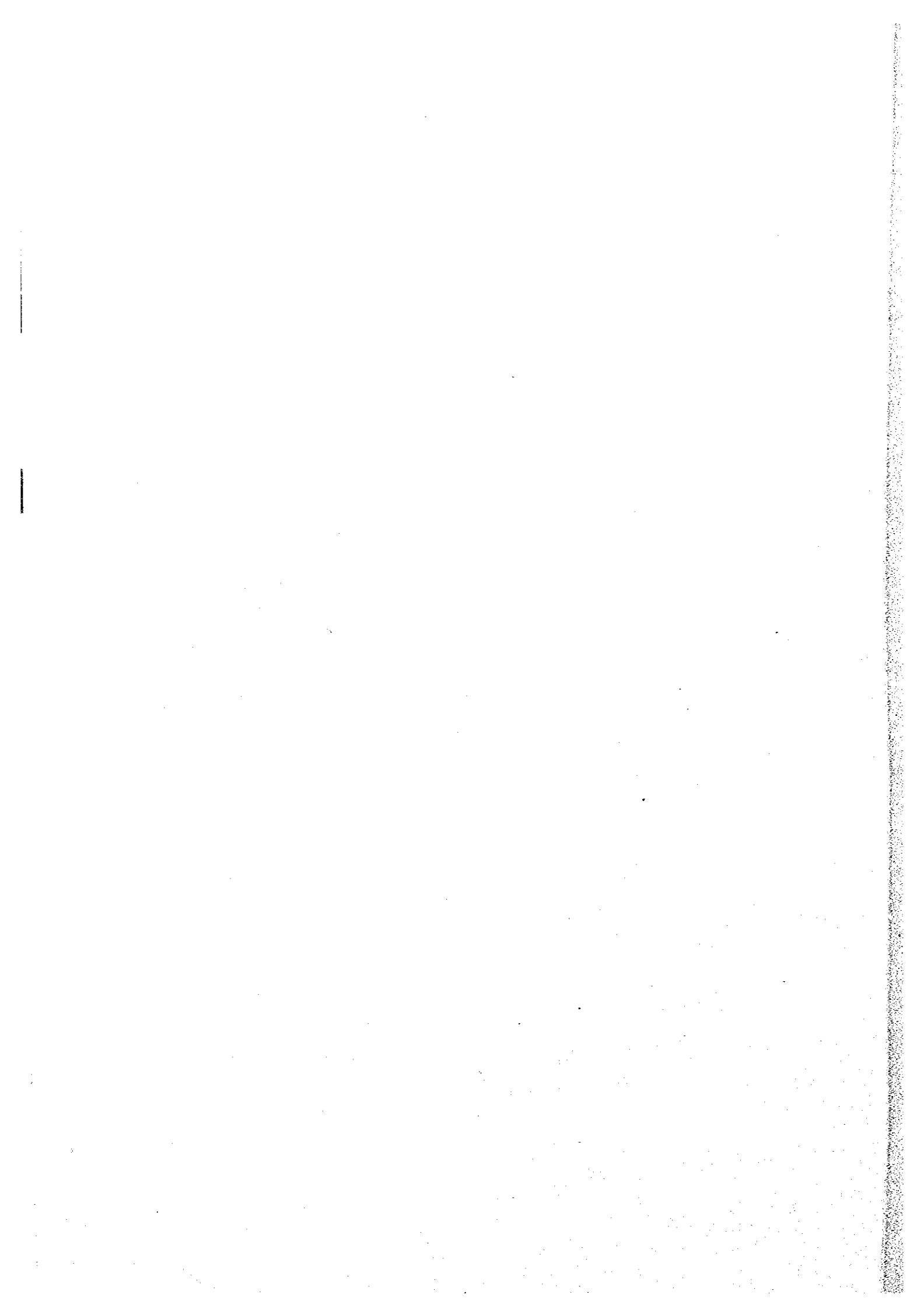


Figure D.6.3.2 Flow Data of each Distribution Line

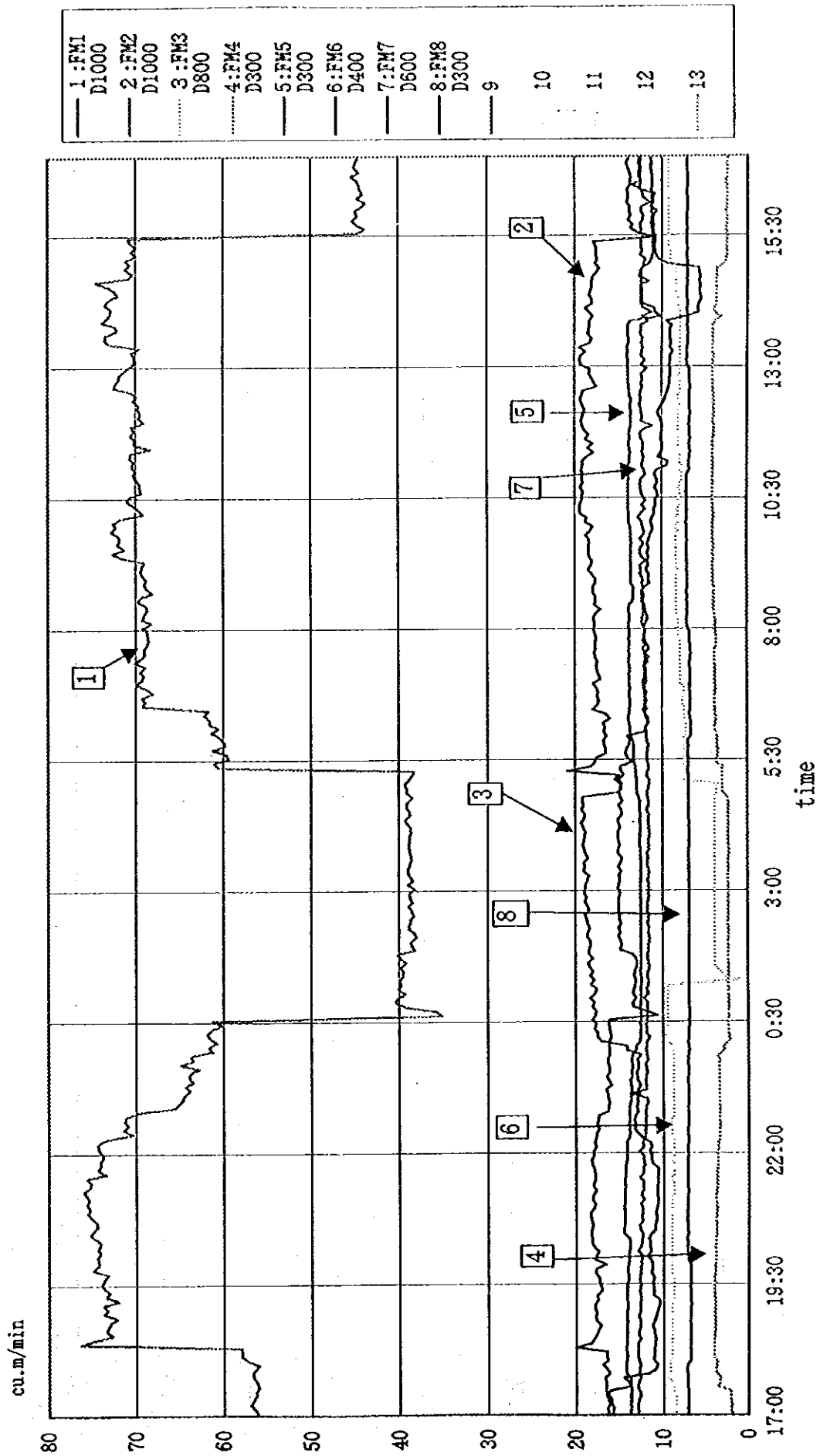




Figure D.6.3.3 Flow Data of Total Water Distribution Volume

