DATA 4

FLOOD CONDITION SURVEY

TABLE C.1.4 (1) SUMMARY OF FLOOD CONDITION (1)

			1989 Flood					
			Flood Area (ha)	Nos. Houses	Max. Flood Depth (cm)	Ave. Flood Depth (cm)	Max. Duration of Inundation	Ave. Duration of Inundation
1	Lansaar	R-L	17.7	140	170	56	210	112.5
2	Diamaguene Diaksao	R-L/C	12.8	115	80	50	90	39.9
			2.7	30	80	60	90	67.5
			10.1	85	40	33	3	3.0
3	Wakhinane	R-L	-	-	-	-	-	-
4	Medina Gounass, Mousdalifa, 3 Mbars	R-L	8.7	580	130	93	180	160.0
5	Darou Rahmane, Guedlawaye	R-L	8.6	100	100	82	90	61.0
			2.4	30	100	100	90	90.0
			6.2	70	45	45	3	3.0
6	Djida 2, Pikine	R-L	7.6	510	85	50	180	69.5
			1.5	100	85	83	180	135.0
			6.1	410	50	35	7	4.0
7	Thiarooye sur Mer	R-L	52.0	485	90	56	30	13.6
8	Ganaw-Rail, Wakhinane	R-L	4.7	150	80	68	90	55.5
			1.1	35	80	80	90	90.0
			3.6	115	55	55	21	21.0
9	Nass Roulah	R-L	5.5	20	80	-	120	-
10	Thiaroye SOTRAC	R-L	5.6	15	100	80	180	130.0
11	Citee Pepiniere Pikine	R-L/C	4.6	75	80	80	14	14.0
12	Dilifort	R-L	-	-	-	-	-	-
13	Entree Tally Boubess	R-L/C	14.2	150	60	49	10	4.5
14	Traverslere	R-L	-	-	-	-	-	-
15	Pikine Rue 10	R-L	10.3	85	60	41	7	4.6
16	Rond Point Maison du Parti, Rue 13, Rocade Fann Bel Air, Colobane Autor	C	Road	small shop	50	29	5	3.5
17	Rue 10, ENAM, Zone B, Rue G	R-H	Road	-	-	-	-	-
18	Rue 11	R-H/C	0.8	30	55	48	30	15.0
19	Sicap Amitie 1, Rue 10	R-M	0.6	20	25	25	3	3.0
20	Ave. Bourguiba + Rue 9, Rue 9 bis	R-M&H	-	-	-	-	-	-
21	Route de Ouakam + Bourguiba + Lycee	R-H	-	-	-	-	-	-
22	Mermoz Terrain Basket	R-H&M	1.3	35	30	30	3	3.0
23	Corniche Ouest + Route de 10, Pyrotechn	R-H&M	Road	-	45	45	90	90.0
24	Sicap Baobab, Rue Biyar	R-M&H	Road	-	-	-	1	1.0
25	Sucao Baibabs + Rue 12	R-H&M	-	-	-	-	-	-
26	Rue 13 + Avenue de la Liberte	C	1.9	Bus Terminal	30	30	3	3.0
27	Derkle	R-M	-	-	-	-	-	-
28	Route de front de Terre + Bourguiba	R	Road	-	-	-	-	-
29	Station de pompage Castors, Sodia, Bourguiba	R/C	1.0	5	35	35	6	6.0
30	Bopp Rue D, Rue de Mbour, Rue 2	R-M	5.3	55	30	28	6	6.0
31	HLM 6 Terrain	R-H&M/C	4.5	soccer field / small shop	15	15	14	7.7
32	Point E Boulevard Sud + Rue 3	R-H	1.6	15	50	50	-	-
33	Point E Rue 4 + Rue C	R-H	2.3	20	40	40	90	90.0
34	Route de Ouakam, Ecole Manguiers	R	-	-	-	-	-	-
35	Fass Rue 22b, Fass cote Canal 4	R-L	7.1	150	45	35	14	9.3
36	Bd. Gueule Tapee + Rue 34 & Rue 10	R-M	Road	-	35	35	3	3.0
37	Gendarmerie Colobane	R-L, M&H	7.9	100	30	30	6	6.0
38	Place de Bakou, Rocade Fann Bel Air	R/C	Road	-	50	50	10	10.0
39	Gueule Tapee Rue 54	R-M&L	Road	-	20	20	6	6.0
40	Bd. Gr. de Gaulle, Rue 11, Route de Champ de Courses P1	C	-	-	-	-	-	-
41	Ecole El Hadji Malick Sy	R-C	Road	-	30	30	5	5.0
42	Ouakam	R-L&M	12.4	95	40	30	7	5.8
43	Ngor	R-H&M/C	5.0	40	100	66	180	81.3
44	Grand Yoff	R-M&L	5.8	165	140	100	30	16.4
45	Yoff	R-L&M	-	-	-	-	-	-
46	Medina	R-L&M	7.6	280	50	30	3	3.0
47	Sud-Est de Medina	R-L&M	1.7	110	50	45	8	7.5
48	Medina Gounass	R-L	2.2	150	50	45	360	190

Pikine

Dakar

R-L : Residentia Low
R-H : Residential High
R-M : Residentia Middle
C : Commercial

TABLE C.1.4 (2) SUMMARY OF FLOOD CONDITION (2)

		Annual Flood							Remarks
		Flood Area (ha)	Nos. Houses	Frequency of Inundation	Max. Flood Depth (cm)	Ave. Flood Depth (cm)	Max. Duration of Inundation	Ave. Duration of Inundation	
1	Lansaar	10.8	55	E.R	20	10	2	1.5	
2	Diamaguene Diaksao	0.6	small shop	E.R	30	25	4	3.3	
3	Wakhinane	-	-	-	-	-	-	-	
4	Medina Gounass, Mousdalifa, 3 Mbars	6.2	415	E.R	40	35	4	4.0	
5	Darou Rahmane, Guediawaye	2.4	30	E.R	45	40	10	7.0	
6	Djida 2, Pikine	4.0	265	E.R	25	20	2	1.3	
7	Thiarooye sur Mer	13.4	235	1 or 2	35	20	3	2.3	
8	Ganaw-Rail, Wakhinane	1.2	40	E.R	20	10	1	1.0	
9	Nass Roulah	2.4	-	E.R	50	-	30	-	
10	Thiaroye SOTRAC	5.6	15	E.R	40	30	60	31.0	SOTRAC BUS GARAGE
11	Cites Pepiniere Pikine	2.3	155	E.R	30	20	4	3.5	
12	Dilifort	-	-	-	-	-	-	-	
13	Entree Tally Boubess	6.4	80	E.R	55	40	6	2.3	
14	Traversiere	-	-	-	-	-	-	-	
15	Pikine Rue 10	6.7	55	1 or 2	40	27.5	1	1.0	
16	Rond Point Maison du Parti, Rue 13, Rocade Fann Bel Air, Colobane Autor	Road	small shop	E.R	30	18	6	2.7	
17	Rue 10, ENAM, Zone B, Rue G	Road	-	-	-	-	-	-	
18	Rue 11	Road	-	E.R	20	20	5	3.7	
19	Sicap Amitie 1, Rue 10	0.2	10	E.R	10	5	1	1.0	
20	Ave. Bourguiba + Rue 9, Rue 9 bis	-	-	-	-	-	-	-	
21	Route de Ouakam + Bourguiba + Lycee	Road	-	10	10	10	3	3.0	
22	Mermoz Terrain Basket	1.3	35	E.R	15	15	1	1.0	
23	Corniche Ouest + Route de 10, Pyrotechn	Road	-	-	-	-	-	-	
24	Sicap Baobab, Bue Biyar	-	-	-	-	-	-	-	
25	Sucao Baibabs + Rue 12	-	-	-	-	-	-	-	
26	Rue 13 + Avenue de la Liberte	0.9	Bus Terminal	E.R	10	10	1	1.0	
27	Derkle	-	-	-	-	-	-	-	
28	Route de front de Terre + Bourguiba	Road	-	-	-	-	-	-	
29	Station de pompage Castors, Sodia, Bourguiba	-	-	-	-	-	-	-	
30	Bopp Rue D, Rue de Mboul, Rue 2	1.5	10	E.R	15	15	2	1.5	
31	HLM 6 Terrain	4.5	soccer field / small shop	E.R	10	10	2	1.5	
32	Point E Boulevard Sud + Rue 3	0.6	5	2	10	10	1	1.0	
33	Point E Rue 4 + Rue C	1.1	10	10	40	20	60	60	
34	Route de Ouakam, Ecole Manguiers	-	-	-	-	-	-	-	
35	Fass Rue 22b, Fass cote Canal 4	2.8	60	E.R	25	15	8	4.5	
36	Bd. Gueule Tapee + Rue 34 & Rue 10	-	-	-	-	-	-	-	
37	Gendarmerie Colobane	-	-	-	-	-	-	-	
38	Place de Bakou, Rocade Fann Bel Air	Road	-	-	-	-	1	1.0	
39	Gueule Tapee Rue 54	-	-	-	-	-	-	-	
40	Bd. Gr. de Gaulle, Rue 11, Route de Champ de Courses P1	-	-	-	-	-	-	-	
41	Ecole El Hadji Malick Sy	-	-	-	-	-	-	-	
42	Ouakam	3.6	Road /soccer field	1 or 2	10	10	1	1.0	
43	Ngor	3.8	25	E.R	30	22	10	4.3	
44	Grand Yoff	1.6	45	E.R	40	35	15	11.7	
45	Yoff	-	-	-	-	-	-	-	
46	Medine	5.1	140	E.R	50	15	7	1.0	
47	Sud-Est de Medine	1.0	55	E.R	50	25	8	7.0	
48	Medina Gounass	1.5	50	E.R	45	30	7	3.5	

Note E.R : Every Big Rain

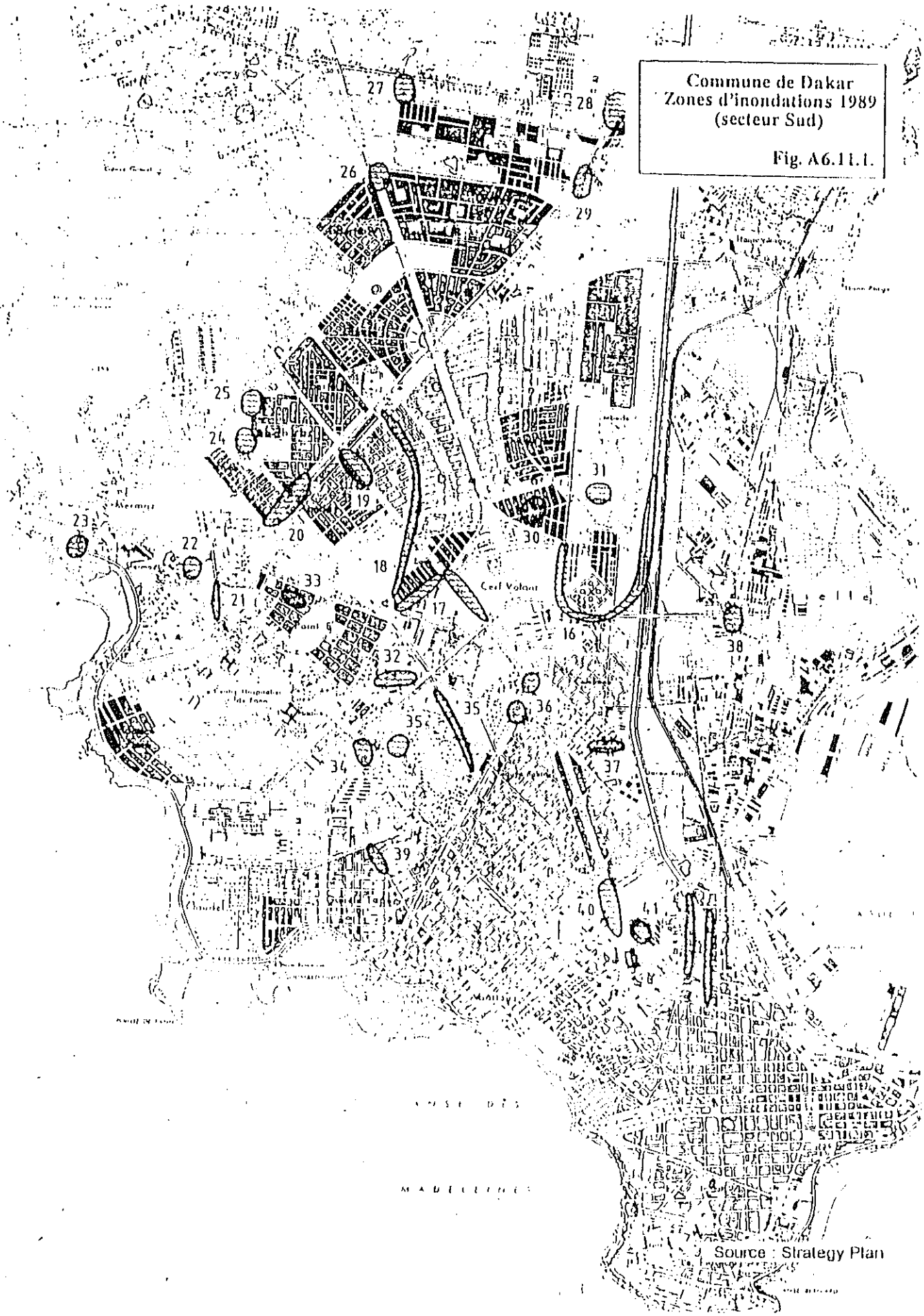


FIGURE C.1.6 (1) FLOOD AREAS IN AUGUST 1989 (1)

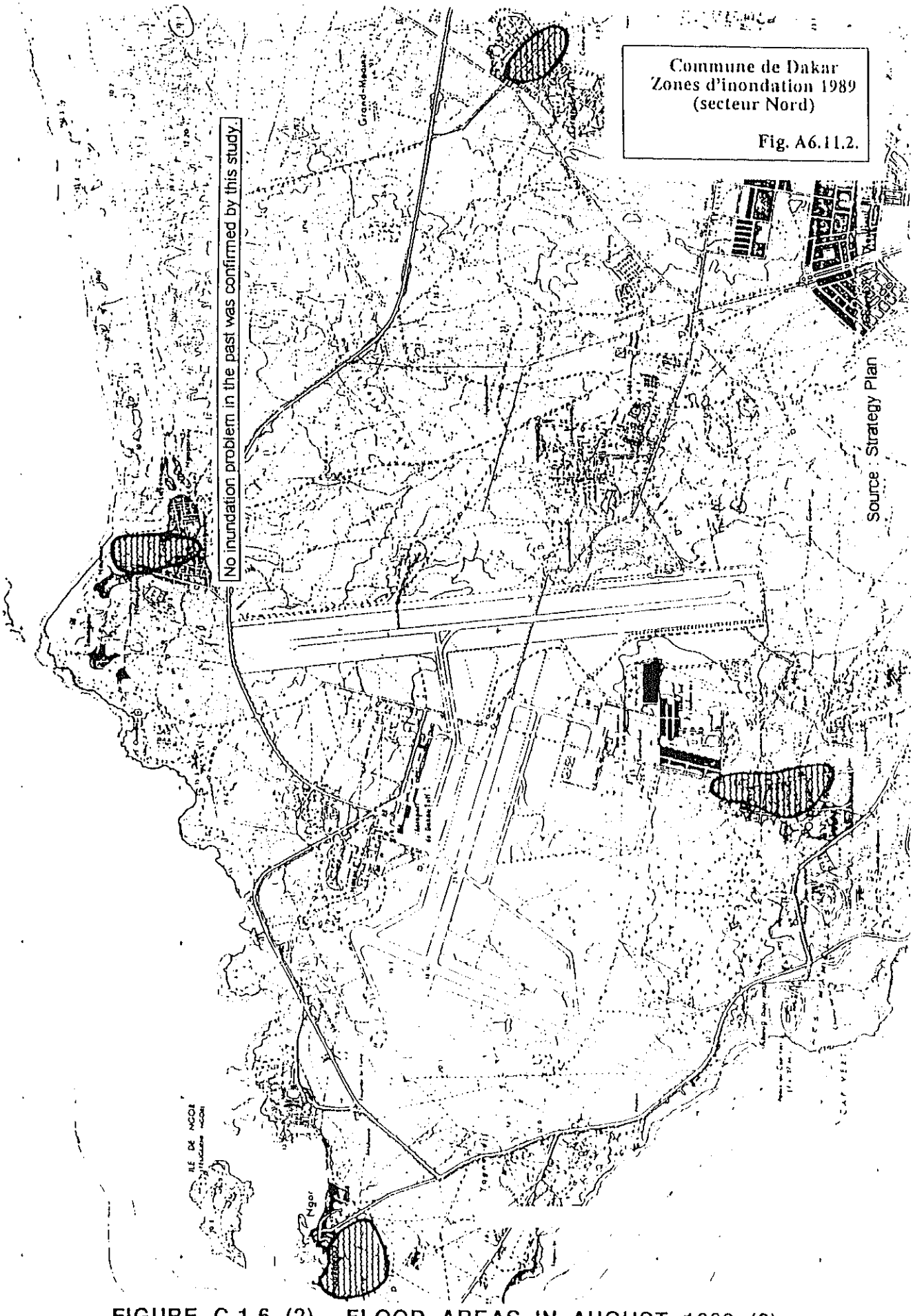


FIGURE C.1.6 (2) FLOOD AREAS IN AUGUST 1989 (2)

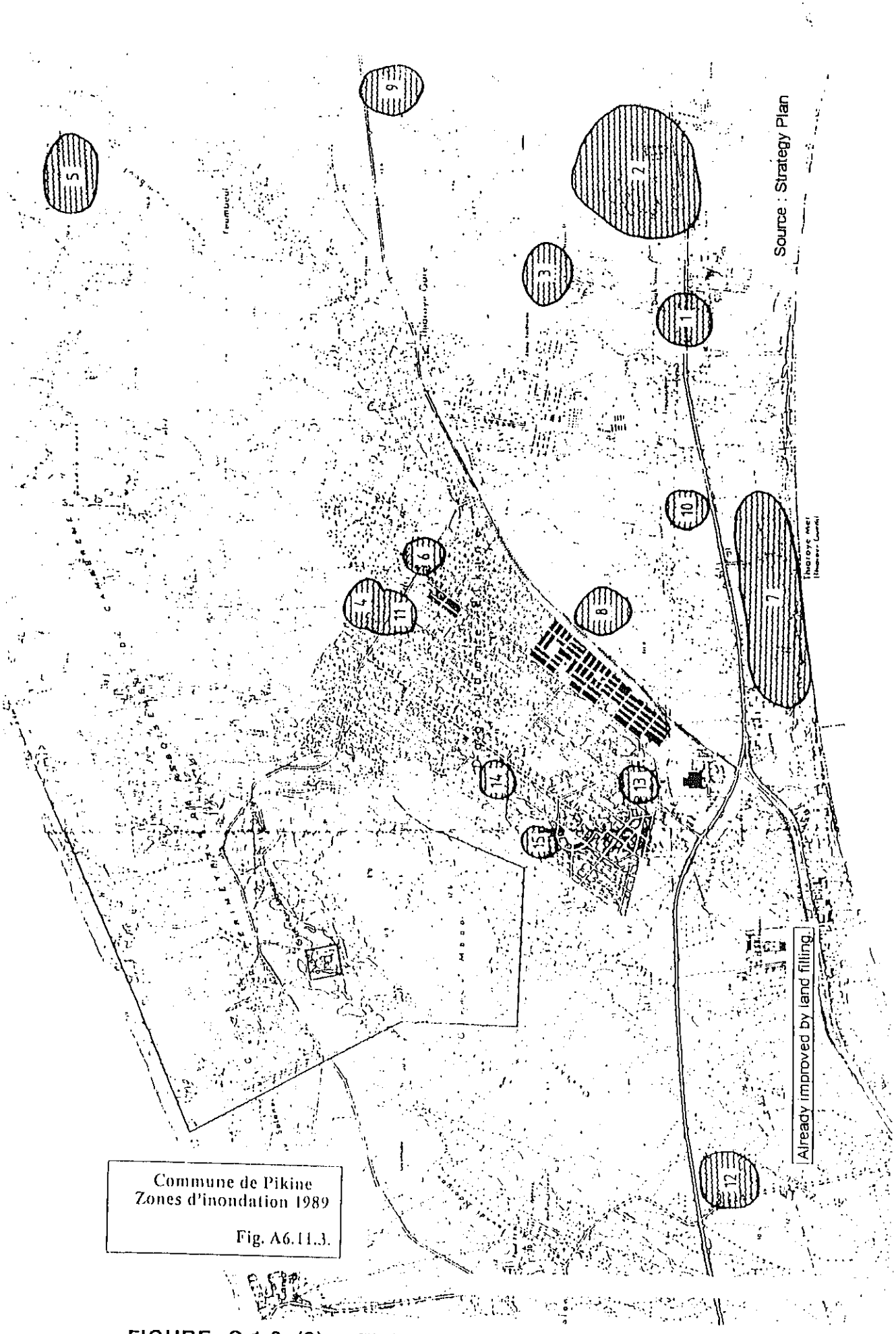


FIGURE C.1.6 (3) FLOOD AREAS IN AUGUST 1989 (3)

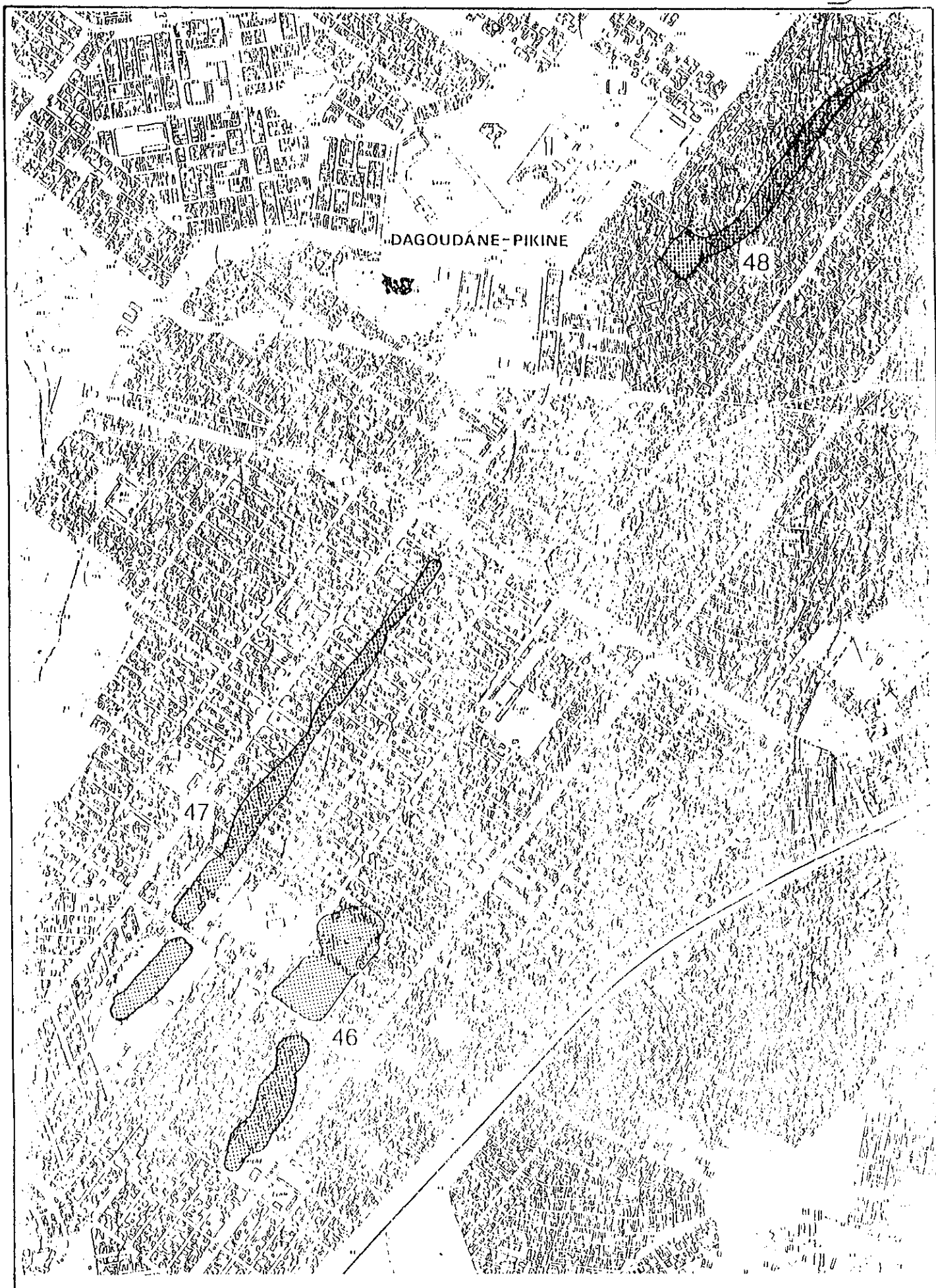


FIGURE C.1.7 FLOOD AFFECTED AREA IDENTIFIED IN THE SURVEY

FLOOD CONDITION SURVEY SHEET

AREA No. 1 | AREA NAME Lanssar | RESIDENTIAL LOW

POINT No.	1989 FLOOD INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	ANNUAL FLOOD INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	170	7 MONTHS	Before Canal	Y			2	After Canal completed(91
2	Y	110	6 MONTHS	"	Y			1	
3	N			On the road	N				
4	Y	35	1 MONTH		N				
5	Y	80	1 MONTH		N				
6									
7									
8									Canalが出来てから、家が作った
9									排水が良くて、ただの事
10									Annualの浸水は
11									10~20cm程度。
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 計 140
TOTAL AREAS OF CULTIVATED LAND

10,77. TOTAL NOS. OF HOUSES 55
TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.2 AREA NAME Diamaguène, Diaksao RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	35	2 MONTHS		Y	Every Rain			
2	Y	45	2 MONTHS		Y	"		3 DAYS	
3	Y	30	3 DAYS		N				
4	N				N				
5	N				N				
6	Y	30	3 DAYS		N				
7	Y	?	?	CAN CATCH FISHES	N				
8	Y	40	3 DAYS		Y	Every Rain	20	4 DAYS	
9	Y	60	2 MONTHS	IN THE MARKET	Y	"	30	3 DAYS	
10	N				N				
11	Y	80	3 MONTHS	OUTSIDE HOUSES	N				
12	Y	80	ALWAYS		N				
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 115

TOTAL AREAS OF CULTIVATED LAND

0.60 TOTAL NOS. OF HOUSES MARKET

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 3(See N°2) AREA NAME Wakhinane(See Diaksao) RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No.4 AREA NAME Medina Gounass, Mousdalifa, 3 Mbars RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	90	6 MONTHS	AT MOUSDALIFA	Y	Every Rain	30	4 DAYS	
2	Y	130	4 MONTHS	AT 3 MBAR	Y	"	40		
3	Y	?	?	?	Y				
4	Y	60	6 MONTHS		N				
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 580

TOTAL AREAS OF CULTIVATED LAND

(6.24) TOTAL NOS. OF HOUSES 415

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.5 AREA NAME Darou Rahmane, Guédiawaye RESIDENTIAL LOW

POINT No.	1989 FLOOD INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	ANNUAL FLOOD INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	100	3 MONTHS	First lowest Point	Y		45	10 DAYS	
2	Y	45	3 DAYS	From District's Chief	Y		30	1 DAYS	
3	Y	100	3 MONTHS	Second lowest Point	Y		45	10 DAYS	
4									
5									
6				18 Swamp Area					
7				Lowest point [illegible]					
8				人が居ない					
9				ゴミ投棄					
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

8.64 ha TOTAL NOS. OF HOUSES ~~400~~ 100 [illegible]

TOTAL AREAS OF CULTIVATED LAND VEGETABLES

[illegible]

2.4 ha [illegible]

2.4 | TOTAL NOS. OF HOUSES 30

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.6 AREA NAME Djida 2, Pikine RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	50	7 DAYS		Y	Every Rain	25	1 DAY	
2	N				N				
3	Y	85	3 MONTHS		Y	Every Rain	15	1 DAY	
4	Y	80	6 MONTHS		Y	"	20	2 DAYS	
5	Y	20	1 DAY		N				
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 510

TOTAL AREAS OF CULTIVATED LAND

403 TOTAL NOS. OF HOUSES 245

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.7 AREA NAME Thiaroye sur Mer RESIDENTIAL LOW

POINT No.	1989 FLOOD INUNDATION (YES/NO)	1989 FLOOD MAX. FLOOD DEPTH (cm)	1989 FLOOD DURATION (DAYS / HOURS)	1989 FLOOD REMARKS	ANNUAL FLOOD INUNDATION (YES/NO)	ANNUAL FLOOD FREQUENCY PER YEAR	ANNUAL FLOOD MAX. FLOOD DEPTH (cm)	ANNUAL FLOOD DURATION (DAYS / HOURS)	ANNUAL FLOOD REMARKS
1	N			} 海岸沿い (臣)	N				
2	N				N				
3	Y	25	15 DAYS		Y		10	2 DAYS	
4	Y	60	30 DAYS		Y				
5	Y	70	15 DAYS	Before Pumping	Y	1 or 2	23	2 DAYS	(家a十)
6	Y	90	15 DAYS	While Pumping	Y		35	3 DAYS	
7	Y	10	1 DAYS		N				
8	Y	80	6 DAYS	While Pumping	Y		10	2 DAYS	
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

52.15 ha TOTAL NOS. OF HOUSES 485
TOTAL AREAS OF CULTIVATED LAND

13.39 ha TOTAL NOS. OF HOUSES 235
TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.8 AREA NAME Ganaw-rail, Wakhinane RESIDENTIAL LOW

POINT No.	1989 FLOOD INUNDATION (YES/NO)	1989 FLOOD MAX. FLOOD DEPTH (cm)	1989 FLOOD DURATION (DAYS / HOURS)	1989 FLOOD REMARKS	ANNUAL FLOOD INUNDATION (YES/NO)	ANNUAL FLOOD FREQUENCY PER YEAR	ANNUAL FLOOD MAX. FLOOD DEPTH (cm)	ANNUAL FLOOD DURATION (DAYS / HOURS)	ANNUAL FLOOD REMARKS
1	N				N				
2	Y	55	21 DAYS		Y			1 DAY	
3	Y	80	3 MONTHS		Y			1 DAY	
4									
5									
6									
7							Market・とその横の低い所に建つ家は。		
8							Annualの被害有.		
9									
10							10~20cm 程度らしいが		
11							低地に建つ家に浸水が入る.		
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 150

TOTAL AREAS OF CULTIVATED LAND

TOTAL NOS. OF HOUSES 40

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.9 | AREA NAME Nass Roulah | RESIDENTIAL LOW

POINT No.	1989 FLOOD INUNDATION (YES/NO)	1989 FLOOD MAX. FLOOD DEPTH (cm)	1989 FLOOD DURATION (DAYS / HOURS)	1989 FLOOD REMARKS	ANNUAL FLOOD INUNDATION (YES/NO)	ANNUAL FLOOD FREQUENCY PER YEAR	ANNUAL FLOOD MAX. FLOOD DEPTH (cm)	ANNUAL FLOOD DURATION (DAYS / HOURS)	ANNUAL FLOOD REMARKS
1	Y	80	120 Until Next Rainy Season		Y	Annualは最大で膝ぐらいまで程度 (50cm?)			
2						低い所にはしばらく水がたまり… (1ヶ月位)			
3									
4						ここには人は住んでいないので実質被害は			
5						ない?			
6						ここは畑地で雨季には水がたまっている			
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES (20)
TOTAL AREAS OF CULTIVATED LAND

TOTAL NOS. OF HOUSES
TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.10 AREA NAME Thiaroye SOTRAC RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	40	3 MONTHS	BUS COMPANY	Y	Every Rain	40	2 MONTHS	
2	Y	100	6 MONTHS	Behind Bus Company	Y	"	30	2 DAYS	Soft Sand
3	Y	100	4 MONTHS	Left of Bus Company	Y	"	20	During all Rainy Season	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 125

TOTAL AREAS OF CULTIVATED LAND

TOTAL NOS. OF HOUSES 15

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.11 AREA NAME Citée Pépinière Pikine RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	80	14 DAYS	BLOCK FACTORY.	Y	Every Rain	10	3 DAYS	
2	Y				N				
3	Y	80	14 DAYS	最低部(80cm位盛土)	Y	Every Rain	30	4 DAYS	
4		無記憶無			Y	"			
5	N				N				
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

4 60 Ha TOTAL NOS. OF HOUSES 75

TOTAL AREAS OF CULTIVATED LAND

2.3 TOTAL NOS. OF HOUSES 155

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.12 AREA NAME Dalifort RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 13 AREA NAME EntréeTally Boubess RESIDENTIAL LOW&COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	80	3 DAYS		Y	Every Rain	30	1 DAY	
2	Y	60	3 "		Y	"	40	1 "	
3	Y	45	10 "		N				
4	Y	40	3 "		Y	Every Rain			
5	N				N				
6	N				N				
7	N				N				
8	Y	10	1 DAY		N				
9	Y			Small Factory	Y	Every Rain	35	1 DAY	
10	Y	60	7 DAYS		Y	"	55	6 DAYS	
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

14.2 ha TOTAL NOS. OF HOUSES 50

TOTAL AREAS OF CULTIVATED LAND

140 TOTAL NOS. OF HOUSES 90

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.14(See 15) AREA NAME Traversière RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 85

TOTAL AREAS OF CULTIVATED LAND

TOTAL NOS. OF HOUSES

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.15 AREA NAME Pikine Rue 10 RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	40	7 DAYS		Y	Every Rain	20	1 DAY	家の中は1年に
2	Y	40	2 "	- 70 cm (Road)	Y	"	30	1 DAY	1,2回程度
3	Y	40	3 "	- 50 cm (Road)	Y	"			
4	Y	20	~~30 MIN~~		N				
5	Y	60	7 DAYS		Y		40	1 DAY	
6	Y	45	4 DAYS	- 30 cm (Road)	Y		20	1 DAY	
7				↑					
8									
9				直近引家の敷地が					
10				低い。					
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

[illegible] TOTAL NOS. OF HOUSES [illegible]

TOTAL AREAS OF CULTIVATED LAND

6.7 TOTAL NOS. OF HOUSES 55

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.16 AREA NAME Rond Point Maison du Parti, Rue 13, Rocade Fann Bel Air, Colobane Autor RESIDENTIAL COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	50	3 DAYS	NEAR SHOP	Y		30	1 DAY	
2	Y	20	5 "		Y		10	1 DAY	
3	Y	15	4 "		N				
4	Y	30	2 "	IN THE SHOP	Y		15	6 DAYS	
5					N				
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES small shop.

TOTAL AREAS OF CULTIVATED LAND

Road TOTAL NOS. OF HOUSES shop.

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.17 AREA NAME Rue 10, ENAM, Zone B, Rue G RESIDENTIALMIDDLE&HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1				通行支水					
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 18 AREA NAME Rue 11 RESIDENTIAL HIGH / COMMERCIAL.

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	40	12 DAYS		Y			2 DAYS	ON THE ROAD ONLY
2	Y		3 DAYS		Y			4 DAYS	"
3	Y	55	~~1 MONTH~~	Road.	Y	BIG RAIN	20	5 DAYS	"
4	N				N				
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES / shops 30

TOTAL AREAS OF CULTIVATED LAND

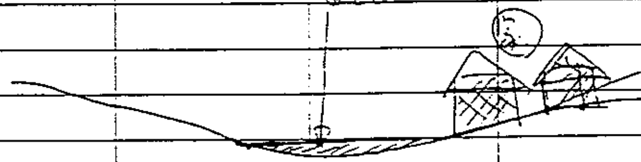
TOTAL NOS. OF HOUSES

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET R H&M.

AREA No.19 AREA NAME Sicap Amitié 1, Rue 10 RESIDENTIAL HIGH&MIDDLE

POINT No.	1989 FLOOD INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	ANNUAL FLOOD INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	25	3 DAYS	家で25cm.	Y	BIG RAIN		1 DAY	
2								道路が低い。	排水路は有効に水が
3									はけない事もある。
4									水がはけないと、
5									たまに水が家の方に
6									来る。
7							道路		
8									家と地盤が
9									同じ高さなので
10									水が来ると家に入るが
11									浸水時間は短い。
12									
13									浸水深も 5~10cm?
14									
15									
16									
17									
18									
19									
20									



0.1 TOTAL NOS. OF HOUSES 20

TOTAL AREAS OF CULTIVATED LAND

0.2 TOTAL NOS. OF HOUSES 10

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.20　　　AREA NAME Ave.Bourguiba+Rue9, Rue9 bis　　　RESIDENTIAL MIDDLE&HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N			[illegible]	N				道路の一部に
2									水がたまる
3									程度の所
4									
5									近くに排水口は有.
6									能力不足が原因か!
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES ______　　　TOTAL NOS. OF HOUSES ______

TOTAL AREAS OF CULTIVATED LAND ______　　　TOTAL AREAS OF CULTIVATED LAND ______

FLOOD CONDITION SURVEY SHEET

AREA No.21 AREA NAME Route de Ouakam+Bourguiba+Lycée RESIDENTIAL HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1				記憶無	Y	10	10	3 DAYS	雨季浸水.
2								KFS前の道路.	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES ~~1078~~

TOTAL AREAS OF CULTIVATED LAND

TOTAL NOS. OF HOUSES

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.22 AREA NAME Mermoz Terrain Basket RESIDENTIAL HIGH&MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	30	3		Y	every Rain	15	1	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

1.5 TOTAL NOS. OF HOUSES 35

TOTAL AREAS OF CULTIVATED LAND

1.5 TOTAL NOS. OF HOUSES 35

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 23

AREA NAME Corniche Ouest + Route de 10, Pyrotechn RESIDENTIAL HIGH & MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	~~87~~ ?	3 MONTHS	ROAD ONLY	Y				道路冠水
2	N	(45)(位)			N				
3			家の敷地内に入った.						
4			家の中は(無)				雨季は常に道路が		
5							冠水している.		
6									
7							すぐそばが海なので		
8							排水不良が原因か?		
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES ______ TOTAL NOS. OF HOUSES ______

TOTAL AREAS OF CULTIVATED LAND ______ TOTAL AREAS OF CULTIVATED LAND ______

FLOOD CONDITION SURVEY SHEET

AREA No. 24 AREA NAME Sicap Baobab, Rue Biyar RESIDENTIAL MIDDLE & HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N				N				
2	Y		1 DAY	89年当時も今も少し低い	N				
3				所，89年に出水の					
4				記憶は有．ただし					
5				浸水深，エリア，日数					
6				などは定かでない．					
7				"1日位かな"という程度					
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES ______ TOTAL NOS. OF HOUSES ______

TOTAL AREAS OF CULTIVATED LAND ______ TOTAL AREAS OF CULTIVATED LAND ______

FLOOD CONDITION SURVEY SHEET

AREA No. 25 AREA NAME Sicap Baobabs + Rue 12 RESIDENTIAL HIGH & MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N				N				
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 26 AREA NAME Rue13+Avenue de la Liberté ~~RESIDENTIAL~~ COMMERCIAL Bus Terminal

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N				N				
2	Y	30	3 DAYS	Bus Parking.	Y	Every Rain		1 DAY	大雨がふると
3				1989は駐車不可.					駐車場のTOPが表
4				以降 土を入れた。					水する
5									半分位?
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

1.0

TOTAL NOS. OF HOUSES Bus Terminal

TOTAL AREAS OF CULTIVATED LAND _____

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 27 AREA NAME Derklé RESIDENTIAL MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	## Y		Route de Front Terre が出来る前は		N				
2			良く浸水した。最近は殆んど無。						
3			89年は1ヶ月位広場に水があったが						
4			浸水範囲、浸水深等は不明。						
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 28 AREA NAME Route de Front de Terre + Bourguiba RESIDENTIAL (ROAD)

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N				N				
2				SONEES の LAV の前の道路が、雨が降ると冠水するが、道路のみ					
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No.29 AREA NAME Station de pompage Castors, Sodida, Bourguiba RESIDENTIAL COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	35	6 DAYS	Bag Factory.	N				
2	Y								
3									
4				バッグ工場(当時)は操業中. 屋内で25cm 3日間.					
5				工場は現在閉鎖して倉庫になっている.					
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES 5

TOTAL AREAS OF CULTIVATED LAND

TOTAL NOS. OF HOUSES

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 30 AREA NAME Bopp Rue D, Rue de Mboul, Rue 2 RESIDENTIAL MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	25	6 DAYS	下水	Y	Every Rain	15	2 DAYS	
2	Y				Y				
3	Y	30	6 DAYS		Y	Every Rain		1 DAY	
4									
5				映郎の公園はむかし					
6				Swamp だった。					
7				下水が雨と共に流入し、雨季は常時水たまり。					
8				下水が含まれているため、悪臭を発している。					
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

5.3 TOTAL NOS. OF HOUSES 55

TOTAL AREAS OF CULTIVATED LAND

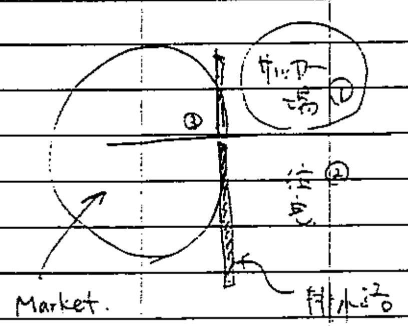
1.5 TOTAL NOS. OF HOUSES 10

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 31 AREA NAME HLM 6 Terrain RESIDENTIAL HIGH&COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	15	14 DAYS	ON SOCCER FIELD	Y	E.R	?	2 DAYS	
2	Y	15	6 DAYS		N				
3	Y	15	3 DAYS	MARKET PLACE	Y	E.R	10	1 DAY	
4									
5									
6						主な浸水个所はサッカー場.			
7						Market内に排水路が有(有蓋).			
8						排水路に入る前に③付近の低い所が浸水するようだ.			
9									
10						店内には入ってないという事. 10cm程度か			
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									



4.47 TOTAL NOS. OF HOUSES

TOTAL AREAS OF CULTIVATED LAND

45 TOTAL NOS. OF HOUSES shop / soccer field

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 32 AREA NAME Point E Boulevard Sud + Rue 3 RESIDENTIAL HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	~~90~~ 150			Y	2	~~20~~ 10	1 DAY	On the Road
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

1.6 TOTAL NOS. OF HOUSES 15

TOTAL AREAS OF CULTIVATED LAND

0.6 TOTAL NOS. OF HOUSES 5

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 33 AREA NAME Point E Rue 4 + Rue C RESIDENTIAL HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	40	3 MONTHS	家は2日間	Y	10	40	道路に2日.	
2	Y				Y				
3	Y				Y				
4	N				N				
5	N				N				
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

2.3 TOTAL NOS. OF HOUSES 20

TOTAL AREAS OF CULTIVATED LAND

1.1 TOTAL NOS. OF HOUSES 10

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 34 AREA NAME Route de Ouakam, Ecole Manguiers RESIDENTIAL (ROAD)

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N				N				
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 35 AREA NAME Fass Rue 22b, Fass coté Canal 4 RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	30	8 DAYS		Y			1 DAY	
2	Y	30	6 DAYS		N				
3	Y	45	14 DAYS		Y	Every Rain	25	8 DAYS	
4	N				N				
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

7.1 TOTAL NOS. OF HOUSES 150 ヘクタ?

TOTAL AREAS OF CULTIVATED LAND

2.8 TOTAL NOS. OF HOUSES 60

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 36 AREA NAME Bd Gueule Tapée+Rue 34 & Rue 10 RESIDENTIAL MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	35	3 DAYS		N				
2	N				N				
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 37 AREA NAME Gendarmerie Colobane RESIDENTIAL LOW, MIDDLE&HIGH

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	30	1 DAY	IN THE HOUSES	N				
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No.38 AREA NAME Place de Bakou, Rocade Fann Bel Air RESIDENTIAL COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N				N				
2									
3	Y	50	10 DAYS ← 1 SEP		Y			1 DAY	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No.39 AREA NAME Gueule Tapée Rue 54 RESIDENTIAL MIDDLE&LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	20	6 DAYS		N				
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No.40 AREA NAME Bd Gr de Gaulle, Rue 11, Route de Champ de courses, Pl. ~~RESIDENTIAL HIGH~~&COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	N			SENEGAL RADIO, TV	N				
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 41 AREA NAME Ecole El hadji Malick Sy RESIDENTIAL COMMERCIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1					N			MALIK SY FRONT	
2	Y	30	5	Before ~~Completing~~ Road Improving	N Y.		5 à 10 Y	NEW ROAD 1	(Road)
3	N				N				
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA No. 42 AREA NAME Ouakam RESIDENTIAL LOW&MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	40	7 DAYS		Y	1-2 ?	10	1 DAY	Road
2	N				N				
3	Y	30	5 DAYS		N				
4	N			School/Soccer Field	N				
5	Y	30	6 DAYS		N				ON THE ROAD
6	Y	20	5 DAYS		N				"
7	N				N				
8	N				N				
9	N				N				
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

12.44ha TOTAL NOS. OF HOUSES 93

TOTAL AREAS OF CULTIVATED LAND

3.6 TOTAL NOS. OF HOUSES Road / field.

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No. 43 AREA NAME Ngor RESIDENTIAL LOW&MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y	80	90 DAYS	AFTER PUMPING	Y	Every Rain	25	4 DAYS	
2	N				N				
3	N				N				
4	N				N				
5	Y	100	180 DAYS		Y	Every Rain	30	10 DAYS	
6	Y	40	40 DAYS		Y	"	10	2 DAYS	
7	Y	45	15 DAYS		Y	"		1 DAY	
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

4.97 ha TOTAL NOS. OF HOUSES 38 / MARKET

TOTAL AREAS OF CULTIVATED LAND

(38) TOTAL NOS. OF HOUSES 25 / MARKET

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.44 AREA NAME Grand Yoff RESIDENTIAL MIDDLE&LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS 雨季になると。
1	Y	110	21 DAYS	AFTER PUMPING	Y	Every Rain	40	15 DAYS	道路は常時浸水。93年に3回
2	Y	105	7 DAYS	IN THE HOUSE	Y	"	30	14 DAYS	共同水栓 水没
3	N				N				
4	Y	65	6 DAYS	IN THE HOUSE					60cm 盛土。
5	Y	140	18 DAYS	IN THE HOUSE					
6	N				N				
7	N				N				
8	Y	80	30 DAYS		Y	Every Rain		6 DAYS	ON THE ROAD 60cm 盛土
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

5.79ha TOTAL NOS. OF HOUSES 165

TOTAL AREAS OF CULTIVATED LAND

1.6 TOTAL NOS. OF HOUSES 45

TOTAL AREAS OF CULTIVATED LAND

FLOOD CONDITION SURVEY SHEET

AREA No.45 AREA NAME Yoff RESIDENTIAL LOW&MIDDLE

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1					N				
2	N				N				
3	Y	50	7 DAYS		Y	Every Big Rain	10	2 DAYS	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA NO: PIKINE1 46 AREA NAME : MEDINE RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS
1	Y				Y	every rain	50	3	in house
2	N				N	every rain			
3	Y	20	3		N	"			
4	Y	20			N	"			
5	Y	50		1N HOUSE	Y	"	20	1	in house
6	Y				Y	"		7	on road
7					Y	"	30	3	on road
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA NO: PIKINE 2 47 AREA NAME : RESIDENTIAL

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION DAYS	REMARKS
1	Y	50	8		Y	every rain	50	8	
2	Y	35	7	In the garden	Y	every rain		3	
3	Y	40	7		Y	"	20	2	on the road
4	Y				N	"	20	10	on the market
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

FLOOD CONDITION SURVEY SHEET

AREA NO: PIKINE 3 48 AREA NAME : MEDINA GOUNASS RESIDENTIAL LOW

	1989 FLOOD				ANNUAL FLOOD				
POINT No.	INUNDATION (YES/NO)	MAX. FLOOD DEPTH (cm)	DURATION (DAYS / HOURS)	REMARKS	INUNDATION (YES/NO)	FREQUENCY PER YEAR	MAX. FLOOD DEPTH (cm)	DURATION DAYS	REMARKS
1	Y	45	6 months		Y	—	—	2	
2	Y	45			Y				
3	Y	50	1 year and half		Y				
4	Y	100	"		Y				
5	Y	40	1 month						
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL NOS. OF HOUSES _____ TOTAL NOS. OF HOUSES _____

TOTAL AREAS OF CULTIVATED LAND _____ TOTAL AREAS OF CULTIVATED LAND _____

DATA 5

WATER QUALITY SURVEY

1. Wastewater/Pollution Load Survey

(1) Contents and Purpose of Survey

Wastewater/Pollution Load Survey contents are as follows;

- Domestic Wastewater Survey
- Commercial/Institutional Wastewater Survey
- Industrial Wastewater Survey
- Urban Drainage survey (dry and rain season)
- Septic Tank survey

These surveys were carried out in order;

- to evaluate the actual pollution condition and pollutant load.
- to determine the design pollutant load.

Contents of Survey are shown in Table 1.

(2) The Date of Conduct

These surveys were carried out from 20th July to 7th. September 1993 and the date of survey conduct are shown in Table 2.

(3) Results of Survey

1) Domestic Wastewater Survey

The survey was made for the following types of pollutant Loads

- Wastewater from detached houses
- Wastewater from the houses in the planned residential area
- Wastewater from the houses in the spontaneous and regular residential area
- Wastewater from flats

The locations of sampling point for above wastewater are shown in Fig. 1. The results of survey and water quality analysis are shown in Table 3, 4 and 5. The results of Survey and water quality analysis are summarized as follows;

- Wastewater quality :	BOD 660 mg/l	(min. : 480	- max. : 840)
	COD 1150 mg/l	(min. : 910	- max. : 1620)
	SS 260 mg/l	(min. : 180	- max. : 320)
- Water consumption	80 lpcd	(min. : 50	- max. : 140)
- Pollutant Load	BOD 47.1 gpcd	(min. : 38.4	- max. : 67.2)
	COD 83,2 gpcd	(min. : 60.0	- max. : 127.4)
	SS 19.0 gpcd	(min. : 10.8	- max. : 30.8)

2) Commercial/Institutional Wastewater Survey

The survey was made for the following types of pollutant Loads

- Wastewater from restaurant
- Wastewater from local market
- Wastewater from super market
- Wastewater from Hotel
- Wastewater from office
- Wastewater from mosque

The locations of sampling point for above wastewater are shown in Fig. 2. The results of questionnaire survey and water quality analysis are shown in Table 6. The results of Survey and water quality analysis are summarized as follows;

- The average water quality of Commercial/Institutional Wastewater is 380 mg/l (BOD). The maximum pollution level obtained is 550 mg/l (BOD) from wastewater of restaurant, and the minimum pollution level obtained is 210 mg/l (BOD) from wastewater of supermarket.
- Unit pollutant load are as follows;

Restaurant	2.8	g-BOD/sq.m/day
Hotel	3.0	g-BOD/sq.m/day
Super market	1.9	g-BOD/sq.m/day
Office	1.3	g-BOD/sq.m/day
Mosque	0.2	g-BOD/sq.m/day

3) Industrial Wastewater Survey

The locations of sampling point for industrial wastewater are shown in Fig. 3.

The reason for selection of factories as sampling points are ;

- These are major factories.
- Wastewater contained high organic pollutant or Hazardous substance.

The results of questionnaire survey and water quality analysis are shown in Table 7, and 8. The results of Survey and water quality analysis are summarized as follows;

Wastewater Quality	BOD	240	mg/l
(Average)	COD	800	mg/l

	SS	320 mg/l
Unit Water Consumption		62.0 cu.m/lot area her/day

4) Urban Drainage Survey>

Canal 4, Canal 6 and Canal Guele Tapee, the major canal for urban drainage, were selected as sampling points for Urban Drainage Survey. The locations of sampling point and the catchment areas are shown in Fig. 4. The results of survey and water quality analysis are shown in Table 9, 10, 11 and 12. The results of Survey and water quality analysis are summarized as follows;

Dry Season (Average)

	Flow (cu.m/sec)	BOD (mg/l)	Load (g-BOD/sec)
Canal 4	0.066	140	9.4
Canal 6	0.335	490	164.2
Canal Guele Tapee	0.120	710	85.2

Rainy Season (Survey - 1)

	Flow (cu.m/sec)	BOD (mg/l)	Load (g-BOD/sec)
Canal 4	0.090	480	43.2(4.6)
Canal 6	0.385	850	327.3(2.0)
Canal Guele Tapee	0.148	820	121.4(1.4)

Rainy Season (Survey - 2)

	Flow (cu.m/sec)	BOD (mg/l)	Load (g-BOD/sec)
Canal 4	0.344	60	2.1(0.2)
Canal 6	0.447	145	64.8(0.4)
Canal Guele Tapee	0.295	370	109.2(1.3)

( ) : Ratio = rainy season Load/dry season Load

5) Septic Tank Survey

Five (5) sampling points were selected in Bene Tali, Dakar. The results of survey and water quality analysis are shown in Table 13, and 14. The results of Survey and water quality analysis are summarized as follows;

wastewater Quality

BOD:	550 mg/l	(min. : 150	-max. : 950)
COD:	1020 mg/l	(min. : 270	-max. : 1790)
SS :	1430 mg/l	(min. : 100	-max. : 4670)

Sludge Quality

Moisture Content	96.7 %	(min. : 95.0	-max. : 99.2)
Ignition Loss	42 %	(min. : 36	-max. : 56)

2. Treatment Plant Function Survey in Camberene WWTP

The Function Survey was carried out in order to evaluate the existing wastewater treatment plant. Contents of survey are as follows;

Sampling point	Inflow of Primary sedimentation Effluence of Primary Sedimentation Effluence of Final Sedimentation
Sampling Times	12 times (every 2 hours for 24 hours) Analysis sample was composed of 3 samples.
Analyzed Parameters	Water : pH, BOD, COD, SS, EC, Coliform group (total and fecal) Sludge : MLSS, MLVSS, RSSS, SV, MLDO

The Survey was scheduled to begin at 6 a.m. on August 18th and end at 6 a.m. on August 19th.

The results of survey and water quality analysis are shown in Table 15, and 16. The results of Survey and water quality analysis are summarized as follows;

Water Quality

Raw Sewage	480 mg/l (BOD)	810 mg/l (SS)
Effluent	17 mg/l (BOD)	11 mg/l (SS)
Reduction	96.5 %	98.6 %

Operation Indicators

Surface Loading (cu.m/sq.m/day)	Primary Sedimentation Tank	13.6
	Final Sedimentation Tank	8.2
BOD Loading (kg.BOD/kg.MLSS)		0.12

Detention Time (hr)	Primary Sedimentation Tank	4.7
	Aeration Tank	24.2
	Final Sedimentation Tank	2.6
MLSS (mg/l)		4200
Sludge Age (day)		5.1
SVI		226

Table. 1 Contents of Wastewater/Pollutant load Survey

survey items	Domestic wastewater Survey	Commercial / Institutional wastewater Survey	Industrial wastewater Survey	Urban Drainage Survey (Dry season)	Urban Drainage Survey (Rainy day)	Septic tank Survey
Number of survey	2	1	1	1	2	1
Sampling points	6 points	20 points	20 points	3 points	3 points	5 points
Sampling times	12 times (every 2 hours for 24 hours) 4 samples were composited one	3 times (during business hour) 3 samples were mixed one	once (during work hour)	12 times (every 2 hours for 24 hours) 4 samples were composited one	once (during rain)	once
Number of samples to be analyzed	12 (6 X 2)	20	20	3	6 (3 X 2)	5 water & 5 sludge samples
Parameters to be analyzed	pH, BOD, COD, SS, Coliform group, Conductivity	pH, BOD, COD, SS, Coliform group, Conductivity	pH, BOD, COD, SS, Coliform group, Conductivity ,Others*	pH, BOD, COD, SS, Coliform group, Conductivity	pH, BOD, COD, SS, Coliform group, Conductivity	< water > pH, BOD, COD, SS, Coliform group, Conductivity <sludge> Moisture Content, Ignitionloss
Others	Wastewater quantity was measured by reading of watermeters. Questionnaire survey for background was conducted.	Questionnaire survey for background was conducted.	Questionnaire survey for background was conducted.	Flowrate was measured by velocity and cross section (flow area).	Flowrate was measured by velocity and cross section (flow area).	Questionnaire survey for background was conducted.

* : In addition to these items, Cu, Zn, T-Cr, F, Cd, Org-P, Pb, As, TCE/PCE were analyzed in Japan.

Table. 2 Date of Survey Conduct

Items	Date of Survey
Domestic Wastewater Survey	27. Jul. 1993 - 28. Jul. 1993
	3. Aug. 1993 - 4. Aug. 1993
	17. Aug. 1993 - 18. Aug. 1993
	24. Aug. 1993 - 25. Aug. 1993
Commercial/Institutional Wastewater Survey	20. Jul. 1993
	29. Jul. 1993
	3. Aug. 1993
	12. Aug. 1993
Industrial Wastewater Survey	23. Aug. 1993
	30. Aug. 1993
	7. Sep. 1993
Urban Drainage Survey (Dry day)	9. Aug. 1993 - 10. Aug. 1993
Urban Drainage Survey (Rainy day - 1)	16. Aug. 1993
Urban Drainage Survey (Rainy day - 2)	3. Sep. 1993
Septic Tank Survey	18. Aug. 1993

Table. 3 Results of Questionnaire Survey (Unit Water Consumption)

Sampling Area	Number of Houses	Number of Family (person)	Unit Water Consumption (lpcd)
Point E	4	4.3 (3 - 6)	140 (130 - 150)
SICAP Dieupeul	14	7.2 (2- 11)	60 (40 - 170)
SICAP Baobabs	8	7.4 (4 - 11)	60 (30 - 100)
Bentali	6	14.8 (10 - 25)	50 (30 - 100)
Pikine	3	7.0 (2 - 11)	60 (30 - 70)
Fass	5	2.7 (2 - 3)	70 (50 - 80)
Average	6.7	7.2 (2 - 25)	70 (30 - 170)

Table. 4 Results of Wastewater/Pollutant Load Survey (Domestic Wastewater)

Survey Point	Housing Type	Survey Times	pH	Conductivity (micro-mho/cm)	BOD (mg/l)	COD (mg/l)	SS (mg/l)	Coliform group (n/ml)	
								Total	Fecal
Point E	Detached (Large) houses	1	8.0	2770	420	750	190	6.2*10^5	2.1*10^5
		2	8.6	3410	540	1070	250	2.4*10^5	1.5*10^5
		average	8.3	3090	480	910	220	4.3*10^5	1.8*10^5
SICAP Dieupeul	Planned	1	7.3	1640	500	950	150	8.2*10^6	2.7*10^6
		2	7.1	1360	780	1050	210	8.3*10^5	5.1*10^5
		average	7.2	1500	640	1000	180	4.5*10^6	1.6*10^6
SICAP Baobabs	Planned	1	7.4	1200	540	820	290	9.8*10^5	4.8*10^5
		2	7.0	1900	820	1320	380	3.4*10^6	9.2*10^5
		average	7.2	1550	680	1070	320	2.2*10^6	7.0*10^5
Bentali	Spontaneous, regular	1	7.5	1220	780	1450	220	1.1*10^7	7.6*10^6
		2	7.3	1960	900	1790	380	9.0*10^6	3.6*10^6
		average	7.4	1590	840	1620	300	1.0*10^7	5.6*10^6
Pikine	Spontaneous, regular	1	7.5	1190	180	230	100	3.1*10^5	1.7*10^5
		2	7.1	990	220	310	140	9.0*10^4	4.9*10^4
		average	7.3	1090	200	270	120	2.0*10^5	1.1*10^5
Fass	Flats	1	7.6	930	240	750	230	4.2*10^7	2.7*10^7
		2	7.0	850	400	970	310	1.6*10^7	8.7*10^6
		average	7.3	890	320	860	270	2.9*10^7	3.0*10^6
Average			7.5	1620	530	960	240	7.7*10^6	1.9*10^6

Table. 5 Results of Unit Domestic Pollution Load Analysis

Sampling Area	Housing Type	Per Capita Water Consumption	Concentration (mg/l)			Unit Pollutant Load (gpcd)		
		(lpcd)	BOD	COD	SS	BOD	COD	SS
Point E	Detached House	140	480	910	220	67.2	127.4	30.8
SICAP Dieupeul	Planned	60	640	1000	180	38.4	60	10.8
SICAP Baobabs	Planned	60	680	1070	320	40.8	64.2	19.2
Bentalli	Spontaneous, regular	50	840	1620	300	42	81	15
Pikine	Spontaneous, regular	60	200	270	120	12	16.2	7.2
Fass	Flats	70	320	860	270	22.4	60.2	18.9
Average (whole)		70	530	960	240	37.1	68.2	17
Average *		80	660	1150	260	47.1	83.2	19

Note ; * : Average of 4 areas (Point E, SICAP Dieupeul, SICAP Baobabs, and Bentalli) is considered to be representative, because figures for 2 areas (Pikine and Fass) are too low.

Table. 6 Results of Unit Pollution Load (Commercial/Institutional Wastewater)

Items	Unit Water Consumption (cu.m/d/sq.m)	Water Quality (mg/l)			Unit Pollutant Load (g/d.sq.m)		
		BOD	COD	SS	BOD	COD	SS
Restaurant	0.005	550	1000	540	2.8	5.0	2.7
Hotel	0.006	500	570	310	3.0	3.4	1.9
Local Market	-	310	1330	800	-	-	-
Super Market	0.009	210	500	350	1.9	4.5	3.2
Office	0.004	330	170	80	1.3	0.7	0.3
Mosque	0.002	380	650	360	0.8	1.3	0.7
Average	0.005	380	700	410	2.0	3.0	1.8

Table. 8 Results of Industrial Wastewater Characteristic Analysis

Name of Factory	pH	Conductivity (micro-mho/cm)	BOD (mg/l)	COD (mg/l)	SS (mg/l)	Coli. group(n/ml) (Total)	(Fecal)	Cd mg/l	Org.-P mg/l	Pb mg/l	As mg/l	Cu mg/l	Zn mg/l	Cr mg/l	F mg/l
S.N.C.D.S.	6.8	648	280	190	8	4.2*10^5	1.5*10^5	<0.005	<0.1	<0.05	<0.01	0.01	0.35	0.23	<0.5
AFRICA AZOTE	6.6	52000	250	-	800	-	-	<0.005	<0.1	<0.05	<0.01	0.04	0.25	0.04	1.05
NESTLE SENEGAL	8.2	670	280	450	130	6.8*10^3	2.1*10^3	<0.005	<0.1	<0.05	<0.01	0.01	0.15	0.03	0.55
SAPROLAIT	8.3	1980	230	1930	22	-	-	<0.005	<0.1	<0.05	<0.01	<0.01	0.18	0.05	<0.5
SOBOA	10.1	673	150	67	1	-	-	<0.005	<0.1	<0.05	<0.01	<0.01	0.01	0.02	<0.5
SENEGAL PROTEINES	6.9	3500	190	350	85	6.8*10^4	2.3*10^4	0.086	<0.1	<0.05	0.07	0.43	0.60	0.24	<0.5
SOFRAVIN	7.5	720	130	190	40	-	-	<0.005	<0.1	<0.05	<0.01	<0.01	0.03	<0.01	7.11
MTOA	8.5	820	280	720	250	1.5*10^3	8.0*10^2	<0.005	<0.1	<0.05	<0.01	0.03	0.25	0.12	<0.5
BLANCHISSERIE DU CYGNE	8.9	1720	350	340	290	1.0*10^3	3.0*10^2	<0.005	<0.1	<0.05	<0.01	<0.01	0.02	0.01	<0.5
LA ROCHETTE DAKAR	5.8	1800	220	1250	350	3.6*10^4	6.5*10^3	<0.005	<0.5	0.36	<0.01	0.60	5.08	0.33	0.92
SAR	7.0	2830	30	220	12	1.3*10^3	6.0*10^2	<0.005	<0.1	<0.05	<0.01	0.01	0.44	1.24	0.79
PARKE DAVIS AFRIQUE OUEST	6.5	800	70	150	80	4.2*10^3	8.5*10^2	<0.005	<0.1	<0.05	<0.01	<0.01	1.50	<0.01	1.45
SIPOA	6.2	604	125	210	820	8.0*10^4	7.7*10^3	0.005	<0.1	<0.05	<0.01	0.04	0.21	0.02	<0.5
NSOA	8.8	1200	650	2200	420	-	-	<0.005	<0.1	<0.05	<0.01	<0.01	0.01	<0.01	<0.5
S.A.F.	10.5	1650	900	3850	1270	-	-	-	-	-	-	-	-	-	-
I.C.S.	1.2	52000	250	-	1300	-	-	0.550	<0.1	<0.05	0.01	0.33	4.80	0.75	51.40
SEGNEURIE AFRIC.	-	-	-	-	-	-	-	<0.005	<0.1	2.06	<0.01	0.30	0.05	0.61	0.74
DAKAR MARINE	6.9	1600	150	440	100	1.5*10^5	8.2*10^4	<0.005	<0.1	<0.05	<0.01	<0.01	0.01	0.01	0.94
Q - FONDS	6.2	750	40	90	140	2.4*10^3	7.2*10^2	0.041	<0.1	<0.05	<0.01	<0.01	0.19	0.02	3.31
SENELEC	6.7	55000	40	-	10	-	-	<0.005	<0.1	<0.05	<0.01	<0.01	0.01	<0.01	<0.5
Average (19 factories)	7.2	9500	240	800	320	7.0*10^4	2.5*10^4	-	-	-	-	-	-	-	-
ABATTOIRS DE DAKAR (SERAS)	6.4	2960	6000	6070	120	2.3*10^7	2.0*10^6	<0.005	<0.1	<0.05	<0.01	0.09	0.43	0.14	0.95

Table 9 Results of Urban Drainage Survey (Dry - Flowrate)

< Canal 4 >

Time	Temp.	Flow Current (m/sec.)	Depth (m)	Flowrate (cu.m/sec.)	Average Flowrate (cu.m/sec.)
12:00	32	0.084	0.06	0.013	
14:00	28	0.056	0.05	0.007	
16:00	34	0.052	0.05	0.006	
18:00	30	0.064	0.05	0.008	0.009
20:00	29	0.071	0.06	0.011	
22:00	28	0.069	0.06	0.010	
24:00	29	0.063	0.05	0.008	
2:00	28	0.064	0.05	0.008	0.009
4:00	28	0.064	0.05	0.008	
6:00	26	0.057	0.06	0.009	
8:00	28	0.081	0.06	0.012	
10:00	31	0.065	0.06	0.010	0.010
Average	29	0.066	0.05	0.009	0.009

< Canal 6 >

Time	Temp.	Flow Current (m/sec.)	Depth (m)	Flowrate (cu.m/sec.)	Average Flowrate (cu.m/sec.)
12:00	30	0.374	0.11	0.120	
14:00	32	0.373	0.11	0.119	
16:00	31	0.369	0.11	0.118	
18:00	30	0.348	0.11	0.111	0.117
20:00	29	0.423	0.11	0.135	
22:00	29	0.239	0.11	0.076	
24:00	24	0.332	0.11	0.106	
2:00	24	0.315	0.07	0.054	0.093
4:00	23	0.295	0.12	0.106	
6:00	23	0.192	0.06	0.027	
8:00	22	0.375	0.08	0.079	
10:00	25	0.387	0.14	0.163	0.094
Average	27	0.335	0.10	0.101	0.101

< Canal Guele Tapee >

Time	Temp.	Flow Current (m/sec.)	Depth (m)	Flowrate (cu.m/sec.)	Average Flowrate (cu.m/sec.)
12:00	32	0.117	0.13	0.082	
14:00	32	0.110	0.13	0.078	
16:00	31	0.110	0.12	0.072	
18:00	31	0.145	0.13	0.102	0.084
20:00	30	0.118	0.11	0.070	
22:00	30	0.122	0.13	0.086	
24:00	28	0.121	0.15	0.098	
2:00	30	0.100	0.13	0.070	0.081
4:00	30	0.096	0.10	0.052	
6:00	30	0.112	0.05	0.030	
8:00	30	0.128	0.11	0.076	
10:00	31	0.164	0.10	0.089	0.062
Average	30	0.120	0.12	0.075	0.075

Table. 10 Results of Urban Drainage Survey (Dry day)

Sampling Point	Sample No.	pH	Conductivity (micro.mho/cm)	BOD (mg/l)	COD (mg/l)	SS (mg/l)	Coliform group (n/ml)	
							Total	Fecal
Canal 4	A	7.4	1260	200	180	180	-	-
	B	7.6	890	180	330	690	-	-
	C	7.6	750	25	67	100	-	-
	Av.	7.5	970	140	190	320	7.6*10^6	6.2*10^6
Canal 6	A	7.3	1910	830	1200	2230	-	-
	B	7.6	950	380	550	600	-	-
	C	7.7	800	250	520	20	-	-
	Av.	7.5	1220	490	760	950	5.2*10^6	4.0*10^4
Canal Guele Tapee	A	7.3	2630	880	1100	2490	-	-
	B	7.4	940	700	830	1260	-	-
	C	7.7	1030	550	960	390	-	-
	Av.	7.5	1530	710	960	1380	1.2*10^7	9.6*10^6

Composited Sample A : 12:00 - 18:00
Composited Sample B : 20:00 - 2:00
Composited Sample C : 4:00 - 10:00

Table. 11 Results of Urban Drainage Survey (Rainy - Flowrate)

Date	Sampling Point	Flow Current (m/sec.)	Depth (m)	Foerate (cu.m/sec.)
16. Aug. 1993	Canal 4	0.09	0.1	0.023
	Canal 6	0.385	0.13	0.15
	Canal Guele Tapee	0.148	0.17	0.136
3. Sep. 1993	Canal 4	0.344	1.18	2.749
	Canal 6	0.447	1.26	1.913
	Canal Guele Tapee	0.295	0.67	1.071

Table. 12 Results of Urban Drainage Survey (Rainy)

Items	Sampling Point	pH	Conductivity (micro.mho/cm)	BOD (mg/l)	COD (mg/l)	SS (mg/l)	Coliform group (n/ml)	
							Total	Fecal
Rainy Survey - 1	Canal 4	7.7	2000	480	710	180	1.3*10^6	7.0*10^5
	Canal 6	7.9	2150	850	1730	430	1.1*10^6	4.0*10^5
	Canal Guele Tapee	7.7	1830	820	1250	400	6.5*10^6	2.9*10^6
Rainy Survey - 2	Canal 4	7.4	800	60	150	45	4.3*10^3	9.2*10^2
	Canal 6	7.3	750	145	280	165	7.0*10^2	4.5*10^2
	Canal Guele Tapee	7.8	960	370	720	250	1.7*10^6	8.1*10^5

Table. 13 Results of Septic Tank Survey

No.	Classification of Establishment	Number of User (person)	Kinds of Wastewater	Form of Septic Tank (m)		
				Length	Width	Depth
ST - 1	Residence	50	kitchen, washing and toilet wastewater	9.00	1.80	-
ST - 2	Marche	-	bath and toilet wastewater	8.30	4.30	1.75
ST - 3	Residence	35	kitchen, bath, washing and toilet wastewater	3.90	1.70	2.50
ST - 4	Residence	25	bath, washing and toilet wastewater	2.00	2.00	2.50
ST - 5	Residence	25	bath and toilet wastewater	2.35	2.20	2.20

Table. 14 Results of Septic Tank Survey

Items			ST - 1	ST - 2	ST - 3	ST - 4	ST - 5
Wastewater	pH		7.1	7.4	7.5	7.4	7.8
	Conductivity (micro.mho/cm)		1920	2930	3730	5800	7050
	BOD (mg/l)		150	250	900	950	500
	COD (mg/l)		270	440	1650	1790	970
	SS (mg/l)		100	190	790	4670	1400
	Coli. group	Total	9.0*10^3	7.0*10^5	3.8*10^4	6.3*10^5	3.4*10^4
		Fecal	5.0*10^3	4.0*10^5	7.0*10^3	3.5*10^5	2.2*10^4
Sludge	Moisture Content (%)		99.2	98.6	95.2	95.5	95.0
	Ignition Loss (%)		40	41	56	36	37

Table. 15 Results of Water Quality Survey of Camberene WWTP
(from 18. Aug. to 19. Aug. 1993)

No.	Items / TIME	Wastewater Quantity					
		Inflow (cu.m)		Desludging from Primary Sedimentation (cu.m)		(kg)	
1	6:00 - 8:00	336	1512	12.1	68.7	243	1377
	8:00 - 10:00	420		20.2		405	
	10:00 - 12:00	756		36.4		729	
2	12:00 - 14:00	589	1514	28.9	74.2	577	1484
	14:00 - 16:00	420		20.6		412	
	16:00 - 18:00	505		24.7		495	
3	18:00 - 20:00	336	1093	16.4	53.5	329	1071
	20:00 - 22:00	420		20.6		412	
	22:00 - 24:00	337		16.5		330	
4	24:00 - 2:00	252	588	12.1	28.3	243	568
	2:00 - 4:00	84		4.1		82	
	4:00 - 6:00	252		12.1		243	
Total		4707		224.7		4500	

Table. 16 Results of Water Quality Survey of Camberene WWTP (from 18. Aug. to 19. Aug. 1993)

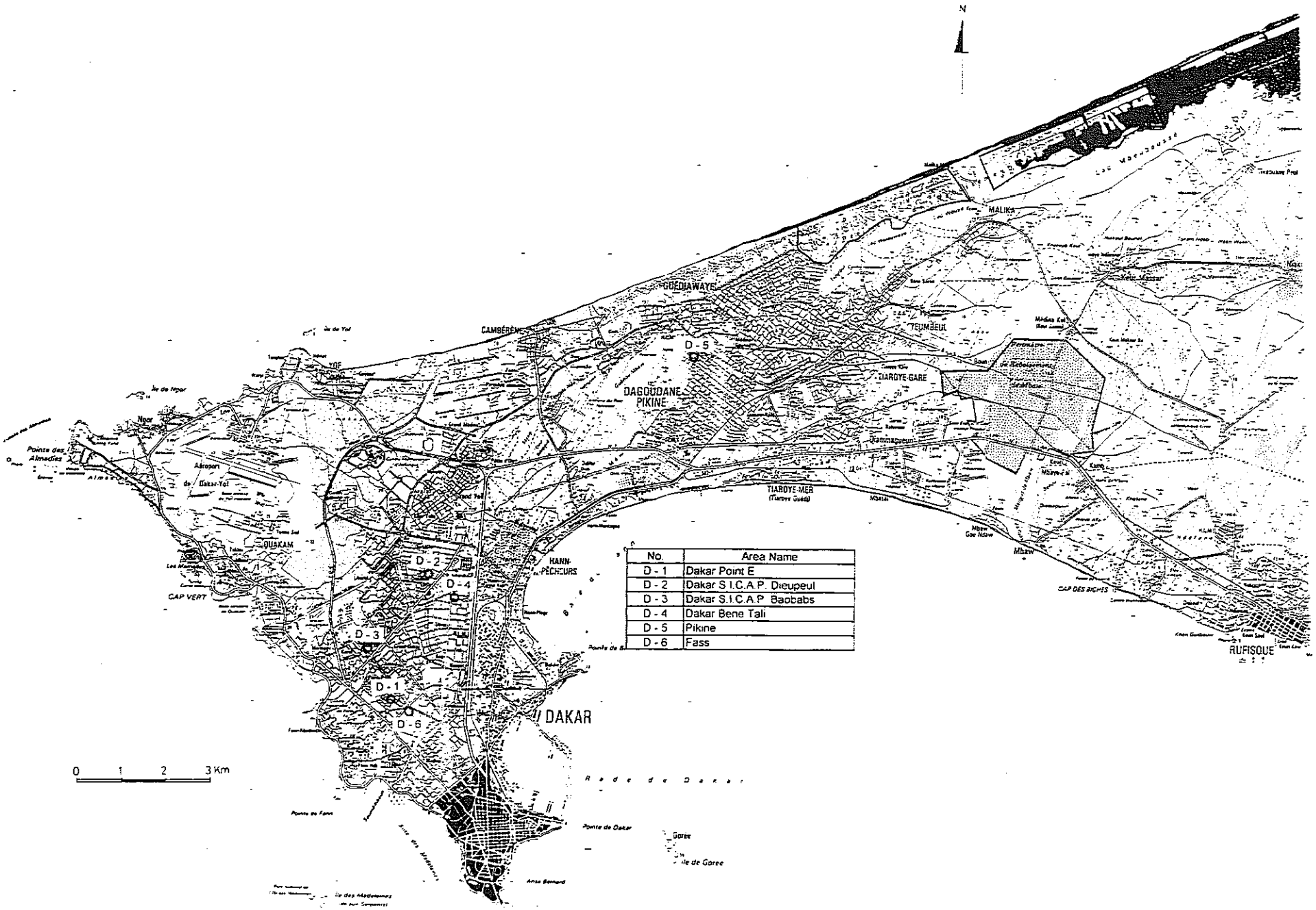
Water Quality										Sludge & Aeration Tank					
No.	Sampling Point	Tem.	pH	BOD mg/l	COD mg/l	SS mg/l	EC mg/l	Coli. group (n/ml) Total	Fecal	MLSS mg/l	MLVSS mg/l	RSSS mg/l	SV ml	MLDO (mg/l) (1)	(2)
1	A	28	7.8	500	1250	964	1587	1.7*10^6	4.0*10^5						
	B	28	7.8	180	417	228	984	1.1*10^6	2.0*10^5					3.6	0.0
	C	28	7.8	10	151	6	954	6.1*10^3	1.6*10^2						
2	A	29	7.8	530	1264	980	1428	5.1*10^6	1.0*10^5						
	B	30	7.8	190	473	142	926	1.4*10^6	6.0*10^5					4.0	0.0
	C	30	7.8	10	151	8	910	3.5*10^3	3.0*10^2	4204	3004	6774	950		
3	A	29	7.9	480	1023	626	1424	3.6*10^6	6.0*10^5						
	B	29	7.8	230	568	88	962	2.6*10^6	3.2*10^5						
	C	29	7.7	5	114	15	926	4.1*10^3	3.0*10^2						
4	A	28	7.9	300	644	322	1321	2.1*10^6	5.0*10^5						
	B	28	7.8	200	492	142	951	1.5*10^6	1.1*10^5						
	C	28	7.6	75	189	24	902	2.1*10^3	2.0*10^2						

Analysis sample (composite sample) : a composite sample was composed of four (4) samples.

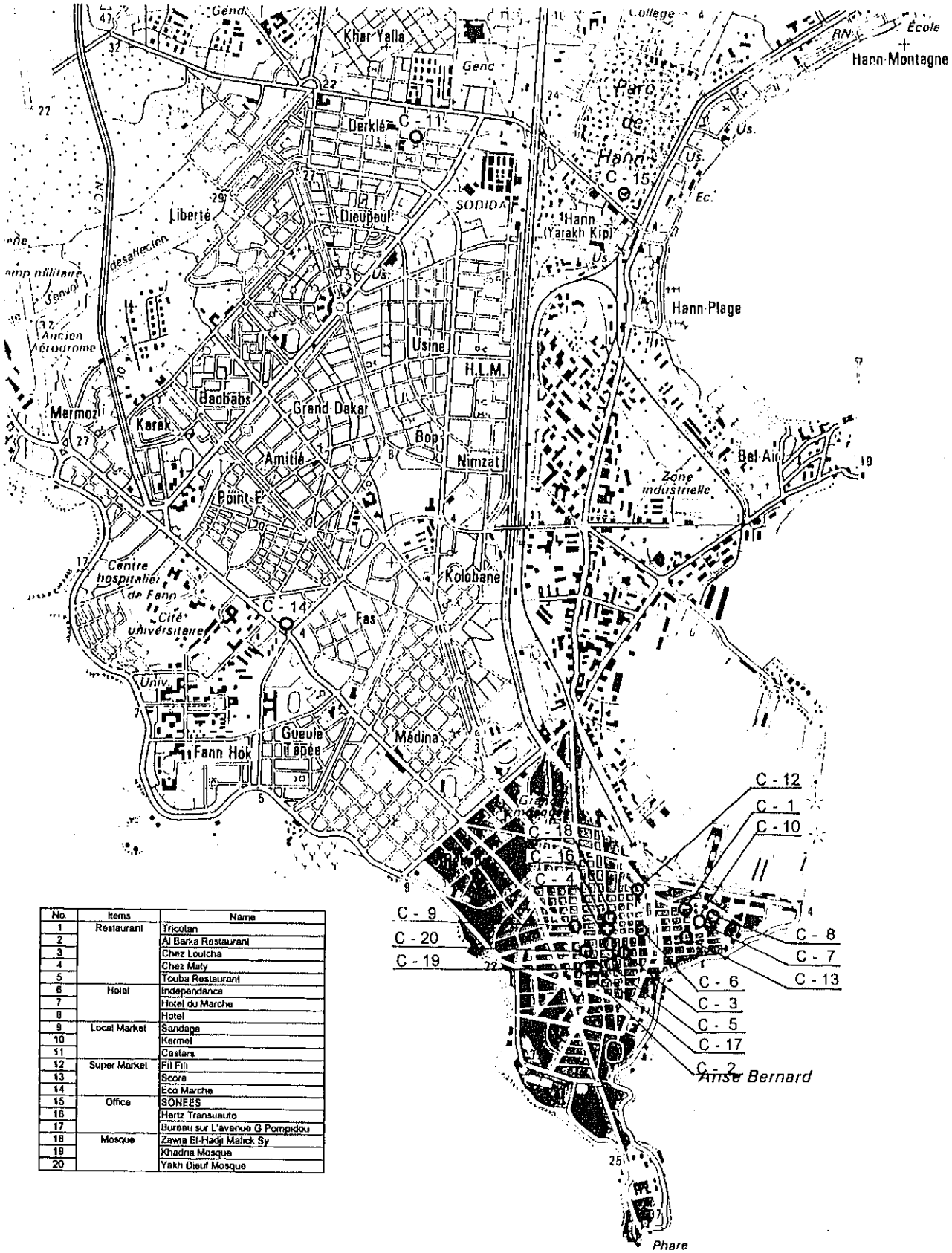
Sample No. 1 : from 8:00 to 12:00
Sample No. 2 : from 14:00 to 18:00
Sample No. 3 : from 20:00 to 24:00
Sample No. 4 : from 2:00 to 6:00

sampling point : A : Inflow of Primary Sedimentation
B : Effluence of Primary Sedimentation
C : Effluence of the Final Sedimentation

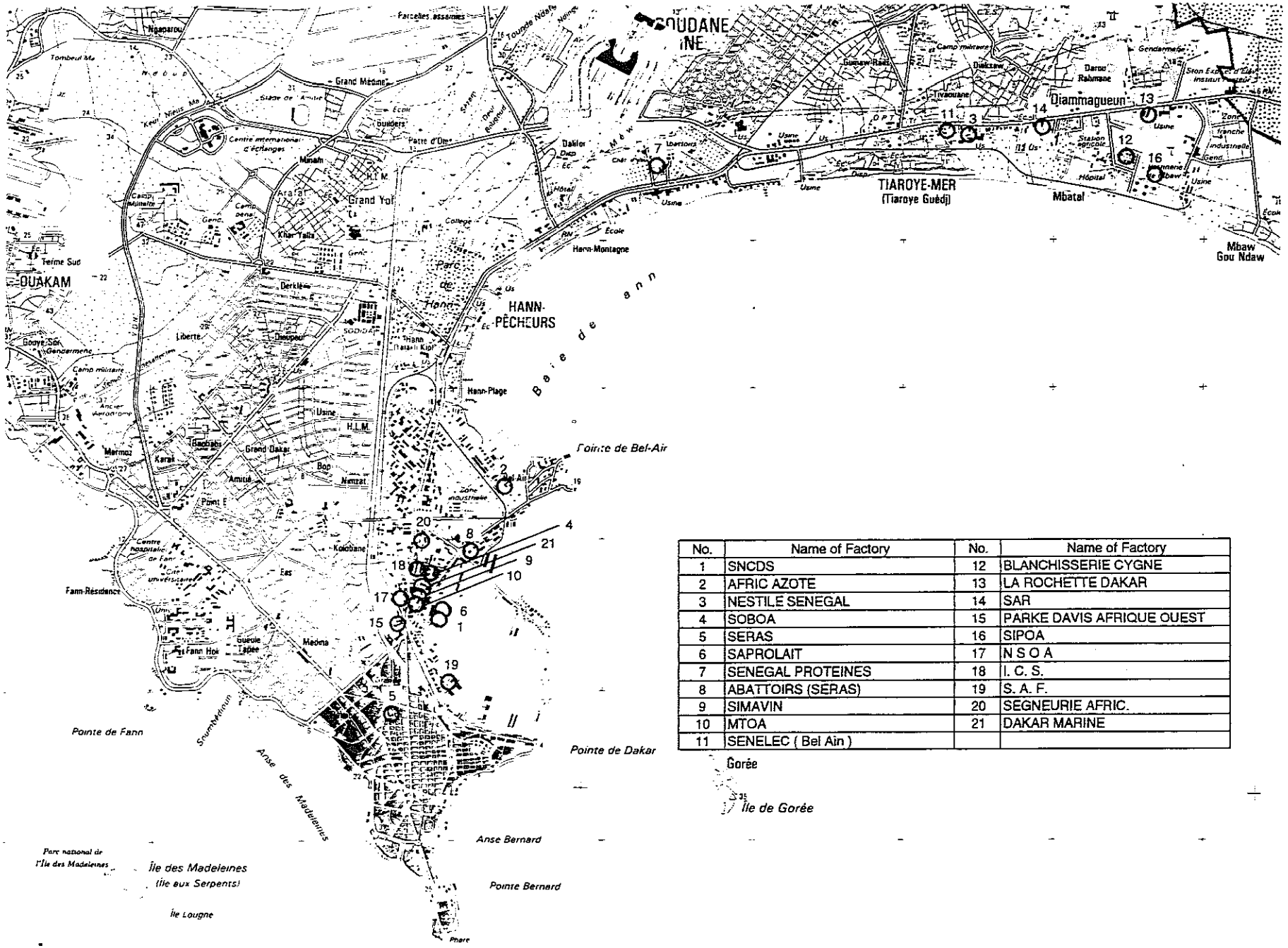
Measurement of MLDO (1) on-aeration
(2) After aeration (stop aeration after five (5) minuts)



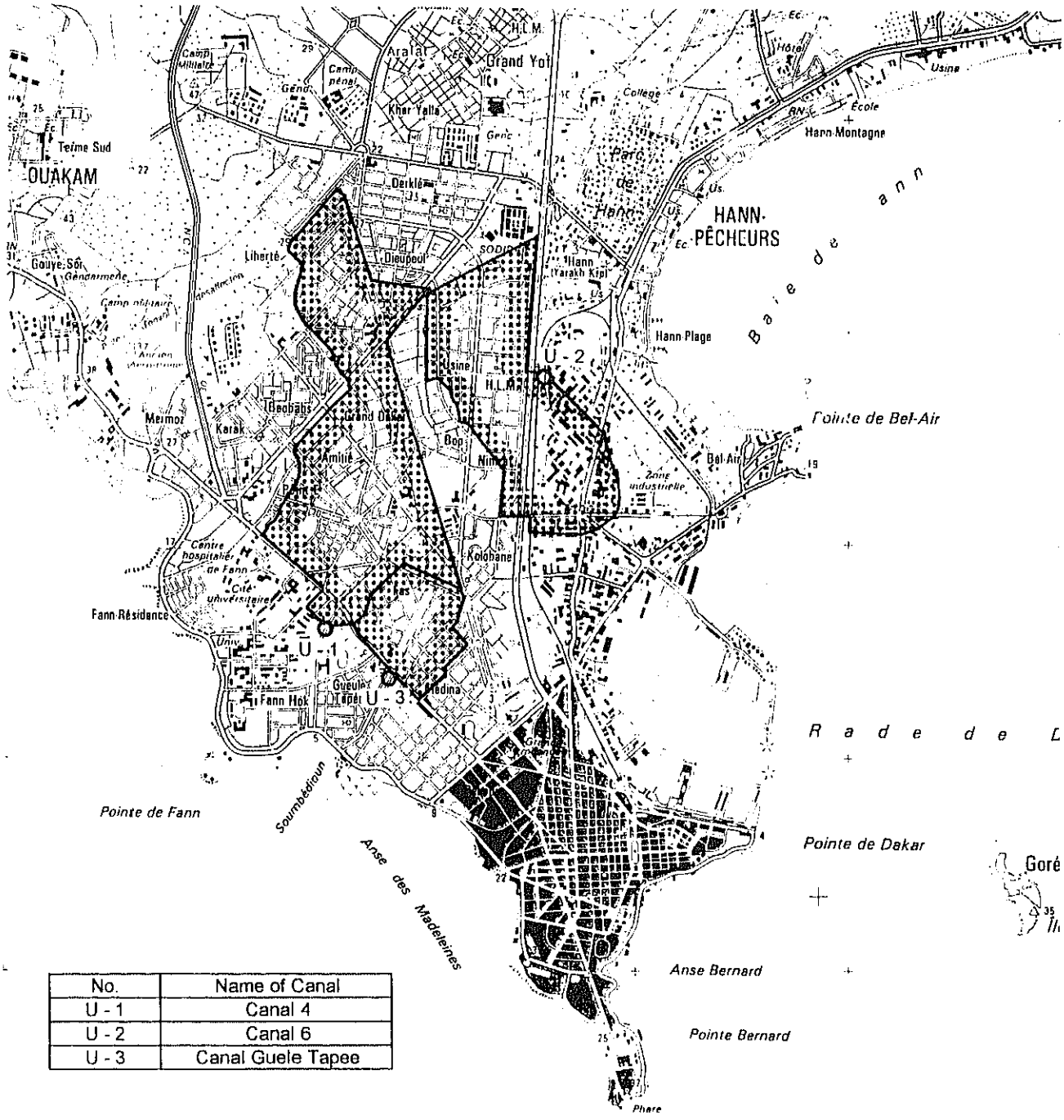
No.	Area Name
D - 1	Dakar Point E
D - 2	Dakar S.I.C.A.P. Dieupeul
D - 3	Dakar S.I.C.A.P. Baobabs
D - 4	Dakar Bene Tali
D - 5	Pikine
D - 6	Fass



No.	Items	Name
1	Restaurant	Tricotan
2		Al Barka Restaurant
3		Chez Loutcha
4		Chez Maty
5		Touba Restaurant
6	Hotel	Independance
7		Hotel du Marche
8		Hotel
9	Local Market	Sandaga
10		Kermel
11		Castars
12	Super Market	Fil Fil
13		Score
14		Eco Marche
15	Office	SONEES
16		Hertz Transauto
17		Bureau sur L'avenue G Pompidou
18	Mosque	Zawia El-Hadji Malick Sy
19		Khadna Mosque
20		Yakh Dieuf Mosque



No.	Name of Factory	No.	Name of Factory
1	SNCDS	12	BLANCHISSERIE CYGNE
2	AFRIC AZOTE	13	LA ROCHETTE DAKAR
3	NESTILE SENEGAL	14	SAR
4	SOBOA	15	PARKE DAVIS AFRIQUE OUEST
5	SERAS	16	SIPOA
6	SAPROLAIT	17	N S O A
7	SENEGAL PROTEINES	18	I. C. S.
8	ABATTOIRS (SERAS)	19	S. A. F.
9	SIMAVIN	20	SEGNEURIE AFRIC.
10	MTOA	21	DAKAR MARINE
11	SENELEC (Bel Ain)		



No.	Name of Canal
U - 1	Canal 4
U - 2	Canal 6
U - 3	Canal Guele Tapee

LEGEND

○ Sampling Point

Boundary of Catchment area