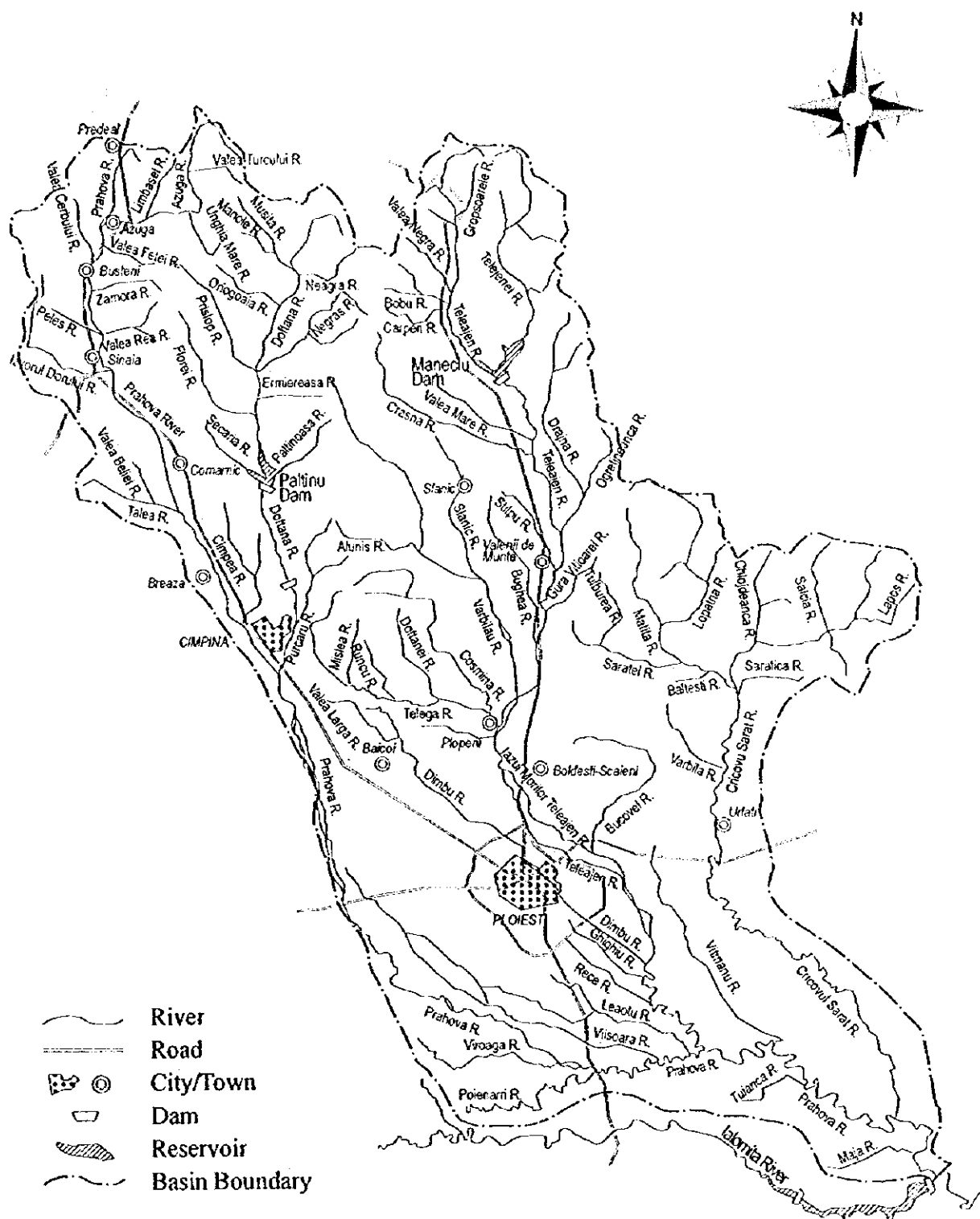


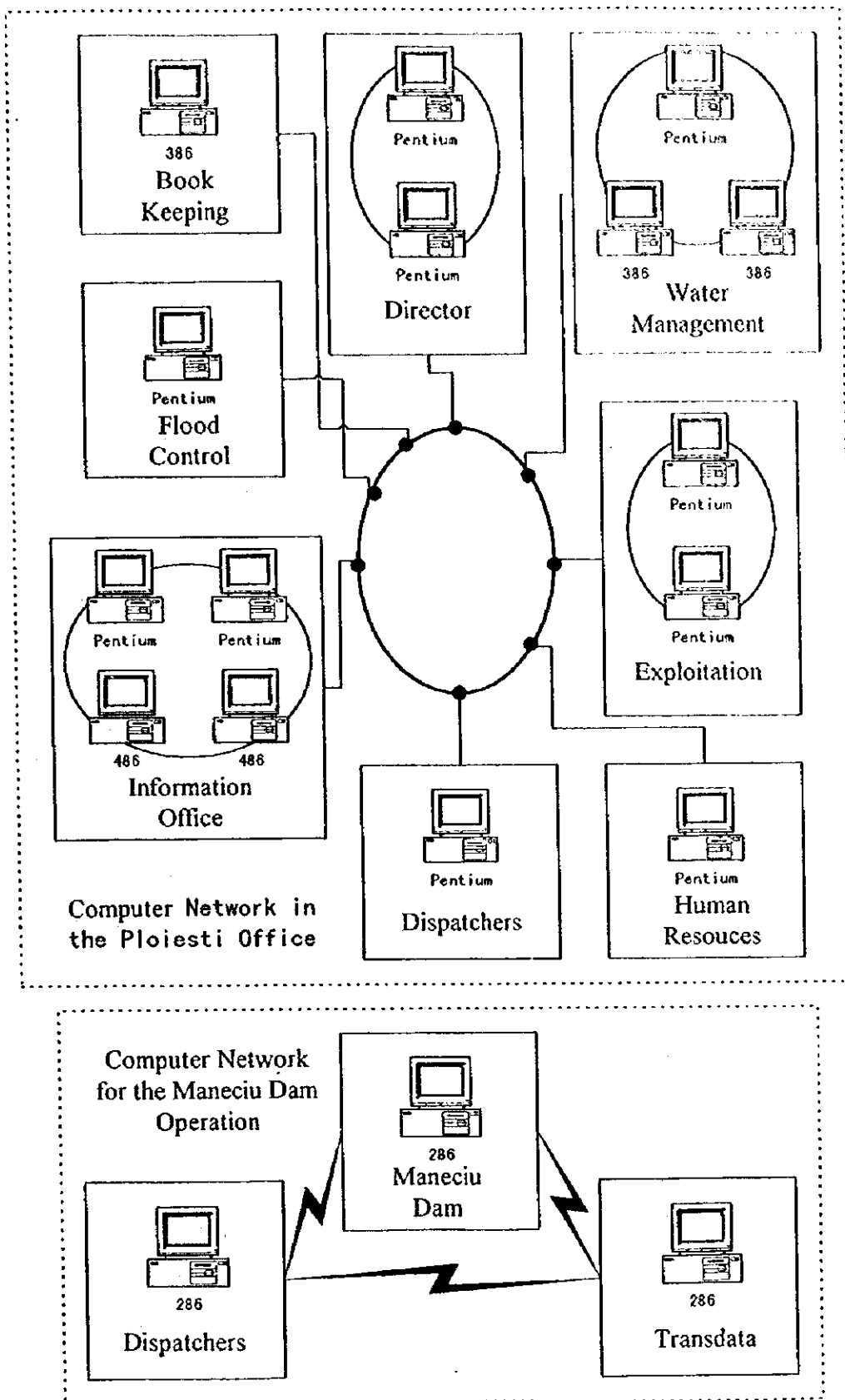
FIGURES



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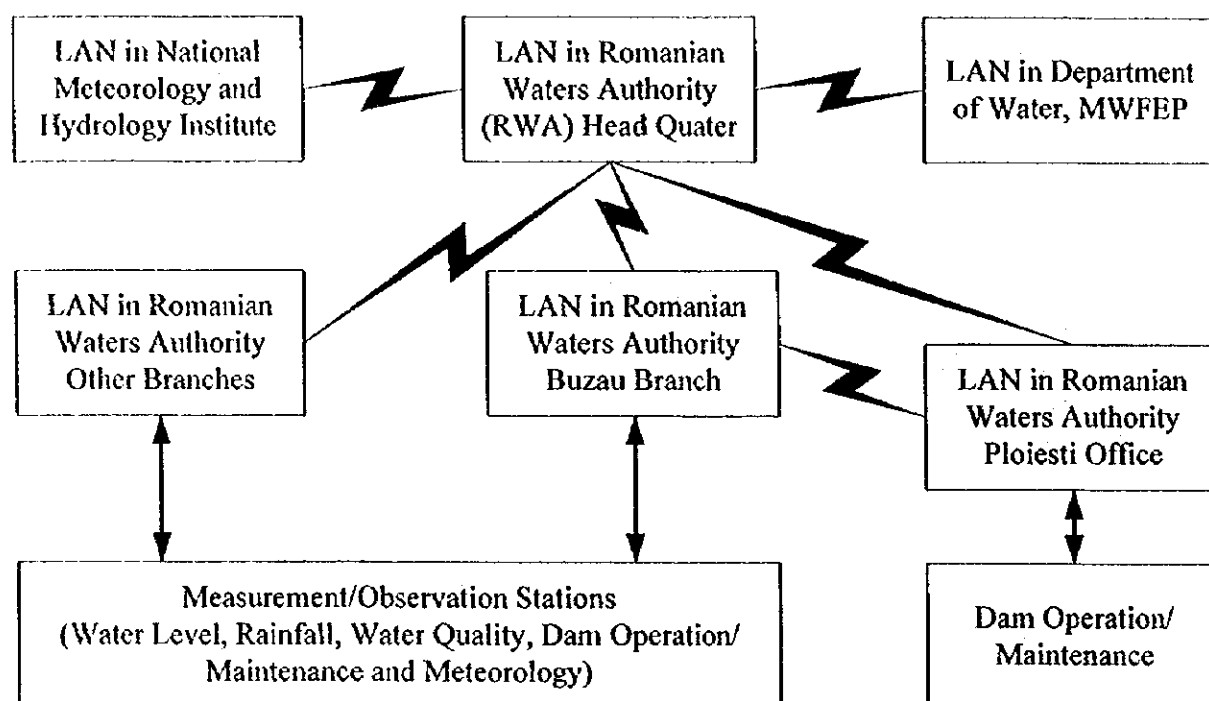
Fig F.1.1 Prahova River Basin



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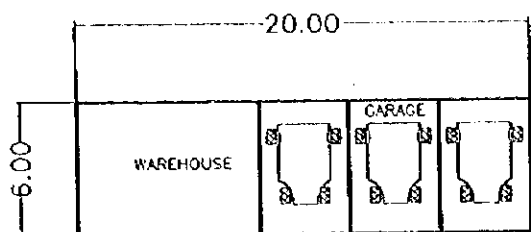
Fig. F.1.3 Computer Network in
Romanian Waters Authority, Ploiesti



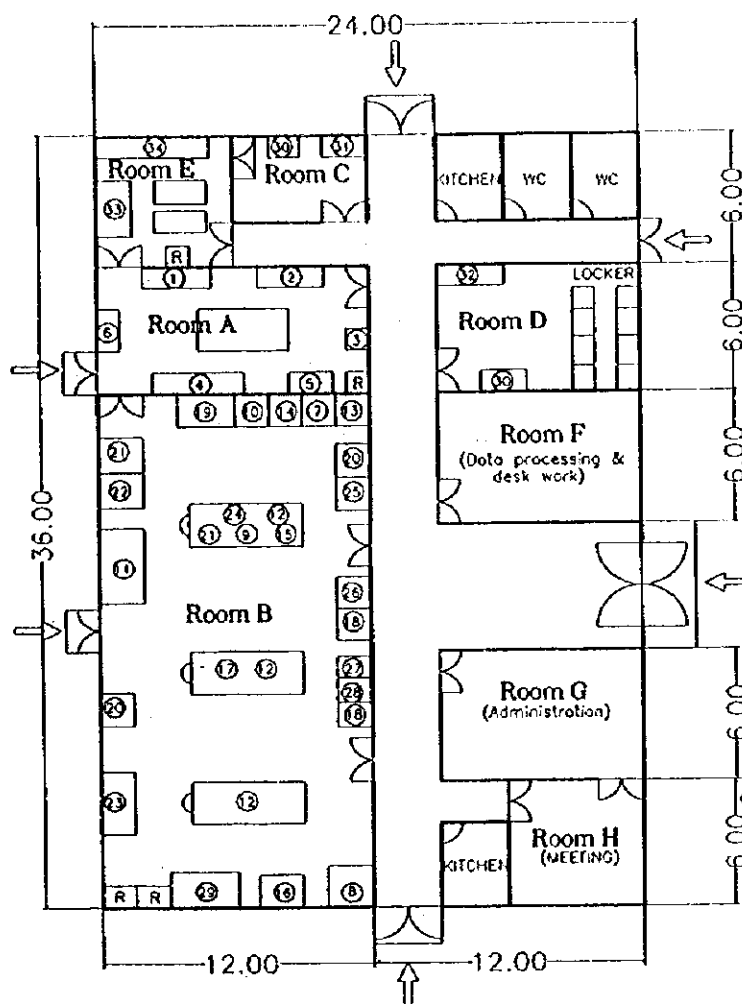
STUDY ON THE MASTER PLAN FOR
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**Fig. F.1.4 National Data Transmission
Network for Water Management**



WAREHOUSE :	48 m ²
GARAGE :	72 m ²
TOTAL	120 m ²



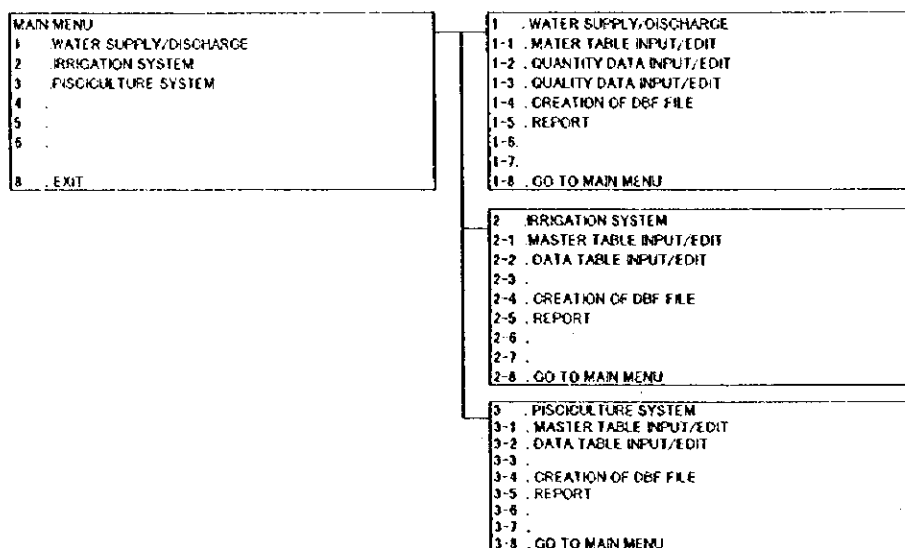
ROOM A (G.C. ROOM) :	72 m ²
ROOM B (Chemical Analysis) :	288 m ²
ROOM C (Balance Room) :	24 m ²
ROOM D (Preparation Room) :	54 m ²
ROOM E (Biological Analysis) :	36 m ²
ROOM F (Data Processing) :	54 m ²
ROOM G (Administration) :	54 m ²
ROOM H (Meeting) :	36 m ²
Other Space :	228 m ²
TOTAL	854 m ²

[R] : Refrigerator

①~⑯ Correspond to Nos. of Equipment List
(Refer to Table 1)

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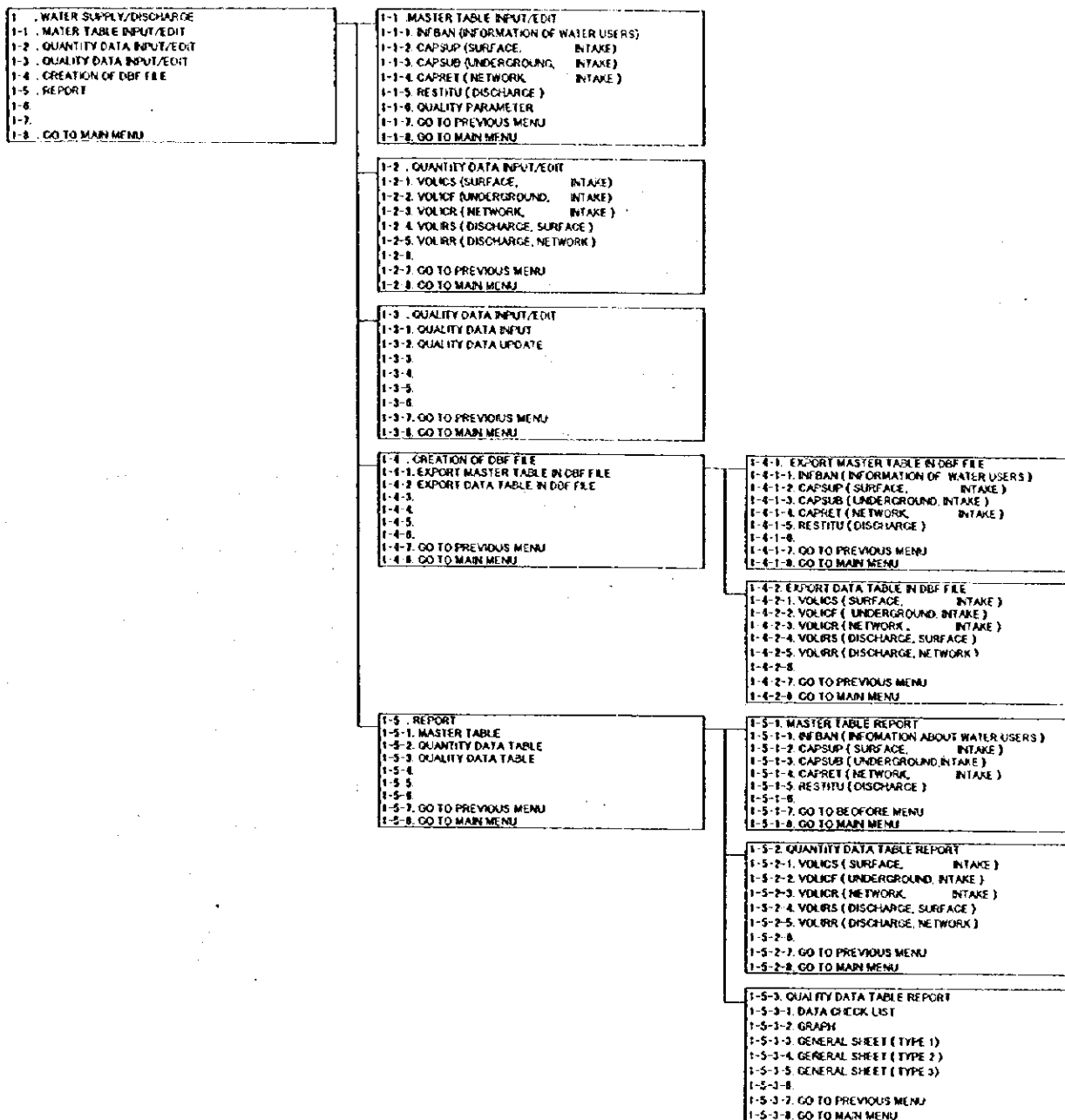
Fig. F.2.1 New Laboratory of
Romanian Waters
Prahova Office



STUDY ON THE MASTER PLAN FOR
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THE PRAHOVA RIVER BASIN

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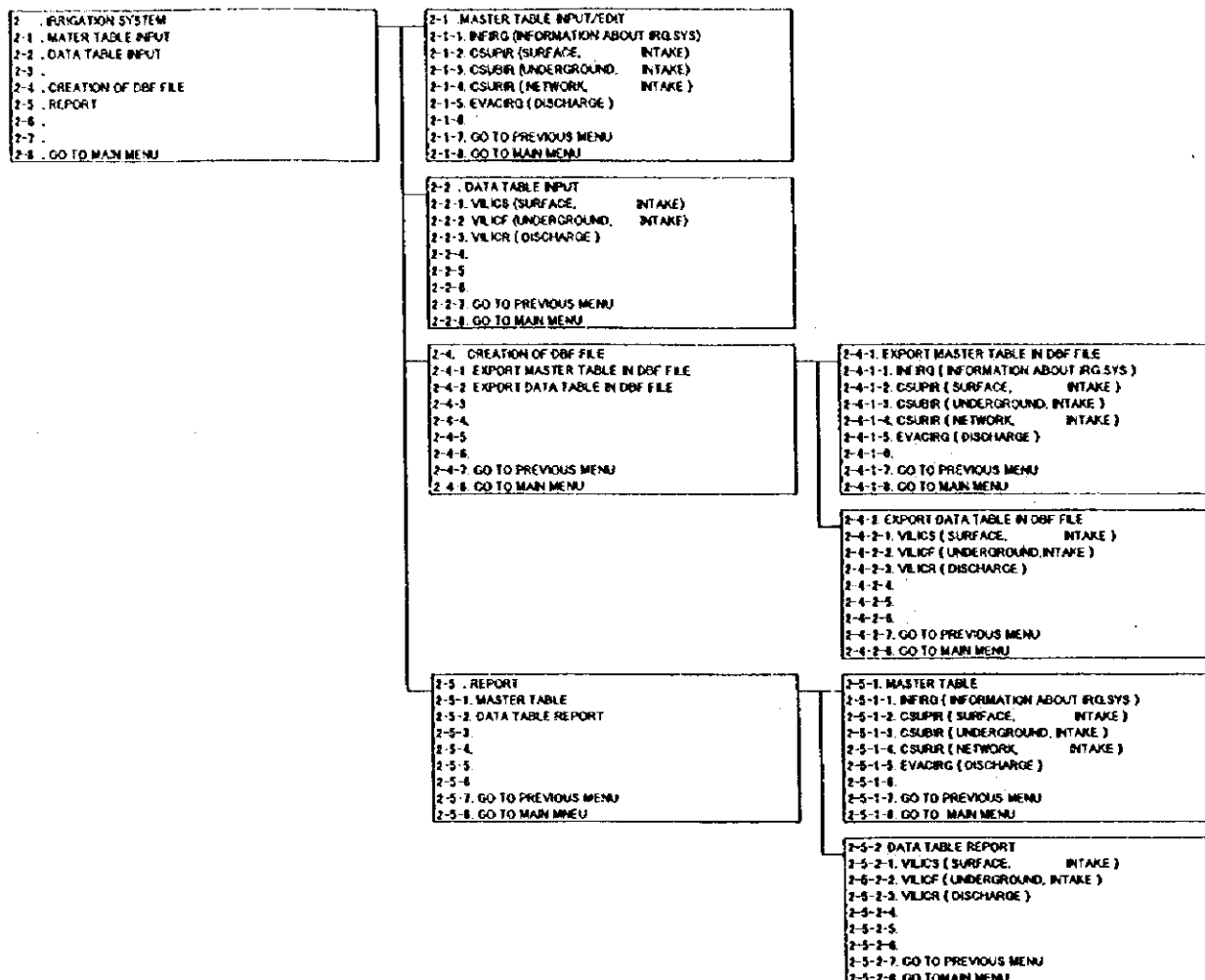
Fig. F.2.2 Main Menu for Water
Management Database



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JAPAN INTERNATIONAL COOPERATION AGENCY

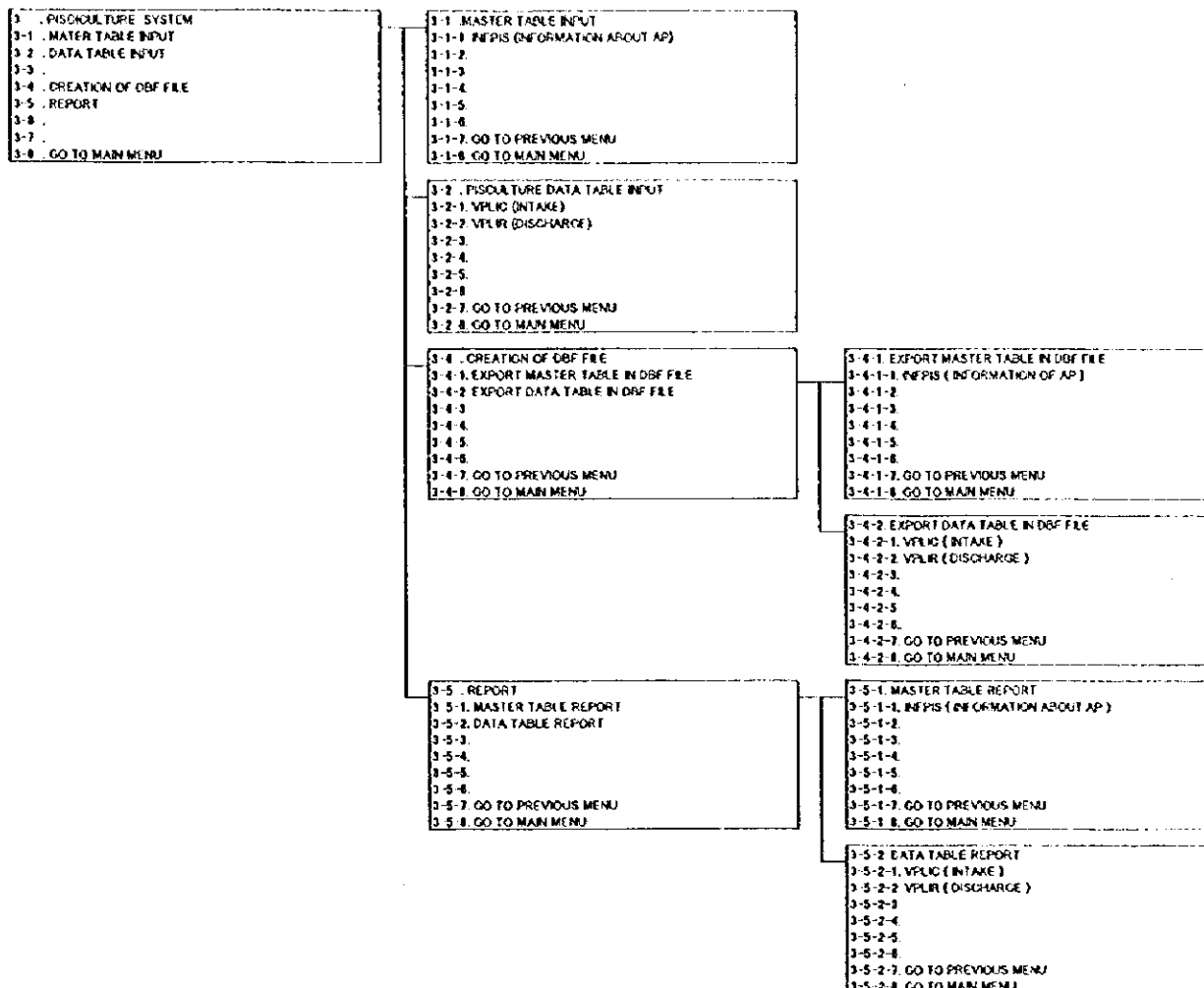
Fig. F.2.3 Menu for Water
Supply/Discharge



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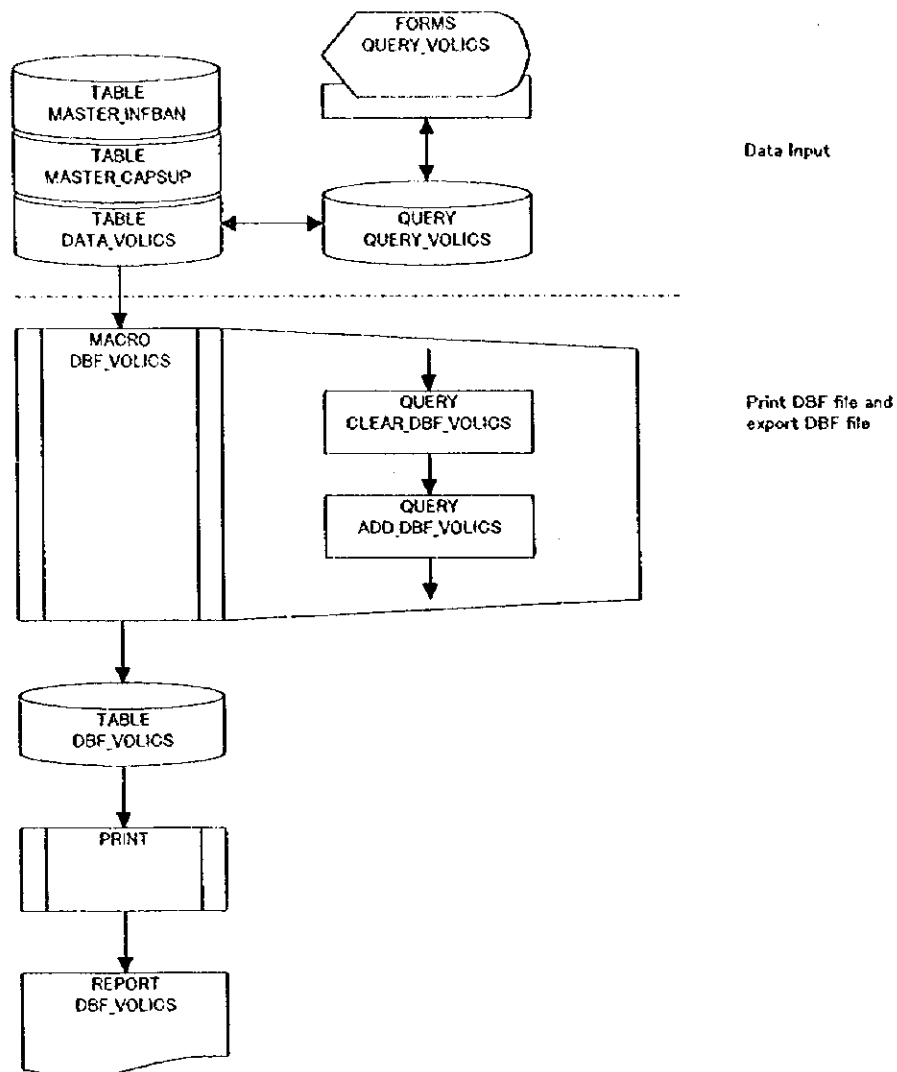
Fig. F.2.4 Menu for Irrigation System

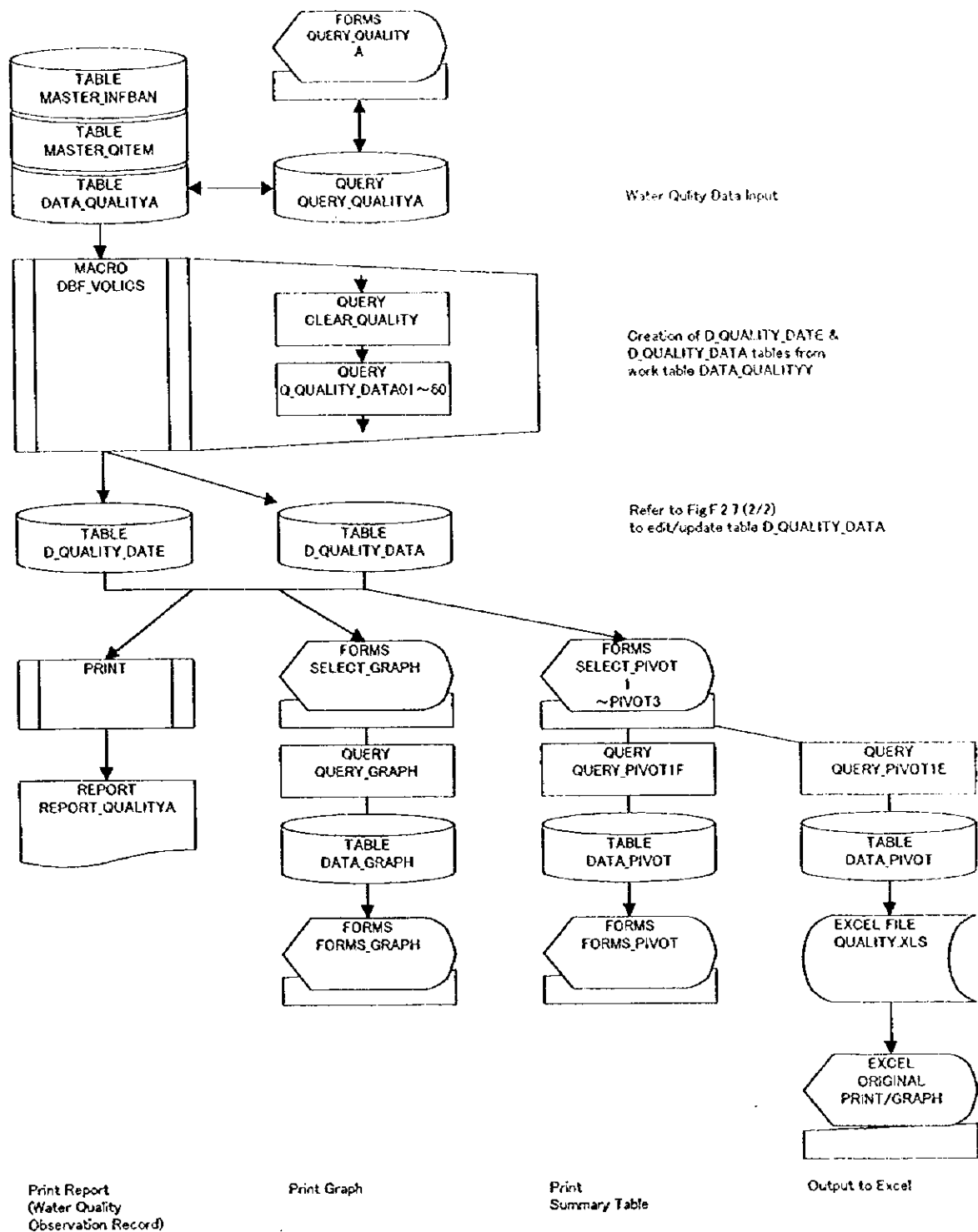


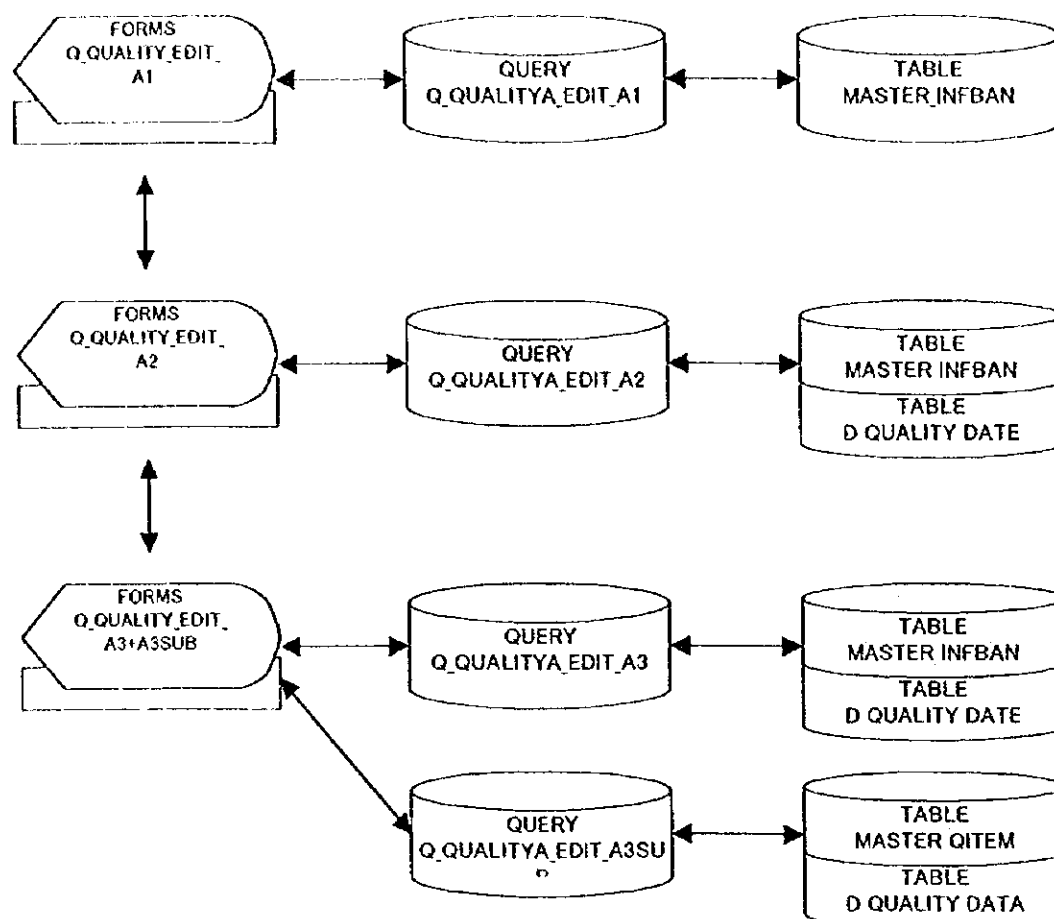
STUDY ON THE MASTER PLAN FOR
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Fig. F.2.5 Menu for Pisciculture System







Update/edit table D_QUALITY_DATA by forms Q_QUALITY_EDIT

WQ NO	WQ NAME	PARM	SURFACE WATER	SEWERAGE SYSTEM
1(1)	Debit	m ³ /h		
2(2)	Temp aerului	°C		
3(3)	Temp apei		30.000	40.000
4(4)	pH		8.500	8.500
5(5)	Conductivity	us/cm		
6(6)	Culoare			
7(7)	Transparența			
8(8)	Miros			
9(9)	alkalinity	ml HCL 0.1 n		
10(10)	acidity	ml NaOH		
11(11)	SS	mg/l	60.000	300.000
12(12)	CODMn	mg/l	40.000	1.000.000
13(13)	CCO-Cr	mg/l	70.000	500.000
14(14)	CBO5	mg/l	20.000	300.000
15(15)	DO(Oxygen dizolvat)	mg/l		
16(16)	Reziduu fix	mg/l		
17(17)	Amoniu	mg/l	2.000	30.000
18(18)	Azotiti	mg/l	1.000	
19(19)	Azotati	mg/l	25.000	
20(20)	Fostati	mg/l		
21(21)	Cloruri	mg/l		
22(22)	Sulfati	mg/l		400.000
23(23)	Clor rezidual	mg/l		
24(24)	Fenoli	mg/l	0.100	30.000
25(25)	detergents	mg/l		
26(26)	extracted substracts	mg/l		
27(27)	Sulfuri	mg/l		
28(28)	Fier total	mg/l		
29(29)	Mangan	mg/l	1.000	1.000
30(30)	Mercur	mg/l		
31(31)	Nichel	mg/l	0.100	1.000
32(32)	Crom	mg/l		
33(33)	Cupru	mg/l		
34(34)	Plumb	mg/l		
35(35)	Zinc	mg/l	0.500	1.000
36(36)	Cadmium	mg/l	0.100	0.100
37(37)	Cobalt	mg/l	1.000	
38(38)	Aluminiu	mg/l	8.000	
39(39)	Sodiu	mg/l		
40(40)	Potasiu	mg/l		
41(41)	Calciu	mg/l		
42(42)	Magneziu	mg/l	100.000	
43(43)	Bicarbonati	mg/l		
44(44)	Duritate totala	mg/l		
45(45)	Duritate temporara	mg/l		
46(46)	Duritate permanenta	mg/l		
47(47)	Fluoruri	mg/l		
48(48)	Clor rezidual liber	mg/l		
49(49)				
50(50)				
51(51)				
52(52)				
53(53)				
54(54)				
55(55)				
56(56)				
57(57)				
58(58)				
59(59)				
60(60)				

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Fig. F.2.8 Table MASTER_QITEM

D_QUALITY_DATE					
ANALYZE_NO	OFFICE_NO	I/O	I/O_NO	DATE	
1	4039	OUT	A	98/02/09	
2	4006	OUT	A	98/03/02	
3	4006	IN	A	97/07/10	
4	4006	IN	A	97/08/19	
5	4006	IN	A	97/10/13	
6	4006	OUT	A	93/08/24	
7	4006	OUT	A	93/11/04	
8	4006	OUT	A	94/11/09	
9	4006	OUT	A	95/03/23	
10	4006	OUT	A	95/05/22	
11	4006	OUT	A	95/08/21	
12	4006	OUT	A	95/09/18	
13	4006	OUT	A	95/11/14	
14	4006	OUT	A	96/01/10	
15	4006	OUT	A	96/02/19	
16	4006	OUT	A	96/03/12	
17	4006	OUT	A	96/04/22	
18	4006	OUT	A	96/05/14	
19	4006	OUT	A	96/06/19	
20	4006	OUT	A	96/07/11	

D_QUALITY_DATA			
ANALYZE_NO	QUALITY_NO	QUALITY_DATA	
1	4	7.95	
1	5	261	
1	11	117	
1	12	383	
1	14	394	
1	15	1301	
1	17	0567	
1	18	004	
1	19	1	
1	20	0.12	
2	4	7.84	
2	5	239	
2	11	49	
2	12	084	
2	14	1.07	
2	15	1388	
2	17	0953	
2	18	0	
2	19	0.2	
2	20	0.14	

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Fig. F. 2.9 Tables D_QUALITY_DATE
& D_QUALITY_DATA

Fig. F.2.10 Table DATA_QUALITYA

NRORJ	NRORJ2	In/Out	ANALIZA NR	DATE	(1) Debit	(2) Temp aerului	(3) Temp apei	(4) pH	(5) Conductiv
4004 A		OUT	1	02/09/1998				7.95	281
4004 A		OUT	2	03/02/1998				7.84	239
4006 A		IN	3	07/10/1997				6.94	400
4006 A		IN	4	08/19/1997				7.71	430
4006 A		IN	5	10/13/1997				8.92	390
4006 A		OUT	6	08/24/1993				7.2	940
4006 A		OUT	7	11/04/1993				6	430
4006 A		OUT	8	11/09/1994				7.43	450
4006 A		OUT	9	03/23/1995					
4006 A		OUT	10	05/22/1995				7.22	410
4006 A		OUT	11	08/21/1995				8.56	590
4006 A		OUT	12	09/18/1995				7.25	630
4006 A		OUT	13	11/14/1995				7.52	370
4006 A		OUT	14	01/10/1996				7.55	400
4006 A		OUT	15	02/19/1996				8.04	700
4006 A		OUT	16	03/12/1996				7.6	460
4006 A		OUT	17	04/22/1996				5.95	460
4006 A		OUT	18	05/14/1996				6.35	460
4006 A		OUT	19	06/19/1996				5.76	310
4006 A		OUT	20	07/11/1996				7.32	470
4006 A		OUT	21	09/12/1996				7.52	450
4006 A		OUT	22	08/24/1993				7.2	940
4006 A		OUT	23	11/04/1993				6	430
4006 A		OUT	24	11/09/1994				7.43	450
4006 A		OUT	25	03/23/1995					
4006 A		OUT	26	05/22/1995				7.22	410
4006 A		OUT	27	08/21/1995				8.56	590
4006 A		OUT	28	09/18/1995				7.25	630
4006 A		OUT	29	11/14/1995				7.52	370
4006 A		OUT	30	01/10/1996				7.55	400
4006 A		OUT	31	02/19/1996				8.04	700
4006 A		OUT	32	03/12/1996				7.6	460

QUERY_INFBAN

INFBAN INFORMATII GENERALE BENEFICIARI

NR STOCARE 4001 FOLOSINTA A.G.C.L MORENI
DETINATOR A.G.C.L MORENI
ADRESA
LOCALITATEA MORENI

PAGE 1 | PAGE 2 | PAGE 3

PREFIX NR_TEL NR_TEX NR_FAX
0 0 0 0

FT 41A1
SCOPUL UTILIZARII APEI A
SURSA R
COD SIRUES 0
AN PIF 0
GRUPA DE ACTIVITATI E1

PAGE 1 | PAGE 2 | PAGE 3

Record 14

GRAD DE RECIRCULARE INSTALAT(%) 8
CAPACITATE COMP.INTERNA NR 0
VOL TOTAL 0
GRAD ASIGURARE ALIM.FOL(%) 95
CLASA IMPORTANTA A.I.I 4

NR.CAPTARI
SUPRAFATA 0
SUBTERAN 1
RETEA 0
NR.RESTITUTII
SUPRAFATA 0
RETEA 0

PAGE 1 | PAGE 2 | PAGE 3

NECESAR TOTAL APA(MC/R) MAXIM MEDIU
CERINTA TOTAL APA(MC/R) 0 0

NR ANUL ELIBERATA
ACORD 0 0
AUTORIZATE 0 0
SH_00

INFRAN INFORMATI GENERALE BENEFICIARI				IND KEY	INPUT	EXIT
NR STOCARE	4001	FOLOSINTA	A.G.C.L.MOREN	4007	POSTAV AZUGA	
		DETINATOR	A.G.C.L.MOREN	4008	R.A.G.C.AZUGA	
		ADRESA		4009	STIAZ AZUGA	
		LOCALITATEA	MORENI	4010	SPITALUL AZUGA	
				4011	R.A.G.C.BUSTENI	
				4012	SANATORIUL T.B.C.BUSTENI	
				4014	HARTIA BUSTENI	
				4016	CERBUL SINAIA	
PAGE 1 PAGE 2 PAGE 3						
PREFX	NR_TEL	NR_TEX	NR_FAX			
	0	0	0	0		
FT		41A1				
SCOFUL UTILIZARI APEI		A				
SURSA		R				
COO SIRUES			0			
AN FIF			0			
GRUPA DE ACTIVITATI		E1				
PAGE 1 PAGE 2 PAGE 3						
GRAD DE RECIRCULARE INSTALAT(%)				0	NR CAPTARI	
CAPACITATE COMP.INTERNA NR				0	SUPRAFATA	0
VOL TOTAL				0	SUBTERAN	1
GRAD ASIORARE ALIM FOL(%)				95	RETEA	0
CLASA IMPORTANTA A II				4	NR RESTITUTII	
					SUPRAFATA	0
					RETEA	0
PAGE 1 PAGE 2 PAGE 3						
				MAGN	MEDIU	
NECESAR TOTAL APA(MC/R)				0	0	
CERINTA TOTAL APA(MC/R)				0	0	
				NR	ANUL	ELIBERATA
ACORD				0	0	
AUTORIZATIE				0	0	
SH_00						

ES QUERY VOLICF

VOLICS VOLUME LUNARE CAPTARI SUBTERM					FIND KEY	DATE	INPUT	EXIT
NR STACARE	4004	BENEFICIAR	S.C. SINTERREF S.A.		4004	1	96	SINTERREF AZUGA
NR CAP	1	FILIALA	SINTERREF AZUGA		4006	1	96	BERE AZUGA
SIRUES	LOC	AZUGA		4006	2	96	BERE AZUGA	
ANUL	777803	DENAPA	AZUGA		4007	1	96	POSTAV AZUGA
96 POP	IND	ZOO	TOT		4008	1	96	STIAZ AZUGA
IAN	0	8000	0	8000	4014	1	96	HARTIA BUSTENI
FEB	0	8000	0	8000	4014	2	96	HARTIA BUSTENI
MAR	0	8000	0	8000				
APR	0	6000	0	6000				365
MAI	0	6000	0	6000				
IUN	0	4000	0	4000				24
IUL	0	6000	0	6000				
AUG	0	6000	0	6000				
SEP	0	7000	0	7000				
OCT	0	6000	0	6000				
NOI	0	7000	0	7000				
DEC	0	6000	0	6000				
TOT	0	78000	0	78000				
DEBIT	0.00	2.47	0.00	2.47				
OBS								

Record 14

ES QUERY QUALITYA

QUALITY DATA INPUT

COD SIR: 827802

INPUT NEXT DATA RECORD

EXIT

NR STOCARE: 4004

ANALIZA NR: 0

DATE:

FOLOSINTA: BERE AZUGA

DETERMINATOR: S.C. BERE S.A. AZUGA

INPUT:

NR OFCZ:

PAGE: PAGE 1

(1) Temp	(16) Conductivity
(2) Temp - wind	(17) Salinity
(3) Temp - water	(18) pH
(4) pH	(19) Dissolved oxygen
(5) Conductivity	(20) Turbidity
(6) Salinity	(21) Chlorophyll
(7) Turbidity	(22) Secchi
(8) Nitrate	(23) Chlorophyll
(9) Nitrite	(24) Chlorophyll
(10) Ammonia	(25) Chlorophyll
(11) SS	(26) Suspended solids
(12) CODMn	(27) BOD5
(13) BOD5	(28) Fecal coliform
(14) BOD5	(29) Faecal coliform
(15) BOD5	(30) Faecal coliform

Record 14

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Fig. F. 2.12 Form QUERY_VOLICF
And QUERY_QUALITYA

VOLIC & VOLUME LUNARE CAPTARI SUBTERM				FINI KEY	INPUT	EXIT
NR STOCARE	4004	BENEFICIAR	S.C. SINTERREF S.A.	4004	1	96
NR CAP	1	FILIALA	SINTERREF AZUGA	4006	1	96
SIRUES	LOC	AZUGA	4006	2	96	BERE AZUGA
ANUL	77603	DENAPA	AZUGA	4007	1	96
96 POP	IND	ZOO	AZUGA	4009	1	96
IAN	0	8000	0	8000	4014	1
FEB	0	8000	0	8000	4014	2
MAR	0	8000	0	8000		
APR	0	8000	0	8000		
MAI	0	8000	0	8000		
IUN	0	4000	0	4000		
IUL	0	6000	0	6000		
AUG	0	6000	0	6000		
SEP	0	7000	0	7000		
OCT	0	8000	0	8000		
NOI	0	7000	0	7000		
DEC	0	6000	0	6000		
TOT	0	78000	0	78000		
DEBIT	0.00	2.47	0.00	2.47		
OBS						

Record 14 | 1 | 1 | 1 | 1

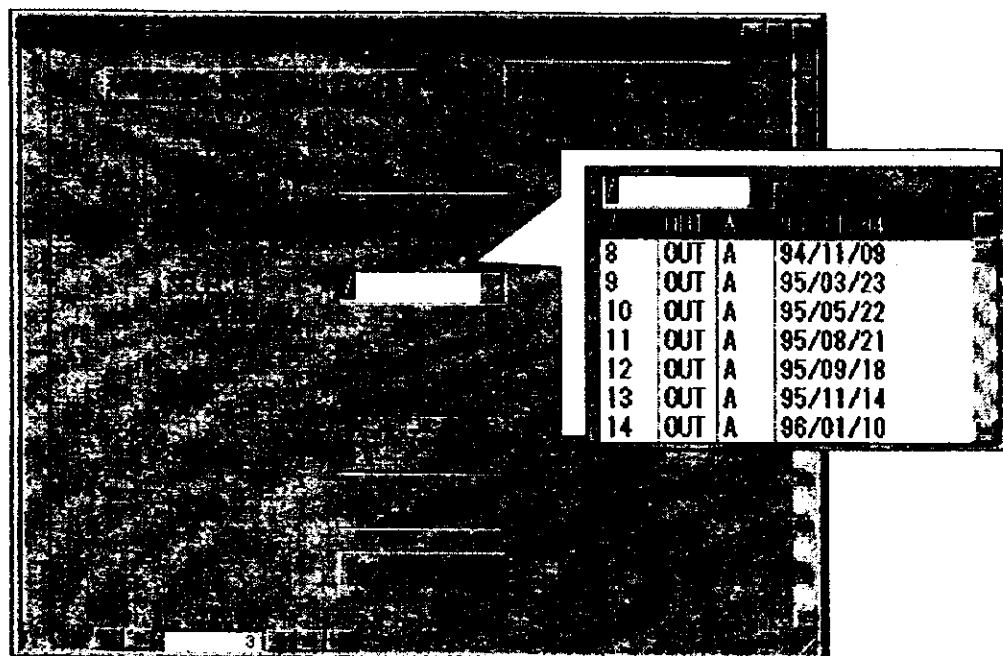
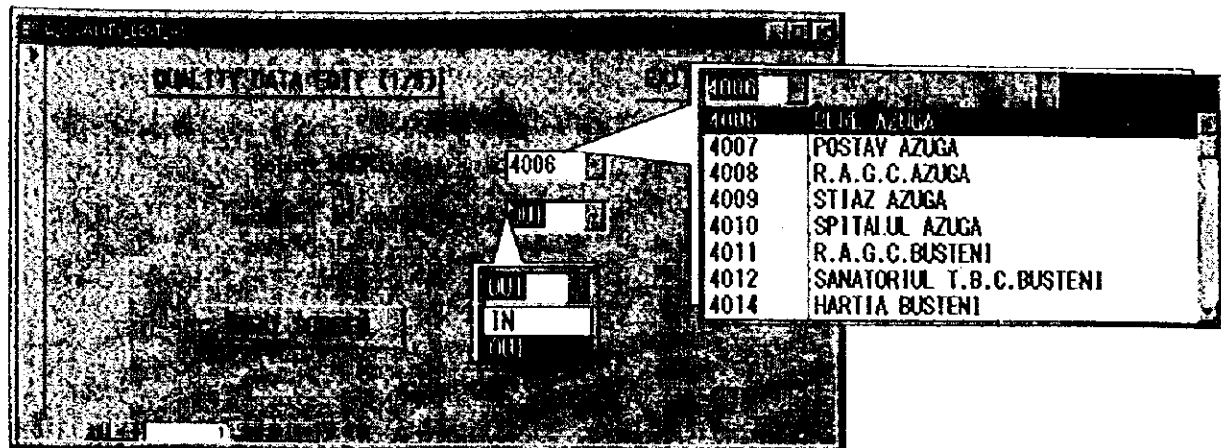
QUALITY DATA INPUT		COD. SIR.	INPUT NEXT DATA RECORD	EXIT
		837867		
NR STOCARE	4006	FOLOSINTA	BERE AZUGA	
ANALIZA NR	0	DETINATOR	S.C. BERE S.A. AZUGA	
DATE		INVCUI	NRORJ2	
PAGE 1	PAGE 2			
(1) Debit (2) Temp aerului (3) Temp apai (4) pH (5) Conductivity (6) Culoare (7) Transparență (8) Miros (9) Alkalinity (10) Acidity (11) SS (12) CODMn (13) CCOCr (14) CBOD5 (15) DO (Oxygen dizotrat)		(16) Reziduu fix (17) Amoniu (18) Azotit (19) Azotat (20) Fosfat (21) Cloruri (22) Sulfat (23) Clor Rezidual (24) Fenoli (25) Detergenți (26) Substanțe extractibile (27) Sulfur (28) Fier total (29) Mangan (30) Mercur		

Record 14 | 1 | 1 | 1 | 1

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Fig. F. 2.12 Form QUERY_VOLICF
And QUERY_QUALITYA



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Fig. F. 2.13 Q_QUALITY_EDIT (1/2)

QUALITY DATA EDIT (1/3)

Select WQRI: 4006

Select IN or OUT: IN

4006

4007 POSTAV AZUGA

4008 R.A.G.C.AZUGA

4009 STIAZ AZUGA

4010 SPITALUL AZUGA

4011 R.A.G.C.BUSTENI

4012 SANATORIUL T.B.C.BUSTENI

4014 HARLIA BUSTENI

NEXT SCREEN

QUALITY DATA EDIT (2/3)

PREVIOUS SCREEN

WQRI: 4006

DENOMIN: BERE AZUGA

SELECT ANALYZE NO: 7

1/0: OUT

1/0 NO: A

DATE: 93/11/04

NEXT SCREEN

7	OUT A	93/11/04
8	OUT A	94/11/09
9	OUT A	95/03/23
10	OUT A	95/05/22
11	OUT A	95/08/21
12	OUT A	95/09/18
13	OUT A	95/11/14
14	OUT A	96/01/10

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Fig. E.2.13 Q_QUALITY_EDIT (1/2)

QUALITY DATA EDIT (3/3) PREVIOUS SCREEN

ANALYZE_NO 7 OFFICE_NO 4008
 DATE 93/11/04 DEN_OBIEC BERE AZUGA
 I/O_NO A I/O OUT

No	NAME	CONC.	UNIT
1	Ph	6	
5	Conductivity	430	us/cm
11	SS	184	mg/l
12	COOMh	21.74	mg/l
14	CB05	67.94	mg/l
16	Residu fix	324	mg/l
17	Amoniu	1.6	mg/l

Note:
 1) You can change Conc.
 2) You can change Parameter by changing Parameter No. without changing concentration.
 3) You can add new Parameter and its concentration in the last line with "

14/11/93 11:11:11 / 8

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Fig. F. 2.13 Q_QUALITY_EDIT (2/2)

QUALITY DATA EDIT (3/3) | PREVIOUS SCREEN

ANALYZE_NO 7 OFFICE_NO 4006
DATE 03/11/04 DEN_ORIED BERE AZUGA
I/O_NO A I/O OUT

No	NAME	CONC.	UNIT
1	pH		
2	Conductivity	400	us/cm
3	SS	10	mg/l
4	DO(Mn)	20.0	mg/l
5	DO(S)	10.0	mg/l
6	Residual Cl ₂	10	mg/l
7	Residual	10	mg/l

Note
1) You can change Unit
2) You can change
Parameter by screen
3) You can change
Parameter by unit
4) You can change
Parameter by unit
5) You can change
Parameter by unit

Fig. E.2.13 Q_QUALITY_EDIT (2/2)

SELECT_GRAPH

SELECT QUALITY DATA (GRAPHIC)

NRSTOCARE:
 IN/OUT:
 NR:
 WQ_NO:
 START ANN:
 END ANN:

NRSTOCARE

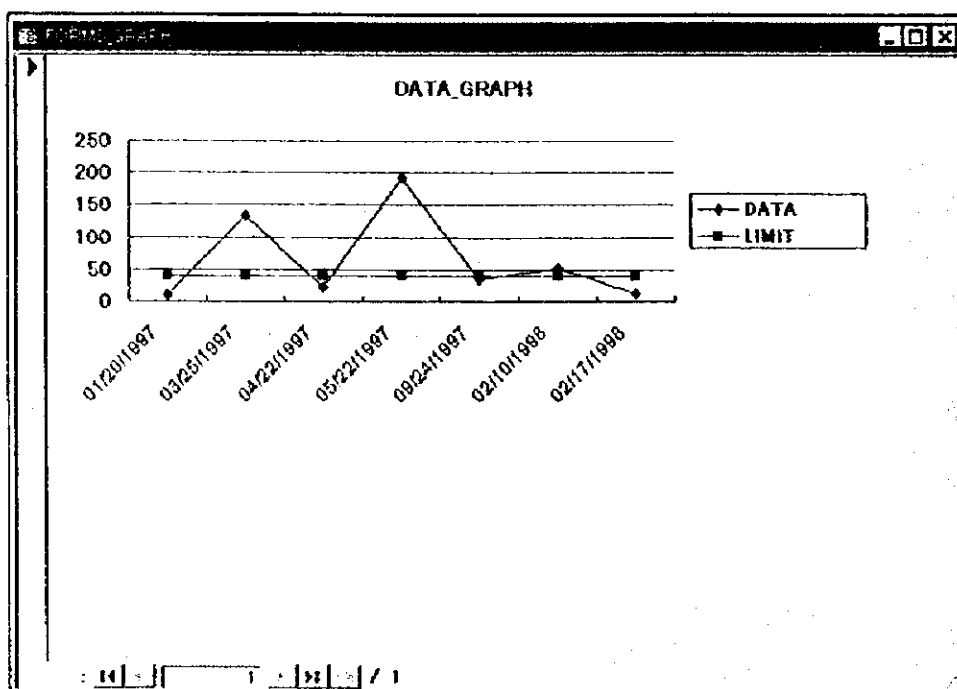
4006	BERE AZUGA
4007	POSTAV AZUGA
4008	RAGC AZUGA
4009	STIAZ AZUGA
4010	STIAZ AZUGA
4011	RAGC BUSTENI
4012	SANATORIUL T.B.C BUSTENI
4014	HARTIA BUSTENI

WQ_NO

13	(13) COO-Cr
14	(14) CB05
15	(15) DO(Oxygen dissolved)

DATA_GRAPH

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



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Fig. F. 2.14 Form SELECT_GRAPH

SELECT PIVOT1

NRSTOCARE

SELECT QUALITY DATA (GENERAL LIST:

NRORJ 4006

WQ_NO 11

START Y 01/01/90

END Y 12/31/99

WQ_NO 00

4006 BERE AZUGA
4007 POSTAV AZUGA
4008 RAGCAZUGA
4009 STIAZ AZUGA
4010 SPITALUL AZUGA
4011 RAGCBUSTENI
4012 SANATORIUL TBCBUSTENI
4014 HARTIA BUSTENI

11 (11) CDM
12 (12) CDM
13 (13) CDM
14 (14) CDM

MS Sans Serif 10

Ready

MS Sans Serif 10

	A	B	C	D	E	F	G	H	I	J	K
1	NRORJ	4006									
2	DEN_OBI	BERE AZUGA									
3											
4											
5	NRORJ2	WQ_NO	Date	(11) SS	Grand Total						
6	A	OUT	Count	40	40						
7			Average	135.425	135.425						
8			Max	308	308						
9			Min	21	21						
10	A Count			40	40						
11	A Average			135.425	135.425						
12	A Max			308	308						
13	A Min			21	21						
14	Total Count			40	40						
15	Total Average			135.425	135.425						
16	Total Max			308	308						
17	Total Min			21	21						
18											
19											
20											
21											
22											
23											
24											
25											
26											

Ready

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Fig. F. 2.15 Form SELECT_PIVOT1

	A	B	C	D	E	F	G	H
1	DEN OBEC	EERE AZUGA						
2								
3				QUALITY NAME				
4	IN/OUT	NRORJ2		(4) pH	(5) Conductivity	(9) alkality	(10) acidity	(11) SS
5	IN	A	RECORD	24	1220	12	1	692
6			MEAN	7.857	406.667	4.133	0.467	230.667
7			MAX	8.920	430.000	4.800	1.000	408.000
8			MIN	6.940	390.000	3.800	0.200	129.000
9			WRONG	1	0	0	0	3
10	IN RECORD			24	1220	12	1	692
11	IN MEAN			7.857	406.667	4.133	0.467	230.667
12	IN MAX			8.920	430.000	4.800	1.000	408.000
13	IN MIN			6.940	390.000	3.800	0.200	129.000
14	IN WRONG			1	0	0	0	3
15	OUT	A	RECORD	273	18068	134	17	5417
16			MEAN	7.193	475.474	3.929	0.488	135.425
17			MAX	8.560	940.000	6.400	1.600	308.000
18			MIN	5.760	240.000	2.200	0.000	21.000
19			WRONG	2	0	0	0	37
20	OUT RECORD			273	18068	134	17	5417
21	OUT MEAN			7.193	475.474	3.929	0.488	135.425
22	OUT MAX			8.560	940.000	6.400	1.600	308.000
23	OUT MIN			5.760	240.000	2.200	0.000	21.000
24	OUT WRONG			2	0	0	0	37

SELECT QUALITY DATA (GENERAL LIST: EXCEL PIVOT)

START Y

END Y

	A	B	C	D	E	F	G	H
1	DEN OBEC	BERE AZUGA						
2								
3			QUALITY NAME					
4	IN/OUT	NRORJ2		(4) pH	(5) Conductivity	(9) alkality	(10) acidity	(11) SS
5	IN	A	RECORD	3	3	3	3	3
6			MEAN	7.857	406.667	4.133	0.467	230.667
7			MAX	8.920	430.000	4.800	1.000	408.000
8			MIN	6.940	390.000	3.800	0.200	129.000
9			WRONG	1	0	0	0	3
10	IN RECORD			3	3	3	3	3
11	IN MEAN			7.857	406.667	4.133	0.467	230.667
12	IN MAX			8.920	430.000	4.800	1.000	408.000
13	IN MIN			6.940	390.000	3.800	0.200	129.000
14	IN WRONG			1	0	0	0	3
15	OUT	A	RECORD	33	33	34	34	40
16			MEAN	7.193	475.474	3.929	0.488	135.425
17			MAX	8.560	940.000	6.400	1.600	308.000
18			MIN	5.760	240.000	2.200	0.000	21.000
19			WRONG	2	0	0	0	37
20	OUT RECORD			33	33	34	34	40
21	OUT MEAN			7.193	475.474	3.929	0.488	135.425
22	OUT MAX			8.560	940.000	6.400	1.600	308.000
23	OUT MIN			5.760	240.000	2.200	0.000	21.000
24	OUT WRONG			2	0	0	0	37
14	M (ATLAS GIP FLORESTI) (AUTOBAZA-TELEAJEN) BERE AZUGA (CAMEX) (4)							

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F-F24

DBF_INFBAN

NR STOCARE	4002		FOLOSINTA	MINA FILIPESTII DE PADURE		
			DETINATOR	EXP.MINIERA FILIPESTI		
			ADRESA	STR.VALEA REA NR.1		
LOCALITATEA	JUDETUL	FT	SCOP	SURSA		
FILIP. DE PADURE	PH	10	I	R		
PREFIX	NR_TEL	NR_TEX	NR_FAX	COD_SIR	AN_FUC	GRUPA AC
0	0	0	0	774605	0	11
BAZIN HIDROGRAFIC			IALOMITA		NR.CAPTARI	
GRAD DE RECIRCULARE INSTALAT(%)			0		SUPRAFATA 0	
CAPACITATE COMP.INTERNA NR			2		SUBTERAN 0	
GRAD ASIGURARE ALIM.FOL(%)			0		NR.RESTITUTII	
CLASA IMPORTANTA A.II			0		SUPRAFATA 1	
					RETEA 0	
			MAXIM	MEDIU		
NECESAR TOTAL APA(MC/RI)			992	862		
CERINTA TOTAL APA(MC/RI)			1044	1044	ELIBERATA	
ACORD			NR	233	ANUL	68 C.S.A.BUCURESTI
AUTORIZATIE				306	94	A.R.-R.A.PLOIESTI
SH_OB						

NR STOCARE	4003		FOLOSINTA	SPITALUL FILIP.TG.		
			DETINATOR	SPITALUL FILIPESTII DE TARG		
			ADRESA			
LOCALITATEA	JUDETUL	FT	SCOP	SURSA		
FILIPESTII DE TG.	PH	85	P	F		
PREFIX	NR_TEL	NR_TEX	NR_FAX	COD_SIR	AN_FUC	GRUPA AC
0	0	0	0	644819	0	S8
BAZIN HIDROGRAFIC			IALOMITA		NR.CAPTARI	
GRAD DE RECIRCULARE INSTALAT(%)			0		SUPRAFATA 0	
CAPACITATE COMP.INTERNA NR			0		SUBTERAN 1	
GRAD ASIGURARE ALIM.FOL(%)			95		NR.RESTITUTII	
CLASA IMPORTANTA A.II			4		SUPRAFATA 0	
					RETEA 0	
			MAXIM	MEDIU		
NECESAR TOTAL APA(MC/RI)			0	0		
CERINTA TOTAL APA(MC/RI)			0	0	ELIBERATA	
ACORD			NR	0	ANUL	0
AUTORIZATIE				0	0	
SH_OB						

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Fig. F. 2.19 Report DBF_INFBAN

DBF_VOLICF

NR STACARE	4003 FILIALA		SPITALUL FILIP.TG.	
NR CAP	1 ANUL		96	
	POP	IND	ZOO	TOT
IAN	0	21000	0	21000
FEB	0	21000	0	21000
MAR	0	19000	0	19000
APR	0	23000	0	23000
MAI	0	23000	0	23000
IUN	0	32000	0	32000
IUL	0	21000	0	21000
AUG	0	21000	0	21000
SEP	0	16000	0	16000
OCT	0	21000	0	21000
NOI	0	21000	0	21000
DEC	0	19000	0	19000
TOT	0	258000	0	258000
DEBIT	0.00	8.18	0.00	8.18
OBS				

NR.ZILE FUNC.INRG./AN 365

NR.MED.ORE FUNC./ZI 24

EVALUAREA VALORILOR INREGISTRATE E

DEBITUL MAX.ZILNIC INREGISTRATE 0.30

NR STACARE	4003 FILIALA		SPITALUL FILIP.TG.	
NR CAP	1 ANUL		97	
	POP	IND	ZOO	TOT
IAN				
FEB				
MAR				
APR				
MAI				
IUN				
IUL				
AUG				
SEP				
OCT				
NOI				
DEC				
TOT				
DEBIT				
OBS				

NR.ZILE FUNC.INRG./AN 365

NR.MED.ORE FUNC./ZI 24

EVALUAREA VALORILOR INREGISTRATE □

DEBITUL MAX.ZILNIC INREGISTRATE

STUDY ON THE MASTER PLAN FOR
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Fig. F. 2.20 Report DBF_VOLICF

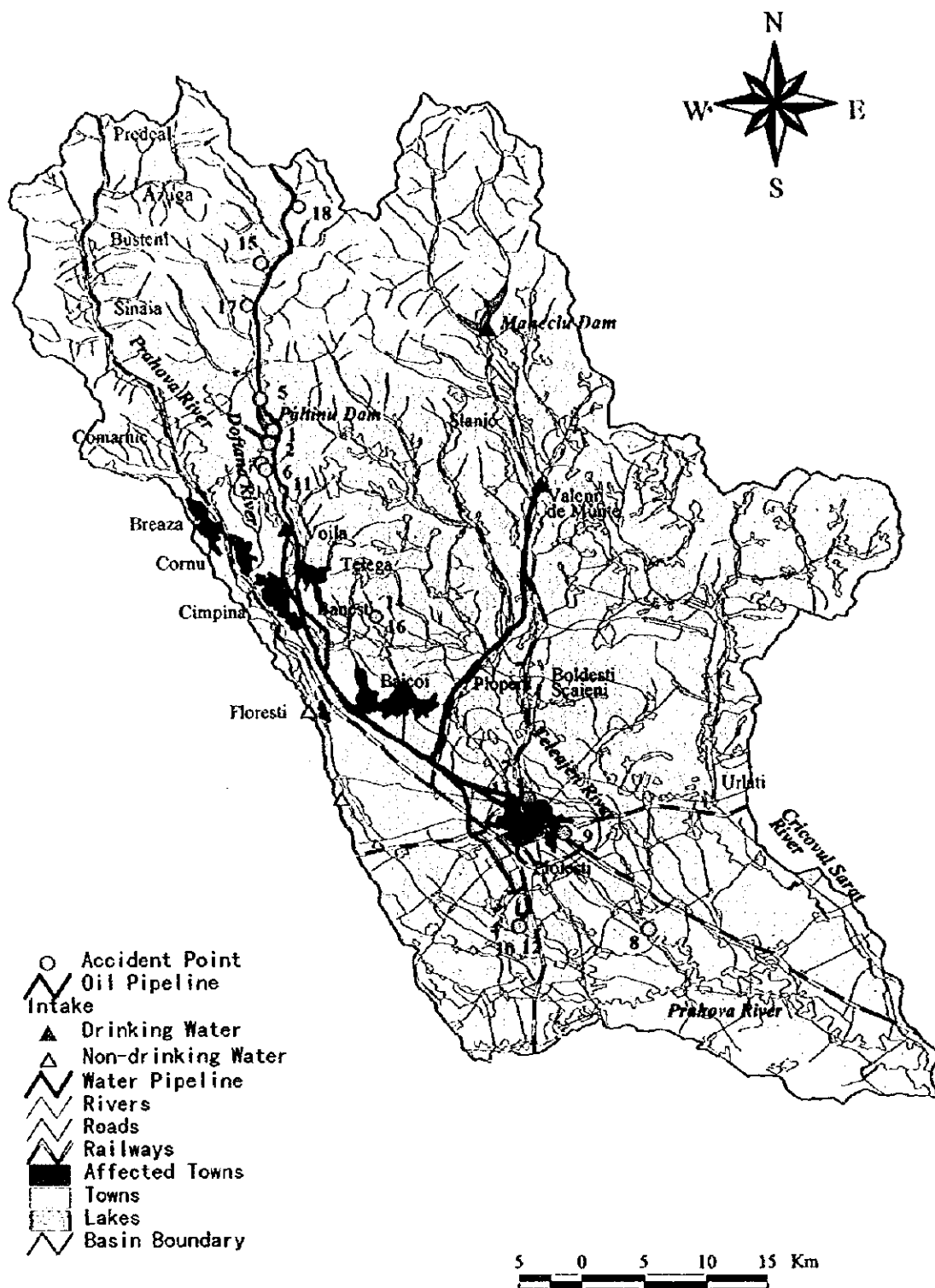
Water Quality Observation Record

NRORJ	4010	DEN OBIEC	SPITALUL AZUGA	
NRORJ2	A	In/Out	OUT	ANALIZA NR
DATE	01/20/1997			94
<hr/>				
(1) Debit		(21) Cloruri	(41) Calciu	
(2) Temp aerului		(22) Sulfati	(42) Magneziu	
(3) Temp apei		(23) Clor Rezidual	(43) Bicarbonati	
(4) pH	7.65	(24) Fenoli	(44) Duritate totala	
(5) Conductivity	570	(25) Detergents	(45) Duritate temporara	
(6) Culoare		(26) Substante extractibile	(46) Duritate permanenta	
(7) Transparenta		(27) Sulfuri	(47) Fluoruri	
(8) Miros		(28) Fier total	(48) Clor rezidual liber	
(9) Alkalinity		(29) Mangan	(49)	
(10) Acidity		(30) Mercur	(50)	
(11) SS	109	(31) Nichel	(51)	
(12) CODMn	10.12	(32) Crom	(52)	
(13) CCO-Cr		(33) Cupru	(53)	
(14) CBO5	14.98	(34) Plumb	(54)	
(15) DO(Oxygen dizolvat)		(35) Zinc	(55)	
(16) Reziduu fix	342	(36) Cadmiu	(56)	
(17) Amoniu		(37) Cobalt	(57)	
(18) Azototo	0.02	(38) Aluminiu	(58)	
(19) Azotati		(39) Sodiu	(59)	
(20) Fosfati	3.03	(40) Potasiu	(60)	

STUDY ON THE MASTER PLAN FOR
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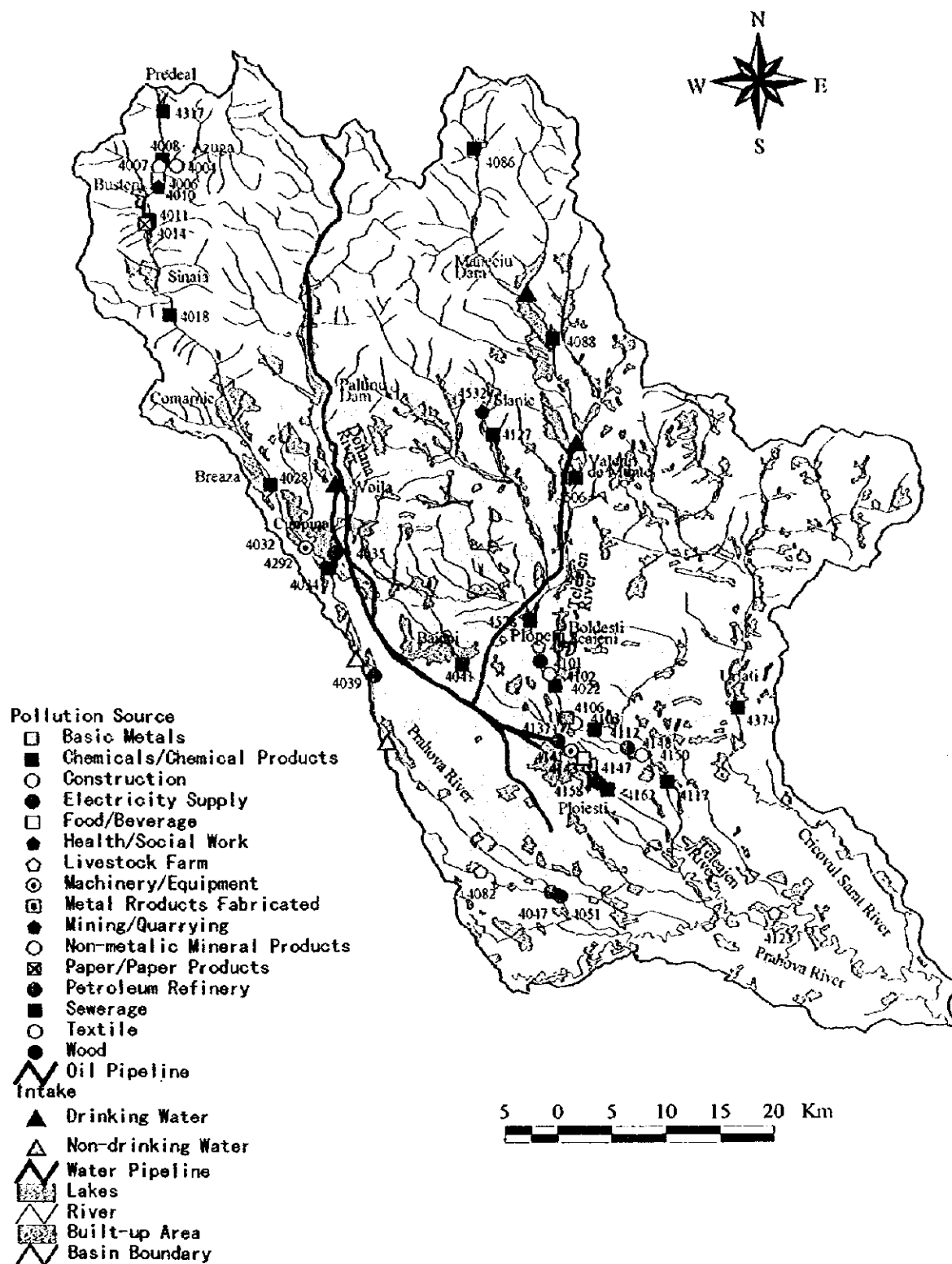
Fig. F. 2.21 Report WATER QUALITY
DATA RECORD



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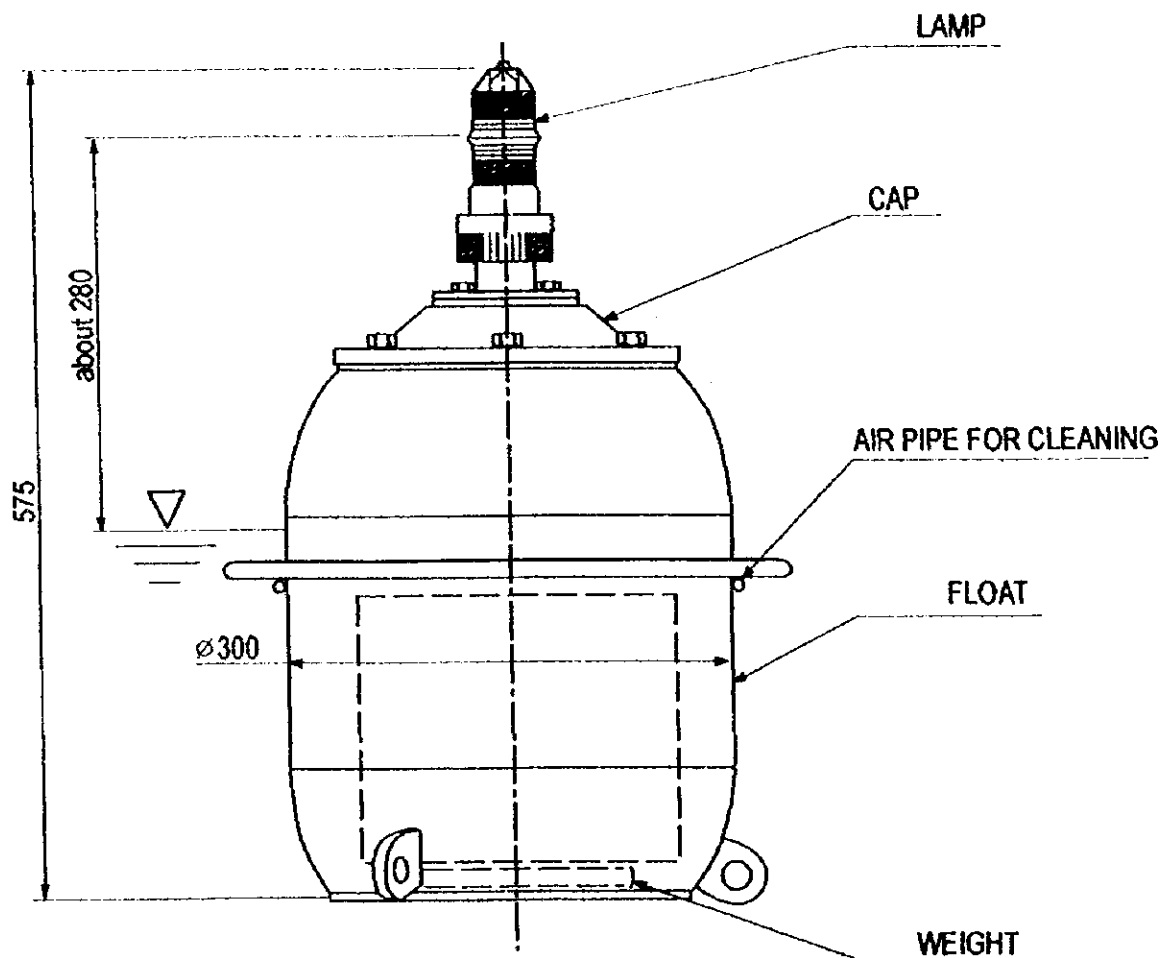
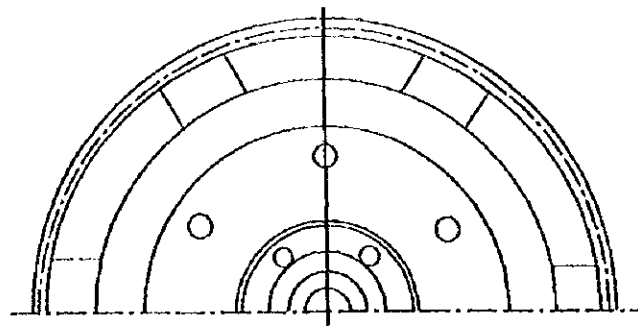
Fig. F.3.1 Past Accidental Pollution Map



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**Fig. F.3.2 Location of Industrial/
Agricultural Establishment
and Sewerage**



TOTAL WEIGHT : about 18 kg (including it's loading weight 7kg)

TOTAL BUOYANCY : about 235N

MAIN MATERIALS

FLOAT : Aluminium alloy

CAP : Juracon

FLOAT RESISTING PRESSURE : external pressure 0.49MPa

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Fig. F3.3 Oil Detector

APPENDIX G

LEGAL AND INSTITUTIONAL ASPECTS

APPENDIX G

LEGAL AND INSTITUTIONAL ASPECTS

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CHAPTER I POLICY ISSUES

1.1 Water Management Policy

Recognizing that water is a regenerable but vulnerable and limited natural resource of an economic value, as well as an important component of the environment, the Water Law stipulates general principles of water management strategy as its objectives. The following are the principles stipulated in such a manner:

- (1) Conservation, development and protection of water resources
- (2) Protection against pollution and characteristics modification of water resources
- (3) Restoration and maintaining of chemical, physical, and biological integrity of water resources
- (4) Conservation and protection of the aquatic ecosystems
- (5) Ensuring of drinking water supply to the population, and of public sanitation
- (6) Complex valuation of waters as an economic resource and the rational and balanced distribution, along with the maintenance and amelioration of quality and natural productivity
- (7) Prevention and control of floods and other hydrometeorological phenomena
- (8) Ensuring of requirements for agriculture, industry, power generation, navigation, pisciculture, tourism, recreation and nautical sports, as well as any other human activities

In order to achieve these, the water management strategy aims at the rational management of water resources and the protection against extinction and pollution, in accordance with the environmental protection strategies and policy. Targets in the achievement are:

- Pollution abatement in water courses
- Meeting the population water demands
- Rational use of water resources to avoid loss and waste
- Prevention of destructive effects of water
- Observation on phased plans

The Water Law provides for an unified, rational and complex water management activity to be organized. The water management shall be carried out on river basins as indivisible geographical entities, and shall cover the surface and ground waters, not only from quantity but from quality point of view, for the purpose of ensuring the sustainable development.

1.2 Environmental Protection Policy

The following general principles have been adopted for the elaboration of the environmental protection strategy:

(1) Preservation and improvement of people's health

This is the main principle subordinating the entire economic and social activity and the whole environmental protection strategy. Pollution prevention measures shall be applied by introducing certain "clean" technologies in all the fields of activity.

(2) Long lasting development

This means the maintenance of the living possibilities and conditions for the generations to come; specifically the preservation of regenerable natural resources for the present generation, as well as the improvement of environmental factors affected by pollution.

(3) Pollution avoidance by warning

Pollution prevention is easier and less expensive than repairing the damages; i.e. rehabilitation of environmental balance. Non-polluting technologies shall be applied in all the field of activity subject to development.

(4) Conservation of biodiversity

This focuses on the elimination of the polluting agents and the maintenance of the ecosystem, of their operational capacity, of their stability and resistance to maladjustments, as well as of their productivity and adoptive capacity.

(5) Preservation of the inherited cultural and historical assets

Numerous monuments belonging to the history of the Romanian people shall be protected from environmental pollution, especially that of the air.

(6) "The polluter has to pay"

All the pollution costs and those entrained by environmental rehabilitation shall be borne by the polluter.

(7) Stimulation of environmental rehabilitation activities

Any activity of the economic unit resulting in improvement of environmental factors' quality will have to be encouraged and stimulated, through subsidies, low-interest credits, loan guarantees, etc.

For the establishment of priorities on actions to be taken for environmental rehabilitation and protection, the following criteria were adopted in Romania:

- Maintenance and improvement of the population's health and of life quality
- Preservation and improvement of the natures' existing potential
- Protection against natural calamities and accidents
- Connection to the provisions of international conventions and to international environmental protection programmes
- Preparation for Romania's joining the European Union (EU)

The environmental protection strategies call for the National Environmental Action Programme (NEAP) that involves concrete objectives and targets, expressed in terms of time, space and costs. The strategies also imply the cooperation of the Ministry of Waters, Forests and

Environmental Protection (MWFEP) with other ministries, local authorities, non-governmental organizations, and with the population as well as with the international bodies. At the moment, the NEAP sets forth 117 priority projects for the short-term, in the environmental protection field.

CHAPTER II LEGISLATIVE FRAMEWORK

2.1 General

In the field of water management, a number of legislations have been promulgated to provide for the legislative framework, starting in the 1920's. To meet the new outlook of socio-economic conditions after 1989, these have been replaced with the new legislations. The fundamental law relating to water management is the Water Law (Law 107/1996) issued and published in 1996.

In the field of environmental protection, the Environmental Protection Law (Law 137/1995) gives a general framework.

Under these two fundamental Laws, subordinate legislations have been updated, in the form of Government Decisions or MWFEP Orders, of which classified are:

- (1) Legislations providing for organization and functions of the government entities; in this case, MWFEP, "Romanian Waters" and the Agency for Environmental Protection
- (2) Legislations providing for regulatory procedures

Prior to the promulgation of the Water Law, however, the Government Decision HG 1001/1990 has been in force, and still effective up to until now. It provides for the unitary payment system of water management products and services, administered by the Self-managed Public Company "Romanian Waters". The Water Law has wholly taken the concepts of HG 1001/1990 into its provisions, as a tool of stimulating the quantitative and qualitative water management under the economic mechanism. Subordinate legislations followed-up HG 1001/1990, having been still effective as well.

Besides, in November 1997, Romanian Standard NTPA-001 was approved by the Government Decision HG 730/1997. It stipulates the effluent limits of pollutants in wastewater discharge into surface water bodies. Simultaneously, MWFEP Order 645/1997 came into force, providing for Romanian Standard NTPA-002 regarding those limits into the sewerage systems.

The legislations related to the Project are listed in Table G.2.1. It should be borne in mind that the two fundamental Laws have established the basis of the current administrative intervention system in respect of both water management and environmental protection.

2.2 The Water Law

The Water Law aims at conservation, development and protection of water resources by applying an unified, rational and complex water management in the respective river basins. So as to effectuate this primary objective, 112 articles are provided for in 7 chapters in the Law. Table G.2.2 summarizes the stipulations of the Law. Hereafter outlined are the significant provisions of the Water Law, categorized by the subject matters, mostly those closely related to the Project.

- (1) General Provisions
 - (a) Objectives and major concerns of the Law

The enumerations of the objectives of the Law might be interpreted as those constituting the water management strategy, which has already been mentioned in CHAPTER I (1.1 Water Management Policy). The major concerns of the Law are: (1) water use right and duties, (2) waters, their banks and beds, and (3) works built on or related to waters.

(b) Public ownership of water

The surface waters, their minor beds of more than 5 km in length, river basins larger than 10 km², the banks and basins of the lake; ground waters; the inland marine waters; the sea beach and the cliff; and the territorial sea and the marine water beds, shall be owned by the public. Others belong to the land-title holders.

(c) Jurisdictions in water use regulation

The establishment of water use regulation is an exclusive right of the Government, to be exerted through MWFEP, except for geothermal waters. The public-owned waters shall be administered by "Romanian Waters". Navigation and its related activities are under the regulations of the Ministry of Transports.

(d) Jurisdictions relating to water management

The MWFEP shall carry out the elaboration of the national water management strategy and policy, and shall ensure the coordination and control in applying the internal and international regulations. The "Romanian Waters" shall carry out the quantitative and qualitative water management, operation of water management structures, and the implementation of the national water management strategy and policy.

(2) Regulation of Water Use

(a) Authorization of water use and discharge

The right to use surface and ground water shall be established by the water management licence. The right also includes the discharge of waste water, after being used. For household needs, the use of surface or ground water is free, if no installation or installations with capacity of less than 0.2 l/s are used. The ground water use shall be based on the certified reserves.

(b) Priority on drinking water supply

(c) Water users' obligations in water consumption

The water users shall comply with water consumption standards to be periodically determined and updated, and shall save water by rational use, recirculation and reuse. Also, the water users shall ensure the maintenance and repair of the installations and of those in water supply and sewerage systems.

(d) Temporary restriction/suspension of water use

Restriction plans shall be developed by "Romanian Waters" with agreement of MWFEP. Throughout the restriction plans application, the provisions of the water management licence shall be subordinated.

(c) Pollution prohibition and water quality standards

Any kind of water resources pollution is forbidden. Water quality standards and drinking water quality standards shall be approved, on the proposal of MWFP and of the Ministry of Health, respectively. The effluent limits of pollutants in waste water discharge shall be approved by the Government Decision, on the proposal of the above two Ministries. The effluent limits provided in the water management licence are the maximum allowable limits forbidden to be exceeded.

(f) Forbidden activities to protect water resources

The increase of waste water pollution contents caused by (1) setting into operation new economic units, (2) developing and introducing modified production technologies in the existing economic units, and (3) setting into place new human settlements, is forbidden, without setting into operation sewerage networks/waste water treatment installations, or without carrying out works/measures to ensure the effluent limits stipulated in the water management licence. Built-up of new drinking/industrial water supply structures or extension of the existing ones, is also forbidden, without making/extending the necessary sewerage network and treatment installations. And so forth.....

(g) Water users' duties for the rational use and protection of water quality

- (i) Adaptation of production technologies with reduced water requirements and minimal polluting probability. Saving water by recycling/reuse. Elimination of waste and water loss. Reduction of pollutants discharge together with waste water. Recovery of useful substances contained in waste water and sludge.
- (ii) Ensuring of building maintenance and operation of waste water treatment plants and installations for the authorized capacity. Survey of their efficiency by laboratory analyses. Operations to maintain the effluent parameters within the allowable limits of waste water discharge stipulated in the water management licence.
- (iii) Strict observation of the discipline/technological standards in the production activities using water and discharging waste water, and in the waste water treatment plants and installations.
- (iv) Others.

(h) Waste water discharge into public/industrial sewerage system

The waste water discharge into public/industrial sewerage network may be admitted, only with the agreement of and in compliance with the conditions established by the network holder, and only if the waste water treatment plant has the necessary technological profile and the available capacities. Local pretreatment of waste water by the water users is mandatory, in all cases.

(i) Obligations of operators of waste water treatment plants and installations

Continuous monitoring of functioning of waste water treatment plants and installations, through laboratory analysis. Book-keeping of records with analysis results. Putting the data at the disposal of the inspection and control personnel of "Romanian Waters", and others.

(j) Mining/industrial waste water discharge

The mining waste water may be discharged into surface water bodies, only after the proper treatment. The mining/industrial waste water without appropriate treatment methods shall be injected in very deep layers, according to the permit issued by the National Agency for Mineral Resources and the water management permit.

(k) Accidental water pollution

The "Romanian Waters" shall organize the activities to prevent the accidental water pollution. Water users are obliged to prepare and apply their own plans, in accordance with the frame-methodology of MWFEP. In case of pollution occurrence, "Romanian Waters" shall immediately warn water users and local public administration authorities downstream to take water protection and damage-elimination measures.

(3) Regulation of River and River Bed Use

(a) Authorization of river bed use

The right to use the minor beds, the sea beach and shore is acquired only after obtaining the water management licence. For walking or recreation, any person has the right of free access to the river banks which are under the public ownership.

(b) Activities on water surface and in the river beds

Any activity shall not produce adverse effects on the banks and beds of water courses, banks and basins of lakes, the existing works/installations in the river beds, and shall generate minimal influence to the other water users. The deterioration of water quality is not allowed in any situation.

(4) Protection Measures for Minor River Beds, Banks and Hydraulic Works

(a) Protected zones

In order to assure the protection of the river beds, banks and hydraulic structures, as well as to improve water flow situation, the protected zones shall be established; and their delimitation shall be carried out by the "Romanian Waters" together with the Land Cadastre. The measures for land use restriction in the protected zones shall be established by the "Romanian Waters".

(b) Protection measures

The measures and works for the protection of minor beds of watercourses, of the structures that are being built on waters or water-related, shall be established through the regulation prescriptions; and their technical standards shall be elaborated by the MWFEP.

(c) Sanitary and servitude flow

The sanitary and servitude flow shall be established by the "Romanian Waters", taking into account the water resources demands, and the compliance with the conditions imposed for the protection of the aquatic ecosystems.

(5) Water Management

(a) Water management and information requirements

The water management shall be carried out, based on scientific, complex, quantitative and qualitative knowledge of water resources in the country. These are obtained through the unified and permanent surveillance activities, the observations and measurements of hydro-meteorological phenomena and of water resources, as well as through the multi-disciplinary research.

(b) National Water Management Database

The hydrometeorological, hydrogeological and water management-related information obtained through specialized units of "Romanian Waters" and others, shall constitute the National Water Management Database. Organization, storage and administration activities shall be established by the MWFEP, and collecting and updating of the information is the responsibility of "Romanian Waters".

(c) The Water Cadastre

The National Water Management Database and recording of the waters belonging to the public, shall form the Water Cadastre. The organizing procedure will be established by MWFEP, and the updating is the responsibility of "Romanian Waters".

(d) National network of hydrological/meteorological observations (charged to INMH)

(e) Research/valuation/homologation of ground water and mineral reserves

(f) Water management frame scheme and development programme

In order to establish the fundamental guidelines for the sustainable, unified, balanced and complex management of water resources, water management frame schemes shall be carried out in river basins or groups of river basins. In correlation with the frame scheme, a short-term development programme for the works, installations and water management structures shall be established. The development programme shall be accomplished, so as to meet the goals of ensuring quantitative and qualitative water demand, the defense against floods and water destructive actions, and the valuation of hydraulic potential of water, in terms of the sustainable development, and in accordance with the environmental strategies and policy. All the social and economic activities, including the structures of the river basins, and the environmental protection planning and the land planning, shall coincide with the frame schemes.

(g) Local schemes

For small river basins, local water structures and management schemes shall be developed. Under these local schemes, the general objectives of valuation and quantitative/qualitative protection of water resources, of aquatic ecosystems and of wet lands, as well as of sustainable resources use and of the protection of all types of affection to water resources, will be achieved. The different water users shall be registered in the local scheme, so as to establish the existing status of water resources use and of the conditions of aquatic ecosystems.

- (h) Basin Committee to be organized
- (6) Regulation of Works Built on or Related to Waters
 - (a) Enumeration of the works built on or related to waters
 - (i) works, constructions and installations to ensure the complex water management, such as: dams, permanent/temporary reservoirs, flow diverting work
 - (ii) works for water use, with their related structures and installations: drinking, industrial and irrigation water supply works, fisheries, power plants, hydrochemical utilities, navigation channels, rafting and floating, floating bridges, balneary, tourist or recreational works, other such works
 - (iii) works, structures and installations for the water quality protection or which may influence the water quality: sewerage networks and waste water discharging works, water quality treatment plants and installations, underground water injections, other such works
 - (iv) works for the prevention and control of the destructive actions of water: embankments, river banks and beds consolidations, bed reshaping and rectifications, water directioning works, soil erosion prevention, versant runoff regularization works, torrents rectification works, draining and reclamation works and other such protection works
 - (v) crossings over water courses and the related works: bridges, pipes, power lines, etc
 - (vi) constructions and installations for extracting mineral aggregates out of the water courses banks and beds, lake sides and sea shores: ballast-pits, quarries, etc.
 - (vii) solid wastes deposits located in the major river beds of the water courses: tailing deposits, scoriates and ashes, sludge, mud, and others of the same sort
 - (viii) afforestation and deforestation of the wooded vegetation, filtering and counter-erosional forest belts located in the protected zones or in major river beds
 - (ix) works, constructions and installations built up on the beach, on the bottom of the inland marine waters and of territorial sea, on the continental plateau, or shore protection constructions
 - (x) terrestrial or maritime prospecting and exploring/exploiting drilling works, hydrometric installations, topohydrographic works and any others in such water-related studies
 - (xi) works and installations for hydrological parameters surveillance or the automatic water quality surveillance
 - (b) Documentation requirements of the works

The documentations developed for the works enumerated above, shall provide the required security, to be consistent with the technical standards and prescriptions, taking into consideration the interest of environmental protection and the location.

(c) Location permit

In the flooded areas of major river beds, the location of new economic and social units including new human settlement, is forbidden. In the special cases, "Romanian Waters" may approve such locations by issuing the location permit with the agreement of riverside residents. The location permit shall not exclude the obligation to obtain the water management permit.

(d) Permitting/licensing requirements of the works

The works built on or related to waters (enumerated above) may be carried out only on the basis of the water management permit for the investment documentation. To set into motion or to put into operation such works shall be made only on the basis of the water management licence. The works in the national navigable water zones require the approval of the Ministry of Transport.

(e) Other necessity to obtain the water management permits

The water management permit is also necessary for the development, modernization or technological updating of certain technological process or of existing installation of the water users.

(f) Obligations of holders of the works/installations subjected to licensing

The works and installations used for surface and ground water intake or for discharging into natural receivers, shall be provided with measuring devices for water intake volume and for determining the quality of discharge waters in conformity with the provisions of the water management licence. The holders of the works/installations have the obligation to set-up and operate measuring devices, to keep the data for 5 years, and to send them monthly to "Romanian Waters"

(g) MWFEP's responsibility to establish procedures for permitting/licensing

- (i) procedures and competence to issue water management permits/licences
- (ii) procedures for the modification and the withdrawal of the water management permit/licence
- (iii) procedures for temporary suspension of the water management licence
- (iv) notification procedures
- (v) procedures to set up the special supervision system
- (vi) normative contents of the technical documentation for permitting/licensing

(7) Prevention and Control of Floods, Hazardous Meteorological Phenomena and Hydraulic Structures Accidents (Omitted, due to non-relationship to the Project)

(8) Participation of the Public (Omitted also; refer to Appendix H: Environmental Education)

(9) Inspection of the Water Management Activity

(a) Specialized inspection

The water management activity and the compliance with the provisions of the Law shall be subjected to the specialized inspection.

(b) State Inspectorate of Water

Within the MWFEP, the State Inspectorate of Water is functioning with the duties of inspection and control of the implementation of the provisions of the Law.

(c) The right of the water management ("Romanian Waters") personnel

- (i)** to access water for ascertaining the compliance with the regulations and implementation of the water management measures
- (ii)** to inspect the water-related works, constructions, installations or activities, and to check up if all these are realized and exploited according to the specific legal provisions and in compliance with the provisions of the water management permits/licences
- (iii)** to check up the flow measurement installations, to take water samples, and to examine any data/documents necessary for the inspection
- (iv)** to identify the actions constituting infringements and infractions in the water management field, and to conclude the documents

(d) Assistance from other public authorities

The central and local public administration authorities are obliged to provide assistance to the personnel of MWFEP and "Romanian Waters" as well as the authorized representatives thereof.

(10) Water Economic Mechanism

(a) Necessity of the economic incentives in water management

The conservation, reuse and saving of water shall be encouraged through economic incentives, inclusively for those demonstrating a permanent concern for protecting the quantity and quality of water, as well as through imposing penalties to those wasting and polluting water resources.

(b) Specific economic mechanism to include payment system

For the quantitative and qualitative water management, the specific economic mechanism shall include the payment system, allowances and penalties as part of the financing practice of the water management system development, and of ensuring the functioning of "Romanian Waters" based on the economic principles.

(c) Objectives of the payment system

The payment system is based on "beneficiary pay" principle, according to the services provided, and the services related to the rational use of water resources, which ensure:

- (i)** economic stimulation of the sustainable water use and of water quality protection

- (ii) territorial differentiation of prices and tariffs, on categories of sources and users, as a result of the different water supply conditions, so long as the system might ensure the balanced income and expenditures
- (iii) correlation of the level of prices and tariffs with the general dynamics of prices
- (iv) transmittal to water users of economic influences derived from the activities of providing water sources, from quantitative and qualitative point of view
- (v) minimization of production costs, through economic stimulation of the price, for the purpose of ensuring the maximum social benefit
- (vi) reflection of water flow and volume demand into water prices

(d) Application of the payment system

The payment system shall cover all the water users. The "Romanian Waters" is the only supplier of water directly drawn from the surface water sources, regardless of the title-holder of the structure, except for geothermal waters, as well as of products and services of water management. In this consequence, "Romanian Waters" is the only entitled to implement the payment system in water management.

(e) Allowances and penalties

The allowance shall be granted to the water users who demonstrate a permanent concern for the rational use and for protection of water quality, discharging together with the treated waste water the pollutants in concentrations and in quantity smaller than those stipulated in the water management licence. The penalties shall be applied to the water users for exceeding both quantities of drawn-off water and the concentrations and quantities of the discharged pollutants. The "Romanian Waters" is the only authority entitled to identify the cases to grant allowances and to apply penalties. The allowances shall be granted with the approval of MWFEF.

(f) Government Decision to establish the payment system

The system of payments, allowances and penalties, as well as the categories of water management products and services shall be established by the Government Decision.

(g) Water Fund (Refer to 5.2)

(h) Financing of investment in water management

Financing of investment towards water management works, structures and installations shall be ensured from:

- (i) the state budget or local budget, for works declared as public utility
- (ii) the water users' fund
- (iii) the development fund of "Romanian Waters"
- (iv) funds obtained through credits or issue of bonds, guaranteed by the Government or local public administration authorities, for the works of

public utility or for partnership associations wishing to carry out such works

(v) Water Fund

2.3 The Environmental Protection Law

The Environmental Protection Law was approved on December 29, 1995 and published on the following day. The objective of the Law is to regulate environmental protection on the basis of the principles and strategic elements leading to the sustainable development of the society. In the transitory provisions, the Law stipulates the fields to be regulated through the special/revised/new laws, in which nominated is "water and aquatic ecosystems management". The Water Law has been effective since December 1996. Accordingly, the specific regulation related to water resources is placed under the Water Law provisions. The Environmental Protection Law gives a general framework of the environmental protection that contains water quality protection being as a part.

Table G.2.3 shows the contents of the Environmental Protection Law. The Law involves 89 articles divided in 6 chapters. Two appendixes are attached as an integral part of the Law:

Appendix No. I - Definition of Terms for the Interpretation of the Law

Appendix No. II - List of Activities Subject to the Procedure of Environmental Impact Assessment to Issue the Environmental Permit/Licence

The Appendix No.II is the most important, since the activities covered by the regulatory procedures under the Law are listed. The following are the outlines of significant provisions related to the Project.

General Principles and Strategic Elements

- (a) precaution in decision-making
- (b) prevention of ecological risks and damage occurrence
- (c) conservation of biodiversity and ecosystems
- (d) "polluter-pays"
- (e) removal of pollutants jeopardizing directly and severely the public health
- (f) setting up of the integrated national environmental monitoring system
- (g) sustainable use
- (h) maintenance, improvement of environmental quality, and reconstruction of the damaged areas
- (i) setting up of a framework for the participation of non-governmental organizations and of the population in the decision-making and implementation
- (j) developing international collaboration to ensure quality of the environment

(2) Jurisdictions in the Environmental Protection

Environmental protection is an obligation of the central and local public administration authorities as well as of all natural and legal persons. The responsibility of environmental protection is incumbent on the central environmental protection authority and on its local agencies. The transitory provisions state, in the last part of the Law, "the central environmental protection authority shall be the MWFEP". In this consequence, the MWFEP and the Agency for Environmental Protection have the mandatory of the environmental protection.

(3) Regulation of Economic and Social Activities having an Environmental Impact

The environmental protection authorities (Agency for Environmental Protection) shall conduct the permitting and licensing procedure and shall issue the environmental permit and the environmental license.

The environmental permit application is compulsory for new investments, for modification of the existing ones, and for activities provided in Appendix No. II.

The environmental license application is compulsory for putting into operation of the objectives which have an environmental permit and for the existing activities.

The activities not involving construction and erection works do require only the environmental license. On the designing of the works which may change the natural environment of an area, the procedure of the environmental impact assessment is compulsory, which shall be carried out through the specialized units certified by the Agency for Environmental Protection. The environmental impact assessment shall be followed by the submitting the technical solutions to maintain natural habitat areas, to conserve the ecosystem functions, and to protect the vegetable and animal organisms, by observing the alternative and conditions imposed by the environmental permit/license.

(4) Protection of Waters and Aquatic Ecosystems

(a) Objective of the protection activity

The protection of surface and ground waters and of aquatic ecosystems shall be conducted to maintain and improve the quality and natural productivity, for the purpose of avoiding negative effects on the environment, human health and welfare.

(b) Elaboration of regulations

The MWFEP shall elaborate the regulations on:

- (i) technical standards regarding the protection of waters and of aquatic ecosystems in case of accidental pollution and in transfrontier context
- (ii) licensing procedure for water resources and aquatic ecosystem exploitation, for hydrotechnical construction accomplishment for works of embanking and course regularization, irrigation, and draining-drainage
- (iii) emission standards
- (iv) water quality standards

- (v) requirements for waste water discharge, treatment, and for the restriction of effluent discharge in waters

- (c) Regulation enforcement

The control over the water and aquatic ecosystem protection regulation enforcement shall be organized and exercised by the environmental protection authority (Agency for Environmental Protection, MWFEF), water management authority ("Romanian Waters", MWFEF) and the health authority (Ministry of Health) as well as by other authorities in accordance with the legal competencies.

- (d) Regulations on navigation-related activities

The environmental protection authority (Agency for Environmental Protection, MWFEF) and the water management authority ("Romanian Waters", MWFEF), together with the navigation authority (Ministry of Transport), shall oversee the provisions and shall enforce the legal measures concerning the protection of waters against the consequences of navigation activities.

- (e) Obligation to apply for the environmental permit/licence

For the activities provided in Appendix No. II, the application for the environmental permit/licence is required. The wells drilled at depths less than 50 m to meet the needs of individual farms is exempted for obtaining the environmental licence.

- (f) Obligation of water quality observance

Any person shall observe the emission and water quality standards, the provisions of the environmental permit/licence, and shall submit water samples for analysis to the authorized laboratories, upon the established terms.

(5) Protection of Human Settlements

The ecological principles shall be compulsorily observed to assure a healthy living environment, in the process of socio-economic development, of urban, territorial and human settlement planning. The local public administration authorities are responsible for the various locality situations, of which included are:

The location of the industrial objectives, of ways and means of transport, of sewerage systems, water treatment plants, domestic, street and industrial waste storage, and of the other objectives and activities, without causing prejudice to public health, environment, resting, treatment and recreational places, to the health and comfort state of the population.

2.4 Water Quality Standards and the Effluent Limits

Romania has issued water quality standards since the early 1960's. The Government has been reviewing the previous water quality standards to harmonized with those of EU. In case of effluent limits in waste water discharge, the new standards were established in November 1997 by the NTPA-001 and NTPA-002 in consideration of the harmonization with EU standards. Quality standards for surface water and for drinking water remain the same as established in 1988 and 1991, respectively.

(1) Water Quality Standards for Surface Waters

The standards were established by the Romanian Standard STAS 4706/88 of the Romanian Institute for Standardization, coming into force in November 1988. The category and technical quality conditions of the surface water are stipulated depending upon the scope of use. Basic three categories to meet the water use purposes are:

Category	Water Use
I	<ul style="list-style-type: none">• Centralized potable water supply• Centralized water supply to livestock farm• Centralized water supply for food industry/other activities requiring potable water quality• Water supply for vegetable cultivation requiring water quality of Category I• Hatching and rearing of salmonids/salmonoid fisheries• Natural bathing waters (pools)• Basins for water contact sports
II	<ul style="list-style-type: none">• Hatching and rearing for maintenance of natural fish stocks and water supply for fishery purposes, with exception of most salmonids• Water supply for industrial technological processes/other activities requiring water quality of Category II• For urban and recreational uses
III	<ul style="list-style-type: none">• Water supply for irrigation• Water for hydro-electric power generation• Water supply for cooling system• Water supply to washing stations/other activities requiring water quality of Category III

The water quality standards in each category are shown in Table G.2.4.

(2) Drinking Water Quality Standards

The drinking water quality standards established by Romanian Standard STAS 1342-91 have been effective since June 1991. It was proposed by the Ministry of Health, Academy of Medical Sciences, and the Hygiene and Public Health Institute and approved by the Romanian Institute of Standardization to replace the previous standards issued in 1984. Table G.2.5 shows this latest water quality standards for drinking water, in comparison with the EU standards. Although the Romanian standards do not cover all the parameters included in those of EU, it is observed that the both standards are almost at the same level except for the parameters of arsenic, lead and nickel.

(3) Effluent Limits for Waste Water Discharge

In November 1997, Romanian Standard NTPA-001 was approved by the Government Decision HG 730/1997, stipulating the effluent limits of pollutants in waste water discharge into surface water bodies. Simultaneously, MWFEP Order 645/1997 came into force, providing for Romanian Standard NTPA-002 regarding the effluent limits into the sewerage systems. The new standards stipulate a constant effluent limit of parameters, being different from the previous ones of 1979 in the regulatory concepts on waste water discharge. Table G.2.6 shows the standard effluent limits of waste water discharge stipulated in NTPA-001 and NTPA-002.

The effluent limits are not constant throughout the country, since those shall be reduced according to the dilution degree of the receiving surface water. The maximum

permissible limits of quality parameter in Table G.2.6 are applicable to surface water of which standard flow rate (minimum yearly mean monthly flow with a probability of 95%) is bigger than three times of the waste water flow discharging into the surface water, except for the Danube River. For the surface water with a dilution degree of smaller than three, the limit values in Table G.2.6 shall be proportionally reduced to secure at least the water quality of Category II in STAS 4706/88. It is considered practical to determine the reduction rate of the limit values by the river system, not by the river section, although it is not clearly mentioned in NTPA-001.

2.5 Regulatory Legislations

Under the Water Law, the water management permit and the water management licence application is obligatory to all the water users and for works on water or related to water, except for those meeting the household needs on the small-scale. For the issuing water management permits/licences, promulgated are:

MWFEP Order 148/1997 : regarding procedures and competence to issue water management permits/licences

MWFEP Order 277/1997 : regarding technical documentation required for obtaining water management permits/licences

Prior to the promulgation of the Water Law, the Government Decision HG 1001/1990 has been in force, providing for the unitary payment system of water management products and services. The Water Law has wholly taken its concepts into its provisions: the payment system shall be included in the specific economic mechanism to stimulate the quantitative/qualitative water management. It is not a regulatory legislation; however, as the "Romanian Waters" is only the entitled to implement the payment system under the Water Law, it has a power of legal compulsion. In this consequence, the Government Decision and its follow-up legislations should be noticed as semi-regulatory:

HG 1001/1990 : regarding the unitary payment system for water management products and services

MWFEP Order 242/1990 : regarding technical instructions to apply HG 1001/1990

HG 861/1992 : regarding modification of HG 1001/1990

Under the Environmental Protection Law, the environmental permit and the environmental licence application is obligatory to all the economic and social activities having environmental impacts. The issuance of the environmental permit/licence shall follow:

MWFEP Order 125/1996 : regarding regulatory procedures for the economic and social activities having environmental impacts, the part of which relating to the environmental impact assessment was expanded in the MWFEP Order 184/1997.

CHAPTER III INSTITUTIONAL SET-UP

3.1 MWFEP and the Water Department

The Ministry of Waters, Forests and Environmental Protection (MWFEP) was reorganized by the Government Decision HG 568/1997, succeeding the former entity in existence since 1990. The MWFEP is a central public administration body to apply the government strategies for water management, forest management, and environmental protection. It has three Departments: namely, Water, Forestry and Environmental Protection, each of which is under a Secretary of State. The National Commission for Control of Nuclear Activities is under a President. Besides, three "staff" Directorates and the Juridical Office are functioning directly under the Minister. Figure G.3.1 shows the organizational structure of the MWFEP. The number of personnel is approximately 150 persons as of August 1998.

The Water Department is directly responsible for the water management. Its main tasks are to substantiate and promote the measures for water resources protection, conservation and rational management. Its specific functions include:

- strategic planning and coordination in water management
- allocation and management of state budget for water management
- preparation and management of legislative and policy of initiatives and administrative processes for the regulation of water resources use
- preparation of legislations and policy
- provision of guidance and technical assistance to other institutions in water management
- control and monitoring of compliance with national standards, policies and regulations concerning water management
- coordination and control in applying the internal and international regulations

These are mainly the functions of the Water Management Directorate. Within the Water Department, functioning are the Flood Protection Synthesis, Survey, Public Information Directorate and the State Inspectorate of Water that is obligated for the inspection and control of the implementation of the provisions of the Water Law at the national level.

3.2 Self-managed Public Company "Romanian Waters"

3.2.1 Headquarters and River Basin Branches

The "Romanian Waters" is an actual operational agent of the MWFEP in the field of water management, directly falling under the Secretary of State, Water Department. It was established in April 1991 by the Government Decision HG 196/1991, being an autonomous authority with self-financing. The "Romanian Waters" is charged with the implementation of the national water management strategy (quality and quantity); and in its capacity, the general responsibilities include:

- to administer the water resources of the country
- to promote rational use of water resources
- to protect water resources against pollution
- to prevent over-use and exhaustion of water resources

- to control destructive effects of the waters;
- to coordinate reservoirs operation;
- to develop new water management works.

Organizationally, "Romanian Waters" is composed of a headquarters and 12 basin branches, as shown in Fig. G.3.2. The National Institute for Meteorology and Hydrology (INMHI) is also attached, charged with the national network of meteorological and hydrological observation. The specific responsibilities of the basin branches include:

- preparation of river basin management and investment plans in accordance with the strategies issued by the MWFEP;
- administration of investment funds supported by the fees collected and used to provide economic incentives in the financing of the investments under the plans;
- operation and maintenance of the monitoring system of the hydrological and water-related information in support of a better understandings in the basin.

Through 12 basin branches spreading over the country, "Romanian Waters" administers 78,905 km of watercourses, 270 water storage facilities, 7,100 km of dikes, 6,600 km of river-bed stabilization/control works, 49 water intake facilities, 6 water treatment plants, 59 pumping stations, and 178 other hydraulic works.

3.2.2 "Romanian Waters" – Prahova Office

The Prahova Office comes under the Basin Branch, Buzau in the organizational settings of "Romanian Waters". It is in charge of the implementation of the strategy in quality and quantity management of surface and ground water in the Prahova River Basin. The set-up of the Prahova Office is shown in Fig. G.3.3. The total personnel, as of August 1998, number almost 480.

The Prahova Office administers 1,786 km of watercourses, 2 multi-purpose reservoirs (Paltinu and Maneciu), 24.15 km of dikes, 190 km of river-bed stabilization works, 49 km of river-bank consolidation, 4 water intake facilities, 3 water treatment plants, 1 groundwater intake facilities with 40 wells, 170 km of pipe-line for water transportation, and others.

The currently carried-out major activities of the Prahova Office are:

- (1) Operation of 2 multi-purpose reservoirs and the respective dams
- (2) Operation of 3 water treatment plants; Paltinu, Maneciu and Valenii de Munte
- (3) Transporting of the treated water, through pipe-lines, directly to water users, and to the storage/distribution facility at Movila Vulpii and then to water users
(The contracts to supply treated water have been concluded with around 45 clients as of August 1998, of which 14 are the local public services companies under the municipalities.)
- (4) Sales of untreated water
(Approximately 120 contracts have been concluded for selling untreated water, based on the water management licences issued.)
- (5) Water management authorization through issuing the water management permits and licences;

- (6) Inspections towards compliance with the provisions of the water management licences;
- (7) Surveillance and monitoring of water resources conditions, by sampling river water, drinking water through the assessment with laboratory analysis and hydrological/hydrogeological measurement;
- (8) Flood defense (only at the time of occurrence) and the related survey;
- (9) Collection of raw water price, treated water price, water tariff, discharge tariff, permit and licence fees, and the penalties for the excessive effluent discharge.

3.3 Agency for Environmental Protection, Ploiesti

The Agency for Environmental Protection, Ploiesti is in charge of the implementation of the environment protection strategy in the Prahova County. It is one of the 42 branch Agencies having an office at each County plus the one at Bucharest. The Agency is subordinate to the MWFEP, directly under the Secretary of State, Environmental Protection Department. The Director, the head of the Agency, is an appointee of the Minister of MWFEP; however, the approval of the Prahova Prefectural Governor (Prefect) is required at the same time. The role of the Prefect towards the Agency is, however, only of formal-juridical character.

Figure G.3.4 indicates the set-up of the Agency for Environmental Protection, Ploiesti. Three Services; Inspection, Advisory and Monitoring, are functioning inside the Agency. Tasks being performed by each Service are:

(1) Advisory Service

Issuing the environmental permits/licences in accordance with the Environmental Protection Law and regulations

(2) Inspection Service

Control of the economic/social units such as industrial plants, agricultural farms, and the public utilities authorized under the environmental permits/licences

(3) Monitoring Service

Surveillance of quality of environmental factors; air, water and others, to report the monitored data to the MWFEP.

The activities of the Agency are focussed on the enforcement of the environmental protection strategy through issuing the environmental permits/licences to economic and social activities having environmental impacts. The activities that shall have the environmental permit/licence are listed in Annex No. II of the Environmental Protection Law (Law 137/1995). The Agency, in most cases, issues the permit/licence based on the technical documentation from the applicants. The MWFEP has the authority to review any permit/licence issued by the Agency. Permits/Licences for activities having large-scale impacts upon the environment shall be issued by the Ministry. In most cases, an environmental impact assessment (EIA) is prescribed.

3.4 Local Public Administration Authorities

The Prahova County Council is the primary administration authority in the Prahova County,

overseeing the lower level Local Council established at each municipality. The County Council is composed of a number of Counsellors elected from the population of the Prahova County, headed by a President. Technical staff are functioning to conduct the actual administration works under the Counsellors. Organization of technical staff is frequently changing due to internal shuffling; however, the major components are 4 divisions as follows:

- Administration Staff
- Legal Staff
- Financial Staff
- Infrastructure Staff

These County Council staff maintain a close coordinative relation with the representatives of the governmental departments stationed in the Prahova County. At the same level of Prahova County Council President, the Prahova Prefectural Governor (Prefect) is appointed by the Government to preside over the several governmental departments in the Prahova County; however, he has mainly the duty of law enforcement (juridical) and little of administrative functions (formal). In some occasions, joint-committees of the County Council staff and the departmental representatives are formed to discuss the specific subjects in the County such as infrastructure development.

At municipality level, the Local Councils are constituted to conduct the administrative matters in the locality. The head of the Local Council is a Mayor, who is elected by the population of the locality. In the Prahova County, 100 Local Councils have been set-up, in total: 2 Cities, 12 Towns and 86 Communes. The Local Council may propose a certain investment programme of the locality to the County Council for the purpose of appraisal. In case of the infrastructure investment, the County Council may arrange the funding measures with the Ministry of Public Works and Land Development after the appraisal.

Fig G.3.5 shows the above-mentioned situations relating to the local public administration authorities.

3.5 Local Public Services Companies

The drinking water supply, sewerage and waste water treatment, central heating network, real estate and housing, street maintenance, solid waste collection and disposal, are the responsibility of the local public services companies set-up at each Local Council area. These are mostly autonomous bodies established by the Local Councils to provide the public services as enumerated above.

In the Prahova River Basin, established and operating are the following:

Name of Municipalities	Name of Organizations	Management Type	Provided Services
Predeal	S.C. Apevita S.A. Predeal	Pure Private	Water Supply, Sewerage, Solid Waste
Azuga	S.G.O. Azuga	Town Department	Water Supply, Sewerage
Busteni	G.O. Busteni	Town Department	Water Supply, Sewerage
Sinaia	A.D.P.P. Sinaia	Town Department	Water Supply, Sewerage, Solid Waste
Comarnic	A.D.P.P. Comarnic	Town Department	Water Supply, Solid Waste
Breaza	S.C. Civitas S.A. Breaza	State Company	Water Supply, Sewerage, Solid Waste
Campina	R.A.G.C. Campina	Self-management Company	Water Supply, Sewerage
Baicoi	S.C.G.L. Baicoi	State Company	Water Supply, Sewerage, Solid Waste, Heating
Plopeni	S.C.G.C.L. Plopeni	State Company	Water Supply, Sewerage, Heating
Slanic	S.C. Goscom S.A. Slanic	State Company	Water Supply, Sewerage, Solid Waste, Heating
Valenii de Munte	S.P.S. Valenii de Munte	Town Department	Water Supply, Sewerage, Solid Waste, Heating
Boldesti Scaieni	S.C.G.C.L. Boldesti Scaieni	State Company	Water Supply, Sewerage
Urlati	A.D.P. Urlati	Town Department	Water Supply, Sewerage, Solid Waste, Heating
Ploiesti	R.A.A.C.F.L. Ploiesti	Self-management Company	Water Supply, Sewerage