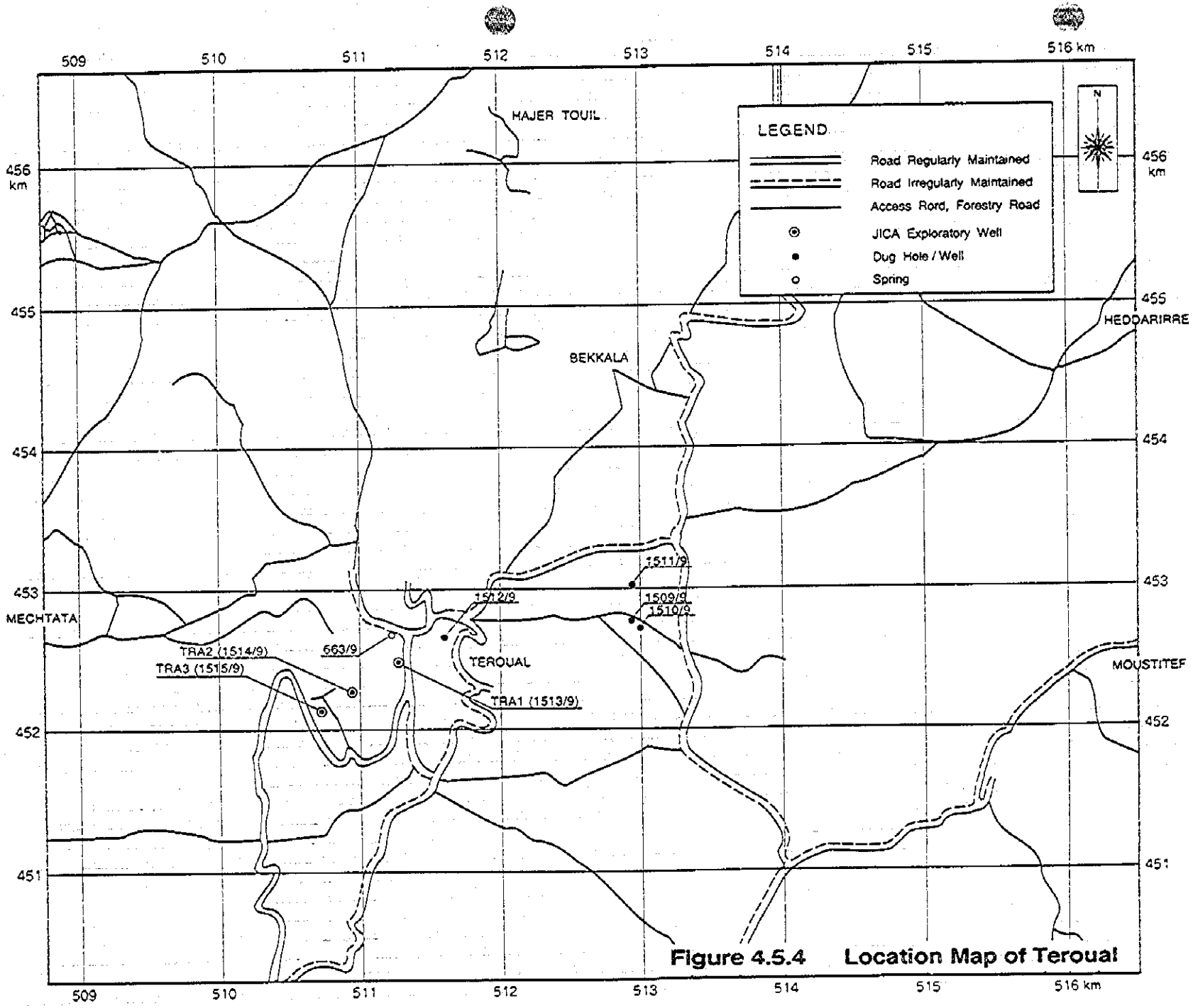


Figure 4.5.4 Location Map of Teroual

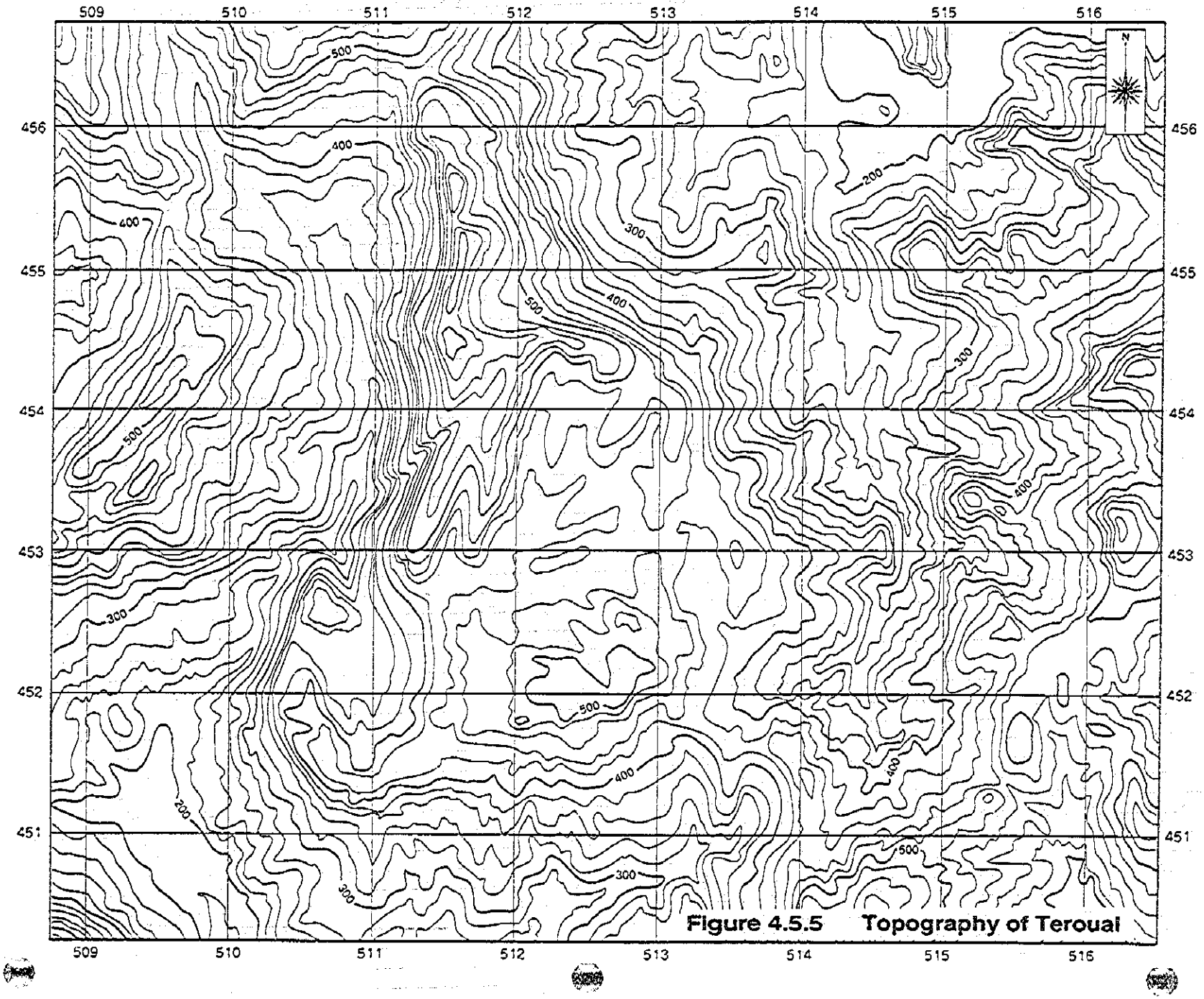


Figure 4.5.5 Topography of Teroual

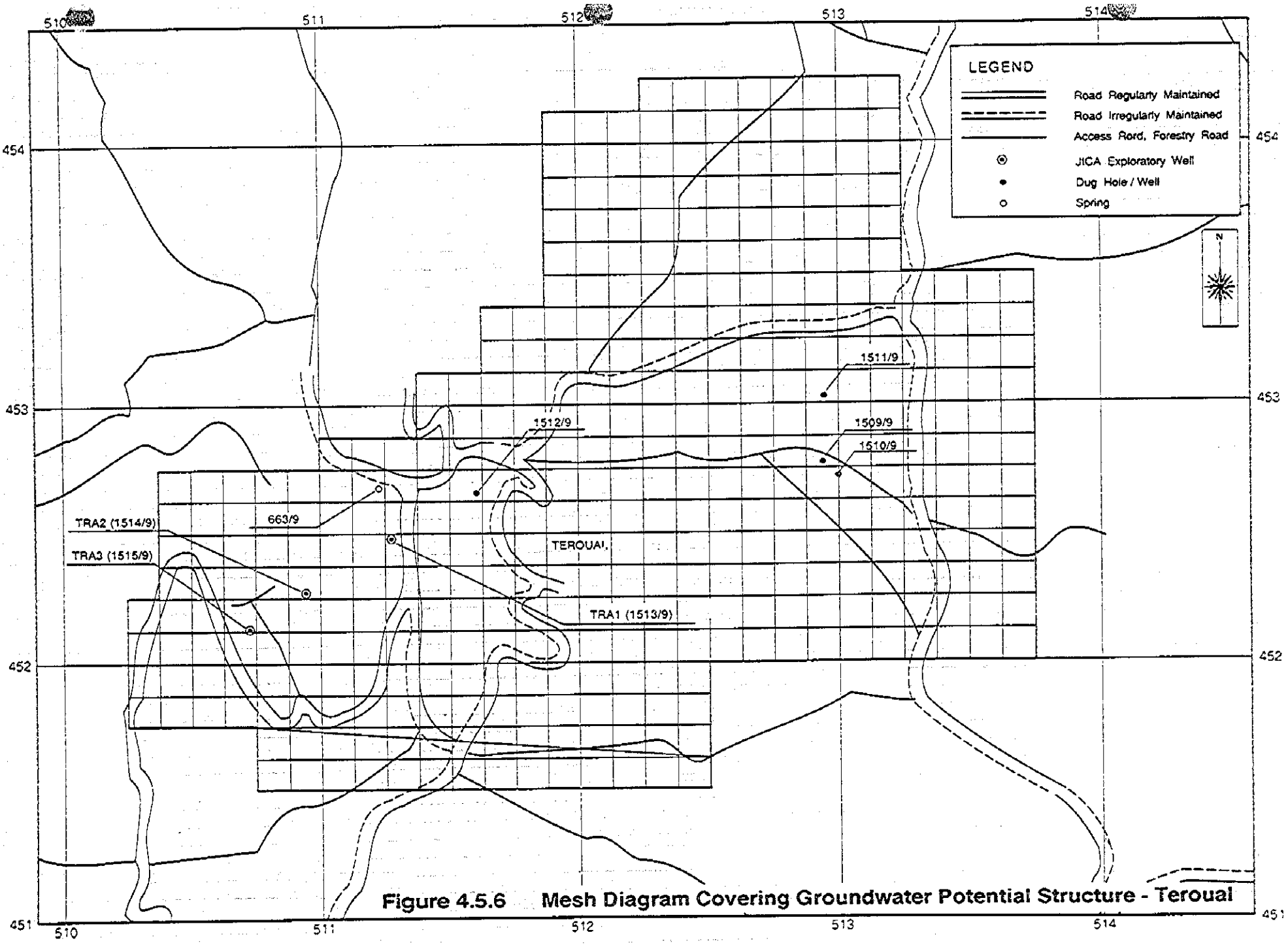


Figure 4.5.6 Mesh Diagram Covering Groundwater Potential Structure - Teroual

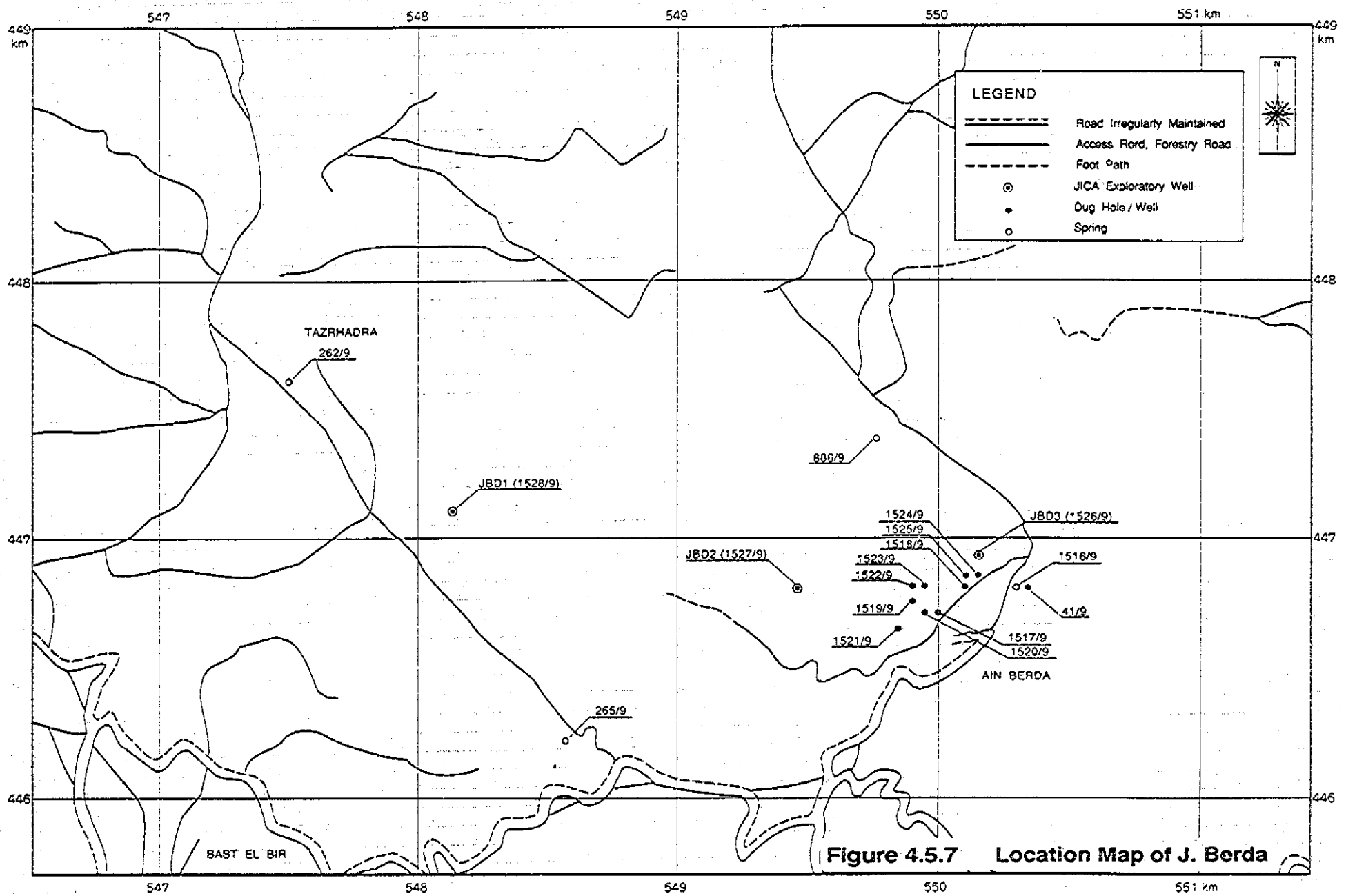


Figure 4.5.7 Location Map of J. Berda

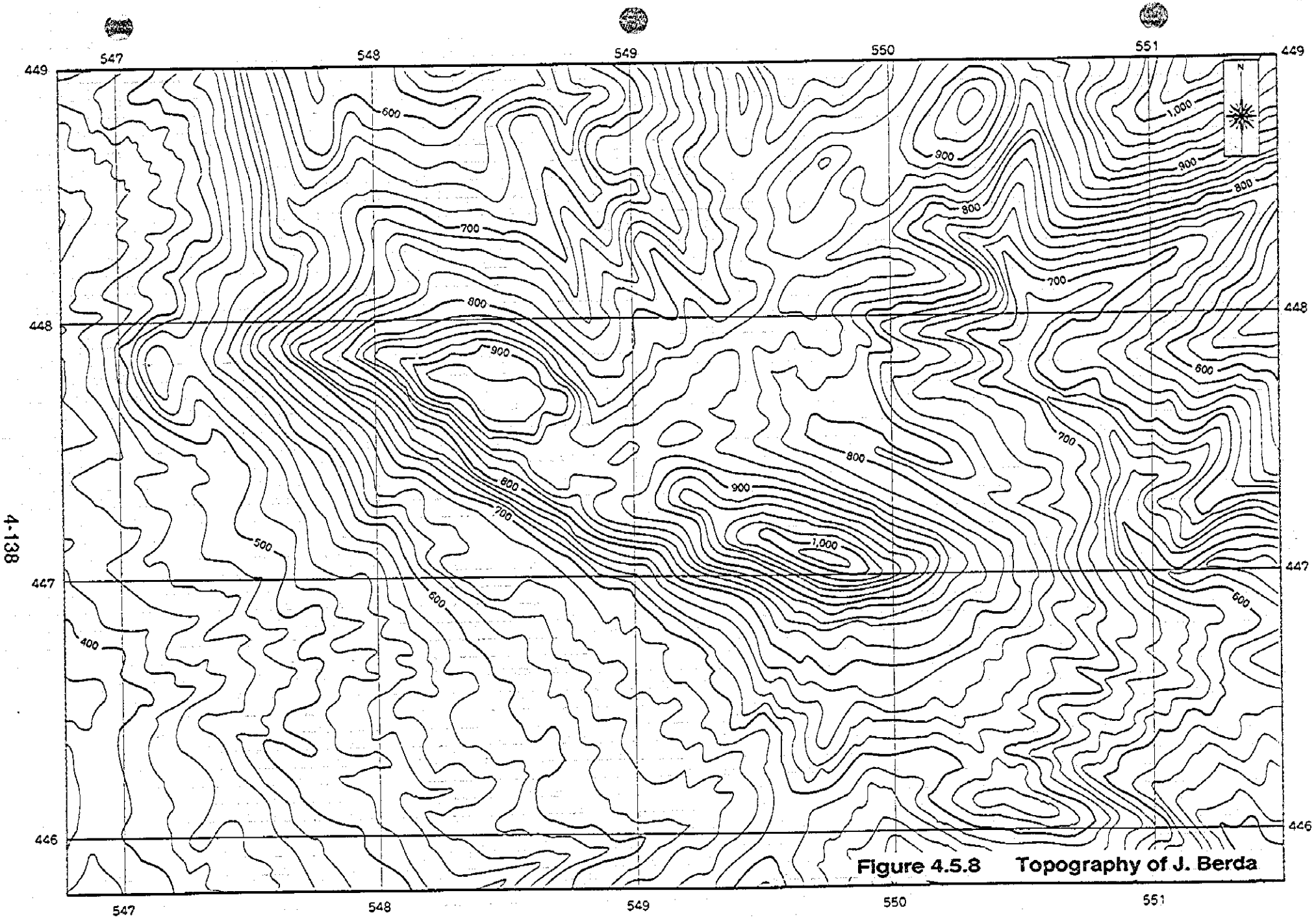


Figure 4.5.8 Topography of J. Berda

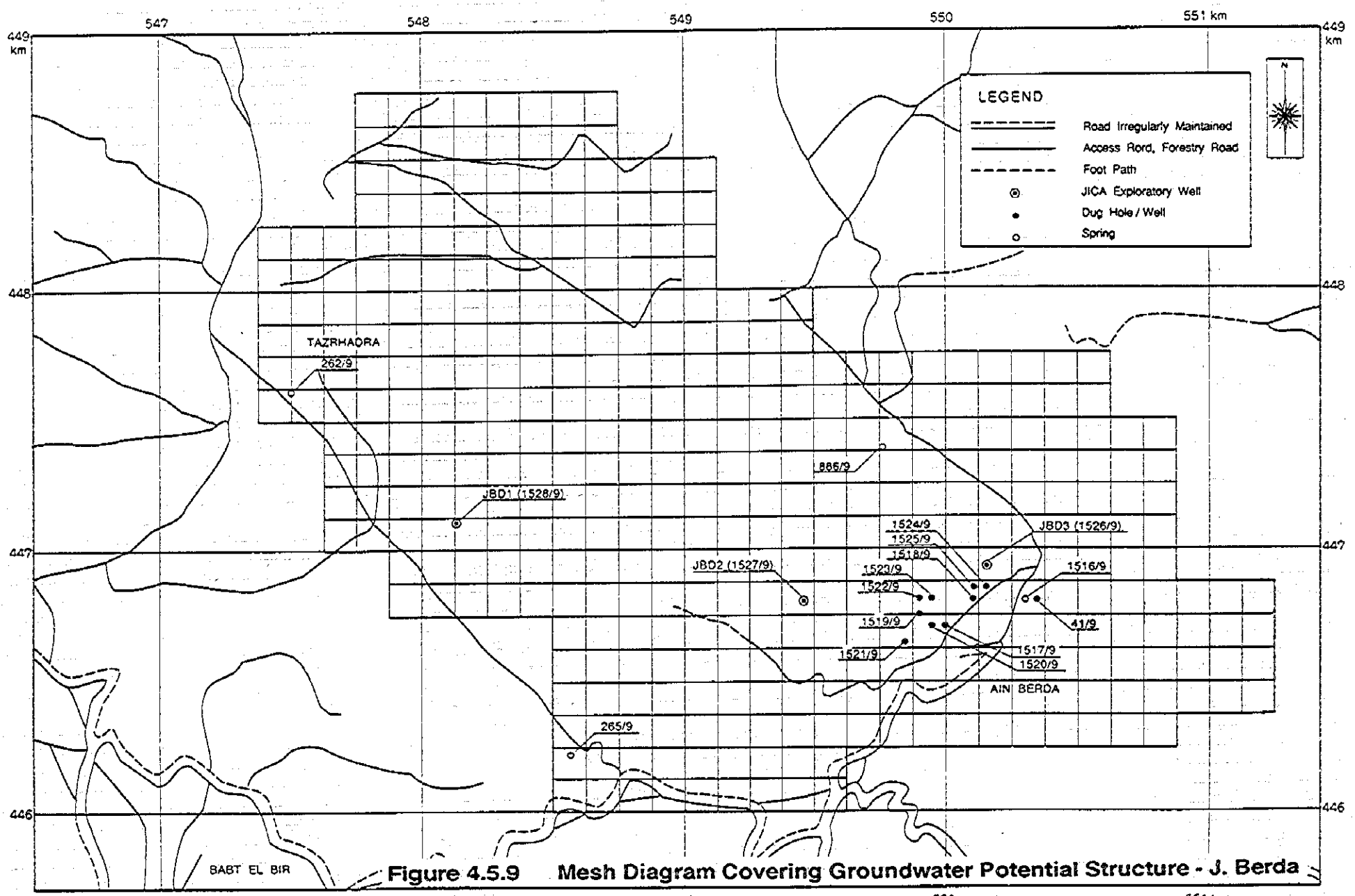


Figure 4.5.9 Mesh Diagram Covering Groundwater Potential Structure - J. Berda

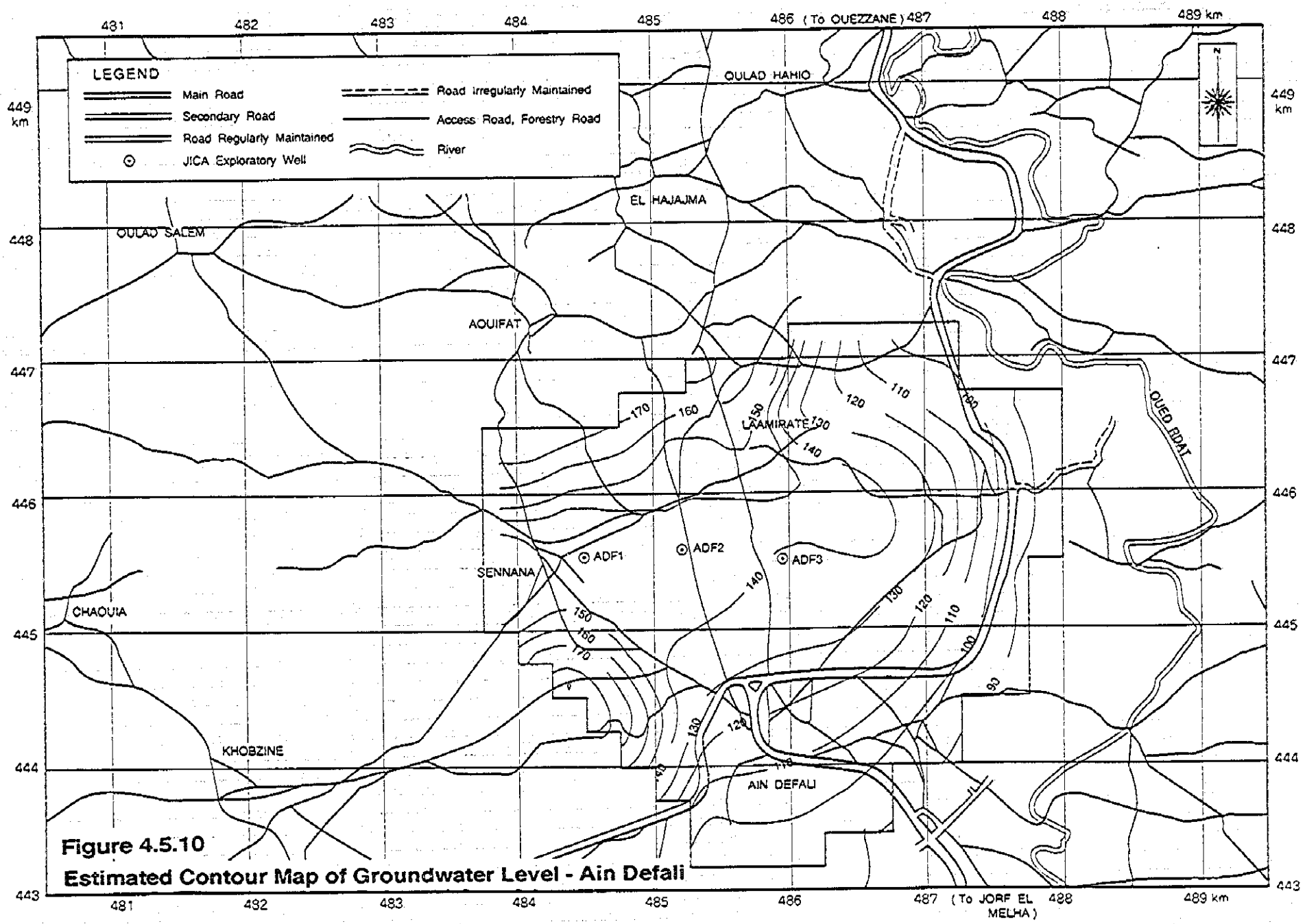


Figure 4.5.10
Estimated Contour Map of Groundwater Level - Ain Defali

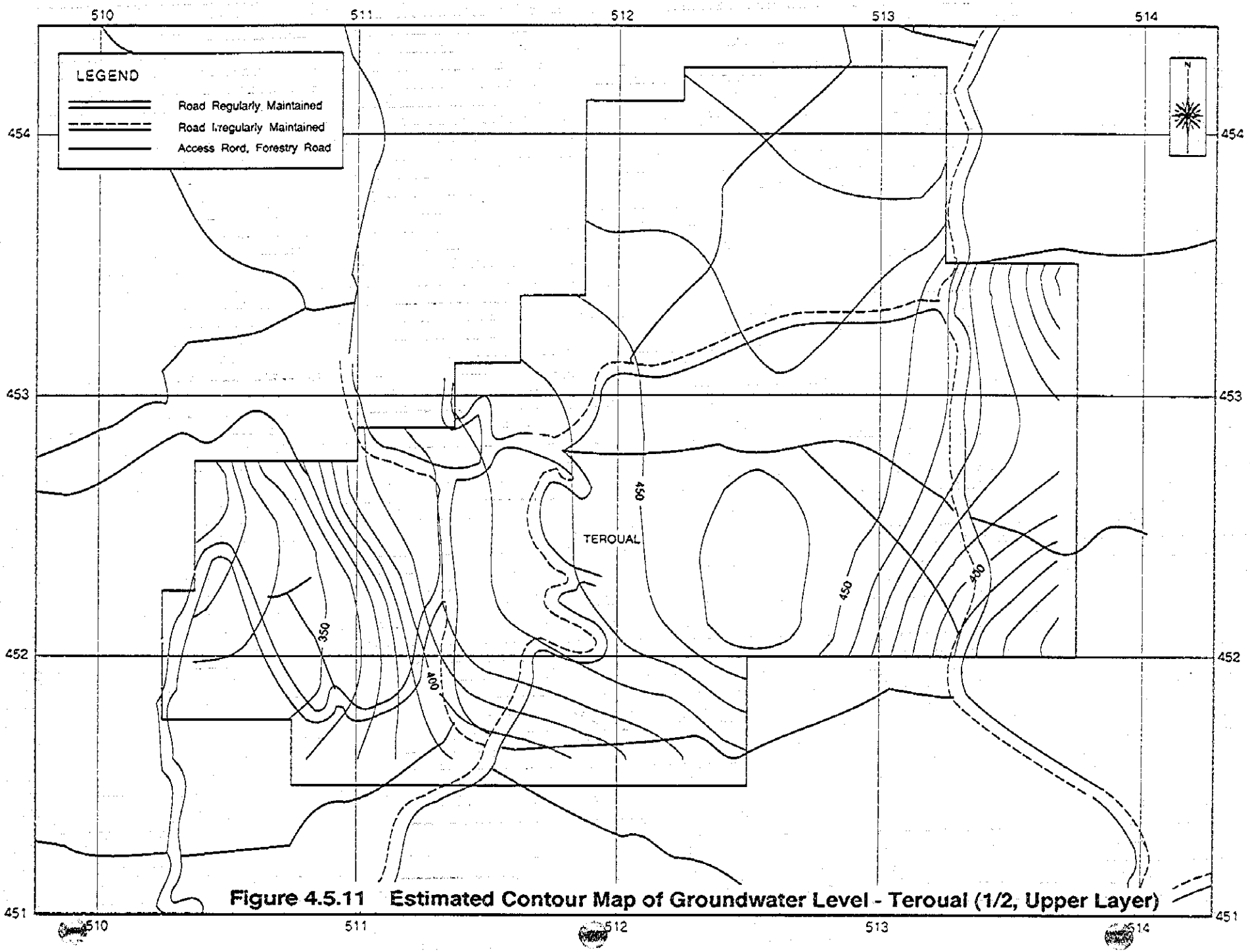


Figure 4.5.11 Estimated Contour Map of Groundwater Level - Teroual (1/2, Upper Layer)

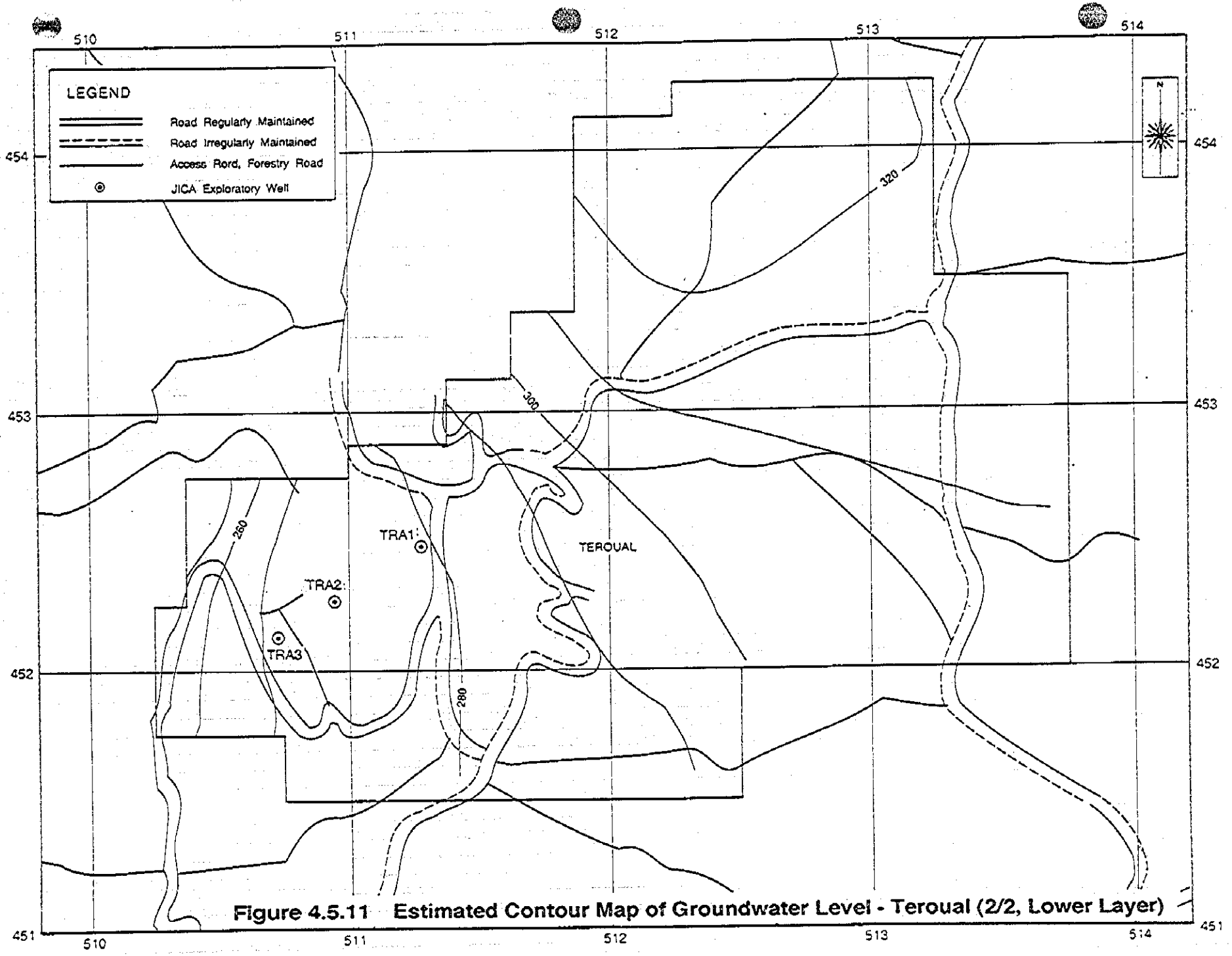


Figure 4.5.11 Estimated Contour Map of Groundwater Level - Teroual (2/2, Lower Layer)

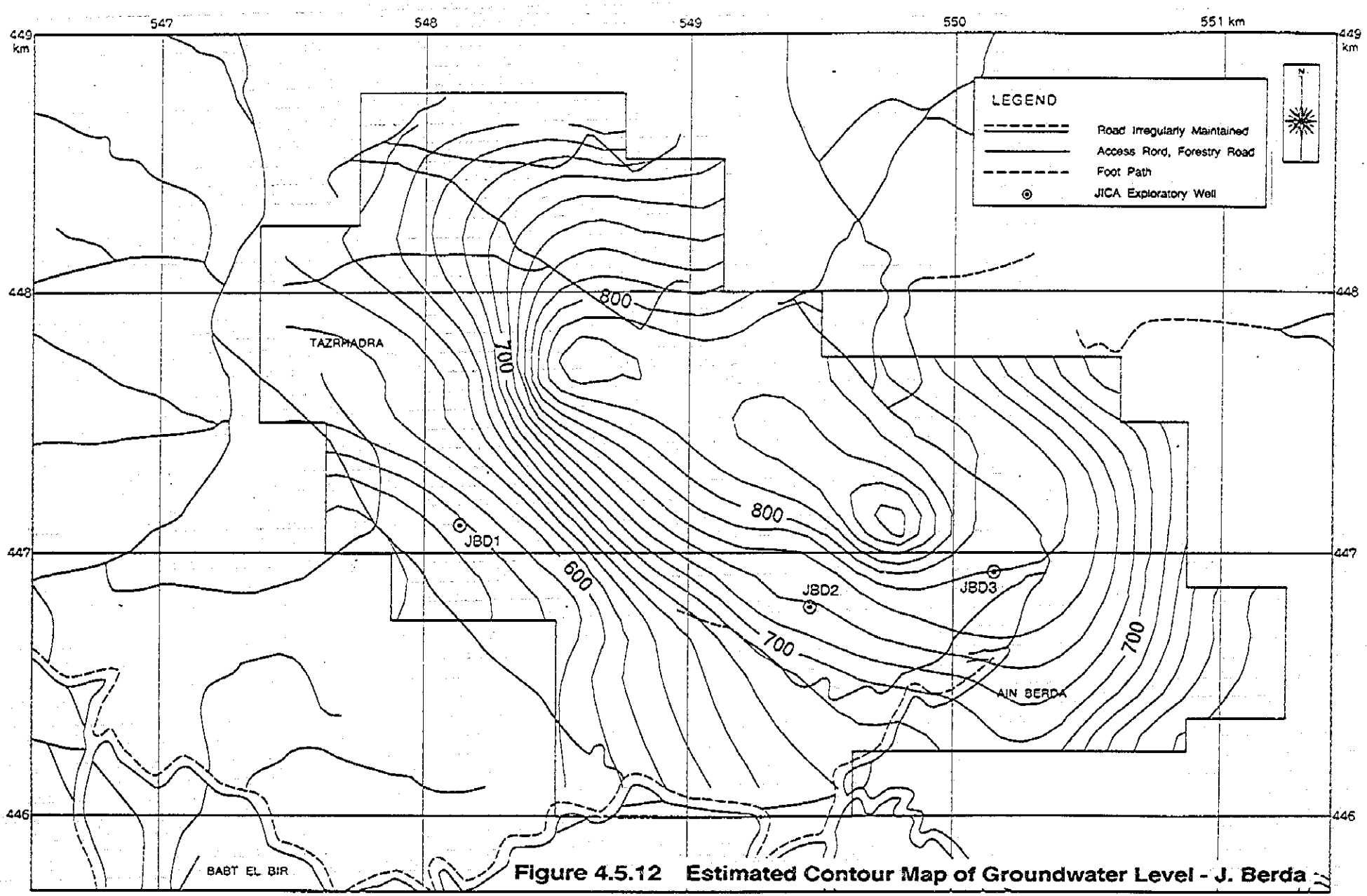
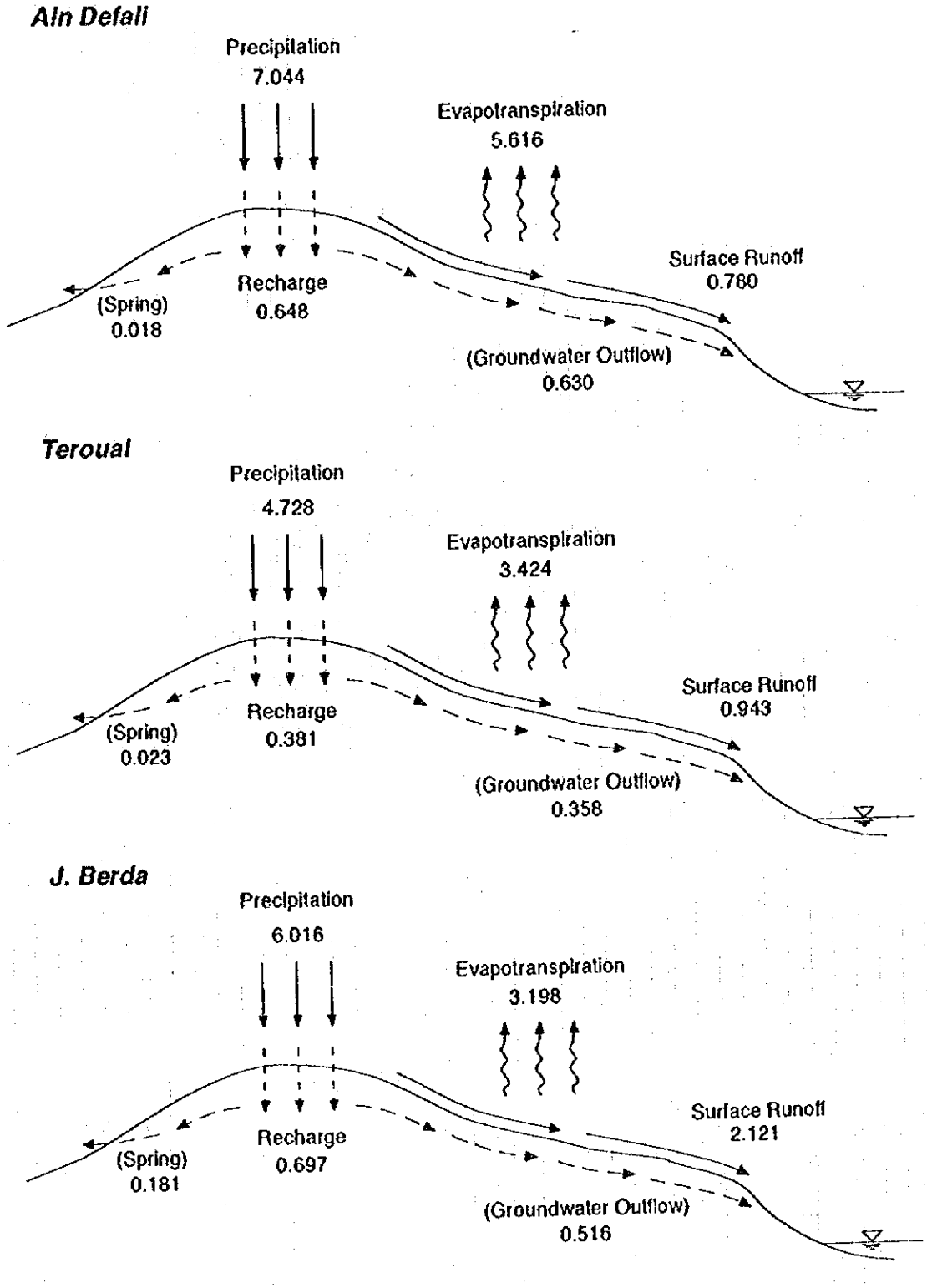
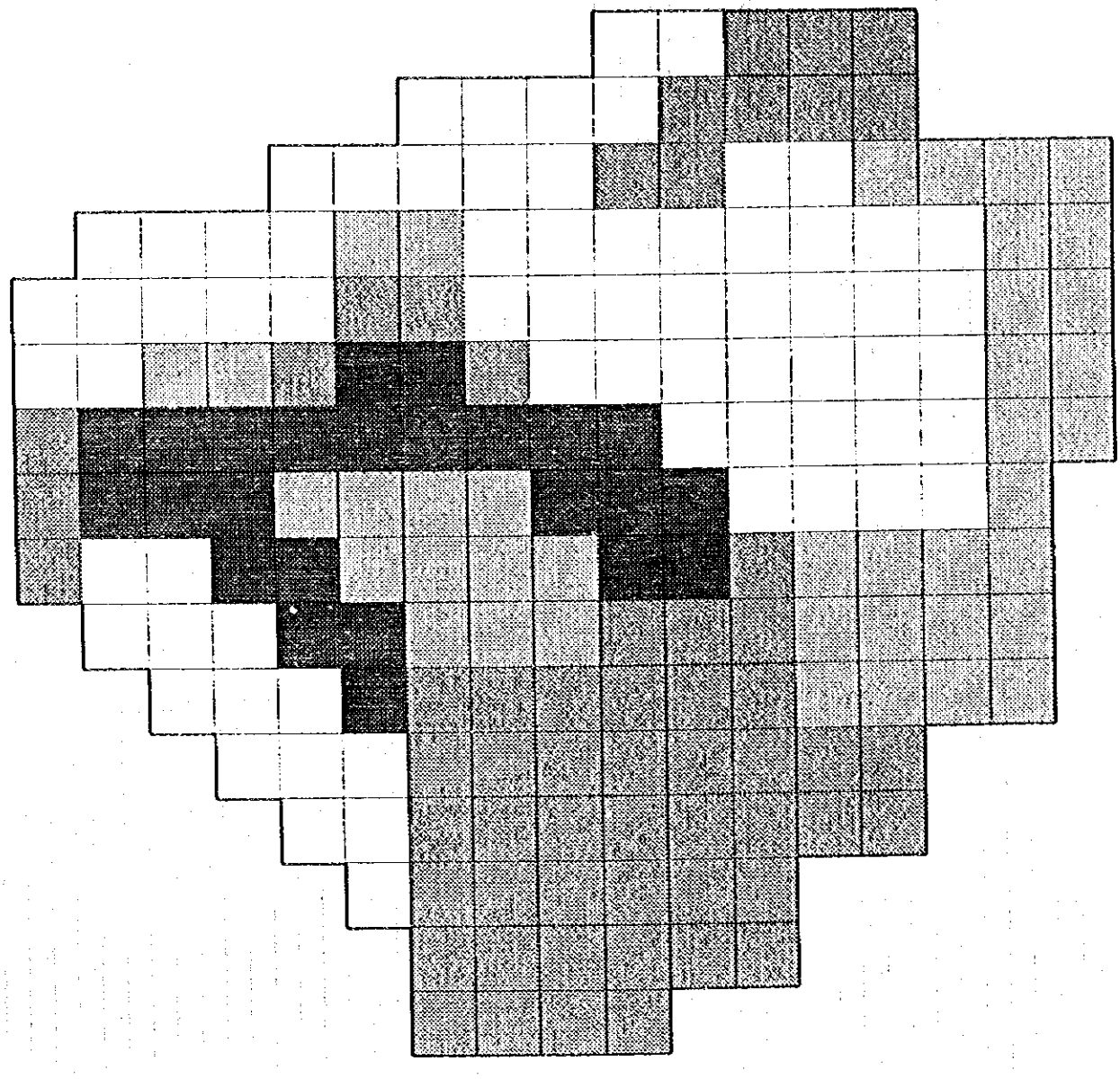


Figure 4.5.12 Estimated Contour Map of Groundwater Level - J. Berda



Unit : Million m3/year

Figure 4.5.13 Water Balance of Groundwater Potential Structure



Legend (m/day)

Under 0.1

0.1 - 0.2

0.2 - 0.5

Over 0.5

Figure 4.5.14
Distribution of Permeability Coefficient - Ain Defali

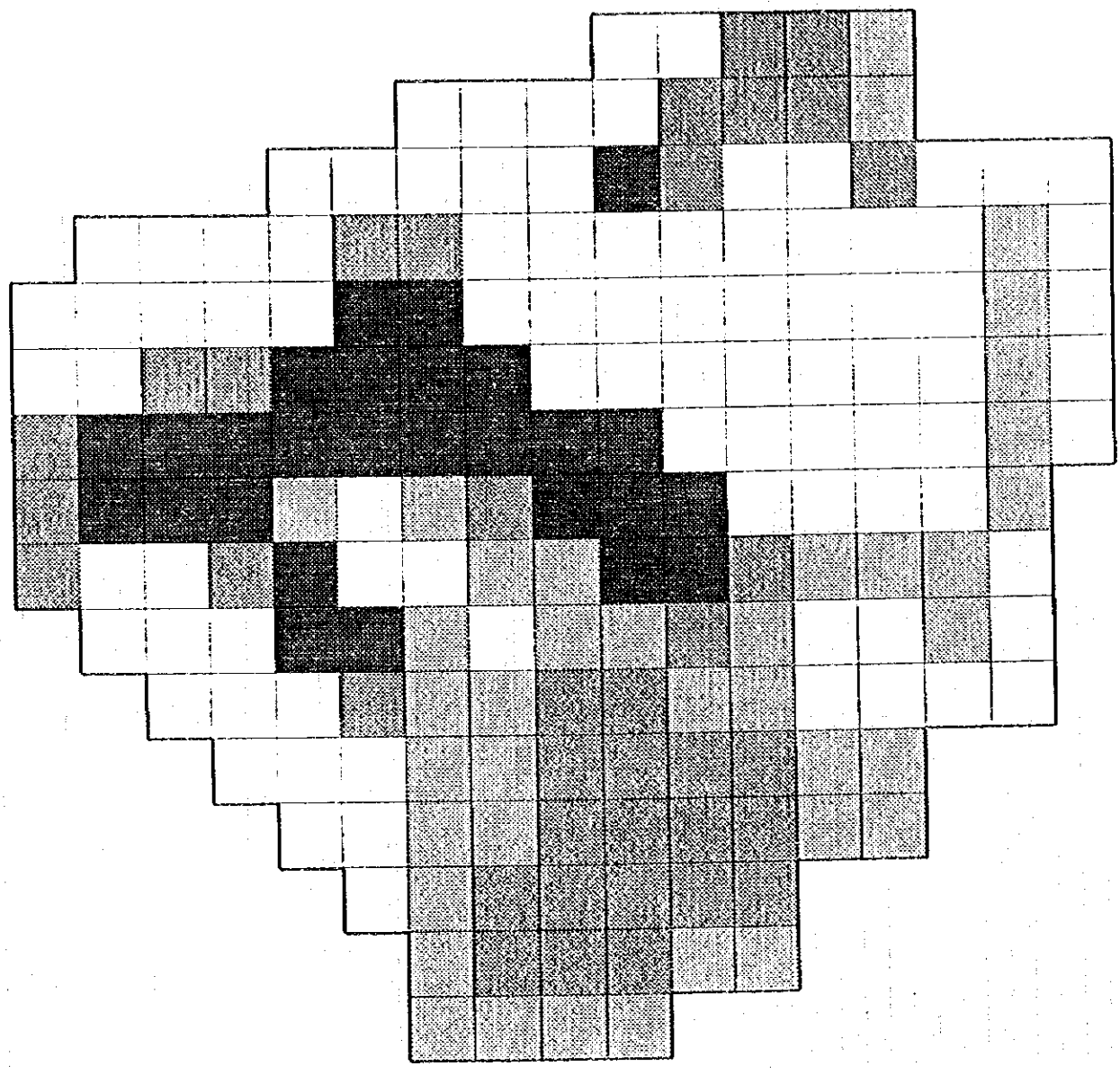


Figure 4.5.15
Distribution of Transmissivity - Ain Defali

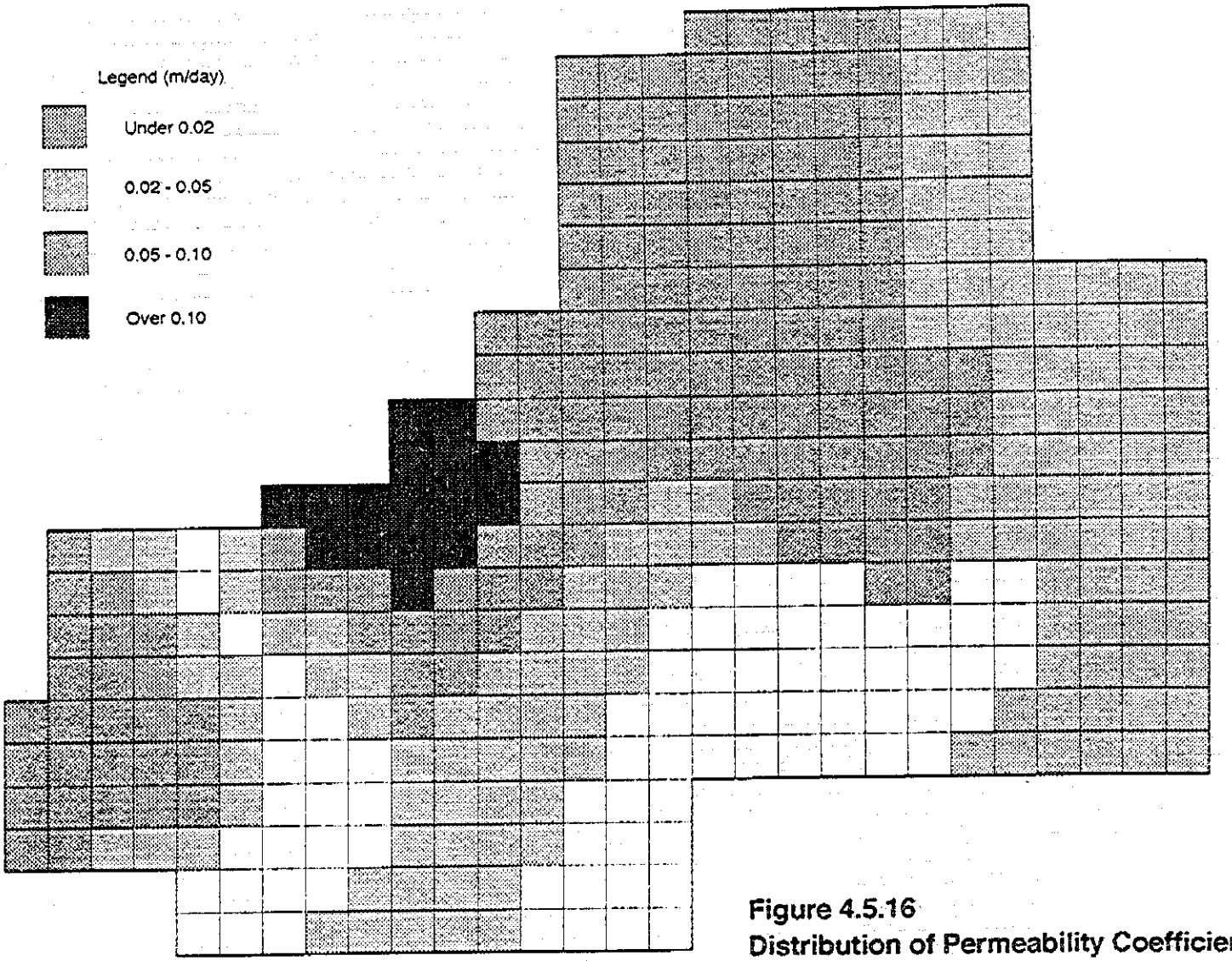


Figure 4.5.16
Distribution of Permeability Coefficient - Teroual (1/2, Upper Layer)

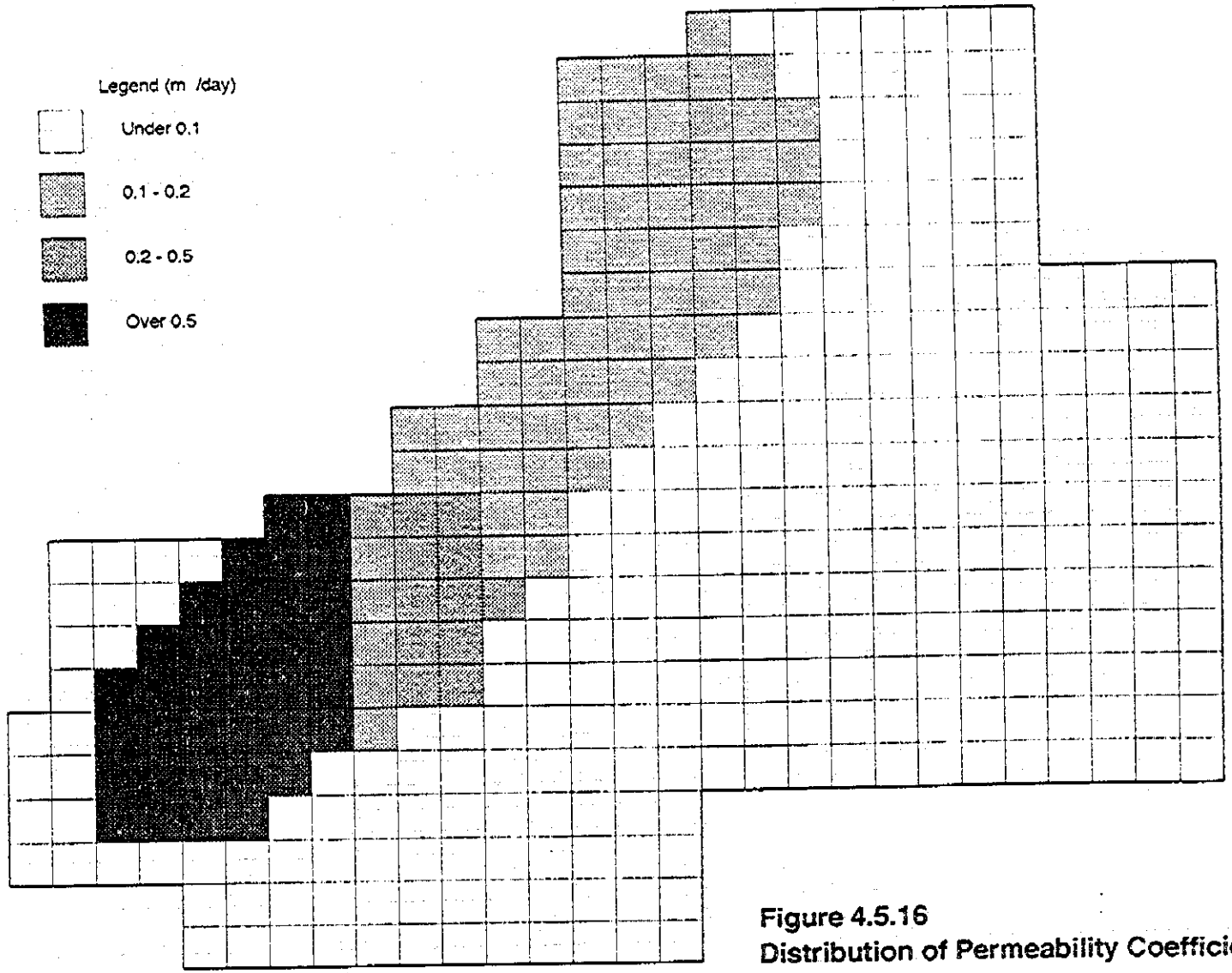


Figure 4.5.16
Distribution of Permeability Coefficient - Teroual (2/2, Lower Layer)

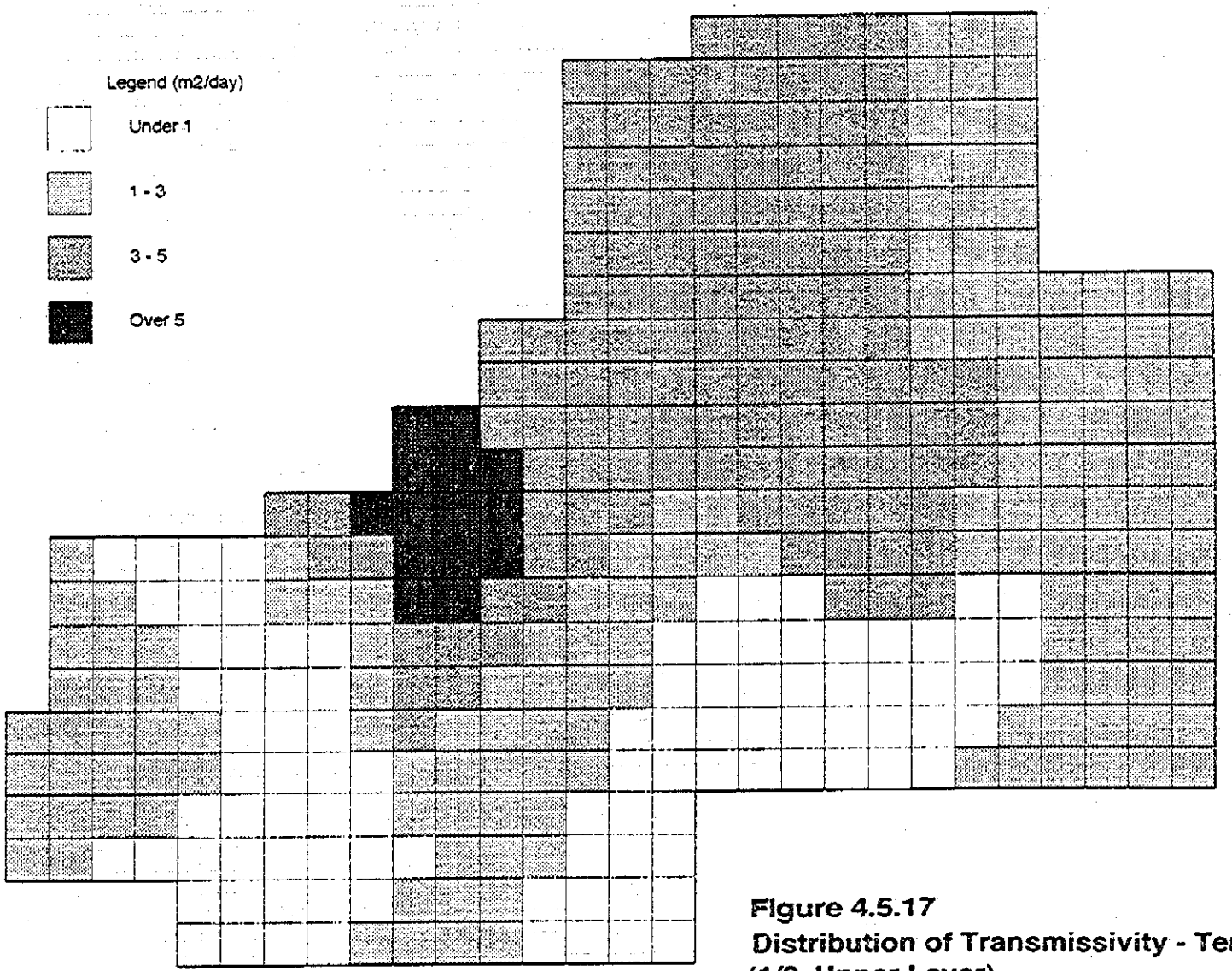


Figure 4.5.17
Distribution of Transmissivity - Teroual
(1/2, Upper Layer)

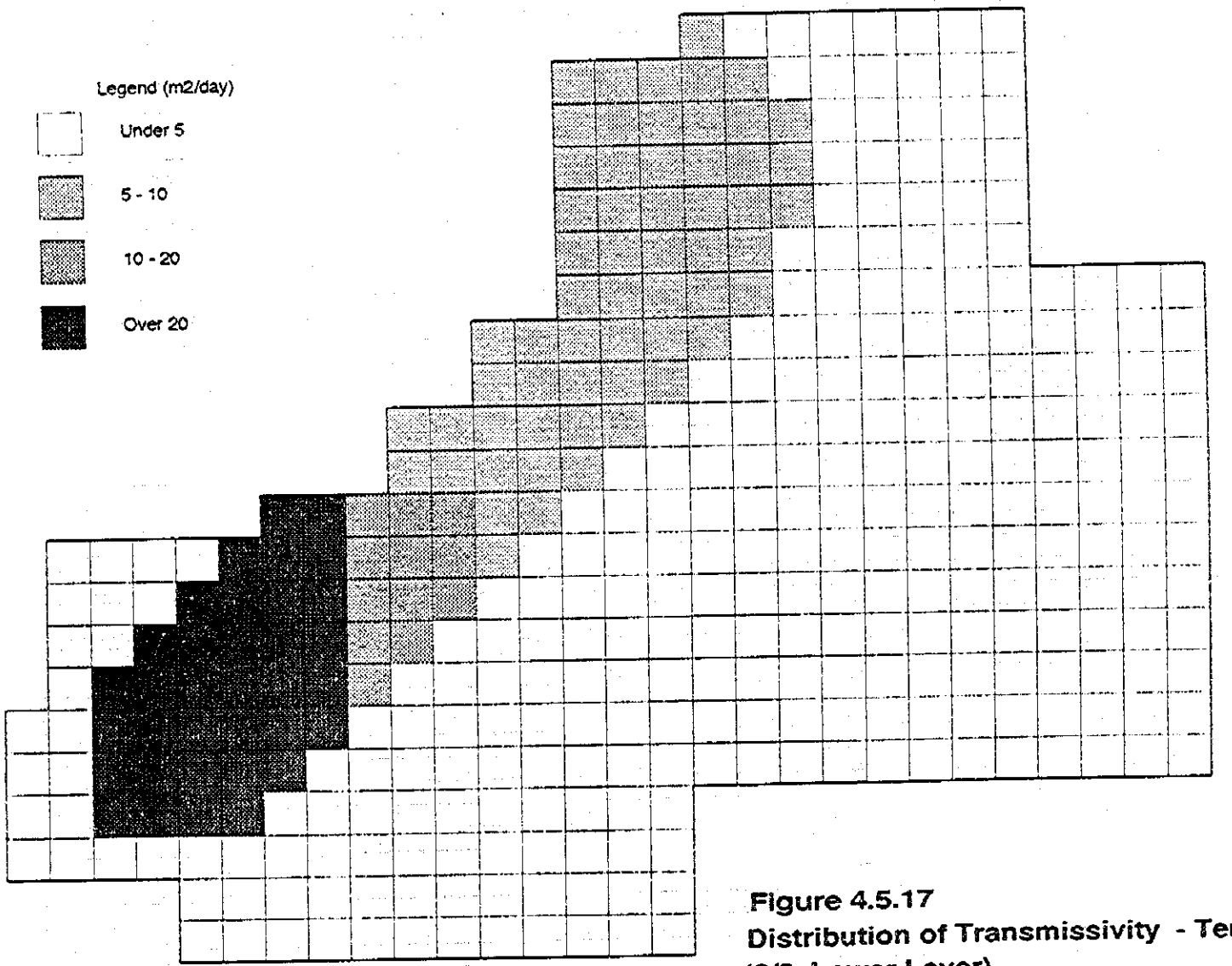


Figure 4.5.17
Distribution of Transmissivity - Teroual (2/2, Lower Layer)

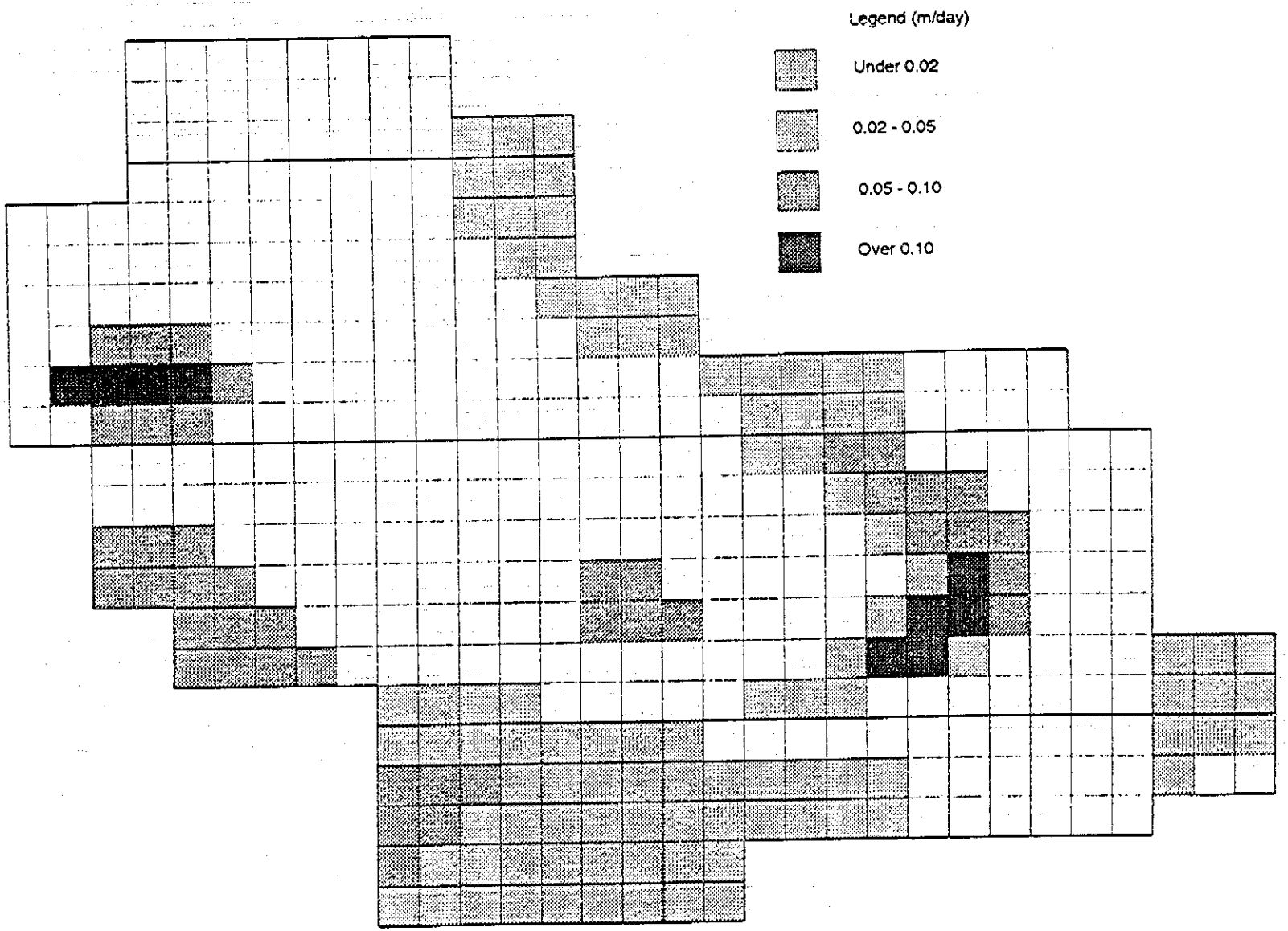


Figure 4.5.18 Distribution of Permeability Coefficient - J. Berda

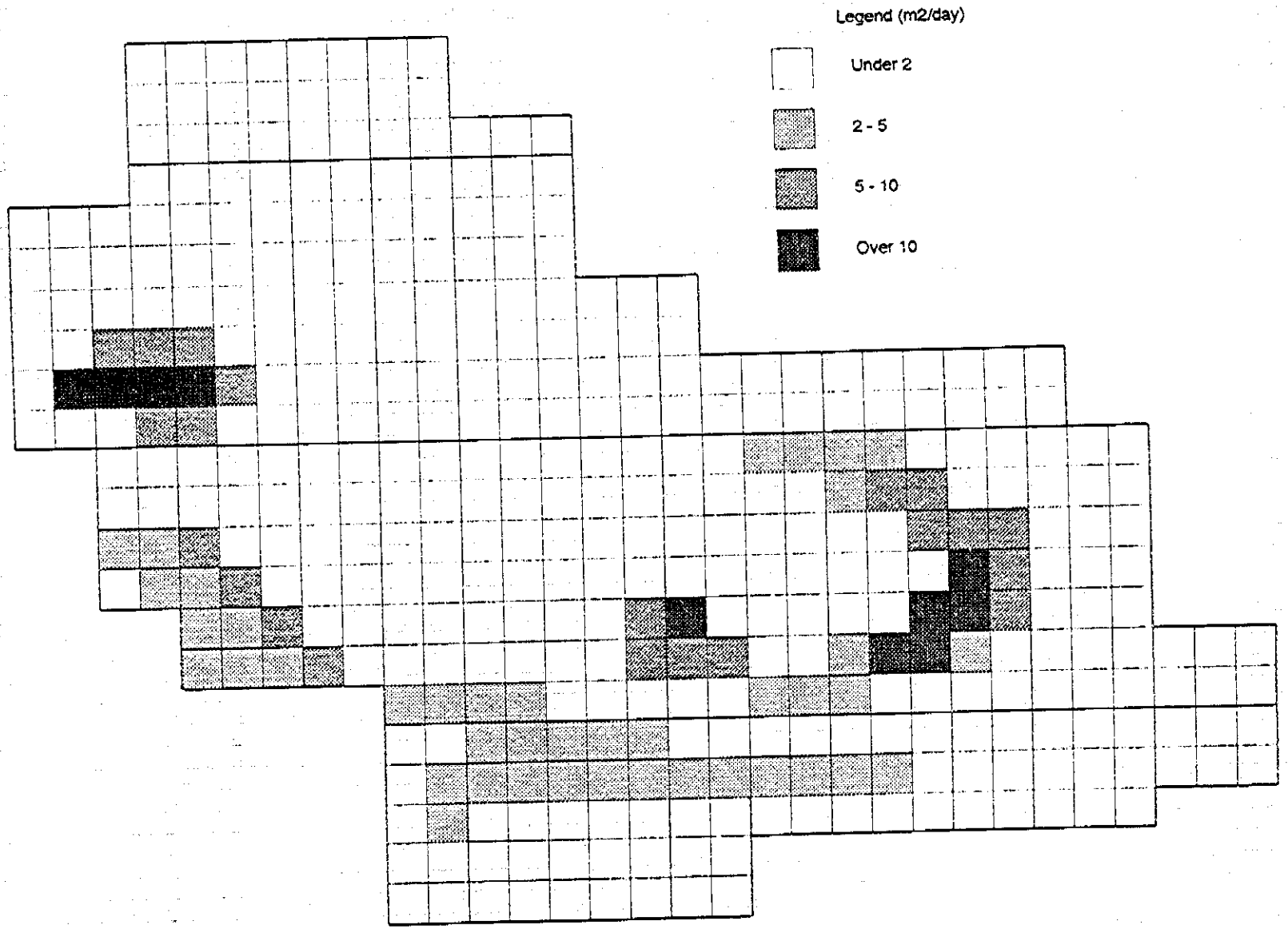
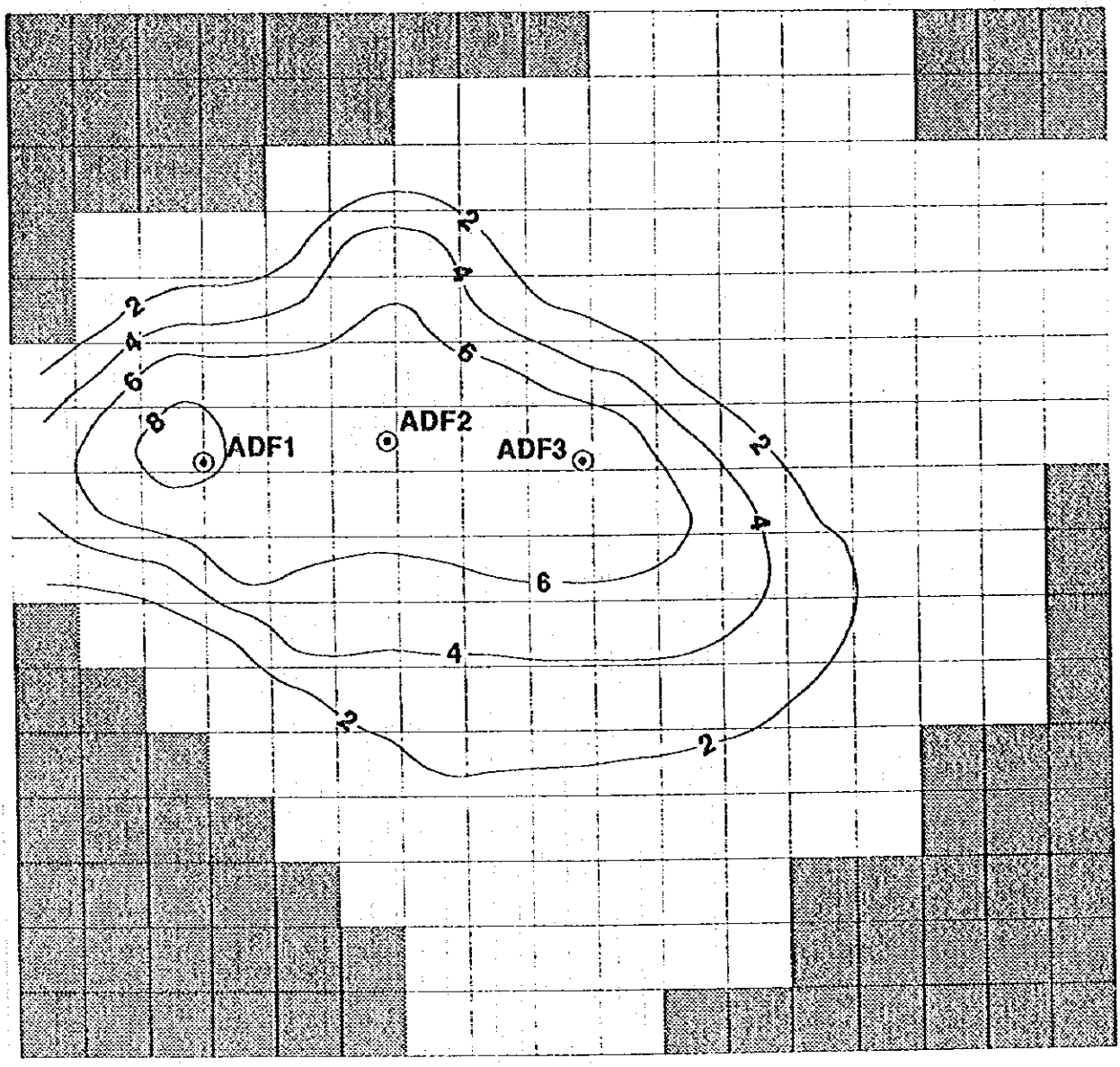


Figure 4.5.19 Distribution of Transmissivity - J. Berda

Ain Defali : Contours of Groundwater Level Lowering, Meters



Condition :

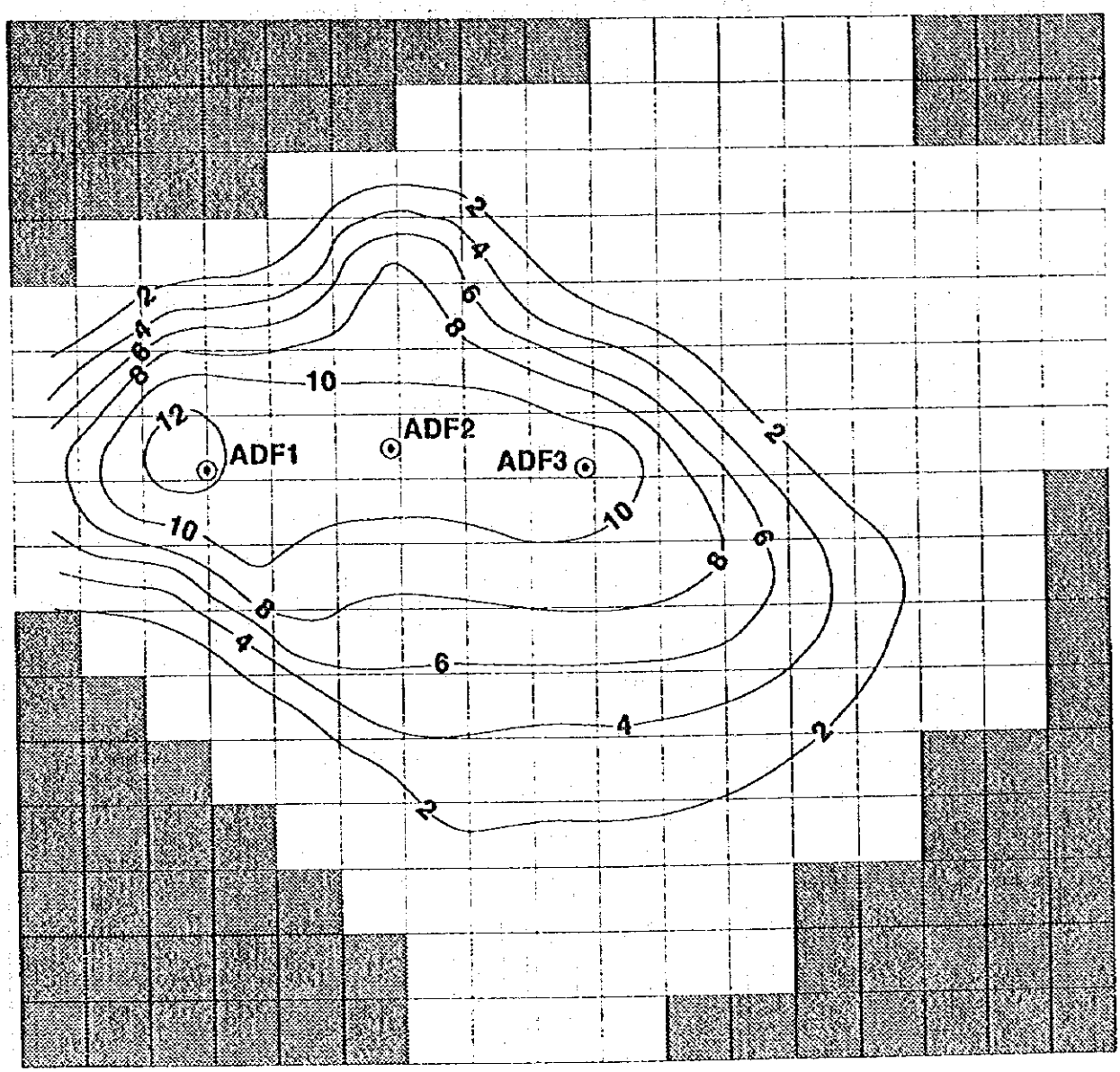
Lowering of Groundwater Level at Exploratory Well < 10 m after 20 Years Pumping

Yield :

ADF1 - 242 m3/day
ADF2 - 60 m3/day
ADF3 - 156 m3/day

Figure 4.5.20 Predicted Lowering of Groundwater Level - Ain Defali (1/3)

Ain Defali : Contours of Groundwater Level Lowering, Meters

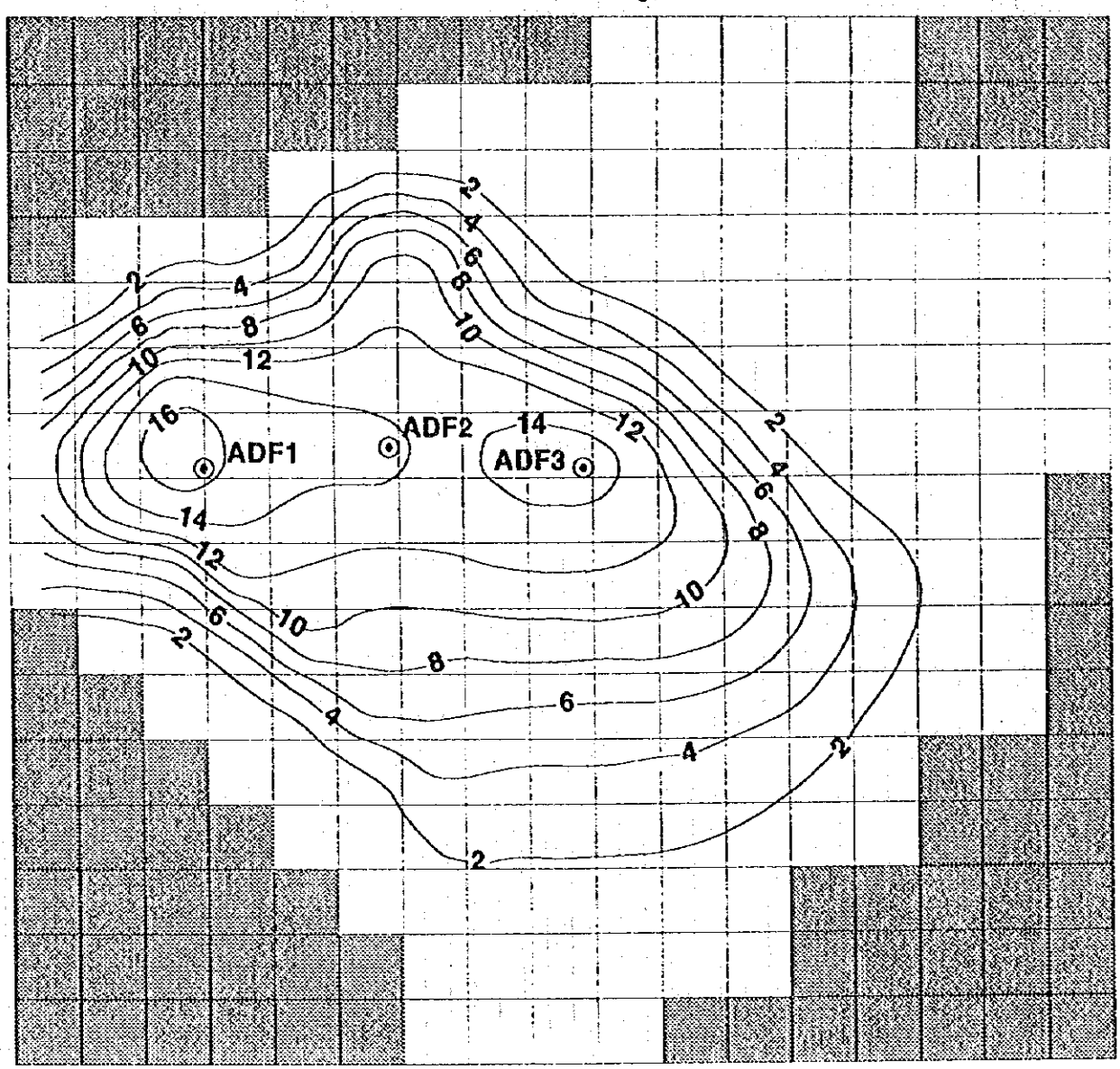


Condition :
Lowering of Groundwater Level at Exploratory Well < 15 m after 20 Years Pumping

Yield :
ADF1 - 354 m3/day
ADF2 - 86 m3/day
ADF3 - 233 m3/day

Figure 4.5.20 Predicted Lowering of Groundwater Level - Ain Defali (2/3)

Ain Defali : Contours of Groundwater Level Lowering, Meters



Condition :

Lowering of Groundwater Level at Explotatory Well < 20 m after 20 Years Pumping

Yield :

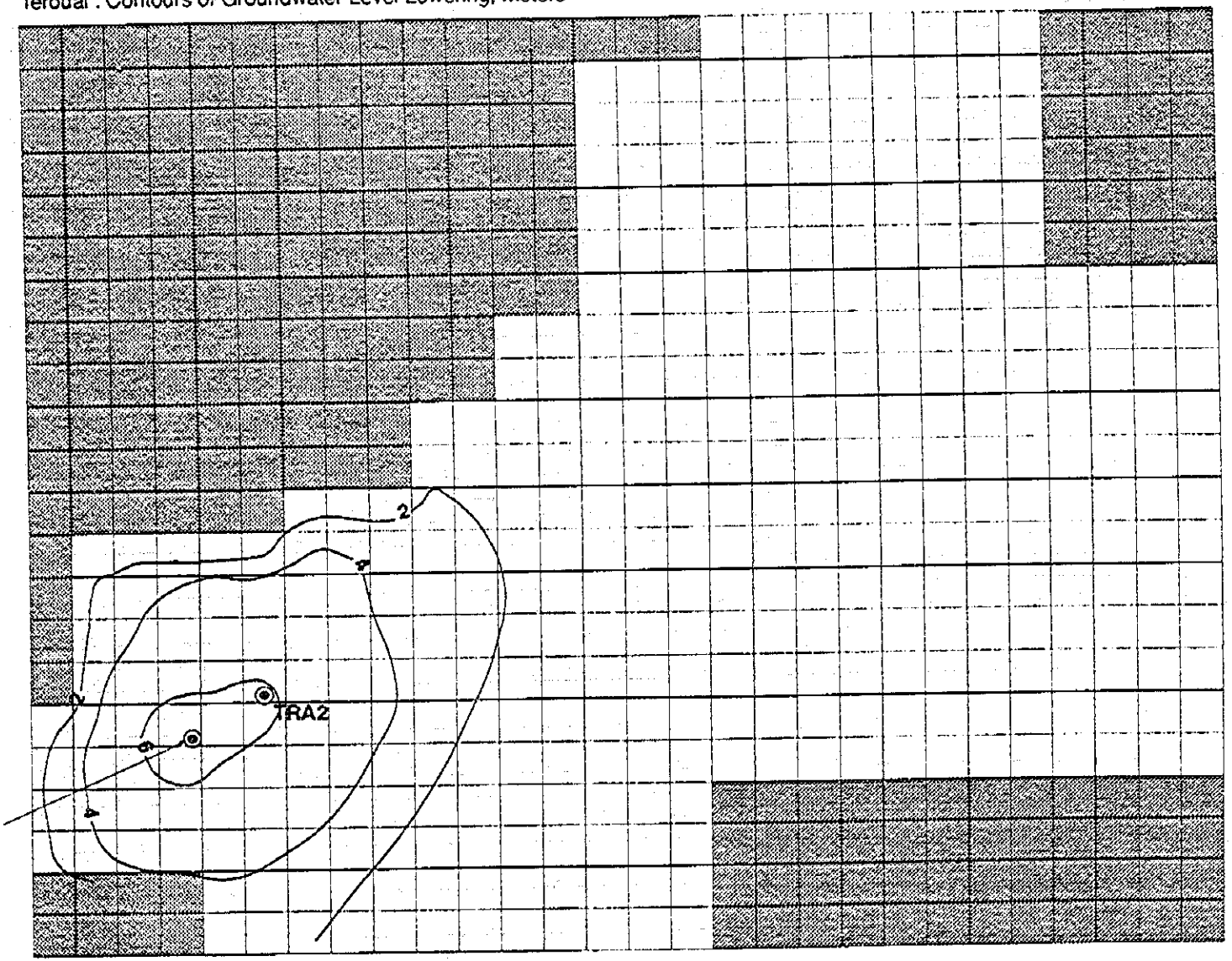
ADF1 - 475 m3/day

ADF2 - 121 m3/day

ADF3 - 311 m3/day

Figure 4.5.20 Predicted Lowering of Groundwater Level - Ain Defali (3/3)

Teroual : Contours of Groundwater Level Lowering, Meters

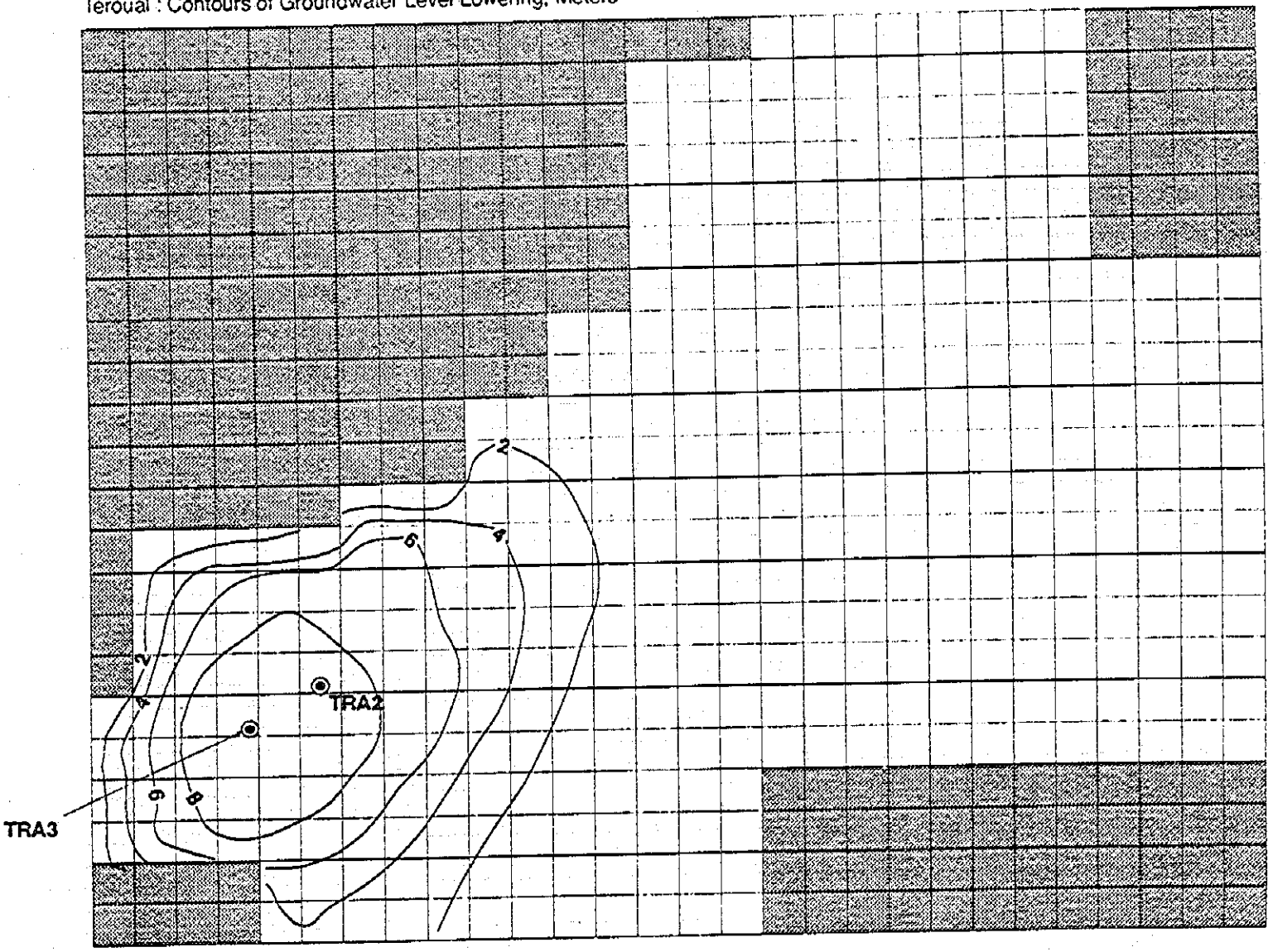


Condition :
Lowering of Groundwater Level at Exploratory Well < 10 m after 20 Years Pumping

Yield :
TRA2 - 111 m3/day
TRA3 - 106 m3/day

Figure 4.5.21 Predicted Lowering of Groundwater Level - Teroual (1/3)

Teroual : Contours of Groundwater Level Lowering, Meters

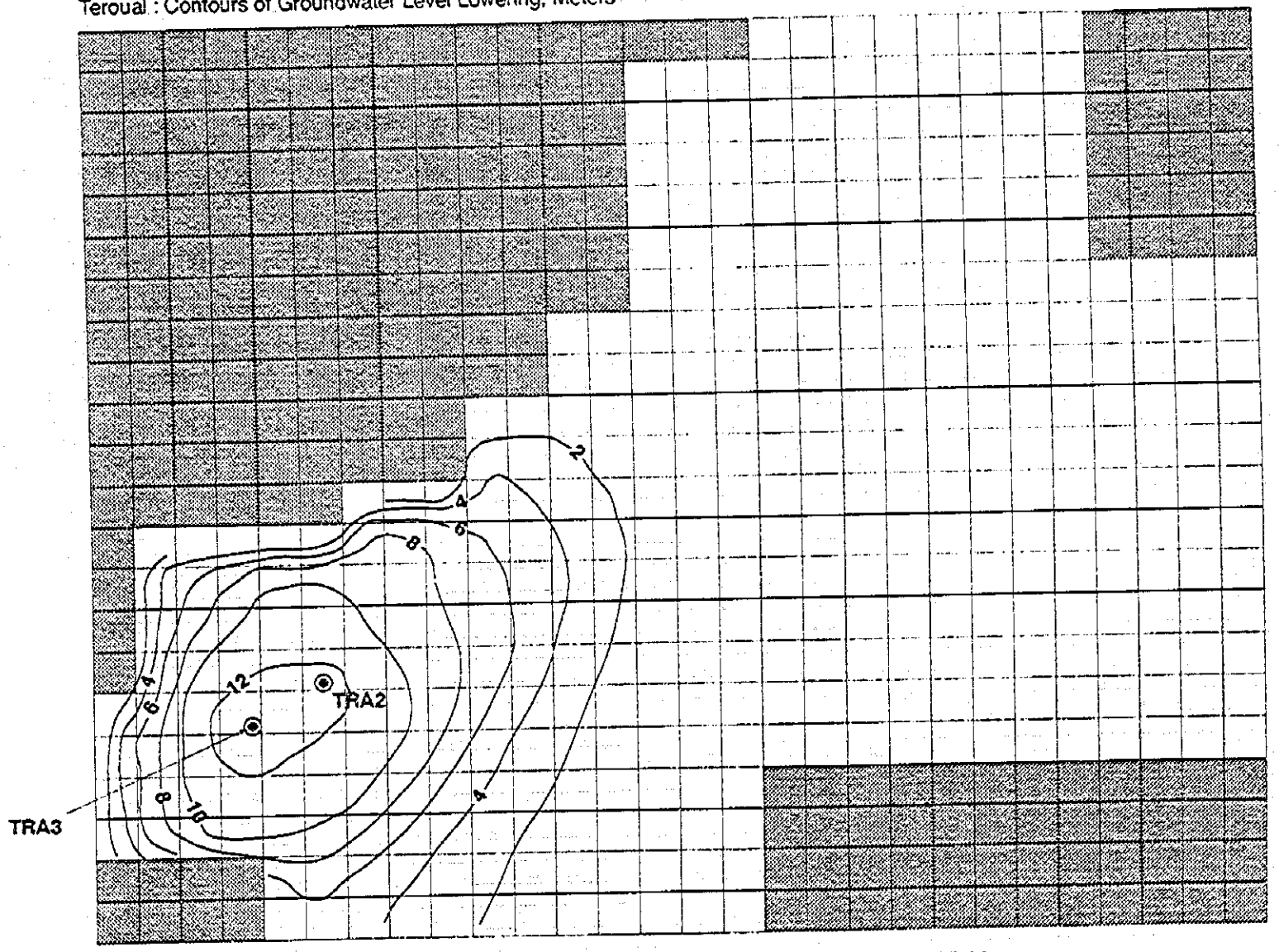


Condition :
Lowering of Groundwater Level at Exploratory Well < 15 m after 20 Years Pumping

Yield :
TRA2 - 167 m3/day
TRA3 - 157 m3/day

Figure 4.5.21 Predicted Lowering of Groundwater Level - Teroual (2/3)

Teroual : Contours of Groundwater Level Lowering, Meters

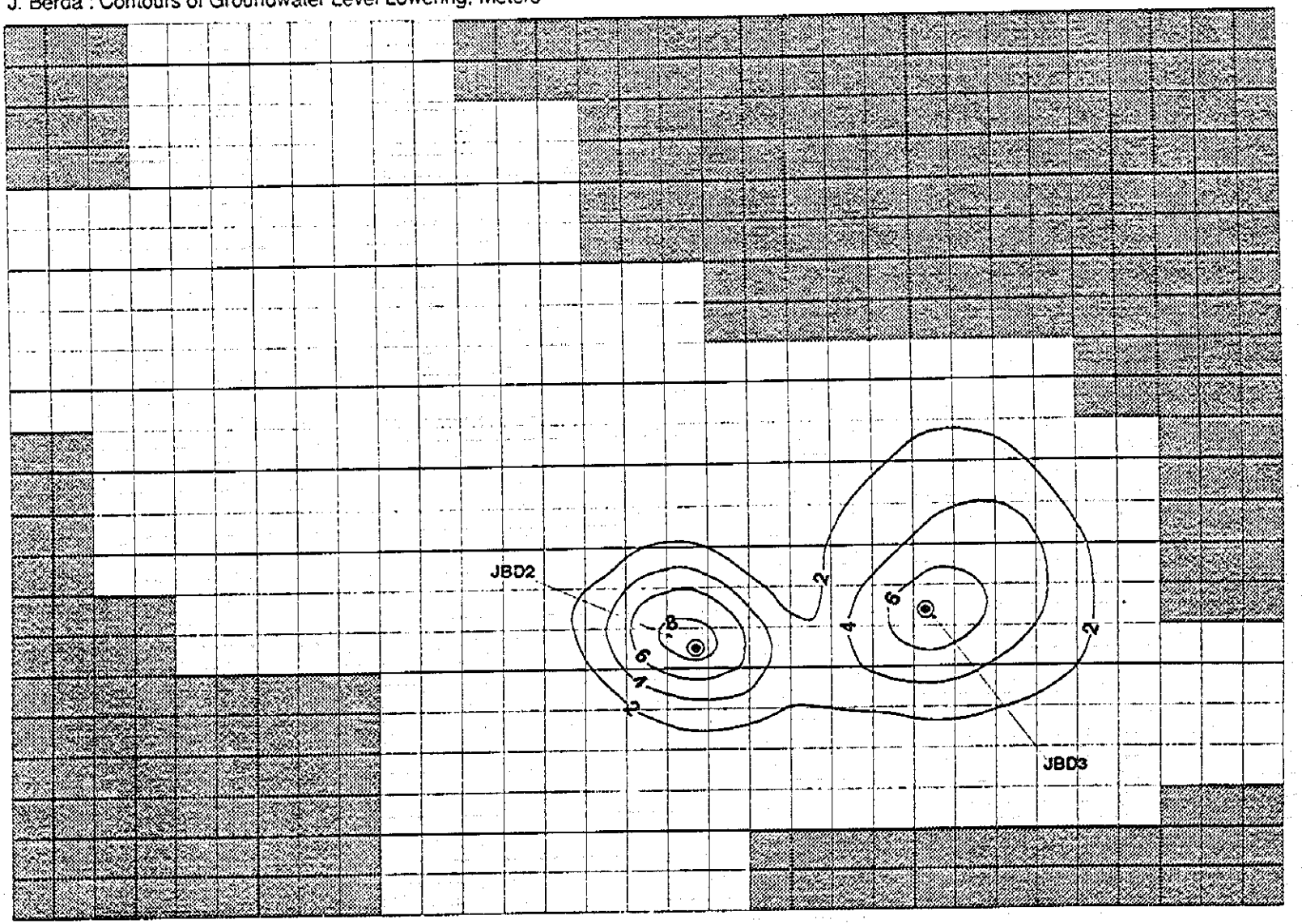


Condition :
Lowering of Groundwater Level at Exploratory Well < 20 m after 20 Years Pumping

Yield :
TRA2 - 225 m3/day
TRA3 - 207 m3/day

Figure 4.5.21 Predicted Lowering of Groundwater Level - Teroual (3/3)

J. Berda : Contours of Groundwater Level Lowering, Meters

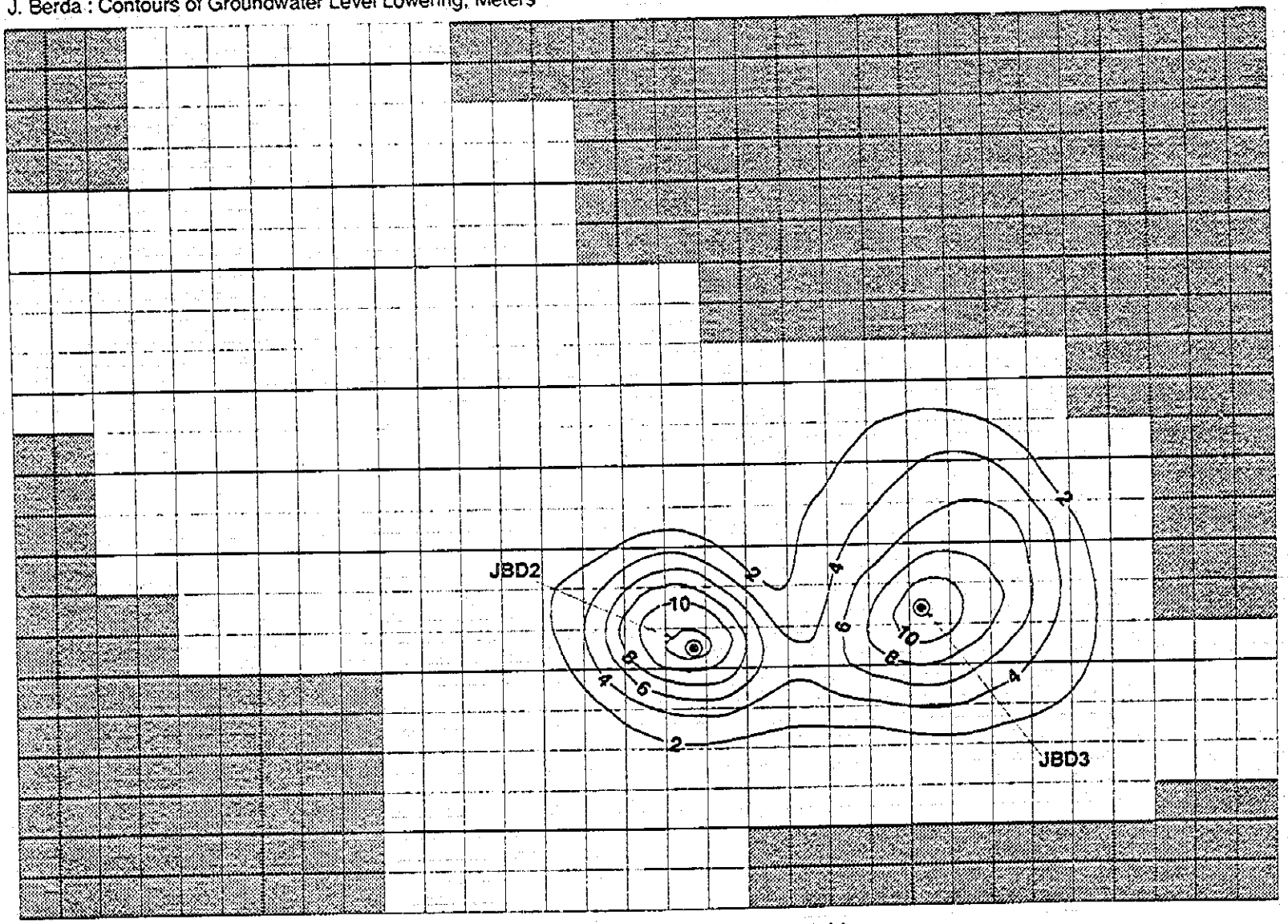


Condition :
Lowering of Groundwater Level at Exploratory Well < 10 m after 20 Years Pumping

Yield :
JBD2 - 43 m3/day
JBD3 - 65 m3/day

Figure 4.5.22 Predicted Lowering of Groundwater Level - J. Berda (1/3)

J. Berda : Contours of Groundwater Level Lowering, Meters

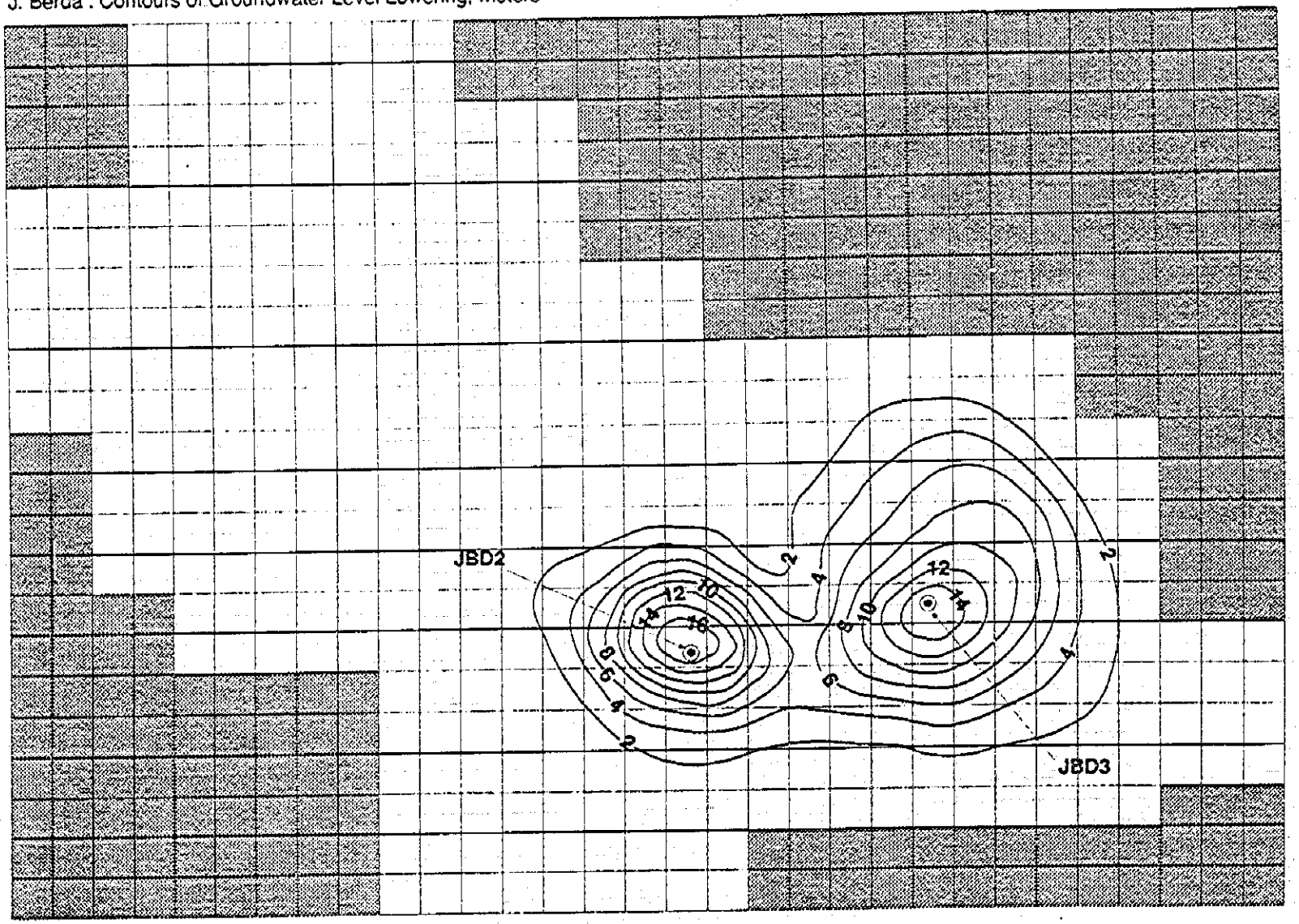


Condition :
Lowering of Groundwater Level at Exploratory Well < 15 m after 20 Years Pumping

Yield :
JBD2 - 65 m3/day
JBD3 - 99 m3/day

Figure 4.5.22 Predicted Lowering of Groundwater Level - J. Berda (2/3)

J. Berda : Contours of Groundwater Level Lowering, Meters



Condition :
Lowering of Groundwater Level at Exploratory Well < 20 m after 20 Years
Pumping

Yield :
JBD2 - 91 m3/day
JBD3 - 134 m3/day

Figure 4.5.22 Predicted Lowering of Groundwater Level - J. Berda (3/3)

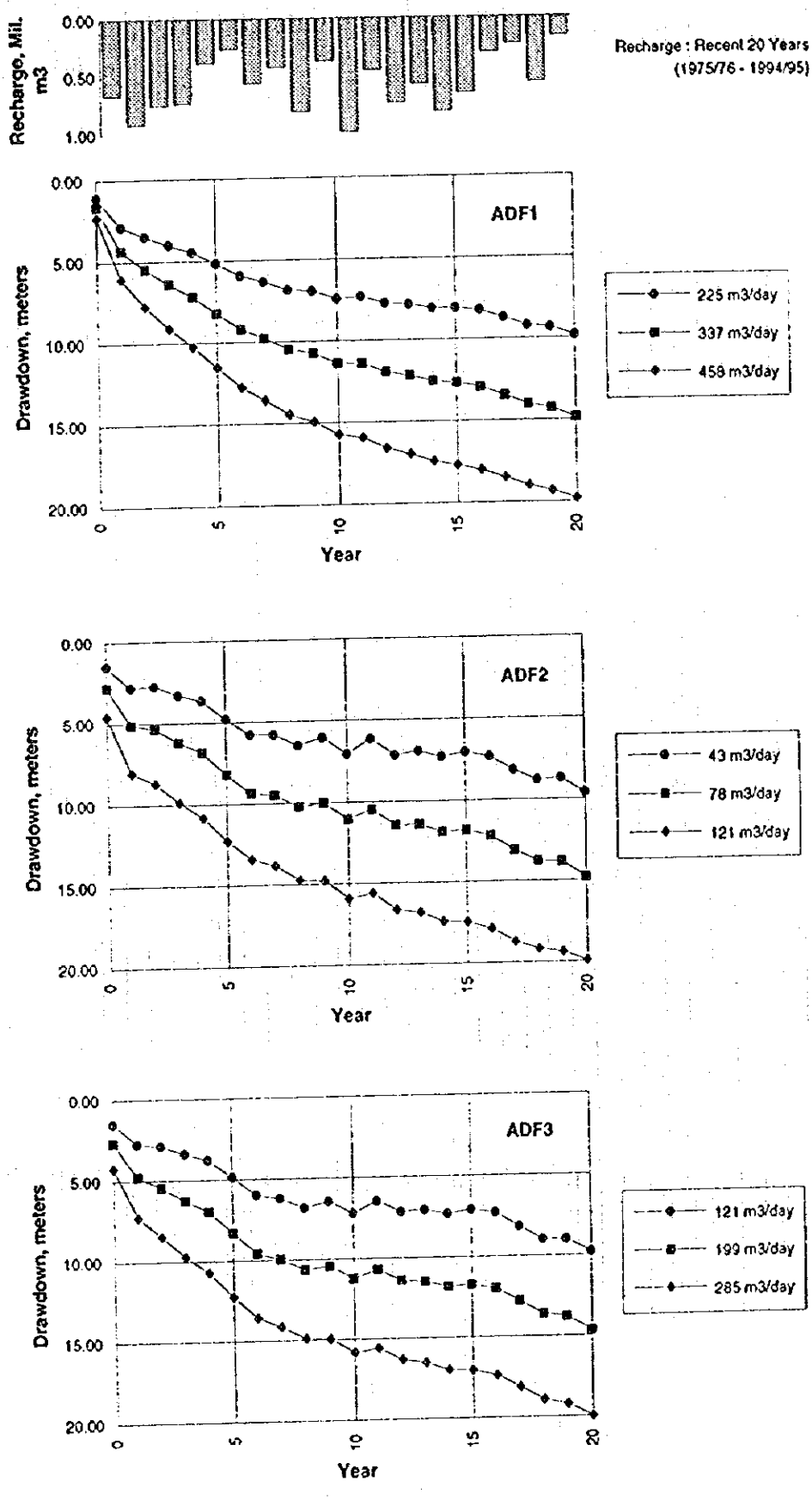


Figure 4.5.23 Variation of Groundwater Level at Exploratory Well - Ain Defali

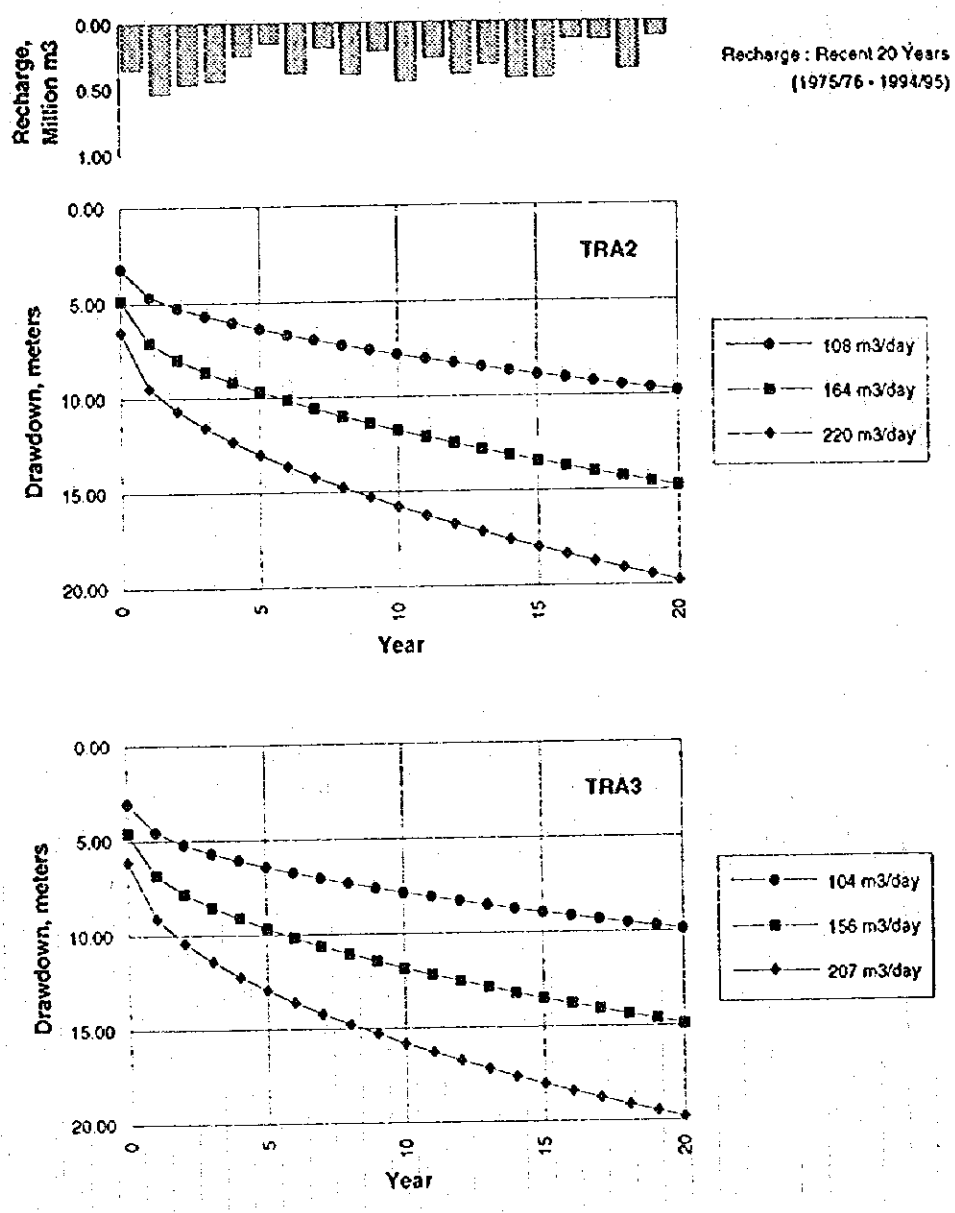


Figure 4.5.24 Variation of Groundwater Level at Exploratory Well - Teroual

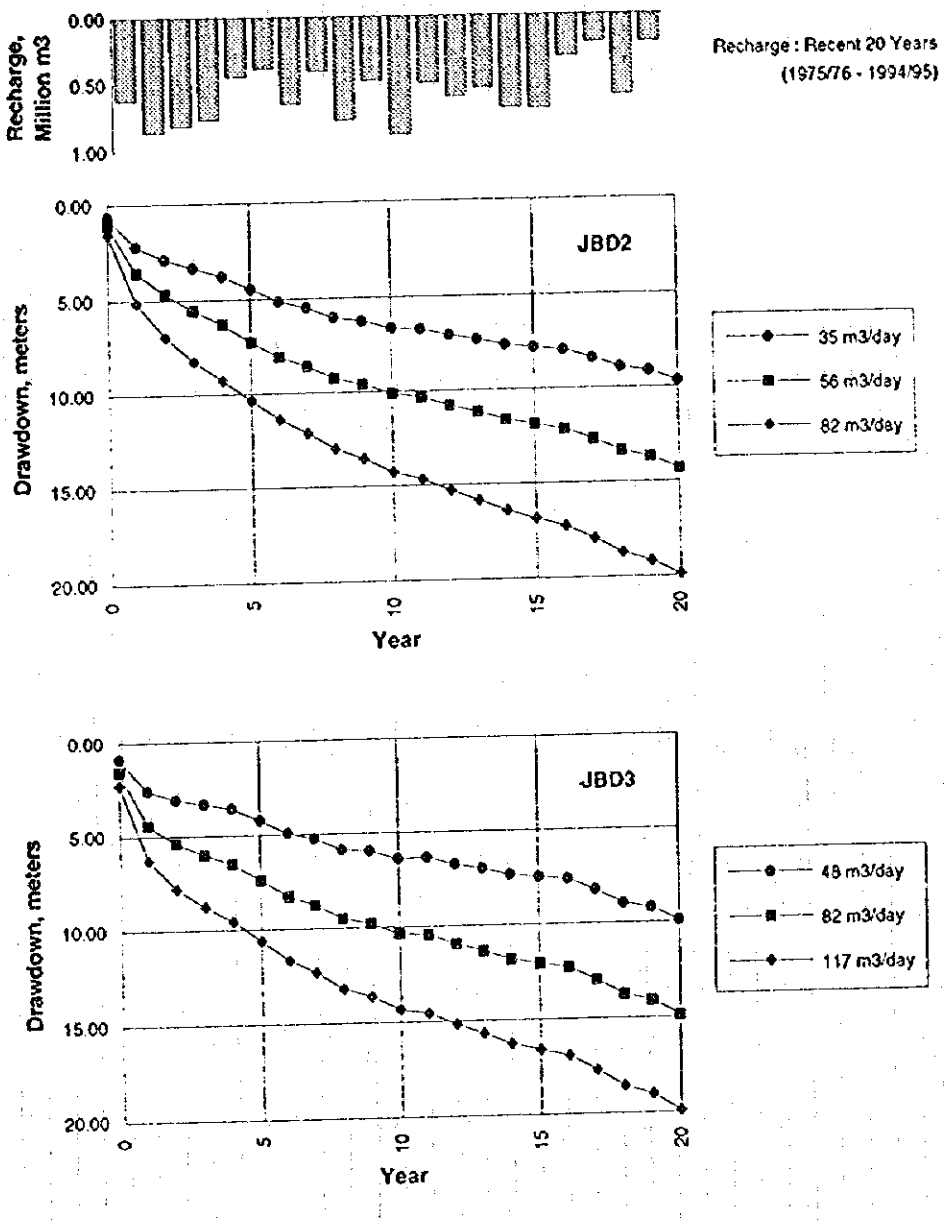


Figure 4.5.25 Variation of Groundwater Level at Exploratory Well - J. Berda

5. Water Supply

Supporting Report
5. Water Supply

Contents

Table 5.1 Ain Gdah Supplied Douar

1. Existing Supplied Douars

1) Lower Pressure Zone (zone 6)

No.	Dours	Existing P.S.P (A)	Function'g P.S.P (B)	P.S.P, not functioning	Source Reserv.	Capacity (m3)	B/A(%)
1	Koudia Hamra	1	1	0	R1	3,000	
2	Boujmaat	5	5	0	R1	3,000	
3	Ain Jdida	1	1	0	R1	3,000	
4	Houmiat	3	3	0	R1	3,000	
5	Old Ellam	2	2	0	R1	3,000	
Total		12	12	0	R1	3,000	1

2) Lower Pressure Zone (zone 8)

No.	Dours	Existing P.S.P (A)	Function'g P.S.P (B)	P.S.P, not functioning	Source Reserv.	Capacity (m3)	B/A
1	Ain Gdah Centre	3	1	2	RU1	50	
2	Coperative Chababat	1	1	0	RS 2	50	
3	Dhar Hmooum	2	2	0	R1	3,000	
4	Old Dkhisi (I)	2	2	0	R1	3,000	
5	Old Dkhisi (II)	2	2	0	RU3	50	
6	Old Salem Safsafa (I)	1	1	0	R1	3,000	
7	Old Salem Safsafa (II)	3	3	0	RU4	2 x 50	
8	Ain Masji	2	2	0	RS V	100+150	
9	Old Abdeslam	3	3	0	RS V	100+150	
10	Old Ajana	3	3	0	RS V	100+150	
11	Lakhnigue	4	4	0	RS V	100+150	
12	Did ba	2	2	0	RS IV	200	
13	Sidi Fateh (I)	3	3	0	R1	3,000	
14	Sidi Fateh (II)	1	1	0	RU5	50	
15	Sidi Fateh (III)	1	1	0	RS III	200	
16	Laatatra (I)	3	3	0	R1	3,000	
17	Laatatra (II)	2	2	0	RU6	50	
18	Krifat	6	6	0	RS IV	200	
19	Bayada	7	7	0	RS III	200	
20	Old Dahou	7	7	0	RS II	200	
21	Blalat	3	3	0	RS II	200	
22	Nbiguiyene (I)	1	1	0	R1	3,000	
23	Nbiguiyene (II)	3	3	0	RU7	50	
24	Old Aajal (I)	1	1	0	R1	3,000	
25	Old Aajal (II)	6	6	0	RU8	50	
26	Old Salem Dhar (I)	2	2	0	RU9	50	
27	Old Salem Dhar (II)	2	2	0	RS I	2 x 200	
28	Grana Eloulia	10	10	0	RS I	2 x 200	
29	Grana Soufla	4	4	0	RS I	2 x 200	
30	Laatarma	6	6	0	RS I	2 x 200	
Total		96	94	2	14		0.98

Source: ONEP Fes

3) Lower Pressure Zone (zone 9)

No.	Dours	Existing P.S.P (A)	Function'g P.S.P (B)	P.S.P, not functioning	Source Reserv.	Capacity (m3)	B/A
1	Kodiat El Hamra	5	5	0	R1	3,000	
2	Ain Laayoune	1	0	1	RU1	50	
3	Dhar Bourzaik (I)	1	1	0	RU1	50	
4	Dhar Bourzaik (II)	1	1	0	R1	3,000	
5	Arzaza (I)	1	1	0	RU3	50	
6	Arzaza (II)	2	2	0	R1	3,000	
7	Arzaza (III)	1	1	0	RU4	50	
8	Kriaat	3	3	0	RS	200	
9	Beni Stiten	4	4	0	RS	200	
10	Krareze (I)	1	1	0	RU5	50	
11	Krareze (II)	1	1	0	RU6	50	
12	Krareze (III)	1	1	0	R1	3,000	
13	Old Laaroussi (I)	1	1	0	RU7	50	
14	Old Laaroussi (II)	1	1	0	RU8	50	
15	Old Laaroussi (III)	2	2	0	R1	3,000	
16	Hmri	2	2	0	RU9	50	
Total		28	27	1	-	-	0.96

4) High Pressure Zone (zone 10)

No.	Dours	Existing P.S.P (A)	Function'g P.S.P (B)	P.S.P, not functioning	Source Reserv.	Capacity (m3)	B/A
1	Touate	3	3	0	R2	1,500	
2	Bab El Koucha	2	2	0	RU1	50	
3	Tacht	2	2	0	RU2	50	
4	Laksar	3	3	0	RS I	200	
5	Mrarsa	3	3	0	RS II	200	
6	Ettllaka	3	3	0	R2	1,500	
7	Mssassa (I)	9	9	0	RS III	200	
8	Mssassa (II)	1	1	0	R2	1,500	
9	Oued Zitoun	2	2	0	RU3	50	
10	Bouaasme	3	3	0	RS III	200	
11	Zrarka	2	2	0	RS V	75	
12	Ain Ouazne	3	2	1	R2	1,500	
13	Beni Boussef	6	5	1	RS IV	100	
Total		42	40	2	-	-	0.95

Source: ONEP Fes

5) High Pressure Zone (zone 11)

No.	Dours	Existing P.S.P (A)	Function'g P.S.P (B)	P.S.P, not functioning	Source Reserv.	Capacity (m3)	B/A
1	Sadrat Moumen	6	6	0	R2	1,500	
2	Elomal	2	2	0	RS6	150	
3	Kririch	2	2	0	RS6	150	
4	Ain Ghafla	1	1	0	RS7	150+200	
5	Kodiat El Ghiran	2	2	0	RS7	150+200	
6	Kodiat El Harcha	3	3	0	RS7	150+200	
7	Old M'hamed	2	2	0	RS7	150+200	
8	Hmari	2	2	0	RS7	150+200	
9	Old Soltan	3	2	1	RS19	2 x 175	
10	Bab daoud	1	1	0	RS8	2 x 200	
11	Bouslahamat	2	1	1	RS8	2 x 200	
12	Mchawiin	2	2	0	RS8	2 x 200	
13	Chachia	2	2	0	RS8	2 x 200	
14	Lhjar Lhoumar	2	2	0	RS9	100	
15	Lhouitat	3	3	0	RS9	100	
16	Sidi Bouknadel	3	3	0	RS9	100	
17	Ben Kazat	1	1	0	R2	1,500	
18	Bouaaram	5	3	2	RS9	100	
19	Jbal Aghlal	3	3	0	RS9	100	
20	Ras Labyad	2	2	0	R2	1,500	
21	Astar I	2	2	0	RU1	50	
22	Ain Zahra	3	3	0	RS10	200	
23	Astar II	2	2	0	RS10	200	
24	Douiwat	3	3	0	RS10	200	
25	Kodiat Kabaz	3	3	0	RS11	150	
26	Msabha	6	5	1	RS11	150	
27	Jnan Abou Ben Amer	1	1	0	RU2	50	
28	Old Rahou	2	2	0	RS12	75	
29	Old Amer Belhaj (I)	3	2	1	R2	1,500	
30	Old Amer Belhaj (II)	1	1	0	RU3	50	
31	Old Tazi	2	2	0	R2	1,500	
32	Dhar El Ghanam	1	0	1	R2	1,500	
33	Kasbat Old Ahmed	3	3	0	R2	1,500	
34	Old Belarbi	1	1	0	RU4	50	
35	Dhar Jmal	2	2	0	RU5	50	
36	Jnan Tahar	2	2	0	RU6	50	
37	Ain Aissa	1	1	0	RU7	50	
38	Ben Chabaanate	2	2	0	RU8	50	
39	Old Mhamed	2	2	0	RS13	75	
40	Old Hsain	2	2	0	RU9	50	
41	Old Douali	1	1	0	RS14	100+150	
42	Beni Rachd	8	7	1	RS14	100+150	
43	El Kelaa	1	1	0	RS15-1	100	
44	Old Abdelkrim	7	7	0	RS15-2	200	
Total		110	102	8	-	-	0.93

Source: ONEP Fes

2. Planned Future Supply Douar

	Name of Douars
1	Chriguiyne
2	Krarda
3	Zaouid
4	Essap
5	Hammoudiyat
6	Od. Taleb
7	Ferricha
8	Od. Daud
9	Od. Moussa
10	Fkarna Od. Ali
11	Dhamna
12	Frama Od. Tkhil
13	Od. Malek
14	Od. Abdeslam
15	Od. Bousabek

Source: ONEP Fes

3. Supply Douar of Ongoing Project

	Name of Douars
1	Gaada
2	Ayne Zitoun
3	Nokt
4	Od. Ajana
5	Amarat
6	Od. Aji
7	Ngoucht
8	Od. Haj. amarat
9	Od. B. Amarat
10	Douibat
11	Abidat
12	Hrachna

Table 5.2 List of Supplied Douars in the Existing M'kansa Water Supply System

No.	Name of Douars	No.	Name of Douars	No.	Name of Douars
1	Klaba	31	Akkat	61	Oulad Fatna
2	Oulad Moussa	32	Gharbaoua	62	Oulad Hammou Lahmar
3	Oulad Bel Ghali	33	Znata	63	Azzouzate
4	Oulad Adya	34	Diouriyne	64	M'kaka
5	Laghchachma	35	Ghazouane	65	Chkiouyene
6	Beni Naiz	36	Ben Oujguel	66	Kariat Sidi Bouazza
7	Aarib	37	Azib Soltane	67	Laanabra
8	Mazaria	38	Azib Moulay Ali	68	Oulad Amer
9	M'kansa	39	Hamri	69	Oulad Tahar
10	Laamour	40	Ouardigha	70	M'Babih
11	Boutouil	41	Taalba	71	Oulad Ahmed
12	Hmadate	42	Laagagda	72	Khiyam Bouchta
13	Taicha	43	Azib Laagagda	73	Lamsamra
14	Oulad Lgnaoui	44	Labdadoua	74	Oulad Yagoub
15	Sidi Lghazi	45	Al Kalaa	75	Oulad Aamra
16	Zianate	46	Zaamra	76	Oulad Jelloul
17	Tahryne	47	Oulad Boulaouane	77	Oulad Ben Hammou
18	Kleaa	48	Oulad Tyeb	78	R'hamna
19	Oulad Yechou	49	Bou Saadate	79	Oulad Kacem
20	Lakreaa	50	Ben Tahrate	80	Lkafa
21	Oulad Bouchaib	51	Oulad Zahra	81	Skhaska
22	Hachmat L'oued	52	Dachra	82	Lakdadcha
23	Hachmat Shira	53	Azzaba	83	Oulad Salem
24	Ouled Abdelkrim	54	Ghoufirat	84	R'mel
25	Laaroussyne	55	Gtabene	85	Cooperative Ghazouane I
26	Aoumarate	56	Khouaoura	86	Cooperative Ghazouane II
27	Oulad Slama	57	Laarbi Lkhaddar	87	cooperative Smara
28	Boujraine	58	Ahmed Ben Idris	88	Centre de M'kansa
29	Hmadate Oulad Slama	59	Oulad Ben Meni	89	Souk L'khmis
30	Ain Ber Zineldihajat	60	Oulad Hammou Meriem	90	Dhar Nouala

Source: ONEP Fes

Table 5.3 List of Supplied Douars in the Existing Karia Ba Mohamed Water Supply System

1	Majaara	5	Gueddara
2	Laamour	6	Bou Chammar
3	Beni Ahmed	7	Oulad Ben Abbou
4	Meaouna	8	Market at Karia Ba Mohamed

Table 5.4 List of Supplied Douars for Future Extension Lines in the Karia Ba Mohamed Water Supply System

Name of Commune	Name of Douars			
Karia Ba Mohamed	1	M'Hamid		
Beni Yasnouss	1	Cooperative Al Ittihad	4	Ouled Ben Aissa
	2	Cooperative Takadoum	5	Ouled L'Haj Laarbi
	3	Croisement Chkoubiine	6	Chtiouine
My. Abdelkrim	1	Ouled Driss	5	Ben Akki
	2	Dchar Ali	6	Rouajaa
	3	Hamri Ali	7	Ouled Ben Jilali
	4	Hamri	8	Ouled Ben Abdelkrim
My. Bouchta	1	Chef Lieu	10	Sdari
	2	KM 66	11	Dhar Mlazou
	3	Chouiba	12	Tachnfichte
	4	Klouaa	13	Jbel Kissane
	5	Zaouia Bas	14	Choukar
	6	Zaouia Haout	15	Kattar
	7	Dkjoukiine	16	Beni Oulass
	8	Chrouf	17	Zeroula
	9	Mejdama	18	Lamrakim
Bouchabel	1	Smouniine		
	2	El. Harzatte		
	3	Koualele		
Branch Line	1	Karmoud	10	Oulad Hmidou Kadour
Branch Line	2	Zraoula	11	Ouled Hadj Med
Branch Line	3	Homrane A. Bida	12	Mzaoura
Branch Line	4	Oulad Yahia	13	Ouled Ben Hadef
Branch Line	5	Lalla Aicha	14	Ouled Taib (Oumarat)
Branch Line	6	Zghimrat	15	Sidi Ali
Branch Line	7	Zouinat	16	Anakda
Branch Line	8	Boaffifat	17	Ahnancha
Branch Line	9	Ghzouana	18	Bouchabel
Sidi Abed Branch Line	1	Oulad Bou Azza		
Branch Line	2	Houara		

Source: ONEP Fes

Table 5.5 List of Existing Water Supply Facilities (Aïn Defali)

Geographic Code			Name of Douar	Estimated	Rehabilitation	
Province	Circle	Commune		Population	Dughole	Spring
Sidi	Had	Ain	AAOUFAT	406	0	1
Kacem	Kourt	Defali	AIN CHAMIA	692	0	1
			AIN DFALI	1,048	1	1
			AIN SEDDINE	90	0	0
			AIN SFESSEF	148	0	1
			AMAMA	601	0	1
			BNI CHELLAH	238	0	0
			BNI SENNANA	1,090	0	1
			BNI ZID	778	0	1
			BOUAJAJAT	115	0	0
			BOUAJOULAT	403	1	0
			BOUKOUIRATT	240	0	0
			CHAOUIA BIR	8,212	0	0
			CHAOUIA BOURYATEL	677	0	0
			CHAOUIA RMEL	1,088	0	0
			CHLEUH	258	0	1
			DAAF LAHFIRA	398	0	0
			DAAF OULD ALI	238	0	0
			DHAR KHARAZ	172	0	0
			DRIOUCHAT	200	0	0
			FADILIA	376	0	0
			FSSAHIYEN	314	0	0
			HJAFNA RDAT	519	0	0
			JAAOUNA	346	0	0
			JDID	602	0	1
			JRAMNA	201	0	0
			KELAA	220	0	1
			KHODZIANNE	791	0	0
			KRANES	458	0	0
			KRAOUCHA	749	0	1
			LAADIRAT	572	0	1
			LAAOUAOULA	390	0	1
			LAHASBA	99	0	0
			LAHJAFRA BOUGDOUR	957	0	0
			LAHJAJMA	675	0	0
			LAHRAHRA	356	0	0
			MAADID	132	0	0
			MKAM MOUGUI	570	0	0
			MOUALDA	427	0	1
			MRABIH	495	1	0
			OULAD BOUCHRIHA	454	0	0
			OULD MAHYOU	463	0	0
			OULD SALEM	202	0	0
			OULED AAROUB	123	1	0
			OULED BENYEFOU	322	0	1
			OULED BOUAMER	115	0	0
			OULED BOUAYEB	220	0	0
			OULED BOUBKER	356	0	0
			OULED GAID	890	1	1
			OULED KTIR	2,148	1	0
			OULED NOUAL	251	0	1
			OULED SALEM	141	1	0
			REGADA	72	0	0
			SLAIMA	354	0	0
			SLIM	1,347	0	1
			SOUHATT	320	0	0
			SOUISSAT	421	0	1
Total			51 Douars	34,540	7	19

Table 5.6 List of Existing Water Supply Facilities (Teroual)

Geographic Code			Name of Douar	Estimated	Rehabilitation	
Province	Circle	Commune		Population	Dughole	Spring
Sidi	Ouezzane	Teroual	ACHIRA	390	0	1
Kacem			AIN ARSA	410	0	1
			AIN HADDAD	390	0	1
			AMALOU	280	0	1
			BAKKALA	340	0	1
			BERIAT RMEL	240	0	1
			GHBALOU	820	1	1
			GLITA	395	0	1
			HADDARINE	590	0	1
			IDAR TOUIL	720	0	1
			HOUMAR	120	0	1
			INDGHAR	150	0	1
			KHANDAK BERD	475	0	1
			KOUDIA	260	0	1
			LALLA AICHA	130	0	1
			LATAMNA	298	0	1
			MERRAKINE	220	0	1
			MGUEROUEL	600	0	0
			OULA BAKKAL	340	0	1
			OULAD IMRANE4	120	0	0
			OULAD LAHCEN	215	0	1
			REMLA	220	0	1
			SIDI ALLAL ZGHARI	960	0	1
			TEROUAL	2,800	0	1
			ZLAYEH	190	0	0
			ZOURAK	575	0	1
Total			26 Douars	12,248	1	23

Table 5.7 List of Existing Water Supply Facilities (El Bibane)

Geographic Code			Name of Douar	Esyimated	Rehabilitation	
Province	Circle	Commune		Population	Dughole	Spring
Taounate	Ghafsai	El Bibane	AIN MERTAB	3,384	0	1
			AOUNANE	775	0	0
			ASTAR	341	0	0
			BABET EL BIR	1,033	0	1
			DOUEHAR	255	0	1
			OULAD BEN JEMAA	310	0	1
			RAS LAKBOUR	286	0	0
			RIF	312	0	0
			RKIBA	1,027	0	1
			TAZGHADRA	1,479	0	1
			ZAOUIA SIDI AHMED	177	0	1
Total			**11 Douars**	**9,379**	**0**	**7**

Table 5.8 Water Demand Projection and Water Balance, 1995

No	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	GW (40%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Tou G.W. Product(x90%) (m3/d)	Surface W Product (m3/d)	Totl Source. W (m3/d)	Water Balance (m3/d)
1	Taounate	K.B.Med	Bouchabel	Rural	15,937	12,750	3,300	20	20	265		265	17.75	1,534	0.30	26	1.00	86	1646	0	1,646	1381
2	(48		Jbabra	Rural	17,998	14,398	3,052	20	20	297		297	1.80	156	0.00	0	0	0	156	0	156	-141
3	communes)		Loulja	Rural	15,474	12,379	3,334	20	20	258		258	25.40	2,195	0.55	48	0	0	2243	0	2,243	1985
4			Sidi Abel	Rural	13,096	10,477	2,533	20	20	217		217	0	0	0.00	0	1.60	138	138	0	138	-79
5			K. Ba Med	Urban	13,271	11,944	439	30	20	360	240	600	4.30	372	2.01	174	0	0	546	0	546	-54
6			My. A. Karim	Rural	8,604	6,883	2,937	20	20	146		146	1.40	121	0.03	3	0	0	124	0	124	-22
7			Bni Snous	Rural	9,038	7,230	3,228	20	20	154		154	14.40	1,244	0.64	55	0	0	1299	0	1,299	1145
8			My. Bouchta	Rural	17,235	13,788	5,990	20	20	294	196	490	8.30	717	1.19	103	0	0	820	0	820	330
9			Ghouazi	Rural	18,876	15,101	5,102	20	20	317		317	1.14	98	0.00	0	0	0	98	0	98	-219
10			Mekansa	Rural	21,330	17,064	7,661	20	20	364	243	607	0	0	0.00	0	0	0	0	369	369	-238
-		Total of Circle		-	150,859	122,014	37,576	-	-	2,672	679	3,351	74	6,437	4.72	409	2.60	224	7,070	369	7,439	4,088
11		Taounate	A. Mediouna	Rural	16,693	13,354	2,172	20	20	274		274	0.80	69	0.01	1	0	0	70	0	70	-204
12			Beni Oulid	Rural	11,809	9,447	1,513	20	20	193		193	4.90	423	24.52	2119	0	0	2542	0	2,542	2349
13			B.O.Tafrnout	Rural	8,952	7,162	678	20	20	145		145	1.40	121	1.30	112	0	0	233	0	233	88
14			Bouadel	Rural	1,393	1,114	706	20	20	24		24	0	0	5.35	462	0	0	462	0	462	438
15			Bouhouda	Rural	23,257	18,606	898	20	20	375		375	0	0	4.16	359	0	0	359	0	359	-16
16			Fennassa	Rural	12,546	10,037	835	20	20	203		203	0.90	78	15.30	1322	0	0	1400	0	1,400	1197
17			Zinzar	Rural	7,666	6,133	1,402	20	20	127		127	8.60	743	3.82	330	0	0	1073	0	1,073	946
18			Khlalfa	Rural	10,883	8,706	1,001	20	20	177		177	17.00	1,469	1.40	121	0	0	1590	0	1,590	1413
19			Dhar Souk	Urban	3,311	2,980	290	30	20	90		90	4.40	380	0.90	78	0	0	458	0	458	368
20			Tamedit	Rural	22,568	18,054	1,587	20	20	366		366	0	0	11.80	1020	0	0	1020	0	1,020	654
21			Taounate	Urban	24,378	21,940	905	30	20	661	441	1,102	0.80	69	6.38	551	0	0	620	0	620	-482
22			Rghoua	Rural	5,528	4,422	718	20	20	91		91	3.50	302	0.00	0	0	0	302	0	302	211
23			Merzaoua	Rural	9,467	7,574	3,062	20	20	161		161	6.48	560	13.68	1182	0	0	1742	0	1,742	1581
-		Total of Circle		-	158,451	129,529	15,767	-	-	2,887	441	3,328	49	4,214	88.62	7,657	0	0	11,871	0	11,871	8,543
24		Tissa	Ain Aicha	Rural	20,640	16,512	5,095	20	20	346		346	14.50	1,253	0.02	2	0	0	1255	0	1,255	909
25			Ain Maatouf	Rural	17,050	13,640	2,555	20	20	280		280	2.50	216	0.00	0	0	0	216	0	216	-64
26			Ain Legdah	Rural	12,498	9,998	4,598	20	20	214		214	0	0	0.00	0	0	0	0	424	424	210
27			Bouarouss	Rural	17,975	14,380	3,887	20	20	299		299	8.34	721	2.35	203	0	0	924	0	924	625
28			O.Daoud	Rural	12,007	9,606	3,218	20	20	202		202	10.51	908	6.05	523	0	0	1431	0	1,431	1229
29			Ras El Oued	Rural	16,280	13,024	4,682	20	20	275		275	40.70	3,516	1.37	118	0	0	3634	0	3,634	3359
30			Tissa	Urban	7,059	6,353	339	30	20	192	128	320	4.80	415	0.00	0	0	0	415	0	415	95
31			S.B.Lahcen	Rural	18,464	14,771	4,906	20	20	310		310	5.80	501	0.00	0	0	0	501	92	593	283
32			O. Bouabane	Rural	10,855	8,684	4,536	20	20	187		187	0.50	43	0.00	0	0	0	43	276	319	132
33			Messasa	Rural	9,052	7,242	2,926	20	20	154		154	0	0	1.10	95	0	0	95	129	224	70
34			Oulad Jmaa	Rural	9,818	7,854	2,514	20	20	165		165	16.40	1,417	8.88	767	0	0	2184	0	2,184	2019
35			Bsabsa	Rural	7,927	6,342	1,609	20	20	132		132	0	0	20.63	1782	0	0	1782	0	1,782	1650
-		Total of Circle		-	159,625	128,406	40,865	-	-	2,756	128	2,884	104	8,990	40.40	3,490	0	0	12,480	921	13,401	10,517
36		Ghafsai	Galaz	Rural	19,047	15,238	1,408	20	20	309		309	0.40	35	0.87	75	1.50	130	240	0	240	-69
37			Kissane	Rural	14,280	11,424	2,291	20	20	235		235	0.31	27	4.80	415	0	0	442	0	442	207
38			Outzagh	Rural	15,266	12,213	3,558	20	20	255		255	4.20	363	16.82	1453	4.70	406	2222	0	2,222	1967
39			Ratba	Rural	12,742	10,194	4,984	20	20	219		219	1.60	138	2.80	242	0	0	380	0	380	161
40			S. Lhaj Med	Rural	6,818	5,454	1,443	20	20	113		113	0.82	71	0.10	9	0	0	80	0	80	-33
41			Sidi Mokhfi	Rural	7,100	5,680	1,040	20	20	117		117	0	0	0.25	22	0	0	22	0	22	-95
42			Timezgana	Rural	12,503	10,002	2,369	20	20	207		207	0	0	0.30	26	0	0	26	0	26	-181
43			Tafrant	Rural	13,356	10,685	3,030	20	20	223		223	3.85	333	3.39	293	0	0	626	0	626	403
44			Tabouda	Rural	13,570	10,856	1,922	20	20	223		223	2.18	188	1.01	87	0	0	275	0	275	52
45			Ghafsai	Urban	4,255	3,830	144	30	20	115	77	192	0.05	4	9.26	800	0	0	804	0	804	612
46			Oudka	Rural	7,447	5,958	2,273	20	20	126		126	0	0	0.07	6	0	0	6	0	6	-120
47			S.Y.Zeroua	Rural	12,750	10,200	2,554	20	20	212		212	6.55	566	9.80	847	0	0	1413	0	1,413	1201
48			El Bibane	Rural	6,273	5,018	321	20	20	101		101	2.49	215	4.11	355	0	0	570	0	570	469
-		Total of Circle		-	145,407	116,752	27,337	-	-	2,455	77	2,532	22	1,940	53.58	4,630	6.20	536	7,106	0	7,106	4,574
-	Total in Province of Taounate			-	614,342	496,701	121,545	-	-	10,770	1,325	12,095	250	21,581	187.32	16,186	8.80	760	38,527	1,290	39,817	27,722

Table 5.8 - 5.11

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	UFW (40%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Toll G.W. Product (m3/d)	Surface W Product (m3/d)	Toll Source. W (m3/d)	Water Balance (m3/d)
49	Sidi Kacem	Ouezzane	Teroual	Rural	11,740	9,392	3,290	20	20	198		198	0	0	2.00	173	12.90	1115	1288	0	1,288	1090
50	(26		Zghira	Rural	15,748	12,598	3,300	20	20	262		262	0.31	27	2.80	242	0	0	269	0	269	7
51	communes)		Ain Dorij	Urban	1,258	1,132	358	30	20	35	23	58	0	0	0.00	0	0.50	43	43	0	43	-15
52			Lamjaara	Rural	14,479	11,583	4,122	20	20	244		244	3.70	320	4.20	363	0	0	683	0	683	439
53			Sidi Housber	Rural	11,023	8,818	3,160	20	20	186		186	0	0	4.00	346	0	0	346	0	346	160
54			Sidi Ahmed	Rural	10,248	8,198	3,600	20	20	175		175	3.20	276	0.10	9	0	0	285	0	285	110
55			S. Redouane	Rural	19,986	15,989	7,560	20	20	342		342	0	0	1.50	130	0	0	130	0	130	-212
56			Bni Oualla	Rural	17,799	14,239	8,180	20	20	309		309	0	0	0.30	26	0	0	26	0	26	-283
57			Mzefroune	Rural	8,695	6,956	4,740	20	20	153		153	0	0	3.60	311	0	0	311	0	311	158
58			Masmouda	Rural	18,198	14,558	5,840	20	20	309		309	0	0	0.30	26	0	0	26	0	26	-283
59			Ounana	Rural	12,248	9,798	7,640	20	20	219		219	0	0	1.00	86	0	0	86	0	86	-133
60			Ouezzane	Urban	52,168	46,951	1,730	30	20	1,414	943	2,357	120	10,368	0.00	0	0	0	10368	0	10,368	8011
-		Total of Circle		-	193,590	160,212	53,520	-	-	3,846	966	4,812	127	10,991	19.80	1,712	13.40	1,158	13,861	0	13,861	9,049
61		Had Kourt	Had Kourt	Urban	4,296	3,866	822	30	20	118	79	197	1.20	104	0.00	0	0	0	104	0	104	-93
62			My. A. Kader	Rural	8,835	7,068	6,568	20	20	161		161	0	0	0.00	0	0	0	0	0	0	-161
63			Sidi Azzouz	Rural	15,796	12,637	9,148	20	20	280		280	0	0	0.00	0	0	0	0	0	0	-280
64			Ain Defali	Rural	23,930	19,144	11,104	20	20	416		416	0	0	0.20	17	2.00	173	190	0	190	-226
65			Bni Oual	Rural	10,014	8,011	7,262	20	20	182		182	1.00	86	0.00	0	0	0	86	0	86	-96
66			S.A. Al Hadi	Rural	11,491	9,193	5,956	20	20	202		202	0	0	0.00	0	0	0	0	0	0	-202
67			S.A.B. Aissa	Rural	9,248	7,398	6,766	20	20	168		168	0	0	0.00	0	0	0	0	0	0	-168
68			Khachet	Urban	6,031	5,428	0	30	20	163	109	272	0.30	26	0.10	9	0	0	35	0	35	-237
69			Khachet	Rural	13,791	11,033	16,270	20	20	269		269	0	0	0.00	0	0	0	0	0	0	-269
70			Oulad Nouel	Rural	11,512	9,210	16,750	20	20	234		234	0.90	78	0.10	9	0	0	87	0	87	-147
71			S.Med. Cheih	Rural	7,527	6,022	7,530	20	20	143		143	0.80	69	0.00	0	0	0	69	0	69	-74
72			Taougbat	Rural	11,437	9,150	7,630	20	20	206		206	0	0	0.00	0	0	0	0	0	0	-206
73			Jorf el Melha	Urban	10,187	9,168	1,938	30	20	281	187	468	0	0	0.00	0	10.00	864	864	0	864	396
74			Lamrabich	Rural	19,453	15,562	8,396	20	20	336		336	0	0	0.20	17	2.80	242	259	0	259	-77
-		Total of Circle		-	163,548	132,890	106,140	-	-	3,159	375	3,534	4	363	0.60	52	14.80	1,279	1,694	0	1,694	-1,840
-	Total in Province of Sidi Kacem			-	357,138	293,102	159,660	-	-	7,005	1,341	8,346	131	11,354	20.40	1,764	28.20	2,437	15,555	0	15,555	7,209
75	Taza	Taounate	Msila	Rural	11,161	8,929	3,678	20	20	190		190	0	0	3.25	281	0	0	281	0	281	91
76	(14		Bragha	Rural	9,763	7,810	2,943	20	20	165		165	0	0	0.00	0	0	0	0	0	0	-165
77	communes)		Taounate	Urban	2,074	1,867	0	30	20	56	37	93	0	0	0.00	0	0	0	0	0	0	-93
78			Taounate	Rural	8,658	6,926	2,698	20	20	147		147	0	0	0.00	0	0	0	0	0	0	-147
79			El Gouzate	Rural	8,992	7,194	2,452	20	20	151		151	0	0	0.00	0	0	0	0	0	0	-151
80			Beni Fiah	Rural	14,246	11,397	4,905	20	20	243		243	2.15	186	0.03	3	0	0	189	0	189	-54
81			Kaf El Ghar	Rural	11,229	8,983	5,395	20	20	196		196	0	0	0.00	0	0	0	0	0	0	-196
82			Taifa	Rural	11,013	8,810	4,169	20	20	189		189	0	0	0.00	0	0	0	0	0	0	-189
83			Traiba	Rural	10,034	8,027	5,640	20	20	177		177	0	0	0.00	0	0	0	0	0	0	-177
-		Total of Circle		-	87,170	69,943	31,880	-	-	1,514	37	1,551	2	186	3.28	284	0	0	470	0	470	-1,081
84		Taza	Beni Lent	Rural	15,033	12,026	5,150	20	20	256		256	0	0	0.00	0	0	0	0	0	0	-256
85			Oulad Chrif	Rural	11,088	8,870	6,071	20	20	196		196	0	0	0.00	0	0	0	0	0	0	-196
-		Total of Circle		-	26,121	20,896	11,221	-	-	452	0	452	0	0	0.00	0	0	0	0	0	0	-452
86		O. Amlil	Oulad Zbair	Rural	15,788	12,630	4,905	20	20	267		267	2.80	242	0.00	0	0	0	242	0	242	-25
87			Bni Frassen	Rural	30,683	24,546	5,150	20	20	506		506	0	0	6.50	562	0	0	562	0	562	56
88			R. El Fouki	Rural	9,718	7,774	4,905	20	20	170		170	0	0	0.00	0	0	0	0	0	0	-170
-		Total of Circle		-	56,189	44,950	14,960	-	-	943	0	943	3	242	6.50	562	0	0	804	0	804	-139
-	Total in Province of Taza			-	169,480	135,789	58,061	-	-	2,909	37	2,946	5	428	9.78	846	0	0	1,274	0	1,274	-1,672
	Total of the Study Area			-	1,140,960	925,592	339,266	-	-	20,684	2,703	23,387	386	33,363	217.50	18,796	37.00	3,197	55,356	1,290	56,646	33,259

Table 5.9 Water Demand Projection and Water Balance, 2000

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	UFW (35%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Totl G.W. Product(x90%) (m3/d)	Surface W Product (m3/d)	Totl Source. W (m3/d)	Water Balance (m3/d)
1	Taounate	K.B.Med	Bouchabel	Rural	16,618	13,294	3,300	23	20	316		316	17.75	1,534	0.30	26	1.00	86	1646	0	1,646	1330
2			Jbabra	Rural	18,767	15,014	3,052	23	20	354		354	1.80	156	0.00	0	0	0	156	0	156	-198
3			Loulja	Rural	16,135	12,908	3,334	23	20	307		307	25.40	2,195	0.55	48	0	0	2243	0	2,243	1936
4			Sidi Abel	Rural	13,656	10,925	2,533	23	20	259		259	0	0	0.00	0	1.60	138	138	0	138	-121
5			K. Ba Med	Urban	13,838	12,454	439	35	20	437	255	692	4.30	372	2.01	174	0	0	546	0	546	-146
6			My. A. Karim	Rural	8,972	7,178	2,937	23	20	174		174	1.40	121	0.03	3	0	0	124	0	124	-50
7			Bni Snous	Rural	9,424	7,539	3,228	23	20	183		183	14.40	1,244	0.64	55	0	0	1299	0	1,299	1116
8			My. Bouchta	Rural	17,972	14,378	5,990	23	20	349	204	553	8.30	717	1.19	103	0	0	820	0	820	267
9			Ghouazi	Rural	19,683	15,746	5,102	23	20	377		377	1.14	98	0.00	0	0	0	98	0	98	-279
10			Mekansa	Rural	22,242	17,794	7,661	23	20	432	252	684	0	0	0.00	0	0	0	0	369	369	-315
-		Total of Circle		-	157,307	127,230	37,576	-	-	3,188	711	3,899	74	6,437	4.72	409	2.60	224	7,070	369	7,439	3,540
11		Taounate	A. Medrouna	Rural	17,406	13,925	2,172	23	20	327		327	0.80	69	0.01	1	0	0	70	0	70	-257
12			Beni Oulid	Rural	12,314	9,851	1,513	23	20	231		231	4.90	423	24.52	2119	0	0	2542	0	2,542	2311
13			B.O.Tafraout	Rural	9,335	7,468	678	23	20	174		174	1.40	121	1.30	112	0	0	233	0	233	59
14			Bouadel	Rural	1,453	1,162	706	23	20	29		29	0	0	5.35	462	0	0	462	0	462	433
15			Bouhouda	Rural	24,251	19,401	898	23	20	449		449	0	0	4.16	359	0	0	359	0	359	-90
16			Fennassa	Rural	13,082	10,466	835	23	20	243		243	0.90	78	15.30	1322	0	0	1400	0	1,400	1157
17			Znzar	Rural	7,994	6,395	1,402	23	20	151		151	8.60	743	3.82	330	0	0	1073	0	1,073	922
18			Khlalfa	Rural	11,348	9,078	1,001	23	20	212		212	17.00	1,469	1.40	121	0	0	1590	0	1,590	1378
19			Dhar Souk	Urban	3,453	3,108	290	35	20	110		110	4.40	380	0.90	78	0	0	458	0	458	348
20			Tamedit	Rural	23,533	18,826	1,587	23	20	438		438	0	0	11.80	1020	0	0	1020	0	1,020	582
21			Taounate	Urban	25,420	22,878	905	35	20	803	468	1,271	0.80	69	6.38	551	0	0	620	0	620	-651
22			Rghoua	Rural	5,764	4,611	718	23	20	108		108	3.50	302	0.00	0	0	0	302	0	302	194
23			Merzaoua	Rural	9,872	7,898	3,062	23	20	191		191	6.48	560	13.68	1182	0	0	1742	0	1,742	1551
-		Total of Circle		-	165,225	135,067	15,767	-	-	3,466	468	3,934	49	4,214	88.62	7,657	0	0	11,871	0	11,871	7,937
24		Tissa	Ain Aicha	Rural	21,522	17,218	5,095	23	20	411		411	14.50	1,253	0.02	2	0	0	1255	0	1,255	844
25			Ain Maatouf	Rural	17,779	14,223	2,555	23	20	335		335	2.50	216	0.00	0	0	0	216	0	216	-119
26			Ain Legdah	Rural	13,032	10,426	4,598	23	20	254		254	0	0	0.00	0	0	0	0	424	424	170
27			Bouarouss	Rural	18,743	14,994	3,887	23	20	357		357	8.34	721	2.35	203	0	0	924	0	924	567
28			O.Daoud	Rural	12,520	10,016	3,218	23	20	240		240	10.51	908	6.05	523	0	0	1431	0	1,431	1191
29			Ras El Oued	Rural	16,976	13,581	4,682	23	20	326		326	40.70	3,516	1.37	118	0	0	3634	0	3,634	3308
30			Tissa	Urban	7,361	6,625	339	35	20	233	136	369	4.80	415	0.00	0	0	0	415	0	415	46
31			S.B.Laheen	Rural	19,253	15,402	4,906	23	20	369		369	5.80	501	0.00	0	0	0	501	92	593	224
32			O. Bouabane	Rural	11,319	9,055	4,536	23	20	222		222	0.50	43	0.00	0	0	0	43	276	319	97
33			Messasa	Rural	9,439	7,551	2,926	23	20	182		182	0	0	1.10	95	0	0	95	129	224	42
34			Oulad Jmaa	Rural	10,238	8,190	2,514	23	20	196		196	16.40	1,417	8.88	767	0	0	2184	0	2,184	1988
35			Bsabsa	Rural	8,266	6,613	1,609	23	20	157		157	0	0	20.63	1782	0	0	1782	0	1,782	1625
-		Total of Circle		-	166,448	133,894	40,865	-	-	3,282	136	3,418	103	8,990	40.40	3,490	0	0	12,480	921	13,401	9,983
36		Ghafsai	Galaz	Rural	19,861	15,889	1,408	23	20	370		370	0.40	35	0.87	75	1.50	130	240	0	240	-130
37			Kissane	Rural	14,890	11,912	2,291	23	20	281		281	0.31	27	4.80	415	0	0	442	0	442	161
38			Outzagh	Rural	15,918	12,734	3,558	23	20	304		304	4.20	363	16.82	1453	4.70	406	2222	0	2,222	1918
39			Ratba	Rural	13,287	10,630	4,984	23	20	259		259	1.60	138	2.80	242	0	0	380	0	380	121
40			S. Lhaj Med	Rural	7,109	5,687	1,443	23	20	135		135	0.82	71	0.10	9	0	0	80	0	80	-55
41			Sidi Mokhfi	Rural	7,403	5,922	1,040	23	20	139		139	0	0	0.25	22	0	0	22	0	22	-117
42			Timezgana	Rural	13,037	10,430	2,369	23	20	247		247	0	0	0.30	26	0	0	26	0	26	-221
43			Tafrant	Rural	13,927	11,142	3,030	23	20	265		265	3.85	333	3.39	293	0	0	626	0	626	361
44			Tabouda	Rural	14,150	11,320	1,922	23	20	266		266	2.18	188	1.01	87	0	0	275	0	275	9
45			Ghafsai	Urban	4,437	3,993	144	35	20	140	82	222	0.05	4	9.26	800	0	0	804	0	804	582
46			Oudka	Rural	7,765	6,212	2,273	23	20	150		150	0	0	0.07	6	0	0	6	0	6	-144
47			S.Y.Zeroua	Rural	13,295	10,636	2,554	23	20	252		252	6.55	566	9.80	847	0	0	1413	0	1,413	1161
48			El Bibane	Rural	6,541	5,233	321	23	20	121		121	2.49	215	4.11	355	0	0	570	0	570	449
-		Total of Circle		-	151,620	121,740	27,337	-	-	2,929	82	3,011	22	1,940	53.58	4,630	6.20	536	7,106	0	7,106	4,095
-	Total in Province of Taounate			-	640,600	517,931	121,545	-	-	12,865	1,397	14,262	250	21,581	187.32	16,186	8.80	760	38,527	1,290	39,817	25,555

Table 5.8 - 5.11

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	UFW (35%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Tott G.W. Product (m3/d)	Surface W Product (m3/d)	Tot Source. W (m3/d)	Water Balance (m3/d)
49	Sidi Kacem	Ouezzane	Terouat	Rural	12,242	9,794	3,290	23	20	235		235	0	0	2.00	173	12.90	1115	1288	0	1,288	1053
50			Zghira	Rural	16,421	13,137	3,300	23	20	312		312	0.31	27	2.80	242	0	0	269	0	269	-43
51			Ain Dorj	Urban	1,312	1,181	358	35	20	42	25	67	0	0	0.00	0	0.50	43	43	0	43	-24
52			Lamjaara	Rural	15,098	12,078	4,122	23	20	290		290	3.70	320	4.20	363	0	0	683	0	683	393
53			Sidi Boubber	Rural	11,494	9,195	3,160	23	20	221		221	0	0	4.00	346	0	0	346	0	346	125
54			Sidi Ahmed	Rural	10,686	8,549	3,600	23	20	207		207	3.20	276	0.10	9	0	0	285	0	285	78
55			S. Redouane	Rural	20,840	16,672	7,560	23	20	406		406	0	0	1.50	130	0	0	130	0	130	-276
56			Bni Oualla	Rural	18,560	14,848	8,180	23	20	366		366	0	0	0.30	26	0	0	26	0	26	-340
57			Mzefroune	Rural	9,067	7,254	4,740	23	20	181		181	0	0	3.60	311	0	0	311	0	311	130
58			Masmouda	Rural	18,976	15,181	5,840	23	20	367		367	0	0	0.30	26	0	0	26	0	26	-341
59			Ounana	Rural	12,772	10,218	7,640	23	20	258		258	0	0	1.00	86	0	0	86	0	86	-172
60			Ouezzane	Urban	54,398	48,958	1,730	35	20	1,719	1,003	2,722	120	10,368	0.00	0	0	0	10368	0	10,368	7646
-		Total of Circle		-	201,866	167,065	53,520	-	-	4,604	1,028	5,632	127	10,991	19.80	1,712	13.40	1,158	13,861	0	13,861	8,229
61		Had Kourt	Had Kourt	Urban	4,480	4,032	822	35	20	144	84	228	1.20	104	0.00	0	0	0	104	0	104	-124
62			My. A. Kader	Rural	9,213	7,370	6,568	23	20	189		189	0	0	0.00	0	0	0	0	0	0	-189
63			Sidi Azzouz	Rural	16,471	13,177	9,148	23	20	331		331	0	0	0.00	0	0	0	0	0	0	-331
64			Ain Defali	Rural	24,953	19,962	11,104	23	20	492		492	0	0	0.20	17	2.00	173	190	0	190	-302
65			Bni Oual	Rural	10,442	8,354	7,262	23	20	214		214	1.00	86	0.00	0	0	0	86	0	86	-128
66			S.A. Al Hadi	Rural	11,982	9,586	5,956	23	20	238		238	0	0	0.00	0	0	0	0	0	0	-238
67			S.A.B. Aissa	Rural	9,643	7,714	6,766	23	20	198		198	0	0	0.00	0	0	0	0	0	0	-198
68			Khnichet	Urban	6,289	5,660	0	35	20	198	116	314	0.30	26	0.10	9	0	0	35	0	35	-279
69			Khnichet	Rural	14,380	11,504	16,270	23	20	313		313	0	0	0.00	0	0	0	0	0	0	-313
70			Oulad Nouel	Rural	12,004	9,603	16,750	23	20	271		271	0.90	78	0.10	9	0	0	87	0	87	-184
71			S.Med. Cheih	Rural	7,849	6,279	7,530	23	20	167		167	0.80	69	0.00	0	0	0	69	0	69	-98
72			Taoughat	Rural	11,926	9,541	7,630	23	20	242		242	0	0	0.00	0	0	0	0	0	0	-242
73			Jorf el Melha	Urban	10,622	9,560	1,938	35	20	340	198	538	0	0	0.00	0	10.00	864	864	0	864	326
74			Lamrabich	Rural	20,284	16,227	8,396	23	20	398		398	0	0	0.20	17	2.80	242	259	0	259	-139
-		Total of Circle		-	170,538	138,569	106,140	-	-	3,735	398	4,133	4	363	0.60	52	14.80	1,279	1,694	0	1,694	-2,439
-	Total in Province of Sidi Kacem			-	372,404	305,634	159,660	-	-	8,339	1,426	9,765	131	11,354	20.40	1,764	28.20	2,437	15,555	0	15,555	5,790
75	Taza	Tainaste	Msila	Rural	11,638	9,310	3,678	23	20	225		225	0	0	3.25	281	0	0	281	0	281	56
76			Bragha	Rural	10,180	8,144	2,943	23	20	196		196	0	0	0.00	0	0	0	0	0	0	-196
77			Tainaste	Urban	2,163	1,947	0	35	20	68	40	108	0	0	0.00	0	0	0	0	0	0	-108
78			Tainaste	Rural	9,028	7,222	2,698	23	20	174		174	0	0	0.00	0	0	0	0	0	0	-174
79			El Gouzate	Rural	9,376	7,501	2,452	23	20	180		180	0	0	0.00	0	0	0	0	0	0	-180
80			Beni Ftah	Rural	14,855	11,884	4,905	23	20	288		288	2.15	186	0.03	3	0	0	189	0	189	-99
81			Kaf El Ghar	Rural	11,709	9,367	5,395	23	20	232		232	0	0	0.00	0	0	0	0	0	0	-232
82			Taifa	Rural	11,494	9,187	4,169	23	20	224		224	0	0	0.00	0	0	0	0	0	0	-224
83			Traiba	Rural	10,463	8,370	5,640	23	20	209		209	0	0	0.00	0	0	0	0	0	0	-209
-		Total of Circle		-	90,896	72,932	31,880	-	-	1,796	40	1,836	2	186	3.25	284	0	0	470	0	470	-1,366
84		Taza	Beni Lent	Rural	15,676	12,541	5,150	23	20	304		304	0	0	0.00	0	0	0	0	0	0	-304
85			Oulad Chrif	Rural	11,562	9,250	6,071	23	20	231		231	0	0	0.00	0	0	0	0	0	0	-231
-		Total of Circle		-	27,238	21,791	11,221	-	-	535	0	535	0	0	0.00	0	0	0	0	0	0	-535
86		O. Amlil	Oulad Zbair	Rural	16,463	13,170	4,905	23	20	318		318	2.80	242	0.00	0	0	0	242	0	242	-76
87			Bni Frassen	Rural	31,994	25,595	5,150	23	20	604		604	0	0	6.50	562	0	0	562	0	562	-42
88			R. El Fouki	Rural	10,133	8,106	4,905	23	20	201		201	0	0	0.00	0	0	0	0	0	0	-201
-		Total of Circle		-	58,590	46,871	14,960	-	-	1,123	0	1,123	3	242	6.50	562	0	0	804	0	804	-319
-	Total in Province of Taza			-	176,724	141,594	58,061	-	-	3,454	40	3,494	5	428	9.78	846	0	0	1,274	0	1,274	-2,220
Total of the Study Area				-	1,189,728	965,159	339,266	-	-	24,658	2,863	27,521	386	33,363	217.50	18,796	37.00	3,197	55,356	1,290	56,646	29,125

Table 5.10 Water Demand Projection and Water Balance, 2005

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	UFW (30%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Tot G.W. Product(x90%) (m3/d)	Surface W Product (m3/d)	Tott Source. W (m3/d)	Water Balance (m3/d)
1	Taounate	K.B.Med	Bouchabel	Rural	17,208	13,766	3,300	27	20	382		382	17.75	1,534	0.30	26	1.00	86	1646	0	1,646	1264
2			Jbabra	Rural	19,433	15,546	3,052	27	20	429		429	1.80	156	0.00	0	0	0	156	0	156	-273
3			Loulja	Rural	16,708	13,366	3,334	27	20	371		371	25.40	2,195	0.55	48	0	0	2243	0	2,243	1872
4			Sidi Abel	Rural	14,140	11,312	2,533	27	20	313		313	0	0	0.00	0	1.60	138	138	0	138	-175
5			K. Ba Med	Urban	14,329	12,896	439	43	20	556	278	834	4.30	372	2.01	174	0	0	546	0	546	-288
6			My. A. Karim	Rural	9,290	7,432	2,937	27	20	209		209	1.40	121	0.03	3	0	0	124	0	124	-85
7			Bni Snous	Rural	9,759	7,807	3,228	27	20	220		220	14.40	1,244	0.64	55	0	0	1299	0	1,299	1079
8			My. Bouchta	Rural	18,610	14,888	5,990	27	20	420	210	630	8.30	717	1.19	103	0	0	820	0	820	190
9			Ghouazi	Rural	20,381	16,305	5,102	27	20	456		456	1.14	98	0.00	0	0	0	98	0	98	-358
10			Mekansa	Rural	23,031	18,425	7,661	27	20	520	260	780	0	0	0.00	0	0	0	0	369	369	-411
-		Total of Circle		-	162,889	131,743	37,576	-	-	3,876	748	4,624	74	6,437	4.72	409	2.60	224	7,070	369	7,439	2,815
11		Taounate	A. Medjouna	Rural	18,024	14,419	2,172	27	20	396		396	0.80	69	0.01	1	0	0	70	0	70	-326
12			Beni Ouhd	Rural	12,751	10,201	1,513	27	20	280		280	4.90	423	24.52	2119	0	0	2542	0	2,542	2262
13			B.O.Tafraout	Rural	9,666	7,733	678	27	20	211		211	1.40	121	1.30	112	0	0	233	0	233	22
14			Boujdel	Rural	1,504	1,203	706	27	20	35		35	0	0	5.35	462	0	0	462	0	462	427
15			Bouhouda	Rural	25,112	20,090	898	27	20	545		545	0	0	4.16	359	0	0	359	0	359	-186
16			Fennassa	Rural	13,547	10,838	835	27	20	295		295	0.90	78	15.30	1322	0	0	1400	0	1,400	1105
17			Znizar	Rural	8,277	6,622	1,402	27	20	183		183	8.60	743	3.82	330	0	0	1073	0	1,073	890
18			Khlalfa	Rural	11,751	9,401	1,001	27	20	257		257	17.00	1,469	1.40	121	0	0	1590	0	1,590	1333
19			Dhar Souk	Urban	3,575	3,218	290	43	20	139		139	4.40	380	0.90	78	0	0	458	0	458	319
20			Tamedit	Rural	24,368	19,494	1,587	27	20	531		531	0	0	11.80	1020	0	0	1020	0	1,020	489
21			Taounate	Urban	26,322	23,690	905	43	20	1,021	511	1,532	0.80	69	6.38	551	0	0	620	0	620	-912
22			Rghoua	Rural	5,969	4,775	718	27	20	131		131	3.50	302	0.00	0	0	0	302	0	302	171
23			Merzaoua	Rural	10,222	8,178	3,062	27	20	230		230	6.48	560	13.68	1182	0	0	1742	0	1,742	1512
-		Total of Circle		-	171,088	139,862	15,767	-	-	4,254	511	4,765	49	4,214	88.62	7,657	0	0	11,871	0	11,871	7,106
24		Tissa	Ain Aicha	Rural	22,286	17,829	5,095	27	20	497		497	14.50	1,253	0.02	2	0	0	1255	0	1,255	758
25			Ain Maatouf	Rural	18,410	14,728	2,555	27	20	405		405	2.50	216	0.00	0	0	0	216	0	216	-189
26			Ain Legdah	Rural	13,495	10,796	4,598	27	20	305		305	0	0	0.00	0	0	0	0	424	424	119
27			Bouarouss	Rural	19,409	15,527	3,887	27	20	431		431	8.34	721	2.35	203	0	0	924	0	924	493
28			O.Daoud	Rural	12,965	10,372	3,218	27	20	290		290	10.51	908	6.05	523	0	0	1431	0	1,431	1141
29			Ras El Oued	Rural	17,578	14,062	4,682	27	20	394		394	40.70	3,516	1.37	118	0	0	3634	0	3,634	3240
30			Tissa	Urban	7,622	6,860	339	43	20	296	148	444	4.80	415	0.00	0	0	0	415	0	415	-29
31			S.B.Labcen	Rural	19,937	15,950	4,906	27	20	445		445	5.80	501	0.00	0	0	0	501	92	593	148
32			O. Bouabane	Rural	11,721	9,377	4,536	27	20	267		267	0.50	43	0.00	0	0	0	43	276	319	52
33			Messasa	Rural	9,774	7,819	2,926	27	20	220		220	0	0	1.10	95	0	0	95	129	224	4
34			Oulad Jmaa	Rural	10,601	8,481	2,514	27	20	237		237	16.40	1,417	8.88	767	0	0	2184	0	2,184	1947
35			Baabsa	Rural	8,559	6,847	1,609	27	20	190		190	0	0	20.63	1782	0	0	1782	0	1,782	1592
-		Total of Circle		-	172,357	138,648	40,865	-	-	3,977	148	4,125	104	8,990	40.40	3,490	0	0	12,480	921	13,401	9,276
36		Ghafsai	Galaz	Rural	20,566	16,453	1,408	27	20	448		448	0.40	35	0.87	75	1.50	130	240	0	240	-208
37			Kissane	Rural	15,419	12,335	2,291	27	20	340		340	0.31	27	4.80	415	0	0	442	0	442	102
38			Outzaeh	Rural	16,484	13,187	3,558	27	20	367		367	4.20	363	16.82	1453	4.70	406	2222	0	2,222	1855
39			Ratba	Rural	13,758	11,006	4,984	27	20	312		312	1.60	138	2.80	242	0	0	380	0	380	68
40			S. Lhaj Med	Rural	7,362	5,890	1,443	27	20	163		163	0.82	71	0.10	9	0	0	80	0	80	-83
41			Sidi Mokhfi	Rural	7,666	6,133	1,040	27	20	169		169	0	0	0.25	22	0	0	22	0	22	-147
42			Timezgana	Rural	13,500	10,800	2,369	27	20	299		299	0	0	0.30	26	0	0	26	0	26	-273
43			Tafrant	Rural	14,421	11,537	3,030	27	20	321		321	3.85	333	3.39	293	0	0	626	0	626	305
44			Tabouda	Rural	14,652	11,722	1,922	27	20	322		322	2.18	188	1.01	87	0	0	275	0	275	-47
45			Ghafsai	Urban	4,594	4,135	144	43	20	178	89	267	0.05	4	9.26	800	0	0	804	0	804	537
46			Oudka	Rural	8,041	6,433	2,273	27	20	181		181	0	0	0.07	6	0	0	6	0	6	-175
47			S.Y.Zeroua	Rural	13,767	11,014	2,554	27	20	305		305	6.55	566	9.80	847	0	0	1413	0	1,413	1108
48			El Bibane	Rural	6,773	5,418	321	27	20	147		147	2.49	215	4.11	355	0	0	570	0	570	423
-		Total of Circle		-	157,003	126,063	27,337	-	-	3,552	89	3,641	22	1,940	53.58	4,630	6.20	536	7,106	0	7,106	3,465
-	Total in Province of Taounate			-	663,337	536,316	121,545	-	-	15,659	1,496	17,155	250	21,581	187.32	16,186	8.80	760	38,527	1,290	39,817	22,662

Table 5.8 - 5.11

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	UFW (30%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Tot G.W. Product (m3/d)	Surface W Product (m3/d)	Tot Source. W (m3/d)	Water Balance (m3/d)
49	Sidi Kacem	Ouezzane	Terouat	Rural	12,676	10,141	3,290	27	20	284		284	0	0	2.00	173	12.90	1115	1288	0	1,288	1004
50			Zghira	Rural	17,004	13,603	3,300	27	20	377		377	0.31	27	2.80	242	0	0	269	0	269	-108
51			Ain Dorj	Urban	1,358	1,222	358	43	20	54	27	81	0	0	0.00	0	0.50	43	43	0	43	-38
52			Lamjaara	Rural	15,634	12,507	4,122	27	20	350		350	3.70	320	4.20	363	0	0	683	0	683	333
53			Sidi Bousber	Rural	11,902	9,522	3,160	27	20	267		267	0	0	4.00	346	0	0	346	0	346	79
54			Sidi Ahmed	Rural	11,065	8,852	3,600	27	20	250		250	3.20	276	0.10	9	0	0	285	0	285	35
55			S. Redouane	Rural	21,580	17,264	7,560	27	20	489		489	0	0	1.50	130	0	0	130	0	130	-359
56			Bni Oualla	Rural	19,219	15,375	8,180	27	20	440		440	0	0	0.30	26	0	0	26	0	26	-414
57			Mzeiroume	Rural	9,308	7,510	4,740	27	20	217		217	0	0	3.60	311	0	0	311	0	311	94
58			Masmouda	Rural	19,649	15,719	5,840	27	20	442		442	0	0	0.30	26	0	0	26	0	26	-416
59			Ounana	Rural	13,225	10,580	7,640	27	20	309		309	0	0	1.00	86	0	0	86	0	86	-223
60			Ouezzane	Urban	56,329	50,696	1,730	43	20	2,185	1,093	3,278	120	10,368	0.00	0	0	0	10368	0	10,368	7090
-		Total of Circle		-	209,029	172,991	53,520	-	-	5,664	1,120	6,784	127	10,991	19.80	1,712	13.40	1,158	13,861	0	13,861	7,077
61		Had Kourt	Had Kourt	Urban	4,639	4,175	822	43	20	182	91	273	1.20	104	0.00	0	0	0	104	0	104	-169
62			My. A. Kader	Rural	9,540	7,632	6,568	27	20	726		226	0	0	0.00	0	0	0	0	0	0	-226
63			Sidi Azzouz	Rural	17,056	13,645	9,148	27	20	396		396	0	0	0.00	0	0	0	0	0	0	-396
64			Ain Defali	Rural	25,838	20,670	11,104	27	20	591		591	0	0	0.20	17	2.00	173	190	0	190	-401
65			Bni Oual	Rural	10,813	8,650	7,262	27	20	255		255	1.00	86	0.00	0	0	0	86	0	86	-169
66			S.A. Al Hadi	Rural	12,407	9,926	5,956	27	20	286		286	0	0	0.00	0	0	0	0	0	0	-286
67			S.A.B. Aissa	Rural	9,986	7,989	6,766	27	20	236		236	0	0	0.00	0	0	0	0	0	0	-236
68			Khmichet	Urban	6,512	5,861	0	43	20	252	126	378	0.30	26	0.10	9	0	0	35	0	35	-343
69			Khnichet	Rural	14,891	11,913	16,270	27	20	370		370	0	0	0.00	0	0	0	0	0	0	-370
70			Oulad Nouet	Rural	12,430	9,944	16,750	27	20	319		319	0.90	78	0.10	9	0	0	87	0	87	-232
71			S.Med. Chelh	Rural	8,127	6,502	7,530	27	20	198		198	0.80	69	0.00	0	0	0	69	0	69	-129
72			Taoughit	Rural	12,349	9,879	7,630	27	20	290		290	0	0	0.00	0	0	0	0	0	0	-290
73			Jorf el Melha	Urban	10,999	9,899	1,938	43	20	431	216	647	0	0	0.00	0	10.00	864	864	0	864	217
74			Lamrabech	Rural	21,004	16,803	8,396	27	20	479		479	0	0	0.20	17	2.80	242	259	0	259	-220
-		Total of Circle		-	176,591	143,488	106,140	-	-	4,511	433	4,944	4	363	0.60	52	14.80	1,279	1,694	0	1,694	-3,250
-	Total in Province of Sidi Kacem			-	385,620	316,479	159,660	-	-	10,175	1,553	11,728	131	11,354	20.40	1,764	28.20	2,437	15,555	0	15,555	3,827
75	Taza	Tainaste	Msila	Rural	12,051	9,641	3,678	27	20	271		271	0	0	3.25	281	0	0	281	0	281	10
76			Bragha	Rural	10,542	8,434	2,943	27	20	237		237	0	0	0.00	0	0	0	0	0	0	-237
77			Tainaste	Urban	2,239	2,015	0	43	20	87	44	131	0	0	0.00	0	0	0	0	0	0	-131
78			Tainaste	Rural	9,348	7,478	2,698	27	20	210		210	0	0	0.00	0	0	0	0	0	0	-210
79			El Gouzate	Rural	9,709	7,767	2,452	27	20	217		217	0	0	0.00	0	0	0	0	0	0	-217
80			Beni Ftah	Rural	15,382	12,306	4,905	27	20	347		347	2.15	186	0.03	3	0	0	189	0	189	-158
81			Kaf El Ghar	Rural	12,125	9,700	5,395	27	20	278		278	0	0	0.00	0	0	0	0	0	0	-278
82			Taifa	Rural	11,891	9,513	4,169	27	20	269		269	0	0	0.00	0	0	0	0	0	0	-269
83			Traiba	Rural	10,834	8,667	5,640	27	20	251		251	0	0	0.00	0	0	0	0	0	0	-251
-		Total of Circle		-	94,121	75,521	31,880	-	-	2,167	44	2,211	2	186	3.28	284	0	0	470	0	470	-1,741
84		Taza	Beni Lent	Rural	16,232	12,986	5,150	27	20	366		366	0	0	0.00	0	0	0	0	0	0	-366
85			Oulad Chrif	Rural	11,972	9,578	6,071	27	20	277		277	0	0	0.00	0	0	0	0	0	0	-277
-		Total of Circle		-	28,204	22,564	11,221	-	-	643	0	643	0	0	0.00	0	0	0	0	0	0	-643
86		O. Amlil	Oulad Zbair	Rural	17,047	13,638	4,905	27	20	383		383	2.80	242	0.00	0	0	0	242	0	242	-141
87			Bni Frassen	Rural	33,130	26,504	5,150	27	20	731		731	0	0	6.50	562	0	0	562	0	562	-169
88			R. El Fouki	Rural	10,493	8,394	4,905	27	20	241		241	0	0	0.00	0	0	0	0	0	0	-241
-		Total of Circle		-	60,670	48,536	14,960	-	-	1,355	0	1,355	3	242	6.50	562	0	0	804	0	804	-551
-	Total in Province of Taza			-	182,995	146,621	58,061	-	-	4,165	44	4,209	5	428	9.78	846	0	0	1,274	0	1,274	-2,935
Total of the Study Area				-	1,231,952	999,416	339,266	-	-	29,999	3,093	33,092	386	33,363	217.50	18,796	37.00	3,197	55,356	1,290	56,646	23,554

Table 5.11 Water Demand Projection and Water Balance, 2010

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	GW (26%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Tot G.W. Product(x90%) (m3/d)	Surface W Product (m3/d)	Tott Source. W (m3/d)	Water Balance (m3/d)
1	Taounate	K.B.Med	Bouchabel	Rural	17,819	14,255	3,300	31	20	452		452	17.75	1,534	0.30	26	1.00	86	1646	0	1,646	1194
2			Jbabra	Rural	20,123	16,098	3,052	31	20	508		508	1.80	156	0.00	0	0	0	156	0	156	-352
3			Loulja	Rural	17,301	13,841	3,334	31	20	439		439	25.40	2,195	0.55	48	0	0	2243	0	2,243	1804
4			Sidi Abel	Rural	14,642	11,714	2,533	31	20	371		371	0	0	0.00	0	1.60	138	138	0	138	-233
5			K. Ba Med	Urban	14,838	13,354	439	52	20	696	302	998	4.30	372	2.01	174	0	0	546	0	546	-452
6			My. A. Karim	Rural	9,620	7,696	2,937	31	20	247		247	1.40	121	0.03	3	0	0	124	0	124	-123
7			Bni Snous	Rural	10,105	8,084	3,228	31	20	260		260	14.40	1,244	0.64	55	0	0	1299	0	1,299	1039
8			My. Bouchta	Rural	19,270	15,416	5,990	31	20	496	215	711	8.30	717	1.19	103	0	0	820	0	820	109
9			Ghouazi	Rural	21,105	16,884	5,102	31	20	539		539	1.14	98	0.00	0	0	0	98	0	98	-441
10			Mekansa	Rural	23,849	19,079	7,661	31	20	614	266	880	0	0	0.00	0	0	0	0	369	369	-511
-		Total of Circle		-	168,672	136,421	37,576	-	-	4,622	783	5,405	74	6,437	4.72	409	2.60	224	7,070	369	7,439	2,034
11		Taounate	A. Mediouna	Rural	18,664	14,931	2,172	31	20	469		469	0.80	69	0.01	1	0	0	70	0	70	-399
12			Beni Ouhd	Rural	13,203	10,562	1,513	31	20	332		332	4.90	423	24.52	2119	0	0	2542	0	2,542	2210
13			B.O.Tafrsout	Rural	10,009	8,007	678	31	20	250		250	1.40	121	1.30	112	0	0	233	0	233	-17
14			Bouadel	Rural	1,557	1,246	706	31	20	41		41	0	0	5.35	462	0	0	462	0	462	421
15			Bouhouda	Rural	26,003	20,802	898	31	20	648		648	0	0	4.16	359	0	0	359	0	359	-289
16			Fennassa	Rural	14,027	11,222	835	31	20	350		350	0.90	78	15.30	1322	0	0	1400	0	1,400	1050
17			Znzar	Rural	8,571	6,857	1,402	31	20	217		217	8.60	743	3.82	330	0	0	1073	0	1,073	856
18			Khlalfa	Rural	12,168	9,734	1,001	31	20	305		305	17.00	1,469	1.40	121	0	0	1590	0	1,590	1285
19			Dhar Souk	Urban	3,702	3,332	290	52	20	174		174	4.40	380	0.90	78	0	0	458	0	458	284
20			Tamedit	Rural	25,233	20,186	1,587	31	20	631		631	0	0	11.80	1020	0	0	1020	0	1,020	389
21			Taounate	Urban	27,256	24,530	905	52	20	1,278	554	1,832	0.80	69	6.38	551	0	0	620	0	620	-1212
22			Rghoua	Rural	6,181	4,945	718	31	20	155		155	3.50	302	0.00	0	0	0	302	0	302	147
23			Merzaoua	Rural	10,585	8,468	3,062	31	20	272		272	6.48	560	13.68	1182	0	0	1742	0	1,742	1470
-		Total of Circle		-	177,159	144,822	15,767	-	-	5,122	554	5,676	49	4,214	88.62	7,657	0	0	11,871	0	11,871	6,195
24		Tissa	Ain Aicha	Rural	23,077	18,462	5,095	31	20	588		588	14.50	1,253	0.02	2	0	0	1255	0	1,255	667
25			Ain Maatouf	Rural	19,063	15,250	2,555	31	20	480		480	2.50	216	0.00	0	0	0	216	0	216	-264
26			Ain Legdah	Rural	13,974	11,179	4,598	31	20	360		360	0	0	0.00	0	0	0	0	424	424	64
27			Bouarouss	Rural	20,097	16,078	3,887	31	20	510		510	8.34	721	2.35	203	0	0	924	0	924	414
28			O.Daoud	Rural	13,425	10,740	3,218	31	20	343		343	10.51	908	6.05	523	0	0	1431	0	1,431	1088
29			Ras El Oued	Rural	18,202	14,562	4,682	31	20	465		465	40.70	3,516	1.37	118	0	0	3634	0	3,634	3169
30			Tissa	Urban	7,893	7,104	339	52	20	370	160	530	4.80	415	0.00	0	0	0	415	0	415	-115
31			S.B.Labeen	Rural	20,644	16,515	4,906	31	20	527		527	5.80	501	0.00	0	0	0	501	92	593	66
32			O. Bouabane	Rural	12,137	9,710	4,536	31	20	315		315	0.50	43	0.00	0	0	0	43	276	319	4
33			Messasa	Rural	10,121	8,097	2,926	31	20	260		260	0	0	1.10	95	0	0	95	129	224	-36
34			Oulad Jnao	Rural	10,977	8,782	2,514	31	20	280		280	16.40	1,417	8.88	767	0	0	2184	0	2,184	1904
35			Bnbsa	Rural	8,863	7,090	1,609	31	20	225		225	0	0	20.63	1782	0	0	1782	0	1,782	1557
-		Total of Circle		-	178,473	143,569	40,865	-	-	4,723	160	4,883	104	8,990	40.40	3,490	0	0	12,480	921	13,401	8,518
36		Ghafsai	Galaz	Rural	21,296	17,037	1,408	31	20	532		532	0.40	35	0.87	75	1.50	130	240	0	240	-292
37			Kissane	Rural	15,966	12,773	2,291	31	20	403		403	0.31	27	4.80	415	0	0	442	0	442	39
38			Outzagh	Rural	17,069	13,655	3,558	31	20	434		434	4.20	363	16.82	1453	4.70	406	2222	0	2,222	1788
39			Ratba	Rural	14,247	11,398	4,984	31	20	368		368	1.60	138	2.80	242	0	0	380	0	380	12
40			S. Lhaj Med	Rural	7,623	6,098	1,443	31	20	193		193	0.82	71	0.10	9	0	0	80	0	80	-113
41			Sidi Mokhfi	Rural	7,938	6,350	1,040	31	20	200		200	0	0	0.25	22	0	0	22	0	22	-178
42			Timezgana	Rural	13,979	11,183	2,369	31	20	354		354	0	0	0.30	26	0	0	26	0	26	-328
43			Tafrant	Rural	14,933	11,946	3,030	31	20	379		379	3.85	333	3.39	293	0	0	626	0	626	247
44			Tabouda	Rural	15,172	12,138	1,922	31	20	382		382	2.18	188	1.01	87	0	0	275	0	275	-107
45			Ghafsai	Urban	4,757	4,281	144	52	20	223	97	320	0.05	4	9.26	800	0	0	804	0	804	484
46			Oudka	Rural	8,326	6,661	2,273	31	20	213		213	0	0	0.07	6	0	0	6	0	6	-207
47			S.Y.Zeroua	Rural	14,255	11,404	2,554	31	20	361		361	6.55	566	9.80	847	0	0	1413	0	1,413	1052
48			El Bibane	Rural	7,014	5,611	321	31	20	175		175	2.49	215	4.11	355	0	0	570	0	570	395
-		Total of Circle		-	162,575	130,535	27,337	-	-	4,217	97	4,314	22	1,940	53.58	4,630	6.20	536	7,106	0	7,106	2,792
-	Total in Province of Taounate			-	686,879	555,347	121,545	-	-	18,684	1,594	20,278	250	21,581	187.32	16,186	8.80	760	38,527	1,290	39,817	19,539

Table 5.8 - 5.11

No.	Province	Circle	Commune	Type	Popula-tion	Sev'd Popu. Rural:80% Urban:90%	Live-stock (Large)	Net Unit Wat. Dem'd Domes. (l/c/d)	Net Unit Wat. Dem'd Livestocks (l/head/d)	Net Water Dem'd (m3/d)	UFW (26%)	Gross Wat Demand (m3/d)	Dughole Yield (l/s)	Dughole Yield (m3/d)	Spring Yield (l/s)	Spring Yield (m3/d)	Well Yield (l/s)	Well Yield (m3/d)	Toll G.W. Product (m3/d)	Surface W Product (m3/d)	Toll Source. W (m3/d)	Water Balance (m3/d)
49	Sidi Kacem	Ouezzane	Terouat	Rural	13,126	10,501	3,290	31	20	335		335	0	0	2.00	173	12.90	1115	1288	0	1,288	953
50			Zghira	Rural	17,607	14,086	3,300	31	20	447		447	0.31	27	2.80	242	0	0	269	0	269	-178
51			Ain Dorij	Urban	1,407	1,266	358	52	20	67	29	96	0	0	0.00	0	0.50	43	43	0	43	-53
52			Lampaara	Rural	16,189	12,951	4,122	31	20	414		414	3.70	320	4.20	363	0	0	683	0	683	269
53			Sidi Bousber	Rural	12,325	9,860	3,160	31	20	315		315	0	0	4.00	346	0	0	346	0	346	31
54			Sidi Ahmed	Rural	11,458	9,166	3,600	31	20	295		295	3.20	276	0.10	9	0	0	285	0	285	-10
55			S. Redouane	Rural	22,346	17,877	7,560	31	20	577		577	0	0	1.50	130	0	0	130	0	130	-447
56			Ben Qualla	Rural	19,901	15,921	8,180	31	20	518		518	0	0	0.30	26	0	0	26	0	26	-492
57			Mzefroune	Rural	9,722	7,778	4,740	31	20	255		255	0	0	3.60	311	0	0	311	0	311	56
58			Masmouda	Rural	20,347	16,278	5,840	31	20	522		522	0	0	0.30	26	0	0	26	0	26	-496
59			Ounana	Rural	13,694	10,955	7,640	31	20	363		363	0	0	1.00	86	0	0	86	0	86	-277
60			Ouezzane	Urban	58,328	52,495	1,730	52	20	2,735	1,185	3,920	120	10,368	0.00	0	0	0	10368	0	10,368	6448
-		Total of Circle		-	216,450	179,134	53,520	-	-	6,843	1,214	8,057	127	10,991	19.80	1,712	13.40	1,158	13,861	0	13,861	5,804
61		Had Kourt	Had Kourt	Urban	4,803	4,323	822	52	20	227	98	325	1.20	104	0.00	0	0	0	104	0	104	-221
62			Mv. A. Kader	Rural	9,878	7,902	6,568	31	20	265		265	0	0	0.00	0	0	0	0	0	0	-265
63			Sidi Azzouz	Rural	17,661	14,129	9,148	31	20	465		465	0	0	0.00	0	0	0	0	0	0	-465
64			Ain Defali	Rural	26,756	21,405	11,104	31	20	697		697	0	0	0.20	17	2.00	173	190	0	190	-507
65			Bni Oual	Rural	11,196	8,957	7,262	31	20	299		299	1.00	86	0.00	0	0	0	86	0	86	-213
66			S.A. Al Hadi	Rural	12,848	10,278	5,956	31	20	336		336	0	0	0.00	0	0	0	0	0	0	-336
67			S.A.B. Aissa	Rural	10,340	8,272	6,766	31	20	277		277	0	0	0.00	0	0	0	0	0	0	-277
68			Khmichet	Urban	6,743	6,069	0	52	20	316	137	453	0.30	26	0.10	9	0	0	35	0	35	-418
69			Khruchet	Rural	15,419	12,335	16,270	31	20	431		431	0	0	0.00	0	0	0	0	0	0	-431
70			Oulad Nouel	Rural	12,871	10,297	16,750	31	20	369		369	0.90	78	0.10	9	0	0	87	0	87	-282
71			S.Med. Cheih	Rural	8,416	6,733	7,530	31	20	231		231	0.80	69	0.00	0	0	0	69	0	69	-162
72			Taoughit	Rural	12,787	10,230	7,630	31	20	340		340	0	0	0.00	0	0	0	0	0	0	-340
73			Jorf el Melha	Urban	11,390	10,251	1,938	52	20	539	234	773	0	0	0.00	0	10.00	864	864	0	864	91
74			Lamrabtich	Rural	21,750	17,400	8,396	31	20	565		565	0	0	0.20	17	2.80	242	259	0	259	-306
-		Total of Circle		-	182,858	148,581	106,140	-	-	5,357	469	5,826	4	363	0.60	52	14.80	1,279	1,694	0	1,694	-4,132
-	Total in Province of Sidi Kacem			-	399,308	327,715	159,660	-	-	12,200	1,683	13,883	131	11,354	20.40	1,764	28.20	2,437	15,555	0	15,555	1,672
75	Taza	Tainaste	Mala	Rural	12,479	9,983	3,678	31	20	321		321	0	0	3.25	281	0	0	281	0	281	-40
76			Bragha	Rural	10,916	8,733	2,943	31	20	280		280	0	0	0.00	0	0	0	0	0	0	-280
77			Tainaste	Urban	2,319	2,087	0	52	20	109	47	156	0	0	0.00	0	0	0	0	0	0	-156
78			Tainaste	Rural	9,680	7,744	2,698	31	20	248		248	0	0	0.00	0	0	0	0	0	0	-248
79			El Gouzate	Rural	10,054	8,043	2,452	31	20	257		257	0	0	0.00	0	0	0	0	0	0	-257
80			Beni Ftah	Rural	15,928	12,742	4,905	31	20	410		410	2.15	186	0.03	3	0	0	189	0	189	-221
81			Kaf El Ghar	Rural	12,555	10,044	5,395	31	20	328		328	0	0	0.00	0	0	0	0	0	0	-328
82			Taifa	Rural	12,313	9,850	4,169	31	20	318		318	0	0	0.00	0	0	0	0	0	0	-318
83			Tmuba	Rural	11,219	8,975	5,640	31	20	295		295	0	0	0.00	0	0	0	0	0	0	-295
-		Total of Circle		-	97,463	78,201	31,880	-	-	2,566	47	2,613	2	186	3.28	284	0	0	470	0	470	-2,143
84		Taza	Beni Lent	Rural	16,808	13,446	5,150	31	20	432		432	0	0	0.00	0	0	0	0	0	0	-432
85			Oulad Chrif	Rural	12,397	9,918	6,071	31	20	326		326	0	0	0.00	0	0	0	0	0	0	-326
-		Total of Circle		-	29,205	23,364	11,221	-	-	758	0	758	0	0	0.00	0	0	0	0	0	0	-758
86		O. Amlil	Oulad Zbair	Rural	17,652	14,122	4,905	31	20	452		452	2.80	242	0.00	0	0	0	242	0	242	-210
87			Bni Frassen	Rural	34,306	27,445	5,150	31	20	866		866	0	0	6.50	562	0	0	562	0	562	-304
88			R. El Fouki	Rural	10,865	8,692	4,905	31	20	284		284	0	0	0.00	0	0	0	0	0	0	-284
-		Total of Circle		-	62,823	50,259	14,960	-	-	1,602	0	1,602	3	242	6.50	562	0	0	804	0	804	-798
-	Total in Province of Taza			-	189,491	151,824	58,061	-	-	4,926	47	4,973	5	428	9.78	846	0	0	1,274	0	1,274	-3,699
Total of the Study Area				-	1,275,678	1,034,886	339,266	-	-	35,810	3,324	39,134	386	33,363	217.50	18,796	37.00	3,197	55,356	1,290	56,646	17,512