

## (6) Mechanized farming

Land preparation and harvesting works are fully mechanized by use of tractors, rotavators and harvesters. The number and type of existing farm machineries in the project area will be sufficient, except for rotavators and tractors during the land preparation period as shown in Table B-46.

### 7.3.2 On-farm water management

Based on the recommendations of DOA on water depth in farm lots and taking into account the proposed farm operations, the water management for each planting method is proposed as illustrated in Fig. B-8 and as summarized below.

#### (1) Wet direct seeding

Farm lot is presaturated for 15 days until the water is 75 mm (3 inches) deep. Then, the supply of water is stopped. The farm lot is left submerged for the following four days. On the 19th day from the start of presaturation, water in the farm lot is drained completely. The drainage should be completed within 24 hours. Pre-germinated seeds are manually broadcast on the 20th day.

After broadcasting, water is again supplied for 20 days until the water is 100 mm deep. Then, the normal irrigation supply starts and lasts 85 days until the 125th day from the start of presaturation.

#### (2) Dry direct seeding

After ploughing, seeds are broadcast on a dry farm lot. The start of the water supply for presaturation depends on the condition of germination of the seeds. Normally, the presaturation starts on the 6th day after seeding. The depth of water is gradually increased to match the growth of paddy for 20 days until the water is 100 mm deep. After that, the water depth is kept at 100 mm during the normal irrigation period. Normal irrigation continues for 85 days.

### 7.3.3 Measures to attain the proposed farm operations

With the completion of proposed improvement works, irrigation water will be timely supplied to farm lots. Farmers will be encouraged to perform the proposed farm operations on a fixed cropping schedule and with a fixed water supply schedule. However, aged farmers are increasing and the number of experienced farmers is decreasing among farm households growing paddy in the project area. Accordingly, the following measures will be necessary to achieve the irrigated double cropping of paddy through the proposed farm operations:

- a. To extend the proposed farming practices by means of strengthening extension services.
- b. To promote group farming through cooperatives or contract work to cope with the increase in aged farmers and the decrease in experienced farmers.
- c. To bring on key farmers to conduct the proposed farm operations in each group farming area.
- d. To improve on-farm drainage conditions for precise control of water on farm lots by excavating or repairing ditches.
- e. To improve paddy field condition for securing even growth of paddy and good performance of harvesting through levelling of land and removing of small patches of higher ground in the farm lot.
- f. To promote the above two physical improvement works with provision of subsidies to be born from the Field Improvement Scheme's fund of the State DOA.
- g. To make paddy cultivation attractive to young members of farm households through integrated implementation of the above measures.

It is necessary to adjust the present planting schedule over a period of five crop seasons before starting the new fixed cropping schedule from the off-season cropping in 1990. In Sungai Nipah, one cropping will have to be cancelled in the second crop season of 1987 for construction of concrete

conducts. For the same purpose, the first cropping in Sawah Sempadan will start from May in 1988. The water supply schedules for this transitional period are proposed as shown in Table B-47.

## 8. PROJECT BENEFITS

### 8.1 Increase in Paddy Production

Direct benefits derived from the implementation of the project will be the increase in unit yield of paddy and the increase in cropping intensity. The present cropping intensity of 1.77 will be increased to 2.0 with consistent double cropping of paddy under the fixed irrigation schedule. By the effect of PBLs, the paddy yield is expected to increase to 3.7 ton/ha for the first season crop and 3.8 ton/ha for the second season crop in 1990, while the cropping intensity retains the present level according to the PBLs's estimate. The record of the highest yield in the past shows the high potential of paddy production in the project area. It ranges from 4.2 to 5.7 ton/ha during the past five years between 1981 and 1985. The original target of PBLs, 4.4 ton/ha for the main season crop and 4.7 ton/ha for the off-season crop, can be considered as realizable. With expansion of improved farming practices coupled with the improvement of irrigation water supply and the fixed cropping schedule, it is anticipated that most of the farmers will attain the original target yield of PBLs. Annual production of paddy in the project area is estimated at about 166,700 tons, as shown below.

Cropping Season	Present <sup>/1</sup>		With PBLs		With Project	
	1st season	2nd season	1st season	2nd season	off-season	Main season
Seeding Period	1/1 to 30/6	1/7 to 31/12	1/1 to 30/6	1/7 to 31/12	15/2 to 14/5	1/9 to 30/11
Cropped Area (ha)	15,460	16,400	15,500	16,400	18,320	18,320
Unit Yield (ton/ha)	2.89	3.35	3.70	3.80	4.70	4.40
Production (ton)	44,680	54,950	57,350	62,320	86,100	80,600
Annual Production (ton)		99,630		119,670		166,700

Remarks: /1=Average during the past five years from 1981 to 1985.

## 8.2 Improvement of Productivity for Paddy Cultivation

The increase in paddy yields will improve a net return from paddy cultivation in the project area. Crop budgets for paddy cultivation under the with-project condition were analyzed as shown in Tables B-48 and B-49, and as summarized below.

Item	Present <sup>L1</sup>			With Project <sup>L2</sup>		
	First Season	Second Season	Average	Main Season	Off- Season	Average
Production cost (M\$/ha)	1,283	1,225	1,254	1,387	1,389	1,388
Gross income (M\$/ha)	1,907	1,554	1,731	2,416	2,581	2,499
Net return (M\$/ha)	624	329	477	1,029	1,192	1,111
Production cost of rice (M\$/ton)	700	823	762	585	547	566

Remarks: <sup>L1</sup> = Average during the past five years from 1981 to 1985

<sup>L2</sup> = 1986 constant price

Under the with-project condition, the net return is expected to be doubled in comparison with the present condition. The unit production cost of milled rice would then be lower than the price of imported rice which was estimated at about M\$ 608/ton in 1985.

## 8.3 Improvement in Farmers' Economy

The increase in the net return will improve the farmers' economy and make paddy cultivation more attractive for farmers. In order to assess the benefits of the project from the farmers' viewpoint, a farm budget analysis was made for a typical farmers holding of 1.2 ha. The result of analysis is shown in Table B-50 and summarized in the following table.

In this analysis, off-farm income and incomes from other crops and agricultural activities under with-project condition were estimated as the same amount with those present condition. Although labour inputs for applying fertilizer, insecticides, weedicides and rodenticides increase under with-project condition, they do not press heavily on off-farm and other incomes, because the increase in labour force requirement is small as shown in Table B-51.

Item	<u>Present</u>		<u>With Project</u> <sup>/2</sup>	
	7 Compart- ments <sup>/1</sup>	Sekinchan	7 Compart- ments <sup>/1</sup>	Sekinchan
A. <u>Gross income (M\$)</u>	4,600	8,637	7,633	10,522
1) Farm income	3,755	5,940	6,788	7,825
2) Off-farm income	845	2,697	845	2,697
B. <u>Gross outgo (M\$)</u>				
1) Production cost	1,589	2,192	2,048	2,385
2) Land rent	1,007	1,975	1,007	1,975
3) Land and water charge	17	17	17	17
C. <u>Living expenses and net reserve (M\$)</u>				
1) Owner operator <sup>/3</sup>	2,994	6,428	5,532	8,120
2) Tenant operator <sup>/4</sup>	2,004	4,470	4,524	6,162

Remarks:    /1 = Excluding Sekinchan                    /2 = 1986 constant prices  
              /3 = (A)-(B.1)-(B.3)                        /4 = (A)-(B.1)-(B.2)

Except in Sekinchan, the gross income of farmers will increase from M\$ 4,600 to M\$ 7,633 and will be over the median gross household income in rural areas of Peninsular Malaysia being M\$ 7,150 in 1984. The annual amount of living expenses and net reserves will also be increased from M\$ 2,994 to M\$ 5,532 for owner operators and from M\$ 2,004 to M\$ 4,542 for tenant operators. In Sekinchan, it will be increased from M\$ 6,428 to M\$ 8,120 for owner operators and from M\$ 4,470 to M\$ 6,162 for tenant operators.

#### 8.4 Contribution to Self-sufficiency of Rice

In line with the National Agricultural Policy and Fifth Malaysia Plan, the future rice production in the country will be concentrated in the existing eight granaries. In 1985, the total rice consumption was estimated to be 1,515,000 tons, 75 % of which were met by domestic rice production. The total output from the granary areas corresponded to about 60 % of the above domestic requirements. Though both the demand and per-capita consumption of rice in the country trend downwards, rice production in the granary areas should be increased to maintain a self-sufficiency level of 55 to 60 % in the future. The expected increase in output from the project area would be marketed to contribute to the needs of other areas outside the granary areas.

# ***TABLES***





Table B-1 POPULATION BY SEX, AGE-GROUP AND ETHNIC GROUP IN PBL5 AREA

Sex and Age-group	Ethnic Group				Total
	Malays	Chinese	Indians	Others	
Males					
0-14	30,423	10,871	6,151	18	47,463
15-29	16,811	6,245	3,977	27	27,060
30-39	6,721	2,789	1,407	13	10,930
40-49	5,579	1,889	1,327	10	8,805
50-54	2,526	671	469	10	3,676
55-59	1,778	433	374	5	2,590
60-64	1,766	390	295	3	2,454
65 & above	2,544	939	502	1	3,986
<u>Total</u>	<u>68,148</u>	<u>24,227</u>	<u>14,502</u>	<u>87</u>	<u>106,964</u>
Females					
0-14	29,716	10,309	5,628	26	45,679
15-29	17,862	6,010	4,240	15	28,127
30-39	7,808	2,644	1,682	6	12,140
40-49	6,417	1,734	1,215	7	9,373
50-54	2,565	668	317	1	3,551
55-59	1,756	489	307	1	2,553
60-64	1,395	461	269	-	2,125
65 & above	1,828	955	330	2	3,115
<u>Total</u>	<u>69,347</u>	<u>23,270</u>	<u>13,988</u>	<u>58</u>	<u>106,663</u>
Total					
0-14	60,139	21,180	11,779	44	93,142
15-29	34,673	12,255	8,217	42	55,187
30-39	14,529	5,433	3,089	19	23,070
40-49	11,996	3,623	2,542	17	18,178
50-54	5,091	1,339	786	11	7,227
55-59	3,534	922	681	6	5,143
60-64	3,161	851	564	3	4,579
65 & above	4,372	1,894	832	3	7,101
<u>Total</u>	<u>137,495</u>	<u>47,497</u>	<u>28,490</u>	<u>145</u>	<u>213,627</u>

Source: 1980 Population and Housing Census of Malaysia, DOS.

Table B-2 POPULATION BY SEX, AGE-GROUP AND ETHNIC GROUP IN THE DISTRICT OF KUALA SELANGOR

Sex and Age-group	Ethnic Group				Total
	Malays	Chinese	Indians	Others	
<b>Males</b>					
0-14	14,522	5,079	5,078	15	24,694
15-29	7,935	2,852	3,255	18	14,060
30-39	3,201	1,229	1,153	5	5,588
40-49	2,521	913	1,123	6	4,563
50-54	1,157	352	360	6	1,875
55-59	880	203	292	1	1,376
60-64	825	204	241	1	1,271
65 & above	1,275	431	385	1	2,092
<u>Total</u>	<u>32,316</u>	<u>11,263</u>	<u>11,887</u>	<u>53</u>	<u>55,519</u>
<b>Females</b>					
0-14	14,229	4,708	4,742	20	23,699
15-29	8,135	2,767	3,503	13	14,418
30-39	3,505	1,160	1,385	4	6,054
40-49	2,940	839	1,040	5	4,824
50-54	1,235	326	244	1	1,806
55-59	837	271	259	1	1,368
60-64	689	223	227	-	1,139
65 & above	831	431	276	1	1,539
<u>Total</u>	<u>32,401</u>	<u>10,725</u>	<u>11,676</u>	<u>45</u>	<u>54,847</u>
<b>Total</b>					
0-14	28,751	9,787	9,820	35	48,393
15-29	16,070	5,619	6,758	31	28,478
30-39	6,706	2,389	2,538	9	11,642
40-49	5,461	1,752	2,163	11	9,387
50-54	2,392	678	604	7	3,681
55-59	1,717	474	551	2	2,744
60-64	1,514	427	468	1	2,410
65 & above	2,106	862	661	2	3,631
<u>Total</u>	<u>64,717</u>	<u>21,988</u>	<u>23,563</u>	<u>98</u>	<u>110,366</u>

Source: 1980 Population and Housing Census of Malaysia, DOS.

Table B-3 POPULATION BY SEX, AGE-GROUP AND ETHNIC GROUP IN THE DISTRICT OF SABAK BERNAM

Sex and Age-group	Ethnic Group				Total
	Malays	Chinese	Indians	Others	
<b>Males</b>					
0-14	15,901	5,792	1,073	3	22,769
15-29	8,876	3,393	722	9	13,000
30-39	3,520	1,560	254	8	5,342
40-49	3,058	976	204	4	4,242
50-54	1,369	319	109	4	1,801
55-59	898	230	82	4	1,214
60-64	941	186	54	2	1,183
65 & above	1,269	508	117	-	1,894
<u>Total</u>	<u>35,832</u>	<u>12,964</u>	<u>2,615</u>	<u>34</u>	<u>51,445</u>
<b>Females</b>					
0-14	15,487	5,601	886	6	21,980
15-29	9,727	3,243	737	2	13,709
30-39	4,303	1,484	297	2	6,086
40-49	3,477	895	175	2	4,549
50-54	1,330	342	73	-	1,745
55-59	919	218	48	-	1,185
60-64	706	238	42	-	986
65 & above	997	524	54	1	1,576
<u>Total</u>	<u>36,946</u>	<u>12,545</u>	<u>2,312</u>	<u>13</u>	<u>51,816</u>
<b>Total</b>					
0-14	31,388	11,393	1,959	9	44,749
15-29	18,603	6,636	1,459	11	26,709
30-39	7,823	3,044	551	10	11,428
40-49	6,535	1,871	379	6	8,791
50-54	2,699	661	182	4	3,546
55-59	1,817	448	130	4	2,399
60-64	1,647	424	96	2	2,169
65 & above	2,266	1,032	171	1	3,470
<u>Total</u>	<u>72,778</u>	<u>25,509</u>	<u>4,927</u>	<u>47</u>	<u>103,261</u>

Source: 1980 Population and Housing Census of Malaysia, DOS.

Table B-4 PRIVATE HOUSEHOLDS BY ETHNICITY  
OF HEAD OF HOUSEHOLD IN PBLA AREA

Ethnicity	Kuala Selangor	Sabak Bernam	Total
Private Households			
Malays	12,208	13,703	25,911
Chinese	3,561	3,727	7,288
Indians	4,112	925	5,037
Others	25	13	38
Sub-total	19,906	18,368	38,274
Non-private Households			
Sub-total	11	8	19
<u>Total</u>	<u>19,917</u>	<u>18,376</u>	<u>38,293</u>

Source: 1980 Population and Housing Census of Malaysia, DOS

Table B-5 POPULATION BY OCCUPATION IN PBL5 AREA

Sex and Occupation	Ethnic Group				Total
	Malays	Chinese	Indians	Others	
<b>Males</b>					
Administratives	2,691	543	525	5	3,764
Sales & service	2,019	2,718	788	38	5,563
Agriculture	18,624	5,090	3,220	4	26,938
Factory	3,840	2,362	1,335	5	7,542
Looking for jobs & others	3,604	684	520	2	4,810
Total labour force	30,778	11,397	6,388	54	48,617
Outside labour force	16,019	4,935	3,437	20	24,411
Children below 10 years	21,351	7,895	4,677	13	33,936
<u>Total</u>	<u>68,148</u>	<u>24,227</u>	<u>14,502</u>	<u>87</u>	<u>106,964</u>
<b>Females</b>					
Administratives	1,257	357	111	1	1,726
Sales & service	781	941	147	-	1,869
Agriculture	8,446	858	2,826	2	12,132
Factory	510	481	161	-	1,152
Looking for jobs & others	2,871	591	306	-	3,768
Total labour force	13,865	3,228	3,551	3	20,647
Outside labour force	34,223	12,456	6,059	37	52,775
Children below 10 years	21,259	7,586	4,378	18	33,241
<u>Total</u>	<u>69,347</u>	<u>23,270</u>	<u>13,988</u>	<u>58</u>	<u>91,066</u>
<b>Total</b>					
Administratives	3,948	900	636	6	5,490
Sales & service	2,800	3,659	935	38	7,432
Agriculture	27,070	5,948	6,046	6	39,070
Factory	4,350	2,843	1,496	5	8,694
Looking for jobs & others	6,475	1,275	826	2	8,578
Total labour force	44,643	14,625	9,939	57	69,264
Outside labour force	50,242	17,391	9,496	57	77,186
Children below 10 years	42,610	15,481	9,055	31	67,177
<u>Total</u>	<u>137,495</u>	<u>47,497</u>	<u>28,490</u>	<u>145</u>	<u>213,627</u>

Source: 1980 Population and Housing Census of Malaysia, DOS.

Table B-6 POPULATION BY OCCUPATION IN  
THE DISTRICT OF KUALA SELANGOR

Sex and Occupation	Ethnic Group				Total
	Malays	Chinese	Indians	Others	
<b>Males</b>					
Administratives	1,396	277	431	3	2,107
Sales & service	1,063	1,144	505	17	2,729
Agriculture	8,062	2,023	2,639	2	12,726
Factory	2,849	1,363	1,174	4	5,390
Looking for jobs & others	1,109	401	384	1	1,895
Total labour force	14,479	5,208	5,133	27	24,847
Outside labour force	7,377	2,384	2,935	14	12,710
Children below 10 years	10,460	3,671	3,819	12	17,962
<u>Total</u>	<u>32,316</u>	<u>11,263</u>	<u>11,887</u>	<u>53</u>	<u>55,519</u>
<b>Females</b>					
Administratives	704	195	86	-	985
Sales & service	393	360	117	-	870
Agriculture	3,467	343	2,298	1	6,109
Factory	397	230	136	-	763
Looking for jobs & others	697	270	240	-	1,207
Total labour force	5,658	1,398	2,877	1	9,934
Outside labour force	16,261	5,812	5,167	29	27,269
Children below 10 years	10,482	3,515	3,632	15	17,644
<u>Total</u>	<u>32,401</u>	<u>10,725</u>	<u>11,676</u>	<u>45</u>	<u>54,847</u>
<b>Total</b>					
Administratives	2,100	472	517	3	3,092
Sales & service	1,456	1,504	622	17	3,599
Agriculture	11,529	2,366	4,937	3	18,835
Factory	3,246	1,593	1,310	4	6,153
Looking for jobs & others	1,806	671	624	1	3,102
Total labour force	20,137	6,606	8,010	28	34,781
Outside labour force	23,638	8,196	8,102	43	39,979
Children below 10 years	20,942	7,186	7,451	27	35,606
<u>Total</u>	<u>64,717</u>	<u>21,988</u>	<u>23,563</u>	<u>98</u>	<u>110,366</u>

Source: 1980 Population and Housing Census of Malaysia, DOS.

Table B-7 POPULATION BY OCCUPATION IN  
THE DISTRICT OF SABAK BERNAM

Sex and Occupation	Ethnic Group				Total
	Malays	Chinese	Indians	Others	
<b>Males</b>					
Administratives	1,295	266	94	2	1,657
Sales & service	956	1,574	283	21	2,834
Agriculture	10,562	3,067	581	2	14,212
Factory	991	999	161	1	2,152
Looking for jobs & others	2,495	283	136	1	2,915
Total labour force	16,299	6,189	1,255	27	23,770
Outside labour force	8,642	2,551	502	6	11,701
Children below 10 years	10,891	4,224	858	1	15,974
<u>Total</u>	<u>35,832</u>	<u>12,964</u>	<u>2,615</u>	<u>34</u>	<u>51,445</u>
<b>Females</b>					
Administratives	553	162	25	1	741
Sales & service	388	581	30	-	999
Agriculture	4,979	515	528	1	6,023
Factory	113	251	25	-	389
Looking for jobs & others	2,174	321	66	-	2,561
Total labour force	8,207	1,830	674	2	10,713
Outside labour force	17,962	6,644	892	8	25,506
Children below 10 years	10,777	4,071	746	3	15,597
<u>Total</u>	<u>36,946</u>	<u>12,545</u>	<u>2,312</u>	<u>13</u>	<u>36,219</u>
<b>Total</b>					
Administratives	1,848	428	119	3	2,398
Sales & service	1,344	2,155	313	21	3,833
Agriculture	15,541	3,582	1,109	3	20,235
Factory	1,104	1,250	186	1	2,541
Looking for jobs & others	4,669	604	202	1	5,476
Total labour force	24,506	8,019	1,929	29	34,483
Outside labour force	26,604	9,195	1,394	14	37,207
Children below 10 years	21,668	8,295	1,604	4	31,571
<u>Total</u>	<u>72,778</u>	<u>25,509</u>	<u>4,927</u>	<u>47</u>	<u>103,261</u>

Source: 1980 Population and Housing Census of Malaysia, DOS.

Table B-8 MONTHLY AIR TEMPERATURE AT  
TANJONG KARANG STATION

Unit: °C

Year	J	F	M	A	M	J	J	A	S	O	N	D
'80 Max.	-	-	-	-	-	-	-	-	32.2	32.2	31.9	31.7
Min.	-	-	-	-	-	-	-	-	23.4	24.0	24.2	23.0
Mean	-	-	-	-	-	-	-	-	27.8	28.1	28.1	27.7
'81 Max.	31.4	32.9	32.4	32.2	31.7	32.7	32.4	33.1	31.7	32.0	32.9	32.5
Min.	22.6	23.0	23.7	24.5	24.6	23.7	22.9	22.9	23.7	24.1	23.6	23.0
Mean	27.0	28.0	28.1	28.4	28.2	28.2	27.7	28.0	27.7	28.1	28.3	27.8
'82 Max.	32.3	32.4	32.2	32.2	32.0	31.7	31.6	31.7	31.9	31.9	32.1	32.1
Min.	22.3	23.2	23.6	24.1	23.9	23.5	22.5	23.1	23.6	23.5	23.6	23.2
Mean	27.3	27.8	27.9	28.2	28.0	27.6	27.1	27.4	27.8	27.7	27.9	27.7
'83 Max.	32.7	33.1	33.6	33.4	32.5	31.8	31.7	32.4	31.6	31.7	32.4	31.3
Min.	22.9	23.1	23.7	25.4	24.8	24.2	23.0	23.3	23.4	23.6	24.0	23.6
Mean	27.8	28.1	28.7	29.4	28.7	28.0	27.4	27.9	27.5	27.7	28.2	27.5
'84 Max.	31.6	30.0	32.2	31.9	31.4	30.6	30.8	31.1	31.8	31.3	31.5	31.1
Min.	23.0	22.9	23.6	23.8	24.5	24.2	23.2	23.1	23.1	23.2	23.8	23.5
Mean	27.3	26.5	27.9	27.9	28.0	27.4	27.0	27.1	27.5	27.3	27.7	27.3
'85 Max.	32.0	31.9	31.6	-	-	-	-	-	-	-	-	-
Min.	22.5	23.6	23.4	-	-	-	-	-	-	-	-	-
Mean	27.3	27.8	27.5	-	-	-	-	-	-	-	-	-
Average												
Max.	32.0	32.1	32.4	32.4	31.9	31.7	31.6	32.1	31.8	31.8	32.2	31.7
Min.	22.7	23.2	23.6	24.5	24.5	23.9	22.9	23.1	23.4	23.7	23.8	23.3
Mean	27.3	27.6	28.0	28.5	28.2	27.8	27.3	27.6	27.7	27.8	28.0	27.6

Source: Monthly Abstract of Meteorological Observations, Malaysian Meteorological Service.



Table B-9 MONTHLY RELATIVE HUMIDITY AT  
TANJONG KARANG STATION

Unit: %

Year	J	F	M	A	M	J	J	A	S	O	N	D
'80 Max.	-	-	-	-	-	-	-	-	94.3	91.9	93.3	91.1
Min.	-	-	-	-	-	-	-	-	57.1	61.6	64.4	60.9
Mean	-	-	-	-	-	-	-	-	75.7	76.8	78.9	76.0
'81 Max.	92.1	93.1	94.0	93.1	92.9	92.3	91.4	93.1	93.8	94.6	95.8	94.8
Min.	58.5	54.5	53.8	61.6	65.2	58.0	55.4	51.1	61.3	62.5	66.0	59.0
Mean	75.3	73.8	73.9	77.4	79.1	75.2	73.4	72.1	77.6	78.6	80.9	76.9
'82 Max.	96.1	94.4	95.6	92.8	96.0	96.2	97.1	92.8	93.6	95.9	96.5	96.5
Min.	54.4	55.0	61.8	63.6	66.4	64.8	61.8	57.3	57.5	62.4	65.3	62.6
Mean	75.3	74.7	78.7	78.2	81.2	80.5	79.5	75.1	75.6	79.2	80.9	79.6
'83 Max.	95.8	95.6	94.4	95.9	94.9	91.1	93.9	95.3	92.4	93.8	90.2	92.2
Min.	54.6	54.7	53.5	59.6	66.4	59.1	61.1	55.0	58.0	59.0	55.3	59.5
Mean	75.2	75.2	74.0	77.8	80.7	75.1	77.5	75.2	75.2	76.4	72.8	75.9
'84 Max.	94.0	93.8	92.4	92.8	93.3	94.3	94.7	93.9	96.1	95.0	93.1	95.2
Min.	59.3	64.7	57.4	56.8	58.3	60.3	69.8	58.3	52.2	56.8	59.7	61.1
Mean	76.7	79.3	74.9	74.8	75.8	77.3	82.3	76.1	74.2	75.9	76.4	78.2
'85 Max.	96.3	96.5	96.7	-	-	-	-	-	-	-	-	-
Min.	54.3	59.3	57.4	-	-	-	-	-	-	-	-	-
Mean	75.3	77.9	77.1	-	-	-	-	-	-	-	-	-
Average												
Max.	94.9	94.7	94.6	93.7	94.3	93.5	94.3	93.8	94.0	94.2	93.8	94.0
Min.	56.2	57.6	56.8	60.4	64.1	60.6	62.0	55.4	57.2	60.5	62.1	60.6
Mean	75.6	76.2	75.7	77.1	79.2	77.1	78.2	74.6	75.6	77.4	78.0	77.3

Source: Monthly Abstract of Meteorological Observations, Malaysian Meteorological Service.

Table B-10 MONTHLY MEAN SUNSHINE HOUR  
AT TANJONG KARANG STATION

Unit: hr/day

Year	J	F	M	A	M	J	J	A	S	O	N	D
1980	-	-	-	-	-	-	-	-	5.4	5.3	4.8	4.2
1981	4.7	7.0	8.2	6.8	5.5	8.1	7.0	7.5	4.6	6.2	4.4	5.6
1982	6.6	8.0	6.7	6.8	6.8	6.6	6.8	5.5	6.0	6.3	5.9	5.3
1983	6.7	8.3	7.7	5.6	6.7	6.3	6.8	5.0	5.5	5.7	6.3	4.3
1984	4.5	3.5	6.6	6.1	6.6	6.4	6.4	6.7	6.2	4.9	6.2	5.4
1985	8.4	6.5	5.5	-	-	-	-	-	-	-	-	-
Average	6.2	6.7	6.9	6.3	6.4	6.9	6.8	6.2	5.5	5.7	5.5	5.0

Source: Monthly Abstract of Meteorological Observations, Malaysian Meteorological Service.

Table B-11 MONTHLY MEAN WIND VELOCITY  
AT TANJONG KARANG STATION

Unit: km/day

Year	J	F	M	A	M	J	J	A	S	O	N	D
1980	-	-	-	-	-	-	-	-	59.9	73.0	38.7	26.7
1981	23.6	50.7	38.5	141.8	126.3	97.9	115.8	162.3	153.6	141.8	134.6	95.5
1982	109.8	150.0	160.5	147.4	117.6	91.2	120.6	136.8	147.1	137.2	104.1	67.3
1983	99.7	129.3	145.9	123.4	99.3	77.5	64.2	98.0	90.3	96.1	94.5	22.2
1984	16.3	26.4	74.2	55.4	75.5	61.2	40.9	20.5	47.8	73.9	55.6	45.9
1985	31.0	46.6	66.9	-	-	-	-	-	-	-	-	-
Average	56.1	80.6	97.2	117.0	104.7	82.0	85.4	104.4	99.8	104.4	85.5	51.5

Source: Monthly Abstract of Meteorological Observations, Malaysian Meteorological Service.

Table B-12 MONTHLY MEAN PAN EVAPORATION  
AND EVAPOTRANSPIRATION IN PBLA AREA

Unit: mm/day

Station	J	F	M	A	M	J	J	A	S	O	N	D
Tg.Karang	4.7	5.3	5.7	5.6	5.1	5.0	5.0	5.3	5.1	5.1	4.7	4.2
Sg.Besar	5.4	5.4	5.2	5.2	5.7	5.6	5.5	5.4	5.1	5.3	5.2	5.4
Bg.Terap	5.1	5.4	5.7	5.3	5.1	5.1	5.2	5.2	4.8	5.0	4.7	4.6

Source: Monthly Abstract of Meteorological Observations, Malaysian Meteorological Services.

Table B-13 (1/2) FIVE-DAY RAINFALL AT  
SUNGAI BURONG STATION (No.3411016)

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1975												
1-5	43.0	18.0	0	8.0	0	0	0	51.0	27.0	0	32.0	0
6-10	0	100.0	0	10.0	0	0	16.0	0	99.0	76.0	0	11.5
11-15	67.0	0	0	76.0	0	16.0	14.0	0	0	0.5	12.0	10.0
16-20	0	10.0	37.0	13.0	26.0	0.5	41.0	0	66.0	0	109.5	0
21-25	12.0	15.0	0	25.0	0	0	74.0	0	39.0	0	0	26.0
26-End	0	0.5	35.0	0	63.0	0	0	0	9.0	35.0	8.0	64.5
<u>Total</u>	<u>122.0</u>	<u>143.5</u>	<u>72.0</u>	<u>132.0</u>	<u>89.0</u>	<u>16.5</u>	<u>145.0</u>	<u>51.0</u>	<u>240.0</u>	<u>111.5</u>	<u>161.5</u>	<u>112.0</u>
Year: 1976												
1-5	0	85.5	0.5	0	41.0	17.0	58.0	0	54.5	36.0	138.0	0
6-10	0	0	40.0	0	0	0	16.0	0	14.0	66.0	37.5	0
11-15	0	0	35.0	78.0	10.0	25.0	3.0	15.5	0	44.0	0	13.5
16-20	0	0	25.0	25.5	0	0	0	63.0	19.5	23.0	40.0	0
21-25	0	0.5	10.0	27.5	0	4.0	6.0	42.0	65.5	0	7.0	22.0
26-End	0	0	35.0	20.5	26.0	18.0	19.0	49.5	32.5	33.5	2.0	55.0
<u>Total</u>	<u>0</u>	<u>86.0</u>	<u>145.5</u>	<u>151.5</u>	<u>77.0</u>	<u>64.0</u>	<u>102.0</u>	<u>170.0</u>	<u>186.0</u>	<u>202.5</u>	<u>224.5</u>	<u>90.5</u>
Year: 1977												
1-5	0	18.5	0	0	0	5.0	0	50.0	0	55.0	9.5	33.0
6-10	0	16.0	0	12.0	0	14.5	11.0	38.0	63.0	94.0	26.0	33.5
11-15	0	45.5	0	8.5	50.0	28.0	143.5	63.0	0	12.0	35.0	2.0
16-20	0	0	0	38.0	0	27.0	0	10.0	20.0	14.0	58.0	4.0
21-25	0	0	0	0	14.0	13.0	0	38.0	56.0	0	27.5	34.0
26-End	0	25.0	0	117.0	0	33.0	0	2.0	112.5	28.5	20.0	26.5
<u>Total</u>	<u>0</u>	<u>105.0</u>	<u>0</u>	<u>175.5</u>	<u>64.0</u>	<u>120.5</u>	<u>154.5</u>	<u>201.0</u>	<u>251.5</u>	<u>203.5</u>	<u>176.0</u>	<u>133.0</u>
Year: 1978												
1-5	0	0	50.0	6.0	3.0	19.0	0	8.5	10.0	0	120.5	117.0
6-10	66.0	0	0	4.0	76.0	25.5	23.0	10.5	20.5	32.0	76.5	96.0
11-15	51.5	25.0	23.0	9.0	10.5	0	0	48.0	25.0	0	75.5	0
16-20	18.0	0	0	7.5	0	68.5	0	0	115.0	65.0	11.0	14.0
21-25	58.5	0	35.0	0	0	0	0	0	86.5	51.0	5.0	68.5
26-End	0	84.0	49.0	0	0	89.0	33.0	27.0	0	37.5	0	0
<u>Total</u>	<u>194.0</u>	<u>109.0</u>	<u>157.0</u>	<u>26.5</u>	<u>89.5</u>	<u>202.0</u>	<u>56.0</u>	<u>94.0</u>	<u>257.0</u>	<u>185.5</u>	<u>288.5</u>	<u>295.5</u>
Year: 1979												
1-5	50.0	0	0	0	0	0	0	5.0	27.5	0	76.0	91.5
6-10	22.5	21.0	0	0	0	53.5	25.5	0	11.0	47.5	6.0	0
11-15	0	6.0	0	0	0	42.0	7.5	0	0	168.5	42.0	8.5
16-20	0	20.0	0	0	0	20.0	31.0	27.0	21.0	28.0	70.0	11.5
21-25	10.5	33.0	0	190.5	0	4.5	70.5	0	0	46.5	32.5	0
26-End	0	0	0	59.0	55.5	0	0	73.5	41.5	63.0	78.0	0
<u>Total</u>	<u>83.0</u>	<u>80.0</u>	<u>0</u>	<u>249.5</u>	<u>55.5</u>	<u>120.0</u>	<u>134.5</u>	<u>105.5</u>	<u>101.0</u>	<u>353.5</u>	<u>304.5</u>	<u>111.5</u>

Source: Data Bank of DID.

Table B-13 (2/2) FIVE-DAY RAINFALL AT  
SUNGAI BURONG STATION

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1980												
1-5	8.5	0	73.0	88.0	47.0	59.0	0	19.5	13.5	74.0	67.0	53.0
6-10	14.0	0	7.0	56.5	142.0	6.0	11.5	19.5	33.5	63.5	0	36.5
11-15	0	0.5	27.0	24.0	72.0	11.0	1.1	0	0	26.5	10.5	0
16-20	43.0	28.5	3.5	5.5	55.5	12.5	34.5	63.5	3.5	0	3.0	18.5
21-25	0	4.5	16.5	73.5	0	14.5	82.0	0.9	46.0	25.5	61.0	147.0
26-End	0	50.5	17.5	5.5	12.0	5.3	42.0	27.5	21.8	74.0	19.0	6.5
<u>Total</u>	<u>65.5</u>	<u>84.0</u>	<u>144.5</u>	<u>253.0</u>	<u>328.5</u>	<u>108.3</u>	<u>171.1</u>	<u>130.9</u>	<u>118.3</u>	<u>263.5</u>	<u>160.5</u>	<u>261.5</u>
Year: 1981												
1-5	42.0	45.5	12.5	5.5	74.5	0	0	0	41.0	0	13.0	15.5
6-10	82.0	10.0	0	33.0	44.5	7.5	8.5	0	80.0	0	46.5	2.5
11-15	0	57.5	0	19.0	0	0	30.5	5.0	12.0	158.5	0	79.5
16-20	9.5	0	12.5	143.5	13.5	0	0	14.5	32.0	72.0	56.0	0
21-25	0	15.0	0	0	0	2.5	51.5	40.0	0	0	17.5	3.0
26-End	0	30.5	41.5	0	96.5	0	0	25.0	7.5	16.5	66.0	103.0
<u>Total</u>	<u>133.5</u>	<u>158.5</u>	<u>66.5</u>	<u>201.0</u>	<u>229.0</u>	<u>10.0</u>	<u>90.5</u>	<u>84.5</u>	<u>172.5</u>	<u>247.0</u>	<u>199.0</u>	<u>203.5</u>
Year: 1982												
1-5	0	51.5	30.5	40.0	5.0	28.0	18.5	10.0	23.0	8.0	16.0	6.5
6-10	0	0	72.0	35.0	48.5	0	18.0	9.5	2.0	16.0	78.0	3.5
11-15	0	4.5	0	23.5	2.5	67.5	0	10.5	0	28.0	42.0	15.5
16-20	16.0	0	86.0	7.0	0	1.5	69.0	6.0	8.5	38.5	25.5	25.5
21-25	0	1.6	29.5	36.5	13.5	3.5	6.5	33.5	0	4.0	44.0	0
26-End	15.5	0	6.5	64.0	35.0	11.0	0	0	21.0	49.5	144.5	40.0
<u>Total</u>	<u>31.5</u>	<u>57.6</u>	<u>224.5</u>	<u>206.0</u>	<u>104.5</u>	<u>111.5</u>	<u>112.0</u>	<u>69.5</u>	<u>54.5</u>	<u>144.0</u>	<u>350.0</u>	<u>91.0</u>
Year: 1983												
1-5	61.0	0	0	0	28.0	0	27.5	13.5	92.0	16.5	26.0	0.5
6-10	14.5	0	0	0	13.5	9.5	20.5	0	25.0	28.0	0.3	26.5
11-15	8.5	5.0	0	0	7.5	35.0	0	43.0	47.5	18.5	0.6	66.5
16-20	0	8.0	17.5	0	32.5	17.5	133.0	5.5	104.5	10.5	0	42.0
21-25	0	14.5	0	62.0	12.5	0	0	36.5	0	27.5	8.0	49.5
26-End	0	0	0	55.0	74.0	0	0	72.0	58.0	85.0	30.0	7.0
<u>Total</u>	<u>84.0</u>	<u>27.5</u>	<u>17.5</u>	<u>117.0</u>	<u>168.0</u>	<u>62.0</u>	<u>181.0</u>	<u>170.5</u>	<u>327.0</u>	<u>186.0</u>	<u>64.9</u>	<u>192.0</u>
Year: 1984												
1-5	27.1	155.0	74.5	32.5	82.5	12.5	47.5	0	10.5	15.0	20.5	98.5
6-10	2.0	138.5	0	33.0	23.5	0	5.0	16.5	0	4.0	31.0	49.0
11-15	42.5	41.5	34.5	42.5	60.0	33.0	79.0	0	10.0	14.0	23.5	31.0
16-20	15.5	61.0	120.5	60.0	0	9.0	19.0	0	45.5	8.0	19.0	72.0
21-25	38.5	0	5.5	0	82.5	0	82.0	84.5	40.0	87.0	86.5	11.0
26-End	95.5	108.5	10.0	0	18.0	0	0	5.5	0	24.0	18.0	31.0
<u>Total</u>	<u>221.1</u>	<u>504.5</u>	<u>245.0</u>	<u>168.0</u>	<u>266.5</u>	<u>54.5</u>	<u>232.5</u>	<u>106.5</u>	<u>106.0</u>	<u>152.0</u>	<u>198.5</u>	<u>292.5</u>

Source: Data Bank of DID.

Table B-14 (1/2) FIVE-DAY RAINFALL AT  
SUNGAI LEMAN STATION (No.3510001)

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1975												
1-5	57.5	26.0	0	-	0	10.5	7.0	0	98.0	0	37.0	50.0
6-10	1.5	105.0	7.5	-	35.0	0	22.5	45.0	18.5	22.0	0	25.5
11-15	0	13.0	0	-	0	0	7.0	0	0	36.0	33.0	18.5
16-20	21.0	16.0	32.0	-	0	0	5.5	0	46.0	0	68.5	0
21-25	44.0	5.0	3.0	-	20.0	0	82.0	10.0	0	3.5	5.0	38.0
26-End	0	0	39.0	-	61.0	0	60.0	21.0	0	21.5	8.5	84.5
<u>Total</u>	<u>124.0</u>	<u>165.0</u>	<u>81.5</u>	<u>-</u>	<u>116.0</u>	<u>10.5</u>	<u>184.0</u>	<u>76.0</u>	<u>162.0</u>	<u>83.0</u>	<u>152.0</u>	<u>216.5</u>
Year: 1976												
1-5	0	10.0	7.0	17.0	41.5	39.0	44.5	0	32.5	15.0	28.5	0
6-10	13.0	0	27.5	0	0	2.0	3.5	8.0	11.0	49.0	30.5	0
11-15	77.0	3.5	87.5	75.5	0	28.0	25.0	8.5	0	28.5	8.0	9.0
16-20	0	0	4.0	12.5	0	0	0	103.0	0	25.5	35.0	17.0
21-25	0	79.5	11.5	47.5	0	15.0	14.0	32.5	0	0	0	52.5
26-End	0	0	32.5	47.0	20.0	20.0	11.5	90.0	34.0	0	0	37.0
<u>Total</u>	<u>90.0</u>	<u>93.0</u>	<u>170.0</u>	<u>199.5</u>	<u>61.5</u>	<u>104.0</u>	<u>98.5</u>	<u>242.0</u>	<u>77.5</u>	<u>118.0</u>	<u>102.0</u>	<u>115.5</u>
Year: 1977												
1-5	11.0	11.0	0	26.0	0	0	0	5.0	2.0	108.5	70.0	10.0
6-10	0	22.5	0	0	2.5	51.0	0	29.5	50.5	145.0	3.0	43.5
11-15	0	16.5	0	12.0	23.5	13.5	50.0	40.5	0	3.5	16.0	0
16-20	0	0	0	30.0	0	22.5	0	19.0	13.0	18.5	46.0	6.0
21-25	4.0	56.0	14.5	0	0	0	0	63.0	35.5	33.0	29.0	22.5
26-End	13.0	42.0	0	8.0	0	40.0	0	10.0	10.5	30.5	3.0	53.5
<u>Total</u>	<u>28.0</u>	<u>148.0</u>	<u>14.5</u>	<u>76.0</u>	<u>26.0</u>	<u>127.0</u>	<u>50.0</u>	<u>167.0</u>	<u>111.5</u>	<u>339.0</u>	<u>167.0</u>	<u>135.5</u>
Year: 1978												
1-5	0	0	10.5	7.0	15.0	40.0	11.0	0	0	0	129.0	14.5
6-10	19.0	0	5.0	48.0	121.0	46.5	22.0	27.0	0	23.0	112.0	100.0
11-15	81.0	6.5	21.0	0	7.5	0	0	21.0	33.0	5.0	21.5	32.5
16-20	3.5	14.0	0	4.0	15.0	12.0	0	7.0	43.0	26.0	6.5	4.5
21-25	29.5	0	10.5	8.0	3.0	0	0	0	88.5	19.0	2.0	24.5
26-End	10.0	48.5	30.0	0	0	24.0	0	0	0	23.0	0	0
<u>Total</u>	<u>143.0</u>	<u>69.0</u>	<u>77.0</u>	<u>67.0</u>	<u>161.5</u>	<u>122.5</u>	<u>33.0</u>	<u>55.0</u>	<u>164.5</u>	<u>96.0</u>	<u>271.0</u>	<u>176.0</u>
Year: 1979												
1-5	74.0	0	28.0	3.0	38.0	38.0	26.0	0	7.0	0	18.5	25.0
6-10	9.0	3.5	0	64.0	16.0	14.0	25.0	27.5	21.0	8.0	11.5	10.0
11-15	16.0	0	30.0	37.0	2.0	19.0	0	0	0	90.0	30.5	55.0
16-20	0	25.5	0	6.0	0	0	7.5	0	24.0	23.0	45.5	0
21-25	0	78.0	0	65.5	0	20.0	59.0	31.5	0	30.0	52.0	0
26-End	0	0	0	24.0	40.0	10.0	0	35.0	0	51.0	44.5	0
<u>Total</u>	<u>99.0</u>	<u>107.0</u>	<u>58.0</u>	<u>199.5</u>	<u>96.0</u>	<u>101.0</u>	<u>117.5</u>	<u>94.0</u>	<u>52.0</u>	<u>202.0</u>	<u>202.5</u>	<u>90.0</u>

Source: Data Bank of DID.

Table B-14 (2/2) FIVE-DAY RAINFALL AT  
SUNGAI LEMAN STATION (No.3510001)

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1980												
1-5	26.5	0.2	79.5	29.0	0	0	0	11.5	5.0	20.5	7.5	74.5
6-10	60.0	0	27.5	39.0	89.0	0	0	0	45.0	11.0	27.0	33.5
11-15	16.0	0	68.0	24.0	2.0	49.5	17.0	10.0	0	10.0	2.0	0
16-20	17.0	35.0	0	0	47.0	16.5	18.0	21.0	19.5	0	0	40.0
21-25	14.0	46.0	12.5	4.5	17.0	6.0	79.5	38.5	44.0	0	97.5	44.5
26-End	0.5	20.5	13.5	13.5	50.0	0	46.0	18.0	13.5	18.0	5.0	42.0
<u>Total</u>	<u>134.0</u>	<u>101.7</u>	<u>201.0</u>	<u>110.0</u>	<u>205.0</u>	<u>72.0</u>	<u>160.5</u>	<u>99.0</u>	<u>127.0</u>	<u>59.5</u>	<u>139.0</u>	<u>234.5</u>
Year: 1981												
1-5	32.5	7.5	16.0	38.3	11.5	0	0	41.0	15.5	2.0	33.0	2.0
6-10	2.5	0	5.0	57.5	0	4.0	0	12.0	103.5	12.0	17.0	2.5
11-15	16.0	13.0	2.0	109.5	30.0	0	4.0	0	7.5	122.0	16.0	67.5
16-20	2.0	0	0	3.5	52.5	15.0	11.0	27.0	61.5	61.5	67.5	7.0
21-25	0	40.0	0	0	53.0	20.0	5.0	37.5	9.0	26.0	19.0	0
26-End	0	65.5	16.0	7.0	0	20.0	32.0	56.5	3.5	11.0	34.5	55.5
<u>Total</u>	<u>53.0</u>	<u>126.0</u>	<u>39.0</u>	<u>215.8</u>	<u>147.0</u>	<u>59.0</u>	<u>52.0</u>	<u>174.0</u>	<u>200.5</u>	<u>234.5</u>	<u>187.0</u>	<u>134.5</u>
Year: 1982												
1-5	14.0	7.0	32.0	10.0	12.0	44.0	6.5	41.0	2.0	14.0	60.0	45.0
6-10	1.0	0	14.0	83.5	18.0	0	20.5	12.0	1.0	24.5	97.0	1.5
11-15	0	15.5	5.0	0	0	13.5	5.0	0	0	23.0	35.0	9.5
16-20	0	0	65.0	22.0	15.0	0	66.0	5.0	8.5	24.0	46.0	74.0
21-25	0	2.0	0	18.0	33.5	7.0	3.0	37.5	0	3.5	6.0	50.5
26-End	0	0	0	0	128.0	0	0	56.5	9.0	51.0	59.5	45.0
<u>Total</u>	<u>15.0</u>	<u>24.5</u>	<u>116.0</u>	<u>133.5</u>	<u>206.5</u>	<u>64.5</u>	<u>101.0</u>	<u>152.0</u>	<u>20.5</u>	<u>140.0</u>	<u>303.5</u>	<u>225.5</u>
Year: 1983												
1-5	82.5	5.0	0	0	69.3	0	23.0	3.0	57.0	32.5	10.0	10.0
6-10	17.5	0	0	0	2.0	24.0	16.0	0	35.5	29.5	1.0	3.5
11-15	47.5	21.5	27.0	0	9.0	26.5	24.0	25.0	44.5	0	29.0	47.0
16-20	0	0	25.0	0	10.0	25.0	50.5	0	36.0	0	2.0	17.0
21-25	0	0	0	52.0	78.0	0	0	36.5	50.5	49.0	0	49.5
26-End	24.0	0	0	91.5	25.0	0	0	54.0	43.5	99.0	52.0	0
<u>Total</u>	<u>171.5</u>	<u>26.5</u>	<u>52.0</u>	<u>143.5</u>	<u>193.3</u>	<u>75.5</u>	<u>113.5</u>	<u>118.5</u>	<u>267.0</u>	<u>210.0</u>	<u>94.0</u>	<u>127.0</u>
Year: 1984												
1-5	0	135.0	127.0	0	14.5	2.0	81.0	0	0	31.0	45.5	34.5
6-10	26.0	108.0	0	21.0	0	18.0	6.0	10.0	3.0	4.0	29.5	11.5
11-15	0	0	25.0	39.0	28.0	16.0	36.0	0	4.0	17.5	10.5	83.5
16-20	0	32.5	76.0	91.0	5.0	0	77.0	0	15.5	17.5	34.5	39.0
21-25	25.5	0	6.5	0	13.0	0	4.0	10.0	23.5	70.0	70.5	5.0
26-End	58.5	28.0	50.0	0	18.0	0	51.0	18.0	0	82.5	0	23.0
<u>Total</u>	<u>110.0</u>	<u>303.5</u>	<u>239.5</u>	<u>151.0</u>	<u>78.5</u>	<u>36.0</u>	<u>255.0</u>	<u>38.0</u>	<u>46.0</u>	<u>222.5</u>	<u>190.5</u>	<u>196.5</u>

Source: Data Bank of DID.

Table B-15 (1/2) FIVE-DAY RAINFALL AT  
SUNGAI BESAR STATION (No.3710011)

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1975												
1-5	95.5	5.0	25.0	3.5	0	37.0	18.5	3.5	53.0	0	23.0	26.0
6-10	10.5	146.5	27.0	0	0	0	23.0	26.5	14.0	14.5	0	13.0
11-15	5.0	21.0	5.5	49.0	0	53.0	57.0	0	0	0	35.0	40.5
16-20	28.0	0	1.0	91.0	35.5	4.5	64.5	4.5	59.5	0	47.0	0
21-25	44.0	13.0	7.0	42.5	4.5	0	57.5	12.5	9.5	31.0	38.5	9.5
26-End	30.5	25.5	95.0	0	32.0	3.5	8.0	26.0	13.5	79.0	35.0	97.0
<u>Total</u>	<u>213.5</u>	<u>211.0</u>	<u>160.5</u>	<u>186.0</u>	<u>72.0</u>	<u>98.0</u>	<u>228.5</u>	<u>73.0</u>	<u>149.5</u>	<u>124.5</u>	<u>178.5</u>	<u>186.0</u>
Year: 1976												
1-5	0	0	88.5	0	100.0	45.0	76.0	0	33.0	39.5	3.0	38.0
6-10	33.0	0	13.5	11.5	0	6.5	2.0	1.5	0	29.5	35.0	0
11-15	2.0	0	22.0	43.5	1.0	32.5	3.0	0	2.0	12.0	4.0	57.0
16-20	0	0	8.5	8.0	1.5	0	0	72.5	1.0	41.0	24.0	19.0
21-25	0	10.5	5.5	26.0	0	10.5	33.0	50.0	43.5	2.0	2.0	97.0
26-End	0	26.5	17.0	44.5	34.5	29.5	15.5	66.0	11.0	1.5	0	44.5
<u>Total</u>	<u>35.0</u>	<u>37.0</u>	<u>155.0</u>	<u>133.5</u>	<u>137.0</u>	<u>124.0</u>	<u>129.5</u>	<u>190.0</u>	<u>90.5</u>	<u>125.5</u>	<u>68.0</u>	<u>255.5</u>
Year: 1977												
1-5	24.0	40.5	0	11.5	0	40.5	0	17.5	8.5	49.0	42.5	36.0
6-10	0	37.0	0	0.1	39.5	33.0	3.5	0.5	54.5	96.5	17.0	44.5
11-15	0	23.5	13.5	3.6	40.0	8.5	8.5	10.0	0	22.5	4.5	1.0
16-20	0	3.0	0	15.0	1.0	1.0	1.0	11.5	2.0	41.0	48.0	5.5
21-25	0	62.0	20.0	18.5	0	45.5	45.5	15.5	16.0	0	27.0	118.0
26-End	17.0	8.5	0	9.5	0	14.0	14.0	8.0	105.5	44.5	57.0	30.5
<u>Total</u>	<u>41.0</u>	<u>174.5</u>	<u>33.5</u>	<u>58.2</u>	<u>80.5</u>	<u>142.5</u>	<u>72.5</u>	<u>63.0</u>	<u>186.0</u>	<u>253.5</u>	<u>196.0</u>	<u>235.5</u>
Year: 1978												
1-5	0	0	2.5	35.0	15.5	5.0	6.0	0	0	41.0	55.0	30.0
6-10	53.5	15.5	14.0	51.5	70.5	20.0	3.0	18.0	14.0	3.5	37.0	42.0
11-15	146.5	38.5	5.5	0	4.5	0	6.5	110.0	30.0	8.0	44.0	6.0
16-20	17.0	27.0	0	1.5	0	5.0	3.5	3.0	20.0	51.5	38.0	15.5
21-25	6.5	0	40.0	7.0	0	4.0	0	0	34.0	18.5	3.0	2.0
26-End	0	36.8	137.5	10.5	7.0	14.0	0	50.5	0	64.0	1.0	2.0
<u>Total</u>	<u>223.5</u>	<u>117.8</u>	<u>199.5</u>	<u>105.5</u>	<u>97.5</u>	<u>48.0</u>	<u>19.0</u>	<u>181.5</u>	<u>98.0</u>	<u>186.5</u>	<u>178.0</u>	<u>97.5</u>
Year: 1979												
1-5	67.0	0	10.0	0	5.0	11.0	0	0	43.5	0	35.5	0
6-10	22.0	20.0	0	37.5	5.5	42.5	10.0	8.0	46.5	9.5	0	0
11-15	0	10.5	11.0	112.5	0	8.0	11.0	0	34.0	88.0	18.5	0
16-20	0	0	1.0	0	0	2.0	9.5	0	30.0	5.5	17.0	0
21-25	31.5	76.0	16.0	108.0	0	10.0	68.0	0	0.3	22.5	17.5	0
26-End	0	0	20.0	150.0	36.0	0	0	103.0	6.0	8.5	49.5	24.5
<u>Total</u>	<u>120.5</u>	<u>106.5</u>	<u>58.0</u>	<u>408.0</u>	<u>46.5</u>	<u>73.5</u>	<u>98.5</u>	<u>111.0</u>	<u>160.3</u>	<u>134.0</u>	<u>138.0</u>	<u>24.5</u>

Source: Data Bank of DID.

Table B-15 (2/2) FIVE-DAY RAINFALL AT  
SUNGAI BESAR STATION

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1980												
1-5	0	0	15.0	0	3.5	12.0	0	0	26.5	16.5	18.5	38.5
6-10	38.5	0	7.5	20.5	63.0	9.5	1.5	14.0	0	22.5	29.5	12.5
11-15	42.0	0	8.0	37.0	4.0	26.5	0	3.5	0	0	9.0	15.5
16-20	10.5	12.5	33.5	0	21.0	0	51.0	29.5	56.5	3.0	20.5	98.0
21-25	0	13.5	4.0	6.5	55.5	13.0	41.5	30.0	29.0	0	41.0	49.0
26-End	0	0	6.0	5.0	8.5	2.5	16.5	0	32.5	31.0	22.0	14.5
<u>Total</u>	<u>91.0</u>	<u>26.0</u>	<u>74.0</u>	<u>69.0</u>	<u>155.5</u>	<u>63.5</u>	<u>110.5</u>	<u>77.0</u>	<u>144.5</u>	<u>73.0</u>	<u>140.5</u>	<u>228.0</u>
Year: 1981												
1-5	12.5	13.0	5.5	16.5	13.0	0	0	0	0	12.5	55.0	3.5
6-10	9.0	8.5	0	55.0	32.0	0	0	0	73.5	0	45.0	0
11-15	41.5	0	0	24.0	0	0	0	0	26.5	15.5	6.0	53.5
16-20	0	0	0	0	9.0	0	0	0	35.5	0	33.0	0
21-25	18.0	7.5	0	0	11.5	24.5	60.5	75.5	5.5	0	10.0	0
26-End	0	11.5	88.5	5.5	107.5	0	35.0	17.0	13.0	15.5	13.0	5.5
<u>Total</u>	<u>81.0</u>	<u>40.5</u>	<u>94.0</u>	<u>101.0</u>	<u>173.0</u>	<u>24.5</u>	<u>95.5</u>	<u>92.5</u>	<u>154.0</u>	<u>43.5</u>	<u>162.0</u>	<u>62.5</u>
Year: 1982												
1-5	46.5	29.0	0	8.0	15.0	0	29.0	0	2.5	0	21.5	38.5
6-10	0	0	19.0	90.5	6.0	0	23.0	45.5	0	27.5	87.5	0
11-15	0	0	0	6.0	0	22.0	2.5	7.0	16.0	16.5	0	26.0
16-20	0	0	17.0	0	0	0	56.0	0	52.0	3.5	50.5	59.5
21-25	1.5	9.0	27.5	4.0	47.5	0	94.5	11.5	0	0	7.0	23.0
26-End	0	0	0	0	68.0	22.0	0	27.5	0	135.0	25.5	14.0
<u>Total</u>	<u>48.0</u>	<u>38.0</u>	<u>63.5</u>	<u>108.5</u>	<u>136.5</u>	<u>44.0</u>	<u>205.0</u>	<u>91.5</u>	<u>70.5</u>	<u>182.5</u>	<u>261.0</u>	<u>179.5</u>
Year: 1983												
1-5	65.5	0	0	0	80.0	0	0	30.0	66.0	44.0	30.5	0
6-10	6.0	0	0	0	37.0	0	6.0	0	79.0	22.5	0	7.0
11-15	13.0	25.5	56.0	0	16.0	42.5	44.0	21.5	10.0	0	15.5	50.0
16-20	0	0	21.5	0	33.5	8.0	4.0	23.3	0	9.0	0	16.0
21-25	0	0	0	0	31.5	0	0	39.5	30.5	20.0	7.0	23.0
26-End	0	0	0	40.0	13.0	0	40.0	0	39.5	0	102.0	50.5
<u>Total</u>	<u>84.5</u>	<u>25.5</u>	<u>77.5</u>	<u>40.0</u>	<u>211.0</u>	<u>50.5</u>	<u>94.0</u>	<u>114.3</u>	<u>225.0</u>	<u>95.5</u>	<u>155.0</u>	<u>146.5</u>
Year: 1984												
1-5	7.5	91.0	70.5	20.5	22.5	0	7.0	0	6.5	10.5	16.5	54.5
6-10	0	88.5	19.5	49.0	0	0	11.0	30.5	0	53.0	13.5	37.5
11-15	30.5	0	20.5	9.0	38.5	74.5	0	0	0	27.0	54.0	23.0
16-20	21.5	42.0	95.5	30.0	0	35.5	38.0	0	4.5	3.5	45.5	99.5
21-25	175.0	0	20.5	29.0	24.5	0	20.0	6.0	39.0	46.0	38.0	0
26-End	68.5	43.5	0	0	39.5	0	0	0	0	17.5	0	89.0
<u>Total</u>	<u>303.0</u>	<u>265.0</u>	<u>226.5</u>	<u>137.5</u>	<u>125.0</u>	<u>110.0</u>	<u>76.0</u>	<u>36.5</u>	<u>50.0</u>	<u>157.5</u>	<u>167.5</u>	<u>303.5</u>

Source: Data Bank of DID.



Table B-16 MEAN 5-DAY RAINFALL IN THE PROJECT  
AREA FOR 1975-84

Unit: mm

Period	J	F	M	A	M	J	J	A	S	O	N	D
(1) Sungai Burong (Station No.3411016)												
1-5	23.2	37.4	24.1	18.0	28.1	14.1	15.2	15.8	29.9	20.5	51.9	41.6
6-10	20.1	28.6	11.9	18.4	34.8	11.7	15.5	9.4	34.8	42.7	30.2	25.9
11-15	17.0	18.6	12.0	28.1	21.3	25.8	27.9	18.5	9.5	47.1	24.1	22.7
16-20	10.2	12.8	30.2	30.0	12.8	15.7	32.8	19.0	43.6	25.9	39.2	18.8
21-25	12.0	8.4	9.7	41.5	12.3	4.2	37.3	27.5	33.3	24.2	28.9	36.1
26-End	11.1	29.9	19.5	32.1	38.0	15.6	9.4	28.2	30.4	44.7	38.6	33.4
<u>Total</u>	<u>93.6</u>	<u>135.7</u>	<u>107.4</u>	<u>168.1</u>	<u>147.3</u>	<u>87.1</u>	<u>138.1</u>	<u>118.4</u>	<u>181.5</u>	<u>205.1</u>	<u>212.9</u>	<u>178.5</u>
(2) Sungai Leman (Station No.3510001)												
1-5	29.8	20.2	30.0	14.5	20.2	17.4	19.9	10.2	21.9	22.4	43.9	26.6
6-10	15.0	23.9	8.7	34.8	28.4	16.0	11.6	17.1	28.9	32.8	32.9	23.2
11-15	25.4	9.0	26.6	33.0	10.2	16.6	16.8	10.5	8.9	33.6	20.2	32.3
16-20	4.4	12.3	20.2	18.8	14.5	9.1	23.6	18.2	26.7	19.6	35.2	20.5
21-25	11.7	30.7	5.9	21.7	21.8	6.8	24.7	29.7	25.1	23.4	28.1	28.7
26-End	10.6	20.5	13.6	21.2	34.2	11.4	20.1	35.9	11.4	38.8	20.7	34.1
<u>Total</u>	<u>96.9</u>	<u>116.6</u>	<u>105.0</u>	<u>144.0</u>	<u>129.3</u>	<u>77.3</u>	<u>116.7</u>	<u>121.6</u>	<u>122.9</u>	<u>170.6</u>	<u>181.0</u>	<u>165.4</u>
(3) Sungai Besar (Station No.3710011)												
1-5	31.9	17.9	21.7	9.5	25.5	15.1	13.7	5.1	24.0	21.3	30.1	26.5
6-10	17.3	31.6	10.1	31.6	25.4	11.2	8.3	14.5	28.2	27.9	26.5	15.7
11-15	28.1	11.9	14.2	28.5	10.4	26.8	13.3	15.2	11.9	19.0	19.1	27.3
16-20	7.7	8.5	17.8	14.6	10.2	5.6	22.8	14.4	26.1	15.8	32.4	31.3
21-25	27.7	19.2	14.1	24.2	17.5	10.8	42.1	24.1	20.7	14.0	26.0	34.0
26-End	11.6	15.2	36.4	26.5	34.6	8.6	12.9	29.8	22.1	39.7	30.5	37.2
<u>Total</u>	<u>124.3</u>	<u>104.3</u>	<u>114.3</u>	<u>134.9</u>	<u>123.6</u>	<u>78.1</u>	<u>113.1</u>	<u>103.1</u>	<u>133.0</u>	<u>137.7</u>	<u>164.6</u>	<u>172.0</u>
(4) Sungai Besar (Station No.3710011, Mean for 1961-1970)												
1-5	23.8	17.9	21.9	23.3	24.1	12.7	8.4	8.5	15.7	24.3	50.8	38.9
6-10	32.0	17.8	13.9	22.8	28.8	10.5	11.6	18.2	15.9	20.0	46.1	45.0
11-15	27.3	35.2	17.5	32.8	25.1	19.8	12.5	12.8	7.3	57.6	61.8	18.6
16-20	16.2	26.7	12.8	21.2	24.3	19.9	20.1	36.1	14.7	42.7	64.2	25.5
21-25	14.7	28.3	15.3	10.8	26.6	21.6	13.4	26.7	37.7	44.6	53.9	24.5
26-End	6.6	13.4	26.8	33.3	22.6	8.3	15.2	16.4	35.3	55.4	50.5	33.3
<u>Total</u>	<u>120.6</u>	<u>139.3</u>	<u>108.2</u>	<u>144.2</u>	<u>151.5</u>	<u>92.8</u>	<u>81.2</u>	<u>118.7</u>	<u>126.6</u>	<u>244.6</u>	<u>327.3</u>	<u>185.8</u>

Source: Data Bank of DID.

Table B-17 (1/2) NUMBER OF DAYS WITH RAINFALL OF MORE THAN 5MM AND STAGNANT WATER ON FARM LOTS UNDER FALLOW CONDITION AT SUNGAI BURONG STATION

Year & Period	Rainfall Day												Sebmerged Day											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1975																								
1-10	2	3	0	2	0	0	1	1	5	2	2	1	3	2	0	0	0	0	1	4	1	2	2	0
11-20	1	1	2	4	1	1	3	0	2	0	4	1	5	6	1	4	1	1	1	0	6	4	1	0
21-End	1	1	1	1	3	0	3	0	3	2	1	3	0	0	3	1	3	0	4	0	4	2	6	3
<u>Total</u>	<u>4</u>	<u>5</u>	<u>3</u>	<u>7</u>	<u>4</u>	<u>1</u>	<u>7</u>	<u>1</u>	<u>10</u>	<u>4</u>	<u>7</u>	<u>5</u>	<u>8</u>	<u>8</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>1</u>	<u>6</u>	<u>4</u>	<u>11</u>	<u>8</u>	<u>9</u>	<u>3</u>
Year: 1976																								
1-10	0	1	1	0	3	2	3	0	4	4	4	0	2	7	2	0	3	1	3	0	3	5	5	0
11-20	0	0	3	6	1	1	0	4	1	4	3	1	0	0	4	4	0	1	0	3	1	6	7	0
21-End	0	0	3	4	1	1	3	3	3	2	0	4	0	0	1	2	0	1	0	8	4	3	1	4
<u>Total</u>	<u>0</u>	<u>1</u>	<u>7</u>	<u>10</u>	<u>5</u>	<u>4</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>10</u>	<u>7</u>	<u>5</u>	<u>2</u>	<u>7</u>	<u>7</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>11</u>	<u>8</u>	<u>14</u>	<u>13</u>	<u>4</u>
Year: 1977																								
1-10	0	2	0	1	0	3	1	2	1	7	3	3	0	2	1	0	6	0	0	6	2	3	2	3
11-20	0	2	0	2	1	3	2	2	1	3	3	0	0	2	0	1	4	2	8	5	4	7	5	2
21-End	0	1	0	1	1	4	0	1	5	2	3	3	0	0	0	5	0	2	3	5	3	3	3	3
<u>Total</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>4</u>	<u>2</u>	<u>10</u>	<u>3</u>	<u>5</u>	<u>7</u>	<u>12</u>	<u>9</u>	<u>6</u>	<u>0</u>	<u>4</u>	<u>1</u>	<u>6</u>	<u>10</u>	<u>4</u>	<u>11</u>	<u>16</u>	<u>9</u>	<u>13</u>	<u>10</u>	<u>8</u>
Year: 1978																								
1-10	3	0	1	0	2	2	3	2	2	1	3	6	1	0	9	0	3	2	4	0	0	6	7	3
11-20	4	1	2	1	2	1	0	3	2	2	2	1	4	1	0	0	3	0	0	2	4	4	8	9
21-End	1	2	4	0	0	2	1	1	2	4	1	1	4	1	4	0	0	7	3	1	8	7	5	7
<u>Total</u>	<u>8</u>	<u>3</u>	<u>7</u>	<u>1</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>6</u>	<u>8</u>	<u>9</u>	<u>2</u>	<u>13</u>	<u>0</u>	<u>6</u>	<u>9</u>	<u>7</u>	<u>3</u>	<u>12</u>	<u>17</u>	<u>20</u>	<u>19</u>
Year: 1979																								
1-10	3	3	0	0	0	3	1	1	3	1	4	3	5	0	0	0	10	2	1	0	1	1	6	7
11-20	0	3	0	0	0	3	4	1	2	5	4	2	0	0	0	0	3	2	0	0	3	5	6	7
21-End	1	2	0	6	1	0	4	3	1	6	4	0	0	2	0	3	4	1	3	3	2	5	6	0
<u>Total</u>	<u>4</u>	<u>8</u>	<u>0</u>	<u>6</u>	<u>1</u>	<u>6</u>	<u>9</u>	<u>5</u>	<u>6</u>	<u>12</u>	<u>12</u>	<u>5</u>	<u>5</u>	<u>2</u>	<u>0</u>	<u>3</u>	<u>17</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>6</u>	<u>11</u>	<u>18</u>	<u>14</u>

Table B-17 (2/2) NUMBER OF DAYS WITH RAINFALL OF MORE THAN 5MM AND STAGNANT WATER ON FARM LOTS UNDER FALLOW CONDITION AT SUNGAI BURONG STATION

Year & Period	Rainfall Day												Sebmerged Day											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1980																								
1-10	2	0	3	7	3	2	1	3	2	3	2	4	0	0	7	3	4	5	0	2	3	4	8	5
11-20	1	1	2	3	4	2	2	1	0	2	1	2	1	0	2	5	6	0	0	1	0	6	0	0
21-End	0	1	2	3	1	2	5	1	3	4	5	5	2	2	0	5	10	0	6	6	4	2	2	6
<u>Total</u>	<u>3</u>	<u>2</u>	<u>7</u>	<u>13</u>	<u>8</u>	<u>6</u>	<u>8</u>	<u>5</u>	<u>5</u>	<u>9</u>	<u>8</u>	<u>11</u>	<u>3</u>	<u>2</u>	<u>9</u>	<u>13</u>	<u>20</u>	<u>5</u>	<u>6</u>	<u>9</u>	<u>7</u>	<u>12</u>	<u>10</u>	<u>11</u>
Year: 1981																								
1-10	5	4	1	3	2	1	1	0	5	0	4	1	5	2	2	3	5	5	0	0	4	0	5	3
11-20	1	2	1	3	1	0	2	2	3	5	3	2	7	3	0	4	3	0	2	0	3	4	1	6
21-End	0	2	1	0	3	0	1	2	1	2	3	1	0	1	2	8	1	0	4	4	1	9	6	0
<u>Total</u>	<u>6</u>	<u>8</u>	<u>3</u>	<u>6</u>	<u>6</u>	<u>1</u>	<u>4</u>	<u>4</u>	<u>9</u>	<u>7</u>	<u>10</u>	<u>4</u>	<u>12</u>	<u>6</u>	<u>4</u>	<u>15</u>	<u>9</u>	<u>5</u>	<u>6</u>	<u>4</u>	<u>8</u>	<u>13</u>	<u>12</u>	<u>9</u>
Year: 1982																								
1-10	0	2	5	5	2	1	3	2	1	2	4	1	8	3	2	2	7	1	1	0	1	0	0	8
11-20	1	0	4	3	0	1	1	2	1	3	3	3	0	0	2	2	1	5	3	0	0	3	7	1
21-End	1	0	3	3	2	1	1	1	1	3	4	2	1	0	5	2	3	0	2	1	1	2	6	1
<u>Total</u>	<u>2</u>	<u>2</u>	<u>12</u>	<u>11</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>3</u>	<u>8</u>	<u>11</u>	<u>6</u>	<u>9</u>	<u>3</u>	<u>9</u>	<u>6</u>	<u>11</u>	<u>6</u>	<u>6</u>	<u>1</u>	<u>2</u>	<u>5</u>	<u>13</u>	<u>10</u>
Year: 1983																								
1-10	3	0	0	0	2	1	2	1	5	3	1	1	4	0	0	0	2	2	2	0	5	5	5	1
11-20	1	2	1	0	3	3	5	3	5	2	0	4	0	0	1	0	1	3	0	3	5	2	0	6
21-End	0	1	0	4	3	0	0	3	2	3	3	2	0	0	0	5	3	0	7	3	8	4	0	6
<u>Total</u>	<u>4</u>	<u>3</u>	<u>1</u>	<u>4</u>	<u>8</u>	<u>4</u>	<u>7</u>	<u>7</u>	<u>12</u>	<u>8</u>	<u>4</u>	<u>7</u>	<u>4</u>	<u>0</u>	<u>1</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>9</u>	<u>6</u>	<u>18</u>	<u>11</u>	<u>5</u>	<u>13</u>
Year: 1984																								
1-10	1	6	3	4	2	1	3	1	1	1	5	4	1	4	7	6	7	0	3	1	0	0	2	4
11-20	4	3	4	3	3	2	3	0	3	3	3	5	3	7	6	7	5	3	4	0	3	0	0	5
21-End	6	3	2	0	4	0	2	2	2	5	3	4	3	6	9	8	5	0	8	6	1	5	6	7
<u>Total</u>	<u>11</u>	<u>12</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>3</u>	<u>8</u>	<u>3</u>	<u>6</u>	<u>9</u>	<u>11</u>	<u>13</u>	<u>7</u>	<u>17</u>	<u>22</u>	<u>21</u>	<u>17</u>	<u>3</u>	<u>15</u>	<u>7</u>	<u>4</u>	<u>5</u>	<u>8</u>	<u>18</u>

Table B-18 (1/2) NUMBER OF DAYS WITH RAINFALL OF MORE THAN 5MM AND STAGNANT WATER ON FARM LOTS UNDER FALLOW CONDITION AT SUNGAI LEMAN STATION

Year & Period	Rainfall Day												Sebmerged Day											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1975																								
1-10	1	5	1	-	1	1	2	1	5	1	2	3	4	1	0	-	0	0	1	5	5	1	2	3
11-20	1	2	2	-	0	0	1	0	2	2	5	2	1	6	2	-	3	0	0	1	3	2	3	0
21-End	2	1	2	-	4	0	4	2	0	2	2	4	3	0	2	-	3	0	6	1	0	0	1	3
<u>Total</u>	<u>4</u>	<u>7</u>	<u>5</u>	<u>-</u>	<u>5</u>	<u>1</u>	<u>7</u>	<u>3</u>	<u>7</u>	<u>5</u>	<u>9</u>	<u>9</u>	<u>8</u>	<u>7</u>	<u>4</u>	<u>-</u>	<u>6</u>	<u>0</u>	<u>7</u>	<u>7</u>	<u>8</u>	<u>3</u>	<u>6</u>	<u>6</u>
Year: 1976																								
1-10	1	1	2	1	1	2	2	1	2	4	2	0	5	0	2	1	3	3	2	0	8	3	2	0
11-20	2	0	2	3	0	1	1	3	0	3	4	3	5	0	7	6	0	1	1	2	1	3	0	0
21-End	0	1	2	3	1	2	3	3	1	0	0	6	1	5	4	7	0	1	0	8	2	0	1	2
<u>Total</u>	<u>3</u>	<u>2</u>	<u>6</u>	<u>7</u>	<u>2</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>3</u>	<u>7</u>	<u>6</u>	<u>9</u>	<u>11</u>	<u>5</u>	<u>13</u>	<u>14</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>10</u>	<u>11</u>	<u>6</u>	<u>3</u>	<u>2</u>
Year: 1977																								
1-10	1	3	0	1	0	2	0	3	2	6	3	3	0	0	4	1	0	1	0	0	3	3	5	2
11-20	0	1	0	3	2	3	2	3	1	1	3	1	0	0	0	1	0	2	3	3	0	9	1	1
21-End	1	3	1	1	0	2	0	2	2	2	1	4	0	3	0	1	0	2	0	4	3	9	3	3
<u>Total</u>	<u>2</u>	<u>7</u>	<u>1</u>	<u>5</u>	<u>2</u>	<u>7</u>	<u>2</u>	<u>8</u>	<u>5</u>	<u>9</u>	<u>7</u>	<u>8</u>	<u>0</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>0</u>	<u>5</u>	<u>3</u>	<u>7</u>	<u>6</u>	<u>21</u>	<u>9</u>	<u>6</u>
Year: 1978																								
1-10	1	0	2	2	3	3	3	1	0	1	4	6	1	0	2	0	1	3	0	1	0	0	6	0
11-20	2	1	1	0	2	1	0	2	2	2	2	2	6	0	1	3	8	3	0	1	4	2	8	6
21-End	2	2	2	1	0	1	0	0	2	3	0	1	1	1	1	0	0	1	0	0	8	2	4	1
<u>Total</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>6</u>	<u>6</u>	<u>9</u>	<u>8</u>	<u>1</u>	<u>4</u>	<u>3</u>	<u>9</u>	<u>7</u>	<u>0</u>	<u>2</u>	<u>12</u>	<u>4</u>	<u>18</u>	<u>7</u>
Year: 1979																								
1-10	4	0	1	1	2	2	2	1	2	0	2	3	4	0	3	1	4	3	2	1	1	0	0	3
11-20	1	1	1	3	0	1	0	0	1	4	3	1	0	1	1	5	0	1	0	0	1	3	5	4
21-End	0	2	0	3	1	2	3	3	0	4	4	0	0	4	0	4	3	1	3	3	0	7	4	0
<u>Total</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>7</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>8</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>10</u>	<u>7</u>	<u>5</u>	<u>5</u>	<u>4</u>	<u>2</u>	<u>10</u>	<u>9</u>	<u>7</u>

Table B-18 (2/2) NUMBER OF DAYS WITH RAINFALL OF MORE THAN 5MM AND STAGNANT WATER ON FARM LOTS UNDER FALLOW CONDITION AT SUNGAI LEMAN STATION

Year & Period	Rainfall Day												Sebmerged Day											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1980																								
1-10	3	0	2	5	2	0	0	2	2	3	3	5	3	0	4	2	1	1	0	3	3	0	0	5
11-20	2	1	1	1	1	4	2	2	1	1	0	3	4	0	8	1	8	2	1	0	1	0	0	1
21-End	1	3	2	1	3	1	4	3	2	2	5	4	1	6	0	0	5	0	7	3	3	0	5	4
<u>Total</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>5</u>	<u>6</u>	<u>8</u>	<u>12</u>	<u>8</u>	<u>6</u>	<u>12</u>	<u>3</u>	<u>14</u>	<u>3</u>	<u>8</u>	<u>6</u>	<u>7</u>	<u>0</u>	<u>5</u>	<u>10</u>
Year: 1981																								
1-10	2	2	2	3	2	0	0	2	4	1	2	0	5	0	7	4	0	0	0	4	5	0	6	0
11-20	1	1	0	2	3	1	1	3	2	5	4	3	1	0	0	8	2	0	0	1	8	2	1	6
21-End	0	3	1	0	1	2	2	6	1	2	3	2	0	1	0	2	6	3	2	2	1	9	5	1
<u>Total</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>5</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>11</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>5</u>	<u>6</u>	<u>1</u>	<u>7</u>	<u>14</u>	<u>8</u>	<u>3</u>	<u>2</u>	<u>7</u>	<u>14</u>	<u>11</u>	<u>12</u>	<u>7</u>
Year: 1982																								
1-10	1	1	2	4	2	2	3	2	0	3	5	1	2	0	3	2	1	8	2	3	2	1	5	4
11-20	0	1	4	1	1	2	3	1	1	2	3	3	0	1	1	3	0	1	2	0	0	3	7	3
21-End	0	0	0	1	4	1	0	6	1	3	4	3	0	0	2	2	5	0	1	2	0	1	6	6
<u>Total</u>	<u>1</u>	<u>2</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>5</u>	<u>6</u>	<u>9</u>	<u>2</u>	<u>8</u>	<u>12</u>	<u>7</u>	<u>2</u>	<u>1</u>	<u>6</u>	<u>7</u>	<u>6</u>	<u>9</u>	<u>5</u>	<u>5</u>	<u>2</u>	<u>5</u>	<u>18</u>	<u>13</u>
Year: 1983																								
1-10	2	1	0	0	1	1	2	0	4	2	1	1	6	0	0	0	9	1	2	0	6	6	7	0
11-20	3	1	2	0	2	4	5	1	4	0	1	4	1	1	1	0	1	2	2	1	6	0	1	3
21-End	1	0	0	6	3	0	0	2	3	3	2	2	1	0	1	3	7	0	3	3	7	5	3	2
<u>Total</u>	<u>6</u>	<u>2</u>	<u>2</u>	<u>6</u>	<u>6</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>11</u>	<u>5</u>	<u>4</u>	<u>7</u>	<u>8</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>17</u>	<u>3</u>	<u>7</u>	<u>4</u>	<u>19</u>	<u>11</u>	<u>11</u>	<u>5</u>
Year: 1984																								
1-10	2	6	3	1	2	1	3	1	0	1	5	2	1	4	7	0	0	1	5	0	1	1	5	2
11-20	0	2	2	4	2	2	6	0	1	2	3	4	0	8	5	3	1	0	2	0	0	2	4	5
21-End	7	2	0	0	4	0	2	2	1	4	1	3	3	7	5	5	0	0	7	0	1	7	5	2
<u>Total</u>	<u>9</u>	<u>10</u>	<u>5</u>	<u>5</u>	<u>9</u>	<u>3</u>	<u>11</u>	<u>3</u>	<u>2</u>	<u>7</u>	<u>9</u>	<u>9</u>	<u>4</u>	<u>19</u>	<u>17</u>	<u>8</u>	<u>1</u>	<u>1</u>	<u>14</u>	<u>0</u>	<u>2</u>	<u>10</u>	<u>14</u>	<u>9</u>

Table B-19 (1/2) NUMBER OF DAYS WITH RAINFALL OF MORE THAN 5MM AND STAGNANT WATER ON FARM LOTS UNDER FALLOW CONDITION AT SUNGAI BESAR STATION

Year & Period	Rainfall Day												Sebmerged Day											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1975																								
1-10	4	4	3	0	0	2	2	2	4	1	2	4	6	3	2	4	0	3	2	0	3	0	3	2
11-20	2	1	1	7	1	2	3	0	3	0	5	2	1	9	0	1	2	4	5	0	2	0	2	2
21-End	3	2	2	1	1	0	4	3	2	5	3	4	2	4	3	7	2	0	6	1	0	4	5	2
<u>Total</u>	<u>9</u>	<u>7</u>	<u>6</u>	<u>8</u>	<u>2</u>	<u>4</u>	<u>9</u>	<u>5</u>	<u>9</u>	<u>6</u>	<u>10</u>	<u>10</u>	<u>9</u>	<u>16</u>	<u>5</u>	<u>12</u>	<u>4</u>	<u>7</u>	<u>13</u>	<u>1</u>	<u>5</u>	<u>4</u>	<u>10</u>	<u>6</u>
Year: 1976																								
1-10	2	0	4	1	2	4	1	0	1	2	1	2	5	0	6	0	6	4	5	0	5	4	3	2
11-20	0	0	3	3	0	1	0	1	0	5	2	4	0	0	0	2	1	3	2	4	0	1	1	3
21-End	0	2	3	4	1	2	2	3	2	0	0	3	0	0	0	3	0	1	3	5	3	0	0	8
<u>Total</u>	<u>2</u>	<u>2</u>	<u>10</u>	<u>8</u>	<u>3</u>	<u>7</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>7</u>	<u>3</u>	<u>9</u>	<u>5</u>	<u>0</u>	<u>6</u>	<u>5</u>	<u>7</u>	<u>8</u>	<u>10</u>	<u>9</u>	<u>8</u>	<u>5</u>	<u>4</u>	<u>13</u>
Year: 1977																								
1-10	2	3	0	1	1	3	0	1	2	5	5	2	3	3	0	0	2	3	0	1	3	5	2	7
11-20	0	1	1	1	2	1	1	2	0	3	2	0	0	2	0	0	4	2	0	0	1	7	2	2
21-End	2	3	2	2	0	2	2	2	4	2	3	3	0	4	0	1	0	4	4	1	1	6	4	8
<u>Total</u>	<u>4</u>	<u>7</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>5</u>	<u>6</u>	<u>10</u>	<u>10</u>	<u>5</u>	<u>3</u>	<u>9</u>	<u>0</u>	<u>1</u>	<u>6</u>	<u>9</u>	<u>4</u>	<u>2</u>	<u>5</u>	<u>18</u>	<u>8</u>	<u>17</u>
Year: 1978																								
1-10	3	1	2	5	2	3	0	2	1	2	4	4	2	1	1	5	3	0	0	0	3	2	6	1
11-20	5	3	1	0	0	1	0	4	2	4	4	2	5	3	0	8	3	0	0	6	2	1	4	2
21-End	1	1	4	1	1	2	0	2	2	5	0	0	7	4	3	0	0	0	0	1	2	4	2	0
<u>Total</u>	<u>9</u>	<u>5</u>	<u>7</u>	<u>6</u>	<u>3</u>	<u>6</u>	<u>0</u>	<u>8</u>	<u>5</u>	<u>11</u>	<u>8</u>	<u>6</u>	<u>14</u>	<u>8</u>	<u>4</u>	<u>13</u>	<u>6</u>	<u>0</u>	<u>0</u>	<u>7</u>	<u>7</u>	<u>7</u>	<u>12</u>	<u>3</u>
Year: 1979																								
1-10	3	1	1	2	1	4	1	1	4	1	1	0	5	1	3	4	9	4	0	0	6	0	3	0
11-20	0	1	1	2	0	1	1	0	4	3	3	0	0	0	0	8	5	0	0	0	5	5	0	0
21-End	1	1	2	4	1	1	2	2	1	3	4	1	3	4	1	5	1	0	6	2	0	0	3	0
<u>Total</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>8</u>	<u>2</u>	<u>6</u>	<u>4</u>	<u>3</u>	<u>9</u>	<u>7</u>	<u>8</u>	<u>1</u>	<u>8</u>	<u>5</u>	<u>4</u>	<u>17</u>	<u>15</u>	<u>4</u>	<u>6</u>	<u>2</u>	<u>11</u>	<u>5</u>	<u>6</u>	<u>0</u>

Table B-19 (2/2) NUMBER OF DAYS WITH RAINFALL OF MORE THAN 5MM AND STAGNANT WATER ON FARM LOTS UNDER FALLOW CONDITION AT SUNGAI BESAR STATION

Year & Period	Rainfall Day												Sebmerged Day											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Year: 1980																								
1-10	2	0	2	2	2	2	0	1	1	2	3	4	3	0	0	0	3	0	0	0	1	1	3	2
11-20	2	2	2	1	1	2	1	1	2	0	1	4	3	0	3	3	2	2	0	0	0	1	1	3
21-End	0	1	1	2	3	1	2	1	2	1	3	4	0	0	0	0	3	0	7	2	8	3	3	6
<u>Total</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>7</u>	<u>12</u>	<u>6</u>	<u>0</u>	<u>3</u>	<u>3</u>	<u>8</u>	<u>2</u>	<u>7</u>	<u>2</u>	<u>9</u>	<u>5</u>	<u>7</u>	<u>11</u>
Year: 1981																								
1-10	2	2	1	5	2	0	0	0	3	1	2	0	0	0	0	5	3	8	0	1	4	0	7	0
11-20	1	0	0	2	1	0	0	0	3	1	2	3	3	0	0	4	0	0	0	2	1	1	2	
21-End	1	2	3	1	3	2	3	2	2	1	1	1	1	0	2	0	0	0	6	7	2	1	0	0
<u>Total</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>8</u>	<u>6</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>8</u>	<u>3</u>	<u>5</u>	<u>4</u>	<u>4</u>	<u>0</u>	<u>2</u>	<u>9</u>	<u>3</u>	<u>8</u>	<u>6</u>	<u>8</u>	<u>8</u>	<u>2</u>	<u>8</u>	<u>2</u>
Year: 1982																								
1-10	2	1	1	4	2	0	2	2	0	1	3	1	3	1	1	2	0	2	2	1	0	1	7	5
11-20	0	0	1	1	0	1	2	1	2	1	1	3	0	0	1	3	0	1	2	2	1	0	9	2
21-End	0	1	1	0	3	1	2	2	0	3	4	3	0	0	1	0	5	0	9	1	4	1	6	5
<u>Total</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>2</u>	<u>6</u>	<u>5</u>	<u>2</u>	<u>5</u>	<u>8</u>	<u>7</u>	<u>3</u>	<u>1</u>	<u>3</u>	<u>5</u>	<u>5</u>	<u>3</u>	<u>13</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>22</u>	<u>12</u>
Year: 1983																								
1-10	2	0	0	0	2	0	1	1	5	3	1	1	4	0	0	0	7	0	0	4	2	4	2	6
11-20	1	1	3	0	2	3	1	2	1	1	1	2	0	1	3	0	5	2	3	2	6	1	1	4
21-End	0	0	0	2	3	0	1	1	3	2	2	2	0	0	1	2	4	0	0	3	3	0	2	5
<u>Total</u>	<u>3</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>9</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>1</u>	<u>4</u>	<u>2</u>	<u>16</u>	<u>2</u>	<u>3</u>	<u>9</u>	<u>11</u>	<u>5</u>	<u>5</u>	<u>15</u>
Year: 1984																								
1-10	1	3	3	3	1	0	2	1	1	3	4	2	0	7	7	3	1	2	0	2	0	2	0	5
11-20	2	1	3	2	2	3	2	0	0	0	2	7	3	9	7	2	3	7	3	1	0	2	3	4
21-End	6	2	1	1	3	0	1	1	1	4	2	2	5	7	8	1	0	0	1	0	3	3	3	8
<u>Total</u>	<u>9</u>	<u>6</u>	<u>7</u>	<u>6</u>	<u>6</u>	<u>3</u>	<u>5</u>	<u>2</u>	<u>2</u>	<u>7</u>	<u>8</u>	<u>11</u>	<u>8</u>	<u>25</u>	<u>22</u>	<u>6</u>	<u>4</u>	<u>9</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>7</u>	<u>6</u>	<u>17</u>

Table B-20 SUMMARY OF NUMBER OF DAYS  
WITH RAINFALL AND STAGNANT WATER

Period	J	F	M	A	M	J	J	A	S	O	N	D
(1) Sungai Burong (Station No.3411016)												
- Average number of days with rainfall more than 5 mm												
1-10	1.9	2.1	1.4	2.2	1.6	1.6	1.9	1.3	2.9	2.4	3.2	2.4
11-20	1.3	1.5	1.9	2.5	1.6	1.7	2.2	1.8	2.0	2.9	2.6	2.1
21-End	1.0	1.3	1.6	2.2	1.9	1.0	2.0	1.7	2.3	3.3	2.7	2.5
<u>Total</u>	<u>4.2</u>	<u>4.9</u>	<u>4.9</u>	<u>6.9</u>	<u>5.1</u>	<u>4.3</u>	<u>6.1</u>	<u>4.8</u>	<u>7.2</u>	<u>8.6</u>	<u>8.5</u>	<u>7.0</u>
- Average number of days with stagnant water												
1-10	2.9	2.0	3.0	1.4	4.7	1.8	1.5	1.3	2.0	2.6	4.2	3.4
11-20	2.0	1.9	1.6	2.7	2.7	1.7	1.8	1.4	2.9	4.1	3.5	3.6
21-End	1.0	1.2	2.4	3.9	2.9	1.1	4.0	3.7	3.6	4.2	4.1	3.7
<u>Total</u>	<u>5.9</u>	<u>5.1</u>	<u>7.0</u>	<u>8.0</u>	<u>10.3</u>	<u>4.6</u>	<u>7.3</u>	<u>6.4</u>	<u>8.5</u>	<u>10.9</u>	<u>11.8</u>	<u>10.7</u>
(2) Sungai Leman (Station No.3510001)												
- Average number of days with rainfall more than 5 mm												
1-10	1.8	1.9	1.5	1.8	1.6	1.4	1.7	1.4	2.1	2.2	2.9	2.4
11-20	1.2	1.1	1.5	1.7	1.3	1.9	2.1	1.5	1.5	2.2	2.8	2.6
21-End	1.4	1.7	1.0	1.6	2.1	1.1	1.8	2.9	1.3	2.5	2.2	2.9
<u>Total</u>	<u>4.4</u>	<u>4.7</u>	<u>4.0</u>	<u>5.1</u>	<u>5.0</u>	<u>4.4</u>	<u>5.6</u>	<u>5.8</u>	<u>4.9</u>	<u>6.9</u>	<u>7.9</u>	<u>7.9</u>
- Average number of days with stagnant water												
1-10	3.1	0.5	3.2	1.1	1.9	2.1	1.4	1.7	3.4	1.5	3.8	1.9
11-20	1.8	1.7	2.6	3.0	2.3	1.2	1.1	0.9	2.4	2.6	3.0	2.9
21-End	1.0	2.7	1.5	2.4	2.9	0.8	2.9	2.6	2.5	4.0	3.7	2.4
<u>Total</u>	<u>5.9</u>	<u>4.7</u>	<u>7.3</u>	<u>6.5</u>	<u>7.1</u>	<u>4.1</u>	<u>5.4</u>	<u>5.2</u>	<u>8.3</u>	<u>8.1</u>	<u>10.5</u>	<u>7.2</u>
(3) Sungai Besar (Station No.3710011)												
- Average number of days with rainfall more than 5 mm												
1-10	2.3	1.5	1.7	2.3	1.5	1.8	0.9	1.1	2.2	2.1	2.6	2.0
11-20	1.3	1.0	1.6	1.9	0.9	1.5	1.1	1.1	1.7	2.0	2.4	2.4
21-End	1.4	1.5	1.9	1.8	1.9	1.1	1.9	1.9	1.9	2.6	2.2	2.3
<u>Total</u>	<u>5.0</u>	<u>4.0</u>	<u>5.2</u>	<u>6.0</u>	<u>4.3</u>	<u>4.4</u>	<u>3.9</u>	<u>4.1</u>	<u>5.8</u>	<u>6.7</u>	<u>7.2</u>	<u>6.7</u>
- Average number of days with stagnant water												
1-10	3.1	1.6	2.0	2.3	3.4	2.6	0.9	0.9	2.7	1.9	3.6	3.0
11-20	1.5	2.4	1.4	3.1	2.5	2.1	1.5	1.5	1.9	1.9	2.8	2.5
21-End	1.8	2.3	1.9	1.9	1.5	0.5	4.2	2.3	2.6	2.2	2.8	4.2
<u>Total</u>	<u>6.4</u>	<u>6.3</u>	<u>5.3</u>	<u>7.3</u>	<u>7.4</u>	<u>5.2</u>	<u>6.6</u>	<u>4.7</u>	<u>7.2</u>	<u>6.0</u>	<u>9.2</u>	<u>9.7</u>

Source: Data Bank of DID.



Table B-21 HECTARAGE OF SOIL SERIES IN SURVEY AREA

Parent Material	Mapping Unit	Mapping Symbol	Hectarage (ha)	Percent (%)
Marine Alluvium	Kranji Series	KNJ	5,097	7.2
	Banjar Series	BNR	6,813	9.6
	Sedu Series	SDU	5,732	8.0
	Jawa Series	JWA	11,450	16.1
	Bernam Series	BNM	22,258	31.2
	Selangor Series	SLR	1,576	2.2
	Bakau Series	BKU	2,077	2.9
	Serong Series	SRG	674	0.9
Brackish Water Deposits	Brown Clays	BNG	4,600	6.5
Organic Deposits	Organic Clays and Mucks	OCM	2,013	2.8
Riverine Alluvium	Briah Series	BRH	8,446	11.8
Riverine and Marine Alluvium	Unclassified Clays	UNC	594	0.8
<u>Total</u>			<u>71,330</u>	<u>100.0</u>

Source: Semi-detailed Soil Survey of Northwest Selangor, Soils and Analytical Services Soil Survey Report No.19, 1984, MOA.

Table B-22 SOIL CLASSIFICATION

Soil Series	Soil Taxonomy	FAO/UNESCO Legend
Kranji	Clayey, mixed, isohyperthermic Typic (Hydra) Sulfaquent	Thionic Fluvisol
Banjar	Clayey, mixed, isohyperthermic Typic Sulfaquent	Thionic Fluvisol
Sedu	Clayey, mixed, isohyperthermic Typic Sulfaquept	Thionic Fluvisol
Jawa	Fine, mixed, isohyperthermic Sulfic Trophaquept	Thionic Fluvisol
Selangor	Clayey, mixed, isohyperthermic Aeric Trophaquept	Dystric Cambisol
Bernam	Clayey, mixed, isohyperthermic Typic Trophaquept	Eutric Gleysol
Bakau	Very fine, mixed, isohyperthermic Typic Hydraquent	Eutric Fluvisol
Serong	Very fine, mixed, isohyperthermic Tropic Fluvaquent	Eutric Fluvisol
Brown Clays	Clayey, mixed, acidic, isohyperthermic Typic Trophaquept	Dystric Gleysol
Briah	Clayey, mixed, acidic, isohyperthermic Typic Trophaquept	Eutric Gleysol
Organic Clays	Troposaprists	Dystric Histosol
Mucks	Tropohemists	Dystric Histosol

Source: Semi-detailed Soil Survey of Northwest Selangor, Soils and Analytical Services Soil Survey Report No.19, 1984, MOA

Table B-23 (1/2) ANALYTICAL DATA OF SOIL SERIES

Horizon	Depth (cm)	Particle Size (%)			T.C (%)	T.N (%)	pH	Water Soluble		EC (ms)	meq/100 g soil					
		Clay	Silt	Fire sand				Coarse sand	SO <sub>4</sub> (%)		Cl (%)	CEC	Ca	Mg	Na	K
<b>Kranji Series</b>																
Ah	0-2	74	22	4	-	1.89	0.18	6.2	0.34	3.32	6.1	32.4	9.9	22.1	50.5	4.8
C1	2-55	79	18	3	-	1.89	0.18	7.0	0.40	3.07	7.5	37.0	13.6	22.7	57.2	4.5
C2	55-110	80	17	3	-	2.04	0.17	6.2	0.58	3.56	8.6	31.3	13.6	24.2	52.0	4.8
<b>Banjar Series</b>																
AB	0-30	74	25	1	0	1.05	0.10	6.4	0.09	0.05	0.7	N.D.	9.1	19.9	3.1	2.5
(B)	30-50	67	31	2	0	1.12	0.10	6.2	0.12	0.10	1.0	N.D.	9.3	18.2	5.2	2.2
BC	50-70	61	37	2	0	1.38	0.10	6.5	0.18	0.14	1.4	N.D.	10.0	18.7	6.1	1.8
C1	70-95	59	38	3	0	1.57	0.10	6.7	0.99	0.14	3.4	N.D.	14.6	18.1	7.0	2.0
C2	95+	58	38	3	1	2.02	0.18	7.4	0.70	0.21	3.2	N.D.	21.2	20.0	8.9	2.5
<b>Sedu Series</b>																
Aph	0-12	45	41	13	1	4.96	0.40	3.3	0.08	0.06	0.6	20.3	3.1	4.3	1.8	0.7
B	12-38	53	27	9	11	2.50	0.17	2.9	0.08	0.03	1.0	23.2	2.1	7.6	3.6	1.2
C1	38-60	65	27	17	1	2.76	0.17	2.8	0.37	0.20	2.2	30.0	3.7	13.5	3.9	1.5
C2	60+	64	28	7	1	2.44	0.15	2.7	0.83	0.19	2.9	25.1	4.0	14.5	3.8	0.1
<b>Jawa Series</b>																
Aph	0-20	31	32	27	11	1.15	0.12	4.3	-	-	0.1	13.5	1.7	1.1	0.1	0.2
AB	20-32	49	25	17	8	0.79	0.08	4.1	-	-	0.1	16.2	2.5	1.0	0.2	0.4
B	32-60	53	25	17	7	0.97	0.08	3.5	-	-	0.2	17.5	0.9	0.1	0.1	0.4
BC	60-90	56	27	13	3	1.33	0.09	3.2	0.04	0.04	0.5	17.2	1.3	1.8	0.9	0.5
C	90+	62	23	12	2	N.D.	N.D.	2.1	0.52	0.03	5.0	15.3	1.9	3.5	0.5	0.1
<b>Selangor Series</b>																
Aph	0-20	48	23	29	1	2.18	0.25	3.8	-	-	N.D.	17.5	0.2	0.5	0.2	0.3
B	20-65	64	21	14	Tr	0.33	0.05	3.3	-	-	N.D.	23.7	0.4	1.2	0.3	0.5
BC	65-120	47	19	36	1	0.29	0.05	3.1	-	-	N.D.	19.9	0.7	1.8	0.4	0.4
C	120-145	49	19	25	10	0.94	0.08	2.8	-	-	N.D.	20.9	1.9	4.4	0.4	0.5

Remarks: pH = Air-dry soil: water ratio of 1:2.5 EC = Soil: water ratio of 1:5

Water soluble sulphate and chloride = Soil: water ratio of 1:5

Source: Semi-detailed Soil Survey of Northwest Selangor, Soils and Analytical Services Soil Survey Report No.19, 1984, MOA.

Table B-23 (2/2) ANALYTICAL DATA OF SOIL SERIES

Horizon	Depth (cm)	Particle Size (%)			T.C (%)	T.N (%)	pH	Water Soluble		meq/100 g soil						
		Clay	Silt	Fire sand				Coarse sand	SO <sub>4</sub> (%)	Cl(%)	EC (ms)	CEC	Ca	Mg	Na	K
<b>Bernam Series</b>																
Aph	0-11	55	38	6	1	2.56	0.28	6.3	-	-	0.2	26.2	10.8	13.4	0.4	1.5
B	11-41	70	27	3	0	0.83	0.13	4.2	-	-	0.3	29.6	9.2	15.3	1.2	1.0
BC	41-75	69	27	3	1	0.54	0.09	5.0	0.20	0.03	0.9	27.4	10.0	14.6	1.2	0.6
C	75+	68	28	4	0	0.54	0.11	5.3	0.27	0.05	1.2	30.0	14.2	10.1	3.0	0.6
<b>Bakeu Series</b>																
Aph	0-18	59	36	4	1	6.54	0.39	4.2	-	-	0.4	31.4	5.4	23.4	1.5	0.7
BC	18-38	66	30	3	1	3.28	0.20	3.8	0.22	0.06	1.0	26.0	5.5	14.2	2.7	0.8
C	38+	71	28	1	0	2.07	0.16	3.9	0.17	0.11	1.2	28.1	5.4	17.1	3.8	1.5
<b>Serong Series</b>																
Aphs	0-14	56	33	10	1	4.24	0.40	3.8	0.10	0.06	0.7	24.9	5.0	8.1	1.7	0.6
B	14-46	64	26	9	1	1.00	0.11	4.8	0.04	0.11	0.8	25.8	5.9	15.1	3.6	0.8
C	46+	67	24	8	1	0.83	0.11	5.0	0.05	0.16	1.0	26.4	5.4	14.8	3.8	1.5
<b>Brown Clay</b>																
Aph	0-18	35	46	16	3	2.70	0.49	3.8	-	-	0.2	40.3	2.3	1.4	1.4	0.2
B	18-75	44	28	27	1	4.58	0.14	4.2	-	-	0.3	30.4	2.0	4.5	2.6	0.3
BC	75+	42	39	18	1	4.44	0.12	4.7	-	-	0.4	31.2	3.6	11.6	3.6	1.0
<b>Briah Series</b>																
Aph	0-10	65	29	6	Tr	2.17	0.24	4.8	-	-	0.0	19.1	4.1	2.4	0.3	0.4
B1	10-33	65	29	9	Tr	0.95	0.11	4.7	-	-	0.0	20.3	3.2	2.6	0.3	0.3
B2	33-48	68	23	9	Tr	0.85	0.09	4.7	-	-	0.0	20.7	2.8	2.9	0.4	0.4
BC	48-80	65	26	6	Tr	0.82	0.09	4.7	-	-	0.0	20.4	2.6	3.6	0.4	0.4

Remarks: pH = Air-dry soil: water ratio of 1:2.5 EC = Soil: water ratio of 1:5

Water soluble sulphate and chloride = Soil: water ratio of 1:5

Source: Semi-detailed Soil Survey of Northwest Selangor, Soils and Analytical Services Soil Survey Report No.19, 1984, MOA.

Table B-24 CROP/SOIL SUITABILITY CORRELATION

Soil Series	Soil Suitability Class	Crop Suitability					
		Coconut	Oil Palm	Cocoa	Maize	Vegetables	Paddy
Kranji	4dst	$\frac{U}{S}$	$\frac{U}{dst}$	$\frac{U}{dst}$	$\frac{U}{dst}$	$\frac{U}{S}$	$\frac{U}{S}$
Banjar	4dt	$\frac{M}{dt}$	$\frac{U}{dt}$	$\frac{U}{dt}$	$\frac{U}{dt}$	$\frac{M}{dt}$	S
Sedu	2adt	$\frac{U}{a}$	$\frac{U}{a}$	$\frac{U}{a}$	$\frac{M}{a}$	S	S
Jawa	2dt (a)	$\frac{M}{(a)}$	$\frac{M}{t(a)}$	$\frac{M}{t(a)}$	S	S	S
Bernam	2dt	S	$\frac{M}{t}$	$\frac{M}{t}$	S	S	S
Selangor	1d	S	S	S	S	S	S
Bakau	3d (t)	$\frac{M}{d}$	$\frac{U}{d}$	$\frac{U}{d}$	$\frac{U}{d}$	$\frac{M}{d}$	S
Serong	4dt	$\frac{M}{dt}$	$\frac{U}{dt}$	$\frac{U}{dt}$	$\frac{U}{dt}$	$\frac{M}{dt}$	S
Brown Clays	3d (t)	$\frac{M}{d}$	$\frac{U}{d}$	$\frac{U}{d}$	$\frac{U}{d}$	$\frac{M}{d}$	S
Organic Clays	2dt	S	$\frac{M}{t}$	$\frac{M}{t}$	S	S	S
Mucks	4dt	$\frac{M}{dt}$	$\frac{U}{dt}$	$\frac{U}{dt}$	$\frac{U}{dt}$	$\frac{M}{dt}$	S
Briah	2dt	S	$\frac{M}{t}$	$\frac{M}{t}$	S	S	S
Unclassified Clays	3d (t)	$\frac{M}{d}$	$\frac{U}{d}$	$\frac{U}{d}$	$\frac{U}{d}$	$\frac{M}{d}$	S

Remarks: S = Suitable for crop growth

M = Marginally suitable for crop growth because of soil limitation indicated as subscript

U = Unsuitable for crop growth without improvements of soil limitations indicated as subscript

a = Acid sulphate layer

d = Drainage

s = Salinity

t = Texture and structure

Source: Soil-crop Suitability Classification for Peninsular Malaysia, Soils and Analytical Services Bulletin No.1, 1974, MOA.

Table B-25 (1/6) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF KUALA SELANGOR

(1) Non-agricultural Land Use (1/3)									Unit: ha
Code	Kuala Selangor			Pasangan			Tanjong Karang		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
1U	79	116	193	11	15	33	92	132	250
1E	-	-	-	86	76	117	-	-	-
1T	-	-	-	-	-	-	-	-	-
1X	-	-	-	-	-	9	-	-	-
1P	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-
6	83	240	12	196	159	123	904	385	115
7F	-	-	-	24	84	-	533	381	583
7S	-	20	3	73	37	6	39	-	-
7C	-	5	2	15	503	331	-	48	100
8	840	554	760	2,144	1,897	1,595	31,541	30,377	31,062
9	411	5	-	-	-	-	1,347	5	-
UN	243	258	224	312	424	327	209	300	263
<u>Total</u>	<u>1,656</u>	<u>1,198</u>	<u>1,194</u>	<u>2,861</u>	<u>3,195</u>	<u>2,541</u>	<u>34,665</u>	<u>31,628</u>	<u>32,373</u>

Remarks: 1U = Urban and associated areas; 1E = Estate buildings and associated areas; 1T = Tin mining areas; 1X = Other mining and quarrying areas; 1P = Power line right of way; 6 = Grasslands; 7F = Forest; 7S = Scrub forest; 7C = Newly cleared land; 8 = Swamps; 9 = Unused land; UN = Unclassified

Source: MOA

5 = Improved permanent pasture;

Table B-25 (2/6) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF KUALA SELANGOR

(1) Non-agricultural Land Use (2/3) Unit: ha

Code	Ujong Permatang			Ulu Tinggi			Api-api		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
1U	15	30	46	-	-	-	40	53	77
1E	6	10	8	8	6	16	53	40	43
1T	-	-	-	-	294	1,213	-	-	-
1X	-	-	-	-	-	-	-	-	-
1P	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-
6	142	332	44	33	122	-	130	272	83
7F	-	-	-	659	468	590	-	-	-
7S	-	8	-	7	-	-	28	15	-
7C	15	332	147	-	71	-	99	99	87
8	3,078	1,063	1,001	7,918	7,664	6,870	1,324	1,255	1,270
9	1,372	14	-	-	-	-	1,027	-	-
UN	203	161	36	-	-	-	53	87	29
<u>Total</u>	<u>4,831</u>	<u>1,950</u>	<u>1,282</u>	<u>8,625</u>	<u>8,625</u>	<u>8,689</u>	<u>2,754</u>	<u>1,821</u>	<u>1,589</u>

Remarks: 1U = Urban and associated areas; 1E = Estate buildings and associated areas; 1T = Tin mining areas; 1X = Other mining and quarrying areas; 1P = Power line right of way; 6 = Grasslands; 7F = Forest; 7S = Scrub forest; 7C = Newly cleared land; 8 = Swamps; 9 = Unused land; UN = Unclassified

Source: MOA

5 = Improved permanent pasture;

Table B-25 (3/6) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF KUALA SELANGOR

(1) Non-agricultural Land Use (3/3) Unit: ha

Code	Batang Berjuntai			Ijok			Jeram		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
1U	100	125	191	40	36	71	71	68	114
1E	99	65	101	45	54	80	55	50	79
1T	533	1,048	2,233	-	-	-	-	-	-
1X	-	-	-	-	-	-	-	6	-
1P	17	31	19	1	-	-	-	-	-
5	-	-	-	-	-	15	-	-	-
6	496	545	154	1,143	378	342	643	202	164
7F	226	240	170	3,314	3,431	2,602	2,544	2,636	2,352
7S	110	109	96	127	135	45	83	48	151
7C	229	465	399	391	849	1,231	98	393	460
8	3,861	2,719	1,223	2,694	1,738	904	616	382	333
9	-	-	-	-	-	-	1,049	-	-
UN	126	203	459	42	74	26	36	102	18
<u>Total</u>	<u>5,796</u>	<u>5,500</u>	<u>5,045</u>	<u>7,799</u>	<u>6,695</u>	<u>5,316</u>	<u>5,195</u>	<u>3,887</u>	<u>3,671</u>

Remarks: 1U = Urban and associated areas; 1E = Estate buildings and associated areas; 1T = Tin mining areas; 1X = Other mining and quarrying areas; 1P = Power line right of way; 6 = Grasslands; 7F = Forest; 7S = Scrub forest; 7C = Newly cleared land; 8 = Swamps; 9 = Unused land; UN = Unclassified

Source: MOA

5 = Improved permanent pasture;



Table B-25 (4/6) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF KUALA SELANGOR

(2) Agricultural Land Use (1/3)

Unit: ha

Code	Kuala Selangor			Pasangan			Tanjong Karang		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
2H	64	31	38	124	157	139	196	558	657
2M	-	-	-	-	-	-	-	25	48
2E	-	-	-	-	-	-	-	29	28
3G	44	31	15	5,574	2,838	481	22	34	3
3O	-	13	127	2,129	4,395	6,807	100	306	1,019
3C	782	843	761	1,060	880	1,222	3,225	4,588	4,317
3X	-	-	-	4	-	19	-	-	2
3S	-	-	-	18	-	-	-	-	-
3K	-	-	-	70	94	-	88	292	64
3N	-	-	-	7	-	-	1	-	-
3A	-	-	-	-	252	587	-	-	-
3H	-	-	-	-	-	-	-	-	-
4P	-	-	-	-	-	-	6,152	5,926	5,770
4C	-	-	-	18	49	11	112	242	62
<u>Total</u>	<u>890</u>	<u>918</u>	<u>941</u>	<u>9,004</u>	<u>8,665</u>	<u>9,266</u>	<u>9,896</u>	<u>12,000</u>	<u>11,970</u>

Remarks: 2H = Mixed horticulture; 2M = Market gardening; 2E =  
Agricultural stations; 3G = Rubber; 3O = Oil palm;  
3C = Coconut; 3X = Orchards; 3S = Sago; 3K = Coffee;  
3N = Pineapple; 3A = Cocoa; 4P = paddy; 4C = Diversified  
crops

Source: MOA  
3H = Fish ponds;

Table B-25 (5/6) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF KUALA SELANGOR

(2) Agricultural Land Use (2/3) Unit: ha

Code	Ujong Permatang			Ulu Tinggi			Api-api		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
2H	37	66	35	-	2	9	33	39	137
2M	-	37	83	-	-	-	4	-	-
2E	-	-	-	-	-	-	-	-	-
3G	523	229	121	24	7	6	3,682	1,457	449
3O	-	452	1,247	670	687	720	458	2,289	3,183
3C	3,111	4,328	4,312	-	-	-	847	1,030	904
3X	-	-	-	-	-	-	-	-	-
3S	-	-	-	-	-	-	-	-	-
3K	34	228	87	-	-	-	-	-	-
3N	-	-	-	-	-	-	-	-	-
3A	-	-	-	-	-	-	-	323	279
3H	-	-	10	-	-	-	-	-	-
4P	6	-	-	7	-	-	-	-	-
4C	35	27	158	3	9	6	8	-	-
<u>Total</u>	<u>3,746</u>	<u>5,367</u>	<u>6,053</u>	<u>704</u>	<u>705</u>	<u>741</u>	<u>5,032</u>	<u>5,138</u>	<u>4,952</u>

Remarks: 2H = Mixed horticulture; 2M = Market gardening; 2E =  
Agricultural stations; 3G = Rubber; 3O = Oil palm;  
3C = Coconut; 3X = Orchards; 3S = Sago; 3K = Coffee;  
3N = Pineapple; 3A = Cocoa; 4P = paddy; 4C = Diversified  
crops

Source: MOA  
3H = Fish ponds;

Table B-25 (6/6) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF KUALA SELANGOR

(2) Agricultural Land Use (3/3) Unit: ha

Code	Batang Berjuntai			Ijok			Jeram		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
2H	16	128	129	49	258	211	148	160	447
2M	-	-	-	-	-	-	-	-	15
2E	-	1	-	-	-	-	-	-	-
3G	3,052	2,457	1,156	5,752	3,880	2,207	5,680	3,103	1,477
3O	979	1,689	3,617	63	2,900	6,126	1,644	4,238	6,535
3C	9	15	8	31	31	7	2,029	2,208	2,183
3X	4	4	6	2	112	-	-	18	14
3S	-	-	-	-	-	-	4	-	-
3K	79	17	24	312	165	85	266	386	146
3N	-	-	-	25	-	-	-	-	-
3A	-	-	-	-	-	-	-	44	-
3H	-	-	-	-	-	3	-	-	5
4P	-	-	-	-	-	-	-	-	-
4C	8	104	16	69	55	30	250	209	3
<b>Total</b>	<b>4,147</b>	<b>4,414</b>	<b>4,956</b>	<b>6,303</b>	<b>7,401</b>	<b>8,669</b>	<b>10,021</b>	<b>10,366</b>	<b>10,825</b>

Remarks: 2H = Mixed horticulture; 2M = Market gardening; 2E =  
Agricultural stations; 3G = Rubber; 3O = Oil palm;  
3C = Coconut; 3X = Orchards; 3S = Sago; 3K = Coffee;  
3N = Pineapple; 3A = Cocoa; 4P = paddy; 4C = Diversified  
crops

Source: MOA  
3H = Fish ponds;

Table B-26 (1/4) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF SABAK BERNAM

(1) Non-agricultural Land Use (1/2) Unit: ha

Code	Bagan Nakhoda Omar			Panchang Bedena			Pasir Panjang		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
1U	60	58	131	99	134	226	123	132	228
1E	8	12	-	-	1	-	-	-	-
1T	-	-	-	-	-	-	-	-	-
1X	-	-	-	-	-	-	-	-	-
1P	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-
6	898	128	58	95	39	33	321	22	5
7F	-	-	-	315	-	-	-	-	-
7S	59	17	-	-	-	4	10	-	-
7C	-	-	36	-	996	120	-	4	-
8	2,179	1,963	1,745	6,387	4,706	5,083	21,812	21,255	21,302
9	1,225	-	-	1,568	-	-	1,391	381	6
UN	187	110	-	140	78	47	90	46	186
<u>Total</u>	<u>4,616</u>	<u>2,288</u>	<u>1,970</u>	<u>8,604</u>	<u>5,945</u>	<u>5,513</u>	<u>23,747</u>	<u>21,840</u>	<u>21,727</u>

Remarks: 1U = Urban and associated areas; 1E = Estate buildings and associated areas; 1T = Tin mining areas; 1X = Other mining and quarrying areas; 1P = Power line right of way; 6 = Grasslands; 7F = Forest; 7S = Scrub forest; 7C = Newly cleared land; 8 = Swamps; 9 = Unused land; UN = Unclassified

Source: MOA

5 = Improved permanent pasture;

Table B-26 (2/4) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF SABAK BERNAM

(1) Non-agricultural Land Use (2/2) Unit: ha

Code	Sabak			Sungai Panjang		
	'66	'74	'85	'66	'74	'85
1U	103	138	239	4	29	60
1E	42	61	70	15	-	6
1T	-	-	-	2	-	7
1X	-	-	-	-	-	-
1P	-	-	-	-	-	-
5	-	-	-	-	-	-
6	208	127	11	1,072	615	427
7F	5	2	-	1,356	628	36
7S	39	26	17	384	173	378
7C	9	23	36	2	1,481	181
8	839	608	775	21,013	19,667	20,878
9	3	-	-	-	-	-
UN	1,037	1,034	1,006	412	595	476
<u>Total</u>	<u>2,285</u>	<u>2,019</u>	<u>2,154</u>	<u>24,260</u>	<u>23,188</u>	<u>22,449</u>

Remarks: 1U = Urban and associated areas; 1E = Estate building and associated areas; 1T = Tin mining areas; 1X = Other mining and quarrying areas; 1P = Power line right of way; 6 = Grasslands; 7F = Forest; 7S = Scrub forest; 7C = Newly cleared land; 8 = Swamps; 9 = Unused land; UN = Unclassified

Source: MOA

5 = Improved permanent pasture;

Table B-26 (3/4) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF SABAK BERNAM

(2) Agricultural Land Use (1/2) Unit: ha

Code	Bagan Nakhoda Omar			Panchang Bedena			Pasir Panjang		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
2H	3	1	20	107	115	263	182	262	438
2M	-	-	-	-	-	3	-	-	60
2E	-	-	3	-	-	5	-	-	-
3G	-	-	-	-	20	-	-	-	-
3O	-	-	-	-	-	-	-	-	2
3C	4,385	5,536	5,869	3,681	4,505	4,958	1,058	1,274	1,233
3X	-	-	-	-	-	-	-	-	5
3S	-	-	-	-	25	-	-	-	-
3K	-	-	-	-	-	-	-	-	-
3N	-	-	-	-	-	-	-	-	-
3A	-	-	-	-	-	-	-	-	-
3H	-	-	-	-	-	-	-	-	-
4P	-	-	-	6,945	7,086	6,918	5,609	6,064	5,717
4C	29	141	-	-	86	45	374	105	19
<u>Total</u>	<u>4,417</u>	<u>5,678</u>	<u>5,892</u>	<u>10,733</u>	<u>11,837</u>	<u>12,192</u>	<u>7,223</u>	<u>7,705</u>	<u>7,474</u>

Remarks: 2H = Mixed horticulture; 2M = Market gardening; 2E = Agricultural stations; 3G = Rubber; 3O = Oil palm; 3C = Coconut; 3X = Orchards; 3S = Sago; 3K = Coffee; 3N = Pineapple; 3A = Cocoa; 4P = Paddy; 4C = Diversified crops

Source: MOA

3H = Fish ponds;

Table B-26 (4/4) HISTORICAL CHANGE OF LAND USE BY MUKIM  
IN THE DISTRICT OF SABAK BERNAM

(2) Agricultural Land Use (2/2) Unit: ha

Code	Sabak			Sungai Panjang		
	'66	'74	'85	'66	'74	'85
2H	61	44	86	118	127	290
2M	-	2	-	-	-	-
2E	-	-	-	-	-	-
3G	371	7	-	63	38	19
3O	-	1,549	1,738	410	458	1,227
3C	13,124	12,128	11,993	1,290	2,218	2,601
3X	8	2	-	1	-	8
3S	-	37	-	-	-	-
3K	-	-	-	-	-	-
3N	-	-	-	-	-	-
3A	13	425	35	-	328	-
3H	-	-	-	-	-	-
4P	11	6	10	2,188	2,228	1,825
4C	8	78	32	11	84	5
<b>Total</b>	<b>13,596</b>	<b>14,278</b>	<b>13,894</b>	<b>4,081</b>	<b>5,481</b>	<b>5,975</b>

Remarks: 2H = Mixed horticulture; 2M = Market gardening;  
2E = Agricultural stations; 3G = Rubber; 3O = Oil palm;  
3C = Coconut; 3X = Orchards; 3S = Sago; 3K Coffee;  
3N = Pineapple; 3A = Cocoa; 4P = Paddy; 4C = Diversified  
crops

Source: MOA  
3H = Fish ponds;

Table B-27 NON-AGRICULTURAL LAND USE IN THE DISTRICTS  
OF KUALA SELANGOR AND SABAK BERNAM

Unit: ha

Code	Kuala Selangor			Sabak Bernam			Total		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
1U	448	575	975	389	491	884	837	1,066	1,859
1E	352	301	444	65	74	76	417	375	520
1T	533	1,342	3,446	2	-	7	535	1,342	3,453
1X	-	6	9	-	-	-	-	6	9
1P	18	31	19	-	-	-	18	31	19
5	-	-	15	-	-	-	-	-	15
6	3,772	2,633	1,037	2,594	931	534	6,366	3,564	1,571
7F	7,300	7,240	6,297	1,676	630	36	8,976	7,870	6,333
7S	467	372	301	492	216	399	959	588	700
7C	847	2,765	2,757	11	2,504	373	858	5,269	3,130
8	54,015	47,650	45,018	52,230	48,199	49,783	106,245	95,849	94,801
9	5,206	25	-	4,187	381	6	9,393	406	6
UN	1,224	1,609	1,382	1,866	1,863	1,715	3,090	3,472	3,097
<u>Total</u>	<u>74,182</u>	<u>64,549</u>	<u>61,700</u>	<u>63,512</u>	<u>55,289</u>	<u>53,813</u>	<u>137,694</u>	<u>119,838</u>	<u>115,513</u>

Remarks: 1U = Urban and associated area; 1E = Estate buildings and associated areas; 1T = Tin mining areas; 1X = Other mining and quarrying areas; 1P = Power line right of way; 6 = Grasslands; 7F = Forest; 7S = Scrub forest; 7C = Newly cleared land; 8 = Swamps; 9 = Unused land; UN = Unclassified

Source: MOA

5 = Improved permanent pasture;



Table B-28 AGRICULTURAL LAND USE IN THE DISTRICTS  
OF KUALA SELANGOR AND SABAK BERNAM

Unit: ha

Code	Kuala Selangor			Sabak Bernam			Total		
	'66	'74	'85	'66	'74	'85	'66	'74	'85
2H	667	1,399	1,802	471	549	1,097	1,138	1,948	2,899
2M	4	62	146	-	2	63	4	64	209
2E	-	30	28	-	-	8	-	30	36
3G	24,353	14,031	5,915	434	65	19	24,787	14,096	5,934
3O	6,043	16,969	29,381	410	2,007	2,967	6,453	18,976	32,348
3C	11,094	13,928	13,714	23,538	25,661	26,654	34,632	39,589	40,368
3X	10	134	41	9	2	13	19	136	54
3S	22	-	-	-	62	-	22	62	-
3K	849	1,182	406	-	-	-	849	1,182	406
3N	33	-	-	-	-	-	33	-	-
3A	-	619	866	13	753	35	13	1,372	901
3H	-	-	18	-	-	-	-	-	18
4P	6,165	5,926	5,770	14,753	15,384	14,470	20,918	21,310	20,240
4C	503	694	286	422	494	101	925	1,188	387
<b>Total</b>	<b>49,743</b>	<b>54,974</b>	<b>58,373</b>	<b>40,050</b>	<b>44,979</b>	<b>45,427</b>	<b>89,793</b>	<b>99,953</b>	<b>103,800</b>

Remarks: 2H = Mixed horticulture; 2M = Market gardening; 2E = Agricultural stations; 3G = Rubber; 3O = Oil palm; 3C = Coconut; 3X = Orchards; 3S = Sago; 3K = Coffee; 3N = Pineapple; 3A = Cocoa; 4P = Paddy; 4C = Diversified crops

Source: MOA

3H = Fish ponds;

Table B-29 PRESENT LAND USE PATTERN IN TANJONG KARANG  
IRRIGATION SCHEME AREA

Unit: ha

Irrigation Compartment	Paddy	Vegetables	Tree Crops	Idle Land	Others <sup>/1</sup>	Gross Area
Sawa Sempadan	2,308	2	-	-	85	2,395
Sungai Burong	2,841	281	298	159	37	3,616
Sekinchan	1,483	295	46	-	33	1,857
Sungai Leman	1,596	169	85	256	27	2,133
Pasir Panjang	1,471	13	31	63	38	1,616
Sungai Nipah	1,938	-	-	2	79	2,019
Panchang Bedena	3,260	-	-	-	91	3,351
Bagan Terap	2,613	-	-	37	220	2,870
<u>Sub-Total</u>	<u>17,510</u>	<u>760</u>	<u>460</u>	<u>517</u>	<u>610</u>	<u>19,857</u>
Extension area	480	-	-	-	63	543
<u>Total</u>	<u>17,990</u>	<u>760</u>	<u>460</u>	<u>517</u>	<u>673</u>	<u>20,400</u>

Remarks: /1 = Including housing area, public spaces, etc.

Source: PBLs, DID and DOA.

Table B-30 FUTURE LAND USE PATTERN IN TANJONG KARANG  
IRRIGATION SCHEME AREA

Unit: ha

Irrigation Compartment	Paddy	Vegetables		Permanent Crops	Others	Gross Area
		Mixed	Exclusive			
Sawa Sempadan	2,310	-	-	-	85	2,395
Sungai Burong	2,890	271	120	298	37	3,616
Sekinchan	1,640	184	-	-	33	1,857
Sungai Leman	1,680	85	-	341	27	2,133
Pasin Panjang	1,470	-	-	108	38	1,616
Sungai Nipah	1,940	-	-	-	79	2,019
Panchang Bedena	3,260	-	-	-	91	3,351
Bagan Terap	2,650	-	-	-	220	2,870
<u>Sub-Total</u>	<u>17,840</u>	<u>540</u>	<u>120</u>	<u>747</u>	<u>610</u>	<u>19,857</u>
Extension area	480	-	-	-	63	543
<u>Total</u>	<u>18,320</u>	<u>540</u>	<u>120</u>	<u>747</u>	<u>673</u>	<u>20,400</u>

Table B-31 GAZETTED IRRIGATION SCHEDULES

Compartment	1984		1985		1986
	1st Season	2nd Season	1st Season	2nd Season	1st Season
Sawa Sempadang	1/2 to 20/5	1/9 to 19/12	15/2 to 16/6	15/8 to 3/12	1/2 to 1/6
Sungai Burong	1/6 to 1/9	1/11 to 19/2	1/7 to 18/10	Cancelled	1/2 to 1/6
Sekinchan	15/3 to 15/6	15/10 to 2/2	15/4 to 13/8	15/10 to 2/2	1/4 to 1/8
Sungai Lemah	1/4 to 1/7	7/11 to 25/2	15/4 to 13/8	15/10 to 2/2	1/4 to 1/8
Pasir Panjang	1/4 to 1/7	7/11 to 25/2	15/4 to 13/8	15/10 to 2/2	1/4 to 1/8
Sungai Nipah	1/4 to 1/7	7/11 to 25/2	15/4 to 13/8	15/10 to 2/2	1/4 to 1/8
Panchang Bedena	1/3 to 15/7	20/9 to 8/1	15/3 to 13/1	15/9 to 3/1	1/6 to 1/10
Bagan Terap	1/3 to 15/7	20/9 to 8/1	15/3 to 13/7	15/9 to 3/1	1/6 to 1/10

Source: PBLs Office

Table B-32 EXPANSION OF DIRECT SEEDING AREA

Unit: %

Year & Crop Season	Irrigation Compartment								Weighted Average
	SS	SB	SK	SL	PP	SN	PB	BT	
1979 I	-	-	68	**	-	-	**	**	10
II	-	-	88	-	-	-	-	-	7
1980 I	-	-	90	-	-	-	-	-	9
II	-	-	100	-	-	-	-	-	8
1981 I	-	-	100	**	**	**	-	-	8
II	-	**	100	-	-	-	-	-	8
1982 I	-	-	100	5	-	13	-	-	10
II	19	-	100	29	-	50	-	-	19
1983 I	**	17	100	60	85	80	**	**	65
II	80	NA	100	NA	NA	NA	-	-	NA
1984 I	85	37	NA	NA	NA	NA	-	-	NA
II	81	22	76	34	89	84	-	-	43
1985 I	81	49	74	36	87	55	-	-	37
II	91	**	77	6	52	16	-	-	33
1986 I	90	71	96	21	17	1	-	-	35

Source: District DOA

Remarks: \*\* = missing crop season by delay of cropping in the preceding crop seasons

NA = data not available

- = transplanting only

Irrigation compartment; SS = Sawa Sempadan, SB = Sungai Burong, SK = Sekinchan, SL = Sungai Leman, PP = Pasir Panjang, SN = Sungai Nipah, PB = Panchang Bedena, BT = Bagan Terap

Table B-33 CHARACTERISTICS OF RICE VARIETIES

Item	Variety					
	Setanjung (MR1)	Sekembang (MR10)	Manik (MR52)	Muda (MR71)	Makmur (MR73)	Seberang (MR77)
Parentage	IR22/ Pazudofusu	IR8/ Engkatek/ Secupak/ Rial63	Radin Goi Ria/ Tadukan	RU243/ BRJ51	MR1/ Pongsu Seribu	RU67009 Zenith/ IRON171
Maturation (days)						
Off season	135-140	140-145	140-145	125-133	140	133
Main season	135-140	140-145	140-145	125-133	130	134
Baring Panicles	15-17	14-16	13	12	12-14	13
LPN Grade	A	B	A	A	A	A
Cooking Quality	Good	Good	Good	Good	Good	Good
1,000 Grain Weight (g)	25.8	20.7	24.2	25.2	24.5	21.8
Yielding Capacity (ton/ha)	4.15-6.36	2.55-5.82	4.06-5.08	5.08-5.59	4.50-5.50	5.08-5.59
Year Released	1979	1979	1984	1984	1984	1984

Source: MARDI

Table B-34 DISTRIBUTION OF RICE VARIETIES GROWN  
FOR THE FIRST SEASON CROP OF 1985

Unit: %

Rice Variety	Irrigation Compartment								Weighted Average
	SS	SB	SK	SL	PP	SN	PB	BT	
MR 1	13	20	31	35	15	17	29	9	21
MR 7	-	-	-	-	1	1	1	1	0
MR 10	-	23	-	-	8	18	23	39	16
MR 27	4	9	-	-	8	3	0	-	3
MR 50/55	40	-	-	-	9	12	8	7	10
MR 52	28	11	5	-	8	2	3	4	8
MR 67	-	-	-	-	-	-	2	8	1
MR 71	3	12	17	25	25	13	22	9	15
MR 73	-	8	24	25	7	16	0	3	9
MR 77	5	11	7	10	16	8	3	-	7
Others	7	6	16	5	3	10	9	20	10

Source: District DOA

Table B-35 BPH INFESTATION AND RICE CROP DAMAGE IN PBLs

Year	Effectuated Area	Severe Infestation (ha)	Total Loss (ha)	Spreading Time of Year and Crop Stage
1980	SB	3,036	308	August Before heading. Before heading.
1982	SK, SL, SN	1,786	21	July/August Heading and drain of field in SK, and Before heading in SL and SN.
1983	SB, SK, SN	1,325	21	July/August Heading and drain of field in SK and 4-6 weeks behind SK.
1984	SN, SL, PP	486	2.7	August Heading
1985	SK, SL, PP, PB, BT	3,274	-	
1986	SK			Early June
	SB			Late May
	SL			June to August
	SS			November

Source: PBLs Office



Table B-36 PADDY CROPPED AREA

Unit: ha

	1981	1982	1983	1984	1985	Average
<b>First Crop Season</b>						
Sawa Sempadang	2,330	2,340	*	2,310	2,360	1,750
Sungai Burong	2,910	3,000	3,020	2,970	2,890	2,970
Sekinchan	1,610	1,400	1,560	1,510	1,450	1,480
Sungai Leman	*	1,720	1,610	1,620	1,650	1,650
Pasir Panjang	*	1,480	1,510	1,470	1,500	1,490
Sungai Nipah	*	1,850	1,820	1,810	1,810	1,820
Panchang Bedena	3,310	3,260	*	3,390	2,830	2,370
Bagan Terap	2,610	2,610	*	2,610	2,510	1,930
<b>Total</b>	<b>12,770</b>	<b>17,660</b>	<b>9,520</b>	<b>17,690</b>	<b>17,000</b>	<b>15,460</b>
<b>Second Crop Season</b>						
Sawa Sempadang	2,330	2,340	2,340	2,340	2,360	2,340
Sungai Burong	*	3,080	2,960	3,030	*	1,810
Sekinchan	1,420	1,400	1,470	1,470	1,500	1,450
Sungai Leman	1,690	1,740	1,620	1,620	1,670	1,670
Pasir Panjang	1,490	1,390	1,500	1,500	1,500	1,480
Sungai Nipah	1,780	1,890	1,810	1,810	1,940	1,850
Panchang Bedena	3,220	3,040	3,400	3,400	3,100	3,230
Bagan Terap	2,610	2,400	2,610	2,610	2,610	2,570
<b>Total</b>	<b>14,540</b>	<b>17,280</b>	<b>17,710</b>	<b>17,780</b>	<b>14,680</b>	<b>16,400</b>
<b>Annual Cropped Area</b>						
Sawa Sempadang	4,660	4,680	2,340	4,650	4,720	4,090
Sungai Burong	2,910	6,080	5,980	6,000	2,890	4,780
Sekinchan	3,030	2,800	3,030	2,980	2,950	2,930
Sungai Leman	1,690	3,460	3,230	3,240	3,320	3,320
Pasir Panjang	1,490	2,870	3,010	2,970	3,000	2,970
Sungai Nipah	1,780	3,740	3,630	3,620	3,750	3,670
Panchang Bedena	6,530	6,300	3,400	6,790	5,930	5,600
Bagan Terap	5,220	5,010	2,610	5,220	5,120	4,500
<b>Total</b>	<b>27,310</b>	<b>34,940</b>	<b>27,230</b>	<b>35,470</b>	<b>31,680</b>	<b>31,860</b>

Remarks: \*; Not planted

Source: PBLs Office

Table B-37 UNIT YIELD OF PADDY

	Unit: ton/ha					
	1981	1982	1983	1984	1985	Weighted Average
<b>First Crop Season</b>						
Sawa Sempadang	2.81	3.74	*	2.33	2.24	2.78
Sungai Burong	2.45	3.12	1.92	3.03	2.40	2.62
Sekinchan	3.51	3.82	4.25	3.89	3.52	3.88
Sungai Lemang	*	3.66	2.01	2.22	1.94	2.47
Pasir Panjang	*	3.36	1.98	2.05	2.17	2.39
Sungai Nipah	*	3.60	1.65	2.98	2.51	2.69
Panchang Bedena	2.84	3.90	*	3.32	1.88	3.09
Bagan Terap	2.57	4.22	*	3.25	2.51	3.34
Weighted Average	2.77	3.68	2.27	2.93	2.35	2.89
<b>Second Crop Season</b>						
Sawa Sempadang	3.53	2.92	2.21	2.28	3.19	2.83
Sungai Burong	*	3.19	2.81	2.67	*	2.90
Sekinchan	3.87	3.84	4.20	3.33	5.15	4.10
Sungai Lemang	4.61	1.58	2.32	1.78	3.05	2.66
Pasir Panjang	5.71	2.92	2.10	1.97	2.89	3.11
Sungai Nipah	4.77	3.28	1.83	2.88	3.84	3.31
Panchang Bedena	3.88	3.88	3.78	3.48	4.01	3.80
Bagan Terap	4.38	3.33	3.40	3.79	3.91	3.77
Weighted Average	4.29	3.17	2.91	2.87	3.73	3.35
<b>Annual Unit Yield (Weighted Average)</b>						
Sawa Sempadang	3.17	3.33	2.21	2.31	2.72	2.81
Sungai Burong	2.45	3.16	2.36	2.85	2.40	2.73
Sekinchan	3.68	3.83	4.22	3.61	4.35	3.99
Sungai Lemang	4.61	2.62	2.17	2.00	2.50	2.57
Pasir Panjang	5.71	3.15	2.04	2.01	2.53	2.75
Sungai Nipah	4.77	3.44	1.74	2.93	3.19	3.01
Panchang Bedena	3.35	3.89	3.78	3.40	2.99	3.50
Bagan Terap	3.48	3.79	3.40	3.52	3.22	3.58
Weighted Average	3.58	3.43	2.69	2.91	2.99	3.13

Remark: \*; Not planted

Unit yield indicates the gross yield (wet paddy including foreign elements such as rachies branch, leaf, weeds, etc.).

Source: PBLs Office

Table B-38 PADDY PRODUCTION

Unit: ha

	1981	1982	1983	1984	1985	Average
<b>First Crop Season</b>						
Sawa Sempadan	6,550	8,750	*	5,380	5,290	4,860
Sungai Burong	7,130	9,360	5,800	9,000	6,940	7,780
Sekinchan	5,650	5,350	6,630	5,870	5,100	5,740
Sungai Leman	*	6,300	3,240	3,600	3,200	4,080
Pasir Panjang	*	4,970	2,990	3,010	3,260	3,560
Sungai Nipah	*	6,660	3,000	5,390	4,540	4,900
Panchang Bedena	9,400	12,710	*	11,250	5,320	7,320
Bagan Terap	6,710	11,010	*	8,480	6,300	6,440
<b>Total</b>	<b>35,440</b>	<b>65,110</b>	<b>21,660</b>	<b>51,980</b>	<b>39,950</b>	<b>44,680</b>
<b>Second Crop Season</b>						
Sawa Sempadang	8,220	6,830	5,170	5,340	7,540	6,620
Sungai Burong	*	9,830	8,320	8,090	*	5,250
Sekinchan	5,500	5,380	6,170	4,900	7,730	5,940
Sungai Leman	7,790	2,750	3,760	2,880	5,090	4,450
Pasir Panjang	8,510	4,060	3,150	2,960	4,330	4,600
Sungai Nipah	8,490	6,200	3,310	5,210	7,440	6,130
Panchang Bedena	12,490	11,800	12,850	11,830	12,440	12,280
Bagan Terap	11,430	7,990	8,870	9,890	10,200	9,680
<b>Total</b>	<b>62,430</b>	<b>54,840</b>	<b>51,600</b>	<b>51,100</b>	<b>54,770</b>	<b>54,950</b>
<b>Annual Production</b>						
Sawa Sempadang	14,770	15,580	5,170	10,720	12,830	11,480
Sungai Burong	7,130	19,190	14,120	17,090	6,940	13,030
Sekinchan	11,150	10,730	12,800	10,770	12,830	11,680
Sungai Leman	7,790	9,050	7,000	6,480	8,290	8,530
Pasir Panjang	8,510	9,030	6,140	5,970	7,590	8,160
Sungai Nipah	8,490	12,860	6,310	10,600	11,980	11,030
Panchang Bedena	21,890	24,510	12,850	23,080	17,760	19,600
Bagan Terap	18,140	19,000	8,870	18,370	16,500	16,120
<b>Total</b>	<b>98,870</b>	<b>119,950</b>	<b>73,260</b>	<b>103,080</b>	<b>94,720</b>	<b>99,630</b>

Remark: \*; Not planted

Production indicates wet paddy including foreign elements such as rechie's branch, leaf, weeds, etc.

Source: PBLs Office

Table B-39 CROP BUDGET FOR FIRST CROP SEASON PADDY

Unit: M\$/ha

Item	1981	1982	1983	1984	1985
<b>A. Production Cost</b>					
1) Seed	17	20	30	32	30
2) Fertilizer	253	238	258	248	246
3) Weedicide	42	52	32	47	56
4) Insecticide	30	42	45	50	42
5) Hired labour and farm machinery					
- Land preparation	154	159	139	154	151
- Planting	186	186	193	181	189
- Harvesting	246	320	188	263	214
- Transportation	48	64	39	51	41
6) Family labour	300	198	186	216	216
7) Land rent	434	496	563	563	580
8) Others <sup>/1</sup>	7	7	7	7	7
Financial cost <sup>/2</sup>	1,283	1,286	1,117	1,249	1,192
Total paid cost					
- Owner operator <sup>/3</sup>	730	850	673	785	730
- Tenant operator <sup>/4</sup>	1,157	1,339	1,229	1,341	1,303
<b>B. Gross Income</b>	1,539	2,094	1,261	1,570	1,306
1) Yield (ton)	(2.77)	(3.68)	(2.27)	(2.93)	(2.35)
2) % of deduction (%)	(16)	(14)	(16)	(19)	(16)
3) Price (M\$/100 kg)	(66.15)	(66.15)	(66.15)	(66.15)	(66.15)
<b>C. Net Return</b>					
1) Financial net return	256	808	144	321	114
2) Owner operator	809	1,244	588	785	576
3) Tenant operator	382	755	32	229	3
<b>D. Production Cost of Rice</b>					
1) Production of rice <sup>/5</sup> (ton)	1.51	2.06	1.24	1.54	1.28
2) Production cost <sup>/6</sup> (M\$/ton)	850	624	901	811	931

Remarks: <sup>/1</sup> Land and water charges.  
<sup>/2</sup> Excluding land rent.  
<sup>/3</sup> Excluding fertilizer, family labour and land rent.  
<sup>/4</sup> Excluding fertilizer and family labour.  
<sup>/5</sup> Yield of paddy x (100% - % of deduction) x Milling recovery rate (65%).  
<sup>/6</sup> Financial cost/Production of rice.

Source: Project Completion Report, PBLs, 1985.

Table B-40 CROP BUDGET FOR SECOND CROP SEASON PADDY

Unit: M\$/ha

Item	1980	1981	1982	1983	1984
<b>A. Production Cost</b>					
1) Seed	20	20	25	32	30
2) Fertilizer	250	246	253	238	246
3) Weedicide	42	45	47	40	50
4) Insecticide	45	32	62	57	47
5) Hired labour and farm machinery					
- Land preparation	139	151	161	149	148
- Planting	188	191	193	186	191
- Harvesting	335	382	250	253	225
- Transportation	67	74	55	52	50
6) Family labour	268	218	193	216	216
7) Land rent	340	414	590	588	560
8) Others <sup>/1</sup>	7	7	7	7	7
Financial cost <sup>/2</sup>	1,361	1,366	1,246	1,230	1,210
Total paid cost					
- Owner operator <sup>/3</sup>	843	902	800	776	748
- Tenant operator <sup>/4</sup>	1,176	1,309	1,383	1,357	1,301
<b>B. Gross Income</b>					
1) Yield (ton)	2,170	2,469	1,720	1,598	1,576
2) % of deduction (%)	(3.86)	(4.29)	(3.17)	(2.91)	(2.87)
3) Price (M\$/100 kg)	(15)	(13)	(18)	(17)	(17)
	(66.15)	(66.15)	(66.15)	(66.15)	(66.15)
<b>C. Net Return</b>					
1) Financial net return	809	1,103	474	368	366
2) Owner operator	1,327	1,567	920	822	828
3) Tenant operator	994	1,160	337	241	275
<b>D. Production Cost of Rice</b>					
1) Production of rice <sup>/5</sup> (ton)	2.13	2.43	1.69	1.57	1.55
2) Production cost <sup>/6</sup> (M\$/ton)	639	562	737	783	781

Remarks: <sup>/1</sup> Land and water charges.  
<sup>/2</sup> Excluding land rent.  
<sup>/3</sup> Excluding fertilizer, family labour and land rent.  
<sup>/4</sup> Excluding fertilizer and family labour.  
<sup>/5</sup> Yield of paddy x (100% - % of deduction) x Milling recovery rate (65%).  
<sup>/6</sup> Financial cost/Production of rice.

Source: Project Completion Report, PBLs, 1985.

Table B-41 (1/2) TYPICAL FARM BUDGET

Farm Size: 1.2 ha  
Owner Operator

Unit : M\$

Item	Sawa Sempadan	Sungai Burong	Sekinchan	Sungai Leman
Gross Income	<u>5,439</u>	<u>5,299</u>	<u>9,063</u>	<u>3,678</u>
1) Farm income	<u>3,636</u>	<u>4,330</u>	<u>6,344</u>	<u>3,097</u>
- 2nd season paddy <sup>/1</sup>	1,466	1,755	2,217	1,146
- 1st season paddy <sup>/2</sup>	1,456	1,581	2,347	1,244
- Other crops and agricultural activities	714	994	1,780	707
2) Off-farm income	<u>1,803</u>	<u>969</u>	<u>2,719</u>	<u>581</u>
Gross Outgo	<u>5,439</u>	<u>5,299</u>	<u>9,063</u>	<u>3,678</u>
1) Production cost <sup>/3</sup>	<u>1,847</u>	<u>2,102</u>	<u>2,501</u>	<u>1,704</u>
- Seed	80	73	95	71
- Weedicide	118	110	144	101
- Insecticide	68	91	158	84
- Hired labour and farm machinery				
Ploughing	263	274	499	245
Planting	394	436	-	403
Harvesting	452	497	553	353
Transportation	98	107	145	76
- Water charge	17	17	17	17
- Others <sup>/4</sup>	357	497	890	354
2) Living expenses and net reserve	<u>3,592</u>	<u>3,197</u>	<u>6,562</u>	<u>1,974</u>

Remarks: /1 2nd season crop in 1984

/2 1st season crop in 1985

/3 Excluding costs of family labour and subsidized fertilizer.

/4 Cost for other crop and agricultural activities (50%)

Source : (1) Others crops, agricultural activities and off-farm income  
- Laporan Kajian 1984, PBLIS.

(2) Farm income and production cost for paddy - Poverty Monitoring Survey, PBLIS.

Table B-41 (2/2) TYPICAL FARM BUDGET

Farm Size: 1.2 ha  
Owner Operator

Unit: M\$

Item	Pasir Panjang	Sungai Nipah	Panchang Bedena	Bagan Terap	Average
Gross Income	<u>4,613</u>	<u>4,901</u>	<u>4,989</u>	<u>6,680</u>	<u>5,583</u>
1) Farm income	<u>3,622</u>	<u>4,134</u>	<u>4,162</u>	<u>6,194</u>	<u>4,440</u>
- 2nd season paddy	1,329	1,923	2,348	3,975	2,020
- 1st season paddy	1,461	1,675	1,268	1,654	1,586
- Other crops and agricultural activities	832	536	546	565	834
2) Off-farm income	<u>991</u>	<u>767</u>	<u>827</u>	<u>486</u>	<u>1,143</u>
Gross Outgo	<u>4,613</u>	<u>4,901</u>	<u>4,989</u>	<u>6,680</u>	<u>5,583</u>
1) Production cost	<u>1,624</u>	<u>1,724</u>	<u>1,896</u>	<u>2,062</u>	<u>1,933</u>
- Seed	66	56	44	43	66
- Weedicide	91	80	78	74	100
- Insecticide	60	64	53	62	80
- Hired labour and farm machinery					
Ploughing	263	257	258	260	290
Planting	389	398	538	529	386
Harvesting	264	482	522	606	466
Transportation	58	102	113	188	111
- Water charge	17	17	17	17	17
- Others	416	268	273	283	417
2) Living expenses and net reserve	<u>2,989</u>	<u>3,177</u>	<u>3,093</u>	<u>4,618</u>	<u>3,650</u>

Table B-42 FARM MACHINERY REQUIREMENT UNDER PRESENT CONDITION

Cropping Schedule	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Working Schedule											
Slashing												
1st Rotavating												
2nd Rotavating												
Harvesting												
Workable Day <sup>1</sup> (%)	89	88	87	80	86	89	86	89	85	80	77	79
Slashing (ha/day)	328	322	335	365	339	328	328	328	343	365		
1st Rotavating (ha/day)	328	332	335	365	339	328	328	328	343	365		
2nd Rotavating												
Harvesting (ton/day)	1099	1112	140	140	140	948	981	948	143	143		
Slasher (No.)	51	52	52	76	53	53	53	51	143	76		
Rotavator (No.)	60	69	140	70	71	68	71	137	143	76		
Harvester (No.)	51	60	140	70	53	53	53	52	143	67		
Tractor <sup>4</sup>	51	121	140	140	124	119	124	188	188	76		
Required Farm Machinery <sup>3</sup>	51	190	190	190	190	190	190	190	190	190		
Peak Farm Machinery Requirement (No.)	53	52	52	76	53	53	53	51	143	143		
Existing Farm Machinery (No.)	52	52	52	76	53	53	53	51	143	143		

<sup>1</sup> The workable day for mechanized farming was estimated on the basis of the rainfall data (1975-1984) at Sungai Nipah and the following criterion.

Rainfall (mm/day)	Workability (%)
< 9.9	100
> 10.0	0

<sup>2</sup> The work load (WL) was calculated as follows:  
 $WL = AP/WP/WD$   
 Where, WP: Working Period (60 days) WD: Workable Day (%)

<sup>3</sup> The required farm machinery (FM) was calculated as follows:  
 $FM = WL/CA/OE$   
 Where, CA: Working capacity on a weighted average in the project area  
 Slashing: 8 ha/day Rotavating: 6 ha/day  
 Harvesting: 23 tons/day  
 OE: Operation efficiency taking into account the losses for repair, movement from lot to other place, etc. (80%)

<sup>4</sup> Slasher + Rotavator

Production: 1st season 2.89\* t/ha x 17,510 ha = 50,600 tons  
 2nd season 3.35\* t/ha x 17,510 ha = 58,700 tons  
 \* Average during the past 5 years (1981-1985)



Table B-43 PROPOSED FARMING PRACTICES FOR DRY DIRECT SEEDING PADDY

Work Item	Work Period	Farm Inputs and Machinery
1) Recommended varieties		MR 52, MR 71, MR 77, MR 84, etc.
2) Growth period		135 days
3) Land preparation		
- Slashing	-30	Slasher
- Burning	-25	
- 1st Rotavating	-20	Rotavator
- 2nd Rotavating	-5	Rotavator
- Repairing of bund	-3	
4) Seeding		
- Manual seeding/ Mechanical seeding	0	Rotavator/Seed drill, Seed:80kg/ha
- Inserting	+18	
5) Fertilizing		
- 1st top dressing	+20	Mixture (17.5:15.5:10) : 100kg/ha
- 2nd top dressing	+35	Mixture (17.5:15.5:10) : 100kg/ha
- 3rd top dressing	+55	Urea (46%):50kg/ha
- 4th top dressing	+75	Urea (46%):50kg/ha
6) Spraying of insecticides	+20	Furadan:20kg/ha
7) Spraying of weedicides		
- 1st spraying	-22	Paraquat:4liter/ha
- 2nd spraying	-7	Paraquat:4liter/ha
- 3rd spraying	+20	2,4-D BE:2.5kg/ha
8) Irrigating		
- Presaturation	+5	20days after seeding
- Normal irrigation	+25	85days
- Drainage	+110	
9) Harvesting	+135	Harvester
10) Rat control		Area-wise operation

Table B-44 PROPOSED FARMING PRACTICES FOR WET DIRECT SEEDING PADDY

Work Item	Work Period	Farm Input and Machinery
1) Recommended varieties		MR 52, MR 71, MR 77 MR 84, etc.
2) Growth period		130 days
3) Land preparation		
- Slashing	-30	Slasher
- Burning	-25	
- Rotavating	-20	Rotavator
- Repairing of bund	-15	
- Puddling	-5	Rotavator, 2times
4) Seeding		
- Soaking of seed	-3	Seed: 80kg/ha
- Manual seeding	0	
- Inserting	+18	
5) Fertilizing		
- 1st top dressing	+20	Mixture (17.5:15.5:10): 100kg/ha
- 2nd top dressing	+35	Mixture (17.5:15.5:10): 100kg/ha
- 3rd top dressing	+55	Urea (46%): 50kg/ha
- 4th top dressing	+75	Urea (46%): 50kg/ha
6) Spraying of insecticides	+20	Furadan: 20kg/ha
7) Spraying of weedicides		
- 1st spraying	-22	Paraquat: 4liter/ha
- 2nd spraying	+20	2,4-D BE: 2.5kg/ha
8) Irrigating		
- Presaturation	-20	
- Normal irrigation	+20	85days
- Drainage	+105	
9) Harvesting	+130	Harvester
10) Rat control		Area-wise operation

Table B-45 FARM INPUTS AND LABOUR REQUIREMENTS

Item		Dry Direct Seeding	Wet Direct Seeding
<u>Farm Inputs Requirements</u>			
1) Seed	(kg/ha)	80	80
2) Fertilizer			
- Urea (46%)	(kg/ha)	100	100
- Mixture (17.5:15.5:10)	(kg/ha)	200	200
3) Insecticide			
- Furadan	(kg/ha)	20	20
4) Weedicide			
- Paraquat	(l/ha)	8	4
- 2,4-D BE	(kg/ha)	2.5	2.5
5) Rodenticide	(kg/ha)	1	1
<u>Labour Requirement</u>	(man-day/ha)	34	35
1) Burning		1	1
2) Repairing of bund		3	3
3) Soaking of seed		-	1
4) Seeding		3	3
5) Inserting		3	3
6) Fertilizing		8	8
7) Spraying of insecticide		2	2
8) Spraying of weedicide		6	4
9) Irrigating		4	6
10) Others <sup>/1</sup>		4	4

/1 Including bagging of paddy after harvest and rat control.

Table B-46 FARM MACHINERY REQUIREMENT UNDER FUTURE CONDITION

Cropping Schedule	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Working Schedule						1st Season (Off-season) 18,320 ha					2nd Season (Main-season) 18,320 ha
Slashing												
1st Rotavating												
2nd and 3rd Rotavating												
Harvesting												
Workable Day <sup>1/1</sup> (%)	89	88	87	80	86	89	86	89	85	80	77	79
Slashing (ha/day)	229	231	234	254				229	239	254		
1st Rotavating (ha/day)	229	231	234	254				229	239	254		
2nd and 3rd Rotavating (ha/day)	229	231	234	254				229	239	254		
Harvesting (ton/day)	1075	1087	1100	1195			1041	1006	1054	1058		
Slasher (No.)	36	36	37	40			1041	36	37	40		
Rotavator (No.)	48	48	46	159				48	149	159		
Harvester (No.)	58	59	60	65			57	55	57			
Tractor <sup>4/4</sup>	36	36	37	40			57	36	37	40		
Required Farm Machinery <sup>3/3</sup>	36	36	37	40			57	36	37	40		
Peak Farm Machinery Requirement (No.)	199	183	183	199			199	199	186	199		
Existing Farm Machinery (No.)	113	113	113	113			113	113	113	113		

Remarks: --- Presaturation

<sup>1/1</sup> The workable day for mechanized farming was estimated on the basis of the rainfall data (1975-1984) at Sungai Nipah and the following criterion.

Rainfall (mm/day)	Workability (%)
< 9.9	100
> 10.0	0

<sup>2/2</sup> The work load (WL) was calculated as follows:  
 $WL = AP/WP/WD$   
 Where, WP: Working Period (90 days) WD: Workable Day (%)

AP: Area or Production  
 Production: 1st season 4.7 t/ha x 18,320 ha = 86,100 tons  
 2nd season 4.4 t/ha x 18,320 ha = 80,600 tons

<sup>3/3</sup> The required farm machinery (FM) was calculated as follows:  
 $FM = WL/CA/OE$   
 Where, CA: Working capacity on a weighted average in the project area  
 Slashing: 8 ha/day  
 Harvesting: 23 tons/day

OE: Operation efficiency taking into account the losses for repair, movement from lot to other place, etc. (80%)

<sup>4/4</sup> Slasher + Rotavator

Table B-47 WATER SUPPLY SCHEDULE FOR THE TRANSITIONAL PERIOD

Year	Compartment	First Crop (Off-season crop)	Second Crop (Main Season Crop)
1987	PB/BT	1/1 - 1/5	15/7 - 15/11
	SS/SB	1/2 - 1/6	15/8 - 15/12
	SN	1/6 - 1/10	Cancel
	SK/SL/PP	15/3 - 15/7	15/9 - 15/1
1988	PB/BT	15/2 - 15/6	1/10 - 1/2
	SB/SK/SL	15/3 - 15/7	1/9 - 1/1
	SS/PP/SN	1/5 - 1/9	1/11 - 1/3
1989	SB/SK/SL	15/2 - 15/6	1/9 - 1/1
	PB/BT	15/3 - 15/7	1/11 - 1/3
	SS/PP/SN	15/4 - 15/8	1/10 - 1/2
1990	SB/SK/SL	21/2 - 5/7	11/8 - 15/1
	SS/PP/SN	21/3 - 5/8	11/9 - 15/2
	PB/BT	21/4 - 5/9	11/10 - 15/3

Table B-48 CROP BUDGET FOR DRY DIRECT SEEDING PADDY

Item		M\$/ha
A. Production Cost		1,389
1) Seed	80kg x M\$1.00/kg	80
2) Fertilizer		
- Urea	100kg x M\$0.48/kg	48
- Mixture	200kg x M\$0.76/kg	152
3) Weedicide		
- Paraquat	81 x M\$7.88/l	63
- 2,4-D BE	2.5kg x M\$6.40/kg	16
4) Insecticide		
- Furadan	20kg x M\$3.13/kg	63
5) Rodenticide	1kg x M\$30.00/kg	30
6) Farm machinery		
- Slashing		42
- 1st rotavating		67
- 2nd rotavating		42
- Rotavating after seeding		42
- Harvesting	59guni x M\$6.00/guni	354
- Transportation	59guni x M\$1.30/guni	77
7) Labour	34man-days x M\$9.00	306
8) Others <sup>1</sup>		7
B. Gross Income		2,581
- Yield of paddy	4.7tons	
- % of deduction	17%	
- Price	M\$66.15/100kg	
C. Net return (B-A)		1,192
D. Production Cost of Rice		
- Production of rice <sup>2</sup> (ton)		2.54
- Production cost <sup>3</sup> (M\$/ton)		547

<sup>1</sup> Land and water charges

<sup>2</sup> Yield of paddy x (100% - % of deduction) x Milling recovery rate (65%)

<sup>3</sup> Production cost of paddy / Production of rice

Table B-49 CROP BUDGET FOR WET DIRECT SEEDING PADDY

Item		M\$/ha
A. Production Cost		1,387
1) Seed	80kg x M\$1.00/kg	80
2) Fertilizer		
- Urea	100kg x M\$0.48/kg	48
- Mixture	200kg x M\$0.76/kg	152
3) Weedicide		
- Paraquat	41 x M\$7.88/l	32
- 2,4-D BE	2.5kg x M\$6.40/kg	16
4) Insecticide		
- Furadan	20kg x M\$3.13/kg	63
5) Rodenticide	1kg x M\$30.00/kg	30
6) Farm machinery		
- Slashing		42
- Rotavating		67
- 1st puddling		75
- 2nd puddling		58
- Harvesting	55guni x M\$6.00/guni	330
- Transportation	55guni x M\$1.30/guni	72
7) Labour	35man-days x M\$9.00	315
8) Others <sup>1</sup>		7
B. Gross Income		2,416
- Yield of paddy	4.4tons	
- % of deduction	17%	
- Price	M\$66.15/100kg	
C. Net return (B-A)		1,029
D. Production Cost of Rice		
- Production of rice <sup>2</sup> (ton)		2.37
- Production cost <sup>3</sup> (M\$/ton)		585

<sup>1</sup> Land and water charges

<sup>2</sup> Yield of paddy x (100% - % of deduction) x Milling recovery rate(65%)

<sup>3</sup> Production cost of paddy / Production of rice

Table B-50 TYPICAL FARM BUDGET UNDER WITH-PROJECT CONDITION  
(1986 CONSTANT PRICES)

Farm Size: 1.2 ha

(Unit: M\$)

Item	Present Condition		With Project Condition	
	7 Compart- ments <sup>/1</sup>	Sekinchan	7 Compart- ments <sup>/1</sup>	Sekinchan
A. <u>Gross Income</u>	<u>4,600</u>	<u>8,637</u>	<u>7,633</u>	<u>10,522</u>
1) Farm income	<u>3,755</u>	<u>5,940</u>	<u>6,788</u>	<u>7,825</u>
- Main season paddy	1,538	2,078	2,899	2,899
- Off-season paddy	1,425	2,033	3,097	3,097
- Other crops	135	736	135	736
- Other agricultural activities	657	1,093	657	1,093
2) Off-farm income	<u>845</u>	<u>2,697</u>	<u>845</u>	<u>2,697</u>
B. <u>Gross Outgo</u>				
1) Production cost <sup>/2</sup>	<u>1,589</u>	<u>2,192</u>	<u>2,084</u>	<u>2,385</u>
- Fertilizer	-	147	-	-
- Seed	59	96	192	192
- Weedicide	88	147	152	152
- Insecticide	76	167	151	151
- Hired labour and machinery				
Ploughing	263	501	522	522
Planting	424	-	-	-
Harvesting	501	607	821	821
Transportation	111	159	179	179
- Others <sup>/3</sup>	67	368	67	368
2) Land rent	<u>1,007</u>	<u>1,975</u>	<u>1,007</u>	<u>1,975</u>
3) Land and water charges	<u>17</u>	<u>17</u>	<u>17</u>	<u>17</u>
C. <u>Living Expenses and Net Reserve</u>				
- Owner operator	<u>2,994</u>	<u>6,428</u>	<u>5,532</u>	<u>8,120</u>
(A) - (B.1) - (B.3)				
- Tenant operator	<u>2,004</u>	<u>4,470</u>	<u>4,542</u>	<u>6,162</u>
(A) - (B.1) - (B.2)				

<sup>/1</sup> Excluding Sekinchan.

<sup>/2</sup> Excluding costs of family labour and subsidized fertilizer.

<sup>/3</sup> Including cost of other crops (50% of income from other crops).

Source: (1) Incomes of other crops, agricultural activities and off-farm  
- Laporan Kajian 1984, PBLIS.

(2) Farm income and production cost for paddy  
- PBLIS Monitoring Survey, PBLIS Office.



Table B-5 | INCREASE IN LABOUR REQUIREMENT

(Unit: man-day/ha)

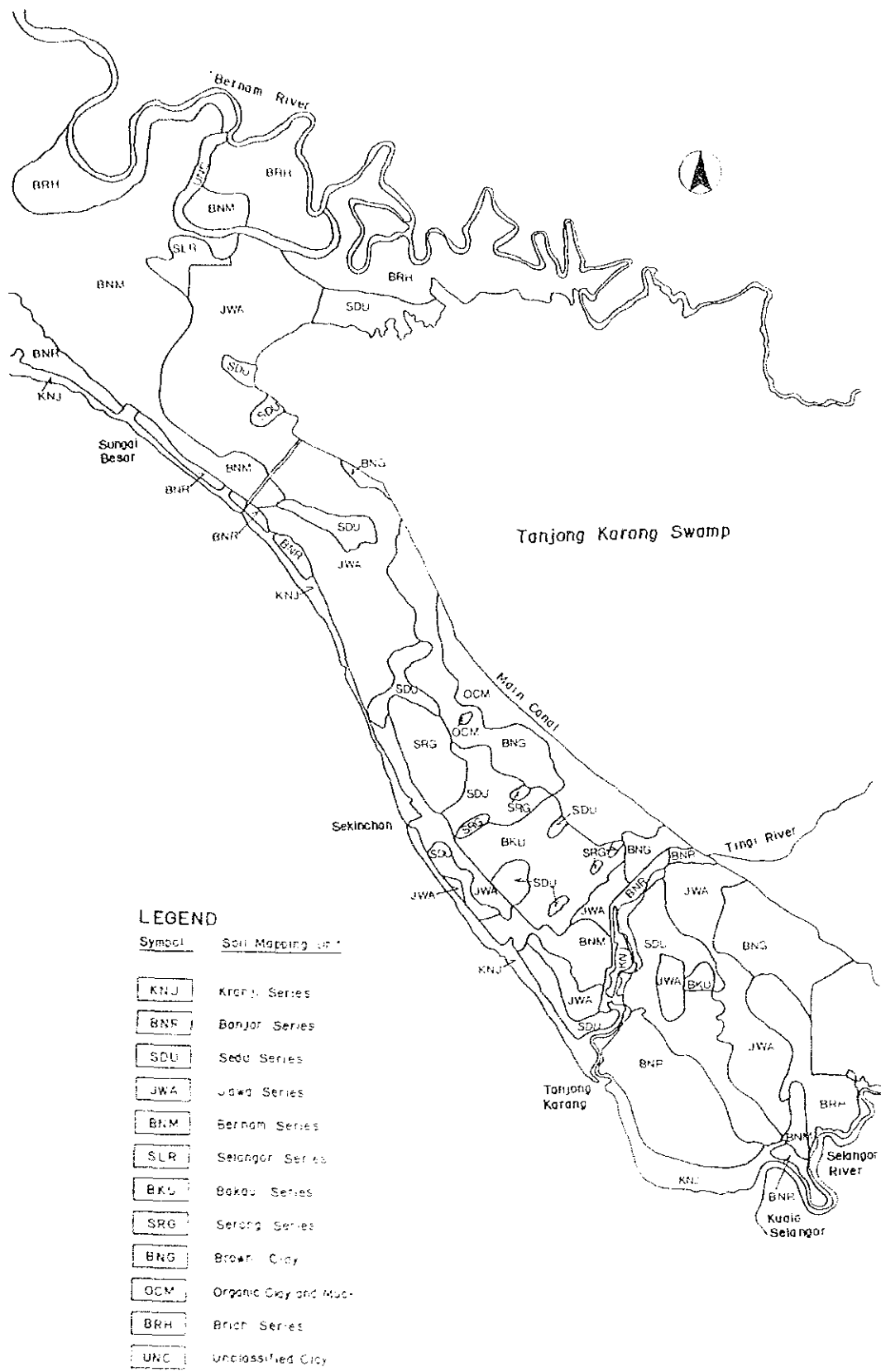
Item	Present			With Project		
	Trans-planting	Direct Seeding	Weighted Average <sup>/1</sup>	Dry Seeding	Wet Direct Seeding	Direct Average
Field clearing and						
bunds repairing	4	4	4	4	4	4
Seeding/Transplanting	20	6	15	7	6	7
Fertilizing	3	3	3	8	8	8
Application of						
Agro-chemicals	5	5	5	6	8	7
Irrigating	3	3	3	6	4	5
Harvesting (bagging, etc.)	3	3	3	4	4	4
<b>Total</b>	<b>38</b>	<b>24</b>	<b>33</b>	<b>35</b>	<b>34</b>	<b>35</b>

<sup>/1</sup> Ratio of cropped area: Transplanting 65% Direct seeding 35%  
 33 man-days = (38 man-days x 65%) + (24 man-days x 35%)



## ***FIGURES***



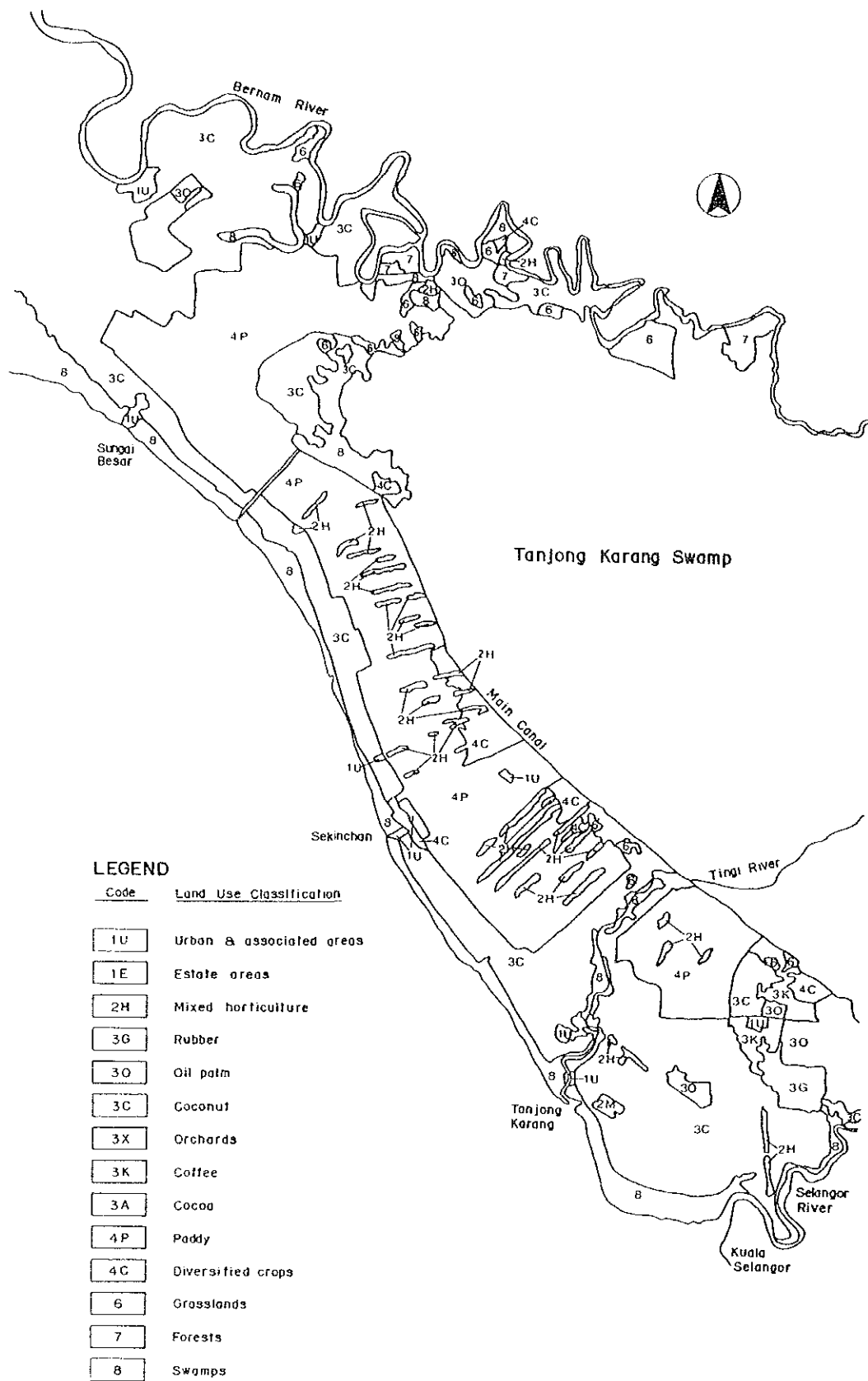


**LEGEND**

Symbol	Soil Mapping Unit
KNJ	Kranji Series
BNF	Banjor Series
SDU	Sedu Series
JWA	Jawa Series
BNM	Bernam Series
SLR	Selangor Series
BKU	Bakau Series
SRG	Serang Series
BNG	Brown Clay
OCM	Organic Clay and Mud
BRH	Brich Series
UNC	Unclassified Clay

Fig. B-1 Soil Map

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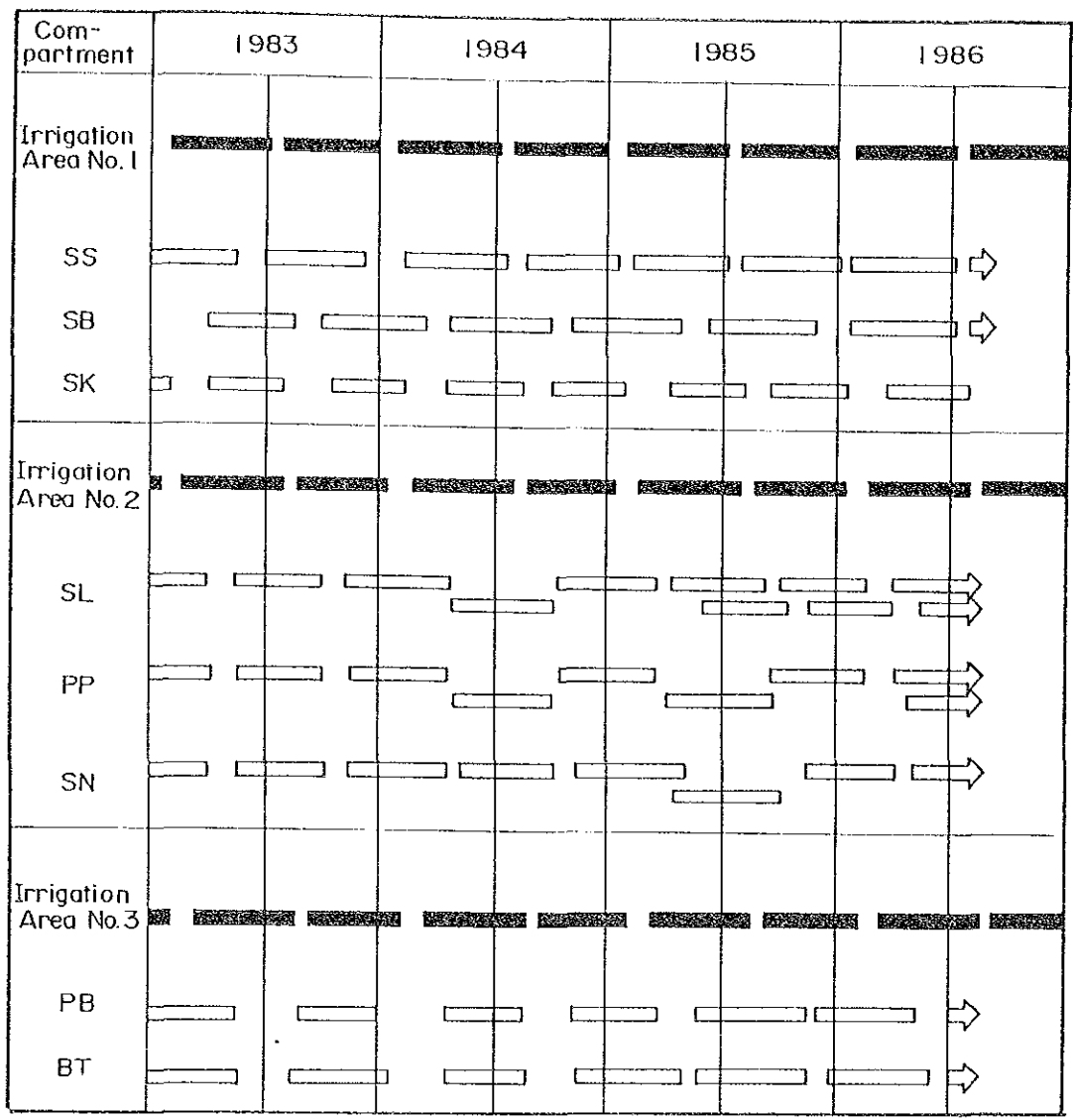


**LEGEND**

Code	Land Use Classification
1U	Urban & associated areas
1E	Estate areas
2H	Mixed horticulture
3G	Rubber
3O	Oil palm
3C	Coconut
3X	Orchards
3K	Coffee
3A	Cocoa
4P	Paddy
4C	Diversified crops
6	Grasslands
7	Forests
8	Swamps

Fig. B-2 Present Land Use Map

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Remarks: Compartment  
 SS : Sawah Sempadan      SB: Sungai Burong  
 SK : Sekinchan            SL: Sungai Leman  
 PP : Pasir Panjang        SN: Sungai Nipah  
 PB : Panchang Bedena     BT: Bagan Terap

■ Irrigation Schedule  
 □ Actual Cropping Calendar

Fig. B-3 Present Irrigation Schedule and Actual Cropping Calendar

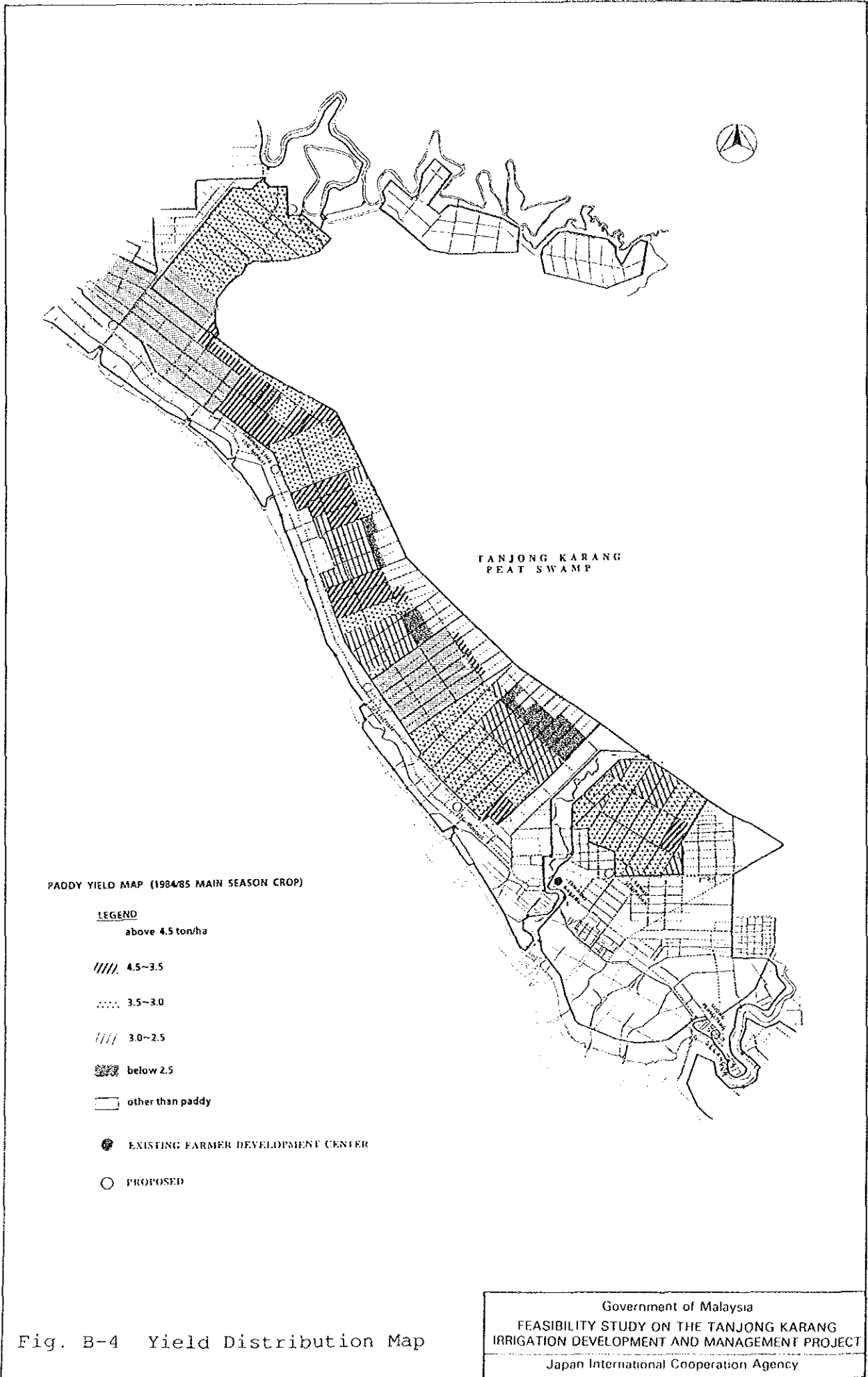


Fig. B-4 Yield Distribution Map



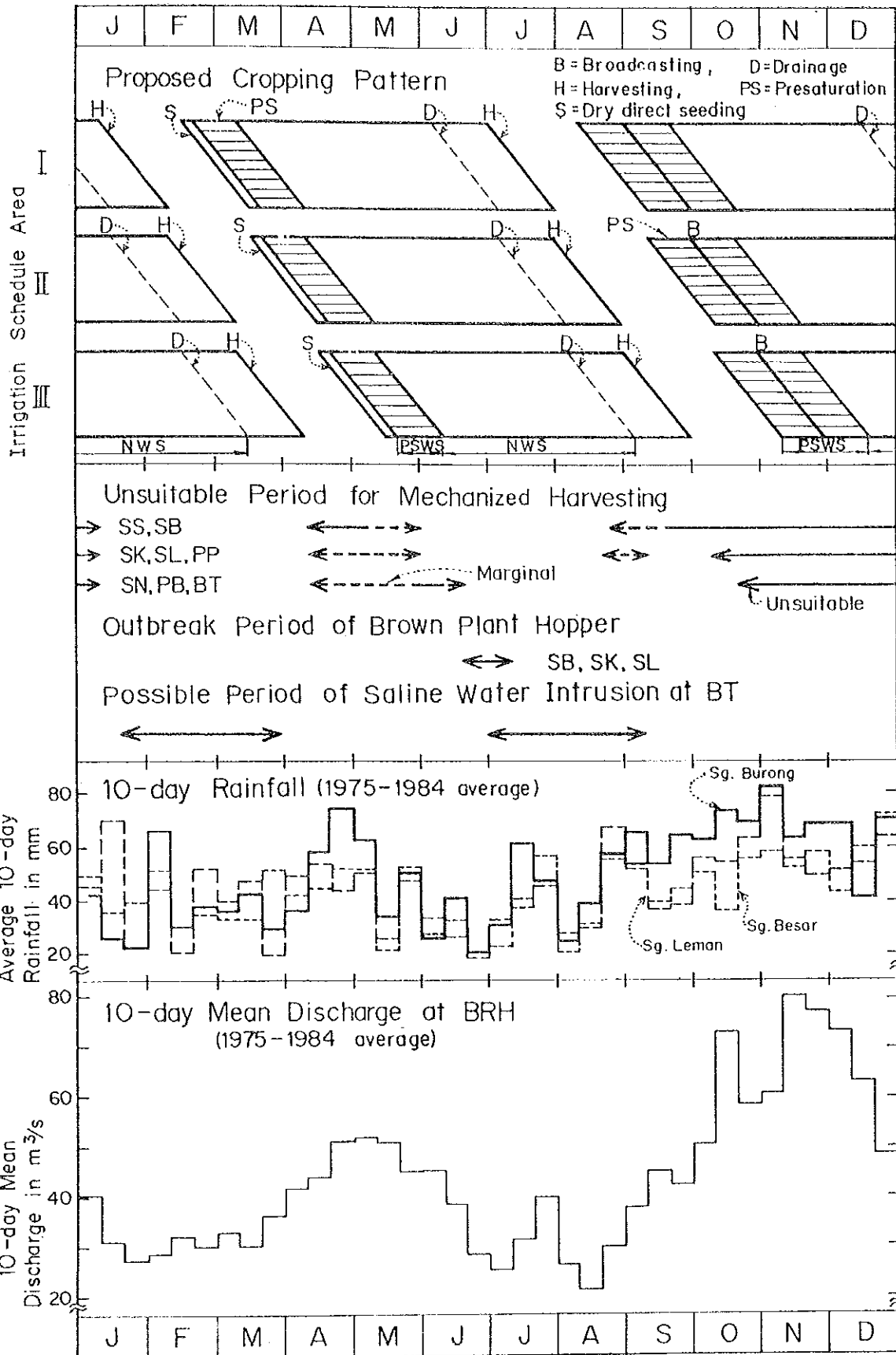
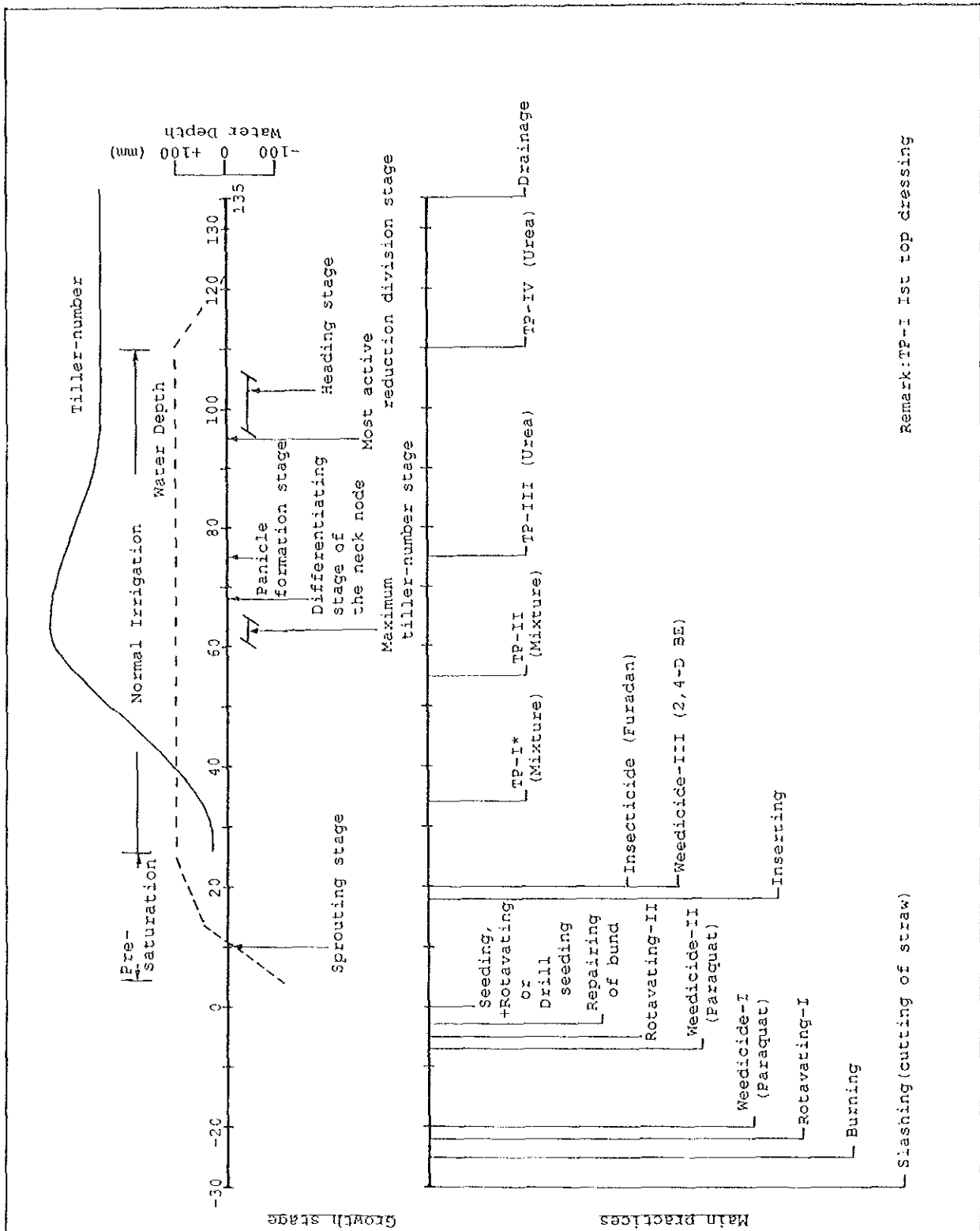
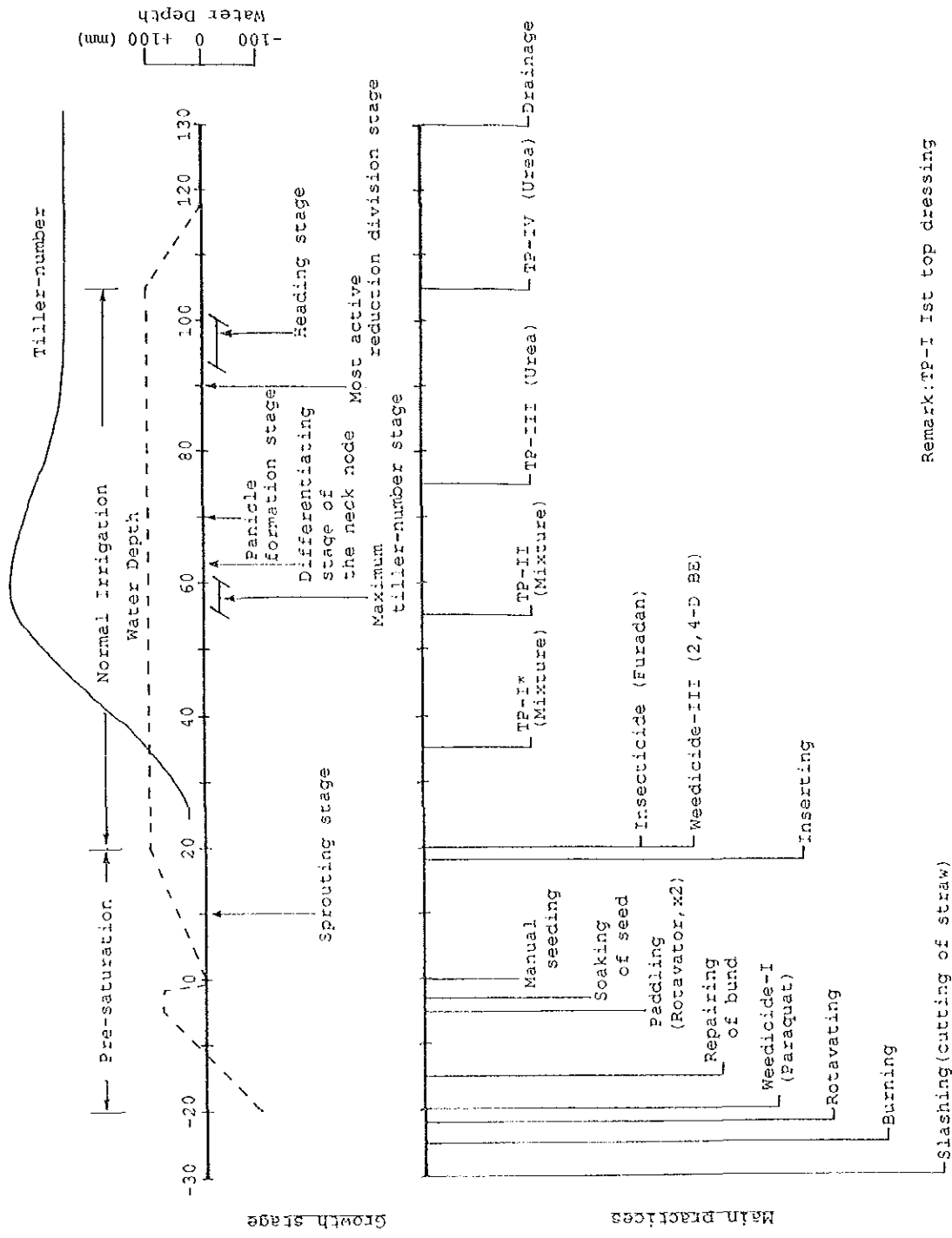


Fig. B-5 Proposed Cropping Schedule



Remark: TP-I Ist top dressing

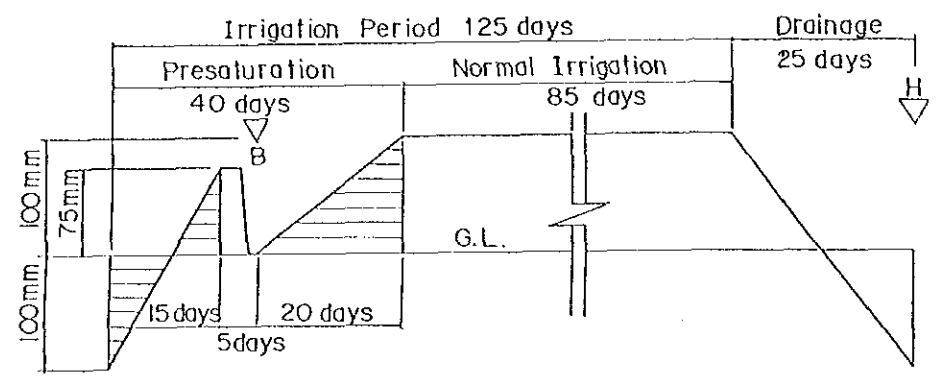
Fig. B-6 Proposed Farming Practices for Dry Direct Seeding.



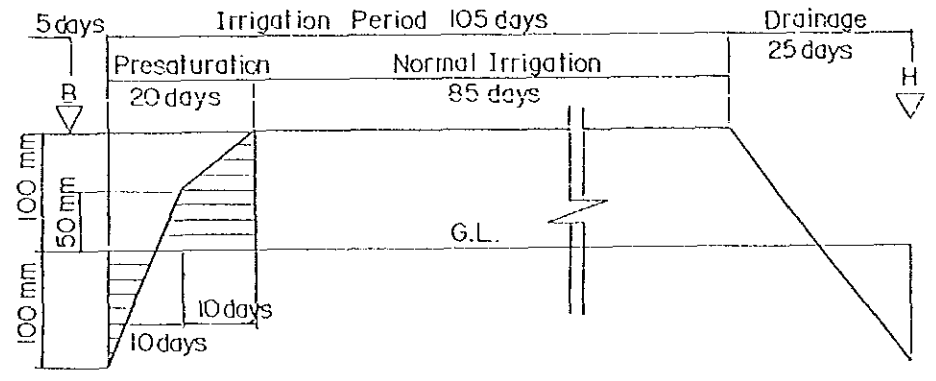
Remark: TP-I Ist top dressing

Fig. B-7 Proposed Farming Practices for Wet Direct Seeding.

Direct Seeding  
under wet  
Field Condition



Direct Seeding  
under Dry  
Field Condition



Remarks ; B = Broadcasting  
H = Harvesting

Fig. B-8 On-Farm Water Management

# **ANNEX C**

## ***Water Demand and Water Balance***



**ANNEX C**  
**IRRIGATION WATER DEMAND AND WATER BALANCE**

**CONTENTS**

1. INTRODUCTION	C- 1
2. NET IRRIGATION WATER REQUIREMENT	C- 2
2.1 Presaturation Requirement by Paddy	C- 2
2.1.1 General	C- 2
2.1.2 Field investigation on presaturation supply	C- 2
2.1.3 Calculation of presaturation requirement	C- 8
2.2 Normal Irrigation Requirement by Paddy	C- 9
3. WATER BALANCE STUDY	C-11
3.1 General	C-11
3.2 Alternative Cases for the Study	C-11
3.3 Procedure and Assumptions for the Study	C-12
3.4 Results of the Study	C-13
3.5 Influence of Delay in Cropping Schedule	C-14
3.6 Influence of Decrease in Irrigation Efficiency	C-14

## **LIST OF TABLES**

- C-1 Situation of Presaturation in TASB 4 Area
- C-2 Presaturation Water Supply to TASB 4 Area
- C-3 Presaturation Water Supply to Selected Lot
- C-4 Groundwater Table in TASB 4 Area
- C-5 Soil Physical Characteristics in TASB 4 Area
- C-6 Result of Measurement of Percolation Loss
- C-7 Estimation of Net Irrigation Water Requirement for Paddy
- C-8 Summary of Water Balance Study by DID
- C-9 Results of Measurement of Daily Decrease of Water Depth in Lot
- C-10 Water Balance for Case 1
- C-11 Water Balance for Case 2
- C-12 Water Balance for Case 3
- C-13 Water Balance in case of 30 Days Delay in Cropping Schedule for Case 1
- C-14 Water Balance in case of 30 Days Delay in Cropping Schedule for Case 2
- C-15 Water Balance in case of 30 Days Delay in Cropping Schedule for Case 3
- C-16 Water Balance under 64% Overall Efficiency for Case 2
- C-17 Water Balance under 60% Overall Efficiency for Case 2

## **LIST OF FIGURES**

- C-1 Location of Site for Field Measurement in TASB 4 Area
- C-2 Water Level of the Main Canal during Presaturation
- C-3 Progress of Presaturation in TASB 4 Area
- C-4 Discharge Capacity of Syphon



## 1. INTRODUCTION

This Annex presents supporting information and data concerning net irrigation water requirement and water balance. Overall explanation on water demand and water balance is mentioned in detail in Sections 5.2 and 5.3 of the Main Report, respectively.

## **2. NET IRRIGATION WATER REQUIREMENT**

### **2.1 Presaturation Requirement by Paddy**

#### **2.1.1 General**

In recent years, direct seeding methods have been extended in the project area. In case of direct seeding methods, more precise water management is required than the transplanting method. Water is necessary to be supplied within a shortest time. With a spread of such direct seeding methods, the water requirement during presaturation period has been changed. In order to get reference data and information for estimation of presaturation supply for direct seeding method, the field investigation on presaturation supply was carried out in a selected area in August 1986. Based on results of field investigation and their analysis, parameters used in the calculation of presaturation requirement were determined.

#### **2.1.2 Field investigation on presaturation supply**

##### **(1) Selection of site for investigation**

In order to measure the amount of presaturation supply, an area commanded by a tertiary canal, TASB 4 in Sungai Burong compartment, was selected, where the Water Management Extension Pilot Project has been promoted by DID. For execution of this project, a DID engineer and supporting staff have been stationed at Sungai Burong. TASB 4 commands a total land area of 285 ha, which consists of 213 ha (182 farm lots) of paddy fields and 72 ha of other land use. TASB 4 is made of concrete conduit 7.2 km long in total. The designed flow capacity is 0.67 cu.m/s (23.5 cusec) at the head of the canal. The area commanded by TASB 4 is divided into five sub-blocks, Z2, Z, T, K and E, by four cross bunds. The area and number of lot by sub-block are as follows:

<u>Sub-block</u>	<u>Total Area</u>		<u>Paddy Field</u>	
	<u>Area</u> <u>(ha)</u>	<u>Lot</u> <u>(No.)</u>	<u>Area</u> <u>(ha)</u>	<u>Lot</u> <u>(No.)</u>
Z2	29	19	0	0
Z	64	52	30	26
T	64	52	61	52
K	64	52	61	52
E	64	52	61	52
<b>Total</b>	<b>285</b>	<b>227</b>	<b>213</b>	<b>182</b>

(2) Items for field investigation

Items for field investigation are listed as follows:

a. Field reconnaissance

Field reconnaissance is made every four days to inspect the following items.

- progress of presaturation
- flow condition of field offtake pipe
- use of syphon (location, size and hydraulic head)
- use of obstacle and extra hole
- farming method

b. Measurement of water level and discharge at the head of conduit

In order to estimate a total amount of water diverted into the conduit, measurements of water level and discharge at the head of conduit are carried out. A water level recorder is installed at 10 m downstream of the offtake. Discharge measurement using a current meter is conducted to supplement the Project team's regular observation at the same point. Then a figure showing a relationship between water level and discharge is prepared. Using this figure, water level records are converted into discharge.

d. Measurement of discharge from field offtake pipe

In order to measure the amount of discharge from the field offtake pipe, three lots are selected at different location in TASB 4, namely sub-blocks Z, T and E, as shown in Fig. C-1. These lots are owned by head farmers and their batas are well-maintained. In each farm lot, a measuring box with a right-angle triangular weir and a water level recorder is installed outlet of a field offtake pipe. Observation of discharge taken into a farm lot is made continuously.

e. Measurement of standing water depth in a farm lot

A water level recorder is installed to record a change in standing water depth in each selected farm lot.

f. Measurement of rainfall by automatic rain gauge

In order to evaluate the contribution of rainfall to presaturation, a rain gauge is installed in a lot in sub-block T as shown in Fig. C-1.

g. Analysis of physical properties of soils

In order to make clear the water retaining capacity of soil, soil samples are taken at the depth of 10, 30 and 50 cm in the selected fram lots. Soil samples are taken both before and after presaturation supply.

h. Measurement of groundwater level in the farm lots

Groundwater level in the selected farm lots is observed using auger holes of 10 cm in diameter. The observation is made both before and after presaturation supply to grasp the influence of water supply on a change in groundwater level.

(3) Major findings

Through the field investigation for presaturation supply, the following findings were obtained.

a. Progress of presaturation

The supply of water was commenced on August 1. However, the water was not diverted as designed. The discharge taken into TASB 4 was decreased day by day due to drop of water level in the Main Canal. The scour gate at the Bernam River Headworks (BRH) was closed on August 6, 1986. Its response was so remarkable that the water level in the Main Canal was maintained at certain level after then. However, it was not recovered to the full supply level. The record of water level in the Main Canal is shown in Fig. C-2.

In spite of such a water shortage, the presaturation gradually advanced. The progress of presaturation in TASB 4 is shown in Fig. C-3. Within the period for presaturation set by DID (from August 1 to 20, 1986), the presaturation in TASB 4 was completed in 143 lots, which corresponds to 79% of the total farm lots of 182. The progress is uneven between lots. However, it should be noted that the supply of water was commenced in almost all the farm lots during the period for presaturation as shown in Table C-1.

b. Planting method

Planting method of each farm lot was inspected through field reconnaissance. Results are shown in the table below. In this planting season, direct seeding methods prevailed over 85% of the area. The transplanting method was limited to about 13% of the area. This tendency was found in the whole of Sungai Burong compartment.

<u>Planting method</u>	<u>Nos. of farm lots (%)</u>	
Direct seeding		
a. by machinery (dry)	36.5	(20%)
b. by hand broadcasting (dry)	111	(61%)
c. by hand broadcasting (wet)	7	(4%)
<u>Sub-total</u>	<u>154.5</u>	<u>(85%)</u>
Transplanting	23	(13%)
Not planting	4.5	(2%)
<b>Total</b>	<b>182</b>	<b>(100%)</b>

c. Use of syphon

Syphon is necessary to meet the requirement of farmers who practice direct seeding. The use of syphon was found in all the lots where the presaturation was completed as scheduled. A diameter of syphon used is 5 to 10 cm (2 to 4 inches). Number of syphon used in TASB 4 was counted by size as shown in Table C-1. It is found that the most farmers remove the syphon after the standing water depth becomes suitable. It seems that the excessive use of water is negligible in case that the dry direct seeding method is practiced.

In addition to the use of syphon, extra holes were found in the joints of conduits. Such holes are made by farmers. In TASB 4, 21 holes in total were found through the field inspection.

d. Effect of field ditch

Most farm lots in TASB 4 have a field ditch along the batas. The ditch is provided by DID to dry the farm lot within a short time before harvesting. It is found that this ditch is very effective for the smooth distribution of water during presaturation. In case that the machine is used for direct seeding, the trails of machine make water distribution smooth in the farm lot.

e. Obstructions in the canal

Farmer puts obstructions in the canal to get much water to his farm lot. This is done mainly in night time. The result of discharge measurement in the selected farm lots shows clearly this fact. The influence of obstructions to the flow in conduit is more remarkable than the use of syphon. It seems necessary that the use of obstruction should be inspected and prohibited by DID.

(4) Presaturation supply in TASB 4

The amount of water diverted into TASB 4 was estimated based on water level records and discharge measurements at the head of the conduit. Results of estimate are shown in Table C-2. Total amount of 533,000 cu.m of water was distributed into TASB 4 during 20 days of observation. By dividing this value by the area presaturated, the water depth supplied for presaturation was estimated. As no rain was recorded

during the period of observation, the figure obtained in the above estimate is regarded as the presaturation water supply. The water depth required for presaturation is estimated at about 260 mm.

The above was also examined in a selected farm lot in the middle reach of the conduit. In the selected farm lot in sub-block T, the presaturation was over on August 12. The standing water depth was 6.4 cm (2.5 inches) when the presaturation was completed. The total amount of 2,536 cu.m, or 2,062 cu.m/ha, was supplied during this period. Two syphons of 3-inch diameter were also used to supply the water for one day during the period. As the land area of the farm lot is 1.23 ha in net, the amount of water supplied for presaturation is converted to 206 mm in depth as shown in Table C-3.

According to interviews to farmers in sub-block T, presaturation supply to a 1.2-ha lot can be completed within three days, when 4-inch syphon is used and five days for 3-inch syphon. In order to confirm this, a discharge capacity of syphon was measured and the coefficient of discharge of syphon with various diameter was estimated. Figure C-4 shows the relationship between the discharge capacity, diameter of syphon and the hydraulic head from the water level in conduit to the outlet level of syphon.

As the average hydraulic head of syphon in sub-block T is assumed to be 0.6 m, the presaturation requirement can be estimated following the experiences by farmers. The result of estimate is shown below. The presaturation water requirement is estimated at about 230 mm in depth.

<u>Pipe Size</u> (inch)	<u>Discharge</u> (lit/s)	<u>Supply Period</u> (days)	<u>Total Supply</u>	
			(cu.m)	(mm)
4	10.6	3	2,748	227
3	6.3	5	2,722	225

It is noted that the above observations and analyses show similar value each other. It would be summarized that the presaturation water requirement is in the range from 210 to 230 mm at field offtake pipes, and about 260 mm at the head of the conduit.

### 2.1.3 Calculation of presaturation requirement

#### (1) Procedure and assumptions for calculation

Net presaturation requirement can be calculated applying the following equation.

$$PS = S + H + Ev + P$$

where, PS = Presaturation requirement  
S = Soil saturation requirement  
H = Standing water depth  
Ev = Evaporation  
P = Percolation rate

#### (a) Standing water depth

Required standing water depth on a lot varies depending upon planting methods of paddy as follows:

<u>Planting Methods</u>	<u>Standing Water Depth and Supply Period</u>	
	<u>1st Supply</u> (mm)(day)	<u>2nd Supply</u> (mm) (day)
Transplanting	100 (20)	-
Wet direct seeding	75 (15)	100 (20)
Dry direct seeding	50 (10)	100 (10)

#### (b) Soil saturation requirement

During the presaturation period for the off season paddy in 1986, it was observed that the groundwater table was about 60 cm below the ground surface and was kept unchanged during the period as shown in Table C-4. Subsoil layer is found 20 to 30 cm below the ground surface. It is, therefore, assumed that soil layer for saturation is about 30 cm. Soils in fields were also sampled and analyzed. The results are as shown in Table C-5. It becomes clear from the results that the vapor phase of the surface soil layer is about 30% in volume ranging between 36% and 16%. The water requirement necessary for soil saturation is, therefore, estimated at about 100 mm in depth including 10% allowance as shown below.



$$300 \text{ mm} \times 0.3 \times 1.1 = 99 \text{ mm, say } 100 \text{ mm}$$

(c) Evaporation

Evaporation from soil surface during the presaturation period is assumed to be the same as pan evaporation, which is observed to be 5 mm/day on an average.

(d) Percolation rate

During the field survey in Phase I study, percolation rate was measured in the farm lots selected from five compartments. The measurement was made using "quick method" equipment with two cylinders of different diameters. It was conducted in the evening time to prevent the effect of temperature. As seen in Table C-6, percolation loss thus measured is in a range between 0.6 to 1.9 mm/day. As an averaged figure, the percolation rate of 2 mm/day is applied for whole of the project area.

(2) Calculation of presaturation requirement

The net presaturation water requirements are estimated as shown in Table C-7, and are summarized below.

<u>Item</u>		<u>Trans-planting</u>	<u>Direct Seeding</u>	
			<u>Wet</u>	<u>Dry</u>
<u>1st presaturation supply</u>				
Supply period	(day)	20	15	10
Drainage period	(day)	-	5	-
Net supply amount	(mm)	320	265	210
	(mm/day)	(16.0)	(17.7)	(21.0)
<u>2nd presaturation supply</u>				
Supply period	(day)	-	20	10
Net supply amount	(mm)	-	240	120
	(mm/day)	-	(12.0)	(12.0)

**2.2 Normal Irrigation Requirement by Paddy**

The present DID operation manual for PBLs shows that gross water

requirement for normal irrigation is 1.165 lit/s/ha (60 acres/cusec) which corresponds to about 10 mm/day in water depth.

DID carried out the field investigation and the water balance study at on-farm level in Sawah Sempadan from February 1984 to November 1985 covering two off-season crops and two main season crops. The result of the study is summarized in Table C-8. As seen in the table, the average evapotranspiration measured for four crop seasons is estimated at 5.57 mm/day. Percolation loss is also measured at 2 mm/day on average. The sum of these two items, about 7.6 mm/day, is the net water requirement at the head of farm lot.

In order to confirm such values, the Study Team made the field measurement of net water requirement through observation of daily decrease in water depth in a farm lot. For this measurement, 14 farm lots under irrigation were selected from five compartments, Sungai Leman, Pasir Panjang, Sungai Nipah, Panchang Bedena and Bagan Terap, where batas were well maintained. The method of observation was as follows:

- a. At first, batas of farm lots was checked. Leakage and holes on the batas were repaired before observation.
- b. Drainage pipe of 15 cm (6 inches) in a farm lot was completely closed.
- c. Water was supplied to farm lots until the depth of water became 10 to 12.5 cm (4 to 5 inches).
- d. A wooden pile with nails was installed in a farm lot. Then the field offtake pipe was closed.
- e. Measurement of water depth in the farm lot was made daily at the fixed time (9:00 a.m.).
- f. The measurement was continued for one week until the water depth became 2.5 to 5 cm (1 to 2 inches).

As shown in Table C-9, the average value of daily decrease of water depth in the farm lots of four compartments except for Pasir Panjang is estimated at 7.4 mm/day. This is considered as the net water requirement. The net water requirements of both cases are very close each other. Therefore, 7.6 mm/day is applied to the water balance calculation as a net supply for the normal irrigation.

### **3. WATER BALANCE STUDY**

#### **3.1 General**

The water balance study (the study) of the Project was carried out to find the best method of water use as well as to identify the optimum irrigation development plan. The study was based on the proposed land use, cropping schedule and water management plans. Among many factors, the amount of water released through the scour sluice at BRH has the greatest influence on the result of study. It is, therefore, necessary to establish alternative plans regarding the use of the released water.

The contribution of the Tanjong Karang swamp as water source for the Project is considered to be so small as to be negligible.

#### **3.2 Alternative Cases for the Study**

Regarding the release of water from BRH, the following three alternative cases have been considered and tested in the study for each case. Conditions of each case are explained below.

**Case 1:** The water is released as it is. Namely, the scour gate is always open and a minimum of 6.2 cu.m/s (220 cusec) is released through the scour sluice. The amount of released water will be reduced to 4 cu.m/s during the dry period, when the Bernam runoff becomes below 18 cu.m/s. At the Bagan Terap pumphouse, 2.5 cu.m/s of water is taken to irrigate the pumped irrigation area (1,200 ha in Bagan Terap and 320 ha in Sungai Panjang ). The area commanded by BRH is 17,460 ha comprising 16,800 ha of paddy area and 660 ha of vegetable area.

**Case 2 :** The pumping of water at Bagan Terap is stopped. All the areas commanded by the Bagan Terap pumphouse at present are served by the Main Canal. The total irrigation area served by BRH is 18,980 ha. A minimum of 1.5 cu.m/s is released from BRH.

**Case 3 :** As in the Case 2, the pumping of water at Bagan Terap is stopped and BRH commands all the irrigable area of 18,980 ha. However, the scour gate is closed and no water is released

downstream. Counter-measures are taken for compensating the existing domestic and industrial (D&I) water supply schemes downstream.

### 3.3 Procedure and Assumptions for the Study

The study is made putting stress on the water balance during dry period and, therefore, discharges from swamp is neglected. Since the runoff of the Bernam river and rainfall in the project area have decreased in recent years, the study is made only for the recent 10 years from 1975 to 1984. Hydrological data used for the study is as follows:

Discharge data:

- a. At BRH: estimated mean discharge converting from discharge records observed at the SKC bridge station
- b. Swamp contribution: neglected

Rainfall data for estimation of effective rainfall:

- a. 5-day rainfall at Sungai Burong (Station No. 3411016) applying to the compartments of Sawah Sempadan, Sungai Burong and Sekinchan
- b. 5-day rainfall at Sungai Nipah (Station No. 3610001) applying to the remaining areas

In the computer simulation of water balance, effectiveness of rainfall is assumed as follows:

- a. rainfall less than 5 mm/day is ineffective;
- b. daily rainfall is effective up to the amount of daily net water requirement in a farm lot; and
- c. no carry over of rainfall to the next day is considered.

The required dependability of irrigation water supply is set at 80%, namely that water shortage should be accepted once in five years. The water shortage which is appeared in the computer outputs in a form of

'minus' does not always cause damage of crop. The damage of crop will be caused when the water in field disappears and a dry spell continues over 10 days. Taking unequitable distribution of water to whole the project area into account, it is assumed that the water shortage may occur when the water depth remaining on a farm lot becomes less than 1 cm on average.

### 3.4 Results of the Study

The results of the study are given in Tables 10 to 12, and summarized below. Explanation for the results is mentioned in the Main Report.

	<u>Case 1</u>	<u>Case 2</u>	<u>Case 3</u>
<u>Conditions</u>			
Irrigation area (ha)			
Served by BRH	17,460	18,980	18,980
Served by BT pumphouse	1,520	0	0
Minimum discharge released through scour sluice (cu.m/s)	4.0	1.5	0
<u>Water deficit</u>			
Frequency of occurrence	3/10	2/10	2/10
Amount of water deficit (million cu.m)			
- Biggest deficit	42	23	20
- 2nd biggest deficit	30	22	17
- 3rd biggest deficit	6	-	-
<u>Need for countermeasures</u>	Yes	No	No
Water source development (M\$ million)			
- Alt.1 Storage dam	70	-	-
- Alt.2 Regulating pond	20	-	-
Reduction of irri. area (ha)	500	-	-
<u>Need for compensation work</u>			
D&I water supply	No	No	Yes

In the Case 2, the deficit of water will occur twice in 10 years, which fulfill the proposed dependability of 80%. No administrative arrangement is required between the two States, Selangor and Perak, and no compensation work is necessary. The Case 2 has more advantages than the other two Cases.

### 3.5 Influence of Delay in Cropping Schedule

Influence of delay in cropping schedule was also examined for each Case. The study was conducted on the assumption that the cropping is made 10 to 40 days behind the schedule. The results of the study in case of 30 days delay are given in Tables 13 to 15 and are summarized in the table below.

	<u>Case 1</u>	<u>Case 2</u>	<u>Case 3</u>
<u>Frequency of water deficit</u>			
Dry season paddy	3/10	1/10	1/10
Wet season paddy	3/10	2/10	1/10
<u>Amount of water deficit (million cu.m)</u>			
Biggest deficit	51	49	39
2nd biggest deficit	25	24	20
3rd biggest deficit	21	20	14

Even if the proposed irrigation schedule is two weeks behind the original schedule, the increase in water deficit is negligible. If cropping is delayed over 30 days, however, the water deficit becomes significant in all Cases as shown in the above table. It may be difficult to strictly follow a fixed irrigation schedule for several years after introduction of the proposed water management. Some delay may occur in the actual cropping. In order to cope with such possible delay, it is desirable that the Bagan Terap pumphouse is retained to supplement irrigation supplies when water shortage occurs.

### 3.6 Influence of Decrease in Irrigation Efficiency

The conveyance and operation efficiency in the main and secondary canals is assumed to be 90% on condition that the leakage from the Main Canal is stopped and a proper water management is practiced. However, if

such a proper water management cannot be achieved in the future, water deficit estimated above surely increases. To examine the influence of decrease in irrigation efficiency of the main conveyance system, water balance study was made under the condition of the Case 2 with different overall efficiencies as follows:

<u>Case</u>	<u>Irr. Efficiency of Main System</u>	<u>Distribution Efficiency</u>	(Unit: %)
			<u>Overall Efficiency</u>
Original	90	75	67
Case A	85	75	64
Case B	80	75	60

The results of estimation is given in Tables 16 and 17, and are summarized in the following table.

	<u>Case A</u>	<u>Case B</u>
<u>Frequency of water deficit</u>		
Dry season paddy	1/10	2/10
Wet season paddy	1/10	1/10
<u>Amount of water deficit (million cu.m)</u>		
Biggest deficit	29	41
2nd biggest deficit	24	27
3rd biggest deficit	-	8

As shown in the above results, increase in water deficit is small in case of 64% overall efficiency. However, water deficit increases considerably when overall efficiency decreases as low as 60%. And the required dependability of irrigation water supply at 80% cannot be satisfied. In this case, supplement of water by the Bagan Terap pumphouse is indispensable.





# ***TABLES***



Table C-1 SITUATION OF PRESATURATION IN TASB 4 AREA

Item	Date					
	1/8	4/8	8/8	12/8	16/8	20/8
<b>Progress of Presaturation</b>						
Nos. of lot under irrigation (% to total lots)	113 (62%)	133 (73%)	158 (87%)	49 (27%)	55 (30%)	
Nos. of lot completed (% to total lots)	5 (3%)	12 (7%)	54 (30%)	99 (54%)	143 (79%)	
Progress of presaturation	19%	38%	61%	81%	90%	
<b>Water Distribution (lit/s)</b>						
Offtake discharge	467	320	314	302	313	252
<b>Way of supply</b>						
1) Field offtake pipe	198	166	122	13	81	
2) Syphon	107	133	171	248	159	
3) Extra hole	15	15	15	12	12	
<b>Number of Syphon Used</b>						
4-inch PVC	6	6	9	11	3	
3-inch PVC	8	9	13	21	14	
2-inch PVC	6	13	10	9	13	
Total	20	28	32	41	30	

Table C-2      PRESATURATION WATER SUPPLY TO TASB 4 AREA

Date	Discharge (lit/s)/ <u>1</u>	Supplied Amount (10 <sup>3</sup> cu.m)		Presaturated Area (ha)/ <u>3</u>	Supply in Depth(mm)
		4-day/ <u>2</u>	Acc.		
Aug. 1	467				
2	411				
3	(380)				
4	(320)	104.2	104.2	41	254
5	(308)				
6	296				
7	303				
8	314	106.4	210.6	81	260
9	320				
10	(314)				
11	308				
12	(316)	108.5	319.1	130	245
13	(313)				
14	311				
15	312				
16	313	108.2	427.3	173	247
17	326				
18	339				
19	294				
20	252	105.4	532.7	199	268

Remarks: 1 = Discharge measured at offtake TASB 4.  
 Figures in ( ) are the estimated one.  
2 = Presaturation water in volume estimated every four days.  
3 = Total area (213 ha)

Table C-3      PRESATURATION WATER SUPPLY TO SELECTED LOT

Lot No.7803 in Sub-block 7

Date	Amount Supplied (cu.m/day)			Standing water Depth (cm)
	Offtake pipe	Syphon	Total	
Aug. 1				
2	294	-	294	-
3	320	-	320	-
4	225	-	225	-
5	199	-	199	-
6	181	-	181	-
7	164	-	164	-
8	121	-	121	-
9	40	-	40	-
10	84	-	84	-
11	85	-	85	-
12	36	787	823	6.4
Total	1,749	787	2,536 <sup>/1</sup>	

Remarks: <sup>/1</sup> = This is equivalent to 206 mm in depth.  
2,536 cu.m/1.23 ha

Table C-4 GROUNDWATER TABLE IN TASB 4 AREA

	Unit: m		
	Sub-block Z	Sub-block T	Sub-block E
Aug. 1, 1986	0.42	0.66	0.62
Aug. 15, 1986	0.40	0.65	0.61

Remarks: Depth of groundwater table measured from the ground surface

Table C-5 SOIL PHYSICAL CHARACTERISTICS IN TASB 4 AREA

Item	Sub-block Z		Sub-block T		Sub-block E	
	10cm	30cm	10cm	30cm	10cm	30cm
1. Real Specific gravity	1.89	2.22	2.25	2.42	2.35	2.52
2. Three phases of soil (%)						
(1) Before presaturation (July 31, 1986)						
Solid phase (%)	28.0	30.7	29.8	30.1	30.5	36.3
Liquid phase (%)	30.2	33.0	33.7	38.8	32.5	42.8
Vapor phase (%)	41.8	36.3	36.5	31.1	37.0	20.9
(2) After presaturation (August, 1986)						
Solid phase (%)	29.3	30.5	30.1	31.7	29.9	38.9
Liquid phase (%)	66.2	64.4	67.5	64.1	66.8	59.1
Vapor phase (%)	4.5	5.1	2.4	4.2	3.3	2.0

Table C-6

## RESULT OF MEASUREMENT OF PERCOLATION LOSS

Compartment	Date of observation	Lot	Percolation loss (mm/day)	Remarks
Sg. Leman	July 30	12,404	1.4	
		12,406	4.1	no water
P. Pangang	July 31	13,180	4.0	no water
		16,326	2.9	no water
Sg. Nipah	Aug. 5	7,458	1.1	
		7,459	1.1	
P. Bedena	July 29	2,460	1.5	
		2,461	1.9	
B. Terap	Aug. 6	4,265		
		4,305	0.6	

Table C-7

ESTIMATION OF NET IRRIGATION WATER  
REQUIREMENT FOR PADDY

Item	Trans- planting	Direct Seeding	
		Wet	Dry
1. Applicable cropping season	Main	Main	Off
2. Growing period (days)	150	130	135
3. Irrigation supply period (days)			
Presaturation	20	35	20
Normal irrigation	105	85	85
Total supply period	125	120	105
4. Net irrigation supply (mm)			
Presaturation			
1st supply	(20 days)	(15 days)	(10 days)
Soil saturation	100	100	100
Standing water	100	75	50
Evaporation	100	75	50
Percolation	20	15	10
<u>Sub-total</u>	<u>320</u>	<u>265</u>	<u>210</u>
	(16.0mm/day)	(17.7mm/day)	(21.0mm/day)
2nd supply	-	(20 days)	(10 days)
Standing water		100	50
Evaporation		100	50
Percolation		40	20
<u>Sub-total</u>	<u>-</u>	<u>240</u>	<u>120</u>
		(12.0mm/day)	(12.0mm/day)
Total supply (mm)	320	505	330
Normal irrigation (mm/day)	7.6	7.6	7.6
5. Irrigation requirement at the offtake of tertiary canals			
Presaturation			
1st supply (mm)	427	353	280
(mm/day)	(21.4)	(23.5)	(28.0)
2nd supply (mm)		320	160
(mm/day)		(16.0)	(16.0)
Normal irrigation (mm/day)	10.1	10.1	10.1



Table C-8

## SUMMARY OF WATER BALANCE STUDY BY DID

Item	Unit	I	II	III	IV
A. Period of Measurement					
a) Crop Season		Off 1984	Main 1984	Off 1985	Main 1985
b) Date		Feb.11- May 20, '84	Sept.3- Dec.11, '84	Feb.21- May 31, '85	Aug.20- Nov.27, '85
c) Duration	days	100	100	100	100
B. Water Balance					
(1) Irrigation Supply					
a) Main canal					
- Mean discharge	cu.m	0.099	0.102	0.111	0.121
- Depth	mm	1,645	1,704	1,865	2,022
b) Rainfall	mm	370	464	471	603
c) Total supply	mm	2,015	2,168	2,336	2,625
(2) Consumption					
a) Evapotranspiration	mm	557	588	554	530
b) Percolation rate	mm	200	200	200	200
c) Soil saturation <sup>/1</sup>	mm	150	150	150	150
d) Standing water depth <sup>/2</sup>	mm	104	94	101	75
e) Total Consumption	mm	1,011	1,032	1,005	955
(3) Surface Outflow <sup>/3</sup>	mm	1,004	1,136	1,331	1,670

Remarks: /1 = Figure was assumed by the Team.

/2 = Water depth in the field on the final day of measurement.

/3 = Calculated figure [(1)-(2)].

Table C-9

RESULTS OF MEASUREMENT OF DAILY DECREASE OF  
WATER DEPTH IN LOT

Compartment	Lot	Daily decrease in water depth (mm/day)	Average for Compartment (mm/day)
Sg. Leman	12,403	4.8	
	12,404	7.5	
	12,406	4.0	5.4
P. Panjang	13,180	27.6	
	16,326	21.0	-
Sg. Nipah	7,458	7.8	
	7,459	10.2	
	7,460	9.3	9.1
P. Bedena	2,460	6.7	
	2,461	7.5	
	2,463	7.7	7.3
B. Terap	4,265	8.0	
	4,278	8.0	
	4,305	7.8	7.9
Average			7.4

Table C-10 (1/5)

## WATER BALANCE FOR CASE 1 IN 1978

YEAR : 1978															
PERIOD	RUNOFF (CUM/S)	PADDY				TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS'N REQM'T (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRN (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)	BLOCK 4 (CUM/S)										
<b>JAN</b>															
1-5	17.66	2.72	2.97	4.94	16.62	0.81	0.47	17.90	4.00	-4.22	-1.82	0.	4.00	86.	
6-10	18.58	0.	2.58	2.14	4.72	0.	0.47	5.19	5.00	8.39	0.	1.80	9.17	100.	
11-15	18.77	0.	0.36	0.	0.36	0.	0.47	0.83	5.00	12.94	0.	5.59	17.94	100.	
16-20	24.80	0.	5.15	4.29	9.44	0.	0.47	9.91	6.00	8.89	0.	3.84	14.89	100.	
21-25	18.05	0.	4.45	3.70	8.15	0.	0.47	8.62	5.00	4.43	0.	1.91	9.43	100.	
26-END	14.22	0.	2.97	4.54	7.90	0.81	0.47	9.18	4.00	1.04	0.	0.54	5.04	100.	
<b>FEB</b>															
1-5	11.82	0.	2.97	4.94	7.90	0.81	0.47	9.18	4.00	-1.36	-0.59	0.	4.00	90.	
6-10	13.66	0.	0.	4.94	4.94	0.81	0.47	6.22	4.00	3.44	0.	0.90	6.08	100.	
11-15	13.84	0.	0.	4.35	4.35	0.	0.47	4.82	4.00	5.02	0.	2.17	9.02	100.	
16-20	16.55	0.	0.	1.26	1.26	0.81	0.47	2.54	4.00	10.01	0.	4.33	14.01	100.	
21-25	10.92	7.51	0.	2.77	10.28	0.81	0.47	11.56	4.00	-4.64	-2.00	0.	4.00	56.	
26-END	11.18	3.70	0.	0.	3.70	0.	0.47	4.17	4.00	3.01	-1.22	0.	4.00	63.	
<b>MAR</b>															
1-5	10.46	5.61	0.	0.84	6.46	0.	0.47	6.93	4.00	-0.47	-1.43	0.	4.00	74.	
6-10	11.40	12.05	0.	0.	12.05	0.81	0.47	13.33	4.00	-5.93	-3.99	0.	4.00	4.	
11-15	13.83	11.98	0.	0.	11.98	0.	0.47	12.45	4.00	-2.62	-5.12	0.	4.00	18.	
16-20	13.61	14.77	0.	0.	14.77	0.81	0.47	16.05	4.00	-6.44	-7.90	0.	4.00	-27.	
21-25	16.36	3.54	5.99	0.	9.51	0.	0.47	10.00	4.00	2.36	-6.88	0.	4.00	19.	
26-END	15.26	3.95	5.02	0.	8.97	0.	0.47	9.44	4.00	2.42	-5.62	0.	4.00	34.	
<b>APR</b>															
1-5	19.77	2.15	12.29	0.	20.44	0.81	0.47	21.72	5.00	-6.95	-8.63	0.	5.00	20.	
6-10	19.41	2.15	10.53	0.	18.49	0.81	0.47	19.97	5.00	-5.56	-11.03	0.	5.00	-2.	
11-15	21.72	7.29	15.87	0.	23.17	0.35	0.47	23.99	5.00	-7.27	-14.17	0.	5.00	-9.	
16-20	10.82	2.15	12.11	0.	14.26	0.81	0.47	25.54	6.00	-0.72	-14.48	0.	6.00	-11.	
21-25	70.28	2.15	10.10	4.31	22.56	0.81	0.47	23.84	6.00	40.44	0.	2.99	12.92	100.	
26-END	41.50	2.15	3.03	1.60	12.98	0.81	0.47	14.26	6.00	21.24	0.	9.17	27.24	100.	
<b>MAY</b>															
1-5	45.55	2.15	2.73	7.16	24.05	0.81	0.47	25.33	6.00	14.22	0.	6.14	20.22	100.	
6-10	57.43	0.	0.	3.92	3.92	0.	0.47	4.39	6.00	47.04	0.	20.32	53.04	100.	
11-15	68.21	2.05	2.93	2.94	25.92	0.75	0.47	27.14	6.00	35.67	0.	15.41	41.67	100.	
16-20	45.47	2.15	2.97	2.94	26.06	0.81	0.47	27.34	6.00	12.13	0.	5.24	18.13	100.	
21-25	37.32	2.15	2.97	2.04	23.16	0.81	0.47	24.44	6.00	6.88	0.	2.97	12.88	100.	
26-END	22.14	2.15	2.97	5.52	22.70	0.81	0.47	23.98	6.00	-7.84	-4.07	0.	6.00	76.	
<b>JUN</b>															
1-5	21.37	5.15	7.05	4.94	17.94	0.	0.47	18.41	5.00	-2.04	-4.94	0.	5.00	71.	
6-10	19.66	2.50	5.25	3.70	12.65	0.	0.47	12.52	5.00	2.14	-4.02	0.	5.00	73.	
11-15	16.94	5.44	2.97	4.94	19.34	0.81	0.47	20.62	4.00	-7.68	-7.34	0.	4.00	50.	
16-20	13.30	0.	5.70	4.74	10.44	0.	0.47	10.91	4.00	-1.61	-8.03	0.	4.00	37.	
21-25	12.70	2.72	2.97	4.94	16.62	0.81	0.47	17.90	4.00	-9.20	-12.01	0.	4.00	5.	
26-END	11.81	0.	4.29	3.57	7.87	0.	0.47	8.34	4.00	-0.53	-12.24	0.	4.00	-16.	
<b>JUL</b>															
1-5	10.75	0.	2.97	4.94	13.90	0.81	0.47	15.18	4.00	-8.43	-15.88	0.	4.00	-50.	
6-10	16.04	0.	3.92	4.94	10.82	0.	0.47	11.34	4.00	0.70	-15.58	0.	4.00	-88.	
11-15	13.28	0.	3.92	3.31	7.29	0.81	0.47	8.57	4.00	0.71	-15.27	0.	4.00	-84.	
16-20	12.25	0.	2.49	4.48	7.18	0.81	0.47	8.46	4.00	-0.21	-15.36	0.	4.00	-155.	
21-25	16.29	0.	2.97	4.94	7.90	0.81	0.47	9.18	4.00	3.11	-14.02	0.	4.00	-133.	
26-END	12.04	0.	0.	4.94	4.94	0.	0.47	5.41	4.00	2.63	-12.65	0.	4.00	-237.	
<b>AUG</b>															
1-5	9.43	0.	0.	4.94	4.94	0.41	0.47	5.82	4.00	-0.39	-12.82	0.	4.00	-241.	
6-10	8.59	0.	0.	3.29	3.29	0.58	0.47	4.34	4.00	0.25	-12.71	0.	4.00	-407.	
11-15	14.12	5.15	0.	0.	5.15	0.	0.47	5.62	4.00	4.30	-10.77	0.	4.00	-135.	
16-20	10.74	7.51	0.	0.	7.51	0.81	0.47	8.79	4.00	-2.05	-11.66	0.	4.00	-251.	
21-25	9.18	12.05	0.	1.25	13.70	0.81	0.47	14.98	4.00	-9.80	-15.89	0.	4.00	-195.	
26-END	6.72	7.42	0.	0.	7.42	0.	0.47	7.89	4.00	-3.17	-17.53	0.	4.00	-323.	
<b>SEP</b>															
1-5	10.27	13.70	0.	0.	13.70	0.24	0.47	14.41	4.00	-8.14	-21.04	0.	4.00	-239.	
6-10	17.69	11.44	0.	0.	11.44	0.	0.47	11.91	4.00	-4.22	-22.87	0.	4.00	-268.	
11-15	11.42	5.09	6.78	0.	12.47	0.	0.47	12.94	4.00	-5.52	-25.25	0.	4.00	-196.	
16-20	8.44	0.	0.	0.	0.	0.	0.47	0.47	4.00	3.97	-23.54	0.	4.00	-176.	
21-25	23.20	0.	6.44	0.	6.44	0.	0.47	6.91	6.00	10.29	-19.09	0.	6.00	-77.	
26-END	13.24	2.15	13.27	0.	21.42	0.31	0.47	22.70	4.00	-13.46	-24.91	0.	4.00	-131.	
<b>OCT</b>															
1-5	12.15	2.15	16.19	0.	20.34	0.81	0.47	25.62	4.00	-17.47	-32.46	0.	4.00	-149.	
6-10	9.79	2.47	7.23	0.	10.30	0.	0.47	10.77	4.00	-4.98	-34.61	0.	4.00	-165.	
11-15	13.05	2.15	10.96	4.55	23.68	0.81	0.47	24.94	4.00	-15.89	-41.47	0.	4.00	-190.	
16-20	15.77	0.	7.93	4.59	12.47	0.	0.47	12.94	4.00	-1.17	-41.97	0.	4.00	-194.	
21-25	28.97	0.	2.81	5.58	6.37	0.	0.47	8.84	6.00	14.13	-35.87	0.	6.00	-131.	
26-END	56.70	3.59	2.33	3.34	9.26	0.	0.47	9.73	6.00	42.97	-13.59	0.	6.00	13.	
<b>NOV</b>															
1-5	42.77	0.	0.23	4.20	4.44	0.	0.47	4.91	6.00	51.86	0.	8.81	26.40	100.	
6-10	53.95	0.	0.	1.34	1.34	0.	0.47	1.81	6.00	46.14	0.	19.93	52.14	100.	
11-15	67.91	0.	0.	0.	0.	0.	0.47	0.47	6.00	61.44	0.	26.54	67.44	100.	
16-20	82.64	6.27	2.49	6.64	21.40	0.13	0.47	21.99	6.00	54.65	0.	23.61	60.65	100.	
21-25	71.43	2.15	2.97	4.94	22.66	0.21	0.47	23.34	6.00	48.09	0.	20.78	54.09	100.	
26-END	43.46	2.15	2.97	4.94	22.66	0.31	0.47	23.34	6.00	14.12	0.	6.10	20.12	100.	
<b>DEC</b>															
1-5	32.09	0.	1.41	1.17	2.57	0.	0.47	3.04	6.00	23.05	0.	9.96	29.05	100.	
6-10	46.05	0.	0.	0.	0.	0.	0.47	0.47	6.00	41.58	0.	17.96	47.58	100.	
11-15	33.45	2.15	3.50	0.39	12.04	0.21	0.47	13.32	6.00	14.13	0.	6.10	20.13	100.	
16-20	23.21	4.22	4.73	3.64	14.52	0.	0.47	15.05	6.00	2.16	0.	0.93	8.16	100.	
21-25	21.78	0.	5.15	4.29	9.44	0.	0.47	9.91	5.00	6.87	0.	2.97	11.87	100.	
26-END	17.37	2.72	2.97	4.94	16.62	0.81	0.47	17.90	4.00	-4.53	-2.35	0.	4.00	81.	

Table C-10 (2/5)

WATER BALANCE FOR CASE 1 IN 1979

YEAR : 1979

PERIOD	RUNOFF (CUM/S)	BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)	TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS'N REQ'NT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. ENDR BRN (CUM/S)	WATER DEPTH (MM)
JAN														
1-5	18.17	0.	0.	0.	0.	0.	0.47	0.47	5.00	12.70	0.	3.14	12.26	100.
6-10	17.80	0.	0.29	4.29	11.08	0.	0.47	11.55	4.00	2.25	0.	0.97	6.25	100.
11-15	15.18	0.	8.97	4.94	13.90	0.81	0.47	15.18	4.00	-4.00	-1.23	0.	4.00	84.
16-20	11.95	0.	5.93	4.94	10.87	0.81	0.47	12.15	4.00	-4.20	-3.54	0.	4.00	57.
21-25	11.99	0.	4.37	3.64	8.01	0.18	0.47	8.66	4.00	-0.67	-3.83	0.	4.00	34.
26-END	11.25	0.	2.97	4.94	7.90	0.81	0.47	9.18	4.00	-1.93	-4.84	0.	4.00	20.
FEB														
1-5	11.10	0.	2.97	4.94	7.90	0.81	0.47	9.18	4.00	-2.08	-5.74	0.	4.00	5.
6-10	12.22	0.	0.	2.34	2.34	0.13	0.47	2.93	4.00	5.29	-3.45	0.	4.00	8.
11-15	11.84	0.	0.	1.04	1.04	0.70	0.47	2.20	4.00	5.64	-1.02	0.	4.00	75.
16-20	14.90	0.	0.	0.	0.	0.18	0.47	0.65	4.00	10.25	0.	3.41	11.89	100.
21-25	35.77	5.86	0.	0.	5.86	0.	0.47	6.33	6.00	23.44	0.	10.12	29.44	100.
26-END	34.91	12.52	0.	1.65	14.16	0.81	0.47	15.44	6.00	13.47	0.	3.49	19.47	100.
MAR														
1-5	27.97	12.05	0.	1.65	13.70	0.81	0.47	14.98	6.00	6.99	0.	3.02	12.99	100.
6-10	25.87	12.05	0.	0.	12.05	0.81	0.47	13.33	6.00	6.54	0.	2.83	12.54	100.
11-15	22.75	14.77	0.	0.	14.77	0.81	0.47	16.05	6.00	0.70	0.	0.30	6.70	100.
16-20	50.69	14.77	0.	0.	14.77	0.81	0.47	16.05	6.00	28.64	0.	12.37	34.64	100.
21-25	65.60	9.98	8.38	0.	18.36	0.81	0.47	19.64	6.00	39.96	0.	17.26	45.96	100.
26-END	39.88	9.22	4.98	0.	16.20	0.81	0.47	17.48	6.00	16.40	0.	8.50	22.60	100.
APR														
1-5	51.33	8.15	13.27	0.	21.42	0.81	0.47	22.70	6.00	22.63	0.	9.78	28.63	100.
6-10	42.36	8.15	12.10	0.	20.25	0.81	0.47	21.53	6.00	14.83	0.	6.41	20.83	100.
11-15	33.29	8.15	3.81	0.	11.97	0.81	0.47	13.25	6.00	14.04	0.	6.07	20.04	100.
16-20	28.31	8.15	16.19	0.	24.34	0.81	0.47	25.62	6.00	-3.31	-1.43	0.	6.00	89.
21-25	35.43	0.	0.	0.87	0.87	0.	0.47	1.34	6.00	28.09	0.	10.71	30.78	100.
26-END	45.29	0.	0.	1.30	1.30	0.	0.47	1.77	6.00	37.52	0.	16.21	43.52	100.
MAY														
1-5	56.30	8.15	8.97	7.29	24.41	0.81	0.47	25.69	6.00	24.61	0.	10.63	30.61	100.
6-10	37.52	8.15	8.97	7.29	24.41	0.81	0.47	25.69	6.00	5.83	0.	2.52	11.83	100.
11-15	50.60	8.15	4.28	5.05	17.48	0.81	0.47	18.76	6.00	25.84	0.	11.16	31.84	100.
16-20	23.45	8.15	8.97	8.94	26.06	0.81	0.47	27.34	6.00	9.89	-4.27	0.	6.00	75.
21-25	19.04	8.15	8.19	5.39	21.73	0.81	0.47	23.01	5.00	-8.97	-8.15	0.	5.00	51.
26-END	26.77	0.	1.38	1.79	3.17	0.	0.47	3.64	6.00	17.13	0.	0.73	7.41	100.
JUN														
1-5	29.59	8.15	7.41	3.64	19.20	0.81	0.47	20.48	6.00	3.11	0.	1.35	9.11	100.
6-10	66.74	0.	3.59	2.99	6.58	0.	0.47	7.05	6.00	53.69	0.	23.19	59.69	100.
11-15	67.25	0.66	0.48	0.	1.14	0.	0.47	1.81	6.00	59.44	0.	23.68	65.44	100.
16-20	30.56	1.97	5.79	2.99	10.74	0.	0.47	11.21	6.00	13.35	0.	5.77	19.35	100.
21-25	23.12	2.72	8.97	4.94	16.62	0.81	0.47	17.90	6.00	-0.78	-0.34	0.	6.00	97.
26-END	20.28	0.	8.97	4.54	13.50	0.81	0.47	15.18	5.00	0.10	-0.30	0.	5.00	97.
JUL														
1-5	17.74	0.	8.97	4.94	13.90	0.81	0.47	15.18	4.00	-1.44	-0.92	0.	4.00	91.
6-10	15.61	0.	5.93	4.94	10.87	0.	0.47	11.34	4.00	0.27	-0.80	0.	4.00	90.
11-15	22.67	0.	5.93	4.94	10.87	0.52	0.47	11.87	6.00	4.80	0.	1.27	8.95	100.
16-20	24.02	0.	2.97	4.94	7.90	0.	0.47	8.37	6.00	9.65	0.	4.17	13.65	100.
21-25	73.93	0.	0.	0.	0.	0.	0.47	0.47	6.00	67.46	0.	29.14	73.46	100.
26-END	49.59	0.	0.	4.40	4.40	0.81	0.47	5.67	6.00	37.92	0.	19.66	43.92	100.
AUG														
1-5	23.82	0.	0.	3.64	3.64	0.81	0.47	4.92	6.00	12.90	0.	5.57	18.90	100.
6-10	21.66	0.	0.	3.29	3.29	0.81	0.47	4.57	5.00	12.09	0.	5.22	17.09	100.
11-15	17.45	7.51	0.	2.43	9.93	0.81	0.47	11.21	4.00	2.24	0.	0.97	6.24	100.
16-20	20.85	5.94	0.	1.65	7.58	0.	0.47	8.05	5.00	7.80	0.	3.37	12.80	100.
21-25	26.95	12.05	0.	1.43	13.48	0.81	0.47	14.76	6.00	6.19	0.	2.67	12.19	100.
26-END	28.20	3.07	0.	0.	3.07	0.	0.47	3.54	6.00	18.66	0.	9.67	24.66	100.
SEP														
1-5	43.99	11.98	0.	0.	11.98	0.	0.47	12.45	6.00	25.54	0.	11.03	31.54	100.
6-10	55.35	14.77	0.	0.	14.77	0.81	0.47	16.05	6.00	33.30	0.	14.39	39.30	100.
11-15	76.67	9.98	8.38	0.	18.36	0.81	0.47	19.64	6.00	51.03	0.	22.05	57.03	100.
16-20	80.10	7.62	7.50	0.	15.12	0.	0.47	15.59	6.00	58.51	0.	25.28	64.51	100.
21-25	42.58	8.15	13.27	0.	21.42	0.81	0.47	22.70	6.00	13.88	0.	6.00	19.88	100.
26-END	37.18	0.32	9.18	0.	9.50	0.	0.47	9.97	6.00	21.21	0.	9.16	27.21	100.
OCT														
1-5	25.41	8.15	16.19	0.	24.34	0.81	0.47	25.62	6.00	-6.21	-2.68	0.	6.00	79.
6-10	27.75	0.	12.38	0.	12.38	0.	0.47	12.85	6.00	8.90	0.	1.16	8.49	100.
11-15	37.89	0.	0.	1.08	1.08	0.	0.47	1.55	6.00	30.34	0.	13.11	36.34	100.
16-20	40.53	5.15	9.66	4.33	18.54	0.	0.47	19.03	6.00	15.52	0.	6.71	21.52	100.
21-25	46.28	1.29	0.48	0.	1.77	0.	0.47	2.24	6.00	38.04	0.	16.43	44.04	100.
26-END	79.24	0.46	0.90	3.19	4.56	0.	0.47	5.03	6.00	68.21	0.	35.36	74.21	100.
NOV														
1-5	73.36	0.	5.93	8.94	14.88	0.	0.47	15.35	6.00	52.01	0.	22.47	58.01	100.
6-10	79.14	8.15	4.28	5.05	17.48	0.81	0.47	18.76	6.00	54.38	0.	23.49	60.38	100.
11-15	80.54	0.97	3.17	3.44	7.58	0.	0.47	8.05	6.00	66.49	0.	28.72	72.49	100.
16-20	168.88	0.	3.59	4.09	7.68	0.	0.47	8.15	6.00	154.73	0.	66.84	160.73	100.
21-25	111.50	3.33	4.05	2.34	9.71	0.	0.47	10.18	6.00	95.32	0.	41.18	101.32	100.
26-END	114.39	0.	0.	0.	0.	0.	0.47	0.47	6.00	107.92	0.	46.62	113.92	100.
DEC														
1-5	80.48	0.	5.93	4.94	10.87	0.	0.47	11.34	6.00	63.14	0.	27.28	69.14	100.
6-10	59.83	8.15	8.97	4.94	22.06	0.81	0.47	23.34	6.00	30.49	0.	13.17	36.49	100.
11-15	40.53	7.40	8.69	4.94	21.03	0.41	0.47	21.91	6.00	12.62	0.	5.45	18.62	100.
16-20	34.72	4.51	8.45	4.94	17.89	0.07	0.47	18.43	6.00	10.29	0.	4.45	16.29	100.
21-25	31.69	5.44	8.19	4.29	17.91	0.81	0.47	19.19	6.00	6.50	0.	2.81	12.50	100.
26-END	26.61	2.72	8.97	4.94	16.62	0.81	0.47	17.90	6.00	2.71	0.	1.40	8.71	100.

Table C-10 (3/5)

## WATER BALANCE FOR CASE 1 IN 1980

YEAR : 1980

PERIOD	RUNOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS'N REQMT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (CM)	SURPLUS (CM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
JAN														
1-5	25.45	2.47	7.91	4.29	14.66	0.41	0.47	15.54	6.00	3.91	0.	1.69	9.91	100.
6-10	22.79	0.	3.64	1.04	4.88	0.18	0.47	5.53	6.00	11.26	0.	4.86	17.26	100.
11-15	18.04	0.	7.41	3.64	11.04	0.81	0.47	12.32	5.00	0.72	0.	0.31	5.72	100.
16-20	15.61	0.	5.93	4.94	10.87	0.	0.47	11.34	4.00	0.27	0.	0.12	4.27	100.
21-25	14.56	0.	5.93	4.94	10.87	0.81	0.47	12.15	4.00	-1.59	-0.69	0.	4.00	92.
26-END	19.16	0.	2.97	4.94	7.90	0.81	0.47	9.18	5.00	4.98	0.	1.89	8.65	100.
FEB														
1-5	14.68	0.	2.97	4.94	7.90	0.81	0.47	9.18	4.00	1.50	0.	0.65	5.50	100.
6-10	12.03	0.	0.	4.94	4.94	0.81	0.47	6.22	4.00	1.81	0.	0.78	5.81	100.
11-15	10.19	0.	0.	4.94	4.94	0.81	0.47	6.22	4.00	-0.03	-0.01	0.	4.00	100.
16-20	9.13	0.	0.	2.86	2.86	0.	0.47	3.33	4.00	1.80	0.	0.77	5.78	100.
21-25	12.87	7.51	0.	2.86	10.37	0.81	0.47	11.65	4.00	-2.78	-1.20	0.	4.00	74.
26-END	28.10	5.32	0.	1.65	6.97	0.	0.47	7.44	6.00	14.66	0.	3.87	17.19	100.
MAR														
1-5	36.12	3.54	0.	0.13	3.67	0.	0.47	4.14	6.00	25.98	0.	11.22	31.98	100.
6-10	59.28	11.76	0.	0.	11.76	0.58	0.47	12.82	6.00	40.46	0.	17.48	46.46	100.
11-15	21.56	11.12	0.	0.	11.12	0.	0.47	11.59	5.00	4.97	0.	2.15	9.97	100.
16-20	27.68	14.77	0.	0.	14.77	0.81	0.47	16.05	6.00	5.63	0.	2.43	11.63	100.
21-25	22.73	8.15	7.70	0.	15.85	0.	0.47	16.32	6.00	0.41	0.	0.18	6.41	100.
26-END	19.44	7.70	6.42	0.	14.12	0.	0.47	14.59	5.00	-0.15	-0.08	0.	5.00	99.
APR														
1-5	21.67	0.	8.20	0.	8.20	0.	0.47	8.67	5.00	8.15	0.	3.44	12.97	100.
6-10	25.89	0.	7.22	0.	7.22	0.	0.47	7.69	6.00	12.20	0.	5.27	18.20	100.
11-15	25.50	5.15	1.92	0.	7.06	0.	0.47	7.53	6.00	11.97	0.	5.17	17.97	100.
16-20	19.27	8.05	16.15	0.	24.20	0.75	0.47	25.42	5.00	-11.15	-4.82	0.	5.00	63.
21-25	17.73	0.	7.93	4.55	12.47	0.	0.47	12.94	4.00	0.79	-4.47	0.	4.00	69.
26-END	44.30	8.05	7.79	3.62	19.52	0.75	0.47	20.74	6.00	17.56	0.	3.11	13.20	100.
MAY														
1-5	46.47	0.	5.93	7.29	13.23	0.	0.47	13.70	6.00	26.77	0.	11.57	32.77	100.
6-10	71.85	0.	0.	1.08	1.08	0.	0.47	1.55	6.00	64.30	0.	27.78	70.30	100.
11-15	68.50	0.	5.15	6.29	15.45	0.	0.47	13.92	6.00	48.58	0.	20.99	54.58	100.
16-20	57.41	0.	2.81	6.34	9.16	0.	0.47	9.63	6.00	41.78	0.	18.05	47.78	100.
21-25	33.02	8.15	5.84	3.44	17.44	0.81	0.47	18.72	6.00	8.30	0.	3.59	14.30	100.
26-END	37.61	7.53	8.08	5.04	20.65	0.41	0.47	21.53	6.00	10.08	0.	5.22	16.08	100.
JUN														
1-5	32.77	0.	5.15	4.29	9.44	0.	0.47	9.91	6.00	16.86	0.	7.28	22.86	100.
6-10	36.61	5.29	7.33	3.64	16.26	0.70	0.47	17.42	6.00	13.19	0.	5.70	19.19	100.
11-15	29.20	4.58	8.49	4.94	18.00	0.13	0.47	18.60	6.00	0.60	0.	0.26	6.60	100.
16-20	36.07	2.18	6.21	3.64	12.63	0.	0.47	13.16	6.00	18.97	0.	8.20	24.97	100.
21-25	24.53	2.04	6.21	4.94	15.18	0.	0.47	15.65	6.00	2.88	0.	1.24	8.88	100.
26-END	23.90	0.	8.94	4.94	13.88	0.78	0.47	15.12	6.00	2.78	0.	1.20	8.78	100.
JUL														
1-5	17.20	0.	8.97	4.94	13.90	0.81	0.47	15.18	4.00	-1.98	-0.86	0.	4.00	92.
6-10	14.59	0.	5.93	4.94	10.87	0.07	0.47	11.41	4.00	-0.82	-1.21	0.	4.00	85.
11-15	13.44	0.	5.15	4.29	9.44	0.81	0.47	10.72	4.00	-1.28	-1.76	0.	4.00	79.
16-20	29.52	0.	0.	0.	0.	0.	0.47	0.47	6.00	23.05	0.	8.19	24.97	100.
21-25	22.95	0.	0.	0.	0.	0.	0.47	0.47	6.00	16.48	0.	7.12	22.48	100.
26-END	37.34	0.	0.	2.77	2.77	0.	0.47	3.24	6.00	28.10	0.	14.57	34.10	100.
AUG														
1-5	38.52	0.	0.	4.94	4.94	0.	0.47	5.41	6.00	26.91	0.	11.63	32.91	100.
6-10	26.12	0.	0.	3.29	3.29	0.	0.47	3.76	6.00	16.36	0.	7.07	22.36	100.
11-15	25.35	7.51	0.	2.43	9.93	0.81	0.47	11.21	6.00	8.14	0.	3.51	14.14	100.
16-20	21.11	3.33	0.	0.35	3.67	0.	0.47	4.14	5.00	11.97	0.	5.17	16.97	100.
21-25	24.01	12.05	0.	1.00	13.05	0.81	0.47	14.33	6.00	63.68	0.	27.51	69.68	100.
26-END	43.59	7.36	0.	0.	7.36	0.	0.47	7.83	6.00	29.76	0.	15.43	35.76	100.
SEP														
1-5	30.07	12.94	0.	0.	12.94	0.	0.47	13.41	6.00	10.66	0.	4.60	16.66	100.
6-10	40.36	8.65	0.	0.	8.65	0.	0.47	9.12	6.00	25.24	0.	10.90	31.24	100.
11-15	26.64	9.92	8.36	0.	18.36	0.81	0.47	19.64	6.00	1.00	0.	0.43	7.00	100.
16-20	47.59	9.92	8.38	0.	18.36	0.81	0.47	19.64	6.00	15.95	0.	4.89	21.95	100.
21-25	75.58	0.21	7.19	0.	7.40	0.	0.47	7.87	6.00	61.71	0.	26.66	67.71	100.
26-END	50.95	6.01	11.30	0.	17.30	0.	0.47	17.77	6.00	27.18	0.	11.74	33.18	100.
OCT														
1-5	47.21	0.	13.16	0.	13.16	0.	0.47	13.63	6.00	27.58	0.	11.92	33.58	100.
6-10	73.82	0.	13.16	0.	13.16	0.	0.47	13.63	6.00	54.25	0.	23.44	60.25	100.
11-15	77.04	4.61	8.86	4.33	17.60	0.	0.47	18.27	6.00	52.77	0.	22.80	58.77	100.
16-20	254.74	8.15	10.18	4.33	22.64	0.81	0.47	23.94	6.00	224.80	0.	97.11	230.80	100.
21-25	64.81	3.75	7.33	7.29	18.38	0.	0.47	18.85	6.00	39.96	0.	17.26	45.96	100.
26-END	40.27	0.	3.33	4.64	7.97	0.	0.47	8.44	6.00	25.83	0.	13.39	31.83	100.
NOV														
1-5	35.41	0.	1.25	5.65	6.30	0.	0.47	6.77	6.00	22.64	0.	9.78	28.64	100.
6-10	33.34	8.15	7.41	7.64	23.20	0.81	0.47	24.48	6.00	2.88	0.	1.24	8.88	100.
11-15	36.21	6.97	6.97	4.74	18.68	0.18	0.47	19.33	6.00	10.88	0.	4.70	16.88	100.
16-20	49.29	8.15	8.19	5.39	21.73	0.81	0.47	23.01	6.00	20.28	0.	8.76	26.28	100.
21-25	70.87	0.	0.	0.	0.	0.	0.47	0.47	6.00	64.40	0.	27.82	70.40	100.
26-END	80.97	6.67	4.58	1.29	13.14	0.13	0.47	13.73	6.00	61.24	0.	26.45	67.24	100.
DEC														
1-5	28.39	0.	0.	0.	0.	0.	0.47	0.47	6.00	81.92	0.	35.39	87.92	100.
6-10	158.55	2.79	1.64	0.	3.83	0.	0.47	4.30	6.00	148.25	0.	64.05	154.25	100.
11-15	148.08	8.15	8.57	4.94	22.06	0.81	0.47	23.34	6.00	118.74	0.	57.30	124.74	100.
16-20	71.17	4.72	2.63	0.	7.35	0.24	0.47	8.06	6.00	57.11	0.	24.67	63.11	100.
21-25	53.13	0.	5.93	4.94	10.87	0.	0.47	11.34	6.00	35.79	0.	15.46	41.79	100.
26-END	45.21	2.63	2.93	0.	5.56	0.64	0.47	6.67	6.00	32.54	0.	16.87	38.54	100.

Table C-10 (4/5)

## WATER BALANCE FOR CASE 1 IN 1981

YEAR : 1981																
PERIOD	RURKOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	O & I WATER (CUM/S)	DIVERS'N REQMT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)		
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)												
JAN																
1-5	54.19	0.43	5.63	4.29	10.35	0.	0.47	10.82	6.00	37.37	0.	16.14	43.37	100.		
6-10	52.32	0.	5.93	4.94	10.87	0.	0.47	11.34	6.00	34.98	0.	15.11	40.98	100.		
11-15	37.97	0.	8.97	4.94	13.90	0.81	0.47	15.18	6.00	16.79	0.	7.25	22.79	100.		
16-20	34.74	0.	5.93	4.94	10.87	0.30	0.47	11.64	6.00	17.10	0.	7.39	23.10	100.		
21-25	32.50	0.	5.15	4.29	9.44	0.81	0.47	10.72	6.00	15.78	0.	6.82	21.78	100.		
26-END	27.20	0.	2.97	4.94	7.90	0.81	0.47	9.18	6.00	12.02	0.	6.23	18.02	100.		
FEB																
1-5	39.70	0.	2.58	4.29	6.86	0.	0.47	7.33	6.00	26.37	0.	11.39	32.37	100.		
6-10	32.25	0.	0.	4.94	4.94	0.24	0.47	5.65	6.00	20.60	0.	8.90	26.60	100.		
11-15	31.98	0.	0.	4.94	4.94	0.	0.47	5.41	6.00	20.57	0.	8.89	26.57	100.		
16-20	51.76	0.	0.	3.29	3.29	0.81	0.47	4.57	6.00	41.19	0.	17.79	47.19	100.		
21-25	30.51	6.79	0.	1.56	8.35	0.	0.47	8.82	6.00	15.69	0.	6.76	21.69	100.		
26-END	51.19	9.48	0.	1.65	11.12	0.	0.47	11.59	6.00	33.60	0.	8.71	39.60	100.		
MAR																
1-5	35.01	10.98	0.	0.	10.98	0.	0.47	11.45	6.00	17.56	0.	7.59	23.56	100.		
6-10	23.44	12.05	0.	0.	12.05	0.81	0.47	13.33	6.00	4.11	0.	1.78	10.11	100.		
11-15	24.14	14.77	0.	0.	14.77	0.81	0.47	16.05	6.00	2.11	0.	0.91	8.11	100.		
16-20	17.98	13.16	0.	0.	13.16	0.	0.47	13.63	4.00	0.35	0.	0.15	4.35	100.		
21-25	21.46	9.98	8.38	0.	18.36	0.81	0.47	19.64	5.00	-3.18	-1.37	0.	5.00	84.		
26-END	19.49	2.69	4.56	0.	7.25	0.	0.47	7.72	5.00	6.77	0.	2.14	9.12	100.		
APR																
1-5	42.94	2.05	11.66	0.	19.71	0.75	0.47	20.93	6.00	16.01	0.	6.91	22.01	100.		
6-10	70.29	3.22	9.69	0.	12.31	0.	0.47	12.78	6.00	51.51	0.	22.25	57.51	100.		
11-15	60.29	5.15	3.87	0.	9.02	0.	0.47	9.49	6.00	44.80	0.	19.36	50.80	100.		
16-20	76.20	0.	13.16	0.	13.16	0.	0.47	13.63	6.00	58.57	0.	25.30	64.57	100.		
21-25	74.85	8.15	8.62	3.90	20.66	0.81	0.47	21.94	6.00	46.91	0.	20.26	52.91	100.		
26-END	47.88	8.15	4.48	2.60	15.23	0.81	0.47	16.51	6.00	19.37	0.	8.37	25.37	100.		
MAY																
1-5	61.81	0.	2.03	5.13	7.16	0.	0.47	7.63	6.00	48.18	0.	20.81	54.18	100.		
6-10	60.43	0.	5.93	7.29	13.23	0.	0.47	13.70	6.00	60.73	0.	26.24	66.73	100.		
11-15	50.35	8.15	7.41	7.64	23.20	0.81	0.47	24.48	6.00	59.87	0.	25.86	65.87	100.		
16-20	100.19	6.33	6.73	7.64	20.70	0.	0.47	21.17	6.00	73.02	0.	31.54	79.02	100.		
21-25	99.62	8.15	7.41	4.74	20.30	0.81	0.47	21.58	6.00	72.04	0.	31.12	78.04	100.		
26-END	84.44	0.	0.	0.	0.	0.	0.47	0.47	6.00	77.97	0.	40.42	83.97	100.		
JUN																
1-5	66.32	8.15	8.97	4.94	22.06	0.81	0.47	23.34	6.00	36.98	0.	15.98	42.98	100.		
6-10	40.96	5.08	8.77	4.94	18.78	0.52	0.47	19.78	6.00	15.18	0.	6.56	21.18	100.		
11-15	34.21	5.44	8.97	4.94	19.35	0.81	0.47	20.62	6.00	7.59	0.	3.28	13.59	100.		
16-20	27.04	2.72	8.97	4.94	16.62	0.81	0.47	17.90	6.00	5.14	0.	1.36	9.14	100.		
21-25	74.95	2.72	8.19	4.29	15.19	0.81	0.47	16.47	6.00	2.48	0.	1.07	8.48	100.		
26-END	37.26	0.	8.97	4.94	13.90	0.81	0.47	15.18	6.00	16.08	0.	6.95	22.08	100.		
JUL																
1-5	23.90	0.	8.97	4.94	13.90	0.81	0.47	15.18	6.00	2.72	0.	1.17	8.72	100.		
6-10	19.46	0.	5.93	4.94	10.87	0.41	0.47	11.75	5.00	2.71	0.	1.17	7.71	100.		
11-15	24.19	0.	5.93	4.94	10.87	0.	0.47	11.34	6.00	6.85	0.	2.96	12.85	100.		
16-20	19.38	0.	2.97	4.94	7.90	0.81	0.47	9.18	5.00	5.70	0.	2.46	10.70	100.		
21-25	19.76	0.	2.19	3.64	5.82	0.	0.47	6.29	5.00	8.47	0.	3.66	13.47	100.		
26-END	22.47	0.	0.	0.61	0.61	0.81	0.47	1.89	6.00	14.58	0.	7.56	20.58	100.		
AUG																
1-5	16.61	0.	0.	4.94	4.94	0.81	0.47	6.22	4.00	6.39	0.	2.76	10.39	100.		
6-10	13.11	0.	0.	3.29	3.29	0.81	0.47	4.57	4.00	4.54	0.	1.96	8.54	100.		
11-15	11.68	7.51	0.	3.29	10.80	0.81	0.47	12.08	4.00	-4.00	-1.90	0.	4.00	58.		
16-20	10.74	7.19	0.	0.	7.19	0.30	0.47	7.95	4.00	-1.21	-2.43	0.	4.00	27.		
21-25	15.60	7.04	0.	1.65	8.69	0.	0.47	9.16	4.00	2.44	-1.37	0.	4.00	75.		
26-END	26.09	8.08	0.	0.	8.08	0.	0.47	8.55	6.00	11.54	0.	4.61	14.90	100.		
SEP																
1-5	24.25	8.12	0.	0.	8.12	0.	0.47	8.59	6.00	9.66	0.	4.17	15.66	100.		
6-10	89.18	3.04	0.	0.	3.04	0.	0.47	3.51	6.00	79.67	0.	34.42	85.67	100.		
11-15	49.06	9.76	8.30	0.	18.06	0.70	0.47	19.23	6.00	43.83	0.	18.94	49.83	100.		
16-20	54.82	6.11	6.94	0.	13.06	0.	0.47	13.53	6.00	35.29	0.	15.25	41.29	100.		
21-25	40.02	8.15	10.14	0.	18.30	0.81	0.47	19.58	6.00	14.44	0.	6.24	20.44	100.		
26-END	27.52	7.62	12.29	0.	19.90	0.52	0.47	20.90	6.00	0.68	0.	0.29	6.68	100.		
OCT																
1-5	22.53	8.15	16.19	0.	24.34	0.81	0.47	25.62	6.00	-9.09	-3.93	0.	6.00	70.		
6-10	28.73	8.15	14.94	0.	23.09	0.81	0.47	24.37	6.00	-1.64	-4.64	0.	6.00	64.		
11-15	46.47	0.	0.	0.43	0.43	0.	0.47	0.90	6.00	39.57	0.	12.46	34.83	100.		
16-20	77.12	0.	6.35	1.99	2.34	0.	0.47	2.81	6.00	68.31	0.	29.51	74.31	100.		
21-25	38.71	8.15	8.97	7.79	24.41	0.81	0.47	25.69	6.00	7.02	0.	3.03	13.02	100.		
26-END	41.04	6.99	5.93	4.64	17.56	0.07	0.47	18.10	6.00	16.94	0.	8.78	22.94	100.		
NOV																
1-5	30.96	6.44	2.39	0.87	9.70	0.	0.47	10.17	6.00	14.79	0.	6.39	20.79	100.		
6-10	32.74	1.39	3.33	6.34	11.07	0.	0.47	11.54	6.00	15.20	0.	6.57	21.20	100.		
11-15	64.02	2.15	8.03	5.26	21.44	0.81	0.47	22.72	6.00	35.30	0.	15.25	41.30	100.		
16-20	65.31	0.	3.83	4.29	8.11	0.	0.47	8.58	6.00	50.73	0.	21.91	56.73	100.		
21-25	102.05	5.47	4.85	2.34	12.66	0.	0.47	13.13	6.00	88.92	0.	38.42	94.92	100.		
26-END	72.27	0.	1.09	0.91	2.00	0.	0.47	2.47	6.00	63.80	0.	27.56	69.80	100.		
DEC																
1-5	52.03	5.90	8.13	4.94	12.97	0.	0.47	19.44	6.00	26.59	0.	11.49	32.59	100.		
6-10	83.51	8.15	8.65	4.68	21.48	0.81	0.47	22.76	6.00	54.75	0.	23.65	60.75	100.		
11-15	55.51	0.	0.	0.	0.	0.	0.47	0.47	6.00	49.04	0.	21.19	55.04	100.		
16-20	37.33	5.44	8.97	4.94	19.34	0.81	0.47	20.82	6.00	10.57	0.	4.54	16.51	100.		
21-25	29.66	5.44	8.97	4.94	19.34	0.81	0.47	20.82	6.00	3.04	0.	1.31	9.04	100.		
26-END	26.80	0.	3.33	2.77	6.10	0.	0.47	6.57	6.00	14.23	0.	7.38	20.23	100.		

Table C-10 (5/5)

## WATER BALANCE FOR CASE 1 IN 1983

YEAR 1 1983														
PERIOD	RUNOFF (CUH/S)	PADDY			TOTAL (CUH/S)	UPLAND CROP (CUH/S)	D & I WATER (CUH/S)	DIVERS'N REQ'NT (CUH/S)	MAINT. FLOW (CUH/S)	BALANCE (CUH/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CUH/S)	WATER DEPTH (MM)
		BLOCK 1 (CUH/S)	BLOCK 2 (CUH/S)	BLOCK 3 (CUH/S)										
JAN														
1-5	39.23	0.	0.	0.	0.	0.	0.47	0.47	4.00	32.76	0.	14.15	38.76	100.
6-10	35.44	0.	7.27	4.16	11.43	0.	0.47	11.90	6.00	17.54	0.	7.58	23.54	100.
11-15	27.60	0.	8.53	4.81	13.34	0.41	0.47	14.22	6.00	7.38	0.	3.19	13.38	100.
16-20	26.84	0.	5.93	4.94	10.87	0.81	0.47	12.15	6.00	6.69	0.	2.89	12.69	100.
21-25	22.11	0.	5.93	4.94	10.87	0.81	0.47	12.15	6.00	3.96	0.	1.71	9.96	100.
26-END	19.29	0.	2.97	4.94	7.90	0.81	0.47	9.18	5.00	5.11	0.	2.65	10.11	100.
FEB														
1-5	18.90	0.	2.97	4.94	7.90	0.81	0.47	9.18	5.00	4.72	0.	2.04	9.72	100.
6-10	16.49	0.	0.	1.82	1.82	0.81	0.47	3.10	4.00	9.39	0.	4.06	13.39	100.
11-15	16.69	0.	0.	4.94	4.94	0.81	0.47	6.22	4.00	6.47	0.	2.80	10.47	100.
16-20	22.30	0.	0.	3.29	3.29	0.47	0.47	6.00	6.00	12.07	0.	5.27	18.07	100.
21-25	17.47	7.04	0.	3.29	10.34	0.87	0.47	10.87	4.00	2.60	0.	1.12	6.60	100.
26-END	15.71	12.52	0.	1.65	16.16	0.81	0.47	15.44	4.00	-3.73	-0.97	0.	4.00	71.
MAR														
1-5	20.92	12.03	0.	1.65	15.70	0.81	0.47	14.98	5.00	1.00	-0.53	0.	5.00	90.
6-10	16.94	12.03	0.	0.	12.03	0.81	0.47	13.33	4.00	-2.39	-1.57	0.	4.00	62.
11-15	19.25	14.77	0.	0.	14.77	0.81	0.47	16.05	5.00	-1.80	-2.34	0.	5.00	62.
16-20	19.61	12.52	0.	0.	12.52	0.	0.47	12.99	5.00	1.62	-1.64	0.	5.00	74.
21-25	18.55	9.98	8.38	0.	18.36	0.87	0.47	19.44	5.00	-6.09	-4.27	0.	5.00	50.
26-END	25.39	9.22	6.98	0.	16.20	0.81	0.47	17.48	6.00	1.91	-3.28	0.	6.00	61.
APR														
1-5	15.76	8.15	13.27	0.	21.42	0.81	0.47	22.70	4.00	-10.94	-8.01	0.	4.00	26.
6-10	13.49	8.15	13.27	0.	21.42	0.81	0.47	22.70	4.00	-13.21	-13.71	0.	4.00	-27.
11-15	12.11	8.15	16.19	0.	24.34	0.81	0.47	25.62	4.00	-17.51	-21.28	0.	4.00	-63.
16-20	10.66	8.15	16.19	0.	24.34	0.81	0.47	25.62	4.00	-18.96	-29.47	0.	4.00	-126.
21-25	12.83	0.	1.99	0.	4.89	0.	0.47	5.36	4.00	3.47	-27.97	0.	4.00	-96.
26-END	19.24	0.	0.	0.39	0.39	0.	0.47	0.86	5.00	13.38	-22.19	0.	5.00	-55.
MAY														
1-5	33.25	3.22	1.20	2.53	6.95	0.	0.47	7.42	6.00	19.83	-13.62	0.	6.00	12.
6-10	24.90	6.33	7.66	6.95	20.94	0.	0.47	21.41	6.00	-2.51	-14.71	0.	6.00	5.
11-15	30.39	7.62	8.77	6.94	25.33	0.52	0.47	26.32	6.00	-1.93	-15.54	0.	6.00	7.
16-20	26.73	3.33	7.17	6.94	19.44	0.	0.47	19.91	6.00	0.82	-15.19	0.	6.00	10.
21-25	29.22	7.40	5.17	3.12	15.69	0.41	0.47	16.57	4.00	6.65	-12.32	0.	4.00	27.
26-END	21.44	0.	5.15	4.93	10.09	0.	0.47	10.56	5.00	5.88	-9.27	0.	5.00	45.
JUN														
1-5	24.00	8.15	8.97	4.94	22.06	0.81	0.47	23.34	6.00	-5.34	-11.57	0.	6.00	31.
6-10	16.35	4.79	8.14	4.55	17.48	0.30	0.47	18.24	4.00	-7.89	-14.98	0.	4.00	-2.
11-15	26.44	1.86	4.32	2.73	8.90	0.	0.47	9.37	6.00	17.07	-10.20	0.	6.00	37.
16-20	34.06	1.82	3.75	1.43	7.01	0.	0.47	7.48	6.00	20.58	-1.31	0.	6.00	90.
21-25	19.74	2.72	8.97	4.94	16.62	0.81	0.47	17.90	5.00	-3.16	-2.68	0.	5.00	79.
26-END	15.07	0.	8.97	4.94	13.90	0.81	0.47	15.18	4.00	-4.11	-4.45	0.	4.00	58.
JUL														
1-5	15.28	0.	7.17	4.94	12.11	0.	0.47	12.58	4.00	-1.30	-5.01	0.	4.00	53.
6-10	17.42	0.	4.37	3.64	8.01	0.	0.47	8.48	4.00	4.94	-2.88	0.	4.00	65.
11-15	19.12	0.	2.81	2.34	5.15	0.81	0.47	6.43	5.00	7.69	0.	0.44	6.03	100.
16-20	26.92	0.	0.	0.	0.	0.	0.47	9.47	4.00	12.45	0.	5.38	16.45	100.
21-25	53.45	0.	2.97	4.94	7.90	0.81	0.47	9.18	6.00	38.27	0.	16.53	44.27	100.
26-END	26.84	0.	0.	3.31	3.31	0.81	0.47	4.59	6.00	18.25	0.	9.46	24.25	100.
AUG														
1-5	42.57	0.	0.	4.94	4.94	0.	0.47	5.41	6.00	51.16	0.	22.10	57.16	100.
6-10	47.59	0.	0.	2.43	2.43	0.81	0.47	3.70	6.00	37.89	0.	16.37	43.89	100.
11-15	31.66	5.15	0.	0.26	5.41	0.	0.47	5.88	6.00	19.78	0.	8.55	25.78	100.
16-20	31.37	7.47	0.	1.65	9.12	0.75	0.47	10.34	6.00	15.03	0.	6.49	21.03	100.
21-25	21.72	7.97	0.	1.43	9.40	0.	0.47	9.87	5.00	6.85	0.	2.96	11.85	100.
26-END	27.00	2.65	0.	0.	2.65	0.	0.47	3.12	6.00	17.88	0.	9.27	23.88	100.
SEP														
1-5	45.75	1.90	0.	0.	1.90	0.	0.47	2.37	6.00	37.38	0.	16.15	43.38	100.
6-10	44.40	12.62	0.	0.	12.62	0.	0.47	13.09	6.00	45.31	0.	19.57	51.31	100.
11-15	42.61	3.54	5.99	0.	9.53	0.	0.47	10.00	6.00	66.61	0.	28.78	72.61	100.
16-20	126.51	0.	1.20	0.	1.20	0.	0.47	1.67	6.00	118.84	0.	51.34	124.84	100.
21-25	73.63	8.15	13.27	0.	21.42	0.81	0.47	22.70	6.00	44.93	0.	19.41	50.93	100.
26-END	45.13	0.	5.92	0.	5.92	0.	0.47	6.39	6.00	32.74	0.	14.14	38.74	100.
OCT														
1-5	35.42	5.69	7.46	0.	13.15	0.	0.47	13.62	6.00	15.80	0.	6.83	21.80	100.
6-10	32.67	4.29	13.19	0.	17.48	0.	0.47	17.95	6.00	8.72	0.	3.77	14.72	100.
11-15	30.39	5.26	7.54	3.90	16.69	0.	0.47	17.16	6.00	7.23	0.	3.12	13.23	100.
16-20	33.91	8.97	10.52	4.55	22.04	0.18	0.47	22.69	6.00	5.22	0.	2.26	11.22	100.
21-25	38.33	3.33	5.21	6.43	15.36	0.	0.47	15.83	6.00	16.50	0.	7.13	22.50	100.
26-END	42.15	0.	0.	2.11	2.11	0.	0.47	2.58	6.00	33.57	0.	17.40	39.57	100.
NOV														
1-5	40.41	3.75	3.43	5.70	12.88	0.	0.47	13.35	6.00	21.06	0.	9.10	27.06	100.
6-10	56.02	8.15	8.97	6.94	24.06	0.81	0.47	27.34	6.00	22.68	0.	9.80	28.68	100.
11-15	48.95	8.15	8.67	6.04	23.16	0.87	0.47	24.44	6.00	18.49	0.	7.99	24.49	100.
16-20	45.67	8.15	8.97	6.04	23.16	0.81	0.47	24.44	6.00	15.23	0.	6.58	21.23	100.
21-25	35.84	7.83	6.50	2.99	17.52	0.64	0.47	18.43	6.00	11.21	0.	4.84	17.21	100.
26-END	34.57	3.86	1.91	0.39	6.16	0.	0.47	6.63	6.00	21.94	0.	9.48	27.94	100.
DEC														
1-5	31.84	8.15	8.97	4.94	22.06	0.81	0.47	23.34	6.00	2.50	0.	1.08	8.50	100.
6-10	26.40	3.54	4.91	2.59	11.44	0.	0.47	11.91	6.00	10.49	0.	4.53	16.49	100.
11-15	40.40	0.	3.59	2.59	6.58	0.	0.47	7.05	6.00	27.35	0.	11.82	33.55	100.
16-20	31.47	0.86	2.51	1.49	5.06	0.	0.47	5.53	6.00	19.94	0.	8.62	25.94	100.
21-25	27.54	0.	1.25	1.04	2.29	0.	0.47	2.76	6.00	18.78	0.	8.11	24.78	100.
26-END	25.90	2.60	8.23	4.54	16.37	0.56	0.47	17.42	6.00	2.48	0.	1.29	8.48	100.

Table C-11 (1/10)

## WATER BALANCE FOR CASE 2 IN 1975

YEAR : 1975														
PERIOD	RUNOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS'N REQM'T (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
JAN														
1-5	94.25	0.36	0.40	0.	0.76	0.	0.60	1.36	1.50	91.39	0.	39.48	92.89	100.
6-10	108.07	0.	8.50	6.38	14.88	0.81	0.60	16.29	1.50	90.28	0.	39.00	91.78	100.
11-15	75.21	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	60.24	0.	26.03	61.74	100.
16-20	68.39	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	52.61	0.	22.73	54.11	100.
21-25	52.41	0.	5.93	6.93	12.87	0.01	0.60	13.48	1.50	37.43	0.	16.17	38.93	100.
26-END	47.73	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	34.92	0.	18.10	36.42	100.
FEB														
1-5	44.31	0.	2.81	6.57	9.38	0.	0.60	9.98	1.50	32.83	0.	14.18	34.33	100.
6-10	32.98	0.	0.	0.	0.	0.	0.60	0.60	1.50	30.88	0.	13.34	32.38	100.
11-15	63.56	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	53.72	0.	23.21	55.22	100.
16-20	73.99	0.	0.	4.62	4.62	0.24	0.60	5.46	1.50	67.03	0.	28.96	68.53	100.
21-25	36.98	6.79	0.	4.38	11.77	0.	0.60	11.77	1.50	23.71	0.	10.24	25.21	100.
26-END	42.91	12.52	0.	0.59	13.10	0.81	0.60	14.51	1.50	26.90	0.	6.97	28.40	100.
MAR														
1-5	65.99	12.05	0.	1.12	13.18	0.81	0.60	14.59	1.50	49.00	0.	21.56	51.40	100.
6-10	86.93	12.05	0.	0.	12.05	0.81	0.60	13.46	1.50	73.97	0.	31.95	75.47	100.
11-15	43.37	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	25.69	0.	11.19	27.99	100.
16-20	33.53	6.98	0.	0.	8.96	0.	0.60	9.58	1.50	22.47	0.	9.71	23.97	100.
21-25	40.61	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	19.34	0.	8.36	20.84	100.
26-END	60.87	3.86	4.99	0.	8.84	0.	0.60	9.44	1.50	49.93	0.	25.88	51.43	100.
APR														
1-5	81.97	7.51	13.03	0.	20.54	0.47	0.60	21.60	1.50	58.87	0.	25.43	60.37	100.
6-10	91.90	7.08	12.87	0.	19.95	0.25	0.60	20.79	1.50	69.61	0.	30.07	71.11	100.
11-15	40.59	0.	3.87	0.	3.87	0.	0.60	4.47	1.50	34.62	0.	14.96	36.12	100.
16-20	64.05	6.44	8.65	0.	15.12	0.	0.60	15.72	1.50	46.83	0.	20.23	48.33	100.
21-25	96.69	3.86	8.35	5.99	18.20	0.	0.60	18.80	1.50	76.39	0.	33.00	77.89	100.
26-END	103.81	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	75.40	0.	32.57	76.90	100.
MAY														
1-5	49.96	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	19.68	0.	8.50	21.18	100.
6-10	57.89	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	27.61	0.	11.93	29.11	100.
11-15	52.82	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	20.23	0.	8.74	21.73	100.
16-20	55.26	3.65	4.67	11.83	22.14	0.	0.60	22.74	1.50	31.02	0.	13.40	32.52	100.
21-25	42.65	8.15	8.97	8.48	25.60	0.81	0.60	27.01	1.50	14.14	0.	6.11	15.64	100.
26-END	40.68	0.	0.	0.43	0.43	0.	0.60	1.03	1.50	38.15	0.	19.78	39.65	100.
JUN														
1-5	36.17	8.15	5.53	2.92	16.60	0.81	0.60	18.01	1.50	16.66	0.	7.20	18.16	100.
6-10	32.59	5.44	6.97	6.93	21.33	0.81	0.60	22.74	1.50	8.35	0.	3.61	9.85	100.
11-15	28.57	3.86	4.97	3.28	12.11	0.	0.60	12.71	1.50	14.36	0.	6.20	15.86	100.
16-20	41.90	2.72	6.97	6.93	18.62	0.81	0.60	20.03	1.50	20.37	0.	8.80	21.87	100.
21-25	26.61	2.72	6.97	6.93	18.62	0.81	0.60	20.03	1.50	5.08	0.	2.20	6.58	100.
26-END	41.36	0.	2.97	6.93	15.90	0.81	0.60	17.31	1.50	22.55	0.	9.74	24.05	100.
JUL														
1-5	31.51	0.	8.73	6.66	15.39	0.81	0.60	16.80	1.50	13.21	0.	5.71	14.71	100.
6-10	32.00	0.	3.20	3.74	6.94	0.	0.60	7.54	1.50	22.78	0.	9.92	24.66	100.
11-15	28.37	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	15.49	0.	5.79	16.90	100.
16-20	99.60	0.	1.41	3.28	4.69	0.	0.60	5.29	1.50	92.81	0.	40.09	94.31	100.
21-25	154.16	0.	0.	0.	0.	0.	0.60	0.60	1.50	152.86	0.	65.89	153.56	100.
26-END	91.85	0.	4.65	4.65	4.65	0.81	0.60	6.06	1.50	84.29	0.	43.70	85.79	100.
AUG														
1-5	38.30	0.	0.	6.93	6.93	0.	0.60	7.53	1.50	29.27	0.	12.64	30.77	100.
6-10	32.05	0.	0.	4.13	4.13	0.81	0.60	5.54	1.50	25.01	0.	10.80	26.51	100.
11-15	27.93	7.51	0.	4.62	12.13	0.81	0.60	13.54	1.50	12.89	0.	5.57	14.39	100.
16-20	27.07	7.51	0.	2.28	9.79	0.81	0.60	11.20	1.50	14.37	0.	6.21	15.67	100.
21-25	25.96	12.05	0.	1.82	13.87	0.81	0.60	15.28	1.50	9.18	0.	3.96	10.68	100.
26-END	22.59	10.04	0.	0.	10.04	0.81	0.60	11.45	1.50	9.64	0.	5.00	11.14	100.
SEP														
1-5	63.63	11.98	0.	0.	11.98	0.	0.60	12.58	1.50	49.55	0.	21.41	51.05	100.
6-10	58.23	1.50	0.	0.	1.50	0.	0.60	2.10	1.50	54.63	0.	23.60	56.13	100.
11-15	37.14	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	15.87	0.	6.86	17.37	100.
16-20	45.85	0.54	3.91	0.	4.45	0.	0.60	5.05	1.50	39.30	0.	16.98	40.80	100.
21-25	71.74	1.93	9.94	0.	11.87	0.	0.60	12.47	1.50	57.77	0.	24.96	59.27	100.
26-END	53.08	7.29	12.09	0.	19.38	0.35	0.60	20.34	1.50	29.24	0.	12.63	30.74	100.
OCT														
1-5	37.31	8.15	16.19	0.	24.34	0.81	0.60	25.75	1.50	10.06	0.	4.35	11.56	100.
6-10	35.75	0.	13.16	0.	13.16	0.	0.60	13.76	1.50	20.49	0.	8.85	21.99	100.
11-15	31.03	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	2.62	0.	1.13	4.12	100.
16-20	27.90	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	-0.51	-0.22	0.	1.50	99.
21-25	24.55	8.15	4.13	6.48	18.75	0.81	0.60	20.16	1.50	2.89	0.	1.03	3.88	100.
26-END	22.97	3.68	1.37	2.71	7.76	0.	0.60	8.36	1.50	13.11	0.	6.79	14.61	100.
NOV														
1-5	30.28	3.43	5.65	10.73	19.81	0.	0.60	20.41	1.50	8.37	0.	3.61	9.87	100.
6-10	37.87	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	5.28	0.	2.28	6.78	100.
11-15	63.49	6.65	7.16	7.02	20.83	0.01	0.60	21.44	1.50	40.55	0.	17.52	42.05	100.
16-20	94.01	0.	0.	0.	0.	0.	0.60	0.60	1.50	91.91	0.	39.71	73.61	100.
21-25	85.48	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	58.52	0.	25.28	60.02	100.
26-END	77.69	7.51	7.24	5.20	19.95	0.47	0.60	21.02	1.50	55.17	0.	23.83	56.67	100.
DEC														
1-5	51.86	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	24.90	0.	10.76	26.40	100.
6-10	92.33	6.87	8.41	6.84	22.12	0.13	0.60	22.84	1.50	67.99	0.	29.37	69.49	100.
11-15	94.15	7.08	7.40	5.56	20.04	0.24	0.60	20.88	1.50	71.77	0.	31.00	73.27	100.
16-20	69.68	2.44	6.97	6.93	21.33	0.81	0.60	22.74	1.50	45.44	0.	19.63	46.94	100.
21-25	93.64	2.43	1.36	0.	3.79	0.	0.60	4.39	1.50	87.75	0.	37.91	89.25	100.
26-END	74.26	0.	0.	0.	0.	0.	0.60	0.60	1.50	72.16	0.	37.41	73.66	100.



Table C-11 (2/10)

## WATER BALANCE FOR CASE 2 IN 1976

YEAR : 1976															
PERIOD	RUNOFF (CUH/S)	PADDT				TOTAL (CUH/S)	UPLAND CROP (CUH/S)	D R I WATER (CUH/S)	DIVERS'N REQ'NT (CUH/S)	MAJNT. FLOW (CUH/S)	BALANCE (CUH/S)	DEFICIT (INCH)	SURPLUS (INCH)	DOWNSTR. FROM BRN (CUH/S)	WATER DEPTH (MM)
		BLOCK 1 (CUH/S)	BLOCK 2 (CUH/S)	BLOCK 3 (CUH/S)											
JAN															
1-5	86.40	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	66.87	0.	28.03	66.37	100.	
6-10	64.87	0.	7.09	5.75	13.84	0.81	0.60	13.23	1.50	50.12	0.	21.65	51.62	100.	
11-15	48.88	0.	8.58	6.48	15.05	0.81	0.60	16.46	1.50	30.92	0.	13.36	32.42	100.	
16-20	42.25	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	26.45	0.	11.43	27.95	100.	
21-25	35.57	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	19.79	0.	8.55	21.29	100.	
26-END	25.27	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	12.46	0.	6.46	13.96	100.	
FEB															
1-5	32.14	0.	2.97	6.93	9.90	0.	0.60	10.50	1.50	20.14	0.	8.70	21.64	100.	
6-10	28.31	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	18.47	0.	7.98	19.97	100.	
11-15	26.58	0.	0.	6.29	6.29	0.81	0.60	7.70	1.50	17.38	0.	7.51	18.88	100.	
16-20	23.80	0.	0.	4.62	4.62	0.81	0.60	6.03	1.50	16.27	0.	7.03	17.77	100.	
21-25	25.09	7.51	0.	4.62	12.13	0.81	0.60	13.54	1.50	8.05	0.	3.48	9.55	100.	
26-END	36.94	9.39	0.	0.	9.39	0.81	0.60	10.80	1.50	24.65	0.	8.52	26.14	100.	
MAR															
1-5	20.70	12.05	0.	1.95	14.00	0.81	0.60	15.41	1.50	3.79	0.	1.64	5.29	100.	
6-10	22.36	7.04	0.	0.	7.04	0.	0.60	7.64	1.50	13.22	0.	5.71	14.72	100.	
11-15	62.64	9.40	0.	0.	9.40	0.	0.60	10.00	1.50	51.14	0.	22.09	52.84	100.	
16-20	48.66	10.48	0.	0.	10.48	0.	0.60	11.08	1.50	36.08	0.	15.59	37.58	100.	
21-25	67.89	8.90	7.98	0.	16.88	0.24	0.60	17.72	1.50	48.67	0.	21.02	50.17	100.	
26-END	36.26	4.75	5.32	0.	10.07	0.	0.60	10.67	1.50	24.09	0.	12.49	25.59	100.	
APR															
1-5	41.18	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	16.85	0.	7.28	18.35	100.	
6-10	49.73	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	25.40	0.	10.97	26.90	100.	
11-15	64.38	0.	9.72	0.	9.72	0.	0.60	10.32	1.50	52.56	0.	22.71	54.06	100.	
16-20	61.28	4.83	13.16	0.	17.98	0.	0.60	18.58	1.50	41.20	0.	17.80	42.70	100.	
21-25	50.51	5.47	4.89	4.41	14.76	0.	0.60	15.36	1.50	33.65	0.	14.53	35.15	100.	
26-END	46.60	4.83	4.57	4.38	13.77	0.	0.60	14.37	1.50	30.73	0.	13.27	32.23	100.	
MAY															
1-5	43.94	2.57	2.05	6.48	11.10	0.	0.60	11.70	1.50	30.74	0.	13.28	32.24	100.	
6-10	37.41	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	7.13	0.	3.08	8.63	100.	
11-15	36.63	7.08	8.57	12.56	26.20	0.24	0.60	29.04	1.50	6.09	0.	2.63	7.59	100.	
16-20	32.03	6.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	-0.58	-0.25	0.	1.50	99.	
21-25	27.95	8.15	8.97	8.48	25.60	0.81	0.60	27.01	1.50	-0.56	-0.49	0.	1.50	97.	
26-END	30.82	4.40	5.32	5.04	12.75	0.	0.60	13.35	1.50	6.00	0.	2.62	6.55	100.	
JUN															
1-5	68.76	7.29	4.59	2.19	14.07	0.35	0.60	15.02	1.50	52.24	0.	22.57	53.74	100.	
6-10	76.55	5.44	8.11	5.93	19.47	0.81	0.60	20.88	1.50	54.17	0.	23.40	55.67	100.	
11-15	70.67	2.57	6.75	6.20	15.52	0.	0.60	16.12	1.50	53.05	0.	22.92	54.55	100.	
16-20	45.99	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	24.66	0.	10.57	25.96	100.	
21-25	59.80	2.72	6.23	3.74	12.69	0.81	0.60	14.10	1.50	44.20	0.	19.09	45.70	100.	
26-END	60.85	0.	5.20	3.74	8.94	0.	0.60	9.54	1.50	49.81	0.	21.52	51.31	100.	
JUL															
1-5	65.44	0.	0.	0.	0.	0.	0.60	0.60	1.50	63.34	0.	27.36	64.84	100.	
6-10	52.66	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	37.89	0.	16.37	39.39	100.	
11-15	54.09	0.	4.61	5.38	9.99	0.81	0.60	11.40	1.50	41.19	0.	17.80	42.69	100.	
16-20	39.19	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	26.38	0.	11.40	27.88	100.	
21-25	41.99	0.	2.38	5.56	7.95	0.70	0.60	9.24	1.50	31.25	0.	13.50	32.75	100.	
26-END	30.83	0.	0.	5.49	5.49	0.	0.60	6.09	1.50	23.24	0.	12.05	24.74	100.	
AUG															
1-5	32.22	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	22.36	0.	9.67	23.88	100.	
6-10	28.42	0.	0.	4.62	4.62	0.81	0.60	6.03	1.50	20.89	0.	9.02	22.39	100.	
11-15	27.12	7.12	0.	4.62	11.74	0.18	0.60	12.52	1.50	13.10	0.	5.66	14.60	100.	
16-20	27.93	3.72	0.	1.37	5.09	0.	0.60	5.69	1.50	20.74	0.	8.96	22.24	100.	
21-25	56.31	7.47	0.	0.	7.47	0.	0.60	8.07	1.50	46.74	0.	20.19	46.24	100.	
26-END	65.48	5.27	0.	0.	5.27	0.	0.60	5.87	1.50	58.11	0.	30.12	59.61	100.	
SEP															
1-5	49.30	5.69	0.	0.	5.69	0.	0.60	6.29	1.50	41.51	0.	17.93	43.01	100.	
6-10	40.67	13.91	0.	0.	13.91	0.35	0.60	14.86	1.50	24.31	0.	10.50	25.81	100.	
11-15	35.07	9.98	8.38	0.	18.36	0.21	0.60	19.77	1.50	13.80	0.	5.96	15.30	100.	
16-20	34.10	6.87	7.22	0.	14.09	0.	0.60	14.69	1.50	17.91	0.	7.74	19.41	100.	
21-25	32.55	0.	8.52	0.	8.52	0.	0.60	9.12	1.50	21.93	0.	9.47	23.43	100.	
26-END	34.48	2.25	10.92	0.	13.17	0.	0.60	13.77	1.50	19.21	0.	8.30	20.71	100.	
OCT															
1-5	84.93	2.57	4.98	0.	7.55	0.	0.60	8.15	1.50	75.28	0.	32.52	76.78	100.	
6-10	99.96	0.	10.50	0.	10.50	0.	0.60	11.10	1.50	87.36	0.	37.74	88.86	100.	
11-15	89.21	0.86	7.31	6.02	14.19	0.	0.60	14.79	1.50	72.92	0.	31.50	74.42	100.	
16-20	68.65	5.36	8.75	5.93	20.04	0.	0.60	20.64	1.50	46.51	0.	20.09	48.01	100.	
21-25	50.80	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	20.52	0.	8.87	22.02	100.	
26-END	42.71	3.95	5.65	7.17	16.77	0.	0.60	17.37	1.50	23.84	0.	12.36	25.34	100.	
NOV															
1-5	68.29	0.	5.93	12.56	18.49	0.	0.60	19.09	1.50	47.70	0.	20.61	49.20	100.	
6-10	75.49	4.61	1.72	3.56	9.89	0.	0.60	10.49	1.50	63.50	0.	27.43	65.00	100.	
11-15	60.36	8.15	7.64	6.93	22.72	0.81	0.60	24.13	1.50	34.73	0.	15.00	36.23	100.	
16-20	55.09	2.79	5.41	6.66	14.86	0.	0.60	15.46	1.50	38.13	0.	16.47	39.63	100.	
21-25	43.28	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	16.32	0.	7.05	17.82	100.	
26-END	42.13	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	15.17	0.	6.55	16.67	100.	
DEC															
1-5	37.15	8.15	3.03	0.	11.19	0.81	0.60	12.60	1.50	23.05	0.	9.96	24.55	100.	
6-10	91.72	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	64.76	0.	27.98	66.26	100.	
11-15	59.30	7.08	2.63	0.	9.71	0.24	0.60	10.55	1.50	47.25	0.	20.41	48.75	100.	
16-20	43.05	5.44	3.89	1.00	10.33	0.81	0.60	11.74	1.50	29.81	0.	12.88	31.31	100.	
21-25	42.22	3.00	3.78	2.46	9.25	0.	0.60	9.85	1.50	30.87	0.	13.34	32.37	100.	
26-END	32.80	0.33	0.84	0.55	1.72	0.	0.60	2.32	1.50	28.98	0.	15.02	30.48	100.	

Table C-11 (3/10)

## WATER BALANCE FOR CASE 2 IN 1977

YEAR : 1977															
PERIOD	RUNOFF (CU/M/S)	PADDY				TOTAL (CU/M/S)	UPLAND CROP (CU/M/S)	D & I WATER (CU/M/S)	DIVERS'N REQM'T (CU/M/S)	MAINT. FLOW (CU/M/S)	BALANCE (CU/M/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CU/M/S)	WATER DEPTH (MM)
		BLOCK 1 (CU/M/S)	BLOCK 2 (CU/M/S)	BLOCK 3 (CU/M/S)											
JAN															
1-5	38.03	2.72	5.30	2.65	10.66	0.81	0.60	12.07	1.50	24.46	0.	10.57	25.96	100.	
6-10	36.32	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	17.51	0.	7.56	19.01	100.	
11-15	35.75	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	16.94	0.	7.32	18.44	100.	
16-20	31.18	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	15.40	0.	6.65	16.90	100.	
21-25	29.09	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	13.31	0.	5.75	14.81	100.	
26-END	23.13	0.	1.05	2.45	3.50	0.81	0.60	4.90	1.50	16.73	0.	8.67	18.23	100.	
FEB															
1-5	26.00	0.	2.11	4.93	7.03	0.	0.60	7.63	1.50	16.87	0.	7.29	18.37	100.	
6-10	24.47	0.	0.	2.28	2.28	0.	0.60	2.88	1.50	20.09	0.	8.68	21.59	100.	
11-15	32.15	0.	0.	6.38	6.38	0.	0.60	6.98	1.50	23.67	0.	10.22	25.17	100.	
16-20	25.52	0.	0.	4.62	4.62	0.81	0.60	6.03	1.50	17.99	0.	7.77	19.49	100.	
21-25	23.06	7.51	0.	2.25	9.76	0.81	0.60	11.17	1.50	10.39	0.	4.49	11.89	100.	
26-END	47.99	10.13	0.	1.91	12.04	0.	0.60	12.64	1.50	33.85	0.	8.77	35.33	100.	
MAR															
1-5	35.96	12.05	0.	2.31	14.36	0.81	0.60	15.77	1.50	18.69	0.	8.07	20.19	100.	
6-10	22.19	12.05	0.	0.	12.05	0.81	0.60	13.66	1.50	7.23	0.	3.12	8.73	100.	
11-15	19.21	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	1.53	0.	0.66	3.03	100.	
16-20	18.73	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	1.05	0.	0.45	2.55	100.	
21-25	24.52	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	3.25	0.	1.41	4.75	100.	
26-END	20.15	9.22	6.98	0.	16.20	0.81	0.60	17.61	1.50	1.04	0.	0.54	2.54	100.	
APR															
1-5	19.85	8.15	12.68	0.	20.83	0.81	0.60	22.24	1.50	-3.89	-1.68	0.	1.50	84.	
6-10	20.09	6.65	12.71	0.	19.36	0.01	0.60	19.97	1.50	-1.38	-2.28	0.	1.50	79.	
11-15	22.16	7.40	15.91	0.	23.31	0.41	0.60	24.32	1.50	-3.66	-3.86	0.	1.50	70.	
16-20	27.87	1.07	13.56	0.	14.63	0.	0.60	15.23	1.50	11.14	0.	0.95	3.71	100.	
21-25	27.74	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	-0.67	-0.29	0.	1.50	98.	
26-END	27.03	0.	7.93	6.38	14.31	0.	0.60	14.91	1.50	10.62	0.	4.30	11.45	100.	
MAY															
1-5	22.47	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	-7.81	-3.37	0.	1.50	80.	
6-10	29.69	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	-0.59	-3.62	0.	1.50	78.	
11-15	53.27	0.	0.47	6.17	6.64	0.	0.60	7.24	1.50	44.53	0.	15.61	37.64	100.	
16-20	33.04	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	0.45	0.	0.20	1.95	100.	
21-25	22.54	6.22	8.25	8.48	22.95	0.	0.60	23.55	1.50	-2.51	-1.09	0.	1.50	94.	
26-END	35.54	8.15	8.97	7.84	24.96	0.81	0.60	26.37	1.50	7.69	0.	2.90	7.10	100.	
JUN															
1-5	26.01	8.15	3.03	0.	11.19	0.81	0.60	12.60	1.50	11.91	0.	5.15	13.41	100.	
6-10	48.41	4.79	2.67	0.	7.47	0.30	0.60	8.36	1.50	38.55	0.	16.65	40.05	100.	
11-15	34.29	2.86	7.53	6.93	17.32	0.	0.60	17.92	1.50	14.87	0.	6.42	16.37	100.	
16-20	37.16	1.14	7.21	6.93	15.29	0.	0.60	15.89	1.50	19.77	0.	8.54	21.27	100.	
21-25	24.66	2.50	5.29	2.92	10.71	0.47	0.60	11.78	1.50	11.18	0.	4.83	12.68	100.	
26-END	22.26	0.	2.52	1.55	4.08	0.	0.60	4.68	1.50	16.08	0.	6.95	17.58	100.	
JUL															
1-5	21.55	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	2.74	0.	1.18	4.24	100.	
6-10	26.76	0.	5.93	6.93	12.87	0.13	0.60	13.59	1.50	11.67	0.	5.94	13.17	100.	
11-15	31.12	0.	0.	0.	0.	0.	0.60	0.60	1.50	29.02	0.	12.54	30.52	100.	
16-20	21.97	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	9.16	0.	3.96	10.46	100.	
21-25	19.74	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	6.93	0.	2.99	8.43	100.	
26-END	14.60	0.	0.	5.26	5.26	0.81	0.60	6.67	1.50	6.43	0.	3.33	7.93	100.	
AUG															
1-5	16.50	0.	0.	6.93	6.93	0.	0.60	7.53	1.50	7.47	0.	3.23	8.97	100.	
6-10	17.86	0.	0.	4.62	4.62	0.	0.60	5.22	1.50	11.14	0.	4.81	12.64	100.	
11-15	17.37	3.36	0.	4.62	7.98	0.	0.60	8.58	1.50	7.29	0.	3.15	8.79	100.	
16-20	18.70	7.15	0.	2.16	9.31	0.24	0.60	10.15	1.50	7.05	0.	3.05	8.55	100.	
21-25	15.55	7.33	0.	1.47	9.00	0.	0.60	9.60	1.50	4.45	0.	1.92	5.95	100.	
26-END	19.03	10.04	0.	0.	10.04	0.81	0.60	11.45	1.50	6.08	0.	3.15	7.38	100.	
SEP															
1-5	25.43	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	7.75	0.	3.35	9.25	100.	
6-10	19.89	3.75	0.	0.	3.75	0.	0.60	4.35	1.50	14.04	0.	6.06	15.54	100.	
11-15	18.32	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	-2.95	-1.27	0.	1.50	85.	
16-20	18.27	6.76	7.18	0.	13.94	0.	0.60	14.54	1.50	2.23	-0.31	0.	1.50	96.	
21-25	18.53	0.	7.14	0.	7.14	0.	0.60	7.74	1.50	9.29	0.	3.71	10.08	100.	
26-END	50.62	0.	0.	0.	0.	0.	0.60	0.60	1.50	48.52	0.	20.96	50.02	100.	
OCT															
1-5	86.99	0.21	6.60	0.	6.81	0.	0.60	7.41	1.50	78.08	0.	33.73	79.58	100.	
6-10	163.57	0.	1.41	0.	1.41	0.	0.60	2.01	1.50	140.06	0.	60.53	161.56	100.	
11-15	229.81	6.65	8.45	5.62	20.72	0.01	0.60	21.33	1.50	206.98	0.	89.41	208.48	100.	
16-20	181.35	7.29	3.85	3.41	14.55	0.35	0.60	15.50	1.50	164.35	0.	71.00	165.85	100.	
21-25	154.60	8.15	6.16	8.06	22.37	0.81	0.60	23.78	1.50	129.32	0.	55.87	130.82	100.	
26-END	191.58	5.56	7.94	8.49	21.99	0.	0.60	22.59	1.50	167.49	0.	86.83	168.99	100.	
NOV															
1-5	115.31	7.19	2.91	5.90	15.99	0.30	0.60	16.89	1.50	96.92	0.	41.87	98.42	100.	
6-10	86.67	4.72	4.64	9.00	18.36	0.	0.60	18.96	1.50	66.01	0.	28.51	67.51	100.	
11-15	107.34	2.57	6.09	8.48	17.95	0.	0.60	18.55	1.50	87.09	0.	37.62	88.59	100.	
16-20	160.29	0.	2.73	4.74	7.48	0.	0.60	8.08	1.50	90.71	0.	39.19	92.21	100.	
21-25	103.72	5.26	6.33	5.11	16.69	0.	0.60	17.29	1.50	84.93	0.	36.69	86.43	100.	
26-END	71.06	4.93	7.69	6.84	19.47	0.	0.60	20.07	1.50	49.49	0.	21.38	50.99	100.	
DEC															
1-5	57.71	2.15	1.27	0.55	3.96	0.	0.60	4.56	1.50	51.65	0.	22.31	53.15	100.	
6-10	77.91	3.97	3.82	2.74	10.52	0.	0.60	11.12	1.50	65.29	0.	28.20	66.79	100.	
11-15	101.78	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	74.82	0.	32.32	76.32	100.	
16-20	64.22	5.44	8.19	6.02	19.64	0.81	0.60	21.05	1.50	41.67	0.	18.00	43.17	100.	
21-25	50.41	2.00	1.12	0.	3.12	0.	0.60	3.72	1.50	45.19	0.	19.52	46.69	100.	
26-END	35.24	1.62	7.74	6.93	16.28	0.	0.60	16.88	1.50	16.86	0.	8.74	18.36	100.	

Table C-11 (4/10)

## WATER BALANCE FOR CASE 2 IN 1978

YEAR : 1978															
PERIOD	RUNOFF (CUH/S)	PADDY				TOTAL (CUH/S)	UPLAND CROP (CUH/S)	D & I WATER (CUH/S)	DIVERS*H REQMT (CUH/S)	MAINT. FLOW (CUH/S)	BALANCE (CUH/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CUH/S)	WATER DEPTH (MM)
		BLOCK 1 (CUH/S)	BLOCK 2 (CUH/S)	BLOCK 3 (CUH/S)											
JAN															
1-5	17.68	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	-3.85	-1.66	0.	1.50	88.	
6-10	18.58	0.	2.58	3.01	5.59	0.	0.60	6.19	1.50	10.89	0.	3.04	8.55	100.	
11-15	18.77	0.	0.36	0.	0.36	0.	0.60	0.96	1.50	16.31	0.	7.05	17.87	100.	
16-20	24.80	0.	5.15	6.02	11.17	0.	0.60	11.77	1.50	11.53	0.	4.98	13.03	100.	
21-25	18.05	0.	4.45	5.20	9.65	0.	0.60	10.25	1.50	6.30	0.	2.72	7.80	100.	
26-END	14.22	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	1.41	0.	0.73	2.91	100.	
FEB															
1-5	11.82	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	-0.99	-0.43	0.	1.50	94.	
6-10	13.66	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	3.82	0.	1.22	4.33	100.	
11-15	13.84	0.	0.	6.11	6.11	0.	0.60	6.71	1.50	5.63	0.	2.43	7.13	100.	
16-20	16.55	0.	0.	1.76	1.76	0.81	0.60	3.17	1.50	11.88	0.	5.13	13.38	100.	
21-25	10.92	7.51	0.	3.89	11.40	0.81	0.60	12.81	1.50	-3.39	-1.46	0.	1.50	74.	
26-END	11.18	3.70	0.	0.	3.70	0.	0.60	6.30	1.50	5.38	-0.07	0.	1.50	98.	
MAR															
1-5	10.46	5.61	0.	1.19	6.80	0.	0.60	7.40	1.50	1.56	0.	0.61	2.90	100.	
6-10	11.40	12.05	0.	0.	12.05	0.81	0.60	13.46	1.50	-3.56	-1.54	0.	1.50	63.	
11-15	13.83	11.98	0.	0.	11.98	0.	0.60	12.58	1.50	-0.25	-1.65	0.	1.50	74.	
16-20	13.61	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	-4.07	-3.40	0.	1.50	45.	
21-25	16.36	3.54	5.99	0.	9.53	0.	0.60	10.13	1.50	4.73	-1.36	0.	1.50	84.	
26-END	15.86	3.95	5.02	0.	8.97	0.	0.60	9.57	1.50	4.79	0.	1.13	3.67	100.	
APR															
1-5	19.77	8.15	12.29	0.	20.44	0.81	0.60	21.85	1.50	-3.58	-1.55	0.	1.50	86.	
6-10	19.41	8.15	10.53	0.	18.69	0.81	0.60	20.10	1.50	-2.19	-2.49	0.	1.50	77.	
11-15	21.72	7.29	15.87	0.	23.17	0.35	0.60	24.12	1.50	-3.90	-4.18	0.	1.50	68.	
16-20	30.82	8.15	16.11	0.	24.26	0.81	0.60	25.67	1.50	3.65	-2.60	0.	1.50	80.	
21-25	70.28	8.15	10.10	6.05	24.30	0.81	0.60	25.71	1.50	43.07	0.	16.00	38.55	100.	
26-END	41.50	8.15	3.03	2.52	13.71	0.81	0.60	15.12	1.50	24.88	0.	10.75	26.38	100.	
MAY															
1-5	45.55	8.15	8.73	10.06	24.95	0.81	0.60	28.36	1.50	15.69	0.	6.78	17.19	100.	
6-10	57.43	0.	0.	5.50	5.50	0.	0.60	6.10	1.50	49.83	0.	21.53	51.33	100.	
11-15	68.81	8.05	8.93	12.56	29.53	0.75	0.60	30.88	1.50	36.43	0.	15.74	37.93	100.	
16-20	45.47	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	12.88	0.	5.57	14.38	100.	
21-25	37.32	8.15	8.97	8.48	25.60	0.81	0.60	27.01	1.50	8.81	0.	3.81	10.31	100.	
26-END	22.14	8.15	8.97	7.84	24.96	0.81	0.60	26.37	1.50	-5.73	-2.97	0.	1.50	84.	
JUN															
1-5	21.37	5.15	7.85	6.93	19.93	0.	0.60	20.53	1.50	-0.66	-3.26	0.	1.50	82.	
6-10	19.66	2.50	5.85	5.20	13.55	0.	0.60	14.15	1.50	4.01	-1.52	0.	1.50	91.	
11-15	16.94	5.44	8.97	6.93	21.33	0.81	0.60	22.74	1.50	-7.30	-4.68	0.	1.50	71.	
16-20	13.30	0.	5.70	6.66	12.36	0.	0.60	12.96	1.50	-1.16	-5.18	0.	1.50	63.	
21-25	12.70	2.72	8.97	6.93	16.62	0.81	0.60	20.03	1.50	-8.83	-8.99	0.	1.50	37.	
26-END	11.81	0.	4.29	5.02	9.31	0.	0.60	9.91	1.50	0.40	-8.82	0.	1.50	27.	
JUL															
1-5	10.75	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	-8.06	-12.30	0.	1.50	-2.	
6-10	16.04	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	1.07	-11.84	0.	1.50	-24.	
11-15	13.28	0.	3.98	4.65	8.63	0.81	0.60	10.04	1.50	1.74	-11.09	0.	1.50	-13.	
16-20	12.25	0.	2.69	6.29	8.99	0.81	0.60	10.40	1.50	0.35	-10.93	0.	1.50	-45.	
21-25	16.29	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	3.48	-9.43	0.	1.50	-25.	
26-END	12.04	0.	6.93	6.93	6.93	0.	0.60	7.53	1.50	3.01	-7.87	0.	1.50	-49.	
AUG															
1-5	9.43	0.	0.	6.93	6.93	0.41	0.60	7.94	1.50	-0.01	-7.88	0.	1.50	-49.	
6-10	8.59	0.	0.	4.62	4.62	0.58	0.60	5.80	1.50	1.29	-7.32	0.	1.50	-108.	
11-15	14.12	5.15	0.	0.	5.15	0.	0.60	5.75	1.50	6.87	-4.35	0.	1.50	22.	
16-20	10.74	7.51	0.	0.	7.51	0.81	0.60	8.92	1.50	0.32	-4.21	0.	1.50	-10.	
21-25	9.18	12.05	0.	2.31	14.36	0.81	0.60	15.77	1.50	-8.09	-7.71	0.	1.50	-31.	
26-END	8.72	7.42	0.	0.	7.42	0.	0.60	8.02	1.50	-0.80	-8.12	0.	1.50	-96.	
SEP															
1-5	10.27	13.70	0.	0.	13.70	0.24	0.60	14.54	1.50	-5.77	-10.61	0.	1.50	-71.	
6-10	11.69	11.44	0.	0.	11.44	0.	0.60	12.04	1.50	-1.85	-11.41	0.	1.50	-84.	
11-15	11.42	5.69	6.78	0.	12.47	0.	0.60	13.07	1.50	-3.15	-12.77	0.	1.50	-80.	
16-20	8.44	0.	0.	0.	0.	0.	0.60	8.60	1.50	6.33	-10.04	0.	1.50	-18.	
21-25	23.20	0.	6.44	0.	6.44	0.	0.60	7.04	1.50	14.66	-3.70	0.	1.50	66.	
26-END	13.24	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	-11.09	-8.49	0.	1.50	21.	
OCT															
1-5	12.15	8.15	16.19	0.	24.34	0.81	0.60	25.75	1.50	-15.10	-15.02	0.	1.50	-15.	
6-10	9.79	2.47	7.83	0.	10.30	0.	0.60	10.90	1.50	-2.61	-16.14	0.	1.50	-24.	
11-15	13.05	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	-15.36	-22.78	0.	1.50	-54.	
16-20	15.77	0.	7.93	6.38	14.31	0.	0.60	14.91	1.50	-0.64	-23.05	0.	1.50	-56.	
21-25	28.97	0.	2.81	7.81	10.62	0.	0.60	11.22	1.50	16.25	-16.03	0.	1.50	3.	
26-END	58.70	3.59	2.33	4.69	10.61	0.	0.60	11.21	1.50	45.99	0.	7.81	16.56	100.	
NOV															
1-5	62.77	0.	0.23	5.90	6.13	0.	0.60	6.73	1.50	54.54	0.	23.56	56.04	100.	
6-10	53.95	0.	0.	1.89	1.89	0.	0.60	2.49	1.50	49.96	0.	21.58	51.46	100.	
11-15	67.91	0.	0.	0.	0.	0.	0.60	0.60	1.50	65.81	0.	28.43	67.31	100.	
16-20	82.64	6.87	8.49	8.48	23.84	0.13	0.60	24.56	1.50	56.58	0.	24.44	58.08	100.	
21-25	77.43	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	50.47	0.	21.80	51.97	100.	
26-END	43.46	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	16.50	0.	7.13	18.00	100.	
DEC															
1-5	32.09	0.	1.41	1.64	3.05	0.	0.60	3.65	1.50	26.94	0.	11.64	28.44	100.	
6-10	48.05	0.	0.	0.	0.	0.	0.60	0.60	1.50	45.95	0.	19.85	47.45	100.	
11-15	33.45	8.15	3.50	0.55	12.20	0.81	0.60	13.61	1.50	18.34	0.	7.92	19.84	100.	
16-20	23.21	4.22	6.73	5.11	18.05	0.	0.60	16.65	1.50	5.06	0.	2.18	6.56	100.	
21-25	21.78	0.	5.15	6.62	11.47	0.	0.60	11.77	1.50	8.51	0.	3.67	10.01	100.	
26-END	17.37	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	-4.16	-2.15	0.	1.50	85.	

Table C-11 (5/10)

## WATER BALANCE FOR CASE 2 IN 1979

YEAR : 1979

PERIOD	RUNOFF (CUH/S)	PADDY			TOTAL (CUH/S)	UPLAND CROP (CUH/S)	D & I WATER (CUH/S)	DIVERSION REQM** (CUH/S)	MAINT. FLOW (CUH/S)	BALANCE (CUH/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRN (CUH/S)	WATER DEPTH (MM)
		BLOCK 1 (CUH/S)	BLOCK 2 (CUH/S)	BLOCK 3 (CUH/S)										
JAN														
1-5	18.17	0.	0.	0.	0.	0.60	0.60	1.50	16.07	0.	4.79	12.58	100.	
6-10	17.80	0.	6.79	4.02	12.81	0.	0.60	13.41	2.89	0.	1.25	4.39	100.	
11-15	15.18	0.	8.97	4.93	15.90	0.81	0.60	17.31	-3.63	-1.57	0.	1.50	87.	
16-20	15.95	0.	5.93	4.93	12.87	0.81	0.60	14.28	-3.83	-3.22	0.	1.50	87.	
21-25	11.99	0.	4.37	5.11	9.48	0.18	0.60	10.26	0.23	-3.12	0.	1.50	89.	
26-END	11.25	0.	2.97	6.93	9.90	0.81	0.60	11.31	-1.56	-3.93	0.	1.50	48.	
FEB														
1-5	11.10	0.	2.97	6.93	9.90	0.81	0.60	11.31	-1.71	-4.67	0.	1.50	38.	
6-10	12.22	0.	0.	3.28	3.28	0.13	0.60	4.01	6.71	-1.77	0.	1.50	66.	
11-15	11.84	0.	0.	1.46	1.46	0.70	0.60	2.75	7.59	0.	1.51	4.99	100.	
16-20	14.90	0.	0.	0.	0.	0.18	0.60	0.78	12.62	0.	5.45	14.12	100.	
21-25	35.77	5.86	0.	0.	5.86	0.	0.60	6.46	27.81	0.	12.01	29.31	100.	
26-END	34.91	12.52	0.	2.31	16.83	0.81	0.60	16.24	17.17	0.	4.65	18.67	100.	
MAR														
1-5	27.97	12.05	0.	2.31	14.36	0.81	0.60	15.77	10.70	0.	4.62	12.20	100.	
6-10	25.87	12.05	0.	0.	12.05	0.81	0.60	13.46	10.91	0.	4.71	12.41	100.	
11-15	22.75	14.77	0.	0.	14.77	0.81	0.60	16.18	5.07	0.	2.19	6.57	100.	
16-20	50.69	14.77	0.	0.	14.77	0.81	0.60	16.18	33.01	0.	14.26	34.51	100.	
21-25	65.60	9.98	8.36	0.	18.36	0.81	0.60	19.77	44.33	0.	19.15	43.83	100.	
26-END	39.88	9.22	6.98	0.	16.20	0.81	0.60	17.61	20.77	0.	10.77	22.27	100.	
APR														
1-5	51.33	8.15	13.27	0.	21.42	0.81	0.60	22.83	27.00	0.	11.66	28.50	100.	
6-10	42.36	8.15	12.10	0.	20.25	0.81	0.60	21.66	19.20	0.	8.30	20.70	100.	
11-15	33.29	8.15	3.81	0.	11.97	0.81	0.60	13.38	18.41	0.	7.95	19.91	100.	
16-20	28.31	8.15	16.19	0.	24.34	0.81	0.60	25.75	1.06	0.	0.46	2.56	100.	
21-25	35.43	0.	0.	1.22	1.22	0.	0.60	1.82	32.11	0.	13.87	33.61	100.	
26-END	45.29	0.	0.	1.82	1.82	0.	0.60	2.42	41.37	0.	17.87	42.87	100.	
MAY														
1-5	56.30	8.15	8.97	10.25	27.37	0.81	0.60	28.78	26.02	0.	11.24	27.52	100.	
6-10	37.52	8.15	8.97	10.25	27.37	0.81	0.60	28.78	7.24	0.	3.13	8.74	100.	
11-15	50.60	8.15	4.28	7.08	19.52	0.81	0.60	20.93	28.17	0.	12.17	29.67	100.	
16-20	23.45	8.15	8.97	12.56	29.68	0.81	0.60	31.09	-9.14	-3.95	0.	1.50	78.	
21-25	19.04	8.15	8.19	7.57	23.91	0.81	0.60	25.32	-7.78	-7.31	0.	1.50	60.	
26-END	26.77	0.	1.38	2.52	3.90	0.	0.60	4.50	20.72	0.	3.66	8.18	100.	
JUN														
1-5	29.59	8.15	7.41	5.11	20.67	0.81	0.60	22.08	6.01	0.	2.60	7.51	100.	
6-10	66.74	0.	3.59	4.20	7.79	0.	0.60	8.39	56.85	0.	24.56	58.35	100.	
11-15	67.25	0.86	0.48	0.	1.34	0.	0.60	1.94	63.81	0.	27.57	65.31	100.	
16-20	30.56	1.97	5.79	4.20	11.95	0.	0.60	12.55	16.51	0.	7.13	18.01	100.	
21-25	23.12	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.59	0.	0.69	3.09	100.	
26-END	20.28	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.47	0.	0.64	2.97	100.	
JUL														
1-5	17.74	0.	8.97	6.93	15.90	0.81	0.60	17.31	-1.07	-0.46	0.	1.50	96.	
6-10	15.61	0.	5.93	6.93	12.87	0.	0.60	13.47	0.64	-0.18	0.	1.50	98.	
11-15	22.67	0.	5.93	6.93	12.87	0.52	0.60	13.99	7.18	0.	2.92	8.25	100.	
16-20	24.02	0.	2.97	6.93	9.90	0.	0.60	10.50	12.02	0.	5.19	13.52	100.	
21-25	23.93	0.	0.	0.	0.	0.	0.60	0.60	71.85	0.	31.03	73.33	100.	
26-END	49.59	0.	0.	6.17	6.17	0.81	0.60	7.58	40.51	0.	21.00	42.01	100.	
AUG														
1-5	23.22	0.	0.	5.11	5.11	0.81	0.60	6.52	15.80	0.	6.83	17.30	100.	
6-10	21.66	0.	0.	4.62	4.62	0.81	0.60	6.03	14.13	0.	6.10	15.63	100.	
11-15	17.45	7.51	0.	3.41	10.91	0.81	0.60	12.32	3.63	0.	1.57	5.13	100.	
16-20	20.85	5.94	0.	2.31	8.25	0.	0.60	6.85	10.50	0.	4.54	12.00	100.	
21-25	26.95	12.05	0.	2.01	14.06	0.81	0.60	15.47	9.98	0.	4.31	11.48	100.	
26-END	28.20	3.07	0.	0.	3.07	0.	0.60	3.67	23.03	0.	11.26	24.53	100.	
SEP														
1-5	43.99	11.98	0.	0.	11.98	0.	0.60	12.58	29.91	0.	12.92	31.41	100.	
6-10	55.35	14.77	0.	0.	14.77	0.81	0.60	16.18	37.67	0.	16.27	39.17	100.	
11-15	76.67	9.98	8.38	0.	18.36	0.81	0.60	19.77	55.40	0.	23.93	56.90	100.	
16-20	80.10	7.62	7.50	0.	15.12	0.	0.60	15.72	62.88	0.	27.16	64.38	100.	
21-25	42.58	8.15	13.27	0.	21.42	0.81	0.60	22.83	18.25	0.	7.88	19.75	100.	
26-END	37.18	0.32	9.18	0.	9.50	0.	0.60	10.10	25.58	0.	11.05	27.08	100.	
OCT														
1-5	25.41	8.15	16.19	0.	24.34	0.81	0.60	25.75	-1.84	-0.80	0.	1.50	94.	
6-10	27.75	0.	12.38	0.	12.38	0.	0.60	12.98	13.27	0.	4.94	12.93	100.	
11-15	37.89	0.	0.	1.52	1.52	0.	0.60	2.12	34.27	0.	14.80	35.77	100.	
16-20	40.53	5.15	9.06	6.08	20.29	0.	0.60	20.89	18.14	0.	7.84	19.64	100.	
21-25	46.28	1.29	0.48	0.	1.77	0.	0.60	2.37	42.41	0.	18.32	43.91	100.	
26-END	79.24	0.46	6.90	4.48	5.85	0.	0.60	6.45	71.29	0.	36.96	72.99	100.	
NOV														
1-5	73.36	0.	5.93	12.56	18.49	0.	0.60	19.09	52.77	0.	22.80	54.27	100.	
6-10	79.14	8.15	4.28	7.08	19.52	0.81	0.60	20.93	56.71	0.	24.50	58.21	100.	
11-15	80.54	0.97	3.17	4.83	8.97	0.	0.60	9.57	69.47	0.	30.01	70.97	100.	
16-20	168.88	0.	3.59	5.75	9.34	0.	0.60	9.94	157.44	0.	68.01	158.94	100.	
21-25	111.50	3.33	4.05	3.28	10.66	0.	0.60	11.26	98.74	0.	42.66	100.24	100.	
26-END	114.39	0.	0.	0.	0.	0.	0.60	0.60	112.22	0.	48.51	113.79	100.	
DEC														
1-5	80.46	0.	5.93	6.93	12.87	0.	0.60	13.47	65.51	0.	28.30	67.01	100.	
6-10	59.83	8.15	2.97	6.93	24.05	0.81	0.60	25.46	32.87	0.	14.20	34.37	100.	
11-15	40.53	7.46	8.69	6.93	23.02	0.41	0.60	24.03	15.00	0.	6.48	16.50	100.	
16-20	34.72	4.51	8.45	6.93	19.89	0.07	0.60	20.55	12.67	0.	5.47	14.17	100.	
21-25	31.69	5.44	8.19	6.02	19.64	0.81	0.60	21.05	9.14	0.	3.95	10.64	100.	
26-END	26.61	2.72	8.97	6.93	18.62	0.81	0.60	20.03	5.08	0.	2.64	6.58	100.	

Table C-11 (6/10)

## WATER BALANCE FOR CASE 2 IN 1980

YEAR 1980

PERIOD	RUNOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS'N REQ'NT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (KCM)	SURPLUS (KCM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
JAN														
1-5	25.45	2.47	7.91	6.02	16.39	0.41	0.60	17.40	1.50	6.55	0.	2.83	8.05	100.
6-10	22.79	0.	3.84	1.46	5.30	0.18	0.60	6.08	1.50	15.21	0.	6.57	16.71	100.
11-15	18.04	0.	7.41	5.11	12.51	0.81	0.60	13.92	1.50	2.62	0.	1.13	4.12	100.
16-20	35.81	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	0.64	0.	0.28	2.14	100.
21-25	14.56	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	-1.22	-0.53	0.	1.50	95.
26-END	19.16	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	6.35	0.	2.77	6.84	100.
FEB														
1-5	16.68	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	1.87	0.	0.81	3.37	100.
6-10	42.03	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	2.19	0.	0.95	3.69	100.
11-15	10.19	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	0.35	0.	0.15	1.85	100.
16-20	9.13	0.	0.	4.01	4.01	0.	0.60	4.61	1.50	3.02	0.	1.30	4.52	100.
21-25	12.87	7.51	0.	4.01	11.52	0.81	0.60	12.93	1.50	-1.56	-0.67	0.	1.50	88.
26-END	26.10	5.32	0.	2.31	7.63	0.	0.60	8.23	1.50	18.37	0.	5.67	17.72	100.
MAR														
1-5	36.12	3.54	0.	0.18	3.72	0.	0.60	4.32	1.50	30.30	0.	13.09	31.80	100.
6-10	59.28	11.76	0.	0.	11.76	0.58	0.60	12.95	1.50	44.83	0.	19.37	46.33	100.
11-15	21.56	11.12	0.	0.	11.12	0.	0.60	11.72	1.50	8.34	0.	3.60	9.84	100.
16-20	27.68	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	10.00	0.	4.52	11.50	100.
21-25	22.73	8.15	7.70	0.	15.85	0.	0.60	16.45	1.50	4.78	0.	2.06	6.28	100.
26-END	19.44	7.70	6.42	0.	14.12	0.	0.60	14.72	1.50	3.22	0.	1.67	4.72	100.
APR														
1-5	21.82	0.	8.20	0.	8.20	0.	0.60	8.80	1.50	11.52	0.	4.98	13.02	100.
6-10	25.89	0.	7.22	0.	7.22	0.	0.60	7.82	1.50	16.57	0.	7.16	18.07	100.
11-15	25.50	5.15	1.92	0.	7.06	0.	0.60	7.66	1.50	16.34	0.	7.06	17.84	100.
16-20	19.27	8.05	16.15	0.	4.20	0.75	0.60	25.55	1.50	-7.78	-3.36	0.	1.50	74.
21-25	17.73	0.	7.93	6.38	14.31	0.	0.60	14.91	1.50	1.32	-2.79	0.	1.50	81.
26-END	44.30	8.05	7.79	5.17	21.01	0.75	0.60	22.36	1.50	20.44	0.	6.04	15.48	100.
MAY														
1-5	46.47	0.	5.93	10.25	16.18	0.	0.60	16.78	1.50	28.19	0.	12.18	29.69	100.
6-10	71.85	0.	0.	1.52	1.52	0.	0.60	2.12	1.50	68.23	0.	29.48	69.73	100.
11-15	48.50	0.	5.15	11.64	16.80	0.	0.60	17.40	1.50	49.60	0.	21.43	51.10	100.
16-20	57.41	0.	2.61	8.91	11.72	0.	0.60	12.32	1.50	43.59	0.	18.83	45.09	100.
21-25	33.02	8.15	5.84	4.83	18.83	0.81	0.60	20.24	1.50	11.28	0.	4.87	12.78	100.
26-END	37.61	7.53	8.08	7.08	22.69	0.41	0.60	23.70	1.50	12.61	0.	6.43	13.91	100.
JUN														
1-5	32.77	0.	5.15	6.02	11.17	0.	0.60	11.77	1.50	19.50	0.	8.42	21.00	100.
6-10	36.61	5.29	7.33	5.11	17.73	0.70	0.60	19.02	1.50	16.09	0.	6.95	17.59	100.
11-15	25.20	4.58	8.49	6.93	20.00	0.13	0.60	20.72	1.50	2.98	0.	1.29	4.48	100.
16-20	38.07	7.18	6.81	5.11	14.10	0.	0.60	14.70	1.50	21.87	0.	9.45	23.37	100.
21-25	24.53	2.04	8.21	6.93	17.18	0.	0.60	17.78	1.50	5.25	0.	2.27	6.75	100.
26-END	23.90	0.	8.94	6.93	15.88	0.78	0.60	17.25	1.50	5.15	0.	2.22	6.65	100.
JUL														
1-5	17.20	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	-1.61	-0.69	0.	1.50	94.
6-10	14.59	0.	5.93	8.93	12.87	0.07	0.60	13.53	1.50	-0.44	-0.89	0.	1.50	91.
11-15	13.44	0.	5.15	8.02	11.17	0.81	0.60	12.58	1.50	-0.64	-1.16	0.	1.50	88.
16-20	29.52	0.	0.	0.	0.	0.	0.60	0.60	1.50	27.42	0.	10.68	26.22	100.
21-25	22.95	0.	0.	0.	0.	0.	0.60	0.60	1.50	20.85	0.	9.01	22.35	100.
26-END	37.34	0.	0.	3.89	3.89	0.	0.60	4.49	1.50	31.35	0.	16.25	32.85	100.
AUG														
1-5	38.32	0.	0.	6.93	6.93	0.	0.60	7.53	1.50	29.29	0.	12.65	30.79	100.
6-10	26.12	0.	0.	4.62	4.62	0.	0.60	5.22	1.50	19.40	0.	8.38	20.90	100.
11-15	25.35	7.51	0.	3.41	10.91	0.81	0.60	12.32	1.50	11.53	0.	4.98	13.03	100.
16-20	21.11	3.33	0.	0.49	3.81	0.	0.60	4.41	1.50	15.20	0.	6.57	16.70	100.
21-25	84.01	12.05	0.	1.40	13.45	0.81	0.60	14.86	1.50	67.65	0.	29.23	69.15	100.
26-END	43.59	7.36	0.	0.	7.36	0.	0.60	7.96	1.50	34.13	0.	17.69	35.63	100.
SEP														
1-5	30.07	12.94	0.	0.	12.94	0.	0.60	13.54	1.50	15.03	0.	6.49	16.53	100.
6-10	40.56	8.65	0.	0.	8.65	0.	0.60	9.25	1.50	29.61	0.	12.79	31.11	100.
11-15	26.64	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	5.37	0.	2.32	6.87	100.
16-20	41.59	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	20.32	0.	8.78	21.82	100.
21-25	75.58	0.21	7.19	0.	7.40	0.	0.60	8.00	1.50	66.08	0.	28.54	67.58	100.
26-END	50.95	6.01	11.30	0.	17.30	0.	0.60	17.90	1.50	31.55	0.	13.63	33.05	100.
OCT														
1-5	47.21	0.	13.16	0.	13.16	0.	0.60	13.76	1.50	31.95	0.	13.80	33.45	100.
6-10	73.86	0.	13.16	0.	13.16	0.	0.60	13.76	1.50	58.62	0.	25.33	60.12	100.
11-15	77.04	4.61	8.86	6.08	19.55	0.	0.60	20.15	1.50	55.39	0.	23.93	56.89	100.
16-20	254.74	8.15	10.18	6.08	24.41	0.81	0.60	25.82	1.50	227.42	0.	98.25	228.92	100.
21-25	64.81	3.75	7.33	10.25	21.33	0.	0.60	21.93	1.50	41.38	0.	17.88	42.88	100.
26-END	40.27	0.	3.33	6.51	9.84	0.	0.60	10.44	1.50	28.33	0.	14.68	29.83	100.
NOV														
1-5	35.41	0.	3.25	7.08	8.33	0.	0.60	8.93	1.50	24.98	0.	10.79	26.48	100.
6-10	33.36	8.15	7.41	10.73	26.29	0.81	0.60	27.70	1.50	4.16	0.	1.80	5.66	100.
11-15	36.21	6.97	6.97	4.66	20.60	0.18	0.60	21.38	1.50	13.33	0.	5.76	14.83	100.
16-20	49.29	8.15	8.19	7.57	23.91	0.81	0.60	25.32	1.50	22.47	0.	9.71	23.97	100.
21-25	70.87	0.	0.	0.	0.	0.	0.60	0.60	1.50	68.77	0.	29.71	70.27	100.
26-END	80.97	6.87	4.58	4.37	13.82	0.13	0.60	14.55	1.50	64.92	0.	28.05	66.52	100.
DEC														
1-5	88.39	0.	0.	0.	0.	0.	0.60	0.60	1.50	86.29	0.	37.28	87.79	100.
6-10	158.55	2.79	1.64	0.	3.81	0.	0.60	4.43	1.50	152.62	0.	63.93	154.12	100.
11-15	148.08	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	121.12	0.	52.32	122.62	100.
16-20	71.17	4.72	2.63	0.	7.35	0.24	0.60	8.19	1.50	61.48	0.	26.56	62.98	100.
21-25	53.13	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	38.16	0.	16.49	39.66	100.
26-END	45.21	2.63	2.93	0.	5.56	0.64	0.60	6.80	1.50	36.91	0.	19.13	38.41	100.

Table C-11 (7/10)

## WATER BALANCE FOR CASE 2 IN 1981

YEAR : 1981														
PERIOD	RINDOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & J WATER (CUM/S)	DIVERS'N REQ'RT (CUM/S)	MAJNT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
JAN														
1-5	54.19	0.43	5.63	6.02	12.08	0.	0.60	12.68	1.50	40.01	0.	17.28	41.51	100.
6-10	52.52	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	37.55	0.	16.14	38.85	100.
11-15	37.97	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	19.16	0.	8.28	20.66	100.
16-20	34.74	0.	5.93	6.93	12.87	0.30	0.60	13.76	1.50	19.48	0.	8.41	20.98	100.
21-25	32.50	0.	5.15	6.02	11.17	0.81	0.60	12.58	1.50	18.42	0.	7.96	19.92	100.
26-END	27.20	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	14.59	0.	7.46	15.89	100.
FEB														
1-5	39.70	0.	2.58	6.02	8.60	0.	0.60	9.20	1.50	29.00	0.	12.53	30.50	100.
6-10	32.25	0.	0.	6.93	6.93	0.24	0.60	7.77	1.50	22.98	0.	9.93	24.48	100.
11-15	31.98	0.	0.	6.93	6.93	0.	0.60	7.53	1.50	22.95	0.	9.91	24.45	100.
16-20	51.76	0.	0.	4.62	4.62	0.81	0.60	6.03	1.50	44.23	0.	19.11	45.73	100.
21-25	30.51	6.79	0.	2.19	8.98	0.	0.60	9.58	1.50	19.43	0.	8.39	20.93	100.
26-END	51.19	9.48	0.	2.31	11.79	0.	0.60	12.39	1.50	37.30	0.	9.67	38.80	100.
MAR														
1-5	35.01	10.98	0.	0.	10.98	0.	0.60	11.58	1.50	21.93	0.	9.47	23.43	100.
6-10	23.44	12.05	0.	0.	12.05	0.81	0.60	13.46	1.50	8.48	0.	3.66	9.98	100.
11-15	24.16	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	6.48	0.	2.80	7.98	100.
16-20	17.98	13.16	0.	0.	13.16	0.	0.60	13.76	1.50	2.72	0.	1.18	4.22	100.
21-25	21.46	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	0.19	0.	0.08	1.69	100.
26-END	19.49	2.69	4.56	0.	7.25	0.	0.60	7.85	1.50	10.14	0.	5.26	11.44	100.
APR														
1-5	42.94	8.05	11.66	0.	19.71	0.75	0.60	21.06	1.50	20.38	0.	8.80	21.88	100.
6-10	70.29	3.22	9.09	0.	12.31	0.	0.60	12.91	1.50	55.88	0.	24.14	57.38	100.
11-15	60.29	5.15	3.87	0.	9.02	0.	0.60	9.62	1.50	49.17	0.	21.24	50.67	100.
16-20	78.20	0.	13.16	0.	13.16	0.	0.60	13.76	1.50	62.94	0.	27.19	64.44	100.
21-25	74.85	8.15	8.62	5.47	22.24	0.81	0.60	23.65	1.50	49.70	0.	21.47	51.20	100.
26-END	41.88	8.15	4.48	3.65	16.28	0.81	0.60	17.69	1.50	22.69	0.	9.80	24.19	100.
MAY														
1-5	61.81	0.	2.03	7.21	9.24	0.	0.60	9.84	1.50	50.47	0.	21.80	51.97	100.
6-10	80.43	0.	5.93	10.25	16.18	0.	0.60	16.78	1.50	62.15	0.	26.85	63.65	100.
11-15	90.35	8.15	7.41	10.73	26.29	0.81	0.60	27.70	1.50	61.15	0.	26.42	62.65	100.
16-20	100.19	6.33	6.75	10.73	25.79	0.	0.60	24.39	1.50	74.30	0.	32.10	75.80	100.
21-25	99.62	8.15	7.41	6.66	22.22	0.81	0.60	23.65	1.50	74.49	0.	32.18	75.99	100.
26-END	84.44	0.	0.	0.	0.	0.	0.60	0.60	1.50	82.34	0.	42.69	83.84	100.
JUN														
1-5	66.32	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	39.36	0.	17.00	40.86	100.
6-10	40.96	5.08	8.77	6.93	20.76	0.52	0.60	21.90	1.50	17.54	0.	7.59	19.06	100.
11-15	24.21	5.44	8.97	6.93	21.33	0.81	0.60	22.74	1.50	9.97	0.	4.31	11.47	100.
16-20	27.04	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	5.51	0.	2.38	7.01	100.
21-25	24.95	2.72	8.19	6.02	16.92	0.81	0.60	18.33	1.50	5.12	0.	2.21	6.62	100.
26-END	37.26	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	18.45	0.	7.97	19.95	100.
JUL														
1-5	23.90	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	5.09	0.	2.20	6.59	100.
6-10	19.46	0.	5.93	6.93	12.87	0.41	0.60	13.88	1.50	4.08	0.	1.76	5.58	100.
11-15	24.19	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	9.22	0.	3.98	10.72	100.
16-20	19.86	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	7.07	0.	3.05	8.57	100.
21-25	19.76	0.	2.19	5.11	7.29	0.	0.60	7.89	1.50	10.37	0.	4.48	11.87	100.
26-END	22.47	0.	0.	0.85	0.85	0.81	0.60	2.26	1.50	18.71	0.	9.70	20.21	100.
AUG														
1-5	16.61	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	6.77	0.	2.92	8.27	100.
6-10	13.11	0.	0.	4.62	4.62	0.81	0.60	6.03	1.50	5.56	0.	2.41	7.08	100.
11-15	11.68	7.51	0.	4.62	12.13	0.81	0.60	13.54	1.50	-3.56	-1.45	0.	1.50	74.
16-20	10.74	7.19	0.	0.	7.19	0.30	0.60	8.08	1.50	1.16	-0.95	0.	1.50	75.
21-25	15.60	7.04	0.	2.31	9.36	0.	0.60	9.96	1.50	4.14	0.	0.84	3.44	100.
26-END	26.09	8.08	0.	0.	8.08	0.	0.60	8.68	1.50	15.91	0.	8.25	17.47	100.
SEP														
1-5	24.25	8.12	0.	0.	8.12	0.	0.60	8.72	1.50	14.03	0.	6.06	15.53	100.
6-10	89.18	3.04	0.	0.	3.04	0.	0.60	3.64	1.50	84.04	0.	36.31	85.34	100.
11-15	69.06	9.76	8.30	0.	18.06	0.70	0.60	19.36	1.50	48.20	0.	20.82	49.70	100.
16-20	54.82	6.11	6.94	0.	13.06	0.	0.60	13.66	1.50	39.66	0.	17.13	41.16	100.
21-25	40.02	8.15	10.14	0.	18.30	0.81	0.60	19.71	1.50	18.81	0.	8.13	20.31	100.
26-END	27.58	7.62	12.29	0.	19.90	0.52	0.60	21.03	1.50	5.05	0.	2.18	6.55	100.
OCT														
1-5	22.53	8.15	16.19	0.	24.34	0.81	0.60	25.75	1.50	-4.72	-2.04	0.	1.50	84.
6-10	28.73	8.15	14.95	0.	23.09	0.81	0.60	24.50	1.50	2.73	-0.86	0.	1.50	93.
11-15	46.47	0.	0.	0.61	0.61	0.	0.60	1.21	1.50	43.76	0.	18.04	43.27	100.
16-20	77.12	0.	0.35	2.80	3.15	0.	0.60	3.75	1.50	71.87	0.	31.05	73.37	100.
21-25	38.71	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	8.43	0.	3.64	9.93	100.
26-END	41.04	6.99	5.93	6.51	19.43	0.07	0.60	20.10	1.50	19.44	0.	10.08	20.94	100.
NOV														
1-5	30.96	6.44	2.39	1.22	10.05	0.	0.60	10.65	1.50	18.81	0.	8.13	20.31	100.
6-10	32.74	1.39	3.33	6.91	13.63	0.	0.60	14.23	1.50	17.01	0.	7.35	18.51	100.
11-15	64.02	8.15	8.03	7.39	23.57	0.81	0.60	24.98	1.50	37.54	0.	16.22	39.04	100.
16-20	65.31	0.	3.83	6.02	9.85	0.	0.60	10.45	1.50	53.36	0.	23.05	54.86	100.
21-25	108.05	5.47	4.25	3.28	13.60	0.	0.60	14.20	1.50	92.35	0.	39.89	93.85	100.
26-END	72.27	0.	1.09	1.28	2.37	0.	0.60	2.97	1.50	67.80	0.	29.29	69.30	100.
DEC														
1-5	52.03	5.90	6.13	6.93	20.96	0.	0.60	21.56	1.50	28.97	0.	12.51	30.47	100.
6-10	83.51	8.15	8.65	6.57	23.37	0.81	0.60	24.78	1.50	57.23	0.	24.72	58.73	100.
11-15	55.51	0.	0.	0.	0.	0.	0.60	0.60	1.50	53.41	0.	23.07	54.91	100.
16-20	37.13	5.44	6.97	6.93	21.33	0.81	0.60	22.74	1.50	12.89	0.	5.57	14.39	100.
21-25	29.66	5.44	8.97	6.93	21.33	0.81	0.60	22.74	1.50	5.42	0.	2.34	6.92	100.
26-END	26.80	0.	3.33	3.69	7.22	0.	0.60	7.82	1.50	17.68	0.	9.06	18.98	100.

Table C-11 (8/10)

## WATER BALANCE FOR CASE 2 IN 1982

YEAR : 1982

PERIOD	RUNOFF (CUM/S)	PADDY				UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	OVERS*IN REF*IT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)	TOTAL (CUM/S)									
JAN														
1-5	25.41	2.72	7.95	5.75	16.42	0.81	0.60	17.83	1.50	6.08	0.	2.63	7.58	100.
6-10	21.78	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	2.97	0.	1.28	4.47	100.
11-15	28.78	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	9.97	0.	4.31	11.47	100.
16-20	19.91	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	4.94	0.	2.14	6.44	100.
21-25	19.52	0.	5.93	6.93	12.87	0.81	0.60	16.28	1.50	3.74	0.	1.62	5.24	100.
26-END	15.72	0.	2.97	6.93	9.90	0.	0.60	10.50	1.50	3.72	0.	1.93	5.22	100.
FEB														
1-5	14.92	0.	1.09	2.55	3.65	0.	0.60	4.25	1.50	9.17	0.	3.96	10.67	100.
6-10	29.61	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	19.77	0.	8.54	21.27	100.
11-15	37.25	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	27.91	0.	12.06	29.41	100.
16-20	20.20	0.	0.	4.62	4.62	0.81	0.60	6.03	1.50	12.67	0.	5.47	14.17	100.
21-25	18.00	7.51	0.	3.65	11.16	0.81	0.60	12.57	1.50	3.93	0.	1.70	5.43	100.
26-END	15.39	12.52	0.	2.31	14.83	0.81	0.60	16.24	1.50	-2.35	-0.61	0.	1.50	84.
MAR														
1-5	15.83	9.12	0.	2.31	11.43	0.	0.60	12.03	1.50	2.30	0.	0.39	2.39	100.
6-10	33.53	3.90	0.	0.	3.90	0.	0.60	4.50	1.50	27.53	0.	11.89	29.03	100.
11-15	25.96	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	8.28	0.	3.58	9.78	100.
16-20	15.97	2.79	0.	0.	2.79	0.	0.60	3.39	1.50	11.08	0.	4.79	12.58	100.
21-25	27.64	5.79	6.82	0.	12.62	0.	0.60	13.22	1.50	12.92	0.	5.58	14.42	100.
26-END	28.43	8.95	6.82	0.	15.84	0.64	0.60	17.07	1.50	9.86	0.	5.11	11.36	100.
APR														
1-5	18.06	1.72	9.94	0.	11.65	0.	0.60	12.25	1.50	4.31	0.	1.86	5.81	100.
6-10	41.24	3.86	7.69	0.	11.55	0.	0.60	12.15	1.50	27.59	0.	11.92	29.09	100.
11-15	31.48	4.01	15.39	0.	21.60	0.	0.60	22.00	1.50	7.98	0.	3.45	9.48	100.
16-20	107.17	7.72	12.91	0.	20.63	0.58	0.60	21.81	1.50	83.86	0.	36.23	85.36	100.
21-25	100.32	2.47	6.66	5.53	14.66	0.	0.60	15.26	1.50	83.56	0.	36.10	85.06	100.
26-END	66.84	0.	6.21	5.72	11.92	0.	0.60	12.52	1.50	52.82	0.	22.82	54.32	100.
MAY														
1-5	79.71	8.15	8.97	10.25	27.37	0.81	0.60	28.78	1.50	49.43	0.	21.36	50.93	100.
6-10	67.17	0.	0.	3.44	3.44	0.	0.60	4.04	1.50	61.63	0.	26.63	63.13	100.
11-15	50.26	8.15	8.19	11.64	27.98	0.81	0.60	29.39	1.50	19.37	0.	8.37	20.87	100.
16-20	48.30	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	15.71	0.	6.79	17.21	100.
21-25	97.00	6.54	6.65	6.48	19.67	0.	0.60	20.27	1.50	75.23	0.	32.50	76.73	100.
26-END	99.54	3.59	2.46	2.21	8.26	0.	0.60	8.86	1.50	89.18	0.	46.23	90.68	100.
JUN														
1-5	40.77	4.83	7.73	6.93	19.49	0.	0.60	20.09	1.50	39.18	0.	16.93	40.68	100.
6-10	46.99	5.44	2.97	6.93	21.33	0.81	0.60	22.74	1.50	22.75	0.	9.83	24.25	100.
11-15	35.38	0.	4.84	5.66	10.50	0.	0.60	11.10	1.50	22.78	0.	9.84	24.28	100.
16-20	36.73	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	15.20	0.	6.57	16.70	100.
21-25	22.67	2.72	4.59	1.82	9.14	0.81	0.60	10.55	1.50	10.62	0.	4.59	12.12	100.
26-END	18.33	0.	8.49	6.53	15.42	0.13	0.60	16.15	1.50	0.68	0.	0.30	2.18	100.
JUL														
1-5	25.51	0.	1.96	0.	1.96	0.	0.60	2.56	1.50	21.45	0.	9.27	22.95	100.
6-10	19.10	0.	3.75	4.38	8.13	0.	0.60	8.75	1.50	8.87	0.	3.83	10.37	100.
11-15	15.78	0.	1.09	1.28	2.37	0.81	0.60	3.78	1.50	10.50	0.	4.54	12.00	100.
16-20	15.80	0.	0.	0.	0.	0.	0.60	0.60	1.50	13.70	0.	5.92	15.20	100.
21-25	25.18	0.	2.19	5.11	7.29	0.64	0.60	8.53	1.50	15.15	0.	6.54	16.65	100.
26-END	15.14	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	5.30	0.	2.75	6.80	100.
AUG														
1-5	15.08	0.	0.	5.84	5.84	0.24	0.60	6.68	1.50	6.90	0.	2.98	8.40	100.
6-10	20.54	0.	0.	3.83	3.83	0.30	0.60	4.73	1.50	14.31	0.	6.18	15.81	100.
11-15	22.78	7.12	0.	4.62	11.74	0.18	0.60	12.52	1.50	8.76	0.	3.78	10.26	100.
16-20	21.82	7.44	0.	2.31	9.75	0.70	0.60	11.04	1.50	15.34	0.	6.63	16.84	100.
21-25	42.65	8.90	0.	2.07	10.97	0.	0.60	11.57	1.50	29.58	0.	12.78	31.08	100.
26-END	25.02	10.04	0.	0.	10.04	0.81	0.60	11.45	1.50	12.07	0.	6.26	13.57	100.
SEP														
1-5	25.63	10.91	0.	0.	10.91	0.	0.60	11.51	1.50	12.62	0.	5.45	14.12	100.
6-10	16.74	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	-0.94	-0.41	0.	1.50	93.
11-15	30.05	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	8.78	0.	3.39	9.35	100.
16-20	47.53	9.23	8.10	0.	17.33	0.41	0.60	18.34	1.50	27.69	0.	11.96	29.19	100.
21-25	44.79	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	20.46	0.	8.84	21.96	100.
26-END	44.45	5.69	12.35	0.	18.03	0.	0.60	18.63	1.50	24.32	0.	10.50	25.82	100.
OCT														
1-5	53.80	7.51	12.44	0.	19.95	0.47	0.60	21.01	1.50	31.29	0.	13.52	32.79	100.
6-10	51.38	4.54	15.59	0.	22.13	0.	0.60	22.73	1.50	27.15	0.	11.73	28.65	100.
11-15	59.83	4.23	8.32	5.84	18.98	0.	0.60	19.58	1.50	38.75	0.	16.74	40.25	100.
16-20	76.35	0.97	7.66	6.14	16.77	0.	0.60	15.37	1.50	59.48	0.	25.70	60.98	100.
21-25	54.55	8.15	6.31	8.18	22.64	0.81	0.60	24.05	1.50	29.00	0.	12.53	30.50	100.
26-END	58.70	2.97	1.10	1.82	5.90	0.	0.60	6.50	1.50	50.70	0.	26.28	52.20	100.
NOV														
1-5	84.56	7.29	5.37	8.73	21.39	0.35	0.60	22.34	1.50	62.72	0.	27.09	64.22	100.
6-10	81.82	0.	0.	1.92	1.92	0.	0.60	2.52	1.50	77.80	0.	33.61	79.30	100.
11-15	94.98	1.29	1.88	3.19	6.36	0.	0.60	6.96	1.50	86.52	0.	37.37	88.02	100.
16-20	114.71	3.75	3.74	4.29	11.78	0.	0.60	12.38	1.50	100.83	0.	43.56	102.33	100.
21-25	85.71	0.54	1.76	1.82	4.12	0.	0.60	4.72	1.50	79.49	0.	34.34	80.99	100.
26-END	109.60	0.	0.	0.	0.	0.	0.60	0.60	1.50	107.50	0.	46.44	109.00	100.
DEC														
1-5	125.72	7.83	6.50	4.20	18.53	0.64	0.60	19.77	1.50	104.45	0.	45.12	105.95	100.
6-10	72.75	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	45.79	0.	19.78	47.29	100.
11-15	73.34	6.97	2.59	0.	9.57	0.18	0.60	10.35	1.50	61.49	0.	26.56	62.99	100.
16-20	70.62	2.50	1.40	0.	3.90	0.	0.60	4.50	1.50	64.62	0.	27.92	66.12	100.
21-25	56.86	5.44	3.03	0.	8.47	0.81	0.60	9.88	1.50	45.48	0.	19.65	46.98	100.
26-END	32.88	0.93	1.04	0.	1.97	0.	0.60	2.57	1.50	28.81	0.	14.94	30.31	100.

Table C-11 (9/10) WATER BALANCE FOR CASE 2 IN 1983

YEAR : 1983															
PERIOD	RUNOFF (CUM/FS)	PADDY				TOTAL (CUM/FS)	UPLAND CROP (CUM/FS)	D & I WATER (CUM/FS)	DIVERS'N REQ'NT (CUM/FS)	MAINT. FLOW (CUM/FS)	BALANCE (CUM/FS)	DEFICIT (RCH)	SURPLUS (RCH)	DOWNSTR. FROM DRH (CUM/FS)	WATER DEPTH (MM)
		BLOCK 1 (CUM/FS)	BLOCK 2 (CUM/FS)	BLOCK 3 (CUM/FS)	FLOCK 3 (CUM/FS)										
JAN															
1- 5	39.23	0.	0.	0.	0.	0.	0.60	0.60	1.50	37.13	0.	16.04	38.63	100.	
6-10	35.44	0.	7.27	5.84	13.11	0.	0.60	13.71	1.50	20.23	0.	8.75	21.73	100.	
11-15	27.60	0.	8.53	6.75	15.28	0.41	0.60	16.29	1.50	9.81	0.	4.24	11.31	100.	
16-20	24.84	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	9.06	0.	3.92	10.56	100.	
21-25	22.11	0.	5.93	6.93	12.87	0.81	0.60	14.28	1.50	6.33	0.	2.74	7.83	100.	
26-END	19.29	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	6.48	0.	3.36	7.98	100.	
FEB															
1- 5	18.90	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	6.09	0.	2.63	7.59	100.	
6-10	16.49	0.	0.	2.55	2.55	0.81	0.60	3.96	1.50	11.03	0.	4.76	12.53	100.	
11-15	16.69	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	6.85	0.	2.96	8.35	100.	
16-20	22.30	0.	0.	4.62	4.62	0.67	0.60	5.69	1.50	15.11	0.	6.53	16.61	100.	
21-25	17.47	7.04	0.	4.62	11.67	0.07	0.60	12.33	1.50	3.64	0.	1.57	5.14	100.	
26-END	15.71	12.52	0.	2.31	14.83	0.81	0.60	16.24	1.50	-2.03	-0.53	0.	1.50	86.	
MAR															
1- 5	26.98	12.05	0.	2.31	14.36	0.81	0.60	15.77	1.50	3.71	0.	1.08	3.99	100.	
6-10	14.94	12.05	0.	0.	12.05	0.81	0.60	13.46	1.50	-0.02	-0.01	0.	1.50	100.	
11-15	19.25	14.77	0.	0.	14.77	0.81	0.60	16.18	1.50	1.57	0.	0.67	3.05	100.	
16-20	19.61	12.52	0.	0.	12.52	0.	0.60	13.12	1.50	4.99	0.	2.16	6.49	100.	
21-25	18.55	9.98	8.38	0.	18.36	0.81	0.60	19.77	1.50	-2.72	-1.17	0.	1.50	86.	
26-END	25.39	9.22	6.98	0.	16.20	0.81	0.60	17.61	1.50	6.28	0.	2.08	5.51	100.	
APR															
1- 5	15.76	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	-8.57	-3.70	0.	1.50	66.	
6-10	13.49	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	-10.84	-8.38	0.	1.50	22.	
11-15	12.11	8.15	16.19	0.	24.34	0.81	0.60	25.75	1.50	-15.14	-14.93	0.	1.50	-14.	
16-20	10.66	8.15	16.19	0.	24.34	0.81	0.60	25.75	1.50	-16.59	-16.59	0.	1.50	-69.	
21-25	12.83	0.	1.99	4.07	6.07	0.	0.60	6.67	1.50	4.66	-20.08	0.	1.50	-36.	
26-END	19.24	0.	0.	0.55	0.55	0.	0.60	1.15	1.50	16.59	-12.91	0.	1.50	13.	
MAY															
1- 5	33.25	3.22	1.20	3.56	7.97	0.	0.60	8.57	1.50	23.18	-2.90	0.	1.50	83.	
6-10	24.90	6.33	7.66	9.76	23.75	0.	0.60	24.35	1.50	-0.95	-3.31	0.	1.50	80.	
11-15	30.39	7.62	8.77	12.56	28.94	0.52	0.60	30.07	1.50	-1.18	-3.82	0.	1.50	79.	
16-20	26.73	3.33	7.17	12.56	23.05	0.	0.60	23.65	1.50	1.58	-3.14	0.	1.50	83.	
21-25	29.22	7.40	5.17	4.38	16.95	0.41	0.60	17.96	1.50	9.76	0.	1.08	4.00	100.	
26-END	21.44	0.	5.15	6.93	12.08	0.	0.60	12.68	1.50	7.26	0.	3.76	8.76	100.	
JUN															
1- 5	24.00	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	-2.96	-1.28	0.	1.50	93.	
6-10	14.35	4.79	8.14	6.38	19.32	0.30	0.60	20.21	1.50	-7.36	-4.46	0.	1.50	75.	
11-15	26.44	1.86	4.32	3.83	10.01	0.	0.60	10.61	1.50	14.33	0.	1.73	5.51	100.	
16-20	34.06	1.82	3.75	2.01	7.58	0.	0.60	8.18	1.50	24.38	0.	10.53	25.88	100.	
21-25	19.74	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	-1.79	-0.77	0.	1.50	95.	
26-END	15.07	0.	8.97	6.93	15.90	0.81	0.60	17.31	1.50	-3.74	-2.39	0.	1.50	80.	
JUL															
1- 5	15.28	0.	7.17	6.93	14.10	0.	0.60	14.70	1.50	-0.92	-2.79	0.	1.50	77.	
6-10	17.42	0.	4.37	5.11	9.48	0.	0.60	10.08	1.50	5.84	-0.26	0.	1.50	97.	
11-15	19.12	0.	2.81	3.28	6.09	0.81	0.60	7.50	1.50	10.12	0.	4.11	11.01	100.	
16-20	16.92	0.	0.	0.	0.	0.	0.60	0.60	1.50	16.82	0.	6.40	16.32	100.	
21-25	53.45	0.	2.97	6.93	9.90	0.81	0.60	11.31	1.50	40.64	0.	17.56	42.14	100.	
26-END	28.84	0.	0.	4.65	4.65	0.81	0.60	6.06	1.50	21.28	0.	11.03	22.78	100.	
AUG															
1- 5	62.57	0.	0.	6.93	6.93	0.	0.60	7.53	1.50	53.54	0.	23.13	55.04	100.	
6-10	47.59	0.	0.	3.41	3.41	0.81	0.60	4.81	1.50	41.28	0.	17.83	42.78	100.	
11-15	31.66	5.15	0.	0.36	5.51	0.	0.60	6.11	1.50	24.05	0.	10.39	25.55	100.	
16-20	31.37	7.47	0.	2.31	9.78	0.75	0.60	11.14	1.50	18.73	0.	8.09	20.23	100.	
21-25	21.72	7.97	0.	2.01	9.98	0.	0.60	10.58	1.50	9.64	0.	4.16	11.14	100.	
26-END	27.00	2.65	0.	0.	2.65	0.	0.60	3.25	1.50	22.25	0.	11.53	23.75	100.	
SEP															
1- 5	45.75	1.90	0.	0.	1.90	0.	0.60	2.50	1.50	41.75	0.	18.04	43.25	100.	
6-10	64.40	12.62	0.	0.	12.62	0.	0.60	13.22	1.50	49.68	0.	21.46	51.18	100.	
11-15	82.61	3.54	5.99	0.	9.53	0.	0.60	10.13	1.50	70.98	0.	30.67	72.48	100.	
16-20	126.51	0.	1.20	0.	1.20	0.	0.60	1.80	1.50	123.21	0.	53.23	124.71	100.	
21-25	73.63	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	49.30	0.	21.30	50.80	100.	
26-END	45.13	0.	5.92	0.	5.92	0.	0.60	6.52	1.50	37.11	0.	16.03	38.61	100.	
OCT															
1- 5	35.42	5.69	7.46	0.	13.15	0.	0.60	13.75	1.50	20.17	0.	8.71	21.67	100.	
6-10	32.67	4.29	13.19	0.	17.48	0.	0.60	18.08	1.50	13.09	0.	2.65	14.59	100.	
11-15	30.39	5.26	7.54	5.47	18.27	0.	0.60	18.87	1.50	10.02	0.	4.33	11.52	100.	
16-20	33.91	6.97	10.52	6.38	23.88	0.18	0.60	24.66	1.50	7.75	0.	3.35	9.25	100.	
21-25	38.53	3.33	5.61	9.03	17.97	0.	0.60	18.57	1.50	18.26	0.	7.89	19.76	100.	
26-END	42.15	0.	0.	2.96	2.96	0.	0.60	3.56	1.50	37.09	0.	19.23	38.59	100.	
NOV															
1- 5	40.41	3.75	3.43	8.00	15.18	0.	0.60	15.78	1.50	23.13	0.	9.99	24.63	100.	
6-10	56.02	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	23.43	0.	10.12	24.93	100.	
11-15	48.93	8.15	8.97	8.48	25.60	0.81	0.60	27.01	1.50	20.42	0.	8.82	21.92	100.	
16-20	45.67	8.15	8.97	8.48	25.60	0.81	0.60	27.01	1.50	17.16	0.	7.41	18.66	100.	
21-25	35.64	7.63	6.50	4.20	18.53	0.64	0.60	19.77	1.50	14.37	0.	6.21	15.87	100.	
26-END	34.57	3.86	1.91	0.55	6.31	0.	0.60	6.91	1.50	26.16	0.	11.30	27.66	100.	
DEC															
1- 5	31.84	8.15	8.97	6.93	24.05	0.81	0.60	25.46	1.50	4.88	0.	2.11	6.38	100.	
6-10	28.40	3.54	4.91	4.20	12.64	0.	0.60	13.24	1.50	13.66	0.	5.90	15.16	100.	
11-15	40.40	0.	3.59	4.20	7.79	0.	0.60	8.39	1.50	30.51	0.	13.18	32.01	100.	
16-20	31.47	0.86	2.51	2.37	5.74	0.	0.60	6.34	1.50	23.63	0.	10.21	25.13	100.	
21-25	27.54	0.	1.25	1.46	2.71	0.	0.60	3.31	1.50	22.73	0.	9.82	24.23	100.	
26-END	25.90	2.60	8.83	6.93	18.36	0.58	0.60	19.55	1.50	4.85	0.	2.52	6.35	100.	



Table C-11 (10/10) WATER BALANCE FOR CASE 2 IN 1984

YEAR : 1984														
PERIOD	RUNOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS* N REQM* T (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MM)	SURPLUS (MM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
<b>JAN</b>														
1-5	24.17	1.39	7.49	6.93	15.62	0.	0.60	16.42	1.50	6.25	0.	2.70	7.75	100.
6-10	18.61	0.	8.19	6.02	14.21	0.81	0.60	15.62	1.50	1.49	0.	0.65	2.99	100.
11-15	22.18	0.	5.21	5.11	10.37	0.	0.60	10.92	1.50	9.76	0.	4.22	11.26	100.
16-20	28.68	0.	0.	0.	0.	0.	0.	0.60	1.50	26.58	0.	11.48	28.08	100.
21-25	68.53	0.	5.93	6.93	12.87	0.	0.60	13.47	1.50	53.56	0.	23.14	55.06	100.
26-END	60.65	0.	0.	0.	0.	0.	0.60	0.60	1.50	58.55	0.	30.35	60.05	100.
<b>FEB</b>														
1-5	69.26	0.	0.	0.	0.	0.	0.60	0.60	1.50	67.16	0.	29.01	68.66	100.
6-10	98.47	0.	0.	0.	0.	0.	0.60	0.60	1.50	96.37	0.	41.53	97.87	100.
11-15	77.92	0.	0.	6.93	6.93	0.	0.60	7.53	1.50	68.89	0.	29.76	70.39	100.
16-20	69.23	0.	0.	0.	0.	0.	0.60	0.60	1.50	67.63	0.	29.22	69.13	100.
21-25	59.77	7.51	0.	4.62	12.13	0.81	0.60	13.54	1.50	44.73	0.	19.32	46.23	100.
26-END	53.93	1.03	0.	0.	1.03	0.	0.60	1.63	1.50	50.80	0.	17.56	52.30	100.
<b>MAR</b>														
1-5	54.93	3.54	0.	0.18	3.72	0.	0.60	4.32	1.50	49.11	0.	21.21	50.61	100.
6-10	44.43	12.05	0.	0.	12.05	0.81	0.60	13.46	1.50	29.49	0.	12.74	30.99	100.
11-15	53.31	9.51	0.	0.	9.51	0.	0.60	10.11	1.50	41.70	0.	18.01	43.20	100.
16-20	63.24	0.	0.	0.	0.	0.	0.60	0.60	1.50	61.14	0.	26.41	62.64	100.
21-25	62.04	9.87	8.34	0.	18.21	0.75	0.60	19.56	1.50	60.98	0.	26.34	62.48	100.
26-END	85.14	8.42	6.68	0.	15.10	0.30	0.60	16.00	1.50	67.64	0.	35.07	69.14	100.
<b>APR</b>														
1-5	91.62	3.33	9.52	0.	12.84	0.	0.60	13.44	1.50	76.68	0.	33.12	78.18	100.
6-10	65.67	3.75	9.68	0.	13.43	0.	0.60	14.03	1.50	50.14	0.	21.66	51.64	100.
11-15	95.44	0.11	11.64	0.	11.74	0.	0.60	12.34	1.50	79.60	0.	34.39	81.10	100.
16-20	63.35	0.	10.03	0.	10.03	0.	0.60	10.63	1.50	51.22	0.	22.13	52.72	100.
21-25	59.23	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	30.82	0.	13.32	32.32	100.
26-END	57.08	8.15	10.96	6.38	25.50	0.81	0.60	26.91	1.50	28.67	0.	12.39	30.17	100.
<b>MAY</b>														
1-5	86.21	0.	5.93	10.25	16.18	0.	0.60	16.78	1.50	67.93	0.	29.35	69.43	100.
6-10	58.33	4.18	1.56	0.91	6.65	0.	0.60	7.25	1.50	49.58	0.	21.42	51.08	100.
11-15	52.28	0.	2.81	8.91	11.72	0.	0.60	12.32	1.50	38.46	0.	16.62	39.96	100.
16-20	50.34	8.15	8.97	12.56	29.68	0.81	0.60	31.09	1.50	17.75	0.	7.67	19.25	100.
21-25	57.84	0.	3.59	5.75	9.34	0.	0.60	9.94	1.50	46.40	0.	20.05	47.90	100.
26-END	58.17	7.53	8.08	7.68	22.69	0.43	0.60	23.70	1.50	32.92	0.	17.07	34.42	100.
<b>JUN</b>														
1-5	94.80	7.51	8.73	6.93	23.17	0.47	0.60	24.24	1.50	69.06	0.	29.84	70.56	100.
6-10	65.79	5.44	8.19	6.02	19.64	0.81	0.60	21.05	1.50	43.24	0.	18.68	44.74	100.
11-15	64.46	1.43	2.83	2.37	6.63	0.	0.60	7.23	1.50	55.73	0.	24.08	57.23	100.
16-20	67.96	2.43	8.65	6.93	18.01	0.35	0.60	18.96	1.50	47.50	0.	20.52	49.00	100.
21-25	43.83	2.72	8.97	6.93	18.62	0.81	0.60	20.03	1.50	22.32	0.	9.64	23.62	100.
26-END	36.19	0.	8.19	6.02	14.21	0.81	0.60	15.62	1.50	19.07	0.	8.24	20.57	100.
<b>JUL</b>														
1-5	33.38	0.	3.94	4.56	8.50	0.	0.60	9.10	1.50	22.78	0.	9.84	24.28	100.
6-10	35.17	0.	4.37	5.11	9.48	0.81	0.60	10.89	1.50	22.76	0.	9.84	24.28	100.
11-15	37.05	0.	4.37	5.11	9.48	0.	0.60	10.88	1.50	25.47	0.	11.00	26.97	100.
16-20	88.45	0.	2.77	6.48	9.25	0.	0.60	9.85	1.50	77.10	0.	33.31	78.60	100.
21-25	54.16	0.	0.	0.	0.	0.	0.60	0.60	1.50	52.06	0.	22.69	53.56	100.
26-END	34.41	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	24.57	0.	12.74	26.07	100.
<b>AUG</b>														
1-5	31.42	0.	0.	6.93	6.93	0.81	0.60	8.34	1.50	21.58	0.	9.32	23.08	100.
6-10	30.08	0.	0.	0.61	0.61	0.	0.60	1.21	1.50	27.37	0.	11.82	28.87	100.
11-15	22.67	7.51	0.	4.62	12.13	0.81	0.60	13.54	1.50	7.63	0.	3.30	9.13	100.
16-20	19.61	7.51	0.	2.31	9.82	0.81	0.60	11.23	1.50	6.88	0.	2.97	8.38	100.
21-25	21.75	1.82	0.	2.31	4.13	0.	0.60	4.73	1.50	15.52	0.	6.70	17.02	100.
26-END	24.97	9.98	0.	0.	9.98	0.75	0.60	11.34	1.50	12.13	0.	6.29	13.63	100.
<b>SEP</b>														
1-5	26.86	13.59	0.	0.	13.59	0.18	0.60	14.37	1.50	10.99	0.	4.75	12.49	100.
6-10	23.36	14.77	0.	0.	14.77	0.21	0.60	16.18	1.50	5.68	0.	2.45	7.18	100.
11-15	20.65	8.90	7.98	0.	16.88	0.24	0.60	17.72	1.50	1.43	0.	0.62	2.93	100.
16-20	42.78	3.00	5.79	0.	8.79	0.	0.60	9.39	1.50	31.89	0.	13.78	33.39	100.
21-25	45.68	1.72	10.40	0.	12.12	0.	0.60	12.72	1.50	31.46	0.	13.59	32.96	100.
26-END	30.46	8.15	13.27	0.	21.42	0.81	0.60	22.83	1.50	6.13	0.	2.65	7.63	100.
<b>OCT</b>														
1-5	51.41	6.01	11.33	0.	17.34	0.	0.60	17.94	1.50	31.97	0.	13.81	33.47	100.
6-10	55.32	8.15	12.91	0.	21.06	0.81	0.60	22.47	1.50	31.35	0.	13.54	32.85	100.
11-15	30.88	7.29	4.67	4.04	16.00	0.35	0.60	16.96	1.50	12.42	0.	5.37	13.92	100.
16-20	41.00	7.51	4.63	3.95	16.09	0.47	0.60	17.16	1.50	22.34	0.	9.65	23.84	100.
21-25	52.03	0.	2.26	7.39	9.65	0.	0.60	10.25	1.50	40.28	0.	17.40	41.78	100.
26-END	38.25	5.65	6.99	7.73	20.37	0.	0.60	20.97	1.50	15.78	0.	8.18	17.28	100.
<b>NOV</b>														
1-5	67.36	6.97	2.59	2.25	11.82	0.18	0.60	12.60	1.50	53.26	0.	23.01	54.76	100.
6-10	70.76	3.65	3.62	8.27	15.54	0.	0.60	16.14	1.50	53.12	0.	22.95	54.62	100.
11-15	96.29	5.26	1.96	1.19	8.40	0.	0.60	9.00	1.50	85.79	0.	37.06	87.29	100.
16-20	108.53	6.54	2.43	1.66	10.64	0.	0.60	10.64	1.50	96.39	0.	41.64	97.89	100.
21-25	99.85	0.	5.93	6.93	12.67	0.	0.60	13.47	1.50	84.88	0.	36.67	86.38	100.
26-END	73.89	6.44	8.23	6.93	21.70	0.	0.60	22.30	1.50	50.09	0.	21.64	51.59	100.
<b>DEC</b>														
1-5	94.07	0.	2.89	3.37	6.26	0.	0.60	6.86	1.50	85.71	0.	37.03	87.21	100.
6-10	166.92	0.54	6.13	6.93	13.60	0.	0.60	14.20	1.50	91.22	0.	39.41	92.72	100.
11-15	87.94	3.65	5.28	4.58	13.50	0.	0.60	14.10	1.50	72.34	0.	31.25	73.84	100.
16-20	87.70	0.	0.78	0.91	1.69	0.	0.60	2.29	1.50	83.91	0.	36.25	85.41	100.
21-25	149.57	4.93	5.25	2.92	13.11	0.41	0.60	14.12	1.50	133.95	0.	57.87	135.45	100.
26-END	109.60	1.76	4.52	2.98	9.26	0.	0.60	9.86	1.50	98.24	0.	50.93	99.74	100.

Table C-12 (1/5) WATER BALANCE FOR CASE 3 IN 1978

YEAR 1978														
PERIOD	RUNOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERS'N REOM'T (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCN)	SURPLUS (MCN)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
<b>JAN</b>														
1-5	17.68	2.72	8.97	6.93	18.62	0.81	0.60	20.03	0.	-2.35	-1.01	0.	0.	93.
6-10	18.58	0.	2.58	3.01	5.59	0.	0.60	6.19	0.	12.39	0.	4.34	10.05	100.
11-15	18.77	0.	0.36	0.	0.36	0.	0.60	0.96	0.	17.81	0.	7.69	17.81	100.
16-20	24.80	0.	5.15	6.02	11.17	0.	0.60	11.77	0.	13.03	0.	5.63	13.03	100.
21-25	18.05	0.	4.45	5.20	9.65	0.	0.60	10.25	0.	7.80	0.	3.37	7.80	100.
26-END	14.22	0.	2.97	6.93	9.90	0.61	0.60	11.31	0.	2.91	0.	1.51	2.91	100.
<b>FEB</b>														
1-5	11.82	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	0.51	0.	0.22	0.51	100.
6-10	13.66	0.	0.	6.93	6.93	0.81	0.60	8.34	0.	5.32	0.	2.30	5.32	100.
11-15	13.84	0.	0.	6.11	6.11	0.	0.60	6.71	0.	7.13	0.	3.08	7.13	100.
16-20	16.55	0.	0.	1.76	1.76	0.81	0.60	3.17	0.	13.38	0.	5.78	13.38	100.
21-25	10.92	7.51	0.	3.89	11.40	0.81	0.60	12.81	0.	-1.89	-0.82	0.	0.	85.
26-END	11.18	3.70	0.	0.	3.70	0.	0.60	4.30	0.	6.86	0.	0.97	3.73	100.
<b>MAR</b>														
1-5	10.46	5.61	0.	1.19	6.80	0.	0.60	7.40	0.	3.06	0.	1.32	3.06	100.
6-10	11.40	12.05	0.	0.	12.05	0.81	0.60	13.46	0.	-2.06	-0.89	0.	0.	79.
11-15	13.83	11.98	0.	0.	11.98	0.	0.60	12.58	0.	1.25	-0.35	0.	0.	94.
16-20	13.61	14.77	0.	0.	14.77	0.81	0.60	16.18	0.	-2.57	-1.46	0.	0.	77.
21-25	16.36	3.54	5.99	0.	9.53	0.	0.60	10.13	0.	6.23	0.	1.23	2.86	100.
26-END	15.86	3.95	5.02	0.	8.97	0.	0.60	9.57	0.	6.29	0.	3.26	6.29	100.
<b>APR</b>														
1-5	19.77	8.15	12.29	0.	20.44	0.81	0.60	21.85	0.	-2.08	-0.90	0.	0.	92.
6-10	19.41	8.15	10.53	0.	18.69	0.81	0.60	20.10	0.	-0.69	-1.20	0.	0.	89.
11-15	21.72	7.29	15.87	0.	23.17	0.35	0.60	24.12	0.	-2.40	-2.23	0.	0.	83.
16-20	10.82	8.15	16.11	0.	24.26	0.81	0.60	25.67	0.	5.15	-0.01	0.	0.	100.
21-25	70.28	8.15	10.10	6.05	24.30	0.81	0.60	25.71	0.	44.57	0.	19.24	44.53	100.
26-END	41.50	8.15	3.03	2.52	13.71	0.81	0.60	15.12	0.	26.38	0.	11.40	26.38	100.
<b>MAY</b>														
1-5	45.55	8.15	8.73	10.06	26.93	0.81	0.60	28.36	0.	17.19	0.	7.43	17.19	100.
6-10	57.43	0.	0.	5.50	5.50	0.	0.60	6.10	0.	51.33	0.	22.17	51.33	100.
11-15	68.81	8.05	8.93	12.56	29.53	0.75	0.60	30.88	0.	37.93	0.	16.38	37.93	100.
16-20	45.47	8.15	8.97	12.56	29.68	0.81	0.60	31.09	0.	14.38	0.	6.21	14.38	100.
21-25	37.32	8.15	8.97	8.48	25.60	0.81	0.60	27.01	0.	10.31	0.	4.45	10.31	100.
26-END	22.14	8.15	8.97	7.84	24.96	0.81	0.60	26.37	0.	-4.23	-2.19	0.	0.	88.
<b>JUN</b>														
1-5	21.37	5.15	7.85	6.93	19.93	0.	0.60	20.53	0.	0.84	-1.83	0.	0.	90.
6-10	19.66	2.50	5.85	5.20	13.55	0.	0.60	14.15	0.	5.51	0.	0.55	1.28	100.
11-15	16.94	5.44	8.97	6.93	21.33	0.81	0.60	22.74	0.	-5.80	-2.51	0.	0.	85.
16-20	13.30	0.	5.70	6.66	12.36	0.	0.60	12.96	0.	0.34	-2.36	0.	0.	85.
21-25	12.70	2.72	8.97	6.93	18.62	0.81	0.60	20.03	0.	-7.33	-3.52	0.	0.	61.
26-END	11.81	0.	4.29	5.02	9.31	0.	0.60	9.91	0.	1.90	-4.70	0.	0.	61.
<b>JUL</b>														
1-5	10.75	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	-6.56	-7.54	0.	0.	38.
6-10	16.04	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	2.57	-6.43	0.	0.	34.
11-15	13.28	0.	3.98	4.65	8.63	0.81	0.60	10.04	0.	3.24	-5.03	0.	0.	49.
16-20	12.25	0.	2.69	6.29	8.99	0.81	0.60	10.40	0.	1.85	-4.23	0.	0.	44.
21-25	16.29	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	4.98	-2.07	0.	0.	72.
26-END	12.04	0.	0.	6.93	6.93	0.	0.60	7.53	0.	4.51	0.	0.26	0.51	100.
<b>AUG</b>														
1-5	9.43	0.	0.	6.93	6.93	0.41	0.60	7.94	0.	1.49	0.	0.64	1.49	100.
6-10	8.59	0.	0.	4.62	4.62	0.58	0.60	5.80	0.	2.79	0.	1.20	2.79	100.
11-15	14.12	5.15	0.	0.	5.15	0.	0.60	5.75	0.	8.37	0.	3.62	8.37	100.
16-20	10.74	7.51	0.	0.	7.51	0.81	0.60	8.92	0.	1.82	0.	0.79	1.82	100.
21-25	9.18	12.05	0.	2.31	14.36	0.81	0.60	15.77	0.	-6.59	-2.85	0.	0.	52.
26-END	8.72	7.42	0.	0.	7.42	0.	0.60	8.02	0.	0.70	-2.58	0.	0.	40.
<b>SEP</b>														
1-5	10.27	13.70	0.	0.	13.70	0.24	0.60	14.54	0.	-4.27	-4.33	0.	0.	30.
6-10	11.69	11.44	0.	0.	11.44	0.	0.60	12.04	0.	-0.35	-4.48	0.	0.	28.
11-15	11.42	5.69	6.78	0.	12.47	0.	0.60	13.07	0.	-1.65	-5.19	0.	0.	39.
16-20	8.44	0.	0.	0.	0.	0.	0.60	0.60	0.	7.84	-3.80	0.	0.	79.
21-25	23.20	0.	6.44	0.	6.44	0.	0.60	7.04	0.	16.16	0.	5.18	11.98	100.
26-END	13.24	8.15	13.27	0.	21.42	0.81	0.60	22.83	0.	-9.59	-4.14	0.	0.	62.
<b>OCT</b>														
1-5	12.15	8.15	16.19	0.	24.34	0.81	0.60	25.75	0.	-13.60	-10.02	0.	0.	23.
6-10	9.79	2.47	7.83	0.	10.30	0.	0.60	10.90	0.	-1.11	-10.20	0.	0.	20.
11-15	13.05	8.15	10.96	6.38	25.50	0.81	0.60	26.91	0.	-13.86	-16.48	0.	0.	-11.
16-20	15.77	0.	7.93	6.38	14.31	0.	0.60	14.91	0.	0.84	-16.11	0.	0.	-9.
21-25	28.97	0.	2.81	7.81	10.62	0.	0.60	11.22	0.	17.75	-8.44	0.	0.	49.
26-END	36.70	3.59	2.33	4.69	10.61	0.	0.60	11.21	0.	47.69	0.	16.18	31.20	100.
<b>NOV</b>														
1-5	62.77	0.	0.23	5.90	6.13	0.	0.60	6.73	0.	56.04	0.	24.21	56.04	100.
6-10	53.95	0.	0.	1.89	1.89	0.	0.60	2.49	0.	51.46	0.	22.23	51.46	100.
11-15	67.91	0.	0.	0.	0.	0.	0.60	0.60	0.	67.31	0.	29.08	67.31	100.
16-20	82.64	6.87	8.49	8.48	23.84	0.13	0.60	24.56	0.	58.08	0.	25.09	58.08	100.
21-25	77.43	8.15	8.97	6.93	24.05	0.81	0.60	25.46	0.	51.97	0.	22.45	51.97	100.
26-END	43.46	8.15	8.97	6.93	24.05	0.81	0.60	25.46	0.	18.00	0.	7.78	18.00	100.
<b>DEC</b>														
1-5	32.09	0.	1.41	1.64	3.05	0.	0.60	3.65	0.	28.44	0.	12.29	28.44	100.
6-10	48.05	0.	0.	0.	0.	0.	0.60	0.60	0.	47.45	0.	20.50	47.45	100.
11-15	33.45	8.15	3.50	0.55	12.20	0.81	0.60	13.61	0.	19.84	0.	8.57	19.84	100.
16-20	23.21	4.22	6.73	5.11	16.03	0.	0.60	16.63	0.	6.56	0.	2.83	6.56	100.
21-25	21.78	0.	5.15	6.02	11.17	0.	0.60	11.77	0.	10.01	0.	4.32	10.01	100.
26-END	17.37	2.72	8.97	6.93	18.62	0.81	0.60	20.03	0.	-2.66	-1.38	0.	0.	90.

Table C-12 (2/5)

## WATER BALANCE FOR CASE 3 IN 1979

YEAR : 1979														
PERIOD	RUNOFF (CUM/S)	PADDY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & I WATER (CUM/S)	DIVERSIN REQMT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCM)	SURPLUS (MCM)	ROHNSR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
JAN														
1-5	18.17	0.	0.	0.	0.	0.	0.60	0.60	0.	17.57	0.	6.21	14.38	100.
6-10	17.80	0.	8.79	8.02	12.81	0.	0.60	13.41	0.	4.39	0.	1.90	4.39	100.
11-15	15.18	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	-2.13	-0.92	0.	0.	92.
16-20	11.95	0.	5.93	6.93	12.87	0.81	0.60	14.28	0.	-2.33	-1.92	0.	0.	80.
21-25	11.99	0.	4.37	5.31	9.48	0.78	0.60	10.26	0.	1.73	-1.18	0.	0.	88.
26-END	11.25	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	-0.06	-1.21	0.	0.	84.
FEB														
1-5	11.10	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	-0.21	-1.30	0.	0.	83.
6-10	12.22	0.	0.	3.28	3.28	0.13	0.60	4.01	0.	8.21	0.	2.25	5.21	100.
11-15	11.84	0.	0.	1.46	1.46	0.70	0.60	2.73	0.	9.09	0.	3.92	9.09	100.
16-20	14.90	0.	0.	0.	0.	0.18	0.60	0.78	0.	14.12	0.	6.10	14.12	100.
21-25	35.77	5.86	0.	0.	5.86	0.	0.60	6.46	0.	29.31	0.	12.66	29.31	100.
26-END	34.91	12.52	0.	2.31	14.83	0.81	0.60	16.24	0.	18.67	0.	4.84	18.67	100.
MAR														
1-5	27.97	12.05	0.	2.31	14.36	0.81	0.60	15.77	0.	12.20	0.	5.27	12.20	100.
6-10	25.87	12.05	0.	0.	12.05	0.81	0.60	13.46	0.	12.41	0.	5.36	12.41	100.
11-15	22.75	14.77	0.	0.	14.77	0.81	0.60	16.18	0.	6.57	0.	2.84	6.57	100.
16-20	50.69	14.77	0.	0.	14.77	0.81	0.60	16.18	0.	34.51	0.	14.91	34.51	100.
21-25	65.60	9.98	8.38	0.	18.36	0.81	0.60	19.77	0.	45.83	0.	19.80	45.83	100.
26-END	39.88	9.22	6.98	0.	16.20	0.81	0.60	17.61	0.	22.27	0.	11.54	22.27	100.
APR														
1-5	51.33	8.15	13.27	0.	21.42	0.81	0.60	22.83	0.	28.50	0.	12.31	28.50	100.
6-10	42.36	8.15	12.10	0.	20.25	0.81	0.60	21.66	0.	20.70	0.	8.94	20.70	100.
11-15	35.29	8.15	3.81	0.	11.97	0.81	0.60	13.38	0.	19.91	0.	8.60	19.91	100.
16-20	26.31	8.15	16.19	0.	24.34	0.81	0.60	25.75	0.	2.56	0.	1.11	2.56	100.
21-25	35.43	0.	0.	1.22	1.22	0.	0.60	1.82	0.	33.61	0.	14.52	33.61	100.
26-END	45.29	0.	0.	1.62	1.62	0.	0.60	2.42	0.	42.87	0.	18.52	42.87	100.
MAY														
1-5	56.30	8.15	8.97	16.25	27.37	0.81	0.60	28.78	0.	27.52	0.	11.89	27.52	100.
6-10	37.52	8.15	8.97	16.25	27.37	0.81	0.60	28.78	0.	8.74	0.	3.78	8.74	100.
11-15	50.60	8.15	4.28	7.08	19.52	0.81	0.60	20.93	0.	29.67	0.	12.82	29.67	100.
16-20	23.45	8.15	8.97	12.56	29.68	0.81	0.60	31.09	0.	-7.64	-3.30	0.	0.	82.
21-25	19.04	8.15	8.19	7.52	23.91	0.81	0.60	25.32	0.	-6.28	-6.01	0.	0.	67.
26-END	26.77	0.	1.38	2.52	3.90	0.	0.60	4.50	0.	22.77	0.	5.53	10.68	100.
JUN														
1-5	29.59	8.15	7.41	5.11	20.67	0.81	0.60	22.08	0.	7.51	0.	3.25	7.51	100.
6-10	66.74	0.	3.59	4.20	7.79	0.	0.60	8.39	0.	58.35	0.	25.21	58.35	100.
11-15	67.25	0.86	0.48	0.	1.34	0.	0.60	1.94	0.	65.31	0.	28.22	65.31	100.
16-20	30.56	1.97	5.79	4.20	11.95	0.	0.60	12.55	0.	18.01	0.	7.78	18.01	100.
21-25	23.12	2.72	8.97	6.93	18.62	0.81	0.60	20.03	0.	3.09	0.	1.34	3.09	100.
26-END	20.28	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	2.97	0.	1.28	2.97	100.
JUL														
1-5	17.74	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	0.43	0.	0.19	0.43	100.
6-10	15.61	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	2.14	0.	0.93	2.14	100.
11-15	22.67	0.	5.93	6.93	12.87	0.52	0.60	13.99	0.	8.68	0.	3.75	8.68	100.
16-20	24.02	0.	2.97	6.93	9.90	0.	0.60	10.50	0.	13.52	0.	5.84	13.52	100.
21-25	73.93	0.	0.	0.	0.	0.	0.60	0.60	0.	73.33	0.	31.68	73.33	100.
26-END	49.59	0.	0.	6.17	6.17	0.81	0.60	7.58	0.	42.01	0.	21.78	42.01	100.
AUG														
1-5	23.82	0.	0.	5.11	5.11	0.81	0.60	6.52	0.	17.30	0.	7.47	17.30	100.
6-10	21.66	0.	0.	4.62	4.62	0.81	0.60	6.03	0.	15.63	0.	6.75	15.63	100.
11-15	17.45	7.51	0.	3.41	10.91	0.81	0.60	12.32	0.	5.13	0.	2.21	5.13	100.
16-20	20.85	5.94	0.	2.31	8.25	0.	0.60	8.85	0.	12.00	0.	5.19	12.00	100.
21-25	26.95	12.05	0.	2.01	14.06	0.81	0.60	15.47	0.	11.48	0.	4.96	11.48	100.
26-END	28.20	3.07	0.	0.	3.07	0.	0.60	3.67	0.	24.53	0.	12.72	24.53	100.
SEP														
1-5	43.99	11.98	0.	0.	11.98	0.	0.60	12.58	0.	31.41	0.	13.57	31.41	100.
6-10	55.35	14.77	0.	0.	14.77	0.81	0.60	16.18	0.	39.17	0.	16.92	39.17	100.
11-15	76.67	9.98	8.38	0.	18.36	0.81	0.60	19.77	0.	56.90	0.	24.58	56.90	100.
16-20	80.10	7.62	7.50	0.	15.12	0.	0.60	15.72	0.	64.38	0.	27.81	64.38	100.
21-25	42.58	8.15	13.27	0.	21.42	0.81	0.60	22.83	0.	19.75	0.	8.53	19.75	100.
26-END	37.16	0.32	9.78	0.	9.50	0.	0.60	10.10	0.	27.08	0.	11.70	27.08	100.
OCT														
1-5	25.41	8.15	16.19	0.	24.34	0.81	0.60	25.75	0.	-0.34	-0.15	0.	0.	99.
6-10	27.75	0.	12.38	0.	12.38	0.	0.60	12.98	0.	14.77	0.	6.23	14.43	100.
11-15	37.89	0.	0.	1.52	1.52	0.	0.60	2.12	0.	35.77	0.	15.45	35.77	100.
16-20	46.53	5.15	9.66	6.02	20.29	0.	0.60	20.89	0.	19.64	0.	8.48	19.64	100.
21-25	46.28	1.29	0.48	0.	1.77	0.	0.60	2.37	0.	43.91	0.	18.97	43.91	100.
26-END	79.24	0.46	6.90	4.48	5.85	0.	0.60	6.45	0.	72.79	0.	37.73	72.79	100.
NOV														
1-5	73.36	0.	5.93	12.56	18.49	0.	0.60	19.09	0.	54.27	0.	23.44	54.27	100.
6-10	79.14	8.15	4.22	7.08	19.52	0.81	0.60	20.93	0.	58.21	0.	25.15	58.21	100.
11-15	60.54	0.97	3.17	4.83	8.97	0.	0.60	9.57	0.	70.97	0.	30.66	70.97	100.
16-20	168.88	0.	3.59	5.75	9.34	0.	0.60	9.94	0.	158.94	0.	68.66	158.94	100.
21-25	111.50	3.33	4.05	3.28	10.66	0.	0.60	11.26	0.	100.24	0.	43.30	100.24	100.
26-END	114.39	0.	0.	0.	0.	0.	0.60	0.60	0.	113.79	0.	49.16	113.79	100.
DEC														
1-5	60.48	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	67.01	0.	28.95	67.01	100.
6-10	59.83	8.15	8.97	6.93	24.05	0.81	0.60	25.46	0.	34.37	0.	14.85	34.37	100.
11-15	40.53	7.40	8.69	6.93	23.02	0.41	0.60	24.03	0.	16.50	0.	7.13	16.50	100.
16-20	34.77	4.51	8.45	6.93	19.89	0.07	0.60	20.55	0.	14.17	0.	6.12	14.17	100.
21-25	31.69	5.44	8.19	6.02	19.64	0.81	0.60	21.05	0.	10.64	0.	4.60	10.64	100.
26-END	26.61	2.72	8.97	6.93	18.62	0.81	0.60	20.03	0.	6.58	0.	3.41	6.58	100.

Table C-12 (3/5) WATER BALANCE FOR CASE 3 IN 1980

YEAR : 1980															
PERIOD	RUNOFF (CUM/S)	PADDT				TOTAL (CUM/S)	UPLAND CROP (CUM/S)	D & J WATER (CUM/S)	DIVERS'N REQ'NT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (CM)	SURPLUS (CM)	DOWNSTR. FROM BRH (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)											
<b>JAN</b>															
1- 5	25.65	2.47	7.91	6.02	16.39	0.41	0.60	17.40	0.	8.05	0.	3.68	8.05	100.	
6-10	22.79	0.	3.84	1.46	5.30	0.18	0.60	6.08	0.	16.71	0.	7.22	16.71	100.	
11-15	18.04	0.	7.41	5.11	12.51	0.81	0.60	13.92	0.	4.12	0.	1.78	4.12	100.	
16-20	15.61	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	2.14	0.	0.93	2.14	100.	
21-25	14.56	0.	5.93	6.93	12.87	0.81	0.60	14.28	0.	0.28	0.	0.12	0.28	100.	
26-END	19.16	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	7.85	0.	4.07	7.85	100.	
<b>FEB</b>															
1- 5	14.66	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	3.37	0.	1.46	3.37	100.	
6-10	12.03	0.	0.	6.93	6.93	0.81	0.60	8.34	0.	3.69	0.	1.59	3.69	100.	
11-15	10.19	0.	0.	6.93	6.93	0.81	0.60	8.34	0.	1.85	0.	0.80	1.85	100.	
16-20	9.13	0.	0.	4.01	4.01	0.	0.60	4.61	0.	4.52	0.	1.95	4.52	100.	
21-25	12.87	7.51	0.	4.01	11.52	0.81	0.60	12.93	0.	-0.06	-0.03	0.	0.	100.	
26-END	28.10	5.32	0.	2.31	7.63	0.	0.60	8.23	0.	19.87	0.	6.84	19.79	100.	
<b>MAR</b>															
1- 5	36.12	3.54	0.	0.18	3.72	0.	0.60	4.32	0.	31.80	0.	13.74	31.80	100.	
6-10	59.28	11.76	0.	0.	11.76	0.58	0.60	12.95	0.	46.33	0.	20.02	46.33	100.	
11-15	21.56	11.12	0.	0.	11.12	0.	0.60	11.72	0.	9.84	0.	4.25	9.84	100.	
16-20	27.68	14.77	0.	0.	14.77	0.61	0.60	16.18	0.	11.50	0.	4.97	11.50	100.	
21-25	22.73	8.15	7.70	0.	15.85	0.	0.60	16.45	0.	6.28	0.	2.71	6.28	100.	
26-END	19.44	7.70	6.42	0.	14.12	0.	0.60	14.72	0.	4.72	0.	2.45	4.72	100.	
<b>APR</b>															
1- 5	21.82	0.	8.20	0.	8.20	0.	0.60	8.80	0.	13.02	0.	5.63	13.02	100.	
6-10	25.89	0.	7.22	0.	7.22	0.	0.60	7.82	0.	18.07	0.	7.81	18.07	100.	
11-15	25.50	5.15	1.92	0.	7.06	0.	0.60	7.66	0.	17.84	0.	7.70	17.84	100.	
16-20	19.27	8.05	16.15	0.	24.20	0.75	0.60	25.55	0.	-6.28	-2.77	0.	0.	100.	
21-25	17.73	0.	7.93	6.38	14.31	0.	0.60	14.91	0.	2.82	-1.49	0.	0.	90.	
26-END	44.30	8.05	7.79	5.17	21.01	0.75	0.60	22.36	0.	21.94	0.	7.98	18.48	100.	
<b>MAY</b>															
1- 5	46.47	0.	5.93	10.25	16.18	0.	0.60	16.78	0.	29.69	0.	12.83	29.69	100.	
6-10	71.85	0.	0.	1.52	1.52	0.	0.60	2.12	0.	69.73	0.	30.12	69.73	100.	
11-15	68.50	0.	5.15	11.64	16.80	0.	0.60	17.40	0.	51.10	0.	22.08	51.10	100.	
16-20	57.41	0.	2.81	6.91	11.72	0.	0.60	12.32	0.	45.09	0.	19.48	45.09	100.	
21-25	33.02	8.15	5.64	4.83	18.83	0.81	0.60	20.24	0.	12.78	0.	5.52	12.78	100.	
26-END	37.61	7.53	8.08	7.68	22.69	0.41	0.60	23.70	0.	13.91	0.	7.21	13.91	100.	
<b>JUN</b>															
1- 5	32.77	0.	5.15	6.02	11.17	0.	0.60	11.77	0.	21.00	0.	9.07	21.00	100.	
6-10	36.61	5.29	7.33	5.11	17.73	0.78	0.60	19.02	0.	17.59	0.	7.60	17.59	100.	
11-15	25.20	4.58	8.49	6.93	20.00	0.13	0.60	20.72	0.	4.48	0.	1.93	4.48	100.	
16-20	18.07	2.18	6.81	5.11	14.10	0.	0.60	14.70	0.	23.37	0.	10.10	23.37	100.	
21-25	24.53	2.04	8.21	6.93	17.18	0.	0.60	17.78	0.	6.75	0.	2.92	6.75	100.	
26-END	23.90	0.	8.94	6.93	15.88	0.78	0.60	17.25	0.	6.65	0.	2.87	6.65	100.	
<b>JUL</b>															
1- 5	17.20	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	-0.11	-0.05	0.	0.	100.	
6-10	14.59	0.	5.93	6.93	12.87	0.07	0.60	13.53	0.	1.06	0.	0.47	0.95	100.	
11-15	13.44	0.	5.15	6.02	11.17	0.81	0.60	12.58	0.	0.86	0.	0.37	0.86	100.	
16-20	29.52	0.	0.	0.	0.	0.	0.60	0.60	0.	28.92	0.	12.49	28.92	100.	
21-25	22.95	0.	0.	0.	0.	0.	0.60	0.60	0.	22.35	0.	9.66	22.35	100.	
26-END	37.34	0.	0.	3.89	3.89	0.	0.60	4.49	0.	32.85	0.	17.03	32.85	100.	
<b>AUG</b>															
1- 5	38.32	0.	0.	6.93	6.93	0.	0.60	7.53	0.	30.79	0.	13.30	30.79	100.	
6-10	26.12	0.	0.	4.62	4.62	0.	0.60	5.22	0.	20.90	0.	9.03	20.90	100.	
11-15	25.35	7.51	0.	5.41	10.91	0.81	0.60	12.32	0.	13.03	0.	5.63	13.03	100.	
16-20	21.11	3.33	0.	0.49	3.81	0.	0.60	4.41	0.	16.70	0.	7.21	16.70	100.	
21-25	84.01	12.05	0.	1.40	13.45	0.81	0.60	14.86	0.	69.15	0.	29.87	69.15	100.	
26-END	43.59	7.56	0.	0.	7.36	0.	0.60	7.96	0.	35.63	0.	18.47	35.63	100.	
<b>SEP</b>															
1- 5	30.07	12.94	0.	0.	12.94	0.	0.60	13.54	0.	16.53	0.	7.14	16.53	100.	
6-10	40.36	8.65	0.	0.	8.65	0.	0.60	9.25	0.	31.11	0.	13.44	31.11	100.	
11-15	26.64	9.98	8.58	0.	18.36	0.81	0.60	19.77	0.	6.87	0.	2.97	6.87	100.	
16-20	41.59	9.98	8.38	0.	18.36	0.81	0.60	19.77	0.	21.82	0.	9.43	21.82	100.	
21-25	75.58	0.21	7.19	0.	7.40	0.	0.60	8.00	0.	67.58	0.	29.19	67.58	100.	
26-END	50.95	6.01	11.30	0.	17.30	0.	0.60	17.90	0.	33.05	0.	14.28	33.05	100.	
<b>OCT</b>															
1- 5	47.21	0.	13.16	0.	13.16	0.	0.60	13.76	0.	33.45	0.	14.45	33.45	100.	
6-10	73.88	0.	13.16	0.	13.16	0.	0.60	13.76	0.	60.12	0.	25.97	60.12	100.	
11-15	77.04	4.61	8.86	6.08	19.55	0.	0.60	20.15	0.	56.89	0.	24.57	56.89	100.	
16-20	254.74	8.15	10.18	6.08	24.41	0.81	0.60	25.82	0.	228.92	0.	98.89	228.92	100.	
21-25	64.81	3.75	7.33	10.25	21.33	0.	0.60	21.93	0.	42.88	0.	18.52	42.88	100.	
26-END	60.27	0.	3.33	6.51	9.84	0.	0.60	10.44	0.	29.83	0.	15.46	29.83	100.	
<b>NOV</b>															
1- 5	35.41	0.	1.25	7.08	8.33	0.	0.60	8.93	0.	26.48	0.	11.44	26.48	100.	
6-10	33.36	8.15	7.41	10.73	26.29	0.81	0.60	27.70	0.	5.66	0.	2.45	5.66	100.	
11-15	36.21	6.97	6.97	6.66	20.60	0.18	0.60	21.38	0.	14.83	0.	6.41	14.83	100.	
16-20	49.29	8.15	8.19	7.57	23.91	0.81	0.60	25.32	0.	23.97	0.	10.36	23.97	100.	
21-25	70.87	0.	0.	0.	0.	0.	0.60	0.60	0.	70.27	0.	30.36	70.27	100.	
26-END	60.97	6.87	4.58	7.37	13.82	0.13	0.60	14.55	0.	66.42	0.	28.69	66.42	100.	
<b>DEC</b>															
1- 5	88.39	0.	0.	0.	0.	0.	0.60	0.60	0.	87.79	0.	37.93	87.79	100.	
6-10	158.55	2.74	1.04	0.	3.83	0.	0.60	4.43	0.	154.12	0.	66.58	154.12	100.	
11-15	148.08	8.15	8.97	6.93	24.05	0.81	0.60	25.46	0.	122.62	0.	52.97	122.62	100.	
16-20	71.17	4.72	2.63	0.	7.35	0.24	0.60	8.19	0.	62.98	0.	27.21	62.98	100.	
21-25	53.13	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	39.66	0.	17.13	39.66	100.	
26-END	45.21	2.63	2.93	0.	5.56	0.64	0.60	6.80	0.	38.41	0.	19.91	38.41	100.	

Table C-12 (4/5)

## WATER BALANCE FOR CASE 3 IN 1981

YEAR : 1981														
PERIOD	RUNOFF (CUM/S)	DADY			TOTAL (CUM/S)	UPLAND CROP (CUM/S)	O & I WATER (CUM/S)	DIVERS'N REQ'NT (CUM/S)	MAINT. FLOW (CUM/S)	BALANCE (CUM/S)	DEFICIT (MCK)	SURPLUS (MCK)	DOWNSR. FROM BRN (CUM/S)	WATER DEPTH (MM)
		BLOCK 1 (CUM/S)	BLOCK 2 (CUM/S)	BLOCK 3 (CUM/S)										
JAN														
1-5	54.19	0.43	5.63	6.02	12.08	0.	0.60	12.68	0.	41.51	0.	17.93	41.51	100.
6-10	52.32	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	38.85	0.	16.78	38.85	100.
11-15	37.97	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	20.66	0.	8.93	20.66	100.
16-20	34.74	0.	5.93	6.93	12.87	0.30	0.60	13.76	0.	20.98	0.	9.06	20.98	100.
21-25	32.50	0.	5.15	6.02	11.17	0.81	0.60	12.58	0.	19.92	0.	8.60	19.92	100.
26-END	27.20	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	15.89	0.	8.24	15.89	100.
FEB														
1-5	39.70	0.	2.58	6.02	8.60	0.	0.60	9.20	0.	30.50	0.	13.18	30.50	100.
6-10	32.25	0.	0.	6.93	6.93	0.24	0.60	7.77	0.	24.48	0.	10.57	24.48	100.
11-15	31.96	0.	0.	6.93	6.93	0.	0.60	7.53	0.	24.45	0.	10.56	24.45	100.
16-20	51.74	0.	0.	4.62	4.62	0.21	0.60	6.03	0.	45.73	0.	19.76	45.73	100.
21-25	30.51	6.79	0.	2.19	6.98	0.	0.60	9.58	0.	20.93	0.	9.04	20.93	100.
26-END	51.19	9.48	0.	2.31	11.79	0.	0.60	12.39	0.	38.80	0.	10.06	38.80	100.
MAR														
1-5	35.01	10.98	0.	0.	10.98	0.	0.60	11.58	0.	23.43	0.	10.12	23.43	100.
6-10	23.44	12.05	0.	0.	12.05	0.81	0.60	13.46	0.	9.98	0.	4.31	9.98	100.
11-15	24.16	14.77	0.	0.	14.77	0.81	0.60	16.18	0.	7.98	0.	3.45	7.98	100.
16-20	17.99	13.16	0.	0.	13.16	0.	0.60	13.76	0.	4.22	0.	1.82	4.22	100.
21-25	21.46	9.98	8.38	0.	18.36	0.81	0.60	19.77	0.	1.69	0.	0.73	1.69	100.
26-END	19.49	2.69	4.56	0.	7.25	0.	0.60	7.85	0.	11.64	0.	6.03	11.64	100.
APR														
1-5	42.94	8.05	11.66	0.	19.71	0.75	0.60	21.06	0.	21.88	0.	9.45	21.88	100.
6-10	70.29	3.22	9.09	0.	12.31	0.	0.60	12.91	0.	57.38	0.	24.79	57.38	100.
11-15	60.29	5.15	3.87	0.	9.02	0.	0.60	9.62	0.	50.67	0.	21.89	50.67	100.
16-20	78.20	0.	13.16	0.	13.16	0.	0.60	13.76	0.	64.44	0.	27.84	64.44	100.
21-25	74.85	8.35	8.62	5.47	22.24	0.81	0.60	23.65	0.	51.20	0.	22.12	51.20	100.
26-END	41.88	8.15	4.48	3.65	16.28	0.81	0.60	17.69	0.	24.19	0.	10.45	24.19	100.
MAY														
1-5	61.81	0.	2.03	7.21	9.24	0.	0.60	9.84	0.	51.97	0.	22.45	51.97	100.
6-10	80.41	0.	5.93	10.25	16.18	0.	0.60	16.78	0.	63.65	0.	27.50	63.65	100.
11-15	90.35	8.15	7.41	10.73	26.29	0.81	0.60	27.70	0.	82.65	0.	27.06	82.65	100.
16-20	100.19	6.33	6.73	10.73	25.79	0.	0.60	26.39	0.	75.80	0.	32.75	75.80	100.
21-25	99.62	8.15	7.41	6.66	22.22	0.81	0.60	23.65	0.	75.99	0.	32.83	75.99	100.
26-END	84.44	0.	0.	0.	0.	0.	0.60	0.60	0.	83.84	0.	43.46	83.84	100.
JUN														
1-5	46.32	8.35	8.97	6.93	24.05	0.81	0.60	25.46	0.	40.86	0.	17.65	40.86	100.
6-10	40.96	5.08	8.77	6.93	20.78	0.52	0.60	21.90	0.	19.06	0.	8.23	19.06	100.
11-15	34.21	5.44	8.97	6.93	21.33	0.81	0.60	22.74	0.	11.47	0.	4.95	11.47	100.
16-20	27.04	2.72	8.97	6.93	18.62	0.81	0.60	20.03	0.	7.01	0.	3.03	7.01	100.
21-25	24.95	2.72	8.19	6.02	16.92	0.81	0.60	18.33	0.	6.62	0.	2.86	6.62	100.
26-END	37.26	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	19.95	0.	8.62	19.95	100.
JUL														
1-5	23.90	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	6.59	0.	2.85	6.59	100.
6-10	19.46	0.	5.93	6.95	12.87	0.41	0.60	13.88	0.	5.58	0.	2.41	5.58	100.
11-15	24.19	0.	5.93	6.93	12.87	0.	0.60	13.47	0.	10.72	0.	4.63	10.72	100.
16-20	19.88	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	8.57	0.	3.70	8.57	100.
21-25	19.76	0.	2.19	5.11	7.29	0.	0.60	7.89	0.	11.87	0.	5.13	11.87	100.
26-END	22.47	0.	0.	0.85	0.85	0.81	0.60	2.26	0.	20.21	0.	10.48	20.21	100.
AUG														
1-5	16.61	0.	0.	6.93	6.93	0.61	0.60	8.34	0.	8.27	0.	3.57	8.27	100.
6-10	13.11	0.	0.	4.62	4.62	0.81	0.60	6.03	0.	7.08	0.	3.06	7.08	100.
11-15	11.68	7.51	0.	4.82	12.13	0.21	0.60	13.54	0.	-1.86	-0.80	0.	0.	86.
16-20	10.74	7.19	0.	0.	7.19	0.30	0.60	8.08	0.	2.66	0.	0.34	0.80	100.
21-25	13.60	7.04	0.	2.31	9.36	0.	0.60	9.96	0.	5.64	0.	2.44	5.64	100.
26-END	26.09	8.08	0.	0.	8.08	0.	0.60	8.68	0.	17.41	0.	9.03	17.41	100.
SEP														
1-5	24.25	8.12	0.	0.	8.12	0.	0.60	8.72	0.	15.53	0.	6.71	15.53	100.
6-10	89.18	3.04	0.	0.	3.04	0.	0.60	3.64	0.	85.54	0.	36.95	85.54	100.
11-15	69.06	9.76	8.30	0.	18.06	0.70	0.60	19.36	0.	49.70	0.	21.47	49.70	100.
16-20	54.82	6.71	4.94	0.	13.04	0.	0.60	13.66	0.	41.16	0.	17.78	41.16	100.
21-25	40.02	8.15	10.14	0.	16.30	0.81	0.60	19.71	0.	20.31	0.	8.78	20.31	100.
26-END	27.58	7.62	12.29	0.	19.90	0.52	0.60	21.03	0.	6.55	0.	2.83	6.55	100.
OCT														
1-5	22.53	8.15	16.19	0.	24.34	0.81	0.60	25.75	0.	-3.22	-1.39	0.	0.	89.
6-10	28.73	8.15	14.94	0.	23.09	0.81	0.60	24.50	0.	4.23	0.	0.43	1.01	100.
11-15	46.47	0.	0.	0.61	0.61	0.	0.60	1.21	0.	45.26	0.	19.55	45.26	100.
16-20	77.12	0.	0.35	2.80	3.15	0.	0.60	3.75	0.	73.37	0.	31.70	73.37	100.
21-25	38.71	8.15	8.97	16.25	27.37	0.81	0.60	28.78	0.	9.93	0.	4.29	9.93	100.
26-END	41.04	6.99	5.93	6.51	19.43	0.07	0.60	20.10	0.	20.94	0.	10.85	20.94	100.
NOV														
1-5	30.96	6.64	2.39	1.22	10.05	0.	0.60	10.65	0.	20.31	0.	8.78	20.31	100.
6-10	32.76	1.39	3.33	6.91	13.63	0.	0.60	14.23	0.	18.51	0.	8.00	18.51	100.
11-15	64.02	8.15	8.03	7.39	23.57	0.21	0.60	24.98	0.	39.04	0.	16.87	39.04	100.
16-20	65.31	0.	3.83	6.02	9.85	0.	0.60	10.45	0.	54.86	0.	23.70	54.86	100.
21-25	108.05	5.47	4.85	3.28	13.60	0.	0.60	14.20	0.	93.85	0.	40.54	93.85	100.
26-END	72.27	0.	1.09	1.28	2.37	0.	0.60	2.97	0.	69.30	0.	29.94	69.30	100.
DEC														
1-5	52.03	5.90	8.15	6.93	20.96	0.	0.60	21.56	0.	30.47	0.	13.16	30.47	100.
6-10	83.31	8.15	8.65	6.57	23.37	0.81	0.60	24.78	0.	58.73	0.	25.37	58.73	100.
11-15	55.51	0.	0.	0.	0.	0.	0.60	0.60	0.	54.91	0.	23.72	54.91	100.
16-20	37.13	5.44	8.97	6.93	21.33	0.81	0.60	22.74	0.	14.39	0.	6.21	14.39	100.
21-25	29.66	5.44	8.97	6.93	21.33	0.81	0.60	22.74	0.	6.92	0.	2.99	6.92	100.
26-END	26.80	0.	3.33	3.89	7.22	0.	0.60	7.82	0.	18.98	0.	9.84	18.98	100.

Table C-12 (5/5)

## WATER BALANCE FOR CASE 3 IN 1983

YEAR : 1983															
PERIOD	RUNOFF (CUH/S)	PADDY				TOTAL (CUH/S)	UPLAND CROP (CUH/S)	D & I WATER (CUH/S)	DIVERS'N REQ'NT (CUH/S)	MAINT. FLOW (CUH/S)	BALANCE (CUH/S)	DEFICIT (CM)	SURPLUS (CM)	DOWNSTR. FROM BRN (CUH/S)	WATER DEPTH (MM)
		BLOCK 1 (CUH/S)	BLOCK 2 (CUH/S)	BLOCK 3 (CUH/S)											
JAN															
1-5	39.23	0.	0.	0.	0.	0.	0.60	0.60	0.	38.63	0.	16.69	38.63	100.	
6-10	35.44	0.	7.27	5.84	13.11	0.	0.60	13.71	0.	21.73	0.	9.39	21.73	100.	
11-15	27.60	0.	8.53	6.75	15.28	0.41	0.60	16.29	0.	11.31	0.	4.89	11.31	100.	
16-20	24.84	0.	5.93	6.93	12.87	0.81	0.60	14.28	0.	10.56	0.	4.56	10.56	100.	
21-25	22.11	0.	5.93	6.93	12.87	0.81	0.60	14.28	0.	7.83	0.	3.38	7.83	100.	
26-END	19.29	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	7.98	0.	4.14	7.98	100.	
FEB															
1-5	18.90	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	7.59	0.	3.28	7.59	100.	
6-10	16.49	0.	0.	2.55	2.55	0.81	0.60	3.96	0.	12.53	0.	5.41	12.53	100.	
11-15	16.69	0.	0.	6.93	6.93	0.81	0.60	8.34	0.	8.35	0.	3.61	8.35	100.	
16-20	22.30	0.	0.	4.62	4.62	0.47	0.60	5.69	0.	16.61	0.	7.18	16.61	100.	
21-25	17.47	7.04	0.	4.62	11.67	0.07	0.60	12.33	0.	5.14	0.	2.22	5.14	100.	
26-END	15.71	12.52	0.	2.31	14.83	0.81	0.60	16.24	0.	-0.53	-0.14	0.	0.	96.	
MAR															
1-5	20.96	12.05	0.	2.31	14.36	0.81	0.60	15.77	0.	5.21	0.	2.11	4.89	100.	
6-10	14.94	12.05	0.	0.	12.05	0.81	0.60	13.46	0.	1.48	0.	0.64	1.48	100.	
11-15	19.25	14.77	0.	0.	14.77	0.81	0.60	16.18	0.	3.07	0.	1.33	3.07	100.	
16-20	19.61	12.52	0.	0.	12.52	0.	0.60	13.12	0.	6.49	0.	2.81	6.49	100.	
21-25	18.55	9.98	8.38	0.	18.36	0.81	0.60	19.77	0.	-1.22	-0.53	0.	0.	94.	
26-END	25.39	9.22	6.98	0.	16.20	0.81	0.60	17.61	0.	7.78	0.	3.51	6.76	100.	
APR															
1-5	15.76	8.15	13.27	0.	21.42	0.81	0.60	22.83	0.	-7.07	-3.05	0.	0.	72.	
6-10	13.49	8.15	13.27	0.	21.42	0.81	0.60	22.83	0.	-9.34	-7.09	0.	0.	34.	
11-15	12.11	8.15	16.19	0.	24.34	0.81	0.60	25.75	0.	-13.64	-12.98	0.	0.	0.	
16-20	10.66	8.15	16.19	0.	24.34	0.81	0.60	25.75	0.	-15.09	-19.50	0.	0.	-50.	
21-25	12.83	0.	1.99	4.07	6.07	0.	0.60	6.67	0.	6.16	-16.84	0.	0.	-14.	
26-END	19.24	0.	0.	0.55	0.55	0.	0.60	1.15	0.	18.09	-9.02	0.	0.	39.	
MAY															
1-5	33.25	7.22	1.20	5.56	7.97	0.	0.60	8.57	0.	24.68	0.	1.64	3.79	100.	
6-10	24.90	8.35	7.66	9.76	23.75	0.	0.60	24.35	0.	0.55	0.	0.24	0.55	100.	
11-15	30.39	7.62	8.77	12.56	28.94	0.52	0.60	30.07	0.	0.32	0.	0.14	0.32	100.	
16-20	26.73	3.35	7.17	12.56	23.05	0.	0.60	23.65	0.	3.08	0.	1.33	3.08	100.	
21-25	29.22	7.60	5.17	4.38	16.95	0.41	0.60	17.96	0.	11.26	0.	4.86	11.26	100.	
26-END	21.44	0.	2.15	6.93	12.08	0.	0.60	12.68	0.	8.76	0.	4.54	8.76	100.	
JUN															
1-5	24.00	8.15	8.97	6.93	24.05	0.81	0.60	25.46	0.	-7.46	-0.63	0.	0.	97.	
6-10	14.35	4.29	8.14	6.38	19.32	0.30	0.60	20.21	0.	-5.86	-3.16	0.	0.	81.	
11-15	26.44	1.86	4.32	3.83	10.01	0.	0.60	10.61	0.	15.83	0.	3.68	8.51	100.	
16-20	34.06	1.82	3.75	2.01	7.58	0.	0.60	8.18	0.	25.88	0.	11.18	25.88	100.	
21-25	19.74	2.72	8.97	6.93	16.62	0.81	0.60	20.03	0.	-0.29	-0.12	0.	0.	99.	
26-END	15.07	0.	8.97	6.93	15.90	0.81	0.60	17.31	0.	-2.24	-1.09	0.	0.	91.	
JUL															
1-5	15.28	0.	7.17	6.93	14.10	0.	0.60	14.70	0.	0.58	-0.84	0.	0.	93.	
6-10	17.42	0.	4.37	5.11	9.48	0.	0.60	10.08	0.	7.34	0.	2.33	5.39	100.	
11-15	19.12	0.	2.81	3.28	6.09	0.81	0.60	7.50	0.	11.62	0.	5.02	11.62	100.	
16-20	16.92	0.	0.	0.	0.	0.	0.60	0.60	0.	16.32	0.	7.05	16.32	100.	
21-25	53.45	0.	2.97	6.93	9.90	0.81	0.60	11.31	0.	42.14	0.	18.21	42.14	100.	
26-END	26.84	0.	0.	4.65	4.65	0.81	0.60	6.06	0.	22.78	0.	11.81	22.78	100.	
AUG															
1-5	42.57	0.	0.	6.93	6.93	0.	0.60	7.53	0.	55.04	0.	23.78	55.04	100.	
6-10	47.59	0.	0.	3.41	3.41	0.81	0.60	4.81	0.	42.78	0.	18.48	42.78	100.	
11-15	31.66	5.15	0.	0.36	5.51	0.	0.60	6.11	0.	25.55	0.	11.04	25.55	100.	
16-20	31.37	7.47	0.	2.31	9.78	0.75	0.60	11.14	0.	20.23	0.	8.74	20.23	100.	
21-25	21.72	7.97	0.	2.01	9.98	0.	0.60	10.58	0.	11.14	0.	4.81	11.14	100.	
26-END	27.00	2.65	0.	0.	2.65	0.	0.60	3.25	0.	23.75	0.	12.31	23.75	100.	
SEP															
1-5	45.75	1.90	0.	0.	1.90	0.	0.60	2.50	0.	43.25	0.	18.69	43.25	100.	
6-10	44.40	12.62	0.	0.	12.62	0.	0.60	13.22	0.	51.18	0.	22.11	51.18	100.	
11-15	42.61	3.54	5.99	0.	9.53	0.	0.60	10.13	0.	72.48	0.	31.31	72.48	100.	
16-20	126.51	0.	1.20	0.	1.20	0.	0.60	1.80	0.	124.71	0.	53.88	124.71	100.	
21-25	73.63	8.15	13.27	0.	21.42	0.81	0.60	22.83	0.	50.80	0.	21.95	50.80	100.	
26-END	45.13	0.	5.92	0.	5.92	0.	0.60	6.52	0.	38.61	0.	16.68	38.61	100.	
OCT															
1-5	35.42	5.69	7.46	0.	13.15	0.	0.60	13.75	0.	21.67	0.	9.36	21.67	100.	
6-10	22.67	4.29	13.19	0.	17.48	0.	0.60	18.08	0.	14.59	0.	6.30	14.59	100.	
11-15	30.39	5.26	7.54	5.47	18.27	0.	0.60	18.87	0.	11.52	0.	4.98	11.52	100.	
16-20	33.91	6.97	10.52	6.38	23.88	0.18	0.60	24.66	0.	9.25	0.	4.00	9.25	100.	
21-25	38.33	3.33	5.61	9.03	17.97	0.	0.60	18.57	0.	19.76	0.	8.54	19.76	100.	
26-END	42.15	0.	0.	2.96	2.96	0.	0.60	3.56	0.	38.59	0.	20.00	38.59	100.	
NOV															
1-5	40.41	3.75	3.43	6.00	15.18	0.	0.60	15.78	0.	24.63	0.	10.64	24.63	100.	
6-10	56.02	8.15	8.97	12.56	29.68	0.81	0.60	31.09	0.	24.93	0.	10.77	24.93	100.	
11-15	48.93	8.15	8.97	8.48	25.60	0.81	0.60	27.01	0.	21.92	0.	9.47	21.92	100.	
16-20	45.67	8.15	3.97	8.48	25.60	0.81	0.60	27.01	0.	18.66	0.	8.06	18.66	100.	
21-25	35.64	7.83	6.50	4.20	18.53	0.64	0.60	19.77	0.	15.87	0.	6.88	15.87	100.	
26-END	34.57	3.86	1.91	6.55	6.31	0.	0.60	6.91	0.	27.66	0.	11.95	27.66	100.	
DEC															
1-5	31.84	8.15	8.97	6.93	24.05	0.81	0.60	25.46	0.	6.38	0.	2.76	6.38	100.	
6-10	28.40	3.54	4.91	4.20	12.64	0.	0.60	13.24	0.	15.76	0.	6.55	15.76	100.	
11-15	40.40	0.	3.59	4.20	7.79	0.	0.60	8.39	0.	32.01	0.	13.83	32.01	100.	
16-20	31.47	0.66	2.37	5.74	8.77	0.	0.60	6.34	0.	25.13	0.	10.86	25.13	100.	
21-25	27.54	0.	1.25	1.46	2.71	0.	0.60	3.31	0.	24.23	0.	10.47	24.23	100.	
26-END	25.90	2.40	8.63	6.93	18.36	0.58	0.60	19.55	0.	6.35	0.	3.29	6.35	100.	

Table C-13 (1/5)

WATER BALANCE IN CASE OF 30 DAYS DELAY  
IN CROPPING SCHEDULE FOR CASE 1 IN 1978

YEAR : 1978														
PERIOD	RUNOFF (CM/S)	PADDY			TOTAL (CM/S)	UPLAND CROP (CM/S)	D & I WATER (CM/S)	DIVERSN REQM'T (CM/S)	MAINT. FLOW (CM/S)	BALANCE (CM/S)	DEFICIT (CMH)	SURPLUS (CMH)	DOWNSTR. FROM BRH (CM/S)	WATER DEPTH (CM)
		BLOCK 1 (CM/S)	BLOCK 2 (CM/S)	BLOCK 3 (CM/S)										
JAN														
1-5	17.68	8.15	8.97	4.94	22.06	0.81	0.47	23.34	4.00	-9.66	-4.17	0.	4.00	75.
6-10	18.58	0.	2.58	2.14	4.72	0.	0.47	5.19	5.00	8.39	-0.55	0.	5.00	97.
11-15	12.77	0.97	0.36	0.	1.32	0.	0.47	1.79	5.00	11.98	0.	4.63	15.71	100.
16-20	24.80	4.15	7.47	4.29	15.90	0.	0.47	16.37	6.00	2.43	0.	1.05	8.43	100.
21-25	18.05	0.	4.45	3.70	8.15	0.	0.47	8.62	5.00	4.43	0.	1.91	9.43	100.
26-END	14.22	2.72	8.97	4.94	16.62	0.81	0.47	17.90	4.00	-7.68	-3.98	0.	4.00	69.
FEB														
1-5	11.82	2.72	8.97	4.94	16.62	0.81	0.47	17.90	4.00	-10.08	-8.34	0.	4.00	34.
6-10	13.66	0.	8.97	4.94	13.98	0.81	0.47	15.18	4.00	-5.52	-10.72	0.	4.00	-1.
11-15	13.84	0.	6.07	4.35	11.02	0.	0.47	11.49	4.00	-1.65	-11.44	0.	4.00	-8.
16-20	16.55	0.	2.26	1.88	4.15	0.81	0.47	5.43	4.00	7.12	-8.36	0.	4.00	-1.
21-25	10.92	0.	5.00	4.18	9.15	0.81	0.47	10.43	4.00	-3.51	-9.88	0.	4.00	-19.
26-END	11.18	0.	0.	0.	0.	0.	0.47	0.47	4.00	6.71	-8.14	0.	4.00	-35.
MAR														
1-5	10.46	0.	1.52	2.51	4.06	0.	0.47	4.53	4.00	1.93	-7.30	0.	4.00	-21.
6-10	11.40	0.	0.	4.48	4.48	0.81	0.47	5.26	4.00	1.64	-6.59	0.	4.00	-75.
11-15	13.83	0.	0.	3.83	3.83	0.	0.47	4.30	4.00	5.53	-4.21	0.	4.00	-12.
16-20	13.61	0.	0.	3.29	3.29	0.81	0.47	4.57	4.00	5.04	-2.03	0.	4.00	19.
21-25	16.36	3.36	0.	1.52	6.88	0.	0.47	7.35	4.00	5.01	0.	0.14	4.32	100.
26-END	15.86	4.50	0.	0.22	4.72	0.	0.47	5.19	4.00	6.67	0.	3.46	10.67	100.
APR														
1-5	19.77	12.05	0.	1.10	13.16	0.81	0.47	14.43	5.00	0.34	0.	0.14	5.34	100.
6-10	19.41	12.05	0.	0.	12.05	0.81	0.47	13.33	5.00	1.08	0.	0.47	6.08	100.
11-15	21.72	13.91	0.	0.	13.91	0.35	0.47	14.73	5.00	1.99	0.	0.86	6.99	100.
16-20	30.82	14.77	0.	0.	14.77	0.81	0.47	16.05	6.00	8.77	0.	3.79	14.77	100.
21-25	20.28	9.98	8.38	0.	18.36	0.81	0.47	19.64	6.00	44.64	0.	19.29	50.64	100.
26-END	41.50	9.98	8.38	0.	18.36	0.81	0.47	19.64	6.00	15.86	0.	6.85	21.86	100.
MAY														
1-5	55.55	8.15	13.15	0.	21.30	0.81	0.47	22.58	6.00	16.97	0.	7.33	22.97	100.
6-10	57.43	0.	5.15	0.	5.15	0.	0.47	5.62	6.00	45.81	0.	19.79	51.81	100.
11-15	68.81	8.05	16.15	0.	24.20	0.75	0.47	25.42	6.00	37.39	0.	16.15	43.39	100.
16-20	45.47	8.15	16.19	0.	24.34	0.81	0.47	25.82	6.00	13.85	0.	5.98	19.85	100.
21-25	37.32	8.15	10.96	4.55	23.66	0.81	0.47	24.94	6.00	6.38	0.	2.76	12.38	100.
26-END	22.14	8.15	10.13	3.79	22.07	0.81	0.47	23.35	6.00	-7.21	-3.74	0.	6.00	74.
JUN														
1-5	21.37	5.15	7.85	7.29	20.29	0.	0.47	20.76	5.00	-4.39	-5.64	0.	5.00	64.
6-10	19.66	3.75	5.85	6.47	16.07	0.	0.47	16.54	5.00	-1.88	-6.45	0.	5.00	59.
11-15	16.94	8.15	8.97	8.94	26.06	0.81	0.47	27.34	4.00	-14.40	-12.67	0.	4.00	25.
16-20	13.36	0.	5.70	8.25	14.45	0.	0.47	14.92	4.00	-5.62	-15.10	0.	4.00	10.
21-25	12.70	8.15	8.97	6.04	23.16	0.81	0.47	24.44	4.00	-15.74	-21.90	0.	4.00	-30.
26-END	11.81	0.	4.29	4.68	8.97	0.	0.47	9.44	4.00	-1.63	-22.60	0.	4.00	-35.
JUL														
1-5	10.75	8.15	8.97	4.94	22.06	0.81	0.47	23.34	4.00	-16.59	-29.77	0.	4.00	-77.
6-10	16.04	4.29	8.33	4.94	17.56	0.	0.47	18.03	4.00	-5.99	-32.36	0.	4.00	-120.
11-15	13.28	5.44	7.01	3.31	15.76	0.81	0.47	17.04	4.00	-7.76	-35.71	0.	4.00	-142.
16-20	12.25	2.72	8.42	6.48	15.62	0.81	0.47	16.90	4.00	-8.65	-39.45	0.	4.00	-212.
21-25	16.29	2.72	8.97	4.94	16.62	0.81	0.47	17.90	4.00	-5.61	-41.87	0.	4.00	-231.
26-END	12.04	0.	7.10	4.94	12.04	0.	0.47	12.51	4.00	-4.47	-44.19	0.	4.00	-317.
AUG														
1-5	9.43	0.	8.69	4.94	13.62	0.61	0.47	14.50	4.00	-9.07	-48.11	0.	4.00	-356.
6-10	8.59	0.	5.93	4.94	10.87	0.58	0.47	11.92	4.00	-7.33	-51.27	0.	4.00	-519.
11-15	14.12	0.	0.	0.	0.	0.	0.47	0.47	4.00	9.45	-47.11	0.	4.00	-469.
16-20	10.74	0.	0.	0.	0.	0.81	0.47	1.28	4.00	5.46	-44.75	0.	4.00	-643.
21-25	9.18	0.	2.97	4.94	7.90	0.81	0.47	9.18	4.00	-4.00	-46.48	0.	4.00	-672.
26-END	8.72	0.	0.	0.93	0.93	0.	0.47	1.40	4.00	3.32	-44.76	0.	4.00	-1090.
SEP														
1-5	10.27	0.	0.	4.94	4.94	0.24	0.47	5.65	4.00	0.62	-44.49	0.	4.00	-1083.
6-10	11.69	0.	0.	2.99	2.99	0.	0.47	3.46	4.00	4.23	-42.66	0.	4.00	-1602.
11-15	11.42	6.08	0.	2.56	6.63	0.	0.47	9.10	4.00	-1.68	-43.39	0.	4.00	-848.
16-20	8.44	0.	0.	1.02	1.02	0.	0.47	1.49	4.00	2.95	-42.11	0.	4.00	-1167.
21-25	23.20	2.04	0.	0.67	2.21	0.	0.47	3.18	6.00	14.02	-36.05	0.	6.00	-568.
26-END	13.24	12.05	0.	0.	12.05	0.81	0.47	13.33	4.00	-4.09	-37.82	0.	4.00	-814.
OCT														
1-5	12.15	14.77	0.	0.	14.77	0.81	0.47	16.05	4.00	-7.90	-41.23	0.	4.00	-564.
6-10	9.79	9.08	0.	0.	9.08	0.	0.47	9.55	4.00	-3.76	-42.86	0.	4.00	-590.
11-15	13.05	9.98	8.38	0.	18.36	0.81	0.47	19.64	4.00	-10.59	-47.43	0.	4.00	-457.
16-20	15.77	0.61	3.99	0.	4.60	0.	0.47	5.07	4.00	6.70	-44.54	0.	4.00	-423.
21-25	26.97	0.	6.43	0.	6.43	0.	0.47	8.90	6.00	14.97	-38.46	0.	6.00	-257.
26-END	58.70	3.59	6.89	0.	10.48	0.	0.47	10.95	6.00	41.75	-16.82	0.	6.00	-56.
NOV														
1-5	62.77	0.	7.46	0.	7.46	0.	0.47	7.93	6.00	48.84	0.	4.28	15.92	100.
6-10	53.95	0.	2.42	0.	2.42	0.	0.47	2.89	6.00	45.06	0.	19.47	51.06	100.
11-15	67.91	0.	0.52	0.	0.52	0.	0.47	0.99	6.00	60.92	0.	26.32	66.92	100.
16-20	82.04	6.87	10.48	4.35	21.89	0.13	0.47	22.49	6.00	54.15	0.	23.39	60.15	100.
21-25	77.43	8.15	8.97	7.29	24.41	0.81	0.47	25.69	6.00	45.74	0.	19.76	51.74	100.
26-END	43.46	2.15	8.97	7.29	24.41	0.81	0.47	25.69	6.00	11.77	0.	5.08	17.77	100.
DEC														
1-5	32.09	0.	1.41	5.15	6.58	0.	0.47	7.05	6.00	19.04	0.	8.22	25.04	100.
6-10	48.05	0.	0.	1.84	1.84	0.	0.47	2.31	6.00	39.74	0.	17.17	45.74	100.
11-15	33.45	6.15	3.50	1.49	13.15	0.81	0.47	14.43	6.00	13.02	0.	5.63	19.02	100.
16-20	23.21	6.33	6.73	4.74	17.80	0.	0.47	18.27	6.00	-1.06	-0.46	0.	6.00	97.
21-25	21.78	0.	5.15	4.29	9.44	0.	0.47	9.91	5.00	6.87	0.	2.51	10.81	100.
26-END	17.37	8.15	8.97	4.94	22.06	0.81	0.47	23.34	4.00	-9.97	-5.17	0.	4.00	69.

Table C-13 (2/5)

WATER BALANCE IN CASE OF 30 DAYS DELAY  
IN CROPPING SCHEDULE FOR CASE 1 IN 1979

YEAR : 1979															
PERIOD	RUNOFF (CU/M/S)	PADDY			TOTAL (CU/M/S)	UPLAND CROP (CU/M/S)	D & B WATER (CU/M/S)	DIVERS'N REQM'T (CU/M/S)	MAINT. FLOW (CU/M/S)	BALANCE (CU/M/S)	DEFICIT (MCM)	SURPLUS (MCM)	DOWNSTR. FROM BRH (CU/M/S)	WATER DEPTH (MM)	
		BLOCK 1 (CU/M/S)	BLOCK 2 (CU/M/S)	BLOCK 3 (CU/M/S)											
<b>JAN</b>															
1-5	18.17	0.	0.	0.	0.	0.47	0.47	5.00	12.70	0.	0.32	5.74	100.		
6-10	17.80	4.40	6.79	4.29	15.47	0.	0.47	4.00	-2.14	-0.93	0.	4.00	94.		
11-15	15.18	8.15	8.97	4.94	22.06	0.81	0.47	4.00	-12.16	-6.18	0.	4.00	63.		
16-20	11.95	5.44	8.97	4.94	19.34	0.81	0.47	4.00	-12.67	-11.65	0.	4.00	21.		
21-25	11.99	4.65	6.97	3.64	15.25	0.18	0.47	4.00	-7.91	-15.07	0.	4.00	-2.		
26-END	11.25	2.72	8.97	4.94	16.62	0.81	0.47	4.00	-10.65	-20.59	0.	4.00	-63.		
<b>FEB</b>															
1-5	31.10	2.72	8.97	4.94	16.62	0.81	0.47	4.00	-10.80	-25.26	0.	4.00	-100.		
6-10	12.22	0.	5.36	2.34	7.70	0.13	0.47	4.00	-0.08	-25.29	0.	4.00	-139.		
11-15	11.84	0.	4.20	1.04	5.24	0.70	0.47	4.00	1.43	-24.67	0.	4.00	-133.		
16-20	14.90	0.	0.	0.	0.	0.18	0.47	4.00	10.25	-20.24	0.	4.00	-145.		
21-25	35.77	0.	0.	0.	0.	0.	0.47	6.00	29.30	-7.59	0.	6.00	8.		
26-END	36.91	0.	2.97	4.94	7.90	0.81	0.47	6.00	19.73	-2.47	0.	6.00	59.		
<b>MAR</b>															
1-5	27.97	0.	2.97	4.94	7.90	0.81	0.47	6.00	12.79	0.	3.05	13.06	100.		
6-10	25.87	0.	0.	4.94	4.94	0.81	0.47	6.00	13.65	0.	5.90	19.65	100.		
11-15	22.75	0.	0.	2.99	2.99	0.81	0.47	6.00	12.48	0.	5.39	18.48	100.		
16-20	50.69	0.	0.	3.20	3.20	0.81	0.47	6.00	40.21	0.	17.37	46.21	100.		
21-25	65.60	7.51	0.	1.56	9.07	0.81	0.47	6.00	69.25	0.	21.28	55.25	100.		
26-END	39.88	6.26	0.	0.02	6.28	0.81	0.47	6.00	26.32	0.	13.64	32.32	100.		
<b>APR</b>															
1-5	51.33	12.05	0.	1.65	13.70	0.81	0.47	6.00	30.35	0.	13.11	36.35	100.		
6-10	42.36	0.	0.	0.	12.05	0.81	0.47	6.00	23.03	0.	9.95	29.03	100.		
11-15	33.29	14.77	0.	0.	14.77	0.81	0.47	6.00	11.24	0.	4.86	17.24	100.		
16-20	26.31	14.77	0.	0.	14.77	0.81	0.47	6.00	6.26	0.	2.71	12.26	100.		
21-25	35.43	0.	0.	0.	0.	0.	0.47	6.00	28.96	0.	12.51	34.96	100.		
26-END	45.29	1.39	4.87	0.	6.26	0.	0.47	6.00	32.56	0.	14.06	38.56	100.		
<b>MAY</b>															
1-5	56.30	8.15	13.27	0.	21.42	0.81	0.47	6.00	27.60	0.	11.92	33.60	100.		
6-10	37.52	8.15	13.27	0.	21.42	0.81	0.47	6.00	8.82	0.	3.81	14.82	100.		
11-15	50.60	8.15	11.50	0.	19.66	0.81	0.47	6.00	23.66	0.	10.22	29.66	100.		
16-20	23.45	8.15	16.19	0.	24.34	0.81	0.47	6.00	-8.17	-3.53	0.	6.00	73.		
21-25	19.04	8.15	10.18	4.33	22.66	0.81	0.47	5.00	-9.90	-7.81	0.	5.00	65.		
26-END	26.77	0.	2.54	2.53	5.07	0.	0.47	6.00	15.23	0.	0.09	6.17	100.		
<b>JUN</b>															
1-5	29.59	8.15	7.41	6.43	21.99	0.81	0.47	6.00	0.32	0.	0.14	6.32	100.		
6-10	46.74	0.	3.59	6.00	9.59	0.	0.47	6.00	50.68	0.	21.89	56.68	100.		
11-15	67.25	1.29	6.68	3.40	5.17	0.	0.47	6.00	55.61	0.	24.03	61.61	100.		
16-20	30.56	5.90	5.79	6.99	18.68	0.	0.47	6.00	5.41	0.	2.34	11.41	100.		
21-25	23.12	8.15	8.97	6.06	23.16	0.81	0.47	6.00	-7.32	-3.16	0.	6.00	81.		
26-END	20.28	8.15	8.97	6.04	23.16	0.81	0.47	5.00	-9.16	-7.12	0.	5.00	58.		
<b>JUL</b>															
1-5	17.74	8.15	8.97	4.94	22.06	0.81	0.47	4.00	-9.60	-11.27	0.	4.00	33.		
6-10	15.61	2.50	7.33	4.94	14.77	0.	0.47	4.00	-3.63	-12.83	0.	4.00	13.		
11-15	22.67	5.08	8.72	4.94	18.78	0.52	0.47	6.00	-3.11	-14.18	0.	6.00	4.		
16-20	24.02	1.57	7.69	4.94	14.20	0.	0.47	6.00	3.35	-12.73	0.	6.00	-1.		
21-25	73.93	0.	0.	0.	0.	0.	0.47	6.00	67.66	0.	16.41	44.00	100.		
26-END	49.59	0.	8.32	4.40	12.71	0.81	0.47	6.00	29.60	0.	15.34	35.60	100.		
<b>AUG</b>															
1-5	23.82	0.	7.41	3.64	11.04	0.81	0.47	6.00	5.50	0.	2.38	11.50	100.		
6-10	21.66	0.	5.93	4.94	10.87	0.81	0.47	5.00	4.51	0.	1.95	9.51	100.		
11-15	17.45	0.	4.37	3.64	8.01	0.81	0.47	4.00	4.16	0.	1.80	8.16	100.		
16-20	20.85	0.	2.97	7.90	0.	0.	0.47	5.00	7.48	0.	3.23	12.48	100.		
21-25	26.95	0.	2.56	4.29	6.86	0.81	0.47	6.00	12.81	0.	5.53	18.81	100.		
26-END	28.20	0.	0.	0.	0.	0.	0.47	6.00	21.73	0.	11.26	27.73	100.		
<b>SEP</b>															
1-5	43.99	0.	0.	2.99	2.99	0.	0.47	6.00	34.53	0.	14.92	40.53	100.		
6-10	55.35	0.	0.	1.56	1.56	0.81	0.47	6.00	46.51	0.	20.09	52.51	100.		
11-15	76.67	7.51	0.	3.29	10.80	0.81	0.47	6.00	58.59	0.	25.31	64.59	100.		
16-20	80.10	6.72	0.	0.13	6.85	0.	0.47	6.00	66.78	0.	28.85	72.78	100.		
21-25	42.58	12.05	0.	1.65	13.70	0.81	0.47	6.00	21.60	0.	9.33	27.60	100.		
26-END	37.18	6.83	0.	0.	6.83	0.	0.47	6.00	25.88	0.	10.32	29.88	100.		
<b>OCT</b>															
1-5	25.41	14.77	0.	0.	14.77	0.81	0.47	6.00	3.36	0.	1.45	9.36	100.		
6-10	27.75	5.97	0.	0.	5.97	0.	0.47	6.00	15.31	0.	6.61	21.31	100.		
11-15	37.89	0.	0.	0.	0.	0.	0.47	6.00	31.42	0.	13.57	37.42	100.		
16-20	40.53	6.97	7.26	0.	14.24	0.	0.47	6.00	19.82	0.	8.56	25.82	100.		
21-25	46.28	1.29	2.51	0.	3.80	0.	0.47	6.00	36.01	0.	15.56	42.01	100.		
26-END	79.24	0.46	5.59	0.	6.06	0.	0.47	6.00	66.71	0.	34.58	72.71	100.		
<b>NOV</b>															
1-5	73.36	0.	13.16	0.	13.16	0.	0.47	6.00	53.73	0.	23.21	59.73	100.		
6-10	79.14	8.15	11.50	0.	19.66	0.81	0.47	6.00	52.20	0.	22.55	58.20	100.		
11-15	80.54	0.97	5.16	3.68	9.81	0.	0.47	6.00	64.26	0.	27.76	70.26	100.		
16-20	168.88	0.	5.56	3.90	9.48	0.	0.47	6.00	152.93	0.	66.07	158.93	100.		
21-25	111.50	3.33	4.65	5.56	12.94	0.	0.47	6.00	92.09	0.	39.78	98.09	100.		
26-END	114.39	0.	0.	0.	0.	0.	0.47	6.00	107.92	0.	46.62	113.92	100.		
<b>DEC</b>															
1-5	80.48	0.	5.93	8.94	14.88	0.	0.47	6.00	59.13	0.	25.55	65.13	100.		
6-10	59.83	8.15	8.97	8.94	26.06	0.81	0.47	6.00	26.49	0.	11.44	32.49	100.		
11-15	40.53	7.40	8.69	6.04	22.13	0.41	0.47	6.00	11.52	0.	4.98	17.52	100.		
16-20	34.72	6.76	8.43	6.04	21.25	0.07	0.47	6.00	6.93	0.	3.00	12.93	100.		
21-25	31.69	8.15	8.19	4.29	20.63	0.81	0.47	6.00	3.78	0.	1.63	9.78	100.		
26-END	26.61	8.15	8.97	4.94	22.06	0.81	0.47	6.00	-2.73	-1.41	0.	6.00	92.		



Table C-13 (3/5)

WATER BALANCE IN CASE OF 30 DAYS DELAY  
IN CROPPING SCHEDULE FOR CASE 1 IN 1980

YEAR : 1980															
PERIOD	RUNOFF (CUH/S)	BLOCK 1 (CUH/S)	BLOCK 2 (CUH/S)	BLOCK 3 (CUH/S)	TOTAL (CUH/S)	UPLAND CROP (CUH/S)	D & I WATER (CUH/S)	DIVERSYN REQMT (CUH/S)	MAINT. FLOW (CUH/S)	BALANCE (CUH/S)	DEFICIT (MCN)	SURPLUS (MCN)	DOWNSTR. FROM BRN (CUH/S)	WATER DEPTH (MM)	
<b>JAN</b>															
1-5	25.45	7.40	7.91	4.29	19.60	0.41	0.47	20.48	6.00	-1.03	-1.84	0.	6.00	89.	
6-10	22.79	6.97	3.84	1.04	11.86	0.18	0.47	12.51	6.00	4.28	-0.01	0.	6.00	100.	
11-15	18.04	8.15	7.41	3.44	19.20	0.81	0.47	20.48	5.00	-7.44	+3.22	0.	5.00	81.	
16-20	35.61	0.	5.93	4.94	10.87	0.	0.47	11.34	4.00	0.27	-3.10	0.	4.00	79.	
21-25	14.56	5.44	8.97	4.94	19.34	0.81	0.47	20.62	4.00	-10.06	-7.45	0.	4.00	49.	
26-END	19.16	2.72	8.97	4.94	16.62	0.81	0.47	17.90	5.00	-3.74	-9.39	0.	5.00	26.	
<b>FEB</b>															
1-5	14.68	2.22	8.97	4.94	14.62	0.81	0.47	17.90	4.00	-7.22	-12.51	0.	4.00	1.	
6-10	12.03	0.	8.97	4.94	13.90	0.81	0.47	15.18	4.00	-7.15	-15.60	0.	4.00	-47.	
11-15	10.19	0.	8.97	4.94	13.90	0.81	0.47	15.18	4.00	-8.99	-19.48	0.	4.00	-84.	
16-20	9.13	0.	5.15	4.29	9.44	0.	0.47	9.91	4.00	-4.78	-21.55	0.	4.00	-160.	
21-25	12.87	0.	5.15	4.29	9.44	0.81	0.47	10.72	4.00	-1.85	-22.34	0.	4.00	-170.	
26-END	28.10	0.	2.92	4.94	7.90	0.	0.47	8.37	6.00	13.73	-17.60	0.	6.00	-192.	
<b>MAR</b>															
1-5	36.12	0.	0.23	0.39	0.62	0.	0.47	1.09	6.00	29.03	-5.06	0.	6.00	16.	
6-10	59.28	0.	0.	1.69	1.69	0.58	0.47	2.74	6.00	50.34	0.	16.77	44.82	100.	
11-15	21.56	0.	0.	2.34	2.34	0.	0.47	2.81	5.00	13.75	0.	5.94	18.75	100.	
16-20	27.68	0.	0.	2.86	2.86	0.81	0.47	4.14	6.00	17.54	0.	7.58	23.54	100.	
21-25	22.73	6.90	0.	3.29	10.19	0.	0.47	10.66	6.00	6.07	0.	2.62	12.07	100.	
26-END	19.44	5.75	0.	0.	5.75	0.	0.47	6.22	5.00	8.22	0.	4.26	13.22	100.	
<b>APR</b>															
1-5	21.82	2.60	0.	1.65	4.51	0.	0.47	4.98	5.00	11.84	0.	5.12	16.84	100.	
6-10	25.89	6.11	0.	0.	6.11	0.	0.47	6.58	6.00	13.31	0.	5.75	19.31	100.	
11-15	25.50	11.76	0.	0.	11.76	0.	0.47	12.23	6.00	7.27	0.	3.14	13.27	100.	
16-20	19.27	14.66	0.	0.	14.66	0.75	0.47	15.86	5.00	-1.61	-0.70	0.	5.00	89.	
21-25	17.73	0.	3.31	0.	3.31	0.	0.47	3.78	4.00	9.95	0.	3.60	12.33	100.	
26-END	44.30	9.87	8.34	0.	18.21	0.75	0.47	19.43	6.00	18.87	0.	8.13	24.87	100.	
<b>MAY</b>															
1-5	66.47	0.	9.91	0.	9.91	0.	0.47	10.38	6.00	30.09	0.	13.00	36.09	100.	
6-10	71.85	0.	1.95	0.	1.95	0.	0.47	2.42	6.00	63.43	0.	27.40	69.43	100.	
11-15	68.50	0.	12.38	0.	12.38	0.	0.47	12.85	6.00	49.65	0.	21.45	55.65	100.	
16-20	52.41	0.	10.03	0.	10.03	0.	0.47	10.50	6.00	40.91	0.	17.67	46.91	100.	
21-25	23.02	8.15	7.61	3.68	19.67	0.81	0.47	20.95	6.00	6.07	0.	2.62	12.07	100.	
26-END	37.61	7.53	9.25	3.61	20.38	0.41	0.47	21.26	6.00	10.35	0.	5.36	16.35	100.	
<b>JUN</b>															
1-5	32.77	0.	5.15	6.66	12.01	0.	0.47	12.48	6.00	14.29	0.	6.17	20.29	100.	
6-10	36.61	7.94	7.33	6.43	21.69	0.70	0.47	22.86	6.00	7.75	0.	3.35	13.75	100.	
11-15	25.20	6.82	8.49	6.94	24.30	0.13	0.47	24.89	6.00	-5.69	-2.46	0.	6.00	85.	
16-20	36.07	6.54	6.81	7.64	26.99	0.	0.47	21.46	6.00	10.61	0.	2.12	10.91	100.	
21-25	24.53	6.11	8.21	6.04	20.34	0.	0.47	20.83	6.00	-2.30	+1.00	0.	6.00	94.	
26-END	23.90	8.09	8.94	6.04	23.07	0.78	0.47	24.32	6.00	-6.42	-3.77	0.	6.00	78.	
<b>JUL</b>															
1-5	17.20	8.15	8.97	4.94	22.06	0.81	0.47	23.34	4.00	-10.14	-8.15	0.	4.00	52.	
6-10	14.59	4.37	8.43	4.94	17.89	0.07	0.47	18.43	4.00	-7.84	-17.53	0.	4.00	22.	
11-15	13.54	5.44	8.19	4.29	17.91	0.81	0.47	19.19	4.00	-9.75	-15.74	0.	4.00	-7.	
16-20	29.52	1.14	1.28	0.	2.42	0.	0.47	2.89	6.00	20.63	-6.83	0.	6.00	46.	
21-25	22.95	0.	0.	0.	0.	0.	0.47	0.47	6.00	16.48	0.	0.29	6.66	100.	
26-END	37.34	0.	4.50	2.77	7.27	0.	0.47	7.74	6.00	23.60	0.	12.23	29.60	100.	
<b>AUG</b>															
1-5	38.32	0.	8.21	4.94	13.15	0.	0.47	13.62	6.00	18.70	0.	8.08	24.70	100.	
6-10	26.12	0.	5.93	4.94	10.87	0.	0.47	11.34	6.00	8.78	0.	3.79	14.78	100.	
11-15	25.35	0.	4.37	3.64	8.01	0.81	0.47	9.29	6.00	10.06	0.	4.33	16.04	100.	
16-20	21.11	0.	6.67	1.04	1.66	0.	0.47	2.13	5.00	13.98	0.	6.04	18.98	100.	
21-25	24.01	0.	1.60	2.99	4.78	0.81	0.47	6.06	6.00	71.95	0.	31.08	77.95	100.	
26-END	43.95	0.	0.	4.94	4.94	0.	0.47	5.41	6.00	32.18	0.	16.68	38.18	100.	
<b>SEP</b>															
1-5	20.07	0.	0.	2.99	2.99	0.	0.47	3.46	6.00	20.61	0.	8.90	26.61	100.	
6-10	40.36	0.	0.	3.29	3.29	0.	0.47	3.76	6.00	30.60	0.	13.22	36.60	100.	
11-15	26.64	7.51	0.	3.29	10.80	0.81	0.47	12.08	6.00	8.56	0.	3.70	14.56	100.	
16-20	41.59	7.51	0.	1.43	8.94	0.81	0.47	10.22	6.00	25.37	0.	10.96	31.37	100.	
21-25	75.58	6.76	0.	0.	6.76	0.	0.47	7.23	6.00	62.35	0.	26.94	68.35	100.	
26-END	50.95	10.62	0.	0.	10.62	0.	0.47	11.09	6.00	33.86	0.	14.63	39.86	100.	
<b>OCT</b>															
1-5	47.21	2.93	0.	0.	2.93	0.	0.47	3.40	6.00	37.81	0.	16.33	43.81	100.	
6-10	73.88	3.68	0.	0.	3.68	0.	0.47	4.15	6.00	65.73	0.	27.53	69.73	100.	
11-15	77.04	6.44	7.06	0.	13.50	0.	0.47	13.97	6.00	57.07	0.	24.65	63.07	100.	
16-20	254.74	9.98	8.38	0.	18.36	0.81	0.47	19.64	6.00	229.10	0.	98.97	235.10	100.	
21-25	64.81	7.75	11.62	0.	15.39	0.	0.47	15.86	6.00	42.95	0.	18.56	48.95	100.	
26-END	46.27	0.	5.83	0.	5.83	0.	0.47	6.30	6.00	27.97	0.	14.50	33.97	100.	
<b>NOV</b>															
1-5	35.41	0.	8.47	0.	8.47	0.	0.47	8.94	6.00	20.47	0.	8.84	26.47	100.	
6-10	33.36	8.15	14.63	0.	23.78	0.81	0.47	24.06	6.00	3.30	0.	1.43	9.30	100.	
11-15	36.21	6.97	2.92	4.11	14.00	0.18	0.47	20.70	6.00	9.51	0.	4.11	15.51	100.	
16-20	49.29	7.15	10.16	4.33	22.66	0.81	0.47	23.94	6.00	19.35	0.	8.36	25.35	100.	
21-25	20.67	0.	0.	2.10	2.10	0.	0.47	2.57	6.00	62.30	0.	26.91	68.30	100.	
26-END	26.97	6.67	4.58	5.13	16.58	0.33	0.47	17.18	6.00	57.79	0.	24.97	63.79	100.	
<b>DEC</b>															
1-5	28.39	0.	0.	3.40	3.40	0.	0.47	3.87	6.00	78.52	0.	33.92	84.52	100.	
6-10	158.55	2.19	1.64	2.97	6.79	0.	0.47	7.26	6.00	145.29	0.	62.78	151.29	100.	
11-15	148.03	8.15	8.97	6.04	23.16	0.81	0.47	24.44	6.00	117.64	0.	50.82	123.64	100.	
16-20	71.47	7.08	7.63	0.	9.71	0.24	0.47	10.42	6.00	54.75	0.	23.65	60.75	100.	
21-25	53.13	0.	5.93	4.94	10.87	0.	0.47	11.34	6.00	35.79	0.	15.46	41.79	100.	
26-END	45.21	7.88	2.93	0.	10.82	0.64	0.47	11.93	6.00	27.28	0.	14.14	33.28	100.	