

3.5.4. Record fro Well Pumping (Actual Pumpage in Sample Farm)

RECORD FOR WELL PUMPING(SUMMER SEAZON)

WELL NO.	Date/Time	23/7/198 AM	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /dev)													
			1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL 1	5	(min)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	9.0	5.0	162	
WELL 2	"	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	7.0	6.4	116
WELL 3	"	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	6.0	7.5	135
WELL 4	"	"																												
Average Total																												6.0	7.6	413

Average :

**RECORD FOR WELL PUMPING(WINTER SEASON)**

FARM : Obaid Khalifah (Eraj Al Musalla)

WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)															
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00 PM	1:00 PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)
WELL 1	9/1/1996 (min)						10																				10.0	4.5	3	
WELL 2	"						10																				9.0	5.0	3	
WELL 3	"																													
WELL 4	"																													
Average																											9.5	4.8		
Total																														6

WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)															
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00 PM	1:00 PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)
WELL 1	10/1/1996 (min)					60	60	60	60	60	60	60																9.0	5.0	90
WELL 2	"					60	60	60	60	60	60																	7.0	6.4	93
WELL 3	"																													
WELL 4	"																													
Average																											8.0	5.7		
Total																														183

WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)															
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00 PM	1:00 PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)
WELL 1	11/1/1996 (min)					60	60	60	60	60	60																	9.0	5.0	90
WELL 2	"					60	60	60	60	60	60																	7.0	6.4	116
WELL 3	"																													
WELL 4	"																													
Average																											8.0	5.7		
Total																														206

WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)															
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00 PM	1:00 PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)
WELL 1	12/1/1996 (min)					60	60	60	60	60	60																	10.0	4.5	81
WELL 2	"					60	60	60	60	60	60																	8.0	5.6	101
WELL 3	"																													
WELL 4	"																													
Average																											9.0	5.1		
Total																														182

**RECORD FOR WELL PUMPING (WINTER SEASON)**

FARM : **Obaid Khalifah (Faral Al Moalla)**

WELL NO.	PUMPING TIME													Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00			
	13/1/199															
	6															
WELL 1	(min)	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	81
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	8.0	5.6	101
WELL 3	"															
WELL 4	"															
Average														9.0	5.1	
Total																182
WELL NO.	PUMPING TIME													Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00			
	14/1/199															
	6															
WELL 1	(min)	60	60	60	60	60	60	60	60	60	60	60	60	9.0	5.0	90
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	7.0	6.4	116
WELL 3	"															
WELL 4	"															
Average														8.0	5.7	
Total																206
WELL NO.	PUMPING TIME													Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00			
	15/1/199															
	6															
WELL 1	(min)	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	81
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	8.0	5.6	101
WELL 3	"															
WELL 4	"															
Average														9.0	5.1	
Total																182

Average :

RECORD FOR WELL PUMPING(WINTER SEASON)

FARM : Local Farm (Dhaid West)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour	Ground water (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(sec/45lit)	(h)
WELL 1	9/7/1996 (min)						30	30					30	30												10.0	4.5	3.0	49	
WELL 2	"						30	30					30	30												9.0	5.0	2.0	36	
WELL 3	"																													
WELL 4	"																													
Average																										9.5	4.8			
Total																														85

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour	Ground water (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(sec/45lit)	(h)
WELL 1	10/1/1996 (min)						35	25					32	28												8.0	5.6	3.0	61	
WELL 2	"						30	30					28	32												9.3	4.8	2.5	44	
WELL 3	"																													
WELL 4	"																													
Average																										8.7	5.2			
Total																														104

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour	Ground water (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(sec/45lit)	(h)
WELL 1	11/1/1996 (min)						30	30					35	25												9.0	5.0	3.0	54	
WELL 2	"						30	30					30	30												10.0	4.5	3.0	49	
WELL 3	"																													
WELL 4	"																													
Average																										9.5	4.8			
Total																														103

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour	Ground water (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(sec/45lit)	(h)
WELL 1	12/1/1996 (min)						35	25					30	30												8.7	5.2	3.0	56	
WELL 2	"						30	30					25	35												9.7	4.6	3.0	50	
WELL 3	"																													
WELL 4	"																													
Average																										9.2	4.9			
Total																														106

**RECORD FOR WELL PUMPING (WINTER SEASON)**  
 FARM : Local Farm (Dhaid West)

WELL NO.	Date/Time	PUMPING TIME														Running Hour	Ground water (m <sup>3</sup> /day)													
		AM												PM																
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00			3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(hr/sec/5hr)	(hr/sec)	(h)
WELL 1	12/7/1996 (min)							35	25		30	30														8.0	5.6	3.0	61	
WELL 2	"							30	30		25	35														9.3	4.8	3.0	52	
WELL 3	"																													
WELL 4	"																													
Average																														
Total																										8.7	5.2	-	-	113

WELL NO.	Date/Time	PUMPING TIME														Running Hour	Ground water (m <sup>3</sup> /day)													
		AM												PM																
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00			3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(hr/sec/5hr)	(hr/sec)	(h)
WELL 1	14/1/1996 (min)							35	25		30	30														8.0	5.6	3.0	61	
WELL 2	"							30	30		28	32														9.0	5.0	3.0	54	
WELL 3	"																													
WELL 4	"																													
Average																														
Total																										8.5	5.3	-	-	115

Average: 104

RECORD FOR WELL PUMPING(WINTER SEAZON)

FARM : Local Farm (Dhaid East)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)													
		AM						PM																					
9-	15/7/1996	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	37.0	1.2	3.4
WELL 1	(min)	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6			
WELL 2	"																												
WELL 3	"																												
WELL 4	"																												
Average																											37.0	1.2	
Total																													15

Average :

15

**RECORD FOR WELL PUMPING (WINTER SEASON)**

FARM : Local Farm (Maficha East)

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
	7/1/1999	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	5.0	9.0	6.5	211	
WELL 1	6	(min)	30	60	60	60	60	60	60	60	60	60	60																	
WELL 2	"	"																												
WELL 3	"	"																												
WELL 4	"	"																												
Average																										5.0	9.0			
Total																														211

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
	8/1/1999	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	5.0	9.0	6.2	200	
WELL 1	6	(min)	60	10																										
WELL 2	"	"																												
WELL 3	"	"																												
WELL 4	"	"																												
Average																										5.0	9.0			
Total																														200

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
	9/1/1999	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	5.0	9.0	4.0	130	
WELL 1	6	(min)	10	60	60	60																								
WELL 2	"	"																												
WELL 3	"	"																												
WELL 4	"	"																												
Average																										5.0	9.0			
Total																														130

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
	10/1/1999	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	5.0	9.0	3.5	113	
WELL 1	6	(min)	60	60	60	60																								
WELL 2	"	"																												
WELL 3	"	"																												
WELL 4	"	"																												
Average																										5.0	9.0			
Total																														113

**RECORD FOR WELL PUMPING(WINTER SEASON)**

FARM : Local Farm, (Mishin East)

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
		AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00			
96	11/1/19	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	4.0	4.5	182
	96			60	10						20				11.3	
WELL 1	(min)			60	10											
WELL 2	"															
WELL 3	"															
WELL 4	"															
Average														4.0	11.3	
Total																182

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
		AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00			
96	12/1/19	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	6.0	4.8	131
	96			60	20						30				7.5	
WELL 1	(min)			60	20							60				
WELL 2	"															
WELL 3	"															
WELL 4	"															
Average														6.0	7.5	
Total																131

WELL NO.	Date/TI	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
		AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00			
96	13/1/19	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	5.0	4.8	157
	96					60					30				9.0	
WELL 1	(min)					60						60	20			
WELL 2	"															
WELL 3	"															
WELL 4	"															
Average														5.0	9.0	
Total																157

Average :

160



RECORD FOR WELL PUMPING (SUMMER SEASON)

FARM : Rashid Obaid Hamed /Waha

WELL NO.	PUMPING TIME																	Pumping Rate	Running Hour	Groud water Draft											
Date/Time	AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)	(m3/day)		
17/7/199	5																														
WELL 1	(min)							60	60	60	60	60	60														46.5	1.0	15.0	52	
WELL 2	"						60	60	60	60	60	60	60														45.5	1.0	11.0	39	
WELL 3	"																														
WELL 4	"																														
Average																											46.0	1.0			
Total																														91	
WELL NO.	PUMPING TIME																	Pumping Rate	Running Hour	Groud water Draft											
Date/Time	AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)	(m3/day)		
18/7/199	5																														
WELL 1	(min)							60	60	60	60	60	60															47.0	1.0	15.0	52
WELL 2	"						60	60	60	60	60	60	60														46.0	1.0	11.0	39	
WELL 3	"																														
WELL 4	"																														
Average																											46.5	1.0			
Total																														90	
WELL NO.	PUMPING TIME																	Pumping Rate	Running Hour	Groud water Draft											
Date/Time	AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)	(m3/day)		
19/7/199	5																														
WELL 1	(min)							60	60	60	60	60	60															47.0	1.0	15.0	52
WELL 2	"						60	60	60	60	60	60	60														45.5	1.0	11.0	39	
WELL 3	"																														
WELL 4	"																														
Average																											46.3	1.0			
Total																														91	
WELL NO.	PUMPING TIME																	Pumping Rate	Running Hour	Groud water Draft											
Date/Time	AM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	PM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)	(m3/day)		
20/7/199	5																														
WELL 1	(min)							60	60	60	60	60	60															47.0	1.0	15.0	52
WELL 2	"						60	60	60	60	60	60	60														46.5	1.0	11.0	38	
WELL 3	"																														
WELL 4	"																														
Average																											46.8	1.0			
Total																														90	

RECORD FOR WELL PUMPING (SUMMER SEASON)

FARM : Rashid Obaid Hamed (Wisha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
WELL.1	21/7/199 5 (min)						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	46.0	1.0	53		
WELL.2	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	46.5	1.0	38		
WELL.3	"																													
WELL.4	"																									46.3	1.0			
Average																													91	
Total																														

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)															
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00			
WELL.1	22/7/199 5 (min)						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	47.0	1.0	52			
WELL.2	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	46.0	1.0	39			
WELL.3	"																														
WELL.4	"																									46.5	1.0				
Average																														90	
Total																															

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)																
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				
WELL.1	23/7/199 5 (min)						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	47.0	1.0	52				
WELL.2	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	46.0	1.0	39				
WELL.3	"																															
WELL.4	"																															
Average																										46.5	1.0					
Total																																

Average :

# RECORD FOR WELL PUMPING (WINTER SEASON)

FARM : Rashid Obaid Hamed (Wisha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)																	
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	6/1/1996 (min)				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	8.0	130		
WELL 2	"				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	14.0	3.2	8.0	93		
WELL 3	"																																
WELL 4	"																																
Average																																	
Total																																	
WELL NO.																																	
Date/Time	7/1/1996 (min)				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	8.0	130		
WELL 2	"				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	14.0	3.2	8.0	93		
WELL 3	"																																
WELL 4	"																																
Average																																	
Total																																	

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)																	
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	8/1/1996 (min)				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	8.0	130		
WELL 2	"				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	14.0	3.2	8.0	93		
WELL 3	"																																
WELL 4	"																																
Average																																	
Total																																	
WELL NO.																																	
Date/Time	9/1/1996 (min)				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	8.0	130	
WELL 2	"				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	14.0	3.2	8.0	93	
WELL 3	"																																
WELL 4	"																																
Average																																	
Total																																	



**RECORD FOR WELL PUMPING(SUMMER SEASON)**  
**FARE : Hohamed Salim Binomah(2/2)**  
**(Khuderah)**

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
WELL.1	19/7/199 5 (min)			30	30	30	30																			32.0	1.4	2.5	13	
WELL.2	"			30	30	30	30	30																		35.0	1.3	2.5	12	
WELL.3	"			30	30	30	30	30																		18.0	2.5	2.5	23	
WELL.4	"			30	30	30	30	30																		15.0	3.0	2.5	27	
WELL.5	"			30	30	30	30	30																		33.0	1.4	2.5	12	
WELL.6	"			30	30	30	30	30																		36.0	1.3	2.5	11	
WELL.7	"			30	30	30	30	30																		20.0	2.3	2.5	20	
WELL.8	"			30	30	30	30	30																		18.0	2.5	2.5	23	
Average				30	30	30	30	30																		25.9	1.9			
Total																														140

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
WELL.1	20/7/199 5 (min)					60	60	60	60	60	60															32.0	1.4	6.0	30	
WELL.2	"					60	60	60	60	60	60															35.0	1.3	6.0	28	
WELL.3	"					60	60	60	60	60	60															20.0	2.3	6.0	49	
WELL.4	"					60	60	60	60	60	60															25.0	1.8	6.0	39	
WELL.5	"			30	30	30	30																			33.0	1.4	2.5	12	
WELL.6	"			30	30	30	30																			36.0	1.3	2.5	11	
WELL.7	"			30	30	30	30																			20.0	2.3	2.5	20	
WELL.8	"			30	30	30	30																			18.0	2.5	2.5	23	
Average				30	30	30	30																			27.4	1.8			
Total																														212

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
WELL.1	21/7/199 5 (min)					60	60	60	60	60	60															32.0	1.4	6.0	30	
WELL.2	"					60	60	60	60	60	60															35.0	1.3	6.0	28	
WELL.3	"					60	60	60	60	60	60															22.0	2.0	6.0	44	
WELL.4	"					60	60	60	60	60	60															20.0	2.3	6.0	49	
WELL.5	"			30	30	30	30																			34.0	1.3	2.5	12	
WELL.6	"			30	30	30	30																			33.0	1.4	2.5	12	
WELL.7	"			30	30	30	30																			22.0	2.0	2.5	18	
WELL.8	"			30	30	30	30																			20.0	2.3	2.5	20	
Average				30	30	30	30																			27.3	1.7			
Total																														214

RECORD FOR WELL PUMPING(SUMMER SEASON)

FARM : Hahamed Salim Binomah(2/2) (Khadurah)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)										
		AM 1:00	AM 2:00	AM 3:00	AM 4:00	AM 5:00	AM 6:00	AM 7:00	AM 8:00	AM 9:00	AM 10:00	AM 11:00	AM 12:00				PM 1:00	PM 2:00	PM 3:00	PM 4:00	PM 5:00	PM 6:00	PM 7:00	PM 8:00	PM 9:00	PM 10:00
WELL.1	22/7/199						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	28.0
WELL.2	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	33.0
WELL.3	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	18.0
WELL.4	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	22.0
WELL.5	"					30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30.0
WELL.6	"					30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	25.0
WELL.7	"					30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	19.0
WELL.8	"					30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	18.0
Average						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	24.1
Total																										236

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)										
		AM 1:00	AM 2:00	AM 3:00	AM 4:00	AM 5:00	AM 6:00	AM 7:00	AM 8:00	AM 9:00	AM 10:00	AM 11:00	AM 12:00				PM 1:00	PM 2:00	PM 3:00	PM 4:00	PM 5:00	PM 6:00	PM 7:00	PM 8:00	PM 9:00	PM 10:00
WELL.1	23/7/199						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	30.0
WELL.2	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	30.0
WELL.3	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	20.0
WELL.4	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	22.0
WELL.5	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	32.0
WELL.6	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	34.0
WELL.7	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30.0
WELL.8	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	22.0
Average							30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	27.5
Total																										214

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)										
		AM 1:00	AM 2:00	AM 3:00	AM 4:00	AM 5:00	AM 6:00	AM 7:00	AM 8:00	AM 9:00	AM 10:00	AM 11:00	AM 12:00				PM 1:00	PM 2:00	PM 3:00	PM 4:00	PM 5:00	PM 6:00	PM 7:00	PM 8:00	PM 9:00	PM 10:00
WELL.1	24/7/199						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	32.0
WELL.2	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	33.0
WELL.3	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	20.0
WELL.4	"						60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	22.0
WELL.5	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	33.0
WELL.6	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	34.0
WELL.7	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	19.0
WELL.8	"						30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	20.0
Average							30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	26.6
Total																										218

### RECORD FOR WELL PUMPING(SUMMER SEASON)

FARM : Mohamed Salim Binmah(2/2) (Khuderah)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Gross water Draft (m <sup>3</sup> /day)						
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM					
WELL 1	25/7/1995 (mm)																	30.0	1.5	6.0	32	
WELL 2	"																	29.0	1.6	6.0	34	
WELL 3	"																	21.0	2.1	6.0	46	
WELL 4	"																	18.0	2.5	6.0	54	
WELL 5	"																	32.0	1.4	2.5	13	
WELL 6	"																	34.0	1.3	2.5	12	
WELL 7	"																	30.0	1.5	2.5	14	
WELL 8	"																	22.0	2.0	2.5	18	
Average																		27.0	1.7	-	223	
Total																						208

Average :

RECORD FOR WELL PUMPING(WINTER SEASON)

FARM : Mohamed Saifim Binomah(2/2) (Khuderah)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
WELL 1	6/1/1996 (min)						60				60				60				18.0	2.5	4.0	36	
WELL 2	"						60				60				60				16.0	2.8	4.0	41	
WELL 3	"						60				60				60				18.0	2.5	4.0	36	
WELL 4	"						60				60				60				15.0	3.0	4.0	43	
WELL 5	"						60				60				60				16.0	2.8	4.0	41	
WELL 6	"						60				60				60				14.0	3.2	4.0	46	
WELL 7	"						60				60				60				13.0	3.5	4.0	50	
WELL 8	"						60				60				60				15.7	2.9			
Average																							
Total																							292

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
WELL 1	7/1/1996 (min)						60				60				60				18.0	2.5	4.0	36	
WELL 2	"						60				60				60				16.0	2.8	4.0	41	
WELL 3	"						60				60				60				18.0	2.5	4.0	36	
WELL 4	"						60				60				60				15.0	3.0	4.0	43	
WELL 5	"						60				60				60				16.0	2.8	4.0	41	
WELL 6	"						60				60				60				14.0	3.2	4.0	46	
WELL 7	"						60				60				60				13.0	3.5	4.0	50	
WELL 8	"						60				60				60				15.7	2.9			
Average																							
Total																							292

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
WELL 1	8/1/1996 (min)						60				60				60				18.0	2.5	4.0	36	
WELL 2	"						60				60				60				16.0	2.8	4.0	41	
WELL 3	"						60				60				60				18.0	2.5	4.0	36	
WELL 4	"						60				60				60				15.0	3.0	4.0	43	
WELL 5	"						60				60				60				16.0	2.8	4.0	41	
WELL 6	"						60				60				60				14.0	3.2	4.0	46	
WELL 7	"						60				60				60				13.0	3.5	4.0	50	
WELL 8	"						60				60				60				15.7	2.9			
Average																							
Total																							292



RECORD FOR WELL PUMPING(WINTER SEASON)

FARM : Mohamed Salim Binomah(272) (Khuderah)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (cc/45lit) (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)		
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	9/1/1996													60	18.0	2.5	4.0	36
WELL 2	"													60	16.0	2.8	4.0	41
WELL 3	"													60	18.0	2.5	4.0	36
WELL 4	"													60	15.0	3.0	4.0	43
WELL 5	"													60	16.0	2.8	4.0	41
WELL 6	"													60	14.0	3.2	4.0	46
WELL 7	"													60	13.0	3.5	4.0	50
WELL 8	"													60	13.0	3.5	4.0	50
Average														15.7	2.9			
Total																		292

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (cc/45lit) (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)		
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	10/1/1996													60	18.0	2.5	4.0	36
WELL 2	"													60	16.0	2.8	4.0	41
WELL 3	"													60	18.0	2.5	4.0	36
WELL 4	"													60	15.0	3.0	4.0	43
WELL 5	"													60	16.0	2.8	4.0	41
WELL 6	"													60	14.0	3.2	4.0	46
WELL 7	"													60	13.0	3.5	4.0	50
WELL 8	"													60	13.0	3.5	4.0	50
Average														15.7	2.9			
Total																		292

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (cc/45lit) (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)		
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	11/1/1996													60	18.0	2.5	4.0	36
WELL 2	"													60	16.0	2.8	4.0	41
WELL 3	"													60	18.0	2.5	4.0	36
WELL 4	"													60	15.0	3.0	4.0	43
WELL 5	"													60	16.0	2.8	4.0	41
WELL 6	"													60	14.0	3.2	4.0	46
WELL 7	"													60	13.0	3.5	4.0	50
WELL 8	"													60	13.0	3.5	4.0	50
Average														15.7	2.9			
Total																		292

RECORD FOR WELL PUMPING(WINTER SEASON)

FARM : Hobamed Salim Binomah(2/2) (Khadurah)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)				
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				12:00	1:00 PM		
WELL-1	12/1/1995 (min)						60										18.0	2.5	4.0	36
WELL-2	"						60										16.0	2.8	4.0	41
WELL-3	"						60										18.0	2.5	4.0	36
WELL-4	"						60										15.0	3.0	4.0	43
WELL-5	"						60										16.0	2.8	4.0	41
WELL-6	"						60										14.0	3.2	4.0	46
WELL-7	"						60										13.0	3.5	4.0	50
WELL-8	"						60										15.7	2.9		
Average																				
Total																				

Average :

292

RECORD FOR WELL PUMPING(SUMMER SEASON)

FARM : Said Seif Ali (Jabal Milerha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00 PM			
	29/6/1995													18.0	2.5	3.0
	(min)	30	30	30	30	30	30	30	30	30	30	30	30			
	WELL.1													22.0	2.0	2.2
	WELL.2													24.0	1.9	2.6
	WELL.3													30.0	1.5	1.8
	WELL.4													23.5	2.0	
	Average															
	Total															70
WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00 PM			
	30/6/1995													20.0	2.3	3.0
	(min)	30	30	30	30	30	30	30	30	30	30	30	30			
	WELL.1													24.0	1.9	2.2
	WELL.2													25.0	1.8	2.6
	WELL.3													29.0	1.6	1.8
	WELL.4													24.5	1.9	
	Average															
	Total															65
WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00 PM			
	1/7/1995													19.0	2.4	3.0
	(min)	30	30	30	30	30	30	30	30	30	30	30	30			
	WELL.1													21.0	2.1	2.2
	WELL.2													23.0	2.0	2.6
	WELL.3													30.0	1.5	1.8
	WELL.4													23.3	2.0	
	Average															
	Total															70
WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m3/day)
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00 PM			
	2/7/1995													15	3.0	3.0
	(min)	30	30	30	30	30	30	30	30	30	30	30	30			
	WELL.1													21	2.1	2.2
	WELL.2													21	2.1	2.6
	WELL.3													22	2.0	1.8
	WELL.4													28.0	2.3	
	Average															
	Total															82

RECORD FOR WELL PUMPING(SUMMER SEASON)

FARM : Said Seif Ali (Jabal Mileha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Groud water Draft (m <sup>3</sup> /day)														
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00		
WELL.1	3/7/1995 (min)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.6	3.0	29
WELL.2	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.0	2.2	15	
WELL.3	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.6	2.6	16	
WELL.4	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	1.5	1.8	9	
Average																														
Total																														68
WELL NO.		PUMPING TIME																												
Date/Time	4/7/1995	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)	(m <sup>3</sup> /day)		
WELL.1	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.3	3.0	24	
WELL.2	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.0	2.2	15	
WELL.3	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	1.9	2.6	17	
WELL.4	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	1.7	1.8	11	
Average																														
Total																														67
WELL NO.		PUMPING TIME																												
Date/Time	5/7/1995	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	(lit/sec)	(h)	(m <sup>3</sup> /day)		
WELL.1	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	1.8	2.5	27	
WELL.2	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.2	2.0	16	
WELL.3	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	2.4	1.9	2.6	17
WELL.4	"	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	1.5	1.8	9	
Average																														
Total																														70

Average :

**RECORD FOR WELL PUMPING(WINTER SEASON)**  
**FARM :** Said Sait Ali (Jabal Miliha)

WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00	12:00	1:00 PM				
26/12/19	95																					
WELL.1					60	58	59	60	55	57	58	60	57	58	59	60	14.0	3.2	5.8	67		
WELL.2				45	45	42	45	40	42	42	40	42	42	42	42	42	20.0	2.3	4.3	35		
WELL.3				30	30	29	30	30	30	28	30	28	28	28	28	28	16.0	2.8	2.9	30		
WELL.4																						
Average																	16.7	2.8				
Total																						132
WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00	12:00	1:00 PM				
27/12/19	95																					
WELL.1					60	50	59	60	55	58	58	60	58	58	58	58	15.0	3.0	5.7	62		
WELL.2				44	41	43	45	40	42	42	40	42	42	42	42	42	21.0	2.1	4.3	33		
WELL.3				30	30	27	31	28	30	30	28	30	28	28	28	28	17.0	2.6	2.9	28		
WELL.4																						
Average																	17.7	2.6				
Total																						122
WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00	12:00	1:00 PM				
28/12/19	95																					
WELL.1					60	56	54	60	55	53	53	60	53	53	53	53	13.0	3.5	5.6	70		
WELL.2				45	43	40	46	40	40	41	41	40	41	41	41	41	19.0	2.4	4.3	36		
WELL.3				31	31	29	30	30	28	27	28	30	28	28	28	28	15.0	3.0	2.9	32		
WELL.4																						
Average																	15.7	2.9				
Total																						138
WELL NO.	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
	Date/Time	1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00				12:00	12:00	1:00 PM				
29/12/19	95																					
WELL.1					60	58	57	60	59	56	56	60	56	56	56	56	14.0	3.2	5.8	68		
WELL.2				45	43	41	45	43	41	40	41	41	40	40	40	40	20.0	2.3	4.3	35		
WELL.3				31	30	29	30	30	28	28	28	30	28	28	28	28	16.0	2.8	3.0	30		
WELL.4																						
Average																	16.7	2.8				
Total																						132

RECORD FOR WELL PUMPING(WINTER SEASON)

Date/Time		Said Seif Ali (Jabal Mletha)														Pumping Rate		Running Hour		Groud water Draft							
Date/Time	AM 1:00	PUMPING TIME														(lit/sec)	(h)	(m <sup>3</sup> /day)									
		2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00				4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
WELL 1	30/12/19 95 (min)	60	60	57	58	44	30	45	59	60	58	44	30	45	59	60	57	58	44	30	45	59	60	14.0	3.2	5.9	68
WELL 2	"	46	31	43	29	30	43	30	44	30	29	30	42	30	44	30	28	43	30	42	30	44	20.0	2.8	4.4	36	
WELL 3	"	31																					16.0	2.8	3.0	30	
WELL 4	"																										
Average																								16.7	2.8		133
Total																											

Date/Time		PUMPING TIME														Pumping Rate		Running Hour		Groud water Draft							
Date/Time	AM 1:00	PUMPING TIME														(lit/sec)	(h)	(m <sup>3</sup> /day)									
		2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00				4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
WELL 1	31/12/19 95 (min)	60	60	59	60	44	30	45	59	60	58	44	30	45	59	60	58	44	30	45	59	60	15.0	3.0	5.9	64	
WELL 2	"	45	32	43	29	30	43	30	44	30	29	30	42	30	44	30	28	43	30	42	30	44	20.0	2.3	4.4	36	
WELL 3	"																						17.0	2.6	3.0	28	
WELL 4	"																										
Average																								17.3	2.6		127
Total																											

Date/Time		PUMPING TIME														Pumping Rate		Running Hour		Groud water Draft							
Date/Time	AM 1:00	PUMPING TIME														(lit/sec)	(h)	(m <sup>3</sup> /day)									
		2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00				4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
WELL 1	1/1/1996 (min)	60	60	57	59	44	30	45	59	60	58	44	30	45	59	60	58	44	30	45	59	60	16.0	2.8	5.9	60	
WELL 2	"	45	31	43	29	30	43	30	44	30	29	30	42	30	44	30	28	43	30	42	30	44	21.0	2.1	4.4	34	
WELL 3	"																						16.0	2.8	2.9	29	
WELL 4	"																										
Average																								17.7	3.6		123
Total																											

Average :

**RECORD FOR WELL PUMPINGS(SUMMER SEASON)**

FARM : Rashtid Oberid Harmed (Mileiha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)													
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL.1	6/7/1995 (min)					60	60	60	60	60							25.0	1.8	7.0	45									
WELL.2	"					60	60	60	60	60							10.0	4.5	7.0	113									
WELL.3	"																												
WELL.4	"																												
Average																	17.3	3.2		159									
Total																				159									
WELL NO.																													
Date/Time	6/7/1995 (min)	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)	
WELL.1	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	27.0	1.7	7.0	42
WELL.2	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	14.0	3.2	7.0	81
WELL.3	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	26.0	1.7	7.0	44
WELL.4	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	26.0	1.7	7.0	44
Average																										23.3	2.1		210
Total																													210
WELL NO.																													
Date/Time	7/7/1995 (min)	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)	
WELL.1	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	14.0	3.2	7.0	81
WELL.2	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	10.0	4.5	7.0	113
WELL.3	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	25.0	1.8	7.0	45
WELL.4	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	20.0	2.3	7.0	57
Average																										17.3	2.9		296
Total																													296
WELL NO.																													
Date/Time	8/7/1995 (min)	AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m3/day)	
WELL.1	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	15	3.0	7.0	76
WELL.2	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	11	4.1	7.0	103
WELL.3	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	26	1.7	7.0	44
WELL.4	"					60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	20	2.3	7.0	57
Average																										28.0	2.8		279
Total																													279





**RECORD FOR WELL PUMPING (WINTER SEASON)**

FARM : Rashid Obeid Hamed (Mileiha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
25/12/19	95												20	55.0	0.8	0.3							
WELL 1	(min)												20	7.0	6.4	0.3							
WELL 2	"																						
WELL 3	"																						
WELL 4	"																						
Average														31.0	3.6								
Total																9							
WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
27/12/19	95												60	6.0	7.5	9.0							
WELL 1	(min)												60	18.0	2.5	9.0							
WELL 2	"												60	18.0	2.5	9.0							
WELL 3	"												60	18.0	2.5	9.0							
WELL 4	"												60	18.0	2.5	9.0							
Average														15.0	3.8								
Total																486							

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
25/12/19	95												60	6.0	7.5	8.0							
WELL 1	(min)												60	15.0	3.0	8.0							
WELL 2	"												60	15.0	3.0	8.0							
WELL 3	"												60	15.0	3.0	8.0							
WELL 4	"												60	15.0	3.0	8.0							
Average														12.8	4.1								
Total																475							
WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)							
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00
25/12/19	95												60	6.0	7.5	8.0							
WELL 1	(min)												60	15.0	3.0	8.0							
WELL 2	"												60	15.0	3.0	8.0							
WELL 3	"												60	15.0	3.0	8.0							
WELL 4	"												60	15.0	3.0	8.0							
Average														12.0	4.5								
Total																389							

### RECORD FOR WELL PUMPING (WINTER SEASON)

FARM : Rashid Obeid Hamed (Milelha)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)		
		PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	30/12/1995 (min)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	6.0	7.5	216
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	15.0	3.0	86
WELL 3	"																	
WELL 4	"																	
Average														10.5	5.3			
Total																302		

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)		
		PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	31/12/1995 (min)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	6.0	7.5	216
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	15.0	3.0	86
WELL 3	"																	
WELL 4	"																	
Average														12.0	4.5			
Total																389		

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)		
		PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	1/1/1996 (min)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	6.0	7.5	243
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	15.0	3.0	97
WELL 3	"																	
WELL 4	"																	
Average														10.5	5.3			
Total																340		

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)		
		PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00					
WELL 1	2/1/1996 (min)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	6.0	7.5	230
WELL 2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	15.0	3.0	92
WELL 3	"																	
WELL 4	"																	
Average														12.0	4.5			
Total																413		

Average :

### RECORD FOR WELL PUMPING(SUMMER SEASON)

FARM : Said Sabn Charshik(Rdb)

WELL NO.	Date/Time	PUMPING TIME																								Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)
		AM												PM														
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00			
107/1995																												
	(min)																											
WELL-1	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-3	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-4	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Average																												
Total																												
117/1995																												
	(min)																											
WELL-1	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-3	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-4	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Average																												
Total																												
127/1995																												
	(min)																											
WELL-1	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-3	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-4	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Average																												
Total																												
137/1995																												
	(min)																											
WELL-1	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-3	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-4	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Average																												
Total																												
147/1995																												
	(min)																											
WELL-1	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-2	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-3	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
WELL-4	"	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Average																												
Total																												

RECORD FOR WELL PUMPINGS(SUMMER SEASON)

FARM : Saad Salim Gharchah(Rhdip)

WELL NO.	Date/Time	PUMPING TIME																								Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)	
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				(sec/45HR)
WELL.1	15/7/1995 (min)																									13.0	3.5	12.0	150
WELL.2	"																									9.0	5.0	12.0	216
WELL.3	"																									11.0	4.1	17.0	290
WELL.4	"																									7.0	6.4	17.0	305
Average Total																										10.0	4.7	-	1,009
WELL NO.	Date/Time	PUMPING TIME																								Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)	
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				(sec/45HR)
WELL.1	16/7/1995 (min)																									13	3.5	14.0	174
WELL.2	"																									8	5.6	14.0	236
WELL.3	"																									11	4.1	16.0	236
WELL.4	"																									7	6.4	16.0	370
Average Total																										9.8	4.9	-	1,041

### RECORD FOR WELL PUMPING(WINTER SEASON)

FARM : Said Naim Charah/Ididir

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (l/sec/ASHP)	Running Hour (h)	Gross water Draft (m <sup>3</sup> /day)										
		AM						PM																		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL-1	6/1/1996 (min)							60	60	60	60	60	60	60							6.0					
WELL-2	"							60	60	60	60	60	60	60							7.0					
WELL-3	"							60	60	60	60	60	60	60							6.0					
WELL-4	"							60	60	60	60	60	60	60							4.0					
Average								60	60	60	60	60	60	60							5.3					
Total								60	60	60	60	60	60	60							23.3					

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (l/sec/ASHP)	Running Hour (h)	Gross water Draft (m <sup>3</sup> /day)										
		AM						PM																		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL-1	7/1/1996 (min)							60	60	60	60	60	60	60							5.0					
WELL-2	"							60	60	60	60	60	60	60							7.0					
WELL-3	"							60	60	60	60	60	60	60							6.0					
WELL-4	"							60	60	60	60	60	60	60							4.0					
Average								60	60	60	60	60	60	60							5.5					
Total								60	60	60	60	60	60	60							22.5					

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (l/sec/ASHP)	Running Hour (h)	Gross water Draft (m <sup>3</sup> /day)										
		AM						PM																		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL-1	8/1/1996 (min)							60	60	60	60	60	60	60							5.0					
WELL-2	"							60	60	60	60	60	60	60							7.0					
WELL-3	"							60	60	60	60	60	60	60							6.0					
WELL-4	"							60	60	60	60	60	60	60							4.0					
Average								60	60	60	60	60	60	60							5.5					
Total								60	60	60	60	60	60	60							22.5					

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (l/sec/ASHP)	Running Hour (h)	Gross water Draft (m <sup>3</sup> /day)										
		AM						PM																		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL-1	9/1/1996 (min)							60	60	60	60	60	60	60							5.0					
WELL-2	"							60	60	60	60	60	60	60							7.0					
WELL-3	"							60	60	60	60	60	60	60							6.0					
WELL-4	"							60	60	60	60	60	60	60							5.0					
Average								60	60	60	60	60	60	60							5.8					
Total								60	60	60	60	60	60	60							23.8					

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (l/sec/ASHP)	Running Hour (h)	Gross water Draft (m <sup>3</sup> /day)										
		AM						PM																		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL-1	10/1/1996 (min)							60	60	60	60	60	60	60							5.0					
WELL-2	"							60	60	60	60	60	60	60							7.0					
WELL-3	"							60	60	60	60	60	60	60							6.0					
WELL-4	"							60	60	60	60	60	60	60							5.0					
Average								60	60	60	60	60	60	60							5.5					
Total								60	60	60	60	60	60	60							23.5					



### RECORD FOR WELL PUMPING(SUMMER SEASON)

FARM : Hohmad Said Gitani (PHI)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)													
		AM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00				PM 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	
WELL 1	12/7/1995 (min)				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	4.7	18.0	620
WELL 2	"				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	30.3	1.5	90
WELL 3	"				60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	25.1	1.8	116
WELL 4	"																												
Average Total																											20.0	4.3	833
		Average :																										833	

RECORD FOR WELL PUMPING(WINTER SEAZON)

WELL NO.	Date/Time	PUMPING TIME												Pumping Rate (lit/sec)	Running Hour (h)	Ground water Draft (m <sup>3</sup> /day)						
		1:00 AM	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00 PM									
WELL 1	26/12/19 95 (min)				60							60							4.0	11.3	4.0	162
WELL 2	"																					
WELL 3	"																					
WELL 4	"																					
Average																			4.0	11.3		
Total																						162

Average :



Area of Sample Farm Observed Groundwater Draft in 35/1996

Area	Unit	Date	Alfalfa	Green Fodder	Other Crops	Area for Farming	Area for Other Purpose	Total Area
Faraji Al	ha	0.60	0.23	0.09	0.00	0.91	1.74	2.65
Mualla	"	0.88	0.00	0.00	0.48	1.36	2.03	3.39
Dhaid West	"	0.92	0.00	0.00	0.31	1.23	0.83	2.06
Dhaid East	"	0.08	0.93	0.18	0.00	1.19	1.04	2.23
Mileiha East	"	2.82	0.00	0.34	0.00	3.16	0.99	4.15
Wisha	"	2.24	0.47	1.47	0.00	4.18	2.02	6.20
Khuderah	"	1.90	0.05	0.25	0.00	2.20	4.81	7.00
Jabal Mileiha	"	0.78	1.03	0.27	0.00	2.08	2.59	4.67
Mileiha	"	1.17	1.47	1.05	0.00	3.68	2.52	6.20
Ikbedir	"	0.56	1.37	0.20	0.03	2.15	1.20	3.36
Filli	"	1.20	0.55	0.38	0.08	2.21	1.98	4.19
Average								

Pumping Rate

Area	Area for Farming	Total Area	Groundwater Draft			Pumping Rate / Farming Area (m <sup>3</sup> /day/ha)	Pumping Rate / Total Area (m <sup>3</sup> /day/ha)
			7/1995 (m <sup>3</sup> /day)	12-1/1995-6 (m <sup>4</sup> /day)	Average (m <sup>5</sup> /day)		
Faraji Al Wualla	0.91	2.65	413	164	289	315	109
Dhaid West	1.36	3.39	-	104	104	76	31
Dhaid East	1.23	2.06	-	15	15	12	7
Mileiha East	1.19	2.23	-	160	160	134	72
Wisha	3.16	4.15	91	222	157	50	38
Khuderah	4.18	6.20	208	292	250	60	40
Jabal Mileiha	2.20	7.00	70	130	100	45	14
Mileiha	2.08	4.67	246	350	298	143	54
Ikhedir	3.68	6.20	1041	609	825	224	133
Filli	2.15	3.36	833	162	498	231	148
Average	2.21	4.19	415	221	269	129	61

### 3.6. Model Construction ( Tentative Manual of Storage Model)

#### 1 Introduction

This simulation consists of the two parts of the Surface System water balance and the Underground water balance.

The program of SUPER is used for the surface water balance , and the program of SUB is adopt to the groundwater balance.

The SUB is used based on the result of the simulation which SUPER was used for, and simulated.

The simulation is shown in section 2.

#### 2 How to advance simulation

##### The Surface System (SUPER)

Step1. Input the basic data in ini file (Refer to section 3-1-2).



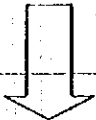
Step2. Input the structure of the tank model to the fry file (Refer to section 3-1-3).



The Surface System simulation start.

Step3. Make the Groundwater Recharge file (Refer to section 3-1-4).

If water balance is unsuitable , return to Step2.



##### The Underground System(SUB)

step4. Input the basic data in ini file (Refer to section 4-1-2).



Step5. Input Groundwater Runoff coefficient (Refer to section 4-2)

The Underground System simulation start.



Step6. The Underground System simulation end.

If water balance is unsuitable , return to Step5.



Step7. The simulation end

When a fundamental problem occurs , return to Step2.

### 3 SUPER

The program of SUPER is used for the simulation of the surface water balance.  
This simulation makes a basic data to be used by SUB simulation.

#### 3-1 Files

Various files should be prepared for before the simulation(SUPER) is operated.

##### 3-1-1 Necessary file

###### Necessary file

- Ini file (Refer to section 3-1-2)
- Try file (Refer to section 3-1-3)
- Daily rainfall data file (binary file)
- Evapotranspiration data file (The monthly data of evapotranspiration potential is described for ASCII format.)

###### If available

- Observed data file of underground water level of the verification well
- Observed data file of Surface Runoff

The SUPER requires the daily rainfall data which is binary formatted. If not, user can exchange any ASCII file using the [makeBIN] wizard. (See section 3-3)

The Daily rainfall data can be set up if necessary to two kinds.

##### 3-1-2 Ini file

The item that it is written in the ini file consists of eight parts of the next.

- |             |  |
|-------------|--|
| ①*File name | ***For the rainfall data file name and the evapotranspiration data file name |
| ②*Data      | ***The number of the sub basins  |
| ③*Graphic   | ***The item about the screen indication                                      |
| ④*Surface   | ***Mainly, the item about the Surface System                                 |
| ⑤*Tank      | ***Mainly, the item about the Underground System                             |

- ⑥\*PumpUP      •••The Groundwater Draft ; the groundwater with drawal
- ⑦\*Link&Area      •••The link section of the Underground tank
- ⑧\*wPerm      •••The file of the Groundwater Runoff coefficient

The item ①,②,④ and ⑤ are integral for the SUPER simulation. ; there is only a part that writes it in ⑤.

Item ③( the screen indication ) : It is recommended for recurrent simulation work.

You must necessarily write ①,② and ④ in the ini file.

The data which must write in each item are explained in order in the following.

①\*File name

- The daily rainfall data file name
- The evapotranspiration data file name

The rainfall data can distribute the different rainfall data of each basin(maximum two kinds).

②\*Data

- The number of Surface tanks
- The number of the Underground connections  
(The number of the pipe which connects the Underground tank)
- The number of the Underground tanks

③\*Graphic

- The screen indication

④\*Surface

- The maximum steps of the Surface tank
- The maximum outlet numbers in each step of the Surface tanks
- Subsequent Basin number in each Basin
- Catchment area of each Basin (unit : 1000m<sup>3</sup>)
- The initial water level of each Surface tank
- Topological correction factor for rainfall data of each Basin [If necessary]

⑤\*Tank

- Basin No. (When there is a Surface tank at the top of the Underground tank.)

## ※ Option

### When you install the trenching

#### ④ \*Surface

- Daily permeation flow of the trench ( $m^3/day$ )

- The daily lowest amount of Surface Runoff which can be reach the trench ( $m^3/day$ )

### When you install the surface dam

#### ④ \*Surface

- Capacity of dam ( $m^3$ )

- Daily discharge quantity of the dam ( $m^3/day$ )

### When there is the verified data

- Observed data file of underground water level of the verification well

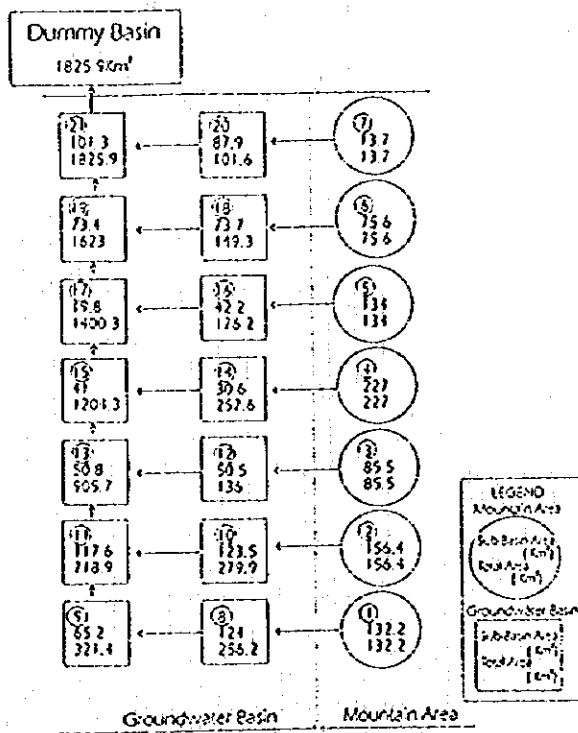
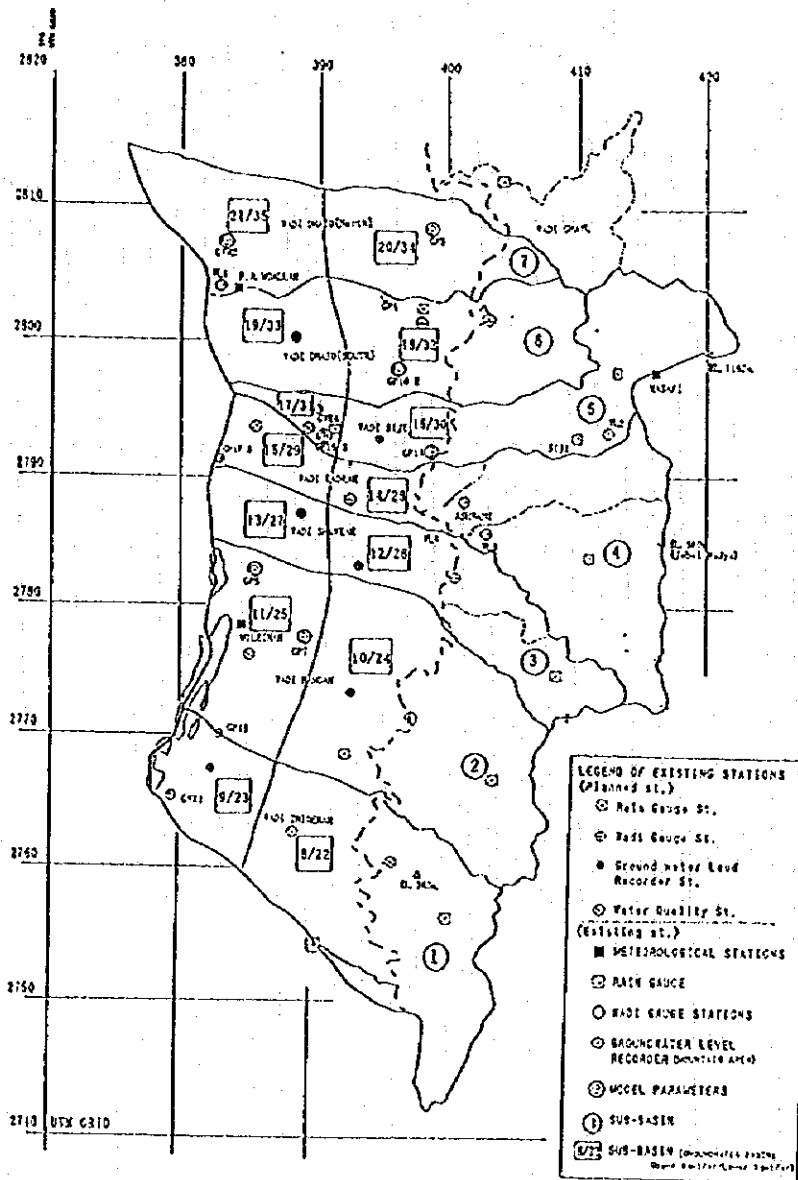
- Observed data file of Surface Runoff

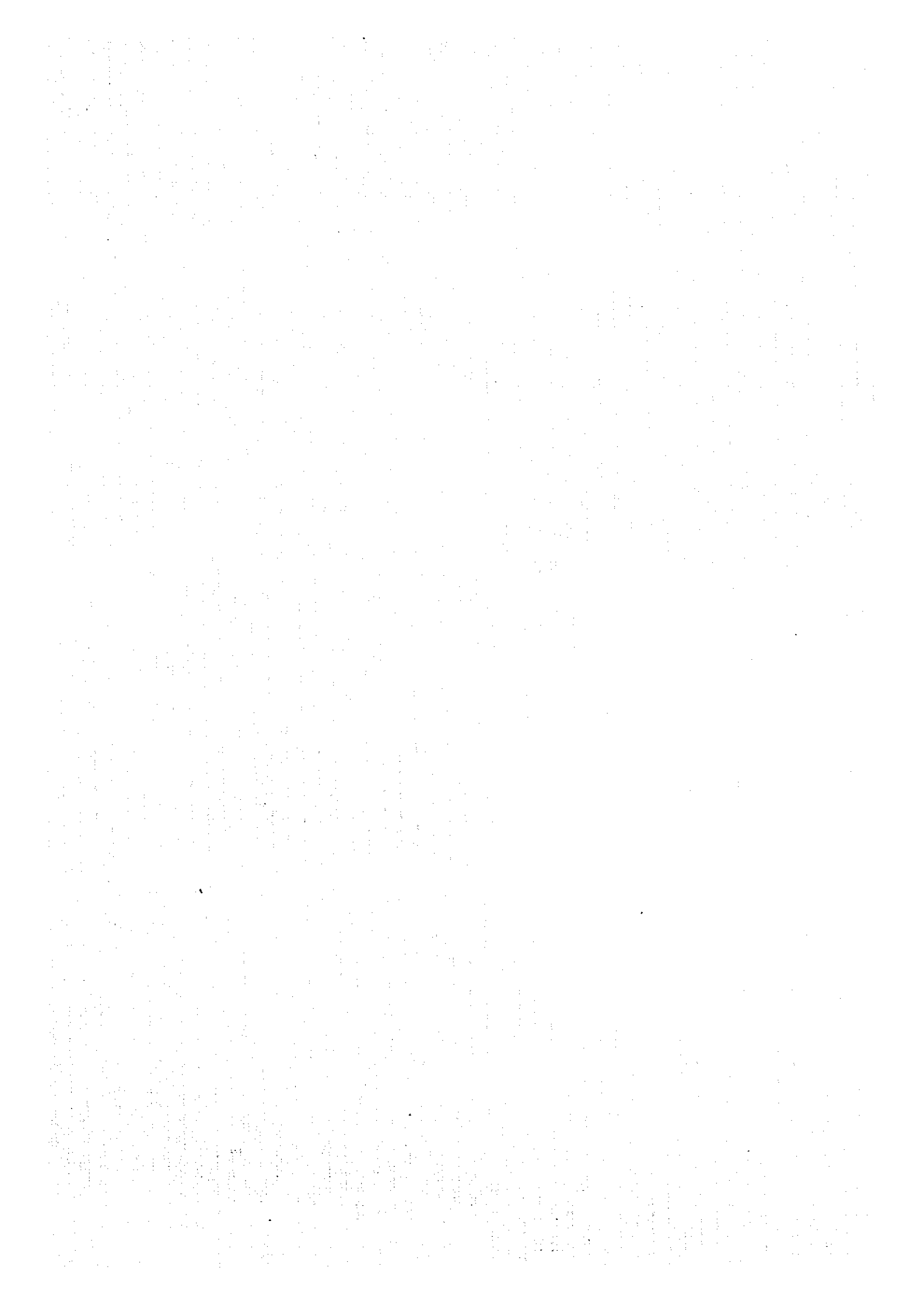
The writing method to the ini file is next page.

### 3-1-3 Try file

The name of the try file must be the name which is the same as ini file.

User makes a try file because it is asked to makes a try file when simulation is operated for the first time. The structure of the tank model is inputted to the made try file in advance. (Refer to section 3-2)







Daily rainfall data file name(example : masaf1.rrr)  
 When it wants to use different rainfall data for the plural, a rainfall data name is connected with the plus of a bite character like masaf1.rrr+masaf1r2.(maximum two kinds)

Evapotranspiration file name(example : dha.evp)

The number of the Surface tanks , The number of the Underground connections , The number of the Underground tanks  
 (The number of the pipe which connects an Underground tank)

Graphic SURF, RDS, S, s, z, 2m, Underground water level : 11.5 Years(1-19) SUB, d, p, p, a, s, (200, 70)  
 \*g: YUAEY, d, h, B, H, P  
 @ @ @ @ @ @ @ @  
 @ @ @ @ @ @ @ @ "The bmp(bit map) file name which wants to indicate"

Screen indication establishment  
 := One unit of the Groundwater Recharge when a screen is indicated.  
 := \* One unit of the verification water level data when a screen is indicated.  
 { Calculation years }  
 = [ The depth width when a screen is indicated. Top , bottom ]

When a dam is set up  
 When a dam is set up in the boundary of Basin4 and Basin14.  
 4 [ Dam capacity(m<sup>3</sup>) | Daily discharge quantity(m<sup>3</sup>/day) ] > 14

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	>8	>10	>12	>14	>16	>18	>9	>11	>13	>15	>17	>19	>21	>23	>25	>27	>29	>31	>33	>35	>37
	132200.	156400.	85500.	227000.	134000.	75600.	13700.	124000.	65200.	123500.	117600.	50500.	50800.	30600.	42200.	19000.	73700.	73400.	87900.	101300.	
	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}	{0.2, 5}
	1.11	1.03	1.03	1.03	1.00	0.95	0.95	1.09	0.87	0.87	0.87	0.83	0.83	0.83	0.83	0.83	0.83	0.89	0.89	0.89	11211

"kh\_data1.104"  
 "siji.105"  
 "The observation value data file name of the Surface Runoff."

When trench is set up.  
 14 [ Permeation flow | The daily lowest amount of Surface Runoff which can reach the trench. ]

[ Observed data file name of the groundwater level of the verification well ]

The number of that files

8(8)	9(9)	10(10)	11(11)	12(12)	13(13)	14(14)	15(15)	16(16)	17(17)	18(18)	19(19)	20(20)	21(21)	22(22)	23(23)	24(24)	25(25)	26(26)	27(27)	28(28)	29(29)	30(30)	31(31)	32(32)	33(33)	34(34)	35(35)
GL=208, [1195m]	GL=170, [162m]	GL=186, [174m]	GL=154, [147m]	GL=175, [162m]	GL=142, [133m]	GL=160, [151m]	GL=130, [124m]	GL=160, [152m]	GL=125, [118m]	GL=173, [150m]	GL=120, [114m]	GL=150, [141m]	GL=100, [92m]	[1186m]	[1153m]	[1166m]	[1142m]	[1153m]	[1127m]	[1139m]	[1117m]	[1144m]	[1106m]	[1145m]	[1114m]	[1140m]	[1 82m]
(151m, 0/163, 16610/168	(140.0/ 145.6900/ 1'	(90.0/ 100.17180/	(90.0/ 100.3467'	(80.0/ 100.27'	(82.0/ 100.'	(40.0/ 60	(59.0/ F	(30.0/	(30.0.	(30.0	(30.0.	(55.0/	(30.0/	(-417.0/-400.27590/-380.7,	(-439.0/-430.32240/-420.531	(-439.0/-420.26980/-410.4210.	(-460.0/-450.22370/-440.55870,	(-457.0/-430.14270/-400.35320/-	(-472.0/-470.4090/-460.24420/-45	(-460.0/-450.6700/-440.13890/-431	(-482.0/-480.4260/-470.23610/-466	(-459.0/-440.12890/-420.25120/-41	(-481.0/-480.1990/-470.8810/-460.	(-474.0/-440.27160/-420.45540/-4	(-508.0/-500.5460/-470.50580/-4'	(-482.0/-450.29070/-420.53670/	(-540.0/-530.15330/-500.6966P

Catchment area (1000m<sup>2</sup>)

Initial water level inside the tank  
 [ first step , second step , third step , in the same way, corresponding to the number of the steps. ]

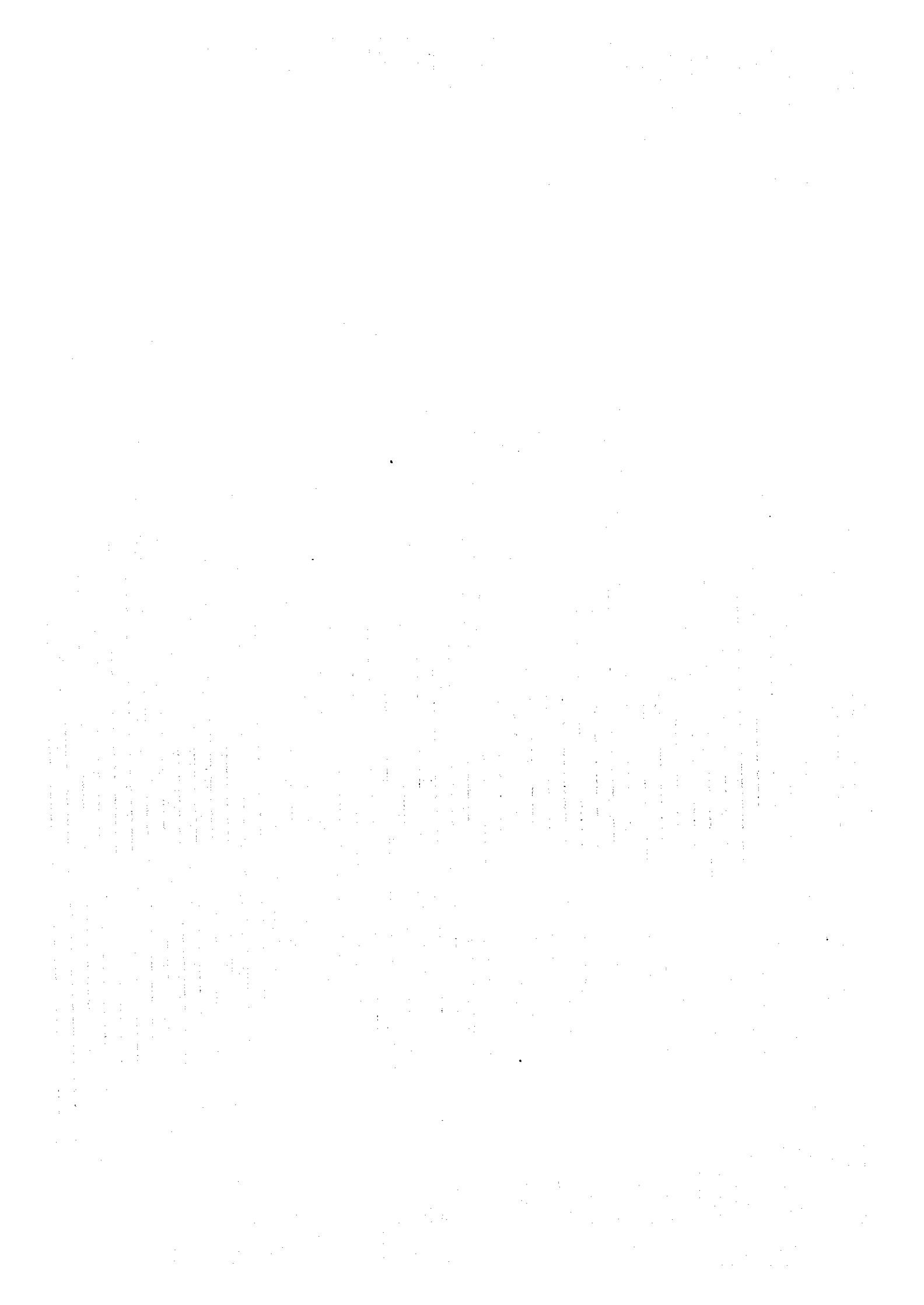
! Topological correction factor for rainfall data !

Basin No. > The subsequent Basin No.  
 When the subsequent are plural, divide Basin No. with slash like " >12/13 "

(The Basin No. (when there is the surface tank in the top))

When a rainfall data file is used for the plural.  
 Input to Basin which it wants to use the second rainfall data for ++2++.

Tank No. ( ) GL=the height above sea level of the tank(m), { Initial water level }



### 3-1-4 Output file

The following files can be output by setting the simulating term as whole period when the simulation of SUPER (Surface System) is started. Turn on the check box of the items where you want to output.

Each Output file is explained as follows.

- ① The daily binary file of Groundwater Recharge in each basin.(unit : mm)
- ② The daily binary file of Groundwater Recharge in each basin.(unit : 1000m<sup>3</sup>)  
This file is necessary for simulating the water balance of the Underground System by the use of SUB)
- ③ The CSV file of every 5 - day Groundwater Recharge in each basin.(unit : mm)
- ④ The daily binary file of Surface Runoff.(unit : mm)  
A necessary Basin No. for the box below is filled in.
- ⑤ The CSV file of every 5 - day Surface Runoff (unit : mm)  
A necessary Basin No. for the box below is filled in.
- ⑥ Undermentioned CSV file of precipitation, amount of evapotranspiration, groundwater Recharge and amount of Runoff in case of each  
A. Value Annual and the average of all the year in each basin. (unit : mm)  
B. Total Annual in the whole of the basin. (unit : mm)  
C. Total Annual of ( from 8 to 21 ) basin. (unit : ton,mm)
- ⑦ The monthly text file of the total in the whole project area. (unit : mm)

### 3-2 The method of the input to the tank model

In the process which is SUPER (simulation of the Surface water balance), the structure of the tank model will be decided.

In that case, the tank model of the structure which it seemed to show in the bottom figure is inputted to the try file as follows.

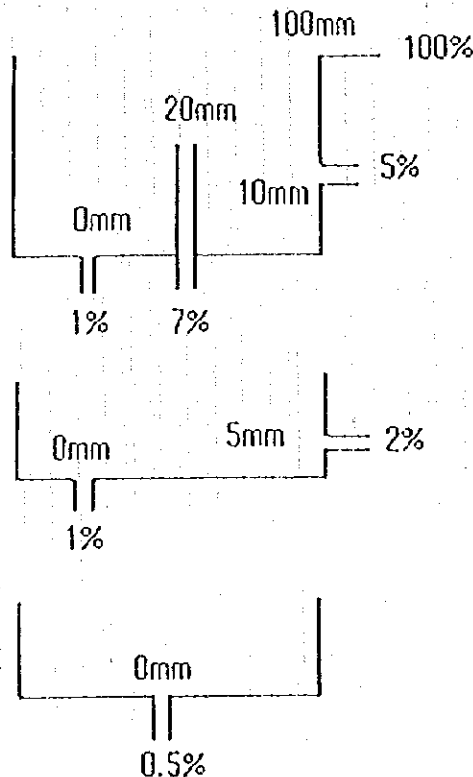
(100,20,10,0[-Y-Y]100,7,5,1)(5,0,[-Y]2,1)(0[Y].5)

It is inputted about every tank one step with ( ① [ ② ] ③ ).

- ① User should inputs  $h$ (mm) in the order of height of pipes with comma to divided each other.
- ② The direction of the pipe should be inputted in the turn which is the same as the value of the height that it faces.  
 "-" shows a side direction . "Y" shows a vertical direction.
- ③ Percent is divided with the comma in the turn which is the same as the value of the height that it faces and inputted.  
 The value like 0.5% is input as .5.

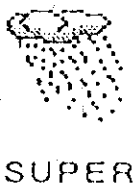
The "%%" being inputted to header of the try file shows the thing that the amount of the water which flows from the tank is inputted to the try file in the percentage.

If "%%" is not written, it is necessary to input 100% to the try file as 1.00.



### 3-3 The simulation.

It explains about the Surface System simulation. When the simulation begins, the file "SUPER.EXE" should be first made an icon. Here, it is assumed that the icon like the figure below was made and advances the talk.

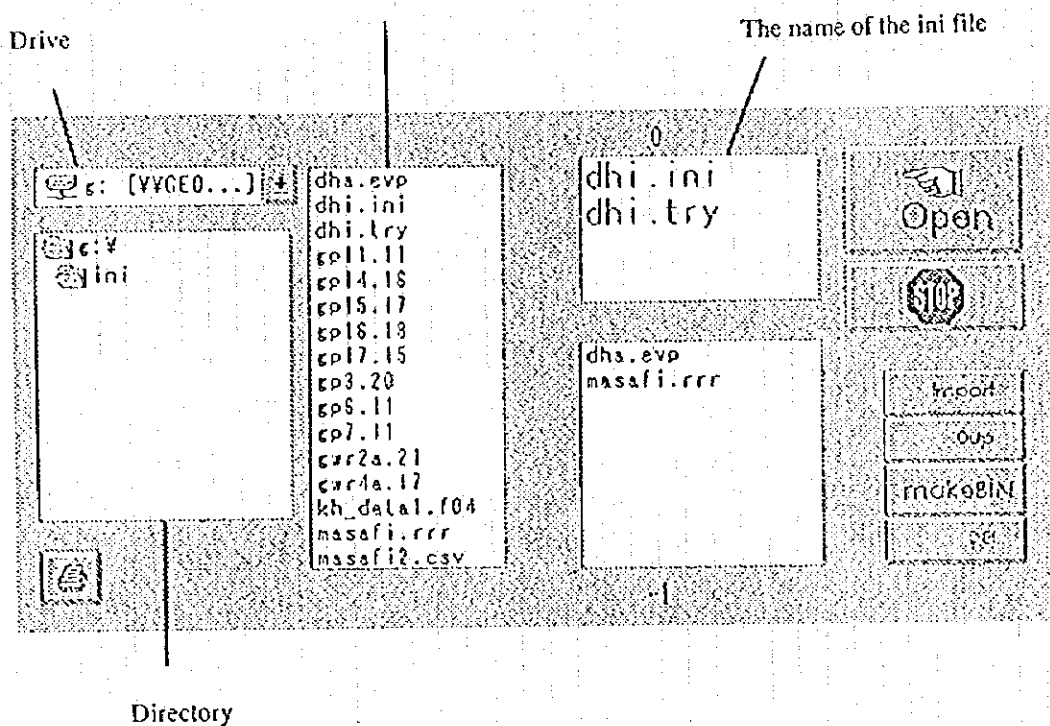


The following screens appear when You double-click the icon.

Select it in order of the drive, the directory, and the Surface System ini file, and click on the [Open] button.

At this time, when a cursor is checked with the ini file or the evapotranspiration data file and it clicks on right, a file can be edited by the memo pad.

The file name contained in the chosen directory



The rainfall data written by the CSV form etc. on this screen can be converted into the binary file. Choose a rainfall data file name, and click on the [makeBIN] button. Then, the following screen appears. Choose the form of the file of four.

Input a file name, and click on the [Go] button.

The file name before the change

The file name after the change (Input this)

masaf12.csv      masaf2.rrr      Go!      Cancel

1977

1  
2.98E-01, 2.89E-01, 1.01E-01, 2.95E-02, 2.94E-02, 2.9  
2.04E-02, 2.82E-02, 2.80E-02, 2.78E-02, 2.77E-02, 2.7  
2.67E-02, 2.66E-02, 2.64E-02, 2.63E-02, 2.61E-02, 2.6

2  
2.50E-02, 2.49E-02, 2.47E-02, 2.46E-02, 2.44E-02, 2.4  
2.36E-02, 2.34E-02, 2.33E-02, 2.32E-02, 2.30E-02, 2.2

How many: 1      Of which: 1

Form

1) 19xx  
1, d1,d2,d3,.....d31  
2, d1,d2,d3, .... d28  
3, d1,d2,d3, .....d31  
4, d1,d2,d3, .....d30

Go!      Cancel

The file of the form before change

Choose the form of the file from four

Next, the following screen appears. The form of binary file that it was changed must be a figure. If it is not a figure, choose the form of the file again.

masaf12.csv      masaf2.rrr      Go!      Cancel

11)1987 1 2 3 4 5 6 7 8 9 10 11 12  
12)1988 1 2 3 4 5 6 7 8 9 10 11 12  
13)1989 1 2 3 4 5 6 7 8 9 10 11 12  
14)1990 1 2 3 4 5 6 7 8 9 10 11 12  
15)1991 1 2 3 4 5 6 7 8 9 10 11 12  
16)1992 1 2 3 4 5 6 7 8 9 10 11 12  
17)1993 1 2 3 4 5 6 7 8 9 10 11 12  
18)1994 1 2 3 4 5 6 7 8 9 10 11 12

Xfer Pages: 1-19      ok

How many: 19

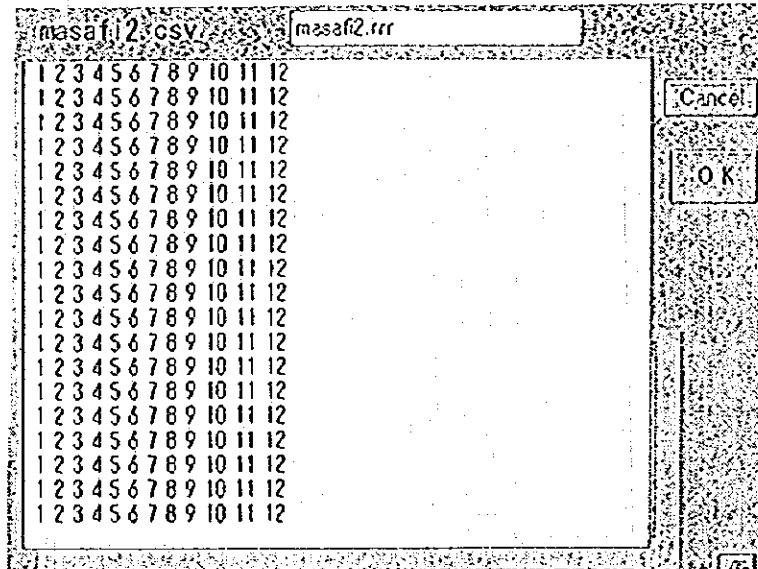
Form

1) 19xx  
1, d1,d2,d3,.....d31  
2, d1,d2,d3, .... d28  
3, d1,d2,d3, .....d31  
4, d1,d2,d3, .....d30

Go!      Cancel

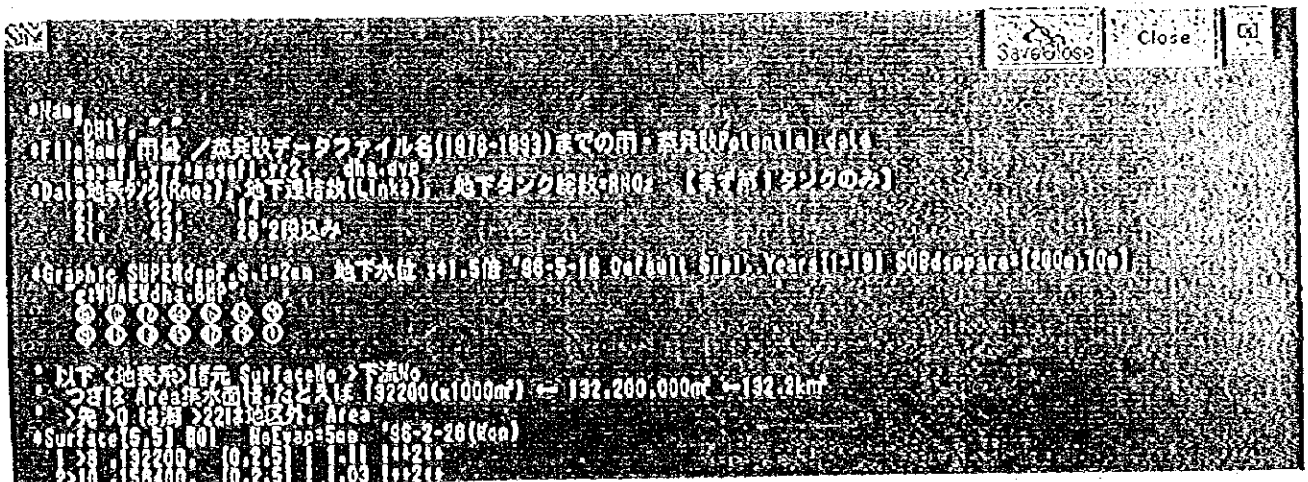
The change is started when it clicks on the [Ok] button.

Confirm whether there is a file made when a change was finished.



The following screen appears when [Open] button is clicked.

The editing can be done even here just like the memo pad. [SaveClose] button is clicked to preserve the file which does the editing and to advance as follows and if the editing is not done, [Close] button is clicked.



Next, the screen like the figure below appears when advancing.

In this screen, information on use ini file, the rainfall data file and the evapotranspiration data file, etc. can be confirmed in the box below.

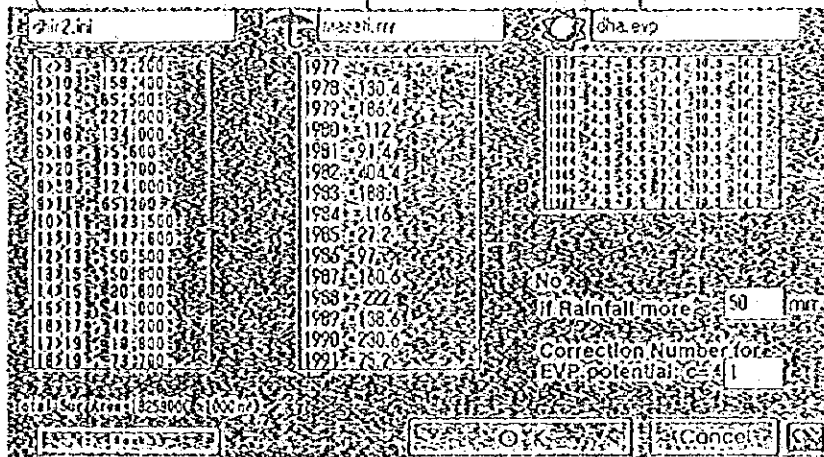
If the amount of the rainfall during a day exceeds 50mm in lower right, the definition of not doing day evapotranspiration is given.

Click on the [Open] button if you finish confirming all.

The name of ini file

The file name of daily rainfall data

The file name of monthly evapotranspiration data

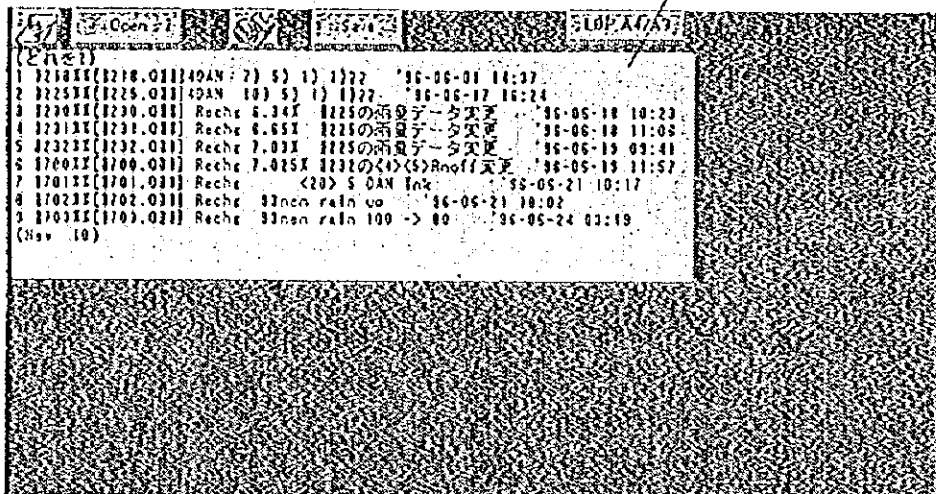


Next, the screen which a file is chosen than comes out.

Make a file because it is asked to make a try file in front of this screen when there is no try file of the name which is the same as the ini file.

Specify the file which wants to open, and click on the [Open] button. The file opens even if the file name is double-clicked.

The file name of tank model





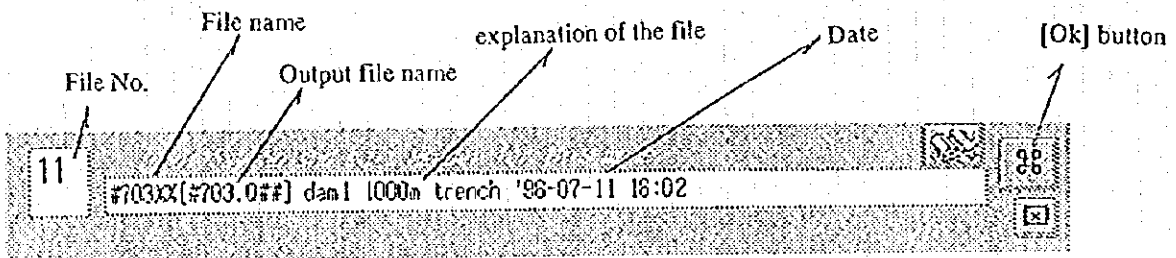
Next, the following screen appears which the structure of the tank model is decided as. The numerical value etc. are input according to the method of the input of the tank model.

The file name of tank model



It is the order of Basin1, Basin2 from the I

Click on the "Save" button if you want to keep a made file. Then, the next screen appears.



Input a file name and others like the explanation of the figure.

Make it the same file number when you want to replace a file.

The explanation of the file can be inputted freely.

You must not input a date by yourself .A present date is inputted automatically.

Click on the [Simulation] button.

Input the year when it wants to simulate it in dialog box which comes out at first by the page number of the chronology file. Then, click on the [Ok] button.

Next, dialog box which comes out is confirmation about the screen establishment. Click on the [Ok] button if you confirm it.

When it is finished completely, it begins to draw the graph of the data which it wants to verify and the graph of the precipitation on the screen.

When trench is set up, it is the place to finish drawing all the graphs, and dialog box about the output of trench file appears.

Input "1" if you output trench file. Input "0" if it is not so. Input the file name when it does when you output it, too.

When it is finished, screen begins to draw the graph of each every Basin.

The choice screen of the Output file appears when one year passes after it begins to draw a graph when the years which it wants to simulate are specified in all the age.

Choose a wanted file, and click on the [Ok] button. Don't choose it, and click on the [Ok] button if it is not here.

It begins to draw the continuation of the graph on the screen.

Simulation is completion if it finishes drawing a graph until the final specified year.

Click on the [END] button when you want to finish simulation halfway.

(The click or the double-click in the sentence shows a left click or a left double-click if there is especially no specification)

## 4 SUB

It is simulated based on Groundwater Recharge that it is calculated with the Surface System.

### 4-1 Files

Various files should be prepared for before the simulation(SUB) is operated.

#### 4-1-1 Necessary files

##### Necessary files

- Ini file (Refer to section 4-1-2)
- The Groundwater Recharge file (extention "Q##" ) of each Basin that it was made with the Surface System simulation.
- Data file of Groundwater Draft ( When Groundwater to be drawal )

##### If available

- Observed value data file of underground water place which wants to be verified.

#### 4-1-2 Ini file

As even a Surface System was shown, the following item is written in the ini file.

- |             |  |
|-------------|--|
| ①*File name | ***For the rainfall data file name and the evapotranspiration data file name |
| ②*Data      | ***The number of the sub basins  |
| ③*Graphic   | ***The item about the screen indication                                      |
| ④*Surface   | ***Mainly, the item about the Surface System                                 |
| ⑤*Tank      | ***Mainly, the item about the Underground System                             |
| ⑥*PumpUP    | ***The Groundwater Draft ; The groundwater with drawal                       |
| ⑦*Link&Area | ***The link section of the Underground tank                                  |
| ⑧*wPerm     | ***The file of the Groundwater Runoff coefficient                            |

In this, the item ⑤,⑥,⑦ and ⑧ are newly integral for the SUB simulation ;

You don't need to write ⑧ in the ini file. It is because a computer writes it automatically.

The data which must write in each item are explained in order in the following.

⑤\***Tank**

- The initial water level of each Underground tank
- Storage coefficient of each tank (It is inputted with the real number like “\*0.003”)
- H-A* data sets for calculating *H-V* curves.  
(*H* (EL. m) is the height above sea level. ; *A* (1000m<sup>2</sup>) is Area correspondent to *H*. ; maximum 9 sets)

⑥\***PumpUP**

- Total tanks to be drawal
- The Annual data file name of the groundwater with drawal
- The coefficient of data of the **Groundwater Draft**
- Tank No., file name of groundwater with drawal and assumed Annual pumping rate

⑦\***Link&Area**

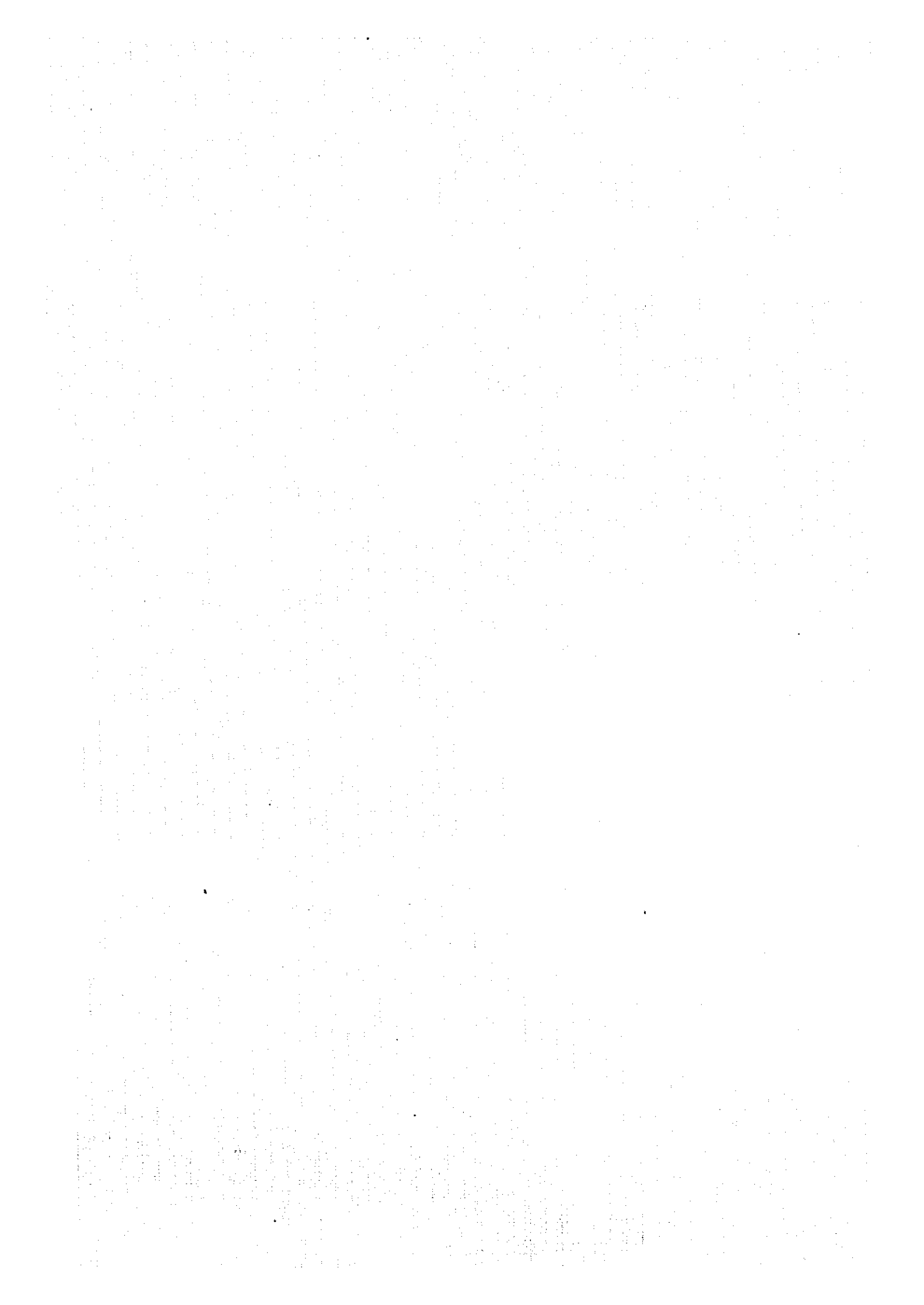
- It is a distance to the center of the Underground tank which adjoins it from the center of each Underground tank.
- H-W* data sets for calculating *H-S* curves.  
(*H*(EL. m) is the height above sea level of the link section. ; *W*(km) is flowing width correspondent to *H*. ; maximum 9 sets)

※**Option**

**When there is the verified data**

- Observed data file of underground water level

The writing method to the ini file is as follows.(But, the same thing of SUPER is omitted.)



#Name  
"D11", ...  
#FileName  
nasafi, rrrnasafi, r2

#		U. z. v.		
15	>17	41000	{0.2.51}	0.83
16 (217219 186400)	>17	42200	{0.2.51}	0.83
17	>19	19800	{0.2.51}	0.83
18	>19	73700	{0.2.51}	0.83
19	>21	73400	{0.2.51}	0.89
20	>21	87900	{0.2.51}	0.89
21	>22	101300	{0.2.51}	0.89

(H(EL.m)) is the height above sea level, A(1000m<sup>2</sup>) is Area correspondent to H / in the same way )

[Observed data file name of the groundwater level of the verification well]

The number of that files

(H, A/H, A/ ... )

#Tank	GI	Initial water level		
8(8)	GL=208 (195m)	(151m, 0/163, 16610/168, 41710/173, 65140/178, 86520/188, 103420/198, 106370/208, 124000)		10.03
9(9)	GL=170 (162m)	(140, 0/ 145, 6900/ 150, 34210/ 160, 58790/ 170, 65200)		10.03
10(10)	GL=186 (174m)	(90, 0/ 100, 17180/ 120, 54500/ 140, 75330/ 160, 97260/ 186, 123500)		10.03
11(11)	GL=154 (147m)	(90, 0/ 100, 34670/ 120, 78820/ 140, 94000/ 146, 117600/154, 11760)		10.05
12(12)	GL=175 (162m)	(80, 0/ 100, 27000/ 120, 42820/ 140, 48690/ 150, 50500/175, 50500)		10.03
13(13)	GL=142 (133m)	(82, 0/ 100, 14040/ 120, 45950/ 130, 50800/142, 50800)		10.03
14(14)	GL=160 (151m)	(40, 0/ 60, 8640/ 80, 16920/ 100, 25500/ 120, 28520/ 130, 30600/160, 30600)		10.03
15(15)	GL=130 (124m)	(59, 0/ 60, 830/ 80, 15940/ 100, 33160/ 120, 40020/ 130, 41000)		10.03
16(16)	GL=160 (152m)	(30, 0/ 40, 32360/ 50, 37960/ 60, 41800/ 67, 42200/160, 42200)		10.03
17(17)	GL=125 (118m)	(30, 0/ 40, 7920/ 60, 12910/ 70, 18760/ 75, 19800/125, 19800)		10.03
18(18)	GL=173 (150m)	(30, 0/ 40, 21030/ 60, 33650/ 80, 43220/ 100, 49830/ 120, 67810/173, 67810)		10.03
19(19)	GL=120 (114m)	(30, 0/ 40, 21250/ 60, 67370/ 62, 73400/120, 73400)		10.03
20(20)	GL=150 (141m)	(55, 0/ 60, 2000/ 80, 28060/ 100, 56960/ 105, 87900/150, 87900)		10.03
21(21)	GL=100 (92m)	(30, 0/ 40, 52980/ 60, 78580/ 70, 101300/ 100, 101300)		10.03
22(C)	(186m)	(-417, 0/-400, 21590/-380, 70940/-40, 132500/1100, 76590/1150, 49380/1200, 510/1250, 0)		10.01
23(C)	(153m)	(-439, 0/-430, 32240/-420, 53120/-390, 65200/-40, 65200/0, 55220/150, 0)		10.01
24(C)	(166m)	(-439, 0/-420, 20980/-410, 42100/-400, 68990/-380, 123500/-100, 123500/0, 66860/150, 26150/1200, 4810/1250, 550/255, 0)		10.01
25(C)	(142m)	(-460, 0/-450, 22370/-440, 55870/-420, 117600/-70, 117600/-50, 97620/0, 42390/150, 2270/160, 0)		10.01
26(C)	(153m)	(-457, 0/-430, 14270/-400, 35320/-390, 50500/-115, 50500/-100, 48440/0, 22100/150, 7350/1100, 1450/1200, 0)		10.01
27(C)	(127m)	(-472, 0/-470, 4090/-460, 24420/-450, 43900/-440, 49910/-390, 50800/-115, 50800/-100, 48060/-50, 10820/-40, 0)		10.01
28(C)	(139m)	(-460, 0/-450, 6700/-440, 13890/-430, 20710/-420, 24850/-390, 30600/-85, 30600/-50, 7790/0, 1030/145, 0)		10.01
29(C)	(117m)	(-482, 0/-480, 4260/-470, 23670/-460, 35650/-430, 41000/-85, 41000/-50, 32240/0, 9690/120, 0)		10.01
30(C)	(144m)	(-459, 0/-440, 12890/-420, 25120/-410, 42200/-85, 42200/-50, 23370/-20, 0)		10.01
31(C)	(106m)	(-481, 0/-480, 1990/-470, 8810/-460, 18930/-430, 19800/-70, 19800/-50, 14400/0, 9520/120, 0)		10.01
32(C)	(145m)	(-474, 0/-440, 21160/-420, 45540/-400, 73700/-160, 73700/-150, 70870/-100, 64220/-50, 35140/0, 11180/130, 0)		10.01
33(C)	(114m)	(-508, 0/-500, 5460/-470, 50580/-460, 73400/-160, 73400/-150, 69420/-100, 60990/-50, 24600/120, 0)		10.01
34(C)	(140m)	(-482, 0/-450, 29070/-420, 53670/-400, 87900/-130, 87900/-100, 84690/-50, 75560/0, 40720/150, 0)		10.01
35(C)	(84m)	(-540, 0/-530, 15330/-500, 69660/-480, 101300/-300, 101300/-200, 64010/-150, 12240/-100, 6790/-50, 1290/-40, 0)		10.01

(The Basin No. (when there is the surface tank in the top))

Tank No. ( ) GI=the height above sea level of the tank(m), ( Initial water level )

Input the value of "0.041" of the coefficient with ".041".

#Pump	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
(8), pmp08.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(9), pmp09.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(10), pmp10.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(11), pmp11.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(12), pmp12.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(13), pmp13.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(14), pmp14.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(15), pmp15.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(16), pmp16.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(17), pmp17.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(18), pmp18.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(19), pmp19.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(20), pmp20.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
(21), pmp21.kt,	.041.	.046.	.053.	.145.	.145.	.164.	.205.	.225.	.336.	.336.	.377.	.408.	.458.	.496.	.514.	.549.	.623.	.613.	.617
22(8), pmp08.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
23(9), pmp09.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
24(A), pmp10.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
25(B), pmp11.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
26(C), pmp12.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
27(D), pmp13.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
28(E), pmp14.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
29(F), pmp15.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
30(G), pmp16.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
31(H), pmp17.kt,	.003.	.003.	.003.	.03.	.03.	.38.	.383.	.383.	.209.	.219.	.15.	.300.	.75.	.950.	.950.	.950.	.1.7.	.1.7.	.1.7
32(I), pmp18.kt,	.003.	.003.	.003.	.01.	.01.	.01.	.01.	.001.	.001.	.039.	.15.	.219.	.21.	.110.	.114.	.116.	.114.	.15.	.153
33(J), pmp19.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
34(K), pmp20.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383
35(L), pmp21.kt,	.003.	.003.	.003.	.03.	.03.	.04.	.053.	.053.	.109.	.119.	.15.	.179.	.21.	.261.	.284.	.336.	.364.	.39.	.383

(tank No.), file name, coefficient, coefficient, ... in the same way

The file name of Groundwater Draft

Link Area

1(8-9)7518	(140m, 0km, 150.0, 71, 160.1, 71, 180.5, 42, 183.6, 42)
2(8-10)12766	(140.1, 14, 142.1, 85, 160.3, 71, 170.6, 56, 180.6, 95, 200.4, 45)
3(9-11)11700	(140.0, 148.7, 85, 170.1, 85)
4(10-11)7518	(105.0, 110.9, 81, 120.11, 41, 130.11, 87, 150.14, 69, 170.11, 69)
5(10-12)9220	(95.0, 100.5, 71, 120.6, 85, 140.7, 85, 160.8, 70, 180.5, 58)
6(11-13)8723	(95.0, 100.0, 29, 102.9, 27, 140.9, 27, 150.2, 94)
7(12-13)9078	(95.0, 100.1, 87, 146.1, 87, 150.3, 57, 154.0, 29)
8(12-14)4255	(80.0, 90.4, 28, 100.5, 68, 120.7, 28, 130.8, 29, 146.8, 29, 160.5, 43, 170.4, 44)
9(13-15)4823	(83.0, 90.1, 43, 100.3, 71, 120.7, 70, 125.8, 42, 130.5, 42, 140.4, 96)
10(14-15)7447	(70.0, 80.0, 43, 100.1, 43, 120.2, 57, 130.3, 71, 139.3, 71, 140.2, 28)
11(14-16)3972	(40.0, 47.4, 71, 50.4, 94, 60.5, 42, 70.6, 56, 140.6, 56, 160.2, 28)
12(15-17)3688	(59.0, 60.7, 42, 70.8, 99, 120.8, 99, 130.2, 54)
13(16-17)7234	(30.0, 40.3, 42, 50.3, 71, 60.3, 99, 70.4, 56, 139.4, 56, 140.3, 78)
14(16-18)7090	(30.0, 40.5, 36, 57.7, 85, 140.7, 85, 150.6, 70, 160.5, 71, 165.5, 10)
15(17-19)4965	(30.0, 40.2, 70, 57.3, 42, 60.5, 98, 75.8, 84, 110.8, 84, 120.6, 85, 126.2, 50)
16(18-19)8370	(30.0, 40.7, 99, 60.8, 77, 67.9, 27, 126.9, 27, 130.7, 70, 140.2, 64)
17(18-20)7160	(55.0, 60.1, 28, 67.3, 00, 80.4, 99, 100.6, 28, 110.9, 41, 126.9, 41, 140.6, 70, 160.4, 42)
18(19-21)7800	(44.0, 60.4, 71, 67.9, 13, 90.9, 13, 100.6, 42, 120.2, 43)
19(20-21)1000	(62.0, 67.1, 43, 70.6, 56, 115.6, 56, 120.3, 99)
20(20-36)1000	(128m<65)(63.0, 80.3, 85, 100.9, 69, 115.11, 98, 120.12, 87, 140.9, 97, 160.7, 13, 170.6, 56)
21(21-36)1000	(177m<60)(30.0, 40.15, 5, 60.21, 7, 70.16, 89, 80.11, 34, 100.3, 06)
22(17-36)1000	(1106m<55m)(40.0, 67.1, 43, 70.3, 0, 120.3, 0)
22(22-23)7518	(-417.0, -413.8, 42, -40.8, 42, 10, 0)
24(22-24)12766	(-417.0, -390.4, 85, -380.5, 71, -350.8, 99, -40.8, 99, 0.2, 85, 1100.2, 14, 1200.1, 28, 1250.0)
25(23-25)11700	(-439.0, -430.4, 85, -420.7, 56, -417.8, 13, -40.8, 13, 0.1, 71, 130.0)
26(24-25)7518	(-439.0, -430.5, 28, -420.9, 13, -417.15, 12, -50.15, 12, -40.8, 99, -25.5, 99, 0.1, 14, 110.0)
27(24-26)9220	(-439.0, -420.3, 28, -400.6, 42, -390.7, 28, -380.8, 84, -25.8, 84, 0.6, 56, 150.2, 43, 1150.0)
28(25-27)8723	(-460.3, 57, -450.6, 70, -449.7, 13, -439.9, 41, -50.9, 41, -49.1, 14, -25.0)
29(26-27)9078	(-457.0, -450.1, 71, -440.3, 71, -439.5, 42, -15.5, 42, -100.3, 57, -90.2, 30, -50.1, 57, -25.0)
30(26-28)4255	(-460.0, -440.2, 71, -420.4, 42, -400.8, 56, -380.9, 99, -90.9, 99, -50.5, 71, 0.1, 07, 1150.0)
31(27-29)4823	(-472.0, -470.1, 00, -460.5, 99, -457.9, 27, -90.9, 27, -50.4, 99, -40.0)
32(28-29)7447	(-460.0, 86, -457.3, 71, -90.3, 71, -60.0)
33(28-30)3972	(-460.0, -450.2, 43, -440.3, 99, -430.5, 99, -420.7, 85, -75.7, 85, -60.4, 88, -50.4, 28, -49.0)
34(29-31)3688	(-480.2, 71, -470.6, 25, -460.9, 27, -60.9, 27, -50.7, 85, -30.7, 12, 0.5, 42, 120.0)
35(30-31)7234	(-460.0, -459.4, 42, -85.4, 42, -60.0)
36(30-32)7090	(-459.0, -440.2, 00, -420.4, 42, -395.8, 13, -85.8, 13, -50.3, 14, -20.0)
37(31-33)4965	(-481.0, -480.3, 71, -470.5, 71, -469.8, 56, -459.8, 99, -85.8, 99, -50.7, 70, 0.5, 63, 120.0)
38(32-33)8370	(-474.0, -470.1, 43, -460.6, 28, -459.9, 27, -150.9, 27, -100.4, 99, -85.1, 43, -50.1, 00, -40.0)
39(32-34)7160	(-474.0, -470.1, 14, -450.3, 85, -430.5, 85, -410.8, 27, -400.10, 13, -385.11, 27, -50.11, 27, -40.7, 85, 0.2, 57, 150.0)
40(33-35)7800	(-510.0, -500.3, 00, -480.7, 28, -474.9, 56, -160.9, 56, -150.4, 85, -100.3, 42, -50.2, 00, -40.0)
41(34-35)11000	(-482.0, -480.2, 14, -474.4, 85, -470.6, 56, -130.6, 56, -100.3, 14, -50.0, 71, -40.0)
42(34-36)7400	(-482.0, -450.4, 71, -430.7, 70, -400.10, 84, -320.14, 69, -130.14, 69, -100.13, 41, -50.11, 12, 0.4, 28, 150.0)
43(35-36)7400	(-540.0, -530.5, 99, -510.10, 27, -500.13, 27, -482.15, 69, -300.15, 69, -250.9, 56, -200.7, 70, -150.1, 43, -130.0)
44(8-22)200	(-500, 124000, 400, 124000)
45(9-23)200	(-600, 65200, 400, 65200)
46(10-24)200	(-600, 123500, 400, 123500)
47(11-25)200	(-600, 117600, 400, 117600)
48(12-26)200	(-600, 50500, 400, 50500)
49(13-27)200	(-600, 50800, 400, 50800)
50(14-28)200	(-600, 30600, 400, 30600)
51(15-29)200	(-600, 41000, 400, 41000)
52(16-30)200	(-600, 42200, 400, 42200)
53(17-31)200	(-600, 19800, 400, 19800)
54(18-32)200	(-600, 73700, 400, 73700)
55(19-33)200	(-600, 73400, 400, 73400)
56(20-34)200	(-600, 87900, 400, 87900)
57(21-35)200	(-600, 101300, 400, 101300)

It is a distance from the center point of No.8 tank to the center point of No.9 tank.

1(8-9)7518 (140m, 0km, 150.0, 71, 160.1, 71, 180.5, 42, 183.6, 42)

Data on the link section of No.8 tank and No.9 tank.

(H, W, H, W, ...)

(H (m)) is the height above sea level, W (km) is Flowing width correspondent to H / in the same way

InParam [703 T1] #701 93men 100 -> 80 '96-6-24(Mon)10:35

1(8-9)7518	.1.50e-2 . . . .
2(8-10)12766	.8.00e-3 . . . .
3(9-11)11700	.6.00e-2 . . . .
4(10-11)7518	.3.00e-3 . . . .
5(10-12)9220	.1.00e-3 . . . .
6(11-13)8723	.7.00e-2 . . . .
7(12-13)9078	.5.00e-3 . . . .
8(12-14)4255	.3.00e-6 . . . .
9(13-15)4823	. . . . .
10(14-15)7447	. . . . .
11(14-16)3972	. . . . .
12(15-17)3688	. . . . .
13(16-17)7234	. . . . .
14(16-18)7090	. . . . .
15(17-19)4965	. . . . .
16(18-19)8370	. . . . .
17(18-20)7160	. . . . .
18(19-21)7800	. . . . .
19(20-21)1000	. . . . .
20(20-36)1000	. . . . .
21(21-36)1000	. . . . .
22(17-36)1000	. . . . .
22(22-23)7518	. . . . .
24(22-24)12766	. . . . .
25(23-25)11700	. . . . .
26(24-25)7518	. . . . .
27(24-26)9220	. . . . .
28(25-27)8723	. . . . .
29(26-27)9078	. . . . .
30(26-28)4255	. . . . .
31(27-29)4823	. . . . .
32(28-29)7447	. . . . .
33(28-30)3972	. . . . .
34(29-31)3688	. . . . .
35(30-31)7234	. . . . .
36(30-32)7090	. . . . .
37(31-33)4965	. . . . .
38(32-33)8370	. . . . .
39(32-34)7160	. . . . .
40(33-35)7800	. . . . .
41(34-35)11000	. . . . .
42(34-36)7400	. . . . .
43(35-36)7400	. . . . .
44(8-22)200	. . . . .
45(9-23)200	. . . . .
46(10-24)200	. . . . .
47(11-25)200	. . . . .
48(12-26)200	. . . . .
49(13-27)200	. . . . .
50(14-28)200	. . . . .
51(15-29)200	. . . . .
52(16-30)200	. . . . .
53(17-31)200	. . . . .
54(18-32)200	. . . . .
55(19-33)200	. . . . .
56(20-34)200	. . . . .
57(21-35)200	. . . . .

You don't need write this in the ini file.

It is because the computer write it automatically.





### 4-1-3 The Output file

The following files can be output by setting the simulating term as whole period when the simulation of SUB (Underground System) is started. Turn on the check box of the items where you want to output.

Each Output file is explained as follows.

- ① The daily binary file of groundwater head of the underground tank (unit : EL.mmm)  
Input a necessary tank No. in the right box.
- ② The binary file of the balance (in the pipe which an underground tank is connected with)(unit :1000m<sup>3</sup>)  
Input a necessary tank No. in the right box.
- ③ The monthly CSV file of the Groundwater Recharge, Groundwater Runoff and Groundwater Draft in the whole basin. (unit :1000m<sup>3</sup>)
- ④ The daily binary file of Groundwater Draft.(unit : mm)  
Input a necessary tank number in the right box.
- ⑤ The binary file of the quantity that a draft couldn't be done.(The value that the amount which actually did a draft was deducted from the draft schedule volume.) (unit :1000m<sup>3</sup>)
- ⑥ The CSV file of every 5 - day Groundwater head of the underground tank.(unit : mm)
- ⑦ The CSV file of every 7 - day Groundwater head of the underground tank.(unit : mm)

If for example the file of ① was made, the extension of the file is "h".

#### 4-2 The way of the Input of the Groundwater Runoff coefficient

\* Groundwater Runoff coefficient ; relevant to the permeability coefficient and leakage in the MODEL.

The next screen is used for changing the various numerical value of the Groundwater Runoff coefficient.

The explanation of each screen is as the next.

The bottom of the link section(EL. m)

The data of link section

File name	The height when it is divided into two	The top of the link section(EL. m)
1(8-9)7518	1.50e-2	EL. m
2(9-10)7518	1.50e-2	202
3(10-11)7518	1.50e-2	170
4(11-12)7518	1.50e-2	170
5(12-13)7518	1.50e-2	150
6(13-14)7518	1.50e-2	150
7(14-15)7518	1.50e-2	150
8(15-16)7518	1.50e-2	150
9(16-17)7518	1.50e-2	150
10(17-18)7518	1.50e-2	150
11(18-19)7518	1.50e-2	150
12(19-20)7518	1.50e-2	150
13(20-21)7518	1.50e-2	150
14(21-22)7518	1.50e-2	150
15(22-23)7518	1.50e-2	150
16(23-24)7518	1.50e-2	150
17(24-25)7518	1.50e-2	150
18(25-26)7518	1.50e-2	150
19(26-27)7518	1.50e-2	150
20(27-28)7518	1.50e-2	150
21(28-29)7518	1.50e-2	150
22(29-30)7518	1.50e-2	150
23(30-31)7518	1.50e-2	150
24(31-32)7518	1.50e-2	150
25(32-33)7518	1.50e-2	150
26(33-34)7518	1.50e-2	150
27(34-35)7518	1.50e-2	150
28(35-36)7518	1.50e-2	150
29(36-37)7518	1.50e-2	150
30(37-38)7518	1.50e-2	150
31(38-39)7518	1.50e-2	150
32(39-40)7518	1.50e-2	150
33(40-41)7518	1.50e-2	150
34(41-42)7518	1.50e-2	150
35(42-43)7518	1.50e-2	150
36(43-44)7518	1.50e-2	150
37(44-45)7518	1.50e-2	150
38(45-46)7518	1.50e-2	150
39(46-47)7518	1.50e-2	150
40(47-48)7518	1.50e-2	150
41(48-49)7518	1.50e-2	150
42(49-50)7518	1.50e-2	150
43(50-51)7518	1.50e-2	150
44(51-52)7518	1.50e-2	150
45(52-53)7518	1.50e-2	150
46(53-54)7518	1.50e-2	150
47(54-55)7518	1.50e-2	150
48(55-56)7518	1.50e-2	150
49(56-57)7518	1.50e-2	150
50(57-58)7518	1.50e-2	150
51(58-59)7518	1.50e-2	150
52(59-60)7518	1.50e-2	150
53(60-61)7518	1.50e-2	150
54(61-62)7518	1.50e-2	150
55(62-63)7518	1.50e-2	150
56(63-64)7518	1.50e-2	150
57(64-65)7518	1.50e-2	150
58(65-66)7518	1.50e-2	150
59(66-67)7518	1.50e-2	150
60(67-68)7518	1.50e-2	150
61(68-69)7518	1.50e-2	150
62(69-70)7518	1.50e-2	150
63(70-71)7518	1.50e-2	150
64(71-72)7518	1.50e-2	150
65(72-73)7518	1.50e-2	150
66(73-74)7518	1.50e-2	150
67(74-75)7518	1.50e-2	150
68(75-76)7518	1.50e-2	150
69(76-77)7518	1.50e-2	150
70(77-78)7518	1.50e-2	150
71(78-79)7518	1.50e-2	150
72(79-80)7518	1.50e-2	150
73(80-81)7518	1.50e-2	150
74(81-82)7518	1.50e-2	150
75(82-83)7518	1.50e-2	150
76(83-84)7518	1.50e-2	150
77(84-85)7518	1.50e-2	150
78(85-86)7518	1.50e-2	150
79(86-87)7518	1.50e-2	150
80(87-88)7518	1.50e-2	150
81(88-89)7518	1.50e-2	150
82(89-90)7518	1.50e-2	150
83(90-91)7518	1.50e-2	150
84(91-92)7518	1.50e-2	150
85(92-93)7518	1.50e-2	150
86(93-94)7518	1.50e-2	150
87(94-95)7518	1.50e-2	150
88(95-96)7518	1.50e-2	150
89(96-97)7518	1.50e-2	150
90(97-98)7518	1.50e-2	150
91(98-99)7518	1.50e-2	150
92(99-100)7518	1.50e-2	150

For the upgrade  
(It can't be used.)

Link section data on the tank which adjoins a certain tank and the tank are being written first. Height is divided about one link section even in two, and a coefficient can be decided about each. For example, the Groundwater Runoff coefficient of the value of "5.00 \* 10<sup>-3</sup>" is inputted with "5.00e-3"

### 4-3 The simulation

The Groundwater Recharge file of each Basin of extension "Q##" made with SUPER is necessary to do simulation with SUB.

The Underground System simulation begins when all the preparations are complete.

First of all, the file named SUB.EXE is this time made an icon just like the time of SUPER. It is assumed that the icon like the figure below was made here and will advance the talk.



SUB

The following screens appear, when You double-click the icon.

Select in order of the drive, the directory, and the ini file and click [Open] button.

At this time, when it clicks on the right, an ini file can be edited by the memo pad.

The following screens appear when [Open] button is clicked. (It can be advanced to the following screen to double-click the ini file)

Drive

Directory

The file name contained in the chosen directory

The name of the ini file

The Groundwater Recharge file name contained in the chose directory

INI-FileName

Recharge-FileName:

Open

Cancel

chglink

SN

First, the pressure conversion factor is decided. Click on the button in the right if you may be the numerical value of the screen.

Then, the following screens appear.

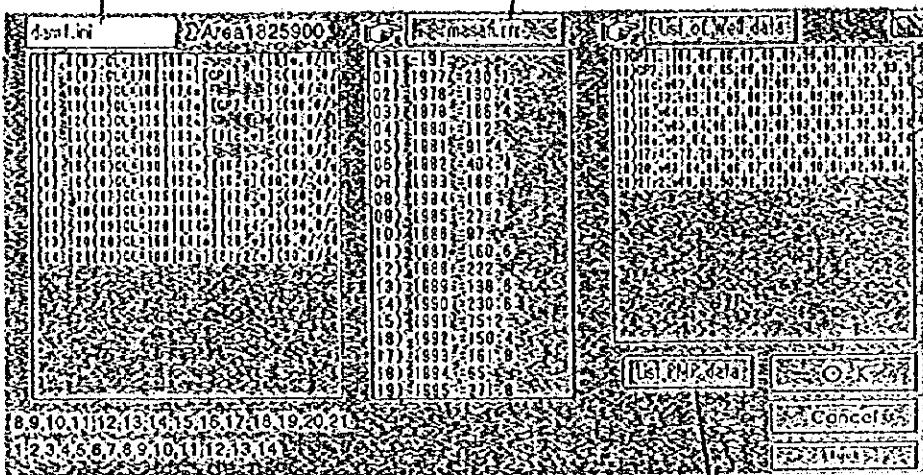
The information of the data of use ini file, the rainfall data and the verification well can be confirmed on the screen by clicking on the button at the point of the finger arrow.

And, when it clicks on the [List PMP data] button, it can be confirmed as for the Groundwater Draft data as well. Click the [Ok] button when confirming.

The name of the use ini file

The file name of daily rainfall data

The name of the verification well data

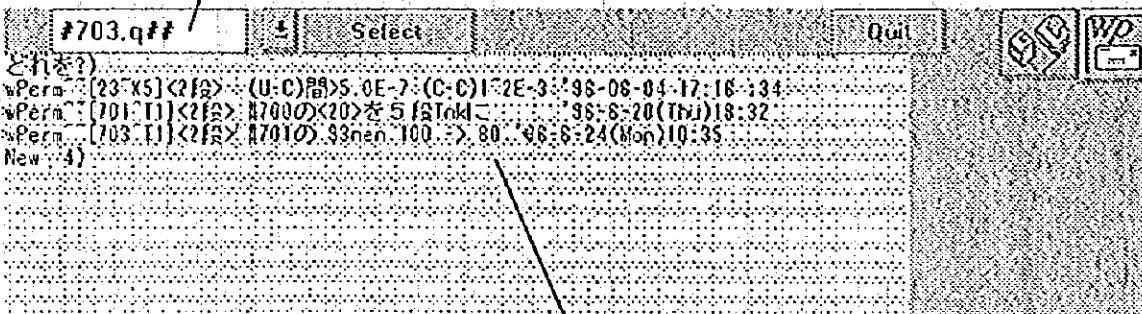


The Groundwater Recharge data

Next, the screen appears which chooses the file of the Groundwater Runoff coefficient.

Click the file name double or choose the file name and click the [Select] button.

The form of Groundwater Recharge file name



File name

Next, the screen appears which a Groundwater Runoff coefficient is decided as.

Input the numerical value according to the method of the input of the Groundwater Runoff

coefficient.

### The preservation of the file

Click the [Save/Close] button if you want to preserve the model of the made Groundwater Runoff coefficient in the file.

Input the file name etc. to the dialog box in the figure below according to the explanation.

File name	The explanation this file	Date
^wPerm~~[703~T1]	#701 93nen 100 -> 80	'96-6-24(Mon)10:35

Click another degree [Save/Close] button when finishing inputting.

Save Position is decided continuously.

Input the same number as the file of the previous state in the file of the previous state to overwrite and input a number different when not so.

Click the [Close] button when you do not do Save.

Next, decided a day whether you divide it into how much.

When the graph vibrates in the day division into one. The division number can be increased.

Click the [Ok] button.

Then, the following screen appears.

How to calculation

Calculation years  
(Input it by the page No.)

Years(Page)	1-19
1)	1977
2)	1978
3)	1979
4)	1980
5)	1981
6)	1982
7)	1983
8)	1984
9)	1985
10)	1986
11)	1987
12)	1988
13)	1989
14)	1990

Calculation Method

MEAN 平均断面法

NSC(ha which is higher)

Screen option

Level: Top [200] Bottom [70]

TankNo: [1-28]

Show H-V curve

Show H-Q curve

DO PumpUP (by INI file)

62	28	83	84	65	77	79	79	83	81
81	92	93	94	95	95	97	83	89	90
(8)	pop0	kt							
041	045	053	145	145	164	205	225	33	
458	498	514	543	623	613	617			
(9)	pop1	kt							
041	045	053	145	145	164	205	225	33	
458	498	514	543	623	613	617			
(10)	pop10	kt							
041	045	053	145	145	164	205	225	33	
458	498	514	543	623	613	617			
(11)	pop11	kt							
041	045	053	145	145	164	205	225	33	
458	498	514	543	623	613	617			
(12)	pop12	kt							
041	045	053	145	145	164	205	225	33	

The condition of the simulation is decided on this screen.

Input the years which it wants to simulate by the page number

Choose how to compute a water balance in the boundary of the tanks which adjoin it.

Input a depth width to indicate on the screen.(top and bottom)

Input a tank No. to indicate on the screen.

Click on the box of each left if you make it indicate a **H-Q** curve and a **H-V** curve.

Click on the left box if Groundwater Draft simulation is done.

Click the **{Ok}** button when you finish inputting all.

The simulation starts.

It begins to draw the graph and the selection screen of the **Output** file appears when a year passes.

Select a necessary **Output** file and click the **{Ok}** button.

Choose nothing, and click on the **{Ok}** button with it if a file isn't necessary.

It begins to draw the continuation of the graph on the screen.

Simulation is completion if it finishes drawing a graph until the setting final year.

Click on the **{END}** button when your want to finish simulation halfway.

(The click or the double-click in the sentence shows a left click or a left double-click when there is especially no specification)

**VOLUME THREE : APPENDICES**

**APPENDIX-4: SOIL AND IRRIGATION SECTOR**





## 4.1. Soils

### 4.1.1. List of Test Pit Locations

List of Hand Auger Investigation Sites

No.	Date	Location	Longitude	Latitude	Longitude	Latitude	Major Soil Type	Thickness of Top Soil (m)	Remarks
1	25-Apr	MAF Dhaid Research Station	25 16 17	55 55 45	2,795,200	392,100	Gravel	0.15	Hand Auger
2	25-Apr	Old MAF Experimental Farm	25 17 20	55 54 56	2,796,590	390,790	Gravel	0.15	Hand Auger south of GP-1
3	26-Apr	An Nasim, near GP-1	25 20 23	55 57 34	2,802,760	395,140	S-Gravel	0.23	Orange garden
4	26-Apr	An Nasim, Sheikh Hamid bin Rashid Al Noa	25 20 13	55 58 2	2,802,450	395,920	S-Gravel	0.70	end of power line from Manama in the sand dune
5	26-Apr	Water Tank/Wells in	25 21 25	55 55 30	2,804,670	391,680	Sand		gravel foundation
6	1-May	Seh Al Aqabah, north of Subeiah	25 23 36	55 58 17	2,808,690	396,340	S-Gravel	0.45	
7	1-May	North of Subeiah	25 7 25	55 52 47	2,778,860	387,130	S-Gravel		
8	1-May	East of Haz Haqf sand dune area	25 23 18	55 55 25	2,808,140	391,540	Sand		Undulated sand dune area, clay layers
10	2-May	Wadi Matadeal	25 24 32	55 50 12	2,810,410	382,810	Sand		Dates and alfalfa farm
11	2-May	Mohammed Shawal, east bank of Wadi Lamaha	25 23 5	55 50 16	2,807,740	382,920	S-Gravel		smaller but active sand dune area
12	2-May	Wadi Al-Ghuan, way to GP-19	25 24 5	55 51 1	2,809,580	384,180	Sand		sand dune area,
13	2-May	North East of Rashueiyah, Wadi ?????	25 23 37	55 52 4	2,808,720	385,930	Sand		gentle dune area
14	2-May	North-east of Falaj Al Mualla	25 21 39	55 52 4	2,805,100	385,930	Sand		flat area in sand dunes
15	3-May	An Nabghah, north-east of F. Al-Mualla	25 22 45	55 52 40	2,807,120	386,940	S-Gravel		farm locates near the foot of sand dunes
16	3-May	Farm between Az Zarcoam & F. Al Mualla	25 20 17	55 50 38	2,804,420	386,740	Sand		junction between Wadi Lamaha & Marraqabat
17	3-May	Wadi Lamaha right bank high water channel	25 20 18	55 50 38	2,802,610	383,530	Gravel		East of Sk. Zaid Farm No.6
18	3-May	East of Al Avayin	25 20 12	55 49 21	2,802,420	381,390	Sand		a part of old sand dunes
19	3-May	Farm in Seh Falaj Ashshekh	25 19 50	55 52 9	2,801,750	386,070	Sand		north of Dhaid along HVPL
20	3-May	right bank high water channel of Wadi Marraq	25 19 16	55 54 45	2,800,700	390,430	S-Gravel	0.13	left bank of Wadi Lamaha opposite of Sk. Zaid Pl
21	4-May	East of Al Khubay	25 18 20	55 51 2	2,798,980	384,200	S-Gravel	0.45	agro-livestock mixed farm water comes long pipes
22	4-May	North of Dhaid, Arqub Marraqabat	25 17 58	55 53 2	2,798,310	387,550	S-Gravel	0.70	5 years no water no operation in front of Sk Zaid Orchard
23	4-May	North Dhaid R/B No.3, a abandoned farm	25 17 40	55 55 20	2,797,750	391,400	S-Gravel		a part of Wadi area, many gravel layer
24	4-May	Farm in north-east Dhaid, near to Wadi Uman	25 17 18	55 57 23	2,797,080	394,830	S-Gravel		Salt accumulation in loose gravel layer, 45 cm below GL
25	4-May	Farm in south of Al Nasim	25 18 49	55 57 53	2,799,870	395,670	Gravel		Typical gravel plain, abandoned due to no water
26	7-May	Dhaid West Water Tank, on left bank of Wadi	25 16 8	55 51 48	2,794,930	385,490	Sand		it seems good farm on soil & water
27	7-May	Abandoned farm in Arqub Al-Yatimid	25 16 3	55 53 10	2,794,770	387,780	Sand		Typical gravel plain, sufficient water
28	7-May	North of old camel race track along Wadi Sifu	25 14 41	55 53 44	2,792,250	388,720	Sand		many gravel as same as MAF research center
29	7-May	Farm in Wishah locate between Wadi Sifuni a	25 14 27	55 55 12	2,791,820	391,180	Sand		
30	7-May	Farm in Dhaid south-east, garden farm?	25 15 54	55 57 57	2,794,500	395,780	S-Gravel		
31	8-May	Farm in Wishah located between Wadi Shaha	25 12 45	55 55 13	2,788,690	391,210	S-Gravel		
32	8-May	Farm in Wishah west end of new camel race tr	25 12 7	55 55 38	2,787,520	391,900	S-Gravel		
33	8-May	Gardep farm in Wishah near to Wadi Shifuni	25 14 3	55 56 10	2,791,090	392,800	S-Gravel		New farm water tank is swimming pool
34	8-May	at the edge of Wadi Shifuni	25 13 22	55 57 15	2,789,830	394,610	Gravel		Gravel with sand top cover (10 cm) near to the Kadrah quarry site
35	8-May	high water channel of Wadi Shifuni	25 13 38	55 57 34	2,790,320	395,140	Gravel		
36	8-May	Farm in Milebah, near Kadrah	25 13 24	55 58 56	2,789,890	397,430	S-Gravel		
37	13-May	Farm in Wishah, ear Qilat Al-Khor	25 11 8	55 55 34	2,785,710	391,790	S-Gravel		M288/B, new farms are under construction including police farm near well for Khuderah village, on the top of hill water tank
38	13-May	North of Qarn Khuderah hill	25 10 20	55 57 55	2,784,230	395,730	S-Gravel		
39	13-May	Old farm in Hozeirah ( Khuderah) village	25 9 14	55 58 11	2,782,210	396,170	S-Gravel		2 open wells (about 15 m) and 1 tubewell

List of Hand Auger Investigation Sites

No.	Date	Location	Longitude	Latitude	Longitude	Latitude	Major Soil Type	Thickness of Top Soil (m)	Remarks
40	13-May	farm in south of Khudrah car wadi Aqab	25 9 40	55 56 51	2,783.010	393.940	Gravel		2 open wells (about 20 m) and 1 tubewell
41	13-May	farm in Hamdah village, near wadi	25 8 25	55 55 24	2,780.700	391.510	S-Gravel		2 tubewells about 100 m
42	14-May	Open area near new camel race track entrance	25 10 38	55 54 28	2,784.790	389.950	S-Gravel		
43	14-May	Farm in Hamdah	25 9 55	55 51 56	2,783.470	385.710	Sand		
44	14-May	Farm in Al Khatamah, (Mileihah)	25 10 15	55 50 59	2,784.080	384.120	Sand		
45	14-May	Farm in Mashuruh (Mileihah)	25 8 10	55 51 56	2,780.240	385.710	Sand		
46	15-May	Wadi plain, near Tawi Mileihah	25 7 36	55 51 6	2,779.200	384.320	Sand		
47	15-May	farm in Selah, Mileihah	25 6 16	55 51 46	2,776.740	385.430	Sand		
48	15-May	farm in south-east end of Mileihah	25 5 43	55 52 44	2,775.720	387.050	garvel		
49	16-May	Farm in east of Mileihah	25 7 30	55 54 41	2,779.010	390.310	Gravel		
50	16-May	Farm in north of Ikhedir	25 5 24	55 57 24	2,775.140	394.860	S-Gravel		
51	16-May	Farm in west of Ikhedir	25 5 3	55 56 15	2,774.500	392.940	S-Gravel		
52	16-May	Plain west of Qiliat Al-Qabr	25 3 27	55 55 22	2,771.550	391.460	S-Gravel		
53	16-May	Plain along E-W Meleha camel race track	25 4 43	55 53 29	2,773.880	388.310	S-Gravel		
54	17-May	Plain on the east foot of Jabal Mileihah	25 4 5	55 50 10	2,772.710	382.750	S-Gravel		virgin land but salt accumulation below 40 cm
55	17-May	Plain near the north end of N-S Mileihah CRT	25 4 3	55 51 32	2,772.650	385.040	S-Gravel		virgin land but salt accumulation below 30 cm
56	17-May	Plain near the south end of N-S Mileihah CRT	25 2 25	55 57 14	2,769.640	394.580	S-Gravel		Compacted fine sand
57	17-May	Plain between Wadi As Sitin and Al Jafar	25 1 37	55 50 29	2,768.170	383.280	S-Gravel		
58	17-May	Farm in northern Babayis (Iili), Madam	25 0 49	55 48 45	2,766.690	380.380	Sand		very badly dried silty sand, sprinklers
59	17-May	Farm in southern Babayis (Iili), Madam	25 0 15	55 49 17	2,765.650	381.270	Sand		near TV antenna, sand dunes
60	18-May	Farm at the west of Iili	25 0 32	55 53 10	2,766.170	387.780	S-Gravel		
61	18-May	Farm in Iili village	25 0 26	55 54 56	2,765.980	390.730	S-Gravel		
62	18-May	Wadi Plain near camel race training course Fii	25 2 23	55 56 7	2,769.580	392.710	Gravel		
63	18-May	Wadi Plain near South Meleha camel race track	25 3 10	55 53 10	2,771.020	387.780	Gravel		
64	23-May	Plain on the north of Meleha C.R.T	25 5 4	55 51 55	2,774.530	385.680	S-Gravel		Sampled
65	23-May	Farm in eastern An Nasim	25 19 8	55 57 59	2,800.460	395.840	S-Gravel		
66	23-May	New Farm in eastern An Nasim	25 19 26	55 58 51	2,801.010	397.290	Gravel		
67	23-May	Farm near Wadi Umannighul	25 18 50	55 55 50	2,799.900	392.240	S-Gravel		
68	23-May	Gravel Plain at the north of GP-16	25 18 3	55 58 15	2,798.460	396.280	Gravel		Sampled
69	27-May	Plain in the south of Meleha	25 5 20	55 50 55	2,775.020	384.010	Sand		Sampled
70	27-May	Plain near to solid waste disposal area	25 3 37	55 49 21	2,771.850	381.390	S-Gravel		Sampled
71	27-May	Plain in west of Meleha C.R.T	25 2 59	55 50 38	2,770.690	383.530	S-Gravel		Sampled
72	28-May	Melon field of National Poultry Foodstuff	25 22 20	55 50 59	2,806.360	384.120	Sand		high water channel
73	28-May	Wadi Lamaha left bank channel	25 22 41	55 50 48	2,807.000	383.810	S-Gravel		Sampled
74	28-May	Plain in sand dunes in Wadi Al Qathah	25 21 45	55 49 15	2,805.280	381.220	Sand		
75	28-May	Farm in front of Power Station FAM	25 20 55	55 51 26	2,803.740	384.870	S-Gravel		
76	28-May	Farm in south end of FAM	25 20 3	55 51 0	2,802.150	384.150	Sand		Salty Water
77	29-May	Plain in front of FAM Palace	25 18 45	55 51 25	2,799.750	384.850	S-Gravel		

List of Hand Auger Investigation Sites

No.	Date	Location	Longitude	Latitude	Longitude	Latitude	Major Soil Type	Thickness of Top Soil (m)	Remarks
78	29-May	Plain behind the Palace	25 19 25	55 52 27	2,800,980	386,580	S-Gravel		
79	29-May	Dates Farm in Seh Falaj Ashshekha	25 19 52	55 52 21	2,801,810	386,410	S-Gravel		
80	29-May	Plain Al Haddad (east of fenced well field)	25 20 32	55 53 35	2,803,040	388,470	S-Gravel		
81	30-May	Farm in Dhaid north	25 18 49	55 55 0	2,799,870	390,840	S-Gravel		
82	30-May	Plain between Wadi Maraqabat and Al-Qraha	25 19 40	55 55 32	2,801,440	391,740	S-Gravel		
83	30-May	Plain near north Dhaid CRF	25 20 32	55 56 6	2,803,040	392,690	S-Gravel		
84	30-May	Farm in Suhalah west	25 21 0	55 57 50	2,803,900	395,590	S-Gravel		Salt crystal in gravel layer below 75 cm
85	31-May	Plain on east of Al Nasim	25 19 42	55 56 53	2,801,500	394,000	S-Gravel		
86	31-May	Plain on northwest of Subelah	25 21 44	55 56 32	2,805,250	393,410	S-Gravel		
87	31-May	Farm in east of Subelah	25 21 3	55 58 9	2,803,990	396,120	S-Gravel		might be salinity problems
88	31-May	Plain on northeast of Subelah	25 21 30	55 59 5	2,804,820	397,680	S-Gravel		
89	3-Jun	MAF Research Center -2 (IRT-1)	25 16 24	55 55 41	2,795,420	391,990	S-Gravel		Intake Rate Test-1
90	5-Jun	Farm in south-east of Dhaid	25 16 44	55 58 10	2,796,030	396,150	Gravel		
91	5-Jun	Farm near to Dhaid Water Bottling factory	25 16 45	55 58 7	2,796,060	397,740	Gravel		
92	5-Jun	Farm in west of the Siji Recharging Dam	25 17 24	55 58 58	2,797,260	397,480	Gravel		
93	4-Jun	Farm north-east Dhaid	25 16 52	55 56 22	2,796,280	393,130	Gravel		
94	8-Jun	Farm in Dhaid, behind MAF Central Region C	25 17 28	55 54 22	2,797,380	389,780	Sand		
95	8-Jun	Date Farm near Dhaid Hospital	25 17 16	55 52 11	2,797,020	386,130	Sand		
96	8-Jun	Farm modernized but few water in sout Dhaid	25 16 28	55 54 11	2,795,540	389,480	Sand		
97	8-Jun	Date/Citrus farm near GWR-4	25 16 20	55 54 35	2,795,300	390,150	Gravel		in field numbered T-96
98	10-Jun	Farm in An Nasim	25 20 8	55 58 14	2,802,300	396,260	Gravel		Intake Rate Test-6
99	11-Jun	Farm in Ar Rashidiyyah, V. Lamaha right bank	25 22 45	55 51 6	2,807,120	384,320	S-Gravel		Intake Rate Test-10
100	12-Jun	Farm in Wishah near CRF diversion (IRT-12)	25 11 33	55 54 58	2,786,480	390,790	Sand		Intake Rate Test-12
101	13-Jun	Farm in Ikhadir (TR-15A&B)	25 4 55	55 57 35	2,774,250	395,170	S-Gravel		Intake Rate Test-15
102	14-Jun	Farm in Jili (TR-17)	25 0 11	55 55 26	2,765,520	391,570	Clay/weathered rock		Intake Rate Test-17
103	14-Jun	Farm in Bahayis (TR-18A&B)	25 1 2	55 49 48	2,767,090	382,140	Sand		Intake Rate Test-18A&B
104	17-Jun	Plain adjacent to BATAWI Farm, Dhaid	25 18 24	55 56 35	2,799,110	393,490	Gravel		Excavated pit
105	17-Jun	Plain near Wadi Uman Nighul, north Dhaid	25 18 21	55 57 33	2,799,010	395,110	Gravel		
106	17-Jun	Farm in Dhaid-2, near MAF/R/C	25 16 35	55 56 33	2,795,760	393,440	S-Gravel		Palm tree (Kalapa)
107	17-Jun	Farm in northeastern Wishah	25 14 8	55 56 7	2,791,240	392,710	S-Gravel		Salt(NaCl) cumulation on the dike surface
108	17-Jun	Plain in Al Bardi	25 15 8	55 55 53	2,793,080	392,320	Gravel		
109	18-Jun	Farm along Highway in Wishaha	25 15 16	55 53 59	2,793,330	389,140	S-Gravel		
110	18-Jun	Farm in island between Wadi Wishahs	25 14 20	55 53 35	2,791,610	388,470	S-Gravel		
111	18-Jun	Farm at the Wadi Wishaha junction with Tawil	25 15 2	55 52 23	2,792,900	386,460	Sand		
112	18-Jun	Plain of Al Bardi	25 15 0	55 57 30	2,792,840	395,030	Gravel		
113	18-Jun	Plain of Al Bardi (near quarry)	25 15 13	55 59 4	2,793,240	397,650	Gravel		
114	19-Jun	Farm in Meleha, southwest end	25 13 5	55 58 49	2,789,300	397,230	S-Gravel	0.10	weathered rocks with Salt crystal
115	19-Jun	Farm in Kadrah, west end	25 11 23	55 59 47	2,786,170	398,850	S-Gravel	0.25	

List of Hand Auger Investigation Sites

No.	Date	Location	Longitude	Latitude	Longitude	Latitude	Major Soil Type	Thickness of Top Soil (m)	Remarks
116	19-Jun	Farm in mountain in south Kaarah	25 10 20	56 0 0	2,784,230	399,210	S-Gravel	0.10	gravel layer hard to excavate
117	19-Jun	Plain in Dhabhan	25 7 26	55 57 45	2,778,890	395,450	S-Gravel	0.15	originated by weathered rocks
118	20-Jun	Plain on south of Wishah CRT	25 11 3	55 52 34	2,785,560	386,770	S-Gravel	0.55	east end of sand dune
119	20-Jun	Plain north side of Khudrah Hill	25 10 53	55 56 35	2,785,250	393,490	S-Sand	-	hardly cemented by CaCO <sub>3</sub>
120	20-Jun	Plain between Hamdah & Arqub Indid	25 8 37	55 54 1	2,781,070	389,200	S-Gravel	0.25	
121	20-Jun	Plain in east of Arqub Indid	25 7 12	55 55 53	2,778,460	392,320	S-Gravel	0.55	
122	20-Jun	Plain in northwest of Ikedir	25 6 21	55 55 19	2,776,890	391,370	S-Gravel	0.45	
123	21-Jun	Farm in northern Meliha	25 8 26	55 52 47	2,780,730	387,130	S-Gravel	0.23	CaCO <sub>3</sub> crystal below 0.35 m, caoused over irrigation
124	21-Jun	Plain in east of Meliha	25 7 5	55 53 20	2,778,240	388,050	S-Gravel	0.45	
125	21-Jun	Farm in eastern Ikedir	25 5 32	55 55 50	2,775,390	392,240	S-Gravel	0.45	
126	21-Jun	Farm in mountain of Shokah	25 4 40	55 59 45	2,773,790	398,800	S-Gravel	0.65	
127	22-Jun	Plain east of Babays	25 1 7	55 50 52	2,767,240	383,930	S-Gravel	0.25	originated by weathered rock
128	22-Jun	Plain north of Fili	25 1 20	55 55 35	2,767,640	391,820	S-Gravel	0.20	CaCO <sub>3</sub> crystal below 0.25 m
129	22-Jun	Plain near Fili	25 1 45	55 53 22	2,768,410	388,110	S-Gravel	0.10	
130	22-Jun	Plain east of Meliha south CRT	25 3 38	55 51 53	2,771,880	385,630	S-Sand	-	perfectly weathered rock (clayey) cemented
131	24-Jun	Farm in noth end of Milehah	25 13 35	55 58 40	2,790,230	396,980	S-Gravel	0.15	IRT-19