

ARCADIS

APPENDIX F
PUMP TEST EVALUATION

Tajiguas Landfill
Dewatering Pump Test

Chronology

- Well DW 3-2 SE ~ 277 feet msl.
10 Oct 00 0940 PDT - Pump on. Meter 000300 counts.
1002 PDT - Pump off due to discharge line leak. Meter 000589 counts.
11 Oct 00 0821 PDT - Pump on, start test. Meter 000589 counts.
Initial discharge rate 9.1 gpm (casing dewatering).
12 Oct 00 Discharge rate 5.4 gpm.
13 Oct 00 1205 PDT - Pump off. Meter 026667 counts.
♦ Total discharge = 026367 counts x 0.72 gal/count = 18,984 gal. Total time = 51.92 hours. Average discharge rate = 6.1 gpm.
♦ See attached Drawdown/Recovery Worksheet.
- Well DW 3-1 SE ~ 282 feet msl.
13 Oct 00 1222 PDT - Pump on 1 minute, connection problem. Meter 000200 counts.
1320 PDT - Pump on, start test. Meter 000205 counts.
16 Oct 00 1520 PDT - Meter 12490 counts. Discharge rate 1.3 gpm.
1530 PDT - Pump off. Meter 12509 counts.
♦ Total discharge = 12309 counts x 0.71 counts/gal = 8739 gal. Total time = 74.17 hours. Average discharge rate = 2.0 gpm.
♦ See attached Drawdown/Recovery Worksheet.
- Well DW 4-3 SE ~ 319 feet msl.
16 Oct 00 1540 PDT - Pump on, start test. Hydrograph (see attached Drawdown/Recovery Worksheet) shows erratic behavior indicative of discharge leakage within casing beginning in first few hours of test. After approximately 10 hours, slow water level decline may indicate some spillage to outside of casing, as was observed visually.
19 Oct 00 1340 PDT - Pump switched off, but there was no air pressure. Apparently pressure was disconnected approximately 0800 PDT due to sandblasting operations at NEO.
♦ Total discharge unknown. Total time of pump operation ~ 64 hours.
- Well DW 4-1 SE ~ 312 feet msl.
19 Oct 00 1417 PDT - Pump on, start test. Meter 012509 counts.
Initial discharge rate 8.8 gpm (casing dewatering).
21 Oct 00 1450 PDT - Discharge rate 0.41 gpm.
1452 PDT - Pump off. Meter 014817 counts.
♦ Total discharge = 2308 counts x 0.71 counts/gal = 1369 gal. Total time = 49.58 hours. Average discharge rate = 0.6 gpm.
♦ See attached Drawdown/Recovery Worksheet.

Well DW 4-2 SE ~ 321 feet msl.

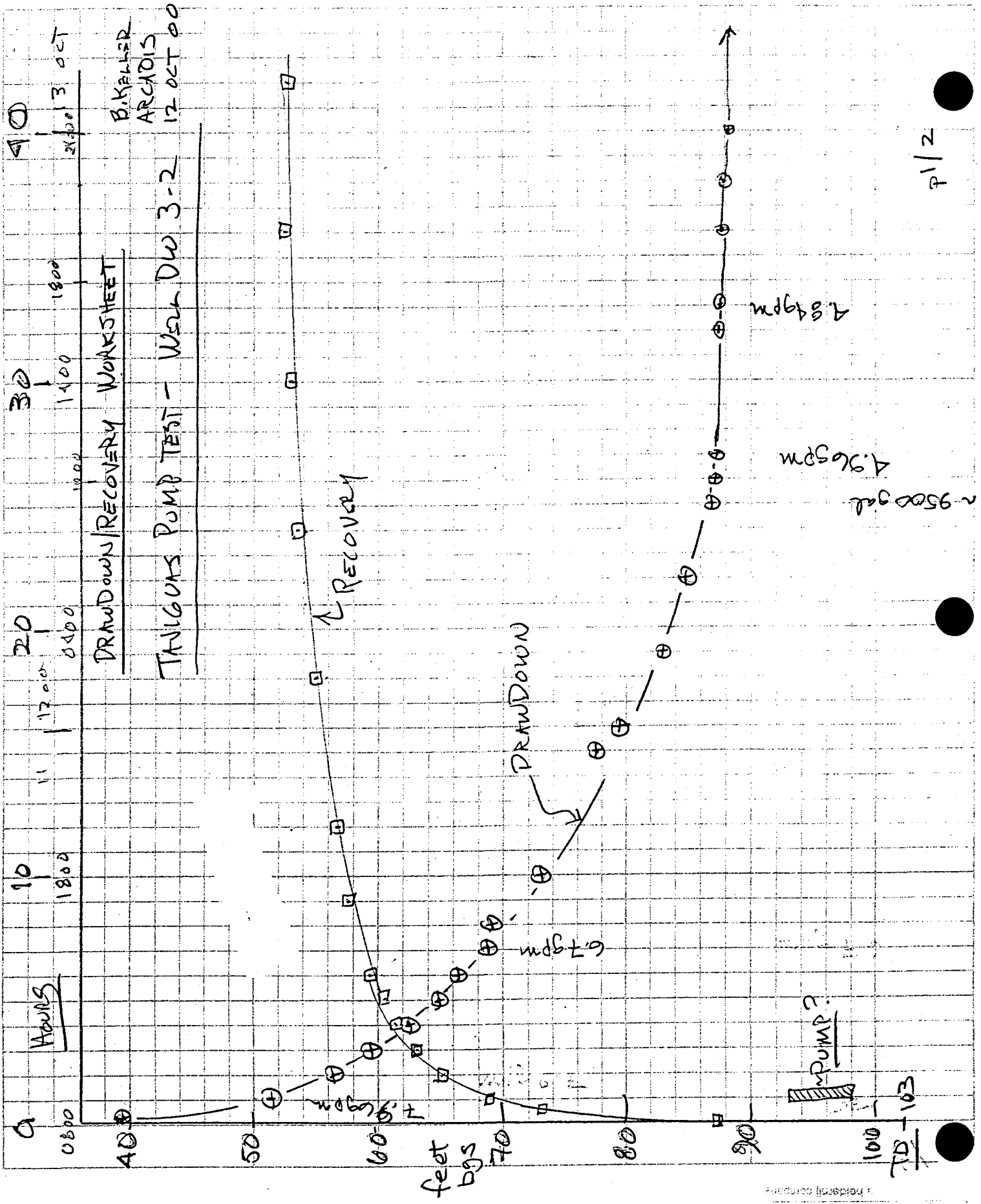
21 Oct 00 1500 PDT – Pump on, start test. Meter 026697 counts.
Initial discharge rate 9.7 gpm (casing dewatering).

24 Oct 00 1405 PDT – Pump off. Meter 035773 counts.

◆ Total discharge = 9075 counts x 0.72 counts/gal = 6534 gal. Total time = 71.08 hours. Average discharge rate = 1.5 gpm.

◆ See attached Drawdown/Recovery Worksheet.

Pump calibration. 7 Nov 00 Buckets filled with 7 counts of pump discharge indicate : Pump used in wells DW 3-2, DW 4-2 @ 0.71 gals/count; Pump used in wells @ 0.72 gals/count.

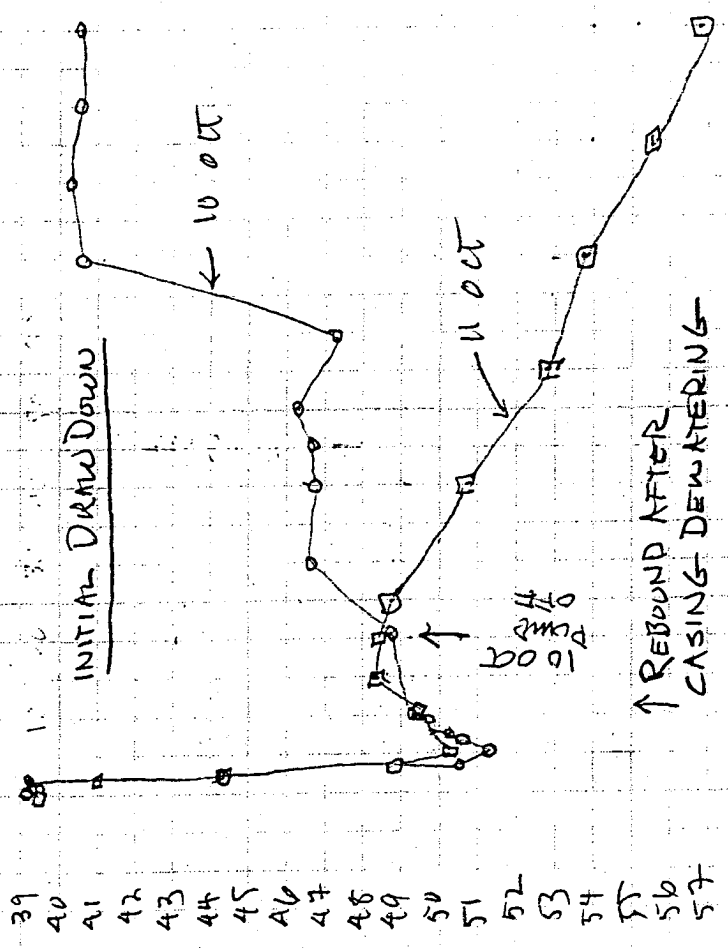
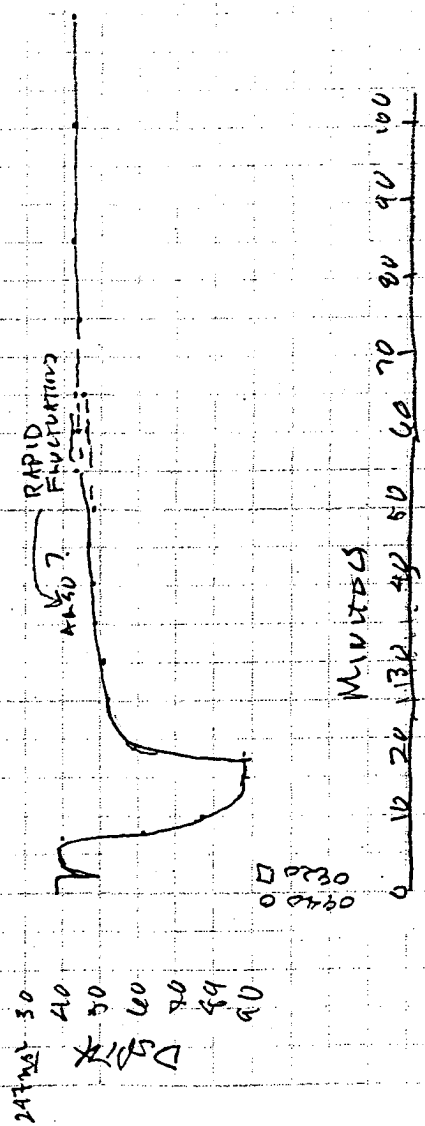


B. KALKER
 ARCHDIOIS
 12 OCT 00

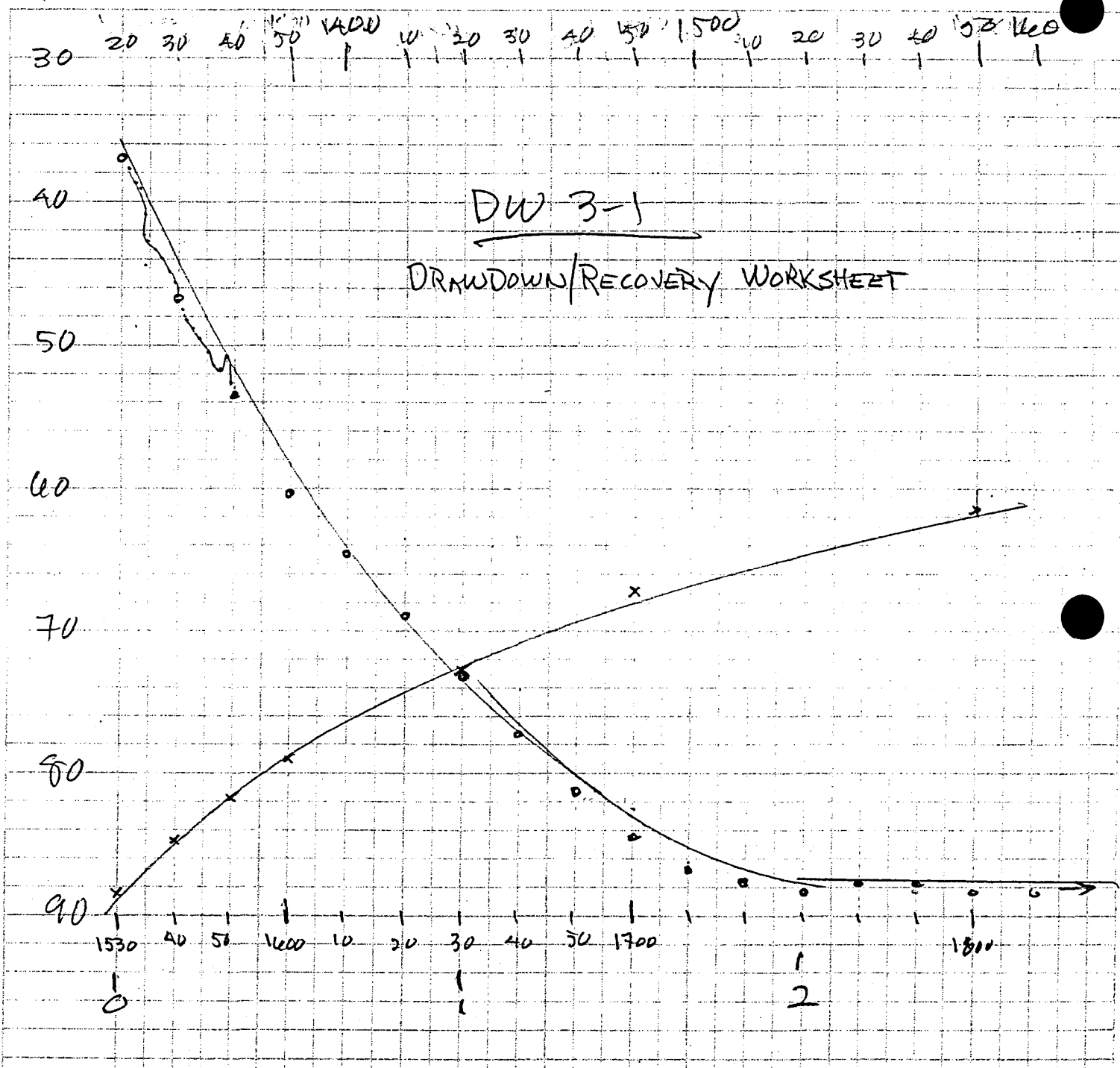
30 1400
 1800
 40 2400 3 OCT

WELL DW 3-2
DRAWDOWN/RECOVERY
WORKSHEET

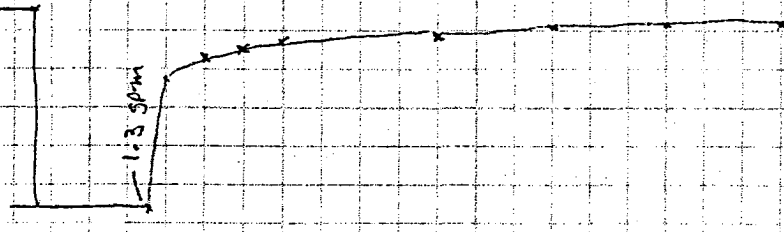
PM 5 - OCT - NOV
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2



← 1 Hour →



26 - 30 = 25R
 - 40
 - 50
 - 60
 - 70
 - 80
 - 90



p1/1

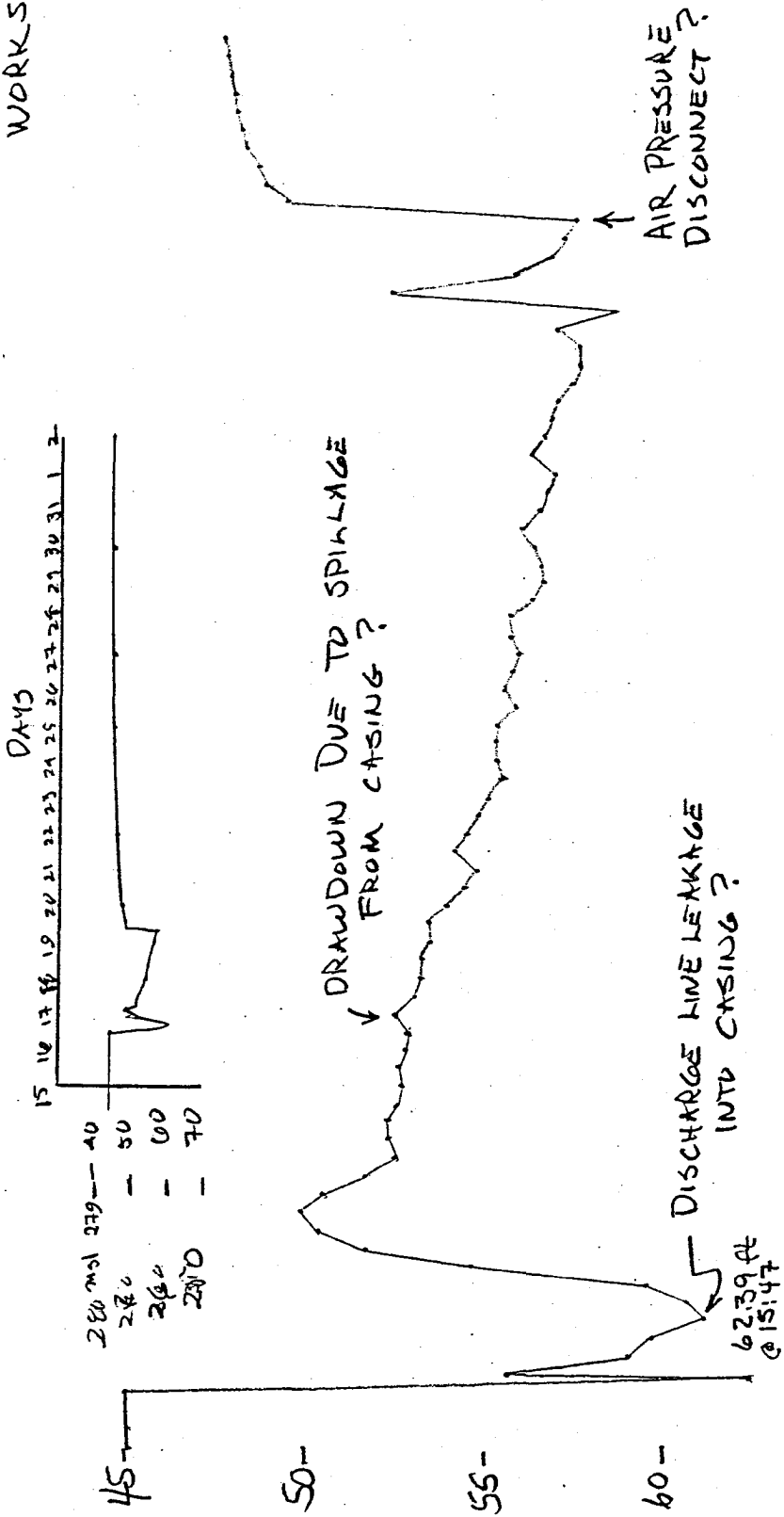
10.14 12.13 14 15 16 17 18.19 20 21 22 23 24 25 26 27 28 29 30 31 1 2

2 Nov 0000 45-58A
 16 Oct 1540 45-123

0.441 FOOT RESIDUAL

WELL DW4-3
 DRAWDOWN/RECOVERY
 WORK SHEET

40-



DAYS
 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2

45-

50-

55-

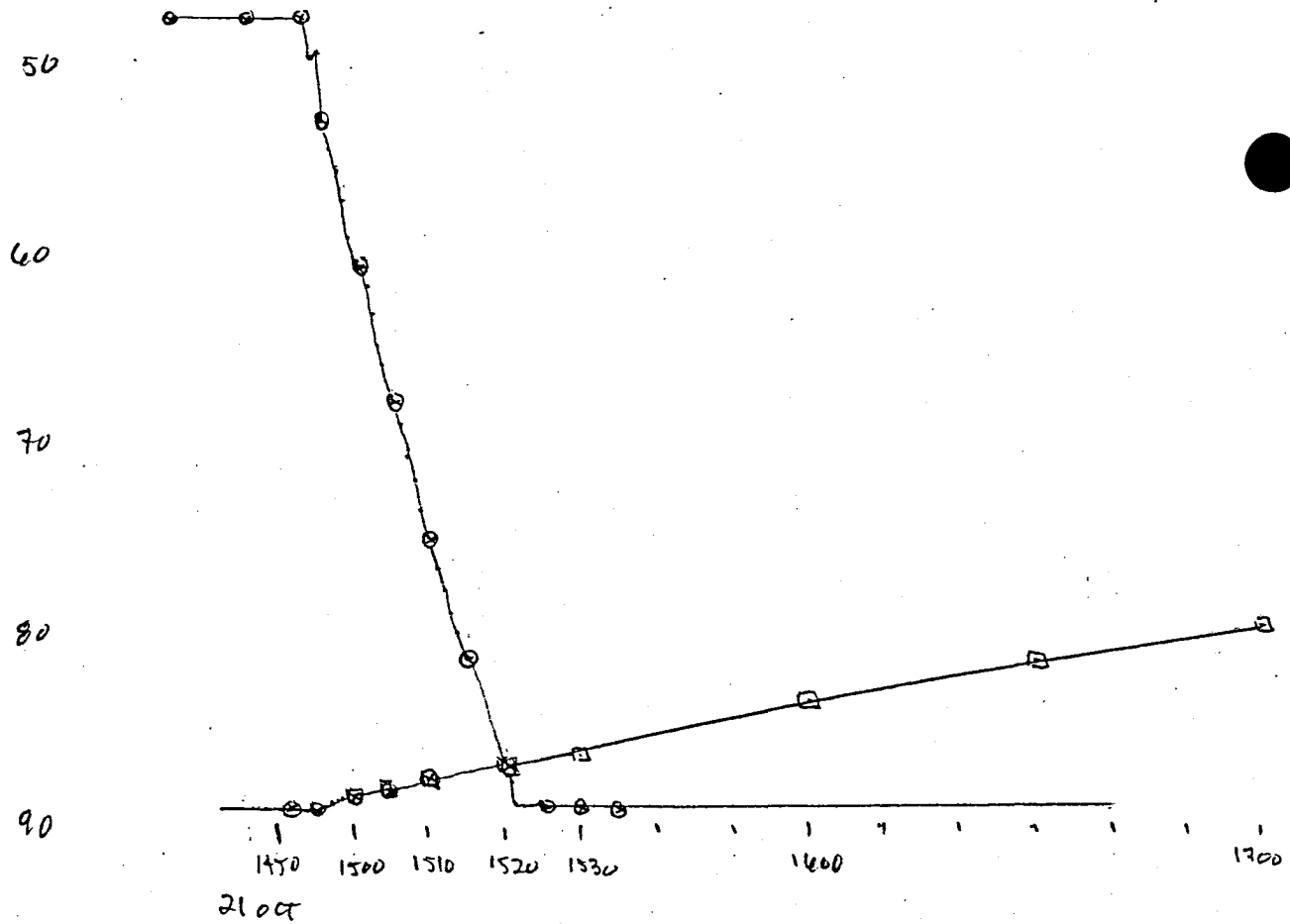
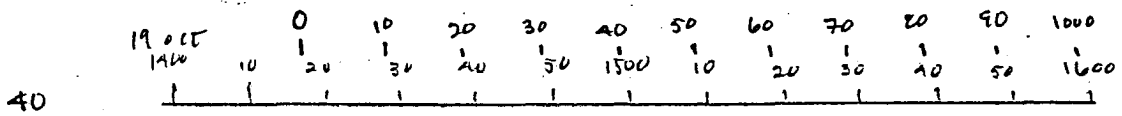
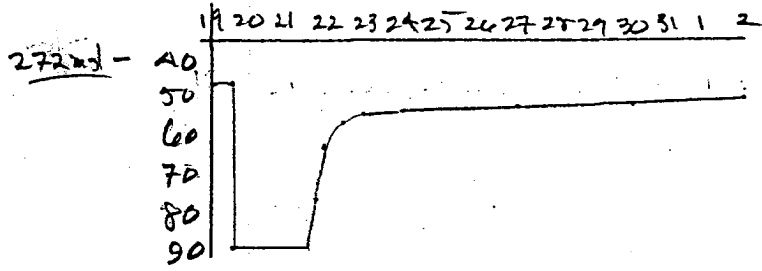
60-

65-

12:00 18:00 00:00 06:00 12:00 18:00 00:00 06:00 12:00 18:00 00:00 06:00 12:00 18:00
 10/16/00 10/17/00 10/18/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00 10/19/00

PUMP TEST DW 4-3 10/16/00 - 10/19/00 TAJIGUAS LANDFILL P1/1

DW 4-1 DRAWDOWN/RECOVERY WORKSHEET



NONREPRODUCIBLE GRID FORM 145

pl/1

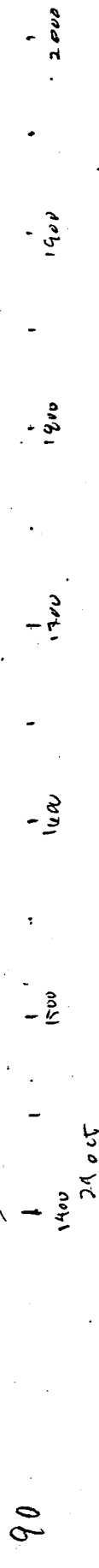
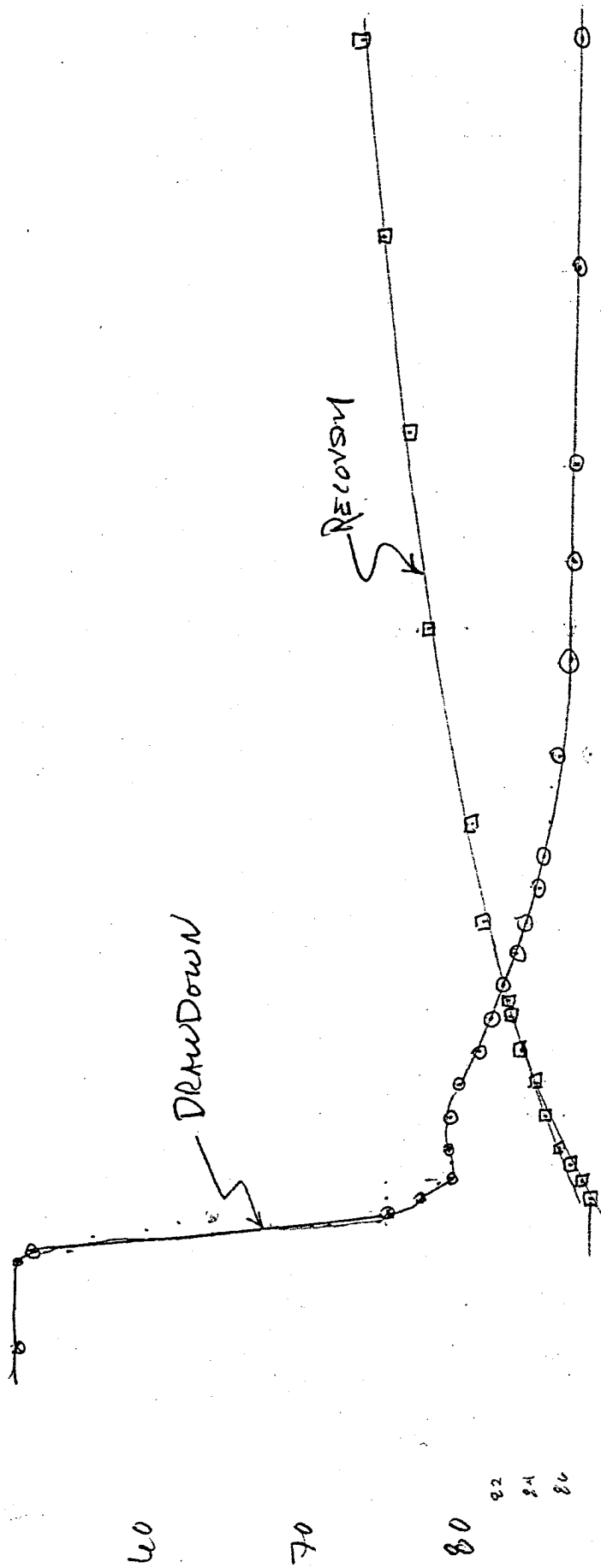
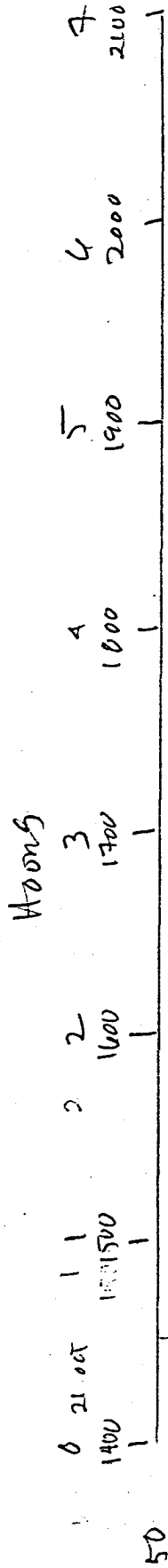
DW 4-2

DMS

21 22 23 24 25 26 27 28 29 30 31 1 2

50
60
70
80
90

WELL DW 4-2
DRAWDOWN / RECOVERY WORK SHEET



P1/1



TRC

Customer-Focused Solutions

Date: September 26, 2001
To: Imelda Cragin
From: Mike Leonard *ML*
Project: 30757
Subject: Tajiguas Expansion Water Use Versus Supply

MEMORANDUM

We have completed the water balance evaluation as requested by Santa Barbara Solid Waste and Utilities Division (SWUD). This has included a Safe Groundwater Yield calculation for the Vaqueros Formation within the landfill watershed and for the Cañada de la Huerta well following the method in County Environmental Thresholds and Guidelines Manual (see attached memo from Rivera and Wright). Also, we completed a rough estimate of water use for construction, i.e., estimate of water needed to raise natural moisture content of native soils and ripped bedrock used in fill construction by an average of 8 percent by weight to meet compaction and earthwork requirements and by 5 percent for stockpile soil placement (see attached Table 1). The latter was then added to the water use estimate for operations provided by SWUD and the water balance computed as shown in Table 2, attached. The sources of information and assumptions used in the analysis are indicated by the notes in the tables.

As indicated there is a reasonable positive annual average water balance of 22.5 acre-feet for the Front Canyon configuration and 15.6 acre-feet for the Back Canyon configuration. These water balances both assume that Well No. 3 located in the Monterey Formation would be available to provide water as needed should the other sources occasionally fall short of their predicted supply capacity (e.g., a particularly dry year causes the sedimentation basins to not fill to capacity). Also, during landfill operations the water level in the Vaqueros Formation wells in use will be monitored. If the level is found to be regularly dropping due to pumping activity, actions can be taken to mitigate the impact, including switching to interim use of Well No. 3 in the Monterey Formation. The water in this well is high in sulfides (naturally occurring) and will require some level of treatment depending on the planned water use. Also, prior to use of the well, permission will be required from the Coastal Commission. Finally, SWUD is currently investigating a location for a well to be installed in the Sespe-Alegria Formation in the Back Canyon area which would provide another water source if needed.

ML/JB:rm
Attachments

cc: John Haines
Bob Mason
Carolyn Trindle
Mark Grivetti



T, E 1A
 BACK CANYON OPTION
 CONSTRUCTION WATER

Construction Item	Volume of Soil(cy)	Volume of Water Added (Gal) (1)	Time Period (Yrs)	GPM	Acre Ft./Yr
Rough Grade Fill/Subgrade Prep	811,000	23132485			
Stability Buttrass	420,000	11979832			
Soil Stockpile (2)	2,000,000	32412965			
Total During 1st 8 yrs	3,231,000	67525282	8	16.1	26.0
Final Cover (4' thick) (Both Existing/Exp)	1,037,000	29578776	7	8.0	13.0
Total During 15 Year Life	4,268,000	97104058	15	12.3	19.9

- (1) Assumes soil dry density of 110 pcf, 8 % avg. increase in moisture content
- (2) Assumes nominal compaction to 100 pcf, 5% avg. increase in moisture content



T, E 1B
 FRONT CANYON OPTION
 CONSTRUCTION WATER

Construction Item	Volume of Soil(cy)	Volume of Water Added (Gal) (1)	Time Period (Yrs)	GPM	Acre Ft./Yr
Rough Grade Fill/Subgrade Prep	301,000	8585546			
Stability Buttrass	300,000	8557023			
Soil Stockpile (2)	2,000,000	32412965			
Total During 1st 8 yrs	2,601,000	49555534	8	11.8	19.1
Final Cover (4' thick) (Both Existing/Exp)	885,000	25243217	7	6.9	11.1
Total During 15 Year Life	3,486,000	74798752	15	9.5	15.3

- (1) Assumes soil dry density of 110 pcf, 8 % avg. increase in moisture content
- (2) Assumes nominal compaction to 100 pcf, 5% avg. increase in moisture content



TABLE 2A
 AVERAGE ANNUAL WATER BALANCE ESTIMATE
 TAJIGUAS EXPANSION, BACK CANYON

Water Use	Quantity (af/y)
Category	
Landfill Operations ⁽¹⁾	30.0
Construction ⁽²⁾	26.0
Total	56.0
Water Supply	
Source	
In-channel No. Sed. Basin ⁽³⁾	6.8
In-channel So. Sed. Basin ⁽⁴⁾	11.0
Out-of-channel Sed. Basin ⁽⁵⁾	18.6
GLCRS interceptor trench ⁽⁶⁾	8.1
Canada de la Huerta well ⁽⁷⁾	3.1
Drainage from liner ⁽⁶⁾	0.3
GW collection system no. of LF ⁽⁶⁾	1.0
Horiz wells at LF base ⁽⁶⁾	0.1
Safe Yield of Vaqueros ⁽⁸⁾	6.5
Well No. 3 in Monterey Formation ⁽⁹⁾	16.1
Total	71.6
Water Balance	
af/yr	15.6
gpm	9.6

36.4

- (1) Based on past 3 years of operations water use history per verbal communication from J. Haines, 6/01.
- (2) From estimate provided in Table 1A attached.
- (3) Based on volume calculated from topography up to overflow pipe elevation minus 30% to account for annual silt accumulation.
- (4) Based on volume calculated from topography up to overflow pipe elevation minus 50% to account for 5 year silt accumulation.
- (5) Assumed average volume of existing basin (i.e., 13.6 ac calculated from topography up to outlet elevation minus 30% to account for annual silt accumulation) and expanded basin (basin may be expanded by 10 acres to 23.6 ac or a new basin built which has 10 acres greater capacity).
- (6) Provided by SWUD, March 2001.
- (7) Based on attached Safe Yield calculation by TRC, September 2001.
- (8) Based on attached Safe Yield calculation by TRC, September 2001.
- (9) Report by Moore & Taber, 2/17/98, indicates a potential 20-25 gpm long-term sustainable pumping rate based on short-term aquifer test. Conservatively reduced to 10 gpm for this analysis since this well would only be used if other water sources occasionally fall short of predicted yield.



TABLE 2B
 AVERAGE ANNUAL WATER BALANCE ESTIMATE
 TAJIGUAS EXPANSION FRONT CANYON

Water Use	Quantity (af/yr)
Category	
Landfill Operations ⁽¹⁾	30.0
Construction ⁽²⁾	19.1
Total	49.1
Water Supply	
Source	
In-channel No. Sed. Basin ⁽³⁾	6.8
In-channel So. Sed. Basin ⁽⁴⁾	11.0
Out-of-channel Sed. Basin ⁽⁵⁾	18.6
GLCRS interceptor trench ⁽⁶⁾	8.1
Canada de la Huerta well ⁽⁷⁾	3.1
Drainage from liner ⁽⁶⁾	0.3
GW collection system no. of LF ⁽⁶⁾	1.0
Horiz wells at LF base ⁽⁶⁾	0.1
Safe Yield of Vaqueros ⁽⁸⁾	6.5
Well No. 3 in Monterey Formation ⁽⁹⁾	16.1
Total	71.6
Water Balance	
af/yr	22.5
gpm	13.9

36.4

- (1) Based on past 3 years of operations water use history per verbal communication from J. Haines, 6/01.
- (2) From estimate provided in Table 1A attached.
- (3) Based on volume calculated from topography up to overflow pipe elevation minus 30% to account for annual silt accumulation.
- (4) Based on volume calculated from topography up to overflow pipe elevation minus 50% to account for 5 year silt accumulation.
- (5) Assumed average volume of existing basin (i.e., 13.6 ac calculated from topography up to outlet elevation minus 30% to account for annual silt accumulation) and expanded basin (i.e., the existing basin will be expanded by 10 acres to 23.6 ac capacity in the future).
- (6) Provided by SWUD, March 2001.
- (7) Based on attached Safe Yield calculation by TRC, September 2001.
- (8) Based on attached Safe Yield calculation by TRC, September 2001.
- (9) Report by Moore & Taber, 2/17/98, indicates a potential 20-25 gpm long-term sustainable pumping rate based on short-term aquifer test. Conservatively reduced to 10 gpm for this analysis since this well would only be used if other water sources occasionally fall short of predicted yield.



TAJIGUAS LANDFILL
SAFE YIELD CALCULATIONS
CANADA DE LA HUERTA WELL

BY TRC
SEPTEMBER, 2001



Data for Tajiguas
 Canada de la Huerta Well
 Rooting Depth
 Soil Moisture capacity
 Soil Reservoir Capacity

5.00 feet
 0.16 in/in
 9.60

Pan Factor

67.0%

Year	Month	Rainfall (Official Tajiguas Landfill)	Effective Percolation (prescribed value)	Effective Rainfall	Initial Soil Moisture	Total Available	Pan Evaporation at Lake Cachuma	Potential ET (pan method)	Final Moisture	Water Yield	Yearly Rainfall	Potential ET	Yearly yield
1974	Sep	-	0.80	-	-	-	6.71	4.50	-	-	-	-	-
	Oct	0.53	0.80	0.42	-	0.42	4.56	3.06	-	-	-	-	-
	Nov	2.31	0.80	1.85	-	1.85	3.43	2.30	-	-	-	-	-
	Dec	2.37	0.80	1.90	-	1.90	2.26	1.51	0.38	-	-	-	-
	Jan	7.11	0.80	5.69	0.38	6.07	2.25	1.51	4.56	-	-	-	-
	Feb	-	0.80	-	4.56	4.56	3.17	2.12	2.44	-	-	-	-
	Mar	5.34	0.80	4.27	2.44	6.71	3.49	2.34	4.37	-	-	-	-
	Apr	0.22	0.80	0.18	4.37	4.55	6.16	4.13	0.42	-	-	-	-
	May	-	0.80	-	0.42	0.42	6.87	4.60	-	-	-	-	-
	Jun	-	0.80	-	-	-	8.49	5.69	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.47	6.34	-	-	-	-	-
	Aug	-	0.80	-	-	-	8.04	5.39	-	-	17.88	43.48	-
1975	Sep	-	0.80	-	-	-	6.45	4.32	-	-	-	-	-
	Oct	1.03	0.80	0.82	-	0.82	4.91	3.29	-	-	-	-	-
	Nov	0.23	0.80	0.18	-	0.18	3.64	2.44	-	-	-	-	-
	Dec	5.13	0.80	4.10	-	4.10	2.55	1.71	2.40	-	-	-	-
	Jan	0.03	0.80	0.02	2.40	2.42	2.7	1.81	0.61	-	-	-	-
	Feb	4.98	0.80	3.98	0.61	4.59	3.15	2.11	2.48	-	-	-	-
	Mar	4.91	0.80	3.93	2.48	6.41	3.53	2.37	4.05	-	-	-	-
	Apr	0.94	0.80	0.75	4.05	4.80	4.39	2.94	1.86	-	-	-	-
	May	3.35	0.80	2.68	1.86	4.54	7.07	4.74	-	-	-	-	-
	Jun	-	0.80	-	-	-	7.6	5.09	-	-	-	-	-
	Jul	-	0.80	-	-	-	8.65	5.80	-	-	-	-	-
	Aug	-	0.80	-	-	-	8	5.36	-	-	20.60	41.97	-
1976	Sep	-	0.80	-	-	-	5.59	3.75	-	-	-	-	-
	Oct	0.61	0.80	0.49	-	0.49	4.53	3.04	-	-	-	-	-
	Nov	0.36	0.80	0.29	-	0.29	3.88	2.60	-	-	-	-	-
	Dec	0.06	0.80	0.05	-	0.05	3.34	2.24	-	-	-	-	-
	Jan	-	0.80	-	-	-	3.66	2.45	-	-	-	-	-
	Feb	6.92	0.80	5.54	-	5.54	3.69	2.47	3.06	-	-	-	-
	Mar	1.71	0.80	1.37	3.06	4.43	4.63	3.10	1.33	-	-	-	-
	Apr	0.95	0.80	0.76	1.33	2.09	4.73	3.17	-	-	-	-	-
	May	-	0.80	-	-	-	7.17	4.80	-	-	-	-	-
	Jun	-	0.80	-	-	-	9.78	6.55	-	-	-	-	-
	Jul	-	0.80	-	-	-	8.95	6.00	-	-	-	-	-
	Aug	-	0.80	-	-	-	8.34	5.59	-	-	10.61	45.75	-
1977	Sep	3.77	0.80	3.02	-	3.02	7.77	5.21	-	-	-	-	-
	Oct	-	0.80	-	-	-	5.72	3.83	-	-	-	-	-
	Nov	-	0.80	-	-	-	4.57	3.06	-	-	-	-	-
	Dec	1.08	0.80	0.86	-	0.86	3.28	2.20	-	-	-	-	-
	Jan	5.09	0.80	4.07	-	4.07	2.28	1.53	2.54	-	-	-	-
	Feb	-	0.80	-	2.54	2.54	3.45	2.31	0.23	-	-	-	-
	Mar	1.40	0.80	1.12	0.23	1.35	5.04	3.38	-	-	-	-	-
	Apr	-	0.80	-	-	-	6.72	4.50	-	-	-	-	-
	May	2.12	0.80	1.70	-	1.70	6.67	4.47	-	-	-	-	-
	Jun	-	0.80	-	-	-	8.18	5.48	-	-	-	-	-
	Jul	-	0.80	-	-	-	10.71	7.18	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.07	6.08	-	-	13.46	49.22	-
1978	Sep	-	0.80	-	-	-	7.8	5.23	-	-	-	-	-
	Oct	-	0.80	-	-	-	5.73	3.84	-	-	-	-	-
	Nov	0.17	0.80	0.14	-	0.14	2.99	2.00	-	-	-	-	-
	Dec	4.15	0.80	3.32	-	3.32	2.42	1.62	1.70	-	-	-	-
	Jan	7.44	0.80	5.95	1.70	7.65	2.68	1.80	5.86	-	-	-	-
	Feb	10.72	0.80	8.58	5.86	14.43	3.5	2.35	12.09	2.49	-	-	-
	Mar	10.50	0.80	8.40	9.60	18.00	4.25	2.85	15.15	5.55	-	-	-
	Apr	2.65	0.80	2.12	9.60	11.72	4.64	3.11	8.61	-	-	-	-
	May	-	0.80	-	8.61	8.61	8.57	5.74	2.87	-	-	-	-
	Jun	-	0.80	-	2.87	2.87	8.58	5.75	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.2	6.16	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.39	6.29	-	-	35.63	46.73	8.04
1979	Sep	1.06	0.80	0.85	-	0.85	6.45	5.66	-	-	-	-	-
	Oct	-	0.80	-	-	-	5	3.35	-	-	-	-	-
	Nov	2.94	0.80	2.35	-	2.35	3.39	2.27	0.08	-	-	-	-
	Dec	1.19	0.80	0.95	0.08	1.03	3.77	2.53	-	-	-	-	-
	Jan	7.04	0.80	5.63	-	5.63	2.22	1.49	4.14	-	-	-	-
	Feb	5.05	0.80	4.04	4.14	8.18	2.87	1.92	6.26	-	-	-	-
	Mar	4.06	0.80	3.25	6.26	9.51	3.7	2.48	7.03	-	-	-	-
	Apr	-	0.80	-	7.03	7.03	6.3	4.22	2.81	-	-	-	-
	May	-	0.80	-	2.81	2.81	7.9	5.29	-	-	-	-	-
	Jun	-	0.80	-	-	-	9.14	6.12	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.87	6.61	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.32	6.24	-	-	21.34	48.19	-
1981	Sep	-	0.80	-	-	-	6.99	4.68	-	-	-	-	-
	Oct	-	0.80	-	-	-	5.12	3.43	-	-	-	-	-
	Nov	-	0.80	-	-	-	3.19	2.14	-	-	-	-	-
	Dec	-	0.80	-	-	-	2.55	1.71	-	-	-	-	-
	Jan	-	0.80	-	-	-	3.04	2.04	-	-	-	-	-
	Feb	3.96	0.80	3.17	-	3.17	30.48	20.42	-	-	-	-	-
	Mar	4.94	0.80	3.95	-	3.95	3.78	2.53	1.42	-	-	-	-
	Apr	-	0.80	-	1.42	1.42	5.49	3.68	-	-	-	-	-
	May	-	0.80	-	-	-	7.58	5.07	-	-	-	-	-
	Jun	-	0.80	-	-	-	10.86	7.28	-	-	-	-	-
	Jul	-	0.80	-	-	-	10.22	6.85	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.23	6.18	-	-	8.90	66.00	-
1983	Sep	-	0.80	-	-	-	-	-	-	-	-	-	-
	Oct	-	0.80	-	-	-	4.85	3.25	-	-	-	-	-
	Nov	4.34	0.80	3.47	-	3.47	2.32	1.55	1.92	-	-	-	-
	Dec	0.30	0.80	0.24	1.92	2.16	1.53	1.03	1.13	-	-	-	-
	Jan	10.55	0.80	8.44	1.13	9.57	2.65	1.78	7.80	-	-	-	-
	Feb	9.67	0.80	7.74	7.80	15.53	2.49	1.67	13.86	4.26	-	-	-
	Mar	7.80	0.80	6.24	9.60	15.84	3.76	2.52	13.32	3.72	-	-	-
	Apr	3.83	0.80	3.06	9.60	12.66	5.1	3.42	9.25	-	-	-	-
	May	-	0.80	-	9.25	9.25	7.54	5.05	4.20	-	-	-	-
	Jun	-	0.80	-	4.20	4.20	7.38	4.94	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.37	6.28	-	-	-	-	-
	Aug	-	0.80	-	-	-	7.86	5.27	-	-	36.49	36.75	7.99
1984	Sep	2.13	0.80	1.70	-	1.70	8.6	5.76	-	-	-	-	-



Oct	0.68	0.80	0.54	-	0.54	5.89	3.95	-	-		
Nov	3.46	0.80	2.77	-	2.77	2.96	1.98	0.78	-		
Dec	3.82	0.80	3.06	0.78	3.84	1.96	1.31	2.53	-		
Jan	-	0.80	-	2.53	2.53	2.34	1.57	0.96	-		
Feb	-	0.80	-	0.96	0.96	3.3	2.21	-	-		
Mar	-	0.80	-	-	-	5.78	3.87	-	-		
Apr	-	0.80	-	-	-	7.23	4.84	-	-		
May	-	0.80	-	-	-	10.36	6.94	-	-		
Jun	-	0.80	-	-	-	9.4	6.30	-	-		
Jul	-	0.80	-	-	-	10.4	6.97	-	-		
Aug	-	0.80	-	-	-	9.38	6.28	-	-	10.09	51.99
1985 Sep	-	0.80	-	-	-	6.88	4.61	-	-		
Oct	-	0.80	-	-	-	5.33	3.57	-	-		
Nov	1.68	0.80	1.34	-	1.34	3.2	2.14	-	-		
Dec	4.53	0.80	3.62	-	3.62	2.31	1.55	2.08	-		
Jan	0.76	0.80	0.61	2.08	2.68	1.97	1.32	1.36	-		
Feb	2.81	0.80	2.25	1.36	3.61	3.05	2.04	1.57	-		
Mar	0.48	0.80	0.38	1.57	1.95	4.28	2.87	-	-		
Apr	-	0.80	-	-	-	6.83	4.58	-	-		
May	-	0.80	-	-	-	7.93	5.31	-	-		
Jun	-	0.80	-	-	-	9.78	6.55	-	-		
Jul	-	0.80	-	-	-	10.47	7.01	-	-		
Aug	-	0.80	-	-	-	9.6	6.43	-	-	10.26	47.99
1986 Sep	-	0.80	-	-	-	6.29	4.21	-	-		
Oct	-	0.80	-	-	-	5.13	3.44	-	-		
Nov	5.08	0.80	4.06	-	4.06	5.44	3.64	0.42	-		
Dec	1.79	0.80	1.43	0.42	1.85	2.33	1.56	0.29	-		
Jan	2.66	0.80	2.13	0.29	2.42	2.65	1.78	0.64	-		
Feb	7.94	0.80	6.35	0.64	6.99	2.91	1.95	5.04	-		
Mar	5.29	0.80	4.23	5.04	9.28	4.18	2.80	6.48	-		
Apr	-	0.80	-	6.48	6.48	5.83	3.91	2.57	-		
May	-	0.80	-	2.57	2.57	8.35	5.59	-	-		
Jun	-	0.80	-	-	-	8.71	5.84	-	-		
Jul	-	0.80	-	-	-	9.65	6.47	-	-		
Aug	-	0.80	-	-	-	9.31	6.24	-	-	22.76	47.42
1987 Sep	1.70	0.80	1.36	-	1.36	5.26	3.52	-	-		
Oct	-	0.80	-	-	-	2.64	1.77	-	-		
Nov	-	0.80	-	-	-	2.11	1.41	-	-		
Dec	0.43	0.80	0.34	-	0.34	0	-	0.34	-		
Jan	2.38	0.80	1.90	0.34	2.25	3.17	2.12	0.12	-		
Feb	5.45	0.80	4.36	0.12	4.48	4.68	3.14	1.35	-		
Mar	6.72	0.80	5.38	1.35	6.72	7.25	4.86	1.87	-		
Apr	-	0.80	-	1.87	1.87	8.38	5.61	-	-		
May	-	0.80	-	-	-	9.04	6.06	-	-		
Jun	-	0.80	-	-	-	0	-	-	-		
Jul	-	0.80	-	-	-	9.29	6.22	-	-		
Aug	-	0.80	-	-	-	7.3	4.89	-	-	16.68	39.61
1988 Sep	0.04	0.80	0.03	-	0.03	7.31	4.90	-	-		
Oct	2.67	0.80	2.14	-	2.14	5.15	3.45	-	-		
Nov	0.29	0.80	0.23	-	0.23	3.36	2.25	-	-		
Dec	3.73	0.80	2.98	-	2.98	2.63	1.76	1.22	-		
Jan	2.92	0.80	2.34	1.22	3.56	2.27	1.52	2.04	-		
Feb	2.20	0.80	1.76	2.04	3.80	3.83	2.57	1.23	-		
Mar	-	0.80	-	1.23	1.23	6.36	4.26	-	-		
Apr	2.88	0.80	2.30	-	2.30	5.98	4.01	-	-		
May	-	0.80	-	-	-	9.08	6.08	-	-		
Jun	-	0.80	-	-	-	8.75	5.86	-	-		
Jul	-	0.80	-	-	-	10.14	6.79	-	-		
Aug	-	0.80	-	-	-	9.14	6.12	-	-	14.73	49.58
1990 Sep	-	0.80	-	-	-	7.28	4.88	-	-		
Oct	-	0.80	-	-	-	6.27	4.20	-	-		
Nov	-	0.80	-	-	-	4.1	2.75	-	-		
Dec	-	0.80	-	-	-	2.61	1.75	-	-		
Jan	3.02	0.80	2.42	-	2.42	2.53	1.70	0.72	-		
Feb	1.93	0.80	1.54	0.72	2.26	2.99	2.00	0.26	-		
Mar	-	0.80	-	0.26	0.26	4.27	2.86	-	-		
Apr	-	0.80	-	-	-	6.46	4.33	-	-		
May	0.75	0.80	0.60	-	0.60	8.34	5.59	-	-		
Jun	-	0.80	-	-	-	9.64	6.46	-	-		
Jul	-	0.80	-	-	-	10.55	7.07	-	-		
Aug	-	0.80	-	-	-	9.74	6.53	-	-	5.70	50.10
1991 Sep	-	0.80	-	-	-	7.22	4.84	-	-		
Oct	-	0.80	-	-	-	5.84	3.91	-	-		
Nov	-	0.80	-	-	-	4.39	2.94	-	-		
Dec	0.53	0.80	0.42	-	0.42	3.35	2.24	-	-		
Jan	1.57	0.80	1.26	-	1.26	2.44	1.63	-	-		
Feb	4.96	0.80	3.97	-	3.97	3.71	2.49	1.48	-		
Mar	10.13	0.80	8.10	1.48	9.59	4.33	2.90	6.69	-		
Apr	-	0.80	-	6.69	6.69	6.24	4.18	2.50	-		
May	-	0.80	-	2.50	2.50	8.29	5.55	-	-		
Jun	-	0.80	-	-	-	7.85	5.26	-	-		
Jul	-	0.80	-	-	-	9.16	6.14	-	-		
Aug	-	0.80	-	-	-	8.28	5.55	-	-	17.19	47.64
1992 Sep	-	0.80	-	-	-	6.84	4.58	-	-		
Oct	0.30	0.80	0.24	-	0.24	5.07	3.40	-	-		
Nov	-	0.80	-	-	-	3.84	2.57	-	-		
Dec	3.46	0.80	2.77	-	2.77	2.12	1.42	1.35	-		
Jan	2.53	0.80	2.02	1.35	3.37	2.43	1.63	1.74	-		
Feb	8.02	0.80	6.42	1.74	8.16	3.24	2.17	5.99	-		
Mar	4.99	0.80	3.99	5.99	9.98	3.28	2.20	7.78	-		
Apr	-	0.80	-	7.78	7.78	6.69	4.48	3.30	-		
May	-	0.80	-	3.30	3.30	6.42	4.30	-	-		
Jun	-	0.80	-	-	-	8.46	5.67	-	-		
Jul	-	0.80	-	-	-	8.76	5.87	-	-		
Aug	-	0.80	-	-	-	9.59	6.43	-	-	19.30	44.72
1993 Sep	-	0.80	-	-	-	6.93	4.64	-	-		
Oct	0.80	0.80	0.64	-	0.64	5.53	3.71	-	-		
Nov	-	0.80	-	-	-	3.82	2.56	-	-		
Dec	4.63	0.80	3.70	-	3.70	2.17	1.45	2.25	-		
Jan	11.92	0.80	9.54	2.25	11.79	1.94	1.30	10.49	0.89		
Feb	8.79	0.80	7.03	9.60	16.63	2.76	1.85	14.78	5.18		
Mar	5.36	0.80	4.29	9.60	13.89	4.26	2.85	11.03	1.43		
Apr	-	0.80	-	9.60	9.60	6.52	4.37	5.23	-		
May	-	0.80	-	5.23	5.23	8.39	5.62	-	-		
Jun	-	0.80	-	-	-	9.34	6.26	-	-		
Jul	-	0.80	-	-	-	8.49	5.69	-	-		
Aug	-	0.80	-	-	-	8.78	5.88	-	-	31.50	46.18 7.50



1994 Sep		0.80	-	-	-	6.37	4.27	-	-		
Oct		0.80	-	-	-	4.98	3.34	-	-		
Nov	1.05	0.80	0.84	-	0.84	2.95	1.98	-	-		
Dec	2.09	0.80	1.67	-	1.67	1.91	1.28	0.39	-		
Jan	1.69	0.80	1.35	0.39	1.74	2.67	1.79	-	-		
Feb	6.86	0.80	5.49	-	5.49	2.81	1.88	3.61	-		
Mar	2.27	0.80	1.82	3.61	5.42	4.24	2.84	2.58	-		
Apr	0.50	0.80	0.40	2.58	2.98	5.64	3.78	-	-		
May	0.35	0.80	0.28	-	0.28	6.36	4.26	-	-		
Jun		0.80	-	-	-	9.37	6.28	-	-		
Jul		0.80	-	-	-	8.9	5.96	-	-		
Aug		0.80	-	-	-	9.11	6.10	-	-	14.81	43.76
1995 Sep	0.05	0.80	0.04	-	0.04	6.67	4.47	-	-		
Oct	0.47	0.80	0.38	-	0.38	5.16	3.46	-	-		
Nov	1.27	0.80	1.02	-	1.02	3.32	2.22	-	-		
Dec	0.82	0.80	0.66	-	0.66	2.33	1.56	-	-		
Jan	23.03	0.80	18.42	-	18.42	1.73	1.16	17.26	7.66		
Feb	2.20	0.80	1.76	9.60	11.36	2.4	1.61	9.75	0.15		
Mar	12.08	0.80	9.66	9.60	19.26	3.31	2.22	17.05	7.45		
Apr	0.39	0.80	0.31	9.60	9.91	5.6	3.75	6.16	-		
May	1.06	0.80	0.85	6.16	7.01	5.66	3.79	3.22	-		
Jun	1.07	0.80	0.86	3.22	4.07	7.74	5.19	-	-		
Jul		0.80	-	-	-	9.3	6.23	-	-		
Aug		0.80	-	-	-	9.14	6.12	-	-	42.44	41.78 15.26
1996 Sep		0.80	-	-	-	5.52	3.70	-	-		
Oct		0.80	-	-	-	2.07	1.39	-	-		
Nov	0.22	0.80	0.18	-	0.18	1.21	0.81	-	-		
Dec	2.31	0.80	1.85	-	1.85	1.21	0.81	1.04	-		
Jan	3.12	0.80	2.50	1.04	3.53	1.64	1.10	2.43	-		
Feb	7.56	0.80	6.05	2.43	8.48	2.87	1.92	6.56	-		
Mar	1.97	0.80	1.58	6.56	8.14	4.54	3.04	5.09	-		
Apr	0.91	0.80	0.73	5.09	5.82	6.17	4.13	1.69	-		
May	1.09	0.80	0.87	1.69	2.56	8.33	5.58	-	-		
Jun		0.80	-	-	-	9.33	6.25	-	-		
Jul		0.80	-	-	-	10.33	6.92	-	-		
Aug		0.80	-	-	-	11.33	7.59	-	-	17.18	43.25
1997 Sep		0.80	-	-	-	5.52	3.70	-	-		
Oct	2.95	0.80	2.36	-	2.36	2.07	1.39	0.97	-		
Nov	3.61	0.80	2.89	0.97	3.86	1.21	0.81	3.05	-		
Dec	7.31	0.80	5.85	3.05	8.90	1.21	0.81	8.09	-		
Jan	7.21	0.80	5.77	8.09	13.86	1.64	1.10	12.76	3.16		
Feb		0.80	-	9.60	9.60	2.87	1.92	7.68	-		
Mar		0.80	-	7.68	7.68	4.54	3.04	4.64	-		
Apr		0.80	-	4.64	4.64	6.17	4.13	0.50	-		
May		0.80	-	0.50	0.50	8.33	5.58	-	-		
Jun		0.80	-	-	-	9.33	6.25	-	-		
Jul		0.80	-	-	-	10.33	6.92	-	-		
Aug		0.80	-	-	-	11.33	7.59	-	-	21.08	43.25 3.16
1998 Sep		0.80	-	-	-	5.52	3.70	-	-		
Oct		0.80	-	-	-	2.07	1.39	-	-		
Nov	2.82	0.80	2.26	-	2.26	1.21	0.81	1.45	-		
Dec	7.95	0.80	6.36	1.45	7.81	1.21	0.81	6.99	-		
Jan	5.15	0.80	4.12	6.99	11.11	1.64	1.10	10.02	0.42		
Feb	20.18	0.80	16.14	8.60	25.74	2.87	1.92	23.82	14.22		
Mar	3.02	0.80	2.42	9.60	12.02	4.54	3.04	8.97	-		
Apr	2.79	0.80	2.23	8.97	11.21	6.17	4.13	7.07	-		
May	1.71	0.80	1.37	7.07	8.44	8.33	5.58	2.86	-		
Jun		0.80	-	2.86	2.86	9.33	6.25	-	-		
Jul		0.80	-	-	-	10.33	6.92	-	-		
Aug		0.80	-	-	-	11.33	7.59	-	-	43.62	43.25 14.64
1999 Sep	0.75	0.80	0.60	-	0.60	5.52	3.70	-	-		
Oct		0.80	-	-	-	2.07	1.39	-	-		
Nov	1.70	0.80	1.36	-	1.36	1.21	0.81	0.55	-		
Dec	0.95	0.80	0.76	0.55	1.31	1.21	0.81	0.50	-		
Jan	1.76	0.80	1.41	0.50	1.91	1.64	1.10	0.81	-		
Feb	0.72	0.80	0.58	0.81	1.38	2.87	1.92	-	-		
Mar	6.94	0.80	5.55	-	5.55	4.54	3.04	2.51	-		
Apr	2.86	0.80	2.29	2.51	4.80	6.17	4.13	0.66	-		
May		0.80	-	0.66	0.66	8.33	5.58	-	-		
Jun		0.80	-	-	-	9.33	6.25	-	-		
Jul		0.80	-	-	-	10.33	6.92	-	-		
Aug		0.80	-	-	-	11.33	7.59	-	-	15.68	43.25
2000 Sep		0.80	-	-	-	5.52	3.70	-	-		
Oct		0.80	-	-	-	2.07	1.39	-	-		
Nov	1.62	0.80	1.30	-	1.30	1.21	0.81	0.49	-		
Dec		0.80	-	0.49	0.49	1.21	0.81	-	-		
Jan	1.46	0.80	1.17	-	1.17	1.64	1.10	0.07	-		
Feb	11.21	0.80	8.97	0.07	9.04	2.87	1.92	7.11	-		
Mar	2.88	0.80	2.30	7.11	9.42	4.54	3.04	6.38	-		
Apr	6.27	0.80	5.02	6.38	11.39	6.17	4.13	7.26	-		
May	0.01	0.80	0.01	7.26	7.27	8.33	5.58	1.69	-		
Jun	0.30	0.80	0.24	1.69	1.93	9.33	6.25	-	-		
Jul		0.80	-	-	-	10.33	6.92	-	-		
Aug		0.80	-	-	-	11.33	7.59	-	-	23.75	43.25

total	491.68		393.34		1,649.43	1,105.12	56.58				
# of years of record	24.00										
in/year	20.49		16.39		68.73	46.05	2.36				
ft/year	1.71		1.37		5.73		0.20				
recharge surface area (acres)	15.90										
GPM	16.83		13.46				1.94				
Acre-Ft/Year							3.12				
Net Infiltration (% of precipitation)							11.5%				

336.76 Inches of r



TAJIGUAS LANDFILL
SAFE YIELD CALCULATIONS
VAQUEROS FORMATION WELL NO. 2

BY TRC
SEPTEMBER, 2001



Data for Tajiguas
Well No. 2-P1a
Rooting Depth
Soil Moisture capacity
Soil Reservoir Capacity

5.00 feet
0.16 in/in
9.60

Pan Factor

67.0%

Year	Month	Rainfall (Official Tajiguas Landfill)	Effective Percolation (prescribed value)	Effective Rainfall	Initial Soil Moisture	Total Available	Pan Evaporation at Lake Cachuma	Potential ET (pan method)	Final Moisture	Water Yield	Yearly Rainfall	Potential ET	Yearly yield
1974	Sep	-	0.80	-	-	-	6.71	4.50	-	-	-	-	-
	Oct	0.53	0.80	0.42	-	0.42	4.56	3.06	-	-	-	-	-
	Nov	2.31	0.80	1.85	-	1.85	3.43	2.30	-	-	-	-	-
	Dec	2.37	0.80	1.90	-	1.90	2.26	1.51	0.38	-	-	-	-
	Jan	7.11	0.80	5.69	0.38	6.07	2.25	1.51	4.56	-	-	-	-
	Feb	-	0.80	-	4.56	4.56	3.17	2.12	2.44	-	-	-	-
	Mar	5.34	0.80	4.27	2.44	6.71	3.49	2.34	4.37	-	-	-	-
	Apr	0.22	0.80	0.18	4.37	4.55	6.16	4.13	0.42	-	-	-	-
	May	-	0.80	-	0.42	0.42	6.87	4.60	-	-	-	-	-
	Jun	-	0.80	-	-	-	8.49	5.69	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.47	6.34	-	-	-	-	-
	Aug	-	0.80	-	-	-	8.04	5.39	-	-	17.88	43.48	-
1975	Sep	-	0.80	-	-	-	6.45	4.32	-	-	-	-	-
	Oct	1.03	0.80	0.82	-	0.82	4.91	3.29	-	-	-	-	-
	Nov	0.23	0.80	0.18	-	0.18	3.64	2.44	-	-	-	-	-
	Dec	5.13	0.80	4.10	-	4.10	2.55	1.71	2.40	-	-	-	-
	Jan	0.03	0.80	0.02	2.40	2.42	2.7	1.81	0.61	-	-	-	-
	Feb	4.98	0.80	3.98	0.61	4.59	3.15	2.11	2.48	-	-	-	-
	Mar	4.91	0.80	3.93	2.48	6.41	3.53	2.37	4.05	-	-	-	-
	Apr	0.94	0.80	0.75	4.05	4.80	4.39	2.94	1.86	-	-	-	-
	May	3.35	0.80	2.68	1.86	4.54	7.07	4.74	-	-	-	-	-
	Jun	-	0.80	-	-	-	7.6	5.09	-	-	-	-	-
	Jul	-	0.80	-	-	-	8.65	5.80	-	-	-	-	-
	Aug	-	0.80	-	-	-	8	5.36	-	-	20.60	41.97	-
1976	Sep	-	0.80	-	-	-	5.59	3.75	-	-	-	-	-
	Oct	0.61	0.80	0.49	-	0.49	4.53	3.04	-	-	-	-	-
	Nov	0.36	0.80	0.29	-	0.29	3.88	2.60	-	-	-	-	-
	Dec	0.06	0.80	0.05	-	0.05	3.34	2.24	-	-	-	-	-
	Jan	-	0.80	-	-	-	3.66	2.45	-	-	-	-	-
	Feb	6.92	0.80	5.54	-	5.54	3.69	2.47	3.06	-	-	-	-
	Mar	1.71	0.80	1.37	3.06	4.43	4.63	3.10	1.33	-	-	-	-
	Apr	0.95	0.80	0.76	1.33	2.09	4.73	3.17	-	-	-	-	-
	May	-	0.80	-	-	-	7.17	4.80	-	-	-	-	-
	Jun	-	0.80	-	-	-	9.78	6.55	-	-	-	-	-
	Jul	-	0.80	-	-	-	8.95	6.00	-	-	-	-	-
	Aug	-	0.80	-	-	-	8.34	5.59	-	-	10.61	45.75	-
1977	Sep	3.77	0.80	3.02	-	3.02	7.77	5.21	-	-	-	-	-
	Oct	-	0.80	-	-	-	5.72	3.83	-	-	-	-	-
	Nov	-	0.80	-	-	-	4.57	3.06	-	-	-	-	-
	Dec	1.08	0.80	0.86	-	0.86	3.28	2.20	-	-	-	-	-
	Jan	5.09	0.80	4.07	-	4.07	2.28	1.53	2.54	-	-	-	-
	Feb	-	0.80	-	2.54	2.54	3.45	2.31	0.23	-	-	-	-
	Mar	1.40	0.80	1.12	0.23	1.35	5.04	3.38	-	-	-	-	-
	Apr	-	0.80	-	-	-	6.72	4.50	-	-	-	-	-
	May	2.12	0.80	1.70	-	1.70	6.67	4.47	-	-	-	-	-
	Jun	-	0.80	-	-	-	8.18	5.48	-	-	-	-	-
	Jul	-	0.80	-	-	-	10.71	7.18	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.07	6.08	-	-	13.46	49.22	-
1978	Sep	-	0.80	-	-	-	7.8	5.23	-	-	-	-	-
	Oct	-	0.80	-	-	-	5.73	3.84	-	-	-	-	-
	Nov	0.17	0.80	0.14	-	0.14	2.99	2.00	-	-	-	-	-
	Dec	4.15	0.80	3.32	-	3.32	2.42	1.62	1.70	-	-	-	-
	Jan	7.44	0.80	5.95	1.70	7.65	2.68	1.80	5.86	-	-	-	-
	Feb	10.72	0.80	8.58	5.86	14.43	3.5	2.35	12.09	2.49	-	-	-
	Mar	10.50	0.80	8.40	9.60	18.00	4.25	2.85	15.15	5.55	-	-	-
	Apr	2.65	0.80	2.12	9.60	11.72	4.64	3.11	8.61	-	-	-	-
	May	-	0.80	-	8.61	8.61	6.57	5.74	2.87	-	-	-	-
	Jun	-	0.80	-	2.87	2.87	8.58	5.75	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.2	6.16	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.39	6.29	-	-	35.63	46.73	8.04
1979	Sep	1.06	0.80	0.85	-	0.85	8.45	5.66	-	-	-	-	-
	Oct	-	0.80	-	-	-	5	3.35	-	-	-	-	-
	Nov	2.94	0.80	2.35	-	2.35	3.39	2.27	0.08	-	-	-	-
	Dec	1.19	0.80	0.95	0.08	1.03	3.77	2.53	-	-	-	-	-
	Jan	7.04	0.80	5.63	-	5.63	2.22	1.49	4.14	-	-	-	-
	Feb	5.05	0.80	4.04	4.14	8.18	2.87	1.92	6.26	-	-	-	-
	Mar	4.06	0.80	3.25	6.26	9.51	3.7	2.48	7.03	-	-	-	-
	Apr	-	0.80	-	7.03	7.03	6.3	4.22	2.81	-	-	-	-
	May	-	0.80	-	2.81	2.81	7.9	5.29	-	-	-	-	-
	Jun	-	0.80	-	-	-	9.14	6.12	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.87	6.61	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.32	6.24	-	-	21.34	48.19	-
1981	Sep	-	0.80	-	-	-	6.99	4.68	-	-	-	-	-
	Oct	-	0.80	-	-	-	5.12	3.43	-	-	-	-	-
	Nov	-	0.80	-	-	-	3.19	2.14	-	-	-	-	-
	Dec	-	0.80	-	-	-	2.55	1.71	-	-	-	-	-
	Jan	-	0.80	-	-	-	3.04	2.04	-	-	-	-	-
	Feb	3.96	0.80	3.17	-	3.17	30.48	20.42	-	-	-	-	-
	Mar	4.94	0.80	3.95	-	3.95	3.78	2.53	1.42	-	-	-	-
	Apr	-	0.80	-	1.42	1.42	5.49	3.68	-	-	-	-	-
	May	-	0.80	-	-	-	7.56	5.07	-	-	-	-	-
	Jun	-	0.80	-	-	-	10.86	7.28	-	-	-	-	-
	Jul	-	0.80	-	-	-	10.22	6.85	-	-	-	-	-
	Aug	-	0.80	-	-	-	9.23	6.18	-	-	8.90	66.00	-
1983	Sep	-	0.80	-	-	-	-	-	-	-	-	-	-
	Oct	-	0.80	-	-	-	4.85	3.25	-	-	-	-	-
	Nov	4.34	0.80	3.47	-	3.47	2.32	1.55	1.92	-	-	-	-
	Dec	0.30	0.80	0.24	1.92	2.16	1.53	1.03	1.13	-	-	-	-
	Jan	10.55	0.80	8.44	1.13	9.57	2.65	1.78	7.80	-	-	-	-
	Feb	9.67	0.80	7.74	7.80	15.53	2.49	1.67	13.86	4.26	-	-	-
	Mar	7.80	0.80	6.24	9.60	15.84	3.76	2.52	13.32	3.72	-	-	-
	Apr	3.83	0.80	3.06	9.60	12.66	5.1	3.42	9.25	-	-	-	-
	May	-	0.80	-	9.25	9.25	7.54	5.05	4.20	-	-	-	-
	Jun	-	0.80	-	4.20	4.20	7.38	4.94	-	-	-	-	-
	Jul	-	0.80	-	-	-	9.37	6.28	-	-	-	-	-
	Aug	-	0.80	-	-	-	7.86	5.27	-	-	36.49	36.75	7.99
1984	Sep	2.13	0.80	1.70	-	1.70	8.6	5.76	-	-	-	-	-



	Oct	0.68	0.80	0.54	-	0.54	5.89	3.95	-	-		
	Nov	3.46	0.80	2.77	-	2.77	2.96	1.98	0.78	-		
	Dec	3.82	0.80	3.06	0.78	3.84	1.96	1.31	2.53	-		
	Jan		0.80	-	2.53	2.53	2.34	1.57	0.96	-		
	Feb		0.80	-	0.96	0.96	3.3	2.21	-	-		
	Mar		0.80	-	-	-	5.78	3.87	-	-		
	Apr		0.80	-	-	-	7.23	4.84	-	-		
	May		0.80	-	-	-	10.36	6.94	-	-		
	Jun		0.80	-	-	-	9.4	6.30	-	-		
	Jul		0.80	-	-	-	10.4	6.97	-	-		
	Aug		0.80	-	-	-	9.38	6.28	-	-	10.09	51.99
1985	Sep		0.80	-	-	-	6.88	4.61	-	-		
	Oct		0.80	-	-	-	5.33	3.57	-	-		
	Nov	1.68	0.80	1.34	-	1.34	3.2	2.14	-	-		
	Dec	4.53	0.80	3.62	-	3.62	2.31	1.55	2.08	-		
	Jan	0.76	0.80	0.61	2.08	2.68	1.97	1.32	1.36	-		
	Feb	2.81	0.80	2.25	1.36	3.61	3.05	2.04	1.57	-		
	Mar	0.48	0.80	0.38	1.57	1.95	4.28	2.87	-	-		
	Apr		0.80	-	-	-	6.83	4.58	-	-		
	May		0.80	-	-	-	7.93	5.31	-	-		
	Jun		0.80	-	-	-	9.78	6.55	-	-		
	Jul		0.80	-	-	-	10.47	7.01	-	-		
	Aug		0.80	-	-	-	9.6	6.43	-	-	10.26	47.99
1986	Sep		0.80	-	-	-	6.29	4.21	-	-		
	Oct		0.80	-	-	-	5.13	3.44	-	-		
	Nov	5.08	0.80	4.06	-	4.06	5.44	3.64	0.42	-		
	Dec	1.79	0.80	1.43	0.42	1.85	2.33	1.56	0.29	-		
	Jan	2.66	0.80	2.13	0.29	2.42	2.65	1.78	0.64	-		
	Feb	7.94	0.80	6.35	0.64	6.99	2.91	1.95	5.04	-		
	Mar	5.29	0.80	4.23	5.04	9.28	4.18	2.80	6.48	-		
	Apr		0.80	-	6.48	6.48	5.83	3.91	2.57	-		
	May		0.80	-	2.57	2.57	8.35	5.59	-	-		
	Jun		0.80	-	-	-	8.71	5.84	-	-		
	Jul		0.80	-	-	-	9.65	6.47	-	-		
	Aug		0.80	-	-	-	9.31	6.24	-	-	22.76	47.42
1987	Sep	1.70	0.80	1.36	-	1.36	5.26	3.52	-	-		
	Oct		0.80	-	-	-	2.64	1.77	-	-		
	Nov		0.80	-	-	-	2.11	1.41	-	-		
	Dec	0.43	0.80	0.34	-	0.34	0	-	0.34	-		
	Jan	2.38	0.80	1.90	0.34	2.25	3.17	2.12	0.12	-		
	Feb	5.45	0.80	4.36	0.12	4.48	4.68	3.14	1.35	-		
	Mar	6.72	0.80	5.38	1.35	6.72	7.25	4.86	1.87	-		
	Apr		0.80	-	1.87	1.87	8.38	5.61	-	-		
	May		0.80	-	-	-	9.04	6.06	-	-		
	Jun		0.80	-	-	-	0	-	-	-		
	Jul		0.80	-	-	-	9.29	6.22	-	-		
	Aug		0.80	-	-	-	7.3	4.89	-	-	16.68	39.61
1988	Sep	0.04	0.80	0.03	-	0.03	7.31	4.90	-	-		
	Oct	2.67	0.80	2.14	-	2.14	5.15	3.45	-	-		
	Nov	0.29	0.80	0.23	-	0.23	3.36	2.25	-	-		
	Dec	3.73	0.80	2.98	-	2.98	2.63	1.76	1.22	-		
	Jan	2.92	0.80	2.34	1.22	3.56	2.27	1.52	2.04	-		
	Feb	2.20	0.80	1.76	2.04	3.80	3.83	2.57	1.23	-		
	Mar		0.80	-	1.23	1.23	6.36	4.26	-	-		
	Apr	2.88	0.80	2.30	-	2.30	5.98	4.01	-	-		
	May		0.80	-	-	-	9.08	6.08	-	-		
	Jun		0.80	-	-	-	8.75	5.86	-	-		
	Jul		0.80	-	-	-	10.14	6.79	-	-		
	Aug		0.80	-	-	-	9.14	6.12	-	-	14.73	49.58
1990	Sep		0.80	-	-	-	7.28	4.88	-	-		
	Oct		0.80	-	-	-	6.27	4.20	-	-		
	Nov		0.80	-	-	-	4.1	2.75	-	-		
	Dec		0.80	-	-	-	2.61	1.75	-	-		
	Jan	3.02	0.80	2.42	-	2.42	2.53	1.70	0.72	-		
	Feb	1.93	0.80	1.54	0.72	2.26	2.99	2.00	0.26	-		
	Mar		0.80	-	0.26	0.26	4.27	2.86	-	-		
	Apr		0.80	-	-	-	6.46	4.33	-	-		
	May	0.75	0.80	0.60	-	0.60	8.34	5.59	-	-		
	Jun		0.80	-	-	-	9.64	6.46	-	-		
	Jul		0.80	-	-	-	10.55	7.07	-	-		
	Aug		0.80	-	-	-	9.74	6.53	-	-	5.70	50.10
1991	Sep		0.80	-	-	-	7.22	4.84	-	-		
	Oct		0.80	-	-	-	5.84	3.91	-	-		
	Nov		0.80	-	-	-	4.39	2.94	-	-		
	Dec	0.53	0.80	0.42	-	0.42	3.35	2.24	-	-		
	Jan	1.57	0.80	1.26	-	1.26	2.44	1.63	-	-		
	Feb	4.96	0.80	3.97	-	3.97	3.71	2.49	1.48	-		
	Mar	10.13	0.80	8.10	1.48	9.59	4.33	2.90	6.69	-		
	Apr		0.80	-	6.69	6.69	6.24	4.18	2.50	-		
	May		0.80	-	2.50	2.50	8.29	5.55	-	-		
	Jun		0.80	-	-	-	7.85	5.26	-	-		
	Jul		0.80	-	-	-	9.16	6.14	-	-		
	Aug		0.80	-	-	-	8.28	5.55	-	-	17.19	47.64
1992	Sep		0.80	-	-	-	6.84	4.58	-	-		
	Oct	0.30	0.80	0.24	-	0.24	5.07	3.40	-	-		
	Nov		0.80	-	-	-	3.84	2.57	-	-		
	Dec	3.46	0.80	2.77	-	2.77	2.12	1.42	1.35	-		
	Jan	2.53	0.80	2.02	1.35	3.37	2.43	1.63	1.74	-		
	Feb	8.02	0.80	6.42	1.74	8.16	3.24	2.17	5.99	-		
	Mar	4.99	0.80	3.99	5.99	9.98	3.28	2.20	7.78	-		
	Apr		0.80	-	7.78	7.78	6.69	4.48	3.30	-		
	May		0.80	-	3.30	3.30	6.42	4.30	-	-		
	Jun		0.80	-	-	-	8.46	5.67	-	-		
	Jul		0.80	-	-	-	8.76	5.87	-	-		
	Aug		0.80	-	-	-	9.59	6.43	-	-	19.30	44.72
1993	Sep		0.80	-	-	-	6.93	4.64	-	-		
	Oct	0.80	0.80	0.64	-	0.64	5.53	3.71	-	-		
	Nov		0.80	-	-	-	3.82	2.56	-	-		
	Dec	4.63	0.80	3.70	-	3.70	2.17	1.45	2.25	-		
	Jan	11.92	0.80	9.54	2.25	11.79	1.94	1.30	10.49	0.89		
	Feb	8.79	0.80	7.03	9.60	16.63	2.76	1.85	14.78	5.18		
	Mar	5.36	0.80	4.29	9.60	13.89	4.26	2.85	11.03	1.43		
	Apr		0.80	-	9.60	9.60	6.52	4.37	5.23	-		
	May		0.80	-	5.23	5.23	8.39	5.62	-	-		
	Jun		0.80	-	-	-	9.34	6.26	-	-		
	Jul		0.80	-	-	-	8.49	5.69	-	-		
	Aug		0.80	-	-	-	8.78	5.88	-	-	31.50	46.18 7.50



