Gail

File
50-00506-W

BARKER, OSHA & ANDERSON, INC.
ENGINEERS - PLANNERS
860 U.S. HIGHWAY ONE
NORTH PALM BEACH, FLORIDA 33408
305/626-4653

October 25, 1982

RECEIVED
OCT 26 1982
RESOURCE CONTROL DEPARTMENT

Richard Paugh
Director of Utilities
Town of Manalapan
Post Office Box 3466
Lantana, FL 33462

Re: Well and Aquifer Performance
Test (81-1049)

Dear Mr. Paugh:

Transmitted herewith for your records are field data and computations relative to the pumpage test of Well No. 12, conducted October 22, 1982.

It is requested that you furnish copies of the chemical analysis for this well to me, and to those copied below.

Very truly yours,

BARKER, OSHA & ANDERSON, INC.

James H. Angel
Project Engineer

JHA/jmd

Enclosures

cc: Persson Drilling Corp.
SFWMD (Pat Gleason)

BARKER, OSHA & ANDERSON, INC.
ENGINEERS · PLANNERS

AQUIFER PERFORMANCE TEST NOTES

MANALAPAN WELL NO. 12
October 22, 1982

Pumped Well: 12" casing, surface to 55' depth
12" x .040 slot screen, 55' to 75'
Velocity = .13 ft./sec. @ 1060 gpm
(= .06 ft./sec. @ 500 gpm)

Pumping Rate: 1060 gpm, measured by orifice/static tube method

Observation wells:
TH#1=2" Dia., sealed casing, screened 60'-70';
@ 25.4' radius
OBS. WELL: 4" open hole, cased to 60'+/-, 340' radius
(See Plate III
DTW measured by electric probes and staff gauges. (See attached drawdown records).

Method of analysis:
Leaky artesian, constant discharge.
Reference: WALTON, Groundwater Resource Evaluation, Section 4.6
Computations: See Plates I & II.

Results:
Transmissivity: 1.13 MGD/ft (Plate II)
Storage Coeff.: .0018 (Plate I)
Aquitard Permeability: P'/m' = 6 gpd/sq. ft. (Plate II)
Well efficiency: 94% (Plate II)
Apparent yield: Q/s = 1060/1.54 = 688 gpm/ft.
Probable draw down @ 500 gpm: 0.73 ft.

Raw data back

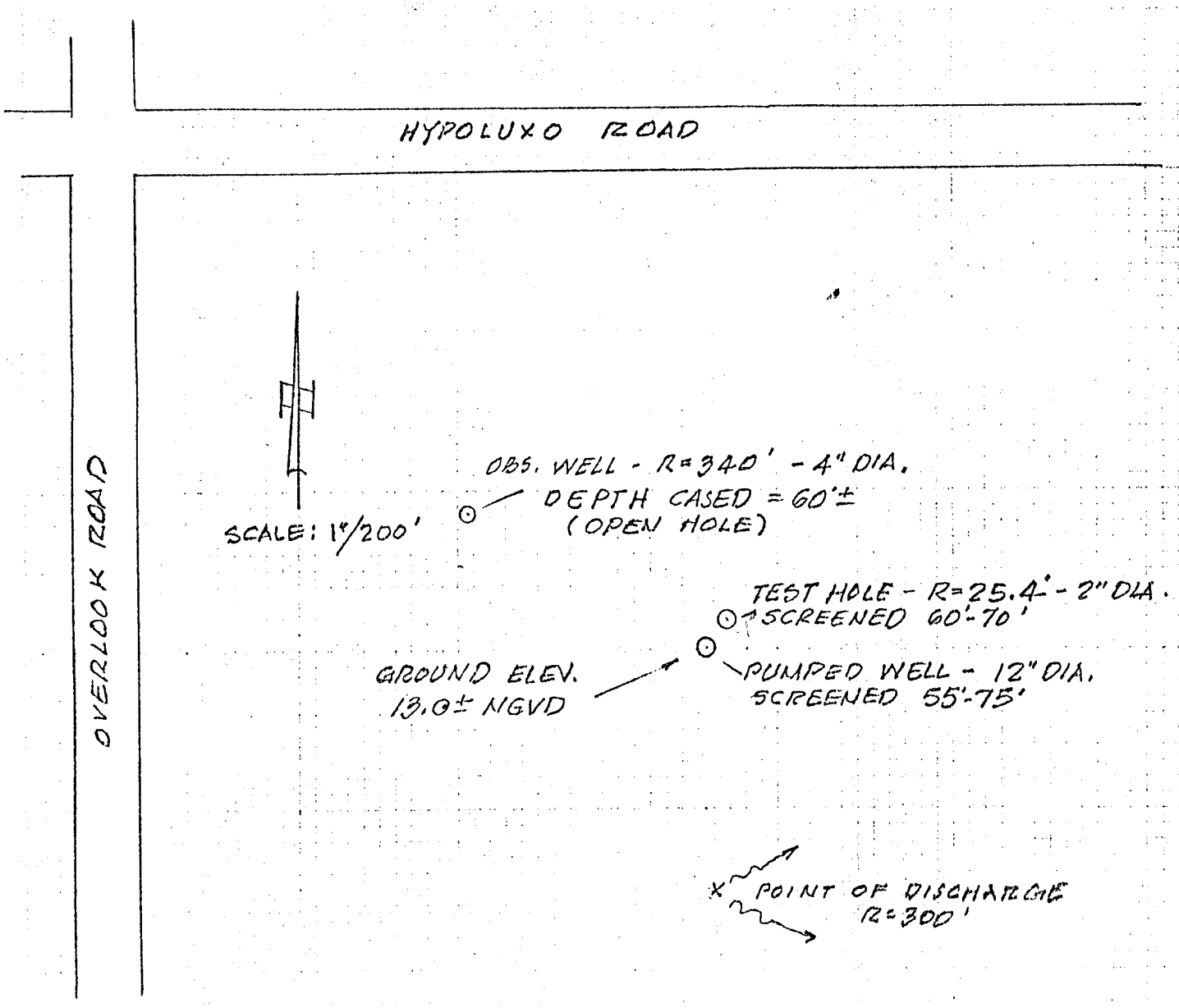

HYPOLUXO ROAD
OVERLOOK ROAD
SCALE: 1"/200'
OBS. WELL - R=340' - 4" DIA.
DEPTH CASED = 60'±
(OPEN HOLE)
TEST HOLE - R=25.4' - 2" DIA.
SCREENED 60'-70'
GROUND ELEV.
13.0± NGVD
PUMPED WELL - 12" DIA.
SCREENED 55'-75'
POINT OF DISCHARGE
R=300'

PLATE III

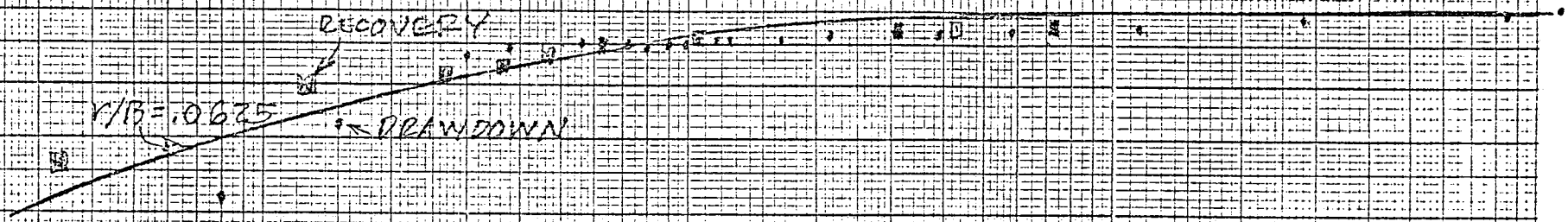
$r = 25.4'$ $\quad Q = 1060$ gpm

$T = 114.6\, Q\, W(u, r/B) / s$ $\quad S = Tut/(1.87\, r^2)$

$= 114.6 \times 1060 \times 1.0 / .103$ $\quad = 5,180,000 \times .01 \times .26 / (1.87 \times 25.4^2 \times 1440)$

$= 1,120,000$ $\quad = .00177$

$\frac{Q'}{M'} = \frac{T\,(r/B)^2}{r^2} = 1,180,000 \times .0625^2 / 25.4^2 = 7.14$ gal/ft²/day



DRAWDOWN (ft.)

5
4
3
2
1.0
.50
.30
.20
.10
.01

$t = 0.26$ (m) $\quad u = .01$

$S = .103$ $\quad W(u, r/B) = 1.0$

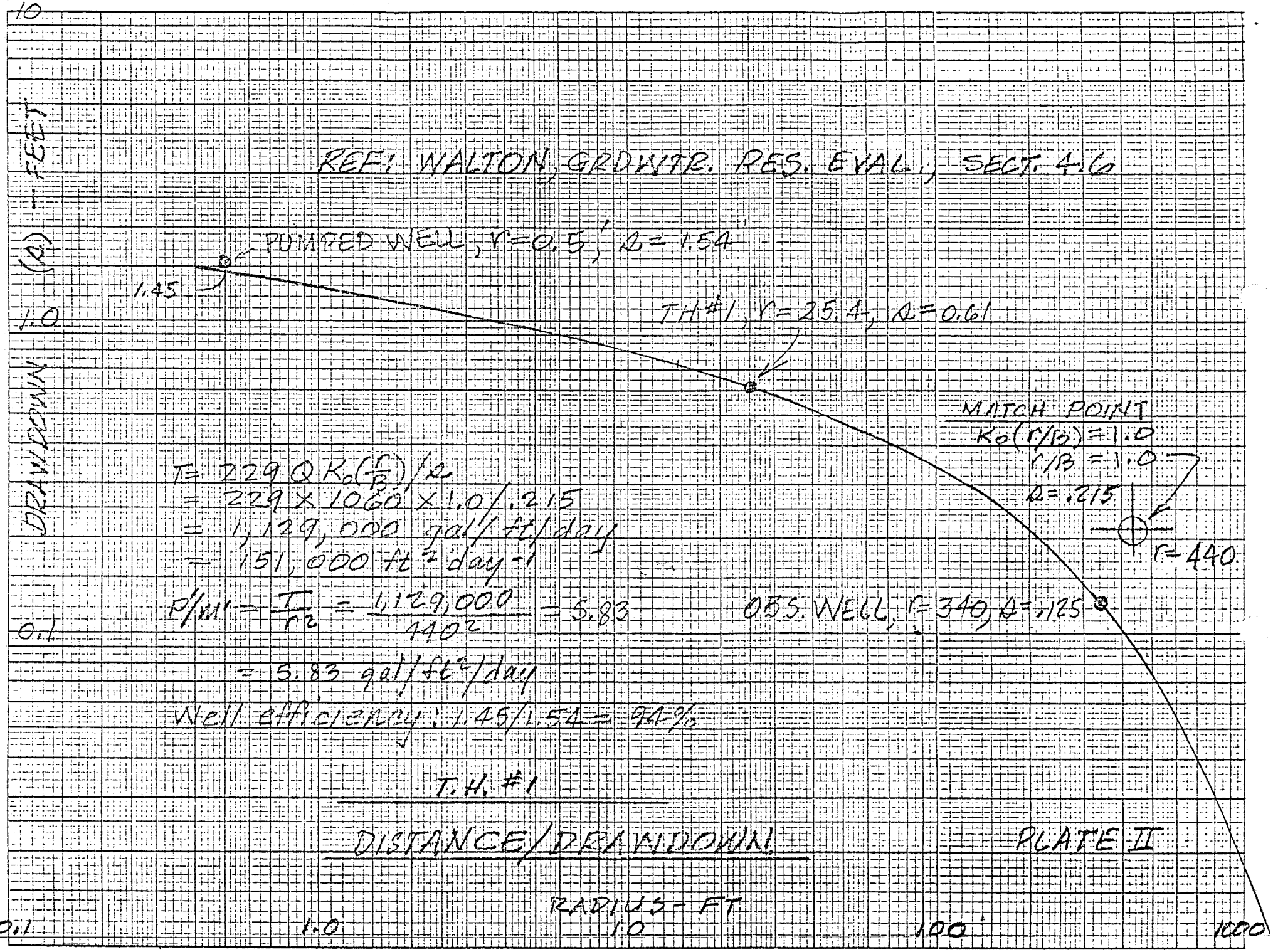
MATCH POINT

TH #1

TIME - DRAWDOWN $\quad$ PLATE I

TIME — MIN.

.01 .10 .2 .3 .4 .6 1.0 10 100


10
REF: WALTON, GRDWTR. RES. EVAL., SECT. 4.6
PUMPED WELL, r=0.5', s=1.54
1.45
TH #1, r=25.4', s=0.61
MATCH POINT
Ko(r/B)=1.0
r/B=1.0
s=.215
r=440
OBS. WELL, r=340', s=.125
T= 229 Q Ko(r/B) / s
= 229 x 1060 x 1.0 / .215
= 1,129,000 gal/ft/day
= 151,000 ft²/day
P/m' = T/r² = 1,129,000 / 140² = 5.83
= 5.83 gal/ft²/day
Well efficiency: 1.45/1.54 = 94%
T.H. #1
DISTANCE/DRAWDOWN
PLATE II
DRAWDOWN (s) - FEET
1.0
0.1
RADIUS - FT
1.0
10
100
1000

AQUIFER PERFORMANCE TEST RECORD — PAGE 1 OF 4

PROJECT NO. 81-1049 WELLFIELD MANALAPAN — TEST NO. 1

PUMPED WELL M #12 — DEPTH 55-75 — RATE 1060 g/m

OBSERVED WELL T.H. #1 — DEPTH 60-70 DIA — r-ft 25.4

REF PT TOP OF 2" COUPLER — RP EL 12.74 ft/MSL

OBSERVER JH ANGEL — MEAS METHOD ELEC. PROBE

☒ DRAWDOWN ☐ RECOVERY — WEATHER CLR-NO RAIN — TEMP 80°

REMARKS

	DATE/TIME H : M : S	t minutes	t days	DTW ft/~~in~~	DTW ft/100	DRAWDOWN feet	OTHER
1	10/22/82						
2	AM 8:36:00	0		7.20		0	5.54 MSL
3	05	.08		7.42		0.22	
4	09	.15		7.52		.32	
5	24	.40		7.67		.47	
6	29	.48		7.69		.49	
7	35	.58		7.70		.50	
8	43	.72		7.70		.50	
9	48	.80		7.69		.49	
10	54	.90		7.70		.50	
11	58	.97		7.70		.50	
12	37:08	1.13		7.705		.505	
13	15	1.25		7.71		.51	
14	28	1.47		7.72		.52	
15	39	1.65		7.71		.51	
16	49	1.82		7.715		.515	
17	58	1.97		7.715		.515	
18	38:07	2.12		7.72		.52	
19	39:03	3.05		7.725		.525	
20	:54	3.90		7.73		.53	
21	41:50	5.83		7.74		.54	
22	44:30	8.50		7.745		.545	
23	47:20	11.33		7.75		.55	
24	50:14	14.23		7.755		.555	
25	55:15	19.25		7.76		.56	
26	59:04	23.07		7.77		.57	
27	9:03:00	27.00		7.775		.575	
28	04:52	28.87		7.78		.58	
29	12:42	36.70		7.79		.59	
30	28:46	52.77		7.795		.595	
31	10:00 -	84		7.805		.605	
32	30	114		7.81		.61	)
33	11:00	144		7.81		.61	} MAX.
34	30	174		7.81		.61	)
35	12:00	204		7.80		.60	
36	30	234		7.79		.59	
37	PM 1:00	264		7.79		.59	
38	30	294		7.78		.58	
39	2:00	324		7.765		.565	
40	30	354		7.765		.565	
41	3 00	384		7.76		.56	
42	30	414		7.76		.56	
43							
44							
45							

AQUIFER PERFORMANCE TEST RECORD — PAGE 2 OF 4

PROJECT NO. 81-1049 — WELLFIELD MANALAPAN — TEST NO. 1

PUMPED WELL M#12 — DEPTH 55-75 — RATE 1060 g/m

OBSERVED WELL TH#1 — DEPTH 60-70 DIA 2" — r-ft 25.4

REF PT TOP OF 2" COUPLING — RP EL 12.74 ft/MSL

OBSERVER J.H. ANGEL — MEAS METHOD ELEC. PROBE

☐ DRAWDOWN ☒ RECOVERY — WEATHER — TEMP

REMARKS

	DATE/TIME H : M : S	t minutes	DTW-FT	RECOVERY			
1	10/22/82						
2	3: 30 :00	.00	7.76	.00			
3	:02	.033	7.50	.26			
4	:08	.133	7.30	.40			
5	:16	.267	7.34	.42			
6	:22	.367	7.32	.44			
7	:28	.467	7.28	.48			
8	:31	.517	7.27	.49			
9	:38	.633	7.26	.50			
10	:45	.750	7.25	.51			
11	:51	.850	7.25	.51			
12	:56	.933	7.245	.515			
13	31 :03	1.050	7.24	.52			
14	:10	1.167	7.235	.525			
15	:30	1.500	7.23	.53			
16	32 : 10	2.167	7.235	.525			
17	:17	2.28	7.225	.535			
18	33 : 10	3.17	7.22	.54			
19	:42	3.70	7.215	.545			
20	34 : 10	4.17	7.210	.55			
21	36 : 20	6.33	7.205	.555			
22	37 : 12	7.20	7.200	.56			
23							
24							
25							
26							
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AQUIFER PERFORMANCE TEST RECORD		PAGE 3 OF 4
PROJECT NO.	WELLFIELD MANALAPAN	TEST NO. 1
PUMPED WELL M.W 12	DEPTH 55-75	RATE 1060 g/m
OBSERVED WELL OW #1	DEPTH 60 DIA 4	r-ft 340
REF PT HIGH PT. ON 4" PVC CASING		RP EL 16.37 ft/MSL
OBSERVER R. PAUGH	MEAS METHOD ELEC. PROBE	
☒ DRAWDOWN ☒ RECOVERY	WEATHER CLR-NO RAIN	TEMP 80°
REMARKS STAFF GAUGE CORRECTION = +: 0.52'		

	DATE/TIME H : M : S	~~t~~ minutes	~~t~~ days	~~DTW~~ ft/in	DTW ft/100	DRAWDOWN feet	OTHER
1	10-22-84	M:S	DTW-FT	MIN			
2		0:00	9.516	.00		.00	6.29 MSL
3		:10	.57	.17		.01	
4		:30	.61	.50		.05	
5		:45	.67	.75		.06	
6		1:00	9.673	1.00		.07	
7		1:30	9.64	1.50		.08	
8		2:00	9.65	2.00		.09	
9		2:30	}	2.50		}	
10		3:00	}	3.		}	
11		3:30	}	3.5		}	
12		4:00	9.65	4			
13		5-	9.66	5		.10	
14		7:30	9.666	7.5		}	
15		10-	9.66	10		}	
16		12:30	9.667	12.5		.11	
17		20-	9.675	20		.115	
18		50-	9.68	50		.12	
19		85-	9.685	85		.125	
20		205-	9.68	205		.12	
21		295-	9.675	295		.115	
22		335-	9.667	335		.11	
23		385-	9.66	385		.10	
24							
25	RECOVERY						
26		0:00	9.666	.00		.00	
27		:10	.65	.17		.01	
28		:20	.64	.33		.02	
29		:30	.63	.50		.03	
30		:45	.61	.75		.05	
31		:50	.60	.83		.06	
32		:55	.59	.92		.07	
33		1:02	9.57	1.03		.09	
34		7:00	9.565	7.00		.095	
35		9:05	9.56	9.08		.10	
36							
37							
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AQUIFER PERFORMANCE TEST RECORD — PAGE 4 OF 4

PROJECT NO. — WELLFIELD MANALIPAKU — TEST NO. 1

PUMPED WELL M.W. 12 — DEPTH SCR. 55-75 — RATE 1060 g/m

OBSERVED WELL M.W. #12 — DEPTH " — DIA 12 — r-ft 0.5'

REF PT TOP OF TEMP 12" CASING — RP EL 12.90 ft/MSL

OBSERVER PERSION TR. Corp. — MEAS METHOD H.L.G. PROBE

☒ DRAWDOWN ☐ RECOVERY — WEATHER CLR-NO RAIN — TEMP 80°

REMARKS PUMPED WELL r = 0

	DATE/TIME H : M : S	t minutes	t days	DTW ft/in	DTW ft/100	DRAWDOWN feet	OTHER
1	10-27-87						
2	8:36:00	0:00			7.35	0.00	5.55 MSL
3		1:00			8.72	1.37	
4		2:00			8.78	1.43	
5		3:00			8.78	1.43	
6		4:00			8.80	1.45	
7		5:00			8.80	1.45	
8		10:00			8.81	1.46	
9		20:00			8.88	1.53	
10		30:00			8.88	1.53	
11		60 —			8.89	1.54	
12		90 —			8.85	1.50	
13		120 —			8.88	1.53	
14		150 —			8.89	1.54	
15		180 —			8.88	1.53	
16		210 —			8.89	1.54	
17		240 —			8.88	1.53	
18		270 —			8.88	1.53	
19		300 —			8.88	1.53	
20		330 —			8.86	1.51	
21		360 —			8.86	1.51	
22		390 —			8.86	1.51	
23		420 —			8.86	1.51	
24							
25							
26							
27	RECOVERED		TO 7.35		IN 10 MIN	+/-	
28							
29							
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