TABLE 1

GROUNDWATER BASIN LAND USE AREA

(acres)

		1977	1987	2002
Urban		555	580	780
Open Space		905	860	700
Irrigated Agriculture		305	325	285

TABLE 2

PERCENT IMPERVIOUS AREA FOR SELECTED LAND USE TYPES

(Rantz, 1971)

	Santa Clara County	San Francisco Bay Region
Residential		
Hill areas, 0.5-2 units/acre	6	8
Low density, 3-6 units/acre	10	15
Medium density, 7-10 units/acre	20	25
High density, 11-20 units/acre	32	40
Industrial		
Non-manufacturing	50	60
Manufacturing	40	50
Commercial	50	60
Transportation	70	75
Public Buildings	40	50
Public Parks	12	12
Agriculture	4	4
Natural Watersheds	2	2

TABLE 3

SUMMARY OF STREAMFLOW DATA NEAR HALF MOON BAY, CA

3a. Streamflow Gauge Stations

Gauge Name and Number	Latitude	Longitude	Elevation (feet)	Period of Record	Drainage Area (mi^2)	Avg. Disch. (AFY)
11162620	37 31' 29"	122 23' 54"	500	1997 to Curr.	6.54	2,339
Pilarcitos Crk blw Stone Dam						
11162630	37 28' 00"	122 25' 59"	32	1966 to Curr.	27.10	11,543
Pilarcitos Crk at Half Moon Bay						
11162600	37 26' 06"	122 22' 23"	380	1958 to 1969	4.83	2,418
Purisma Crk nr Half Moon Bay						

3b. Summary of Discharges for Period of Coincidence

Gauge Name and Number	Record Avg.[1] Discharge (AFY)	Avg. Disch. Coincidence (AFY)	Percent Difference
Record between 1997 and 2001			
11162620	2,339	2,339	100.00
Pilarcitos Crk blw Stone Dam			
11162630	11,543	18,890	61.11
Pilarcitos Crk at Half Moon Bay			
Record between 1966 and 1969			
11162630	11,543	12,410	93.01
Pilarcitos Crk at Half Moon Bay			
11162600	2,418	3,975	60.83
Purisima Crk nr Half Moon Bay			

TABLE 4

SUMMARY OF TEST BORING/WELL CONSTRUCTION DETAILS FOR LOWER PILARCITOS CREEK GROUNDWATER INVESTIGATION

			Test Bore			Test Well					
			Total Depth	Aquifer		Completed Depth	Screened Depth	Screen Length	Surface Seal Depth	Static Water Level	
Well	Date	Elevation		Depth	Thickness						
TB1/TW1	9/2/1997	50	75	40 to 73	33	85	40 to 85	45	33	13	Glog
TB2/TW2	9/3/1997	45	73	37 to 69	32	85	40 to 85	45	37	15	Glog
TB3/TW3	9/4/1997	35	69	39 to 66	27	85	40 to 85	45	27	17	Glog
TB4	9/5/1997	-	64	-	0	-	-	-	-	-	-
TB5/TW5	9/5/1997	40	70	37 to 68	31	82	42 to 82	40	31	16	Glog
TB6/TW6	9/9/1997	45	72	38 to 71	33	85	39 to 83	44	25	15	-
			5" bore			14" bore					

Notes: All borings/wells installed by Pitcher Drilling Company, East Palo Alto, California.
Installed with a Failing 1500 direct mud rotary drilling rig.
All depths rounded to the nearest integer foot.
All casing is 8-inch diameter Schedule 40 PVC.
Perforations are horizontal slots, 0.060-inch aperture, 43 rows per foot.
Glog - Geophysical logs.

TABLE 5

SUMMARY OF HYDRAULIC DATA FOR LOWER PILARCITOS CREEK GROUNDWATER INVESTIGATION

Well	Date	Static[1] Water Level	Duration	Discharge	Pumping[1] Water Level	Total Drawdown	Specific Capacity	Transmissivity			Aquifer Thickness	Hydraulic Conductivity
								gpd/ft Drawdown	Recovery	Average		
		feet	minutes	gpm	feet	feet	gpm/ft				feet	gpd/ft^2
Pilarcitos Creek Proposed Well Field												
TW1	12/22/1997	15.83	720	203	47.08	31.25	6.50	9,200	14,800	12,000	33	364
TW2	1/14/1998	17.21	720	172	39.17	21.96	7.83	19,200	18,400	18,800	32	588
TW3	1/20/1998	19.00	720	135	48.08	29.08	4.64	13,000	25,500	19,250	27	713
TW5	1/16/1998	20.46	720	195	43.08	22.62	8.62	17,000	23,300	20,150	31	650
TW6	1/12/1998	17.83	720	171	45.96	28.13	6.08	7,020	12,900	9,960	33	302
									Average	16,032	31	523
Neighboring Wells												
Holiday Inn	2/12/1992	19.25	1440	150	51.51	32.26	4.65	19,000	20,000	19,500	32	609
Cunha 1[2]	5/25/1977	23.00	480	45	83.00	60.00	0.75	Estimate		1,500	20	75
Cunha 2[3]	11/5/1991	45.83	1440	40	63.83	18.00	2.22	7,000	7,000	7,000	20	350
Corp. Yard	12/16/1991	45.58	1440	32	89.64	44.06	0.73	1,800	2,400	2,100	38	55

Notes:
1. Reference point from top of casing.
2. Transmissivity estimated from specific capacity.
3. Transmissivity derived from observation well, distance 35 feet.

TABLE 6

LOWER PILARCITOS CREEK TEST WELLS - OPERATING PARAMETERS

Table 6a Winter

		Depth Below Ground Surface						
	Ground Elevation	Static Water Level	Specific[1] Capacity	Depth to Top of Aquifer	Available drawdown		Pumping Water Level	Discharge[4]
					Total[2]	2/3[3]		
Well[5]	feet	feet	gpm/ft	feet	feet	feet	feet	gpm
TW1	50	15.83	6.46	40	24.17	16	32	104
TW2	45	17.21	7.45	37	19.79	13	30	98
TW3	35	19.00	4.64	39	20.00	13	32	62
TW5	40	20.46	8.58	37	16.54	11	31	95
TW6	45	17.83	6.08	38	20.17	13	31	82
							Total	441

Table 6b Summer[6]

		Depth Below Ground Surface						
	Ground Elevation	Static Water Level	Specific[1] Capacity	Top of Aquifer	Available drawdown		Pumping Water Level	Discharge[4]
					Total[2]	2/3[3]		
Well[5]	feet	feet	gpm/ft	feet	feet	feet	feet	gpm
TW1	50	35.83	6.46	40	4.17	3	39	18
TW2	45	37.00	7.45	37	0.00	0	37	0
TW3	35	39.00	4.64	39	0.00	0	39	0
TW5	40	37.00	8.58	37	0.00	0	37	0
TW6	45	37.83	6.08	38	0.17	0	38	1
							Total	19

Notes:

1. Specific capacity in gallons per minute per foot of drawdown - from 12 hr pumping tests.
2. Total available drawdown - Top of aquifer minus static water level.
3. Two-thirds of available drawdown used to compensate for unaccounted for water level fluctuations.
4. Estimated safe discharge.
5. All wells are cased with Schedule 40 8-inch diameter PVC.
6. Estimated summer or drought static water levels - 20 feet deeper.

TABLE 7

SUMMARY OF HYDRAULIC DATA FOR LOWER PILARCITOS CREEK GROUNDWATER INVESTIGATION AT THE BALBOA WELLFIELD

		Distance	Elevation	Static Water Level	Total Drawdown	Transmissivity			Storage	Aquifer Thickness	Hydraulic Conductivity
						gpd/ft					
Well	Date	feet	feet	feet	feet	Theis	Cooper-J	Average		feet	gpd/ft^2
Balboa Well Field											
NW3	10/30/1998	0.0	18.3	14.5	Duration 480 minutes, Discharge 66 gpm						
OW3		33.3	17.7	9.9	4.90	9,920	9,980	9,950	0.00130	23	433
OW2		45.1	18.2	11.6	4.40	10,250	10,370	10,310	0.00130	25	412
NM4		98.9	24.4	17.4	4.35	7,840	8,150	7,995	0.00071	37	216
							Average	9,418	0.00110	28	354

TABLE 8

SUMMARY OF GAUGE STATION AREAS AND AVERAGE DISCHARGES

Station Number	Area		Average Precipitation	Average Discharge
	mi^2	acres	inches	AFY
Pilarcitos Creek				
11162620	6.39	4,090	38.98	2,339
11162630	26.67	17,069	32.53	11,543
Purisima Creek				
11162600	4.95	3,168	36.66	2,418

TABLE 9

COASTSIDE COUNTY WATER DISTRICT, HALF MOON BAY, CA
PILARCITOS CREEK REGIONAL WATER BALANCE

	A	B	C		
		Pilarcitos Creek			
	Purisima Creek Gauge	below Stone Dam Gauge	at Half Moon Bay Gauge		Units
Elevation	380	500	32		feet above msl
Area					
Square Miles	4.95	6.39	26.67		$Mile^2$
Acres	3,168	4,090	17,069		acre
Precipitation	**36.66**	**38.98**	34.08		inches
Inflow					
Total Precipitation	9,678	13,284	48,475		AFY
Surface Inflow	0	0	0		AFY
Subsurface Inflow	0	0	0		AFY
Imported Water[1]	0	0	77		AFY
Subtotal	9,678	13,284	48,552		AFY
Ouflow					
Evapotranspiration	UNK	UNK	**34,660**		AFY
Surface Outflow	**2,418**	**2,339**	11,543		AFY
Subsurface Outflow	24	23	UNK		AFY
Exported Water[2]	0	0	913		AFY
Exported Water[3]	0	0	155		AFY
Exported Water[4]	0	760	760		AFY
Subtotal	2,442	3,122	48,031		AFY
Balance	7,236	10,162	521	*	AFY
ET Percent	74.8	76.5	71.5		
WS RO Coeff.	0.76	0.76	0.68		AF/A
Period of Record	1959 to 1969	1998 to 2001	1967 to 2001		
Years	11	4	35		years
Measured Precip.	36.66	38.98	34.08		inches
Rec. Precipitation	23.66	33.61	26.40		inches
Percent Precip.	89.62	127.31	100.00		
Rec. Streamflow	2,418	2,339	11,543		AFY
Coinc. Purisima	3,975	n/a	10,107		AFY
Coinc. Pilarcitos	n/a	2,339	18,890		AFY
Darcy's Law Calculation			254 to 508		AFY

Notes:

1. Crystal Springs Import	336	AF	8 years
2. City of San Francisco export (USGS gauge)	3,550	AF	9 years
3. Pilarcitos Creek Wells	181	AF	30 years
4. Pilarcitos Lake	887	AF	30 years

* Residual representing subsurface outflow.

TABLE 10

GROUNDWATER BASIN LAND USE AREAS FOR WATER BALANCE

(acres)

	1987	2002
Urban		
Impervious	186	250
Landscaping	394	530
Agriculture		
Impervious	13	11
Cropland	312	274
Open Space	860	700
Total Impervious	199	261
Total Landscaping and Cropland	706	804
Total Open Space	860	700

TABLE 11

LOWER PILARCITOS CREEK GROUNDWATER BASIN
RAINFALL AND RECHARGE WATER YEARS 1987-2001

	Rainfall	Recharge, inches	
Water Year	inches	Landscaping/Crop	Native Vegetation
1986-1987	18.16	0.85	3.57
1987-1988	20.17	1.06	2.90
1988-1989	24.51	2.65	5.97
1989-1990	16.45	0.00	0.00
1990-1991	20.76	0.78	3.50
1991-1992	24.19	3.01	6.80
1992-1993	33.22	8.67	12.14
1993-1994	17.94	0.00	1.27
1994-1995	34.62	10.37	13.68
1995-1996	31.88	9.40	12.11
1996-1997	26.70	7.67	9.05
1997-1998	50.20	20.61	23.71
1998-1999	29.59	6.42	9.94
1999-2000	31.80	7.29	10.58
2000-2001	22.85	1.01	4.42
Average	26.87	5.32	7.98
Average, feet	2.24	0.44	0.66

TABLE 12

LAND USE TYPES
AND AVERAGE ANNUAL RECHARGE FROM RAINFALL

Land Use Type	Acreage		Recharge, AFY	
	1987	2002	1987	2002
Impervious	199	261	0	0
Landscaping/Cropland	706	804	313	356
Native/Open Space	860	700	572	465
Total			885	822

TABLE 13

SUMMARY OF WATER BALANCE
LOWER PILARCITOS CREEK GROUNDWATER BASIN
WATER YEARS 1987- 2001

	Estimate AFY
Inflows	
Rainfall Recharge	822
Deep percolation from irrigation	118
Subsurface inflow	449
Pipeline leakage	50
Stream recharge	723
Total	2,162
Outflows	
Subsurface outflow	1,755
Pumping and export	347
Pumping and consumption	163
Phreatophyte consumption	19
Total	2,284
Change in Storage	0
Residual Error	-122

Note: Most values are significant to one or two significant digits. All digits are retained to preserve totals and allow replication.

TABLE 14

LOWER PILARCITOS CREEK GROUNDWATER QUALITY

		Coastside County Water District Test Wells																	Treated	
	IDL[1]	TW1	TW2	TW3	TW5	TW6	Avg	Nerhan	Holiday I.	Corp. Yard	Amesport 1	Amesport 2	NM 3	NM 1	SP CTR 4	SP CTR 6	SP CTR 1	DWS[2]	Amesport	SP CTR
		Jan-98	Jan-98	Jan-98	Jan-98	Jan-98		Apr-91	Feb-92	Dec-91	Feb-91	Feb-91	Feb-91	Feb-91	Feb-91	Feb-91	Feb-91		Feb-91	
MAJOR CATIONS																				
Calcium	0.05	36	39	57	47	36	43	31	38	80	52	40	34	48	43	46	46		22	47
Magnesium	0.001	12	14	32	18	12	18	11	-[3]	23	29	48	58	58	28	18	17		13	19
Sodium	0.015	51	59	100	86	6	60	54	-	58	76	69	120	100	110	74	73		130	100
Potassium	0.015	1	1	3	2	1	1	2	-	2	*[4]	5	*	8	*	*	*		*	*
MAJOR ANIONS																				
Bicarbonate	1	180	210	170	190	190	188	140	-	-	190	210	310	290	230	120	120		190	170
Sulfate	0.5	47	58	58	40	49	50	49	-	74	90	98	88	69	77	91	100	250	93	92
Chloride	2	46	45	210	120	42	93	38	59	76	82	98	180	160	150	96	92	250	93	120
Minor Ions																				
Iron	0.1	4.00	8.40	9.60	9.50	6.00	7.50	0.08	0.44	1.30	0.03	0.14	5.50	0.23	6.00	6.90	4.60	0.3	0.059	0.2
Manganese	0.03	0.16	0.30	1.50	0.82	0.28	0.61	*	0.11	0.28	0.09	0.52	0.27	1.10	0.25	0.35	0.21	0.05	*	1
Nitrate	2	10.0	*	*	7.3	*	8.7	14.0	-	1.1	3.9	2.6	*	1.8	*	*	*	45	3.7	*
Nitrite plus Nitrate	0.4	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	1	-	-
Flouride	0.1	1.6	*	*	*	*	1.6	0.33	-	*	0.22	0.2	0.32	0.22	0.33	0.20	0.18	1.4 to 2.4	0.22	0.25
Boron	0.0006	0.190	0.130	0.099	0.150	0.260	0.166	0.500	-	0.130	0.200	0.160	0.530	0.520	0.490	0.290	0.240		0.18	0.38
Cyanide	0.1	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	0.2	-	-
Physical Properties																				
Total Hardness	1	280	180	260	260	160	228	130	180	360	250	300	320	360	220	190	180		110	190
Alkalinity	-	180	190	170	190	190	184	-	170	250	-	-	-	-	-	-	-		-	-
pH Units	-	6.9	7.0	7.0	6.8	7.0	6.9	6.5	6.7	7.4	7.5	7.6	7.3	7.3	7.4	7.1	6.9		7.4	7.5
EC umhos/cm	1	600	600	930	780	580	698	490	1000	700	790	880	1300	1100	1100	760	720	900	840	900
Total Dissolved Solids	1	360	370	610	460	330	426	300	710	510	470	550	760	670	620	430	420	500	490	530
Color Units	5	*	100	70	150	80	100	*	-	*	*	*	100	*	80	50	20	15	*	*
Odor Units	1	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	3	*	*
Turbidity NTU	5	38	41	88	69	52	58	*	0.19	8.5	0.14	0.8	65	1.11	51	38	9.8	5	0.27	0.31
MBAS	0.025	*	0.034	*	*	0.031	0.033	*	-	*	*	*	*	*	*	*	*	0.5	*	*
Trace Ions																				
Aluminum	0.05	0.380	0.150	0.140	0.098	0.110	0.176	0.320	-	0.086	0.720	0.210	0.490	0.680	0.370	0.160	0.093	1	*	0.27
Antimony	0.006	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	0.006	-	-
Arsenic	0.002	*	0.0022	0.0029	0.0046	0.0024	0.0030	*	-	*	*	*	*	*	*	*	*	0.05	*	*
Barium	0.1	*	0.15	0.24	0.18	*	0.19	*	-	0.12	*	*	0.26	0.19	0.17	0.11	*	1	*	*
Beryllium	0.001	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	0.004	-	-
Cadmium	0.001	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	0.005	*	*
Chromium	0.01	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	0.05	*	*
Copper	0.05	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	1	0.027	*
Lead	0.005	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*		*	*
Mercury	0.001	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	0.002	*	*
Nickel	0.01	*	*	*	*	0.14	0.14	-	-	-	-	-	-	-	-	-	-	0.1	-	-
Selenium	0.005	*	*	0.0073	0.0052	*	0.0063	*	-	*	*	*	*	*	*	*	*	0.05	*	*
Silver	0.01	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*	0.1	*	*
Thallium	0.001	*	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	0.002	-	-
Zinc	0.05	*	*	*	*	*	*	0.12	-	0.068	*	*	*	*	*	0.15	0.17	5	0.036	*

Notes:

1. Instrument detection limit.
2. Drinking water standard.
3. Not analyzed.
4. Below the instrument detection limit.

All concentrations in mg/l except noted otherwise.
Shaded areas exceed DWS.

TABLE 15

GROUNDWATER QUALITY IN APN 56 AREA

	IDL[1]	APN 056-047-020 to APN 056-164-380	DWS[2]
MAJOR ANIONS			
Bicarbonate	1	33.0 to >300	
Chloride	2	25 to 450	250
Minor Ions			
Iron	0.1	0.010 to 26.0	0.3
Manganese	0.03	0.003 to 1.600	0.05
Nitrate	2	1.0 to 156	45
Physical Properties			
pH Units	-	6.6 to 7.3	
EC umhos/cm	1	60 to 5,900	900
Total Dissolved Solids	1	163 to 3,600	500
Coliform mpn/L		<2.2 to >16	

Notes:

1. Instrument detection limit.
2. Drinking water standard.
3. Not analyzed.
4. Below the instrument detection limit.

TABLE 16

LOWER PILARCITOS WELLFIELD WATER QUALITY

	Coastside County Water District Test Wells						Cr. Spr. SW	SW-GW Blend	Nunes Blend	Denniston WTP	Use Criteria
	TW1	TW2	TW3	TW5	TW6						
CHARACTERISTICS	Jan-98	Jan-98	Jan-98	Jan-98	Jan-98	Avg	Avg.	3:1	Treated	Treated	
GENERAL											
pH Units	6.9	7.0	7.0	6.8	7.0	6.9	7.9	7.2	7.8	8.1	6.5 to 8.0
Turbidity NTU	38	41	88	69	52	58	3	17	<0.1	0.1	<0.5
Color Units	*	100	70	150	80	100	6	30	<5	<5	<15
Conductivity uS	600	600	930	780	580	698	155	300	320	285	<900
Total Dissolved Solids	360	370	610	460	330	426	101	180	190	200	<500
Total Hardness	280	180	260	260	160	228	66	110	110	170	<200
Total Alkalinity	180	190	170	190	190	184	45	70	80	115	<200
MAJOR CATIONS											
Calcium	36	39	57	47	36	43	16	22	22	48	-
Magnesium	12	14	32	18	12	18	12	13	13	12	-
Sodium	51	59	100	86	6	60	7	30	30	40	<70
Potassium	1	1	3	2	1	1	1	2	2	1	-
Iron	4.00	8.40	9.60	9.50	6.00	7.50	0.07	1.90	<0.1	<0.1	<0.3
Manganese	0.16	0.30	1.50	0.82	0.28	0.61	0.004	0.17	<0.02	<0.02	<0.05
MAJOR ANIONS											
Bicarbonate	180	210	170	190	190	188	55	85	90	95	-
Chloride	46	45	210	120	42	93	11	32	35	43	<250
Sulfate	47	58	58	40	49	50	12	21	25	23	<250
Flouride	1.6	*	*	*	*	1.6	0.05	0.45	0.45	0.21	<2
Nitrate	10.0	*	*	7.3	*	8.7	1.0	2.9	2.9	<0.1	<44
Nitrite plus Nitrate	*	*	*	*	*	*	0.002	0.002	0.002	-	<1
Boron	0.190	0.130	0.099	0.150	0.260	0.166	0.120	0.130	0.130	-	<0.5
Metals											
Aluminum	0.380	0.150	0.140	0.098	0.110	0.176	0.025	0.060	0.100	<0.1	<0.2
Arsenic	*	0.0022	0.0029	0.0046	0.0024	0.0030	<0.005	0.0020	<0.002	<0.005	<0.01
Barium	*	0.15	0.24	0.18	*	0.19	0.30	0.27	0.27	<0.1	<1.0
Chromium	*	*	*	*	*	*	<0.001	<0.001	<0.001	<0.005	<0.05
Copper	*	*	*	*	*	*	0.005	0.005	<0.005	<0.005	<1.3
Lead	*	*	*	*	*	*	<0.001	<0.001	<0.001	<0.001	<0.15
Mercury	*	*	*	*	*	*	<0.0005	<0.0005	<0.0005	<0.001	<0.002
Nickel	*	*	*	*	0.14	0.14	-	0.04	<0.03	-	<0.1
Selenium	*	*	0.0073	0.0052	*	0.0063	<0.005	<0.005	<0.005	<0.005	<0.05
Silver	*	*	*	*	*	*	<0.001	<0.001	<0.001	<0.001	<0.1
Zinc	*	*	*	*	*	*	0.0073	0.0070	<0.005	<0.01	<5.0

Notes:

1. California Secondary Contaminant Level.
2. Desirable hardness
3. Desirable Floriculture Irrigation primary contaminant limits.
4. All other limits are California primary contaminant limits.
5. Blend of three parts surface water (SW) to one part groundwater (GW) Pilarcitos Well Average.
6. Predicted blended water quality for Nunes WTP.
7. Denniston WTP average treated water from SW-GW blend.

All concentrations in mg/l except noted otherwise.
Shaded areas exceed DWS.

TABLE 17

LOWER PILARCITOS WELLFIELD WATER:
CORROSIVITY/SCALING CHARACTERISITICS OF GROUNDWATER

Characteristic	Units	TW1	TW2	TW3	TW5	TW6	Nunes WTP Combined Treated Water	Desirable Criteria
pH	-	6.9	7.0	7.0	6.8	7.0	7.8	>7.5
pH_s $CaCO_3$ Saturation	-	7.97	7.94	7.83	7.86	7.94	8.36	-
Langelier Index	LI	-1.07	-0.94	-0.83	-1.06	-0.94	-0.56	-0.5 to +0.5
Ryzner Index	RI	9.04	8.88	8.66	8.92	8.88	8.92	6 to 8
Aggressive Index	AI	11.02	11.18	11.29	11.06	11.14	11.44	>12
Larson Index	LN/I	0.79	0.71	2.56	1.35	0.64	0.53	<0.4
SO_4/Cl Ratio	Ratio	0.80	1.29	0.28	0.95	0.54	0.71	<3
Copper Pitting Potential	CPP	7	5	13	13	6	-2	<1
Carbon Dioxide	ug/l	45	37	35	60	38	3	<5

Corrosivity to Materials of Construction								Probable Corrosion Rate mmPY
Steel		HI/P	HI/P	HI/P	HI/P	HI/P	MOD/P	20 to 30
Ductile/Cast Iron		HI/P	HI/P	HI/P	HI/P	HI/P	MOD/P	10 to 20
Type 304 SS		LO/C	LO/C	MO/C	LO/C	LO/C	VL/C	0.01 to 0.02
Type 316 SS		VL/C	VL/C	LO/C	VL/C	VL/C	LO/U	<0.01 M
Copper		HI/P	HI/P	HI/P	VL/C	HI/P	LO/U	0.5 to 1
Bronze or Brass		LO/P	LO/P	VL/P	LO/C	LO/P	LO/U	0.1 to 0.2
Zinc		HI/P	HI/P	HI/P	HI/P	HI/P	LO/U	10 to 20
Lead		LO/U	LO/U	LO/U	LO/U	LO/U	VL/U	0.001 to 0.01
Aluminum		LO/P	LO/P	LO/P	LO/P	LO/P	VL/P	0.01 to 1
Concrete/Cement		MOD/U	MOD/U	MOD/U	MOD/U	MOD/U	LO/U	10 to 20

Notes:
1. HI/P - Degree/Type, I.e., High Pitting
2. LO/C - Low Crevice
3. MOD/C - Moderate Crevice
4. VL/C - Very Low Crevice
5. LO/U - Low/Uniform
6. MOD/U - Moderate/Uniform

TABLE 18

LOWER PILARCITOS GROUNDWATER STUDY:
SOIL CHARACTERISITICS AND CORROSIVITY

Site	Soil Classification[1]	Depth[1] inches		pH[1]	Conductivity[1] microseisms	Soil Resisitivity OHM-Centimenters at Depth 5 feet	10 feet	20 feet
TW3	Dennison Loam (Silty Sand)	>	60	6.5 to 7.6	700	4,000	4,000	4,000
TW4	Dennison Loam (Silty Sand)	>	60	6.5 to 7.6	700	-	-	-
TW5	Farralone Coarse Sandy Loam	>	60	-	-	18,000	19,000	-
TW1	Borella Clay Loam	>	60	4.7 to 5.9	4,100	-	-	-
TW6	Borella Clay Loam	>	60	4.7 to 5.9	4,100	2,500	2,800	4.4
TW2	Borella Clay Loam	>	60	4.7 to 5.9	4,100	-	-	-
Pilarcitos Creek	Gullied Loam	>	60	5.8 to 6.8	-	-	-	-
Hiway 1and Main	Dennison Loam	>	60	6.5 to 7.6	700	-	-	-
Foster Drive	Tierra Loam	>	60	6.0 to 6.7	1,400	-	-	-
Access Road	Tierra Sandy Loam	>	60	-	-	450,000	-	-
Nunes WTP	Gazos Loam	+-	36	5.8 to 6.8	-	-	-	-

Notes:
1. USDA SCS 1961 - Soil Survey San Mateo County Area, California.
2. Field Survey, Wenner 4 Pin Soil Resistivity Tester by R.A. Ryder, February 5, 2003.

TABLE 19

LOWER PILARCITOS WELLFIELD: WELL PUMP SIZE AND CAPACITY

Test Well	Capacity[1] gpm	Total Dynamic Head (TDH) feet	Horsepower Theoretical	Motor[2]	Size Well inches	Size Pump inches[3]	Size Discharge Pipe inches[4]
1	104	470	17.6	20	8	3	4
2	98	475	14.2	15	8	3	4
3	62	485	20.9	25	8	3	4
5	95	480	16.4	20	8	3	4
6	82	475	14.8	15	8	3	4
Total	441	-	83.9	95	-	-	-

Notes:
1. See Table 6a and (Table 4a in Todd Engineers, January 2003).
2. Theoretical horsepower based on assumed 70 percent pump efficiency.
3. Pump size based on subnersible multi-stage turbine pump operating at 3,450 RPM.
4. Discharge pipe size from well to street or main line pipe connection.