Appendix D

Priority 3 (SR-71) Site Data

Particle Size Distribution

Tests on selected soil samples to obtain the distribution of particle sizes were performed in accordance with ASTM D 422-63(1998), "Standard Test Method for Particle-Size Analysis of Soils", and/or D 1140-97, "Standard Test Method for Amount of Material in Soils Finer Than the No. 200 (75-μm) Sieve".

On some samples a sieve analysis was performed, which yields the distribution of particle sizes larger than the U.S. No. 200 sieve. Sieving through the No. 200 was performed by washing.

On other samples a partial sieve analysis was performed, called a wash analysis, primarily to obtain the percent of particles passing the No. 200 sieve, i.e., fines content. The wash analysis also yielded the percent of particles passing the No. 40 and No. 100 sieves.

In other cases a hydrometer analysis was performed in addition to a sieve analysis. The hydrometer analysis yields the distribution of particle sizes smaller than the No. 200 sieve opening.

For correlation with the soil profile, the fines content1 values from sieve analyses (denoted by "SA") and wash analyses (WA) of samples from the borings and test pits are presented on the corresponding logs.

pH

Soil pH was determined using methods consistent with the US Department of Agriculture, US Regional Salinity Laboratory, Handbook No. 60.

Organic Matter Content

Organic matter content tests were performed using the Muffle Furnace Method.

Cation Exchange Capacity

The test method involved an acid extraction followed by Inductively Coupled Plasma/Mass Spectrometer (ICPMS) analysis.

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[1] "Fines" is defined in this report as the soil particles passing a U.S. Standard No. 200 sieve, and "fines content" is defined as the percentage of soil particles, on a dry weight basis, passing a U.S. Standard No. 200 sieve in a sieve analysis by washing.

APPENDIX D

71N-1 (Valley/Holt Blvd.)

Table 1	Geotechnical Laboratory Test Data
Figure 71N-1-1	Site Plan
Figure 71N-1-2	Geologic Cross Section A-A'
Figure 71N-1-3	Log of Boring 71N-1-MW-1
Figure 71N-1-4	Groundwater Monitoring Well 71N-1-MW-1 Diagram
Figure 71N-1-5	Groundwater Monitoring Well 71N-1-MW-1 Photographs
Figure 71N-1-6	Log of Boring 71N-1-B-1
Figure 71N-1-7	Log of Boring 71N-1-B-3
Figure 71N-1-8	Log of Boring 71N-1-B-4
Figure 71N-1-9	Particle-Size Distribution Curves
Figure 71N-1-10	Particle-Size Distribution Curves
Figure 71N-1-11	Particle-Size Distribution Curves
Figure 71N-1-12	Plasticity Chart
Figure 71N-1-13	Site Photographs

TABLE 1

71N-1 GEOTECHNICAL LABORATORY TEST DATA

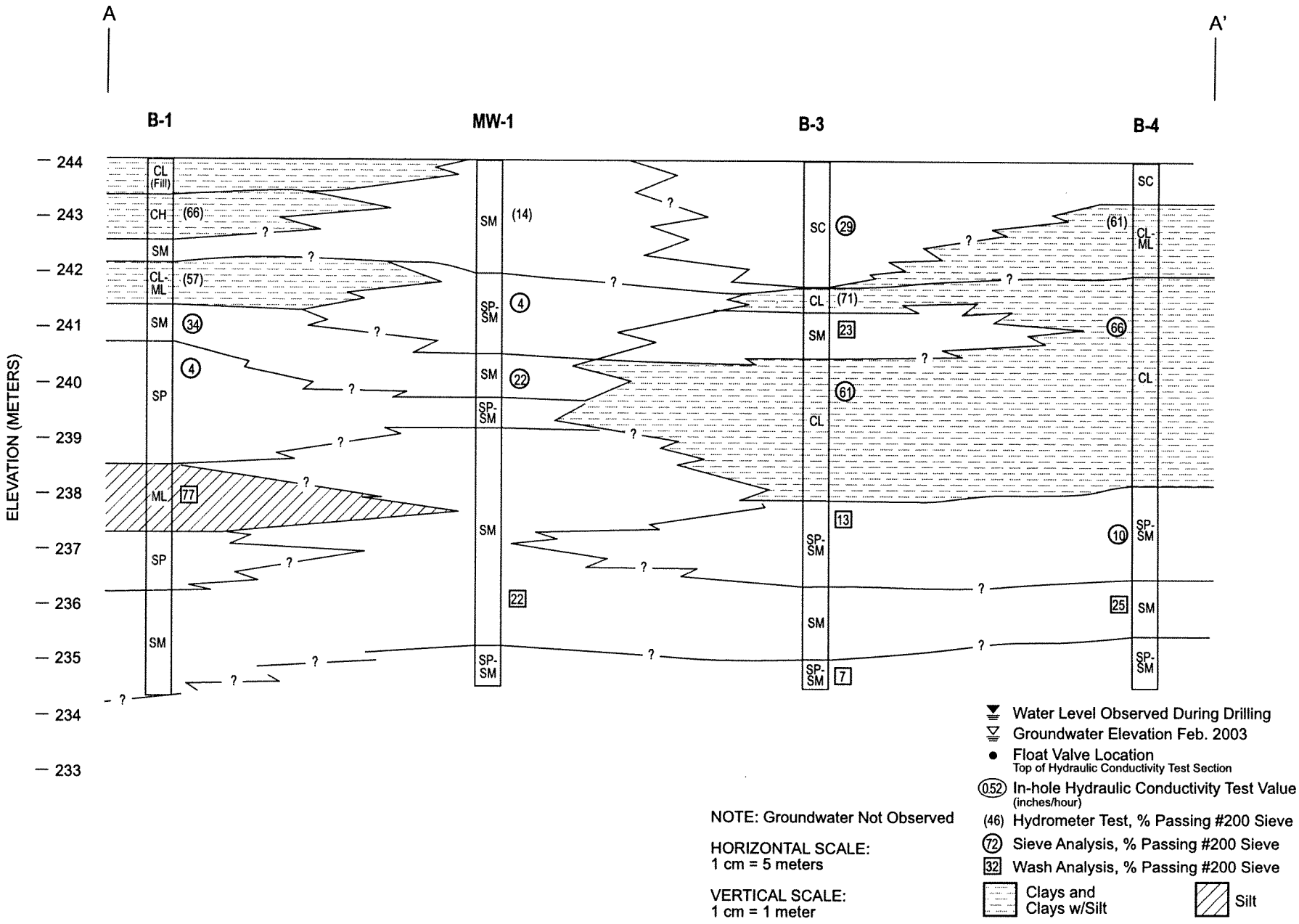
Location							Atterberg Limits		Sieve				Chemical Test Data		
Exploration Number	Sample/ Specimen Number	Depth (m)	Caltrans Soil Classification	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)	Gravel (%)	Sand (%)	<#200 Fines (%)	5 microns (%)	pH	O.M.% (% organic matter)	CEC (me/g)[1]
71N-1-B-1	R-1B	0.91	CH	24	-	-	68	35	7	27	66	32	6.8	4.7	0.217
71N-1-B-1	R-2A	1.98	CL-ML	14	-	-	25	5	0	43	57	12	-	-	-
71N-1-B-1	R-2B	2.74	SM	7	-	-	-	-	0	66	34	-	-	-	-
71N-1-B-1	R-3	3.96	SP	1	-	-	-	-	27	69	4	-	-	-	-
71N-1-B-1	4	6.10	ML	16	-	-	-	-	-	-	77	-	-	-	-
71N-1-MW-1	R-1B	1.22	SM	-	-	-	-	-	15	71	14	6	7.6	0.9	0.044
71N-1-MW-1	R-2B	2.44	SP	3	-	-	-	-	3	93	4	-	-	-	-
71N-1-MW-1	R-3A	3.81	SM	-	-	-	NP	NP	12	66	22	7	-	-	-
71N-1-MW-1	5	7.62	SC	6	-	-	-	-	-	-	22	-	-	-	-
71N-1-B-3	R-1B	1.22	SC-SM	-	-	-	24	7	11	60	29	11	7.7	1.8	0.103
71N-1-B-3	R-2A	2.44	CL	-	-	-	-	-	0	29	71	22	-	-	-
71N-1-B-3	R-2B	2.74	CL-ML	8	-	-	-	-	-	-	23	-	-	-	-
71N-1-B-3	R-3B	4.27	CL	18	-	-	-	-	0	39	61	-	-	-	-
71N-1-B-3	SPT 4-B	6.40	SM	4	-	-	-	-	-	-	13	-	-	-	-
71N-1-B-3	SPT 6	9.14	SP-SM	5	-	-	-	-	-	-	7	-	-	-	-
71N-1-B-4	R-1B	0.76	CL-ML	-	-	-	28	7	1	38	61	24	7.5	1.5	0.096
71N-1-B-4	R-2B	2.74	CL-ML	7	-	-	28	7	1	34	66	21	-	-	-
71N-1-B-4	4	6.10	SP-SM	2	-	-	-	-	35	55	10	-	-	-	-
71N-1-B-4	5	7.62	SM	4	-	-	-	-	-	-	25	-	-	-	-

Notes: [1] Cation excange capacity, millequivalents per gram

NP = Non plastic

Priority 3-71N-1 (Valley Blvd./Holt Ave.) Site Plan

April 2003	Infiltration Basin Site Selection Study	Figure 71N-1-1



PRIORITY 3 - SITE 71 N-1 GEOLOGIC CROSS SECTION A-A'

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71N-1-2

L:/CALTRANS/C GOETZ/xsect 71 N-1-2.FH10

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd./Holt Blvd.

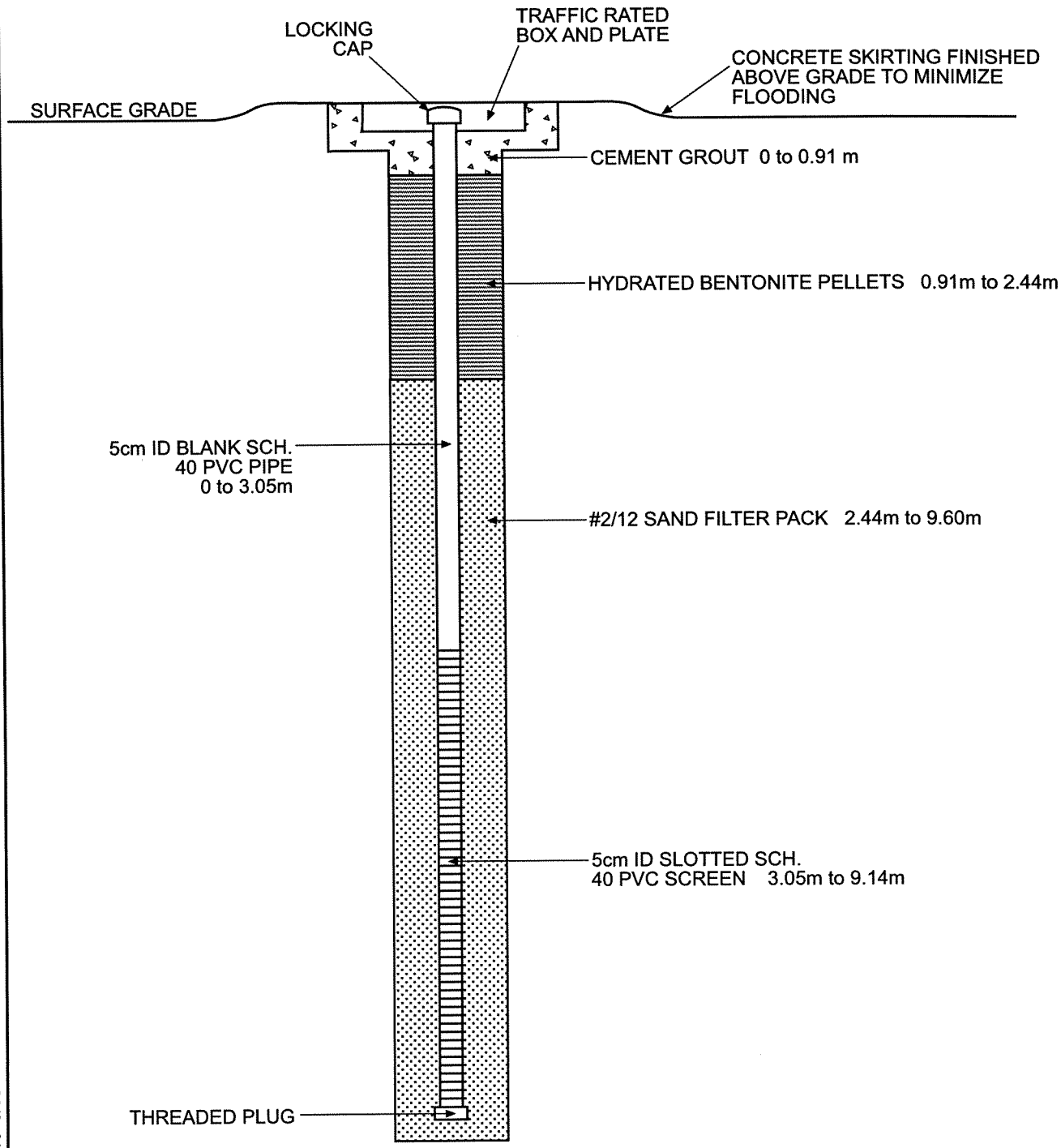
Log of Boring 71N-1-MW-1

Sheet 1 of 1

Date(s) Drilled	3/13/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	See Well Construction Figure	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Silty sand (SM) brown, moist, with roots and organics			
			R-1-A		R-1 50			Becomes black			
	1		R-1-B					Becomes light brown			pH=7.6; O.M.=0.9% CEC=0.044 me/g HYD:14%<#200
242	2		R-2-A		R-2 50			Poorly graded sand with silt (SP-SM) light gray and yellowish brown, moist, fine grained sand	3		SA: 4%<#200
			R-2-B								
	3				R-3 50			Silty sand (SM) reddish brown, moist, fine grained sand			
240	4		R-3-A								HYD: 22%<#200 LL=NP; PI=NP
			R-3-B					Poorly graded sand with silt and gravel (SP-SM) light gray and brown, moist, fine grained sand			
	5		R-4		R-4 40			Silty sand (SM) yellowish brown, moist, fine grained sand	20		
238	6										
	7							Becomes medium dense, reddish brown, with gravel up to 38mm diameter			
236	8		5	21					6		WA: 22%<#200
	9		6	44				Poorly graded sand with silt and gravel (SP-SM), dense, light gray, moist, fine to coarse grained sand			
234	10							Bottom of boring at 9.6 meters			
	11										
232	12										

Figure 71N-1-3



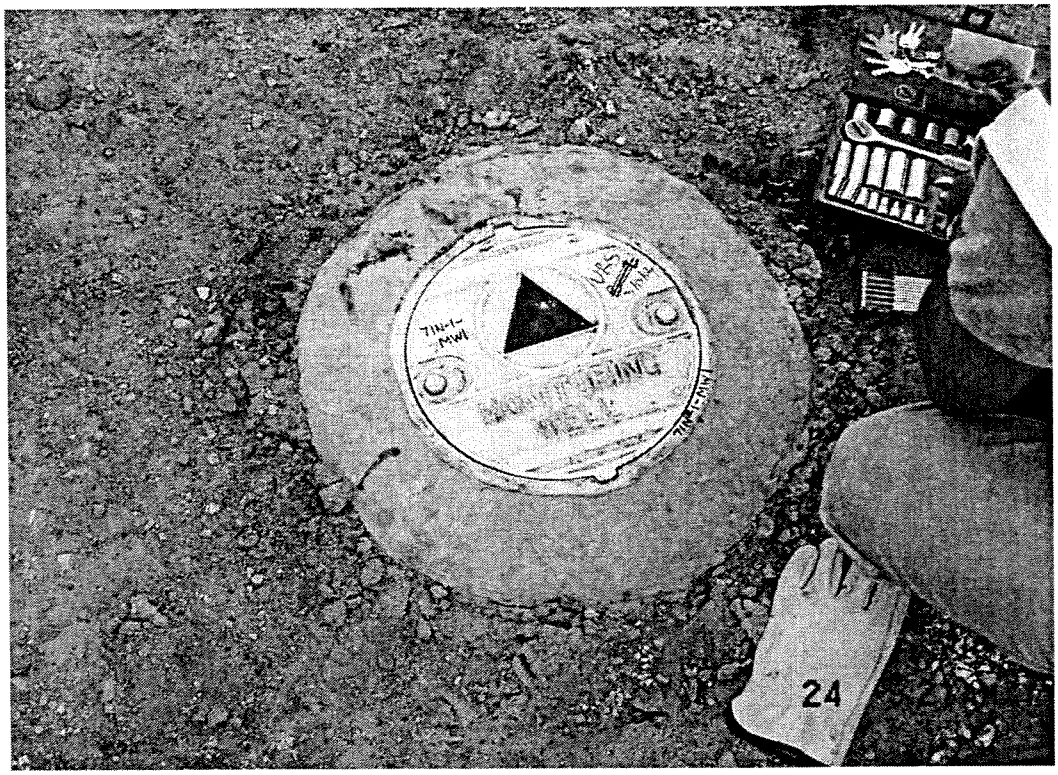
71N-1-MW-1

Not to Scale

L:/Caltrans/GW monitoring well diag.fh10 5/03

GROUNDWATER MONITORING WELL DIAGRAM

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71N-1-4



71N-1-MW-1

Date: April 2003	**Project: Caltrans IFB Site Selection Study**	Figure: 71N-1-5

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd./Holt Blvd.

Log of Boring 71N-1-B-1

Sheet 1 of 1

Date(s) Drilled	3/12/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Sandy lean clay (CL) [FILL] yelowish brown, moist, fine grained sand, with roots and organics to 0.45 meter			HYD: 66%<#200 LL=68; PI=35 pH=6.8; O.M.=4.7% CEC=0.217 me/g
			R-1-A		R-1 100			Sandy fat clay (CH) light yellowish brown, moist, fine grained sand, with gravel up to 50mm	24		
	1		R-1-B								
			R-1-C					Silty sand (SM) [NATIVE ALLUVIUM] dark brown, moist, fine to medium grained sand, with traces of mica			
242	2		R-2-A		R-2 95			Sandy silty clay (CL-ML) yellowish brown, moist, fine grained sand	14		HYD: 57%<#200 LL=25; PI=5
	3		R-2-B					Silty sand (SM) light yellowish brown, moist, very fine grained sand	7		SA: 34%<#200
240	4		R-3		R-3 50			Poorly graded sand (SP) light yellowish brown, moist, fine to coarse grained sand; Becomes light gray, medium to coarse grained sand, with gravel up to 20mm diameter	1		SA: 4%<#200
	5										
238	6		4	9				Silt with sand (ML) loose, light grayish brown, moist, very fine grained sand, with mica	16		WA: 77%<#200
	7							Poorly graded sand (SP) light brown, moist, medium grained sand			
236	8		5	28				Silty sand (SM) medium dense, reddish brown, moist, medium grained sand, with gravel			
	9		6	43				Becomes dense	3		
234	10							Bottom of boring at 9.6 meters			
	11										
232	12										

Figure 71N-1-6

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd./Holt Blvd.

Log of Boring 71N-1-B-3

Sheet 1 of 1

Date(s) Drilled	3/12/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0				R-1 100			Clayey sand (SC) dark black, moist, with traces of gravel up to 20mm, roots and organics			
	1		R-1-A					Becomes dark brown with gravel, up to 13mm			pH=7.7; O.M.=1.8% CEC=0.103 me/g LL=24; PI=7 HYD: 29%<#200
			R-1-B					Becomes brown, with silt, no gravel			
242	2				R-2 95						HYD: 71%<#200
			R-2-A					Lean clay with sand (CL) light brown, moist, fine grained sand, with mica			
			R-2-B					Silty SAND (SM) yellowish brown, moist, very fine grained sand, with traces of mica	8		WA: 23%<#200
	3				R-3 100						
			R-3-A					Lean clay with sand (CL) light brown, moist, fine grained sand, with mica Sandy Clay (CL) light brown, moist, very fine grained sand, traces of mica			
240	4		R-3-B						18		SA: 61%<#200
	5										
238	6		4a					Becomes loose			
			4b	10				Poorly graded sand with silt (SP-SM) loose, light brown and light gray, moist, medium to coarse grained sand	4		WA: 13%<#200
	7							Becomes very fine grained sand			
236	8		5	14				Silty sand (SM) loose, reddish brown, moist, very fine grained sand, traces of mica	21		
	9		6	31				Poorly graded sand with silt (SP-SM) dense, light brown, moist, fine to coarse grained sand, with gravel	5		WA: 7%<#200
234	10							Bottom of boring at 9.6 meters			
	11										
232	12										

Figure 71N-1-7

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd./Holt Blvd.

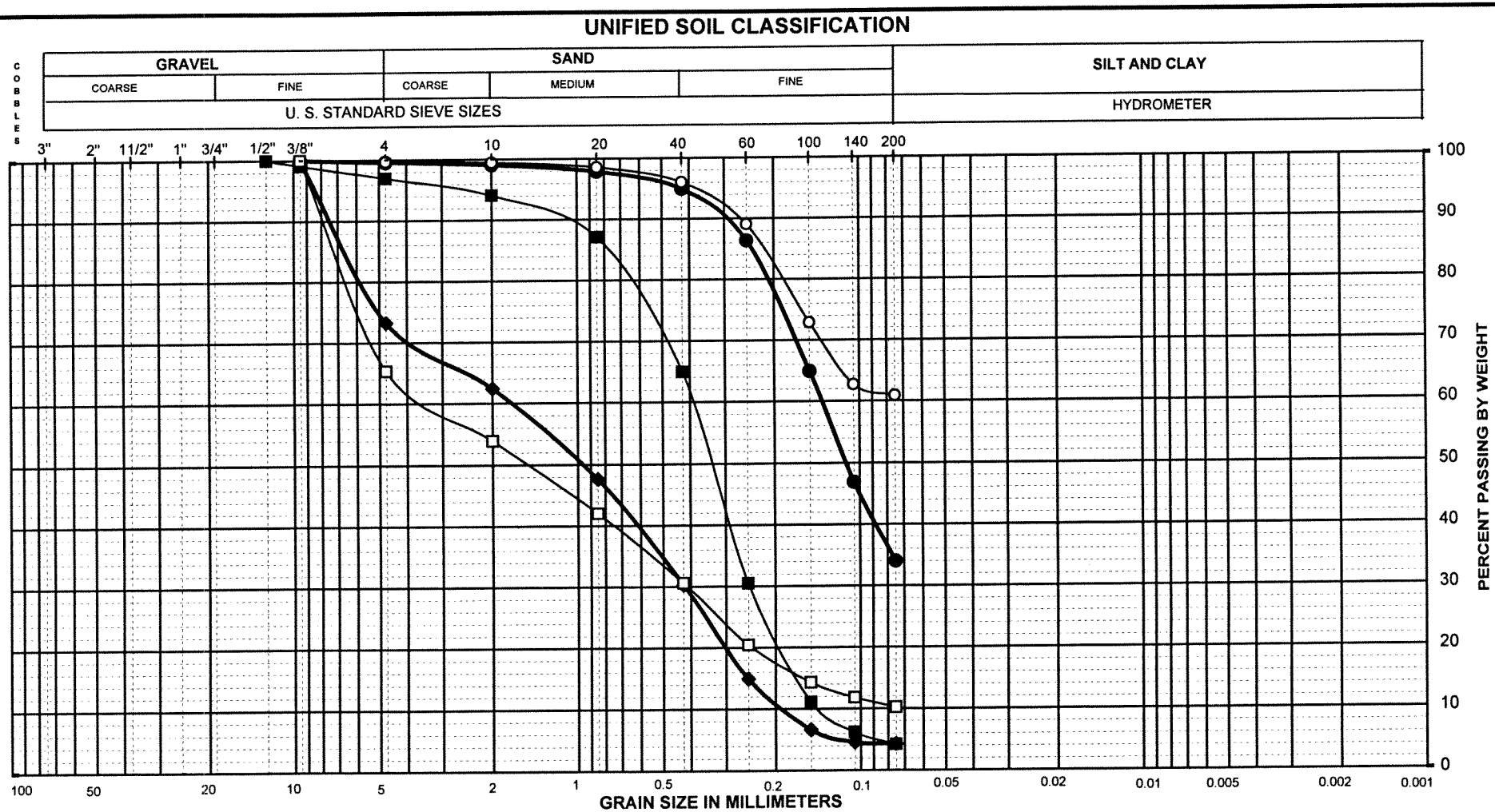
Log of Boring 71N-1-B-4

Sheet 1 of 1

Date(s) Drilled	3/12/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Clayey sand (SC) black, moist, with roots, organics and traces of mica			
			R-1-A R-1-B		R-1 60			Sandy silty clay (CL-ML) light brown, moist, very fine grained sand, with traces of mica			pH=7.5; O.M.=1.5% CEC=0.096 me/g LL=28; PI=7 HYD: 61%<#200
	1										
242	2		R-2-A		R-2 100			Sandy lean clay (CL) light brown, moist, fine grained sand			
			R-2-B						7		HYD: 66%<#200 LL-28; PI=7
	3				R-3 60						
240	4		R-3						4		
	5										
238	6		4	15				Poorly graded sand with silt (SP-SM) medium dense, light gray and yellowish brown, moist, with gravel up to 20mm	2		SA: 10%<#200
	7										
236	8		5	84				Silty sand (SM) very dense, brown, moist, fine grained sand, with gravel up to 50mm	4		WA: 25%<#200
	9		6	47				Poorly graded sand with silt and gravel (SP-SM) dense, yellowish brown, moist, medium to coarse grained sand			
234	10							Bottom of boring at 9.6 meters			
	11										
232	12										

Figure 71N-1-8



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71N-1-B-1	R-2-B	2.74	●	7.3				**Olive brown Silty Sand (SM)**	0.130				
71N-1-B-1	R-3	3.96	◆	1.4				**Light gray poorly graded Sand with Gravel (SP)**	1.800	0.430	0.190	9.5	0.5
71N-1-MW-1	R-2-B	2.44	■	2.8				**Olive brown poorly graded Sand (SP)**	0.390	0.250	0.140	2.8	1.1
71N-1-B-3	R-3-B	4.27	○	18.0				**Brown Sandy Clay (CL)**					
71N-1-B-4	4	6.10	□	1.8				**Brown poorly graded Sand with Silt and Gravel (SP-SM)**	3.800	0.430	0.080	47.5	0.6

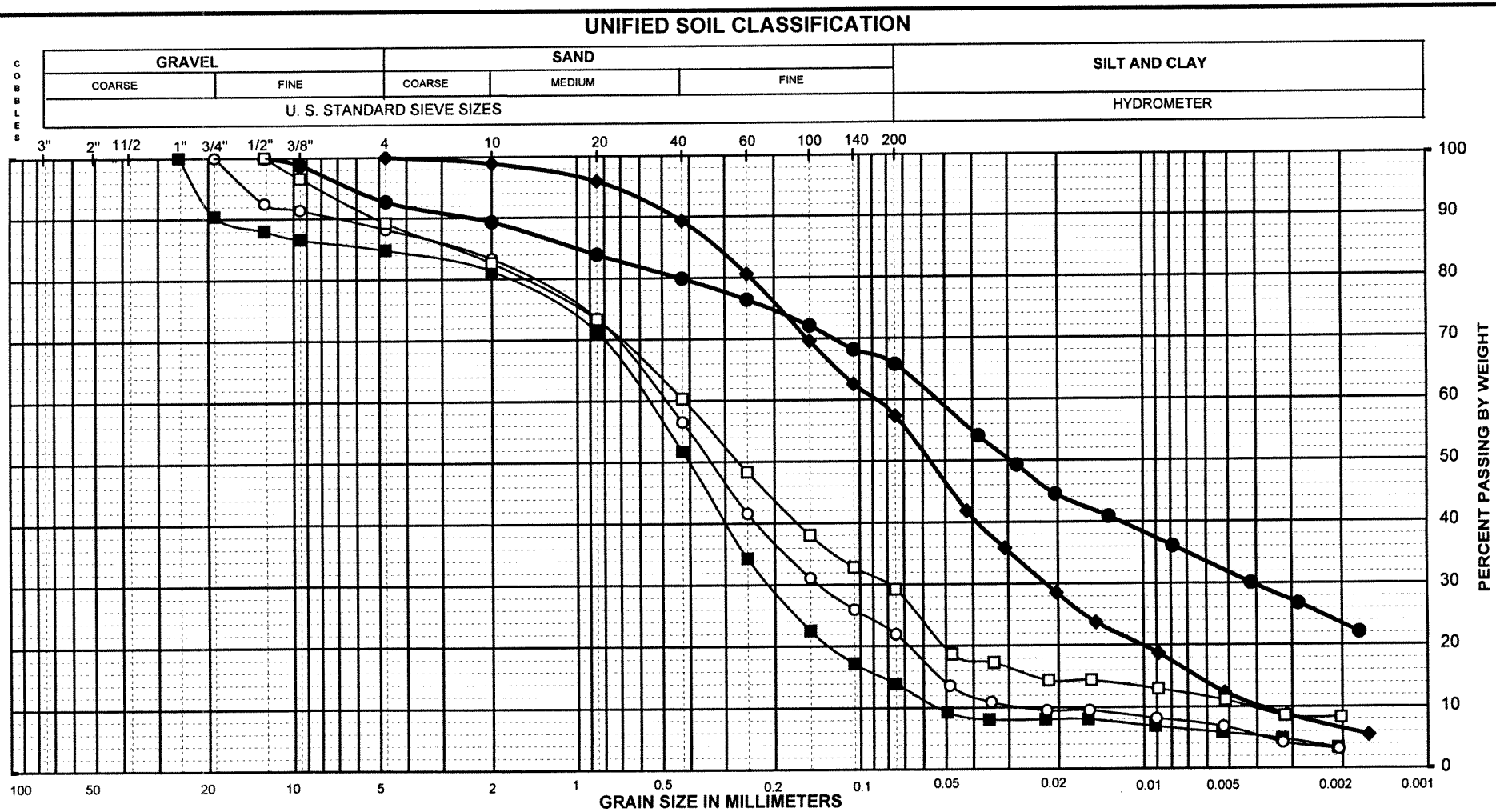
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71N-1-9

(SNA) sieve only (01/2000)

Sieve 71n1.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71N-1-B-1	R-1-B	0.91	●	23.5	68	35		**Light brown sandy Clay (CH)**	0.052	0.004			
71N-1-B-1	R-2-A	1.98	◆	13.7	25	5		**Olive brown sandy silty Clay (CL-ML)**	0.075	0.022	0.004	18.8	1.6
71N-1-MW-1	R-1-B	1.22	■					**Dark brown silty Sand with gravel (SM)**	0.560	0.220	0.053	10.6	1.6
71N-1-MW-1	R-3-A	3.81	○		NP	NP		**Brown silty Sand (SM)**	0.490	0.140	0.025	19.6	1.6
71N-1-B-3	R-1-B	1.22	□		24	7		**Dark brown clayey, silty Sand (SC-SM)**	0.430	0.080	0.004	107.5	3.7

PROJECT NAME: Caltrans IFB Site Selection Study

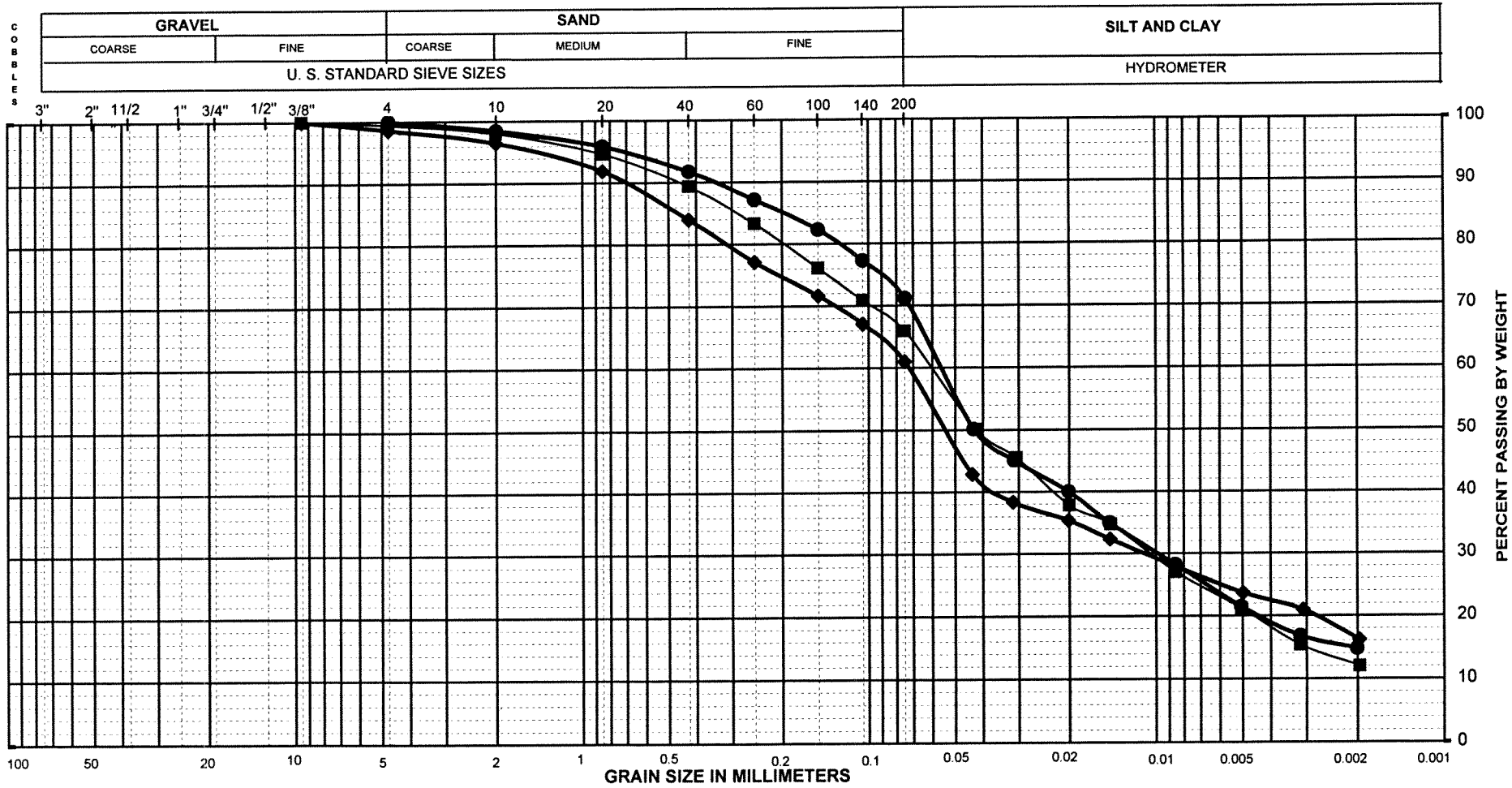
PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71N-1-10

(SNA) sieve only (01/2000)

Hydro 71n1.xls

UNIFIED SOIL CLASSIFICATION



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71N-1-B-3	R-2-A	2.44	●					**Olive brown Clay with sand (CL)**	0.055	0.008			
71N-1-B-4	R-1-B	0.76	◆		28	7		**Brown sandy, silty Clay (CL-ML)**	0.082	0.012			
71N-1-B-4	R-2-B	2.74	■		28	7		**Light brown sandy, silty Clay (CL-ML)**	0.060	0.011			

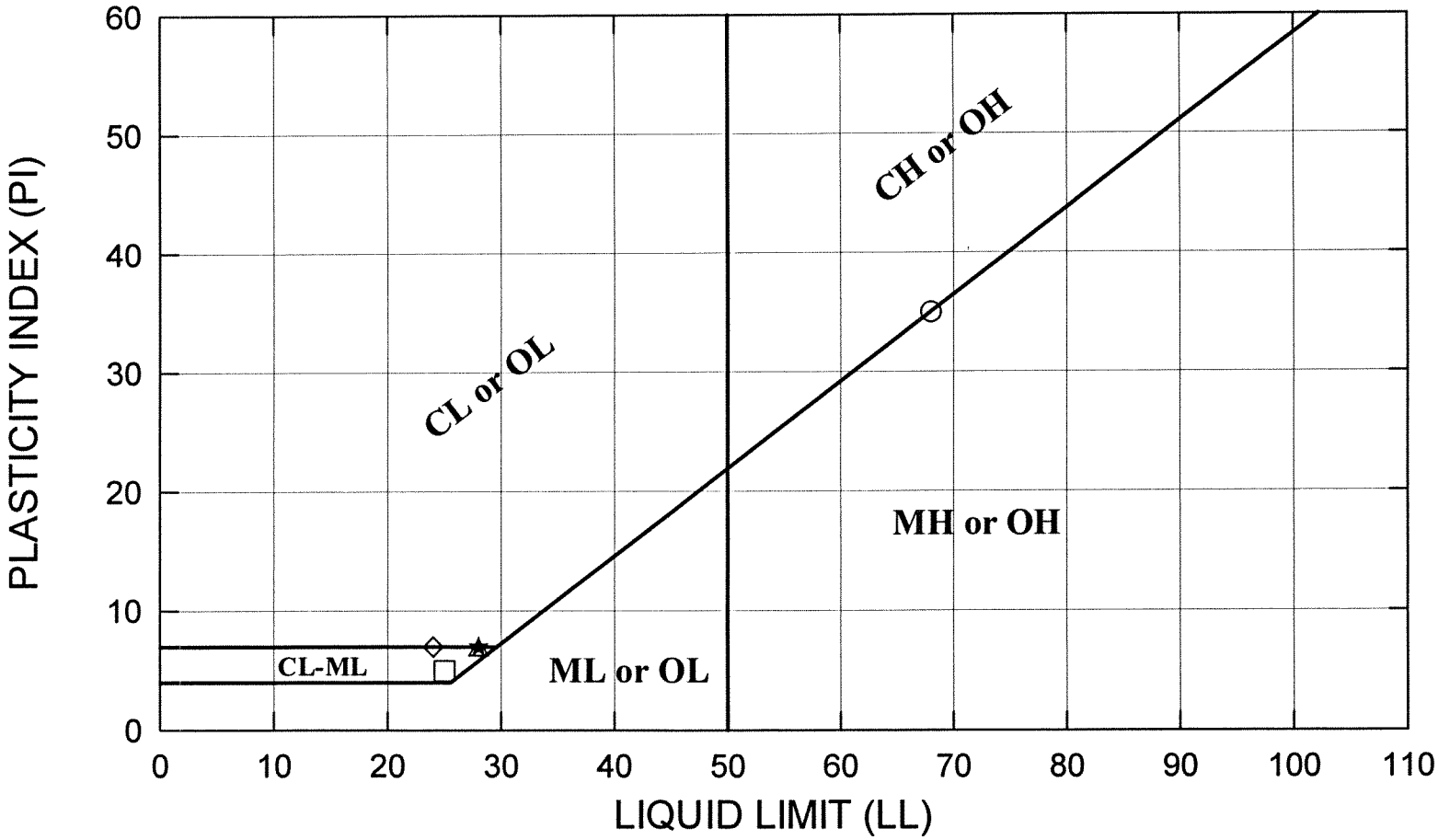
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71N-1-11

(SNA) sieve only (01/2000)

Hydro 71n1.xls



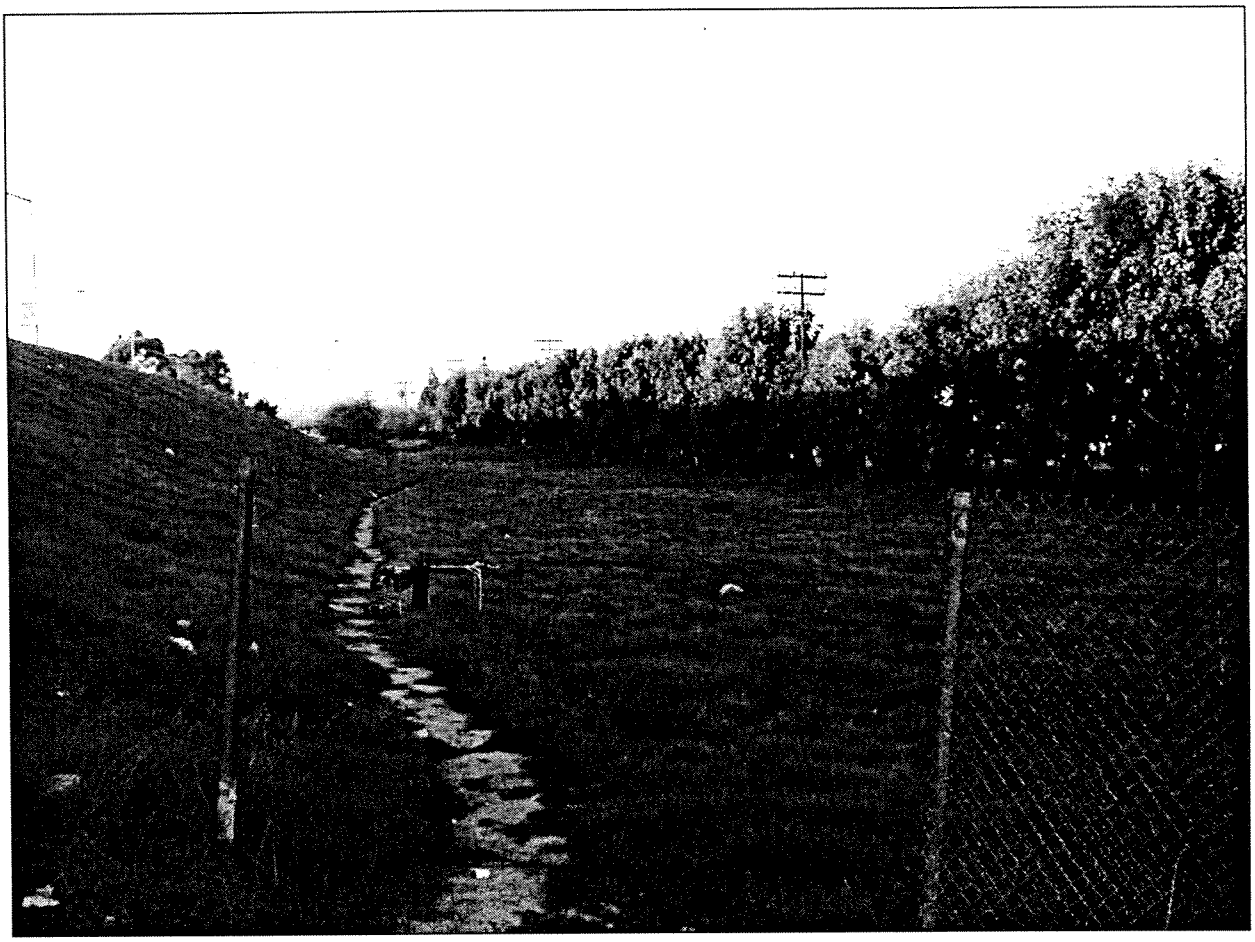
LEGEND: ○ 71N-1-B-1@0.91 m ◇ 71N-1-B-3@1.22 m ★ 71N-1-B-4@2.74 m ● _____

□ 71N-1-B-1@1.98 m △ 71N-1-B-4@0.76 m ▲ _____ × _____

PLASTICITY CHART

	Date: April 2003	Project: Caltrans Infiltration Basin Project	Figure 71N-1-12

s.mikesmith.PiChart.PiMaster.GRF



Priority 3-71N-1 (Valley Blvd./Holt Ave.) Site Photograph

Date: April 2003	Project: Caltrans IFB Site Selection Study	Figure: 71N-1-13

APPENDIX D

71S-2 (Ridgeway St.)

Table 1	Geotechnical Laboratory Test Data
Figure 71S-2-1	Site Plan
Figure 71S-2-2	Geologic Cross Section A-A'
Figure 71S-2-3	Log of Boring 71S-2-MW-1
Figure 71S-2-4	Groundwater Monitoring Well 71S-2-MW-1 Diagram
Figure 71S-2-5	Groundwater Monitoring Well 71S-2-MW-1 Photographs
Figure 71S-2-6	Log of Boring 71S-2-P-1
Figure 71S-2-7	Infiltration Data for 71S-2-P-1
Figure 71S-2-8	Log of Boring 71S-2-P-2
Figure 71S-2-9	Infiltration Data for 71S-2-P-2
Figure 71S-2-10	Log of Boring 71S-2-P-3
Figure 71S-2-11	Infiltration Data for 71S-2-P-3
Figure 71S-2-12	Particle-Size Distribution Curves
Figure 71S-2-13	Particle-Size Distribution Curves
Figure 71S-2-14	Plasticity Chart
Figure 71S-2-15	Hydrographs for Selected Wells
Figure 71S-2-16	Site Photographs

TABLE 1

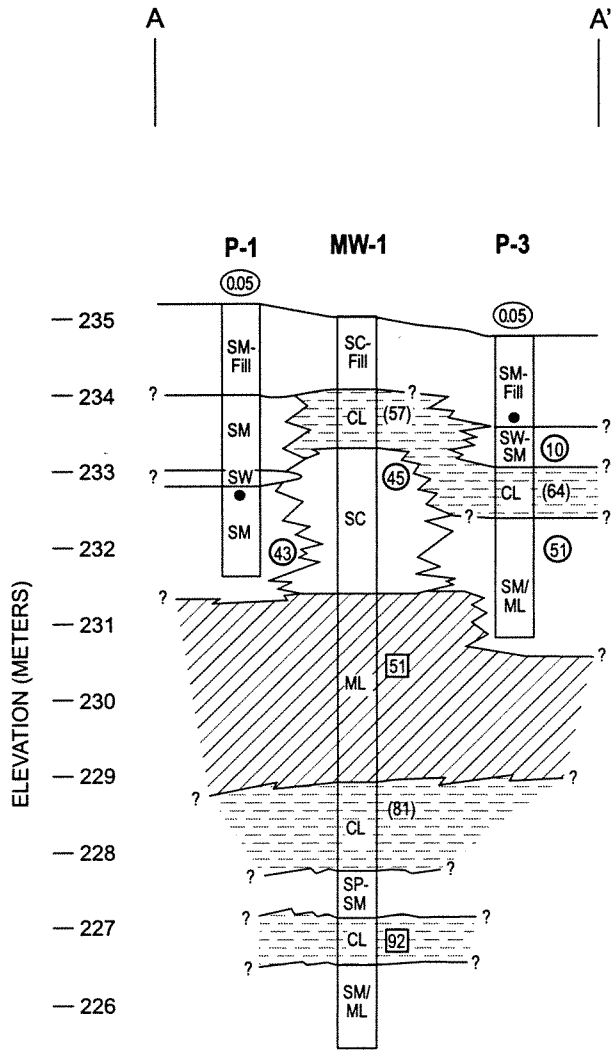
71S-2 GEOTECHNICAL LABORATORY TEST DATA

Location							Atterberg Limits		Sieve				Chemical Test Data		
Exploration Number	Sample/ Specimen Number	Depth (m)	Caltrans Soil Classification	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)	Gravel (%)	Sand (%)	<#200 Fines (%)	5 microns (%)	pH	O.M.% (% organic matter)	CEC (me/g)[1]
71S-2-MW-1	R-1B	1.22	CL	11	-	-	-	-	1	43	57	18	7.4	1.7	0.12
71S-2-MW-1	R-2	1.83	SC	10	-	-	29	7	0	56	44	18	-	-	-
71S-2-MW-1	R-3B	4.27	CL	8	-	-	-	-	-	-	51	-	-	-	-
71S-2-MW-1	4	6.10	CL	28	-	-	31	10	0	19	81	32	-	-	-
71S-2-MW-1	5B	7.92	CL	36	-	-	-	-	-	-	92	-	-	-	-
71S-2-P-1	7	3.05	SM	-	-	-	25	4	1	56	43	-	-	-	-
71S-2-P-2	4	1.98	ML	6	-	-	30	7	0	20	80	25	-	-	-
71S-2-P-3	4a	1.52	SW-SM	-	-	-	-	-	2	87	10	-	-	-	-
71S-2-P-3	5	1.98	CL	-	-	-	29	8	0	36	64	18	-	-	-
71S-2-P-3	6	2.44	ML\SM	-	-	-	-	-	0	49	51	-	-	-	-

Notes: [1] Cation excange capacity, millequivalents per gram

Priority 3-71S-2 (Ridgeway St.) Site Plan

April 2003	Infiltration Basin Site Selection Study	Figure 71S-2-1



NOTE: Groundwater Not Observed

HORIZONTAL SCALE:
1 cm = 5 meters

VERTICAL SCALE:
1 cm = 1 meter

- Water Level Observed During Drilling
- Groundwater Elevation Feb. 2003
- Float Valve Location
  Top of Hydraulic Conductivity Test Section
- (0.52) In-hole Hydraulic Conductivity Test Value (inches/hour)
- (46) Hydrometer Test, % Passing #200 Sieve
- (72) Sieve Analysis, % Passing #200 Sieve
- [32] Wash Analysis, % Passing #200 Sieve
- Clays and Clays w/Silt
- Silt

PRIORITY 3 – SITE 71S-2 GEOLOGIC CROSS SECTION A-A'

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-2-2

L:/CALTRANS/C GOETZ/xsect 71S-2-2.FH10

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Ridgeway Street

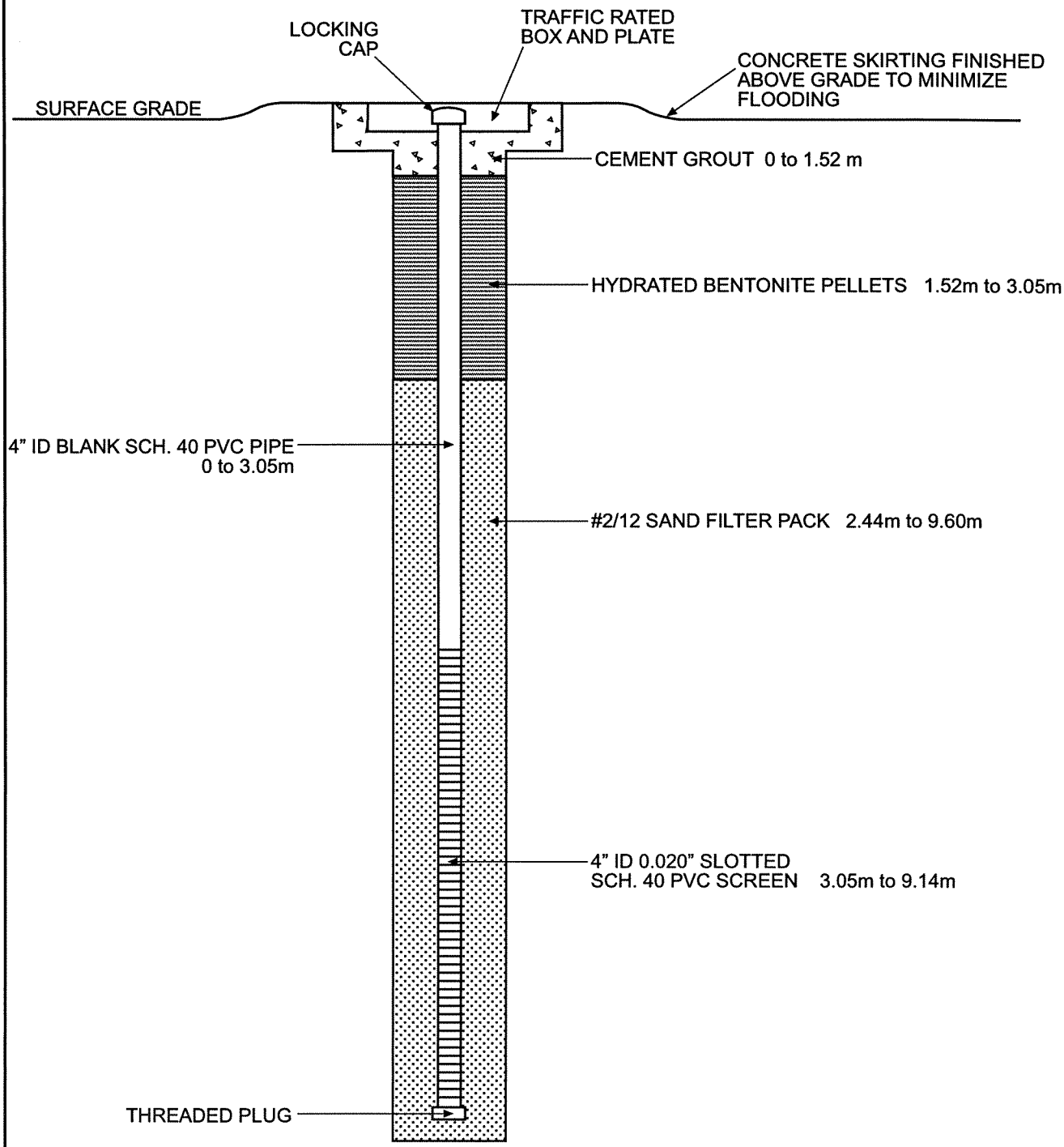
Log of Boring 71S-2-MW-1

Sheet 1 of 1

Date(s) Drilled	3/13/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	235.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	See Well Construction Figure	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Clayey sand (SC) [FILL] dark brown, moist, fine grained sand, with organics including roots			
			R-1-A		R-1 50						
234	1		R-1-B					Sandy lean clay (CL) dark brown, moist, with fine grained sand and organics	11		HYD: 57%<#200 pH=7.4, O.M.=1.7% CEC=0.12 me/g
	2		R-2		R-2 70			Clayey sand (SC) brown, moist, fine grained sand, with traces of mica	10		LL=29; PI=7 HYD: 45%<#200
232	3										
			R-3-A		R-3 100			Sandy silt (ML) brown, moist, with fine grained sand			
	4		R-3-B						8		WA: 51%<#200
230	5										
	6		4	8				Lean clay with sand (CL) firm, light brown, moist, fine grained sand, with mica	28		HYD: 81%<#200 LL=31; PI=10
228	7										
			5A 5B	9				Poorly graded sand with silt (SP-SM) light gray and brown, moist, fine grained sand, with mica and oxidation staining			
	8							Lean clay (CL) firm, reddish-brown and light gray, moist, with traces of mica	36		WA: 92%<#200
226	9		6A 6B	7				Silty sand to sandy silt (SM/ML) loose, light gray, moist, fine grained sand, with trace of mica Becomes light brown, fine to medium grained sand			
	10							Bottom of boring at 9.6 meters			
224	11										
	12										

Figure 71S-2-3



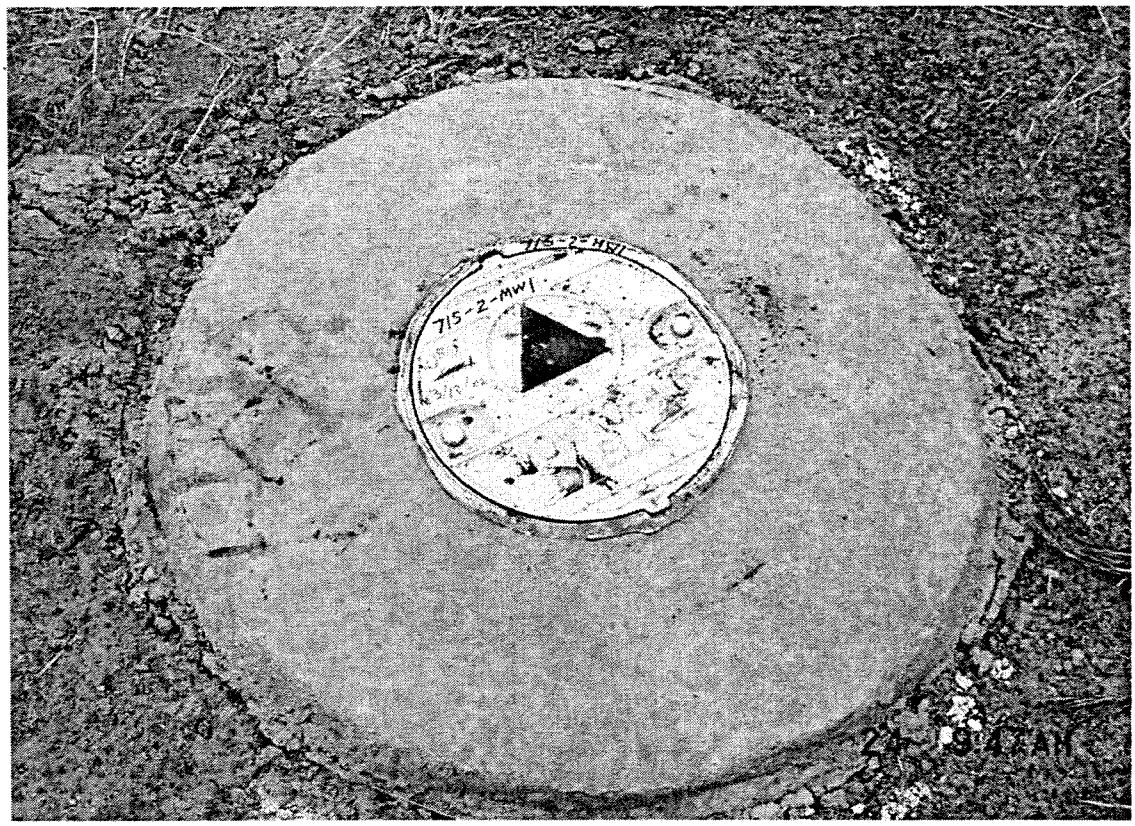
71S-2-MW-1

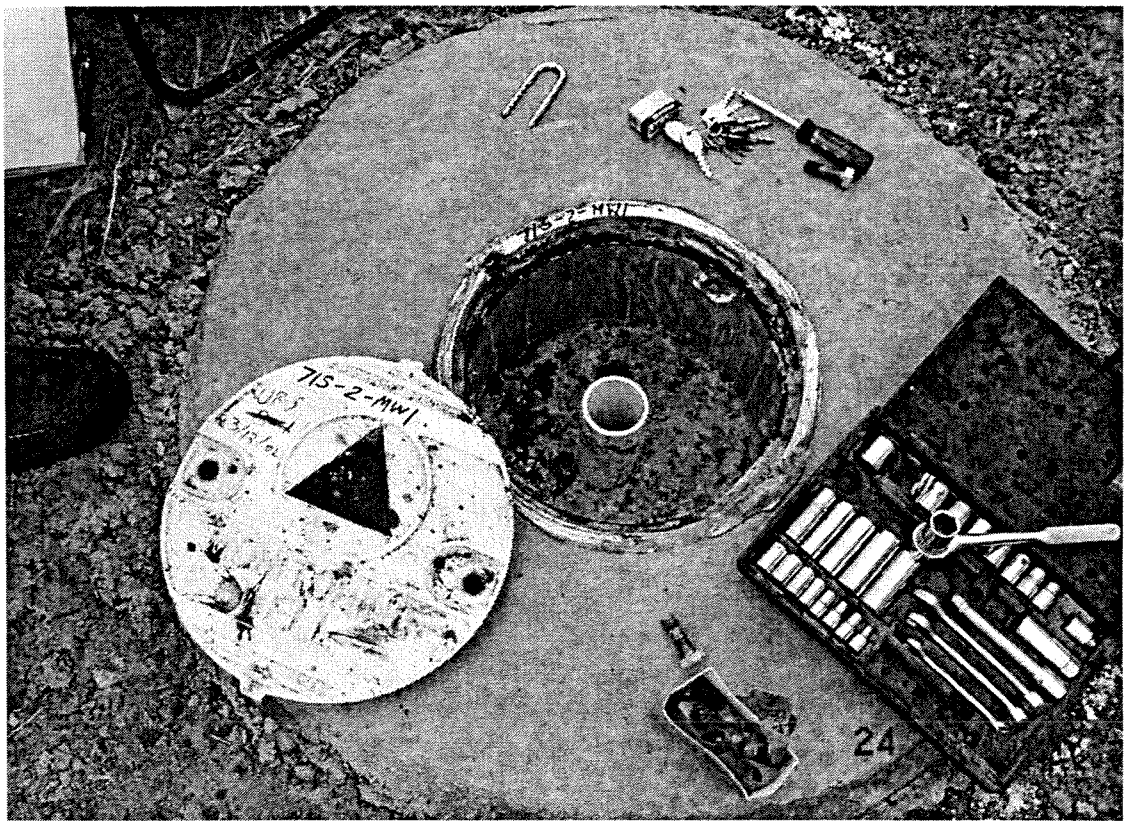
Not to Scale

GROUNDWATER MONITORING WELL DIAGRAM

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-2-4

L:/Caltrans/GW monitoring well diag.fh10 5/03





71S-2-MW-1

Date: April 2003	**Project: Caltrans IFB Site Selection Study**	Figure: 71S-2-5

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Ridgeway Street

Log of Boring 71S-2-P-1

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.5 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	235.2 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	26				Silty sand (SM) [FILL] medium dense, mottled brown, moist, fine to coarse grained sand, with fine to coarse grained angular and rounded gravel			NATIVE
			2	20				Becomes dark brown			
	1		3a								CASING
234			3b	30				Silty sand (SM) medium dense, dark brown, moist, fine to medium grained sand, slightly organic			
			4	12				As above, with occasional fine gravel			
	2		5	27				Well graded sand (SW) medium dense, dark brown, moist, fine to coarse grained sand			1.98-2.13 meters sample not recovered
			6	16				Silty sand (SM) medium dense, dark brown, moist, fine to medium grained sand			(COARSE AQUARIUM SAND) SA: 43%<#200 LL=25: PI=4
232	3		7	14							
	4							Bottom of boring at 3.5 meters			
230	5										
	6										
228	7										
	8										
226	9										
	10										
224	11										
	12										

Figure 71S-2-6

71S-2-P-1-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:35:00	0:00:00	54.5	0	0	0.000	77.6	
8:36:00	0:01:00	53.3	1.2	1.2	1.200		
8:37:00	0:02:00	53.0	0.3	1.5	0.750		
8:38:00	0:03:00	52.9	0.1	1.6	0.533		
8:48:00	0:13:00	52.3	0.6	2.2	0.169	76.3	76.8
9:08:00	0:33:00	51.9	0.4	2.6	0.079	76.3	77.2
9:26:00	0:51:00	51.1	0.8	3.4	0.067	76.3	77.9
10:02:00	1:27:00	50.2	0.9	4.3	0.049	77	
10:31:00	1:56:00	49.8	0.4	4.7	0.041	77.7	78.6
11:03:00	2:28:00	49.0	0.8	5.5	0.037	78.7	
11:34:00	2:59:00	48.4	0.6	6.1	0.034	79.9	
12:03:00	3:28:00	47.8	0.6	6.7	0.032	80.8	
12:34:00	3:59:00	47.1	0.7	7.4	0.031	81.9	
13:06:00	4:31:00	46.5	0.6	8	0.030	82.8	83.6
13:36:00	5:01:00	45.8	0.7	8.7	0.029	83.8	84.9
14:12:00	5:37:00	45.0	0.8	9.5	0.028	84.7	86.2
14:43:00	6:08:00	44.5	0.5	10	0.027	85.3	87.4
15:13:00	6:38:00	43.8	0.7	10.7	0.027	86	
15:42:00	7:07:00	43.2	0.6	11.3	0.026	86.9	88.9

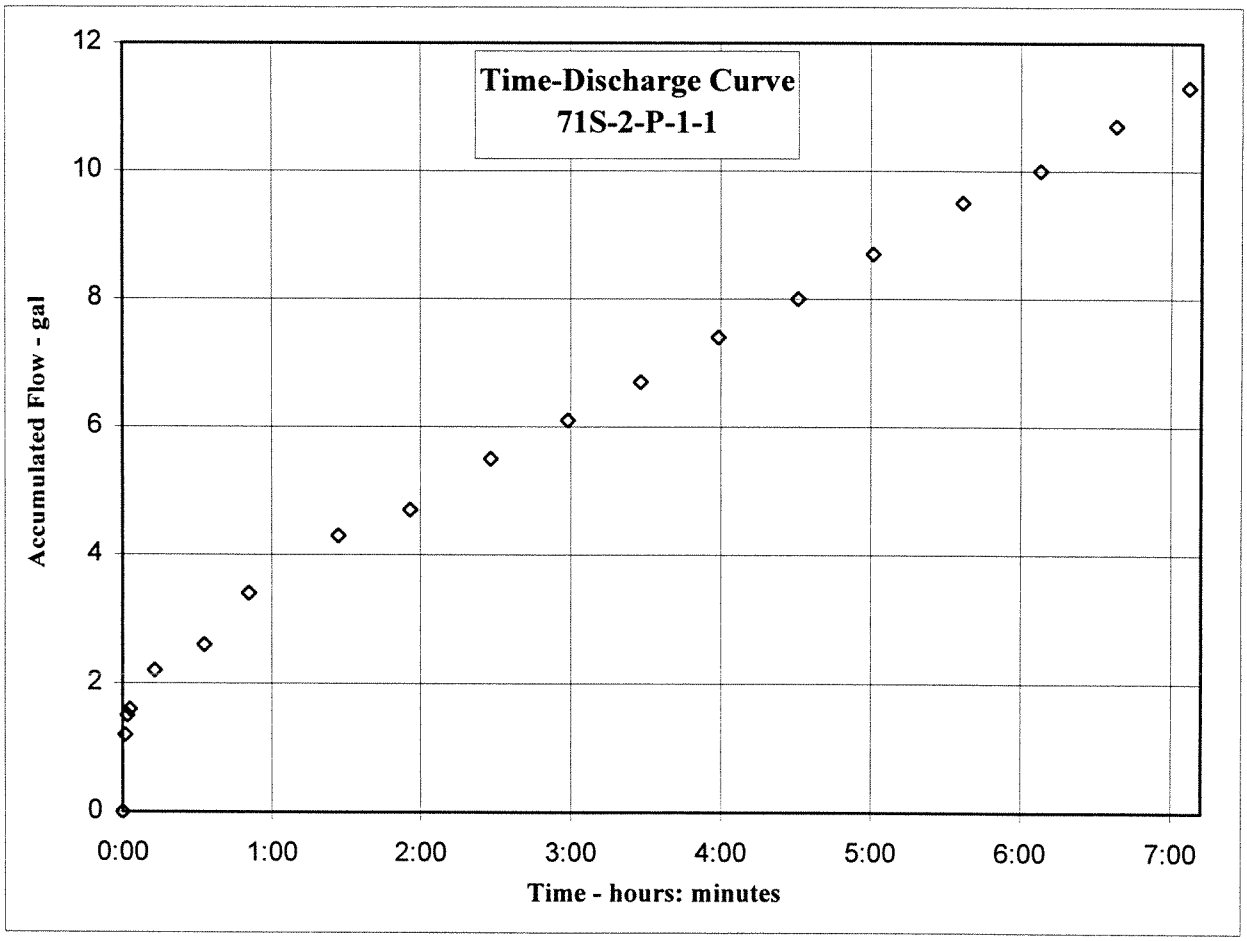


Figure 71S-2-7A

Calculation of Test Condition

Float depth =	8 ft	2.44 meters
Borehole depth =	11.5 ft	3.51 meters
Height of water in test well, h =	3.5 ft	1.07 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	20 ft	6.10 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	12 ft	3.66 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	105.66 lbs/cu ft	
r_w =	0.293 ft	3.52 inches

Calculations for k_{20}

h =	3.5 ft	42 inches
Steady-state discharge rate, q =	0.0208 gpm	4.80 cu.in./min
Average well water temperature, T =	84.49 °F	29.16 °C
Kinematic viscosity ratio, V =	0.7862 no units	
Condition I - k20=	7.68E-04 in/min	0.0461 in/hr

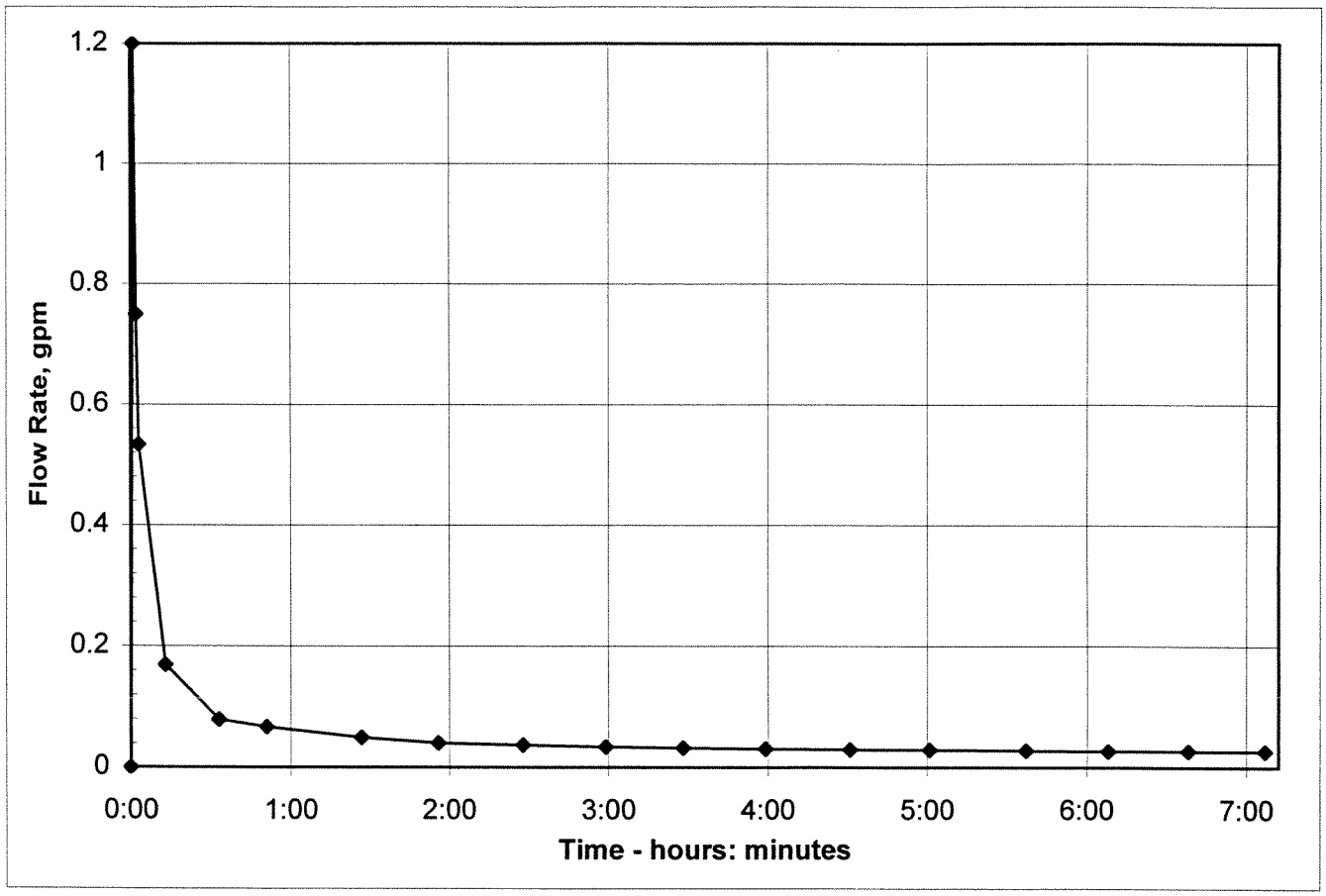


Figure 71S-2-7B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Ridgeway Street

Log of Boring 71S-2-P-2

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	2.4 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	235.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Silty sand (SM) [FILL] dense, brown, moist, fine to coarse grained sand, with angular gravel and cobbles (schist)			NATIVE
			1	32				As above, no cobbles			CASING
234	1		2	13				Becomes medium dense			(COARSE AQUARIUM SAND)
			3	17				Silt (ML) soft, light brown, moist, clayey, with trace fine grained sand			
	2		4	20					6		HYD:80%<#200 LL=30; PI=7
232	3							Bottom of boring at 2.44 meters			Refusal at 0.61 meter grinding on cobble (in silty sand with gravel and cobbles to 13cm [FILL]. Moved 1.5 meters North and redrilled.
	4										
230	5										
	6										
228	7										
	8										
226	9										
	10										
224	11										
	12										

Figure 71S-2-8

71S-2-P-2-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:33:00	0:00:00	59.8	0	0	0.000		
8:34:00	0:01:00	58	1.8	1.8	1.800		
8:35:00	0:02:00	57.3	0.7	2.5	1.250		
8:37:00	0:04:00	56.7	0.6	3.1	0.775	76.6	
8:41:00	0:08:00	55	1.7	4.8	0.600		74.8
8:46:00	0:13:00	53.6	1.4	6.2	0.477		
8:53:00	0:20:00	53.2	0.4	6.6	0.330	76.3	73.4
9:08:00	0:35:00	52.5	0.7	7.3	0.209		
9:30:00	0:57:00	52	0.5	7.8	0.137	75.4	
10:01:00	1:28:00	51	1	8.8	0.100		
10:30:00	1:57:00	50	1	9.8	0.084	75.6	72.9
11:02:00	2:29:00	49.3	0.7	10.5	0.070	75.9	73.4
11:33:00	3:00:00	48.6	0.7	11.2	0.062	76.3	74.9
12:02:00	3:29:00	47.8	0.8	12	0.057	76.6	
12:33:00	4:00:00	47	0.8	12.8	0.053	77.2	
13:04:00	4:31:00	46.4	0.6	13.4	0.049	77.7	77.2
13:34:00	5:01:00	45.7	0.7	14.1	0.047	78.6	
14:10:00	5:37:00	44.8	0.9	15	0.045	79.9	
14:42:00	6:09:00	44.0	0.8	15.8	0.043	81.0	79.9
15:11:00	6:38:00	43.1	0.9	16.7	0.042	82.6	
15:38:00	7:05:00	42.5	0.6	17.3	0.041	83.1	

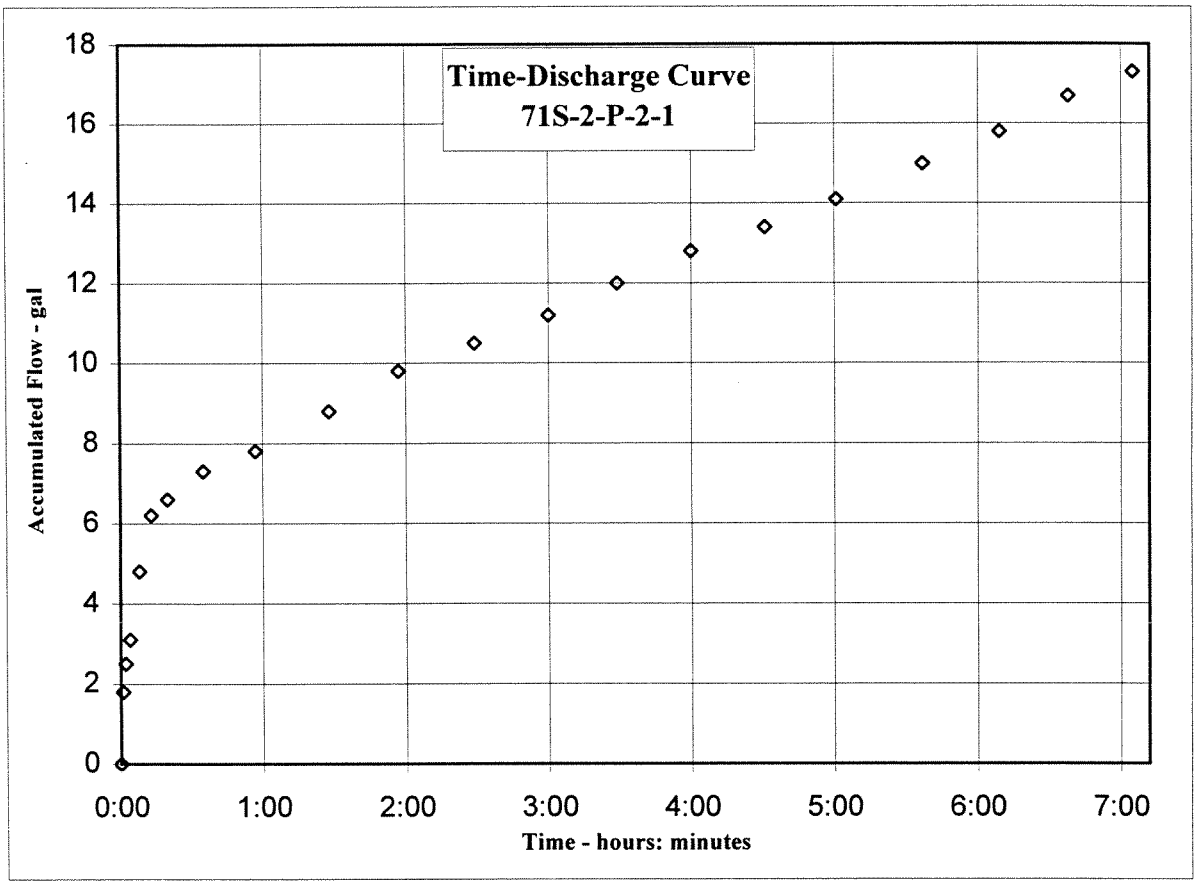


Figure 71S-2-9A

Calculation of Test Condition

Float depth =	5.1 ft	1.55 meters
Borehole depth =	8 ft	2.44 meters
Height of water in test well, h =	2.9 ft	0.88 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	20 ft	6.10 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	14.9 ft	4.54 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	103.71 lbs/cu ft	
r_w =	0.325 ft	3.90 inches

Calculations for k_{20}

h =	2.9 ft	34.8 inches
Steady-state discharge rate, q =	0.0246 gpm	5.68 cu.in./min
Average well water temperature, T =	79.59 °F	26.44 °C
Kinematic viscosity ratio, V =	0.8410 no units	
Condition I - k20=	1.25E-03 in/min	0.0749 in/hr

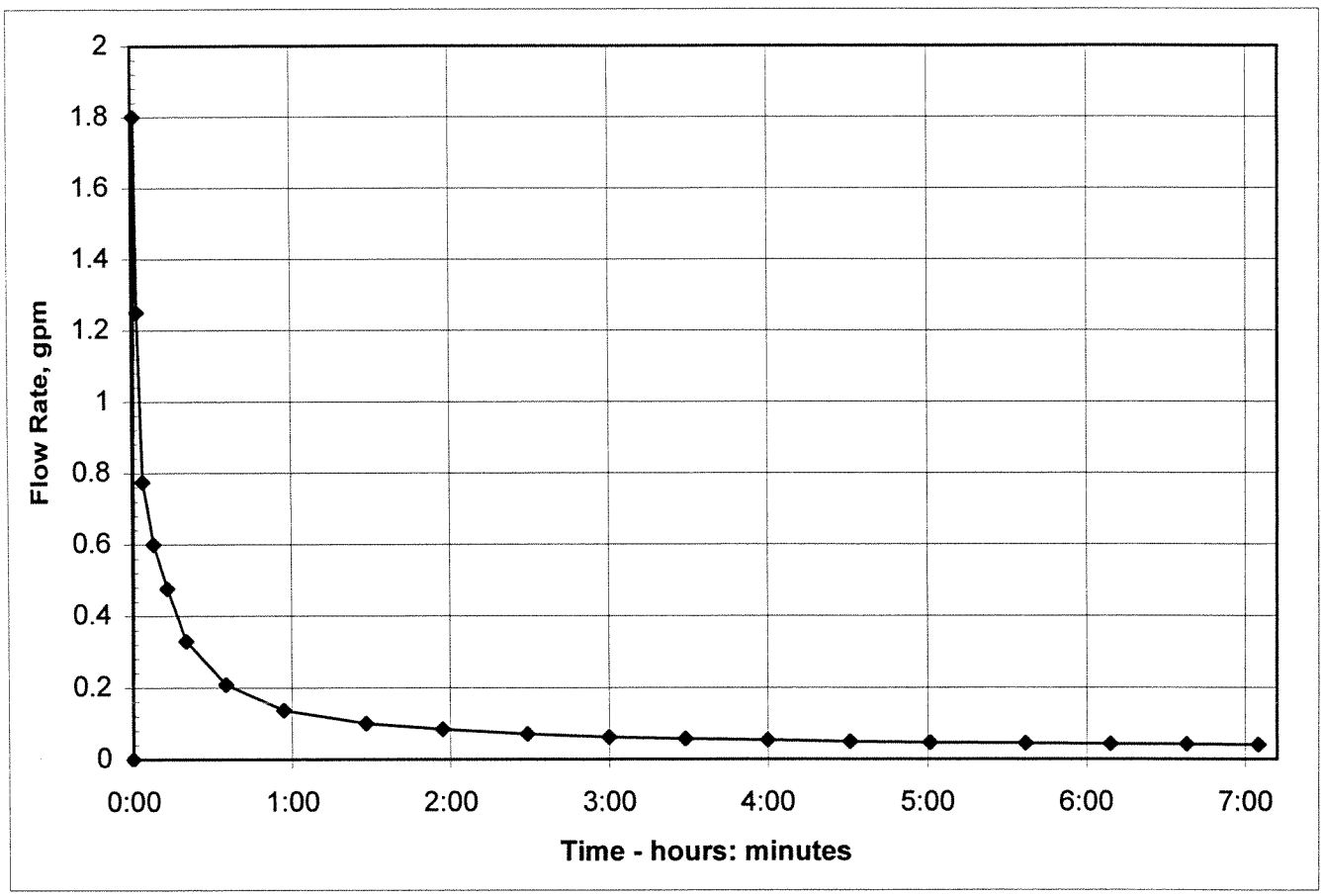


Figure 71S-2-9B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Ridgeway Street

Log of Boring 71S-2-P-3

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	4.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	234.8 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	18				Silty sand (SM) [FILL] medium dense, dark brown, moist, fine grained sand			NATIVE
			2	28				As above, with occasional coarse gravel			CASING
234	1		3a								
			3b	28				Well-graded sand with silt (SW-SM) medium dense, mottled brown, moist, fine to coarse grained sand, micaceous			SA: 10%<#200
			4a								
			4b	20				Sandy clay (CL) soft, yellowish brown, moist			HYD: 64%<#200 LL=29; PI=8
	2		5	18							
232	3		6	14				Sandy silt to silty sand (SM/ML) medium dense to soft, light brown, moist, fine grained sand			SA: 51%<#200
			7	16							(COARSE AQUARIUM SAND)
			8	17							
	4							Bottom of boring at 3.96 meters			
230	5										
	6										
228	7										
	8										
226	9										
	10										
224	11										
	12										

Figure 71S-2-10

71S-2-P-3-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:30:00	0:00:00	60	0	0	0.000	78.1	76.1
8:31:00	0:01:00	57	3	3	3.000		
8:32:00	0:02:00	55.5	1.5	4.5	2.250		
8:33:00	0:03:00	55	0.5	5	1.667		
8:35:00	0:05:00	54.5	0.5	5.5	1.100		
8:38:00	0:08:00	54	0.5	6	0.750		
8:41:00	0:11:00	53.5	0.5	6.5	0.591		
8:44:00	0:14:00	53	0.5	7	0.500		
8:48:00	0:18:00	52.5	0.5	7.5	0.417	78.8	
8:52:00	0:22:00	52	0.5	8	0.364		
8:56:00	0:26:00	51.5	0.5	8.5	0.327		
9:00:00	0:30:00	51	0.5	9	0.300	79.2	75.8
9:09:00	0:39:00	50	1	10	0.256		
9:19:00	0:49:00	49	1	11	0.224		
9:28:00	0:58:00	48	1	12	0.207		
9:38:00	1:08:00	47	1	13	0.191	79.2	
9:48:00	1:18:00	46	1	14	0.179		
9:58:00	1:28:00	45	1	15	0.170	79.2	75.2
10:18:00	1:48:00	43	2	17	0.157		
10:51:00	2:21:00	40	3	20	0.142	79.9	
11:24:00	2:54:00	37	3	23	0.132	81.7	78.1
12:00:00	3:30:00	33.9	3.1	26.1	0.124	82.9	79.7
12:30:00	4:00:00	31.3	2.6	28.7	0.120	84.2	81.3
13:00:00	4:30:00	28.9	2.4	31.1	0.115	85.3	
13:30:00	5:00:00	26.0	2.9	34	0.113	86.9	
14:09:00	5:39:00	23.2	2.8	36.8	0.109	88.9	
14:30:00	6:00:00	21.0	2.2	39	0.108	89.6	
15:00:00	6:30:00	18.7	2.3	41.3	0.106	91.4	
15:30:00	7:00:00	16.2	2.5	43.8	0.104	92.8	90.5

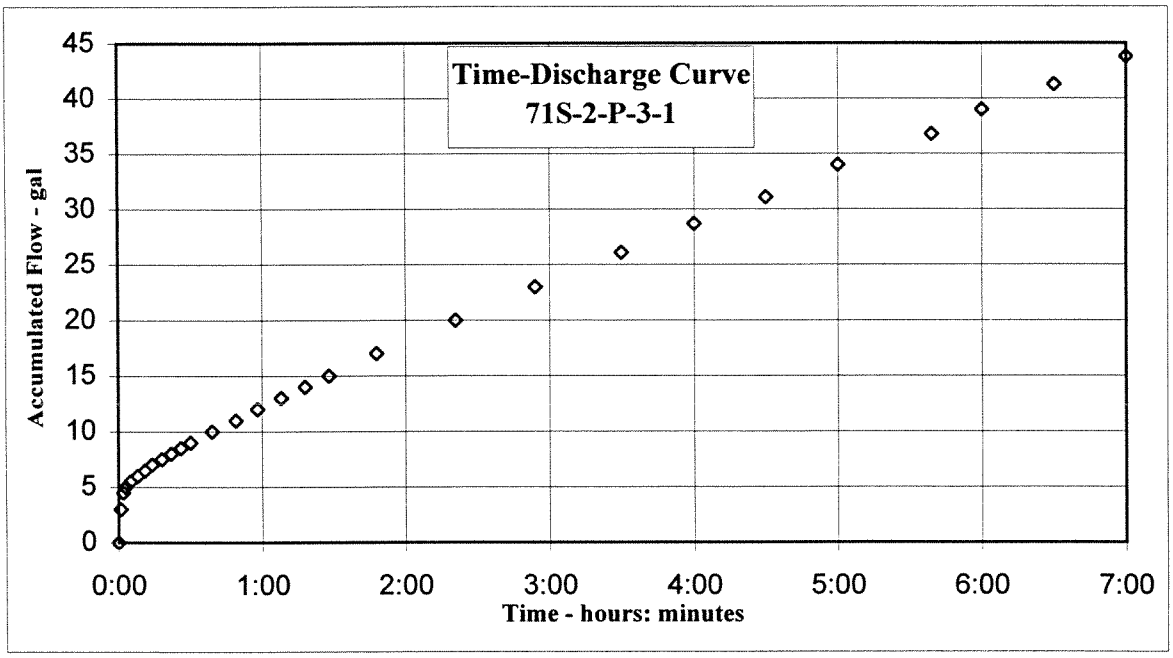


Figure 71S-2-11A

Calculation of Test Condition

Float depth =	3.7 ft	1.13 meters
Borehole depth =	13 ft	3.96 meters
Height of water in test well, h =	9.3 ft	2.83 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	20 ft	6.10 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	16.3 ft	4.97 meters

Based on the Test Data, Condition II is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	250 lbs	
density of sand in borehole, ρ_s =	104.74 lbs/cu ft	
r_w =	0.286 ft	3.43 inches

Calculations for k_{20}

h =	9.3 ft	111.6 inches
Steady-state discharge rate, q =	0.0841 gpm	19.4 cu.in./min
Average well water temperature, T =	88.44 °F	31.36 °C
Kinematic viscosity ratio, V =	0.7444 no units	
Condition II - k20 =	8.57E-04 in/min	0.0514 in/hr
Condition I - k20 =	5.92E-04 in/min	0.0355 in/hr

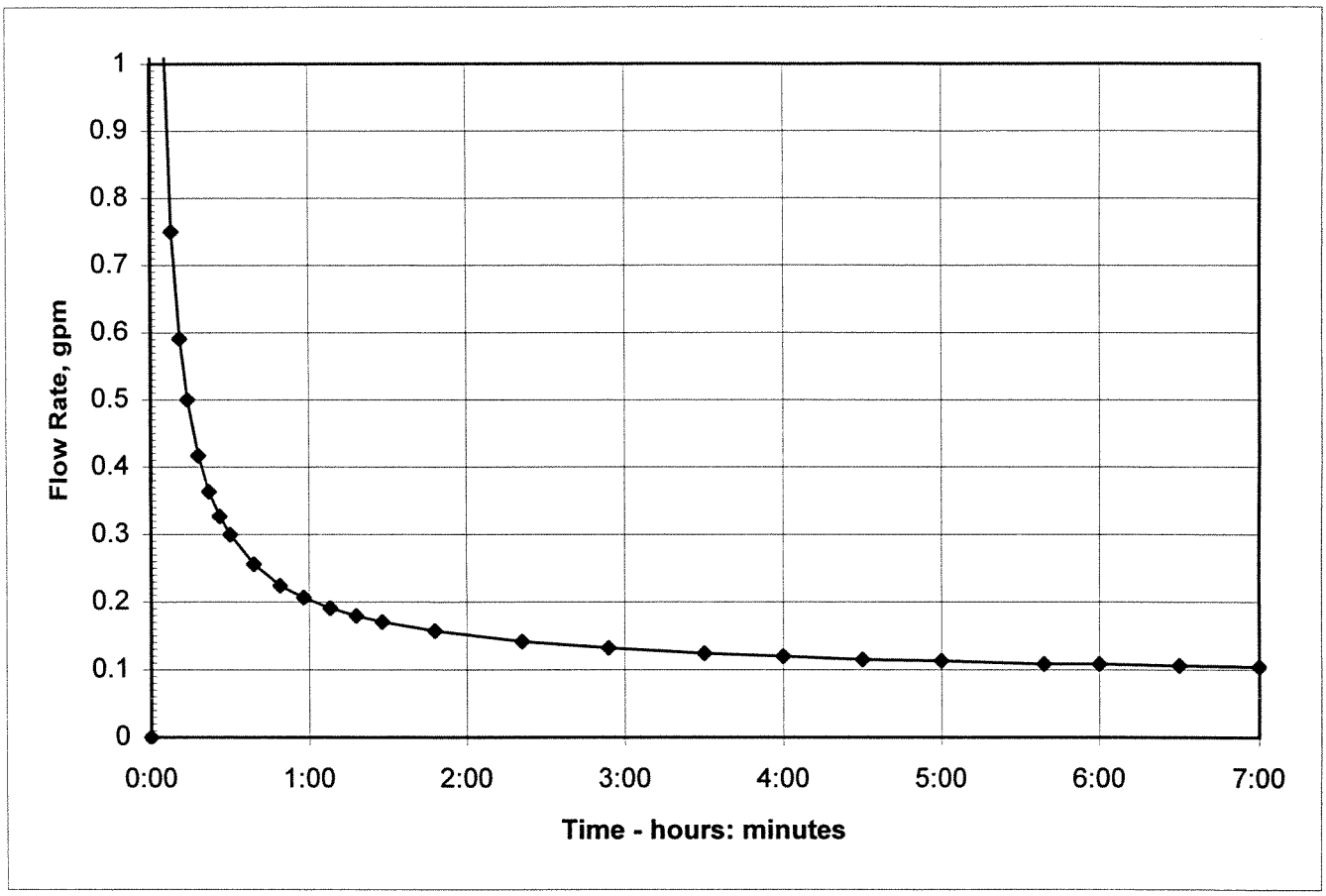
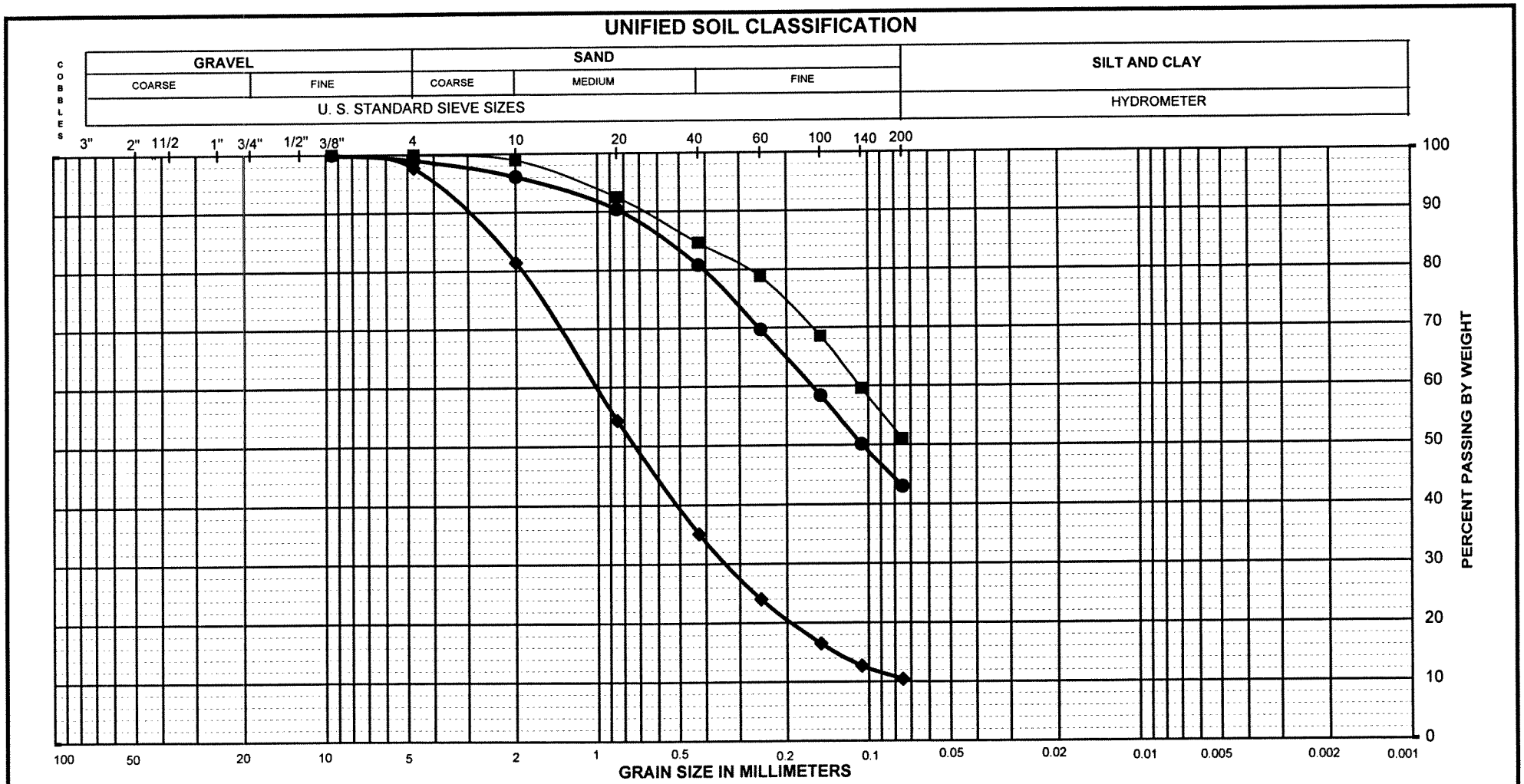


Figure 71S-2-11B



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-2-P-1	7	3.05	●		25	4		**Olive gray silty Sand (SM)**	0.15				
71S-2-P3	4a	1.52	◆					**Brown well-graded Sand with silt (SW-SM)**	1.1	0.35	0.07	15.7	1.6
71S-2-P3	6	2.44	■					**Gray sandy Silt (ML/SM)**	0.11				

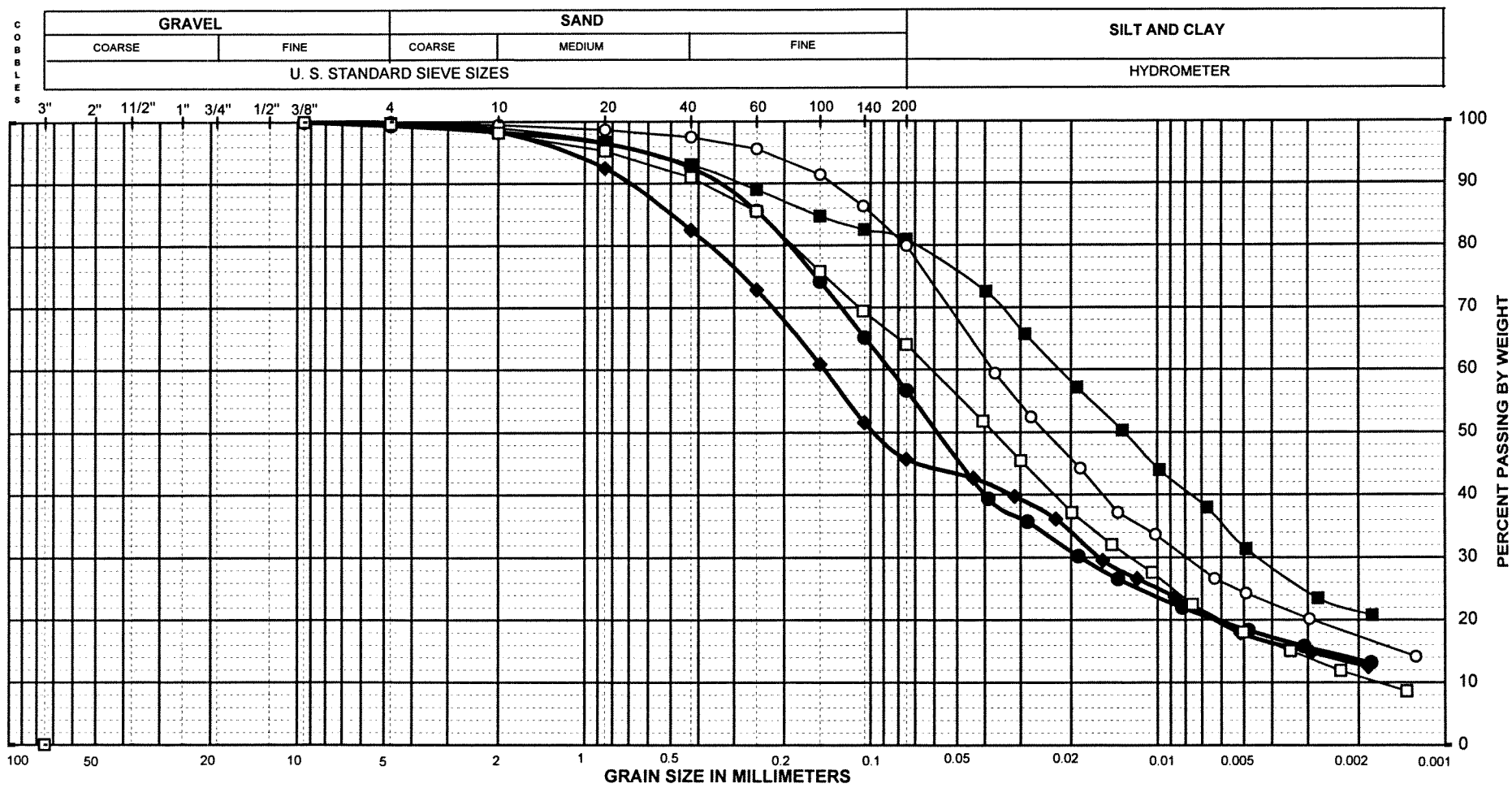
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-2-12

(SNA) sieve only (01/2000)

Sieve 71S-2.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-2-MW-1	R-1-B	1.22	●	11.4			13	**Very dark brown sandy Clay (CL)**	0.085	0.019			
71S-2-MW-1	R-2	1.83	◆	9.9	29	7	13	**Olive brown clayey Sand (SC)**	0.150	0.016			
71S-2-MW-1	4	6.10	■	28.1	31	10	21	**Olive brown Clay with sand (CL)**	0.022	0.005			
71S-P-2	4	1.98	○	5.5	30	7	17	**Gray Silt with sand (ML)**	0.037	0.008			
71S-2-P-3	5	1.98	□		29	8	11	**Dark brown sandy Clay (CL)**	0.060	0.013	0.002	30.0	1.4

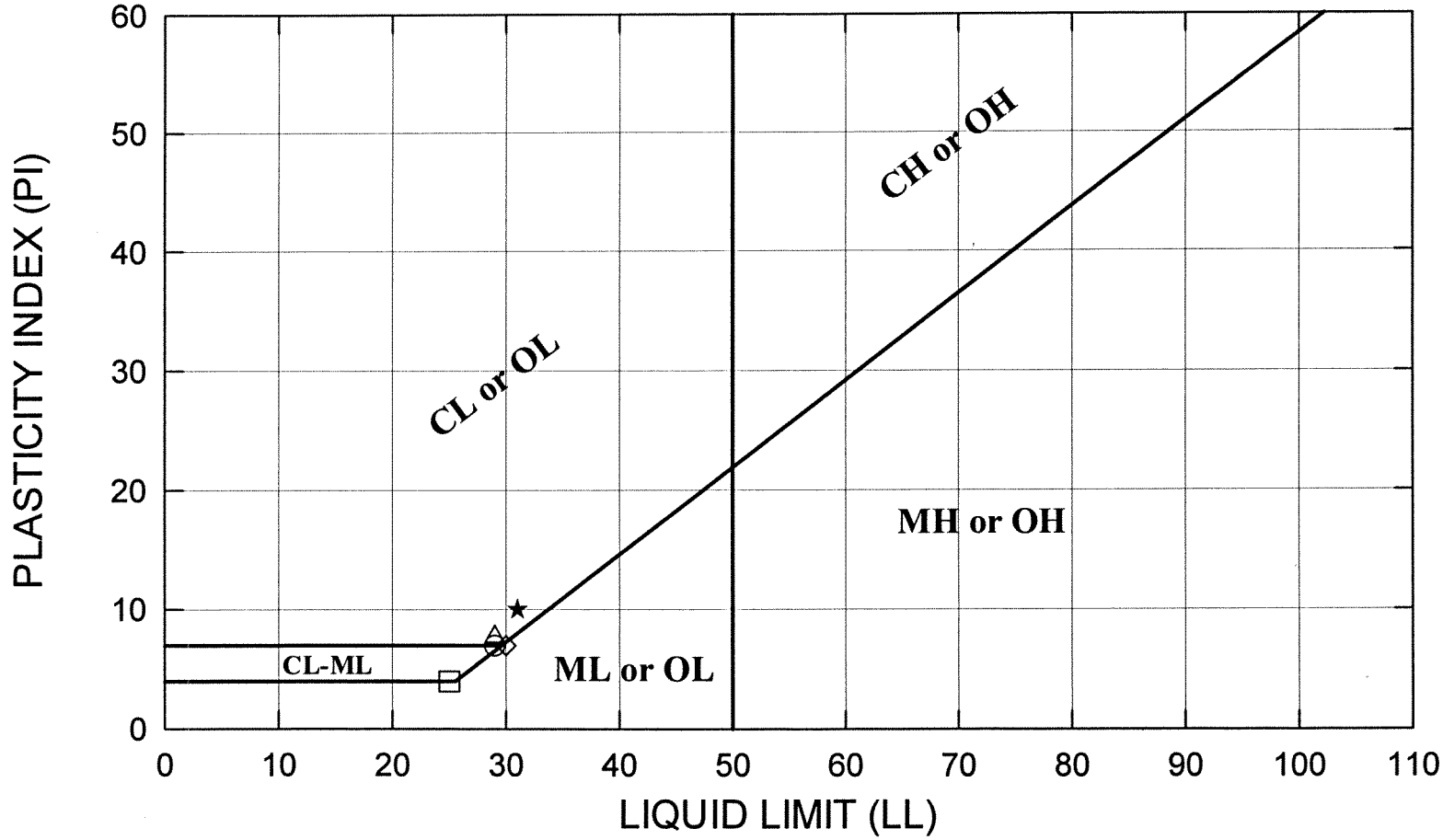
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-2-13

(SNA) sieve only (01/2000)

Hydro 71s-2 .xls



LEGEND: ○ 71S-2-MW-1@1.83m ◇ 71S-2-P-2@1.98m ★ 71S-2-MW-1@6.1m ● _____

□ 71S-2-P-1@3.05m △ 71S-2-P-3@1.98m ▲ _____ × _____

PLASTICITY CHART

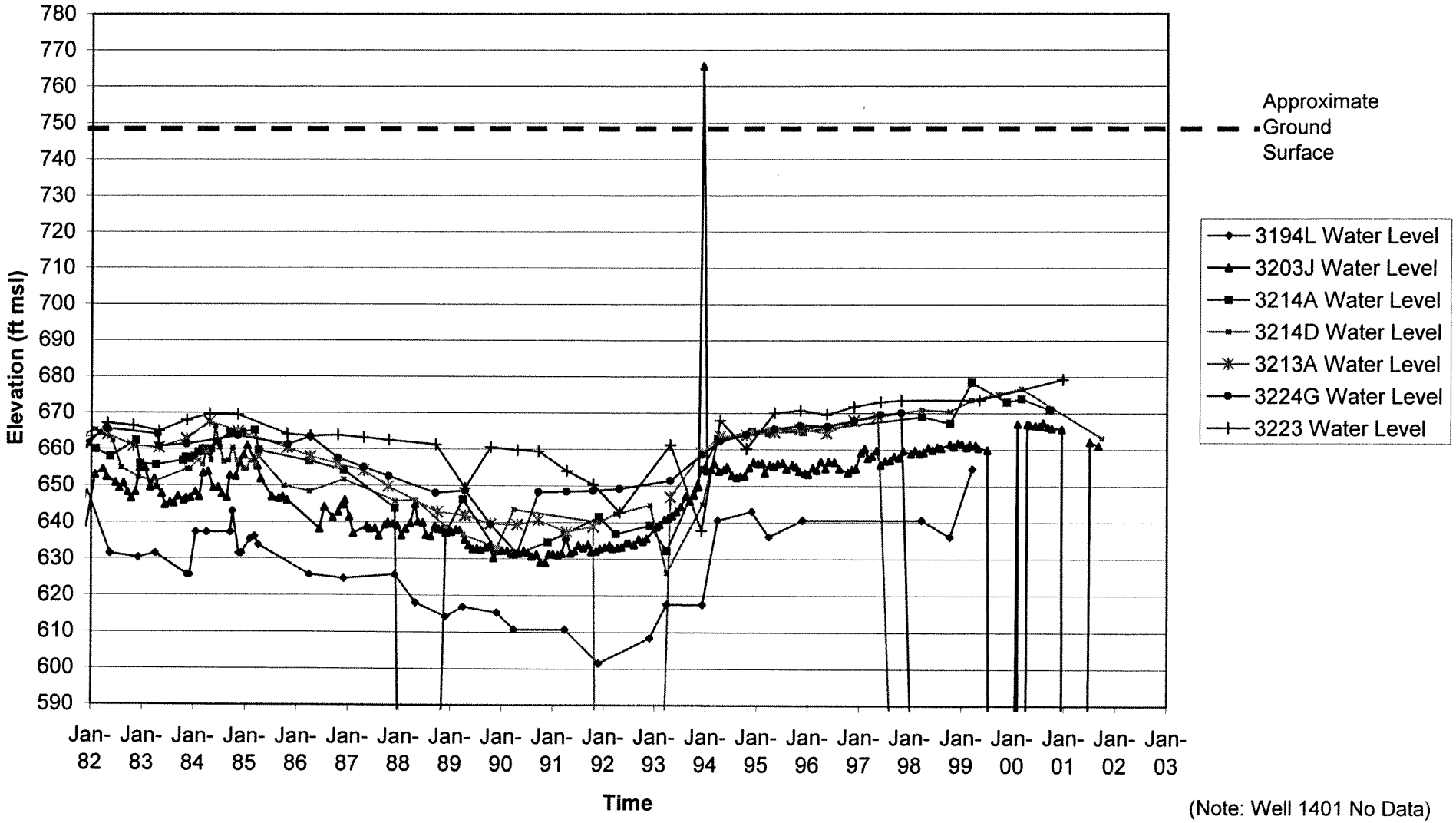
	Date: April 2003	Project: Caltrans Infiltration Basin Project	Figure 71S-2-14

s.mikesmith.PiChart.PiMaster.GRF

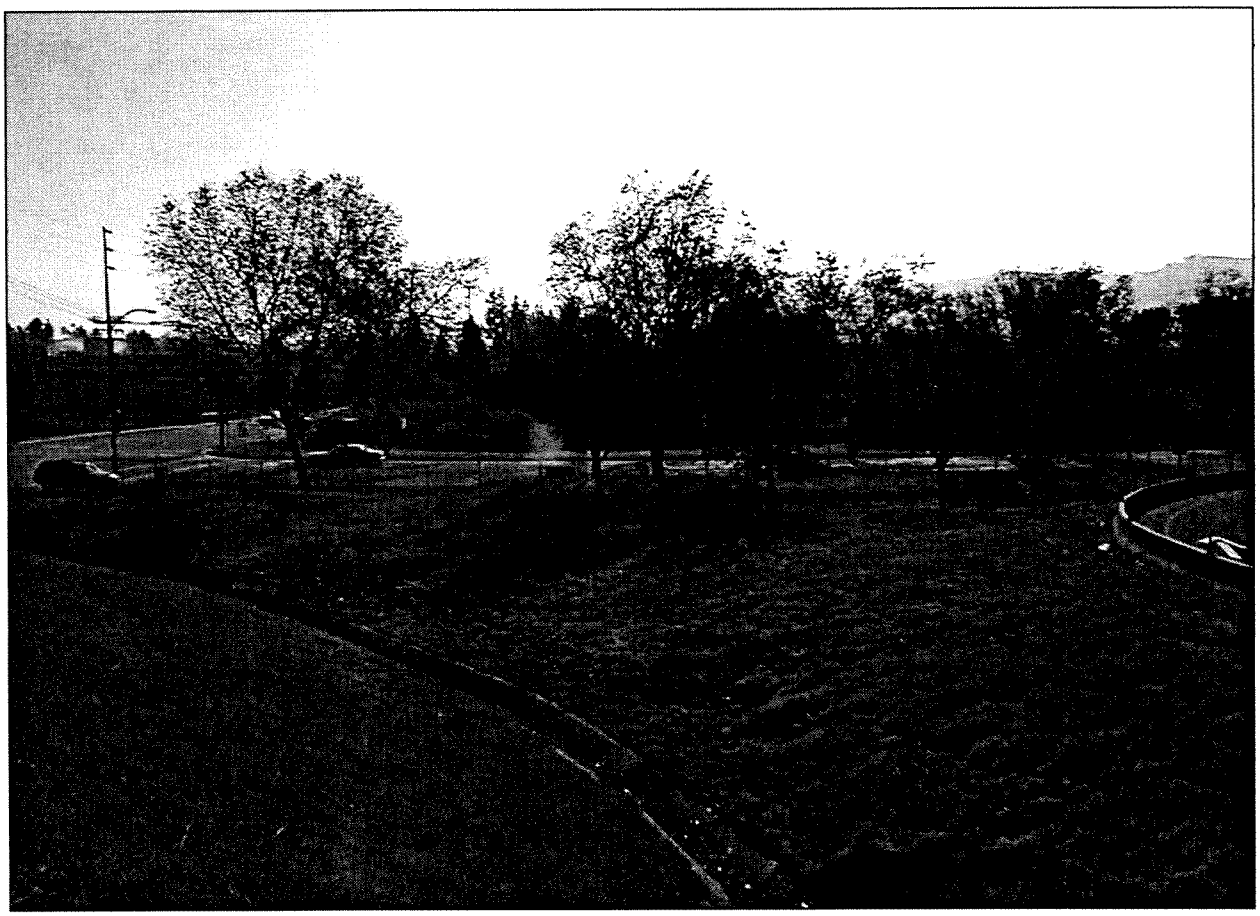
FIGURE 71S-2-15

Hydrographs of Selected Wells near 71 Freeway; 71S-2, 71S-3, 71S-4

LA Co. Dept. Public Works Well Data - 7 Closest Wells
USGS Well Data - Wells within approx. 1 mile radius



(Note: Well 1401 No Data)



Priority 3-71S-2 (Ridgeway St.) Site Photograph

Date: April 2003	**Project: Caltrans IFB Site Selection Study**	Figure: 71S-2-16

APPENDIX D

71S-3 (Valley Blvd.)

Table 1	Geotechnical Laboratory Test Data
Figure 71S-3-1	Site Plan
Figure 71S-3-2	Geologic Cross Section A-A'
Figure 71S-3-3	Geologic Cross Section B-B'
Figure 71S-3-4	Log of Boring 71S-3-MW-1
Figure 71S-3-5	Groundwater Monitoring Well 71S-3-MW-1 Diagram
Figure 71S-3-6	Groundwater Monitoring Well 71S-3-MW-1 Photographs
Figure 71S-3-7	Log of Boring 71S-3-B-1
Figure 71S-3-8	Log of Boring 71S-3-B-3
Figure 71S-3-9	Log of Boring 71S-3-P-1
Figure 71S-3-10	Infiltration Data for 71S-3-P-1
Figure 71S-3-11	Log of Boring 71S-3-P-2
Figure 71S-3-12	Infiltration Data for 71S-3-P-2
Figure 71S-3-13	Log of Boring 71S-3-P-3
Figure 71S-3-14	Infiltration Data for 71S-3-P-3
Figure 71S-3-15	Log of Boring 71S-3-P-4
Figure 71S-3-16	Infiltration Data for 71S-3-P-4
Figure 71S-3-17	Log of Boring 71S-3-P-5
Figure 71S-3-18	Infiltration Data for 71S-3-P-5
Figure 71S-3-19	Log of Boring 71S-3-P-6
Figure 71S-3-20	Infiltration Data for 71S-3-P-6
Figure 71S-3-21	Log of Boring 71S-3-P-7
Figure 71S-3-22	Infiltration Data for 71S-3-P-7
Figure 71S-3-23	Particle-Size Distribution Curves
Figure 71S-3-24	Particle-Size Distribution Curves
Figure 71S-3-25	Particle-Size Distribution Curves
Figure 71S-3-26	Particle-Size Distribution Curves
Figure 71S-3-27	Plasticity Chart
Figure 71S-3-28	Plasticity Chart
Figure 71S-3-29	Hydrographs for Selected Wells
Figure 71S-3-30	Site Photographs

TABLE 1

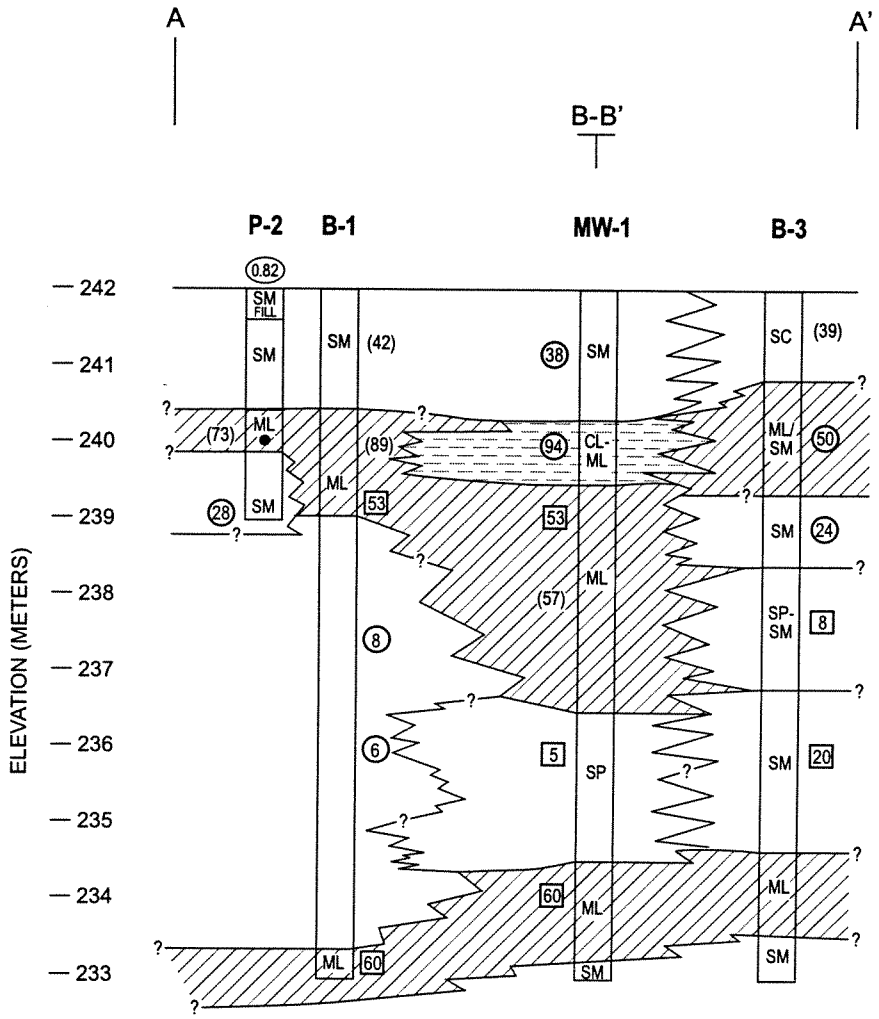
71S-3 GEOTECHNICAL LABORATORY TEST DATA

Location							Atterberg Limits		Sieve				Chemical Test Data		
Exploration Number	Sample/ Specimen Number	Depth (m)	Caltrans Soil Classification	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)	Gravel (%)	Sand (%)	<#200 Fines (%)	5 microns (%)	pH	O.M.% (% organic matter)	CEC (me/g)[1]
71S-3-B-1	1	1.07	SM	5	-	-	23	4	1	57	42	12	6.4	1.2	0.095
71S-3-B-1	2	1.52	CH	11	-	-	-	-	0	11	89	34	-	-	-
71S-3-B-1	4	2.44	ML	3	-	-	-	-	-	-	53	-	-	-	-
71S-3-B-1	7	4.11	SP-SM	2	-	-	-	-	11	80	9	-	-	-	-
71S-3-B-1	8	5.64	SP-SM	2	-	-	-	-	-	-	6	-	-	-	-
71S-3-B-1	10	8.69	ML	16	-	-	-	-	-	-	60	-	-	-	-
71S-3-MW-1	1	1.07	SM	5	-	-	-	-	1	61	38		7.4	1.2	0.099
71S-3-MW-1	2	1.52	CL-ML	-	-	-	26	6	0	6	94	31	-	-	-
71S-3-MW-1	4	2.59	ML	4	-	-	-	-	-	-	53	-	-	-	-
71S-3-MW-1	6	4.11	CL	5	-	-	-	-	0	43	57	16	-	-	-
71S-3-MW-1	8	5.64	SP-SM	1	-	-	-	-	-	-	5	-	-	-	-
71S-3-MW-1	9b	7.47	CL	23	-	-	-	-	-	-	79	-	-	-	-
71S-3-B-3	SK-1	0.30	SC	15	-	-	43	20	16	45	39	17	7.2	3	0.126
71S-3-B-3	3	1.52	ML-SM	5	-	-	-	-	0	20	50	-	-	-	-
71S-3-B-3	5	2.59	SM	2	-	-	-	-	1	80	24	-	-	-	-
71S-3-B-3	8	4.11	SP-SM	1	-	-	-	-	-	-	8	-	-	-	-
71S-3-B-3	9	5.64	SM	2	-	-	-	-	-	-	20	-	-	-	-
71S-3-P-1	4a	1.52	CL	-	-	-	-	-	0	19	81	-	-	-	-
71S-3-P-1	6	2.44	ML	-	-	-	-	-	2	42	56	-	-	-	-
71S-3-P-2	6	2.44	SM	-	-	-	-	-	16	49	35	-	-	-	-
71S-3-P-3	4	1.52	CL	8			36	12	0	13	87	27	-	-	-
71S-3-P-4	4	1.68	ML	-	-	-	35	11	-	-	-	-	-	-	-
71S-3-P-4	5	2.13	ML	-	-	-	29	5	1	31	68	18	-	-	-
71S-3-P-4	6	2.59	SM	-	-	-	-	-	0	73	27	-	-	-	-
71S-3-P-4	8	3.51	SM	-	-	-	-	-	1	80	20	-	-	-	-
71S-3-P-5	4	1.68	ML	-	-	-	27	1	0	27	73	14	-	-	-
71S-3-P-5	5	2.13	ML	-	-	-	26	2	-	-	-	-	-	-	-
71S-3-P-5	6	2.59	SM	-	-	-	-	-	15	58	28	-	-	-	-
71S-3-P-6	4a	1.68	ML	-	-	-	32	8	-	-	-	-	-	-	-
71S-3-P-6	4b	1.68	ML	5	-	-	29	5	0	25	75	19	-	-	-
71S-3-P-6	5	2.13	ML/SM	-	-	-	-	-	0	48	52	-	-	-	-
71S-3-P-7	4a	1.68	ML	-	-	-	38	11	-	-	-	-	-	-	-
71S-3-P-7	4b	1.68	ML	4	-	-	26	3	0	30	70	19	-	-	-
71S-3-P-7	5	2.13	SM/ML	-	-	-	-	-	0	46	54	-	-	-	-

Notes: [1] Cation excange capacity, millequivalents per gram

Priority 3-71S-3 (Valley Blvd.) Site Plan

April 2003	Infiltration Basin Site Selection Study	Figure 71S-3-1



Water Level Observed During Drilling

Groundwater Elevation Feb. 2003

Float Valve Location
Top of Hydraulic Conductivity Test Section

(0.52) In-hole Hydraulic Conductivity Test Value (inches/hour)

(46) Hydrometer Test, % Passing #200 Sieve

(72) Sieve Analysis, % Passing #200 Sieve

[32] Wash Analysis, % Passing #200 Sieve

Clays and Clays w/Silt

Silt

NOTE: Groundwater Not Observed

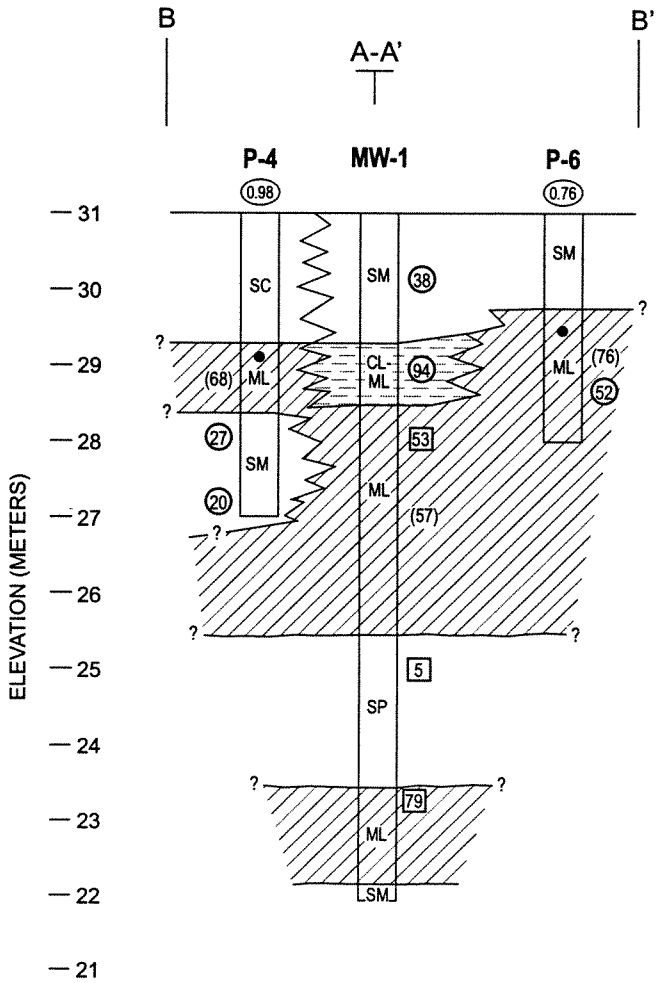
HORIZONTAL SCALE:
1 cm = 5 meters

VERTICAL SCALE:
1 cm = 1 meter

PRIORITY 3 – SITE 71S-3 GEOLOGIC CROSS SECTION A-A'

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-3-2

L:/CALTRANS/C GOETZ/xsect 71S-3-2.FH10



Water Level Observed During Drilling

Groundwater Elevation Feb. 2003

Float Valve Location
Top of Hydraulic Conductivity Test Section

(0.52) In-hole Hydraulic Conductivity Test Value (inches/hour)

(46) Hydrometer Test, % Passing #200 Sieve

(72) Sieve Analysis, % Passing #200 Sieve

[32] Wash Analysis, % Passing #200 Sieve

Clays and Clays w/Silt

Silt

NOTE: Groundwater Not Observed

HORIZONTAL SCALE:
1 cm = 5 meters

VERTICAL SCALE:
1 cm = 1 meter

PRIORITY 3 – SITE 71S-3 GEOLOGIC CROSS SECTION B-B'

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-3-3

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Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

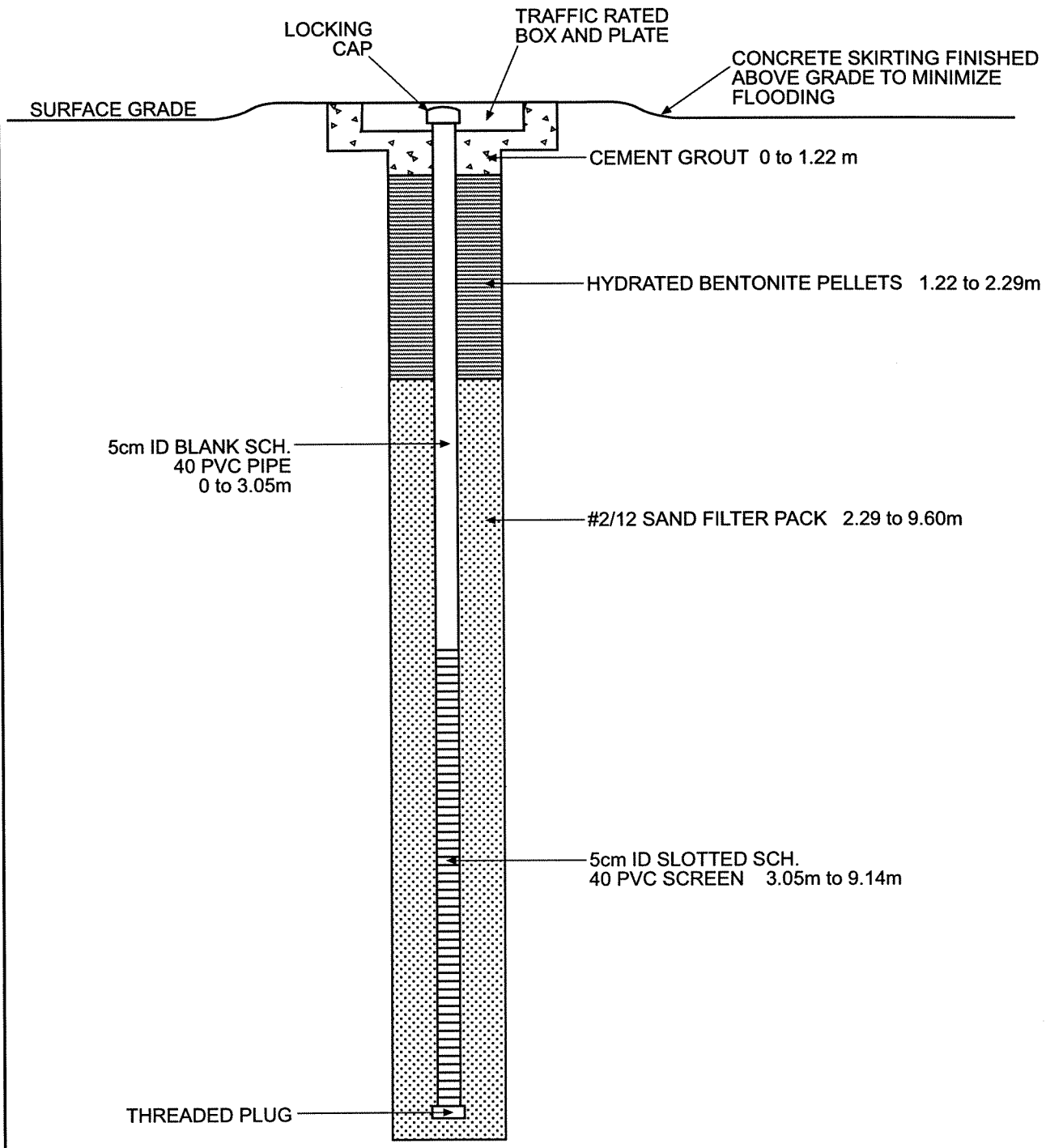
Log of Boring 71S-3-MW-1

Sheet 1 of 1

Date(s) Drilled	3/14/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	9.1 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ModifiedCalifornia/SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	Well Construction Figure	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Silty sand (SM) brown, dry, fine to coarse grained sand, with trace fine gravel, mica, and roots			Hand Auger to 1.1m
	1							Becomes light brown, medium dense			
			1	30					5		SA: 38%<#200 pH=7.4; O.M.=1.2% CEC=0.099 me/g
			2	22				Silty clay (CL-ML) very stiff, light brown, dry, with roots			HYD: 94%<#200 LL=26; PI=6
240	2							no roots			
			3	24							
			4	27				Sandy silt (ML) medium dense, light brown, dry, fine grained sand	4		WA: 53%<#200
	3							roots and oxidation spots			
			5	20							
			6	19				Sandy lean clay (CL), medium dense, light brown, dry			
238	4								5		Hyd:57%<#200
			7	41				Sandy silt (ML), dense, light brown, dry, fine grained sand			
	5										
			8	37				Poorly graded sand (SP) dense, light brown and light gray, dry, fine to coarse grained sand, with some gravel and trace silt	1		WA: 5%<#200
236	6										
								Becomes reddish brown, medium dense, fine grained sand			
	7		9a								
			9b	24							
								Silt with sand (ML) medium dense, olive brown, moist, fine grained sand, with traces of mica	23		WA: 79%<#200
234	8							becomes reddish brown			
	9		10	24				Silty sand (SM) dense, brown, moist, fine grained sand, with traces of mica			
								Bottom of boring at 9.1 meters			
232	10										
	11										
230	12										

Figure 71S-3-4



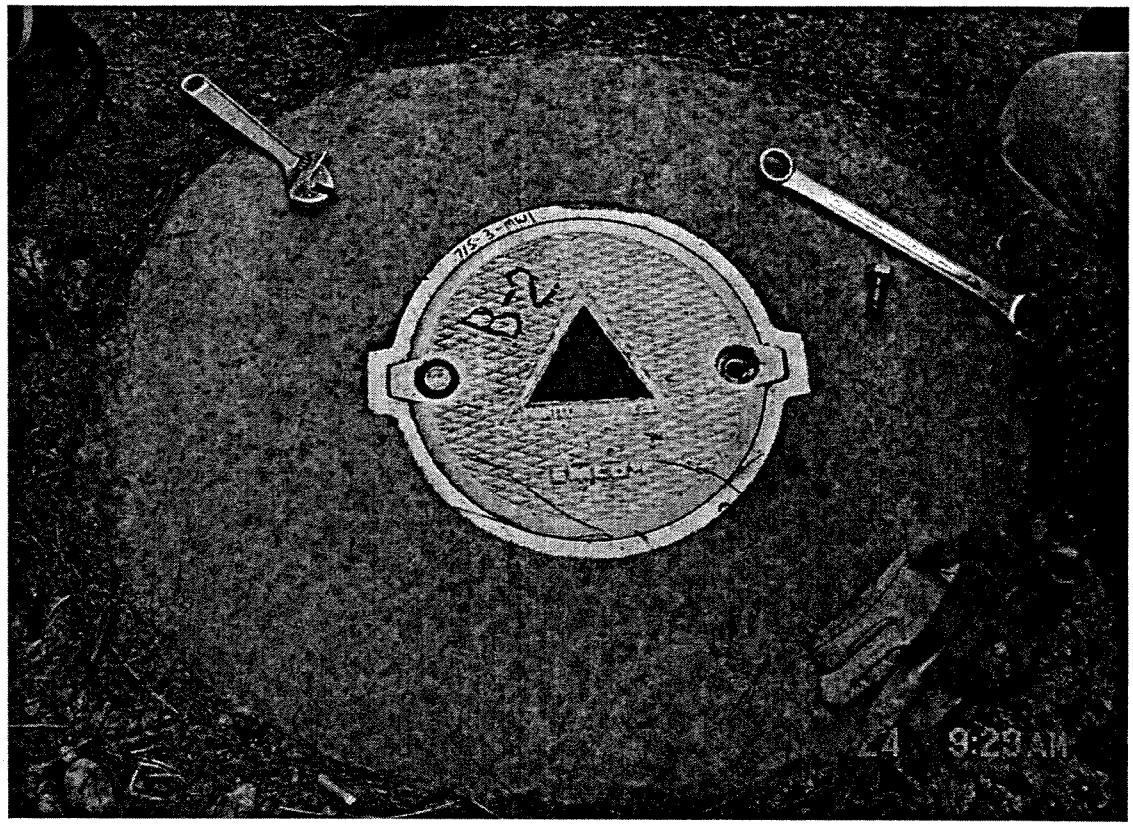
71S-3-MW-1

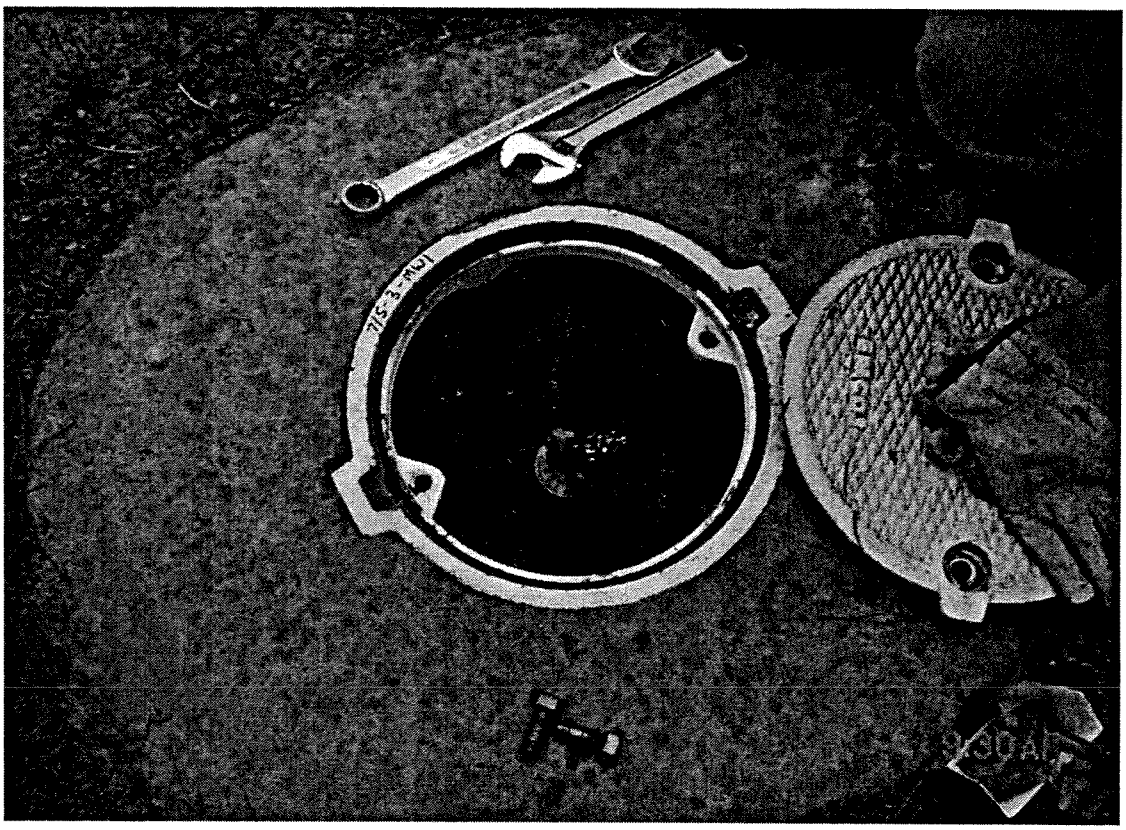
Not to Scale

L:/Caltrans/GW monitoring well diag.fh10 5/03

GROUNDWATER MONITORING WELL DIAGRAM

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-3-5





71S-3-MW-1

Date: April 2003	**Project: Caltrans IFB Site Selection Study**	Figure: 71S-3-6

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-B-1

Sheet 1 of 1

Date(s) Drilled	3/14/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	9.1 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ModifiedCalifornia/SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Silty sand (SM) brown, moist, fine grained sand, with organics including roots			Hand Auger to 1.1m
	1							Becomes medium dense			
			1	28					5		HYD:42%<#200 LL=23; PI=4 pH=6.4; O.M.=1.2% CEC=0.095 me/g
			2	31				Silt (ML) dense, light brown, dry, with some fine grained sand, roots, and fat clay seams	11		HYD:89%<#200
240	2		3	16				Sandy silt (ML) medium dense, brown, dry, fine grained sand			
			4	23					3		WA: 53%<#200
	3		5	26				Poorly graded sand with silt (SP-SM) medium dense, light brown and gray, moist, fine to coarse grained sand and fine gravel			
238	4		6	37				Becomes dense			
			7	34					2		SA: 8%<#200
	5										
								Becomes very dense, with gravel			
236	6		8	54					2		WA: 6%<#200
	7										
			9	NR							
234	8										
	9		10	NR				Sandy silt (ML) brown, moist, fine grained sand	16		WA: 60%<#200
								Bottom of boring at 9.1 meters			
232	10										
	11										
230	12										

Figure 71S-3-7

Project: INFILTRATION BASIN SITE SELECTION STUDY Project Location: SR 71, Valley Blvd.	Log of Boring 71S-3-B-3 Sheet 1 of 1

Date(s) Drilled	3/14/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	9.1 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	Bulk/ModifiedCalifornia/SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Clayey sand with gravel (SC) dark brown, moist, fine to coarse grained sand and fine gravel, with roots and other organics			Hand Auger to 1.1m
			1						15		HYD:39%<#200 LL=43; PI=20 pH=7.2; O.M.=3% CEC=0.126 me/g
	1		2	27				Sandy silt to silty sand (ML/SM) medium dense, yellowish brown, dry, fine to medium grained sand			
240	2		3	24					5		SA: 50%<#200
			4	15				Silty sand (SM) medium dense, yellowish-brown, dry, fine to coarse grained sand			
	3		5	26					2		SA: 24%<#200
			6	22							No Recovery
238	4		7	30				Poorly graded sand with silt and gravel (SP-SM) dense, yellowish brown, dry, fine to medium grained sand and fine gravel			
			8	33					1		WA: 8%<#200
	5							Silty sand with gravel (SM) medium dense, brown, dry, fine to medium grained sand and fine gravel			
236	6		9	26					2		WA: 20%<#200
	7		10a 10b	24				Sandy silt (ML) medium dense, yellowish brown, dry, fine grained sand, with traces of mica			
234	8										
	9		11	29				Silty sand (SM) medium dense, yellowish brown, moist, fine to medium grained sand			
								Bottom of boring at 9.1 meters			
232	10										
	11										
230	12										

Figure 71S-3-8

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-1

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	31				Silty sand (SM) [TOPSOIL] dense, dark brown, moist, fine to medium grained sand			NATIVE
			2	40				Silty sand with gravel (SM) [FILL] very dense, mottled brown, moist, fine to coarse grained sand, fine grained gravel			CASING
	1		3	32				Sandy lean clay (CL) firm, light brown, moist, fine to medium grained sand; Becomes soft, increase in fines content			SA: 81%<#200
			4	15							(COARSE AQUARIUM SAND)
240	2		5	35				Sandy silt (ML) dense, yellowish-brown, moist, fine to medium grained sand			SA: 56%<#200
			6	28							
	3							Bottom of boring at 3.04 meters			
238	4										
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-9

71S-3-P-1-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:55:00	0:00:00	60	0	0	0.000	75.4	
8:56:00	0:01:00	57.5	2.5	2.5	2.500		
8:57:00	0:02:00	55	2.5	5	2.500		
8:58:00	0:03:00	53	2	7	2.333		
8:59:00	0:04:00	51.5	1.5	8.5	2.125		
9:00:00	0:05:00	50.5	1	9.5	1.900		
9:01:00	0:06:00	49.8	0.7	10.2	1.700		
9:02:00	0:07:00	49	0.8	11	1.571		
9:05:00	0:10:00	47.2	1.8	12.8	1.280		
9:10:00	0:15:00	43.2	4	16.8	1.120	75.2	73.5
9:20:00	0:25:00	36.5	6.7	23.5	0.940		
9:30:00	0:35:00	31	5.5	29	0.829	74.8	
9:40:00	0:45:00	26	5	34	0.756	75.6	
9:47:00	0:52:00	22.8	3.2	37.2	0.715		
9:47:00	0:52:00	58	0	37.2			
10:02:00	1:07:00	50	8	45.2	0.675	75.4	
10:30:00	1:35:00	38.5	11.5	56.7	0.597	75.2	
11:00:00	2:05:00	26.5	12	68.7	0.550	75.2	73.5
11:30:00	2:35:00	14	12.5	81.2	0.524	75.2	73.5
11:44:00	2:49:00	9	5	86.2	0.510		
11:44:00	2:49:00	60	0	86.2			
12:00:00	3:05:00	52	8	94.2	0.509	82	81
12:30:00	3:35:00	41	11	105.2	0.489	81.9	80.2
13:00:00	4:05:00	30	11	116.2	0.474	81.9	80.2
13:30:00	4:35:00	17	13	129.2	0.470	81.9	
13:58:00	5:03:00	6.0	11	140.2	0.463	82.4	
13:58:00	5:03:00	60.0	0	140.2	0.463		
14:30:00	5:35:00	45.0	15	155.2	0.463	79.2	
15:05:00	6:10:00	31.7	13.3	168.5	0.455	79.3	
15:30:00	6:35:00	21.0	10.7	179.2	0.454	79.7	79.9
15:55:00	7:00:00	11.8	9.2	188.4	0.449	79.7	79.9

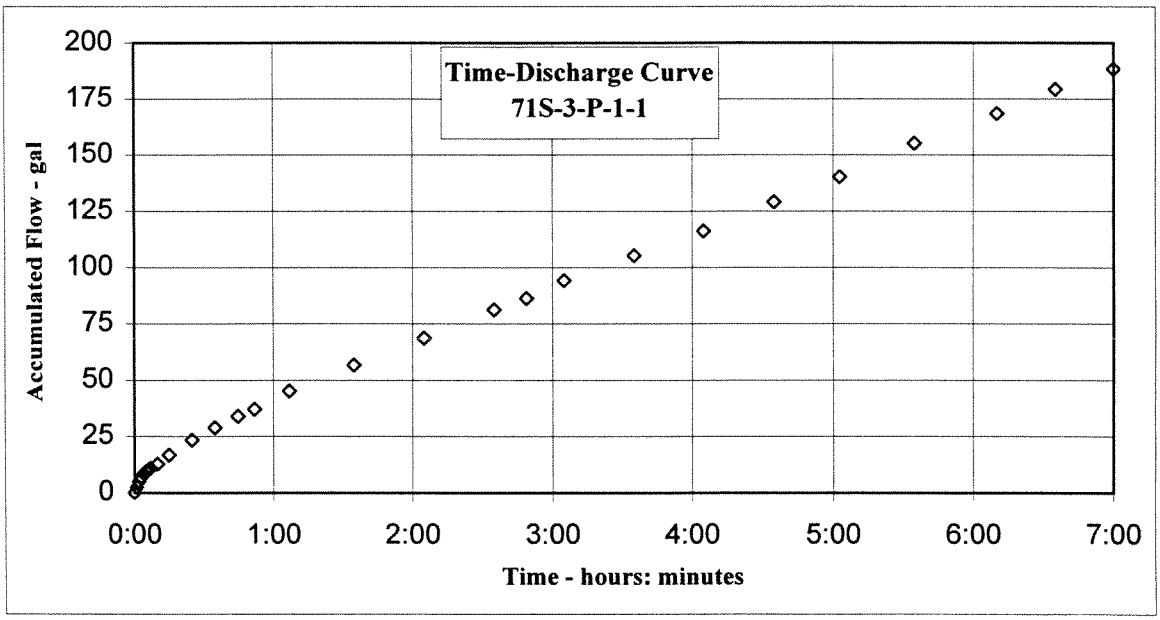


Figure 71S-3-10A

Calculation of Test Condition

Float depth =	2.5 ft	0.76 meters
Borehole depth =	10 ft	3.05 meters
Height of water in test well, h =	7.5 ft	2.29 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	30.3 ft	9.24 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	200 lbs	
density of sand in borehole, ρ_s =	103.41 lbs/cu ft	
r_w =	0.287 ft	3.44 inches

Calculations for k_{20}

h =	7.5 ft	90 inches
Steady-state discharge rate, q =	0.408 gpm	94.2 cu.in./min
Average well water temperature, T =	80.89 °F	27.16 °C
Kinematic viscosity ratio, V =	0.8261 no units	
Condition I - k20=	4.58E-03 in/min	0.2747 in/hr

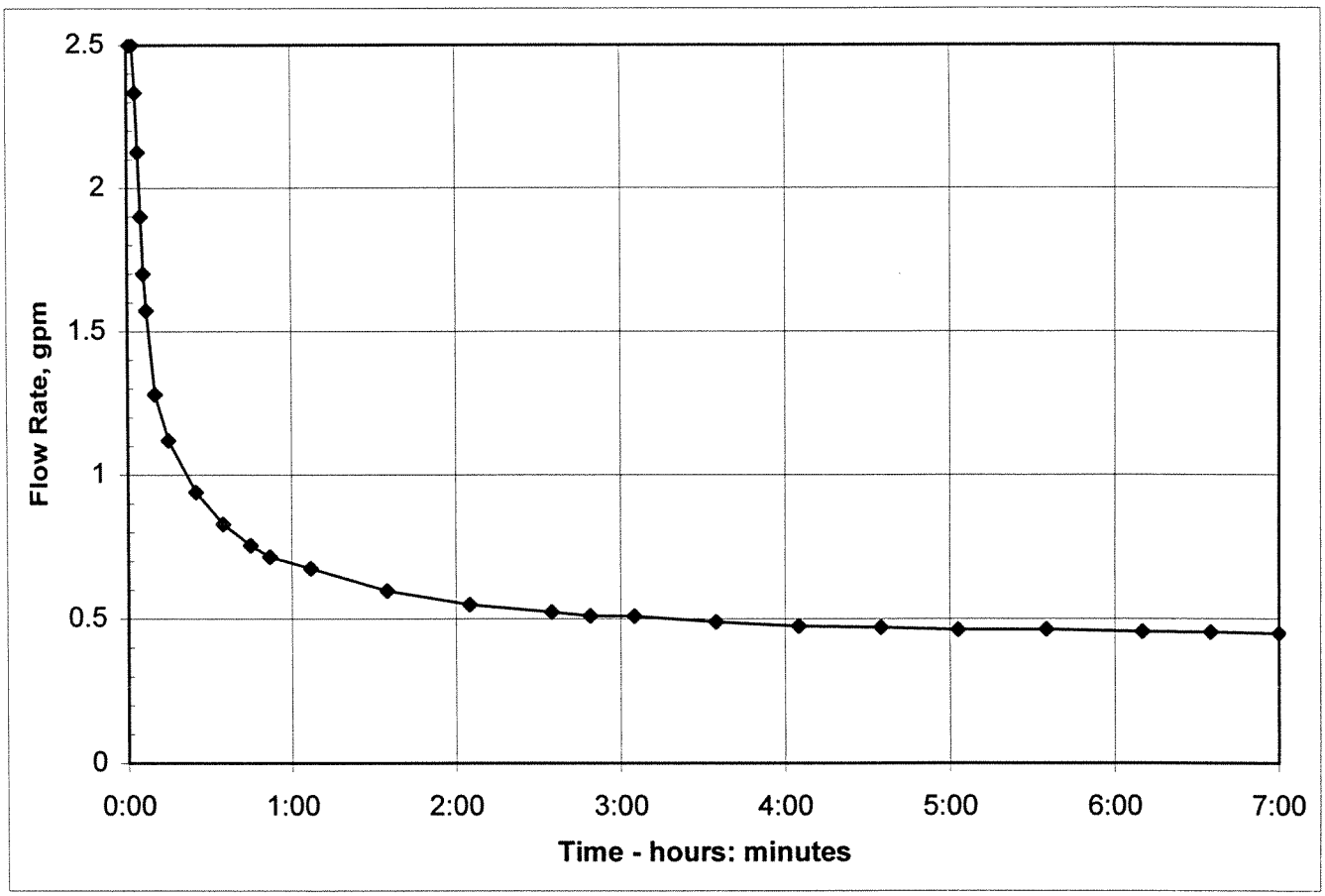


Figure 71S-3-10B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-2

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	29				Silty sand with gravel (SM) [FILL] medium dense, mottled brown, moist, fine to medium grained sand, fine grained gravel			NATIVE
			2	30				Silty sand (SM) medium dense, light brown, moist, fine to medium grained sand			
	1		3	13							CASING
			4	19				Silt (ML) soft, mottled gray and brown, moist			
240	2		5	22				Silty sand (SM) medium dense, yellowish-brown, moist, fine to medium grained sand			(COARSE AQUARIUM SAND)
			6	23				Coarsening downward			SA: 35%<#200
	3							Bottom of boring at 3.04 meters			
238	4										
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-11

71S-3-P-2-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:51:00	0:00:00	60	0	0	0.000		
8:52:00	0:01:00	53.5	6.5	6.5	6.500		
8:53:00	0:02:00	52	1.5	8	4.000	79.9	
8:54:00	0:03:00	51.8	0.2	8.2	2.733		
8:55:00	0:04:00	49.9	1.9	10.1	2.525		
8:57:00	0:06:00	48	1.9	12	2.000	79.9	
8:59:00	0:08:00	47	1	13	1.625		
9:02:00	0:11:00	45	2	15	1.364	79.9	75.9
9:08:00	0:17:00	41.7	3.3	18.3	1.076	79.7	75.4
9:22:00	0:31:00	34.1	7.6	25.9	0.835	79.7	74.8
9:34:00	0:43:00	28.8	5.3	31.2	0.726	79.9	74.9
9:56:00	1:05:00	19.7	9.1	40.3	0.620	80.2	74.8
10:02:00	1:11:00	17.5	2.2	42.5	0.599		
10:02:00	1:11:00	60	0	42.5			
10:31:00	1:40:00	46	14	56.5	0.565	77.4	74.6
11:02:00	2:11:00	34.2	11.8	68.3	0.521	80.6	
11:32:00	2:41:00	23.4	10.8	79.1	0.491	81.5	
11:53:00	3:02:00	16	7.4	86.5	0.475		
11:56:00	3:05:00	60	0	86.5			
12:00:00	3:09:00	57	3	89.5	0.474	84.7	
12:24:00	3:33:00	46.5	10.5	100	0.469	85.1	
12:32:00	3:41:00	44.7	1.8	101.8	0.461		
12:50:00	3:59:00	37	7.7	109.5	0.458	85.8	
13:05:00	4:14:00	31.8	5.2	114.7	0.452	86.2	84.2
13:36:00	4:45:00	20.5	11.3	126	0.442	87.3	85.1
13:50:00	4:59:00	14.8	5.7	131.7	0.440		
13:50:00	4:59:00	60.0	0	131.7			
14:03:00	5:12:00	53.0	7	138.7	0.445	89.2	
14:12:00	5:21:00	49.5	3.5	142.2	0.443	89.4	
14:32:00	5:41:00	41.5	8	150.2	0.440	89.6	87.8
15:03:00	6:12:00	30.0	11.5	161.7	0.435	90.5	88.9
15:40:00	6:49:00	15.8	14.2	175.9	0.430	91.4	89.6
15:51:00	7:00:00	11.7	4.1	180	0.429	91.8	

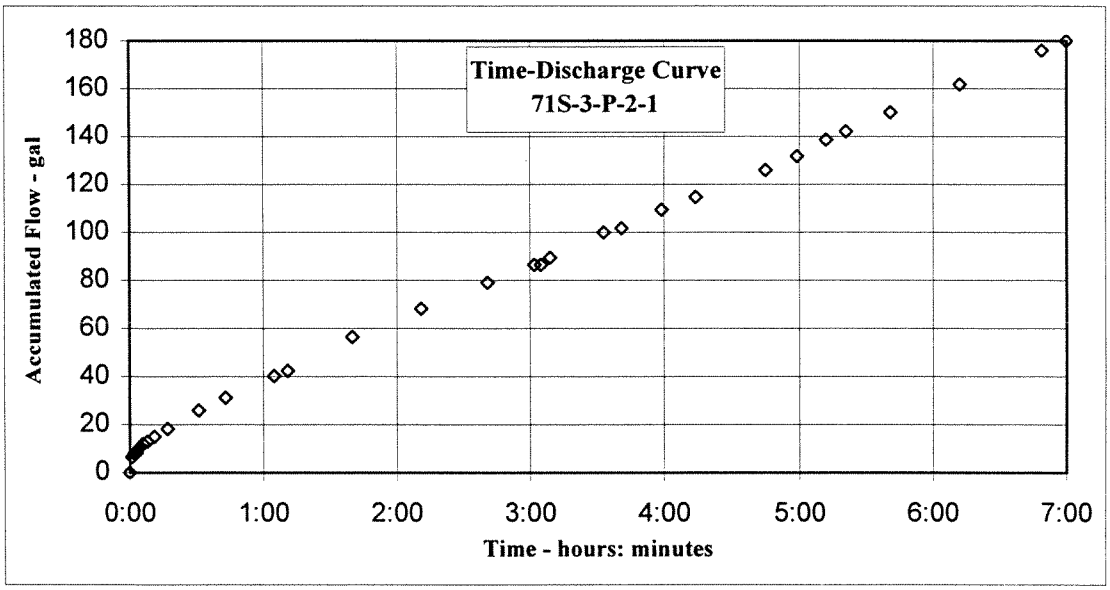


Figure 71S-3-12A

Calculation of Test Condition

Float depth =	6.5 ft	1.98 meters
Borehole depth =	10 ft	3.05 meters
Height of water in test well, h =	3.5 ft	1.07 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	26.3 ft	8.02 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	104.78 lbs/cu ft	
r_w =	0.295 ft	3.54 inches

Calculations for k_{20}

h =	3.5 ft	42 inches
Steady-state discharge rate, q =	0.397 gpm	91.8 cu.in./min
Average well water temperature, T =	89.43 °F	31.90 °C
Kinematic viscosity ratio, V =	0.7343 no units	
Condition I - k20=	0.0137 in/min	0.8213 in/hr

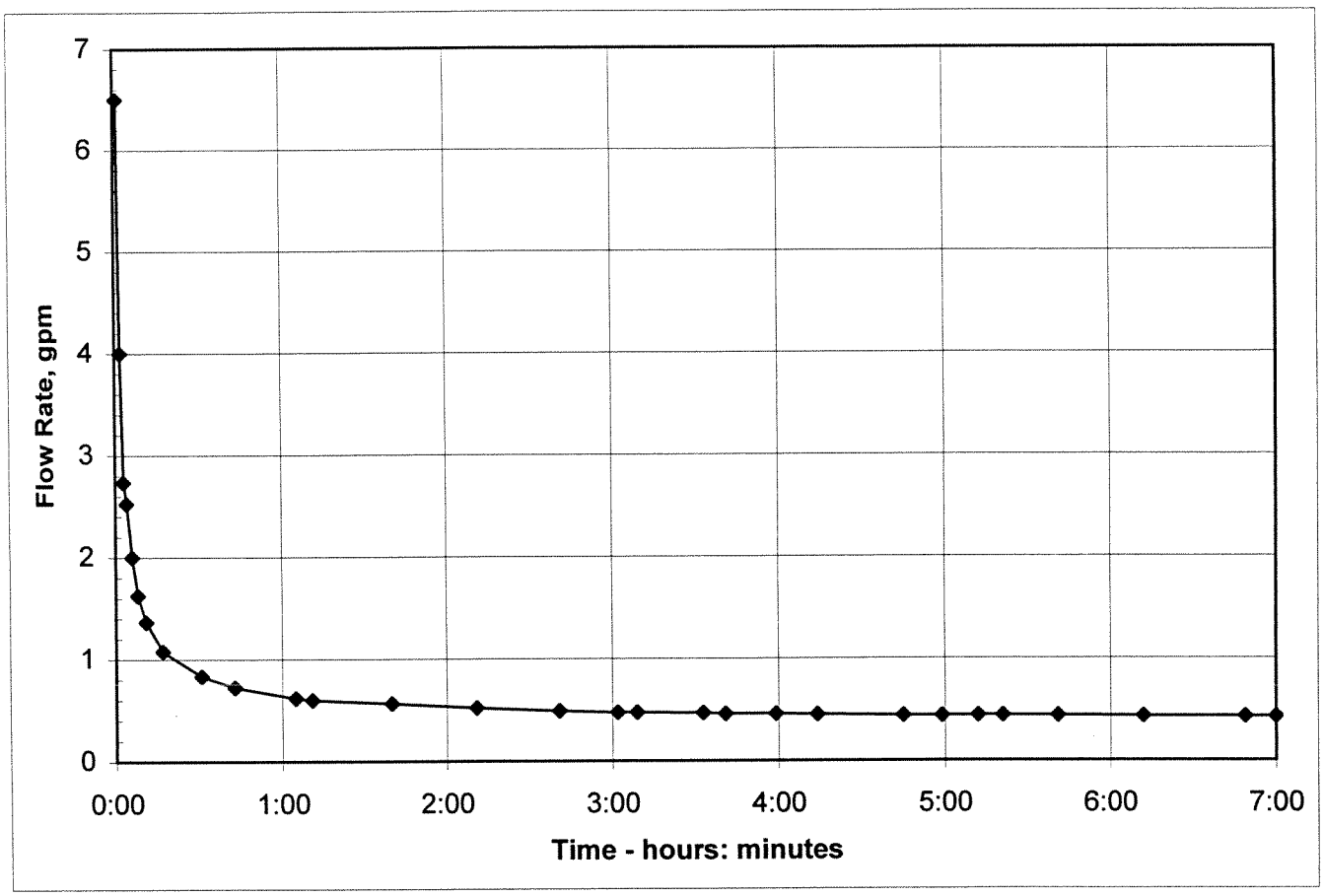


Figure 71S-3-12B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-3

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	2.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	24				Silty sand with gravel (SM) [FILL] medium dense, mottled brown, moist, fine to medium grained sand, with wood fragments			NATIVE
			2	38				Silty sand (SM) dense, light brown, moist, fine to medium grained sand			CASING
	1		3	27				Becomes medium dense			(COARSE SAND AQUARIUM)
			4	23				Lean clay (CL) soft, light yellowish-brown, moist	8		HYD:87%<#200 LL=36; PI=12
240	2							Bottom of boring at 1.98 meters			
	3										
238	4										
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-13

71S-3-P-3-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:50:00	0:00:00	60	0	0	0.000		
8:51:00	0:01:00	59	1	1	1.000		
8:52:00	0:02:00	57.8	1.2	2.2	1.100	75.2	74.9
8:53:00	0:03:00	55.8	2	4.2	1.400		
8:54:00	0:04:00	55.8	0	4.2	1.050	74.9	74.9
8:55:00	0:05:00	55.8	0	4.2	0.840		
9:00:00	0:10:00	55	0.8	5	0.500	74.5	74.3
9:10:00	0:20:00	54.7	0.3	5.3	0.265	74.3	
9:20:00	0:30:00	54.2	0.5	5.8	0.193	74.1	
9:41:00	0:51:00	53.8	0.4	6.2	0.122	74.1	
10:04:00	1:14:00	53	0.8	7	0.095	74..5	
10:34:00	1:44:00	52.2	0.8	7.8	0.075	75.9	74.1
11:02:00	2:12:00	51.8	0.4	8.2	0.062	76.6	
11:34:00	2:44:00	51	0.8	9	0.055	77.5	
12:07:00	3:17:00	50.8	0.2	9.2	0.047		
12:35:00	3:45:00	49.6	1.2	10.4	0.046	79.2	
13:07:00	4:17:00	49	0.6	11	0.043	79.9	
13:39:00	4:49:00	48.2	0.8	11.8	0.041	80.8	80.4
14:05:00	5:15:00	47.8	0.4	12.2	0.039	81.3	81
14:34:00	5:44:00	47	0.8	13	0.038	81.7	81.9
15:05:00	6:15:00	46.6	0.4	13.4	0.036	82.6	
15:42:00	6:52:00	45.8	0.8	14.2	0.034		
15:53:00	7:03:00	45.6	0.2	14.4	0.034	83.1	84.2

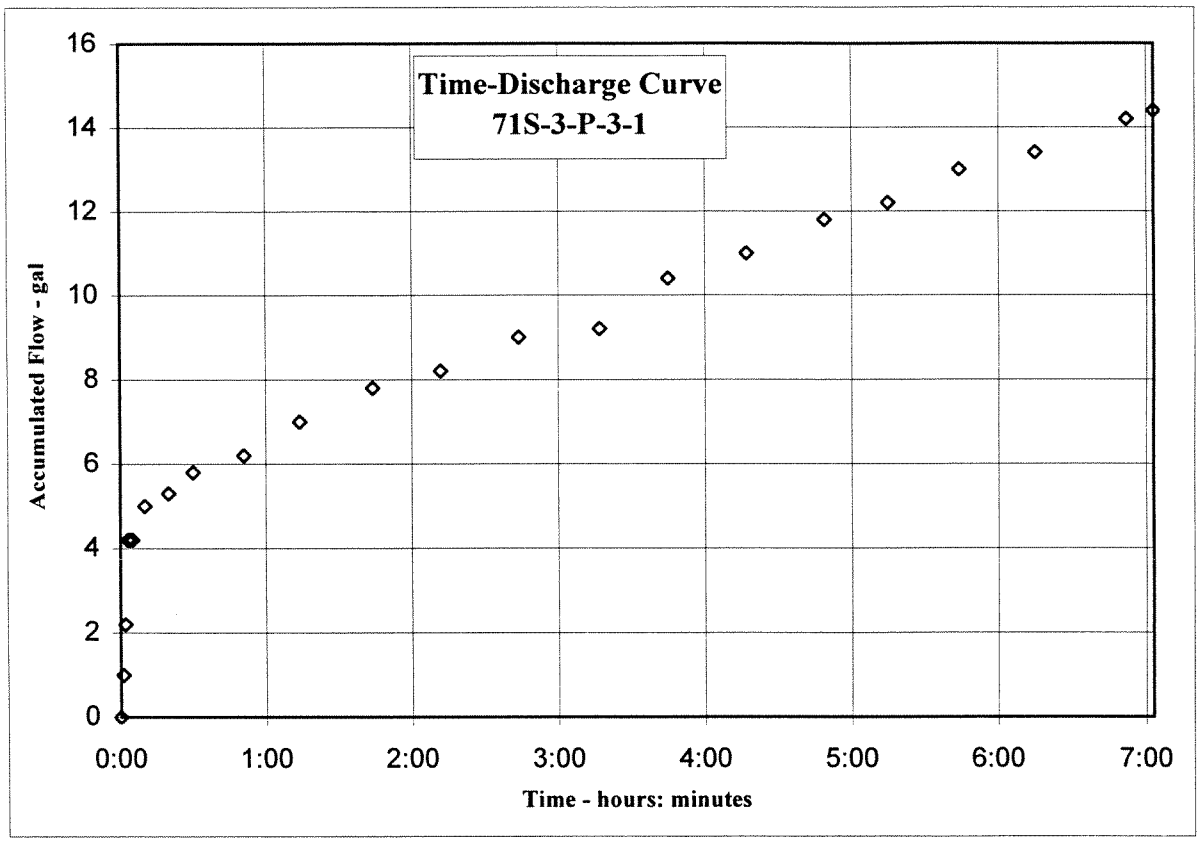


Figure 71S-3-14A

Calculation of Test Condition

Float depth =	5.3 ft	1.62 meters
Borehole depth =	6.5 ft	1.98 meters
Height of water in test well, h =	1.2 ft	0.37 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	27.5 ft	8.38 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	50 lbs	
density of sand in borehole, ρ_s =	103.28 lbs/cu ft	
r_w =	0.358 ft	4.30 inches

Calculations for k_{20}

h =	1.2 ft	14.4 inches
Steady-state discharge rate, q =	0.0203 gpm	4.68 cu.in./min
Average well water temperature, T =	81.23 °F	27.35 °C
Kinematic viscosity ratio, V =	0.8222 no units	
Condition I - k20=	3.48E-03 in/min	0.2089 in/hr

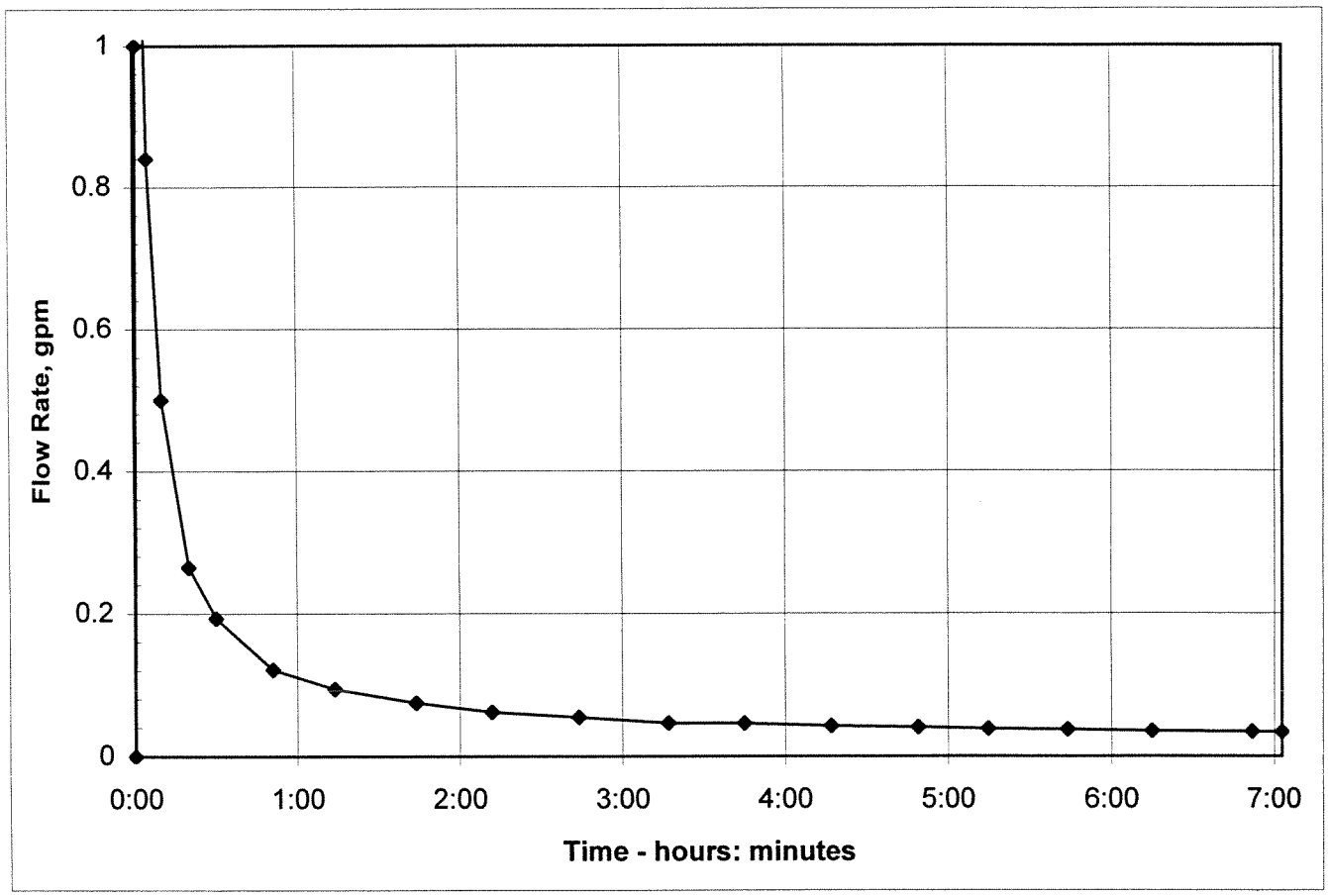


Figure 71S-3-14B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-4

Sheet 1 of 1

Date(s) Drilled	9/18/02	Logged By	J. Marin	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	4.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	A&R Drilling	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Clayey sand (SC) very dense, dark brown, moist, fine grained sand			NATIVE
			1	57							
	1		2	59							CASING
			3	30				Becomes dense			(COARSE SAND AQUARIUM)
240	2		4	31				Sandy silt (ML) dense, light brown, damp			LL=35; PI=11
			5	40							HYD:68%<#200 LL=29; PI=5
	3		6	26				Silty sand (SM) medium dense, light brown, damp, fine grained sand			SA: 27%<#200
			7	30							
			8	32							SA: 20%<#200
238	4							Bottom of boring at 4 meters			
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-15

71S-3-P-4-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
9:22:00	0:00:00	58	0	0	0.000	-	-
9:23:00	0:01:00	50.5	7.5	7.5	7.500	75.6	-
9:24:00	0:02:00	46	4.5	12	6.000	-	-
9:25:00	0:03:00	42	4	16	5.333	75.6	-
9:26:00	0:04:00	39	3	19	4.750	76.3	-
9:27:00	0:05:00	37	2	21	4.200	75.6	-
9:28:00	0:06:00	35	2	23	3.833	75.6	-
9:29:00	0:07:00	33.3	1.7	24.7	3.529	75.6	-
9:30:00	0:08:00	31.8	1.5	26.2	3.275	75.6	-
9:31:00	0:09:00	30	1.8	28	3.111	75.6	-
9:32:00	0:10:00	28.5	1.5	29.5	2.950	75.6	-
9:33:00	0:11:00	26.8	1.7	31.2	2.836	75.6	-
9:35:00	0:13:00	24	2.8	34	2.615	75.6	-
9:36:00	0:14:00	21.8	2.2	36.2	2.586	75.7	-
9:38:00	0:16:00	18.8	3	39.2	2.450	75.7	-
9:40:00	0:18:00	57	0	39.2	2.178	-	-
9:43:00	0:21:00	51	6	45.2	2.152	75.4	-
9:48:00	0:26:00	43	8	53.2	2.046	75.6	-
9:54:00	0:32:00	35.5	7.5	60.7	1.897	75.7	-
10:00:00	0:38:00	28.0	7.5	68.2	1.795	75.6	-
10:05:00	0:43:00	20.8	7.2	75.4	1.753	75.7	-
10:12:00	0:50:00	12.5	8.3	83.7	1.674	-	-
10:14:00	0:52:00	59.0	0	83.7	1.610	-	-
10:19:00	0:57:00	48.8	10.2	93.9	1.647	77.2	-
10:31:00	1:09:00	34.2	14.6	108.5	1.572	77.4	-
10:46:00	1:24:00	16.0	18.2	126.7	1.508	77.7	-
10:48:00	1:26:00	13.5	2.5	129.2	1.502	-	-
10:50:00	1:28:00	56.0	0	129.2	1.468	78.8	-
11:02:00	1:40:00	39.0	17	146.2	1.462	79.2	78.8
11:23:00	2:01:00	13.0	26	172.2	1.423	79.5	78.8
11:26:00	2:04:00	57.0	0	172.2	1.389	-	-
11:46:00	2:24:00	29.0	28	200.2	1.390	81.1	80.6
12:01:00	2:39:00	10.5	18.5	218.7	1.375	-	-
12:03:00	2:41:00	58.0	0	218.7	1.358	81.7	-
12:23:00	3:01:00	30.0	28	246.7	1.363	82	81.5
12:36:00	3:14:00	14.0	16	262.7	1.354	82.6	81.7
12:38:00	3:16:00	57.0	0	262.7	1.340	85.5	84.6
13:11:00	3:49:00	12.5	44.5	307.2	1.341	86.2	84.6
13:13:00	3:51:00	57.0	0	307.2	1.330	81	80.6
13:51:00	4:29:00	8.0	49	356.2	1.324	82.4	82
13:53:00	4:31:00	58.5	0	356.2	1.314	84.2	-
14:27:00	5:05:00	12.0	46.5	402.7	1.320	85.3	84
14:30:00	5:08:00	57.5	0	402.7	1.307	86.7	86
15:04:00	5:42:00	11.0	46.5	449.2	1.313	87.4	86.5
15:06:00	5:44:00	57.0	0	449.2	1.306	82.8	81.3
15:37:00	6:15:00	14.0	43	492.2	1.313	-	-
15:39:00	6:17:00	56.0	0	492.2	1.306	83.8	83.7
15:51:00	6:29:00	39.0	17	509.2	1.309	84	82.9
15:52:00	6:30:00	57.0	0	509.2	1.306	84.6	83.8
16:22:00	7:00:00	16.0	41	550.2	1.310	85.1	84.6

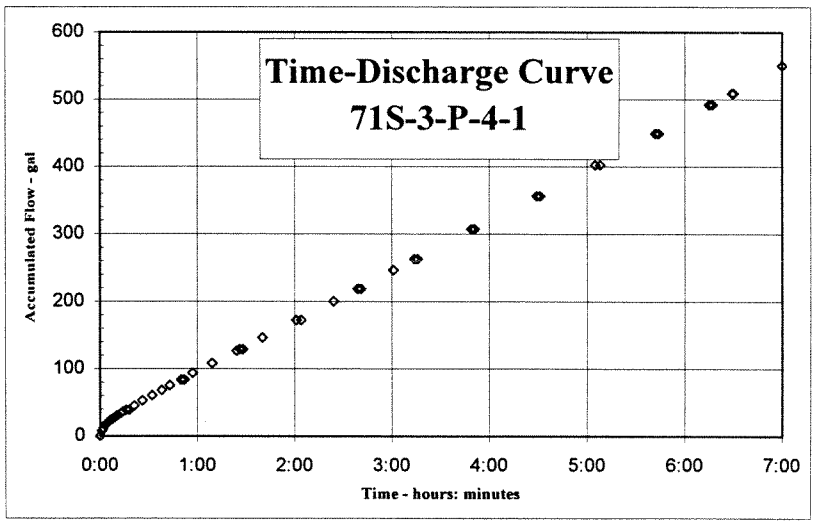


Figure 71S-3-16A

Calculation of Test Condition

Float depth =	5.8 ft	1.77 meters
Borehole depth =	12.5 ft	3.81 meters
Height of water in test well, h =	6.7 ft	2.04 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	27 ft	8.23 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	200 lbs	
density of sand in borehole, ρ_s =	105.28 lbs/cu ft	
r_w =	0.300 ft	3.61 inches

Calculations for k_{20}

h =	6.7 ft	80.4 inches
Steady-state discharge rate, q =	1.254 gpm	289.7 cu.in./min
Average well water temperature, T =	82.44 °F	28.02 °C
Kinematic viscosity ratio, V =	0.8086 no units	
Condition I - k20=	0.0164 in/min	0.9837 in/hr

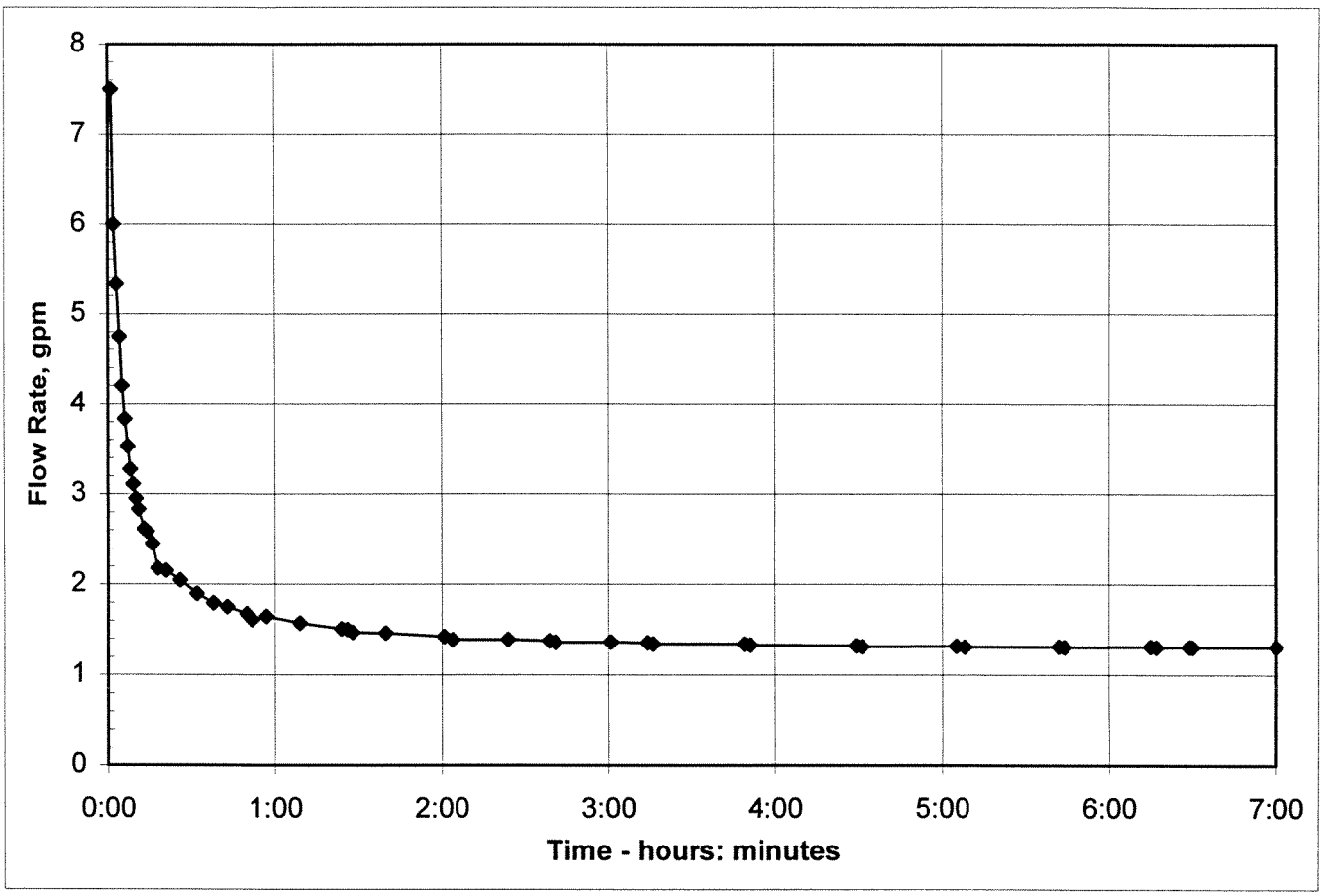


Figure 71S-3-16B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-5

Sheet 1 of 1

Date(s) Drilled	9/18/02	Logged By	J. Marin	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	A&R Drilling	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Clayey sand (SC) medium dense, dark brown, moist, fine grained sand, with roots			NATIVE
			1	21							
	1		2	26							CASING
			3	32				Silt with sand (ML) firm, light brown, moist, fine grained sand			
240	2		4	28							HYD:73%<#200 LL=27; PI=1
			5	39							LL=26; PI=2
	3		6	21				Silty sand (SM) dense, light brown, damp, fine grained sand			SA: 28%<#200 (COARSE SAND AQUARIUM)
								Bottom of boring at 3.1 meters			
238	4										
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-17

71S-3-P-5-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
9:15:00	0:00:00	53.5	0	0	0.000	80.8	-
9:16:00	0:01:00	48	5.5	5.5	5.500	80.8	-
9:17:00	0:02:00	46	2	7.5	3.750	80.8	-
9:20:00	0:05:00	44	2	9.5	1.900	80.8	-
9:22:00	0:07:00	43	1	10.5	1.500	80.8	-
9:24:00	0:09:00	42	1	11.5	1.278	80.8	-
9:26:00	0:11:00	41	1	12.5	1.136	80.8	-
9:28:00	0:13:00	40	1	13.5	1.038	80.8	-
9:30:00	0:15:00	38.5	1.5	15	1.000	80.8	-
9:32:00	0:17:00	37	1.5	16.5	0.971	80.8	-
9:34:00	0:19:00	36	1	17.5	0.921	81	-
9:36:00	0:21:00	35	1	18.5	0.881	81	-
9:38:00	0:23:00	34	1	19.5	0.848	81	-
9:40:00	0:25:00	33	1	20.5	0.820	81	-
9:42:00	0:27:00	32	1	21.5	0.796	81	-
9:45:00	0:30:00	30.5	1.5	23	0.767	81	-
9:50:00	0:35:00	28	2.5	25.5	0.729	81	78.8
9:55:00	0:40:00	25.5	2.5	28	0.700	81.3	78.8
10:00:00	0:45:00	23	2.5	30.5	0.678	81.3	79.2
10:05:00	0:50:00	21	2	32.5	0.650	81.5	79.2
10:10:00	0:55:00	18.5	2.5	35	0.636	81.5	79.7
10:15:00	1:00:00	16	2.5	37.5	0.625	81.7	79.9
10:20:00	1:05:00	14.0	2	39.5	0.608	81.9	79.9
10:22:00	1:07:00	13.0	1	40.5	0.604	81.9	80.2
10:25:00	1:10:00	29.0	0	40.5	0.579	80.2	78.6
10:30:00	1:15:00	26.0	3	43.5	0.580	80.2	78.4
10:33:00	1:18:00	25.0	1	44.5	0.571	80.2	78.1
10:36:00	1:21:00	42.0	0	44.5	0.549	78.8	77.4
11:00:00	1:45:00	31.0	11	55.5	0.529	79.5	77.4
11:07:00	1:52:00	46.0	0	55.5	0.496	78.8	-
11:30:00	2:15:00	36.5	9.5	65	0.481	79.3	-
12:00:00	2:45:00	24.0	12.5	77.5	0.470	79.9	78.8
12:43:00	3:28:00	8.0	16	93.5	0.450	-	-
12:47:00	3:32:00	53.5	0	93.5	0.441	-	-
13:09:00	3:54:00	44.0	9.5	103	0.440	85.1	83.7
13:45:00	4:30:00	29.5	14.5	117.5	0.435	86	84.8
14:15:00	5:00:00	17.0	12.5	130	0.433	87.3	85.8
14:37:00	5:22:00	8.0	9	139	0.432	-	-
14:46:00	5:31:00	57.0	0	139	0.420	-	-
15:15:00	6:00:00	40.0	17	156	0.433	86	84.8
15:45:00	6:30:00	27.0	13	169	0.433	86.9	85.3
16:15:00	7:00:00	15.2	11.8	180.8	0.430	81.8	86.2

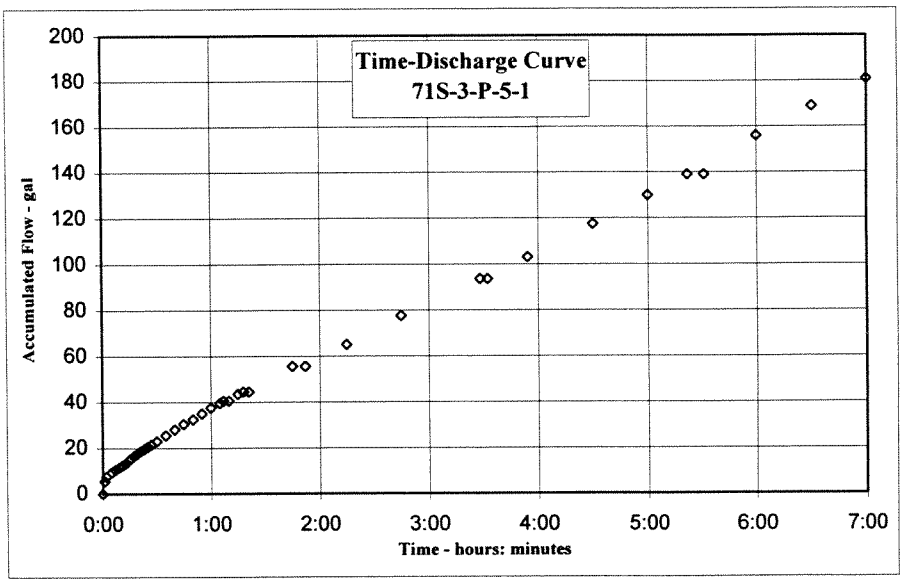


Figure 71S-3-18A

Calculation of Test Condition

Float depth =	5.7 ft	1.74 meters
Borehole depth =	10 ft	3.05 meters
Height of water in test well, h =	4.3 ft	1.31 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	27.1 ft	8.26 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	104.53 lbs/cu ft	
r_w =	0.266 ft	3.19 inches

Calculations for k_{20}

h =	4.3 ft	51.6 inches
Steady-state discharge rate, q =	0.378 gpm	87.3 cu.in./min
Average well water temperature, T =	80.98 °F	27.21 °C
Kinematic viscosity ratio, V =	0.8250 no units	
Condition I - k20=	0.0109 in/min	0.6555 in/hr

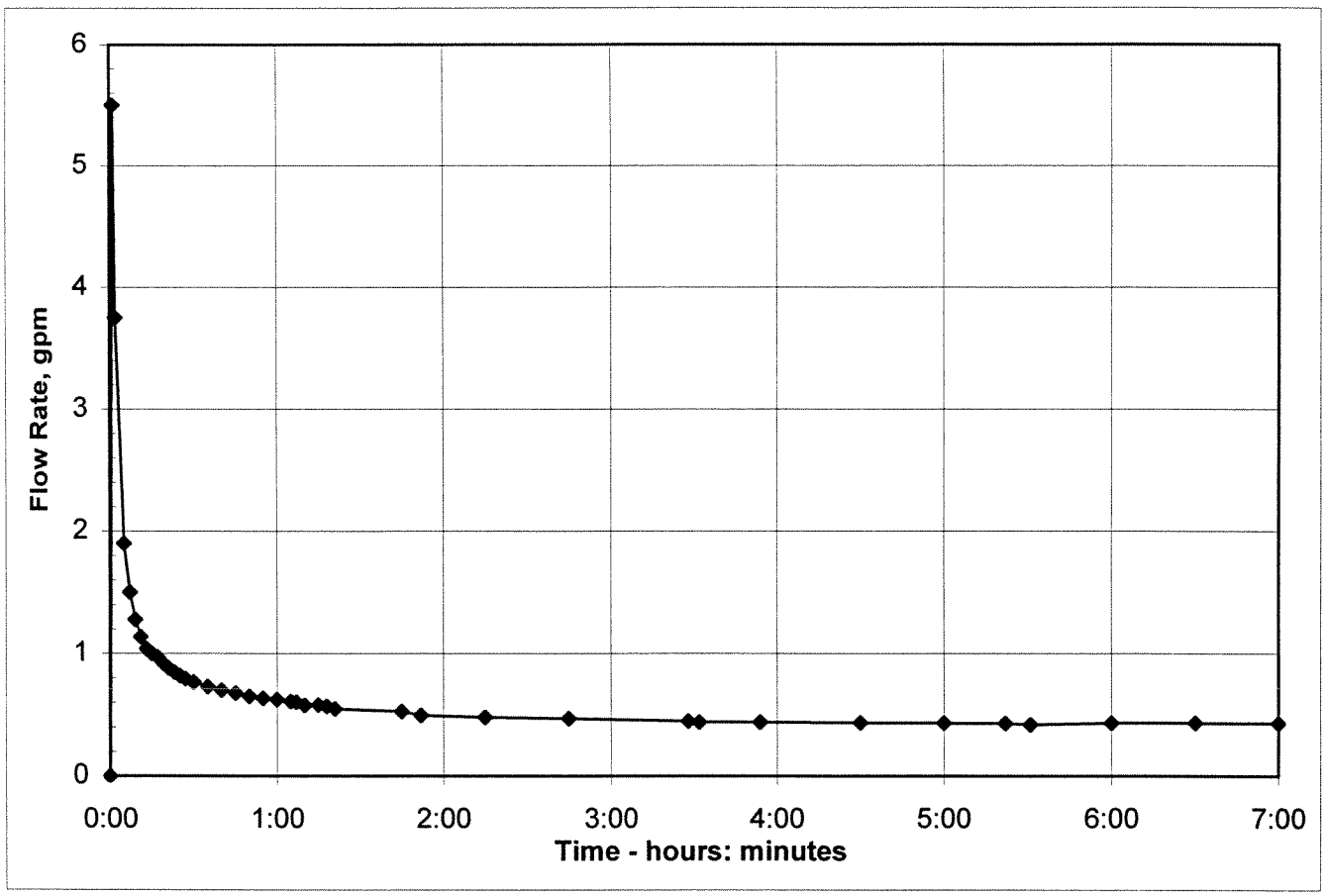


Figure 71S-3-18B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-6

Sheet 1 of 1

Date(s) Drilled	9/18/02	Logged By	J. Marin	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.0 meters
Drill Rig Type	Limited Access	Drilling Contractor	A&R Drilling	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Silty sand (SM) very dense, dark brown, moist, fine grained sand, with some gravel and trace roots			NATIVE
			1	50							
	1		2	35							CASING
			3	42				Silt with sand (ML) hard, light brown, dry, fine grained sand			
			4a								LL=32; PI=8
240	2		4b	25							LL=29; PI=5 HYD:76%<#200
			5	22				Becomes sandy silt (ML)			SA: 52%<#200 (COARSE AQUARIUM SAND)
			6	28							
	3							Bottom of boring at 3.1 meters			
238	4										
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-19

71S-3-P-6-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
9:16:00	0:00:00	53	0	0	0.000	75.7	-
9:17:00	0:01:00	49	4	4	4.000	75.7	-
9:20:00	0:04:00	44	5	9	2.250	75.7	-
9:22:00	0:06:00	43	1	10	1.667	75.7	-
9:24:00	0:08:00	42	1	11	1.375	75.6	-
9:26:00	0:10:00	41	1	12	1.200	75.6	-
9:28:00	0:12:00	40	1	13	1.083	75.6	-
9:30:00	0:14:00	38	2	15	1.071	75.6	-
9:32:00	0:16:00	36.5	1.5	16.5	1.031	75.6	-
9:34:00	0:18:00	35.5	1	17.5	0.972	75.6	-
9:36:00	0:20:00	34.5	1	18.5	0.925	75.6	-
9:38:00	0:22:00	33.5	1	19.5	0.886	75.6	-
9:40:00	0:24:00	32	1.5	21	0.875	75.4	-
9:42:00	0:26:00	31	1	22	0.846	75.4	-
9:45:00	0:29:00	30	1	23	0.793	75.4	-
9:50:00	0:34:00	27	3	26	0.765	75.4	-
9:55:00	0:39:00	24	3	29	0.744	75.4	-
10:00:00	0:44:00	21	3	32	0.727	75.4	-
10:05:00	0:49:00	19	2	34	0.694	75.4	-
10:10:00	0:54:00	16	3	37	0.685	75.4	-
10:11:00	0:55:00	15.5	0.5	37.5	0.682	75.4	-
10:15:00	0:59:00	58	0	37.5	0.636	76.5	-
10:20:00	1:04:00	53.5	4.5	42	0.656	76.8	-
10:25:00	1:09:00	50.0	3.5	45.5	0.659	76.8	-
10:30:00	1:14:00	48.0	2	47.5	0.642	76.8	-
11:00:00	1:44:00	34.0	14	61.5	0.591	77.4	-
11:24:00	2:08:00	23.5	10.5	72	0.563	77.5	-
12:00:00	2:44:00	40.0	0	72	0.439	80.4	-
12:53:00	3:37:00	14.0	26	98	0.452	82.2	-
13:02:00	3:46:00	10.5	3.5	101.5	0.449	82.8	-
13:05:00	3:49:00	59.0	0	101.5	0.443	81.7	-
13:45:00	4:29:00	37.0	22	123.5	0.459	81.7	-
14:15:00	4:59:00	23.0	14	137.5	0.460	82.9	-
14:28:00	5:12:00	16.5	6.5	144	0.462	83.3	-
14:30:00	5:14:00	61.0	0	144	0.459	82.9	-
15:00:00	5:44:00	43.0	18	162	0.471	82.8	-
15:15:00	5:59:00	34.0	9	171	0.476	83.3	-
15:45:00	6:29:00	20.5	13.5	184.5	0.474	84.4	-
16:15:00	6:59:00	6.0	14.5	199	0.475	86	-

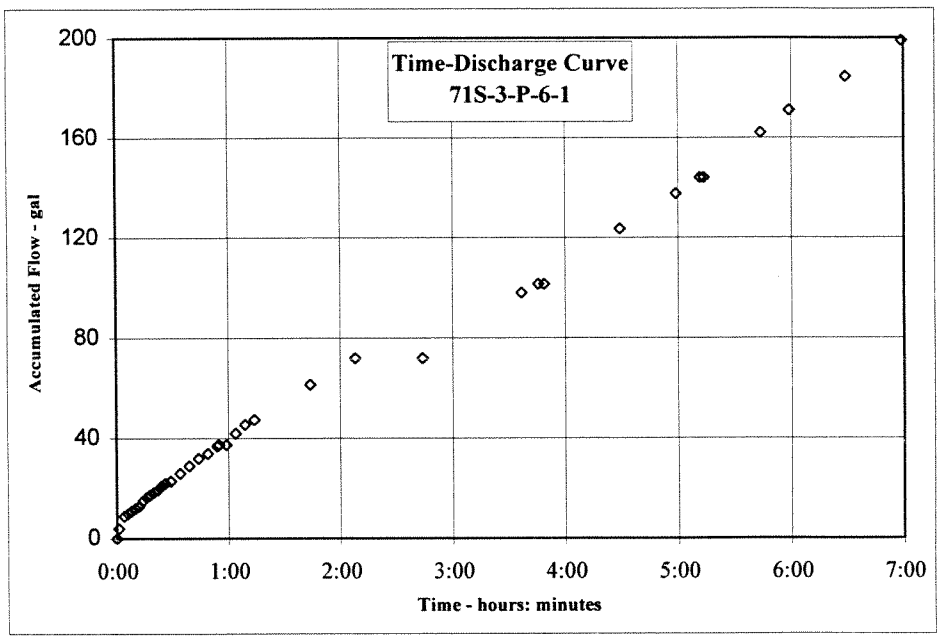


Figure 71S-3-20A

Calculation of Test Condition

Float depth =	5.3 ft	1.62 meters
Borehole depth =	10 ft	3.05 meters
Height of water in test well, h =	4.7 ft	1.43 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	27.5 ft	8.38 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	104.40 lbs/cu ft	
r_w =	0.255 ft	3.06 inches

Calculations for k_{20}

h =	4.7 ft	56.4 inches
Steady-state discharge rate, q =	0.517 gpm	119.4 cu.in./min
Average well water temperature, T =	83.22 °F	28.46 °C
Kinematic viscosity ratio, V =	0.8000 no units	
Condition I - k20=	0.0127 in/min	0.7634 in/hr

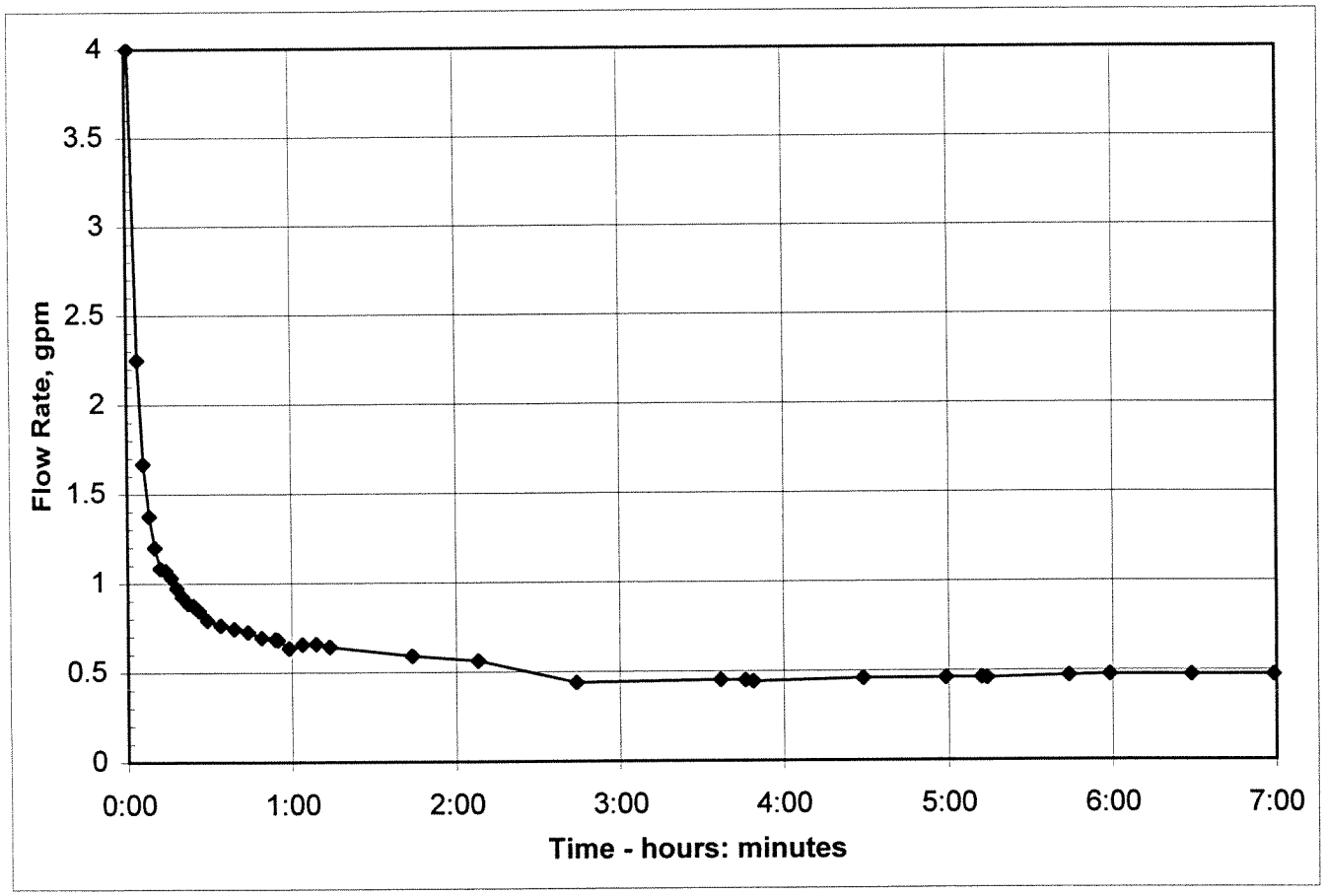


Figure 71S-3-20B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Valley Blvd.

Log of Boring 71S-3-P-7

Sheet 1 of 1

Date(s) Drilled	9/18/02	Logged By	J. Marin	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	2.6 meters
Drill Rig Type	Limited Access	Drilling Contractor	A&R Drilling	Approximate Surface Elevation	242.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Silty sand (SM) very dense, brown, moist, fine to medium grained sand, with gravel			NATIVE
			1	81							
	1		2	55				Decrease in gravel content			CASING
								Becomes medium dense			
			3	24							
			4a					Silt with sand (ML) very stiff, light brown, dry, fine grained sand			LL=38; PI=11 HYD:70%<#200 LL=26; PI=3 SA: 54%<#200
240	2		4b	39							
			5	23				Becomes medium dense sandy silt (ML)			(COARSE SAND AQUARIUM)
								Bottom of boring at 2.6 meters			
	3										
238	4										
	5										
236	6										
	7										
234	8										
	9										
232	10										
	11										
230	12										

Figure 71S-3-21

71S-3-P-7-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
9:22:00	0:00:00	57	0	0	0.000	-	-
9:23:00	0:01:00	51.5	5.5	5.5	5.500	-	-
9:24:00	0:02:00	50.5	1	6.5	3.250	-	-
9:25:00	0:03:00	49.5	1	7.5	2.500	-	-
9:26:00	0:04:00	49.5	0	7.5	1.875	-	-
9:29:00	0:07:00	48.5	1	8.5	1.214	-	-
9:34:00	0:12:00	47	1.5	10	0.833	-	-
9:41:00	0:19:00	46	1	11	0.579		
9:49:00	0:27:00	44.5	1.5	12.5	0.463	74.3	75.2
9:52:00	0:30:00	44	0.5	13	0.433	74.3	74.8
10:05:00	0:43:00	42	2	15	0.349	74.1	74.5
10:31:00	1:09:00	38	4	19	0.275	73.6	73.9
11:01:00	1:39:00	34	4	23	0.232	73.6	73.6
11:48:00	2:26:00	29	5	28	0.192	73.9	-
12:18:00	2:56:00	24.5	4.5	32.5	0.185	73.9	-
13:18:00	3:56:00	17.5	7	39.5	0.167	74.5	-
13:19:00	3:57:00	39	0	39.5	0.167	74.5	-
13:55:00	4:33:00	35.5	3.5	43	0.158	75.9	-
15:08:00	5:46:00	28	7.5	50.5	0.146	76.6	-
15:36:00	6:14:00	26	2	52.5	0.140	76.6	-
15:56:00	6:34:00	24	2	54.5	0.138	76.5	-
16:21:00	6:59:00	22	2	56.5	0.135	77.2	-

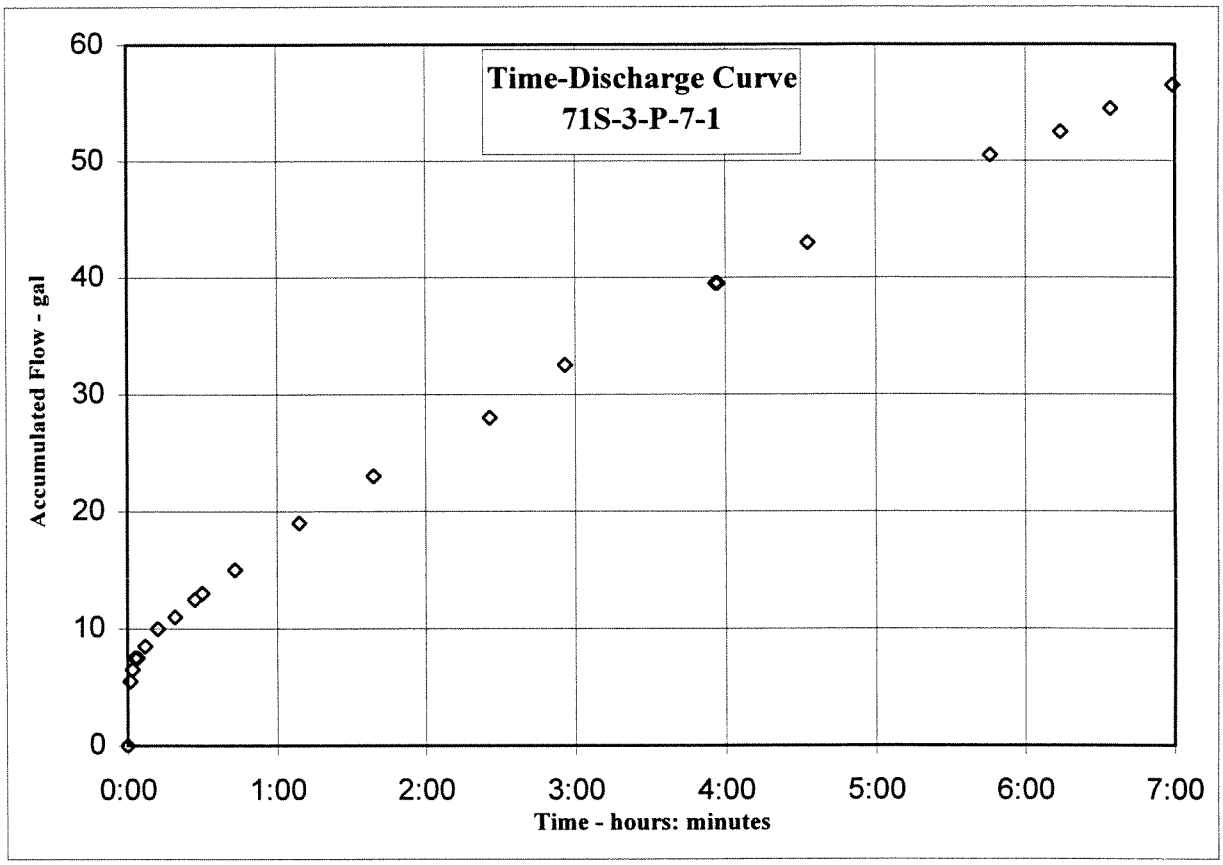


Figure 71S-3-22A

Calculation of Test Condition

Float depth =	5.5 ft	1.68 meters
Borehole depth =	8.5 ft	2.59 meters
Height of water in test well, h =	3 ft	0.91 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	32.8 ft	10.00 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	27.3 ft	8.32 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	104.00 lbs/cu ft	
r_w =	0.319 ft	3.83 inches

Calculations for k_{20}

h =	3 ft	36 inches
Steady-state discharge rate, q =	0.0942 gpm	21.8 cu.in./min
Average well water temperature, T =	76.22 °F	24.56 °C
Kinematic viscosity ratio, V =	0.8813 no units	
Condition I - k20=	4.80E-03 in/min	0.2878 in/hr

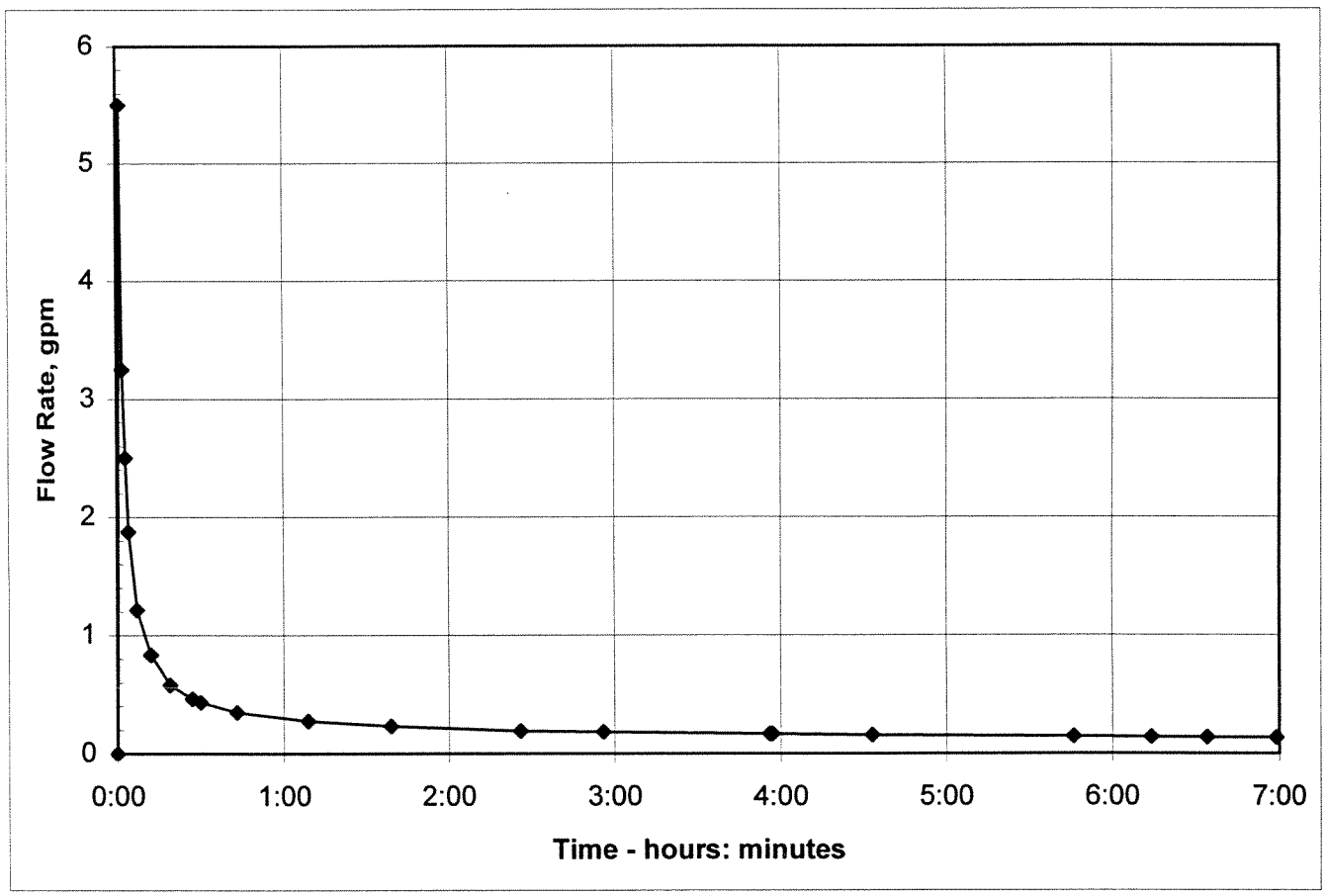
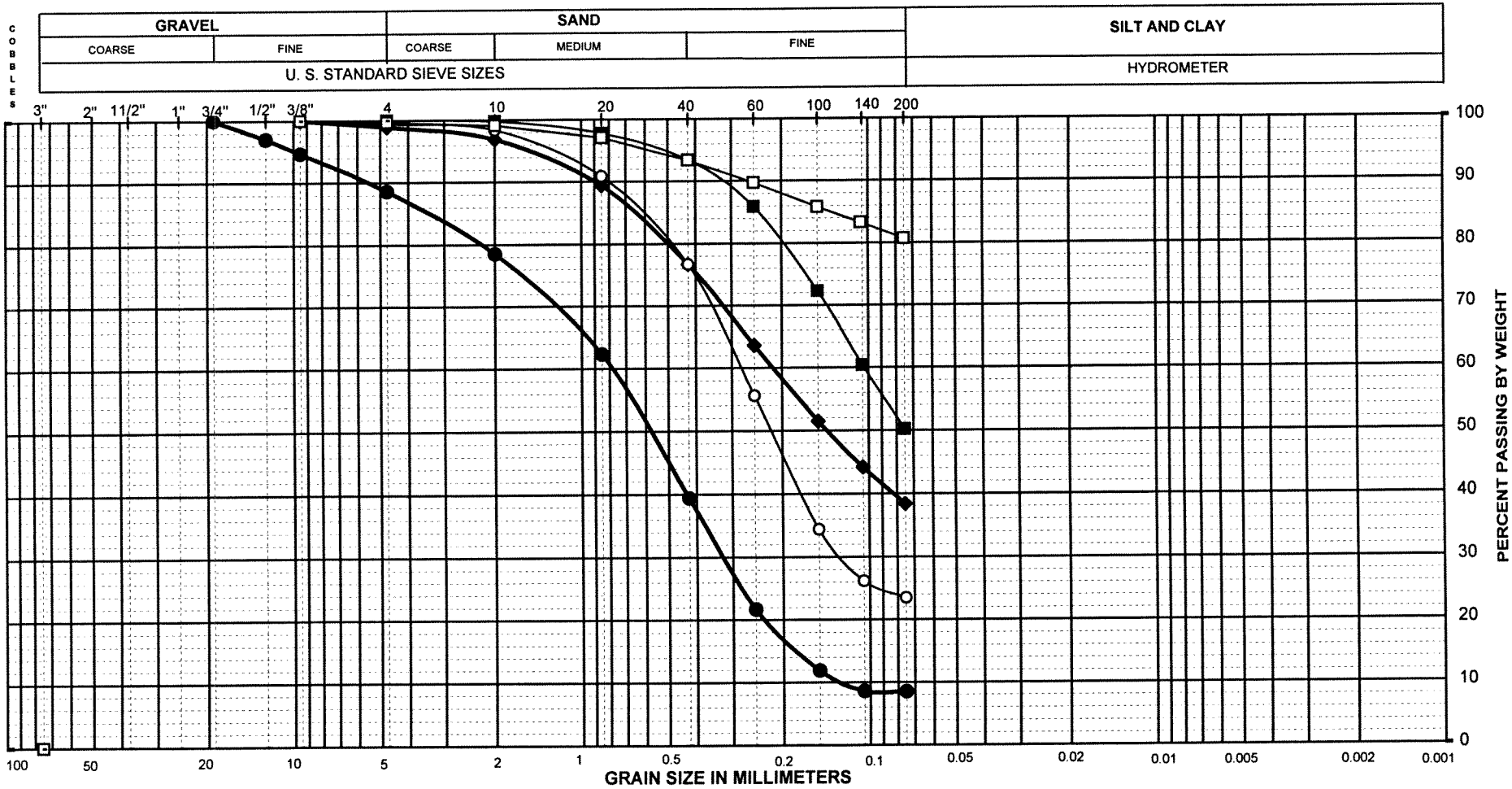


Figure 71S-3-22B



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-3-B-1	7	4.11	●	2.3				**Olive brown poorly graded Sand with silt (SP-SM)**	0.77	0.32	0.13	5.9	1.0
71S-3-MW-1	1	1.07	◆	4.6				**Light brown silty Sand (SM)**	0.22				
71S-3-B-3	3	1.52	■	5.0				**Light olive brown sandy Silt to silty Sand (ML/SM)**	0.11				
71S-3-B-3	5	2.59	○	2.4				**Light olive brown silty Sand (SM)**	0.27	0.13			
71S-3-P-1	4a	1.52	□					**Brown Clay (CL)**					

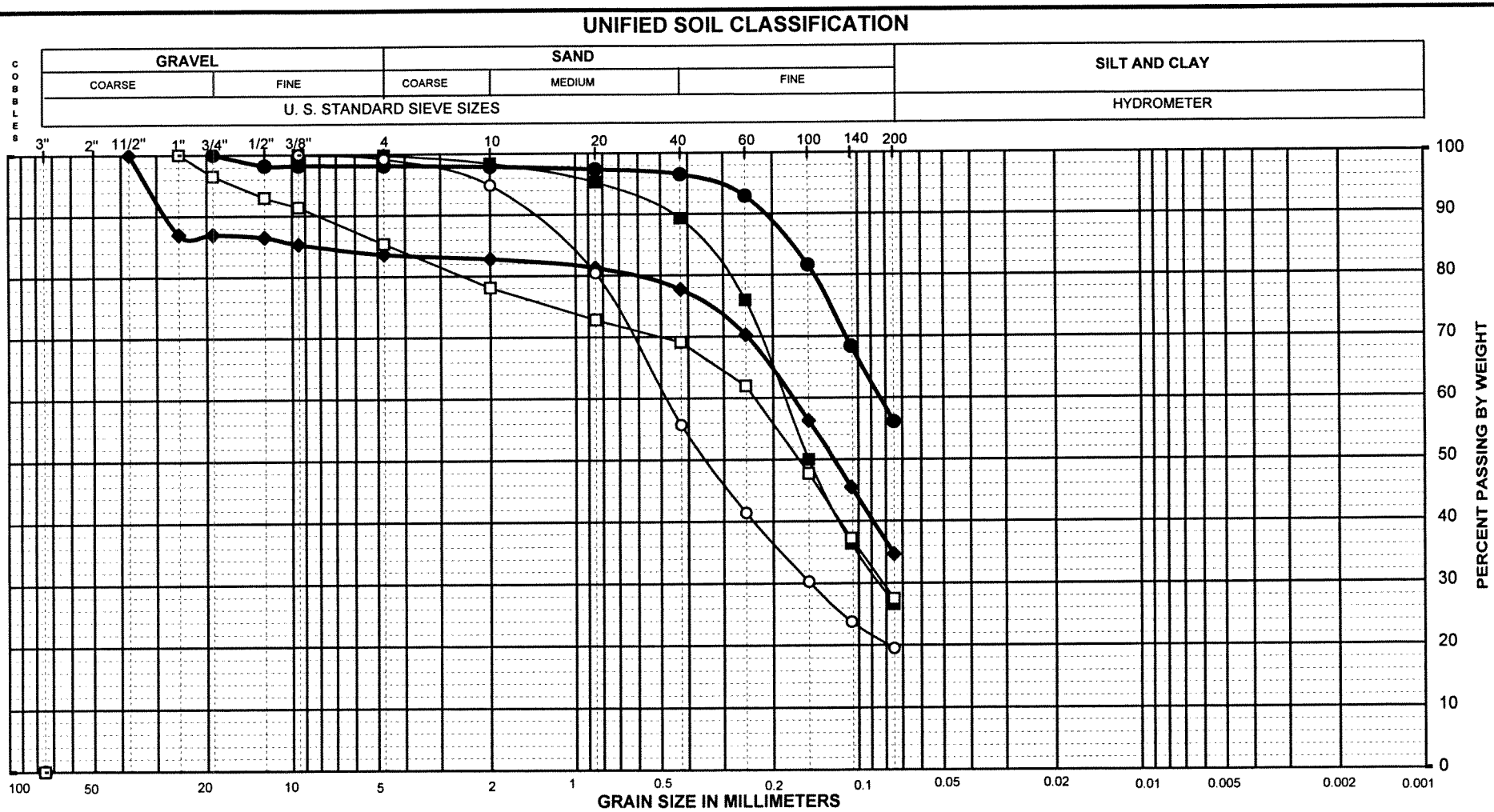
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-3-23

(SNA) sieve only (01/2000)

Sieve 71s-3.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-3-P-1	6	2.44	●					**Brown sandy Silt (ML)**	0.083				
71S-3-P-2	6	2.44	◆					**Grayish brown silty Sand with gravel (SM)**	0.17				
71S-3-P-4	6	2.59	■					**Brown silty Sand (SM)**	0.18	0.085			
71S-3-P-4	8	3.51	○					**Brown silty Sand (SM)**	0.48	0.15			
71S-3-P-5	6	2.59	□					**Gray silty Sand (SM)**	0.23	0.082			

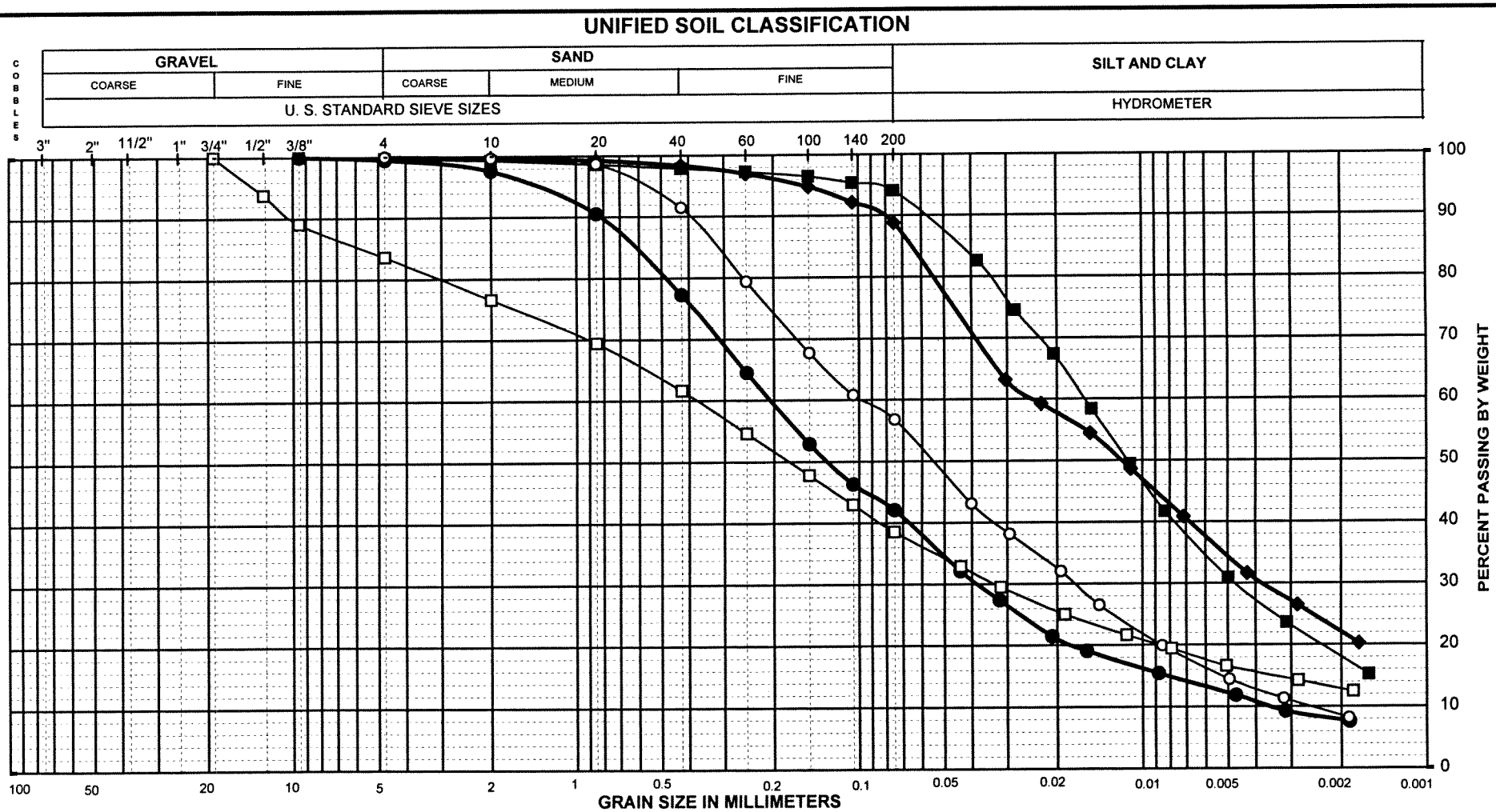
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-3-24

(SNA) sieve only (01/2000)

Sieve 71s-3.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-3-B-1	1	1.07	●	5.1	23	4	8	**Brown silty Sand (SM)**	0.20	0.038	0.004	50.0	1.8
71S-3-B-1	2	1.52	◆	10.6			22	**Light brown Clay (CH)**	0.025	0.004			
71S-3-MW-1	2	1.52	■		26	6	18	**Olive brown silty Clay (CL-ML)**	0.016	0.005			
71S-3-MW-1	6	4.11	○	4.6			8	**Light brown sandy Clay (CL)**	0.10	0.018	0.003	33.3	1.1
71S-3-B-3	SK-1	0.30	□	15.2	43	20	13	**Dark brown clayey Sand with gravel (SC)**	0.38	0.032			

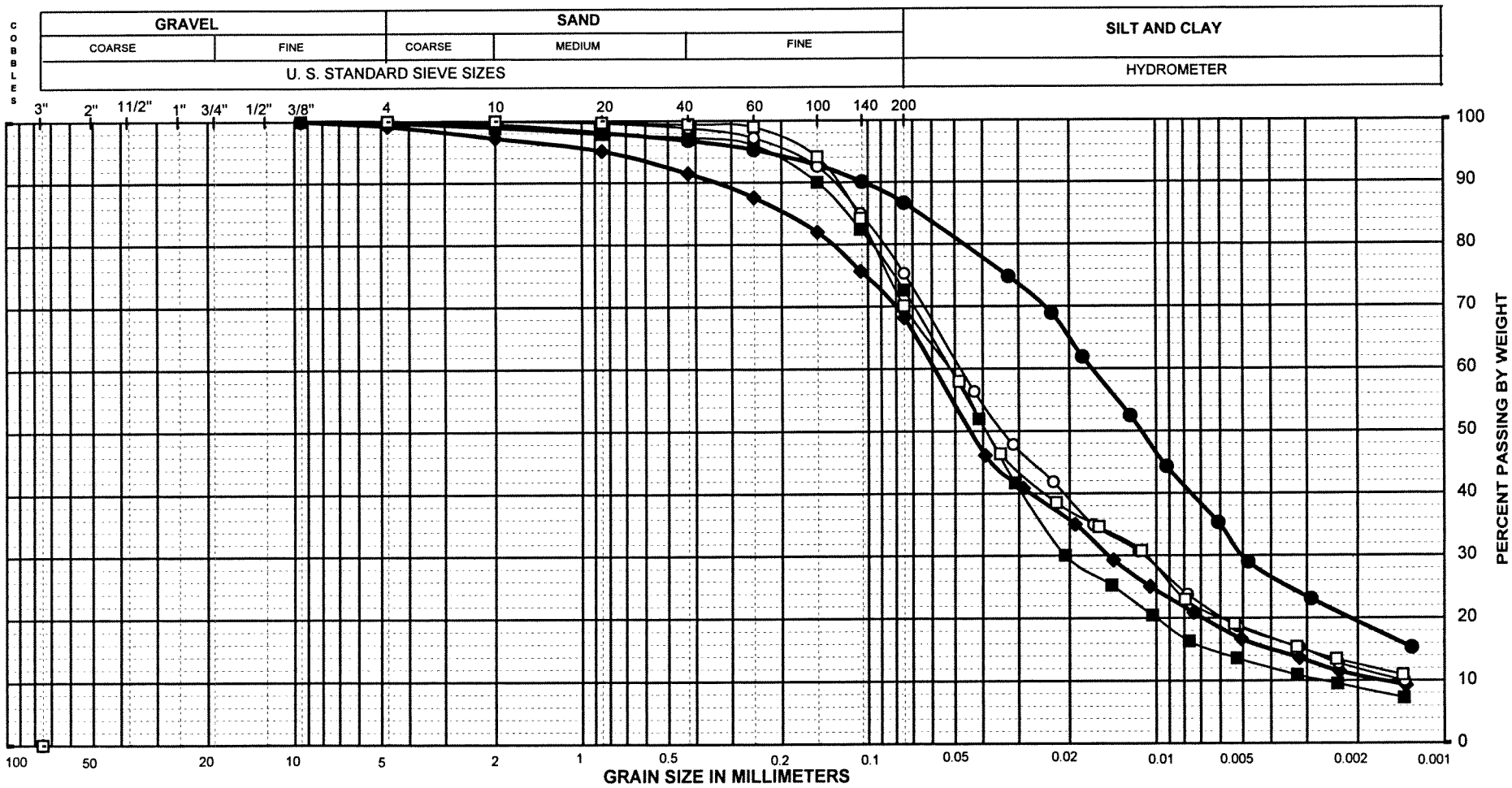
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-3-25

(SNA) sieve only (01/2000)

Hydro 71s-3.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-3-P-3	4	1.52	●	8.3	36	12	20	**Brown Clay (CL)**	0.017	0.005			
71S-3-P-4	5	2.13	◆		29	5	11	**Brown sandy Silt (ML)**	0.060	0.016	0.002	30.0	2.1
71S-3-P-5	4	1.68	■		27	1	9	**Brown Silt with sand (ML)**	0.052	0.021	0.003	17.3	2.8
71S-3-P-6	4b	1.68	○		29	5	12	**Brown Silt with sand (ML)**	0.048	0.012	0.001	48.0	3.0
71S-3-P-7	4b	1.68	□		26	3	13	**Brown Silt with sand (ML)**	0.052	0.012			

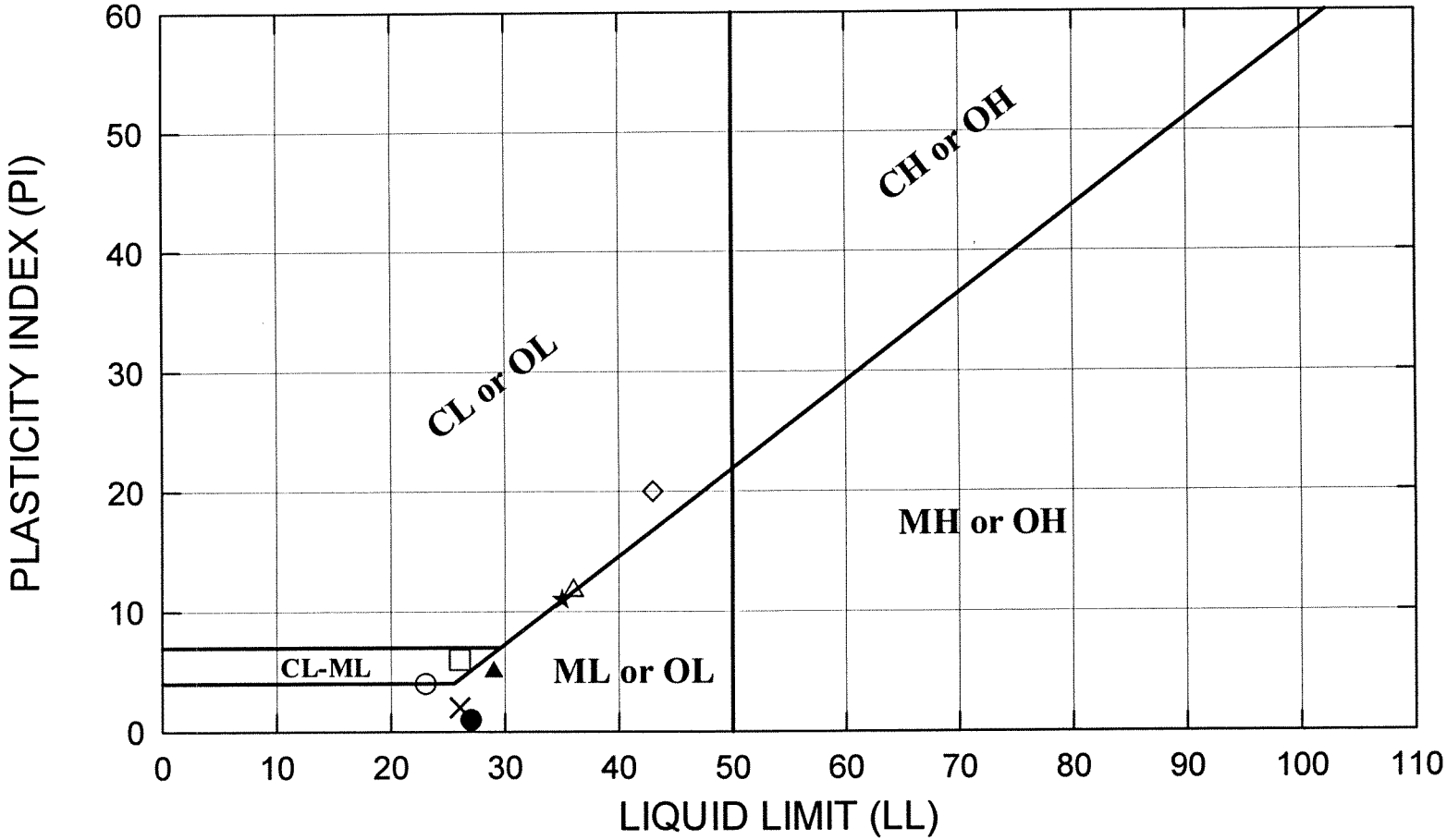
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-3-26

(SNA) sieve only (01/2000)

Hydro 71s-3.xls



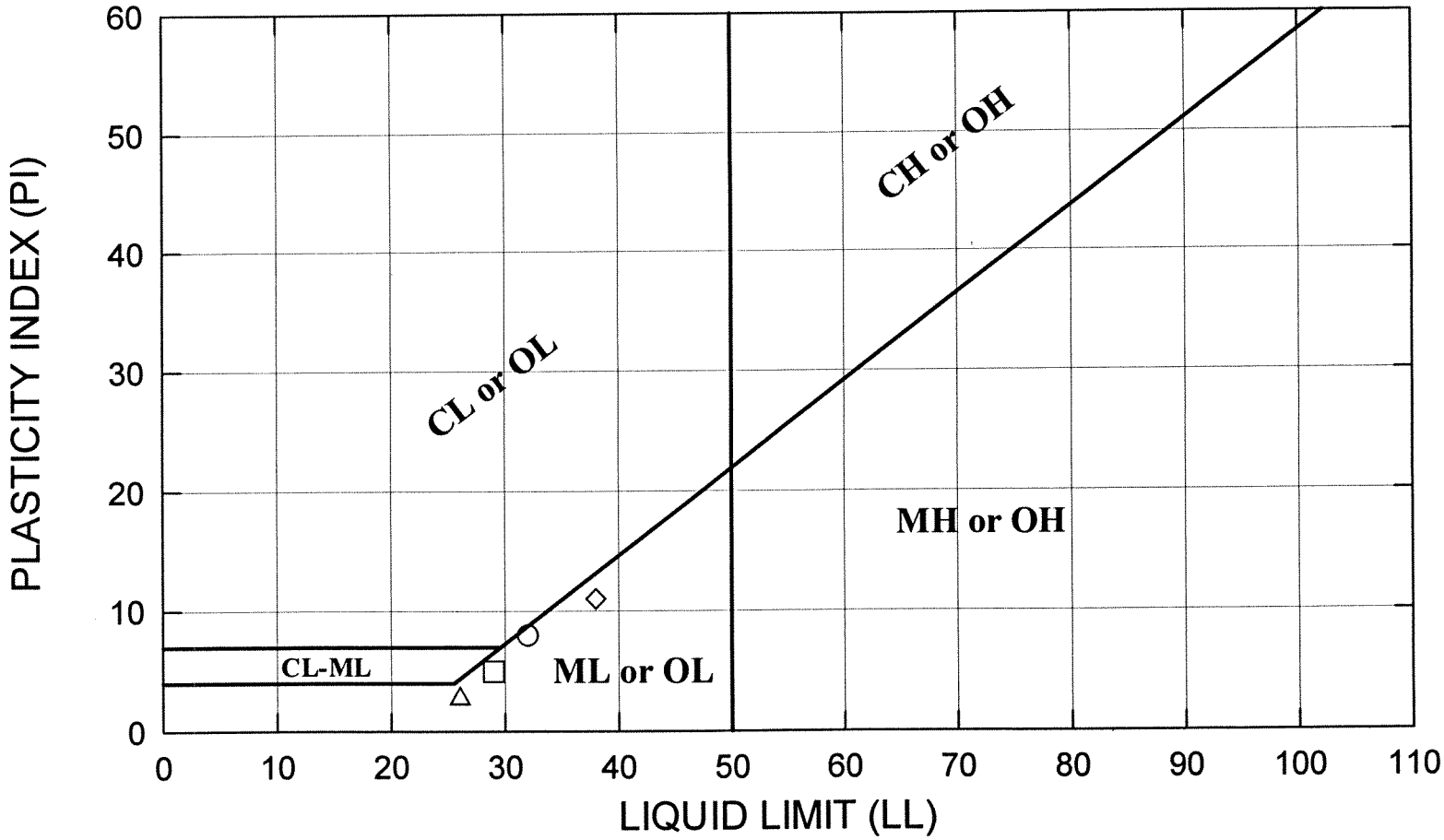
LEGEND: ○ 71S-3-B-1@1.07m ◇ 71S-3-B-3@0.3-0.91m ★ 71S-3-P-4@1.68m ● 71S-3-P-5@1.68m

□ 71S-3-MW-1@1.52m △ 71S-3-P-3@1.52m ▲ 71S-3-P-4@2.13m ✕ 71S-3-P-5@2.13m

PLASTICITY CHART

Date: April 2003	Project: Caltrans Infiltration Basin Project	Figure 71S-3-27

s.mikesmith.PiChart.PiMaster.GRF



LEGEND: ○ 71S-3-P-6@1.68m ◇ 71S-3-P-7@1.68m ★ _____ ● _____

□ 71S-3-P-6@1.68m △ 71S-3-P-7@1.68m ▲ _____ × _____

PLASTICITY CHART

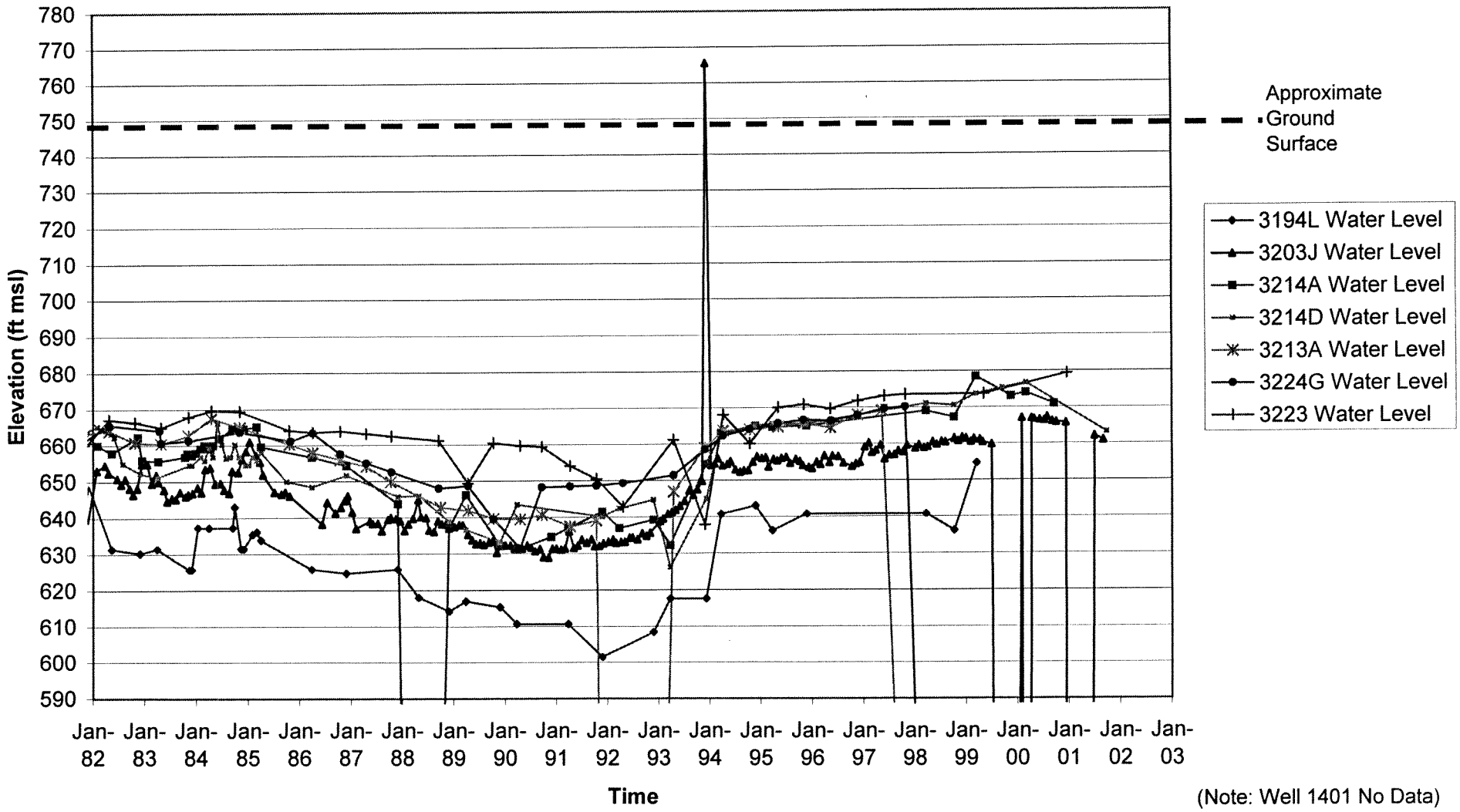
	Date: April 2003	Project: Caltrans Infiltration Basin Project	Figure 71S-3-28

s.mikesmith.PiChart.PiMaster.GRF

FIGURE 71S-3-29

Hydrographs of Selected Wells near 71 Freeway; 71S-2, 71S-3, 71S-4

LA Co. Dept. Public Works Well Data - 7 Closest Wells
USGS Well Data - Wells within approx. 1 mile radius



(Note: Well 1401 No Data)

Priority 3-71S-3 (Valley Blvd.) Site Photographs

Date: April 2003	Project: Caltrans IFB Site Selection Study	Figure: 71S-3-30

APPENDIX D

71S-4 (Pomona Blvd.)

Table 1	Geotechnical Laboratory Test Data
Figure 71S-4-1	Site Plan
Figure 71S-4-2	Geologic Cross Section A-A'
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Figure 71S-4-4	Groundwater Monitoring Well 71S-4-MW-1 Diagram
Figure 71S-4-5	Groundwater Monitoring Well 71S-4-MW-1 Photographs
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Figure 71S-4-7	Log of Boring 71S-4-B-2
Figure 71S-4-8	Log of Boring 71S-4-P-1
Figure 71S-4-9	Infiltration Data for 71S-4-P-1
Figure 71S-4-10	Log of Boring 71S-4-P-2
Figure 71S-4-11	Infiltration Data for 71S-4-P-2
Figure 71S-4-12	Log of Boring 71S-4-P-3
Figure 71S-4-13	Infiltration Data for 71S-4-P-3
Figure 71S-4-14	Log of Boring 71S-4-P-4
Figure 71S-4-15	Infiltration Data for 71S-4-P-4
Figure 71S-4-16	Log of Boring 71S-4-P-5
Figure 71S-4-17	Infiltration Data for 71S-4-P-5
Figure 71S-4-18	Log of Boring 71S-4-P-6
Figure 71S-4-19	Infiltration Data for 71S-4-P-6
Figure 71S-4-20	Log of Boring 71S-4-P-7
Figure 71S-4-21	Infiltration Data for 71S-4-P-7
Figure 71S-4-22	Log of Boring 71S-4-P-8
Figure 71S-4-23	Infiltration Data for 71S-4-P-8
Figure 71S-4-24	Particle-Size Distribution Curves
Figure 71S-4-25	Particle-Size Distribution Curves
Figure 71S-4-26	Particle-Size Distribution Curves
Figure 71S-4-27	Particle-Size Distribution Curves
Figure 71S-4-28	Plasticity Chart
Figure 71S-4-29	Hydrographs for Selected Wells
Figure 71S-4-30	Site Photographs

TABLE 1

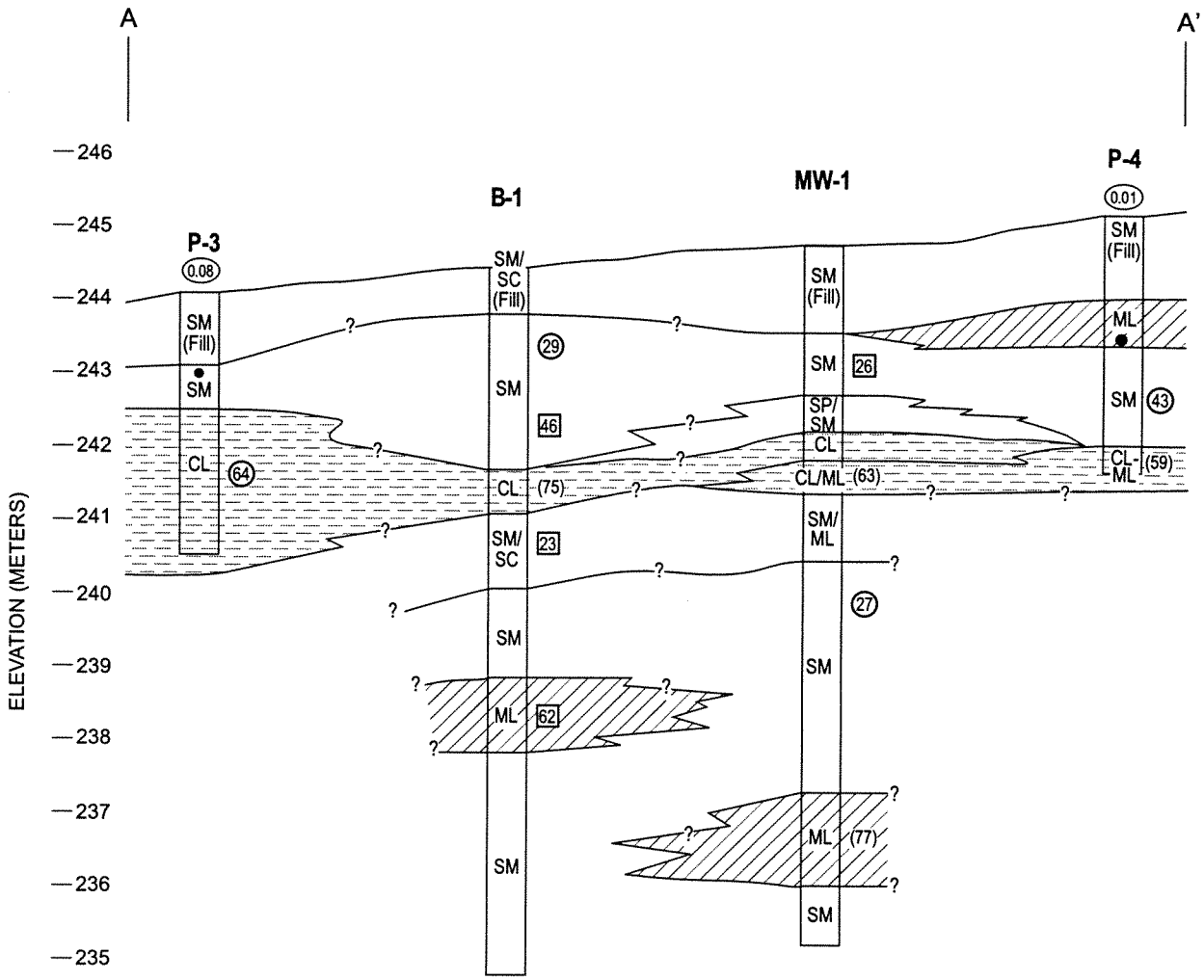
71S-4 GEOTECHNICAL LABORATORY TEST DATA

Location							Atterberg Limits		Sieve				Chemical Test Data		
Exploration Number	Sample/ Specimen Number	Depth (m)	Caltrans Soil Classification	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)	Gravel (%)	Sand (%)	<#200 Fines (%)	5 microns (%)	pH	O.M.% (% organic matter)	CEC (me/g)[1]
71S-4-B-1	R-1-2	1.22	SM	5	-	-	-	-	2	69	29	-	7.3	1.2	0.059
71S-4-B-1	R-2-1	2.59	SM	6	-	-	-	-	-	-	46	-	-	-	-
71S-4-B-1	R-2-2	2.90	CL	19	-	-	29	8	2	22	76	23	-	-	-
71S-4-B-1	R-3-1	3.35	SM	6	-	-	-	-	-	-	23	-	-	-	-
71S-4-B-1	4	6.10	ML	18	-	-	-	-	-	-	62	-	-	-	-
71S-4-B-2	2	0.76	SC	7	-	-	-	-	3	64	33	-	-	-	-
71S-4-B-2	5	2.13	ML	8	-	-	-	-	-	-	40	-	-	-	-
71S-4-B-2	9	3.96	ML	11	-	-	24	3	-	-	56	-	-	-	-
71S-4-B-2	10	4.42	SM	6	-	-	-	-	6	67	28	-	-	-	-
71S-4-B-2	12	7.62	SP-SM	2	-	-	-	-	6	88	6	-	-	-	-
71S-4-MW-1	R-1	0.91	SM	5	-	-	-	-	-	-	-	-	7.2	2.1	0.088
71S-4-MW-1	R-2-A	1.98	SM	5	-	-	-	-	-	-	-	-	-	-	-
71S-4-MW-1	R-2-B	2.90	CL-ML	16	-	-	26	6	0	37	63	20	-	-	-
71S-4-MW-1	R-4a	4.88	SM	4	-	-	-	-	2	71	27	-	-	-	-
71S-4-MW-1	5	7.62	ML	-	-	-	29	6	0	22	78	13	-	-	-
71S-4-P-1	5	1.98	SC	-	-	-	-	-	0	57	43	-	-	-	-
71S-4-P-1	7	3.05	CL-ML	14	-	-	25	4	0	41	59	17	-	-	-
71S-4-P-2	7	3.05	SM	9	-	-	20	1	1	52	47	9	-	-	-
71S-4-P-3	5	1.98	CL	-	-	-	-	-	0	36	64	-	-	-	-
71S-4-P-5	2	0.76	SM	8	-	-	-	-	5	60	35	-	-	-	-
71S-4-P-5	4	1.68	SM	4	-	-	-	-	9	72	19	-	-	-	-
71S-4-P-5	5a	2.13	SM	6	-	-	-	-	-	-	35	-	-	-	-
71S-4-P-6	1	0.30	SC	11	-	-	-	-	9	55	36	-	-	-	-
71S-4-P-6	2	0.76	SM	12	-	-	-	-			35	-	-	-	-
71S-4-P-6	3	1.37	SC	11	-	-	-	-			36	-	-	-	-
71S-4-P-6	6	2.59	CL	16	-	-	-	-			62	-	-	-	-
71S-4-P-7	1	0.30	SC	7	-	-	-	-	2	66	33	-	-	-	-
71S-4-P-7	3	1.22	SM	3	-	-	-	-	1	84	15	-	-	-	-
71S-4-P-7	4b	1.98	CL	18	-	-	-	-			69	-	-	-	-
71S-4-P-8	1	0.30	SC	10	-	-	-	-	3	69	28	-	-	-	-
71S-4-P-8	3	1.22	SW-SM	3	-	-	-	-	4	85	11	-	-	-	-

Notes: [1] Cation excange capacity, millequivalents per gram

Priority 3-71S-4 (Pomona Blvd.) Site Plan

April 2003	Infiltration Basin Site Selection Study	Figure 71S-4-1



Water Level Observed During Drilling

Groundwater Elevation Feb. 2003

Float Valve Location
Top of Hydraulic Conductivity Test Section

(0.52) In-hole Hydraulic Conductivity Test Value (inches/hour)

(46) Hydrometer Test, % Passing #200 Sieve

(72) Sieve Analysis, % Passing #200 Sieve

[32] Wash Analysis, % Passing #200 Sieve

Clays and Clays w/Silt

Silt

NOTE: Groundwater Not Observed

HORIZONTAL SCALE:
1 cm = 5 meters

VERTICAL SCALE:
1 cm = 1 meter

PRIORITY 3 - SITE 71 S-4 GEOLOGIC CROSS SECTION A-A'

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-4-2

L:/CALTRANS/C GOETZ/xsect 71 S-4 A_A.FH10

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

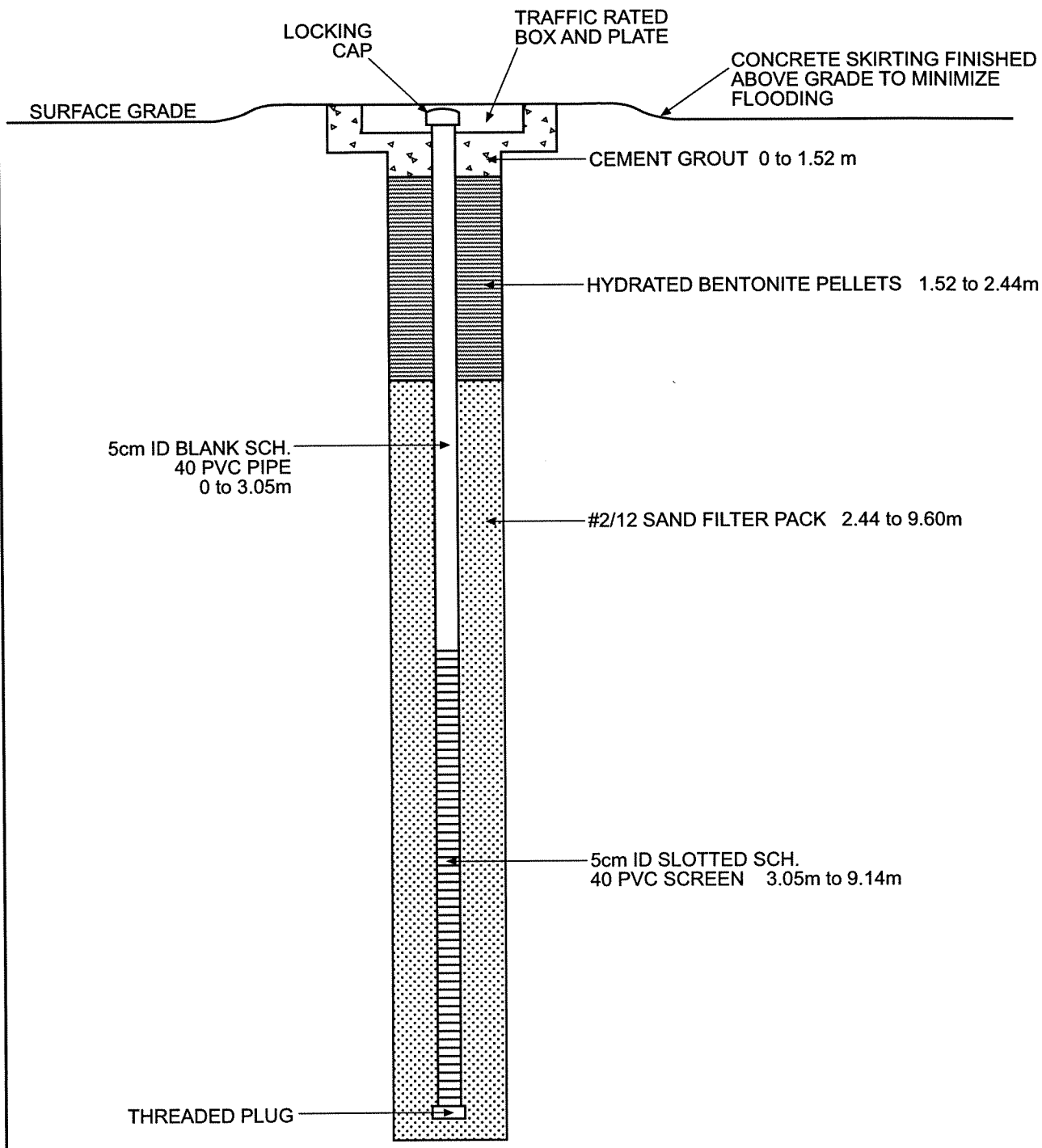
Log of Boring 71S-4-MW-1

Sheet 1 of 1

Date(s) Drilled	3/13/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	244.7 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Well Construction Figure	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0				R-1 60			Silty sand (SM) [FILL] yellowish brown and dark brown, fine to medium grained sand, with trace gravel and organics (roots)			
244	1		R-1						5		pH=7.2; O.M.=2.1% CEC=0.088 me/g
			R-1-2					Silty sand (SM) yellowish brown, moist, fine to medium grained sand, traces of mica			
	2		R-2-A		R-2 80				5		WA: 26%<#200
								Poorly graded sand with silt (SP-SM) light brown, moist, fine grained sand, with trace fine gravel			
242								Silty clay (CL) brown, moist, with traces of mica			
	3		R-2-B					Sandy silty clay (CL-ML) brown, moist, fine to medium grained sand, low plasticity	16		LL=26; PI=6 HYD:63%<#200
					R-3 100			Silty sand to sandy silt (SM/ML) brown, moist, fine to medium grained sand, with traces of mica			
	4		R-3-A						12		
			R-3-B					Silty sand (SM) light brown, moist, fine to coarse grained sand, with mica			
240	5		R-4-A		R-4 100				4		SA: 27%<#200
			R-4-B								
	6										
238	7										
								Silt with sand (ML) firm, light brown, moist, fine to medium grained sand, low plasticity, with traces of mica			
	8		5	8							HYD:77%<#200 LL=29; PI=6
236								Silty sand (SM) medium dense, yellowish-brown, moist, fine grained sand			
	9		6	16					15		
	10							Bottom of boring at 9.6 meters			
234	11										
	12										

Figure 71S-4-3



71S-4-MW-1

Not to Scale

L:/Caltrans/GW monitoring well diag.fh10 5/03

GROUNDWATER MONITORING WELL DIAGRAM

Date: APRIL 2003	Project: INFILTRATION BASIN SITE SELECTION STUDY	Figure 71S-4-4

71S-4-MW-1

Date: April 2003	**Project: Caltrans IFB Site Selection Study**	Figure: 71S-4-5

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-B-1

Sheet 1 of 1

Date(s) Drilled	3/12/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	244.4 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Silty to clayey sand (SM/SC) [FILL] brown to yellowish brown, dry, fine grained sand, with organics (roots)			
244			R-1-1		R-1 80			Silty sand (SM) brown to yellowish brown, moist, fine to coarse grained sand, with traces of mica, and fine gravel			
	1		R-1-2						5		SA: 29%<#200 pH=7.3; O.M.=1.2% CEC=0.059 me/g
	2				R-2 80						
242			R-2-1					Silty sand (SM) yellowish brown, moist, fine grained sand	6		WA: 46%<#200
	3		R-2-2					Lean clay with sand (CL) yellowish brown, moist, fine to medium grained sand, with trace silt and fine gravel	19		LL=29; PI=8 HYD:75%<#200
			R-3-1		R-3 100			Silty to clayey sand (SM/SC) yellowish brown, moist, fine to coarse grained sand and some gravel	6		WA: 23%<#200
	4										
240			R-3-2					Silty sand (SM) brown, moist, fine to medium grained sand			
	5										
	6							Sandy silt (ML) loose, brown to yellowish brown, moist, with fine to medium grained sand			
238			4	9					18		WA: 62%<#200
	7							Silty sand (SM) medium dense, brown to yellowish brown, moist, fine to coarse grained sand			
	8		5	18				Becomes medium dense; 100mm layer of silt; Becomes fine to medium grained sand	11		
236											
	9		6	12					14		
	10							Bottom of boring at 9.6 meters			
234											
	11										
	12										

Figure 71S-4-6

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-B-2

Sheet 1 of 1

Date(s) Drilled	2/24/03	Logged By	P. Salter	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	Prosonic	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							Clayey sand (SC) [FILL] medium dense, dark brown, moist, fine grained sand, with some gravel and asphalt			
			1	17							
	1		2	5				Clayey sand (SC) loose, dark brown, moist, fine to medium grained sand	7		SA: 33%<#200
			3	4				Becomes loose, brown, with rare fine grained gravels			
242	2		4	9							
			5	12				Silty sand (SM) medium dense, brown, moist, fine grained sand	8		WA: 40%<#200 LL=26; PI=3
			6	9				Sandy silt (ML) loose, brown, moist, fine grained sand			
	3		7a					Becomes medium dense			
			7b	11				Decrease in silt content			
			8	11							
240	4		9	9				Becomes loose	11		WA: 56%<#200 LL=24; PI=3
			10	14				Silty sand (SM) medium dense, brown, moist, fine to medium grained sand, with occasional fine grained gravel	6		SA: 28%<#200
	5							Occasional cobbles			
238	6		11	11				No cobbles			
	7							Poorly graded sand with silt (SP-SM) medium dense, light brown, moist, medium grained sand			
236	8		12	16					2		SA: 6%<#200
								Becomes fine to medium grained sand			
	9		13a								
			13b	14							
234	10							Silty sand (SM) medium dense, brown, moist, fine grained sand Bottom of boring at 9.6 meters			
	11										
232	12										

Figure 71S-4-7

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-P-1

Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.5 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	245.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	23				150mm thick layer Wood chips and fine to coarse grained gravel (Scoria) [FILL]			NATIVE
			2	21				Silty sand (SM) [FILL] medium dense, brown, moist, fine to medium grained sand, with some fine to coarse grained gravel, angular and rounded, and occasional wood fragments			CASING
244	1		3	21				Sandy silt (ML) medium dense, dark brown, moist, fine grained sand			(COARSE AQUARIUM SAND)
			4	19							
	2		5	25				Silty sand (SM) medium dense, yellowish-brown, moist, fine grained sand			SA: 43%<#200
			6	14				Becomes fine to medium grained sand			
242	3		7	16				Sandy silty clay (CL-ML) soft, brown, moist, fine grained sand	14		HYD:59%<#200 LL=25; PI=4
								Bottom of boring at 3.53 meters			
	4										
240	5										
	6										
238	7										
	8										
236	9										
	10										
234	11										
	12										

Figure 71S-4-8

71S-4-P-1-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:25:00	0:00:00	60	0	0	0.000		
8:26:00	0:01:00	57.5	2.5	2.5	2.500		
8:27:00	0:02:00	57	0.5	3	1.500		
8:28:00	0:03:00	56.8	0.2	3.2	1.067		
8:30:00	0:05:00	56.7	0.1	3.3	0.660		
8:35:00	0:10:00	56.5	0.2	3.5	0.350		
8:40:00	0:15:00	56	0.5	4	0.267	79.7	83.5
8:48:00	0:23:00	55.6	0.4	4.4	0.191		
9:00:00	0:35:00	54.9	0.7	5.1	0.146		
9:17:00	0:52:00	54.4	0.5	5.6	0.108	79.9	82
9:45:00	1:20:00	53.8	0.6	6.2	0.078		
10:20:00	1:55:00	53.2	0.6	6.8	0.059		
10:52:00	2:27:00	52.5	0.7	7.5	0.051		
11:24:00	2:59:00	52	0.5	8	0.045		
11:55:00	3:30:00	51.7	0.3	8.3	0.040		
12:26:00	4:01:00	51.3	0.4	8.7	0.036		
12:56:00	4:31:00	50.8	0.5	9.2	0.034		
13:53:00	5:28:00	50	0.8	10	0.030	82.9	90
14:35:00	6:10:00	49.5	0.5	10.5	0.028		
15:06:00	6:41:00	49	0.5	11	0.027	86	91
15:35:00	7:10:00	48.7	0.3	11.3	0.026		

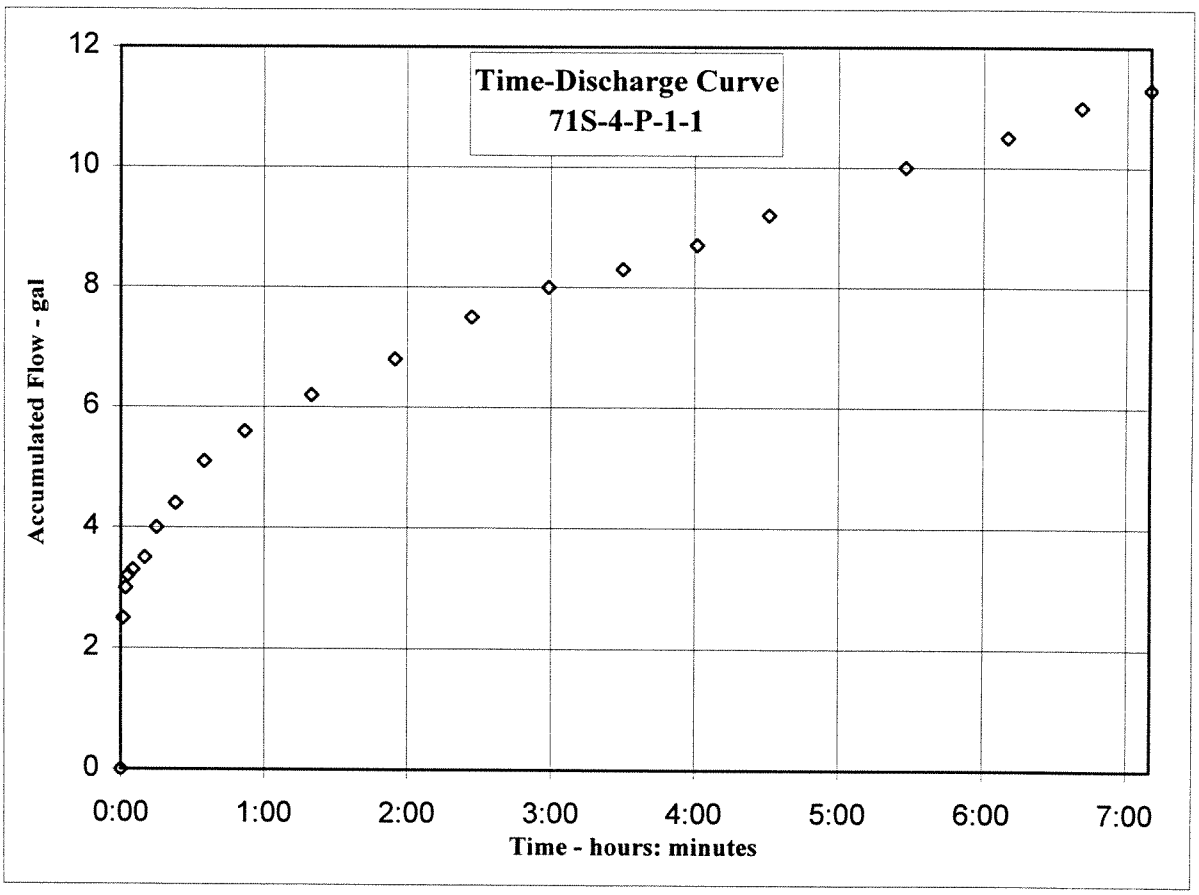


Figure 71S-4-9A

Calculation of Test Condition

Float depth =	5.75 ft	1.75 meters
Borehole depth =	11.5 ft	3.51 meters
Height of water in test well, h =	5.75 ft	1.75 meters
Depth of water table =	1000 ft	304.80 meters
Depth to impervious layer =	11.5 ft	3.51 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	5.75 ft	1.75 meters

Based on the Test Data, Condition II is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	200 lbs	
density of sand in borehole, ρ_s =	104.96 lbs/cu ft	
r_w =	0.325 ft	3.90 inches

Calculations for k_{20}

h =	5.75 ft	69 inches
Steady-state discharge rate, q =	0.014 gpm	3.137 cu.in./min
Average well water temperature, T =	84.45 °F	29.14 °C
Kinematic viscosity ratio, V =	0.7866 no units	
Condition II - k20 =	4.74E-04 in/min	0.0284 in/hr
Condition I - k20 =	2.16E-04 in/min	0.0130 in/hr

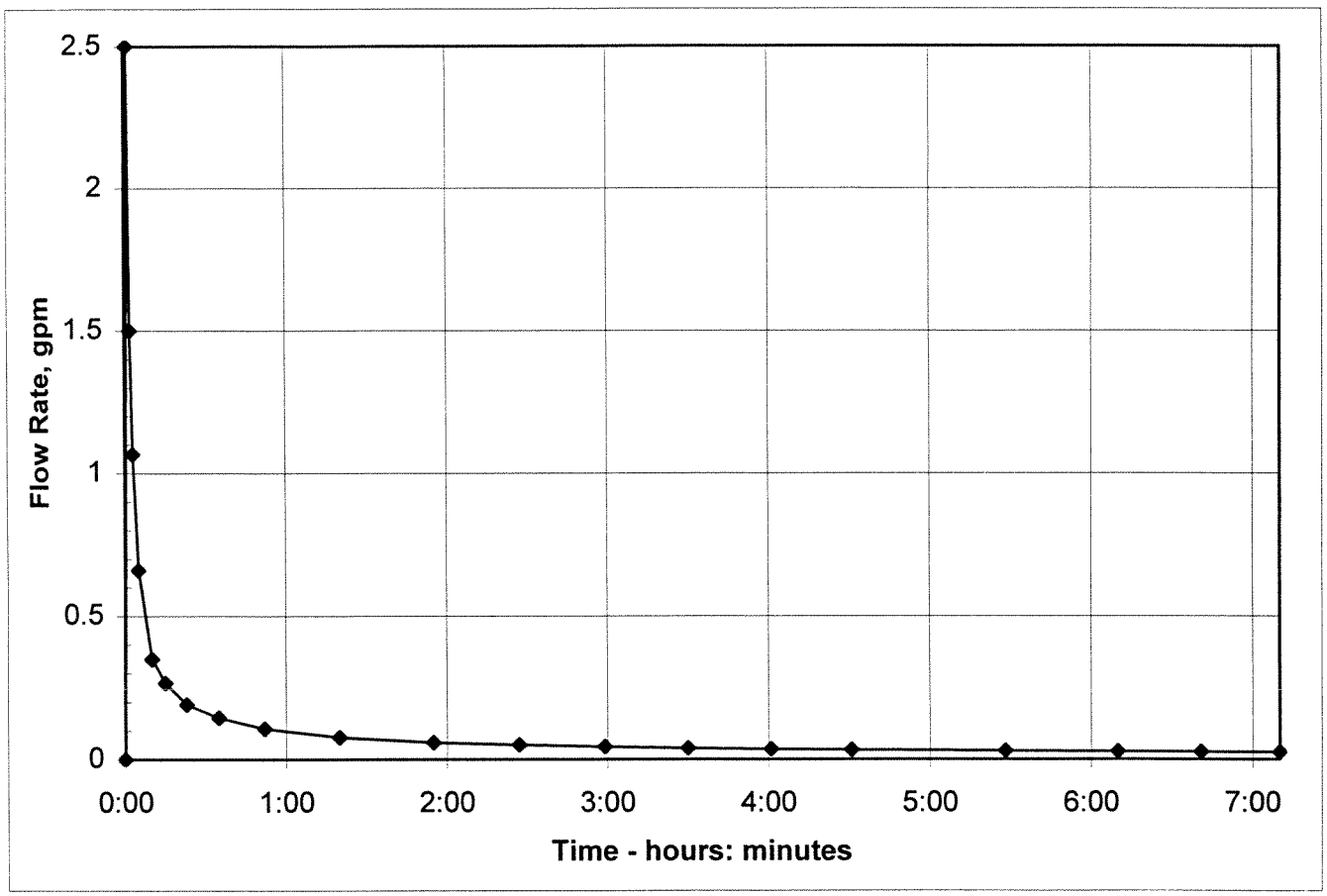


Figure 71S-4-9B

Project: INFILTRATION BASIN SITE SELECTION STUDY Project Location: SR 71, Pomona Blvd.	Log of Boring 71S-4-P-2 Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.5 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	48				Sandy silt with gravel (ML) [Possible FILL] firm, light brown, moist, fine grained sand, coarse grained gravel			NATIVE
			2	14				Silty sand (SM) medium dense, brown, moist, fine to medium grained sand, with occasional fine to coarse grained gravel			
	1		3	8				Becomes loose			CASING
			4	12				Becomes fine to coarse grained sand			
242	2		5	18				Becomes dark brown, no gravel			(COARSE AQUARIUM SAND)
			6	14							
	3		7	19					9		HYD:47%<#200 LL=20; PI=1
								Bottom of boring at 3.5 meters			
240	4										
	5										
238	6										
	7										
236	8										
	9										
234	10										
	11										
232	12										

Figure 71S-4-10

71S-4-P-2-1

Clock	Accumulated Time	Tank Reading	Difference	Accumulated Flow	Flow Rate	Well Temp	Reservoir Temp
hh:mm:ss	h:mm:ss	(gallons)	(gallons)	(gallons)	(gpm)	(°F)	(°F)
8:25:00	0:00:00	60	0	0	0.000	77.5	82.8
8:26:00	0:01:00	50	10	10	10.000		
8:27:00	0:02:00	49	1	11	5.500	80.6	
8:31:00	0:06:00	43.2	5.8	16.8	2.800		
8:35:00	0:10:00	40	3.2	20	2.000		
8:45:00	0:20:00	34.8	5.2	25.2	1.260	82.8	
8:56:00	0:31:00	27.5	7.3	32.5	1.048		81.9
9:06:00	0:41:00	21.8	5.7	38.2	0.932		
9:15:00	0:50:00	16.5	5.3	43.5	0.870		
9:51:00	1:18:01	60	16.5	60			
9:53:00	1:28:00	58	2	62	0.705	81.9	82.8
10:07:00	1:42:00	55	3	65	0.637		
10:43:00	2:18:00	51.8	3.2	68.2	0.494	81.3	
11:21:00	2:56:00	48.3	3.5	71.7	0.407		84.2
11:48:00	3:23:00	46	2.3	74	0.365		85.1
12:24:00	3:59:00	42.6	3.4	77.4	0.324		86
12:56:00	4:31:00	39.8	2.8	80.2	0.296		
13:00:00	4:35:00	60	0.35	80.55			
13:54:00	5:29:00	51.8	8.2	88.75	0.270		
14:19:00	5:54:00	49	2.8	91.55	0.259	85.6	90.1
15:08:00	6:43:00	44	5	96.55	0.240	84.6	91.2
15:34:00	7:09:00	41.5	2.5	99.05	0.231		
16:07:00	7:42:00	37.8	3.7	102.75	0.222		

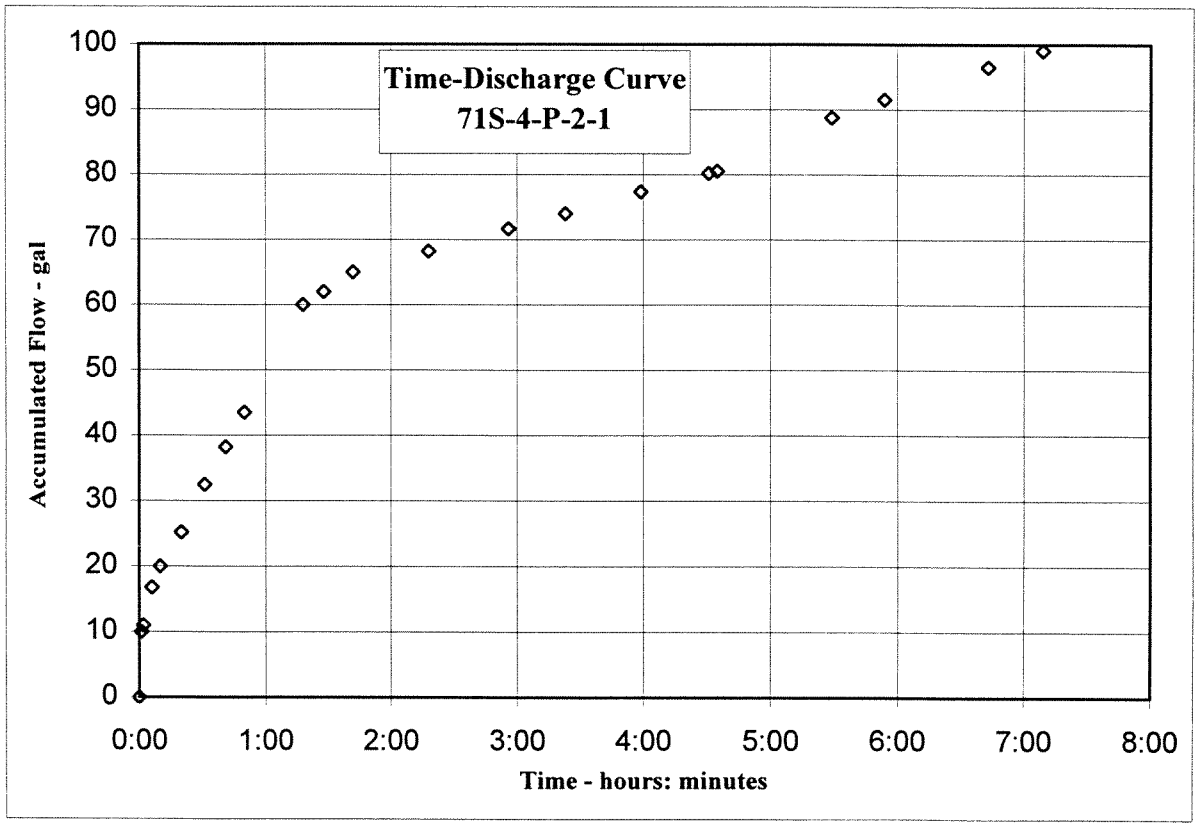


Figure 71S-4-11A

Calculation of Test Condition

Float depth =	8 ft	2.44 meters
Borehole depth =	11.5 ft	3.51 meters
Height of water in test well, h =	3.5 ft	1.07 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	8.5 ft	2.59 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	0.5 ft	0.15 meters

Based on the Test Data, Condition III is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	100 lbs	
density of sand in borehole, ρ_s =	105.66 lbs/cu ft	
r_w =	0.293 ft	3.52 inches

Calculations for k_{20}

h =	3.5 ft	42 inches
Steady-state discharge rate, q =	0.090 gpm	20.8 cu.in./min
Average well water temperature, T =	81.30 °F	27.39 °C
Kinematic viscosity ratio, V =	0.8214 no units	
Condition III - k20	0.0250 in/min	1.5000 in/hr

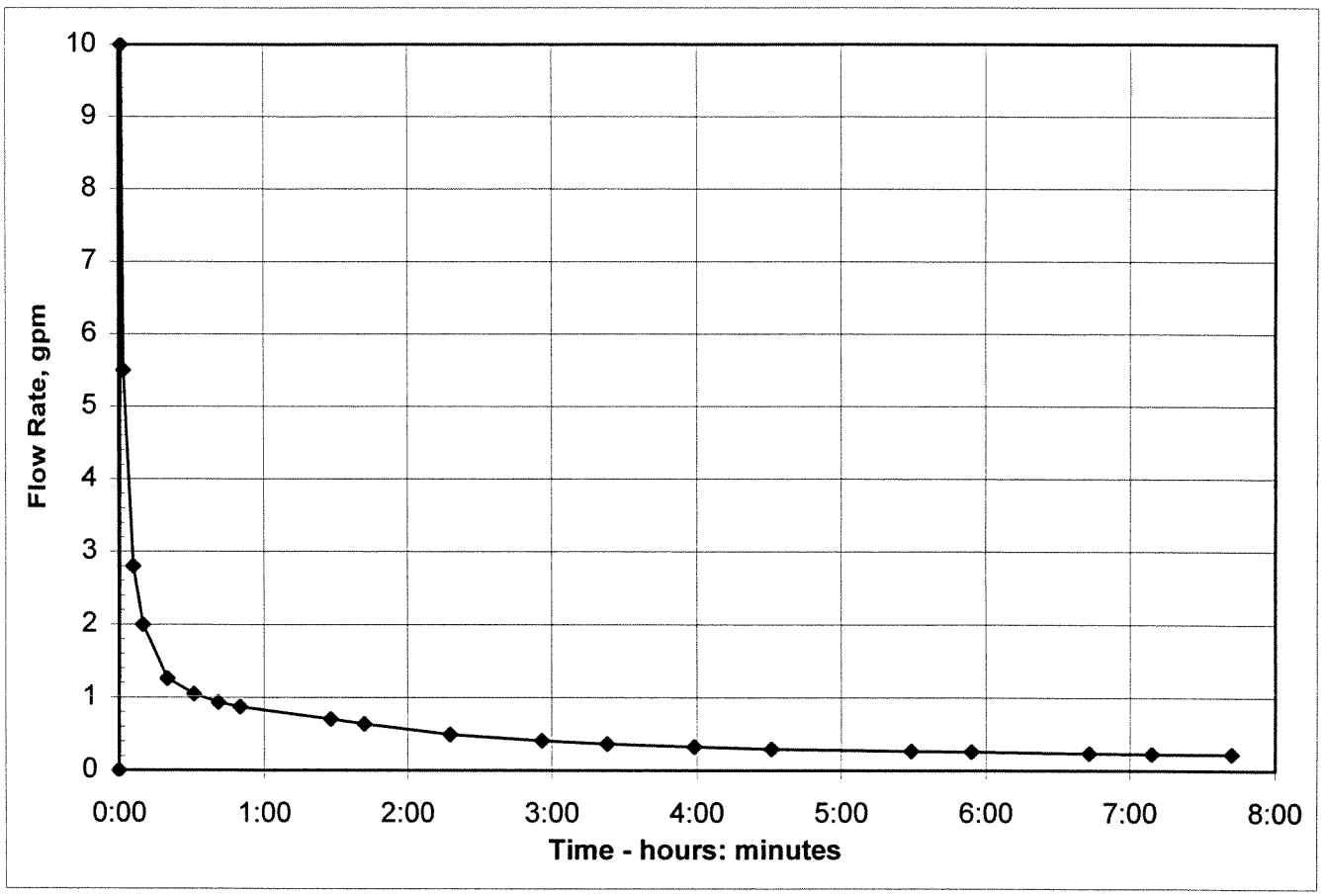


Figure 71S-4-11B

Project: INFILTRATION BASIN SITE SELECTION STUDY Project Location: SR 71, Pomona Blvd.	Log of Boring 71S-4-P-3 Sheet 1 of 1

Date(s) Drilled	7/25/02	Logged By	P. Salter	Checked By	C. Goetz
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	152mm auger bit	Total Depth of Borehole	3.5 meters
Drill Rig Type	Limited Access	Drilling Contractor	BC2 Environmental	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0		1	42				Silty sand with gravel (SM) [Possible FILL] dense to very dense, light brown, moist, fine to medium grained sand			NATIVE
			2	24				Becomes medium dense			
	1		3	12				Silty sand (SM) medium dense, brown, moist, fine to coarse grained sand			CASING
			4	18				Sandy lean clay (CL) soft, dark brown, moist, fine grained sand			
242	2		5	15							SA: 64%<#200
			6	13							(COARSE AQUARIUM SAND)
	3		7	18							
								Bottom of boring at 3.5 meters			
240	4										
	5										
238	6										
	7										
236	8										
	9										
234	10										
	11										
232	12										

Figure 71S-4-12

71S-4-P-3-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:30:00	0:00:00	54	0	0	0.000		
8:31:00	0:01:00	53.7	0.3	0.3	0.300		81
8:44:00	0:14:00	53.5	0.2	0.5	0.036	77.4	
8:54:00	0:24:00	53.1	0.4	0.9	0.038	79.7	82.4
9:41:00	1:11:00	47.5	5.6	6.5	0.092		
9:56:00	1:26:00	45	2.5	9	0.105	77.5	
10:17:00	1:47:00	41.3	3.7	12.7	0.119	82.8	
10:58:00	2:28:00	34.9	6.4	19.1	0.129		84.6
10:59:00	2:29:00	56	0	19.1	0.128		
11:50:00	3:20:00	47.9	8.1	27.2	0.136		
12:37:00	4:07:00	41.3	6.6	33.8	0.137		
13:20:00	4:50:00	35	6.3	40.1	0.138		90.1
13:56:00	5:26:00	31.2	3.8	43.9	0.135		
15:15:00	6:45:00	21	10.2	54.1	0.134		92.8
15:41:00	7:11:00	17.8	3.2	57.3	0.133		

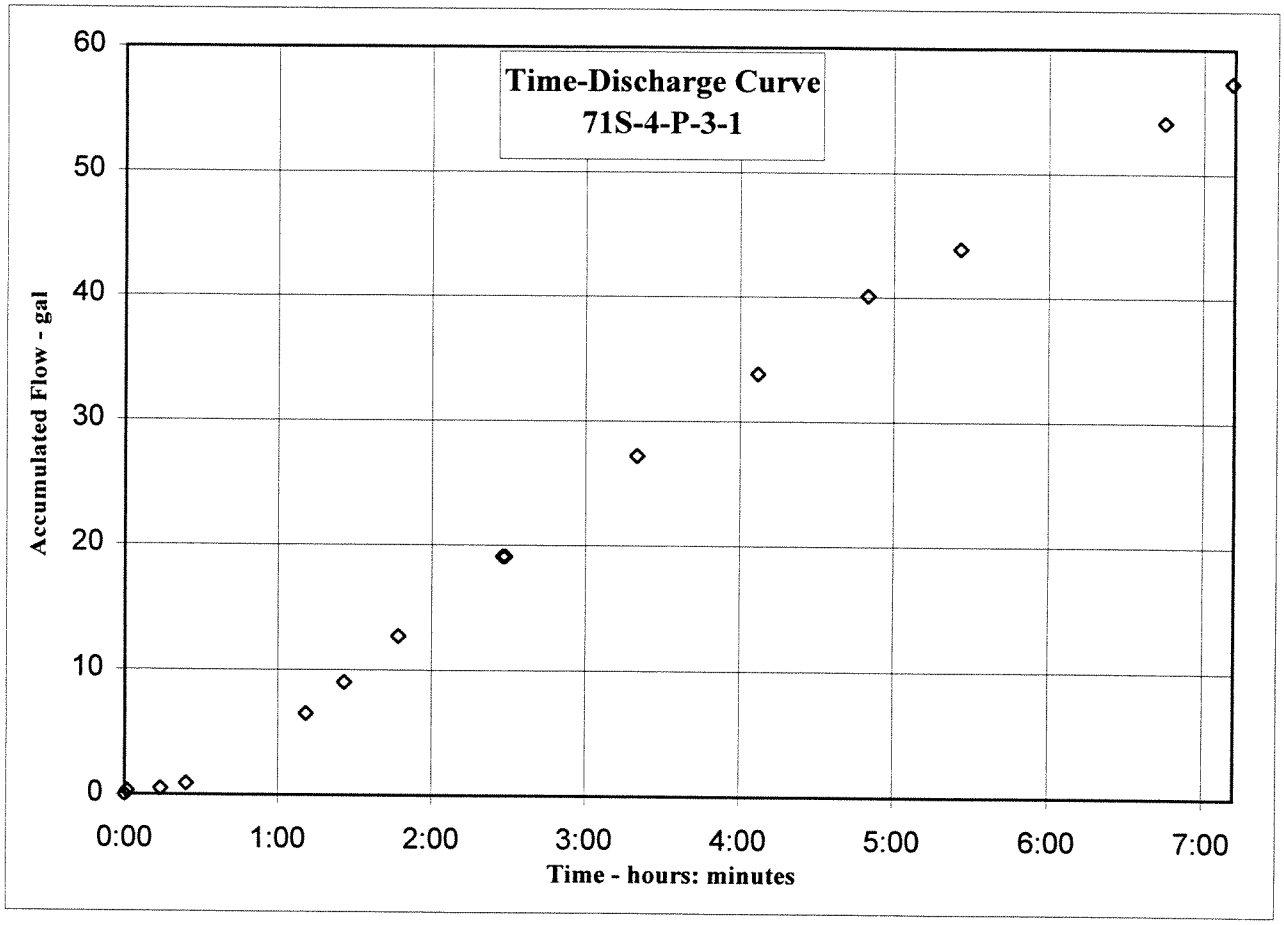


Figure 71S-4-13A

Calculation of Test Condition

Float depth =	3.7 ft	1.13 meters
Borehole depth =	11.5 ft	3.51 meters
Height of water in test well, h =	7.8 ft	2.38 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	5 ft	1.52 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	1.3 ft	0.40 meters

Based on the Test Data, Condition III is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	250 lbs	
density of sand in borehole, ρ_s =	104.3 lbs/cu ft	
r_w =	0.31 ft	3.8 inches

Calculations for k_{20}

h =	7.8 ft	93.6 inches
Steady-state discharge rate, q =	0.126 gpm	29.2 cu.in./min
Average well water temperature, T =	79.4 °F	26.3 °C
Kinematic viscosity ratio, V =	0.8438 no units	
Condition III - k20	7.97E-03 in/min	0.478 in/hr

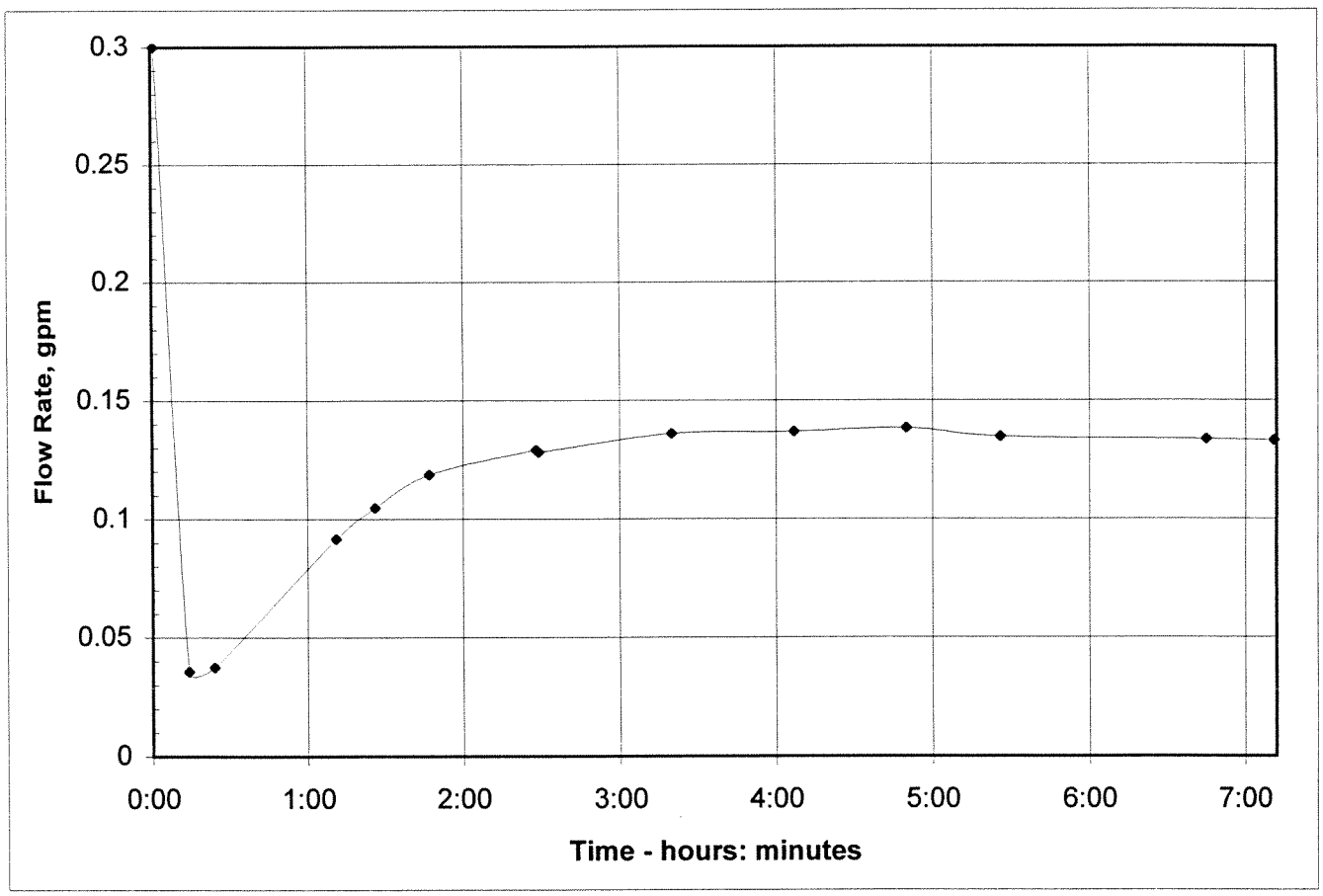


Figure 71S-4-13B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-P-4

Sheet 1 of 1

Date(s) Drilled	7/26/02	Logged By	M. Siem	Checked By	C. Goetz
Drilling Method	Hand Auger	Drill Bit Size/Type	N/A	Total Depth of Borehole	0.6 meters
Drill Rig Type	N/A	Drilling Contractor	N/A	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	N/A	Hammer Data	N/A
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES: Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Sandy Silt to Silty sand (SM/ML) [FILL] stiff, light brown, dry, fine grained sand, with occasional fine to coarse grained gravel			NATIVE; CASING; (COARSE AQUARIUM SAND)
	1							Silty sand (SM) medium dense, brown, dry to moist, fine to medium grained sand, with occasional fine gravels			
								Bottom of boring at 0.61 meters			
242	2										
	3										
240	4										
	5										
238	6										
	7										
236	8										
	9										
234	10										
	11										
232	12										

Figure 71S-4-14

71S-4-P-4-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:29:00	0:00:00	60	0	0	0.000		
8:30:00	0:01:00	59	1	1	1.000		
8:34:00	0:05:00	58.5	0.5	1.5	0.300		
8:39:00	0:10:00	58	0.5	2	0.200	81.7	85.1
8:49:00	0:20:00	58	0	2	0.100		
9:19:00	0:50:00	57.5	0.5	2.5	0.050	77.5	86.4
9:33:00	1:04:00	57	0.5	3	0.047		
10:09:00	1:40:00	56.5	0.5	3.5	0.035		
10:29:00	2:00:00	56	0.5	4	0.033		
11:25:00	2:56:00	55	1	5	0.028	85.1	88.5
13:02:00	4:33:00	54	1	6	0.022		
13:05:00	4:36:00	54	0	6	0.022		
13:13:00	4:44:00	53.5	0.5	6.5	0.023		
14:03:00	5:34:00	53	0.5	7	0.021	86	93.4
15:37:00	7:08:00	52.5	0.5	7.5	0.018	86.7	94.6

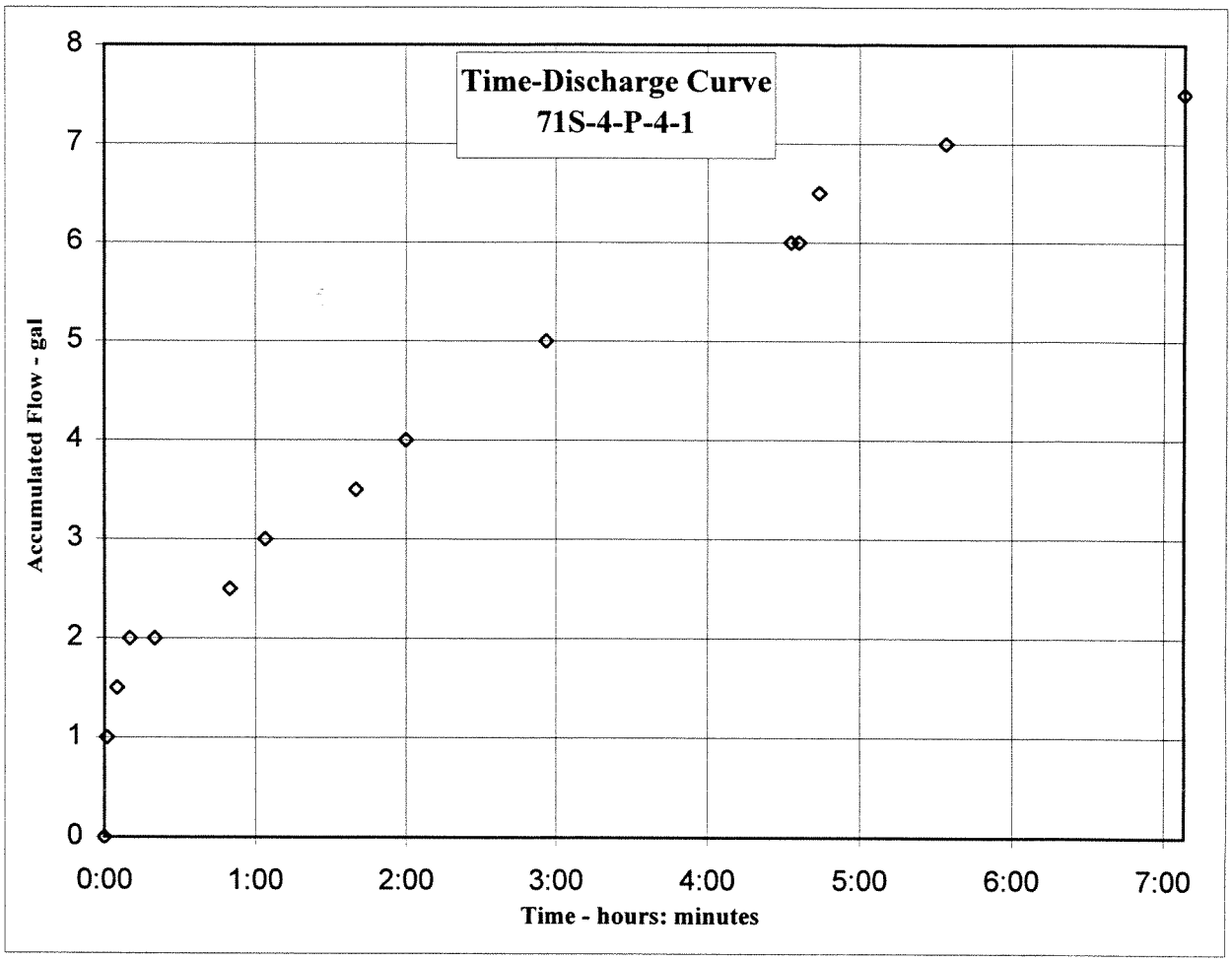


Figure 71S-4-15A

Calculation of Test Condition

Float depth =	1.2 ft	0.37 meters
Borehole depth =	2 ft	0.61 meters
Height of water in test well, h =	0.8 ft	0.24 meters
Depth of water table =	80 ft	24.38 meters
Depth to impervious layer =	8.5 ft	2.59 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	7.3 ft	2.23 meters

Based on the Test Data, Condition I is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	25 lbs	
density of sand in borehole, ρ_s =	99.5 lbs/cu ft	
r_w =	0.32 ft	3.8 inches

Calculations for k_{20}

h =	0.8 ft	9.6 inches
Steady-state discharge rate, q =	0.007 gpm	1.6 cu.in./min
Average well water temperature, T =	86.4 °F	30.2 °C
Kinematic viscosity ratio, V =	0.7663 no units	
Condition I - k20=	2.01E-03 in/min	0.121 in/hr

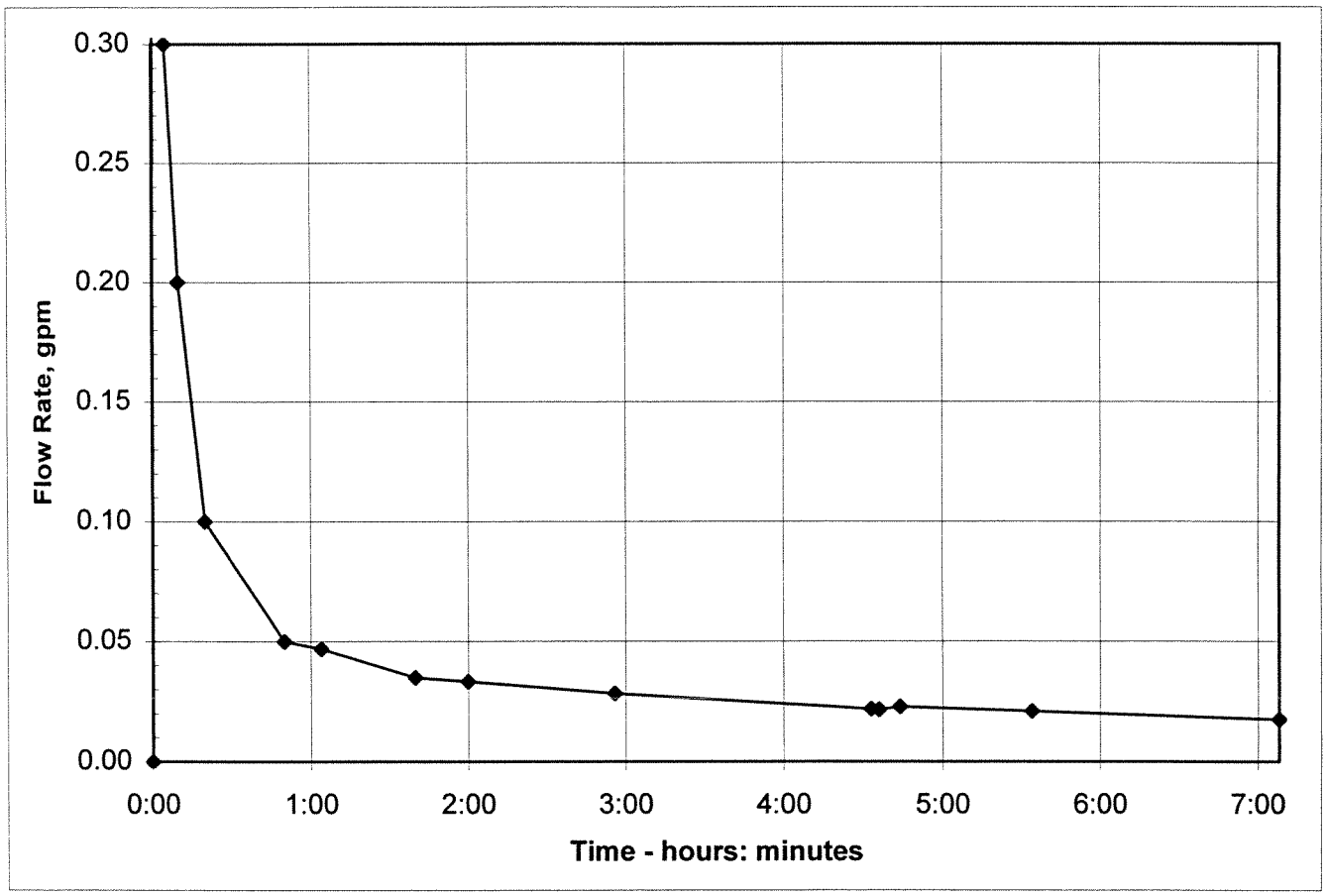


Figure 71S-4-15B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-P-5

Sheet 1 of 1

Date(s) Drilled	2/24/03	Logged By	P. Salter	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	2.6 meters
Drill Rig Type	CME 75	Drilling Contractor	Prosonic	Approximate Surface Elevation	244.6 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Gravelly sand [FILL]			BENTONITE CHIPS
244			1	13				Silty sand (SM), medium dense, dark brown, moist, fine to medium grained sand, with organics			NATIVE
								Becomes loose			CASING
	1		2	7					8		SA: 35%<#200
			3	6				no organics			(COARSE AQUARIUM SAND)
	2		4	8					4		SA: 19%<#200
			5a						6		WA: 35%<#200
			5b	7							COLLAPSE
242								Silty clay (CL-ML) medium stiff, brown, moist			
	3							Bottom of boring at 2.6 meters			
	4										
240											
	5										
	6										
238											
	7										
	8										
236											
	9										
	10										
234											
	11										
	12										

Figure 71S-4-16

71S-4-P-5-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:15:00	0:00:00	56	0	0	0.000		
8:16:00	0:01:00	53	3	3.0	3.000	62.6	
8:17:00	0:02:00	51	2	5.0	2.500	62.8	
8:18:00	0:03:00	49.5	1.5	6.5	2.167	62.8	
8:19:00	0:04:00	47.5	2	8.5	2.125	62.8	
8:20:00	0:05:00	47	0.5	9.0	1.800	62.8	
8:21:00	0:06:00	46.5	0.5	9.5	1.583	62.8	
8:22:00	0:07:00	46	0.5	10.0	1.429	62.8	
8:23:00	0:08:00	45	1	11.0	1.375	62.8	
8:27:30	0:12:30	43	2	13.0	1.040	63	
8:34:30	0:19:30	40	3	16.0	0.821	63	
8:39:30	0:24:30	38	2	18.0	0.735	63	
8:45:00	0:30:00	35.5	2.5	20.5	0.683	63.1	
8:52:00	0:37:00	33	2.5	23.0	0.622	63.3	
8:58:30	0:43:30	31	2	25.0	0.575	63.5	
9:05:30	0:50:30	27.5	3.5	28.5	0.564	64	
9:22:00	1:07:00	21.5	6	34.5	0.515	64.6	
9:38:30	1:23:30	15.5	6	40.5	0.485	65.5	
9:41:00	1:26:00	57	0.91	41.4	0.482	65.5	
10:15:00	2:00:00	44	13	54.4	0.453	65.7	
10:45:00	2:30:00	33.5	10.5	64.9	0.433	66.7	
11:19:00	3:04:00	21.5	12	76.9	0.418	68.5	
11:52:30	3:37:30	9.5	12	88.9	0.409	71.4	
11:54:00	3:39:00	59	0.54	89.4	0.408		
12:24:30	4:09:30	46	13	102.4	0.411	68.7	
12:56:00	4:41:00	34	12	114.4	0.407	70.2	
13:01:00	4:46:00	33	1	115.4	0.404	70.3	
13:01:30	4:46:30	58	0.10	115.5	0.403		
13:29:30	5:14:30	46.5	11.5	127.0	0.404	72.1	
13:57:30	5:42:30	36	10.5	137.5	0.402	73	
14:22:30	6:07:30	26	10	147.5	0.401	74.1	

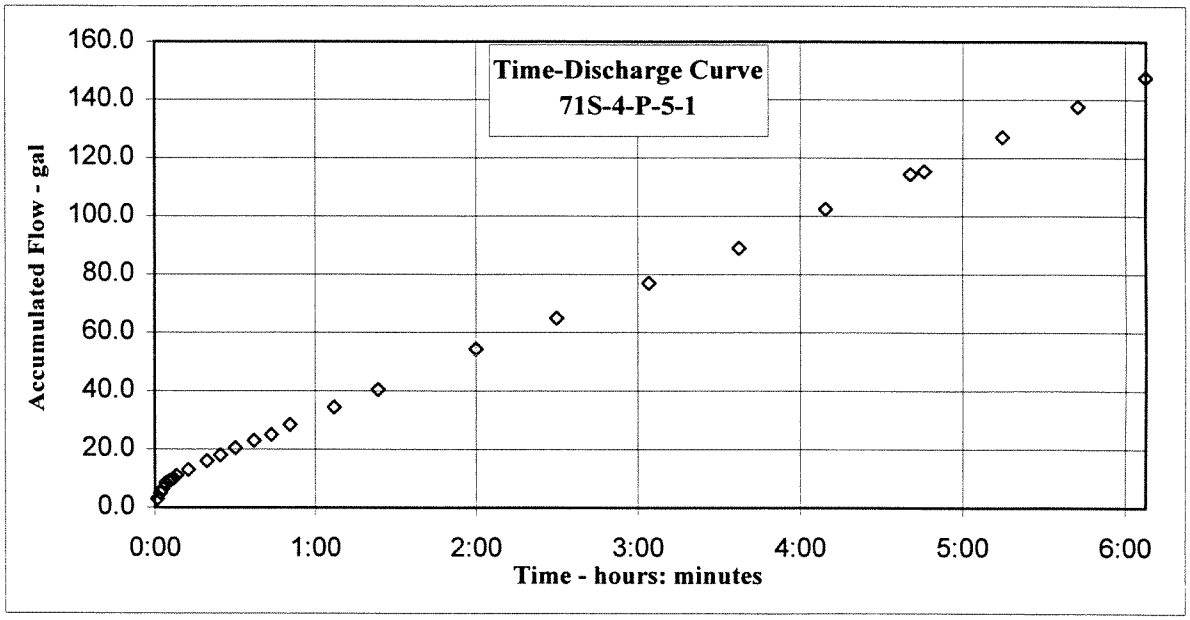


Figure 71S-4-17A

Calculation of Test Condition

Float depth =	2.25 ft	0.69 meters
Borehole depth =	8 ft	2.44 meters
Height of water in test well, h =	5.75 ft	1.75 meters
Depth of water table =	30 ft	9.14 meters
Depth to impervious layer =	8 ft	2.44 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	5.75 ft	1.75 meters

Based on the Test Data, Condition II is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	200 lbs	
density of sand in borehole, ρ_s =	102.7 lbs/cu ft	
r_w =	0.33 ft	3.9 inches

Calculations for k_{20}

h =	5.75 ft	69 inches
Steady-state discharge rate, q =	0.362 gpm	83.6 cu.in./min
Average well water temperature, T =	66.5 °F	19.2 °C
Kinematic viscosity ratio, V =	1.0133 no units	
Condition II - k20 =	0.0162 in/min	0.972 in/hr
Condition I - k20 =	7.39E-03 in/min	0.444 in/hr

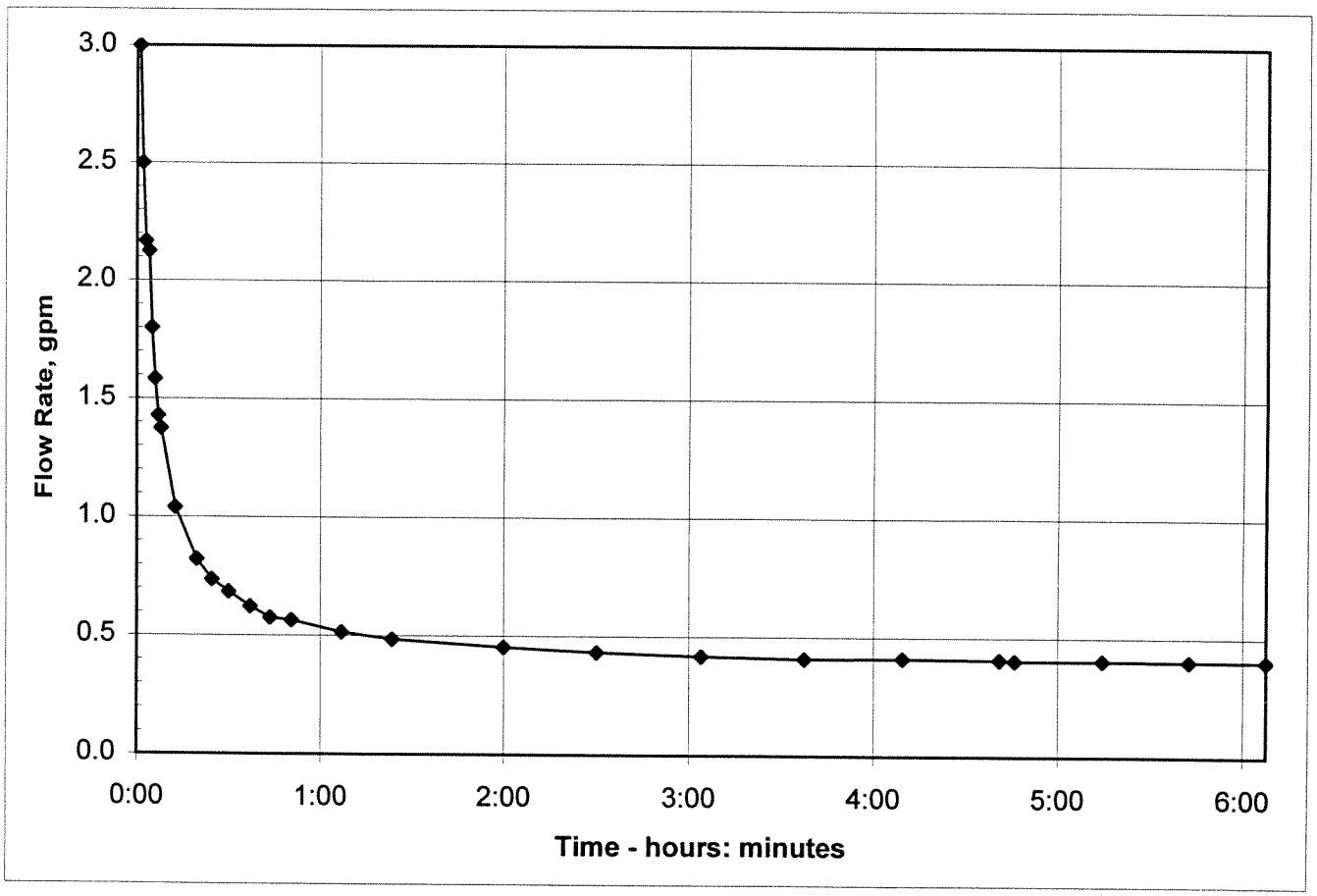


Figure 71S-4-17B

Project: INFILTRATION BASIN SITE SELECTION STUDY Project Location: SR 71, Pomona Blvd.	Log of Boring 71S-4-P-6 Sheet 1 of 1

Date(s) Drilled	2/24/03	Logged By	P. Salter	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	3.0 meters
Drill Rig Type	CME 75	Drilling Contractor	Prosonic	Approximate Surface Elevation	244.6 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Gravel/Asphalt [FILL]			
244			1	5				Silty sand with gravel (SM) [FILL] loose, dark brown, moist, fine to medium grained sand, with concrete pieces and organics	11		BENTONITE CHIPS SA: 36%<#200
	1		2	2				Becomes very loose, with organics [Buried Topsoil?]	12		NATIVE WA: 35%<#200
			3	5				Clayey sand (SC) loose, olive brown, moist, fine to medium grained sand, with some fine grained gravel	11		CASING WA: 36%<#200
	2		4	3				Silty sand (SM) very loose, brown, moist, fine grained sand			(COARSE AQUARIUM SAND)
242			5	10				Sandy silt (ML) medium dense, light olive brown, moist, fine grained sand			
	3		6	6				Sandy lean clay (CL) medium stiff, brown, moist, fine grained sand	16		COLLAPSE WA: 62%<#200
								Bottom of boring at 3.05 meters			
	4										
240											
	5										
	6										
238											
	7										
	8										
236											
	9										
	10										
234											
	11										
	12										

Figure 71S-4-18

71S-4-P-6-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)	Interval Flow Rate (gpm)
8:23:00	0:00:00	57	0	0	0.000		65	
8:23:30	0:00:30	55	2	2.0	4.000			4
8:24:00	0:01:00	54.5	0.5	2.5	2.500			1
8:24:30	0:01:30	54	0.5	3.0	2.000			1
8:25:00	0:02:00	54	0	3.0	1.500			0
8:26:00	0:03:00	53.5	0.5	3.5	1.167			0.5
8:27:00	0:04:00	53	0.5	4.0	1.000			0.5
8:28:00	0:05:00	52.5	0.5	4.5	0.900			0.5
8:32:30	0:09:30	51	1.5	6.0	0.632			0.333333333
8:42:00	0:19:00	50	1	7.0	0.368			0.105263158
8:46:00	0:23:00	49.5	0.5	7.5	0.326			0.125
8:56:00	0:33:00	49	0.5	8.0	0.242			0.05
9:07:00	0:44:00	48	1	9.0	0.205		67	0.090909091
9:18:30	0:55:30	47	1	10.0	0.180		67	0.086956522
9:49:00	1:26:00	44.5	2.5	12.5	0.145		66	0.081967213
10:20:00	1:57:00	42	2.5	15.0	0.128			0.080645161
10:53:00	2:30:00	40	2	17.0	0.113			0.060606061
11:22:00	2:59:00	37.5	2.5	19.5	0.109			0.086206897
11:53:00	3:30:00	35	2.5	22.0	0.105		72	0.080645161
12:24:00	4:01:00	33	2	24.0	0.100		73	0.064516129
12:58:00	4:35:00	30	3	27.0	0.098		75	0.088235294
13:04:30	4:41:30	29	1	28.0	0.099			0.153846154
13:05:30	4:42:30	54	0.15	28.2	0.100			0.153846154
13:23:00	5:00:00	52.25	1.75	29.9	0.100		74	0.1
13:59:00	5:36:00	50	2.25	32.2	0.096			0.0625
14:32:30	6:09:30	47.5	2.5	34.7	0.094		78	0.074626866

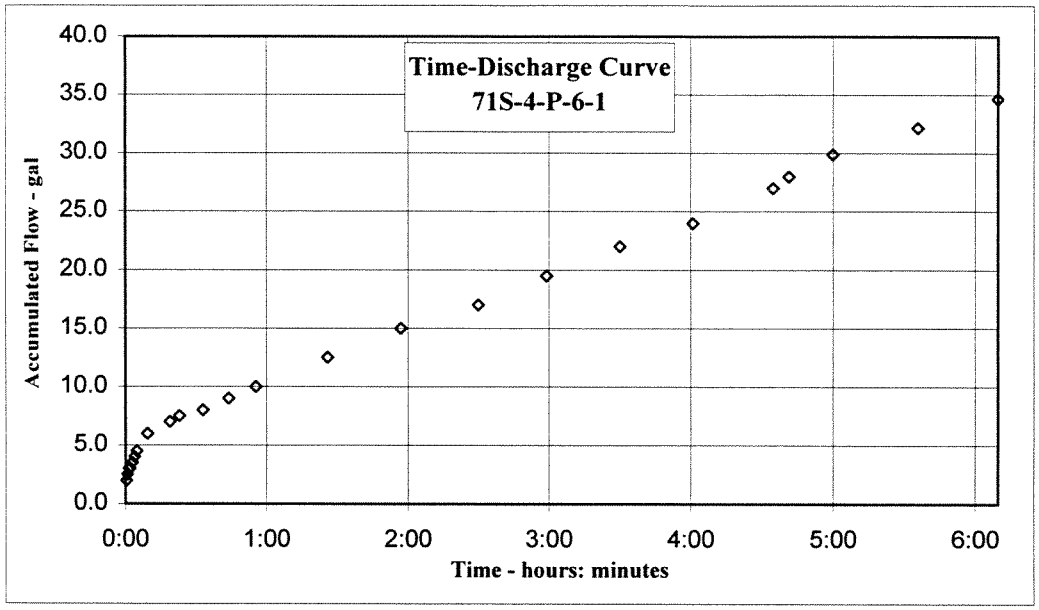


Figure 71S-4-19A

Calculation of Test Condition

Float depth =	4.6 ft	1.40 meters
Borehole depth =	9 ft	2.74 meters
Height of water in test well, h =	4.4 ft	1.34 meters
Depth of water table =	30 ft	9.14 meters
Depth to impervious layer =	8.5 ft	2.59 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	3.9 ft	1.19 meters

Based on the Test Data, Condition III is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	150 lbs	
density of sand in borehole, ρ_s =	103.9 lbs/cu ft	
r_w =	0.32 ft	3.9 inches

Calculations for k_{20}

h =	4.4 ft	52.8 inches
Steady-state discharge rate, q =	0.079 gpm	18.3 cu.in./min
Average well water temperature, T =	71.4 °F	21.9 °C
Kinematic viscosity ratio, V =	0.9434 no units	
Condition III - k20	2.01E-03 in/min	0.121 in/hr

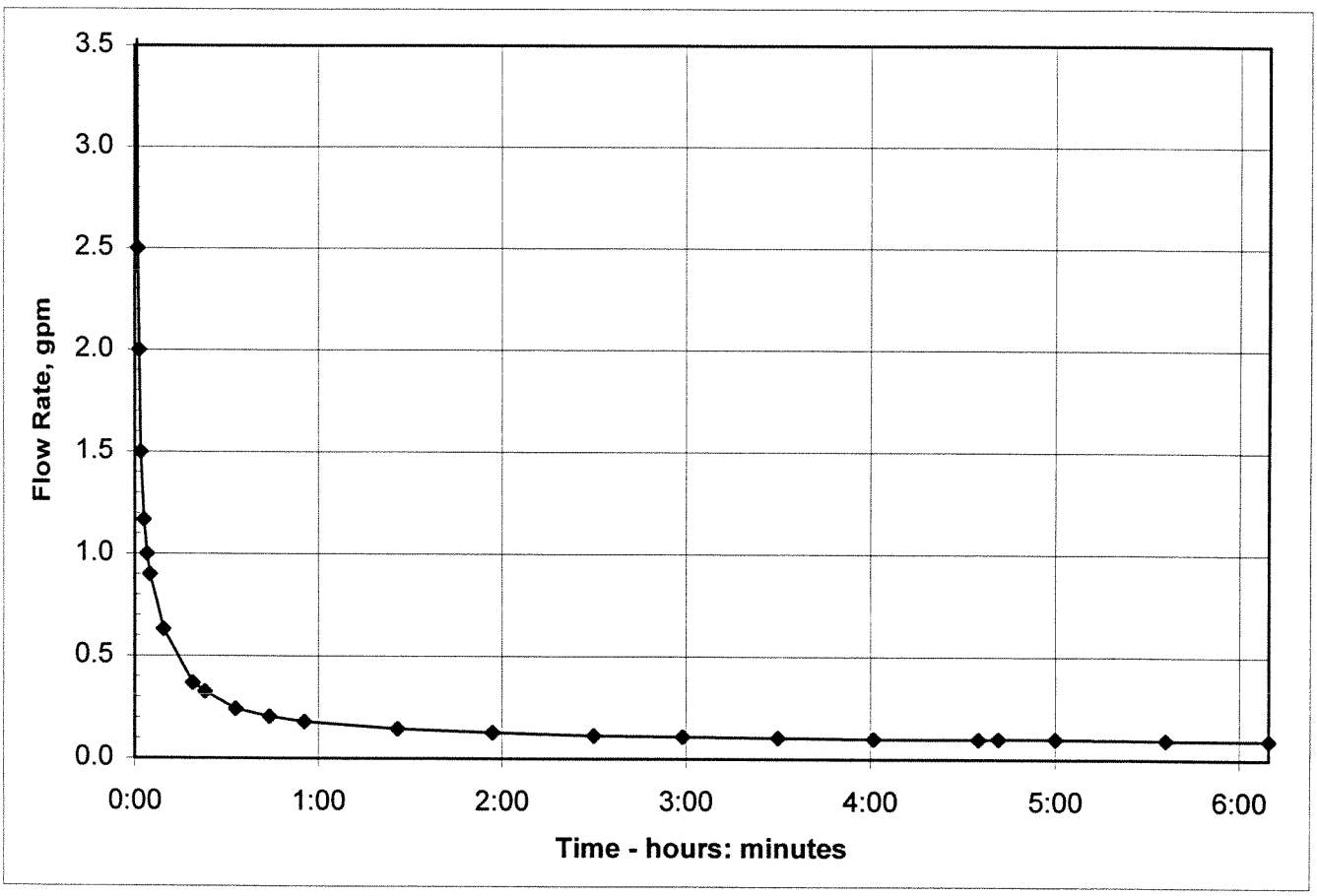


Figure 71S-4-19B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-P-7

Sheet 1 of 1

Date(s) Drilled	2/24/03	Logged By	P. Salter	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	3.0 meters
Drill Rig Type	CME 75	Drilling Contractor	Prosonic	Approximate Surface Elevation	244.4 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
244	0							Silty sand (SM) loose, dark brown, moist, fine to medium grained sand, with organics			BENTONITE CHIPS
			1	7					7		SA: 33%<#200
								Becomes olive brown			CASING
	1		2	7							
								Becomes medium dense			
			3	15					3		SA: 15%<#200
			4a								
	2		4b	10				Becomes loose			
			5a					Sandy lean clay (CL) very soft, brown, moist, fine grained sand	18		WA: 69%<#200
242			5b	9							(COARSE AQUARIUM SAND)
								Lean clay (CL) very soft, brown, moist			
			6	12							COLLAPSE
	3							Silty sand (SM) medium dense, brown, moist, fine to medium grained sand			
								Bottom of boring at 3.05 meters			
	4										
240											
	5										
	6										
238											
	7										
	8										
236											
	9										
	10										
234											
	11										
	12										

Figure 71S-4-20

71S-4-P-7-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)	Interval Flow Rate (gpm)
8:36:00	0:00:00	49.5	0	0	0.000		65	
8:36:30	0:00:30	49	0.5	0.5	1.000			1
8:37:00	0:01:00	49	0	0.5	0.500			0
8:38:00	0:02:00	48.5	0.5	1.0	0.500			0.5
8:39:00	0:03:00	48	0.5	1.5	0.500			0.5
8:40:30	0:04:30	47.5	0.5	2.0	0.444			0.333333333
8:41:30	0:05:30	47	0.5	2.5	0.455			0.5
8:43:00	0:07:00	46.75	0.25	2.8	0.393			0.166666667
8:45:00	0:09:00	45.5	1.25	4.0	0.444			0.625
8:57:00	0:21:00	42	3.5	7.5	0.357		63.7	0.291666667
9:08:00	0:32:00	39.5	2.5	10.0	0.313			0.227272727
9:19:00	0:43:00	36.5	3	13.0	0.302		64.8	0.272727273
9:50:00	1:14:00	30	6.5	19.5	0.264		66	0.209677419
10:21:00	1:45:00	22.5	7.5	27.0	0.257			0.241935484
10:48:30	2:12:30	17	5.5	32.5	0.245			0.2
10:52:30	2:16:30	55	0.80	33.3	0.244		68.2	0.2
11:21:00	2:45:00	48.5	6.5	39.8	0.241			0.228070175
11:53:00	3:17:00	42	6.5	46.3	0.235		70.2	0.203125
12:24:00	3:48:00	35.5	6.5	52.8	0.232		71.1	0.209677419
12:57:00	4:21:00	29	6.5	59.3	0.227		72.9	0.196969697
13:06:00	4:30:00	27	2	61.3	0.227			0.222222222
13:07:00	4:31:00	51	0.22	61.5	0.227		69.4	0.222222222
13:29:00	4:53:00	47	4	65.5	0.224			0.181818182
14:00:00	5:24:00	40.5	6.5	72.0	0.222		70.7	0.209677419
14:36:00	6:00:00	33	7.5	79.5	0.221		72.9	0.208333333

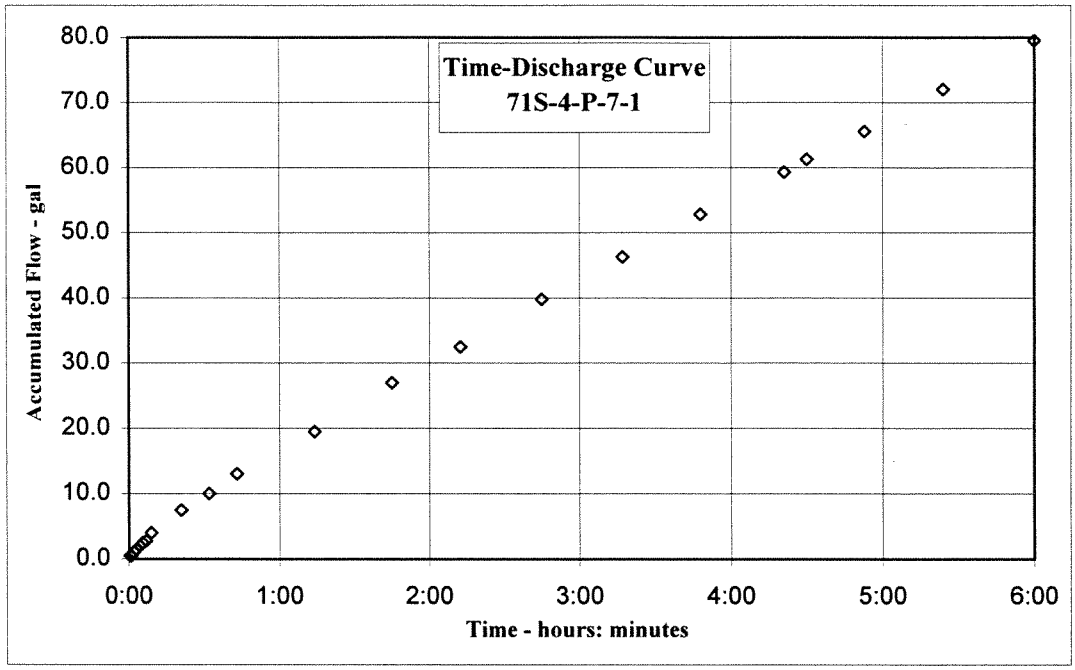


Figure 71S-4-21A

Calculation of Test Condition

Float depth =	3.25 ft	0.99 meters
Borehole depth =	9 ft	2.74 meters
Height of water in test well, h =	5.75 ft	1.75 meters
Depth of water table =	30 ft	9.14 meters
Depth to impervious layer =	6.5 ft	1.98 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	3.25 ft	0.99 meters

Based on the Test Data, Condition III is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	200 lbs	
density of sand in borehole, ρ_s =	103.4 lbs/cu ft	
r_w =	0.33 ft	3.9 inches

Calculations for k_{20}

h =	5.75 ft	69 inches
Steady-state discharge rate, q =	0.203 gpm	46.8 cu.in./min
Average well water temperature, T =	71.4 °F	21.9 °C
Kinematic viscosity ratio, V =	0.9434 no units	
Condition III - k20	5.84E-03 in/min	0.350 in/hr

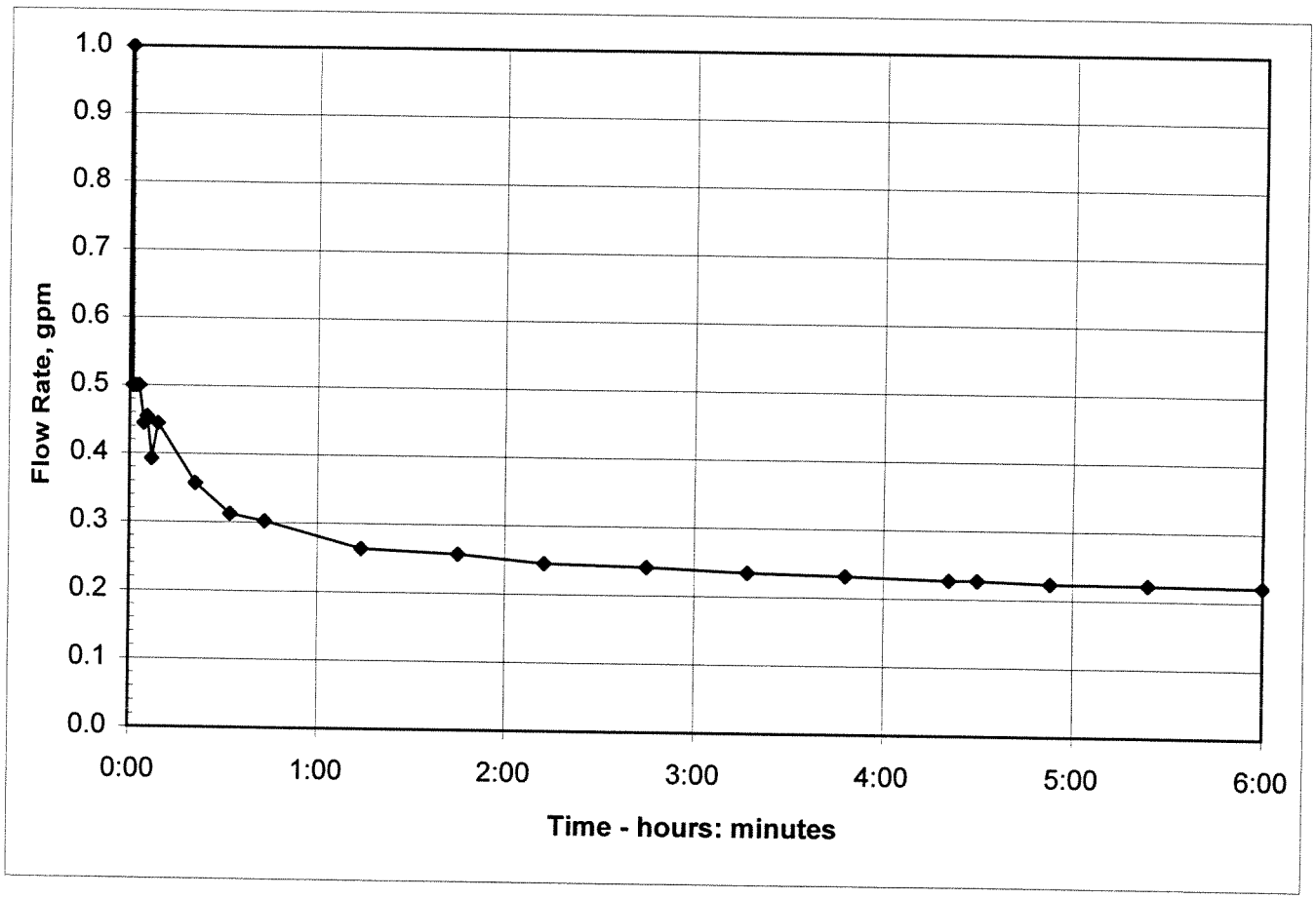


Figure 71S-4-21B

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Pomona Blvd.

Log of Boring 71S-4-P-8

Sheet 1 of 1

Date(s) Drilled	2/24/03	Logged By	P. Salter	Checked By	V. Glisic
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	2.1 meters
Drill Rig Type	CME 75	Drilling Contractor	Prosonic	Approximate Surface Elevation	244.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	SPT	Hammer Data	63.5 kg, 762mm drop
Borehole Backfill	See well construction on log	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Infiltration Test Well	REMARKS AND OTHER TESTS
	0							Loose gravel [FILL]			BENTONITE CHIPS
			1	3				Silty sand (SM) very loose, dark brown, moist, fine to medium grained sand, with organics	10		CASING SA: 28%<#200
	1		2	5				Becomes loose			
			3	8				Well-graded sand with silt (SW-SM) loose, light olive brown, moist, fine to medium grained sand	3		SA: 11%<#200 (COARSE AQUARIUM SAND)
			4a								
242	2		4b	8				Lean clay (CL) very soft, brown, moist			
								Bottom of boring at 2.13 meters			
	3										
240	4										
	5										
238	6										
	7										
236	8										
	9										
234	10										
	11										
232	12										

Figure 71S-4-22

71S-4-P-8-1

Clock	Accumulated Time	Tank Reading (gallons)	Difference (gallons)	Accumulated Flow (gallons)	Flow Rate (gpm)	Well Temp (°F)	Reservoir Temp (°F)
8:08:00	0:00:00	59	0	0	0.000		
8:09:00	0:01:00	55	4	4.0	4.000	61.7	
8:10:00	0:02:00	52.5	2.5	6.5	3.250	62.2	
8:11:00	0:03:00	50.5	2	8.5	2.833	62.4	
8:12:00	0:04:00	49.5	1	9.5	2.375	62.2	
8:13:00	0:05:00	49	0.5	10.0	2.000	62.2	
8:14:00	0:06:00	48.5	0.5	10.5	1.750	62.2	
8:18:30	0:10:30	47	1.5	12.0	1.143	62.2	
8:24:00	0:16:00	46	1	13.0	0.812	62.4	
8:28:00	0:20:00	44.5	1.5	14.5	0.725	62.4	
8:34:00	0:26:00	43	1.5	16.0	0.615	62.4	
8:39:00	0:31:00	42	1	17.0	0.548	62.6	
8:44:30	0:36:30	40	2	19.0	0.521	62.6	
8:51:30	0:43:30	38	2	21.0	0.483	62.8	
8:58:00	0:50:00	36	2	23.0	0.460	63.1	
9:05:00	0:57:00	35	1	24.0	0.421	63.3	
9:21:30	1:13:30	31	4	28.0	0.381	64	
9:37:30	1:29:30	27	4	32.0	0.358	64.9	
10:14:00	2:06:00	17.5	9.5	41.5	0.329	67.5	
10:51:00	2:43:00	9	8.5	50.0	0.307	72.1	
10:52:30	2:44:30	59	0.34	50.3	0.306	70.5	
11:20:00	3:12:00	55	4	54.3	0.283	64	
11:23:00	3:15:00	52	3	57.3	0.294	67.1	
11:51:00	3:43:00	45	7	64.3	0.289	68.4	
12:23:30	4:15:30	37	8	72.3	0.283	70	
12:55:00	4:47:00	30	7	79.3	0.276	71.4	
13:05:00	4:57:00	27.5	2.5	81.8	0.276	72.1	
13:06:00	4:58:00	55	0.25	82.1	0.275	72.1	
13:29:00	5:21:00	49	6	88.1	0.274	70.9	
13:57:00	5:49:00	42.5	6.5	94.6	0.271	71.6	
14:21:30	6:13:30	36	6.5	101.1	0.271	72.9	

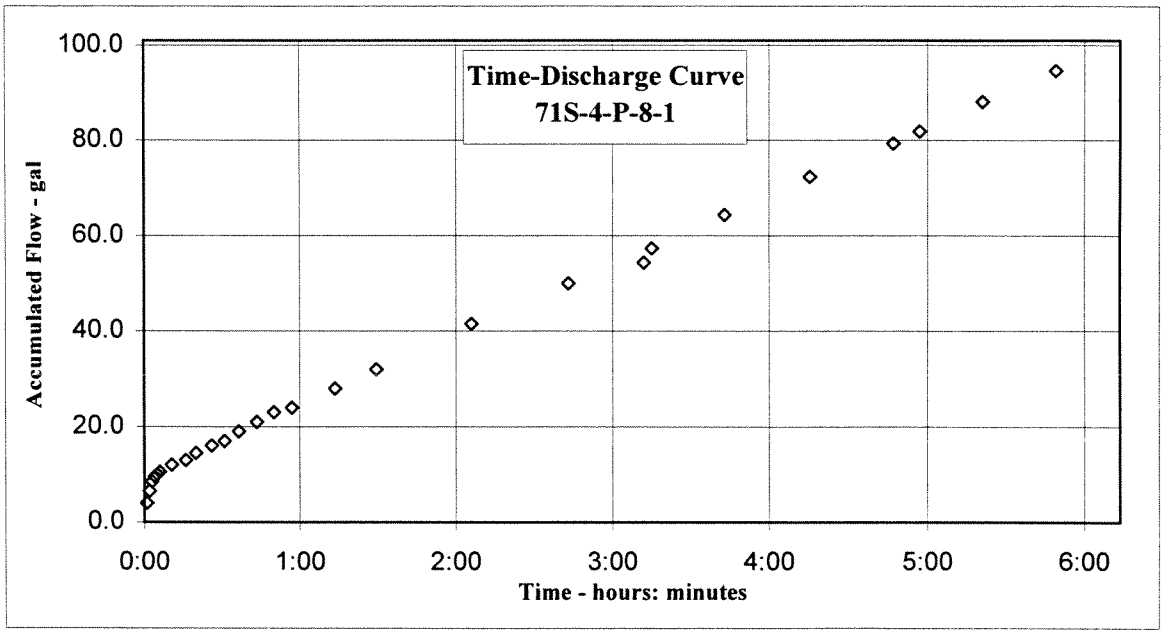


Figure 71S-4-23A

Calculation of Test Condition

Float depth =	1 ft	0.30 meters
Borehole depth =	7 ft	2.13 meters
Height of water in test well, h =	6 ft	1.83 meters
Depth of water table =	30 ft	9.14 meters
Depth to impervious layer =	6.5 ft	1.98 meters
Unsaturated distance between water table or impervious layer and surface of well water, Tu=	5.5 ft	1.68 meters

Based on the Test Data, Condition III is the most applicable

Calculation of equivalent radius of the well, r_w

mass of sand in borehole, m_s =	200 lbs	
density of sand in borehole, ρ_s =	101.7 lbs/cu ft	
r_w =	0.32 ft	3.9 inches

Calculations for k_{20}

h =	6 ft	72 inches
Steady-state discharge rate, q =	0.243 gpm	56.1 cu.in./min
Average well water temperature, T =	71.2 °F	21.8 °C
Kinematic viscosity ratio, V =	0.9465 no units	
Condition III - k20	3.57E-03 in/min	0.214 in/hr

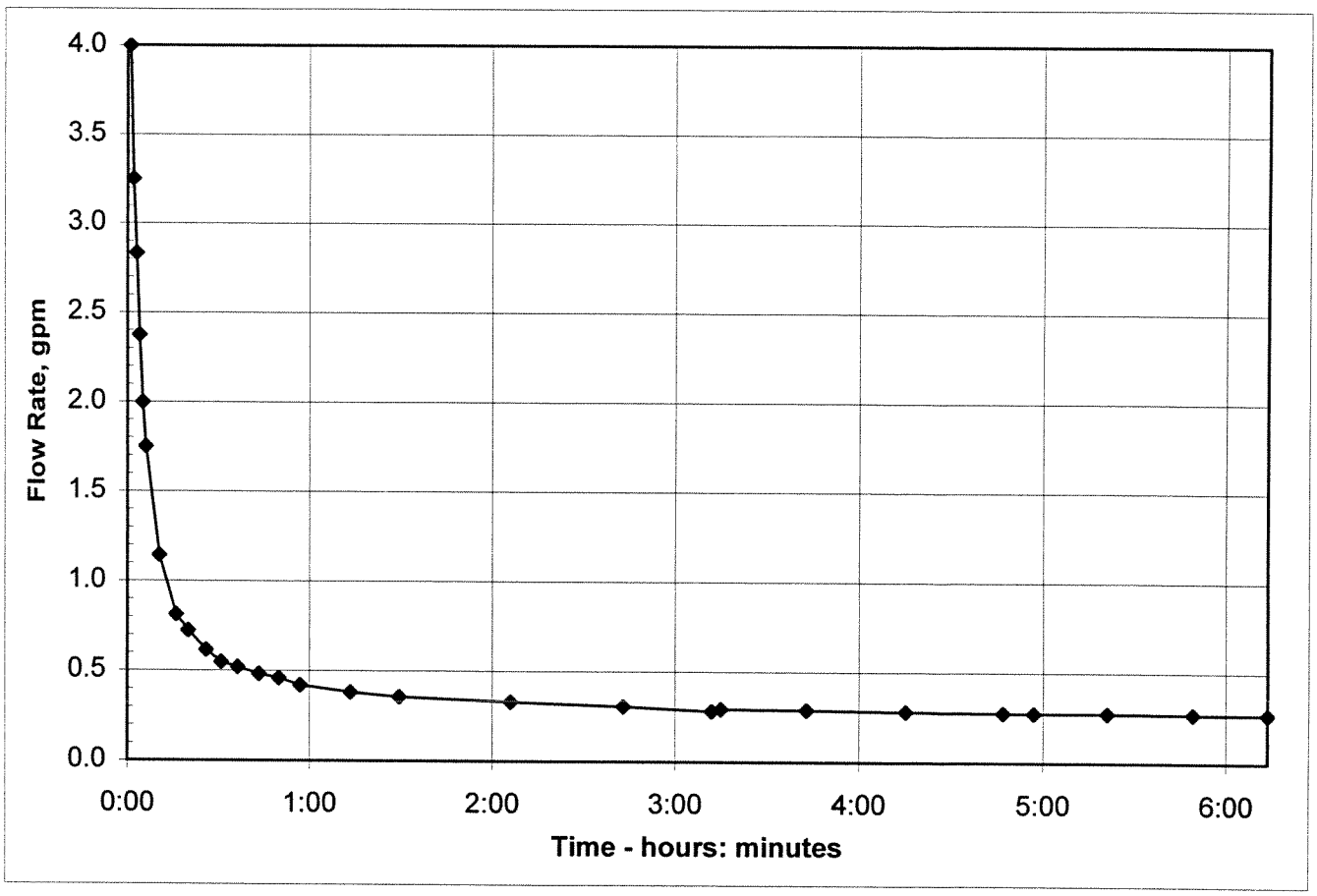
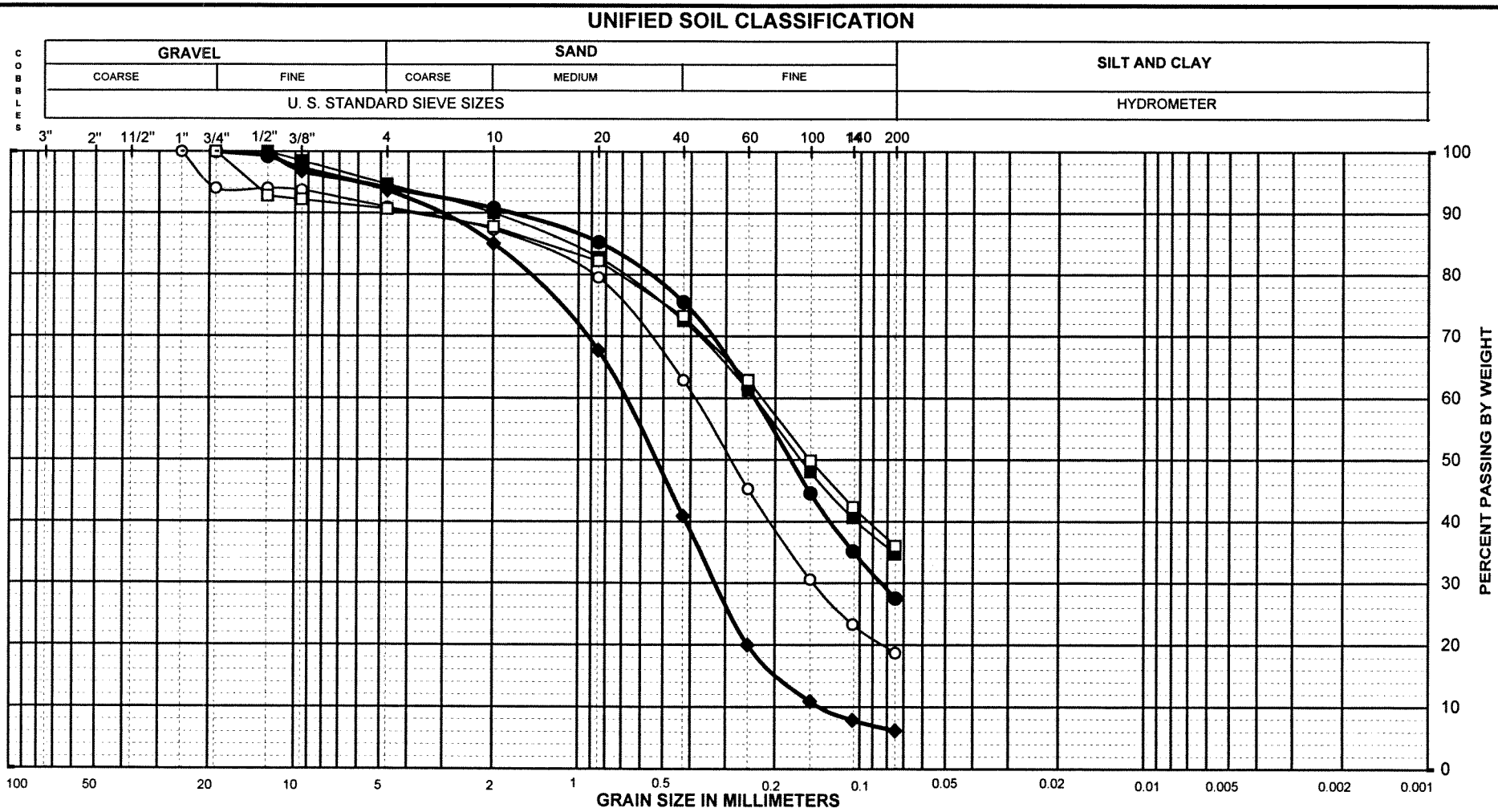


Figure 71S-4-23B



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-4-B-2	10	4.42	●	5.7				**Olive brown silty Sand (SM)**	0.24	0.085			
71S-4-B-2	12	7.62	◆	2.1				**Gray poorly graded Sand with silt (SP-SM)**	0.7	0.33	0.15	4.7	1.0
71S-4-P-5	2	0.76	■	8.3				**Dark brown silty Sand (SM)**	0.24				
71S-4-P-5	4	1.68	○	3.5				**Olive brown silty Sand (SM)**	0.39	0.15			
71S-4-P-6	1	0.30	□	10.5				**Dark brown clayey Sand (SC)**	0.23				

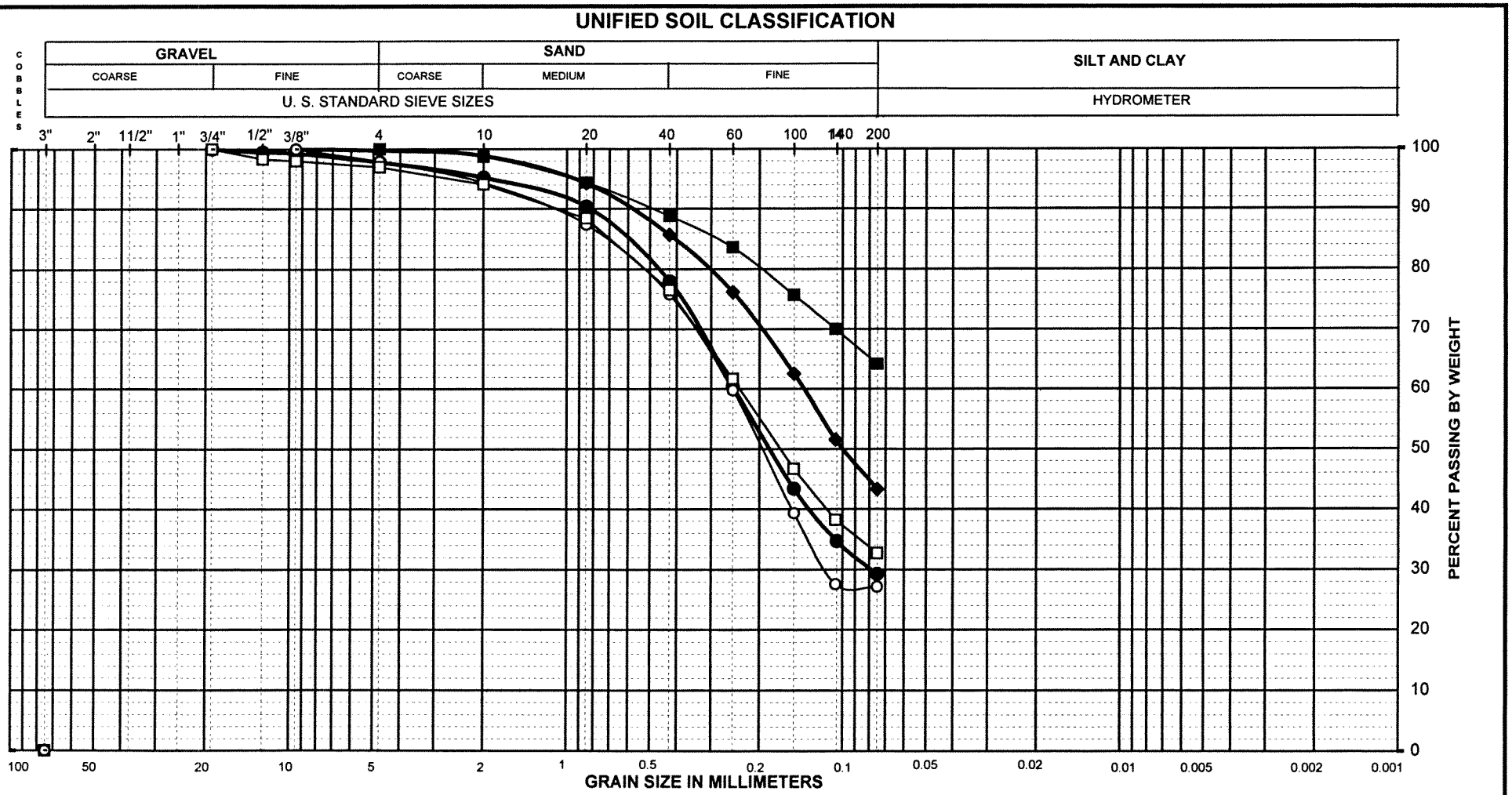
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-4-24

(SNA) sieve only (01/2000)

Sieve 71s-4.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-4-B-1	R-1-2	1.22	●	4.8				**Olive brown Silty Sand (SM)**	0.25	0.08			
71S-4-P-1	5	1.98	◆					**Grayish brown Silty Sand (SM)**	0.14				
71S-4-P-3	5	1.98	■					**Brown sandy Clay (CL)**					
71S-4-MW-1	R-4-A	4.88	○	3.5				**Olive brown silty Sand (SM)**	0.25	0.12			
71S-4-B-2	2	0.76	□	6.5				**Very dark gray clayey Sand (SC)**	0.24				

PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-4-25

(SNA) sieve only (01/2000)

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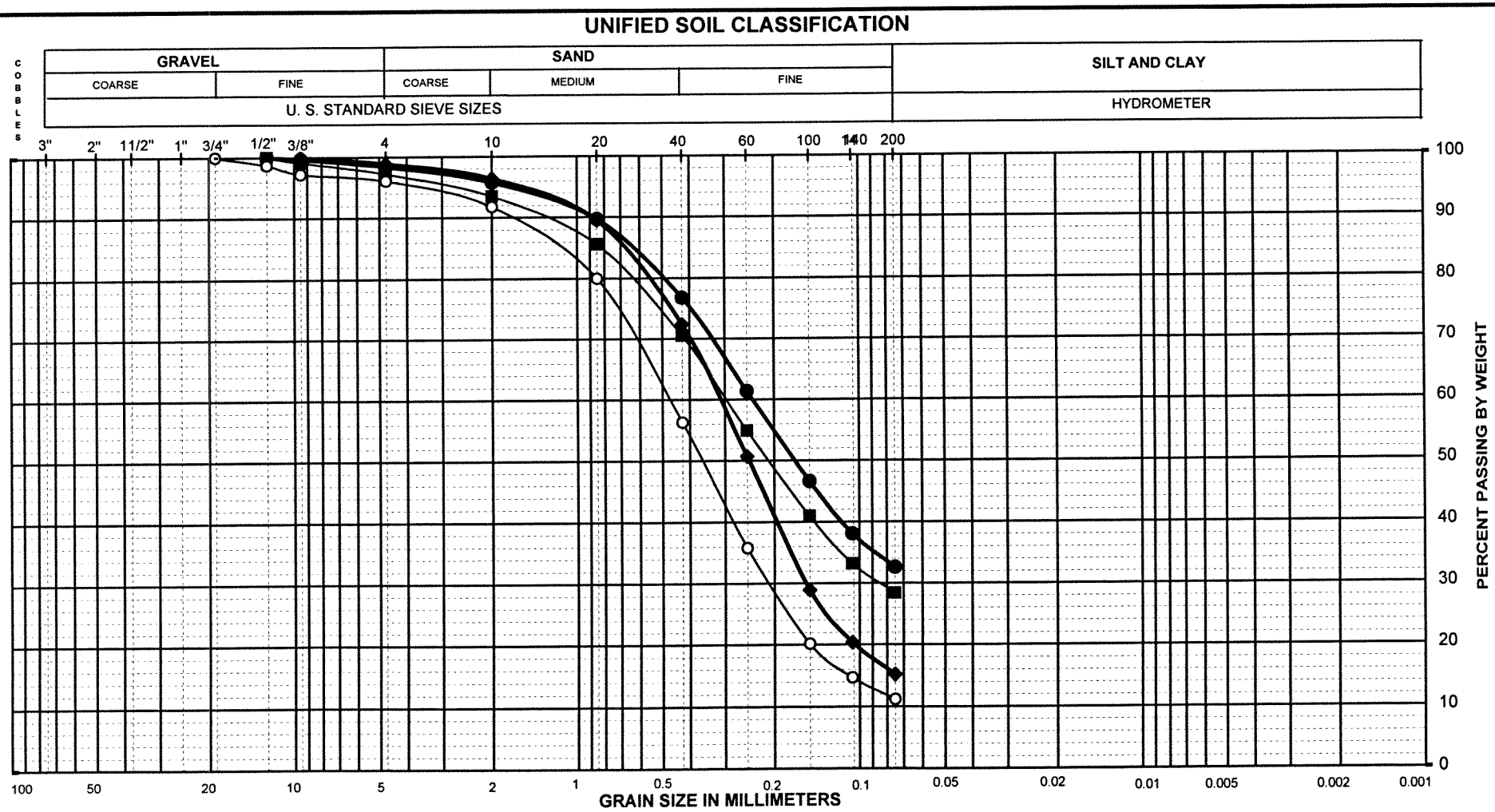

Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-4-P-7	1	0.30	●	6.6				**Dark brown silty Sand (SM)**	0.24				
71S-4-P-7	3	1.22	◆	2.9				**Olive brown silty Sand (SM)**	0.31	0.15			
71S-4-P-8	1	0.30	■	9.9				**Very dark gray silty Sand (SM)**	0.3	0.085			
71S-4-P-8	3	1.22	○	2.7				**Olive brown well-graded Sand with silt (SW-SM)**	0.49	0.21	0.06	8.2	1.5

PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-4-26

(SNA) sieve only (01/2000)

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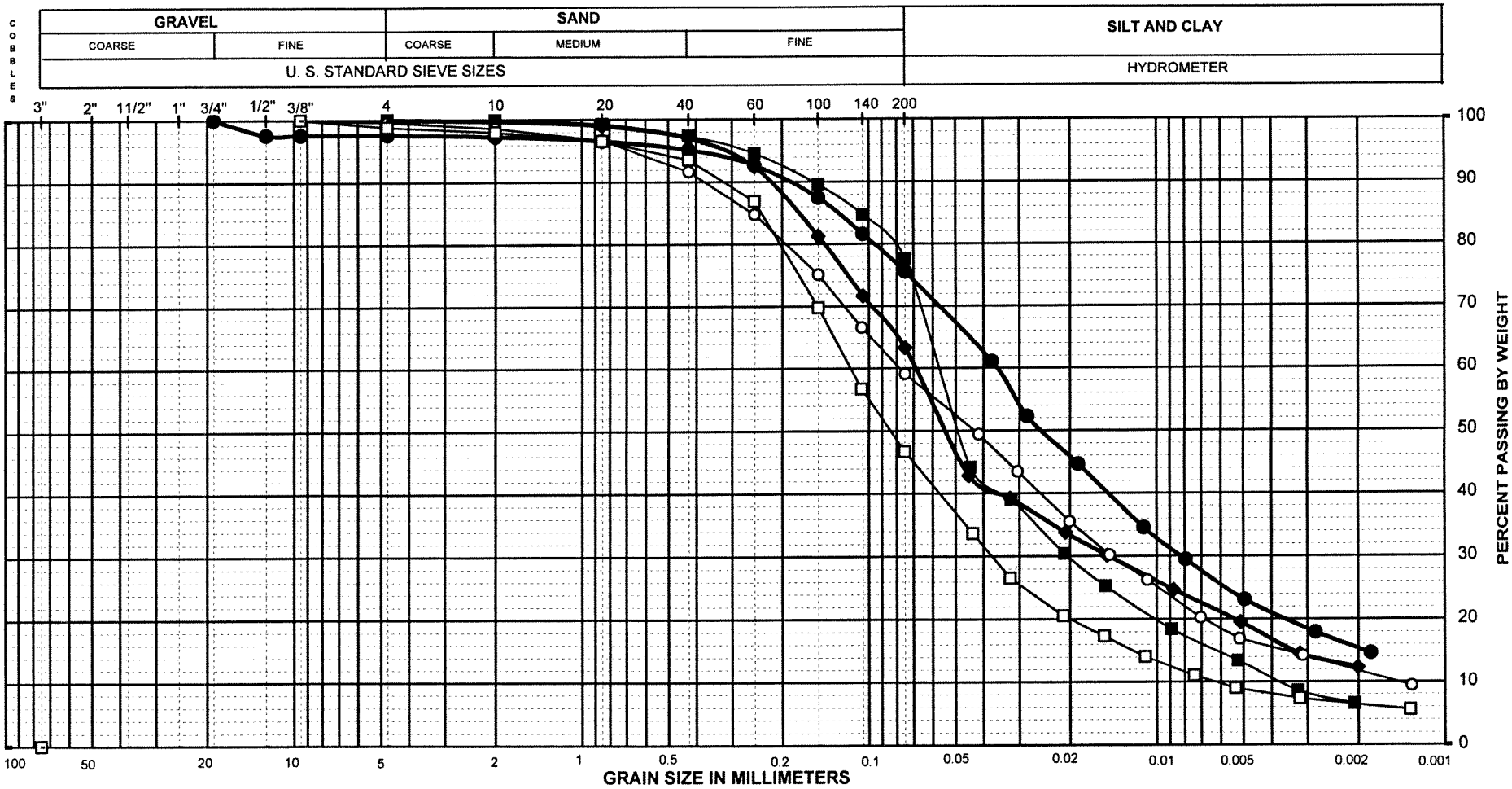


Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-4-B-1	R-2-2	2.90	●	18.8	29	8	15	**Olive brown Clay with sand (CL)**	0.036	0.008			
71S-4-MW-1	R-2-B	2.90	◆		26	6	12	**Dark brown sandy, silty Clay (CL-ML)**	0.07	0.015			
71S-4-MW-1	5	7.62	■		29	6	6	**Olive brown Silt with sand (ML)**	0.057	0.02	0.004	14.3	1.8
71S-4-P-1	7	3.05	○	13.7	25	4	12	**Grayish brown sandy, silty Clay (CL-ML)**	0.079	0.015	0.002	39.5	1.4
71S-4-P-2	7	3.05	□	8.5	20	1	6	**Olive brown silty Sand (SM)**	0.12	0.038	0.006	20.0	2.0

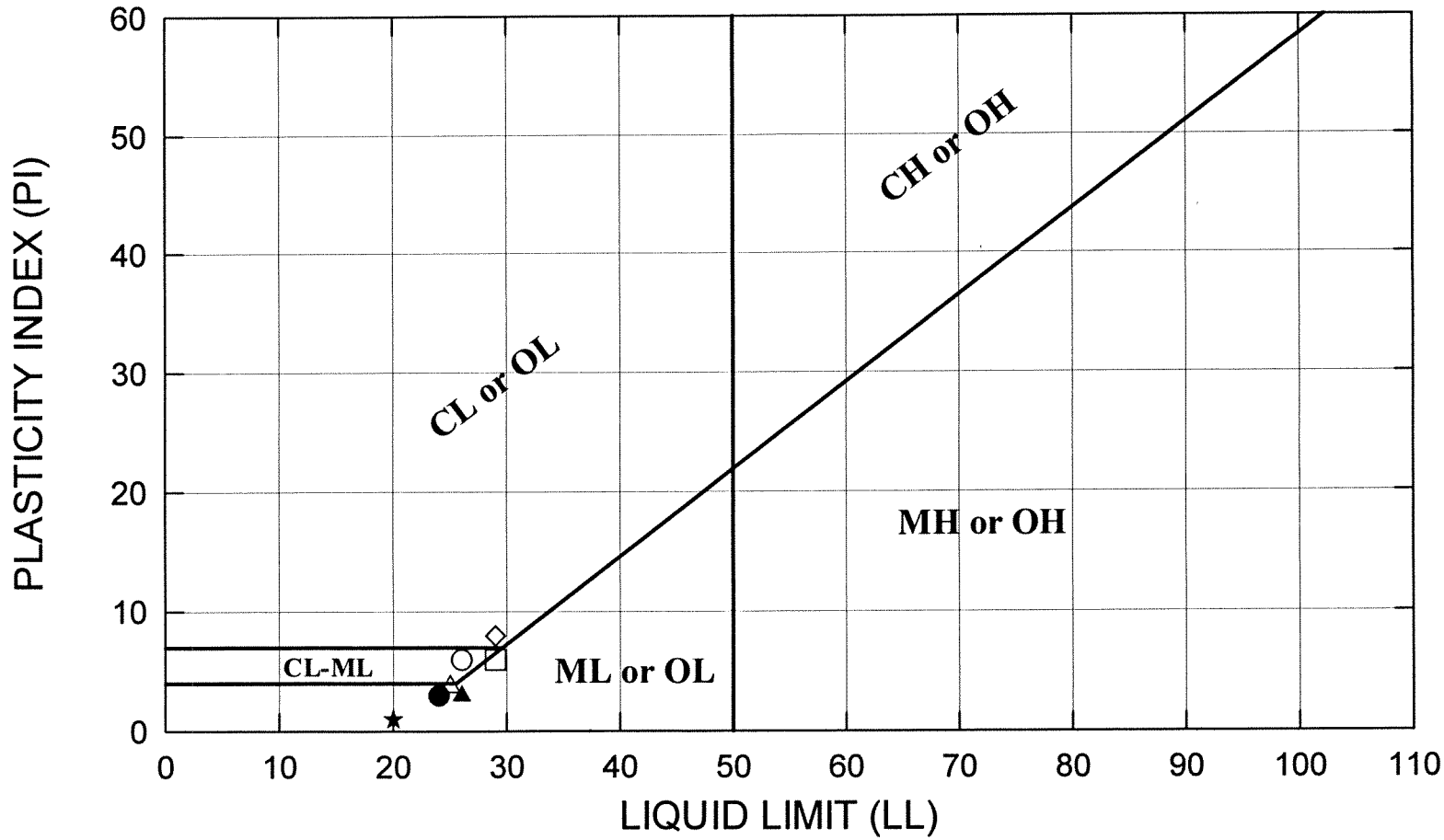
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-4-27

(SNA) sieve only (01/2000)

Hydro 71s-4.xls



LEGEND: ○ 71S-4-MW-1@2.9m ◇ 71S-4-B-1@2.90m ★ 71S-4-P-2@3.05m ● 71S-4-B-2@3.96m

□ 71S-4-MW-1@7.62m △ 71S-4-P-1@3.05m ▲ 71S-4-B-2@2.13m ✕ _____

PLASTICITY CHART

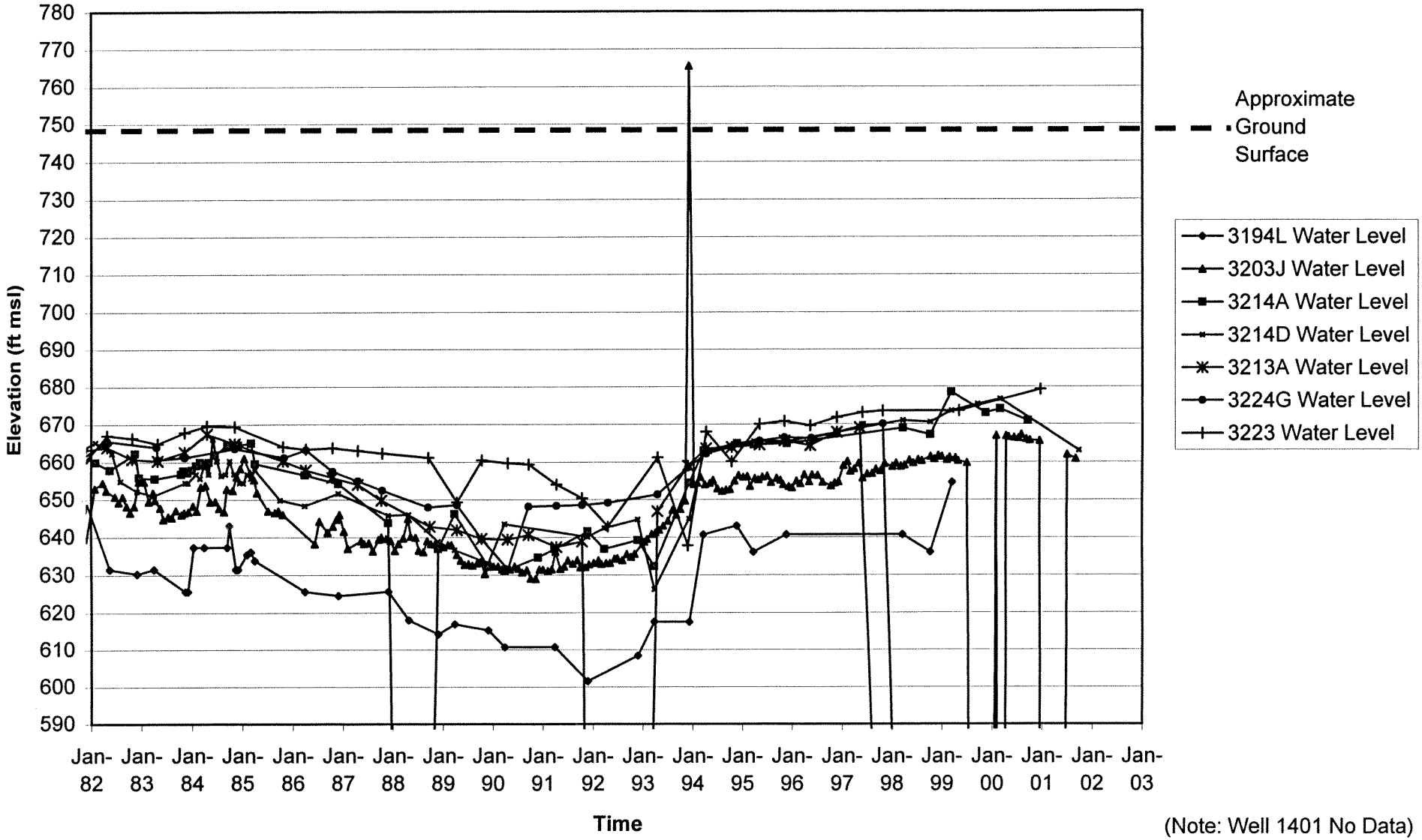
	Date: April 2003	Project: Caltrans Infiltration Basin Project	Figure 71S-4-28

s.mikesmith.PiChart.PiMaster.GRF

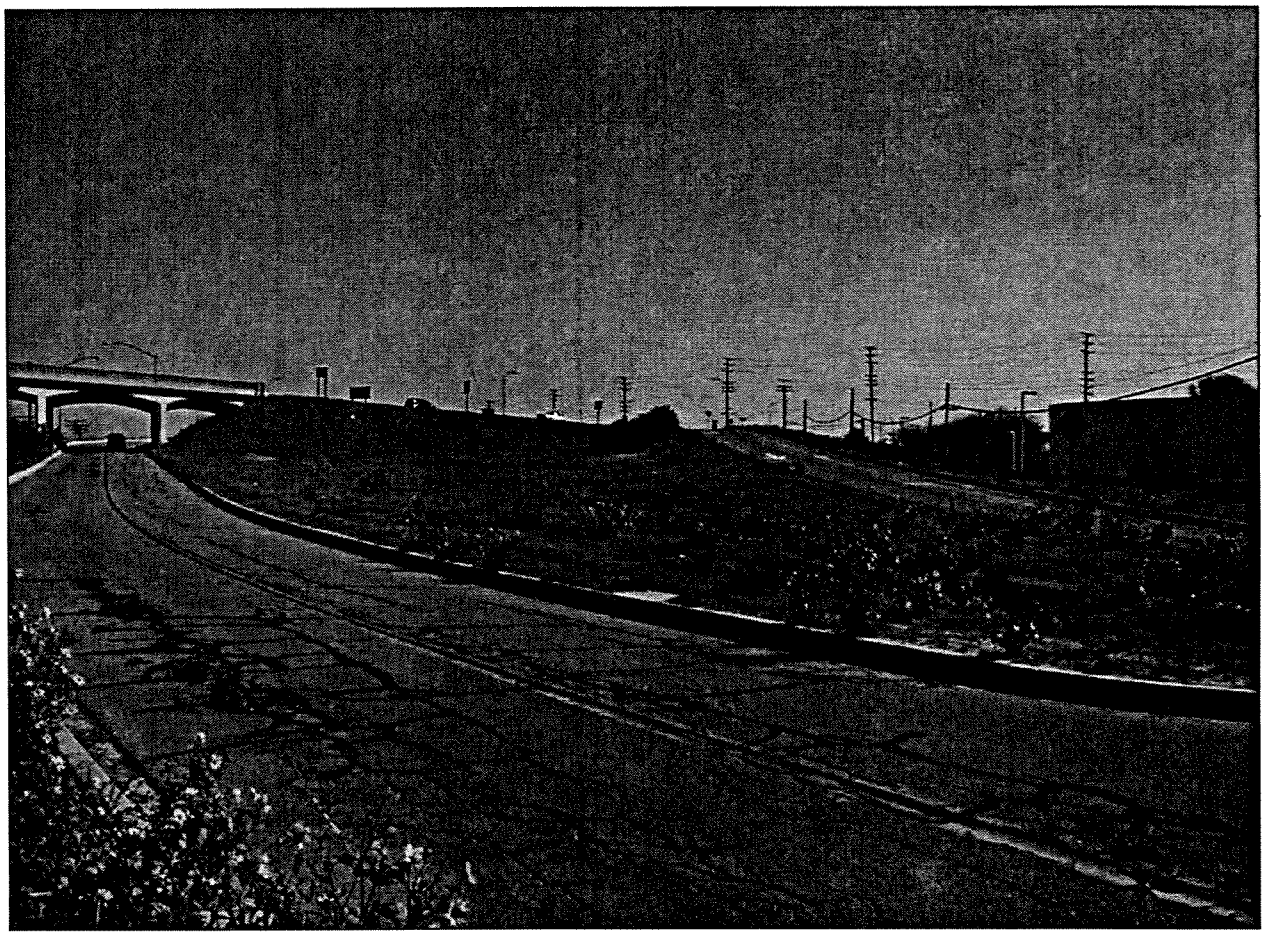
FIGURE 71S-4-29

Hydrographs of Selected Wells near 71 Freeway; 71S-2, 71S-3, 71S-4

LA Co. Dept. Public Works Well Data - 7 Closest Wells
USGS Well Data - Wells within approx. 1 mile radius



(Note: Well 1401 No Data)



Priority 3-71S-4 (Pomona Blvd.) Site Photograph

Date: April 2003	**Project: Caltrans IFB Site Selection Study**	Figure: 71S-4-30

APPENDIX D

71S-5 (Phillips Rd)

Table 1	Geotechnical Laboratory Test Data
Figure 71S-5-1	Site Plan
Figure 71S-5-2	Geologic Cross Section A-A'
Figure 71S-5-3	Log of Boring 71S-5-B-1
Figure 71S-5-4	Log of Boring 71S-5-B-2
Figure 71S-5-5	Log of Boring 71S-5-B-3
Figure 71S-5-6	Log of Boring 71S-5-B-5
Figure 71S-5-7	Log of Boring 71S-5-B-6
Figure 71S-5-8	Log of Boring 71S-5-B-7
Figure 71S-5-9	Particle-Size Distribution Curves
Figure 71S-5-10	Particle-Size Distribution Curves
Figure 71S-5-11	Particle-Size Distribution Curves
Figure 71S-5-12	Plasticity Chart
Figure 71S-5-13	Site Photographs

TABLE 1

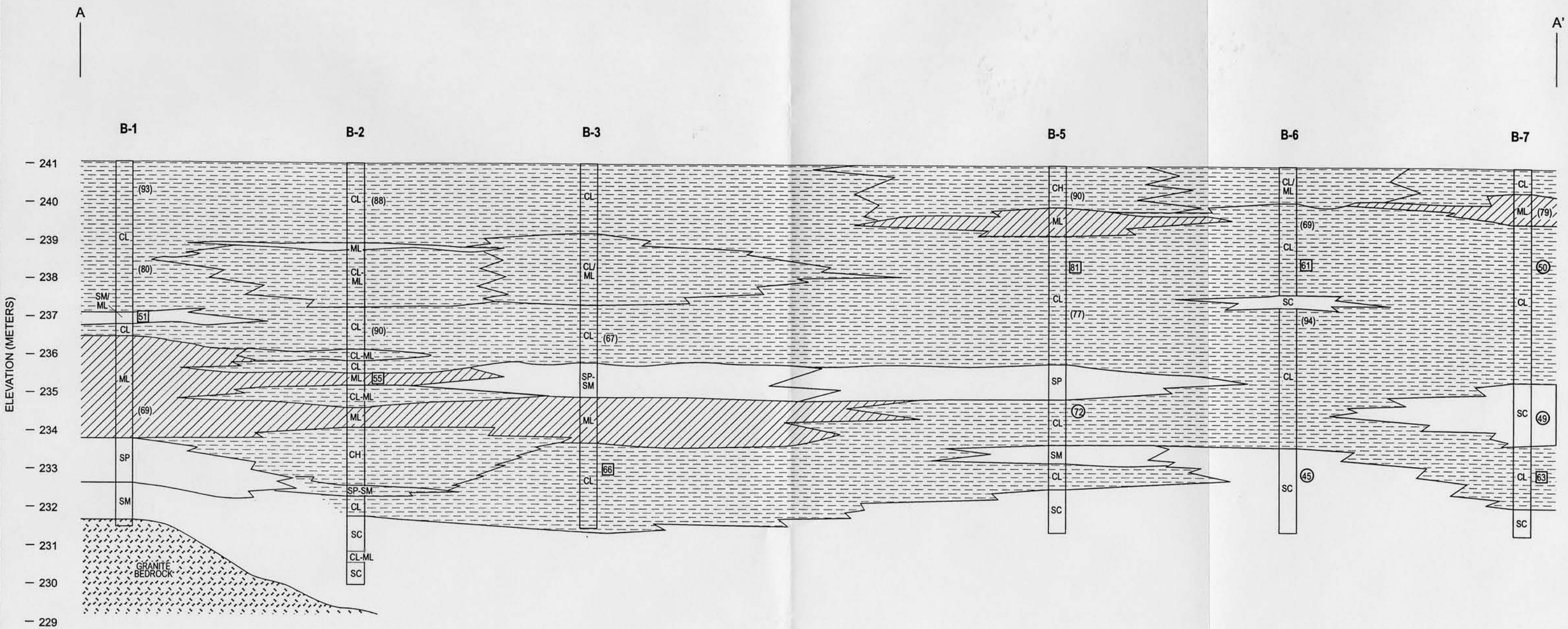
71S-5 GEOTECHNICAL LABORATORY TEST DATA

Location							Atterberg Limits		Sieve				Chemical Test Data		
Exploration Number	Sample/ Specimen Number	Depth (m)	Caltrans Soil Classification	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)	Gravel (%)	Sand (%)	<#200 Fines (%)	5 microns (%)	pH	O.M.% (% organic matter)	CEC (me/g)[1]
71S-5-B-1	R-1-2	0.61	CL	10	-	-	36	12	0	7	93	34	7.3	2	0.114
71S-5-B-1	R-2-2	2.74	ML	8	-	-	-	-	0	19	81	24	-	-	-
71S-5-B-1	R-3-1	3.96	ML	5	-	-	-	-	-	-	51	-	-	-	-
71S-5-B-1	M-4	6.10	ML	8	-	-	-	-	0	31	69	-	-	-	-
71S-5-B-2	R-1B	1.07	ML	9	-	-	33	9	4	8	88	28	7.6	1.6	0.118
71S-5-B-2	R-5B	4.27	CL	19	-	-	41	23	0	10	90	43	-	-	-
71S-5-B-2	R-7B	5.64	ML	7	-	-	-	-	-	-	56	-	-	-	-
71S-5-B-3	R-3	4.27	CL	21	-	-	40	22	0	33	67	33	-	-	-
71S-5-B-3	5	7.62	CL	21	-	-	-	-	-	-	67	-	-	-	-
71S-5-B-5	R-1A	0.91	CH	22	-	-	53	26	0	9	90	44	6.8	3.9	0.151
71S-5-B-5	R-2	2.44	CL	17	-	-	-	-	-	-	81	-	-	-	-
71S-5-B-5	R-3	3.66	CL\CH	20	-	-	-	-	0	23	77	39	-	-	-
71S-5-B-5	4	6.10	CL	26	-	-	-	-	0	28	73	-	-	-	-
71S-5-B-6	R-1-B	1.37	CL	11	-	-	-	-	0	22	78	18	7.9	2.4	0.12
71S-5-B-6	R-2B	2.59	CL	15	-	-	-	-	-	-	62	-	-	-	-
71S-5-B-6	R-3B	3.96	CL	17	-	-	41	23	0	6	94	48	-	-	-
71S-5-B-6	5	7.62	SC	15	-	-	-	-	0	55	45	-	-	-	-
71S-5-B-7	R-1B	1.07	ML	20	-	-	-	-	0	12	88	15	6.9	2.1	0.114
71S-5-B-7	R2	2.29	SC	15	-	-	31	15	2	49	50	-	-	-	-
71S-5-B-7	4	6.10	SC\CL	18	-	-	-	-	1	49	50	20	-	-	-
71S-5-B-7	5	7.62	CL	21	-	-	-	-	-	-	63	-	-	-	-

Notes: [1] Cation excange capacity, millequivalents per gram

Priority 3-71S-5 (Phillips Rd.) Site Plan

April 2003	Infiltration Basin Site Selection Study	Figure 71S-5-1



Water Level Observed During Drilling

Groundwater Elevation Feb. 2003

Float Valve Location
Top of Hydraulic Conductivity Test Section

(0.52) In-hole Hydraulic Conductivity Test Value (inches/hour)

(46) Hydrometer Test, % Passing #200 Sieve

(72) Sieve Analysis, % Passing #200 Sieve

[32] Wash Analysis, % Passing #200 Sieve

Clays and Clays w/Silt

Silt

Note: Groundwater Not Observed

HORIZONTAL SCALE:
1 cm = 5 meters

VERTICAL SCALE:
1 cm = 1 meter

PRIORITY 3 - SITE 71 S-5
GEOLOGIC CROSS SECTION A-A'

Project: INFILTRATION BASIN SITE SELECTION STUDY

Date: APRIL 2003

Figure 71S-5-2

L:/CALTRANS/C GOETZ/xsect 71 S-5.FH10

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Phillips Road

Log of Boring 71S-5-B-1

Sheet 1 of 1

Date(s) Drilled	3/11/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	241.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							130mm mulch			
								Lean clay (CL) dark brown, moist, with organics including roots			
			R-1-1		R-1						pH=7.3; O.M.=2.0% CEC=0.114 me/g HYD:93%<#200 LL=36; PI=12
			R-1-2		100			Lean clay (CL) light gray, moist, low plasticity, with organics and roots	10		
240	1										
	2		R-2-1		R-2 100			Becomes olive gray; oxidation spots	11		
			R-2-2						8		HYD:80%<#200
238	3				R-3 95						
	4		R-3-1					Silty Sand to Sandy Silt (SM/ML) yellowish brown, dry, fine grained sand	5		WA: 51%<#200
			R-3-2					Lean clay (CL) dark brown, moist, with trace sand			
236	5							Sandy silt (ML) medium dense, yellowish brown, moist, fine grained sand, with roots and oxidation spots			
	6		4	24					7		SA: 69%<#200
234	7										
	8		5	24				Poorly graded sand (SP) medium dense, light gray and brown, dry, medium grained sand, with trace gravel	2		
232	9		6	21				Silty sand (SM) brown, moist, coarse grained sand			
	10							GRANITIC BEDROCK medium dense, light brown, yellow and brown, highly to extremely weathered			
								Bottom of boring at 9.6 meters			
230	11										
	12										

Figure 71S-5-3

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Phillips Road

Log of Boring 71S-5-B-2

Sheet 1 of 1

Date(s) Drilled	3/11/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	11.1 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	241.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							76mm mulch			
			R-1-A		R-1 70			Lean clay (CL) dark brown, moist, with organics and roots			
240	1		R-1-B					Silt (ML) brown, moist, with roots and traces of mica	9		HYD: 88%<#200 LL=33; PI=9 pH=7.6; O.M.=1.6% CEC=0.118 me/g
			2	11	R-3 80						
	2		R-3-A								
			R-3-B					Silty clay (CL-ML) stiff, yellowish brown, moist, with roots and oxidation spots	9		
238	3		4	12	R-5 95						
			R-5-A								
	4		R-5-B					Lean clay (CL) very stiff, dark brown, moist, very plastic, with some roots	19		Hyd:90%<#200 LL=41; PI=23
			6	18	R-7 90						
236	5		R-7-A					Silty clay (CL-ML) very stiff, yellowish brown, moist, with some roots			
			R-7-B					Lean clay (CL) dark brown, moist, with roots			
	6							Sandy silt (ML) light yellowish brown, moist, fine grained sand, with some mica	6		WA: 55%<#200
			8	13	R-9 90			Silty clay (CL-ML) stiff, light brown, moist, with mica			
			R-9-A					Sandy silt (ML) stiff, orange brown, moist, fine grained sand			
234	7		R-9-B					Fat clay with sand (CH) stiff, olive brown, moist, highly plastic, with trace roots	21		
	8		10	10	R-11 100						
			R-11-A					Poorly graded sand with silt (SP-SM) light gray, moist, medium to coarse grained sand, poorly graded with trace gravel			
232	9		R-11-B								
			12	10	R-13 100			Lean clay (CL) brown, moist, with trace sand			
	10		R-13-A					Clayey sand (SC) loose, brown, moist, medium grained sand			
								Silty clay (CL-ML) light brown, moist, with traces of mica			
230	11		14	10				Clayey sand (SC) loose, brown, moist, fine grained sand, with traces of mica			
	12							Bottom of boring at 11.1 meters			

Figure 71S-5-4

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Phillips Road

Log of Boring 71S-5-B-3

Sheet 1 of 1

Date(s) Drilled	3/11/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	241.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							150mm mulch			
			R-1-A		R-1 88			Lean clay (CL) dark brown, moist, with organics and roots			
240	1		R-1-B					Becomes yellowish brown, increased plasticity, with trace silt and sand	14		
	2		R-2-A		R-2 100			Silty clay (CL/ML) brown, moist, with roots			
238	3		R-2-B					Becomes with sand, yellowish brown, fine grained	18		
	4		R-3		R-3 50			Sandy lean clay (CL) dark brown, moist, plastic	21		HYD:67%<#200 LL=40; PI=22
236	5										
	6		4	20				Poorly graded sand with silt (SP-SM) yellowish brown, moist, fine grained sand, with roots			
234	7							Silt (ML) medium dense, light brown, moist, with fine grained sand	19		
	8		5	10				Sandy lean clay (CL) stiff, dark brown, moist, medium to coarse grained sand	21		WA: 66%<#200
232	9		6	13							
	10							Bottom of boring at 9.6 meters			
230	11										
	12										

Figure 71S-5-5

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Phillips Road

Log of Boring 71S-5-B-5

Sheet 1 of 1

Date(s) Drilled	3/11/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	241.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							127mm mulch			
					R-1 95			Fat clay (CH) dark brown, moist, with organics and roots			pH=6.8; O.M.=3.9% CEC=0.151 me/g HYD:90%<#200 LL=53; PI=26
240	1		R-1-A R-1-B					Silt (ML) yellowish brown, moist, with roots	22		
	2		R-2		R-2 60			Clay with sand (CL) yellowish brown, moist, with roots	17		WA: 81%<#200
238	3										
	4		R-3		R-3 100			Lean clay with sand (CL) dark brown, moist, medium to coarse grained sand, plastic; Becomes without sand	20		HYD:77%<#200
236	5							Poorly graded sand (SP) yellowish brown, moist, fine grained sand			
	6		4	11				Lean clay (CL) stiff, dark brown, moist, with roots	26		SA: 72%<#200
234	7							Silty sand (SM) loose, light brown and reddish spots, moist, fine grained sand			
	8		5a 5b	9				Lean clay (CL) stiff, dark brown, moist, plastic	27		
232	9		6					Clayey sand (SC) dark brown, moist, fine grained sand			Sample Not recorded
	10							Bottom of boring at 9.6 meters			
230	11										
	12										

Figure 71S-5-6

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Phillips Road

Log of Boring 71S-5-B-6

Sheet 1 of 1

Date(s) Drilled	3/11/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	241.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	SAMPLES Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							150mm mulch			
			R-1-A		R-1 100			Silty clay (CL-ML) dark brown, moist, with organics, roots and trace sand			
240	1		R-1-B					Lean clay (CL) yellowish brown, moist, with mica	11		pH=7.9; O.M.=2.4% CEC=0.12 me/g HYD: 69%<#200
	2		R-2-A		R-2 80				11		
			R-2-B					Lean clay (CL) dark brown, moist, highly plastic, with roots and traces of mica	15		WA: 61%<#200
238	3		R-3-A		R-3 90			Clayey sand (SC) reddish brown, moist, with traces of mica			
	4		R-3-B					Lean clay with sand (CL) stiff, dark brown, moist, with traces of roots and mica	17		HYD: 94%<#200 LL=41; PI=23
236	5										
	6		4	12				Becomes brown			
234	7							Clayey sand (SC) medium dense, reddish brown, moist, with traces of mica			
	8		5	14					15		SA: 45%<#200
232	9		6	12				Becomes light gray, medium grained sand, with trace gravel	10		
	10							Bottom of boring at 9.6 meters			
230	11										
	12										

Figure 71S-5-7

Project: INFILTRATION BASIN SITE SELECTION STUDY
Project Location: SR 71, Phillips Road

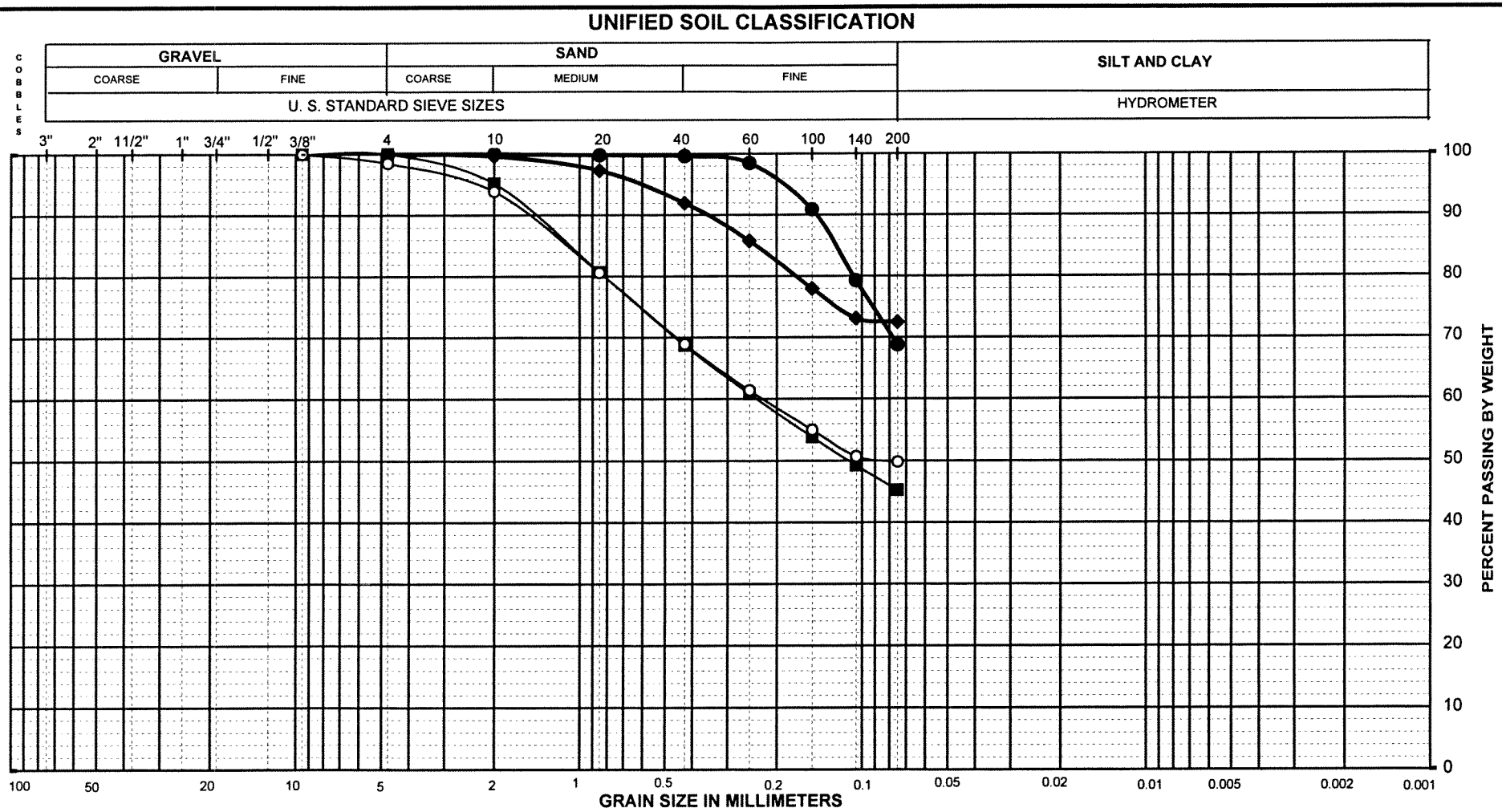
Log of Boring 71S-5-B-7

Sheet 1 of 1

Date(s) Drilled	3/12/02	Logged By	J. Marin	Checked By	M. Smith
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	203mm auger bit	Total Depth of Borehole	9.6 meters
Drill Rig Type	CME 75	Drilling Contractor	A & R Drilling	Approximate Surface Elevation	241.0 m MSL
Groundwater Level(s)	Not encountered	Sampling Method(s)	ContinousCoring/Mod.Cal./SPT	Hammer Data	63.5 kg, 762mm drop, Auto
Borehole Backfill	Soil Cuttings	Location	See Site Plan		

Elevation, meters	Depth, meters	Type	Number	Sampling Resistance, blows/0.30m	Core Recovery, %	Environmental Sample ID	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	PID, ppm	REMARKS AND OTHER TESTS
	0							76mm mulch			
			R-1-A		R-1 95			Lean clay with sand (CL) dark brown, moist, with organics and roots	16		
240	1		R-1-B					Sandy silt (ML) yellowish brown, moist, with clay and roots	20		pH=6.9; O.M.=2.1% CEC=0.114 me/g HYD: 79%<#200
	2		R-2		R-2 100			Sandy lean clay (CL) reddish brown, moist, with oxidation spots and roots	15		SA: 50%<#200 LL=31; PI=15
238	3		R-3		R-3 100			Becomes dark brown	15		
236	5										
	6		4	15				Clayey sand (SC) medium dense, yellowish brown, moist, medium grained sand	18		HYD: 50%<#200
234	7										
	8		5	18				Sandy lean clay (CL) very stiff, grayish brown, moist, medium grained sand	21		WA: 63%<#200
232	9		6	10				Clayey sand (SC) loose, greenish gray, moist			
	10							Bottom of boring at 9.6 meters			
230	11										
	12										

Figure 71S-5-8



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-5-B-1	4	6.10	●	7.5				**Light olive brown sandy Silt(ML)**					
71S-5-B-5	4	6.10	◆	25.9				**Olive Clay with sand (CL)**					
71S-5-B-6	5	7.62	■	15.3				**Brown clayey Sand (SC)**	0.23				
71S-5-B-7	R-2	2.29	○	14.6	31	15		**Dark brown clayey Sand/sandy Clay (SC/CL)**	0.22				

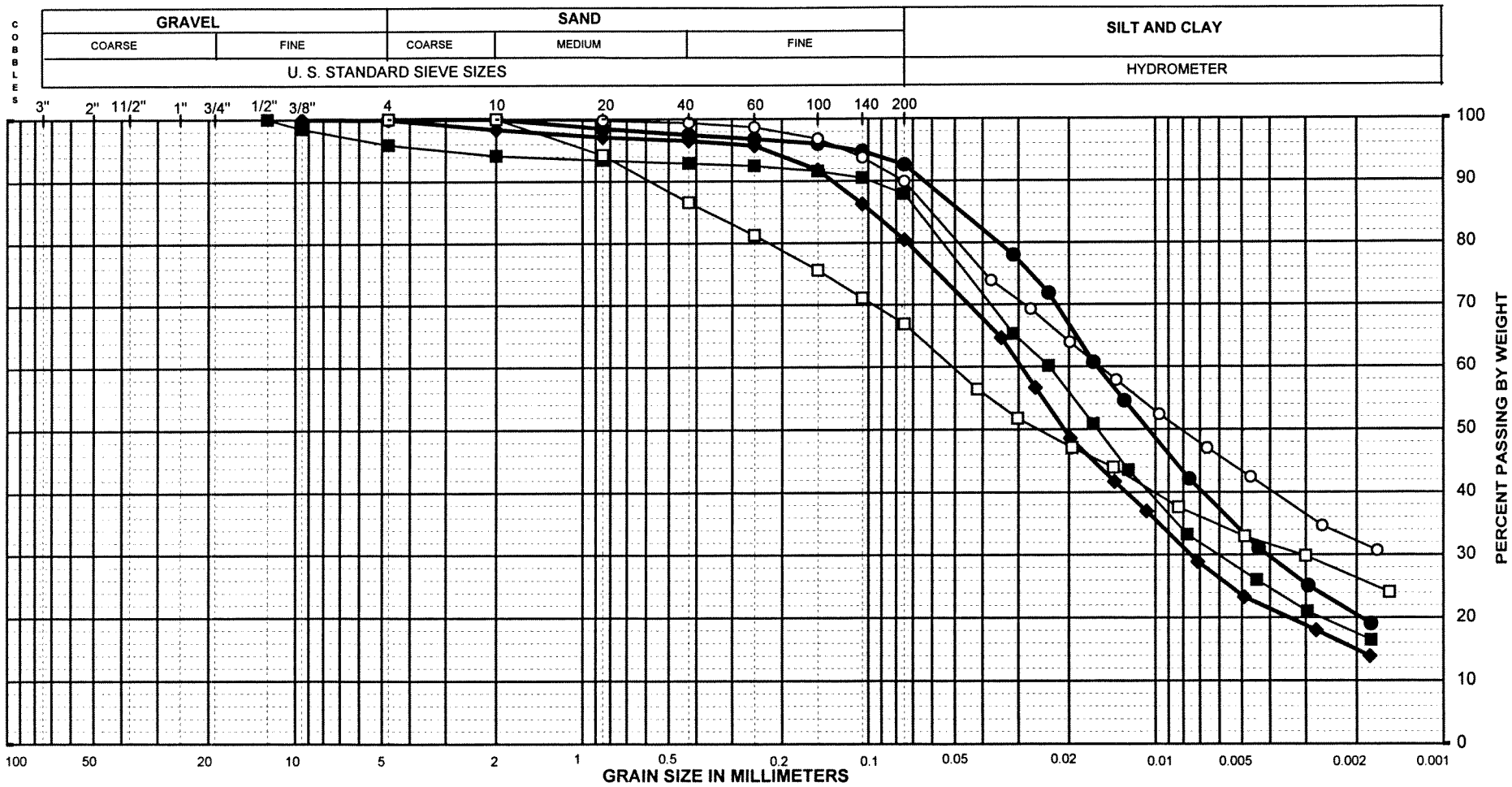
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-5-9

(SNA) sieve only (01/2000)

Sieve 71s-5.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-5-B-1	R-1-2	0.61	●	10.3	36	12	20	**Light gray Clay (CL)**	0.017	0.004			
71S-5-B-1	R-2-2	2.74	◆	8.3			14	**Brownish gray Silt with sand (ML)**	0.03	0.075			
71S-5-B-2	R-1-B	1.07	■	8.8	33	9	18	**Light gray Silt (ML)**	0.024	0.006			
71S-5-B-2	R-5-B	4.27	○	19.1	41	23	32	**Dark brown Clay (CL)**	0.017				
71S-5-B-3	R-3	4.27	□	21.4	40	22	26	**Dark brown sandy Clay (CL)**	0.05	0.003			

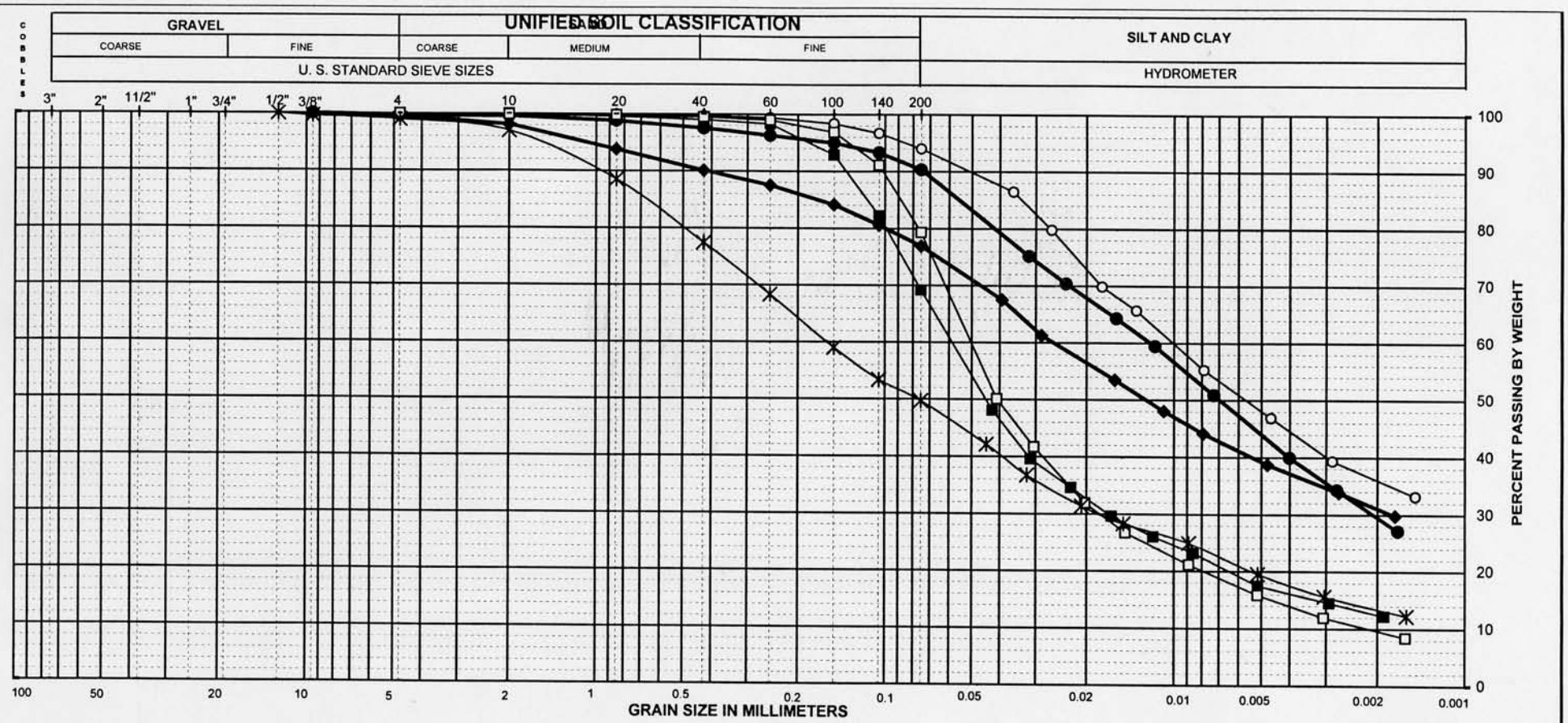
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-5-10

(SNA) sieve only (01/2000)

Hydro 71s-5.xls



Exploration No.	Sample No.	Depth (m)	SYMBOL	Wn (%)	LL	PI	% Clay	Description and Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
71S-5-B-5	R-1-A	0.91	●	21.5	53	26	30	Very dark brown Clay (CH)	0.013	0.002			
71S-5-B-5	R-3	3.66	◆	20.0			31	Dark brown Clay with sand (CL/CH)	0.027	0.002			
71S-5-B-6	R-1-B	1.37	■	10.7			12	Brown Clay with sand (CL)	0.017	0.059			
71S-5-B-6	R-3-B	3.96	○	16.6	41	23	36	Dark brown Clay (CL)	0.01				
71S-5-B-7	R-1-B	1.07	□	20.0			10	Olive brown Silt (ML)	0.05	0.018	0.002	25	3.24
71S-5-B-7	4	6.10	✳	17.8			13	Olive brown clayey Sand / sandy Clay (SC/CL)	0.16	0.018			

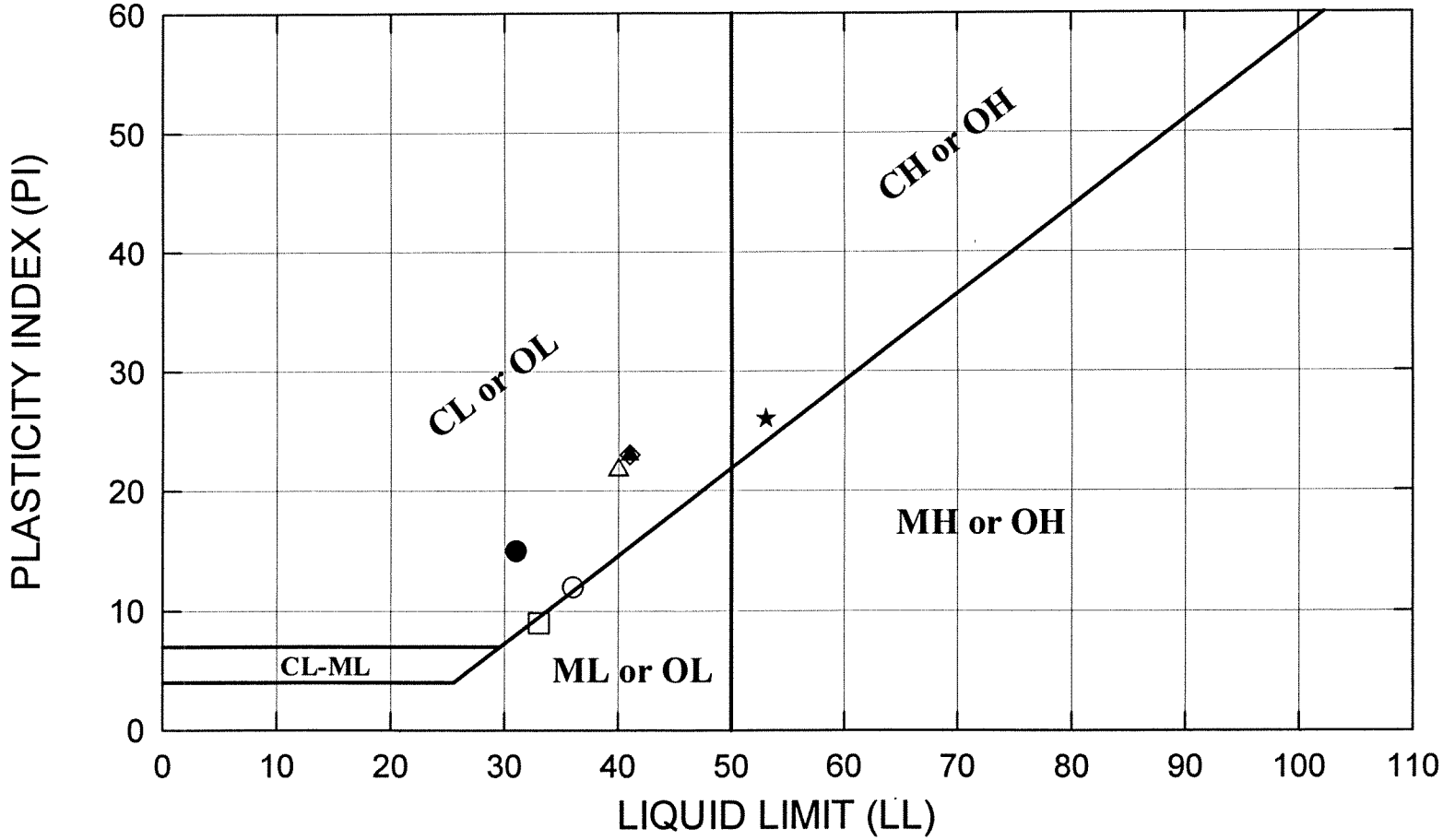
PROJECT NAME: Caltrans IFB Site Selection Study

PARTICLE-SIZE DISTRIBUTION CURVES

Figure: 71S-5-11

(SNA) sieve only (01/2000)

Hydro 71s-5.xls



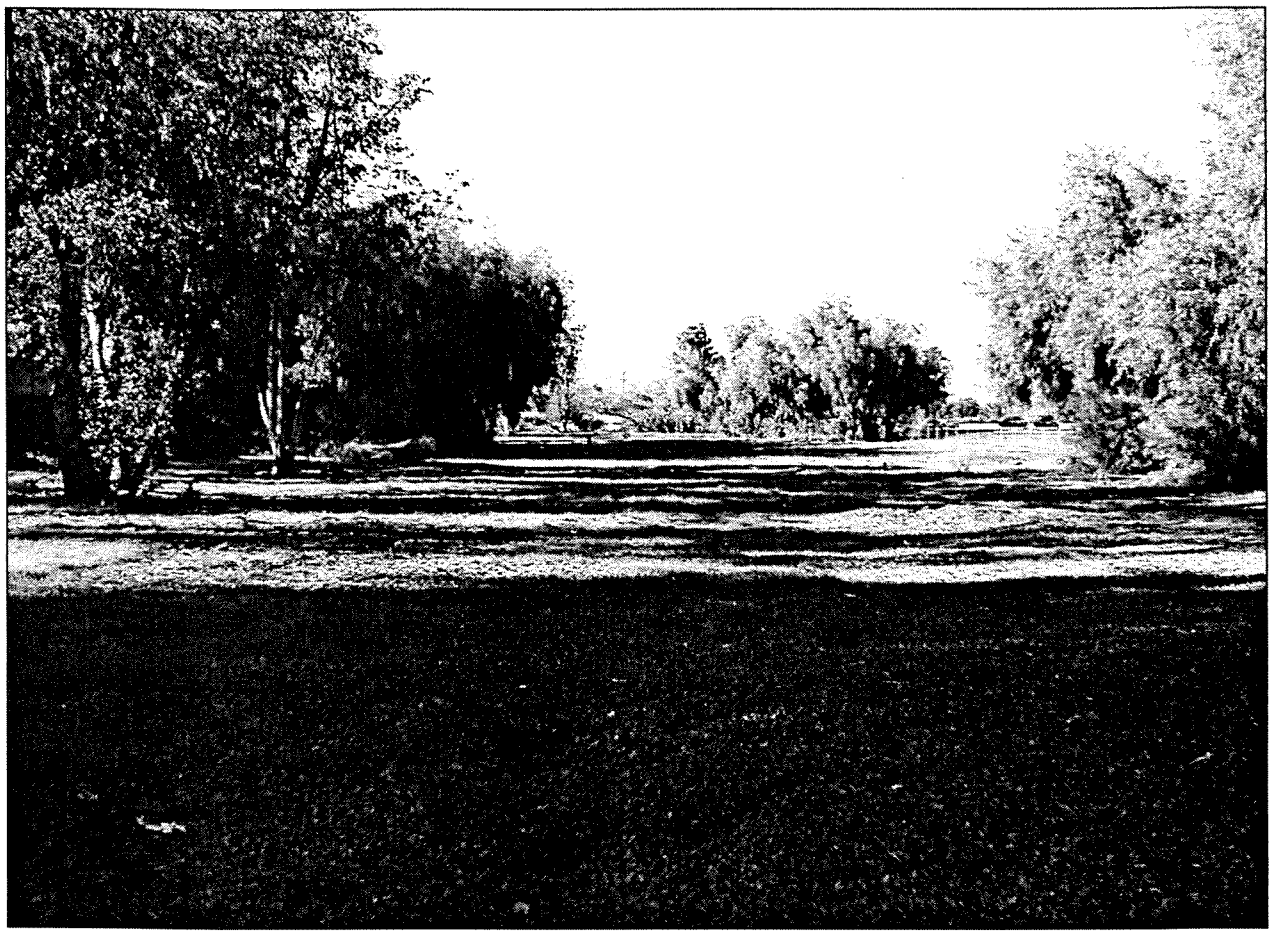
LEGEND: ○ 71S-5-B-1@0.61m ◇ 71S-5-B-2@4.27m ★ 71S-5-B-5@0.91m ● 71S-5-B-7@2.29m

□ 71S-5-B-2@1.07m △ 71S-5-B-3@4.27m ▲ 71S-5-B-6@3.96m ×

PLASTICITY CHART

	Date: April 2003	Project: Caltrans Infiltration Basin Project	Figure 71S-5-12

s.mikesmith.PiChart.PiMaster.GRF



Priority 3-71S-5 (Phillips Rd.) Site Photograph

Date: April 2003	Project: Caltrans IFB Site Selection Study	Figure: 71S-5-13