20-2611

CAMBRIA

March 1, 2005

Mr. Robert Schultz
Alameda County Environmental Health Services (ACEHS)
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: **Addendum to Area Well Survey**
Former Chevron SS #9-0261 (Site #304291)
3884 First Street
Livermore, California
Cambria Project No. 31H-2036

Dear Mr. Schultz:

Per your request, Cambria Environmental Technology, Inc. (Cambria) is submitting this addendum to our October 2004 *Area Well Survey.* Our original area well survey was conducted using information obtained from the State of California Department of Water Resources (DWR) and Zone 7 Water Agency. All documented wells within a ¼-mile radius were plotted as accurately as possible using addresses and descriptions provided on the original DWR well logs.

In response to your recent request for location addresses for all wells identified in our October 2004 survey, a field inspection verification of well locations was recently conducted. Cambria Senior Staff Scientist Melissa Terry visited the areas indicated on the ¼-mile radius map and visually searched for the two wells identified in our original well survey. The well identified as #1 (see map) is a cluster of two monitoring wells and one piezometer located at 3927 First Street. Our field inspection revealed that these wells have been destroyed, though there are no DWR records indicating when this may have occurred. Well #2 is a municipal well located on the north side of Duke Way, adjacent to a residence addressed as 3916 Duke Way; this well is more than 1,200 feet southeast of the former Chevron station. DWR well logs for these two wells are presented as Attachment A.

Please call Robert Foss at (510) 420-3348 if you have any questions or comments.

Cambria Environmental Technology, Inc.

5900 Hollis Street
Suite A
Emeryville, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

Sincerely,
Cambria Environmental Technology, Inc.

Melissa Terry
Senior Staff Scientist

Robert Foss, P.G. No. 7445
Associate Geologist

REGISTERED GEOLOGIST
ROBERT C. FOSS
exp 08/06
No. 7445
STATE OF CALIFORNIA

Figures: 1 – Well Survey Map

Attachments: A – DWR Well Logs

cc: Mr. Mark Inglis, ChevronTexaco, P.O. Box 6012, San Ramon, CA 94583
Ms. Sandi L. Nichols, Stoel Rives, 111 Sutter Street, Suite 700, San Francisco, CA 94104
Mr. Jon Robbins, ChevronTexaco, P.O. Box 6012, San Ramon, CA 94583
Ms. Susan Gallardo, GeoMatrix Consultants, Inc., 2101 Webster Street, 12th Floor, Oakland, CA 94612

i:\304291 livermore\site assessment 2004\well survey\addendum to well suvey report jan 05.doc

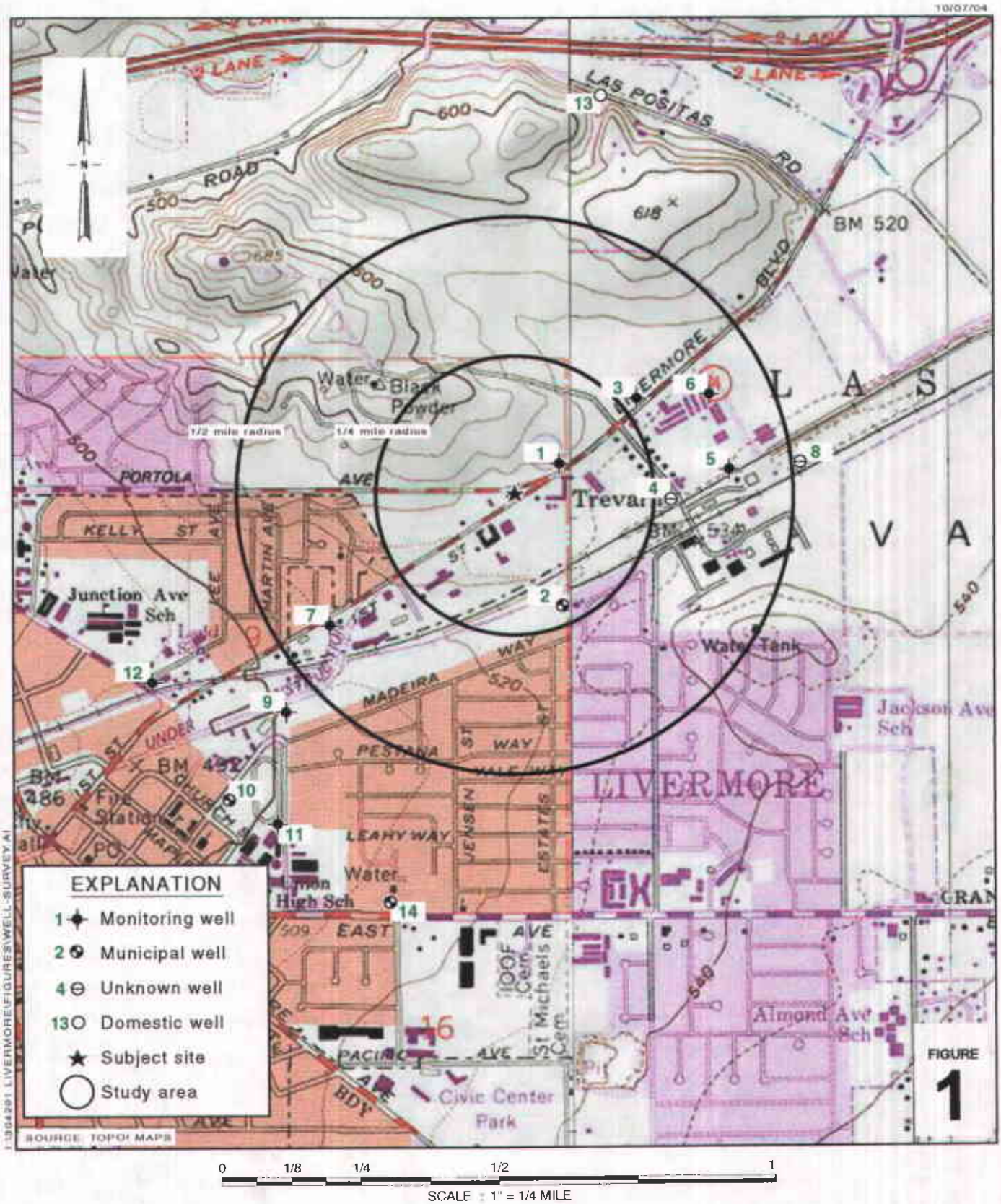


FIGURE 1

Former Standard Oil Service Station 9-0261 (Site No. 304291)

3884 First Street
Livermore, California

CAMBRIA

Well Survey Map

(1/2- and 1/4- Mile Radii)

ATTACHMENT A

DWR Well Logs

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

259199 3S/2E-9AJ'

DATE: 10/09/90
LOGGED BY: TWB
ELEVATION: +534.20' MSL
WATER LEVEL: +504.50 MSL (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION MW-1

JOB: P90212
FIGURE: 5

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
						FILL	GRAVELLY SILT/SILTY GRAVEL: Light-brown, damp	
						CL	SILTY CLAY: Brown, sandy, damp, firm no pores, occasional small black mottles	
5	2.0	17	-	-	1			OVM to 0
						ML	CLAYEY SILT: Light gray-brown, very stiff, damp, few coarse sand grains	
	2.0	43	-	-	2			OVM to 0
10							Grades light blue-gray, no odor	
15	2.0	26	-	-	3		Grades mottle brown-gray with gray streaks	OVM to 0
						ML CL	CLAYEY SILT/SILTY CLAY: Mottle orange-brown and blue-gray, firm, damp to moist, no pores, few black mottles	
20	2.0	18	-	-				
25	2.0	29	-	-				

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140lb HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

TRC & Associates

259199 3S/2E-9A1

DATE: 10/09/90
LOGGED BY: TWB
ELEVATION: +534.20' MSL
WATER LEVEL: +504.50 MSL (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION MW-1 (Cont'd)

JOB: P90212
FIGURE: 5

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS / FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
25	2.0	29	-	-	4	ML/CL	Grades to contain thin lenses of coarse sand and fine angular gravel, wet fracture surfaces, some fine sand lenses, damp to moist, firm	OVM to 0
30	2.0	20	-	-	5		Grades orange with spidery black veinlets, stiff, damp, few small pebbles, few small vertical pores	OVM to 0
35	2.0	28	-	-	6	ML	CLAYEY SILT: Mottle yellow-brown and light gray, thin fine sand lenses, damp, semi-dense, no pores, few black mottles	OVM to 0
40	2.0	46	-	-	7	ML/CL	CLAYEY SILT/SILTY CLAY: Orange-red, very stiff to hard, damp, 1mm MnO concretions, no pores	▽ (ATD)*
							Thin lenses of saturated coarse sandy clay and clayey sand	OVM to 0
45	2.0	22	-	-	8		Grades orange-brown, calcareous to stage IV, damp, no pores	OVM to 0
50	2.0	20	-	-	9	SW	CLAYEY SAND: Red-brown and gray, some fine gravel, wet, semi-dense	Boring terminated at 50 feet

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

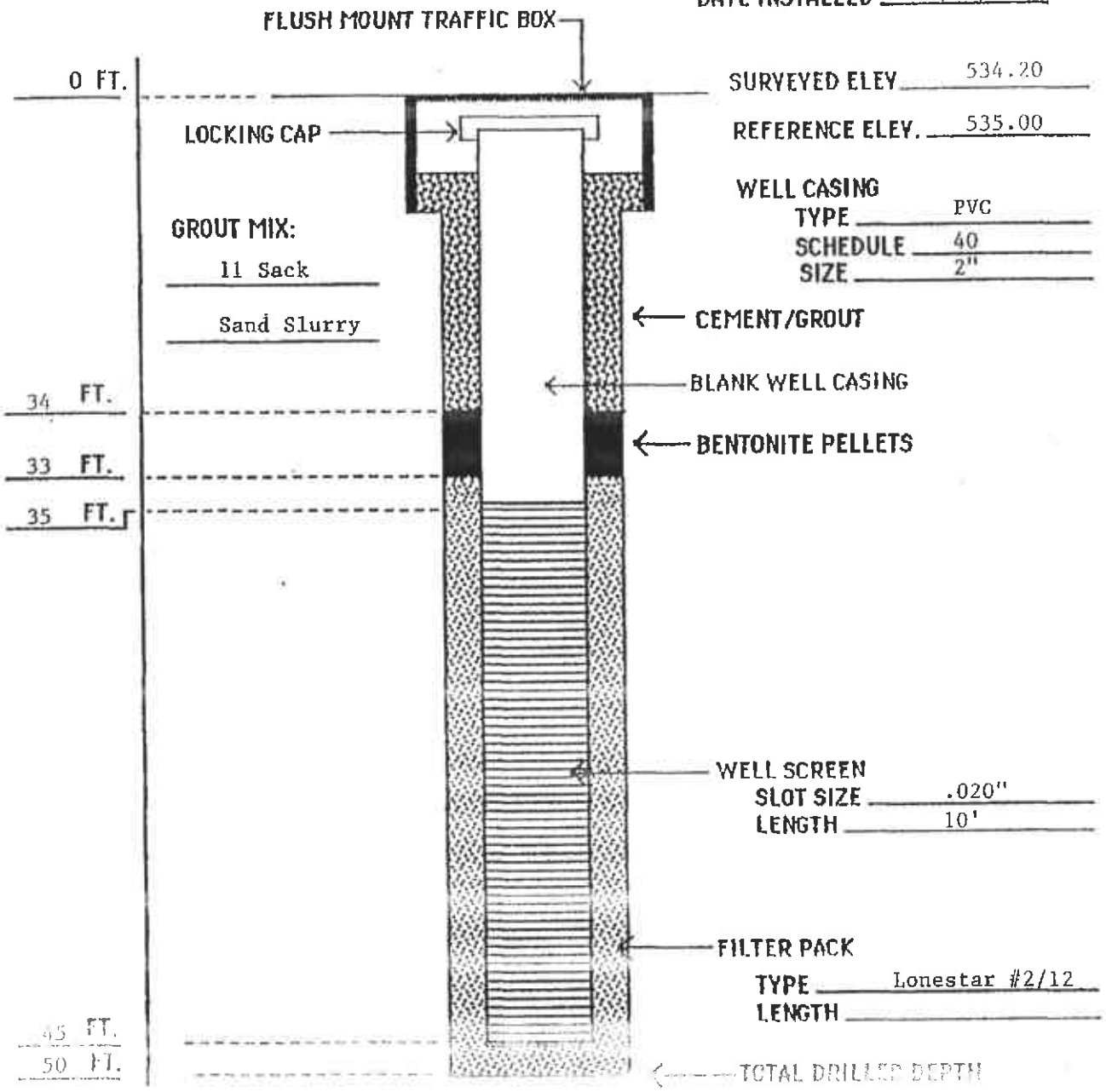
(1) SAMPLER INSIDE DIAM.
(2) 140lb HAMMER-30 INCH DROP.
(P) HYDRAULICALLY PUSHED

*At the Time of Drilling

DSK & Associates

259199 3S/2E-9 A1

WELL NO. MW-1
PROJECT NO. P90212
DATE INSTALLED 10/15/90



REMARKS: Sealed with neat cement from 50' to 45' in depth

PROJECT NO. P90212	MONITORING WELL	P&K
FIGURE: 8	INSTALLATION REPORT	&ASSOCIATES

259199

35/2E-9A1

Project No. : P90212
Date : November 1990
Figure No. : 11

INDIVIDUAL WELL FIELD LOG

WELL DEVELOPMENT: _____ Date: _____
SAMPLE COLLECTION: X Date: 10/22/90

PROJECT NAME & LOCATION: Sam Patel, 3927 First Street, Livermore, California

PERSONNEL: TWB
WEATHER: Clear/Warm

WELL INFORMATION

Well No.: MW-1
Depth to Water: 31.62 feet
Water Volume: 0.29 cubic feet
Reference Point Elevation: +534.20'
Groundwater Elevation: +502.58'
Measurement Technique: Electric Sounder

Date Purged: 10/22/90
Purge Method: Bailer
Purge Begin: 16:47
End Purge: 17:22
Development/Purge Rate: 0.19 gpm

IMMISCIBLE LAYERS:

Top: None
Bottom: None
Detection Method: Clear PVC Bailer
Collection Method: Bailer

WELL DEVELOPMENT/PURGE DATA:

TIME	Volume Removed (gal.)	Electrical Conductivity (Ec/Range)	pH	Temperature (F)	Comments
16:47	0.5	8660	11.14	75.0	
16:53	1.0	8190	11.75	72.1	
17:04	2.5	7660	11.75	71.8	
17:13	5	8080	11.55	70.5	
17:22	7	7370	12.19	70.3	
					Evacuated

SAMPLE COLLECTION DATA:

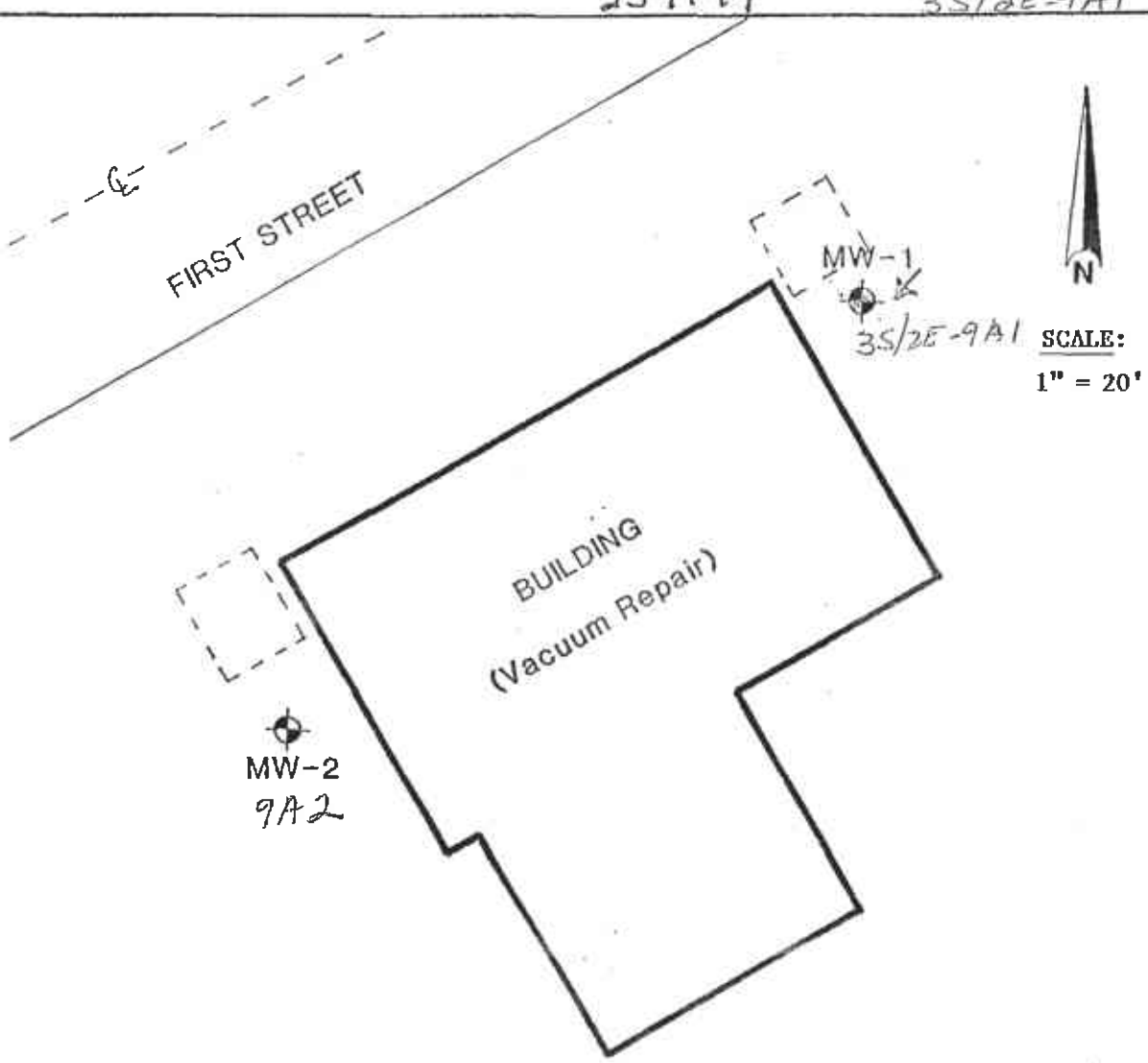
Sampling Equipment and Procedures:

TIME	TYPE OF TEST	AMOUNT/CONTAINER USED	DEPTH
1800	BTXE + TVH	2-40 ML Glass Vials with HCL	35'

Field Observations: Water extremely alkaline, yields white precipitate, well builds up gas when sealed

BSK & Associates

259199 3S/2E-9A1



CHECKED BY

DATE

BY

LEGEND:

- Location and Designation of Groundwater Monitoring Well
- Location and Designation of Piezometer
- Former Underground Tank Location

P-1
9A3

SITE PLAN

Job No. P90212
November 1990
FIGURE: 2

BSK & Associates

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

259183

3S/2E-9A2

DATE: 10/10/90
LOGGED BY: TWB
ELEVATION: +535.00 MSL
WATER LEVEL: +505.15 MSL (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION MW-2

JOB: P90212
FIGURE: 6

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Asphalt Pavement - 3"	
						FILL	GRAVEL AND CLAY MIXTURE	
						ML	CLAYEY SILT: Orange-brown (10 YR 4/6) stiff/dense, damp, no pores, weak carbonates	
5	1 3/8	22	-	-				No Odor
						GW/SM	SAND AND GRAVEL: Yellow-gray (10 YR 5/3) semi-dense, damp, fine gravel, medium to coarse sand, no odor, no stain	
10	2.0	35	-	-	1		Gravels appear layered with clay/silts	OVM to 0
						CL	SILTY CLAY: Yellow (2.5 Y 5/4) stiff, damp to moist, no pores, few coarse sand grains, some MnO surfaces	
15	2.0	28	-	-	2			OVM to 0
20	2.0	33	-	-	3		Grades yellow-brown (2.5 Y 5/6), contains fine sand, few vertical small (~1mm) pores, stiff to very stiff	OVM to 0
25	2.0	20	-	-				

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED. IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) HOLLOW STEM AUGER,
(2) 140 POUND HAMMER, 30 INCH DROP.
P.P. HYDRAULICALLY PUSHED

DOA & Associates

259183

3S/2E-9A2

DATE: 10/10/90
LOGGED BY: TWB
ELEVATION: +535.00 MSL
WATER LEVEL: +505.15 MSL (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION MW-2 (Cont'd)

JOB: P90212
FIGURE: 6

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
25	2.0	20	-	-	4	CL/SC	SANDY CLAY/CLAYEY SAND: Yellow-brown (2.5 Y 6/4) fine grained sand; semi-dense/firm to stiff, damp, crumbly no pores	OVM to 0
30	2.0	27	-	-	5	ML/CL	SILTY CLAY/CLAYEY SILT: Brownish-orange, damp, stiff, MnO, no pores, few vertical fractures with gray aureoles Gravel encountered	
35	2.0	36	-	-	6	SP	SAND: Yellow-brown, fine to medium grained, wet to saturated, some clayey lenses	▽ (ATD)*
40	2.0	40	-	-	7	CL	SILTY CLAY: Yellow-brown, mottled with red-brown, damp, very stiff, lenses of coarse sand grains, MnO concretions to 2mm, wet horizontal fractures, some short vertical pores	
	1 3/8	45	-	-			Grades light yellow-gray, cemented very stiff, damp	
45	1 3/8	20	-	-			Grades less stiff	Boring terminated at 45-1/2 feet
50							*At the Time of Drilling	

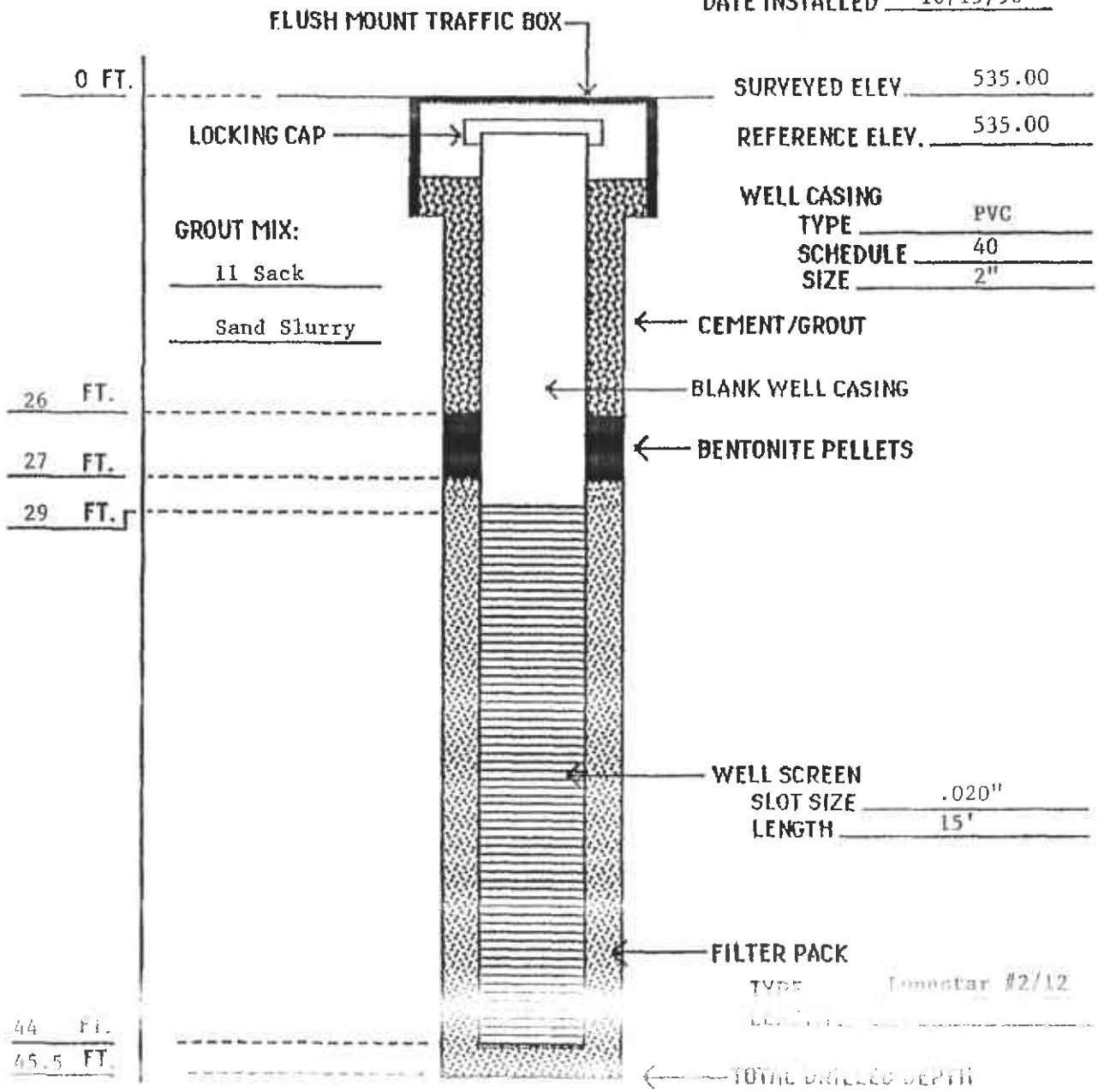
THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) Hollow Stem Auger
(2) 140lbs HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

259183 3S/2E-9A2

WELL NO. MW-2
PROJECT NO. P90212
DATE INSTALLED 10/15/90



REMARKS : _____

PROJECT NO. P90212	MONITORING WELL INSTALLATION REPORT	BSK & ASSOCIATES
FIGURE: 9		

259183 3S/2E-9A2

Project No. : P90212
Date : November 1990
Figure No. : 12

INDIVIDUAL WELL FIELD LOG

WELL DEVELOPMENT: _____ Date: _____
SAMPLE COLLECTION: X Date: 10/22/90

PROJECT NAME & LOCATION: Sam Patel, 3927 First Street, Livermore, California

PERSONNEL: TWB
WEATHER: Clear/Warm

WELL INFORMATION

Well No.: MW-2
Depth to Water: 30.07 feet
Water Volume: 0.30 cubic feet
Reference Point Elevation: +535.00'
Groundwater Elevation: +504.93'
Measurement Technique: Electric Sounder

Date Purged: 10/22/90
Purge Method: Bailer
Purge Begin: 15.27
End Purge: 15.59
Development/Purge Rate: 0.20 gpm

IMMISCIBLE LAYERS:

Top: None
Bottom: None
Detection Method: Clear PVC Bailer
Collection Method: Bailer

WELL DEVELOPMENT/PURGE DATA:

TIME	Volume Removed (gal.)	Electrical Conductivity (Ec/Range)	pH	Temperature (F)	Comments
15:27	2	1263	7.29	74.9	
15:38	5	1250	7.47	74.9	
15:49	7.5	1244	7.49	75.1	
15:59	10	1241	7.54	74.9	

SAMPLE COLLECTION DATA:

Sampling Equipment and Procedures:

TIME	TYPE OF TEST	AMOUNT/CONTAINER USED	[illegible]
16:12	BTXE + TVH	2-40 ML Glass Vials with HCL	32'

Field Observations: _____

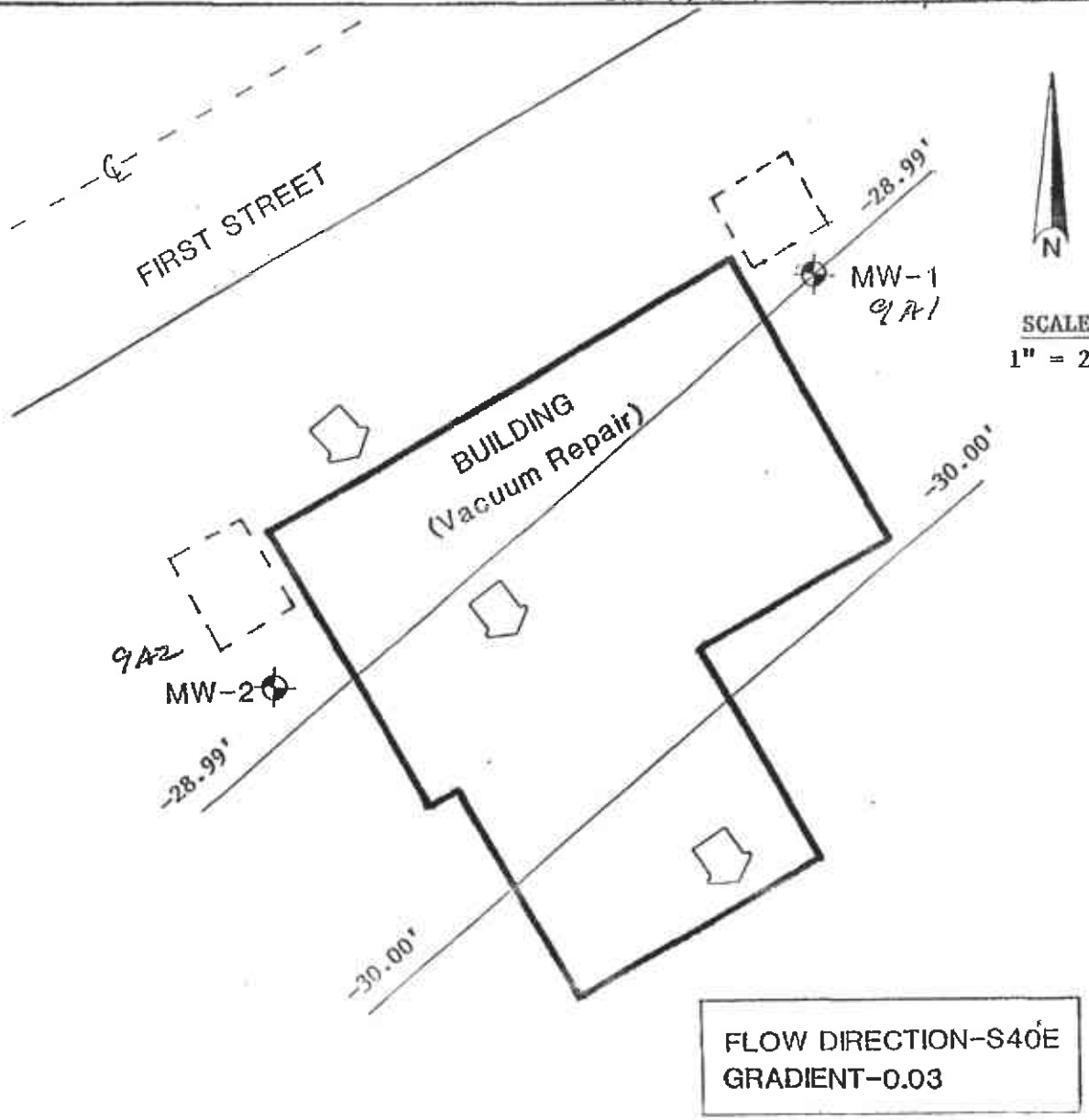
BSK & Associates

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

259184 3S/2E-9A3



LEGEND:

- Piezometer
- Groundwater Flow Direction
- -30.00' — Line of Equal Depth to Groundwater
- Former Underground Tank Location

9A3
P-1

GROUNDWATER FLOW DIRECTION AND GRADIENT

Job No. 290212
November 1990
FIGURE: 10

BSK & Associates

CHECKED BY
DATE
BY

259184 35/2E-9A3

DATE: 10/09/90
LOGGED BY: TWB
ELEVATION: +536.06 MSL
WATER LEVEL: +503.68 (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION P-1

JOB: P90212
FIGURE: 4

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
							Gravel and Decayed Asphalt Driveway	
						FILL	GRAVEL: Gray, sandy, coarse	
							CLAYEY SILT: Dark-brown, firm, moist, pebbly	
						ML	SANDY SILT: Yellow-brown (10 YR 5/6), clayey, dense, damp to moist, some angular gravel and coarse sand, some carbonate in cracks	
5	1 3/8	39	-	-				
						GC	CLAYEY GRAVEL	
						ML	SILT: Brownish-yellow (10 YR 5/8), few small MnO mottles, dense, damp, no pores	
10	1 3/8	21	-	-				
15	1 3/8	24	-	-			Grades to contain occasional 1/4" pebbles	
20	1 3/8	29	-	-			Grades denser, drier	
							Grades moister	
25	1 3/8	24	-	-				

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lb HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

259184 3S/2E-9A3

DATE: 10/09/90
LOGGED BY: TWB
ELEVATION: +536.06 MSL
WATER LEVEL: +503.68 (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

LOG DESIGNATION P-1 (Cont'd)

JOB: P90212
FIGURE: 4

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
25	1 3/8	24	-	-		ML	Grades damper, less dense, mottled red and light gray, enters red earth and carbonate horizon	
30	1 3/8	23	-	-			Grades mottled yellow-brown and light gray, disseminated carbonates, dense, damp, few black mottles and coarse sand grains	
35	1 3/8	22	-	-		ML/SM	SILTY SAND AND CLAYEY SILT: Yellow-gray (10 YR 5/4) lensy, moist to wet, medium dense, well graded fine sands	
40	1 3/8	27	-	-		CL/ML	CLAYEY SILT/SILTY CLAY: Yellow-gray (10 YR 5/3) with few black mottles, very stiff, dense, damp, no pores	
45	1 3/8	28	-	-			Grades browner (10 YR 5/4)	
50	1 3/8	34	-	-				

THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) CLEAN HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

259184 35/2E-9B2

LOG DESIGNATION P-1 (Cont'd)

DATE: 10/09/90
LOGGED BY: TWB
ELEVATION: +536.06 MSL
WATER LEVEL: +503.68 (10/15/90)
EQUIPMENT: B-53 Mobile Drill using 8" Hollow Stem Auger

JOB: P90212
FIGURE: 4

DEPTH, FEET	NOMINAL (1) DIAMETER, IN.	BLOWS/FOOT (2)	MOISTURE %	DRY DENSITY, PCF	SAMPLES	U.S.C.S.	SOIL OR ROCK DESCRIPTION	NOTES
50	1 3/8	34	-	-		CL/ML	Grades redder (7.5 YR 5/6) with MnO concretions of 3 mm, pressure faces on peds, very stiff, dense, damp	
55	1 3/8	26	-	-			Grades yellower (10 YR 4/6), very stiff, carbonates stage 1 to stage III, damp, moist to wet fracture surfaces	Boring terminated at 55-1/2 feet
60								
65								
70								
75								

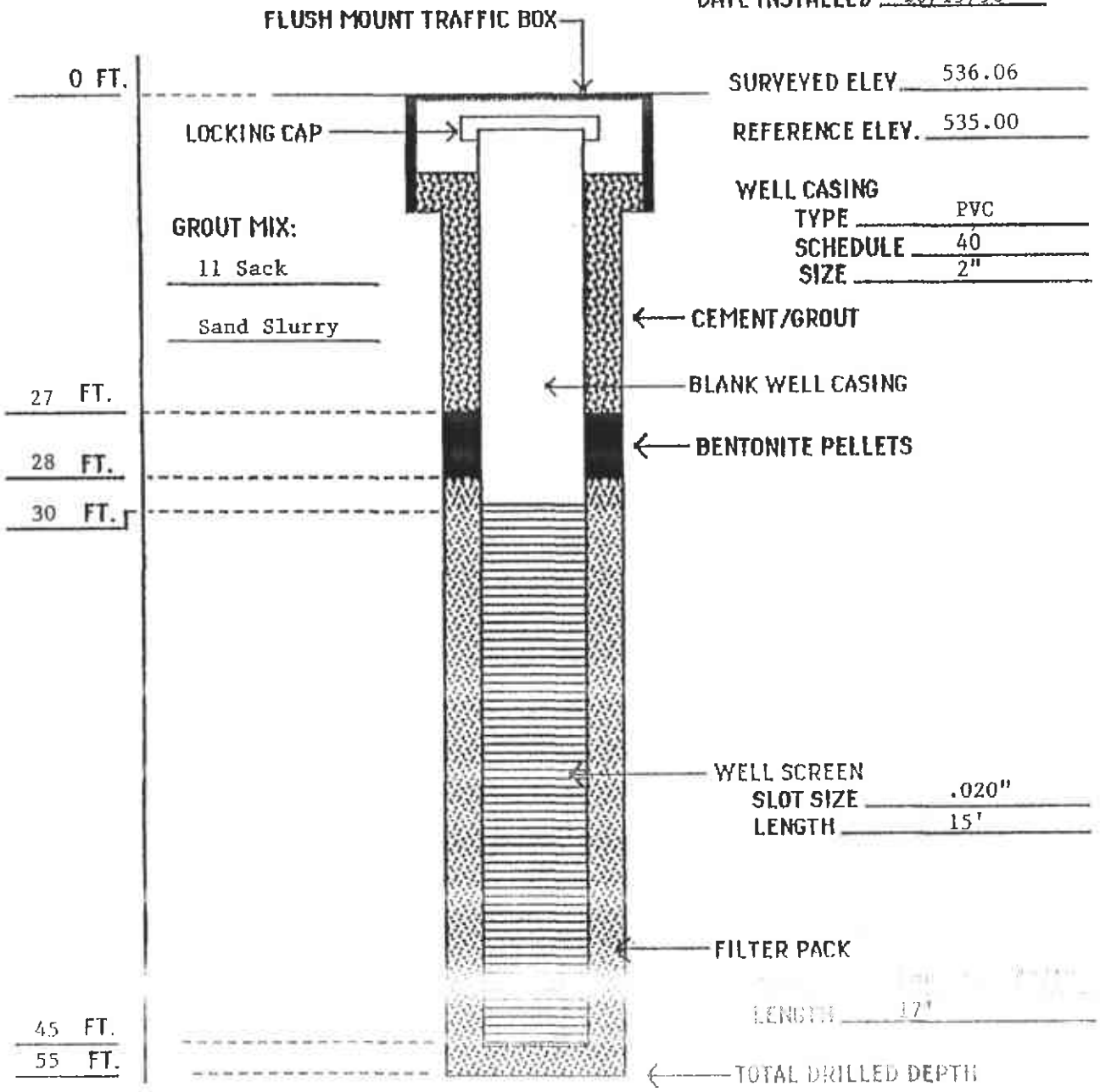
THE LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

(1) SAMPLER INSIDE DIAM.
(2) 140 lb HAMMER - 30 INCH DROP.
(P) HYDRAULICALLY PUSHED

BSK & Associates

259184 3S/2E-9AB

WELL NO. P-1
PROJECT NO. P90212
DATE INSTALLED 10/15/90



REMARKS: Original boring sealed with neat cement from 55' to 45' in depth

PROJECT NO. P90212 FIGURE: 7	PIEZOMETER INSTALLATION REPORT	BSK &ASSOCIATES

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

50880

(11) WELL LOG (CONT'D)

326 ft.	to	339 ft.	Gravel 20
339		343	Yellow Clay 3
343		360	Blue Sandy Clay 5
360		362	Gravel & Boulders 5
362		383	Blue Sandy Clay 5
383		403	Yellow Sandy Clay & Gravel 5
403		418	Blue Clay with Gravel (Hard) 5
418		428	Gravel (Tight, Hard) 20
428		439	Gravel with Blue Clay 5
439		444	Gravel 20
444		448	Gravel with Blue Clay 5
448		462	Blue Clay 3
462		471	Blue Clay with particles of Gravel 5
471		479	Blue Clay 3
479		515	Blue Clay with particles of Gravel 5