OHM Remediation Services Corp.
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Irvine, CA 92612-169
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M60050.000173
MCAS EL TORO
SSIC #5090.3

A Member of The IT Group

August 6, 1999

Ms. Bozier H. Demaree
Contracting Officer
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5187

Attention: Ms. Lynn Hornecker

Subject: SVE Well Construction and Boring Logs for IRP Site 24
Contract N68711-93-D-1459, Delivery Order 065,
Removal and Remedial Actions at IRP Sites, MCAS El Toro, California

Dear Ms. Hornecker:

Attached is a copy of the well completion and boring logs for the first set of SVE wells installed at IRP Site 24. These include:

24SVE67/67B	24SVE117
24SVE128B	24SVE138A
24SVE147A	

As discussed, additional well and boring logs are under development and will continue to be issues as they are finalized.

A copy of these logs has been forwarded to Crispin Wanyoike at Earth Tech for his use in the monthly reports. If you have any questions or need additional information please call or e-mail me.

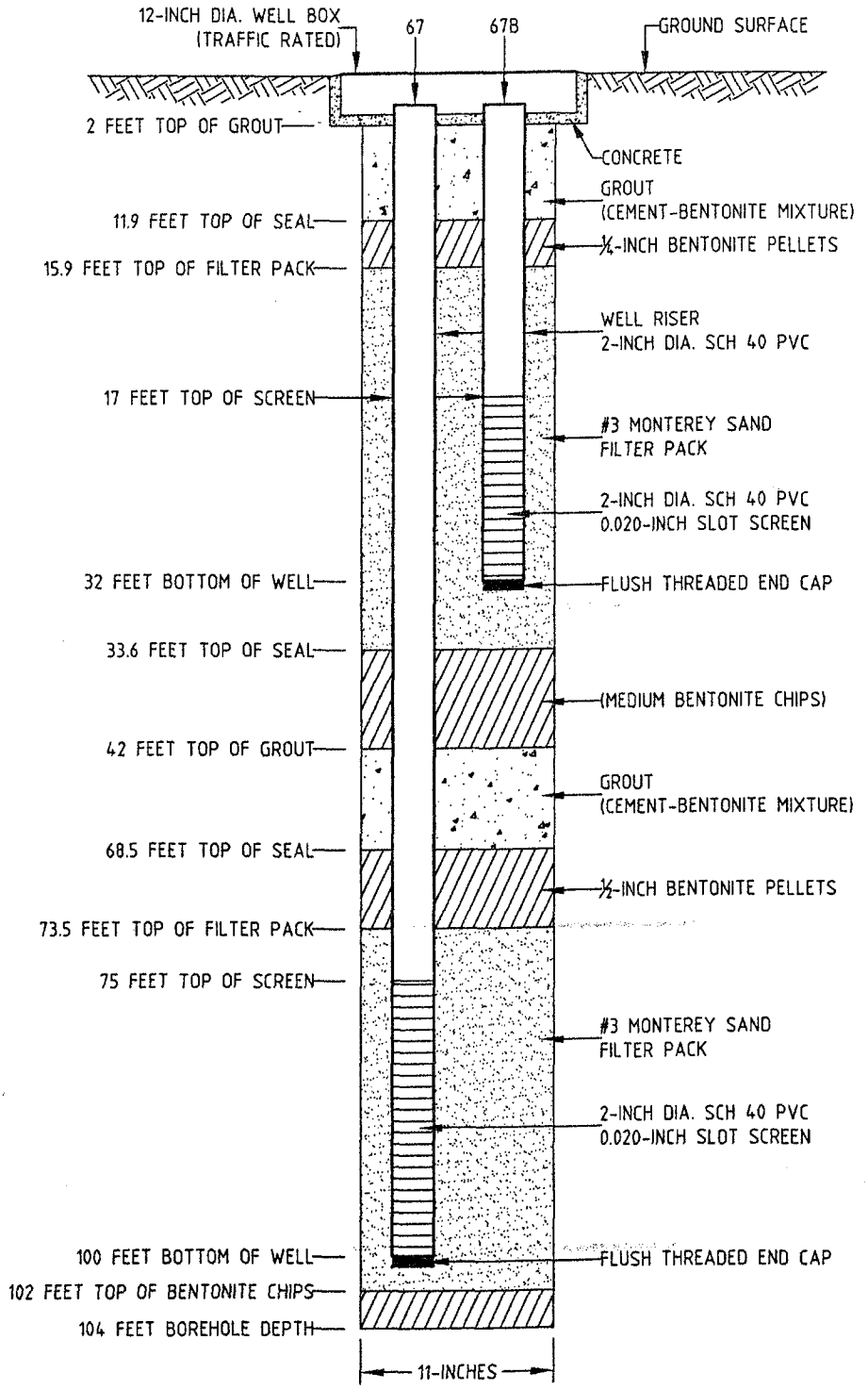
Sincerely,

William Sedlak, P.E.
Sr. Project Manager

cc: L. Holloway, COTR 1C/1E
C. Wanyoike, Earth Tech 1C/1E
OHM PMO File 1C/1E
Project File, Communications B.01

Well Construction 24-SVE 67/B

Project **MCAS/EL TORO**	Northing 2188889.85	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6109981.62	Drill Rig CME 95	Begin Drilling 5/11/99
Client SWDIV	TOC Elevation 283.37	Driller JIM KLINE	End Drilling 5/12/99
Location **SITE 24**	B 283.33	Drill Method HOLLOW STEM AUGER	Well Completion Date
Geologist A. SIDDIQUI	TOP OF RIM 283.84	DIAGRAM NOT TO SCALE	5/13/99



NOTES:

DEPTHS ARE REFERENCED FROM
0 FEET GROUND SURFACE.
TOC=TOP OF CASING

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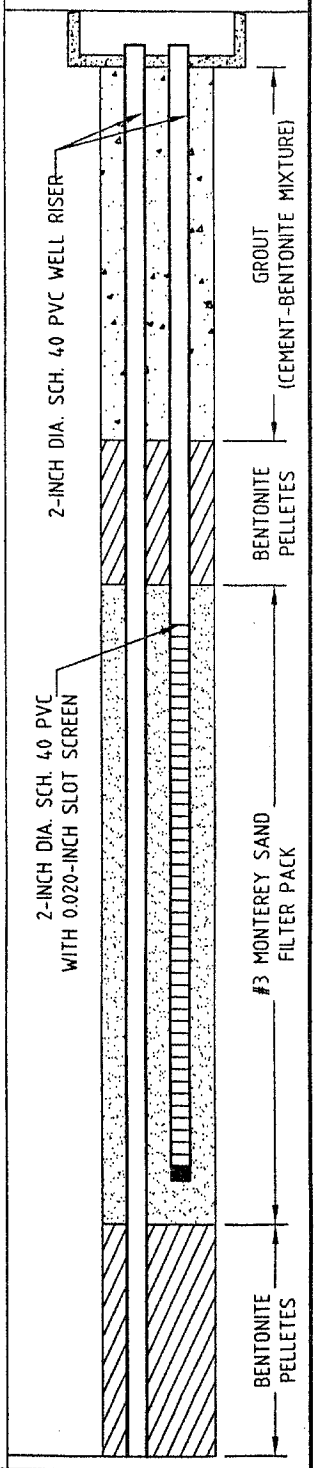
Geologic Log of Boring 24-SVE 67/B

Project **MCAS/EL TORO**	Northing 2188889.85	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6109981.62	Drill Rig CME-95	Begin Drilling 5/11/99
Client SWDIV	TOC Elevation 283.37	Driller JIM KLINE	End Drilling 5/12/99
Location **SITE 24**	B 283.33	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/13/99
Geologist A. SIDDIQUI	TOP OF RIM 283.84	DIAGRAM NOT TO SCALE	
Borehole Diameter 7 1/2-INCHES	Total Depth of Borehole 105.5 FEET	Depth to Water 104.5 FEET	

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 in.	Recovery (inches)
Top 16 feet hand augured for underground utility clearance.	0						
Based on soil cuttings silt and sandy silt with minor lenses of silty sand to 17 feet.	2, 4, 6, 8, 10, 12, 14, 16	ML					
Poorly graded Sand (SP): Light yellowish brown (2.5Y 6/4), 90% fine to medium sand, 10% fines subrounded gravel, trace fine, slightly moist, medium dense.	18, 20	SP			0	7 10 12	6 6 6
Fine subrounded to subangular gravel showed up in cutting @ 27 feet, sand interbedded in silty sand & silt from 25 to 28 feet.	22, 24, 26, 28	SP					
Clayey Sand (SC): Dark yellowish brown (10YR 3/6), Mottled to olive (5Y 5/3) at places, 70% fine sand, 30% medium plastic fines, slightly moist, dense. Thin lens of fine gravel around 33 feet.	30, 32	SC			0	17 24 31	3 6 6
Sandy Silt (ML): Dark yellowish brown (10YR 3/6), 80% low plastic fines, 20% fine sand, slightly moist, very stiff.	34, 36	ML			0	7 15 23	2 6 6
Sandy Silt (ML): Dark yellowish brown (10YR 3/6), 75% medium plastic fines, 25% very fine sand, slightly moist, hard. Amount of sand is variable 20 to 40 percent.	38, 40	ML				11 19	6 6

BORING DETAIL



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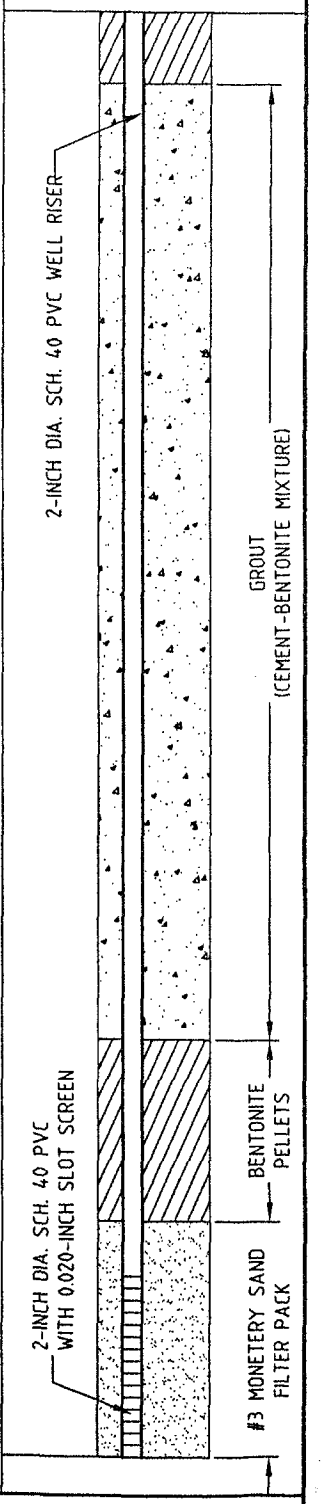
Geologic Log of Well 24-SVE 67/B

Project **MCAS/EL TORO** Project No. **918708**

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)
Sandy Silt (ML): Dark yellowish brown (10YR 3/6), 75% medium plastic fines, 25% very fine sand, slightly moist, hard. Amount of sand is variable 20 to 40 percent.	40	ML				33	6
	42						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 80% very fine sand, 20% non to low plastic fines, slightly moist, dense, very well sorted.	44	SM				14 27 29	6 6 6
	46						
	48						
Poorly graded Sand (SP): Dark yellowish brown (10YR 4/6), 95% fine sand, 5% fines, slightly moist, dense, well sorted. At places grades into SP-SM.	50	SP				19 23 29	6 6 6
	52						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 65% very fine sand, 35% low plastic fines, slightly moist, medium dense. Amount of fines variable between 25 to 40 percent. Interbedded with sandy silt.	54	SM				12 17 27	6 6 6
	56						
	58						
Sandy Silt (ML): Yellowish brown (10YR 5/4), 75% non plastic fines, 25% very fine sand, slightly moist, very stiff, traces of caliche. Interbedded with sand.	60	ML				11 14 23	
	62						
Poorly graded Sand with Silt (SP/SM): Dark yellowish brown (10YR 4/6), 90% fine to medium sand, 10% fines, slightly moist, medium dense.	64	SP/SM				14 18 26	6 6 6
Clayey Silt (ML): Olive brown (2.5Y 4/4), 90% medium to high plastic fines, 10% fine to medium sand, slightly moist, hard, mottled, trace caliche. Very hard drilling, driller introduced few gallons of water to aid in drilling.	66						
	68	ML					
Sandy Silt (ML): dark yellowish brown (10YR 4/4), 60% low plastic fines, 40% very fine sand, slightly moist, hard, grades into silty sand at places. From 57 feet predominantly silts with thin lenses of sand at places.	70					19 24 27	6 6 6
	72						
Poorly graded Sand with Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% fine sand, 10% fines, slightly moist, medium dense. Amount of fine between 5 to 10 percent.	74	SP/SM				18 22 24	6 6 6
	76						
	78	ML					
Sandy Silt (ML): Dark yellowish brown (10YR 3/4), 80% low to medium plastic fines, 20% fine sand, slightly moist, very stiff.	80	SM				11 16	4 6

WELL DETAIL



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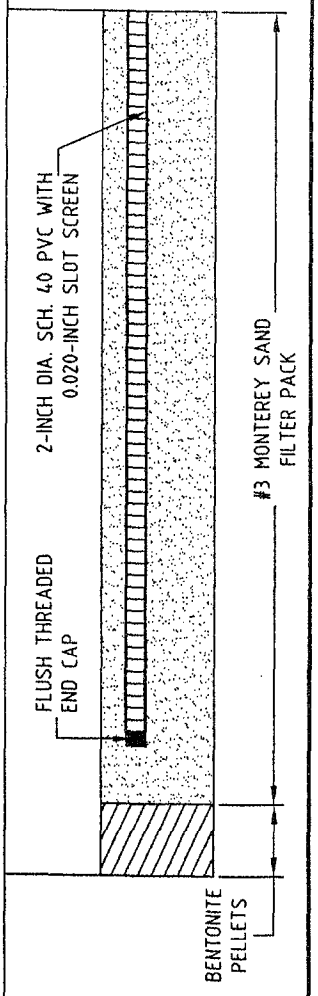
Geologic Log of Well 24-SVE 67/B

Project **MCAS/EL TORO** Project No. **918708**

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)
Silty Sand (SM): Light olive brown (2.5Y 5/6), 75% fine sand, 25% low plastic fines, slightly moist, medium dense, few m.m. thick lenses of silt at places. Silty sand interbedded with silt and sandy silt.	80	SM				26	6
	82						
Poorly graded Sand (SP): Light yellowish brown (2.5Y 6/4), 95% fine (mostly) to medium sand, 5% fines, slightly moist, dense, at places grade into poorly graded sand with silt. Interbedded with thin lenses of sandy silt at places.	84	SP			4.2	18 29 32	6 6 6
	86						
	88						
Poorly graded Sand (SP): Light yellowish brown (2.5Y 6/4), 95% fine sand, <5% fines, slightly moist, medium dense to dense, well sorted, at places grades into poorly graded sand with silt.	90				2.1	29 30 32	6 6 6
	92						
Silty Sand (SM): Light olive brown (2.5Y 5/4), 75% fine sand, 25% low plastic fines, slightly moist, dense.	94	SM			1.2	12 26 40	6 6 6
	96						
	98						
Poorly graded Sand with Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% fine (mostly) to medium sand, 10% fines, moist, medium dense.	100	SP/SM			0.0	12 16 23	4 6 6
	102						
Silty Sand (SM): Olive brown (2.5Y 5/4), 70% fine (mostly) to medium sand, 30% low plastic fines, wet, medium dense. Total depth=105.5 feet.	104	SM			1.8	6 8 19	4 6 6
	106						
	108						
	110						
	112						
	114						
	116						
	118						
	120						

WELL DETAIL



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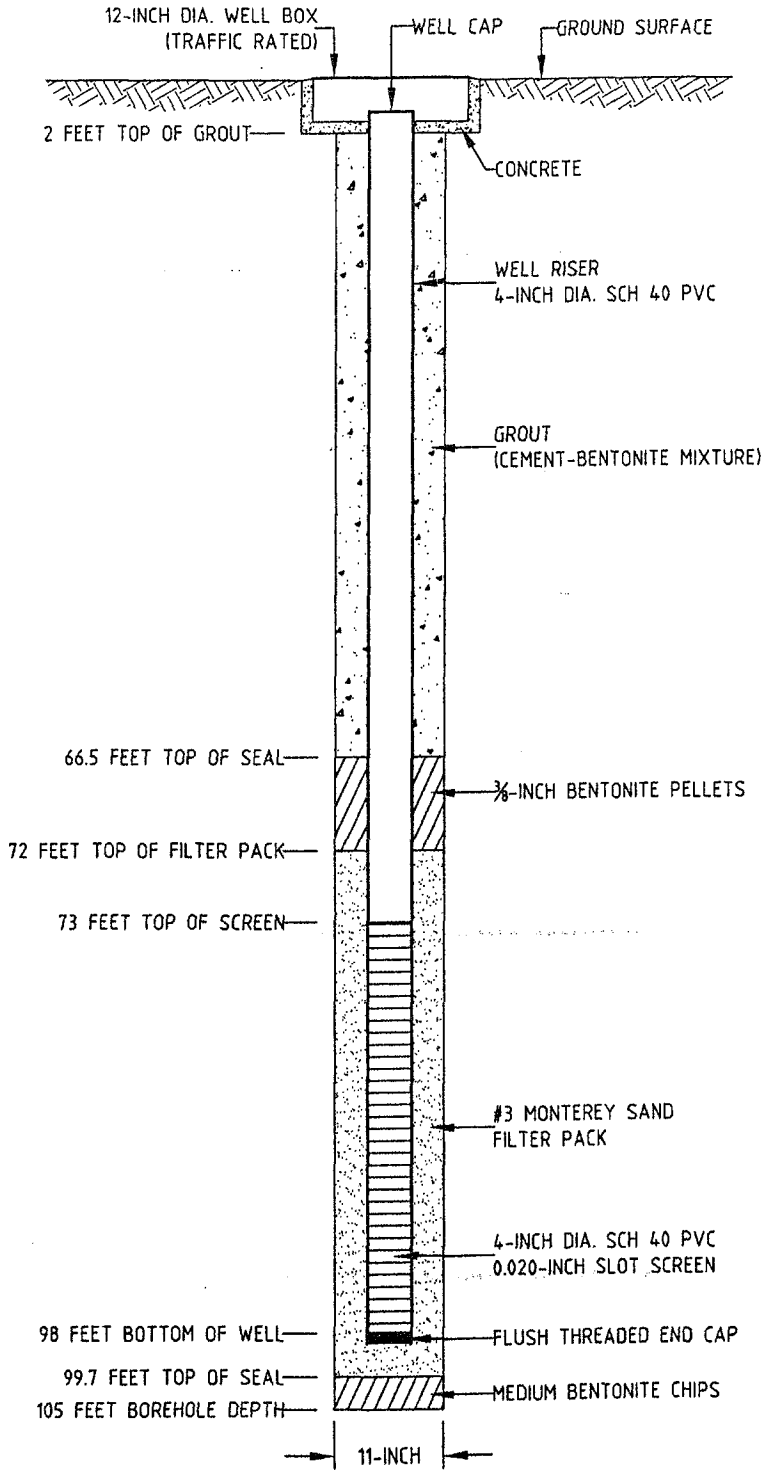
Well Construction 24-SVE 117

Project **MCAS/EL TORO**	Northing 2187926.52	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6110258.89	Drill Rig CME 95	Begin Drilling 5/10/99
Client SWDIV	TOC Elevation 286.39	Driller JIM KLINE	End Drilling 5/11/99
Location **SITE 24**	TOP OF RIM 287.15	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/11/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		



NOTES:

DEPTHS ARE REFERENCED FROM
0 FEET GROUND SURFACE.
TOC=TOP OF CASING

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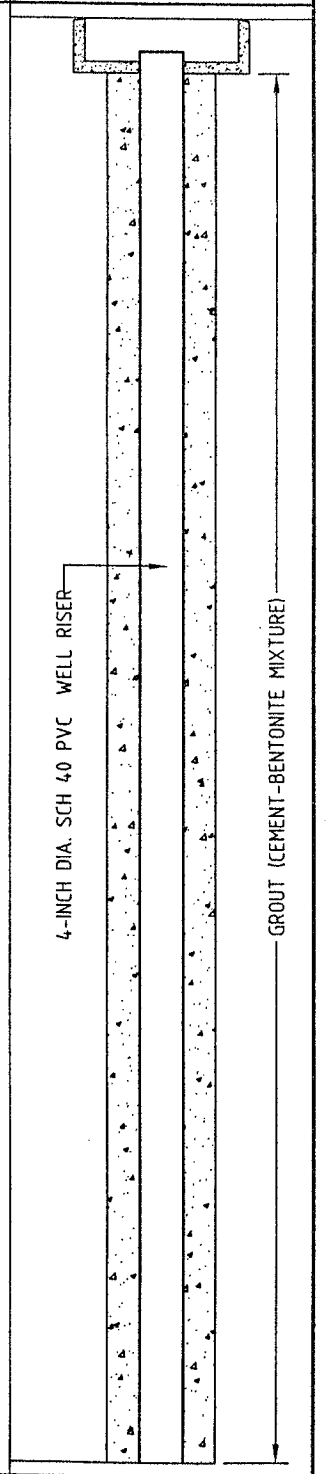
Geologic Log of Boring 24-SVE 117

Project **MCAS/EL TORO**	Northing 2187926.52	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6110258.89	Drill Rig CME-95	Begin Drilling 5/10/99
Client SWDIV	TOC Elevation 286.39	Driller JIM KLINE	End Drilling 5/11/99
Location **SITE 24**	TOP OF RIM 287.15	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/11/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		
Borehole Diameter 11-INCHES	Total Depth of Borehole 105.5 FEET	Depth to Water 101.09 FEET BGS	

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 in.	Recovery (inches)
Top 16 feet. hand augured for underground utility clearance.	0						
Sandy Silt (ML): Dark yellowish brown (10YR ¾), 80% low plastic fines, 20% fine sand, slightly moist, stiff.	2						
	4						
	6						
	8	ML					
	10						
	12						
	14						
	16						
	18						
Silty Sand (SM): Yellowish brown (10YR ⅝), 75% fine sand, 25% low plastic fines, slightly moist, medium dense, amount of fines is variable.	20	SM			2.6	9 15 18	4 6 6
Cuttings are coming in round balls indicating fines (Silt & Clay).	22						
	24						
	26						
	28						
Silt (ML): Dark yellowish brown (10YR ⅗), 90% medium plastic fines, 10% very fine sand, moist, stiff to very stiff, micaceous.	30	ML			0	6 7 12	6 6 6
	32						
	34						
	36						
Sandy Silt (ML): Dark brown (10YR ⅔), 70% low to medium plastic fines, 30% very fine sand, moist, stiff, amount of sand is variable 25 to 40 percent.	38						
	40				0	6 7	4 6

BORING DETAIL



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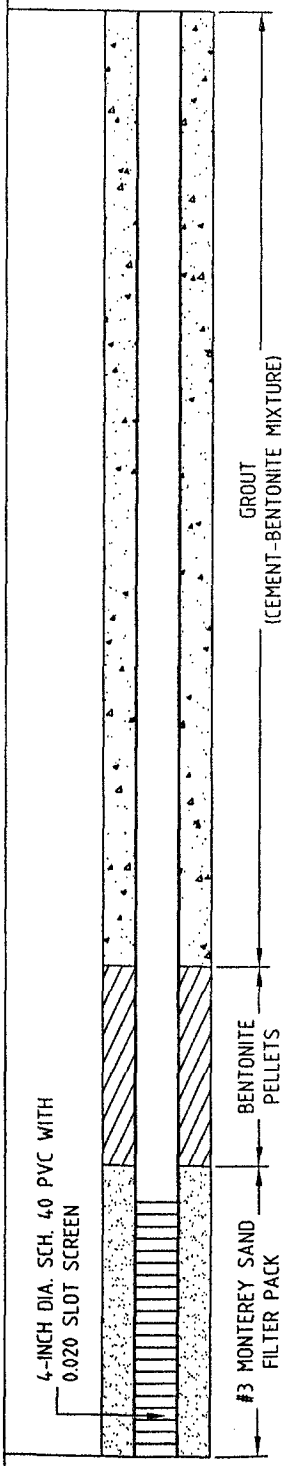
Geologic Log of Well 24-SVE 117

Project **MCAS/EL TORO** Project No. **918708**

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)
Sandy Silt (ML): Dark brown (10YR 3/3), 70% low to medium plastic fines, 30% very fine sand, moist, stiff, amount of sand is variable 25% to 40%.	40	ML				10	6
	42						
Silty Sand (SM): Light olive brown (2.5Y 5/4), 85% fine sand, 15% fines, slightly moist, medium dense, amount of fines is variable 10%-20%.	44	SM			0	9 5 24	6 6 6
	46						
	48						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 75% fine sand, 25% low plastic fines, moist, medium dense, interfingering with silt & sandy silt.	50				0	8 14 19	6 6 6
	52						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 60% fine sand, 40% low plastic fines, slightly moist, medium dense, interbedded with silt.	54				0	11 14 19	6 6 6
	56						
	58						
Sandy Silt (ML): Dark yellowish brown (10YR 4/6), 70% low plastic fines, 30% fine sand, slightly moist to moist, very stiff, amount of sand is variable in sample 10%-35%. Interbedded with silty sand.	60	ML			0	6 7 16	6 6 6
	62						
Poorly graded Sand with Silt (SP/SM): Yellowish brown (10YR 5/4), 90% fine to medium sand, 10% fines, slightly moist, medium dense.	64	SP/SM			0	15 18 24	6 6 6
Silt (ML): Dark yellowish brown (10YR 4/4), 100% medium plastic fines, slightly moist, very stiff, mottled, contain some clay, PID not working properly waiting for different PID.	66						
	68	ML					
Silts (ML): Dark yellowish brown (10YR 4/4), 95% low to medium plastic fines, 5% very fine sand, slightly moist, very stiff.	70				0	10 14 18	6 6 6
	72						
Silty Sand (SM): Yellowish brown (10YR 5/4), 75% fine sand, 25% low plastic fines, slightly moist, medium dense, amount of fines is variable 20%-35%, few coarse, subangular gravels showed up in soil cuttings between 77 and 79 feet.	74	SM			0	6 10 18	4 6 6
	76						
Sandy Silt (ML): Same as at 80 feet.	78	ML					
Poorly graded Sand with Silts (SP/SM): Light olive brown (2.5Y 5/4), 90% sand, 10% fines, slightly moist, medium dense.	80	SP/SM				15 21	6 6

WELL DETAIL

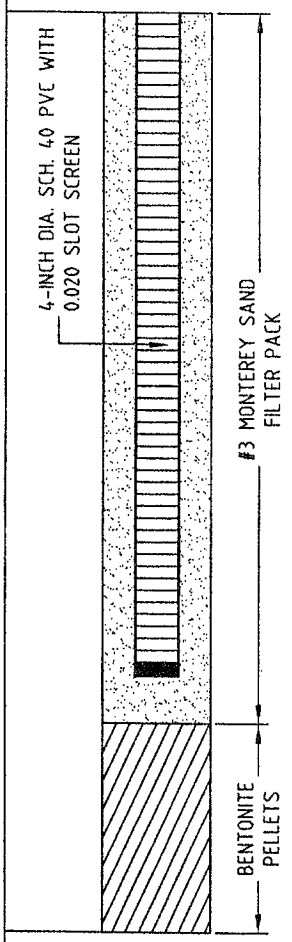


Geologic Log of Well 24-SVE 117

Project **MCAS/EL TORO** Project No. **918708**

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)
Sandy Silt (ML): Light olive brown (2.5Y 5/4), 70% low plastic fines, 30% very fine sand, slightly moist, very stiff, grade into silty sand at places.	80	ML				24	6
	82						
Poorly graded Sand with Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% fine (mostly) to medium sand, 10% fines, slightly moist, dense.	84	SP/SM			0	21 27 33	6 6 6
Silty Sand (SM): Olive brown (2.5Y 4/4), 60% fine sand, 40% low plastic fines, slightly moist to moist, dense, grade into sandy silt at places, fine to coarse, subangular to subrounded gravels showed up in soil cuttings 86 to 89 feet.	86						
	88						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 85% fine sand, 15% fines, trace fine subrounded gravel, slightly moist, very dense, top 4 inch of sample contain 30% low plastic fines.	90				0	26 32 50/4"	3 6 6
	92						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 75% fine (mostly) to medium sand, 25% low plastic fines, trace fine subrounded gravel, moist, medium dense to dense.	94	SM			0	12 21 27	6 6 6
	96						
	98						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 75% fine sand, 25% low plastic fines, very moist, dense, amount of fines 20%-30%. Groundwater observed at 101 feet bgs during drillup.	100				0	17 26 34	6 6 6
	102						
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 75% fine mostly to medium sand, 25% low plastic fines, trace fine gravel subrounded, wet, medium dense. Total Depth=105.5 feet.	104				0	7 12 19	
	106						
	108						
	110						
	112						
	114						
	116						
	118						
	120						

WELL DETAIL



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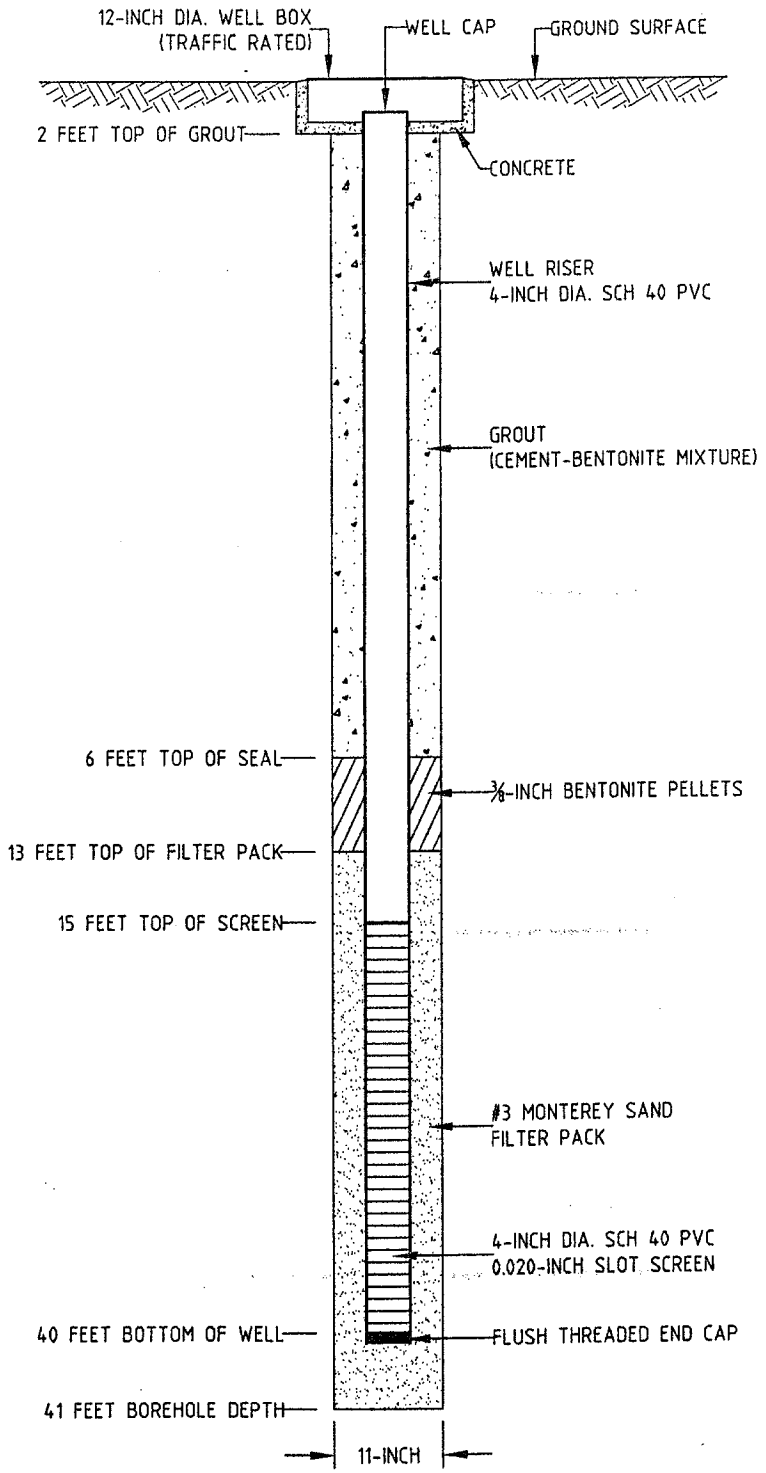
Well Construction 24-SVE 128B

Project **MCAS/EL TORO**	Northing 2188458.58	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6110588.56	Drill Rig CME 95	Begin Drilling 5/17/99
Client SWDIV	TOC Elevation -	Driller JIM KLINE	End Drilling 5/17/99
Location **SITE 24**	TOP OF RIM 291.82	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/17/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		



NOTES:

DEPTHS ARE REFERENCED FROM
0 FEET GROUND SURFACE.
TOC=TOP OF CASING

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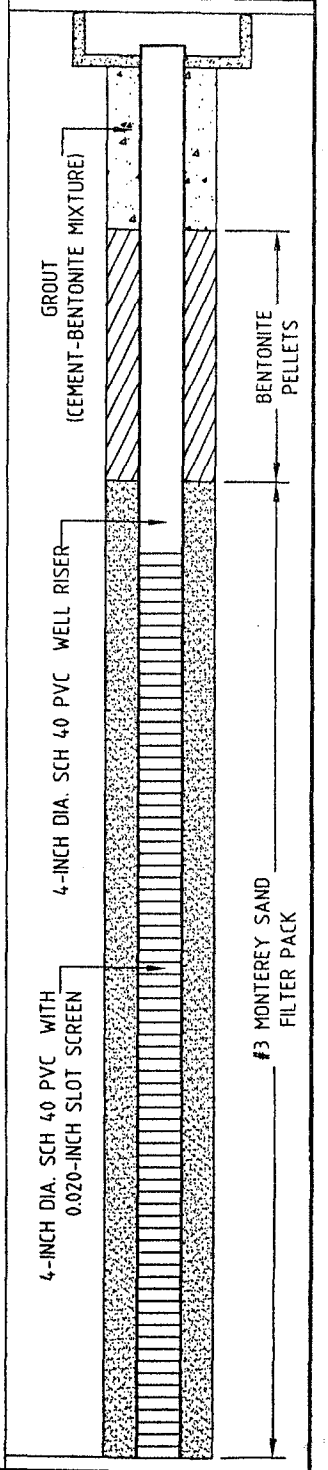
Geologic Log of Boring 24-SVE 128B

Project **MCAS/EL TORO**	Northing 2188458.58	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6110588.56	Drill Rig CME-95	Begin Drilling 5/17/99
Client SWDIV	TOC Elevation -	Driller JIM KLINE	End Drilling 5/17/99
Location **SITE 24**	TOP OF RIM 291.82	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/17/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		
Borehole Diameter 11-INCHES	Total Depth of Borehole 40.5 FEET	Depth to Water NOT ENCOUNTERED	

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 in.	Recovery (inches)
Top 16 feet. hand augured for underground utility clearance.	0, 2, 4, 6, 8, 10, 12, 14	SM					
Silty Sand (SM): Yellowish brown (10YR 5/4), 70% very fine sand, 30% low plastic fines, slightly moist, slightly loose, interbedded with sandy silt, strong hydrocarbon odor in the top silty part of sample.	16, 18				58	2 3 3	6 6 6
Poorly graded Sand (SP): Yellowish brown (10YR 5/4), 95% fine sand, 25% fine, well sorted, slightly moist, loose.	20, 22	SP			484	3 4 5	6 6 6
Poorly graded Sand (SP): Yellowish brown (10YR 5/4), 95% fine to medium sand, trace coarse sand, slightly moist, loose.	24, 26					2 3 5	6 6 6
Silty Sand (SM): Dark yellowish brown (10YR 4/4), 70% very fine sand sand, 30% low plastic fines, slightly moist, medium dense, interbedded with lenses of sandy silt and poorly graded sand.	28, 30, 32	SM			4.5	9 15 17	6 6 6
Silty Sand (SM): Dark yellowish brown (10YR 4/4), 70% fine to medium (mostly fine) sand, 30% low plastic fine, slightly moist, medium dense, interbedded with poorly graded sand with trace fine gravel and micaceous silt and sandy silt.	34, 36				21	4 7 10	6 6 6
Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 80% low plastic fines, 20% very fine sand, slightly moist, stiff, interbedded with sand and silty sand.	38, 40	ML			75	5 5	6 6

BORING DETAIL



OHM Remediation Services Corp.

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Geologic Log of Well 24-SVE 128B

Project **MCAS/EL TORO** Project No. **918708**

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)	WELL DETAIL
Sandy Silt (ML): Dark yellowish brown (10YR ¾), 80% low plastic fines, 20% very fine sand, slightly moist, stiff, Interbedded with sand and silty sand. Total Depth=40.5 feet	40	ML				7	6	#3 MONTEREY SAND FILTER PACK
	42							
	44							
	46							
	48							
	50							
	52							
	54							
	56							
	58							
	60							
	62							
	64							
	66							
	68							
	70							
	72							
	74							
	76							
	78							
	80							

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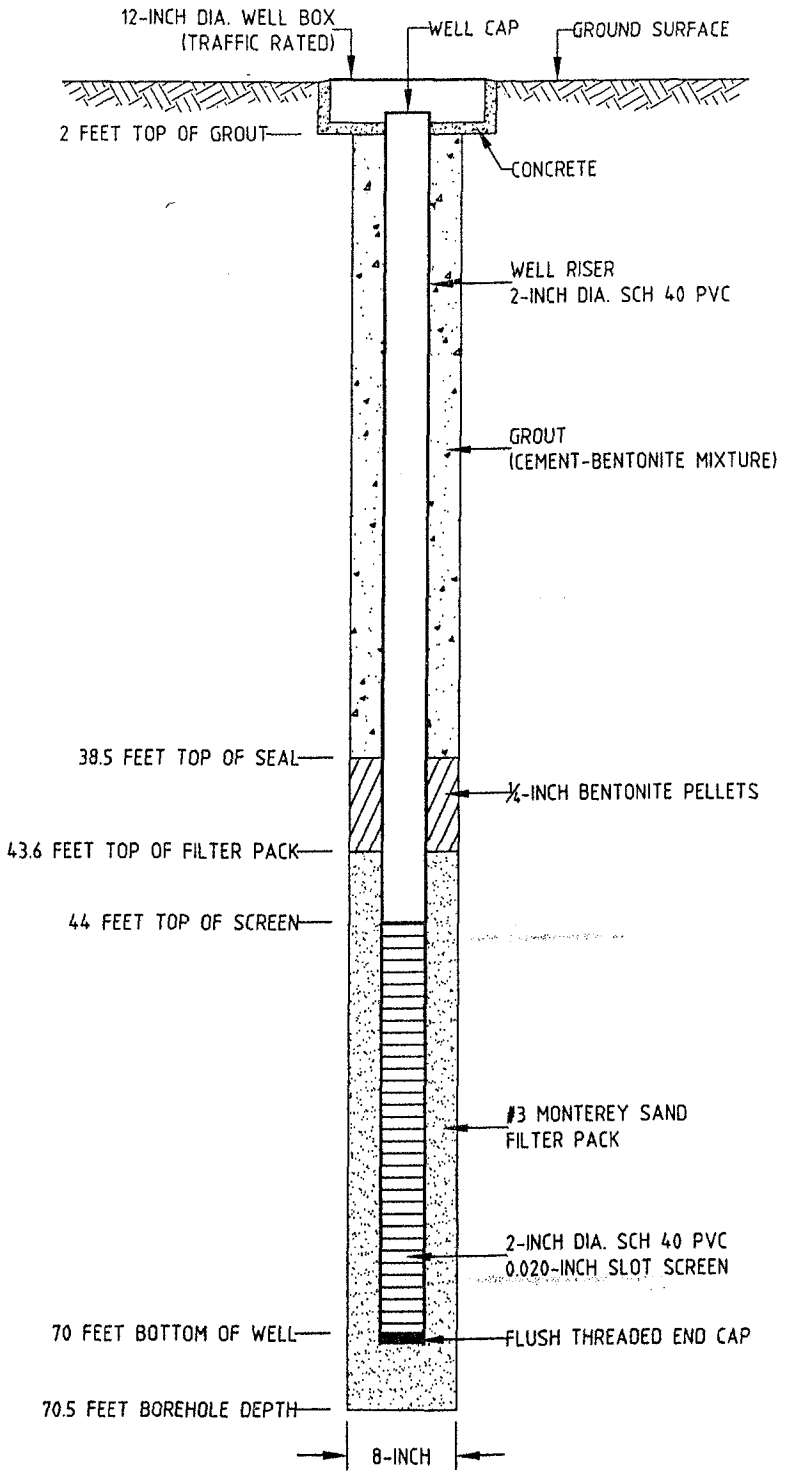
Well Construction 24-SVE 138A

Project **MCAS/EL TORO**	Northing 2187382.44	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6110056.29	Drill Rig CME 95	Begin Drilling 5/6/99
Client SWDIV	TOC Elevation 269.49	Driller JIM KLINE	End Drilling 5/6/99
Location **SITE 24**	TOP OF RIM 270.36	Drill Method HOLLOW STEM AUGER	Well Completion Date
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		5/7/99



NOTES:

DEPTHS ARE REFERENCED FROM
0 FEET GROUND SURFACE.
TOC=TOP OF CASING

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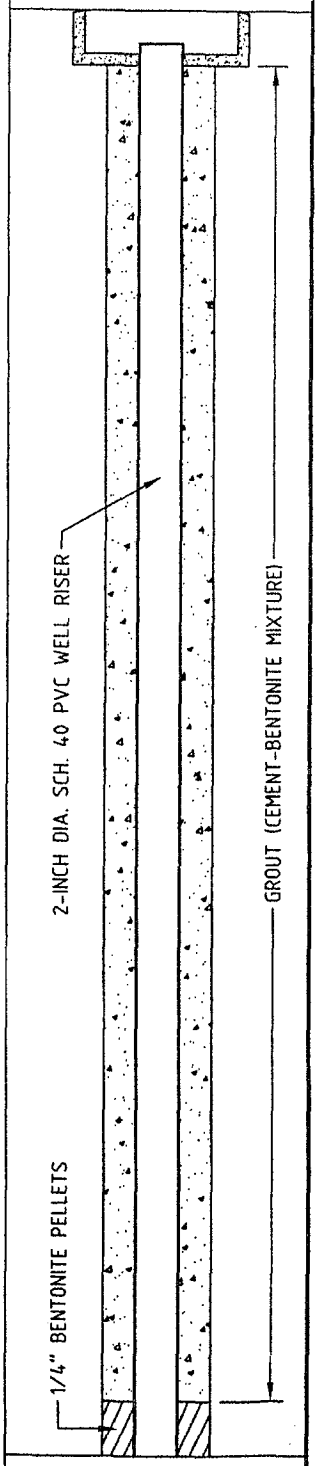
Geologic Log of Boring 24-SVE 138A

Project **MCAS/EL TORO**	Northing 2187382.44	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6110056.29	Drill Rig CME-95	Begin Drilling 5/6/99
Client SWDIV	TOC Elevation 269.49	Driller JIM KLINE	End Drilling 5/6/99
Location **SITE 24**	TOP OF RIM 270.36	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/7/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		
Borehole Diameter 8-INCHES	Total Depth of Borehole 70.5 FEET	Depth to Water NOT ENCOUNTERED	

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 in.	Recovery (inches)
Top 16 feet. hand augured for underground utility clearance.	0, 2, 4						
Subsurface soil with top 20 feet. consist predominantly of silty sand with sand and silt lenses at places.	6, 8, 10, 12, 14, 16, 18	SM					
Sandy Silt (ML): Dark yellowish brown (10YR 4/4), 75% low to non plastic fines, 25% very fine sand, slightly moist, stiff, no odor.	20, 22, 24, 26	ML			120	6 8 11	6 6 6
Silty Sand (SM): Yellowish brown (10YR 5/4), 60% very fine sand, 40% non to low plastic fines, slightly moist, medium dense, no odor. First two PID readings may be incorrect due to moisture in bag.	28, 30, 32	SM			947	7 9 14	0.0 6 6
Silty Sand (SM): Dark yellowish brown (10YR 4/6), 80% fine to very fine sand, 20% non to low plastic fines, slightly moist, dense, at places 2 to 3 inches thick, sandy silt lenses. The blow counts may be incorrect because the sand line got off the spool.	34, 36				3.5	31 34 37	6 6 6
Sandy silt (ML): Light olive brown (2.5Y 5/4), 70% low plastic fines, 30% very fine sand, slightly moist, hard, mottled.	38, 40	ML			6.7	12 17	6 6



BORING DETAIL

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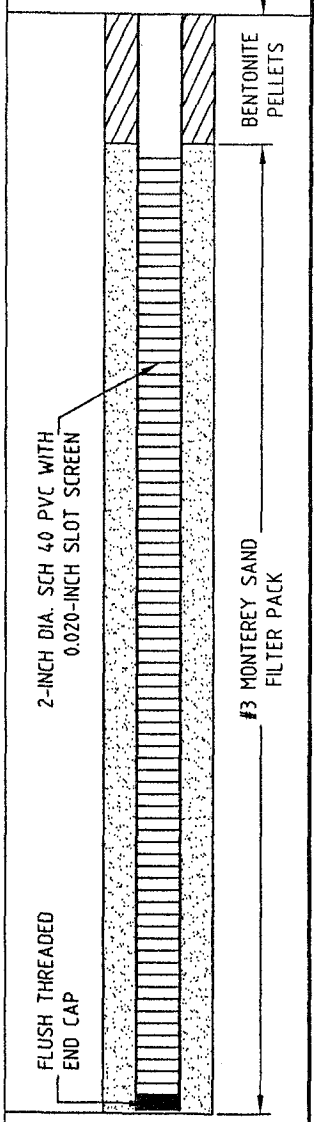
Geologic Log of Well 24-SVE 138A

Project **MCAS/EL TORO** Project No. **918708**

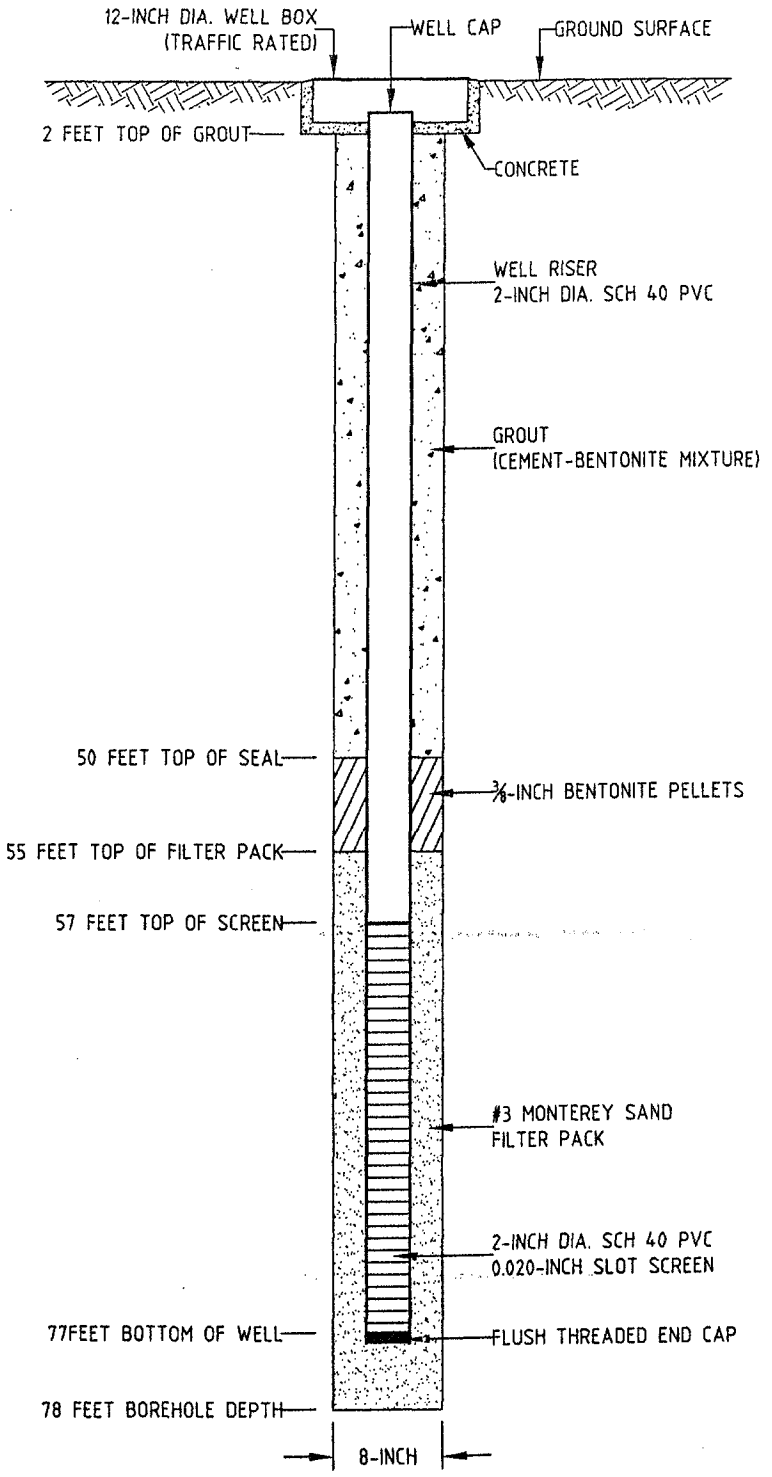
DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)
Sandy silt (ML): Light olive brown (2.5Y 5/4), 70% low plastic fines, 30% very fine sand, slightly moist, hard, mottled.	40	ML				26	6
	42						
Silty Sand (SM): Light olive brown (2.5Y 5/3), 70% very fine sand, 30% low plastic fines, dense, slightly moist, no odor. Slow drilling, augers are smoking very tight formation.	44	SM			4.2	17 29 34	
	46						
	48						
Silty Sand (SM): Light olive brown (2.5Y 5/4), 70% very fine sand, 30% low plastic fines, slightly moist, medium dense.	50				2.1	19 26 21	
	52						
Poorly graded Sand with Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% fine grained (predominantly) to medium grained sand, 10% fines, trace fine subrounded gravel (18mm max.), slightly moist, medium dense.	54	SP/SM			1.2	18 22 24	
	56						
	58						
Silty Sand (SM): Light olive brown (2.5Y 5/4), 70% fine sand, 30% low plastic fines, medium dense, slightly moist, amount of fines in variable 25-40%. In the shoe of the samples is sandy silt.	60	SM			0.0	14 19 27	
Sandy Silt (ML): Lightly olive brown (2.5Y 5/6), 60% non to low plastic fines, 40% very fine sand, slightly moist, very stiff.	62	ML					
Sitly Sand (SM): Dark yellowish brown (10YR 3/6), 85% fine sand, 15% fines, slightly moist, medium dense.	64				1.8	14 19 22	
	66						
	68	SM					
Silty Sand (SM): Dark yellowish brown (10YR 4/4), 75% very fine sand, 25% low plastic fines, moist, dense. Total Depth=70½ feet.	70					15 26 40	
	72						
	74						
	76						
	78						
	80						

WELL DETAIL



Well Construction 24-SVE 147A

Project **MCAS/EL TORO**	Northing 2187188.87	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6109894.24	Drill Rig CME 95	Begin Drilling 5/7/99
Client SWDIV	TOC Elevation 266.22	Driller JIM KLINE	End Drilling 5/7/99
Location **SITE 24**	TOP OF RIM 266.80	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/7/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		



NOTES:

DEPTHS ARE REFERENCED FROM
0 FEET GROUND SURFACE.
TOC=TOP OF CASING

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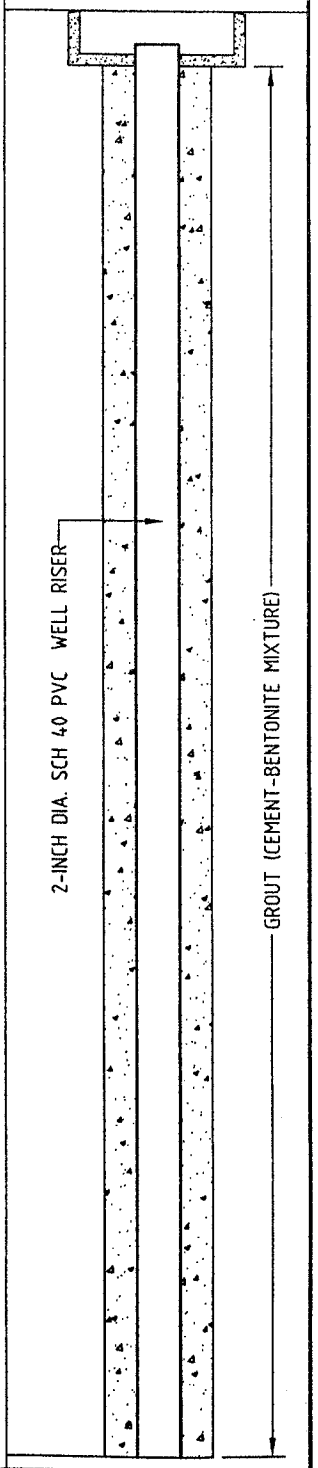
Geologic Log of Boring 24-SVE 147A

Project **MCAS/EL TORO**	Northing 2187188.87	Drilling Company LAYNE CHRISTENSEN	
Project Number **918708**	Easting 6109894.24	Drill Rig CME-95	Begin Drilling 5/7/99
Client SWDIV	TOC Elevation 266.22	Driller JIM KLINE	End Drilling 5/7/99
Location **SITE 24**	TOP OF RIM 266.80	Drill Method HOLLOW STEM AUGER	Well Completion Date 5/7/99
Geologist A. SIDDIQUI	DIAGRAM NOT TO SCALE		
Borehole Diameter 8-INCHES	Total Depth of Borehole 78.5 FEET	Depth to Water 77.5 FEET	

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 in.	Recovery (inches)
Top 16 feet. hand augured for underground utility clearance. Soil within top 16 feet predominantly consist of silty sand interlayered with sandy silt	0–16	SM					
Clayey Sand (SC): Light olive brown (2.5Y 5/4), 75% fine sand, 25% low to medium plastic fines, dense, slightly moist, bottom 3-inch of the sample consist of sandy silt with clay, 80% medium plastic fines, 20% fine sand.	18–24	SC		20	0	17 26 36	6 6 6
Silty Sand (SM): Dark yellowish brown (10YR 5/4), 85% fine sand, 15% fines, slightly moist, dense, interbedded with sandy silt at places.	26–30	SM		30	0	21 32 27	6 6 6
Silty Sand (SM): Yellowish brown (10YR 5/6), 80% fine sand, 20% fines, slightly moist, medium dense, very well sorted, interbedded with sandy silt at places.	32–36	SM		34		16 18 27	6 6 6
Silty Sand (SM): Yellowish brown (10YR 5/6), 80% very fine sand, 20% fines, slightly moist, medium dense, very well sorted.	38–40	SM		40	0	6 9	

BORING DETAIL



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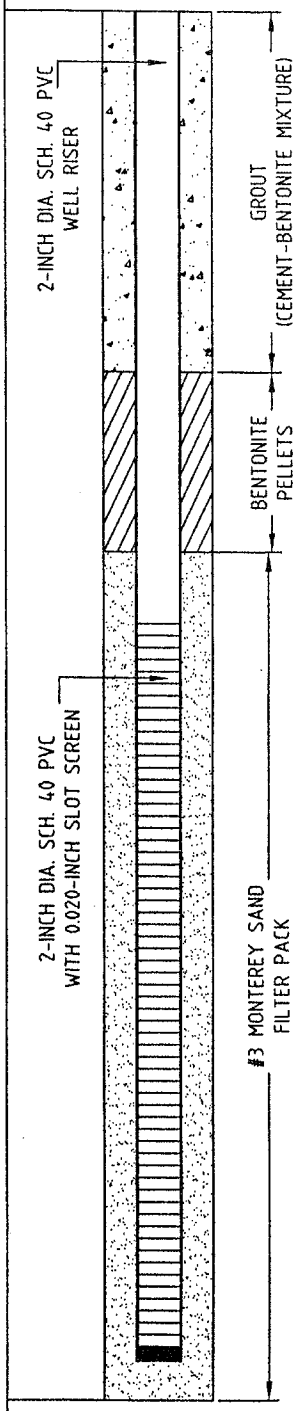
Geologic Log of Well 24-SVE 147A

Project **MCAS/EL TORO** Project No. **918708**

DESCRIPTION	Depth (feet)	Soil Group	Graphic Log	Samples	PID/FID (ppm)	Blows/6 In.	Recovery (6 inches)
Silty Sand (SM): Dark yellowish brown (10YR 5/6), 70% fine sand, 30% medium plastic fines.	40	SM				17	
	42						
	44				0	11, 19, 22	
Gravelly Sand (SP): Yellowish brown (10YR 5/4), 90% fine to medium sand, 10% fine subrounded gravel, trace fines, slightly moist, medium dense.	46	SP			0	9, 17, 22	
Silt (ML): Very dark grayish brown (2.5Y 3/2), 95% medium plastic fines, 5% very fine sand, hard to very stiff, slightly moist.	48	ML			0	11, 18, 28	
Silty Sand (SM): Yellowish brown (10YR 5/6), 75% fine sand, 25% low plastic fines, slightly moist, medium dense, interbedded with silt & sandy silt. Very slow drilling from 48 to 60 feet.	50	SM					
	52						
	54				0	7, 9, 16	
Poorly graded Sand (SP): Light olive brown (2.5Y 5/4), 95% fine sand, <5% fines, slightly moist, medium dense, very well sorted, interbedded with silt.	56	SP					
	58						
Poorly graded Sand with Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% very fine sand, 10% fines, slightly moist, medium dense, very well sorted.	60	SP/SM			0	9, 15, 21	6, 6, 6
Sandy Silt (ML): Olive brown (2.5Y 4/4), 90% low plastic silt, 10% very fine sand, little clay, slightly moist, very stiff, amount of sand is variable.	62						
	64	ML			0	7, 8, 17	6, 6, 6
	66						
Poorly graded Sand Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% fine sand, 10% fines, moist, medium dense.	68	SP/SM			0	8, 11, 18	6, 6, 6
Silty Sand (SM): Light olive brown (2.5Y 5/4), 80% fine sand, 20% low plastic fine, moist to slightly moist, dense.	70	SM			0	9, 16, 37	6, 6, 6
Poorly graded Sand with Silt (SP/SM): Light olive brown (2.5Y 5/4), 90% fine to medium sand, trace coarse sand, trace fine gravel, slightly moist to moist, medium dense, amount of fines is variable 10%-20%.	72	SP/SM				9, 19, 23	6, 6, 6
Poorly graded Sand (SP): Light olive brown (2.5Y 5/4), 100% fine to medium grained, trace coarse sand, trace fine, moist, medium dense, very thin lenses of silty sand at places.	74	SP				11, 15, 21	6, 6, 6
Silty Sand (SM): Olive brown (2.5Y 4/4), 75% fine sand, 25% low plastic fines, wet, very loose, organic.	76	SM				3, 4, 6	
	78						
	80						

WELL DETAIL



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