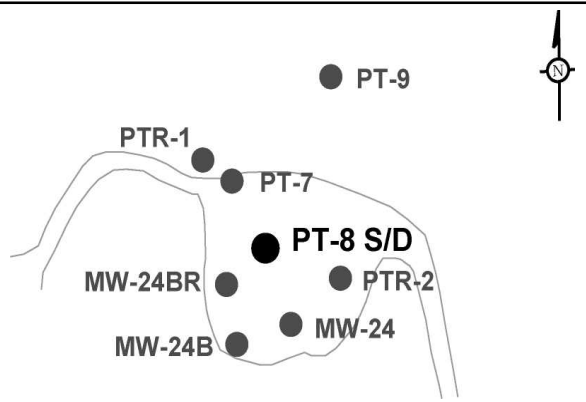


# LOG OF BORING PT-8 S/D

## PG&E Topock Site Needles, California

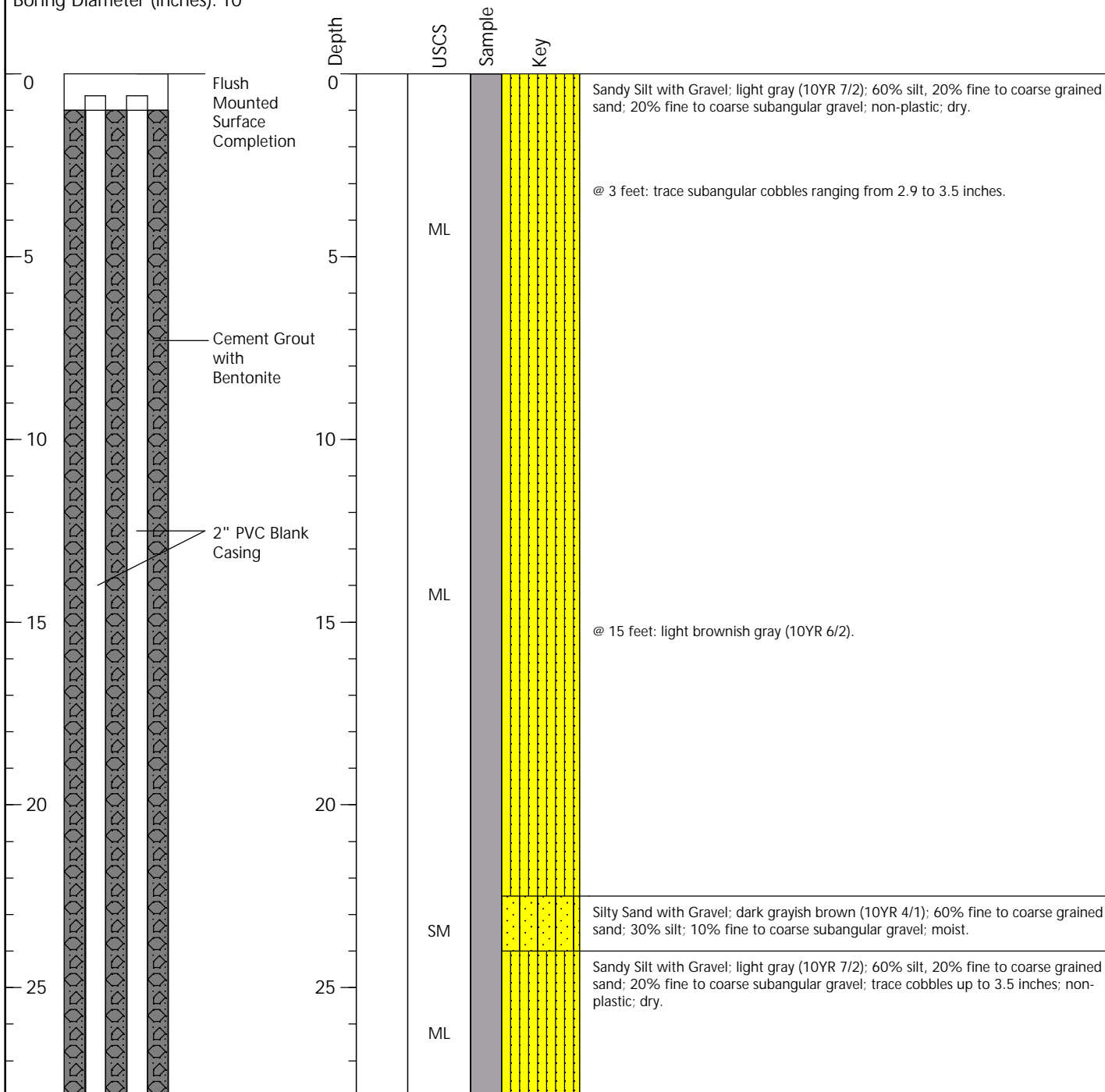


Project No.:	RC000689.0004	Date Started:	12 May 2007
Logged by:	Brett Bardsley	Date Completed:	21 May 2007
Drilling Co.:	WDC	Drilling Method:	Rotosonic/Mud Rotary
Drillers:	Rivera, West, Sakioka, Villegas	Sample Method:	4" x 6" Core Rod
Well Permit #	2007040403, 2007040405	Driller's License:	C57-283326

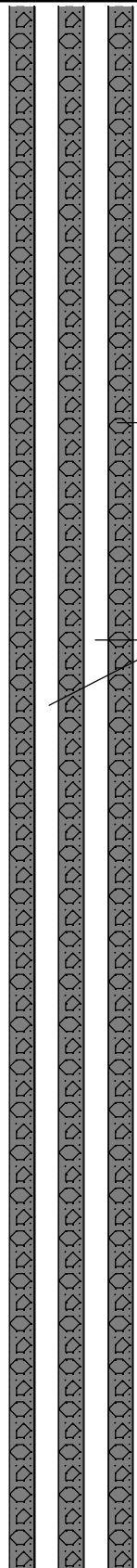
### WELL CONSTRUCTION

### LITHOLOGIC DESCRIPTION

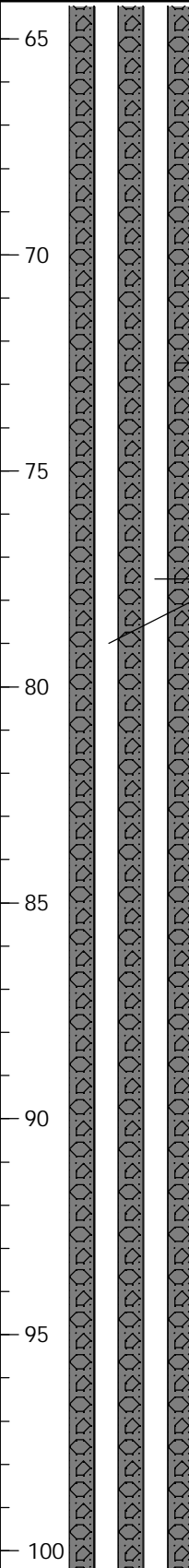
Boring Diameter (inches): 10



# LOG OF BORING PT-8 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
 <p style="margin-left: 100px;">Cement Grout with Bentonite</p> <p style="margin-left: 100px;">2" PVC Blank Casing</p>	30	ML	[Yellow pattern]	[Yellow pattern]	
	30	SM	[Yellow pattern]	[Yellow pattern]	Silty Sand with Gravel; pale brown (10YR 6/3); 70% fine to coarse grained sand; 20% silt; 10% fine to coarse subangular gravel; dry.
	35	ML	[Yellow pattern]	[Yellow pattern]	Sandy Silt with Gravel; light gray (10YR 7/2); 60% silt, 20% fine to coarse grained sand; 20% fine to coarse subangular gravel; non-plastic; dry.
	35	SM	[Yellow pattern]	[Yellow pattern]	Silty Sand; dark reddish gray (10YR 7/2); 70% medium to coarse grained sand; 25% silt; 5% fine subangular gravel; wet. @ 37 feet: fine to coarse grained sand and trace cobbles up to 3.3 inches.
	40	ML	[Yellow pattern]	[Yellow pattern]	Sandy Silt with Gravel; light gray (10YR 7/2); 60% silt, 30% fine to coarse grained sand; 10% fine to coarse subangular gravel; non-plastic; dry.
	45	ML	[Yellow pattern]	[Yellow pattern]	
	45	CL	[Green diagonal pattern]	[Green diagonal pattern]	Sandy Lean Clay; dark reddish gray (2.5YR 3/1) with some dark red (2.5YR 3/6); 60% lean clay; 40% medium to coarse grained sand; low plasticity; medium stiff, wet. @ 47 feet: changes to very dark grayish brown (10YR 3/2) with some dark red (2.5YR 3/6); 80% lean clay; 20% medium to coarse grained sand; soft; moist.
	50	ML	[Yellow pattern]	[Yellow pattern]	Sandy Silt with Gravel; reddish gray (2.5YR 6/1); 70% silt, 20% fine to coarse grained sand; 10% fine to coarse subangular gravel up to 2 inches; non-plastic; dry.
	55	SM	[Yellow pattern]	[Yellow pattern]	Silty Sand; dark reddish gray (10R 3/1); with a seam of dark greenish gray (GLE Y1 4/1); 60% medium to coarse grained sand; 40% silt; trace fine subangular gravel; wet.
	60	CL	[Green diagonal pattern]	[Green diagonal pattern]	Lean Clay with Gravel; very dark grayish brown (10YR 3/2); 90% lean clay; 10% fine subangular gravel; low plasticity; stiff; moist. @ 60 feet: 4-inch moderately cemented layer; hard.
	60	ML	[Yellow pattern]	[Yellow pattern]	Sandy Silt with Gravel; light reddish gray (2.5YR 7/1); 70% silt, 20% medium to coarse grained sand; 10% fine subangular gravel; non-plastic; dry.

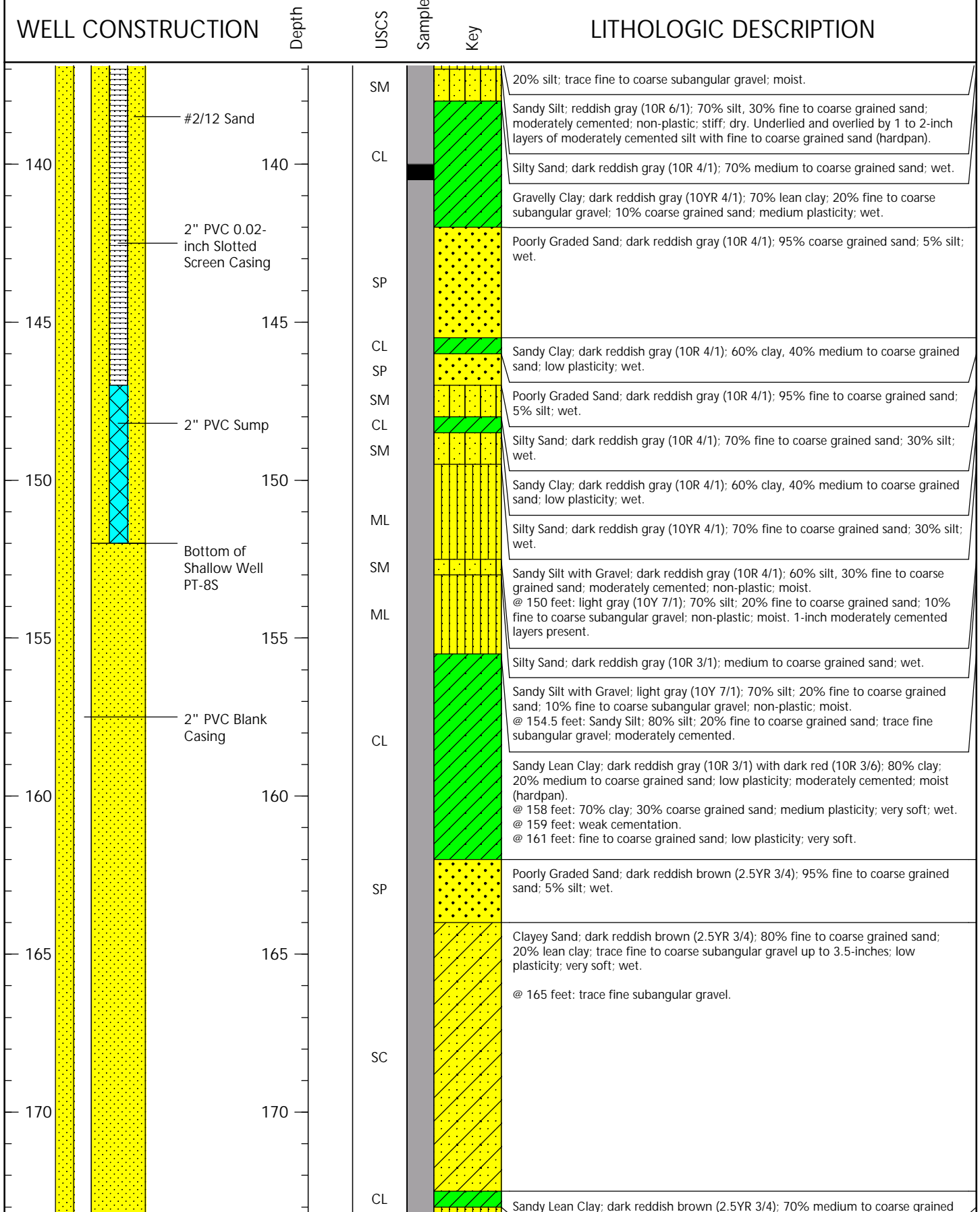
# LOG OF BORING PT-8 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
 <p style="margin-left: 100px;">Cement Grout with Bentonite</p> <p style="margin-left: 100px;">2" PVC Blank Casing</p>	65				<p>Sandy Clay; dark reddish gray (2.5YR 3/1); 70% clay, 20% medium to coarse grained sand; trace subangular fine gravel; low plasticity; very soft; wet.</p> <p>@ 68 feet: dark greenish (GLEY 4/1) to light greenish gray (GLEY 7/1) seam (0.5-inch thick)</p>
	70	CL			
	70	SM			<p>Silty Sand with Gravel; dark reddish gray (2.5YR 3/1); 60% fine to medium grained sand; 25% silt; 15% fine to coarse subangular gravel; moist.</p>
	75	ML			<p>Sandy Silt with Gravel; light reddish gray (2.5YR 7/1); 70% silt, 20% medium to coarse grained sand; 10% fine subangular gravel; non-plastic; very soft; dry. Alternating with weakly cemented stiff layers.</p>
	75	SM			<p>Silty Sand with Gravel; light gray (10R 7/2); 55% fine to coarse grained sand; 25% silt; 15% fine to coarse subangular gravel; dry.</p>
	80	ML			<p>Sandy Silt with Gravel; light gray (10R 7/2); 70% silt, 25% fine to coarse grained sand; 15% fine to coarse subangular gravel; non-plastic; dry.</p>
	80	ML			
	85	CL			<p>Lean Clay with Gravel; dark grayish brown (10YR 4/2); 90% lean clay; 10% fine subangular gravel; medium plasticity; medium stiff; moist.</p>
	85	ML			<p>Silt with Gravel; light reddish gray (2.5YR 7/1); 90% silt; 10% fine subangular gravel; non-plastic; dry.</p> <p>@ 87 feet: 70% silt; 30% fine subangular gravel.</p>
	90	GW			<p>Sandy Gravel; light reddish gray (2.5YR 7/1); 60% fine to coarse subangular gravel; 35% fine to coarse grained sand; 5% silt; moist.</p>
	90	SM			<p>Silty Sand with Gravel; light reddish gray (2.5YR 7/1); 60% fine to coarse grained sand; 20% silt; 20% fine to coarse subangular gravel; dry.</p> <p>@ 93 feet: moderately cemented 2-inch layers.</p> <p>@ 95 feet: dark grayish brown (10YR 4/2); wet.</p>
	95	CL			<p>Lean Clay with Gravel; dark brown (10YR 3/3); 90% clay; 10% fine to coarse subangular gravel; low to medium plasticity; moist.</p>
100	ML			<p>Sandy Silt; light reddish gray (2.5YR 7/1); 70% silt, 25% fine to coarse grained sand; 5% fine subangular gravel; non-plastic; 1-inch layers that are weakly cemented; stiff; dry, alternating with layers that are non-cemented and soft.</p>	

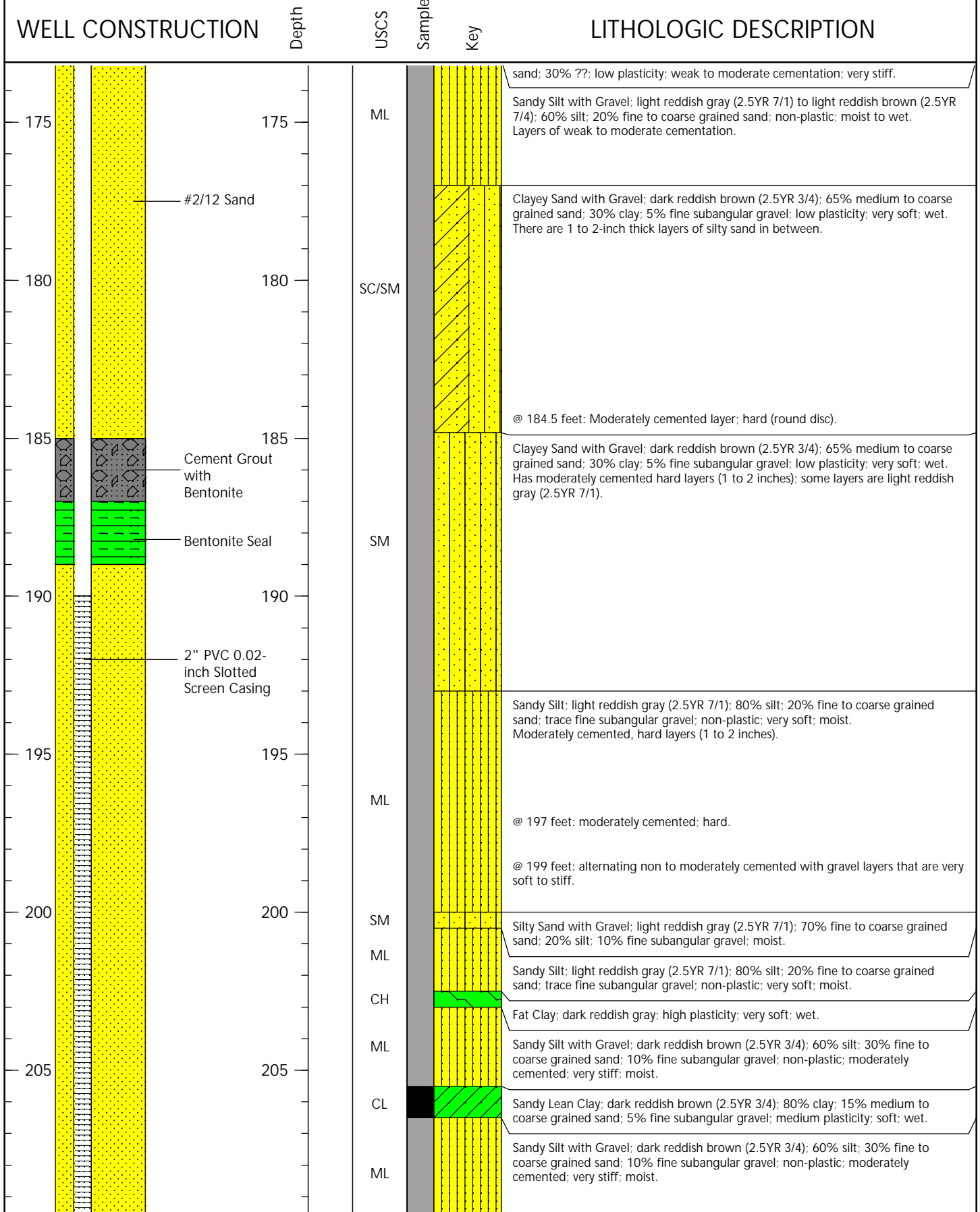
# LOG OF BORING PT-8 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
<p style="margin-left: 20px;">Cement Grout with Bentonite</p> <p style="margin-left: 20px;">2" PVC Blank Casing</p> <p style="margin-left: 20px;">Bentonite Seal</p> <p style="margin-left: 20px;">#2/12 Sand</p> <p style="margin-left: 20px;">2" PVC 0.02-inch Slotted Screen Casing</p>	105	ML			<p>@ 101 feet: light gray (5YR 7/1).</p> <p>@ 103 feet: light reddish gray (2.5YR 7/1); 80% silt; 20% fine to coarse grained sand; weak cementation; very stiff; dry.</p>
	105	SM			<p>Silty Sand with Gravel; light gray (5YR 7/1); 60% fine to coarse grained sand; 25% silt; 15% fine subangular gravel; dry.</p> <p>There are layers that are weak to moderately cemented.</p>
	110	ML			<p>Sandy Silt; light gray (5YR 7/1); 80% silt; 20% fine to coarse grained sand; non-plastic; weakly cemented; stiff; moist.</p> <p>@ 113 feet: very stiff.</p>
	115	SM			<p>Silty Sand with Gravel; dark reddish gray (5YR 4/2); 60% fine to coarse grained sand; 30% silt; 10% fine to coarse subangular gravel; moist.</p>
	115	ML			<p>Sandy Silt; light gray (5YR 7/1); 80% silt; 20% fine to coarse grained sand; non-plastic; weakly cemented; stiff; moist.</p>
	120	SM			<p>Silty Sand with Gravel; dark reddish gray (5YR 4/2); 60% fine to coarse grained sand; 30% silt; 10% fine subangular gravel; moist.</p>
	125	SM			<p>@ 125 feet: Silty Sand; dark reddish brown (5YR 3/2); 80% medium to coarse grained sand; 20% silt; trace fine to coarse subangular gravel; wet.</p>
	130	SP			<p>Poorly Graded Sand; dark reddish brown (5YR 3/2); 95% medium to coarse grained sand; 5% silt; wet.</p>
	130	SM/SC			<p>Silty Sand; dark reddish brown (5YR 3/2); 80% medium to coarse grained sand; 20% silt; trace fine to coarse subangular gravel; wet.</p> <p>0.5-inch seams of Clayey Sand; dark reddish brown (5YR 3/2); 70% medium to coarse grained sand; 30% lean clay; low to medium plasticity; wet.</p>
	135	ML			<p>Sandy Silt; reddish gray (10R 6/1); 70% silt, 30% fine to coarse grained sand; moderately cemented; non-plastic; stiff; dry.</p>
	135	SM ML			<p>Silty Sand; dark reddish brown (5YR 3/2); 80% medium to coarse grained sand;</p>

# LOG OF BORING PT-8 S/D (Continued)



# LOG OF BORING PT-8 S/D (Continued)



# LOG OF BORING PT-8 S/D (Continued)

