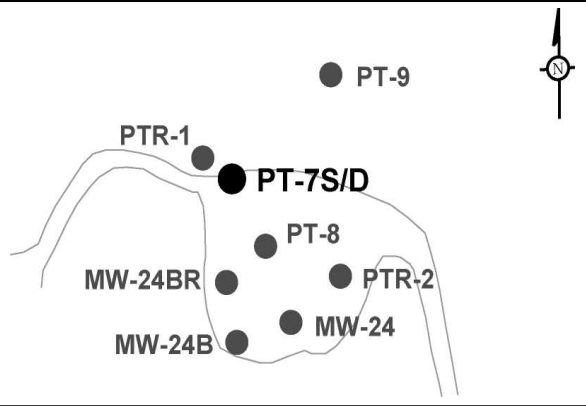


LOG OF BORING PT-7 S/D

PG&E Topock Site Needles, California

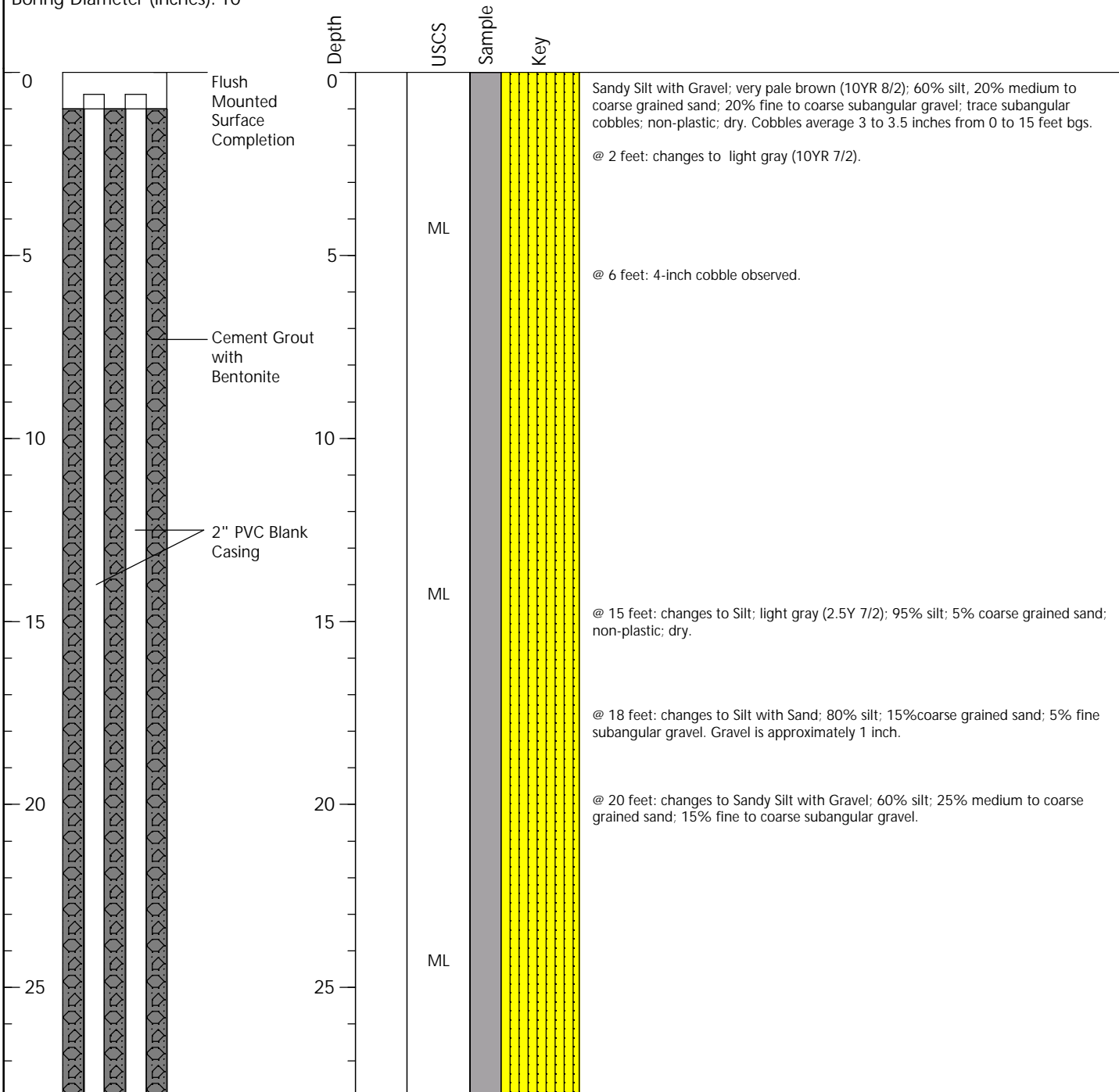


Project No.: RC000689.0004 Date Started: 9 May 2007
 Logged by: Brett Bardsley Date Completed: 11 May 2007
 Drilling Co.: WDC Drilling Method: Rotosonic/Mud Rotary
 Drillers: Rivera, West, Sakioka, Villegas Sample Method: 4" x 6" Core Rod
 Well Permit #2007040402, 2007040400 Driller's License: C57-283326

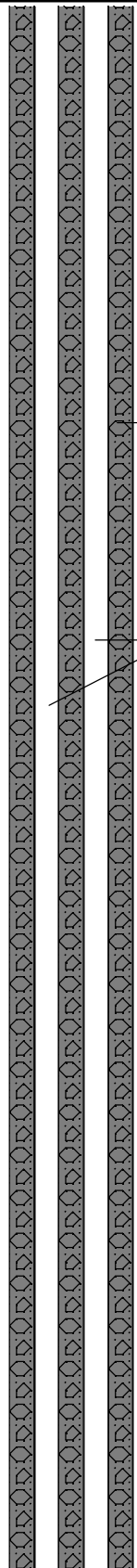
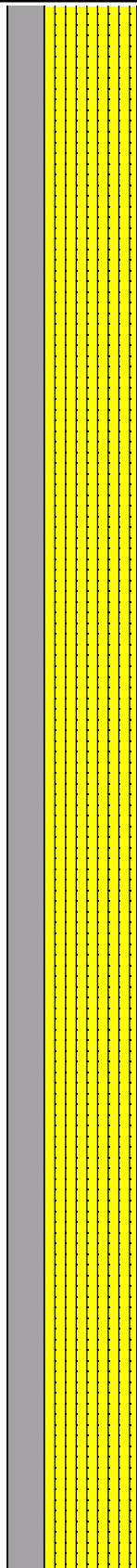
WELL CONSTRUCTION

LITHOLOGIC DESCRIPTION

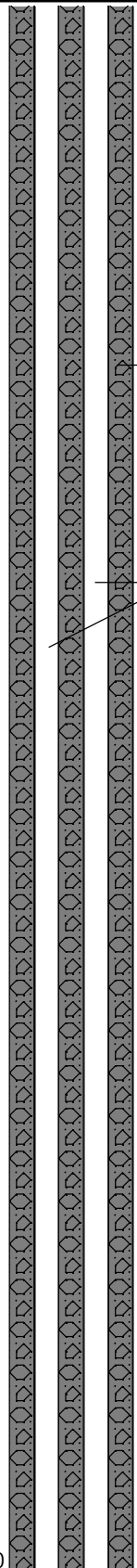
Boring Diameter (inches): 10



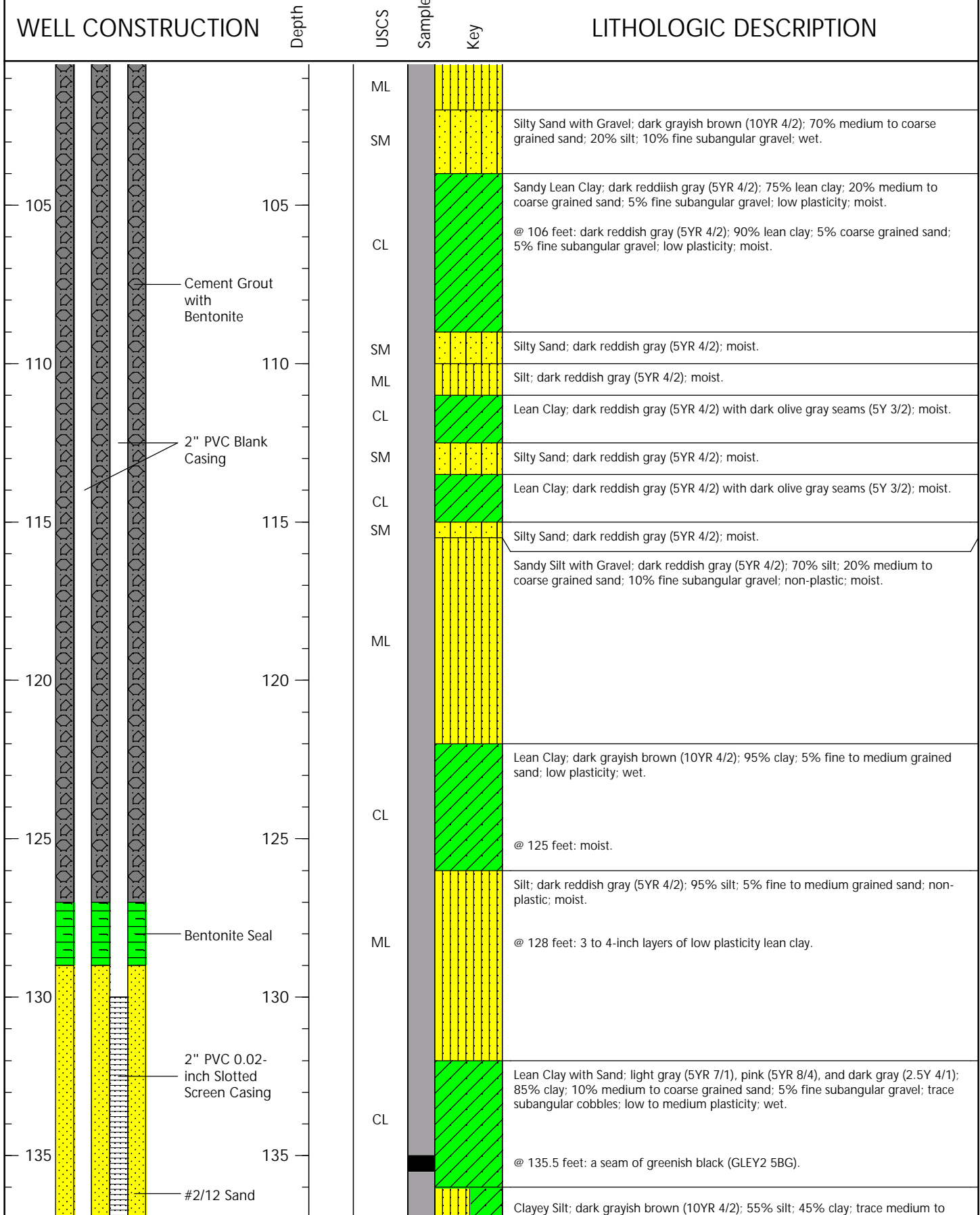
LOG OF BORING PT-7 S/D (Continued)

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>	30 35 40 45 50 55 60	ML ML		@ 30 feet: Silt with Sand; 90% silt; 10% medium to coarse grained sand. @ 31 feet: Silt with Gravel; 85% silt; 15% fine to coarse subangular gravel ranging from 1 to 3 inches. @ 32 feet: Sandy Silt; grayish brown (10YR 5/2); 60% silt; 40% medium to coarse grained sand; non-plastic; moist. @ 34 feet: trace subangular cobbles ranging from 3 to 4 inches. @ 35 feet: no cobbles. @ 37 feet: changes to light gray (2.5Y 7/2); 75% silt; 25% medium to coarse grained sand; non-plastic; dry. @ 40 feet: Sandy Silt with Gravel; light gray (2.5Y 7/2); 60% silt; 20% fine to coarse grained sand; 20% fine subangular gravel. @ 42 feet: changes to light gray (5Y 7/1). @ 43 feet: changes to pinkish gray (5YR 6/2) to dark reddish brown (5YR 3/4). @ 45 feet: Sandy Silt with Gravel; light gray (2.5Y 7/2); 60% silt; 30% fine to medium grained sand; 10% fine subangular gravel. @ 47 feet: fine to coarse grained sand. @ 63 feet: trace subangular cobbles up to 3.5 inches.	

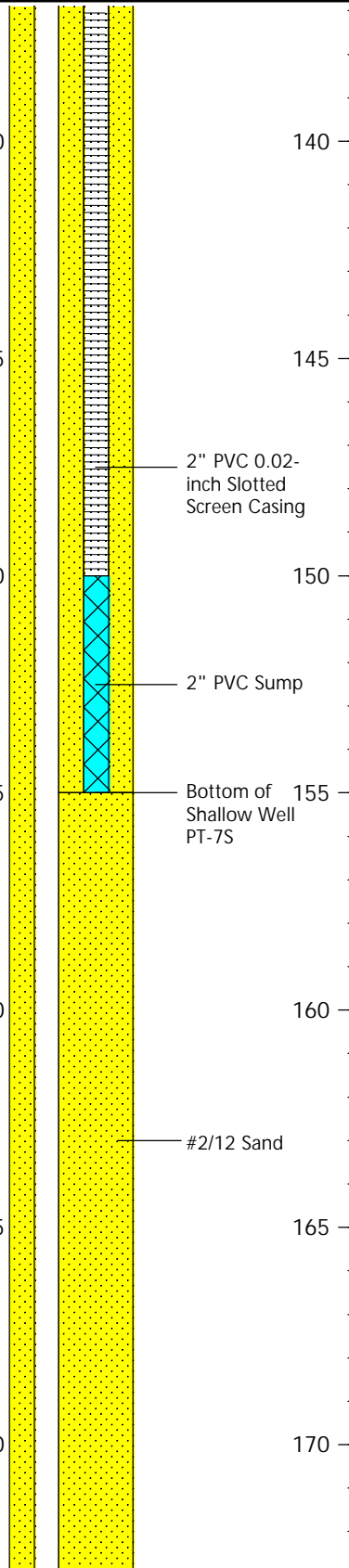
LOG OF BORING PT-7 S/D (Continued)

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	CL			<p>Sandy Clay; dark reddish brown (5YR 3/3); 60% lean clay; 40% fine to coarse grained sand; low plasticity; wet.</p> <p>@ 65 feet: Sandy Clay with Gravel; dark grayish brown (10YR 5/2); 60% lean clay; 30% medium to coarse grained sand; 10% fine subangular gravel; low plasticity; wet.</p>
		SM			<p>Silty Sand; dark grayish brown (10YR 5/2); 90% medium to coarse grained sand; 10% silt; non-plastic; wet.</p>
		CL			<p>Lean Clay with Gravel; very dark gray (6YR 3/1); 90% clay; 10% fine subangular gravel; low plasticity; moist.</p>
					<p>@ 72 feet: Lean Clay; dark grayish brown (10YR 4/2); 95% lean clay; 5% fine subangular gravel; low plasticity; moderately cemented; moist.</p>
		ML			<p>Silt with Sand; light brownish gray (10YR 6/2); 80% silt; 15% coarse grained sand; 5% fine subangular gravel; non-plastic; dry.</p>
					<p>@ 77 feet: trace subangular cobbles.</p>
					<p>@ 78 feet: Sandy Silt with Gravel; light brownish gray; 70% silt; 20% medium to coarse grained sand; 10% fine subangular gravel; trace cobbles to 3.5 inches; non-plastic; dry.</p>
		ML			
		CL			<p>Sandy Clay; dark grayish brown (10YR 4/2) and zones of dark red (10R 3/6); 80% lean clay; 20% medium to coarse grained sand; trace cobbles up to 4 inches; low plasticity; moist.</p>
		ML			<p>Sandy Silt with Gravel; dark grayish brown (10YR 4/2); 55% silt; 35% medium to coarse grained sand; 10% fine to coarse subangular gravel; non-plastic; moist. Thin moderately cemented zones (hardpan).</p> <p>@ 90 feet: pale brown (10YR 6/3); trace subangular cobbles up to 3.5 inches; dry.</p> <p>@ 93 feet: 70% silt; 20% medium to coarse grained sand; 10% fine to coarse grained gravel; trace subangular cobbles.</p> <p>@ 97 feet: larger quantity of cobbles ranging from 3.5 to 4 inches.</p> <p>@ 98 feet: Silt with Gravel; pale brown (10YR 6/3); 85% silt; 10% fine subangular gravel; 5% coarse grained sand; one 3.5-inch subangular cobble; non-plastic; dry.</p>
	ML				<p>@ 100 feet: Sandy Silt with Gravel; pale brown (10YR 6/3); 70% silt; 20% medium to coarse grained sand; 10% fine subangular gravel.</p>

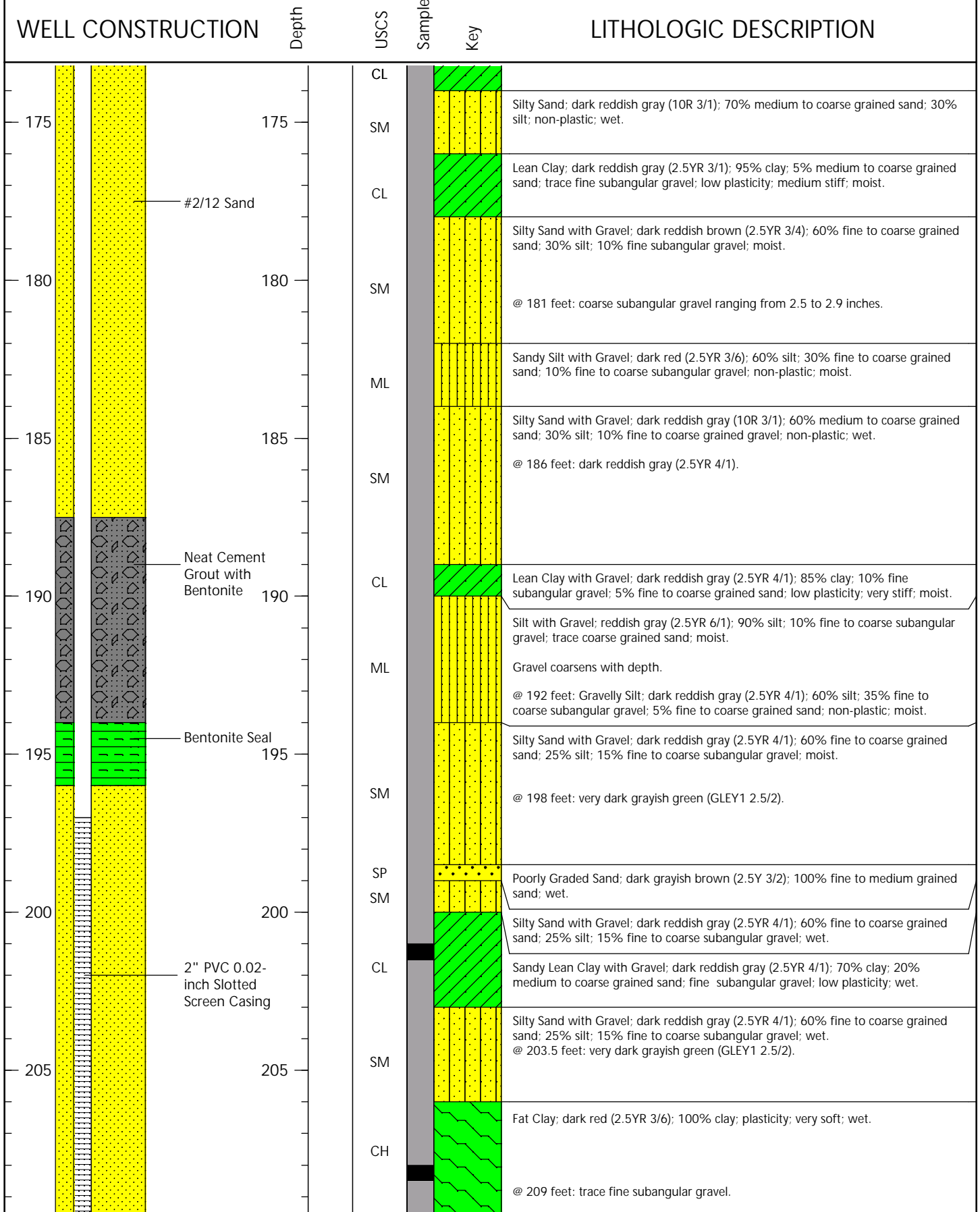
LOG OF BORING PT-7 S/D (Continued)



LOG OF BORING PT-7 S/D (Continued)

WELL CONSTRUCTION	Depth	USCS	Sample	Key	LITHOLOGIC DESCRIPTION
 <p>2" PVC 0.02-inch Slotted Screen Casing</p> <p>2" PVC Sump</p> <p>Bottom of Shallow Well PT-7S</p> <p>#2/12 Sand</p>	140	ML/CL			coarse grained sand and fine subangular gravel; low plasticity; hard; moist.
	140	CL			Lean Clay; dark grayish brown (10YR 4/2); 95% lean clay; 5% medium to coarse grained sand; low plasticity; very stiff; wet.
	145	ML			Silt; dark grayish brown (10YR 4/2); 95% silt; 5% medium to coarse grained sand; non-plastic; hard; moist. @ 144 feet: moderately cemented.
	150	ML			@ 152 feet: Sandy Silt with Gravel; light gray (5Y 7/1); 70% silt; 20% medium to coarse grained sand; 10% fine subangular gravel; non-plastic; very soft; moist.
	155	ML			@ 156 feet: very dark grayish brown (10YR 3/2); with areas of light reddish brown (2.5YR 7/4) and dark red (2.5YR 3/6); 60% silt; 30% fine to coarse grained sand; 10% fine subangular gravel.
	160	CL			Lean Clay with Sand; dark reddish gray (2.5YR 3/1) with areas of light reddish brown (2.5YR 7/4) and dark red (2.5YR 3/6); 90% lean clay; 10% fine to medium grained sand; low plasticity; soft; wet.
	165	SM			Silty Sand; dark reddish gray (2.5YR 4/1); 90% medium to coarse grained sand; 10% silt; wet.
	165	ML			Silt with Gravel; dark reddish gray (2.5YR 4/1) with areas of light red (2.5YR 7/8); 80% silt; 15% fine subangular gravel; 5% medium to coarse grained sand; non-plastic; wet.
	165	CL			Silty Clay with Sand; dark reddish brown (2.5YR 3/4); 50% clay; 40% silt; 10% coarse grained sand; low plasticity; wet.
	170	ML			Sandy Silt with Gravel; dark reddish gray (2.5YR 4/1); 70% silt; 20% medium to grained sand; 10% fine subangular gravel; non-plastic; moist.
	170	CL			Lean Clay; dark reddish gray (10R 3/1); 95% clay; 5% medium to coarse grained sand; low plasticity; very soft; wet.

LOG OF BORING PT-7 S/D (Continued)



LOG OF BORING PT-7 S/D (Continued)

