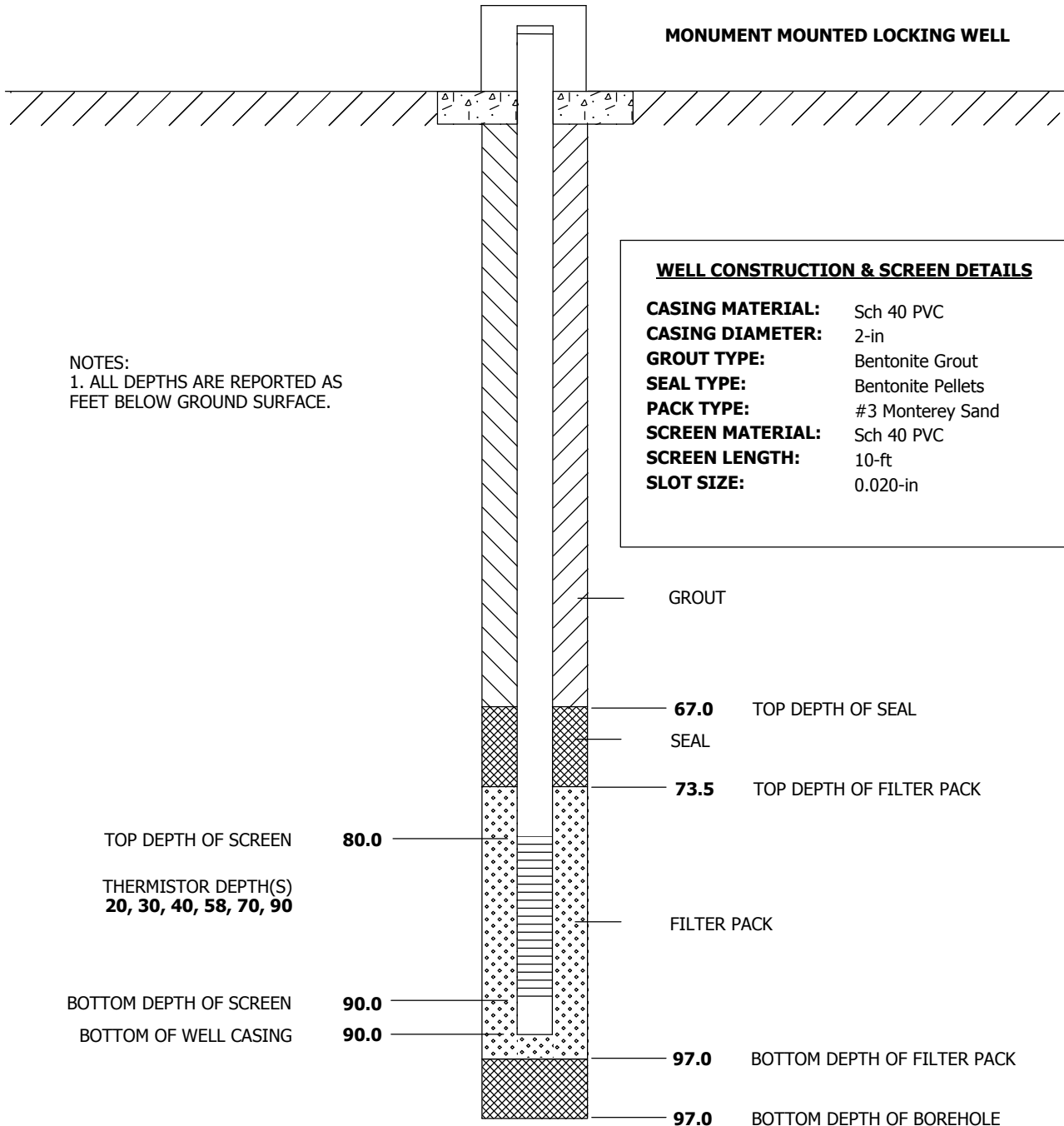


# WELL COMPLETION DIAGRAM

<b>PROJECT NO:</b> 326228.IM	<b>PROJECT:</b> PG&E Topock, Interim Measures, Phase 2 (2005)	<b>WELL NO:</b> MW-43-090
<b>LOCATION:</b> Floodplain, N. side of 1-40 bridge ROW, 1/4 mi SE of MW-20 Bench.		
<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Phoenix, AZ		<b>DRILLING START DATE:</b> 02/23/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>DRILLING END DATE:</b> 02/23/2005
<b>LOGGER:</b> B. Trebble, T. Lae		<b>WELL COMPLETION DATE:</b> 02/24/2005
<b>TOP OF WELL CASING (NGVD 29):</b> 462.76		<b>NORTHING COORDINATE (CCS DAND 27, ZONE 5):</b> 2101824.65
<b>GROUND SURFACE ELEVATION (NGVD 29):</b> 459.94		<b>EASTING COORDINATE (CCS NAD 27 ZONE 5):</b> 7616693.23

## MONUMENT MOUNTED LOCKING WELL



### WELL CONSTRUCTION & SCREEN DETAILS

<b>CASING MATERIAL:</b>	Sch 40 PVC
<b>CASING DIAMETER:</b>	2-in
<b>GROUT TYPE:</b>	Bentonite Grout
<b>SEAL TYPE:</b>	Bentonite Pellets
<b>PACK TYPE:</b>	#3 Monterey Sand
<b>SCREEN MATERIAL:</b>	Sch 40 PVC
<b>SCREEN LENGTH:</b>	10-ft
<b>SLOT SIZE:</b>	0.020-in

**NOTES:**  
1. ALL DEPTHS ARE REPORTED AS FEET BELOW GROUND SURFACE.

TOP DEPTH OF SCREEN      **80.0**

THERMISTOR DEPTH(S)  
**20, 30, 40, 58, 70, 90**

BOTTOM DEPTH OF SCREEN      **90.0**

BOTTOM OF WELL CASING      **90.0**

GROUT

**67.0**      TOP DEPTH OF SEAL

SEAL

**73.5**      TOP DEPTH OF FILTER PACK

FILTER PACK

**97.0**      BOTTOM DEPTH OF FILTER PACK

**97.0**      BOTTOM DEPTH OF BOREHOLE

WELL DIAGRAM IS NOT TO SCALE

**SOIL BORING LOG**

<b>PROJECT NAME:</b> PG&E Topock, Interim Measures, Phase 2 (2005)		<b>HOLE DEPTH (ft):</b> 97.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Phoenix, AZ	
<b>SURFACE ELEVATION:</b> 459.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,101,824.65	<b>EASTING (CCS NAD 27 Z 5):</b> 7,616,693.23	<b>DATE STARTED:</b>	<b>DATE COMPLETED:</b>
<b>DRILLING METHOD:</b>		<b>WATER LEVEL (ft):</b>	<b>DRILLING EQUIPMENT:</b>	
<b>LOCATION:</b> Floodplain, N. side of 1-40 bridge ROW, 1/4 mi SE of MW-20 Bench.			<b>LOGGED BY:</b> B. Trebble, T. Lae	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION  SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	COMMENTS  DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
5			6	SP	<p><b>POORLY GRADED SAND (SP)</b> - olive yellow 2.5YR6/6, 95% f sand, 5% ang gravel to 4 ft, subrnd, loose, damp, trace organics</p> <p>- topsoil organic rich</p>	<p>collect bag samples for archive description and potential grain-size testing.</p>
10		CC1	10		<p>- 100% subrnd f sand</p>	<p>saturated below 10 ft</p> <p>at 10:00 collect MW43(USGS, PW, RESP)-12</p>
15					<p>- trace organics to ~16 ft</p>	
20		CC2	10		<p>- olive yellow 2.5YR6/6, 100% f sand, saturated</p>	<p>at 10:05 collect MW43(USGS, PW, RESP)-20</p>
25						<p>at 10:45 collect MW43-24.5 (hex chrome)</p>
30		CC3	11		<p>at 11:00 collect MW43(USGS, PW, RESP)-30</p>	
35						

**SOIL BORING LOG**

<b>PROJECT NAME:</b> PG&E Topock, Interim Measures, Phase 2 (2005)		<b>HOLE DEPTH (ft):</b> 97.0		<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Phoenix, AZ	
<b>SURFACE ELEVATION:</b> 459.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,101,824.65	<b>EASTING (CCS NAD 27 Z 5):</b> 7,616,693.23		<b>DATE STARTED:</b>	<b>DATE COMPLETED:</b>
<b>DRILLING METHOD:</b>		<b>WATER LEVEL (ft):</b>		<b>DRILLING EQUIPMENT:</b>	
<b>LOCATION:</b> Floodplain, N. side of 1-40 bridge ROW, 1/4 mi SE of MW-20 Bench.				<b>LOGGED BY:</b> B. Trebble, T. Lae	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
40		CC4	10		<p><b>POORLY GRADED SAND (SP)</b> - olive yellow 2.5YR6/6, 95% f sand, 5% ang gravel to 4 ft, subrnd, loose, damp, trace organics</p> <p>- lt brn gray 10YR6/2, 70% f sand, 29% m sand, 1% gravel, subrnd to subang</p> <p>- olive yellow, 100% sand, subrnd</p>	at 11:15 collect MW43(USGS, PW, RESP)-40
45					<p>- 99% sand, 1% fines</p> <p>- increase in fines to 95%</p>	at 11:40 collect MW43(USGS, PW, RESP)-44.5
50		CC5	10		<p>- 95% sand, subrnd to subang, 1st occurrence of 5% subrnd gravel</p>	at 13:10 collect MW43(USGS, PW, RESP)-50
55					<p>- start of interspersed coarse gravel, 93% sand, 5% gravel, 2% fines</p> <p>- 84% sand, 15% gravel, 1% fines</p>	
60		CC6	10			
65				GW	<p><b>WELL GRADED GRAVEL (GW)</b> - 65% rnd-vrnd gravel up to 2", 33% sand, 2% fines</p>	at 14:00 collect MW43-64.5
70				SW	<p>- 85% f sand, 10% gravel, 5% m sand</p>	

**SOIL BORING LOG**

<b>PROJECT NAME:</b> PG&E Topock, Interim Measures, Phase 2 (2005)		<b>HOLE DEPTH (ft):</b> 97.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Phoenix, AZ	
<b>SURFACE ELEVATION:</b> 459.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,101,824.65	<b>EASTING (CCS NAD 27 Z 5):</b> 7,616,693.23	<b>DATE STARTED:</b>	<b>DATE COMPLETED:</b>
<b>DRILLING METHOD:</b>		<b>WATER LEVEL (ft):</b>	<b>DRILLING EQUIPMENT:</b>	
<b>LOCATION:</b> Floodplain, N. side of 1-40 bridge ROW, 1/4 mi SE of MW-20 Bench.			<b>LOGGED BY:</b> B. Trebble, T. Lae	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION  SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	COMMENTS  DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.	
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)				
75		CC7	10	SW	<b>GRAVELLY SAND (SW)</b> - lt yellow brn 2.5YR6/3, 65% subrnd to subang sand, 35% f subrnd to rnd gravel, loose  - 65% sand, 35% gravel  - lt brn gray 2.5YR6/2, 83% sand, 15% gravel, 2% fines	at 14:05 collect MW43(USGS, PW, RESP)-70	
80		CC8	10			- 69% sand, 30% gravel, 1% fines	at 14:15 collect MW43(USGS, PW, RESP)-80, GS sample 83'
85						- 64% sand, 35% gravel, 1% fines	at 15:00 collect MW43-84.5 (hex chrome)
90		CC9	10	BR	<b>CONGLOMERATE (BR)</b> - dk reddish brn 2.5YR3/4, conglomerate consists of 65% sand, 25% fines (silt), 10% gravel, dry, weakly-moderately cemented fanglomerate	Top Miocene Conglomerate at 89 ft at 15:50 collect MW43(USGS, PW, RESP)-90  very hard drilling	
95						at 16:30 collect MW43-94.5 (hex chrome)	
					Boring Terminated at 97 ft		
					<b>ABBREVIATIONS</b> cc = continuous core run brn = brown lt = light dk = dark vf = very fine-grained f = fine-grained m = medium-grained c = coarse-grained		

**SOIL BORING LOG**

<b>PROJECT NAME:</b> PG&E Topock, Interim Measures, Phase 2 (2005)		<b>HOLE DEPTH (ft):</b> 97.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Phoenix, AZ	
<b>SURFACE ELEVATION:</b> 459.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,101,824.65	<b>EASTING (CCS NAD 27 Z 5):</b> 7,616,693.23	<b>DATE STARTED:</b>	<b>DATE COMPLETED:</b>
<b>DRILLING METHOD:</b>		<b>WATER LEVEL (ft):</b>	<b>DRILLING EQUIPMENT:</b>	
<b>LOCATION:</b> Floodplain, N. side of 1-40 bridge ROW, 1/4 mi SE of MW-20 Bench.			<b>LOGGED BY:</b> B. Trebble, T. Lae	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION  SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	COMMENTS  DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
	INTERVAL	TYPE/ NUMBER	RECOVERY (ft)			
					vc = very coarse-grained ang = angular subang = subangular subrnd = subrounded rnd = rounded br = bedrock formation ss = sandstone conglom = conglomerate comptd = compacted qtz = quartz	