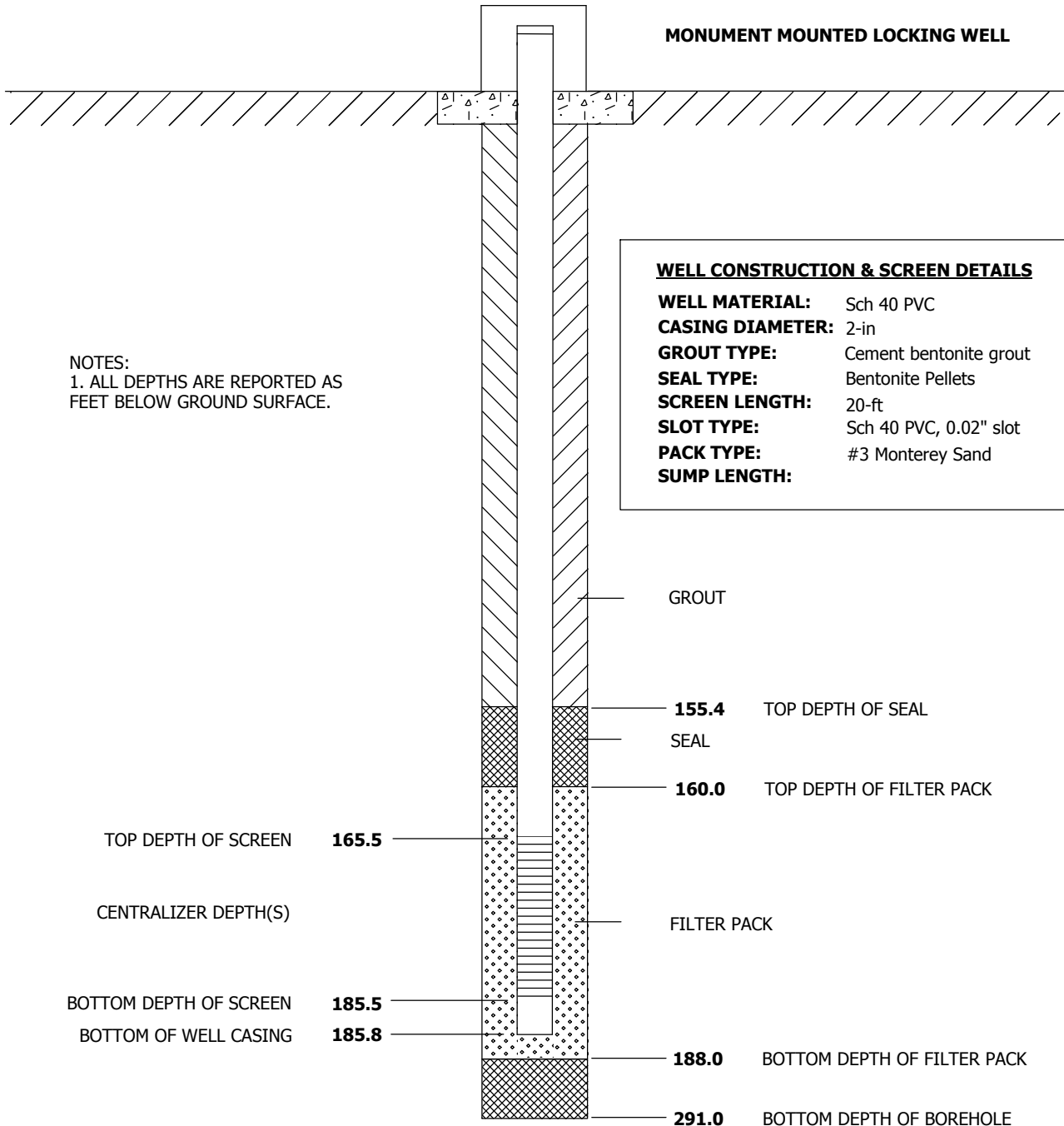


# WELL COMPLETION DIAGRAM

<b>PROJECT NO:</b> 326128.01.07.AR	<b>PROJECT:</b> IM-3 Hydrogeologic Investigation, PG&E Topock	<b>WELL NO:</b> OW-1M
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06		
<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA		<b>DRILLING START DATE:</b> 09/24/2004
<b>DRILLING METHOD:</b> Rotosonic		<b>DRILLING END DATE:</b> 09/25/2004
<b>LOGGER:</b> J. Weigel		<b>WELL COMPLETION DATE:</b> 09/25/2004
<b>TOP OF WELL CASING (NGVD 29):</b> 550.36		<b>NORTHING COORDINATE (CCS DAND 27, ZONE 5):</b> 2103038.38
<b>GROUND SURFACE ELEVATION (NGVD 29):</b> 547.75		<b>EASTING COORDINATE (CCS NAD 27 ZONE 5):</b> 7613428.89



WELL DIAGRAM IS NOT TO SCALE

**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 291.0	<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA	
<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

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		Box 1 Box 2	10	SM	<b>GRAVEL WITH SAND AND SILT (SM)</b> - lt brnsh gray (10YR 6/2), 50% f-c sand, 25% f-m gravel, 25% fines, subang to subrnd clasts.  -layers of carbonate cement up to 3" thick, cemented layers are GM/SM. Cemented zones from 11' to 15' bgs - 3" metamorphic gneissic cobble  - 10YR6/2 fines decreasing, cemented layers 1-2" thick  - wet color 7.5YR5/3  - think cemented zones	11:40, dry-hot core barrel		
10		Box 3	5			12:00, 3" cobble at 11 ft bgs, metamorphic gneiss		
15		Box 4 Box 5	6			15:30, set casing stage bins		
20		Box 5 Box 6	5			GM/SM	<b>WELL GRADED GRAVEL WITH SAND AND SILT (GM/SM)</b> - <= 20% fines.	
25		Box 6 Box 7 Box 8	8			GM	<b>WELL GRADED SANDY GRAVEL (GM)</b> - lt brnsh gray to lt gray (10YR 6/2 to 7/2), 50% f-m gravel, 40% f-c sand, 10% fines, schist, gneiss, metamorphic clasts.  - 50% f-c subrnd to subang gravel, 40% f-c subang sand, moist	hot core barrel
30								
35								



**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 291.0	<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA	
<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

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)			
40		Box 8	8	GM	<b>WELL GRADED SANDY GRAVEL (GM)</b> - lt brnsh gray to lt gray (10YR 6/2 to 7/2), 50% f-m gravel, 40% f-c sand, 10% fines, schist, gneiss, metamorphic clasts.  - thin, weakly cemented zones fining upward	
45		Box 11	5	SM	<b>SAND WITH GRAVEL AND SILT (SM)</b> - lt gray (10YR 7/2), 50% f-c sand, 30% f-c gravel, 20% silt, subrnd to subang, little cementation, moisture increasing with depth.  - white 10YR8/1, 50% f-c sand, 30% silt, 20% gravel, subang-subrnd	
50		Box 12 Box 13	5	SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - very pale brn (10YR 7/3), 75% f-c sand, 25% gravel, subang to subrnd, no cementation.  - igneous/metamorphic rock up to cobble size	
55		Box 13 Box 14	4.5	ML/CL	<b>SILT/CLAY WITH SAND (ML/CL)</b> - pale brn (10YR 6/3), 60% silt, 37% f-c sand, < 3% gravel, wet, decreasing moisture with depth.	wet sample, decreasing moisture with increase in depth
60		Box 14 Box 15 Box 16	6	SW	<b>SAND WITH GRAVEL AND FINES (SW)</b> -lt gray (2.5Y 7/1), 60% f-c sand, 30% gravel, 10% silt, subrnd to subang, coarsening downwards, relatively dry.  - gravel increasing to 40% subang-ang	sample relatively dry compared to upper sections, coarsening downward
65		Box 16 Box 17	6	SW/GM	<b>SAND/GRAVEL WITH SILT (SW/GM)</b> - lt gray (10YR 7/2), 55% f-c sand, 40% gravel, 5% silt, ang to subrnd.  - some minor cementation, dissolves in water  - metamorphic and gneissic clasts	
70					- lt gray 10YR7/2 50% f-m sand, 30% silt, 20% ang-subang gravel	

**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 291.0	<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA	
<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotasonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

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		Box 18	6	SW/GM	<b>SAND/GRAVEL WITH SILT (SW/GM)</b> - lt gray (10YR 7/2), 55% f-c sand, 40% gravel, 5% silt, ang to subrnd.  -calcium carbonate cement caliche 3-5"	clay on sides of core from core barrel  5" silt zone
80		Box 19 Box 20	6	SM	<b>SAND WITH SILT AND CLAY (SM)</b> - 80% f-c sand, 20% silt/clay.  - caliche 1-2"	
				ML/SM	<b>SILT WITH SAND (ML/SM)</b> - lt gray (10YR 7/2), 50% silt/clay, 50% fine sand.	
85		Box 21	4	SW	<b>WELL GRADED SAND WITH SILT AND GRAVEL (SW)</b> - 60% f-c sand, 30% gravel, 10% fines, ang to subang.  - cemented, not CaCO3	
90		Box 22 Box 23	10	SM	<b>SAND WITH SILT (SM)</b> - very pale brn (10YR 7/3), 50% f-m sand, 45% silt, 5% gravel, ang to subang.  - lt gray 10YR7/2, 65% well graded f-c sand, 20% silt, 15% subrnd-ang gravel, fairly moist but drying with depth, igneous and mm clasts  - very pale brn 10YR7/3, 50% sand, 30% silt/clay, 20% gravel, fining upward, grain supported, quartzite and mm clasts	
95					- composition pale brn, 10YR6/3  - lt gray 10YR7/2	
100		Box 24 Box 25 Box 26	12		- 40% silt/clay, 30% f-c sand ang-subang, 10% gravel	groundwater grab sample collected from 100-116 ft bgs
				ML	<b>SILT WITH SAND AND GRAVEL (ML)</b> - lt brnish gray (10YR 6/2), 50% silt, 40% f-c sand, 10% gravel, ang-subrnd, low plasticity.	
105				SW/SM	<b>WELL GRADED SAND WITH SILT AND GRAVEL (SW/SM)</b> - lt reddish	



**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 291.0		<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA	
<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85		<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotasonic		<b>WATER LEVEL (ft):</b> ---		<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06				<b>LOGGED BY:</b> J. Weigel	

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)			
110				SW/SM	brn (5YR 6/3), 75% f-c sand, 15% fines, 10% gravels, subrnd, grain supported, mm clasts. <b>WELL GRADED SAND WITH SILT AND GRAVEL (SW/SM)</b> - lt reddish brn (5YR 6/3), 75% f-c sand, 15% fines, 10% gravels, subrnd. <b>WELL GRADED SAND WITH SILT AND GRAVEL (SM)</b> - lt reddish gray (5YR 5/2), 70% f-c sand, 25% fines, 5% gravels, subang to subrnd, grain supported, natural soil moisture.	fell apart in core barrel
115		Box 27 Box 28 Box 29	10	SM	- less cemented zone	
120				CL/ML	<b>CLAY AND SILT WITH SAND AND GRAVEL (CL/ML)</b> - olive gray (5Y 5/2), 65% med plasticity silt/clay, 30% f-c sand, 5% gravel, matrix supported.	hot core barrel
125		Box 30 Box 31	7	SM/SC	<b>WELL GRADED SAND WITH GRAVEL AND SILT AND CLAY (SM/SC)</b> - 55% f-c sand, 40% silt/clay, 5% gravel.	
130				ML/CL	<b>SILT AND CLAY WITH GRAVEL AND SAND (ML/CL)</b> - olive brn (2.5Y 4/3 to 4/4) to lt yellowish brn (2.5Y 6/4), 65% silt/clay, 25% f-c sand, 10% gravel, subang, low-med plasticity, matrix supported, wet.  - lt olive 2.5Y5/3, 60% silt/clay, 35% f-c sand, 5% gravel, dry	
135		Box 32 Box 33 Box 34	10	SC	<b>SAND WITH SILT, CLAY AND GRAVEL (SC)</b> - pale brn (10YR 6/3) to lt olive gray (5Y 6/2), 60% f-m sand, 35% silt/clay, 5% gravel, ang to subang.  - fining up sequence	
140		Box 35 Box 36	6	SM	<b>SAND AND SILT WITH GRAVEL (SM)</b> - dark grayish brn (2.5Y 4/2), 50% f-c sand, 40% silt/clay, 10% gravel, ang-subang, med plasticity.  - 4" seam of low plasticity silt / clay	

**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 291.0		<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA	
<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004	
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---		<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel		

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
145				SM	<p><b>SAND AND SILT WITH GRAVEL (SM)</b> - dark grayish brn (2.5Y 4/2), 50% f-c sand, 40% silt/clay, 10% gravel, ang-subang, med plasticity, grain edge contact, grain supported, dry.</p> <p>- sand with silt and gravel, lt yellowish brn 2.5YR6/3 and 10YR7/1, 60% f-c sand, 40% silt/clay, 5% gravel</p>	<p>DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.</p> <p>groundwater grab sample collected from 160-180 ft bgs</p> <p>casing at 160', borehole to 180'</p>
150		Box 36 Box 37 Box 38	10	ML/SM	<p><b>SAND AND SILT WITH GRAVEL (ML/SM)</b> - lt gray (10YR 7/1) to lt gray (2.5Y 7/2) 40% f-c sand, 40% silt, 20% gravel.</p> <p>- 2.5Y7/2 lt gray, 55% silt, 35% f-c sand, 10% gravel</p>	
155				SM/ML	<p><b>SAND AND SILT WITH GRAVEL (SM/ML)</b> - brn (10YR 5/3), 50% fines, 45% f-c sand, 5% gravel, not cemented, wet.</p> <p>- grayish brn 10YR5/2 45% f-c sand, 40% silt, 15% gravel, ang-subang, dry</p>	
160		Box 39 Box 40 Box 41	10		<p><b>SAND WITH GRAVEL AND SILT (SM)</b> - brn (10YR 5/3), 55% f-c sand, 30% silt, 15% gravel.</p> <p>- silt content increasing with depth, gravel content decreasing</p> <p>- brn 10YR5/3, C208 50% silt, 48% f-c sand, 2% gravel</p>	
165				SM	<p>- brn 10YR5/3, 65% f-c sand, 20% silt, 15% gravel, ang-subang, moist</p> <p>- gray 2.5Y5/1, 60% silt, 30% sand, 10% gravel, ang-subang, med plasticity</p>	
170		Box 41 Box 42	8		<p>- wet</p> <p>- metamorphic clasts</p>	
175					<p>- lt olive brn 2.5Y5/3, 75% well grade f-c sand, 20% silt, 5% gravel, loose</p> <p>- lt yellowish brn 2.5YR6/3, 50% sand, 45% silt, 5% gravel, moist, tight</p>	

**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
180		Box 43 Box 44	8	SM	<p><b>SAND WITH GRAVEL AND SILT (SM)</b> - brn (10YR 5/3), 55% f-c sand, 30% silt, 15% gravel.</p> <ul style="list-style-type: none"> <li>- compacted</li> <li>- lt olive brn 2.5Y5/3, 55% sand, 30% silt, 15% gravel, ang mm clasts, sample broken and dry</li> </ul>	<p><b>DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.</b></p>
185		Box 45 Box 46	6.5	SW/SM	<p><b>SAND WITH SILT AND GRAVEL (SW/SM)</b> - yellowish brn (10YR 5/4), 70% subang to ang sand, 20% silt, 10% subrnd gravel up to 3".</p> <p><b>SILT AND SAND WITH GRAVEL (ML/SM)</b> - yellowish brn (10YR 5/4), 50% silt/clay, 45% sand, 5% gravel, ang to subang.</p> <ul style="list-style-type: none"> <li>- last sand and gravel, mm origin</li> <li>- lt yellowish brn 2.5Y6/3, 60% silt/clay, 30% f-c sand, 10% gravel, subang-subrnd, med plasticity, matrix supported</li> </ul>	
190				ML/SM	<ul style="list-style-type: none"> <li>- dry and loose, oscillating silt and clay</li> <li>- moist and tight</li> </ul>	
195		Box 47 Box 48 Box 49	10		<ul style="list-style-type: none"> <li>- moist mm clasts</li> </ul>	
200						
205				SM	<p><b>WELL GRADED SAND AND SILT WITH GRAVEL (SM)</b> - pale brn (10YR 6/3), 50% sand, 40% fines, 10% coarse gravel up to 1.5", ang, stiff, grain edge supported, moist to wet.</p> <ul style="list-style-type: none"> <li>- lt olive brn 2.5Y5/3, 50% sand ang, clast supported, 45% silt/clay, 5% gravel</li> <li>- 65% f-c sand, 20% silt, 15% gravel ang-subang, metamorphic clasts, loose, wet</li> </ul>	
210		Box 50 Box 51 Box 53	0	ML/CL	<p><b>SILT AND CLAY WITH SAND AND GRAVEL (ML/CL)</b> - lt olive brn (2.5Y 5/3), 60% silt/clay, 35% f-c sand, 5% gravel, matrix supported, med plasticity, alternates between clast and matrix supported.</p>	

8:00, tripping in



**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotasonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

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)			
215					<b>NO RECOVERY</b>	sample fell out of core barrel and was redrilled
220		Box 54	6		<b>SAND AND SILTY CLAY WITH GRAVEL (SM/ML)</b> - lt olive brn (2.5Y 5/3), 55% f-c sand, 40% silt/clay, 5% ang to subang gravel up to 1.75", moist, cohesive, soft, mm clasts, increasing sand and clay with depth.  - gravel up to 3" - 3" sand zone, 65% sand, 30% silt, 5% gravel up to 3", stiff	drilling is hard  groundwater grab sample collected from 220-236 ft bgs  sample went from hard to soft
225				SM/ML	- lt yellowish brn 2.5Y6/3, 80% f-c sand subang-ang, 15% gravel subrnd-subang, 5% silt, soft, loose and moist  - 80% silt/clay, 10% gravel to cobble, 10% f-m sand, m-h plasticity  - 60% sand, 20% silt, 20% gravel, 3" sand / silt seam	
230		Box 55 Box 56 Box 57	12		- lt yellowish brn 2.5Y6/3, 85% f-c sand, 10% silt, 5% gravel	
235					- grayish brn 2.5Y5/2, 45% f-c sand, 40% silt/clay, 15% gravel, subrnd-ang, mm	
240		Box 53	0		<b>NO RECOVERY</b>	drilling is hard, broke casing at drill head at depth, casing at 180 ft bgs, had to shake core barrel to get out of hole, lost sample
245						



**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

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)			
250				SW/GP	<b>NO RECOVERY</b>  <b>SAND AND GRAVEL WITH FINES (SW/GP)</b> - grayish brn (2.5Y 5/2), 55% m-c subang to subrnd sand, 40% f-m subang to rnd gravel, 5% silt.  - gravely well graded sand with silt, lt olive brn 2.5Y5/3, 65% f-c sand, 20% f gravel ang-subang grain supported	246 ft bgs - formation tight, water flows out of casing while tripping in core barrel drilling is hard
255		Box 59 Box 60 Box 61	11	ML/CL	<b>SILT AND CLAY WITH SAND (ML/CL)</b> - lt olive brn (2.5Y 5/3), 70% m. plasticity fines, 35% f-c sand, 5% gravel, ang to subang. <b>SAND WITH SILT AND CLAY (SM/ML)</b> - lt olive brn (2.5Y 5/3), 50% fines, 48% f-c sand, 2% gravel, ang to subang, med plasticity, alternating zones of matrix and grain supported.  - silty well graded sand with gravel, 55% f-c sand, 35% silt/clay, 10% f-m gravel, 2.5" max gravel size	
260				SM/ML		
265		no sample return	0			
270				GM	- sandy silty clay with gravel, grayish brn, 60% fines, 30% f-c sand, 10% ang-subang gravel  <b>GRAVEL WITH SILT (GM)</b> - grayish brn (2.5Y 5/2), 90% f-c gravel, 10% fines, bimodal distribution.	drilling is hard, tried to wash down with casing from 246 to 266 ft bgs, cement casing broke on washdown, core barrel stuck -- had to vibrate to get it out, lost sample    hard and tight
275		Box 62	3	ML/CL	<b>SANDY SILTY CLAY WITH GRAVEL (ML/CL)</b> - dark grayish brn (2.5Y 4/2), 60% silt, 35% f-c sand, 5% gravel, subrnd to subang, matrix supported, metamorphic, stiff, moist.	
		Box 63	5	CL	<b>SILT AND CLAY WITH SAND (CL)</b> - lt olive brn (2.5Y 5/3), 80% silt/clay, 15% sand, 5% gravel.	
				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - grayish brn (2.5Y 5/2), 75% f-c sand, 20% gravel, 5% fines, bimodal distribution.	
280				SM/ML	<b>SILTY SAND WITH GRAVEL (SM/ML)</b> - lt olive brn, 55% f-c sand, 40% fines, 5% f-gravel, edge supported, increasing silt with depth.	



**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 291.0	<b>DRILLING CONTRACTOR:</b> WDC Exploration & Wells, Montclair, CA	
<b>SURFACE ELEVATION:</b> 547.8 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,030.90	<b>EASTING (CCS NAD 27 Z 5):</b> 7,613,420.85	<b>DATE STARTED:</b> 09/09/2004	<b>DATE COMPLETED:</b> 09/22/2004
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic SS-15K	
<b>LOCATION:</b> East Mesa, Parcel No. 650-151-06			<b>LOGGED BY:</b> J. Weigel	

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)			
285		Box 65	6	SM/ML	<p><b>SILTY SAND WITH GRAVEL (SM/ML)</b> - lt olive brn, 55% f-c sand, 40% fines, 5% f-gravel, edge supported. - calcium carbonate cement</p> <p>- gravely silt/clayey sand, 40% f-c sand, 35% silt/clay, 25% f-gravel, subang-subrnd, grain supported, l-m dense, wet</p>	<p>ran casing after core barrel became stuck, casing broke, lost sample</p>
290		no sample return	0	<b>NO RECOVERY</b>		
					<p>Boring Terminated at 291 ft</p> <p><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                      vc = very coarse-grained                      ang = angular                      subang = subangular                      subrnd = subrounded                      rnd = rounded                      br = bedrock formation                      ss = sandstone                      conglom = conglomerate                      comptd = compacted                      qtz = quartz</p>	