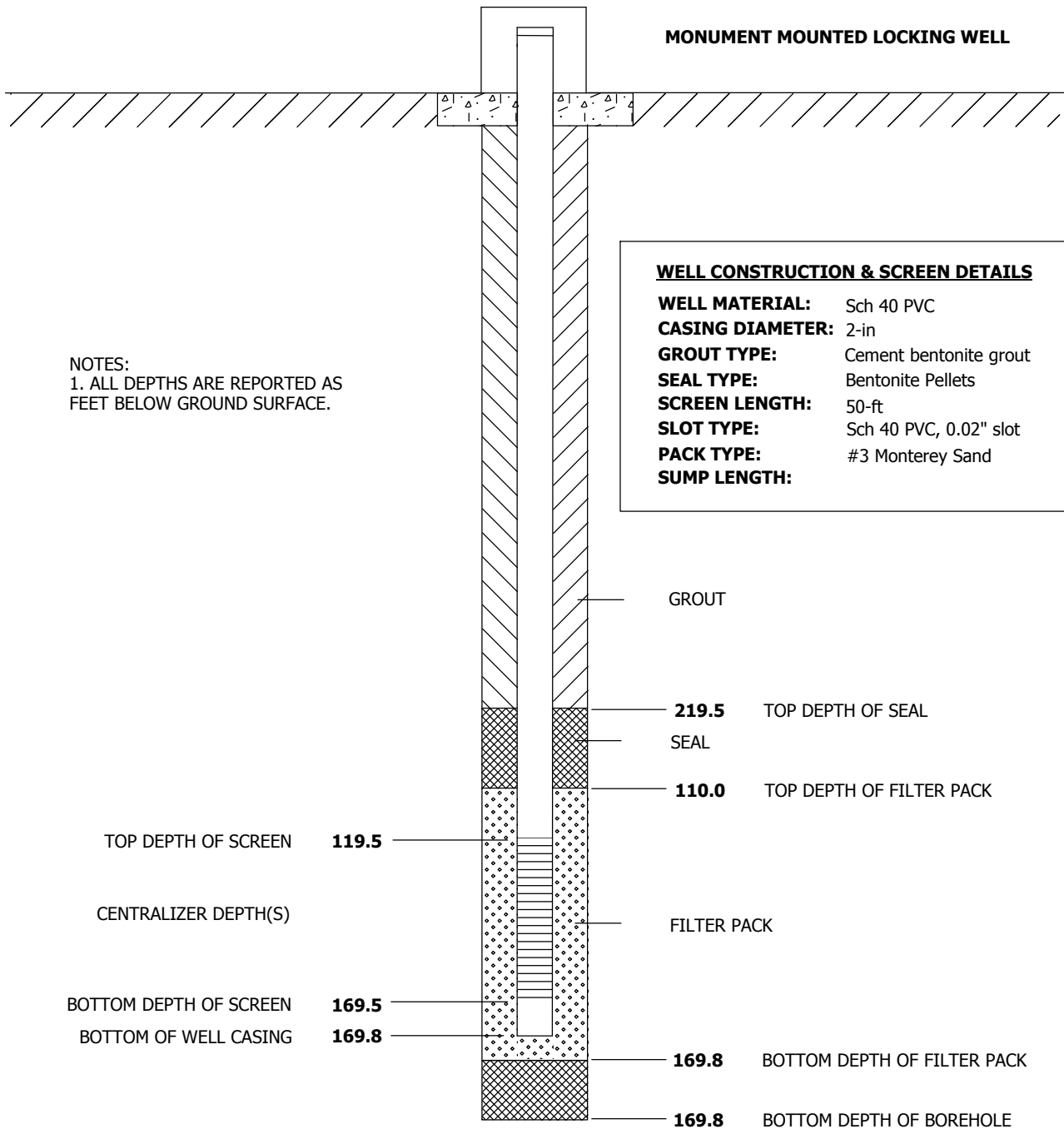


# WELL COMPLETION DIAGRAM

<b>PROJECT NO:</b> 326128.01.07.AR	<b>PROJECT:</b> IM-3 Hydrogeologic Investigation, PG&E Topock	<b>WELL NO:</b> CW-4M
<b>LOCATION:</b> Bat Cave Wash Between East & West Mesas, Parcel No. 650-151-06		
<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Mareta, OH		<b>DRILLING START DATE:</b> 01/17/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>DRILLING END DATE:</b> 01/01/2005
<b>LOGGER:</b> B. Moayyad, B. Trebble		<b>WELL COMPLETION DATE:</b> 01/17/2005
<b>TOP OF WELL CASING (NGVD 29):</b> 518.55		<b>NORTHING COORDINATE (CCS DAND 27, ZONE 5):</b> 2103268.73
<b>GROUND SURFACE ELEVATION (NGVD 29):</b> 515.80		<b>EASTING COORDINATE (CCS NAD 27 ZONE 5):</b> 7612925.43



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> 337.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Maretta, OH	
<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

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)			
0						Conductor casing set to 10 ft bgs, wash casing to 48 ft bgs without collection of core. Per work-plan, drilled interval in unsaturated zone was not logged.
45						cuttings well graded sand with gravel, brn 10YR5/3, medium hard, dry
50					<b>WELL GRADED SAND WITH GRAVEL AND SILT (SW)</b> - brn 10YR3/2, 50% sand, 35% gravel up to 2.2" long, 15% fines (silt), no clay (predominantly f sand), subang Igneous and metamorphic.	continuous coring started at 48 ft bgs
55		CC1	10	SW	- becomes moist - sand becomes more coarse. Pale brn 10YR6/3, 60% sand, 30% gravel, 10% fines	
60						saturated (water table) groundwater grab sample collected from 58-78 ft bgs
65		CC2	10	SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 10YR5/3, 70-75% sand, 15-20% gravel, 10% fines (some clay), subrnd, igneous and metamorphic, hard, wet. - becomes subang with more clay, 65% sand, 20% gravel, 5% fines - <5% fines	some decomposing MM gravels  drilling becomes difficult
70				SW	<b>WELL GRADED SAND WITH CLAY AND GRAVEL (SW)</b> - brn 10YR4/3, 55% f sand, 25% fines, 20% gravel, subang, one cobble 4" long, metamorphic, hard, wet.	collect CW-4-68 @ 10:40 on 1/11/05

**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 337.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Maretta, OH	
<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

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		CC3	9.5	SW	<b>WELL GRADED SAND WITH CLAY AND GRAVEL (SW)</b> - brn 10YR4/3, 70% sand, 20% gravel, 10% fines, subang, one cobble 4" long, metamorphic, hard, wet.	
80					<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - dk grayish brn 10YR4/2, 45% ang sand with med c grains, 25% gravel, 20% fines, 10% cobbles up to 4.5", igneous and metamorphic, hard, wet.	stop drilling at 78ft to bail from 58-78 ft
85		CC4	9.5	SW	- no cobbles, 60% sand, 25% gravel, 15% fines	very difficult drilling
90						
95		CC5	9	SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - dk grayish brn 10YR4/5, 72% subrnd sand, 25% subang to subrnd gravel, < 3% fines, m dense, wet.	cleaner, grayier zone
				SW-GW	<b>WELL GRADED SAND AND GRAVEL (SW)</b> - dk grayish brn 10YR4/3, 50% sand, 40% gravel, 10% fines, subang to ang metamorphic, hard, wet.	decomposing MM cobbles
100				SW	<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - dk brn 7.5YR3/3, 65% sand, 20% gravel, 15% fines, hard, wet.	
105		CC6	9		<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/3, 75% subang to subrnd sand, 20% subang gravel, 5% fines, medium density.	



## SOIL BORING LOG

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 337.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Maretta, OH	
<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotasonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
110				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/3, 75% subang to subrnd sand, 20% subang gravel, 5% fines, medium density.	<p>DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.</p> <p>groundwater grab sample collected from 118-138 ft bgs</p> <p>collect sample CW-4-128 on 1/11/05. End of 1/11/05 drilling day</p> <p>at 15:45 stop drilling to bail for sample</p>
				GW	<b>WELL GRADED GRAVEL AND COBBLES (GW)</b> - 40% gravel, 10% sand, 10% fines, subrnd.	
				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - 75% sand, 20% gravel, 5% fines.	
				ML	<b>SANDY SILT (ML)</b> - brn 7.5YR4/3, 35% sand, 5% gravel, non plastic, firm, wet.	
115		CC7	9.5		<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/3, 60% sand, 30% gravel, 10% fines, subang, medium density, wet.	
120					<ul style="list-style-type: none"> <li>- 65% sand, 5% fines, gravel is predominantly gneiss</li> <li>- 58% c subrnd sand, 10% gravel, 5% fines</li> <li>- silty layer, 60% sand, 25% gravel, 5% fines</li> </ul>	
125		CC8	10	SW	<ul style="list-style-type: none"> <li>- well graded sand with gravel (SW), grayish brn 10YR 5/2, 75% subrnd sand, 20% subang gravel, 5% fines, igneous and metamorphic, medium density, wet</li> <li>- cobbles</li> </ul>	
130					<ul style="list-style-type: none"> <li>- color changes to brn 7.5YR4/3</li> </ul>	
135		CC9	10		<ul style="list-style-type: none"> <li>- 75% sand, 15% gravel, 10% fines</li> </ul>	
140				SW	<ul style="list-style-type: none"> <li>- <b>WELL GRADED SAND WITH GRAVEL AND SILT (SW)</b> - brn 7.5YR4/3, 65% sand, 20% gravel, 15% fines, subang, igneous and metamorphic, hard, wet.</li> <li>- cobble zone</li> </ul>	

**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 337.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Maretta, OH	
<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
145		CC10	10	SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/3, 75% f and c sand, 20% predominantly f gravel, 5% fines, subang, igneous and metamorphic, medium density, wet, occasional cobble 3".	slough not kept for core box
150				GW	<b>WELL GRADED GRAVEL WITH COBBLES (GW)</b> - gray 10YR6/1, 55% gravel, 35% subang cobbles up to 5.7" long, 5% sand, igneous and metamorphic, hard, dry.	finer wash into cobbles and gravel?
155		CC11	9.5	SW	<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - 55% sand, 25% gravel, 20% fines.	
160				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - gray 5YR5/1 sand and gravel, strong brn 7.5YR4/6 fines, 65% sand, 30% gravels up to 2.5", 5% fines, subang to ang, igneous and metamorphic, hard, wet.  - gray sand	
165		CC12	10	SW	<b>WELL GRADED SAND (SW)</b> - dk gray 7.5YR4/2, 85% sand, 10% fines, 5% gravel, subang, medium. <b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - brn 7.5YR4/4, 55% sand, 30% gravel, 15% fines, subang, medium hard, wet.  - gravel is mostly coarse, cobbles present up to 5.5 inch	
170					<b>WELL GRADED SAND WITH GRAVEL (SW)</b> -brn 7.5YR4/4, 65% sand, 30% gravel which is mostly fine, 5% fines, subang, igneous and metamorphic, medium density, wet.  - 60% sand, 10% fines	
175		CC13	9.5		- color change to gray and brn 7.5YR5/1 and 5/2	

**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
180		CC14	9.5	SW	<p><b>WELL GRADED SAND WITH GRAVEL (SW)</b> -brn 7.5YR4/4, 65% sand, 30% gravel which is mostly fine, 5% fines, subang, igneous and metamorphic, medium density, wet.</p> <ul style="list-style-type: none"> <li>- less gravel, 75% sand, 20% gravel, 5% fines</li> <li>- gray 7.5YR5/1, 55% sand, 35% gravels, 10% fines, cobbles up to 3.3 inch</li> <li>- less gravel, 75% sand, 20% gravel, 5% fines</li> </ul>	groundwater grab sample collected from 178-198 ft bgs
185					<p>- brn 7.5YR4/4, better grading below 185.5ft, cobbles up to 3-4 inch, 80% sand, 10% gravel, 5% cobbles, 5% fines</p>	
190				SP	<b>POORLY GRADED SAND (SP)</b> - gray, f sand fining upwards, <3% fines, subang, clean, wet.	
				GP	<b>POORLY GRADED GRAVEL (GP)</b> - gray 7.5YR5/1.	
					- grades to subrnd c sand	
					- fine gravel	
195		CC15	9	SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - gray, 80% sand, 15% subang to subrnd c gravel, 5% fines, wet.	
200				SC	<b>CLAYEY SAND WITH GRAVEL (SC)</b> - brn 7.5YR4/4, 40% sand, 30% f to c gravel, 30% fines, ang, igneous and metamorphic, medium density, wet.	
205				SW	<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - brn 7.5YR4/4, 50% subang sand, 30% ang gravel, 20% fines, hard, wet.	
210		CC16	18		<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - strong brn 7.5YR4/6, 60% sand, 35% gravel, 5% fines, subrnd igneous and metamorphic, hard, wet.	



**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
215				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - strong brn 7.5YR4/6, 60% sand, 35% gravel, 5% fines, subrnd igneous and metamorphic, hard, wet.  - gravels up to 1.5 inch	refusal in metamorphic bedrock
				SW	<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - strong brn 7.5YR4/6, 55% sand, 30% gravel, 15% fines, subang, hard, wet.	
220				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/4, 60% sand, 30% gravel, 10% fines, subang to subrnd, medium density, wet.  - cobble zone, 35% sand, 30% cobbles, 20% gravel, 15% fines	
225					- brn 7.5YR4/3	
230		CC17	19		- becomes strong brn 7.5YR4/6 with more c sand, 65% sand, 25% gravel, 10% fines	
235				SW	<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - brn 7.5YR4/3, 45% sand, 35% gravel, 20% fines, subang, igneous and metamorphic, medium hard, wet.	
240				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/3, 78% subrnd sand, 15% subang gravel up to 2" long, 7% fines, medium density, wet.	groundwater grab sample collected from 238-258 ft bgs
245						



**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
250		CC18	18	GW	<b>WELL GRADED GRAVEL WITH COBBLES AND SAND (GW)</b> - brn 7.5YR4/3, 40% gravel, 30% sand, 20% cobbles, 10% fines, ang, wet.	
				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - 75% sand, 20% gravel. - cobble zone, 45% sand, 25% gravel, 20% cobbles, 10% fines - 50% sand, 40% gravel, 10% fines	
				SW	<b>WELL GRADED SAND WITH GRAVEL AND CLAY (SW)</b> - brn 7.5YR4/2, 50% sand, 30% gravel, 10% fines, 10% cobbles, ang to subang, hard, wet.	
255				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/2, 65% sand, 30% gravel, 5% fines, subang to ang, hard, wet.	
260				GW	<b>WELL GRADED GRAVEL WITH SILT AND SAND (GW)</b> - brn, 60% subang to ang gravel, 20-25% sand, 15-20% fines (silt), hard, wet.	
265		CC19	9	SW	<b>WELL GRADED SAND WITH GRAVEL AND SILT (SW)</b> - 45% sand, 40% gravel, 15% fines.	
				GW	<b>WELL GRADED GRAVEL WITH SAND AND SILT (GW)</b> - brn, 60% gravel, 20-25% sand, 15-20% fines, hard.	
				GW	<b>WELL GRADED GRAVEL (GW)</b> - bluish gray 10YR36/1, 65% ang gravel, 32% sand, 3% fines, hard, wet.	
270				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR5/6, 75% sand, 20% fine gravel, subrnd igneous and metamorphic, medium density, wet.  - gravel becomes more coarse and subang below 273 ft	
275		CC20	18	GW	<b>COBBLES WITH SAND</b> - bluish gray, 25% sand, 5% fines, ang cobbles.	
					<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - reddish brn 7.5YR4/4, 55% subang sand, 40% c gravel, 5% reddish brn silt, ang, medium hard, wet.	
280						



**SOIL BORING LOG**

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<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS	
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)				
285				SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - reddish brn 7.5YR4/4, 55% subang sand, 40% c gravel, 5% reddish brn silt, ang, medium hard, wet.		
				SW	<b>WELL GRADED SAND WITH GRAVEL AND COBBLES (SW)</b> - bluish gray 10B6/1, 55% sand, 25% cobbles, 15% gravel, 5% fines, hard, wet.		
				SW / GW	<b>WELL GRADED SAND AND GRAVEL (SW / GW)</b> - brn 7.5YR5/4, ang 45-50% gravel, 45-50% sand, 3-5% fines, hard, wet.  - silty zone, 50% gravel, 35% sand, 15% fines		
290				SW / GW			
295		CC21	9.5	SW	<b>WELL GRADED SAND WITH GRAVEL AND SILT (SW)</b> - reddish brn 5YR4/4 and 2.5YR4/4, 50% sand, 25% gravel, 25% silty fines, subang, medium density, wet.  - metamorphic, boulder? cobbles? weathered		red fanglomerate (reworked)
300					<b>CLAYEY SAND AND GRAVEL (GC / SC)</b> - reddish brn 5YR4/4, 35-40% ang gravel, 35-40% subang sand, 25% fines, hard, wet.		groundwater grab sample collected from 298-318 ft bgs  red fanglomerate (reworked)
305		CC22	9	GC / SC	- weathered MM bedrock, bolder? cobbles?  - cobbles		
310							
315		CC23	9.5	SW	<b>WELL GRADED SAND WITH GRAVEL (SW)</b> - brn 7.5YR4/4, 60% sand, 25% f gravel, 5% fines, subang to ang, medium, wet.  - more silt below 312 ft, 60% sand, 25% gravel, 15% fines	oldest alluvium?	

**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 337.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Maretta, OH	
<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

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)			
320				BR	<b>CONGLOMERATE (BR)</b> - brn 7.5YR4/4, 55% fines, 20% cobbles, 15% sand, 10% gravel, subang, non plastic, hard.	top Miocene conglomerate estimated at 315 ft bgs
325				BR	<b>CONGLOMERATE (BR)</b> - reddish brn (5YR4/14), hard, 25% gravel, subang, 30% rnd, 45% fines.	encountered rocks at 323'
330		CC24	17.1	BR	<b>CONGLOMERATE (BR)</b> - brn 7.5YR4/4, hard, 20% subang gravel, 15% cobbles, 25% sand, 40% fines  - cobbles and ang rock fragments are metamorphic	
335				BR	<b>BEDROCK (BR)</b> - weathered, fractured metamorphic rock with fill	
					Boring Terminated at 337 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 vc = very coarse-grained ang = angular subang = subangular subrnd = subrounded rnd = rounded br = bedrock formation ss = sandstone	



**SOIL BORING LOG**

<b>PROJECT NAME:</b> IM-3 Hydrogeologic Investigation, PG&E Topock		<b>HOLE DEPTH (ft):</b> 337.0	<b>DRILLING CONTRACTOR:</b> Prosonic Corp. Maretta, OH	
<b>SURFACE ELEVATION:</b> 515.9 ft. MSL	<b>NORTHING (CCS NAD 27 Z 5):</b> 2,103,263.03	<b>EASTING (CCS NAD 27 Z 5):</b> 7,612,928.74	<b>DATE STARTED:</b> 01/10/2005	<b>DATE COMPLETED:</b> 01/14/2005
<b>DRILLING METHOD:</b> Rotosonic		<b>WATER LEVEL (ft):</b> ---	<b>DRILLING EQUIPMENT:</b> Sonic AT (track mounted)	
<b>LOCATION:</b> Wash Between East & West Mesas, Parcel No. 650-151-06			<b>LOGGED BY:</b> B. Moayyad, B. Trebble	

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)			
					conglom = conglomerate comptd = compacted qtz = quartz	