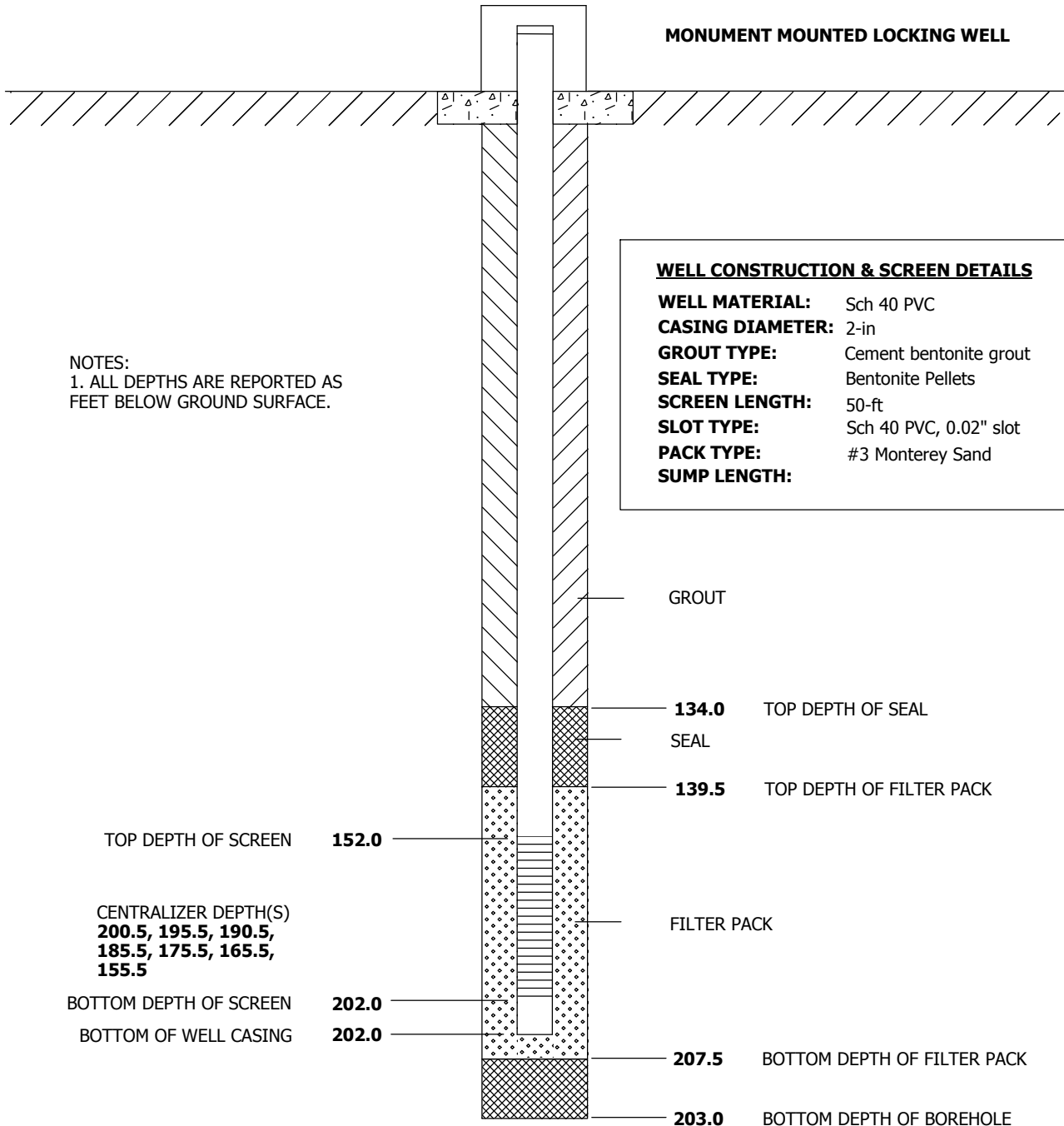


WELL COMPLETION DIAGRAM

PROJECT NO: 326128.01.07.AR	PROJECT: IM-3 Hydrogeologic Investigation, PG&E Topock	WELL NO: CW-2M
LOCATION: East Mesa Area, Parcel No. 650-151-06		
DRILLING CONTRACTOR: WDC Exploration & Wells, Montclair, CA		DRILLING START DATE: 02/05/2005
DRILLING METHOD: Rotosonic		DRILLING END DATE: 02/05/2005
LOGGER: E. Gray		WELL COMPLETION DATE: 02/05/2005
TOP OF WELL CASING (NGVD 29): 549.45		NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2103106.51
GROUND SURFACE ELEVATION (NGVD 29): 546.64		EASTING COORDINATE (CCS NAD 27 ZONE 5): 7613795.76

MONUMENT MOUNTED LOCKING WELL



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

WELL CONSTRUCTION & SCREEN DETAILS

WELL MATERIAL: Sch 40 PVC
CASING DIAMETER: 2-in
GROUT TYPE: Cement bentonite grout
SEAL TYPE: Bentonite Pellets
SCREEN LENGTH: 50-ft
SLOT TYPE: Sch 40 PVC, 0.02" slot
PACK TYPE: #3 Monterey Sand
SUMP LENGTH:

WELL DIAGRAM IS NOT TO SCALE

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

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 88 ft bgs without collection of core. Per work-plan, drilled interval in unsaturated zone was not logged. Drilling returns in unsaturated zone were primarily well-graded sand with silt and gravel.
85						
90		CC1	10	SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - pale brn (10YR6/3), 65% sand, 15% igneous and metamorphic gravel, 10% silt, 10% cobbles up to 4.3" long, ang, medium density, dry-silty moist.</p> <ul style="list-style-type: none"> - more coarse 2.5-3", 60% sand, 35% subang gravel, 5% fines - becomes moist - 4-4.5 inch cobbles at 94', 96' and 97' - brn 7.5YR4/4, 55% ang to subang sand, 30% subang gravel, 10% subang cobbles, 5% fines, dense, moist to wet 	continuous coring started at 88 ft bgs
95						
100				SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn 7.5YR4/3, 60% sand, 30% subang gravel, 10% fines, medium density, wet.	
		CC2	8.5	SW	WELL GRADED SAND WITH SILT (SW) - brn 7.5YR4/3, 80% sand, 10% gravel, 10% silt, medium density, wet.	
105				GW	WELL GRADED GRAVEL (GW) - brn 7.5YR5/3, 55% mostly f gravel,	



SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
110				SW	42% sand, 3% fines, ang metamorphic, dense, wet. WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/3, 55% sand, 40% gravel, 3% fines, subang igneous and metamorphic grains, medium density, wet.	groundwater grab sample collected from 108-128 ft bgs
				SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - gray 7.5YR5/1, 70% sand, 15% gravel, 10% fines, cobbles up to 4", subang, medium density, wet.	
115		CC3	8	SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/2, 70% subrnd m sand, 27% c gravel up to 2.2" long, 3% fines, hard, wet. - 4.5" metamorphic cobbles, possibly larger, fractured by core	
120		CC4	10	SW	WELL GRADED SAND WITH SILT (SW) - brn, 70% sand, 20% silt, 10% gravel, medium density, wet.	collect sample CW2-118 at 13:30
125				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/2, 70% sand, 27% gravel, 3% fines, occasional cobbles up to 4" long, subrnd to subrnd, hard, wet. - becomes coarser below 121.5 ft, more silt, less fine sand, 60% sand, 32% gravel, 8% silt	core settles in bags and looks shorter
130		CC5	9	SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn 7.5YR4/2, 65% subrnd sand, 20% subang gravel, 15% fines, cobbles up to 3.3" long, medium density, wet.	bail 30 gals at 128 ft bgs
135				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn, 80% subrnd sand, 12% subang gravel up to 2" long, 8% fines, hard, wet.	
140				SW	WELL GRADED SAND WITH GRAVEL AND SILT (SW) - brn 7.5YR4/2, 55% subrnd sand, 25% subang gravel, 15% fines, 5% cobbles up to 4.2" long, hard, wet.	
						no core 138-140 ft bgs - seemed similar not preserved, fell into cutting pipe



SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
145		CC6	7.2	SW	WELL GRADED SAND (SW) - gray 7.5YR5/1, 93% sand, 5% gravel, 2% fines, subang to ang igneous and metamorphic, medium density, wet.	DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES. core barrel breaks on 148-158 ft run, retrieve, end day 1/19/05 logging on 1/20/05 groundwater grab sample collected from 168-188 ft bgs
				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/3, 75% sand, 17% subang gravel up to 2.5" long, 8% fines, hard, wet. - more gravel below 146 ft, 70% sand, 25% gravel, 5% fines	
150				SW	- material fell back into hole when pipe breaks, appears to be well graded sand with gravel and silt	
155				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 84% f sand, 12% f gravel, 4% fines, subang to ang, medium density, wet. - grades to more and c gravel - 157-158.5 ft: 70% sand, 25% gravel up to 2.2 inch long, 5% fines	
160		CC7	18	SW	WELL GRADED SAND WITH GRAVEL AND CLAY (SW) - brn, 60% sand, 25% gravel, 15% clay, subang, hard, wet.	
				SW	WELL GRADED SAND WITH GRAVEL AND SILT (SW) - brn 7.5YR5/2, 60% sand, 30% gravels up to 2.3" long, 10% fines, subang igneous and metamorphic grains, medium hard, wet.	
165				SM	SILTY SAND WITH GRAVEL (SM) - brn 7.5YR4/3, 60% sand, 12% gravel, 23% silt, subang to subrnd, medium density, non-plastic, wet. - sand grades to gravel	
				GM	SILTY GRAVEL (GM) - brn, 45% gravel, 30% silt, 25% sand, hard, wet.	
170				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 70% sand, 25% gravel up to 2.5" long, 5% fines, occasional cobbles, subang, metamorphic, medium density, wet .	
175				SW	SILTY SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 60% sand, 20-25 % silty and silty plastic fines, 15-20% gravel which is predominantly <1" long, no cobbles, subang, hard, wet. - 60% sand, 20-25% gravel, 15-20% fines	

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
180		CC8	18	GW	<p>SILTY SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 60% sand, 20-25% silty and silty plastic fines, 15-20% gravel which is predominantly <1" long, no cobbles, subang, hard, wet.</p> <p>WELL GRADED GRAVEL WITH CLAY (GW) - brn 7.5YR4/3, 50% gravel, 35% sand, 15% fines, no cobbles, clay and silt present, ang, hard, wet.</p> <p>- more sandy below 183 ft</p>	<p>DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.</p>
185				GW/SW	<p>WELL GRADED GRAVEL AND SAND (GW/SW) - brn, 45% gravel, 45% sand, 10% fines, subang, hard, wet.</p>	
				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - brn, 70% sand, 20% subang f gravel, 10% fines, medium density, wet.</p>	
				GW	<p>WELL GRADED GRAVEL (GW) - brn 7.5YR5/2, 60% f c gravel, 30% sand, 10% fines, subrnd, hard, wet.</p>	
190				SW	<p>WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn 7.5YR5/2, 58% sand, 30% subrnd gravel up to 2.5" long, 12% silty fines, hard, wet.</p>	
				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - brn, 60% sand, 35% gravel, 5% fines, subrnd, hard, wet.</p>	
				GM	<p>SILTY GRAVEL AND COBBLES (GM and COBBLES) - 30% gravel, 25% cobbles, 25% sand, 20% silty fines.</p>	
195				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - reddish brn 5YR4/4, 70% sand, 20% subrnd gravel, 5% fines, 5% cobbles up to 3.7" long, subang igneous and metamorphic grains, medium hard, wet.</p> <p>- more brn and silty more silty from 196.5-199 ft</p>	
200				SM	<p>SILTY SAND WITH GRAVEL (SM) - reddish brn 5YR4/4, 55-60% sand, 25% silty fines, 15-20% gravel, predominantly silt to f gravel, medium density, wet.</p> <p>- more gravel below 202.5 ft, 50% sand, 25% gravel, 25% silt and clay</p>	
205				GW	<p>WELL GRADED GRAVEL WITH CLAY (GW) - gray 7.5YR5/1, 65% gravel, 25% sand, 10% fines, ang metamorphic sand and gravel, hard, moist, clay lenses and coatings on gravel.</p> <p>- evidence of clay infiltration by water</p>	
210				SC	<p>CLAYEY SAND WITH GRAVEL (SC) - brn 5YR4/3, 65% sand, 25% clay and silt, 15% f gravel, subrnd to subang, medium density, wet.</p>	

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

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		CC10	8.5	SM	<p>SILTY SAND WITH GRAVEL (SM) - brn 5YR4/3, 60-65% sand, 20-25% silty fines, 15% gravel, subrnd, medium density, wet.</p> <p>- some larger gravels</p>	
220		CC11	8.5	GW	<p>WELL GRADED GRAVEL WITH CLAY (GW) - brn, 50% gravel, 35% sand, 15% fines, hard, wet, some clay coatings on gravel, silt and clay lenses.</p> <p>- 75% sand, 55% gravel, 25% cobbles, 5% fines</p>	
225				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/3, 70% sand, 20% gravel, 10% fines, subrnd, hard, wet.</p>	
				SW	<p>WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn, 50% sand, 35% gravel, 15% fines, subang, hard, wet.</p>	
				GW	<p>WELL GRADED GRAVEL WITH SAND (GW) - brn, 55% gravel, 40% sand, 5% fines, clay coatings, ang, hard, wet.</p>	
230		CC12	17	SW	<p>WELL GRADED SAND WITH GRAVEL AND CLAY (SW) - reddish brn 5YR4/4, 60% sand, 30% gravel up to 2.3" long, 10% fines, subrnd igneous and metamorphic grains, medium density, wet.</p> <p>- well graded sand with gravel, as above with less fines and gravel, brn 7.5YR4/4, 75% sand, 20% gravel, 5% fines</p> <p>- becomes gray 7.5YR5/1</p>	groundwater grab sample collected from 228-248 ft bgs
235				ML	<p>SANDY SILT (ML) - dk greenish gray 10BG4/1, 30% sand, silty plastic, soft, wet.</p>	
240				SM	<p>SILTY SAND WITH GRAVEL (SM) - brn 5YR5/2, 60% sand, 20% gravel, 20% fines, subrnd, medium density, wet.</p>	
245				SW	<p>WELL GRADED SAND WITH GRAVEL AND SILT (SW) - reddish brn 5YR4/3, 67% sand, 30% gravel, 13% fines including some clay, subang, medium hard, wet.</p>	core through 6+ inches intact rock hard

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
					WELL GRADED SAND WITH GRAVEL AND SILT (SW) - reddish brn 5YR4/3, 67% sand, 30% gravel, 13% fines including some clay, subang, medium hard, wet.	
250				ML	WELL GRADED SAND WITH SILT AND GRAVELS (ML) - grayish brn 2.5YR5/2, 60% subrnd sand, 20% subang gravel, 20% fines, m dense, damp. -increasing sand, decreasing silt, gravels ang to 3 cm	
				SP	POORLY GRADED SAND WITH SILT (SP) - brn 7.5YR5/3, 85-90% sand, 5-10% gravel, <5% fines, subrnd, loose, damp.	
255				SW	WELL GRADED SAND WITH GRAVEL (SW) - olive gray 5YR5/2, gravels to 7 cm, few cobbles to 10cm, subang, medium dense, damp.	hard, slow and steady drilling
260		CC13	20	SW	WELL GRADED SAND WITH SILT AND GRAVELS (SW) - grayish brn 2.5YR5/2, 60% subrnd sand, 20-25% subang gravel, 15-20% fines, low density, moderate plasticity, damp. - color change to brn 10YR5/3 - same as above with fewer fines, 70-80% sand, 10-20% gravel, <10% fines	
265				SP	POORLY GRADED SAND (SP) - brn 10YR5/3, 90% f to m sand, 5% gravel, <5% fines, loose, damp.	
270				SW	WELL GRADED SAND WITH GRAVEL (SW) - reddish brn 5YR4/3, 60-70% m sand, 35-25% subang gravel to 4cm, <5% fines, damp. - cobble with fines - silt/clay, fragments up to 9 cm - very soft clay with cobble fragments up to 10cm	
275					MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - reddish brn 5YR4/3, 80-90% sand, 5-15% subang gravel, <5% fines, damp.	
280		CC14	20			



SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotasonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

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				SW/SP	MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - reddish brn 5YR4/3, 80-90% sand, 5-15% subang gravel, <5% fines, damp.	groundwater grab sample collected from 288-308 ft bgs
290				SM	- same as above, damp to wet - cobble, same as 270-272 ft, damp to wet SAND WITH SILT AND GRAVEL (SM) - grayish brn 2.5YR5/2, 70% subrnd sand, 20% gravel, 10% fines, loose.	
295				SP	POORLY GRADED SAND WITH GRAVEL (SP) - grayish brn 2.5YR5/2, m sand, few gravels, wet.	
300				SM	SAND WITH SILT AND GRAVEL (SM) - grayish brn 2.5YR5/2, 70% sand, 15% gravel, 15% fines, low plasticity, loose, wet.	
305				SM/SP	MODERATELY GRADED SAND WITH GRAVEL (SM/SP) - grayish brn 2.5YR5/2, gravels subang to 5cm, wet. - wet grading to damp at 302.5 to 308 ft bgs	
310				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 10YR5/3, 80% subrnd sand, 15% subang gravel up to 4 cm, <5% fines, loose, moist to wet.	
				SM	SILTY SAND WITH COBBLES (SM)	
				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/4, 80% subrnd m to c sand, 15% subang gravel up to 4cm, <5% fines, loose, moist to wet.	
315						

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
320		CC16	20	SP/GP SW SW/SP	- f-m sand, medium density POORLY GRADED SAND WITH GRAVEL (SP/GP) - gley 2.5/5BG, greenish black, 95% sand and gravel, <5% fines, gravels up to 3 cm when cleaned gravels resemble gneissic clasts, gravels mottled with red oxidation, subrnd to subang. WELL GRADED SAND WITH GRAVEL (SW) - reddish brn 5YR4/4, 60% subrnd f to m sand, 30-35% subang to ang gravel up to 5 cm, 5-10% fines, few cobbles that resemble gneiss when cleaned, moist. MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - reddish brn 5YR5/4, 85% subrnd f to m sand, 10% subang to ang gravels to 3 cm, <5% fines.	
325					- color grades to dk gray 5YR4/1	
330				SW	WELL GRADED SAND WITH GRAVEL (SW) - olive brn 2.5YR4/3, 70-80% subrnd f to m sand, 15-25% subang gravel to 5 cm, <5% fines, loose, moist to wet.	
335						
340		CC17	20	GW	GRAVELLY SAND/GRAVEL WITH SAND (GW) - reddish brn 5YR4/4, gravels subang to ang to 6 cm, increasing fines content with depth from 5-10% to 20%, low plasticity, dense.	
345				CL SP SM SW	CLAY WITH GRAVEL (CL) - brn 10YR4/3, few f to m sand, few gravels up to 2 cm, low to medium plasticity. POORLY GRADED SAND (SP) - reddish brn 5YR4/4, fine to medium, subrnd, <5% fines, damp. SILTY SAND WITH GRAVEL (SM) - olive brn 2.5YR4/3, 50% sand, 35-30% gravel, 15-20% fines, dense, low plasticity, damp. WELL GRADED SAND WITH GRAVEL (SW) - dk grayish brn 2.5YR4/2, 70% subrnd sand, 15-20% subang gravel, 10-15% fines, dense, low plasticity, dry to damp.	
350					MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - brn 7.5YR4/4, 80% m to c subrnd sand, 15% subang gravel to 5 cm, <5% fines, very low plasticity, loose, damp.	groundwater grab sample collected from 348-368 ft bgs



SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
355		CC18	20	SW/SP	MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - brn 7.5YR4/4, 80% m to c subrnd sand, 15% subang gravel to 5 cm, <5% fines, very low plasticity, loose, damp.	
360				SM/ML	SANDY SILT WITH GRAVEL (SM/ML) - brn 7.5YR4/4, 50-60% sand, >20% fines, remainder subang gravel, well graded, dense, damp.	
365		CC19	17	SW	WELL GRADED SAND (SW) - reddish brn 5YR5/3, 40% m sand, 25% c sand, 25% f sand, 5% gravel, 5% fine, soft, saturated. - 60-70% m sand, 10-30% gravel, 10-20% fines	groundwater grab sample collected from 368-385 ft bgs
370				SM/SP	SILTY SAND (SM/SP) - greenish gray 5GY6/1, 40% silty clay, 30% f sand, 25% m sand, <5% c sand, <5% gravel, moderately soft, moist large cobbles - increasing c sand, mottling with reddish brn 5YR4/4	lots of chatter during drilling, drilling is hard
375				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 10YR5/3, 30% c sand, 30% m sand, 25% f sand, 10% gravel, 5% silt and clay, clasts subang to subrnd up to 4 cm, saturated, soft.	
380				SP/SM	SILTY SAND WITH GRAVEL (SP/SM) - greenish gray 5GY6/1, 30% f sand, 30% silt, 20% m sand, 10% c gravel, 5% f gravel, 5% c sand. - mottling with reddish brn 5YR4/4, decreasing gravel, increasing c and m sand	distinct sweet odor noted from 378-380 ft in one sleeve when cut open on 1/21/05
385				BR	CONGLOMERATE (BR) - reddish brn 5YR4/4, 35% m sand, 20% c sand, 10% gravel, clasts ang to subang	appears to be weathered Miocene conglomerate. Very hard drilling from 380-385 ft

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/ NUMBER	RECOVERY (ft)		SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
					Boring Terminated at 385 ft	
					ABBREVIATIONS 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	