

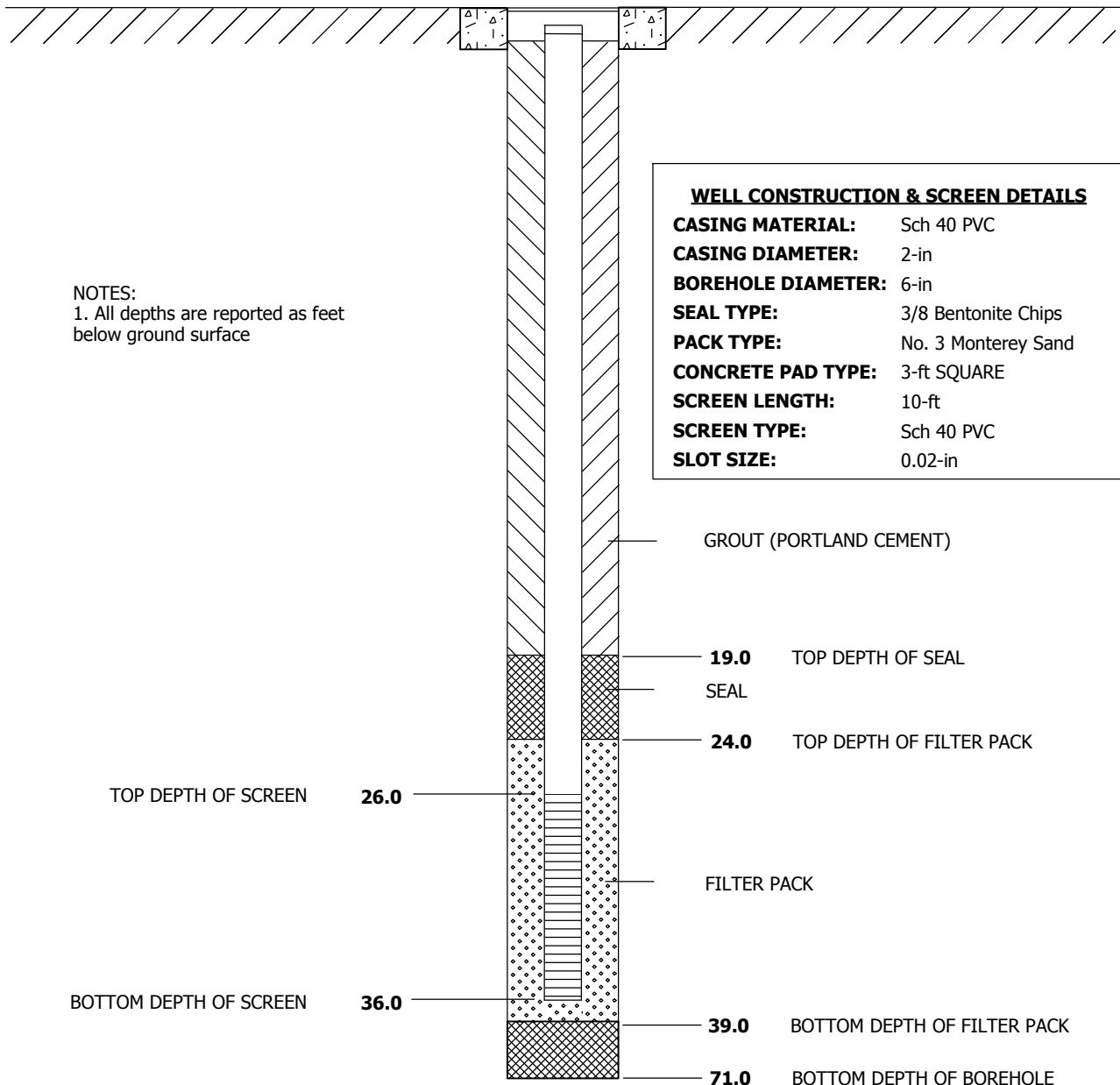
WELL COMPLETION DIAGRAM

PROJECT NO: 417981.ER.02.FW **PROJECT:** ER-TCS Groundwater Investigation **WELL NO:** *MW-71-35*

LOCATION: Site L

DRILLING CONTRACTOR: Boart Longyear (R. Sawrey)	DRILLING START: 9/12/2011
DRILLING METHOD: Rotosonic/Wireline Rotary Core	DRILLING END: 9/14/2011
LOGGER: A. Brewster (Northstar)	WELL COMPLETION DATE: 9/14/2011
GROUND SURFACE ELEVATION (NAVD 88): 484.0 ft AMSL	GENERAL REMARKS: Centralizers at 15 feet bgs. HQ rock core hole 39 to 71 feet bgs backfilled with bentonite chips.
NORTHING (CCS NAD 83 Z 5): 2101338.43 EASTING (CCS NAD 83 Z 5): 7616207.60	

12-IN DIAMETER WELL VAULT (FLUSH WITH GRADE)



WELL CONSTRUCTION & SCREEN DETAILS	
CASING MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in
BOREHOLE DIAMETER:	6-in
SEAL TYPE:	3/8 Bentonite Chips
PACK TYPE:	No. 3 Monterey Sand
CONCRETE PAD TYPE:	3-ft SQUARE
SCREEN LENGTH:	10-ft
SCREEN TYPE:	Sch 40 PVC
SLOT SIZE:	0.02-in

NOTES:
1. All depths are reported as feet below ground surface

WELL DIAGRAM IS NOT TO SCALE



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-71	SHEET 3 OF 4
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : Site L (2101338.4 N, 7616207.6 E)
 ELEVATION : 484.0 ft DRILLING CONTRACTOR : Boart Longyear (R. Sawrey)
 CORING EQUIPMENT AND METHOD : HQ wireline rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 29 ft BGS START : 9/14/2011 END : 9/14/2011 LOGGER : A. Brewster (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
37.0	R1 4 ft 100%	100	0	35' - Note: All fractures in core are mechanical breaks generated during the drilling process, unless otherwise noted.	Conglomerate (Tmc) 35.0-71.0' - dark reddish brown, (10YR 4/4), no dominant mineralogy, heavily cemented, slightly weathered, moderate strength, massive. Angular to very angular clasts. Nobedding or foliation. Well-graded.	R1=0.82 FPM	
40			0				
41.0			0				
45			0				
46.0	R2 5 ft 100%	100	0			R2=0.67 FPM	
50			0				
51.0			0				
55			0				
	R3 5 ft 100%	100	0			R3=0.72 FPM	
			0				
			0				
			0				
	R4 5 ft 100%	100	0			R4=0.75 FPM	
			0				
			0				
			0				



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DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS		
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION	
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS	
56.0	R5 5 ft 100%	100	0		Conglomerate (Tmc) 35.0-71.0' - dark reddish brown, (10YR 4/4), no dominant mineralogy, heavily cemented, slightly weathered, moderate strength, massive. Angular to very angular clasts. Nobedding or foliation. Well-graded.	R5=0.59 FPM		
			0					
			0					
			0					
			0					
60			0					
61.0	R6 5 ft 100%	100	1			61.6' - Joint, 40 deg, rough, planar, no infill material, no staining, tight.		R6=0.57 FPM
			0					
			0					
			0					
			0					
65			0					
66.0	R7 5 ft 100%	100	0		R7=0.77 FPM			
			0					
			0					
			0					
			0					
70			0					
71.0								
					End Drilling on 9/14/2011 Total Borehole Depth: 71.0 ft bgs	This borehole was converted into the following monitoring well(s): MW-71-35		
75								