WELL COMPLETION DIAGRAM **PROJECT:** IMPM Drill Program WELL NO: MW-44-115 **PROJECT NO:** 326128.01.16.EN **LOCATION:** PG&E Compressor Station - Flood Plain, Topock, California **DRILLING CONTRACTOR:** Prosonic (Perry Hormann = Driller) **DRILLING START DATE: 3/7/2006 DRILLING METHOD:** Rotosonic **DRILLING END DATE:** 3/10/2006 LOGGER: Rob Tweidt, Kate Ebel **WELL COMPLETION DATE:** 3/11/2006 TOP OF WELL CASING (NGVD 29): 471.99 NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2102723.85 **GROUND SURFACE ELEVATION (NGVD 29): 470.54** EASTING COORDINATE (CCS NAD 27 ZONE 5): 7616262.11 MONUMENT MOUNTED LOCKING WELL **WELL CONSTRUCTION & SCREEN DETAILS** CASING MATERIAL: **PVC** CASING DIAMETER: 2-in GROUT TYPE: Bentonite Grout 1. ALL DEPTHS ARE REPORTED AS SEAL TYPE: Bentonite Pellets FEET BELOW GROUND SURFACE. PACK TYPE: Monterey beach sand # 3 SCREEN MATERIAL: Sch 40 PVC SCREEN LENGTH: 10-ft SLOT SIZE: 0.02-in **GROUT** 95.0 TOP DEPTH OF SEAL SEAL 100.0 TOP DEPTH OF TRANSITION SAND 101.0 TOP DEPTH OF FILTER PACK TOP DEPTH OF SCREEN 103.0 FILTER PACK BOTTOM DEPTH OF SCREEN 113.0 BOTTOM OF WELL CASING 113.0 -117.0 BOTTOM DEPTH OF FILTER PACK 117.0 BOTTOM DEPTH OF BOREHOLE WELL DIAGRAM IS NOT TO SCALE CH2MHILL

SHEET 1 of 5	;					PROJECT NUMBER:		BORIN	BORING NUMBER:		
						326128.01.16.E			MW-44		
PROJECT NAMI		Duill Duc	aram			HOLE DEPTH (ft):	DRILLING CONTR				
SURFACE ELEV	ATION:	Drill Pro	ORTH	ING (CCS	NAD 27 Z 5):	134.0 EASTING (CCS NAD 27 Z 5):	DATE STARTED:	nic Corp. Pho	DATE COMPLETED:		
470.8 ft. DRILLING MET			2,1	02,729.79		7,616,251.64	3/6/2006 DRILLING EQUIP	MENT:	3/7/2006		
Rotos	onic							Track Moun	ted Rotosonic		
LOCATION: PG8	&E Comp	ressor	Station	- Flood Pla	iin, Topock, Cali	fornia	LOGGED BY:	R. Tweidt	t		
	SA	MPLE				SOIL DESCRIPTION			COMMENTS		
DEPTH BGS (feet)	INTERVAL TYPE/ NUMBER RECOVERY (ft)			USCS CODE	PERCENT CO	SOIL NAME, USCS SYMBOL, COLO MPOSITION, GRADING, GRAIN SHAI SITY/CONSISTENCY, STRUCTURE, M	PE. MINERALOGY.	DAILY S	G OBSERVATIONS AND OPERATIONS, TART AND END TIMES , DRILL RATE, LS, SAMPLING AND TESTING NOTES.		
5 			æ			- brn (10YR4/3), 95% f sand, <5% olastic, wet, no odor	silt, 0% gravel, poorly	Hand a	augured to 5' bgs		
 20									was drilled using a 11 3/4 - inch h air rotary		
			7		- color cha 5% f sand	ange to very dk brn (10YR2/2) ange to very dk grayish brn (2.5YR3 I, 95% silt, 0% gravel ganic specks	3/2), fine silt layer (ML),				
			10	SP	- 95% sar	nd, <5% silt, 0% gravel, <2% black	c organic specks	Drill Ra	ate = 10' / min		



SHEET 2 of 5							PROJECT NUMBER: 326128.01.16.EN				BORING NUMBER: MW-44		
						SO	IL BORING						
PROJECT NAM		1 Drill Dr	ogram		[]		DEPTH (ft):		DRILLING CONTRAC				
IMPM Drill Program SURFACE ELEVATION: 470.8 ft. MSL						EAST			DATE STARTED: 3/6/2006	Corp. Phoe	DATE COMPLETED: 3/7/2006		
DRILLING ME	THOD:			02,723.73			7,010,231.01		DRILLING EQUIPME		1		
Roto:		npressor	Station	- Flood Pla	ain, Topock, Califo	ornia			LOGGED BY:		ted Rotosonic		
		·								R. Tweidt			
	SAMPLE			USCS	SOIL DESCRIPTION						COMMENTS		
DEPTH BGS (feet)	INTERVAL	TYPE/ NUMBER	RECOVERY (ft)	CODE	SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, DENSITY/CONSISTENCY, STRUCTURE, MOI				, MINERALOGY,	DAILY ST	G OBSERVATIONS AND OPERATIONS, FART AND END TIMES , DRILL RATE, .S, SAMPLING AND TESTING NOTES.		
			_		SAND (SP) - b sorted, non-pla		0YR4/3), 95% f sand, wet, no odor	<5% si	lt, 0% gravel, poorly				
					, ,	,	•						
	.\									Drill Ra	te = 10' / min		
- 40	1\ /												
] \				- 95% sand, up to 2 cm	•	silt, 0% gravel, <2%	black o	rganic specks, gravel				
			10		- 95% sand.	d. <5%	silt, <5% gravel, <2	% black	organic specks,				
	- /				gravel up to	o 2 cm	, subrnd to rnd, chert	& other	5 ,				
	$\cdot / \setminus $					_	downward, mostly m	sand					
45	/ \				- local motti	iled bla	ack organic strings						
	·/ \												
	.\ /												
50	. \				- 95% sand	1 <5%	silt, <5% gravel, <2	% black	organic specks				
	-				<2% coarse	•	, , ,	70 Black	organic specia,	Drill Ra	te = 10' / min		
			10										
	//												
 55	1/\												
	1/ \												
					SANDY GRAV	VEL (C		n (10YR	4/4), 35% sand, <5%				
	.\ /			GW	_ mostly sed with	th mino		•					
	.\ /						SW) - dk yellowish br I grd, subrnd to rnd u		4/4), 70% sand, <5% m, wet, no odor				
60	- \												
	$\mid \bigvee \mid$,		i% sand, <5% silt, 60 silt, 25% gravel, ma	-					
			10		organic spec		5 5 m.y 25 70 gravely max		my dade sider				
	1 // 1						silt, 40% gravel, trac		• ,				
 65	1/ \				- 85% sand, dia 5 cm, m		silt, 10% gravel, gra sed	vel fining	g downward, max				
	1/ \			SW	- 85% sand,	i, <5%	silt, 10% gravel						
							silt, 35% gravel, incr	_	,				
- 	$\sqrt{1}$				- clayey silt	layer,	brn (7.5YR4/3), low p	plasticity	, slow dilatancy, soft	Drill Ra	te = 10' / min		
	. X												
70	<u>/ </u>												
											CH2MHILL		

SHEET 3 of	5					P	ROJECT NU 3261	JMBER: 28.01.16.EN	ı	BORING NUMBER: MW-44			
						SO	IL BOR			l			
PROJECT NAM		1 Drill Pr	ogram			HOLE	DEPTH (ft):		DRILLING CONTRA	CTOR: ic Corp. Pho	oniv A7		
SURFACE ELEVATION: NORTHING (CCS NAD 27 Z 5): 470.8 ft. MSL 2.102,729.79							134.0 ING (CCS NAI 7,616,251	D 27 Z 5):	DATE STARTED: 3/6/2006	ic Corp. Prio	DATE COMPLETED: 3/7/2006		
DRILLING ME	THOD:			02/123173			,,010,201		DRILLING EQUIPM				
Rotosonic LOCATION: PG&E Compressor Station - Flood Plain, Topock, Cali									LOGGED BY:		nted Rotosonic		
, , ,										R. Tweid			
	<u></u>	AMPLE		USCS			SOIL DESCR	IPTION			COMMENTS		
DEPTH BGS (feet)	INTERVAL	TYPE/ NUMBER	RECOVERY (ft)	CODE	SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.				, MINERALOGY, ISTURE.	DAILY S	G OBSERVATIONS AND OPERATIONS, ITART AND END TIMES , DRILL RATE, LS, SAMPLING AND TESTING NOTES.		
	\								(4/4), 70% sand, <5% m, wet, no odor				
]\ /		10		- 75% f to	m grd	sand, 10% silt,	15% gravel u	p to 7 cm	Drill R	ate = 10' / min		
			"			•	silt, 15% grave	•	, 3	_			
- 75 				ML	gravel, gravel alluvial unit w - mostly cl	el very and with fluw lay lense lay lense lay lense lay lense lay lense lay lense lay	ng to subang u rial package es with black or silt, <5% grav	p to 4 cm, stiff	nd, 95% silt, 5% , very moist to wet sand, decreased	Drill R	Drill Rate = 3.3' / min		
					CAND (CD)		h h (10\/DE//	1) 700/	d -20/ -:lk 200/	_			
	1\ /				gravel, poorly	, y graded	d, subrnd to rno		d, <2% silt, 30% vet, no odor, distal				
 80	1\ /				rock suite ass	semblag	je						
	1\/												
	1 V I												
	1 1 1		10										
	1 / \				- 65% san	nd, <5%	silt, 30% grav	el, rnd to subr	nd, max dia 11 cm				
- 85	$1/ \cdot $												
	1/ \			65	- 90% san	nd, <5%	silt, 10% grav	el, max dia for	gravel 8 cm				
	1 1			SP									
	1\ /												
90	$ \cdot $												
	1\/												
]		10		- 55% m s dia 9 cm	sand, 5%	% silt, 40% gra	vel, subrnd to	well rnd with max				
]		10										
]				- Distal De	erived Ro	ock Assemblage	e					
95]/ \					•	,	. ,,	and, <5% silt, 60%	-			
	.// \			GW	gravel, well g mostly sed to		subrnd to well	rnd up to 12 c	m, wet, no odor,				
					200/	-1 00/	:'IL 000/	l					
	$\left \cdot \right $				SILTY GRAV	vel, wel	l graded, subar	dk brn (7.5YR3	m (4), 70% sand, 15% p to 3cm, wet, no	-			
100	$ \setminus $				- 40% san	nd, 25%	silt, 15% grave	el, subang to s	subrnd, max dia 3 cm,				
					met gravel	. *	-	-	ŕ				
	$ \cdot $												
	/ \												
105	. <u>/</u>												
										3	CH2MHILL		

PROJECT NAME: IN SURFACE ELEVATI 470.8 ft. MSI	MPM Drill					326128.01.16.E		BORING NUMBER: MW-44		
SURFACE ELEVATI	MPM Drill				SOIL B	ORING LO				
SURFACE ELEVATI		Program			HOLE DEPTH	(ft): 134.0	DRILLING CONTRA	CTOR: c Corp. Phoe	eniv A7	
4/0.0 11. 1951		NORTHI		NAD 27 Z 5):	EASTING (CO	CS NAD 27 Z 5): 16,251.64	DATE STARTED:	c corp. i no	DATE COMPLETED:	
DRILLING METHO	DD:	2,1	02,729.79		7,0.	10,231.04	3/6/2006 DRILLING EQUIPM		3/7/2006	
Rotosonic		or Station	- Flood Pla	in, Topock, Calif	ornia		LOGGED BY:		ted Rotosonic	
						ESCRIPTION		R. Tweidt		
DEPTH BGS	SAMPL		USCS		201L D	DESCRIPTION			COMMENTS	
DEPTH BGS (feet)	TYPE/ NUMBER RECOVERY (ft)		CODE	PERCENT CON DENS	IPOSTTION GR	ISCS SYMBOL, COLOF ADING, GRAIN SHAP NCY, STRUCTURE, MC	F MINERALOGY	DAILY S	G OBSERVATIONS AND OPERATIONS, TART AND END TIMES , DRILL RATE, LS, SAMPLING AND TESTING NOTES.	
110 		20	SM	silt, 15% grav odor, mostly r - 50% sand met gravel	vel, well graded met gravel d, 20% silt, 30%	, subang to subrnd o	3/4), 70% sand, 15% up to 3cm, wet, no subrnd, max dia 4 cm, subrnd, max dia 3 cm,			
115				dia 2 cm, s material - dk brn (7	lightly musty-su	, 55% sand, 25% sil ulphur odor, appears sand, 20% silt, 50% hly weathered met g	to contain organic			
120			ML	sand, 45% sil		ip to 8 cm, well grad	sh brn (5YR3/4), 25% ed, subang to subrnd	-		
- 			SM	10% gravel, v	vell graded, sub	dish brn (5YR3/4), 7 pang to subrnd up to	2 cm,wet, no odor	Top of	Reworked Bedrock (?)	
				MIOCENE C 6 25% silt, 10%	o gravel, hard, o	FE (BR) - reddish br clasts up to 10 cm, c	n (5YR4/4), 65% sand, Iry			
130 - 			BR							
				ABBREVIATI cc = continuou brn = brown It = light dk = dark vf = very fine-	T ONS us core run	Terminated at 134 f	t			

SHEET 5 of 5				PROJECT NUMBER: 326128.01.16.EN				BORING NUMBER: MW-44		
				SOIL BORING						
PROJECT NAME:	D			HOLE DEPTH (ft):		LING CONTRA				
IMPM Drill SURFACE ELEVATION:		NG (CCS NA	AD 27 Z 5):	134.0 EASTING (CCS NAD 27 Z 5): DATE	Prosonic STARTED:	c Corp. Phoe	DATE COMPLETED:		
470.8 ft. MSL	2,10	2,729.79	.5 27 2 57.	7,616,251.64	3/6/2	2006		3/7/2006		
DRILLING METHOD: Rotosonic					DRILI	LING EQUIPMI		ted Rotosonic		
LOCATION: PG&E Compress	or Station -	- Flood Plain,	Topock, Califo	ornia	LOGG	ED BY:	R. Tweidt			
					_		R. TWEIGU			
SAMPI				SOIL DESCRIPTION	!			COMMENTS		
(teet) (teet) (TYPE/NIMBED	RECOVERY (ft)	USCS CODE	PERCENT COM DENSI	SOIL NAME, USCS SYMBOL, C POSITION, GRADING, GRAIN TY/CONSISTENCY, STRUCTUR	SHAPE, MINER	ALOGY,	DAILY ST	G OBSERVATIONS AND OPERATIONS, FART AND END TIMES , DRILL RATE, .S, SAMPLING AND TESTING NOTES.		
			f = fine-grained m = medium-g c = coarse-grai vc = very coars ang = angular subang = suba subrnd = subro crnd = rounded br = bedrock fo ss = sandstone conglom = com comptd = com ptz = quartz	grained ined se-grained angular ounded formation e aglomerate						