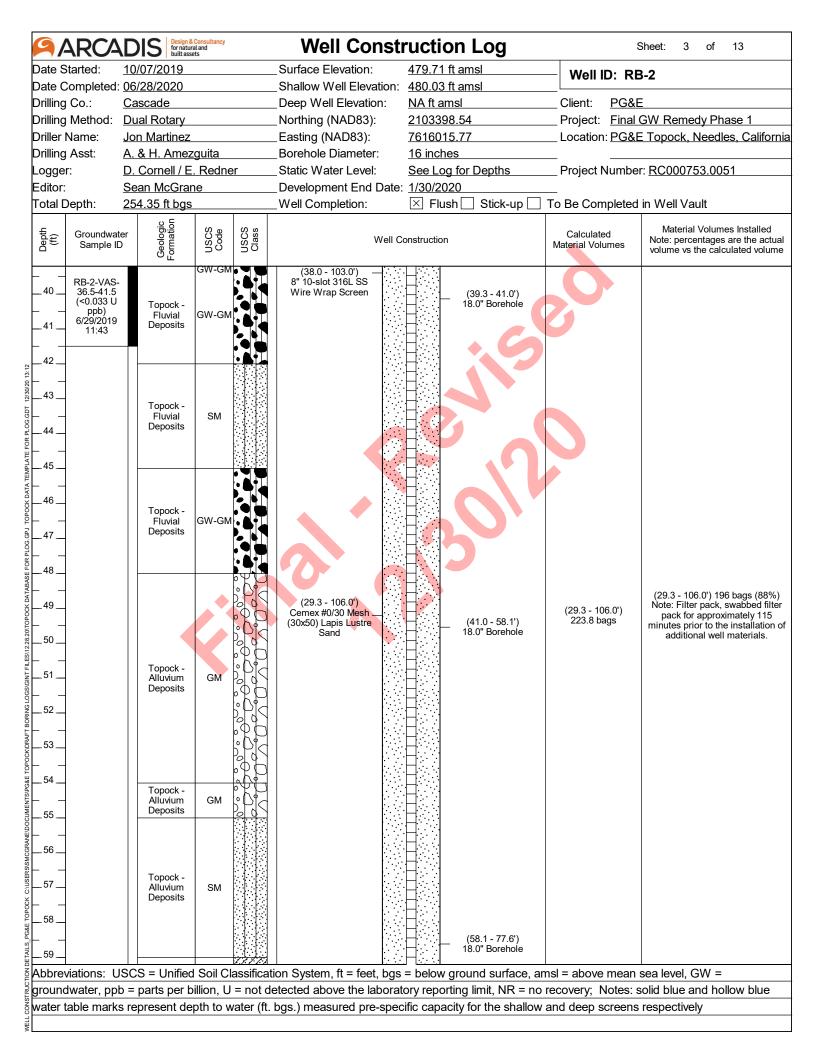


	DIS Design & for natura built asse	Consultancy al and ets	well Cons	struction Log		Sheet: 2 of 13
ate Started:	10/07/2019		Surface Elevation:	479.71 ft amsl	Well ID: R	3-2
ate Completed:	06/28/2020		Shallow Well Elevation	n: <u>480.03 ft amsl</u>		
rilling Co.:	Cascade		Deep Well Elevation:	NA ft amsl	Client: <u>PG&I</u>	<u> </u>
rilling Method:	Dual Rotary		Northing (NAD83):	<u>2103398.54</u>	Project: <u>Final</u>	GW Remedy Phase 1
riller Name:	Jon Martinez		Easting (NAD83):	<u>7616015.77</u>	Location: <u>PG&I</u>	<u> E Topock, Needles, Californ</u>
rilling Asst:	A. & H. Amez	guita	Borehole Diameter:	<u>16 inches</u>		
ogger:	D. Cornell / E	. Redner	Static Water Level:	See Log for Depths	Project Numbe	r: <u>RC000753.0051</u>
ditor:	Sean McGran	ne	Development End Dat	te: <u>1/30/2020</u>		
otal Depth:	254.35 ft bgs		Well Completion:	🔀 Flush 🗌 Stick-up 🛛	To Be Completed	in Well Vault
Groundwat (jj) Sample ID		USCS USCS USCS	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
20 21 22 23	Deposits	SP	(+0.3 - 38.0') 8" SHUR-GRIP SDR17 PVC Casing (4.0 - 24.6') Portland Cement 3% Bentonite Type I, II and V with Hydrogel	(0.0 - 19.8') 18.0" Borehole	(4.0 - 24.6') 218.4 gallons	(4.0 - 24.6') 253 gallons (116%) Note: Grout seal.
24 25 26 27			(24.6 - 27.0') Bentonite seal chips_ Puregold medium chips		(24.6 - 27.0') 4.7 bags	(24.6 - 27.0') 4 bags (85%) Note: Seal between transition san and grout seal.
 28 29	Topock - Fluvial	SP	(27.0 - 29.3') Cemex #60 Mesh (40x70) Lapis Lustre Sand	(19.8 - 39.3)	(27.0 - 29.3') 6.4 bags	(27.0 - 29.3') 7 bags (109%) Note: Transition sand
- 30 _ - 31 _ - 32 _ - 33 _ - 33 _ - - - - - - - - - - - - -	Deposits	NR	(29.3 - 106.0') Cemex #0/30 Mesh (30x50) Lapis Lustre	18.0" Borehole	(29.3 - 106.0') 223.8 bags	(29.3 - 106.0') 196 bags (88%) Note: Filter pack, swabbed filter pack for approximately 115 minutes prior to the installation of
35 36 37 37 36.5-41.5 (<0.033 U ppb) 6/29/2019 11:43 39	Topock - Fluvial Deposits Topock - Fluvial Deposits	SP-SM	Sand (35.5 - 36.5') Centralizer (38.0 - 103.0') 8" 10-slot 316L SS Wire Wrap Screen			additional well materials.
	SCS = Unified	Soil Class	ification System, ft = feet, bg	<u>, , , , , , , , , , , , , , , , , , , </u>	amsl = above mean	sea level, GW =
	= narte ner h	illion. U = r	not detected above the labor	atory reporting limit, NR = r	no recovery; Notes:	solid blue and hollow blue
oundwater, ppl	5 – parts per b	, -				



ARCA	built ass	<mark>Consultancy</mark> ral and ets		truction Log	· · · · · · · · · · · · · · · · · · ·	Sheet: 4 of 13
ate Started:	10/07/2019		Surface Elevation:	<u>479.71 ft amsl</u>		3-2
ate Completed:	06/28/2020		Shallow Well Elevation	: <u>480.03 ft amsl</u>		
rilling Co.:	Cascade		Deep Well Elevation:	NA ft amsl	Client: PG&I	
rilling Method:	Dual Rotary		Northing (NAD83):	<u>2103398.54</u>	Project: <u>Final</u>	GW Remedy Phase 1
riller Name:	Jon Martinez		Easting (NAD83):	7616015.77	Location: <u>PG&</u>	<u> Topock, Needles, Califorr</u>
rilling Asst:	A. & H. Amez	zguita	Borehole Diameter:	<u>16 inches</u>		
ogger:	D. Cornell / E	Redner	Static Water Level:	See Log for Depths	Project Numbe	r: <u>RC000753.0051</u>
ditor:	Sean McGra	ne	Development End Date	e: <u>1/30/2020</u>		
otal Depth:	<u>254.35 ft bgs</u>		Well Completion:	🗵 Flush 🗌 Stick-up 🗌	To Be Completed	in Well Vault
Groundwat Sample II		U SCS U SCS U SCS	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
_	Topock - Alluvium	SC ///	(38.0 - 103.0') (38.0 - 103.0')			
60	Deposits		Wire Wrap Screen			
- 61 _ - 62 _ - 63 _ - 64 _ - 65 _ - 66 _ - 67 _	Topock - Alluvium Deposits	GM GM GM				
68 69 70 71 72 73 74 RB-2-VAS-	Topock - Alluvium Deposits	GW	(29.3 - 106.0') Cemex #0/30 Mesh (30x50) Lapis Lustre Sand	(58.1 - 77.6') 18.0" Borehole	(29.3 - 106.0') 223.8 bags	(29.3 - 106.0') 196 bags (88%) Note: Filter pack, swabbed filte pack for approximately 115 minutes prior to the installation additional well materials.
74	Topock -					
756/30/2019	Alluvium Deposits	GC S				
	Topock - Alluvium Deposits	SW				
77 78 79	Topock - Alluvium Deposits	SW-SM		(77.6 - 82.0') 18.0" Borehole		
breviations: U	SCS = Unified	d Soil Classif	cation System, ft = feet, bg	s = below ground surface.	amsl = above mean	sea level, GW =
			t detected above the labora			
	POI N	, •		, · · · · · · · · · · · · · · · ·	, , , , , , , , , , , , , , , , , ,	

ARCA	DIS for natu built as	& Consultancy ral and sets		ell Const	ruction Log		Sheet: 5 of 13
)ate Started:	10/07/2019		Surface	Elevation:	479.71 ft amsl	Well ID: R	B-2
ate Completed:					480.03 ft amsl		
Prilling Co.:	Cascade			ell Elevation:	NA ft amsl	Client: <u>PG&</u>	
•	Dual Rotary		-	(NAD83):	2103398.54	-	GW Remedy Phase 1
riller Name:	Jon Martinez		-	(NAD83):	7616015.77	Location: <u>PG&</u>	E Topock, Needles, Californ
orilling Asst:	<u>A. & H. Ame</u>	•		e Diameter:	<u>16 inches</u>		
ogger:	D. Cornell / E			ater Level:	See Log for Depths	Project Numbe	er: <u>RC000753.0051</u>
Editor: Total Depth:	Sean McGra 254.35 ft bgs			ment End Date mpletion:	<u>1/30/2020</u> ⊠ Flush	 To Be Completed	
	-						
Groundwat Generation Sample II		U Code U SCS			onstruction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
80 80 81	Topock - Alluvium Deposits	SW-SM	8" 10-sl	- 103.0')	(77.6 - 82.0') 18.0" Borehole	eo	
	Topock - Alluvium Deposits						
87 88 89 90	Topock - Alluvium Deposits	GC	Cemex	- 106.0') #0/30 Mesh _apis Lustre sand	(82.0 - 92.0') 18.0" Borehole	(29.3 - 106.0') 223.8 bags	(29.3 - 106.0') 196 bags (88%) Note: Filter pack, swabbed filte pack for approximately 115 minutes prior to the installation additional well materials.
91 92 93	Topock - Alluvium Deposits	GC					
94 95 96	Topock - Alluvium Deposits	GM GM	2,0,2,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,,0,7,0,7,1 ,0,7,1 ,,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1		(92.0 - 97.0') (92.0 - 97.0') 18.0" Borehole		
	Topock - Alluvium Deposits	GM O			(97.0 - 119.3') 18.0" Borehole		
obreviations: U	SCS = Unified	⊣ _ ⊮⊠ d Soil Class	fication System	n, ft = feet, bas	= below ground surface	, amsl = above mean	sea level, GW =
					*		solid blue and hollow blue
		,				•	s respectively

ite Started: ite Completed illing Co.:	10/07/2019					
			Surface Elevation:	<u>479.71 ft amsl</u>		B-2
Illing Co			Shallow Well Elevation			
-	Cascade		Deep Well Elevation:	NA ft amsl	Client: <u>PG&</u>	
illing Method:	-		Northing (NAD83):	<u>2103398.54</u>	-	GW Remedy Phase 1
iller Name:	Jon Martinez		Easting (NAD83):	7616015.77	Location: <u>PG&</u>	E Topock, Needles, Califorr
illing Asst:	<u>A. & H. Amez</u>	-	Borehole Diameter:	16 inches		
gger:	D. Cornell / E.		Static Water Level:	See Log for Depths	Project Numbe	er: <u>RC000753.0051</u>
litor:	Sean McGran	le	Development End Date			1. 14/ 11/ 11
tal Depth:	254.35 ft bgs		Well Completion:	🔀 Flush 🗌 Stick-up [To Be Completed	a in Well Vault
Groundwa Sample		USCS Code USCS	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
00 01 02 03	Topock - Alluvium Deposits	GC CC C	(38.0 - 103.0') 8" 10-slot 316L SS Wire Wrap Screen (29.3 - 106.0') Cemex #0/30 Mesh (30x50) Lapis Lustre Sand	(103.0 - 133.0') 8" SHUR-GRIP SDR17 PVC Casing	(29.3 - 106.0') 223.8 bags	(29.3 - 106.0') 196 bags (88%) Note: Filter pack, swabbed filte pack for approximately 115 minutes prior to the installation additional well materials.
04RB-2-VAS 102-107 (<0.033 L ppb) 057/1/2019 15:21 06 07		GM COC	(104.0 - 105.0') Centralizer (106.0 - 106.7') Cemex #60 Mesh (40x70) Lapis Lustre Sand		(106.0 - 106.7') 2.1 bags	(106.0 - 106.7') 2 bags (95%) Note: Transition sand
 08 09	Topock - Alluvium Deposits	GC		(97.0 - 119.3')		
 10 11	Topock - Alluvium Deposits	GM 0		18.0" Borehole		
12	Topock - Alluvium Deposits	GM O	(106.7 - 117.0') Bentonite seal		(106.7 - 117.0') 23.2 buckets	(106.7 - 117.0') 22.5 buckets (97%) Note: Intermediate seal
 13 14	Topock - Alluvium Deposits	GM O	(TR30) 3/8" (111.5 - 112.5') Centralizer			
 15 16	Topock - Alluvium Deposits	GW CW CW CW CW CW CW CW CW CW CW CW CW CW				
17 18		0000	(117.0 - 118.0') Cemex #60 Mesh (40x70) Lapis Lustre Sand		(117.0 - 118.0') 2.9 bags	(117.0 - 118.0') 5 bags (172%) Note: Transition sand, used >2C of the calculated volume due to potential voids that formed durin drilling.
 19					(118.0 - 254.4') 293.8 bags	
	JSCS = Unified	Soil Classi	fication System, ft = feet, bg	s = below around surface	amsl = above mean	sea level. GW =
			ot detected above the labora	-		
	· · ·		(ft. bgs.) measured pre-spe			

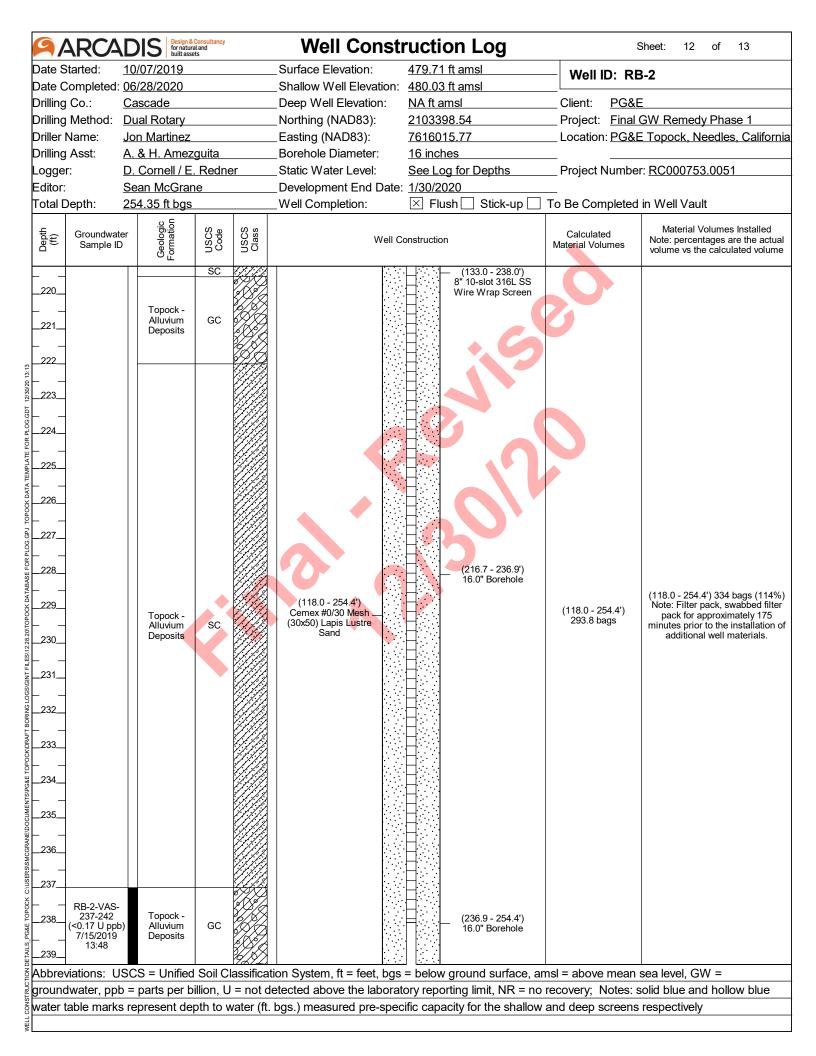
ate Completed: (illing Co.: (illing Method: [iller Name: (illing Asst: (ggger: [ditor: (btal Depth: (forundwate) (Groundwate)	Cascade Dual Rotary Jon Martinez A. & H. Amez D. Cornell / E. Sean McGran		Surface Elevation: Shallow Well Elevation: Deep Well Elevation: Northing (NAD83):	<u>479.71 ft amsl</u> <u>480.03 ft amsl</u> NA ft amsl	Well ID: R	B-2
illing Co.: (illing Method: [iller Name: _ illing Asst: / bgger: [ditor: otal Depth:	Cascade Dual Rotary Jon Martinez A. & H. Amez D. Cornell / E. Sean McGran		Deep Well Elevation:			
illing Method: [iller Name:] illing Asst:] ogger: [ditor:] otal Depth:]	Dual Rotary Jon Martinez A. & H. Amez D. Cornell / E. Sean McGran			NA ft amel		
iller Name: illing Asst: ogger: ditor: otal Depth:	Jon Martinez A. & H. Amez D. Cornell / E. Sean McGran		Northing (NAD83)		Client: PG&	
illing Asst: // ogger: [ditor: <u>{</u> otal Depth: //	A. & H. Amez D. Cornell / E. Sean McGran		,	<u>2103398.54</u>	•	GW Remedy Phase 1
ogger: [ditor: <u>s</u> otal Depth: <u>2</u>	<u>D. Cornell / E.</u> Sean McGran		Easting (NAD83):	7616015.77	Location: <u>PG&</u>	E Topock, Needles, Californ
ditor: <u>s</u> otal Depth: <u>2</u>	Sean McGran	•	Borehole Diameter: Static Water Level:	<u>16 inches</u> See Log for Depths	 Project Number	er: <u>RC000753.0051</u>
otal Depth: 2			Development End Date	÷ .		n. <u>RC000733.0031</u>
Groundwate	254.35 ft bgs		Well Completion:	✓ Flush Stick-up] To Be Completed	l in Well Vault
Sample ID	Geologic Formation	USCS Code USCS Class	Well (Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
	Topock - Alluvium Deposits	GM		(103.0 - 133.0') 8" SHUR-GRIP SDR17 PVC Casing	20	
	Topock - Alluvium Deposits	$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} $		(119.3 - 130.0') 16.0" Borehole		
_ 128_ _ 129_ _ 130_ _ 131_	Topock - Alluvium Deposits		(118.0 - 254.4') Cemex #0/30 Mesh (30x50) Lapis Lustre Sand (131.0 - 132.0')		(118.0 - 254.4') 293.8 bags	(118.0 - 254.4') 334 bags (114% Note: Filter pack, swabbed filter pack for approximately 175 minutes prior to the installation of additional well materials.
132 133 134 135 136	Topock - Alluvium Deposits	میں	Centralizer	(130.0 - 137.1') 16.0" Borehole (133.0 - 238.0') 8" 10-slot 316L SS Wire Wrap Screen		
137 139	Topock - Alluvium Deposits	SM		(137.1 - 157.1') 		
				s = below ground surface, a		
				tory reporting limit, NR = no cific capacity for the shallov	•	

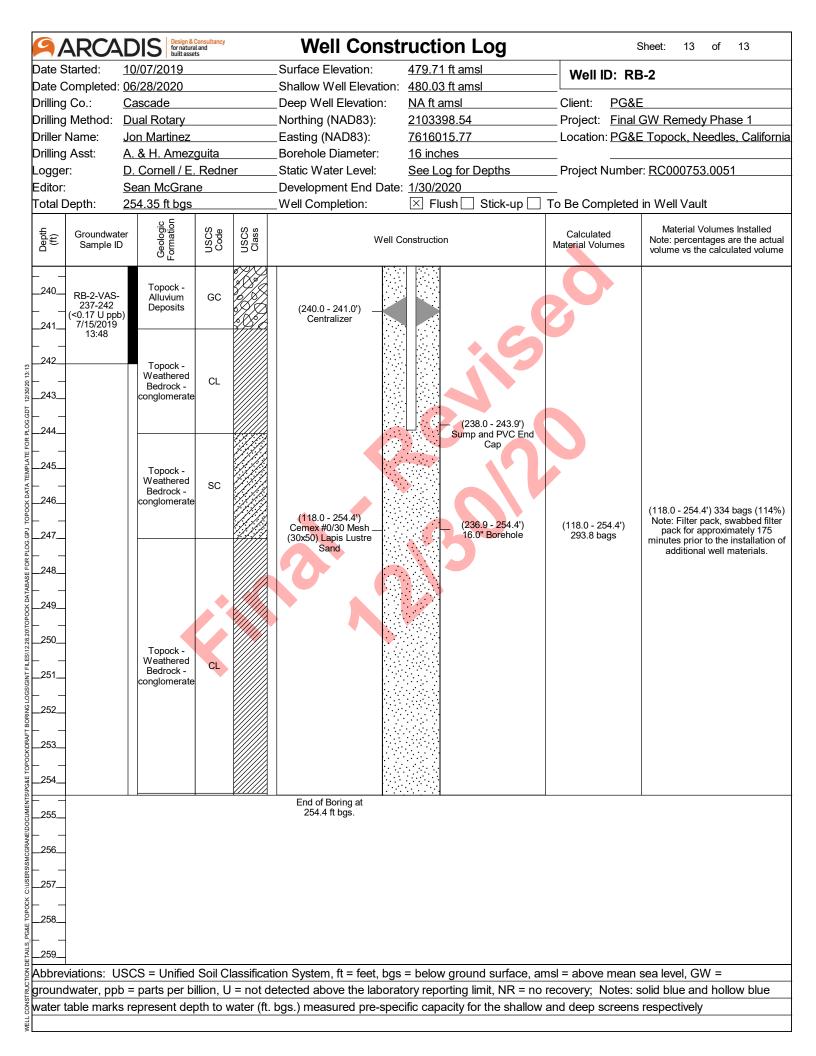
ARC A	DIS built asse	Consultancy al and ts	Well Const	ruction Log		Sheet: 8 of 13
Date Started:	10/07/2019		Surface Elevation:	479.71 ft amsl		3-2
Date Completed			Shallow Well Elevation:			
Drilling Co.:	Cascade		Deep Well Elevation:	NA ft amsl	Client: <u>PG&</u>	
Drilling Method:	Dual Rotary		Northing (NAD83):	2103398.54	-	GW Remedy Phase 1
Driller Name:	Jon Martinez		Easting (NAD83):	7616015.77	Location: <u>PG&I</u>	<u>E Topock, Needles, Californ</u>
Drilling Asst:	<u>A. & H. Amez</u>	•	Borehole Diameter:	16 inches		
ogger:	D. Cornell / E		Static Water Level:	See Log for Depths	Project Numbe	r: <u>RC000753.0051</u>
Editor:	Sean McGran	le	Development End Date] To Do Commisted	
otal Depth:	254.35 ft bgs		Well Completion:	⊠ Flush Stick-up] To Be Completed	
Groundwar (t) Sample II		USCS Code USCS Class	Well C	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
	Topock - Alluvium Deposits	SM		(133.0 - 238.0') 8" 10-slot 316L SS Wire Wrap Screen	20	
142 	Deposita	GM 00000				
 _146 _147	Topock - Alluvium Deposits	SM				
	Topock - Alluvium Deposits	SM	(118.0 - 254.4') Cemex #0/30 Mesh	(137.1 - 157.1') 16.0" Borehole	(118.0 - 254.4')	(118.0 - 254.4') 334 bags (114% Note: Filter pack, swabbed filter pack for approximately 175
- – _150 _ 151 _ – _152 _ – _153	Topock - Alluvium Deposits	SM	(30x50) Lapis Lustre Sand		293.8 bags	minutes prior to the installation o additional well materials.
 	Topock - Alluvium Deposits	GM GM				
	Topock - Alluvium Deposits	GM 000		(157.1 - 176.7') (157.1 - 176.7') (157.1 - 176.7') (157.1 - 176.7') (157.1 - 176.7')		
	ISCS = Unified	Soil Classifie	cation System, ft = feet, bgs	= below ground surface, a	msl = above mean	sea level, GW =
			detected above the labora			
				cific capacity for the shallow	-	

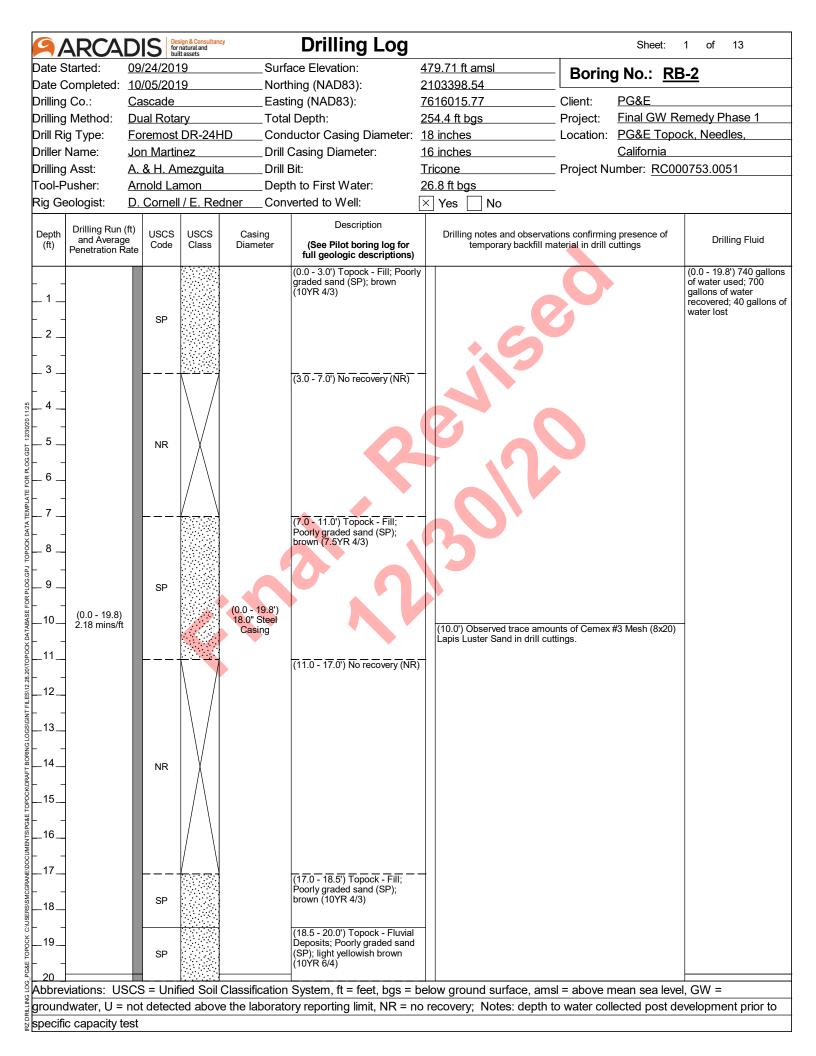
ARCA	DIS Design & for nature built asse	Consultancy al and ets	Well Cons	truction Log		Sheet: 9 of 13
Date Started:	10/07/2019		Surface Elevation:	479.71 ft amsl	Well ID: RI	B-2
Date Completed:			Shallow Well Elevation			
Drilling Co.:	Cascade		Deep Well Elevation:	NA ft amsl	Client: PG&	
•	Dual Rotary		Northing (NAD83):	2103398.54	-	GW Remedy Phase 1
Driller Name:	Jon Martinez	quito	Easting (NAD83): Borehole Diameter:	<u>7616015.77</u> <u>16 inches</u>	Location: <u>PG&</u>	E Topock, Needles, Californi
Drilling Asst: .ogger:	A. & H. Amez D. Cornell / E	-	Static Water Level:	See Log for Depths	 Project Number	er: <u>RC000753.0051</u>
Editor:	Sean McGrar		Development End Date	• .		1.
otal Depth:	254.35 ft bgs		Well Completion:	∑ Flush Stick-up] To Be Completed	l in Well Vault
Groundwat		USCS Code USCS	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
	Topock -	GM 0 GC Ø		··· (133.0 - 238.0') ··· (133.0 - 238.0') ··· (133.0 - 238.0')		
_160	Alluvium			Wire Wrap Screen		
_161	Topock -					
	Alluvium Deposits	GM of				
_102						
_163		S.C				
_164		l Pat				
_						
_165	Topock - Alluvium	GM O				
	Deposits					
_166		Pol				
		0				
_167						
				(157.1 - 176.7')		
_168				16.0" Borehole		
	Topock -		(118.0 - 254.4')			(118.0 - 254.4') 334 bags (114% Note: Filter pack, swabbed filter
_109	Alluvium Deposits	SM 🔆	Cemex #0/30 Mesh		(118.0 - 254.4') 293.8 bags	pack for approximately 175
			(30x50) Lapis Lustre Sand			minutes prior to the installation o additional well materials.
_171						
	Topock -					
_172	Alluvium Deposits	SM				
_173						
_174 RB-2-VAS- 172-177	_					
(<0.17 U ppt 175 7/12/2019) Topock - Alluvium	SM				
_17514:55	Deposits					
	Topock - Alluvium	SM				
_178	Deposits			· · · · · · · · · · · · · · · · · · ·		
	Topock - Alluvium	SM				
_179	Deposits					
bbreviations: U	SCS = Unified	Soil Class	fication System, ft = feet, bg	s = below ground surface, a	amsl = above mean	sea level, GW =
			ot detected above the labor			
			r (ft. bgs.) measured pre-spe			

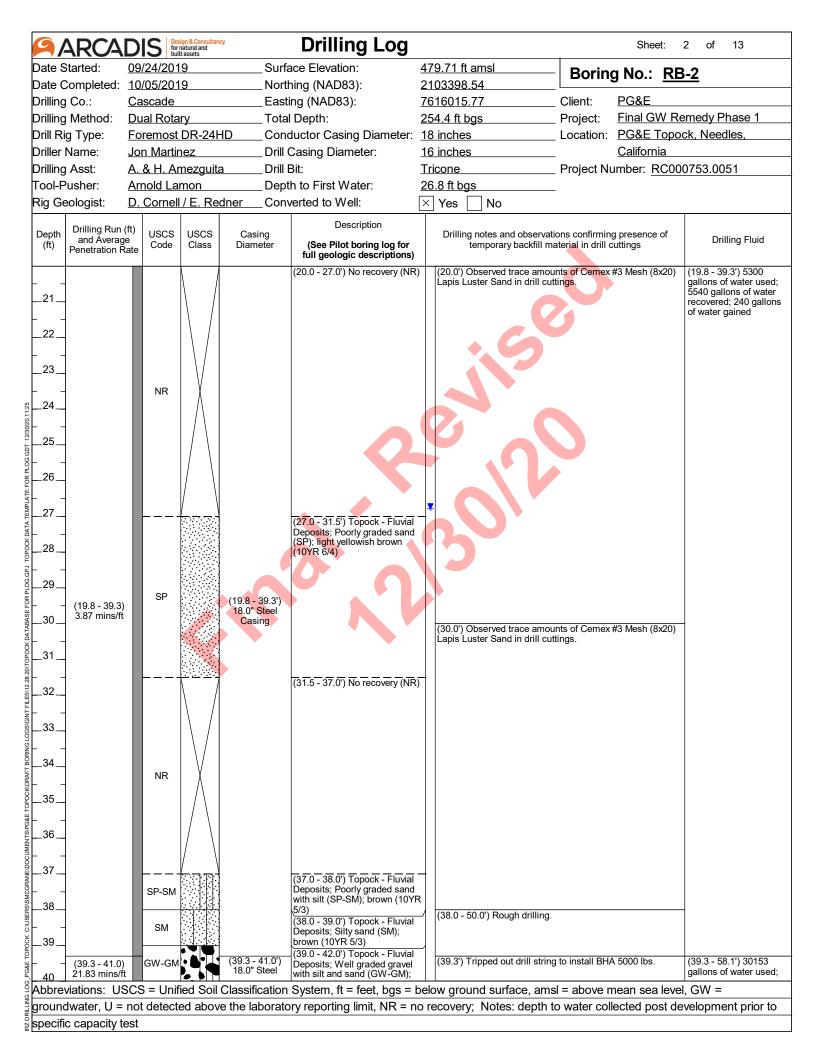
ARCA		Consultancy al and ets	well Const	ruction Log		Sheet: 10 of 13
ate Started:	10/07/2019		Surface Elevation:	<u>479.71 ft amsl</u>		3-2
ate Completed:			Shallow Well Elevation:			
vrilling Co.:	Cascade		Deep Well Elevation:	NA ft amsl	Client: PG&I	
•	Dual Rotary		Northing (NAD83):	2103398.54		GW Remedy Phase 1
riller Name:	Jon Martinez		Easting (NAD83):	<u>7616015.77</u>	Location: <u>PG&I</u>	<u>E Topock, Needles, Californ</u>
rilling Asst:	A. & H. Amez D. Cornell / E	-	Borehole Diameter:	<u>16 inches</u>		
ogger: ditor:	<u>D. Comeil / E</u> Sean McGrar		Static Water Level: Development End Date:	See Log for Depths	Project Numbe	r: <u>RC000753.0051</u>
otal Depth:	254.35 ft bgs		Well Completion:	∑ Flush Stick-up] To Be Completed	in Well Vault
Groundwat	ation a	USCS Code USCS Class		construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
 	Topock - Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits	SM SM SM SW SW SW SW SW SW SW SW SW SW SW SW SW	(118.0 - 254.4 ¹) Cemex #0/30 Mesh (30x50) Lapis Lustre Sand	(176.7 - 197.0') 16.0" Borehole	(118.0 - 254.4') 293.8 bags	(118.0 - 254.4') 334 bags (114% Note: Filter pack, swabbed filter pack for approximately 175 minutes prior to the installation of additional well materials.
.194 .195 .196 .197 	Topock - Alluvium Deposits	SW-SM				
.198 .199	Topock - Alluvium Deposits	SM		(197.0 - 216.7') 16.0" Borehole		
			ation System, ft = feet, bgs detected above the laborat			
nungwater on	o = parts per b	illion. U = not	uelected above the laborat	ory reporting limit. NR = nc	precovery: Notes: 9	solid plue and hollow blue

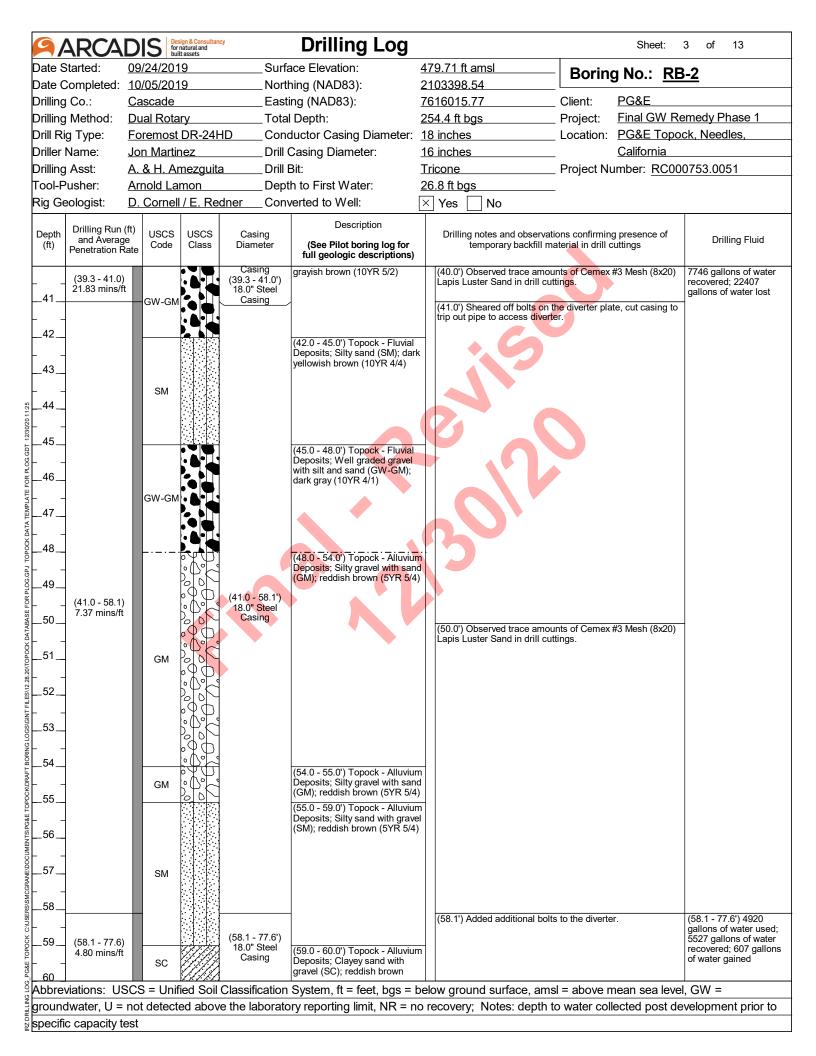
ARCA	DIS Design & for nature built asset	ts		truction Log		Sheet: 11 of 13
Date Started:	10/07/2019		Surface Elevation:	<u>479.71 ft amsl</u>		3-2
ate Completed:			Shallow Well Elevation			
Drilling Co.:	Cascade		Deep Well Elevation:	NA ft amsl	Client: PG&I	
•	Dual Rotary		Northing (NAD83):	2103398.54	-	GW Remedy Phase 1
oriller Name:	Jon Martinez		Easting (NAD83):	7616015.77	Location: <u>PG&I</u>	<u> Topock, Needles, Californ</u>
Drilling Asst:	<u>A. & H. Amez</u>	•	Borehole Diameter:	16 inches		
ogger:	D. Cornell / E		Static Water Level:	See Log for Depths	Project Numbe	r: <u>RC000753.0051</u>
Editor:	Sean McGrar	1e	Development End Dat			
otal Depth:	<u>254.35 ft bgs</u>		Well Completion:	⊠ Flush Stick-up] To Be Completed	
Groundwat		USCS Code USCS	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actua volume vs the calculated volume
	Topock - Alluvium Deposits	SM ····		- (133.0 - 238.0') 8" 10-slot 316L SS Wire Wrap Screen	0	
 203 204	Topock - Alluvium Deposits	SM				
202-207	l opock -	SM 🔅				
	Deposits Topock -	ML				
09:20	Alluvium					
206	Deposits Topock -					
	Alluvium Deposits	SM				
_207	Deposits					
_208		(/ / / / / / / / / / / / / / / / / / /		(197.0 - 216.7') 16.0" Borehole		
209			(118.0 - 254.4')	H A	(119.0	(118.0 - 254.4') 334 bags (114%) Note: Filter pack, swabbed filte
			Cemex #0/30 Mesh (30x50) Lapis Lustre		(118.0 - 254.4') 293.8 bags	pack for approximately 175 minutes prior to the installation
210			Sand			additional well materials.
.211						
212	Topock -					
	Alluvium Deposits	SC .				
_213	Deposits					
_214						
_215						
_216						
_217						
		مربر بر مو مرز				
_218	Topock -			(216.7 - 236.9') 		
	Alluvium Deposits	SC				
_219						
	SCS = Unified	Soil Classi	ication System ft = feet bo	s = below ground surface, a	amsl = above mean	sea level. GW =
				atory reporting limit, NR = n		
rounuwater. Do					,	











9	ARCA	DIS	Design & Consultar for natural and built assets	су	Drilling Log		Sheet:	4 of 13
	started:	09/24/2)19	Surfa	ace Elevation:	179.71 ft amsl	Boring No.: RE	3_2
Date C	Completed:	10/05/20	019			2103398.54		
Drilling		Cascade	e		• • •	7616015.77	Client: <u>PG&E</u>	
-	Method:	<u>Dual Ro</u>	•		-	254.4 ft bgs	,	emedy Phase 1
	д Туре:		st DR-241		•	18 inches	Location: PG&E Topo	ck, Needles,
Driller		<u>Jon Mar</u>			•	16 inches	<u>California</u>	
Drilling			Amezguit			Tricone	Project Number: RC00	0753.0051
Tool-P		Arnold L			-	26.8 ft bgs		
Rig Ge	eologist:	D. Corn	ell / E. Re	dner Con	verted to Well:	× Yes		1
Depth (ft)	Drilling Run and Averag Penetration R			Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observation temporary backfill ma	iterial in drill cuttings	Drilling Fluid
		GM			(5YR 5/4) (60.0 - 67.0') Topock - Alluvium Deposits; Silty gravel with sand (GM); reddish brown (5YR 5/4)	(60.0') Observed trace amoun Lapis Luster Sand in drill cutt	nts of Cemex #3 Mesh (8x20) ings.	
					(67.0 - 74.0') Topock - Alluvium			
68 68 68 69 69 69 69 69 70 69 70 71 72	(58.1 - 77.6) 4.80 mins/ft	GW		(58.1 - 77.6') 18.0" Steel Casing	(67.0 - 74.0) Topock - Alluvium Deposits; Well graded gravel (GW); reddish gray / pale brown (5YR 5/2)	(70.0') Observed trace amoun Lapis Luster Sand in drill cutt	nts of Cemex #3 Mesh (8x20) ings.	
		GC			Deposits; Clayey gravel with			
75					sand (GC); dark reddish gray (5YR 4/2)	(75.0 - 77.0') Drill rods chatte	ring	4
76		sw			(75.0 - 77.0') Topock - Alluvium Deposits; Well graded sand with gravel (SW); reddish brown / moderate brown (5YR 4/4)			
77					(77.0 - 81.5') Topock - Alluvium	(77.0') Drill rods chattering.		1
78 78 79 79	(77.6 - 82.0) 6.18 mins/ft	SW-S		(77.6 - 82.0') 18.0" Steel Casing	Deposits; Well graded sand with silt and gravel (SW-SM); reddish gray / pale brown (5YR 5/2)	(78.0 - 82.0') Rough drilling.		(77.6 - 119.3') 14976 gallons of water used; 18999 gallons of water recovered; 4023 gallons of water gained
					System, ft = feet, bgs = b	-		
<u>د</u>			cted abov	e the laborato	ory reporting limit, NR = no	recovery; Notes: depth to	o water collected post de	velopment prior to
specifi	c capacity to	est						

Barting Display Op/24/2019 Sufface Elevation: 479-71 ft amal Boring No.: RB-2 Barting Origin Construction Cascade Esting (MADB3): 210338.63 Cleant: PORE Final State Description Cleant: PORE PORE PORE	ARCA	DIS	Design & Consultant or natural and built assets	су	Drilling Log		Sheet: 5	5 of 13
hale Competence in Udda/2013 Morthing (MAD83): 2103398.34. Clearting (Mad2/2013 Clearting (MAD83): 2103398.34. Clearting (Mad2/2013 Clearting (MAD83): 2103398.34. Clearting (Mad2/2013 Clearting (Date Started:					479.71 ft amsl	Boring No · PP	-2
tiling Nethod: Dual Rolary Total Doptin: 26.4.1 bgs Project: Field Wareney Phase 1 ther Name: Conserver Casing Diameter: 16 inches Conserver State St	Date Completed	: <u>10/05/20</u>	19	Nort	ning (NAD83):	2103398.54		-2
III Rig Type: Foremost DP.24HD Conductor Casing Diameter: 18 inches Conductor Casing Diameter: 18 inches 17 casing 19 Project Number: PC020753.0051 10 conductor Casing Diameter: 10 Project Number: PC020753.0051 10 Project N	Drilling Co.:	Cascade	•	East	ing (NAD83):	7616015.77	Client: <u>PG&E</u>	
Him Name: Jon Martinez Drill Cashing Diamiterie: 16 inches California John Martinez Drill Cashing Diamiterie: 16 inches California John Martinez Depth to First Water: 28.8 ft.bgs Project Number: RC000753.0051 John Martinez Depth to First Water: 28.8 ft.bgs Project Number: RC000753.0051 John Martinez Depth to First Water: 28.8 ft.bgs Project Number: RC000753.0051 John Martinez USCS Casing Demonstruct 28.8 ft.bgs John Martinez USCS Casing Demonstruct	Drilling Method:	Dual Rot	ary	Tota	Depth:	<u>254.4 ft bgs</u>	Project: Final GW Re	medy Phase 1
Hing Ass: A.B.H.Amegula: Definition Ticone Project Number: RC000753.0051 g Geologist: D. Comel / E. Redner: Converted to Welt: ZE 8.ft bgs Project Number: RC000753.0051 g Geologist: D. Comel / E. Redner: Converted to Welt: Yes No g Geologist: D. Comel / E. Redner: Converted to Welt: Yes No g Geologist: Group and Lamon Description Description Description g Geologist: Group and Lamon Group and Lamon Description Description g Geologist: Group and Lamon Group and Lamon Group and Lamon Description g Geologist: Group and Lamon Group and Lamon Group and Lamon Description g Geologist: Group and Lamon Group and Lamon Group and Lamon Description g Geologist: Group and Lamon Group and Lamon Group and Lamon Description g Geologist: Group and Lamon Group and Lamon Group and Lamon Group and Lamon Description g Geologist: Group and Lamon Group and Lamon Group and Lamon Group and	Drill Rig Type:	<u>Foremos</u>	t DR-24H	ID Cond	ductor Casing Diameter:	18 inches	Location: PG&E Topod	k, Needles,
Operation Amodel Lamon Depth to First Water: 28.6 ft bbg g Geologist: D.Comell / E. Redner Converted to Well: Ves No mining Markenger Casing Description Description Description Description g Geologist: Casing Description Description Description Description g Geologist: Syr-SW Casing Description Description Description g Gool - 92.0) Mt Description Description Description Description g Gool - 92.0) Mt Description Description Description Description g Gool - 92.0 Mt Description Description Description Description	Driller Name:	Jon Mar	inez	Drill (Casing Diameter:	<u>16 inches</u>	California	
g Geologisti D. Cornel / E. Redner Converted to Walt Vell: etcol Diffing Run (f) Production Ran (f) Cost USCs USCs Case Diameter Be Plot Corn (g of production Ran (f)) (f) Cost Case Diameter Be Plot Corn (g of production Ran (f)) (f) Cost Case Diameter Be Plot Corn (g of production Ran (f)) (f) Cost Case Diameter Be Plot Corn (g of production Ran (f)) (f) Cost Case Diameter Be Plot Corn (g of production Ran (f)) (f) Cost Case Diameter Be Plot Corn (g of production Ran (f)) (f) Cost Case Diameter Be Plot Corn (f) Cost Case Diameter Be Plot Corn (f) (f) Cost Case Diameter Be Plot Corn (f) Cost Case Diameter Be Plot Corn (f) (f) Cost Case Diameter Be Plot Corn (f) Cost Case Diameter Be Plot Cost (f) Cost Case Diameter Be Plot Cost (f) Cost (Drilling Asst:	<u>A. & H. A</u>		aDrill I	Bit:	Tricone	Project Number: RC000	753.0051
optiming Function (10) USCS Prestorement and Aurops, Code USCS Casing Diameter USCS Diameter USCS Casing Diameter Description (See Pilot forming or process/setallinations in difficultings Duling Fluid 81 (77.6 - 82.0) (16 minetit SW-556 (17.6 - 82.0) (16.7 - 66.7) (17.6 - 66.7) (1	Tool-Pusher:		-		h to First Water:	<u>26.8 ft bgs</u>	· ·	
epid Multiple Distling Topols Casing Dameter Casing Dameter Casing Dameter Casing Dameter Casing Dameter Casing Dameter Distling Topols Distling	Rig Geologist:	D. Corne	ell / E. Re	dnerConv	verted to Well:	× Yes No		
10 geologic declemports 81 (77.6 - 82.0) (5.10 minuted 82 (77.6 - 82.0) (5.10 minuted 82 (77.6 - 82.0) (5.10 minuted 84 (77.6 - 82.0) (5.10 minuted 85 (77.6 - 82.0) (5.10 minuted 86 (77.6 - 92.0) (5.20 - 92.0) 88 (77.6 - 82.0) (5.20 - 92.0) 91 (82.0 - 92.0) 92 (82.0 - 92.0) 93 (92.0 - 92.0) 94 (92.0 - 92.0) 95 (92.0 - 92.0) 96 (92.0 - 92.0) 97 (10.0 - 93.0) 98 (92.0 - 92.0) 99 (92.0 - 92.0) 91 (92.0 - 92.0) 92 (92.0 - 92.0) 93 (92.0 - 92.0) 94 (92.0 - 92.0) 95 (92.0 - 92.0) 96 (92.0 - 92.0) 97 <t< td=""><td>(ft) and Avera</td><td>age Code</td><td></td><td></td><td>(See Pilot boring log for</td><td></td><td></td><td>Drilling Fluid</td></t<>	(ft) and Avera	age Code			(See Pilot boring log for			Drilling Fluid
81 77.6 8.00 90%-38 91%-36 <td< td=""><td>Tenetration</td><td>Trate</td><td></td><td></td><td>full geologic descriptions)</td><td></td><td></td><td></td></td<>	Tenetration	Trate			full geologic descriptions)			
83 4 M. 6		J)		`18.0" Steel		m (82.0') Rough drilling, loss of	tings.	
87 (82.0 - 92.0) (3.0 mins.ft) (82.0 - 92.0) (18.0 * Steel Casing (86.5 - 90.0') (19.0 * Steel Casing (86.5 - 90.0') (19.0 * Steel	83 84 85	ML			0		3	
91 GC GC <td< td=""><td></td><td>fí</td><td></td><td>`18.0" Steel (</td><td>Deposits; Clayey gravel (GC); yellowish red / light brown (5Y 5/6)</td><td>R</td><td></td><td></td></td<>		fí		`18.0" Steel (Deposits; Clayey gravel (GC); yellowish red / light brown (5Y 5/6)	R		
94 94 95 95 96 96 96 97 97 98 99 97 98 99 99 99 90 97 98 99 97 98 99 99 90 97 98 99 99 90 97 98 99 97 98 99 97 98 99 97 98 99 97 98 99 97 98 97 97 98 97 97 97 97 97 97 97 97 97 97	 _91 _92 _ 93	GC			Deposits; Clayey gravel (GC);	Lapis Luster Sand in drill cut		
97 GM 0	 _94 (92.0 - 97.	164		`18.0" Steel	Deposits; Silty gravel (GM);		ering.	
GC Alluvium Depósits; Clayey gravel (GC); yellowish red / obreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = oundwater, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: depth to water collected post development prior to		.3)		18.0" Steel	Deposits; Silty gravel (GM); strong brown (7.5YR 5/6)		of casing 1.95 ft.	
oundwater, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: depth to water collected post development prior to	 _100 _ Abbreviations: I		ified Soil	Classification	Alluvium Deposits; Clayey gravel (GC); yellowish red /	below around surface amo	s) = ahove mean sea level	GW =
					· · · · ·	.		
			ven 900A		$r_{\rm r} = r_{\rm r}$	io recovery, motes: depth t	o water collected post del	eiopineni prior io
	specific capacity	test						

Complete: 1005/2019_Northing (NADR3): 210338.6.4. DOIIng (No. NE22 George Co.: George Co.: Co.: George Co.: Co.: Co.: Co.: Co.: Co.: Co.: Co.:	ARCA	DIS Design & Cons for natural an built assets	nd	Drilling Log		Sheet: 6	6 of 13
Complete: 1005/2019 Northing (VADB3): 2103/38.34 g Method: Dual Rotary Total Depth: 254.11 bps: Project Final GW Remdy Phase 1 Rot Transmitter (Complete Casing Diameter: 16 Inches Location: Final GW Remdy Phase 1 9 Average Version 2007/33.0051 Project Number: RC0007/33.0051 Project Number: RC0007/37.0070 Projec						Boring No.: RB	-2
Op Method: Dual Rotary Total Depth: 224.4 H bgs Project: Final Conductor Cosing Diameter: 16 Inches Conductor: PGAE Topock, Needles, California rg Asst: A. & H. Amszulta Ontil Bit Tricine Project: Final Cosing California Project Number: RC0000753.0051 Borbigs D. Cornell / E. Reicher Converted to Velit × Yes No Borbigs Description Beergrann Description Description </td <td>-</td> <td>10/05/2019</td> <td></td> <td> ,</td> <td></td> <td></td> <td></td>	-	10/05/2019		,			
Re Type: Foremost DR-24HD Conductor Casing Diameter: 18 InchesLocation: PG-84 Topock. NaedlesCalifornia_ r Name: Jon MattinezDrill Casing Diameter: 16 InchesCalifornia_ project Number: RC0000753.0051 Paster: Andel LamonDepth to First Water: 26.8 fttgs Coom/LF. ExcedenceCoverted to Well: 26.9 No	0			- ,		-	
r Name: Jon Martínez Drill Casing Diameter: 16 inches Callfornia rg Asst: A. A. H. Amszgula Drill Bit: 12000 A. A. H. Amszgula Drill Bit: 26.8 ft. bgs Project Number: RC000753.0051 Project Number: RC000753.0051 Project Number: RC000753.0051 Project Number: RC000753.0051 Doming Fuel Project Number: RC000753.0051 Doming Fuel Decipito Coll Viel Co	•	•		•	•	- ,	•
g Asst: As A: H. Amegulia	rill Rig Type:	Foremost DR-2	24HD Con	ductor Casing Diameter:	<u>18 inches</u>	Location: PG&E Topoc	k, Needles,
Pusher: Deciminan Depth to First Water: 28.8 lt bps Seologist: D.Comel / E. Reduct Converted to Weit: X Yes No Image Average Penetration Rise Usca Usca Usca Usca Penetration Rise Usca Usca Usca Usca Usca Usca Usca Usca	riller Name:	Jon Martinez	Drill	Casing Diameter:	<u>16 inches</u>	California	
Backgist D. Cornel / E. Redner Converted to Well: Yes No Mark Average Presentation Rate Loss Description Description Description Description Diming Num (1) Presentation Rate Diming Num (1) Presentation Diming Num (1) Diming Num (1) Presentation Diming Num (1) Presentation Diming Num (1) Diming Num (1) Presentation Diming Num (1) Presentation Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Diming Num (1) Presentati	-	-		Bit:	Tricone	Project Number: <u>RC000</u>	753.0051
h Dilling Run (ff) and Average. beentmon Refer Code Class Code Class Cla				th to First Water:	26.8 ft bgs	-	
Monitoring Avanual Pointing Young Pointing Young Pointing Pointing Pointing Young Pointing Young Pointing Youn	g Geologist:	D. Cornell / E.	Redner Con	verted to Well:	X Yes No		
GC GC<	(ft) and Average			(See Pilot boring log for			Drilling Fluid
Image: Section of the section of th	- 101 102 103 -	GC		light brown (5YR 5/6)			
Image: Second	104_ _ 105_ 106_ _ 107_	GM 000		Alluvium Deposits; Silty grave (GM); yellowish red / light brown (5YR 5/6)	(104.0 - 119.0') Rough drillin	g	
(97.0 - 119.3) GM 0 (15.0 - 119.3) Alluvium Deposits; Silty gravel (Casing 5.03 mins/ft GM 0 (10.0 - 112.0) Topock - Alluvium Deposits; Silty gravel (GM); selowish brown (10YR 5/6) GM 0 (10.0 - 112.0) 111.0 - 112.0) Topock - Alluvium Deposits; Silty gravel (GM); strong brown (7.5YR 5/6) GM 0 (10.0 - 114.0) Topock - Alluvium Deposits; Silty gravel (GM); strong brown (7.5YR 5/6) GM 0 (114.0 - 121.0) Topock - Alluvium Deposits; Silty gravel (I14.0 - 121.0) GM 0 (10.0 - 0 (1	_ 08_ _ 09_	GC		Alluvium Deposits; Clayey gravel with sand (GC); yellowish red / light brown (5Y 5/6)	R		
GM GM GM GM GM GM GM GM GM GM	110 `5.03 mins/ft´ 		18.0" Steel	Alluvium Deposits; Silty grave with sand (GM); yellowish			
GM GM GM GM GM GM GM GM GM GM	111 112	GM O		Alluvium Deposits; Silty grave (GM); yellowish brown (10YR			
GM G	- 113	GM OC		(112.0 - 114.0') Topock - Alluvium Deposits; Silty grave			
(119.3 - 130.0) (119.3 - 130.0') 2.00 mins/ft (119.3 - 130.0') (119.3') Conductor casing cannot be advanced deeper due gallons of water use	114 115 116 117	GM C		Alluvium Deposits; Silty grave with sand (GM); yellowish			
2.00 mins/ft [0 0] 16.0" Steel [119.3') Conductor casing cannot be advanced deeper due gallons of water use	 118 119						
			() (119.3 - 130.0') ↓ (119.3 - 130.0') ↓ (119.3 - 130.0')				(119.3 - 176.7') 1377 gallons of water used
reviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =	20_	CS = Unified S		System ft = feet bas -	, , ,	•	0
				, ,			
ndwater, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: depth to water collected post development prior t ific capacity test			oove ine laborato	bry reporting limit, $NR = n$	o recovery; notes: depth t	o water collected post dev	velopment prior t

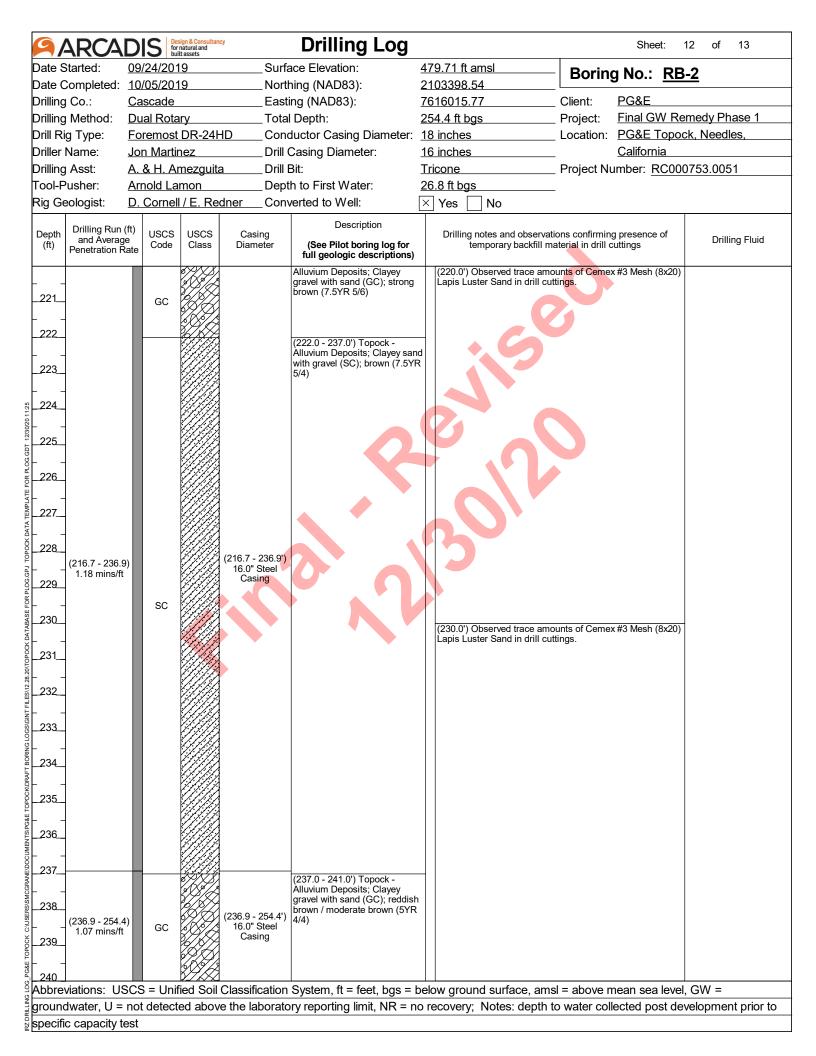
ARCA		<mark>ign & Consultancy</mark> natural and t assets		Drilling Log			Sheet:	7 of 13
Date Started:	09/24/201		Surfa	ace Elevation:	479.71 ft amsl	Boring	g No.: <u>R</u> E	1_9
Date Completed:	10/05/201	9	North	hing (NAD83):	2103398.54		<u>, NU RE</u>	
Drilling Co.:	Cascade			ing (NAD83):	7616015.77	_ Client:	PG&E	
Drilling Method:	Dual Rota	ry	Tota	I Depth:	254.4 ft bgs	_ Project:	Final GW Re	emedy Phase 1
Drill Rig Type:	Foremost	DR-24HD	Cond	ductor Casing Diameter:	18 inches	_ Location:	PG&E Topo	ck, Needles,
Driller Name:	Jon Martin	iez	Drill (Casing Diameter:	16 inches	_	California	
Drilling Asst:	<u>A. & H. Ar</u>	nezguita	Drill I	Bit:	Tricone	_ Project Nu	mber: <u>RC00</u>	0753.0051
Fool-Pusher:	Arnold Lar	mon	Dept	h to First Water:	26.8 ft bgs	_		
Rig Geologist:	D. Cornell	/ E. Redner	Conv	verted to Well:	🛛 Yes 🗌 No			
Depth (ft) Drilling Run and Average Penetration F	je Codo		asing Imeter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observal temporary backfill m			Drilling Fluid
	GM		asing		to increased torque during r	un, formation is	very tight.	13310 gallons of water recovered; 468 gallons
_121			s - 130.0') " Steel asing	(121.0 - 127.0') Topock - Alluvium Deposits; Silty gravel with sand (GM); yellowish brown (10YR 5/6) (127.0 - 131.5') Topock - Alluvium Deposits; Gravelly si with sand (ML); brown (7.5YR 5/4)				of water lost
130 				(131.5 - 137.0') Topock - Alluvium Deposits; Silty gravel with sand (GM); yellowish brown (10YR 5/6)	(130.0') Observed trace and Lapis Luster Sand in drill cu	ounts of Cemex ttings.	(#3 Mesh (8x20)	
133_ (130.0 - 137. 3.01 mins/fi _ 135_ _ 136_ _ 137_	1) GM	6 16.0	I - 137.1') I' Steel asing					
	1) SM	16.0	- 157.1') " Steel asing	(137.0 - 142.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); dark yellowis brown (10YR 4/6)	h			
	SCS = Unifi	ied Soil Class	ification	System, ft = feet, bgs = l	pelow ground surface, am	sl = above m	nean sea leve	I, GW =
					o recovery; Notes: depth			
	est			-			-	· · · · ·

a Slatet: 99/24/2019 Surface Elevalor: 479.11 amai a Complete: 0002/2019 Surface Elevalor: 479.11 amai Complete: 0002/2019 Surface Elevalor: 479.11 amai 200388.84 Complete: 01002/2019 Surface Elevalor: 479.11 amai 200388.84 Complete: 01002/2019 Surface Elevalor: 479.11 amai 200388.84 Complete: 01002/2019 Surface Elevalor: 479.11 amai 201388.84 Complete: 01002/2019 Surface Elevalor: 479.11 amai 2010 Surface Elevalor: 40000 Surface Elevalor: 479.11 amai 2010 Surface Elevalor: 40000 Surface Elev	ARC	A	DIS	Design & Consulta for natural and built assets	псу	Drilling Log		Sheet: 8	3 of 13
a complete: 100/b2/013	Date Started:					ace Elevation:	479.71 ft amsl	Boring No · PR	-2
Ing Method: Dual Rolary Total Depth: 264.41 bgs Project: Elia GMS Remedy Phase 1 Rig Type: FormersUR2-44-BH Conductor Casing Diameter: Libinchas Conditions (Casing Diameter: Libinchas Conditions) (Casing D	Date Complete	ed:	10/05/2	2019	Nort	hing (NAD83):	2103398.54		-2
Rig Type: Exerement DR2:24:D Conductor Casing Diameter: 18 inches Location: PC64E Dropok. Meddlas. ing Ast: A. & H. Amazguita Dell Bit: Ticon Project Number: RC000753.0051 JPH user: Conductor Casing Diameter: 28.8 it bgs Project Number: RC000753.0051 JPH user: Connel LE: Redigitari Dell Bit: Ticon Project Number: RC000753.0051 Goolgist: D. Connel LE: Redigitari Connel LE: Redigitari Project Number: RC000753.0051 drin Averopic Description: Description: Description: Project Number: RC000753.0051 drin Averopic Casing Description: Description: Project Number: RC000753.0051 drin Averopic Casing Description: Description: Description: drin Averopic Casing Casing Description: Dring Rudon content in the User Signed rudon content in the User Si	Drilling Co.:		Cascad	le	East	ing (NAD83):	7616015.77	-	
Iden Name: Jon Martinez Def Casing Diameter: 10 inches California Mining Asst: A.S. H.Amazguina Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 ShPusher: Arnold Lamon Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: RC000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: Rc000753.0051 gen Unit of Kim N, Water Depth to First Water: 28.8 ft bgs Project Number: Rc000753.0051 gen Unit of Kim N, Water Second Unit of Kim N, Water 28.8 ft bgs Project Number: Rc000753.0051 gen Unit of Kim N, Water Second	Drilling Method	d:	Dual R	otary	Tota	I Depth:	<u>254.4 ft bgs</u>	Project: Final GW Re	medy Phase 1
Imp A sts: As H. Amsguita Del Bit Ticone Project Number: RC000753.0051 >HPusher: Annoli Lamon Depth to First Water: 26.8 ft.bgs No cologist: D. Cannel/ E. Reflect Converted to Weit: X Yes No cologist: D. Cannel/ E. Reflect Converted to Weit: X Yes No cologist: D. Cannel/ E. Reflect Converted to Weit: X Yes No cologist: D. Cannel/ E. Reflect Converted to Weit: X Yes No cologist: SN Description Description During Fills During Fills cologist: SN GM GM GM Cologist: Docide Strate During Fills cologist: SN GM GM GM GM GM Docide Strate Docide Strate Docide Strate cologist: SN GM GM GM GM GM Docide Strate	Drill Rig Type:		Foremo	ost DR-24	HD Con	ductor Casing Diameter:	<u>18 inches</u>	Location: PG&E Topod	ck, Needles,
Operation Depth to First Warr: 28.8 fb.bg. Geologist: D. Cornell / E. Reduce Converted to Weit: X Yes No Drilling Find Document / E. Reduce Converted to Weit: X Yes Document / E. Reduce Document / E. Reduce Drilling Find Document / E. Reduce Converted to Weit: X Yes Document / E. Reduce Description Diff Diff Ref (N) weight Uses Document / E. Reduce Description Description Diff Diff Ref (N) Stat Diff Ref (N) Document / E. Reduce Document	Driller Name:	1	Jon Ma	irtinez	Drill (Casing Diameter:	<u>16 inches</u>	California	
Geologist D. Commel/E. Reference Converted to Well Yes No abi prediction predit prediction pred	Drilling Asst:			-	aDrill	Bit:		Project Number: <u>RC000</u>	0753.0051
Diffing Run (ft) Pendituling Pendituling Penditul	Fool-Pusher:					h to First Water:	26.8 ft bgs	-	
Million Torregin USCS Class ClasClass Class Class <	Rig Geologist:		D. Corr	nell / E. Re	edner Conv	verted to Well:	× Yes No		
12 0	(ff) and Av	verage				(See Pilot boring log for	temporary backfill m		Drilling Fluid
13 Image: Section of the section of			SN	1				,	
64 SM SM Allukium Deposits: Silly sand with grave (Sk), storag brown (7.5YR 5/6) 14 SM (187.1 - 157.1) (1.40 mins/t) SM (187.1 - 157.1) (16.7 Steel) 13 SM (187.1 - 157.1) (16.7 Steel) (187.1 - 157.1) (16.7 Steel) (187.1 - 157.1) (16.7 Steel) 34 SM (187.1 - 157.1) (16.7 Steel) (187.1 - 157.1) (16.7 Steel) (187.1 - 157.1) (16.7 Steel) 34 GM GM (157.1 - 176.7) (1.40 mins/t) GM (157.1 - 176.7) (157.1 - 176.7) 35 GM GM (157.1 - 176.7) (157.1 - 176.7) (157.1 - 176.7) (157.1 - 176.7) (157.1 - 176.7) (157.1 - 176.7) 36 GM Composite: Sitly gravel (Min strong brown (7.5 YR 5/6)) (157.1 - 176.7) (157.1 - 176.7) (157.1 - 176.7) (157.1 - 176.7) 36 GM Composite: Sitly gravel (Min strong brown (7.5 YR 5/6)) (157.1 - 176.7) (159.5 - 160.0') Topock - Casing (157.1 - 176.7) (16.9 Steel) (157.1 - 176.7) (159.5 - 160.0') Topock - Casing 37 GM Composite: Sitly gravel (Min strong brown (7.5 YR 5/6)) (157.1 - 176.7) (159.5 - 160.0') Topock - Casing (159.5 - 160.0') Topock - Casing 38 GM Composite: Sitly gravel (159.5 - 160.0') Topock - Casing (159.5 - 160.0') Topock - Casing (159.5 - 1	142 143 144 145		GN			Alluvium Deposits; Silty grave with sand (GM); strong brown		5	
18 (137.1 - 157.1) 1.48 (137.1 - 157.1) 1.49 (137.1 - 157.1) 1.49 (137.1 - 157.1) 1.49 (137.1 - 157.1) 1.40 (137.1 - 157.1) 1.40 (137.1 - 157.1) 1.40 (137.1 - 157.1) 1.41 (137.1 - 157.1) 1.42 (140.0 - 153.0) 1.41 (140.0 - 153.0) 1.41 (140.0 - 153.0) 1.41 (140.0 - 153.0) 1.41 (140.0 - 153.0) 1.41 (140.0 - 153.0) 1.41 (140.0 - 153.0) 1.41 (140.0 - 155.0) 1.42 (140.0 - 155.0) 1.43 (140.0 - 155.0) 1.41 (140.0 - 155.0) 1.42 (140.0 - 155.0) 1.43 (140.0 - 155.0) 1.44 (140.0 - 155.0) 1.45 (140.0 - 155.0) 1.45 (140.0 - 155.0) 1.46 (140.0 - 155.0) 1.48 (140.0 - 155.0) 1.48 (140.0 - 155.0) 1.48 (140.0 - 155.0) <t< td=""><td>- – _146 - – _147</td><td></td><td>SN</td><td>1</td><td></td><td>Alluvium Deposits; Silty sand with gravel (SM); strong brown (7.5YR 5/6)</td><td></td><td></td><td></td></t<>	- – _146 - – _147		SN	1		Alluvium Deposits; Silty sand with gravel (SM); strong brown (7.5YR 5/6)			
1 SM (149.0 - 153.0) Topock - Alluvium Deposits; Silty sand with gravel (SM); yellowish brown (10YR 56) 31 SM (153.0 - 156.5) Topock - Alluvium Deposits; Silty gravel with sand (GM); strong brown (7.5YR 56) 33 GM O 44 O O 55 O O 64 O O 55 O O 64 O O 56 O O 67 O O 68 O O 69 O O 60 O O 60 O O 61 O O 62 O O 63 O O 64 O O 65 O O 66 O O 7 O O 67 O O 93 O O 148 mins/ft O O 68 O O 93 O O </td <td></td> <td></td> <td></td> <td>1</td> <td>16.0" Steel</td> <td>Alluvium Deposits; Silty sand with gravel (SM); reddish brow</td> <td>vn</td> <td></td> <td></td>				1	16.0" Steel	Alluvium Deposits; Silty sand with gravel (SM); reddish brow	vn		
34 35 36 37 36 37 36 37 <td< td=""><td></td><td></td><td>SN</td><td>1</td><td></td><td>Alluvium Deposits; Silty sand with gravel (SM); yellowish</td><td></td><td></td><td></td></td<>			SN	1		Alluvium Deposits; Silty sand with gravel (SM); yellowish			
GM GM GM GC GC GC GC GC GC GC GC GC GC	_153 154 155		GM			Alluvium Deposits; Silty grave with sand (GM); strong brown			
GM GM GM GC GC GC GC GC GC GC GC GC GC	 _156 _157					Alluvium Deposits; Silty grave			
boreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = undwater, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: depth to water collected post development prior to				b Y.K	16.0" Steel	(GM); strong brown (7.5YR 5/	0)		
previations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = undwater, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: depth to water collected post development prior to	- – 160		G			(159.5 - 160.0') Topock -	71		
undwater, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: depth to water collected post development prior to		: US	CS = L	Inified Soil	Classification	System, ft = feet. bas =	below ground surface. ame	sl = above mean sea level	. GW =
	еспс сарас	city te	st						

ARCA		sign & Consultance natural and ilt assets		Drilling Log			Sheet:	9 of 13
	09/24/201			ace Elevation:	<u>479.71 ft amsl</u>	- Boring	3 No.: <u>R</u> E	3-2
•	10/05/201	19		ning (NAD83):	2103398.54	_		
rilling Co.:	Cascade		East	ing (NAD83):	7616015.77	Client:	PG&E	
rilling Method:	Dual Rota	ary		I Depth:	254.4 ft bgs	Project:		emedy Phase 1
rill Rig Type:	Foremost	DR-24H	<u>ID</u> Cono	ductor Casing Diameter:	18 inches	Location:	PG&E Topo	ock, Needles,
riller Name:	Jon Martin	nez	Drill (Casing Diameter:	<u>16 inches</u>		<u>California</u>	
rilling Asst:	<u>A. & H. A</u>	mezguita	aDrill I	Bit:	Tricone	Project Nu	mber: RC00	0753.0051
ol-Pusher:	Arnold La	mon	Dept	h to First Water:	<u>26.8 ft bgs</u>			
g Geologist:	D. Cornel	I / E. Red	dner Conv	verted to Well:	🗙 Yes 🗌 No			
(ft) Drilling Run (and Average Penetration R	e Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and obser temporary backfill			Drilling Fluid
- 161_ 162_ -	GM			Alluvium Deposits; Clayey gravel (GC); yellowish brown (10YR 5/6) (160.0 - 163.0') Topock - Alluvium Deposits; Silty grave (GM); strong brown (7.5YR 5/	l 6)	20		
163_ _ 164_ 165_ 166_ _ 167_	GM	00000000000000000000000000000000000000		(163.0 - 167.0') Topock - Alluvium Deposits; Silty grave (GM); reddish yellow (7.5YR 6/8)		0		
168 168 1.48 mins/ft 169 170 171)) SM		(157.1 - 176.7') 16.0" Steel Casing	(167.0 - 171.0') Topock - Alluvium Deposits; Silty sand (SM); reddish brown / modera brown (5YR 4/4)	Ite			
172	SM			(171.0 - 172.5') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brov / moderate brown (5YR 4/4)	vn			
173 174 175 176	SM			(172.5 - 177.0') Topock - Alluvium Deposits; Silty sand (SM); reddish brown / modera brown (5YR 4/4)	te			
177 178	SM			(177.0 - 178.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brov (/5YR 5/4)	vn			(176.7 - 254.0') 1325 gallons of water used 13862 gallons of water recovered; 605 gallo of water gained
(176.7 - 197.0 - 1.09 mins/ft 179_			(176.7 - 197.0') 16.0" Steel Casing	(178.0 - 179.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brov				of water gained
-	SM			(moderate brown (5YR 4/4) (179.0 - 181.0') Topock - Alluvium Deposits; Silty sand				
					below ground surface, a			

9	ARCA	DIS	Design & Consultar for natural and built assets	су	Drilling Log			Sheet: 1	0 of 13
Date S	Started:	09/24/2	2019	Surfa	ace Elevation:	479.71 ft amsl	Boring	g No.: <u>RB</u>	-2
	Completed:				ning (NAD83):	2103398.54			=
Drilling		Cascad			ing (NAD83):		Client:	PG&E	
-	g Method:	<u>Dual R</u>	-		Depth:	•	Project:	Final GW Rei	•
	ig Type:		ost DR-24		ductor Casing Diameter:		Location:	PG&E Topoc	k, Needles,
	Name:	Jon Ma			Casing Diameter:	16 inches		<u>California</u>	
Drilling			Amezguit				Project Nu	mber: <u>RC000</u>	753.0051
	Pusher:	Arnold			h to First Water:	26.8 ft bgs			
Rig Ge	eologist:	D. Cori	<u>nell / E. Re</u>	dner Conv	verted to Well:	X Yes No			
Depth (ft)	Drilling Run and Averag Penetration F			Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observatic temporary backfill ma			Drilling Fluid
	-	SN	1		(SM); reddish brown / moderat brown (5YR 4/4) (181.0 - 188.0') Topock -	Lapis Luster Sand in drill cutti		:#3 Mesh (8x20)	
	-				Alluvium Deposits; Well grade sand with gravel (SW); strong brown (7.5YR 5/6)				
	-								
	-								
		SV					3		
186				•		T SV			
187									
	(176.7 - 197.0			(176.7 - 197.0')	(188.0 - 189.0') Topock - Alluvium Deposits; Well grade				
	1.09 mins/ft	GW-		16.0" Steel Casing	gravel with silt and sand (GW-GM); strong brown (7.5YR 5/6)				
190	-				(189.0 - 189.5') Topock - Alluvium Deposits; Silty sand with gravel (SM); strong brown (7.5YR 5/6)	(190.0') Observed trace amou Lapis Luster Sand in drill cutti		#3 Mesh (8x20)	
191		G			(189.5 - 192.0') Topock - Alluvium Deposits; Silty gravel with sand (GM); strong brown				
192	-				(7.5YR 5/6) (192.0 - 197.0') Topock - Alluvium Deposits; Well grade	_			
193	-				sand with silt and gravel (SW-SM); strong brown (7.5YF 5/6)				
194		SW-	، نُوْنَهُ ، • • • • • • • • • • • • • • • • • • •						
195									
196	-								
197					(197.0 - 199.5') Topock -				
 198	(197.0 - 216.7) SM	1	(197.0 - 216.7') 16.0" Steel	Alluvium Deposits; Silty sand (SM); strong brown (7.5YR 5/6				
	1.35 mins/ft			Casing					
200		M			(199.5 - 202.0') Topock -				
						elow ground surface, amsl			
•			ected abov	e the laborato	ry reporting limit, NR = n	o recovery; Notes: depth to	o water coll	ected post dev	elopment prior to
specifi	ic capacity t	est							

	ARCA	DIS	lesign & Consultanc or natural and uilt assets	У	Drilling Log		Sheet: 1	1 of 13
ate St	tarted:	09/24/20	19	Surfa	ace Elevation:	479.71 ft amsl	Boring No.: RB-	2
	ompleted:				hing (NAD83):	2103398.54		=
Prilling		<u>Cascade</u>			ing (NAD83):	7616015.77	_ Client: <u>PG&E</u>	
-		<u>Dual Rot</u> –	•		I Depth:	254.4 ft bgs	_ Project: <u>Final GW Rer</u>	•
-			<u>t DR-24H</u>		ductor Casing Diameter:		_ Location: <u>PG&E Topocl</u>	k, Needles,
		Jon Mart			Casing Diameter:	<u>16 inches</u>	_ <u>California</u>	
rilling			mezguita			Tricone	_ Project Number: <u>RC000</u>	753.0051
		Arnold La	amon ell / E. Rec		h to First Water: verted to Well:	26.8 ft bgs	_	
	ologist:		== / ⊑. Kec			Yes No	I	
Depth (ft)	Drilling Run (and Average Penetration R			Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observa temporary backfill n	tions confirming presence of naterial in drill cuttings	Drilling Fluid
_201		ML			Alluvium Deposits; Gravelly si with sand (ML); strong brown (7.5YR 5/6)	t (200.0') Observed trace am Lapis Luster Sand in drill cu	ounts of Cemex #3 Mesh (8x20) Ittings.	
202_ _ _203_ _		SM			(202.0 - 204.0') Topock - Alluvium Deposits; Silty sand (SM); strong brown (7.5YR 5/6))		
204		SM			(204.0 - 204.5') Topock - Alluvium Deposits; Silty sand			
_205		ML			(SM); strong brown (7.5YR 5/6 (204.5 - 205.0') Topock - Alluvium Deposits; Gravelly si		J	
_206		SM			with sand (ML); strong brown (7.5YR 5/6) (205.0 - 207.5') Topock - Alluvium Deposits; Silty sand (SM); strong brown (7.5YR 5/6			
_207					(207.5 - 217.0') Topock -			
_208	(197.0 - 216.7 1.35 mins/ft)		(197.0 - 216.7') 16.0" Steel Casing	Alluvium Deposits; Clayey sar with gravel (SC); brown (7.5YI 4/4)			
_209								
210						(210.0') Observed trace am Lapis Luster Sand in drill cu	ounts of Cemex #3 Mesh (8x20)	
211_						(211.0 - 212.0') Rough drilli	,	
_212		SC						
_214								
_								
_216								
_217					(217.0 - 219.5') Topock -			
_218 _219	(216.7 - 236.9 1.18 mins/ft) sc		(216.7 - 236.9') 16.0" Steel Casing	Alluvium Deposits; Clayey sar (SC); (7.5R 4/4)			
1			14444		(219.5 - 222.0') Topock -			



te Completed: 1 lling Co.: Q lling Method: D ll Rig Type: F ller Name: J lling Asst: A ol-Pusher: A	9/24/20 0/05/20 Cascade Dual Rota Foremost Ion Martin A. & H. Ai Arnold La D. Cornel USCS Code GC CL	19 ary DR-24H nez mezguita	Surfa North Easti Total Don Conco Drill C Drill C Drill E	h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	16 inches Tricone 26.8 ft bgs X Yes No Drilling notes and observat temporary backfill m	Boring No.: RB- Client: PG&E Project: Final GW Rer Location: PG&E Topocl California California Project Number: RC000 - - tions confirming presence of laterial in drill cuttings punts of Cemex #3 Mesh (8x20) ttings.	nedy Phase 1 k, Needles,
Iling Co.: Q Iling Method: D Il Rig Type: F Iler Name: J Iling Asst: A ol-Pusher: A g Geologist: D pth Drilling Run (ft) and Average Penetration Rate 41_ 42_ 43_ 44_ 45_ 44_ 45_ 46_ 47_ (236.9 - 254.4) 1.07 mins/ft	Cascade Dual Rota Foremost Ion Martii A. & H. Ai Arnold La D. Cornel USCS Code GC CL	ary DR-24H mez mezguita mon I/E. Rec	Easti Total D Conc Drill C Drill E Dept <u>Iner</u> Conv	ng (NAD83): Depth: ductor Casing Diameter: Casing Diameter: Bit: h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	7616015.77 254.4 ft bgs 18 inches 16 inches Tricone 26.8 ft bgs X Yes No Drilling notes and observat temporary backfill m (240.0') Observed trace amogeneous contracts	Client: PG&E Project: Final GW Rer Location: PG&E Topoct California Project Number: RC000 tions confirming presence of laterial in drill cuttings cunts of Cemex #3 Mesh (8x20)	nedy Phase 1 k, Needles, 753.0051
lling Method: D II Rig Type: F Iler Name: J Iling Asst: A ol-Pusher: A g Geologist: D of Geologist: D Penetration Rate 41 42 43 44 45 44 45 46 47 (236.9 - 254.4) 1.07 mins/ft	Dual Rota Foremost Ion Martin A. & H. Ai Arnold La D. Cornel USCS Code GC CL	DR-24H nez mezguita mon I / E. Rec	Total D Conc Drill (D Drill (D Drill [D Dri	Depth: ductor Casing Diameter: Casing Diameter: Bit: h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	254.4 ft bgs 18 inches 16 inches Tricone 26.8 ft bgs X Yes No Drilling notes and observat temporary backfill m (240.0') Observed trace amounts	Project: Final GW Rer Location: PG&E Topoc California Project Number: RC000	k, Needles, 753.0051
II Rig Type: <u>F</u> Iler Name: <u>J</u> Iling Asst: <u>A</u> ol-Pusher: <u>A</u> g Geologist: <u>D</u> pth Drilling Run (ft) and Average Penetration Rate 41_ 42_ 43_ 44_ 45_ - 44_ 45_ - 44_ 45_ - 46_ - 46_ - 47_ (236.9 - 254.4) 1.07 mins/ft	Coremost lon Martii A. & H. Ai Arnold La D. Cornel USCS Code GC CL	DR-24H nez mezguita mon I / E. Rec	D Conc Drill C Drill C Drill E Dept dner Conv Casing	ductor Casing Diameter: Casing Diameter: Bit: h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	18 inches 16 inches Tricone 26.8 ft bgs X Yes No Drilling notes and observat temporary backfill m (240.0') Observed trace amogeneous trace amogene	Location: <u>PG&E Topoc</u> <u>California</u> Project Number: <u>RC000</u> 	k, Needles, 753.0051
Iler Name: J. Iling Asst: A ol-Pusher: A g Geologist: D pth Drilling Run (ft) and Average Penetration Rate 41 - 42 - 43 - 44 - 45 - 46 - - - 46 - - - 48 -	Arnold La Arnold La D. Cornel USCS Code GC	nez mezguita mon I / E. Rec uscs	Drill (Drill E Dept Iner Conv	Casing Diameter: Bit: h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock -	16 inches Tricone 26.8 ft bgs X Yes No Drilling notes and observatitemporary backfill mediatemporary backfill m	California Project Number: <u>RC000</u> 	753.0051
lling Asst: A ol-Pusher: A g Geologist: D (pth) (t) (t) (t) (t) (t) (t) (t) (t) (t) (t	A. & H. Ai Arnold La D. Cornel USCS Code GC CL	mezguita mon I / E. Rec	Drill E Dept Iner Conv	Bit: h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	Tricone 26.8 ft bgs X Yes No Drilling notes and observat temporary backfill m (240.0') Observed trace amounts	Project Number: <u>RC000</u>	
ol-Pusher: A g Geologist: D pth Drilling Run (ft) and Average Penetration Rate 41424344454647(236.9 - 254.4) 1.07 mins/ft	Arnold La D. Cornel USCS Code GC CL	I/E.Rec	Dept	h to First Water: verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	26.8 ft bgs X Yes No Drilling notes and observat temporary backfill m (240.0') Observed trace amo	tions confirming presence of naterial in drill cuttings punts of Cemex #3 Mesh (8x20)	
Geologist: D pth Drilling Run (ft) and Average Penetration Rate 41. 42. 43. 44. 45. 44. 45. 46. 47. (236.9 - 254.4) 1.07 mins/ft	D. Cornel USCS Code GC CL	I/E.Red	<u>Iner</u> Conv	Verted to Well: Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	X Yes No Drilling notes and observat temporary backfill m (240.0') Observed trace amo	aterial in drill cuttings bunts of Cemex #3 Mesh (8x20)	Drilling Fluid
Drilling Run (ft) and Average Penetration Rate 41 42 43 44 44 45 46 46 47(236.9 - 254.4) 1.07 mins/ft) USCS Code GC CL	USCS	Casing	Description (See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	Drilling notes and observat temporary backfill m	aterial in drill cuttings bunts of Cemex #3 Mesh (8x20)	Drilling Fluid
and Āverage Penetration Ratu 41 42 43 44 44 45 44 45 46 47(236.9 - 254.4) 1.07 mins/ft	GC CL			(See Pilot boring log for full geologic descriptions) (241.0 - 244.0') Topock - Weathered Bedrock -	temporary backfill m	aterial in drill cuttings bunts of Cemex #3 Mesh (8x20)	Drilling Fluid
42 43 44 45 46 47(236.9 - 254.4) 1.07 mins/ft 48	 CL			Weathered Bedrock -			
42 43 44 45 46 47(236.9 - 254.4) 1.07 mins/ft 48				Weathered Bedrock -			
43 44 45 46 47(236.9 - 254.4) 1.07 mins/ft 48				Weathered Bedrock -			
45 46 47 (236.9 - 254.4) 1.07 mins/ft 48				conglomerate; Sandy lean clay with gravel (CL); reddish brow (5YR 5/4)			
46 47 (236.9 - 254.4) 1.07 mins/ft 48							
46 47 (236.9 - 254.4) 1.07 mins/ft 48				(244.0 - 247.0') Topock - Weathered Bedrock - conglomerate; Clayey sand			
47(236.9 - 254.4) 1.07 mins/ft 48				with gravel (SC); yellowish rec			
47(236.9 - 254.4) 1.07 mins/ft 48	SC			light brown (5YR 5/6)			
(230.9 - 204.4) 1.07 mins/ft 48							
(230.9 - 204.4) 1.07 mins/ft 48							
-			(236.9 - 254.4') 16.0" Steel Casing	(247.0 - 254.3') Topock - Weathered Bedrock - conglomerate; Gravelly lean clay with sand (CL); reddish brown (2.5YR 4/4)	3		
50					(250.0') Observed trace amo		
51	CL				(20x40) Lapis Luster Sand in	n drill cuttings.	
52							
53							
_							
54				End of Boring at 254.4 ft bgs.		ounts of Cemex #1/20 Mesh	
55				בות טו שטוווע at 204.4 it Dgs	(20x40) Lapis Luster Sand in		
_ 56							
-							
57							
58_							
_							
59							
₆₀]							
				• •		sl = above mean sea level,	
oundwater, U = no ecific capacity tes	ot detect	ed above	e the laborato	ry reporting limit, NR = n	o recovery; Notes: depth	to water collected post dev	elopment prior f

	ADIS	Design & Consultancy for natural and built assets		Во	ring	Log	J		She	et: 1 of	16
Date Started:	06/28/	2019		Surface	Elevati	ion:	480.91 ft amsl	Borin	a No .	RB-2 Pile	ot
Date Complete	ed: <u>07/26/</u>	2019		Northing	g (NAD	83):	2103398.89	Donn	y 110		<u>, </u>
Drilling Co.:	<u>Casca</u>			Easting	•	33):	7616014.81	Client:	PG&E		
Drilling Method	l: <u>Sonic</u>	Drilling	······································	Total De	epth:		<u>307 ft bgs</u>	Project:		<u> V Remedy Ph</u>	
Drill Rig Type:	<u>Boart I</u>	<u>_ongyear Trac</u>	ck Mount	Borehol	e Diam	eter:	4-12 inches	Location:	<u>PG&E T</u>	opock, Need	es,
Driller Name:	<u>TA / D</u>			•			23.8 ft bgs		<u>Californi</u>		
Drilling Asst:		<u>delaria, G. Ar</u>		Samplir			4 inch x 10 ft Core Barrel	Project N	umber: <u>I</u>	RC000753.00	51
_ogger:	<u>Joe La</u>			Samplir	-		Continuous				
Editor:	<u>Grant</u>	Willford		Convert	ed to V	Vell:	🛛 Yes 🗌 No				
Depth (ft) (ft) Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
			Topock - Fill	I SP		(0.0 - 3. 4/3); fin	0') Topock - Fill; Poorly graded sand (e grained to medium grained, subrour	SP); brown (* id; dry	10YR	(0.0 - 7.0') Soft drilling.	2 gallons used; 0 gallons recovered; 2 gallons lost
_ 3 _ 36 _ 4 _ 5 _ 6 						(3.0 - 7.	0') No recovery (NR)	3		(3.0 - 7.0') Lost recovery due to soft sands falling out of or locking up in core barrel.	
_ 7 _ 8 _ 9 _ 10 _ 11 _ 12 48			Topock - Fill	SP		4/3); fin	1.0') Topock - Fill; Poorly graded sand e grained to medium grained, subang 17.0') No recovery (NR)			(7.0 - 17.0') Heaving sands. No recovery 11 to 17 ft bgs due to loose sands falling out of or locking up core barrel.	1 gallons used; 0 gallons recovered; 1 gallons lost
.13 .14 .15 .16 .17				NR							
			Topock - Fill	SP		4/3); fin	18.5') Topock - Fill; Poorly graded san e grained to medium grained, subang	ular to subrou	ınd; dry	(17.0 - 27.0') Heaving sands, no recovery 20 to 27 ft bgs due	
_19			Topock - Fluvial Deposits	SP		light yel round; t	20.0') Topock - Fluvial Deposits; Poorl lowish brown (10YR 6/4); very fine gra race silt; dry	ined to fine g	rained,	to loose sands falling out of or locking up core barrel. During	
							= below ground surface, ams				
roundwater, r	opb = parts	per billion, U	= not dete	cted ab	ove the	e labora	tory reporting limit, NR = no re	covery; N	otes: blue	e water table s	symbol
/ 1		h haruseam	uring the fir	st VAS	interval	l; appar	ent partial recoveries can be t	ne result of	f potentia	compaction	of sedimen
	oth to wate	measureu u	annig are m								

B Seve Seve Groundwater Soll Description Dutling Notes Dutling File 21- 22- 23- 24- 25- 26- 26- 26- 26- 26- 26- 26- 26- 26- 26	AR	CADIS	Design & Consultancy for natural and built assets		Bo	ring L	og	Sh	neet: 2 of	16
Accompeted: 07/28/2019 Northing (NADB3): 2103388.89 Clent PGSE Milling Arbord: Sonic Dilling Total Deph: 302.1 b.gs Project: Enatting Memody Readed Milling Arbord: Sonic Dilling Total Deph: 302.1 b.gs Location: PGGET: Enatting Memody Readed Canthona Illing Arbord: J.Concletatic S.A.Guigano Sampling Intervat: Canthona 10 fb Core Barrel Continuous Canthona 10 fb Core Barrel Continuous itor: Grant Wilford Converted to Welt: S Yes No No 10: Grant Wilford Converted to Welt: S Yes No No 21: Sample ID Sample ID Sample ID Sample ID Dilling Nate Dilling N								- Borina No.	: RB-2 Pil	ot
Mind Method: Sonic Defining Total Depti: 307.ft.bgs Project: Find QVP: Find VP: Locandation: Project: Find QVP: Find VP: Construction: Construction: Construction: <td>•</td> <td></td> <td></td> <td></td> <td>-</td> <td>• •</td> <td></td> <td>_</td> <td><u></u></td> <td></td>	•				-	• •		_	<u></u>	
lif kip Type: Baset Longyber Track Mount Borehole Diameter: 4-12 inches Location: CG&E Pose Meedles. California					-	. ,				
Iden Name: TA / DO / SV Depth to First Water: 23.8 ft bgs Candidation gger: Joe Lation Sampling Intervat: Continuous Project Number: BC000753.0051 gger: Joe Lation Sampling Intervat: Continuous Continuous Project Number: BC000753.0051 itting Asst: Joe Lation Converted to Weit Itting File No Dolling Notes Dolling Not	-		•			•	· · · · ·			
Hing Ass: J. Condetaria, G. Angiano Sampling Method: 4 Incl. x 10.1 Core Barrel Project Number: EC000753.0051 gger: Joe Lathom Grant Willord Converted to Weit: [2] Yes No gger: Grant Willord Converted to Weit: [2] Yes No Deling Notes Delin										les,
gger Joea Latham Sampling Intervat: Continuous itto: Grant Willford Converted to Weit: Yes No ist ist ist Service D Converted to Weit: Yes No ist ist ist Service D Converted to Weit: Yes No ist ist Service D Converted to Weit: Yes Soil Description Drilling Modes Drilling Modes ist Service D Converted to Weit: Yes Soil Description Drilling Modes Drilling Modes ist NR Value D										051
Iden: Grant_Willord Converted to Well: No Image: Sample D Grant_Willord Openthylating to the sample D Converted to Well: No Image: Sample D Grant_Willord Image: Sample D Grant_Will red Dilling FM Image: Sample D Grant_Will red Image: Sample D Grant_Will red Image: Sample D Dilling FM Image: Sample D Grant_Will red Image: Sample D Grant_Will red Image: Sample D Dilling FM Image: Sample D Grant_Will red Image: Sample D	•		•		-	-			<u>KC000733.00</u>	101
B Silver Sample D Councember Sample D B B B Soil Description 21	Editor:				-	-		_		
21 22 23 24 24 25 26 27<										
21	Depth (ft) Recover (in)	Sieve Sample ID		Geologi Formatic	USCS Code					Drilling Fluid
24 36 NR NR 2 galors 25 26 1 1 1 2 galors 26 27 1	21 21 22						0 - 27.0') No recovery (NR)	So.	sand dropped ~12 ft. indicating void at ~15 to 25 ft	
27 1	_23 				NR		2010	3	¥	
28 1	_26 _27					ligh	t yellowish brown (10YR 6/4); very fine g		Heaving	
32 48 33 - 34 - 35 - 36 - 37 - 36 - 37 - 48 - 36 - 37 - 38 - 40 - 90 - 91 - 92 - 93 - 94 - 11:43 - 11:43 - 11:43 - 12:40 - 14:40 - 14:41 - 14:42 - 14:43 - 14:45 - 15:41:5 - 16:42:70:19 - 16:42:70:19 - 11:43 - 11:43 - 11:43 - 11:43 - 12:40 - 14:40 - 14	_28 29 _30 _31	31 7/15/2019		Fluvial	SP				recovery 31.5 to 37 ft bgs due to loose sands falling out of or locking up	gallons recovered; 2 gallons lost
38 60 RB-2-SS-37- 42 7/15/2019 09:46 RB-2-VAS- 36.5-41.5 (<0.033 U ppb) 6/29/2019 11:43 Topock - Fluvial Deposits SP-SM (37.0 - 38.0) Topock - Fluvial Deposits; Poorly graded sand with silt (SP-SM); brown (10YR 5/3); fine grained, subangular to round; little silt; moist (37.0 - 307. No used 39 60 RB-2-VAS- 42 7/15/2019 09:46 SP-SM SP-SM (37.0 - 38.0') Topock - Fluvial Deposits; Silty sand (SM); brown (10YR 5/3); very fine grained to fine grained, round; little silt; moist (37.0 - 307. No used 40 Fluvial Deposits SM (38.0 - 39.0') Topock - Fluvial Deposits; Silty sand (SM); brown (10YR 5/3); very fine grained to fine grained, round; little silt; moist (39.0 - 42.0') Topock - Fluvial Deposits; Well graded gravel with silt and sand (GW-GM); grayish brown (10YR 5/2); granules to very large pebbles, subangular to subround; some very fine 40 WSCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =	-3248 				NR		5 - 37.0') No recovery (NR)		Approximate depth to water	
39 - 11:43 Deposits 11:43 11:43 Topock - Fluvial Deposits (39.0 - 42.0') Topock - Fluvial Deposits; Well graded gravel with silt and sand (GW-GM); gravish brown (10YR 5/2); granules to very large pebbles, subangular to subround; some very fine observiations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =	_37	42	RB-2-VAS- 36.5-41.5 (<0.033 U ppb)	Fluvial Deposits Topock -		silt ittle	(SP-SM); brown (10YR 5/3); fine grained silt; moist 0 - 39.0') Topock - Fluvial Deposits; Silt	d, subangular to round; y sand (SM); brown		(37.0 - 307.0' No used
	_39 _ _40	09:46	11:43	Deposits Topock - Fluvial Deposits	GW-GM	(39 silt very	0 - 42.0') Topock - Fluvial Deposits; We and sand (GW-GM); grayish brown (10' large pebbles, subangular to subround	Il graded gravel with /R 5/2); granules to ; some very fine		
Junuwater, ppp – parts per billion, o – not detected above the laboratory reporting limit, NR = no recovery; Notes: blue water table symbol							o o o			wmbol
			•							
presents depth to water measured during the first VAS interval; apparent partial recoveries can be the result of potential compaction of sedime the core bag	-	-	r measured duri	ng the fil	ST VAS	nterval; ap	parent partial recoveries can be	une result of potenti	ai compaction	or seamen

- /-	AR	CADIS	Design & Consultancy for natural and built assets				Log	5	Sheet: 3 of	16
	tarted				Surface			- Borina Na	o.: <u>RB-2 Pil</u>	ot
	•	eted: 07/26/2			Northing			_		
-	Co.:	<u>Casca</u>			Easting	•		_ Client: <u>PG&I</u>		
rilling	Methe		•		Total De	•	<u>307 ft bgs</u>	•	GW Remedy Pl	
rill Ri	д Туре	e: <u>Boart L</u>	<u>ongyear Trac</u>	<u>ck Mount</u>	Borehol	e Diam	eter: <u>4-12 inches</u>	_ Location: <u>PG&I</u>	<u>E Topock, Need</u>	les,
riller l	Name:	<u>TA / D</u>	O/SV		Depth to	o First V	/ater: <u>23.8 ft bgs</u>	_ Califo	ornia	
rilling	Asst:	<u>J. Con</u>	delaria, G. An	giano	Samplin	ig Meth	od: <u>4 inch x 10 ft Core Barrel</u>	_ Project Number	r: <u>RC000753.00</u>)51
oggei	r:	<u>Joe La</u>	tham		Samplin	g Inter	al: <u>Continuous</u>	_		
ditor:		Grant V	Nillford		Convert	ed to V	ell: 🛛 Yes 🗌 No			
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Flui
_ 41	60	RB-2-SS-37- 42 7/15/2019		Topock - Fluvial	GW-GM		grained to very coarse grained sand; little sm trace caliche; trace coarser clasts composed			
-		09:46		Deposits					(41.5')	
42							(42.0 - 45.0') Topock - Fluvial Deposits: Silty	sand (SM): dark	Bottom of sampler set at	
-							yellowish brown (10YR 4/4); very fine grained		41.5 instead of	
43_				Topock -			trace clay; wet		42 ft bgs because of	
-				Fluvial	SM				formation collapse.	
14		RB-2-SS-42-		Deposits						
_		47 7/15/2019								
45_		10:00			_				_	
_							(45.0 - 48.0') Topock - Fluvial Deposits; Well silt and sand (GW-GM); dark gray (10YR 4/1); granules to very		
46							large pebbles, round; little very fine grained to sand; little silt; trace small cobbles; trace cla	o very coarse grained		
				Topock - Fluvial	GW-GM	• ? 9	coarser clasts composed of metadiorite; wet			
I7_				Deposits	GVV-GIVI					
10										
18_		RB-2-SS-47- 50			+	σ¥Ď	(48.0 - 54.0') Topock - Alluvium Deposits; Sil		•	
		7/15/2019				6 PIC	(GM); reddish brown (5YR 5/4); small pebble pebbles, angular to subangular; some very fil			
19		10:06				600	coarse grained sand; little silt; trace clay; sor			
-	180		•			$\left[0 \right]$	composed of metadiorite; wet			
50_						60				
_				Topock -						
51_				Alluvium	GM		•			
_				Deposits		0 Q Q				
52_		RB-2-SS-50-				5 P.C				
_		55 7/15/2019				[0H				
53_		7/15/2019 10:10				[0,0]				
]						6				
54_						PX9				
				Topock -		exp	(54.0 - 55.0') Topock - Alluvium Deposits; Sil (GM); reddish brown (5YR 5/4); small pebble	ty gravel with sand		
55_				Alluvium Deposits	GM	pj Hd	pebbles, angular to subangular; some very fil	ne grained to very		
~_							coarse grained sand; some clay; little silt; so composed of metadiorite; moist	me coarser clasts		
7							(55.0 - 59.0') Topock - Alluvium Deposits; Sil			
56_							(SM); reddish brown (5YR 5/4); fine grained t subangular; some granules to medium pebbl			
				Topock -			clay; little coarser clasts composed of metad			
57_		RB-2-SS-55-		Alluvium	SM		clast composed of quartz; moist			
-		60 7/15/2019		Deposits						
58_		10:15								
_	120									
59_									41	
				Topock - Alluvium	sc		(59.0 - 60.0') Topock - Alluvium Deposits; Cla (SC); reddish brown (5YR 5/4); fine grained t	o coarse grained,		
60				Deposits	_		angular to subangular; little granules to large	pebbles, angular to		
							et, bgs = below ground surface, am			
			•				laboratory reporting limit, NR = no re			
ores	ents d	epth to water	measured d	uring the fi	rst VAS	interval	apparent partial recoveries can be t	the result of poter	ntial compaction	of sedime
	core ba									

ite Starteo ite Compl illing Co.:		2019								
illing Co.:	atad: 07/26/			Surface	Elevation	on: <u>480.91 ft amsl</u>	- Boring No	.: RB-2 Pil	ot	
-	eleu. $0//20/2$	2019		Northing	g (NAD8	3): <u>2103398.89</u>	Bornighto			
III	Casca	de		Easting	(NAD8	B): <u>7616014.81</u>	Client: <u>PG&E</u>			
illing Meth	nod: <u>Sonic I</u>	Drilling		Total De	epth:	<u>307 ft bgs</u>	Project: Final	GW Remedy P	hase 1	
ill Rig Typ	e: <u>Boart L</u>	ongyear Trac	k Mount	Borehol	e Diame	eter: <u>4-12 inches</u>	_ Location: PG&E	<u>E Topock, Need</u>	lles,	
iller Name	e: <u>TA / D</u>	D/SV		Depth to	o First V	/ater: <u>23.8 ft bgs</u>	Califo	rnia		
illing Asst:		delaria, G. An		Samplin		0	Project Number	: RC000753.00	051	
gger:	Joe La	tham	•	Samplin	•					
litor:	Grant			Convert	-		-			
~			о <u>Б</u>							
(ft) Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluic	
_ 51 52 53 53 54 55	RB-2-SS-60- 65 7/15/2019 10:20		Topock - Alluvium Deposits	GM		subangular; little clay; trace silt; little coarser metadiorite; little granite; moist (60.0 - 67.0') Topock - Alluvium Deposits; Sii (GM); reddish brown (5YR 5/4); granules to I to subangular; some very fine grained to very sand; little silt; trace coarser clasts compose moist	ty gravel with sand arge pebbles, angular coarse grained			
- - - - - - - - - - - - - - - - - - -	RB-2-SS-65- 70 7/15/2019 10:25			0		(67.0 - 74.0') Topock - Alluvium Deposits; W (GW); reddish gray / pale brown (5YR 5/2); g cobbles, angular to subangular; and medium grained sand, angular to subangular; trace si silt; some coarser clasts composed of metac and basalt; wet	ranules to small to very coarse nall cobbles; trace			
 71 72120 73 74	RB-2-SS-70- 75 7/15/2019 11:38	RB-2-VAS- 72-77	Topock - Alluvium Deposits	GW						
_ 75		(<0.033 U ppb) 6/30/2019 14:10	Topock - Alluvium Deposits	GC		(74.0 - 75.0') Topock - Alluvium Deposits; Cla (GC); dark reddish gray (5YR 4/2); granules subangular; some very fine grained to very co little clay; trace silt; some coarser clasts com	to medium pebbles, parse grained sand;			
76 77			Topock - Alluvium Deposits	SW		moist (75.0 - 77.0') Topock - Alluvium Deposits; W gravel (SW); reddish brown / moderate brow grained to very coarse grained, angular to su granules to medium pebbles, angular; trace s clasts composed of metadiorite; wet	n (5YR 4/4); medium bround; some			
78 78 79 30	RB-2-SS-75- 80 7/15/2019 12:14		Topock - Alluvium Deposits	SW-SM		(77.0 - 81.5') Topock - Alluvium Deposits; W silt and gravel (SW-SM); reddish gray / pale I medium grained to coarse grained, angular t granules to large pebbles, angular to subang coarser clasts composed of metadiorite; little	prown (5YR 5/2); o subround; some ular; little silt; little			
	ns: USCS = l	Inified Soil Cla	assificatior	n System	1, ft = fe	et, bgs = below ground surface, am	sl = above mean s	ea level, GW =		
						aboratory reporting limit, NR = no re				
		-				apparent partial recoveries can be t			-	
vroconto -	ieuu iu walel	measured dl	anna the ti	ISL VAO	n nerval.	apparent partial recoveries can be t	ne result of Dolen	uai compaction	or seamer	

9/		CADIS	Design & Consultancy for natural and built assets		Во	ring	_og	Sh	eet: 5 of	16
ate S	tarted	06/28/2	2019		Surface	Elevati	n: <u>480.91 ft amsl</u>	Boring No.	RB-2 Pil	ot
ate C	omple	eted: 07/26/2	2019		Northing	g (NAD	B): <u>2103398.89</u>	_	<u></u>	<u> </u>
rilling		<u>Cascac</u>			Easting	•		Client: <u>PG&E</u>		
0	Metho		-		Total De	•	<u>307 ft bgs</u>	•	W Remedy Ph	
-	д Туре		ongyear Trac					_ Location: <u>PG&E</u>	-	les,
	lame:						ater: <u>23.8 ft bgs</u>	Californ		
rilling	Asst:		delaria, G. An	•	Samplir	-		_ Project Number:	RC000753.00)51
ogger	:	Joe La			Samplir	-		_		
ditor:		<u>Grant V</u>	Villford		Convert	ted to V	ll: ⊠ Yes 🗌 No			
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
_ _81				Topock - Alluvium Deposits	SW-SM		6			
_ _82 _83 _84 _ _85	120	RB-2-SS-80- 85 7/15/2019 12:21		Topock - Alluvium Deposits	ML		31.5 - 86.5') Topock - Alluvium Deposits; Sil w plasticity; some granules to large pebble ubangular; little very fine grained to very coa tile clay; little coarser clasts composed of m	s, angular to arse grained sand;		
.86 .87 .88 .89 .90		RB-2-SS-85- 90 7/15/2019 14:00		Topock - Alluvium Deposits	GC		36.5 - 90.0') Topock - Alluvium Deposits; Cli ellowish red / light brown (5YR 5/6); granule ngular to subangular; some clay; little silt; tr rained sand, subangular to subround; some omposed of metadiorite; wet	es to large pebbles, ace fine to coarse		
91 92 93	120	RB-2-SS-90- 95 7/16/2019 08:04		Topock - Alluvium Deposits	GC		0.0 - 93.0') Topock - Alluvium Deposits; Cla rown (7.5YR 5/4); granules to very large pel ubangular; some clay; trace very fine graine rained sand; trace silt; some coarser clasts netadiorite; trace granite; moist	obles, angular to d to very coarse	(90.0 - 103.0') Rough drilling.	
 .94 .95 .96				Topock - Alluvium Deposits	GM		93.0 - 96.5') Topock - Alluvium Deposits; Sil rown (7.5'\R 5/6); granules to very large pel ubangular; little silt; trace very fine grained t and; trace clay; and coarser clasts compose	obles, angular to o very coarse grained		
_97 _98 _99	120	RB-2-SS-95- 100 7/16/2019 08:12		Topock - Alluvium Deposits	GM		06.5 - 99.0') Topock - Alluvium Deposits; Sil rown (7.5YR 5/6); granules to very large pel ubangular; some silt; little clay; trace very fil parse grained sand; some coarser clasts co letadiorite; moist	obles, angular to ne grained to very		
100				Topock - Alluvium Deposits	GC		99.0 - 104.0') Topock - Alluvium Deposits; C ellowish red / light brown (5YR 5/6); granule ebbles, angular to subangular; some clay; li	es to very large ttle silt; trace very		
							t, bgs = below ground surface, am			
			•				boratory reporting limit, NR = no re			
prese	ents de	epth to water	measured du	uring the fi	rst VAS	interval	apparent partial recoveries can be t	he result of potenti	al compaction	of sedimer
rese		epth to water	•							

AR	CADIS	Design & Consultancy for natural and built assets		Bo	ring	Log	SI	neet: 6 of	16
ate Starte	ed: <u>06/28/</u>	2019		Surface	Elevatio	n: <u>480.91 ft amsl</u>	Boring No	: RB-2 Pil	ot
ate Comp	leted: <u>07/26/</u>	2019		Northing) (NAD8	3): <u>2103398.89</u>	_		
rilling Co.				Easting	•		_ Client: <u>PG&E</u>		
rilling Met		Drilling		Total De	•	<u>307 ft bgs</u>	•	SW Remedy Pl	
rill Rig Ty		<u>Longyear Trac</u>					_ Location: <u>PG&E</u>	•	les,
riller Nam		O/SV				ater: <u>23.8 ft bgs</u>	_ <u>Califor</u>		
rilling Ass		<u>idelaria, G. Ar</u>	•	Samplin	•		Project Number:	<u>RC000753.00</u>)51
ogger: ditor:	<u>Joe La</u> Cront	Willford		Samplin Convert	•		_		
Lepth (ft) Recovery	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Flui
_ 101 102 _	RB-2-SS- 100-105 7/16/2019		Topock - Alluvium Deposits	GC		ine grained to very coarse grained sand; sor composed of metadiorite; moist	ne coarser clasts		
03_ 120 04_ 05_	08:20	RB-2-VAS- 102-107 (<0.033 U ppb) 7/1/2019				(104.0 - 107.0') Topock - Alluvium Deposits; jellowish red / light brown (5YR 5/6); granule sebbles, angular to subangular; some silt; lit clasts composed of metadiorite; wet	es to medium		
_ 06_ _ 07		15:21	Topock - Alluvium Deposits	GM		(107.0 - 109.0') Topock - Alluvium Deposits;	Clayey gravel with		
_ 08_ _ 09_	105-110 7/16/2019 08:33		Topock - Alluvium Deposits	GC		sand (GC); yellowish red / light brown (5YR nedium pebbles, angular to subangular; little very coarse grained sand; little silt; little clay coarser clasts composed of metadiorite; moi 109.0 - 111.0') Topock - Alluvium Deposits;	5/6); granules to e very fine grained to trace mica; little st Silty gravel with sand		
- 10 _ 11			Topock - Alluvium Deposits Topock -	GM		(GM); yellowish brown (10YR 5/6); granules subangular; some silt; little very fine grained grained sand; little clay; little coarser clasts of netadiorite; moist (111.0 - 112.0') Topock - Alluvium Deposits;	to very coarse composed of Silty gravel (GM);	(110.0 - 125.0') Rough drilling.	
12120	110-115 7/16/2019		Alluvium Deposits Topock -	GM		vellowish brown (10YR 5/6); granules to larg subangular; little very fine grained to very coa ittle silt; little clay; little coarser clasts compo noist (112.0 - 114.0') Topock - Alluvium Deposits;	arse grained sand; osed of metadiorite;		
13 14	08:40		Alluvium Deposits	GM		strong brown (7.5YR 5/6); granules to large p subangular; some silt, little very fine grained grained sand; trace clay, trace caliche; some somposed of metadiorite; moist (114.0 - 121.0') Topock - Alluvium Deposits;	bebbles, angular to to very coarse coarser clasts		
- 15_ 16_ 17			Topock - Alluvium	GM		GM); yellowish brown (10YR 5/6); granules subangular; some silt; little granules to smal race clay; trace coarser clasts composed of	to small pebbles, pebbles, subangular;		
- 18_ - 120 19_ -	115-120 7/16/2019 08:51		Deposits			(119.5′); less silt, more clay			
20 breviatio	ns: USCS =	Unified Soil Cl	assification	System	n, ft = fee	et, bgs = below ground surface, am	sl = above mean s	ea level, GW =	I
						aboratory reporting limit, NR = no re			
						apparent partial recoveries can be			
	bag		~		,	··· ·		•	

AR	CADIS	Design & Consultancy for natural and built assets		Во	ring	og	Sh	eet: 7 of	16
Date Starte	d: <u>06/28</u>	/2019		Surface			Boring No.:	RB-2 Pil	ot
•	leted: <u>07/26</u>			Northing			_	<u></u>	<u> </u>
Drilling Co.:				Easting Total De	•	: <u>7616014.81</u> 307 ft bgs	Client: <u>PG&E</u>		hasa 1
Drilling Method: Sonic Drilling Drill Rig Type: Boart Longyear Track Mount				•		Project: <u>Final GW Remedy Phase 1</u> Location: <u>PG&E Topock, Needles,</u>			
Driller Name		00 / SV				ater: 23.8 ft bgs	Californ	-	<u>, 100</u>
Drilling Asst		ndelaria, G. Ar	ngiano	Samplin		0	Project Number:		051
ogger:	<u>Joe L</u>	atham		Samplin	•		-		
Editor:	-	Willford		Convert	ed to W	ll: 🖂 Yes 🗌 No			1
Depth (ft) Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	U SCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
			Topock - Alluvium Deposits	GM					
122 122 123 123 120 124 125	RB-2-SS- 120-125 7/16/2019 09:00		Topock - Alluvium Deposits	GM		21.0 - 127.0') Topock - Alluvium Deposits; 3 M); yellowish brown (10YR 5/6); granules to ibangular; some silt; little granules to small ace clay; trace coarser clasts composed of	o small pebbles, pebbles, subangular;		
-126 	RB-2-SS- 125-129 7/16/2019 09:09		Topock	0		27.0 - 131.5') Topock - Alluvium Deposits; (IL); brown (7.5YR 5/4); low plasticity; some abbles, angular to subangular; little very fine parse grained sand; little clay; little coarser o etadiorite; wet	granules to small grained to very		
	RB-2-SS- 129-134 7/16/2019	RB-2-SS- 129-134 7/16/2019 09:22 Alluvium Deposits ML 0 0 0 Topock - Alluvium Deposits 0 0 0 0 0 0 RB-2-SS- 134-139 7/16/2019 10:36 Topock - Alluvium Deposits 0 0 0 0 0 0 RB-2-SS- 134-139 7/16/2019 0<	Alluvium			31.5 - 137.0') Topock - Alluvium Deposits; 3	Silty gravel with sand		
_132 ₁₂₀ 133 134	09:22					SM); yellowish brown (10YR 5/6); granules t ibangular; some silt; little very fine grained f ained sand; trace clay; trace coarser clasts etadiorite; moist	o very coarse		
135 _136_ _136_ _137	134-139 7/16/2019								
	RB-2-SS- 139-144		Alluvium	SM		37.0 - 142.0') Topock - Alluvium Deposits; M); dark yellowish brown (10YR 4/6); very f parse grained, angular to subround; some g bbles, angular; some silt; some coarser cla etadiorite; moist	ine grained to very ranules to large		
						, bgs = below ground surface, ams			
						boratory reporting limit, NR = no re			
•		er measured d	uring the f	irst VAS	interval;	pparent partial recoveries can be t	he result of potentia	al compaction	of sediment
n the core l	bag								

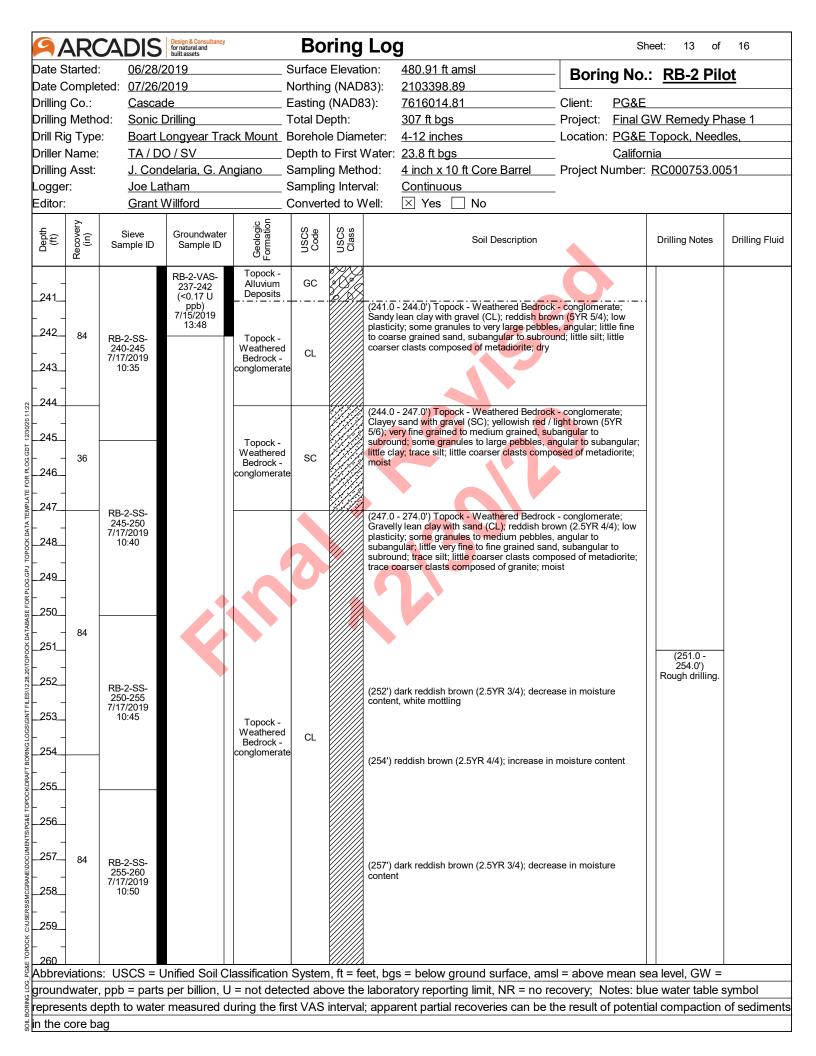
		ADIS	Design & Consultancy for natural and built assets			ring	•		neet: 8 of	16		
Pate Started: 06/28/2019					Surface			Boring No.	: <u>R</u> B-2 Pil	ot		
-					Northing							
•		<u>Casca</u>			Easting	•	,	_ Client: <u>PG&E</u>		h 4		
Drilling Method: Sonic Drilling Drill Rig Type: Boart Longyear Track Mount					Total De	•	307 ft bgs eter: 4-12 inches	_ Project: <u>Final (</u> _ Location: <u>PG&E</u>	<u>W Remedy P</u>			
							/ater: 23.8 ft bgs	_ Location. <u>PG&E</u> Califor	•	iles,		
			Samplin		0)51				
ogge		Joe La		٠	Samplin	0						
ditor:		<u>Grant</u>	Willford		Convert	ed to V	ell: 🗵 Yes 🗌 No					
(ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Flui		
_ 141		10:45 RB-2-SS-		Topock - Alluvium Deposits	SM		C	0				
42 43 44	120	RB-2-SS- 139-144 7/16/2019 10:45	RB-2-VAS- 142-147	Topock - Alluvium Deposits	GM		(142.0 - 145.5') Topock - Alluvium Deposits; (GM); strong brown (7.5YR 5/6); granules to angular; little silt; trace small cobbles; some composed of metadiorite; moist	very large pebbles,				
45_ 46_ 47		RB-2-SS- 144-149 7/16/2019	(<0.17 U ppb) 7/9/2019 13:10	Topock - Alluvium Deposits	SM		(145.5 - 147.0') Topock - Alluvium Deposits; (SM); strong brown (7.5YR 5/6); very fine gra grained, subangular to subround; some gran angular to subangular; little coarser clasts co metadiorite; trace granite; moist	ined to very coarse ules to large pebbles,				
47 48 49		10:56		Topock - Alluvium Deposits	SM		(147.0 - 149.0') Topock - Alluvium Deposits; (SM); reddish brown / moderate brown (5YR to coarse grained, subangular to subround; li medium pebbles, angular; little silt; trace coa composed of metadiorite; little granite; wet (149.0 - 153.0') Topock - Alluvium Deposits;	4/4); very fine grained ttle granules to rser clasts				
- 50_ 51_ 52_ -	120	RB-2-SS- 149-154 7/16/2019 11:06	2-SS- 154 2019 SM			Alluvium	SM		(SM); yellowish brown (10YR 5/6); medium g grained, angular to subround; little granules t subangular; little silt; trace coarser clasts cor	rained to very coarse o very large pebbles,		
53 54				ery large pebbles, coarse grained sand,								
55 56		RB-2-SS- 154-157 7/16/2019 11:14		Alluvium Deposits	GM							
57_						o KO	(156.5 - 159.5') Topock - Alluvium Deposits; strong brown (7.5YR 5/6); granules to very la	Silty gravel (GM); rge pebbles, angular				
58 59	120	RB-2-SS- 157-162 7/16/2019 11:20		Topock - Alluvium Deposits	GM		satoling brown (1,51rt control of the every fine to very sand, subangular; some silt; little very fine to very sand, subangular to subround; trace clay; soi composed of metadiorite; wet	y coarse grained				
160				Topock -	GC		(159.5 - 160.0') Topock - Alluvium Deposits;	Clayey gravel (GC);				
	/iations	: USCS =	Unified Soil C	assification	System	ft = fe	et, bgs = below ground surface, am	sl = above mean s	ea level, GW =	1		
							laboratory reporting limit, NR = no re					
			-				apparent partial recoveries can be t			-		
. 20		ng										

9/	ARC	ADIS	Design & Consultancy for natural and built assets		Во	ring	Log	She	eet: 9 of	16
	tarted:				Surface			Boring No.:	RB-2 Pil	ot
	•	ted: <u>07/26/</u>			Northing					
-					Easting	•		Client: <u>PG&E</u>		
					Total De	•	<u>307 ft bgs</u>	•	W Remedy Pl	
Drill Rig Type: Boart Longyear Track Mount Driller Name: TA / DO / SV							-	lles,		
							/ater: <u>23.8 ft bgs</u>	<u>Californ</u>		
•	Asst:	<u>J. Con</u> Joe La	<u>delaria, G. Ar</u> thom	•	Samplin Samplin	•		_ Project Number:	RC000753.00	151
ogge ditor:			Willford		Convert	0		-		
untor.		Oldin								
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	minimite A	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
_		RB-2-SS-		Deposits	/	66	yellowish brown (10YR 5/6); granules to very angular to subangular; some clay; little very fi	ine to very coarse		
161		157-162 7/16/2019				Polo	grained sand, subangular to subround; little s clasts composed of metadiorite; moist	silt; little coarser		
_		11:20		Topock - Alluvium	GM		(160.0 - 163.0') Topock - Alluvium Depo <mark>sit</mark> s; strong brown (7.5YR 5/6); granules to very la	Silty gravel (GM);		
162				Deposits		Pala	to subangular; some silt; little very fine to very	coarse grained		
_						P L C	sand, subangular to subround; trace clay; sor composed of metadiorite; wet			
163		RB-2-SS-				554	(160.5'); 0.3' lens of grayish green color chan (163.0 - 167.0') Topock <mark>- A</mark> lluvium Deposits;			
-	120	162-165 7/16/2019				[0]	reddish yellow (7.5YR 6/8); granules to very I	arge pebbles,		
164		11:58				[d]	angular to subangular; and silt; little very fine grained sand, subangular to subround; trace			
_				Topock -		66	clasts composed of metadiorite; moist			
165				Alluvium	GM	Polo				
-				Deposits						
166						Palo				
-						b				
167		RB-2-SS-				PDK	(167.0 - 171.0') Topock - Alluvium Deposits;	Silty sand (SM):	(167.0 -	
-		165-170 7/16/2019					reddish brown / moderate brown (5YR 4/4); v	ery fine grained to	177.0') Rough drilling.	
168		12:07					fine grained, <mark>subangula</mark> r to subround; and sil [:] medium p <mark>eb</mark> bles, subangular; trace clay; little		Rough aniling.	
_				Topock -			composed of metadiorite; wet			
169				Alluvium	SM					
-			•	Deposits						
170							(170'); moist; 0.2' lens of grayish green color	change		
-		RB-2-SS-						0		
171		170-172 7/16/2019		· ·			(171.0 - 172.5') Topock - Alluvium Deposits;	Silty sand with gravel		
-		12:18		Topock - Alluvium	SM		SM); reddish brown / moderate brown (5YR to coarse grained, angular; little granules to r	4/4); very fine grained		
172_	120			Deposits	OW		angular; little silt; little coarser clasts compos			
-							wet (172.5 - 177.0') Topock - Alluvium Deposits; :	Silty sand (SM):		
173_							reddish brown / moderate brown (5YR 4/4); v fine grained, subangular to subround; and sil	ery fine grained to		
			RB-2-VAS-				medium pebbles, subangular; trace clay; little			
174_		RB-2-SS-	172-177				composed of metadiorite; moist (174'); saturated zone			
		172-177 7/16/2019	(<0.17 U ppb)	Topock - Alluvium	SM					
175_		12:29	7/12/2019 14:55	Deposits						
							(175.5'); 0.2' lens of grayish green color chan	ge		
_176										
_177				Topock -			(177.0 - 178.0') Topock - Alluvium Deposits;			
170				Alluvium Deposits	SM		(SM); reddish brown (5YR 5/4); very fine grain grained, angular; and silt; little granules to me			
178_		RB-2-SS-		Topock -			angular to subangular; trace clay; little coarse metadiorite; wet			
170	120	177-180 7/17/2019		Alluvium Deposits	SM		(178.0 - 179.0') Topock - Alluvium Deposits;			
179_		07:59		Topock -			(SM); reddish brown / moderate brown (5YR to coarse grained, angular; little granules to r			
100				Alluvium Deposits	SM		angular; little silt; little coarser clasts compos wet			
180 bbrev	/iations	S: USCS = I	Jnified Soil C	· ·	ו Svsterr	<u>). tt = f</u>	wet et, bgs = below ground surface, ams	sl = above mean se	a level. GW =	1
							aboratory reporting limit, NR = no re			
			•				apparent partial recoveries can be t			
	ore ba	•		•			-		•	

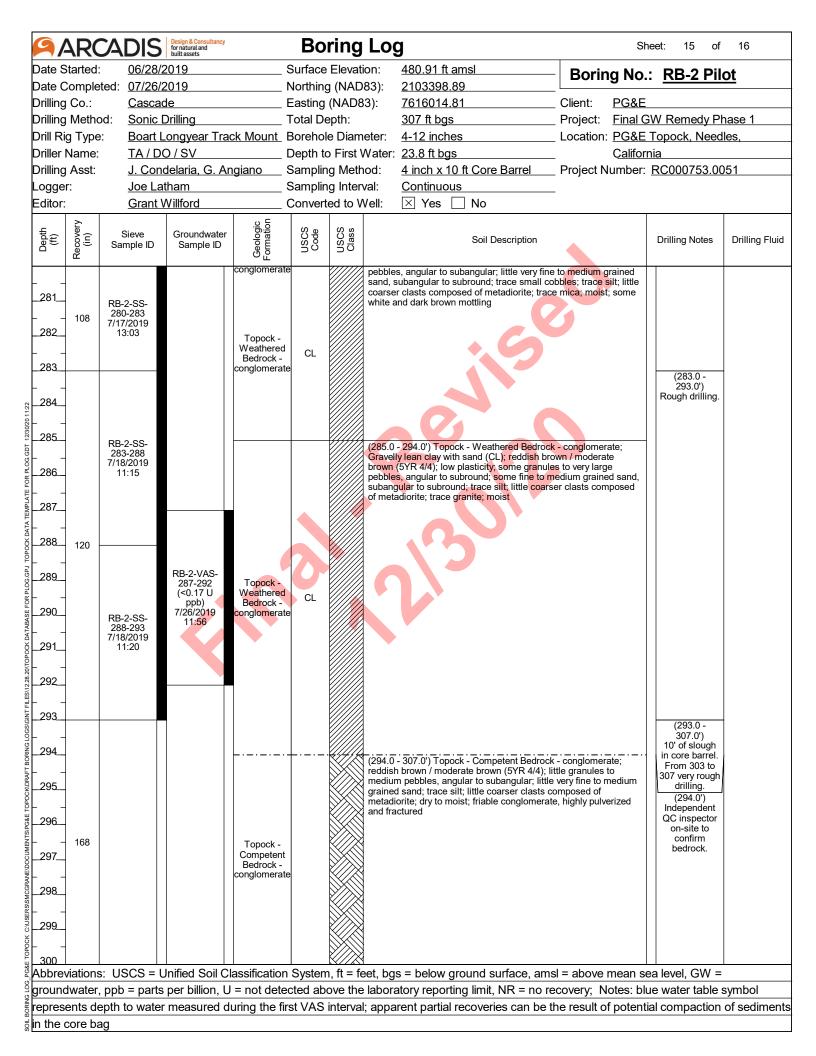
┦/.	ARC		Design & Consultancy for natural and built assets			ring	•	,	Sheet: 10 of	16
Date Started: 06/28/2019					Surface			Boring No	o.: <u>RB-2 Pil</u>	ot
ate Completed: <u>07/26/2019</u> rilling Co.: Cascade					Northing					
Drilling Co.: <u>Cascade</u> Drilling Method: <u>Sonic Drilling</u>					Easting Total De	•): <u>7616014.81</u> <u>307 ft bgs</u>	Client: <u>PG&</u> Project: <u>Final</u>	E GW Remedy P	hase 1
Drill Rig Type: <u>Boart Longyear Track Mount</u>						•			E Topock, Need	
							/ater: 23.8 ft bgs	Califo	-	100,
	Asst:		delaria, G. An		Samplin		•		r: <u>RC000753.00</u>)51
ogge	r:	<u>Joe La</u>	tham	-	Samplin	-				
ditor:		<u>Grant \</u>	Willford		Convert	ed to V	ell: 🛛 Yes 🗌 No		1	
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Flui
		RB-2-SS- 180-182		Topock - Alluvium Deposits	SM		(179.0 - 181.0') Topock - Alluvium Deposits; eddish brown / moderate brown (5YR 4/4); v fine grained, subangular to subround; and sil	ery fine grained to ; little granules to		
		7/17/2019 08:08					medium pebbles, subangular; trace clay; little composed of metadiorite; wet			
182						૾ૣૼ૾૾૽૽૾૽ૢૺ૽	(181.0 - 188.0') Topock - Alluvium Depo <mark>sits;</mark> with gravel (SW); strong brown (7.5YR 5/6); v	Well graded sand		
							very coarse grained, angular; some granules angular; trace silt; some coarser clasts comp	to large pebbles,		
183						<u>а</u> .О.	wet	used of metadionite,		
_	120				I SW	, , , , ,				
84		RB-2-SS-		Tanada						
_		182-187 7/17/2019		Topock - Alluvium		, Ó				
85		08:17	9	Deposits		؞؞۫۞ۛ				
_										
86										
-										
187										
-										
188		RB-2-SS-		Topock -			(188.0 - 189.0') Topock - Alluvium Deposits; \	Well graded gravel	-	
		187-190 7/17/2019	19 Alluvium 19 Deposits Topock	Alluvium	GW-GM		with silt and sand (GW-GM); strong brown (7 to very large pebbles, angular; and very fine to	.5YR 5/6); granules		
189		08:25		Topock -	SM		sand, angular; trace clay; little coarser clasts metadiorite; trace coarser clast composed of	composed of		
				Alluvium Deposits		¢Ψ́	(189.0 - 189.5') Topock - Alluvium Deposits;	Silty sand with gravel		
90			Topock - Alluvium				SM); strong brown (7.5YR 5/6); very fine grain grained, angular; some granules to large peb			
_ 91					٥ŶĎ	silt; trace clay; little coarser clasts composed coarser clast composed of guartz; wet	of metadiorite; trace			
191_				Deposits		s Pl<	(189.5 - 192.0') Topock - Alluvium Deposits:	Silty gravel with sand		
- 192_						βh	GM); strong brown (7.5YR 5/6); granules to angular; some very fine to very coarse graine	<i>v</i> ery large pebbles, d sand, angular; little		
	120	RB-2-SS- 190-195					silt; trace clay; little coarser clasts composed coarser clast composed of quartz; wet	of metadiorite; trace		
193_		7/17/2019	7/17/2019 08:33 08:33 08:33 08:34 08:34 08:34 08:34 08:34 08:34 08:34 09:00 00 00 00 00 00 00 00 00 00 00 00 00				(192.0 - 197.0') Topock - Alluvium Deposits;	Well graded sand		
		00.00		grained to very coarse grained, angular; some	e granules to very					
94					composed of metadiorite; trace coarser clast					
				Topock - Alluvium	SW-SM		wet; green staining			
95				Deposits						
_										
96		RB-2-SS-								
_		195-198 7/17/2019								
197		08:40					(197.0 - 199.5') Topock - Alluvium Deposits; 3	Silty cand (SM).	-	
-							strong brown (7.5YR 5/6); very fine grained to	medium grained,		
198				Topock -			angular; and silt; little granules to small pebb clay; trace coarser clasts composed of metac			
-	120	RB-2-SS-		Alluvium Deposits	SM					
199		198-203 7/17/2019								
-		09:03			ML		(199.5 - 202.0') Topock - Alluvium Deposits; (Gravelly silt with san		
2 <u>00</u>	liation		Inified Seil Cl			6 ft - f-	et, bgs = below ground surface, ams			
							aboratory reporting limit, NR = no re			
			•				apparent partial recoveries can be t			
	u	aq								5. 50ainto

		<u>ADIS</u>				ring	•		heet: 11 of	16
	Started				Surface			- Boring No.	.: <u>R</u> B-2 Pil	ot
	•	ted: <u>07/26/</u>			Northing		•	_	-	_
•	Co.:	<u>Casca</u>			Easting	•		_ Client: <u>PG&E</u>		
•	Metho		Drilling		Total De	•	<u>307 ft bgs</u>		GW Remedy P	
	д Туре		<u>ongyear Tra</u>						•	les,
	Name:		O/SV		•		Vater: <u>23.8 ft bgs</u>	C <u>alifor</u>		
	Asst:		<u>delaria, G. A</u>	٠	Samplin	0		Project Number:	<u>RC000753.00</u>)51
ogge		Joe La			Samplin	-		_		
ditor:		Grant	Willford		Convert		/ell: 🛛 Yes 🗌 No		I	
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Flui
-				Topock -			(ML); strong brown (7.5YR 5/6); low plastici small pebbles, angular; little very fine to me angular; little clay; little coarser clasts comp	dium grained sand,		
201		RB-2-SS-		Alluvium	ML		wet	osed of metadionte,		
-		198-203 7/17/2019		Deposits		000				
202		09:03			-		(202.0 - 204.0') Topock - Alluvium Deposits	: Silty sand (SM):		
-				Topock -			strong brown (7.5YR 5/6); very fine grained angular; and silt; little small to very large pe	to medium grained,		
203				Alluvium	SM		clay; trace coarser clasts composed of met			
-	120			Deposits			(202.5'); green staining			
204			RB-2-VAS- 202-207	Topock -			(204.0 - 204.5') Topock - Alluvium Deposits	Silty sand (SM):		
_		RB-2-SS-	(<0.17 U ppb)	Alluvium	SM		strong brown (7.5YR 5/6); fine grained to co	arse grained, angular;		
205		203-207 7/17/2019	7/14/2019 09:20	└ Deposits Topock -	/		little granules to small pebbles, angular; littl coarser clasts composed of metadiorite; we	et	1	
_		09:09	09.20	Alluvium Deposits	/		(204.5 - 205.0') Topock - Alluvium Deposits (ML); strong brown (7.5YR 5/6); low plastici	; Gravelly silt with sand		
206				Topock -	- I		large pebbles, angular; little very fine to me	dium grained sand,		
-				Alluvium Deposits	SM		angular; little clay; little coarser clasts comp wet	osed of metadiorite;		
207							(205.0 - 207.5') Topock - Alluvium Deposits		(207.0')	-
_		RB-2-SS-					strong brown (7.5YR 5/6); very fine grained angular; and silt; little small to very large pe	bbles, angular; trace	Switched	
208		207-209					clay; trace coarser clasts composed of met		driller T. Alvmer with D.	
_		7/17/2019 09:15					(207.5 - 217.0') Topock - Alluvium Deposits gravel (SC); brown (7.5YR 4/4); very fine gravel	ained to very coarse	O'Mara.	
209							grained, angular to subround; some small to angular; little clay; trace silt; little coarser cl			
_							metadiorite; moist			
210										
_										
211_										
_		RB-2-SS- 209-214								
212	120	7/17/2019 09:22		Topock -						
_	120			Alluvium Deposits	SC					
213				Deposits						
214										
215_										
_		RB-2-SS- 214-217								
216_		7/17/2019 09:28								
_										
217										
							(217.0 - 219.5') Topock - Alluvium Deposits (7.5R 4/4); medium grained to very coarse g			
218_				Topock -			clay; trace granules, angular; trace silt; trac			
	100	RB-2-SS- 217-222		Alluvium	SC		composed of metadiorite; wet			
219_	180	7/17/2019 09:35		Deposits						
<u>- 13</u>		09.00								
220					GC	1 A A	(219.5 - 222.0') Topock - Alluvium Deposits	; Clayey gravel with	11	
	viations	S: USCS = I	Jnified Soil C	lassification			et, bgs = below ground surface, an	nsl = above mean s	ea level. GW =	1
							laboratory reporting limit, NR = no			
			-				; apparent partial recoveries can be	-		-
		ag		J		41		. 1	1	

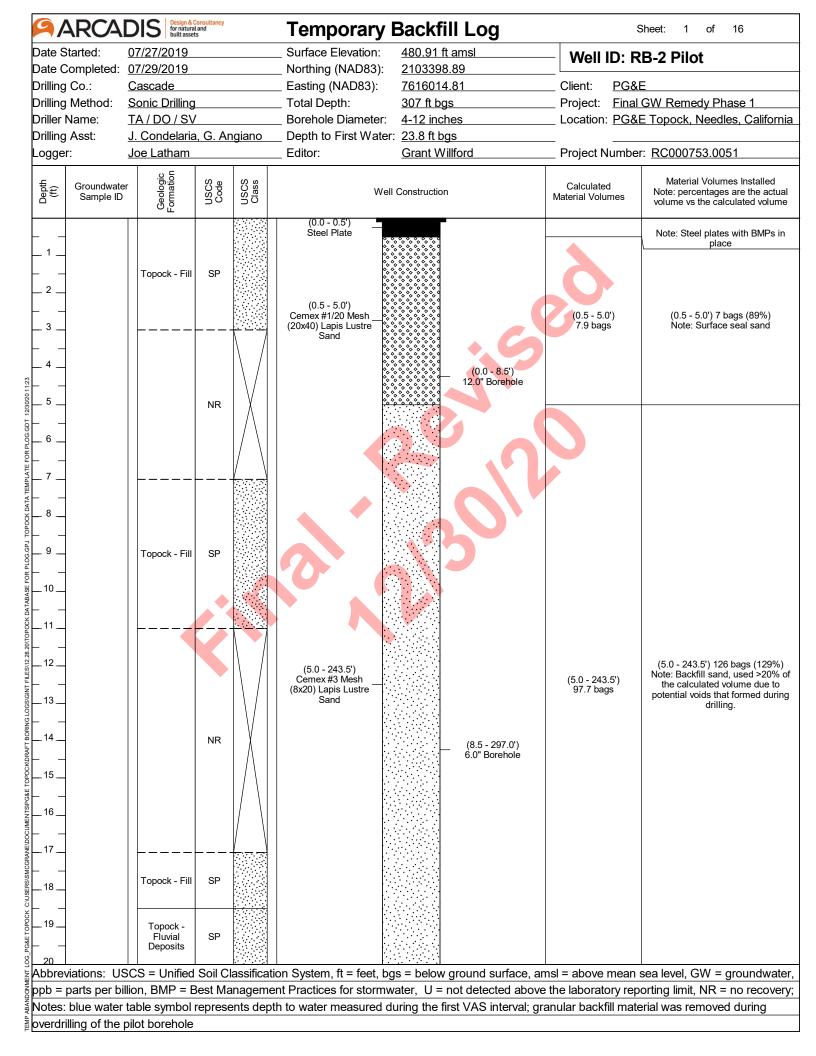
te St	arted:	06/28/	Design & Consultancy for natural and built assets		Surface	e Elevati	on:	480.91 ft amsl	Denter		00 0 0''	at
		ted: <u>07/26/</u>				g (NAD		2103398.89	Borin	g NO.:	<u>RB-2 Pil</u>	<u>ot</u>
illing (<u>Casca</u>			Easting			7616014.81	Client:	PG&E		
	Metho				Total D	•	,	307 ft bgs	Project:		N Remedy Pl	hase 1
-	Туре		_ongyear Tra			•		4-12 inches	-		Fopock, Need	
iller N			0 / SV					23.8 ft bgs		<u>Californ</u>	•	
illing A			delaria, G. Ar	ngiano	Samplir			4 inch x 10 ft Core Barrel	Proiect N		RC000753.00)51
ogger:		Joe La		<u>.g.a</u>		ng Interv		Continuous				
ditor:			Willford			ted to W		X Yes No	•			
	~			05								
	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
_ 221 _ 222_		RB-2-SS- 217-222 7/17/2019 09:35		Topock - Alluvium Deposits	GC		pebbles to subro	C); strong brown (7.5YR 5/6); granule , angular; some fine to very coarse gr und; little clay; some coarser clasts c rite; trace granite; wet	ained sand, a			
23 24 25 26 27	180	RB-2-SS- 222-227 7/17/2019 09:40					gravel (grained angular	237.0') Topock - Alluvium Deposits; (SC); brown (7.5YR 5/4); very fine grai , angular to subround; some small to ' little clay; trace silt; little coarser clas rite; moist	ned to very co very large pet	barse bles,	(227.0 -	
28_ 29_ 30_ 31_ 32_ _		RB-2-SS- 227-233 7/17/2019 09:45		Topock - Alluvium Deposits	SC						244.0') Rough drilling.	
33_ 	60	RB-2-SS- 233-235 7/17/2019 09:50					(234'); <u>c</u>	greenish gray staining				
37 38 39 40	84	RB-2-SS- 235-240 7/17/2019 10:30	RB-2-VAS- 237-242 (<0.17 U ppb) 7/15/2019 13:48	Topock - Alluvium Deposits	GC		sand (G to small subang	241.0') Topock - Alluvium Deposits; (C); reddish brown / moderate brown / pebbles, angular; some fine to coars lar to subround; some clay; trace silt ed of metadiorite; moist	(5YR 4/4); gra e grained sar	anules nd,	(237.0') Switched driller D. O'Mara with S. Vasquez.	-
					-		-	= below ground surface, ams				
oundv	water,	ppb = parts	s per billion, U	= not det	ected ab	ove the	labora	tory reporting limit, NR = no re	covery; N	otes: blu	e water table	symbol
	nte de	oth to wate	r measured d	uring the f	iret V/AS	interval	· annar	ent partial recoveries can be t	ha result of	f notontic	l compaction	of sedimer

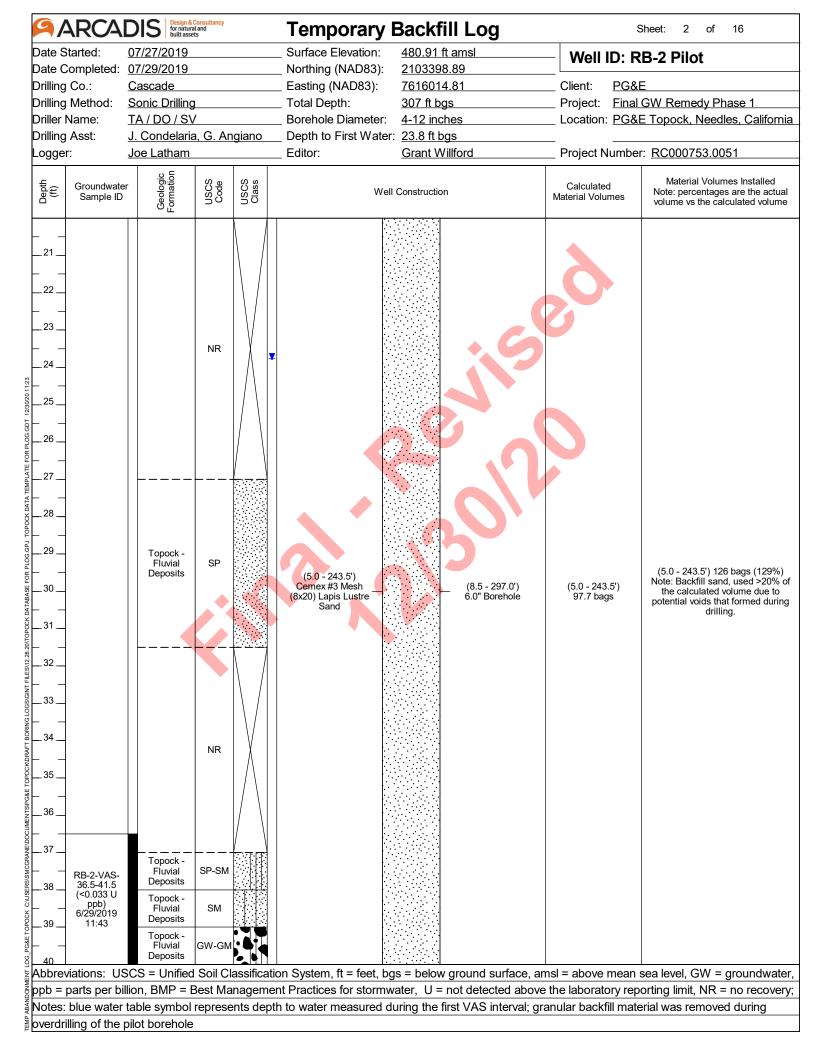


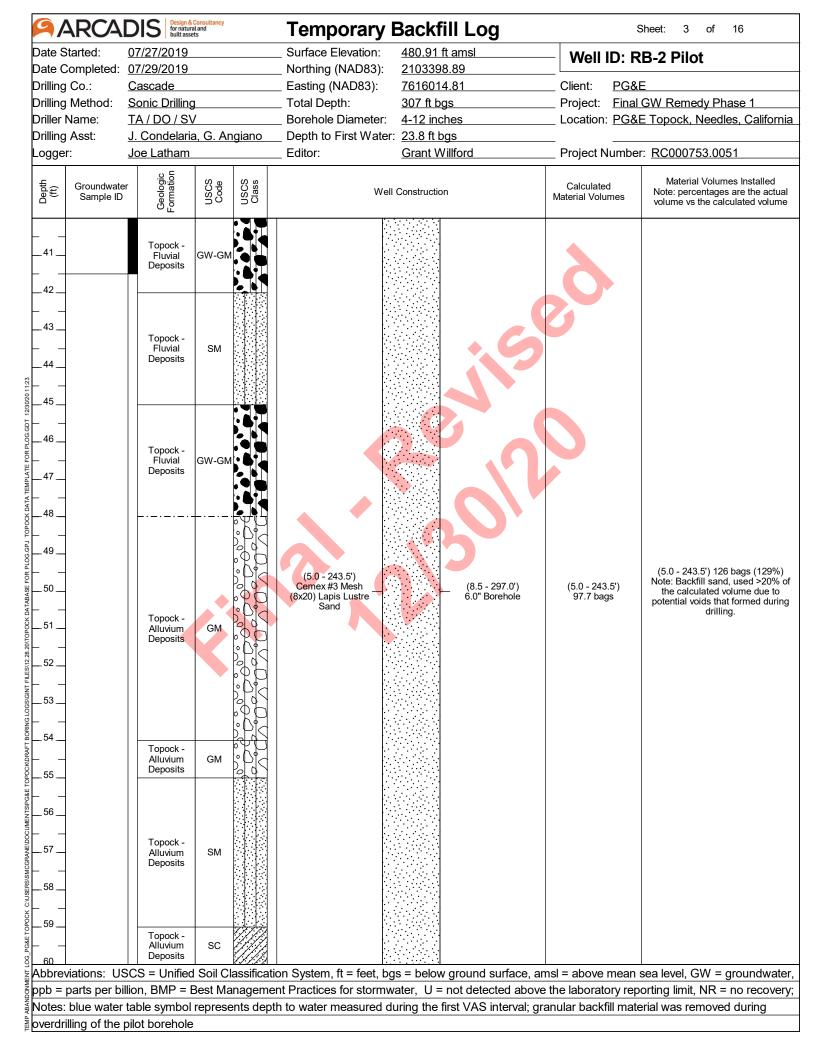
AR	CADIS	Design & Consultancy for natural and built assets		Во	ring	Log	She	et: 14 of	16
ate Started	: <u>06/28</u>	/2019		Surface			Boring No.:	RB-2 Pil	ot
•	eted: <u>07/26</u>			Northing		•	_	<u></u>	
rilling Co.:	Casca			Easting	•		Client: PG&E		
rilling Meth		Drilling		Total De	•	<u>307 ft bgs</u>		V Remedy Ph	
rill Rig Type riller Name		<u>Longyear Tra</u> IO / SV				eter: <u>4-12 inches</u> /ater: <u>23.8 ft bgs</u>	Location: <u>PG&E T</u> Californi	•	les,
rilling Asst:		ndelaria, G. Ai		Samplin		•	Project Number: F		51
ogger:	Joe La		•	Samplir	-		1 10jeot Number. <u>1</u>	(0000700.00	01
ditor:		Willford		Convert	-				
ery	O		gic tion	S a	SS				
Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Flui
- 84 261	_								
262									
_	RB-2-SS- 260-265 7/17/2019					1.5			
263	10:55								
.6472						(264') reddish brown / moderate brown (5YR 4	(/4); decrease in		
65						moisture content			
								(265.0 - 267.0')	
266								Rough drilling.	
			Topock -						
267	RB-2-SS-		Weathered	CL					
_	265-270 7/17/2019		Bedrock - conglomerat	ie					
268	11:00								
_									
269				U				(269.0 -	
-		•						274.0') Rough drilling,	
270								drill rig ran out of fuel mid-drill	
- 84								run.	
271									
-									
272	RB-2-SS-								
.73	270-275 7/17/2019 12:49								
	12.49								
274									
						(274.0 - 277.0') Topock - Weathered Bedrock Clayey sand with gravel (SC); brown (7.5YR 4,			
275_			Topcak			to very coarse grained, subangular to subroun very large pebbles, angular; little clay; trace sr	d; some medium to		
			Topock - Weathered	sc		silt; little coarser clasts composed of metadior			
276		RB-2-VAS- 274-279	Bedrock - conglomerat						
_		(<0.17 U	-						
277108	RB-2-SS-	ppb) 7/18/2019					oonglomastat		
_	275-280 7/17/2019	09:17	Topock -			(277.0 - 279.0') Topock - Weathered Bedrock Sandy lean clay with gravel (CL); reddish brow	n / moderate brown		
278	12:56		Weathered Bedrock -	CL		(5YR 4/4); low plasticity; some very fine to me subangular to subround; little granules to very			
_			conglomerat			subangular; trace silt; little coarser clasts com metadiorite; moist			
279			Topock -			(279.0 - 285.0') Topock - Weathered Bedrock	- conglomerate:		
-			Weathered Bedrock -	CL		Gravelly lean clay with sand (CL); reddish brown (5YR 4/4); low plasticity; some granules	wn / moderate		
280 hreviation	- 202U -	Inified Soil C		 1 Sveton	<u> ////////////////////////////////////</u>	et, bgs = below ground surface, ams	, ,	alevel GW -	
				-	-	laboratory reporting limit, NR = no re			symbol
		-				apparent partial recoveries can be th	-		-
			<u> </u>						

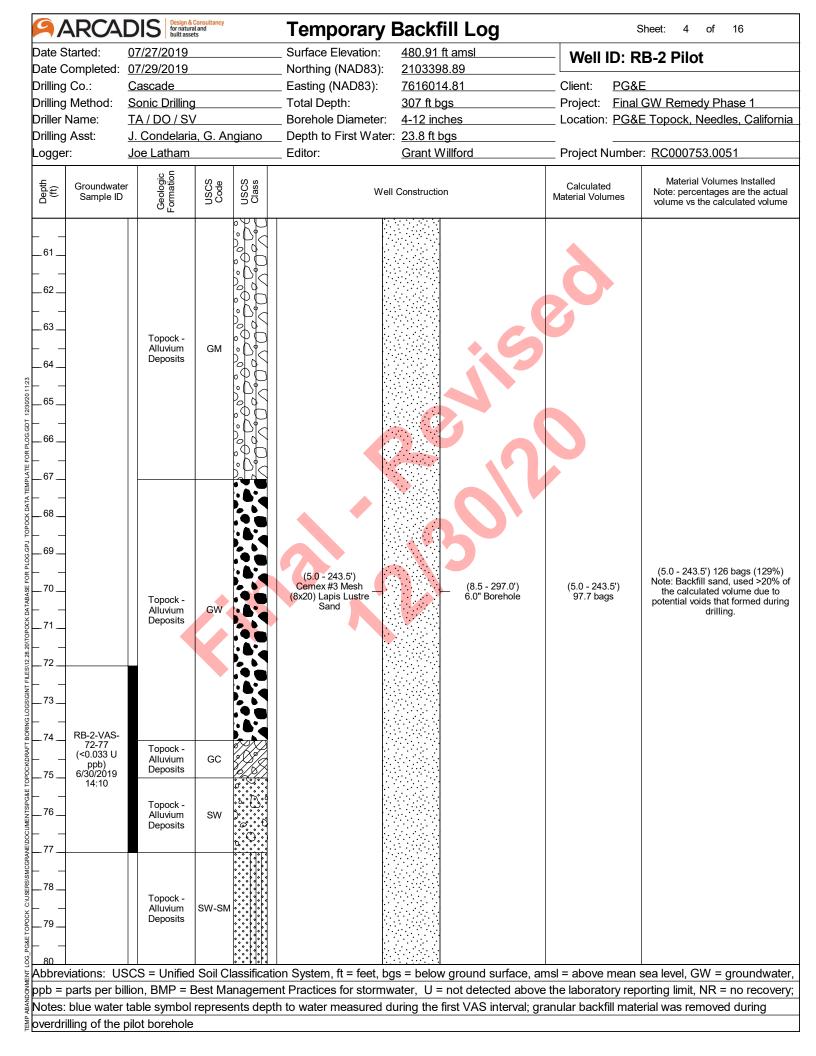


91	ARC	ADIS	Design & Consultancy for natural and built assets		Во	ring Lo	g		She	et: 16 of	16
	Started:					Elevation:	480.91 ft amsl	Borin	a No.:	RB-2 Pile	ot
Date C						g (NAD83):	2103398.89				
Drilling		Cascad				(NAD83):	7616014.81	Client:	PG&E		
Drilling					Total De		<u>307 ft bgs</u>	Project: <u>Final GW Remedy Phase 1</u> Location: <u>PG&E Topock, Needles,</u>			
Drill Ri			ongyear Trad	<u>ck mount</u>			4-12 inches	Location:		-	es,
Drilling	Name: TA / DO / SV California g Asst: J. Condelaria, G. Angiano Sampling Method: 4 inch x 10 ft Core Barrel Project Number: RC000753.005								51		
Logge									10000100.00	01	
Editor		Grant V				ed to Well:	🛛 Yes 🗌 No	•			
_	٩٢			dic on	(0	(0, m)					
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description			Drilling Notes	Drilling Fluid
	Å			٥°							
	-										
301	-										
	-							5			
302											
303				Topock - Competen	t l	(303');	dry; friable conglomerate, moderately	oulverized and	d l		
304_	168			Bedrock - conglomera		fracture	ea				
				Congromera							
	-										
306											
							End of Boring at 307.0 ft bo	js.			
309											
2 											
310											
311						•					
312											
313											
314											
315											
<u> </u>											
316											
320	/		Inified Seil Cl	accificati-	n Suntar	tt - fact k-	a - bolow around ourfood				
1							s = below ground surface, ams atory reporting limit, NR = no re				symbol
			-				rent partial recoveries can be th	-			-
• ·	core ba	-		-			·			•	

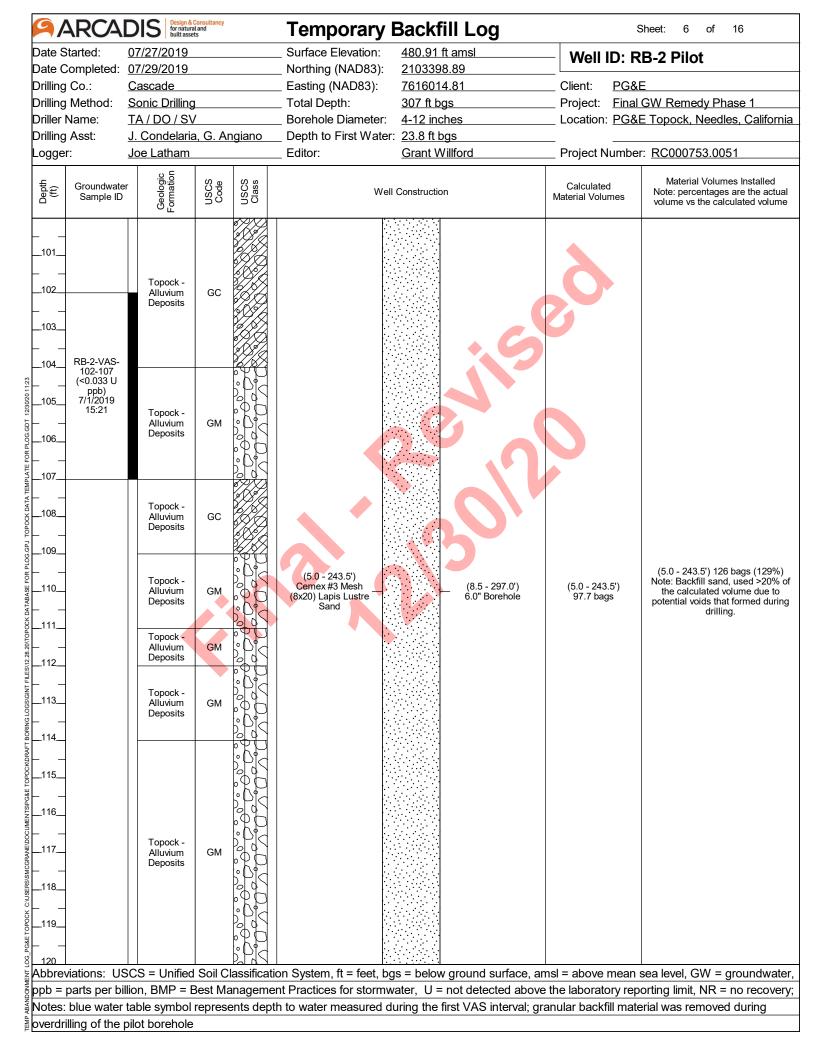


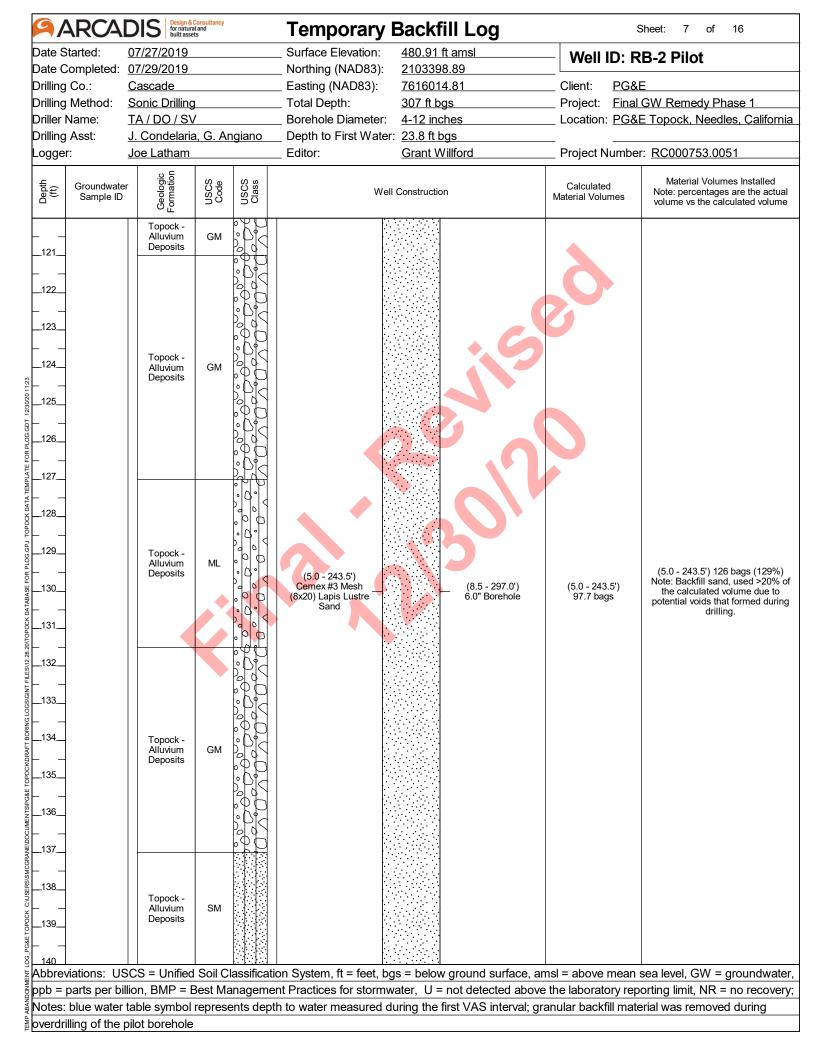






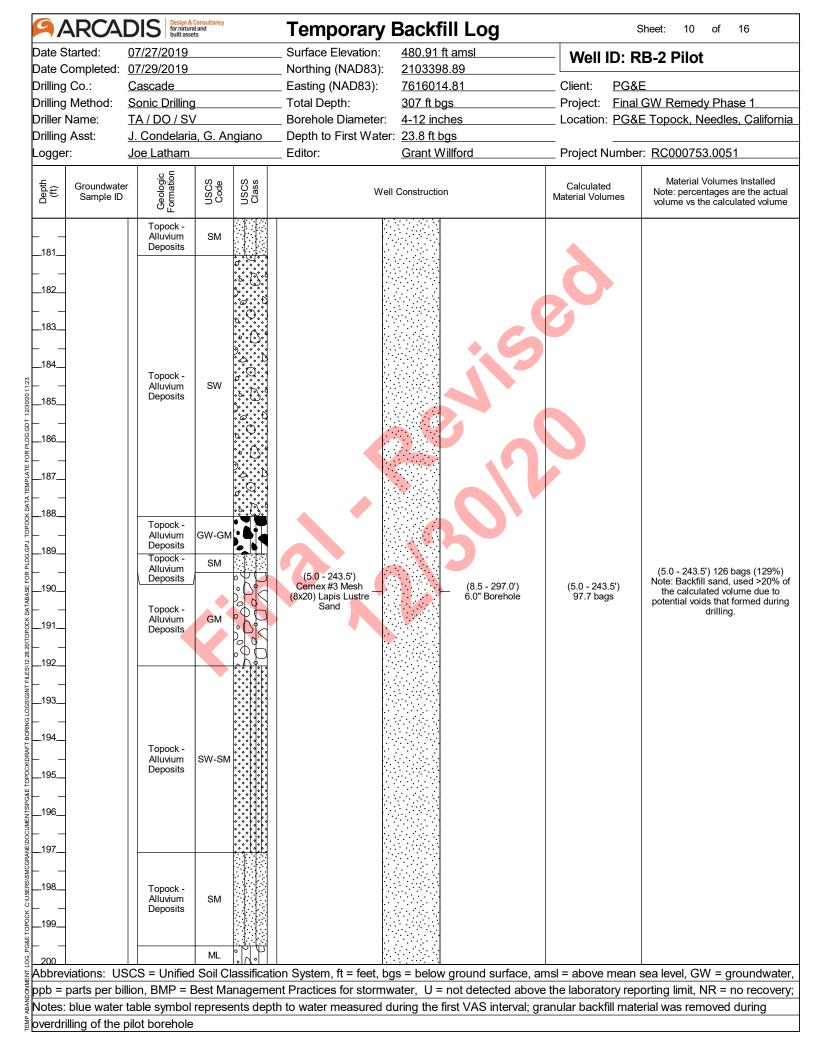
ARCA	DIS Design for natu built as	& Consultancy ural and sets		Temporary B		Sheet: 5 of 16			
Date Started:	Cascade Sonic Drilling			_ Surface Elevation:	480.91 ft amsl	Well ID:	RB-2 Pilot		
Date Completed:				_ Northing (NAD83):	2103398.89	Client: <u>PG&E</u>			
Drilling Co.:				Easting (NAD83):	7616014.81				
Drilling Method:				_ Total Depth:	<u>307 ft bgs</u>	-	al GW Remedy Phase 1		
Driller Name: Drilling Asst:	TA / DO / S		aiano	_ Borehole Diameter: _ Depth to First Water:	4-12 inches	Location: PG	<u>&E Topock, Needles, California</u>		
_ogger:	J. Condelaria, G. Angiano Joe Latham		_ Depth to First water. _ Editor:	Grant Willford	Project Numb	per: <u>RC000753.0051</u>			
Groundwat Ge Sample II		USCS Code	USCS Class	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
 81 	Topock - Alluvium Deposits	SW-SM							
82 83 84 84 85 86 	Topock - Alluvium Deposits	ML							
87 88 89 89 90	Topock - Alluvium Deposits	GC		(5.0 - 243.5') Cemex #3 Mesh	(8.5 - 297.0') (5.0 - 243.5')	(5.0 - 243.5') 126 bags (129%) Note: Backfill sand, used >20% of the calculated volume due to		
91 92 93	Topock - Alluvium Deposits	GC		(8x20) Lapis Lustre Sand	6.0" Borehol	e 97.7 bags	potential voids that formed during drilling.		
94 95 96	Topock - Alluvium Deposits	GM							
 _97 _ 98 _ 00	Topock - Alluvium Deposits	GM							
99 100	Topock - Alluvium Deposits	GC							
				· · ·	-		n sea level, GW = groundwater,		
							eporting limit, NR = no recovery aterial was removed during		
NUTES, DIDE WATE	i iaule symbo	e represe	ans uept	in to water measured di	anny ure inst vas interv	ai, granular backilli Ma	atenai was removed during		

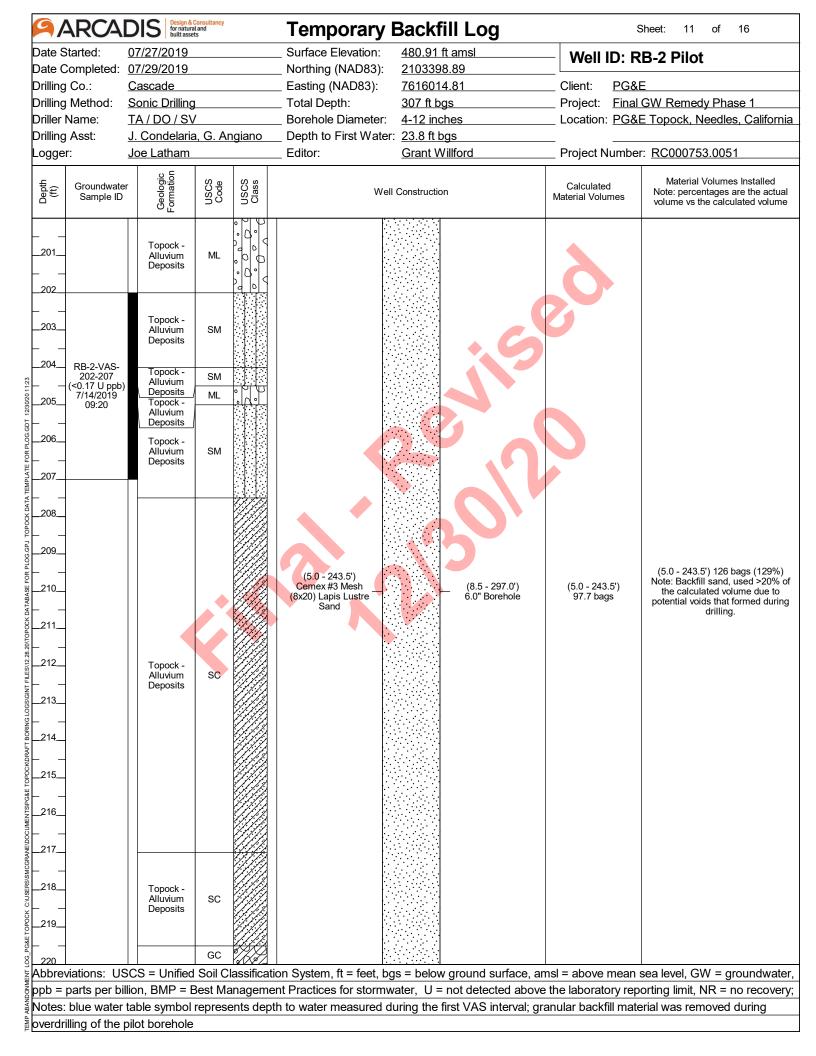


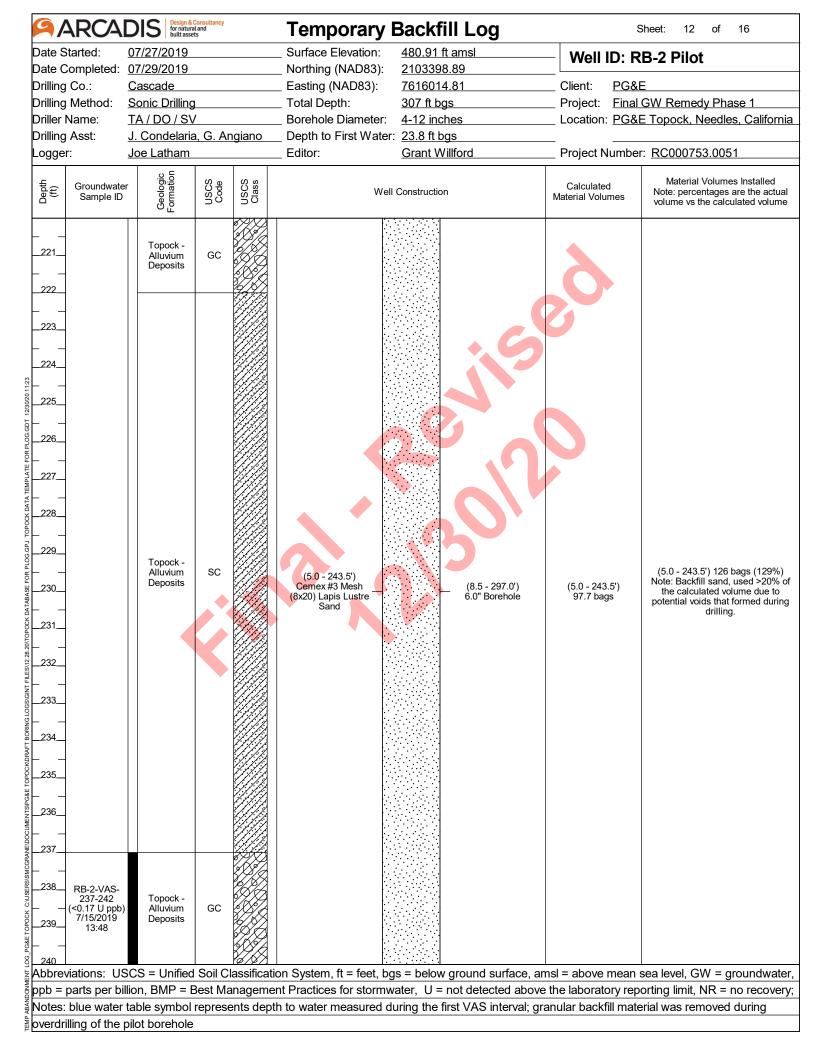


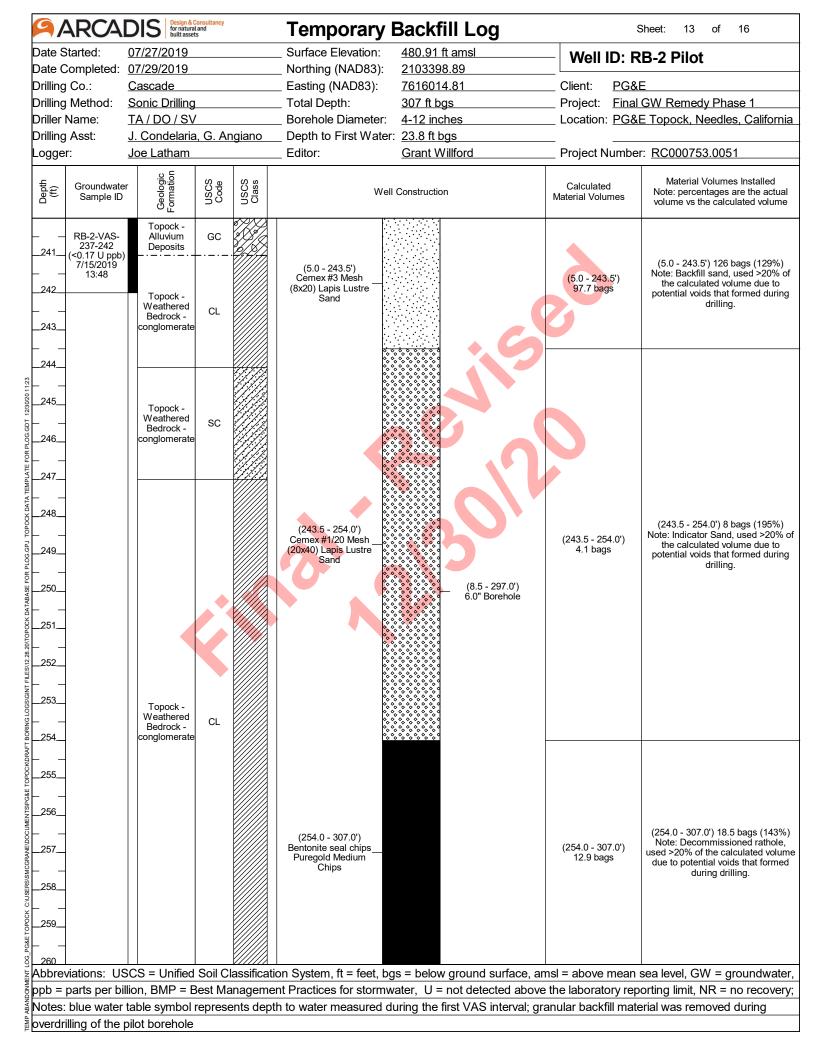
ARC		DIS Design & C for natura built asset	Consultancy Land ts		Temporary I	Backfill Log	S	Sheet: 8 of 16		
Date Started:	<u>[</u>	07/27/2019			_ Surface Elevation:	480.91 ft amsl	Well ID: R	B-2 Pilot		
Date Complet		CascadeEasting (NAD83):7616014.81Sonic DrillingTotal Depth:307 ft bgs		2103398.89						
Drilling Co.:	-						,		Client: PG&E	
Drilling Metho				0		_ Total Depth: _ Borehole Diameter:	•	_ Project: <u>Final GW Remedy Phase 1</u>		
Driller Name: Drilling Asst:		<u>TA / DO / SV</u> J. Condelaria		naiano	_ Borenole Diameter: _ Depth to First Water:	<u>4-12 inches</u>	_ Location: PG&E Topock, Needles, Californ			
Logger:		Joe Latham	<u>i, O. Ai</u>	Igiano	_ Editor:	Grant Willford	Proiect Number	per: <u>RC000753.0051</u>		
33		1								
	dwater ple ID	Geologic Formation	USCS Code	USCS Class	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
 141 142		Topock - Alluvium Deposits	SM				6			
	147 J ppb) 019	Topock - Alluvium Deposits	GM				2			
астораности 146 иодина 147 147		Topock - Alluvium Deposits	SM							
₽ <u>4</u> <u>4</u> <u>4</u> <u>4</u> <u>4</u> <u>4</u> <u>4</u> <u>4</u>		Topock - Alluvium Deposits	SM							
оод и слани и		Topock - Alluvium Deposits	SM		(5.0 - 243.5') Cemex #3 Mesh (8x20) Lapis Lustre Sand	(8.5 - 297.0') 6.0" Borehole	(5.0 - 243.5') 97.7 bags	(5.0 - 243.5') 126 bags (129%) Note: Backfill sand, used >20% of the calculated volume due to potential voids that formed during drilling.		
		Topock - Alluvium Deposits	GM							
001 157 157 158 158 159 160		Topock - Alluvium Deposits Topock - Alluvium	GM GC							
		CS = Unified			· · ·			sea level, GW = groundwater,		
				-				orting limit, NR = no recovery;		
-		-	represe	ents dept	h to water measured du	uring the first VAS interval; gra	anular backfill mate	erial was removed during		
overdrilling of	une p	IIOL DOLENOIE								

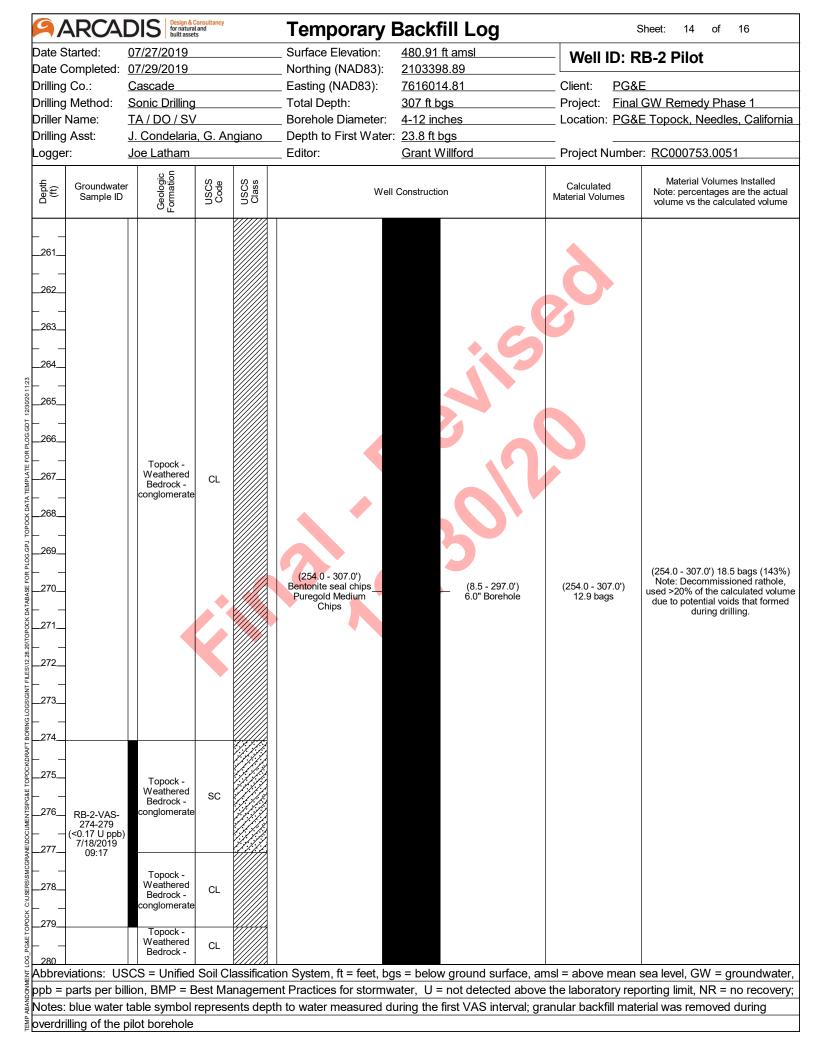
ARCA	DIS Design & for natura built asse	Consultancy al and its		Temporary	Backfill Log	Ş	Sheet: 9 of 16	
Date Started:	07/27/2019			_ Surface Elevation:	480.91 ft amsl	Well ID: R	B-2 Pilot	
Date Completed:				_ Northing (NAD83):	2103398.89			
Drilling Co.:	Cascade Sonic Drilling		_ Easting (NAD83): _ Total Depth:	7616014.81	Client: PG&			
Drilling Method:			0		<u>307 ft bgs</u>	Project: Final GW Remedy Phase 1		
Driller Name:	TA/DO/S			Borehole Diameter:	4-12 inches	Location: <u>PG&</u>	E Topock, Needles, California	
Drilling Asst:	J. Condelaria	a, G. Ar	ngiano	_ Depth to First Water	· · · · · · · · · · · · · · · · · · ·		D0000750 0054	
Logger:	Joe Latham	1	1 1	_ Editor:	Grant Willford		r: <u>RC000753.0051</u>	
Groundwate G Sample ID	Geol	USCS Code	USCS Class	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
Полна и представляет и предста	Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits	GM GM SM SM SM		(5.0 - 243.5') Cemex #3 Mesh (8x20) Lapis Lustre Sand	(8.5 - 297.0') 6.0" Borehole	(5.0 - 243.5') 97.7 bags	(5.0 - 243.5') 126 bags (129%) Note: Backfill sand, used >20% of the calculated volume due to potential voids that formed during drilling.	
	Topock - Alluvium	CM						
	Alluvium Deposits	SM		.				
		Soil C	lassificati	on System, ft = feet, bo	s = below ground surface, a	amsl = above mean	sea level, GW = groundwater,	
							orting limit, NR = no recovery;	
			-		uring the first VAS interval; g			
overdrilling of the		-	· - I* ·		<u> </u>	· ····································		
- 50								

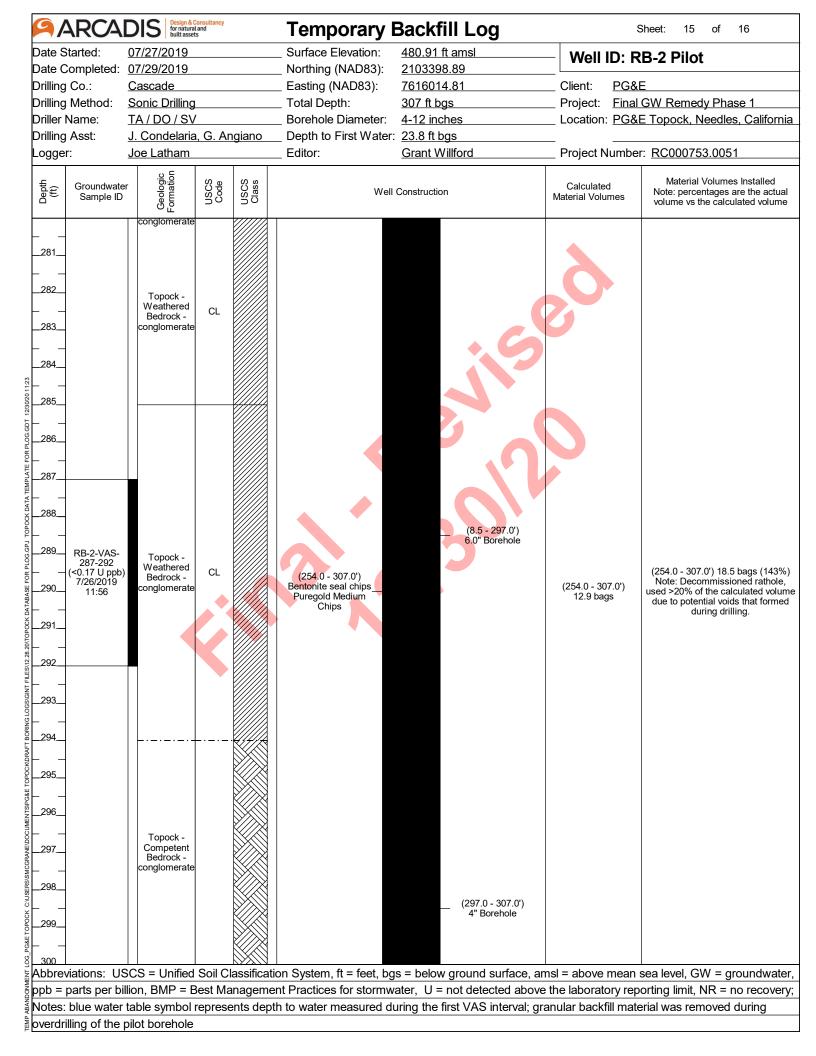












9/	ARCA	DIS Design & C for natura built asset	<mark>Consultancy</mark> Land ts		Temporary I	Backfill Log		S	heet: 16 of 16	
Date C Drilling Drilling Driller I	Date Started: 07/27/2019 Date Completed: 07/29/2019 Drilling Co.: Cascade Drilling Method: Sonic Drilling Driller Name: TA / DO / SV Drilling Asst: J. Condelaria, G. Angiano				Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: Depth to First Water:	Client: Project:				
Logger		Joe Latham	.,	9.0	_ Editor:	Grant Willford	Project N	umber	RC000753.0051	
Depth (ft)	Groundwate Sample ID		USCS Code	USCS Class	Well	Construction	Calculated Material Volu		Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
		Topock - Competent Bedrock - conglomerate			(254.0 - 307.0') Bentonite seal chips Puregold Medium Chips	— (297.0 - 30 4" Boreh		7.0') Is	(254.0 - 307.0') 18.5 bags (143%) Note: Decommissioned rathole, used >20% of the calculated volume due to potential voids that formed during drilling.	
			Ċ			130				
 _314										
_315										
_316										
317										
- – _318 - – _319										
									ea level, GW = groundwater,	
				-				-	orting limit, NR = no recovery; rial was removed during	
		pilot borehole				-	-			