Final Well Design TCS-02 (07/22/22)



Well ID: TCS-02 Well Type: Dual Screened Well Purpose: Remediation Borehole Dia.: 18-16 in. Well Diameters: 10 in. **Backfill Volumes** 0 ft. Units Quantity Material 4 ft. 9.8 Temp Backfill Sand Bags 45 ft. 879.4 **Neat Cement** Gallons **Well Construction Materials** For upper screen 132-159 ft: 10" Suregrip SDR-17 Casing 10" 35-slot 316L SS Wire Wrap Screen For lower screen 179-223 ft: 10" Suregrip SDR-17 Casing 78 ft. 10" 60-slot 316L SS Wire Wrap Screen For upper primary filter pack 124-162 ft: Cemex 8 Mesh (8x16) Lapis Lustre Sand 100.28 ft. For upper transition sands 121-124 and 162-163 ft: Cemex #0/30 (30x50) Lapis Lustre Sand For lower primary filter pack 171-232 ft: Cemex 6 Mesh (4x16) Lapis Lustre Sand 118 ft. For lower transition sands 170-171 ft: 39.5 Cemex #0/30 (30x50) Lapis Lustre Sand Transition Sand Bags 123.5 ft. 124 ft. 0.6 **Bentonite Chips** Bags Approximate DTW 131 ft. 132 ft. 131-136 ft bgs Results: 4,300 ug/l 64.6 Sand Pack 159 ft. 147-152 ft bgs Results: <0.025 ug/l U 162 ft. 1.7 **Transition Sand** Bags 163 ft. 164 ft. 167 ft. Buckets 8.8 **Bentonite Pellets** 161.5-166.5 ft bgs 169.5 ft. Results: <0.025 ug/I U Transition Sand 181-186 ft bgs 1.7 Bags Results: <0.025 ug/I U 170.5 ft. 171 ft. 0.7 Bentonite Pellets Buckets 176 ft. 179 ft. 202 to 207 ft. bgs Results: 2,300 ug/l * Not to Scale 119.9 Sand Pack Legend bags Transition Sand Primary Fitler Sand 211.5 to 216.5 ft. bgs Results: 120 ug/l Bentonite Pellets or Chips - Neat Cement Centralizers Suregrip SDR-17 casing 316L SS Wire Wrap Screen 220 to 225 ft. bgs 223 ft. Results: <0.13 ug/l Backfill Cemex #3 Lapis Lustre Sand 225.5 ft. 228.4 ft. 16-Inch Casing Total Depth 234.55 ft Top of Slough 236.5 ft 15.5-Inch BHA Total Depth 238.5 ft

9	ARC	ΔΓ	DIS			Well Const	ruction Log	;	Sheet: 1 of 12
Date S	11 10	07/2	3/2022			Surface Elevation:	587.37 ft amsl	Well ID: TO	.e us
	ompleted:					_ _Shallow Well Elevation:		- well ib: TC	,S-U2
Drilling	-	Caso				_ _Deep Well Elevation:	N/A	 Client: <u>PG&</u> I	<u>=</u>
_			Rotary			 _Northing (NAD83):	2100921.24		GW Remedy Phase 2A
Driller I			ldana / A	Lamor	1	_Easting (NAD83):	7615150.98		E Topock, Needles California
Drilling			mezquita			_Borehole Diameter:	15.5-18 inches		,
Logger	ogger: <u>Ellen Redner</u>					_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:				e		_Development End Date:	10/20/2022		
Total D	epth:	<u>238.</u>	5 ft bgs		T T	_Well Completion:	☐ Flush ☐ Stick-up ⊠	Well Vault	T
Depth (ft)	Groundwat Sample II		Geologic Formation	USCS	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
1		_	Fluvial Deposits	SW		(0.0 - 4.0') Well Vault			Note: Well vault dimensions 4x5 feet by 4 feet deep.
5 6 7 8			Fluvial Deposits	NR SW		(3.5 - 131.1") 10" SHUR-GRIP SDR17 PVC Casing	(4.0 - 100.3') 18"Diameter Borehole	3	
9	No Groundwate Samples Collected		Fluvial Deposits	SP		(4.0 - 53.0') Portland Cement Grout with up to 6% bentonite hydrogel		(4.0 - 53.0') 447.6 gallons	(4.0 - 53.0') 523 gallons (117%) Note: Grout seal second lift.
13			Fluvial Deposits	SM					
18			Alluvium Deposits	SW					

9	ARC	Α[DIS			Well Const	ruction Log		Sheet: 2 of 12
Date S	Started:	07/2	23/2022			_Surface Elevation:	587.37 ft amsl	Well ID: TO	:S-02
Date C	Completed:	08/0	6/2022			_Shallow Well Elevation:	N/A	VVeil iD. 10	
Drilling	Co.:	Cas	cade			_Deep Well Elevation:	N/A	Client: PG&E	<u> </u>
Drilling	Method:	<u>Dua</u>	l Rotary			_Northing (NAD83):	2100921.24	Project: Final	GW Remedy Phase 2A
Driller I	Name:	J Sa	aldana / A	Lamor	1	_Easting (NAD83):	7615150.98	Location: PG&E	Topock, Needles California
Drilling	Asst:	<u>A. A</u>	mezquita.	/ D. Ale	dona	_Borehole Diameter:	15.5-18 inches		
Logge	r:	Ellen Redner				_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		<u>Sea</u>	n McGran	е		_Development End Date:			
Total D	Depth:	238.	.5 ft bgs			_Well Completion:		Well Vault	1
Depth (ft)	Groundwat Sample II		Geologic Formation	Code	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
21			Alluvium Deposits	SW		(3.5 - 131.1') 10" SHUR-GRIP SDR17 PVC Casing			3
 26			Alluvium Deposits	SP	0 () 0 0 () 0 1 1 1 1				
 27			Alluvium Deposits	ML					
28	No Groundwate Samples Collected	r	Alluvium Deposits	SM		(4.0 - 53.0') Portland Cement Grout with up to 6% bentonite hydrogel		(4.0 - 53.0') 447.6 gallons	(4.0 - 53.0') 523 gallons (117%) Note: Grout seal second lift.
31			Alluvium Deposits	SW					
 32			Alluvium	CNA					
_ 02			Deposits	SM					
33			Alluvium Deposits	SW-SC					
34 35			Alluvium Deposits	SM					
 36 			Alluvium Deposits	SW					
37 38 39 40			Alluvium Deposits	sw					

AR	\mathbb{C}_7	NDIS			Well Const	ruction Log	:	Sheet: 3 of 12
Date Started:	07	7/23/2022			_Surface Elevation:	587.37 ft amsl	Well ID: TO	`S_02
Date Complete	ed: <u>08</u>	3/06/2022			_Shallow Well Elevation:	N/A		J3-02
Drilling Co.:	<u>C</u>	ascade			_Deep Well Elevation:	N/A	Client: PG&I	<u>E</u>
Drilling Method	d: <u>D</u>	ual Rotary			_Northing (NAD83):	2100921.24	Project: Final	GW Remedy Phase 2A
Driller Name:	J	<u>Saldana / A</u>	Lamor	1	_Easting (NAD83):	7615150.98	Location: <u>PG&</u> l	E Topock, Needles California
Drilling Asst:	<u>A</u>	. Amezquita	/ D. Al	dona	_Borehole Diameter:	15.5-18 inches	<u> </u>	
Logger:	<u>E</u>	Ellen Redner			_Static Water Level:	See Log for Depths	Project Numbe	er: <u>30126255</u>
Editor:	<u>S</u>	Sean McGrane			_Development End Date:			
Total Depth:	<u>23</u>	38.5 ft bgs	1		_Well Completion:	☐ Flush ☐ Stick-up ⊠	Well Vault	
Ground Sampl		Geologic Formation	USCS	USCS Class	Construi	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
41	es	Alluvium Deposits Alluvium Deposits Alluvium	SW SW		(44.5 - 45.5') Kwik-Zip Centralizer (4.0 - 53.0') Portland Cement Grout with up to 6% bentonite hydrogel		(4.0 - 53.0') 447.6 gallons	(4.0 - 53.0') 523 gallons (117%) Note: Grout seal second lift.
53 54 55 56 57		Alluvium Deposits	SM		(53.0 - 101.0') Portland Cement Grout with up to 6% bentonite hydrogel		(53.0 - 101.0') 436.2 gallons	(53.0 - 101.0') 538 gallons (123%) Note: Grout seal first lift, used >20% of the calculated volume due to potential grout migration and voids forming during drilling.
58 59 60		Alluvium Deposits	SM					

9	ARC	ADIS			Well Const	ruction Log		Sheet: 4 of 12
	Started:	07/23/2022			_Surface Elevation:	587.37 ft amsl	Well ID: TO	:S-02
Date C	Completed:	08/06/2022			_Shallow Well Elevation:	N/A	VVenilb. ic	
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: PG&E	
Drilling	Method:	Dual Rotary			_Northing (NAD83):	2100921.24	Project: Final	GW Remedy Phase 2A
Driller	Name:	J Saldana / A	Lamor		_Easting (NAD83):	7615150.98	Location: PG&E	Topock, Needles California
Drilling	Orilling Asst: A. Amezquita / D. Aldona		_Borehole Diameter:	15.5-18 inches				
Logge	r:	Ellen Redner			_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGran	ne		_Development End Date:	10/20/2022		
Total D	Depth:	238.5 ft bgs	<u> </u>		_Well Completion:		Well Vault	T
Depth (ft)	Groundwat Sample II		USCS	USCS	Constru	Calculated Materi		Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
61 62 63		Alluvium Deposits	SM		(3.5 - 131.1') 10" SHUR-GRIP SDR17 PVC Casing		2	
 64		Alluvium Deposits	SM					3
65 66 67 68		Alluvium Deposits	SW-SM				3	
69		Alluvium Deposits	SM					
70	No Groundwate Samples Collected		SW-SM		(53.0 - 101.0') Portland Cement Grout with up to 6% bentonite hydrogel		(53.0 - 101.0') 436.2 gallons	(53.0 - 101.0') 538 gallons (123%) Note: Grout seal first lift, used >20% of the calculated volume due to potential grout migration and voids forming during drilling.
78 79 80		Alluvium Deposits	SW-SM		(77.5 - 78.5') Kwik-Zip Centralizer			

9 AF	heet: 5 of 12
Date Started	S-02
Date Comple	5-02
Orilling Co.:	
Orilling Meth	GW Remedy Phase 2A
Oriller Name	Topock, Needles California
Driller Name: <u>J Saldana / A Lamon</u> Drilling Asst: <u>A. Amezquita / D. Aldona</u>	
Logger: <u>Ellen Redner</u>	
Editor:	: 30126255
otal Depth:	
Groun Sam	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
Sam	(53.0 - 101.0') 538 gallons (123%) Note: Grout seal first lift, used >20% of the calculated volume due to potential grout migration and voids forming during drilling.
94	
N Groun-Sam Colle	

9	ARC	AL)IS			Well Const	ruction Log		Sheet: 6 of 12	
Date S	Started:	07/23	3/2022			_Surface Elevation:	587.37 ft amsl	Well ID: TO	CS-02	
Date C	Completed:	08/06	6/2022			_Shallow Well Elevation:	N/A		JO-02	
Drilling	Co.:	Casc	ade			_Deep Well Elevation:	N/A	Client: PG&I	<u>E</u>	
Drilling	Method:		Rotary			_Northing (NAD83):	2100921.24	Project: <u>Final</u>	Project: Final GW Remedy Phase 2A	
	Name:		<u>ldana / A</u>			_Easting (NAD83):	7615150.98	Location: <u>PG&</u> l	E Topock, Needles California	
Drilling			<u>mezquita</u>	/ D. Ald	dona	_Borehole Diameter:	15.5-18 inches			
Logge			Redner			_Static Water Level:	See Log for Depths	Project Numbe	er: <u>30126255</u>	
Editor:		Sean McGrane				_Development End Date:				
Total [Jepth:	238.5	5 ft bgs			_Well Completion:	☐ Flush ☐ Stick-up 区	Well Vault		
Depth (ft)	Groundwat Sample II		Geologic Formation	USCS	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
 101			Alluvium Deposits	SW		(3.5 - 131.1') 10" SHUR-GRIP SDR17 PVC Casing	(100.3 - 234.6') 16" Diameter Borehole	(53.0 - 101.0') 436.2 gallons		
102			•					0		
103 104 			Alluvium						3	
105 106			Deposits	SM				3		
107 108										
109 109 110	No Groundwate Samples		Alluvium Deposits	SM		(101.0 - 122.8')				
	Collected			•		Cemex #0/30 Mesh (30x50) Lapis Lustre Sand		(101.0 - 122.8') 37.1 bags	(101.0 - 122.8') 35 bags (94%) Note: Transition sand	
113			Alluvium Deposits	SM						
116 117			Alluvium Deposits	SM		 				
				_						
118 119			Alluvium Deposits	SM		(117.5 - 118.5') Kwik-Zip Centralizer				
120										

9	ARC	ADIS			Well Constr	uction Log	5	Sheet: 7 of 12
Date S	Started:	07/23/2022			Surface Elevation:	587.37 ft amsl	Well ID: TO	:S-02
Date C	Completed:	08/06/2022			Shallow Well Elevation:	N/A	_ Well IB. 10	
Drilling		Cascade			_Deep Well Elevation:	N/A	Client: PG&E	<u> </u>
Drilling		Dual Rotary			Northing (NAD83):	2100921.24	-	GW Remedy Phase 2A
Driller		J Saldana / A			_Easting (NAD83):	7615150.98	Location: <u>PG&E</u>	Topock, Needles California
_	Orilling Asst: A. Amezquita / D. Aldona			1	Borehole Diameter:	15.5-18 inches		
Logge		Ellen Redner			_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGran	е		Development End Date:			
Total D	Jeptn:	238.5 ft bgs			Well Completion:		Well Vault	
Depth (ft)	Groundwat Sample ID		USCS Code	Class		tion Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 121 122		Alluvium Deposits	SM		(3.5 - 131.1')		(101.0 - 122.8') 37.1 bags	(101.0 - 122.8') 35 bags (94%) Note: Transition sand
123 124		Alluvium			(122.8 - 123.8') Holeplug 3/8" bentonite chips		(122.8 - 123.8') 1.2 bags	(122.8 - 123.8') 2 bags (167%) Note: Bentonite seal, used >20% of the calculated volume due to potential voids that formed during drilling.
125 126 	No Groundwate Samples Collected	Deposits	SM				3	
127	No Sample (127-132 Interval did not produce 4/19/2022	Alluvium Deposits	SM		(131.1 - 158.6')			(123.8 - 161.4') 84 bags (131%) Note: Filter pack, used >20% of
132	TCS-2-VAS- 131-136	_			10° 35-Slot 316L SS Wire Wrap Screen (123.8 - 161.4') Cemex #8 Mesh (8x16) Lapis Lustre Sand		(123.8 - 161.4') 63.9 bags	the calculated volume due to potential voids that formed during drilling. Swabbed the filter pack for approximately 240 minutes prior to installation of the bentonite seal.
134 135 136	(4300 ppb) 4/19/2022 15:10	Alluvium Deposits	SM		Cand Condition of the C			
137 138 139		Alluvium Deposits	SM					
_		Alluvium	SM					

6	<u>۸ DC</u>	Λ	DIC				Well Cons	tru	ct	ion Log			Sh	neet: 8 of 12
, , -	ARC	<u> </u>	DIS											
Date S			/23/2022				Surface Elevation:			7 ft amsl		Well ID:	TCS	S-02
	ompleted:						Shallow Well Elevation				— <u>'</u>	Ol: 1 DC	205	
Drilling			scade				Deep Well Elevation:	<u>N</u>		204.04			3 <u>&E</u>	NA D
•			al Rotary				Northing (NAD83):			921.24		-		W Remedy Phase 2A
Driller I			Saldana / A				Easting (NAD83):			50.98	l	_ocation: <u>PC</u>	<u> 3&E</u>	Topock, Needles California
Drilling			Amezquita		uona		Borehole Diameter:			18 inches	—,	 	-	20420055
Loggeı Editor:	r.		en Redner				Static Water Level:			og for Depths	'	Project Num	iber:	30120233
Editor: Total D	\onth·		an McGrar 8.5 ft bgs	<u>1e</u>			Development End Date Well Completion:	e: <u>10</u>		ush	\\/c	ell Vault		
TOLAL	ериі.	230				_	Consti	ruotio			776	ii vauit		
Depth (ft)	Groundwat Sample II		Geologic Formation	USCS	USCS		Consu	iuciioi	II Del	alis	M	Calculated laterial Volume	es	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
		Τ	Deposits				(131.1 - 158.6') —	:H						
141			Alluvium Deposits	SM			Wire Wrap Screen							
142						a		÷Π						
142						•								
143			Alluvium Deposits	SW-SM		<u> </u>		4						
			Deposits]			\Diamond			•		
144						•		\mathbb{H}						
			Alluvium			4		:H						
145			Deposits	SM		1		\Box						
								$: \sqcup$						
146						:		$:: \vdash$						
			A11					÷Η						
147			Alluvium Deposits	SM										
148						N								
					\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			H						
149	TCS-2-VAS 147-152	-	Alluvium	SM	47]		$: \Box$						(123.8 - 161.4') 84 bags (131%)
	(<0.025 ppb)	Deposits	SIVI			(123.8 - 161.4')							Note: Filter pack, used >20% of the calculated volume due to
150	4/20/2022 11:15					1	Cemex #8 Mesh	$\cdot : \sqcup$	4			(123.8 - 161.4') 63.9 bags	´	potential voids that formed during
			Alluvium	CM			(8x16) Lapis Lustre	:H				00.0 Dage	8	drilling. Swabbed the filter pack for approximately 240 minutes prior to installation of the bentonite seal.
151			Deposits	SM										installation of the bentonite seal.
			Alluvium	014										
152			Deposits	SM					•					
153								:H						
						:		$:: \exists$						
154						1								
155			Alluvium	SM				:: old						
			Deposits				ļ.	∴H						
156						.]		÷П						
157														
							:`·	$\cdot H$						
158						1		∷Fl						
L _						1								
159			Alluvium	SM				$\Box \Box$		— (158.6 - 178.6') 10" SHUR-GRIP				
			Deposits]				SDR17 PVC Casing				
160							<u>:</u> :							

9	ARC	ADIS			Well Const	ruction Log	:	Sheet: 9 of 12
Date S	Started:	07/23/2022			_Surface Elevation:	587.37 ft amsl	Well ID: TO	`S_02
Date C	Completed:	08/06/2022			_Shallow Well Elevation:	N/A		
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: PG&I	<u> </u>
Drilling	Method:	Dual Rotary			Northing (NAD83):	2100921.24	Project: Final	GW Remedy Phase 2A
Driller		J Saldana / A	A Lamor	1	Easting (NAD83):	7615150.98	Location: PG&I	E Topock, Needles California
Drilling Asst: <u>A. Amezquita / D. Aldona</u>				Borehole Diameter:	15.5-18 inches	<u> </u>	•	
Logge	r:	Ellen Redner	r		_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGra	ine		Development End Date:	10/20/2022		
Total D	Depth:	238.5 ft bgs			_Well Completion:	☐ Flush ☐ Stick-up ⊠	Well Vault	
Depth (ft)	Groundwat Sample ID		USCS	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
161 162 		Alluvium Deposits	ML		(123.8 - 161.4') Cemex #8 Mesh (8x16) Lapis Lustre Sand (161.4 - 162.4') Cemex #0/30 Mesh (30x50) Lapis Lustre Sand	(158.6 - 178.6') 10" SHUR-GRIP SDR17 PVC Casing	(123.8 - 161.4') 63.9 bags (161.4 - 162.4') 1.8 bags	(161.4 - 162.4') 5 bags (278%) Note: Transition sand seal, used >20% due to potential voids forming during drilling and sand entering the well through the upper screen.
164 165	TCS-2-VAS 161.5-166.5 (<0.025 ppb 4/21/2022 09:45	Allen de una	SM		(163.5 - 164.5') Kwik-Zip Centralizer			5
166 167		Alluvium Deposits	ML		(162.4 - 169.6') Pel-Plug Bentonite Pellets 3/8" (TR30)		(162.4 - 169.6') 9.8 buckets	(162.4 - 169.6') 9 buckets (92%) Note: Bentonite seal
 168 		Alluvium Deposits	SM		8			
169 170 171		Alluvium Deposits	ML		(169.6 - 170.3') Cemex #0/30 Mesh — % % % (30x50) Lapis Lustre Sand (170.3 - 171.1') Pel-Plug Bentonite Pellets 3/8' (TR30)		(169.6 - 170.3') 1.1 bags (170.3 - 171.1') 1.2 buckets	(169.6 - 170.3') 3 bags (273%) Note: Transition sand seal, used >20% due to potential voids forming during drilling and sand entering the well through the upper screen.
172173174175176177		Alluvium Deposits	SM SW-SM		(171.1 - 236.4') Cemex #6 Mesh (4x16) Lapis Lustre Sand (175.5 - 176.5') Kwik-Zip Centralizer	(178.6 - 223.3') 10" 60-Slot 316L SS	(171.1 - 236.4') 118.9 bags	(170.3 - 171.1') 1 buckets (83%) Note: Bentonite seal (171.1 - 236.4') 147 bags (124%) Note: Filter pack, during installation some of the bags of sand appeared to be not to the manufacturer's specifications and contained too much fine grained sand. Bags were visually inspected in the field to confirm that the sand did look out of spec prior to installation. Used >20% of the calculated volume due to potential voids forming during drilling or the finer grained sand observed in the filter pack material entering the well through the screens during installation. Swabbed the filter pack for approximately 240 minutes prior to installation of the bentonite seal.
		Alluvium Deposits	SM			Wire Wrap Screen		

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SA		4DI2				truction Log		Sheet: 10 of 12
Date Starte		07/23/2022			_Surface Elevation:	587.37 ft amsl	Well ID: To	CS-02
-	-	08/06/2022			_Shallow Well Elevation			
Drilling Co.		Cascade			_Deep Well Elevation:	N/A	Client: PG&	
Drilling Met		Dual Rotary			_Northing (NAD83):	2100921.24	•	GW Remedy Phase 2A
Driller Nam		J Saldana / A			_Easting (NAD83):	7615150.98	Location: <u>PG&</u>	E Topock, Needles California
Drilling Asst: <u>A. Amezquita / D. Aldona</u>			_Borehole Diameter:	15.5-18 inches				
Logger:		Ellen Redner			_Static Water Level:	See Log for Depth	s Project Number	er: <u>30126255</u>
Editor:		<u>Sean McGrar</u>	ne		Development End Date			
Total Dept	:h:	238.5 ft bgs	1		_Well Completion:		-up ⊠ Well Vault	T
	oundwate ample ID		USCS	USCS Class	Consti	uction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
		Alluvium Deposits	SW-SM			(178.6 - 22 10" 60-Slot 3 Wire Wrap 9	16L SS	
183 TCS 18 (<0.	S-2-VAS- 81-186 .025 ppb)	Alluvium Deposits	ML					0
	21/2022 ´ 14:45	Alluvium Deposits	SM					
		Alluvium	SM					
185		Deposits						
186		Alluvium Deposits	SM				(3)	
187 188		Alluvium Deposits	SM		0			(171.1 - 236.4') 147 bags (124%) Note: Filter pack, during installation some of the bags of
189		Alluvium Deposits	SM		(171.1 - 236.4') Cemex #6 Mesh		(171.1 - 236.4')	sand appeared to be not to the manufacturer's specifications and contained too much fine grained sand. Bags were visually inspected in the field to confirm that the sand did look out of spec prior to installation. Used >20% of the
		Alluvium Deposits	SM		(4x16) Lapis Lustre Sand		` 118.9 bags ´	calculated volume due to potential voids forming during drilling or the finer grained sand observed in the filter pack material entering the well through the screens during installation. Swabbed the filter pack for approximately 240
193		Alluvium Deposits	SM					minutes prior to installation of the bentonite seal.
195 196		Alluvium Deposits	SM					
196 197		Alluvium Deposits	SM			3금강성 소금강성		
198 		Alluvium Deposits	ML					
200		Alluvium Deposits	SM					

6	ARC	V DIS			Well Const	ruction Log		Sheet: 11 of 12
Date S	tarted:	07/23/2022 08/06/2022			Surface Elevation: Shallow Well Elevation:	587.37 ft amsl	Well ID: TO	
Drilling	-	Cascade	<u> </u>		Deep Well Elevation:	N/A	 Client: <u>PG&</u> E	
_		Dual Rotar	ν		Northing (NAD83):	2100921.24		- GW Remedy Phase 2A
Driller I		J Saldana	-	n	Easting (NAD83):	7615150.98	-	Topock, Needles California
Drilling		A. Amezqu			Borehole Diameter:	15.5-18 inches		•
Logge	r:	Ellen Redr	ner		_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McG	rane		Development End Date	: <u>10/20/2022</u>		
Total D	Depth:	238.5 ft bg	S		_Well Completion:	☐ Flush ☐ Stick-up ⊠	Well Vault	
Depth (ft)	Groundwat Sample II		USCS	USCS	Constru	uction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
201		Alluviur Deposi				10" 60-Slot 316L SS Wire Wrap Screen		
_202		Alluviur Deposi						
203		Deposi	15					
	TCS-2-VAS 202-207 (2300 ppb) 4/22/2022 11:50	- Alluviur Deposii			(171.1 - 236.4') Cemex#6 Mesh (4x16) Lapis Lustre Sand		(171.1 - 236.4') 118.9 bags	(171.1 - 236.4') 147 bags (124%) Note: Filter pack, during installation some of the bags of sand appeared to be not to the manufacturer's specifications and contained too much fine grained sand. Bags were visually inspected in the field to confirm that the sand did look out of spec prior to installation. Used >20% of the calculated volume due to potential voids forming during drilling or the finer grained sand observed in the filter pack material entering the well through the screens during
212 213 214	TCS-2-VAS 211.5-216.5 (120 ppb) 4/23/2022				5			installation. Swabbed the filter pack for approximately 240 minutes prior to installation of the bentonite seal.
215 216	4/23/2022 09:00	Alluviur Deposi						
		Alluviur Deposi		1.1.1				
218 219		Alluviur Deposi	m sM					
L J		Deposi						
220			SM			:H::::1		

ARC	ADIS			Well Consti	ruction Log	;	Sheet: 12 of 12
Date Started: Date Completed: Drilling Co.: Drilling Method: Driller Name: Drilling Asst: Logger: Editor:	mpleted: 08/06/2022 co.: Cascade Method: Dual Rotary ame: J Saldana / A Lamon asst: A. Amezquita / D. Aldona Ellen Redner Sean McGrane		_Surface Elevation: _Shallow Well Elevation: _Deep Well Elevation: _Northing (NAD83): _Easting (NAD83): _Borehole Diameter: _Static Water Level: _Development End Date: _Well Completion:	N/A Client: PG&E 2100921.24 Project: Final GW Remover 7615150.98 Location: PG&E Topock, 15.5-18 inches Project Number: 301262 10/20/2022 Project Number: 301262		E GW Remedy Phase 2A E Topock, Needles California	
Total Depth: Groundwar Sample II	logic ation	USCS	USCS Class	· · · · · · · · · · · · · · · · · · ·	☐ Flush ☐ Stick-up ⊠	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
221	Alluvium Deposits	SM			(178.6 - 223.3') 10" 60-Slot 316L SS Wire Wrap Screen		
15:10 1 - 224 - 225 226 227	Weathered Bedrock - Conglomerate	N/A	× × × × × × × × × × × × × × × × × × ×	(225.0 - 226.0') Kwik-Zip Centralizer	(223.3 - 227.5') 10" SHUR-GRIP SDR-17 PVC Sump	3	(171.1 - 236.4') 147 bags (124%) Note: Filter pack, during installation some of the bags of sand appeared to be not to the manufacturer's specifications and
	Competent Bedrock - Conglomerate	N/A	***** **** **** **** **** **** **** ****	(171.1 - 236.4') Cemex #6 Mesh (4x16) Lapis Lustre Sand	(227.5 - 228.83') 10" 316L SS End Cap (234.6 - 238.5') 15.5" Diameter Borehole	(171.1 - 236.4') 118.9 bags	contained too much fine grained sand. Bags were visually inspected in the field to confirm that the sand did look out of spec prior to installation. Used >20% of the calculated volume due to potential voids forming during drilling or the finer grained sand observed in the filter pack material entering the well through the screens during installation. Swabbed the filter pack for approximately 240 minutes prior to installation of the bentonite seal.
237 238			X X X X X X X X X X X X X X X X X X X	(236.4 - 238.5') Slough in bottom of borehole			Note: Potential formation collapse or sediment settling out in drill casing.
239 240 Abbreviations: U	SCS = Unified	Soil CI	assificat	tion System, ft = feet, bgs	= below ground surface, ar	msl = above mean	sea level, SS = Stainless

9	AR	CAD	IS		Вс	oring	g Log	9		She	et: 1 of	12
Date S	started:	04/01/	/2022		Surfac	e Eleva	ation:	587.37 ft amsl	Borin	a No.:	TCS-02	Pilot
	•	ted: 04/24/	/2022		Northir	ng (NA	D83):	2100921.24			100 02	
Drilling		Casca			Easting	g (NAD	83):	7615150.98	_ Client:	PG&E		
Drilling			Drilling		Total D	•		232 ft bgs	_ Project:		V Remedy Pl	
Drill Ri			Longyear drill	head	Boreho			4-7 inches	_ Location:	PG&E T	opock, Need	<u>les California</u>
Driller		Matt A			•			129.5 ft bgs	- 		20400055	
Drilling			eppner / R We	<u>st</u>	Sampli	•		4 inch x 10 ft. Core Barrel	_ Project N	umber: 3	30126255	
Logge Editor:			Redner McGrane		Sampli Conve	-		Continuous	-			
Editor.		Sean	IVICGIANE		Tonve		VV CII.	△ Tes ☐ NO				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
1	1.5			Fluvial Deposits	SW		very fine small to subangu was exc sample	Well graded sand with gravel (SW); it to very coarse grained, subangular to very large pebbles, subangular to sub lar to subround; trace silt; trace clay; avated with air-knife and placed back is disturbed. ft) No Recovery.	subround; so round; little gr dry. NOTE: M	me anules, aterial	(0.0 - 10.0') Air-knifed for utility clearance on 4/1/22, excavated material put back in hole.	(0.0 - 10.0') No drilling fluid used
7 8 9 10		No Sieve Samples	No Groundwater Samples	Fluvial Deposits	SW		very fine small to subangu was exc sample	t) Well graded sand with gravel (SW); to very coarse grained, subangular to very large pebbles, subangular to sub ilar to subround; trace silt; trace clay; avated with air-knife and placed back is disturbed. ft) Poorly graded sand with gravel (SF	subround; so round; little gr dry. NOTE: M in the excavat	me ranules, aterial ion,	(10.0 - 17.0')	(10.0 - 17.0')
 11 12	6.8	Collected	Collected	Fluvial Deposits	SP		very fine subangu	to fine grained, little medium to very out lar to subround; little granules, suban all to large pebbles, subangular to sub	coarse grained gular to subro	d, und;	Soft drilling	No drilling fluid used
13 14 15 16 17				Fluvial Deposits	SM		very fine small to granules	ft) Silty sand with gravel (SM); yellow to very coarse grained, subangular to very large pebbles, subangular to subs, subangular to subround; little clay; definition of the coarse grained, subangular to subround; little clay; definition of the clay; definition of the clay is defined by definition of the clay is defined by definition.	subround; so round; little si lry.	me		
18 19 	7.3			Alluvium Deposits	SW		very fine small to	ft) Well graded sand with gravel (SW to very coarse grained, subangular to very large pebbles, subangular to sub lar to subround; trace silt; trace clay; of	subround; so round; little gr	me	(17.0 - 20.0') Soft drilling	(17.0 - 20.0') No drilling fluid used

9	ΔR	CAD	IS		Вс	ring	g Log	g		She	et: 2 of	12
	tarted:				Surface			587.37 ft amsl	Borin	a No ·	TCS-02	Pilot
Date C	Comple	ted: <u>04/24/</u>	/2022		Northin	ng (NAI	D83):	2100921.24		g .10	1 30 02	<u></u>
Drilling		Casca	ide		Easting	g (NAD	83):	7615150.98	_ Client:	PG&E		
_	Metho		Drilling		Total D	-		232 ft bgs	_ Project:		V Remedy Pl	
	д Туре		Longyear drill	head	Boreho			4-7 inches	_ Location:	PG&E T	opock, Need	les California
	Name:				•			129.5 ft bgs	-			
Drilling			ppner / R We	st	Sampli	-		4 inch x 10 ft. Core Barrel	_ Project N	lumber: 3	30126255	
Logge Editor:			Redner McGrane		Sampli Convei	-		Continuous	-			
Editor.		Sean	<u> </u>		Conve	led to	vveii.	△ res ☐ No				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
21 22 23 24	7.3	7.3 Alluvi Depo					very fine small to	if th) Well graded sand with gravel (SW to very coarse grained, subangular to very large pebbles, subangular to subular to subround; trace silt; trace clay; of	subround; so round; little g	me	(20.0 - 27.0') Normal drilling	(20.0 - 27.0') No drilling fluid used
25 26				Alluvium Deposits	SP	0 0 0 0	very fine subangu	is ft) Poorly graded sand with gravel (SF to medium grained, little coarse to ve ular to subround; little granules, suban all to large pebbles, subangular to sub ay; dry.	ry coarse gra gular to subro	ned, ound;		
 27				Alluvium Deposits	ML		slow dila subang	t) Sandy silt (ML); brown (7.5YR 5/3); a atancy; little very fine to very coarse graular to subround; little clay; trace granud; trace small to large pebbles, suban	ained sand, ıles, subangu	lar to	(27.0. 27.0)	(27.0. 27.0)
		No Sieve Samples Collected No Groundwater Samples Collected		Alluvium Deposits	SM		soft to n (27-31 f subangu	nedium stiff; moist. t) Silty sand (SM); brown (7.5YR 5/3); alar to subround; some silt; trace grant d; trace clay; moist.	very fine grain	ied,	(27.0 - 37.0') Normal drilling	(27.0 - 37.0') No drilling fluid used
31				Alluvium	SW	*****		ft) Well graded sand (SW); brown (10				
32	7.5			Deposits Alluvium Deposits	SM		small to (31.5-32	rse grained; trace granules, subangul- medium pebbles, subangular to subro 2.5 ft) Silty sand (SM); brown (7.5YR 5/	ound; trace sil (3); very fine g	t; dry. rained,		
				Alluvium	SW-SC			ular to subround; some silt; trace grant d; trace clay; moist; rapid dilatancy.	ules, subangu	lar to		
33				Deposits	1			B ft) Well graded sand with clay (SW-S ry fine to very coarse grained; little clay				
 34							medium	pebbles, subangular to subround; trace cs, subangular to subround; dry; trace c	ce silt; trace			
34				Alluvium Deposits	SM		(33-35.5	oft) Silty sand (SM); brown (7.5YR 5/3)); very fine gra			
35				Берозііз				ular to subround; some silt; some clay; ular to subround; moist; rapid dilatancy		es,		
36 				Alluvium Deposits	SW		to very o	6.5 ft) Well graded sand (SW); brown (coarse grained; trace granules, subangual to medium pebbles, subangular to av; drv.	ular to subro	und;		
37 38 39 40	8.2			Alluvium Deposits	SW		(36.5-48 very fine granules	s (t) Well graded sand with gravel (SW to very coarse grained, subangular to s, subangular to subround; little small t alar to subround; trace clay; of	subround; lit to very large p	tle	(37.0 - 47.0') Normal drilling	(37.0 - 47.0') No drilling fluid used

9	ΑR	CAD	S		Вс	oring	j Log	g		She	eet: 3 of	12
* /	tarted:		2022		Surfac	e Eleva	tion:	587.37 ft amsl	Borin	a No:	TCS-02	Pilot
Date C	Comple	ted: <u>04/24/</u>	2022		Northir	ng (NAI	D83):	2100921.24			100 02	<u></u>
Drilling		Casca			Easting	-	83):	7615150.98	_ Client:	PG&E		
Drilling			<u>Drilling</u>		Total D	-		232 ft bgs	-		N Remedy Pr	
Drill Ri			Longyear drill	<u>head</u>	Boreho			4-7 inches	_ Location:	PG&E 1	opock, Need	<u>les California</u>
	Name:				•			129.5 ft bgs	- Duningt N		20400055	
Drilling			ppner / R We	ST	Sampli	-		4 inch x 10 ft. Core Barrel	_ Project N	umber: .	30126255	
Logge Editor:			Redner McGrane		Sampli Conve	-		Continuous	-			
		Sieve	Groundwater	Geologic			V V O.II.				Dellin - Nete -	Dellia a Florid
Depth (ft)	Recovery (ft)	Sample ID	Sample ID	Geol	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
41 42 43 44 45 46 47	8.2			Alluvium Deposits	SW		very fine granules subangs	If the Well graded sand with gravel (SW) to very coarse grained, subangular to see, subangular to subround; little small tallar to subround; trace silt; trace clay; of Small cobble	subround; lit to very large p	tle	(47.0 - 57.0')	(47.0 - 57.0')
48 49 50 51		No Sieve Samples Collected No Groundwater Samples Collected		Alluvium Deposits Alluvium Deposits	SW		to very of large personal large pers	6 ft) Silty sand with gravel (SM); brown coarse grained, subangular to subroun bbles, angular to subround; little grant d; little silt; trace clay; dry. 2 ft) Well graded sand with gravel (SW to very coarse grained, subangular to s, subangular to subround; little small t ular to subround; trace silt; trace clay; of	d; little small ules, subangules, subangules); brown (10Y) subround; little very large p	to very lar to R 5/3);	Rough drilling	No drilling fluid used
525354555656	8.2			Alluvium Deposits	SM		with bro subangi angular	t) Silty sand with gravel (SM); grayish b wn (7.5YR 5/3); very fine to very coarse alar to subround; little silt; little small to to subround; little clay; trace granules, and clays nodules within unit.	e grained, large pebble	s,		
57 58 59	5.6			Alluvium Deposits	SM		very fine	t) Silty sand with gravel (SM); grayish be to very coarse grained, subangular to all to large pebbles, angular to subrour to subround; trace clay; dry; silt and cl	subround; so nd; trace gran	ome silt; ules,	(57.0 - 64.5') Rough and hard drilling	(57.0 - 64.5') No drilling fluid used

9	AR	CADI	S		Вс	ring	g Log	3			She	eet: 4 of	12
Date S					Surface	e Eleva	ation:	587.37 ft an	nsl	Borin	a No	TCS-02	Pilot
Date C	omple	ted: <u>04/24/</u>	2022		Northin	g (NA	D83):	2100921.24			g	. <u> </u>	<u></u>
Drilling	Co.:	Casca			Easting	(NAD	83):	7615150.98	i	_ Client:	PG&E		
Drilling			Drilling		Total D	epth:				•		N Remedy Pl	
Drill Ri			Longyear drill		Boreho					_ Location:	PG&E 7	Topock, Need	<u>les Californi</u>
Driller I		Matt A			•			129.5 ft bgs					
Drilling	Asst:		ppner / R We		Sampli	-			t. Core Barrel	_ Project N	umber: <u>;</u>	30126255	
_ogger	r:	·			Sampli	-		Continuous		_			
Editor:		<u>Sean I</u>	McGrane		Conver	ted to	vveii:	× Yes	No				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class			Soil Description			Drilling Notes	Drilling Fluid
 61 62 63	5.6			Alluvium Deposits	SM		very fine little sma angular unit.	to very coarse call to large pebblic to subround; traces: Boulder; pulve	gravel (SM); grayish grained, subangular to es, angular to subrouce clay; dry; silt and corized by drilling process.	o subround; so ind; trace gran lay nodules wi	ome silt; ules, thin		
 64				Alluvium Deposits	SM		with bro very coa to mediu	wn (7.5YR 5/2); rse grained, sub	th gravel (SM); grayis very fine to fine grain angular to subround; ular to subround; little	ed, little mediu some silt; little	m to e small		
65 66 67 68				Alluvium Deposits	SW-SM		brown (v small to granules	very fine to very overy large pebbles, angular to sub-	d sand with silt and goarse grained, angues, angular to subangangular; trace clay; d	ar to subround gular; little silt; ry.	f; little trace	(64.5 - 77.0') Rough drilling	(64.5 - 77.0' No drilling flu used
69			No	Alluvium Deposits	SM		brown (7	7.5YR 5/3); very t d; little silt; little s	with gravel (SM); brow ine to very coarse gra small to very large pe es, angular to suban	ained, angular bbles, angular	to		
70 71 72	9.5	No Sieve Samples Collected	Groundwater Samples Collected				moist; si (69.5-77 (10YR 5 angular subangu	It and clay nodul ft) Well graded /3) with brown (7 to subround; little lar; little silt; trad		avel (SW-SM); o very coarse pebbles, angul to subangular;	brown grained, ar to		
73 74 75				Alluvium Deposits	SW-SM								
 76 							(75.5-76	i.5 ft) Cobbles/bo	oulder pulverized by o	drilling process			
	7.1			Alluvium Deposits	SW-SM		brown (* grained, angular	Í0YR 5/2) with bi angular to subro to subangular; li	and with silt and gravioun (7.5YR 5/2); verbund; little small to vettle silt; trace granule ry to moist; silt and c	ry fine to very of ery large pebbles, angular to	oarse es,	(77.0 - 87.0') Rough drilling	(77.0 - 87.0 No drilling flu used

9	AR	CAD	IS		Во	ring	g Log	9		Shee	et: 5 of	12
	tarted:				Surface	Eleva	ation:	587.37 ft amsl	Borine	a No.:	TCS-02	Pilot
Date C	omple	ted: <u>04/24/</u>	2022		Northin	g (NAI	D83):	2100921.24		g .10		<u></u>
Drilling	Co.:	Casca			Easting	(NAD	83):	7615150.98	Client:	PG&E		
•	Metho		•		Total D			232 ft bgs	•		V Remedy Pr	
	g Type		Longyear drill		Boreho			4-7 inches	Location:	PG&E T	opock, Need	les California
	Name:	Matt A			•			129.5 ft bgs				
Drilling			ppner / R We		Sampli	-		4 inch x 10 ft. Core Barrel	Project Nu	ımber: <u>3</u>	0126255	
Logge					Sampli	-		Continuous				
Editor:		<u>Sean</u>	McGrane		Conver	ted to	Well:					
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
 _81 _82							brown (1 grained, angular subangu unit.	b) Well graded sand with silt and gravel (10YR 5/2) with brown (7.5YR 5/2); very angular to subround; little small to ver to subangular; little silt; trace granules, ular; trace clay; dry to moist; silt and cla	fine to very co y large pebbles angular to y nodules with	parse s,		
83 84 85	7.1			Alluvium Deposits	SM		with brown subroun little silt;	off) Silty sand with gravel (SM); grayish wn (7.5YR 5/2); very fine to very coarsed; little small to very large pebbles, and trace granules, angular to subangular; it and clay nodules within unit.	e grained, angu Jular to subang	ular to gular;		
 86 87				Alluvium Deposits	ML		plasticity grained angular medium	ft) Sandy silt with gravel (ML); brown (, rapid dilatancy; some clay; little very is sand, angular to subround; little small to subangular; trace granules, angular stiff to hard; dry.	fine to very coa to large pebble to subangular	arse es, ;	(97.0 97.0)	(97.0 . 97.0)
 _88 				Alluvium Deposits	SM		with brown subroun little silt;	Silty sand with gravel (SM); grayish b wn (7.5YR 5/2); very fine to very coarse di little small to very large pebbles, ang trace granules, angular to subangular; lt and clay nodules within unit.	grained, angu gular to subang	ular to gular;	(87.0 - 97.0') Rough drilling	(87.0 - 97.0') No drilling fluid used
89 90 91 		No Sieve Samples Collected	No Groundwater Samples Collected				brown (1 grained, angular	e) Well graded sand with silt and gravel 10YR 5/2) with brown (7.5YR 5/2); very angular to subround; little small to ver to subangular; little silt; trace granules, ilar; trace clay; dry to moist; silt and cla	fine to very co y large pebble angular to	oarse s,		
92 93 _94	8.2			Alluvium Deposits	SW-SM		(93.6 ft)	Boulder/cobble pulverized by drilling p	rocess.			
 95 96								.4 ft) Silt lens				
 97				Alluvium Deposits	ML		dilatancy coarse o	Sandy silt (ML); brown (10YR 5/3); lo y; some very fine to fine grained sand, grained sand, angular to subround; little s, angular to subangular; trace small to	little medium to e clay; trace	o very		
 98 99	7.3			Alluvium Deposits	SW		angular (97-99.5 (10YR 5 angular subangu	s, angular to subangular, trace small to to subangular; medium stiff to hard; dr. ft) Well graded sand with gravel (SW)/2) with brown (7.5YR 5/2); very fine to to subround; little small to very large pellar; trace granules, angular to subanguto moist; silt and clay nodules within u	y. ; grayish brow very coarse gr ebbles, angula ular; trace silt;	rn rained, ir to	(97.0 - 107.0') Rough drilling	(97.0 - 107.0') No drilling fluid used
 100				Alluvium	SM		(99.5-10	0 ft) Silty sand with gravel (SM); grayis	h brown (10YF	R 5/2);		

9	AR	CAD	IS		Вс	ring	y Log	9		She	et: 6 of	12
	tarted:				Surface			587.37 ft amsl	Borin	u N∪ ·	TCS-02	Pilot
Date C	Comple	ted: <u>04/24</u>	/2022		Northin	ıg (NAI	D83):	2100921.24	Вопп	9 110	100-02	1 1101
Drilling	Co.:	Casca	ade		Easting	g (NAD	83):	7615150.98		PG&E		
_	Metho				Total D	-		232 ft bgs	•		V Remedy Pr	
	д Туре		Longyear drill		Boreho			4-7 inches	Location:	PG&E T	opock, Need	les California
	Name:				•			129.5 ft bgs				
Drilling			eppner / R We		Sampli	-		4 inch x 10 ft. Core Barrel	Project Nu	ımber: 3	30126255	
Logge Editor:			Redner McGrane		Sampli Convei	-		Continuous	-			
Luitoi.		<u>Sean</u>	IVICGIANE				VV GII.	NO TES INO				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
 101				Deposits			very larç angular	to very coarse grained, angular to sub e pebbles, angular to subangular; little to subangular; trace clay; dry; silt and o	silt; trace gra	nules,		
				Alluvium Deposits	SW		unit. (100-10	2.5 ft) Well graded sand with gravel (S)	W); brown (7.5	SYR		
102							5/2) with angular subang	grayish brown (10YR 5/2); very fine to to subround; little small to very large pr lar; trace granules, angular to suba <mark>ng</mark>	very coarse g ebbles, angula ular; trace silt;	rained, ar to		
103								to moist; silt and clay nodules within u 07 ft) Silty sand with gravel (SM); brow		with		
	7.3						grayish	prown (10YR 5/2); very fine to very coa und; little small to very large pebbles, a	rse grained, a	ngular		
104	7.5						subangı	ilar; little silt; trace granules, angular to ; silt and clay nodules within unit.		race		
 105				Alluvium Deposits	SM) Small cobble				
106				·								
107								2 ft) Silty sand with gravel (SM); brown			(107.0 -	(107.0 -
 108							to subro	orown (10YR 5/2); very fine to very coa und; little silt; little small to large pebbl	es, angular to		117.0') Rough drilling,	117.0') No drilling fluid
								llar; trace granules, angular to subrour clay nodules within unit.	nd; trace clay;	moist;	stopped drilling for day	used
109											on 4/15/22 due to moist core	
			No	Alluvium	SM						and potential for water table	
110		No Sieve Samples	Groundwater Samples	Deposits							to be close for first VAS	
		Collected	Collected								collection.	
111												
112	7.6						(112-11	6.5 ft) Silty sand with gravel (SM); brow	vn (7.5YR 5/2)	with		
							to subro	prown (10YR 5/2); very fine to very coa und; some silt; little small to large pebl	bles, angular t	ه ا		
113							subroun	d; trace granules, subangular to subro It and clay nodules and lens within uni	und; trace clay	/;		
 114								,	-			
				Alluvium Deposits	SM							
115												
116												
				Alluvium	014		(116.5.1	17 ft) Silty sand with gravel (SM); brow	n (7.5VR 5/3)	Verv		
117				Deposits	SM		fine to fi	ne grained, little medium to very coarse	e grained,	1	(117.0 -	(117.0 -
<u> </u>							angular	ılar to subround; some silt; little small t to subangular; little clay, trace granule		;o,	122.0') Rough drilling	122.0') No drilling fluid
118				A.U			(117-12	d; moist; rapid dilatancy. 2 ft) Silty sand with gravel (SM); brown			1.ough unining	used
110	3.5			Alluvium Deposits	SM		grayish	prown (10YR 5/2); very fine to very coa und; little small to very large pebbles, a	rse grained, a	ngular		
119							little silt;	trace granules, subangular to subroun bbles, subround; dry to moist; silt and	nd; trace clay;	trace		
 120							lens with		,			

9	ΔĘ	RCADI	IS		Вс	oring	g Lo	g		She	eet: 7 of	12
Date S					Surfac			587.37 ft amsl	Borin	a No	: TCS-02	Pilot
Date C	omple	eted: <u>04/24/</u>	/2022		Northir	ng (NA	D83):	2100921.24	Воли	ıg 110.	. 100 02	1 1101
Drilling	Co.:	<u>Casca</u>	ıde		Easting	g (NAD	83):	7615150.98	Client:	PG&E		
Drilling			•		Total D	-		232 ft bgs	-		W Remedy Pl	
Drill Ri			Longyear drill		Boreho			4-7 inches	Location:	PG&E	<u> Fopock, Need</u>	les California
Driller					•			129.5 ft bgs				
Drilling			eppner / R We		Sampli	-		4 inch x 10 ft. Core Barrel	Project N	umber:	30126255	
Logge Editor:			Redner McCrons		Sampli Conve	-		Continuous				
Editor.		<u>Sean i</u>	McGrane		Conve	Tied to	vveii.	△ res ☐ No				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
 121 122	3.5			Alluvium Deposits	SM		(119.5-	119.5 ft) Dry to moist 120.5 ft) Moist 121.5 ft) Dry to moist 122 ft) Moist				
	3.5	No Sieve Samples Collected	No Groundwater Samples Collected	Alluvium Deposits	SM		fine to very large per subang dry to m	6.5 ft) Silty sand with gravel (SM); browery coarse grained, angular to subround; bbles, angular to subround; little silt; trular to subround; trace clay; trace small loist; silt and clay nodules and lens with 15.5 ft) Moist 126 ft) Dry to moist 6.5 ft) Moist	id; l <mark>ittle</mark> small ace granules I co <mark>bbles</mark> , sub	to very	(122.0 - 127.0') Normal drilling	(122.0 - 127.0') No drilling fluid used
	3.6	TCS-2-SS- 126.5-131 4/25/2022 09:00	No Sample (127-132 Interval did not produce) 4/19/2022	Alluvium Deposits	SM		fine to vilarge per subang nodules	134 ft) Silty sand with gravel (SM); browery coarse grained, angular to subroune bebles, angular to subround; little silt; trular to subround; trace clay; moist to we and lens within unit.	id; little small ace granules	to very	(127.0 - 132.0') Normal drilling	(127.0 - 132.0') No drilling fluid used
		TCS-2-SS- 131-134 4/25/2022 09:05	TCS-2-VAS- 131-136 (4300 ppb) 4/19/2022 15:10								(132.0 - 137.0') Normal drilling	(132.0 - 137.0') No drilling fluid used
135 136 	4.5	TCS-2-SS- 134-139.5	13.10	Alluvium Deposits	SM		fine to value fi	77 ft) Silty sand with gravel (SM); brown ery coarse grained, angular to subroun ebbles, angular to subround; little silt; tr ular to subround; trace clay; dry to mois and lens within unit. t) Moist	id; little small ace granules	to very		
_137 138 139	8	4/25/2022 09:10		Alluvium Deposits	SM		5/4); ve little sm trace gr	9.5 ft) Silty sand with gravel (SM); yello ry fine to very coarse grained, angular tall to very large pebbles, angular to subtrainly, subangular to subround; dry to and lens within unit. Moist	o subround; Ì pround; little c	ittle silt; clay;	(137.0 - 147.0') Rough drilling	(137.0 - 147.0') No drilling fluid used
-				Alluvium	SM		- 7					

9	AR	CADI	S		Вс	rinç	j Lo	9		She	et: 8 of	12
Date S	started	: <u>04/01/</u>	2022		Surface	e Eleva	ation:	587.37 ft amsl	Boring N	0.:	TCS-02	Pilot
Date C	•	eted: <u>04/24/</u>	2022		Northin		•	2100921.24	209			
Drilling		Casca			Easting	•	83):	7615150.98	Client: PG&			
Drilling					Total D	•		232 ft bgs	•		V Remedy Pl	
Drill Ri			Longyear drill	<u>head</u>	Boreho			4-7 inches	Location: PG&	<u>E T</u>	opock, Need	<u>les California</u>
Driller					•			129.5 ft bgs			20400055	
Drilling			ppner / R We		Sampli	-		4 inch x 10 ft. Core Barrel	Project Number	er: <u>`</u>	30126255	
Logge Editor:			Redner McGrane		Sampli Conver	-		Continuous				
Editor.		Sean	VICGIAITE			Ted to	VV CII.	△ TES ☐ INU		1		
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
				Deposits				42 ft) Silty sand with gravel (SM); browery coarse grained, angular to subroun				
141 _142_		TCS-2-SS-		Alluvium Deposits	SM		large pe subangu	bbles, angular to subround; little silt; tra lar to subround; trace clay; dry to mois and lens within unit.	ace granules,			
172		139.5-144.5 4/25/2022						4.5 ft) Well graded sand with silt and gr 0YR 5/3); very fine to very coarse grain				
143		09:15					subroun	d; little small to very large pebbles, and trace granules, angular to subangular;	ular to subangular;			
	8			Alluvium Deposits	SW-SM		silt and	clay nodules and lens within unit.	trace clay, moist,			
144							(143-14	4.5 ft) Moist				
								15 5 () 2 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(40)(5 5(0) ::			
_145				Alluvium Deposits	SM		brown (7 subroun	45.5 ft) Silty sand with gravel (SM); bro 7.5YR 5/3); very fine to very coarse grai d; little silt; little small to very large peb ılar; little clay; trace granules, angular t	ned, angular to bles, angular to	'		
146		TCS-2-SS-					silt and	clay nodules and lens within unit. 48.5 ft) Silty sand with gravel (SM); yel				
		144.5-148.5 4/25/2022					5/4) with	brown (7.5YR 5/4); very fine to very co	arse grained,	`		
147		09:20		Alluvium Deposits	SM		subangu	to subround <mark>; litt</mark> le small to large pebble lar; little silt; trace granules, angular to	subangular; trace		(147.0 -	(147.0 -
			i	Бороско				t; silt and clay nodules and lens within color change to brown (10YR 5/3) with			152.0') Normal drilling	152.0') No drilling fluid
148			i i	i					,		Normal drilling	used
			i				(148.5-1	50 ft) Silty sand with gravel (SM); brow	n (7.5YR 5/3) with	\dashv		
_149			TCS-2-VAS- 147-152	Alluvium	SM			0YR 5/3) very fine to very coarse grain d; some silt; little small to very large pe				
450	3.8		(<0.025 ppb) 4/20/2022	Deposits			subangu	ilar; little clay; trace granules, angular t clay nodules and lens within unit.	o subangular; wet;			
150		TCS-2-SS-	11:15				(150-15	1.5 ft) Silty sand with gravel (SM); brow		\dashv		
151		148.5-153 4/25/2022	i i	Alluvium Deposits	SM			0YR 5/3) very fine to very coarse grain d; some silt; little small to very large pe				
151		09:25	i i	Deposits				ılar; trace granules, angular to subangı clay nodules and lens within unit.	ılar; trace clay; wet;			
 152			i	Alluvium Deposits	SM		(151.5-1	52 ft) Silty sand with gravel (SM); brow		1		
102				Deposits			subroun	7.5YR 5/3); very fine to very coarse grai d; little small to large pebbles, angular	to subangular; little		(152.0 - 157.0')	(152.0 - 157.0')
153								e granules, angular to subangular; trace ules and lens within unit.	e clay; wet; silt and		Rough drilling	No drilling fluid
								3 ft) Silty sand with gravel (SM); brown 7.5YR 5/3); very fine to fine grained, little		7		used
154							coarse o	rained, angular to subround; some silt	; little small to large			
							to subar	, angular to subangular; little clay; trace ngular; moist to wet; rapid dilatancy; silt				
155		TCS-2-SS-		Alluvium	SM			s with in unit. 53 ft) Wet				
		153-158		Deposits			1 `	4 ft) Moist to wet				
156	12	4/25/2022 09:30					1 `	6 ft) Wet				
							(156-158	3 ft) Moist to wet				
_157]				(157.0 -	(157.0 -
-							:				`159.0')	159.0')
_158					_		(158-16)	Oft) Silty sand with gravel (SM); brown	(10YR 5/3) with	\dashv	Very hard drilling	No drilling fluid used
-							brown (7	7.5YR 5/3); very fine to very coarse grai	ned, angular to			
159				Alluvium Deposits	SM		subangu	d; some silt; little small to very large pe ılar; little clay; little granules, angular to	subangular; trace		(159.0 -	(159.0 -
-							and lens	bble, subangular; wet; rapid dilatancy; swithin unit.	silt and clay nodules	8	167.0') hard drilling	167.0') No drilling fluid
160							(159-159	9.5 ft) Moist to Wet			liaru urilliriy	I vo arming mula

6	ΛΕ	CADI	S		Вс	rino	g Lo	<u> </u>		She	eet: 9 of	12
Date S					Surfac			587.37 ft amsl	Borin	a No	: TCS-02	Dilot
		eted: 04/24/			Northir	ng (NA	D83):	2100921.24	БОП	ig ivo.	. 103-02	FIIOL
Drilling	Co.:	Casca	.de		Easting		-	7615150.98	_ Client:	PG&E		
Drilling	Meth	od: <u>Sonic</u>	Drilling		Total D	epth:		232 ft bgs	_ Project:	Final G\	N Remedy Pł	nase 2A
Drill Ri	д Туре	: <u>Boart I</u>	Longyear drill	head	Boreho	ole Dia	meter:	4-7 inches	_ Location:	PG&E 7	Topock, Need	les California
Driller	Name:				Depth	to Firs	t Water:	129.5 ft bgs	_			
Drilling	Asst:		ppner / R We	st	Sampli	-		4 inch x 10 ft. Core Barrel	_ Project N	lumber: 3	30126255	
Logge					Sampli	•		Continuous	-			
Editor:		Sean I	McGrane		Conve	rted to	Well:					T
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	SOSO	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
 161 _162_ _163_		TCS-2-SS- 158-163.5 4/25/2022 09:35		Alluvium Deposits	ML		(160-16) plasticit sand, all angular subang rapid dil	60 ft) Wet 3.5 ft) Sandy silt with gravel (ML); brow, rapid dilatancy; some very fine to very lide to subround; little small to very little to subangular; little clay; little granules; lar; trace small cobbles, subangular; atancy; silt and clay nodules and lens 163.5 ft) Wet	ry coarse grai arge pebbles s, angular to soft; moist to	ned ,		used
164	12		TCS-2-VAS- 161.5-166.5 (<0.025 ppb) 4/21/2022 09:45	Alluvium Deposits	SM		fine to v	64.5 ft) Silty sand with gravel (SM); br ery coarse grained, angular to subrour large pebbles, angular to subround; li ngular; little clay; wet; silt and clay nod	nd; some silt;	little angular		
165 166 167		TCS-2-SS- 163.5-167 4/25/2022 09:40	05.40	Alluvium Deposits	ML		unit. (164.5- plasticit sand, a subrour medium (165.5-	167 ft) Sandy silt with gravel (ML); browy, rapid dilatancy; some very fine to vengular to subround; little small to large dd; little granules, angular to subangular stiff; wet; silt and clay nodules and ler (68.8 ft) Silty sand lens (SM); very fine, angular to surround; little silt; little cla	vn (7.5YR 5/3 ry coarse grai pebbles, ang ar; little clay; s ns within unit.); low ned jular to soft to		
168				Alluvium Deposits	SM		pebbles (166.5 f	, subangular. t) Color change to reddish brown (5YR 8 ft) Silty sand with gravel (SM); brown	3 5/4).		(167.0 - 177.0') Normal drilling	(167.0 - 177.0') No drilling fluid
169 170 171 171 172	7.4	TCS-2-SS- 167-172.5 4/25/2022 09:45		Alluvium Deposits	ML		fine to version small to granule lens wit (168-17 medium grained angular	ery coarse grained, angular to subround large pebbles, angular to subround; liss, angular to subround; liss, angular to subangular; moist; silt annin unit. 2.5 ft) Sandy silt with gravel (ML); brow plasticity, rapid dilatancy; some very for sand, angular to subround; little small to subround; little granules, angular to to medium stiff; moist; silt and clay not to medium stiff; moist; silt and clay not subround; little granules, angular to the medium stiff; moist; silt and clay not subround; little granules, angular to the medium stiff; moist; silt and clay not subround; little granules, angular to subround; little granules, angula	nd; some silt; ttle clay; trace d clay nodule vn (7.5YR 5/3 ine to very co to large pebb subangular;	little s and); low to arse oles, little		used
		TCS-2-SS- 172.5-179 4/25/2022 09:50		Alluvium Deposits	SM		4/2); ve	77 ft) Silty sand with gravel (SM); dark y fine to very coarse grained, angular nules, angular to subangular; trace sm to subround; trace clay; wet; silt and c nit.	to subround; nall to large p	little silt; ebbles,		
177 178 179	7.7			Alluvium Deposits	SW-SM		reddish subrour small to	9 ft) Well graded sand with silt and gra gray (5YR 4/2); very fine to very coars d; little granules, angular to subangula large pebbles, angular to subround; tr clay nodules within unit.	e grained, and ar; little silt; tra	gular to ace	(177.0 - 187.0') Normal drilling	(177.0 - 187.0') No drilling fluid used
179				Alluvium Deposits	SM	******	very fine	0 ft) Silty sand with gravel (SM); reddis to very coarse grained, angular to sul all to large pebbles, angular to subrou	bround; some	silt;		

9	AR	CADI	S		Вс	orin	g Lo	g		She	et: 10 of	12
Date S					Surfac	e Elev	ation:	587.37 ft amsl	Borin	a No ·	TCS-02	Pilot
Date C	omple	ted: <u>04/24/</u>	2022		Northin	ng (NA	D83):	2100921.24		g 110	100 02	1 1100
Drilling		<u>Casca</u>	de		Easting	JAN) g	083):	7615150.98	_ Client:	PG&E		
Drilling			•		Total D	-		232 ft bgs	-		V Remedy Pr	
Drill Ri			<u>ongyear drill</u>	<u>head</u>	Boreho			4-7 inches	_ Location:	PG&E T	opock, Need	<u>les California</u>
Driller					•			129.5 ft bgs	- 		0400055	
Drilling			ppner / R We	<u>st</u>	Sampli	-		4 inch x 10 ft. Core Barrel	_ Project N	umber: 3	30126255	
Logge Editor:		Ellen F	dedner McGrane		Sampli	-		Continuous	-			
Luitoi.		<u>Seairi</u>	VICGIANE				VV GII.	N 163 NO				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
								s, angular to subangular; wet; rapid dila within unit.	atancy; silt an	d clay		
181		TCS-2-SS- 179-182		Alluvium	SW-SM		(180-18	2 ft) Well graded sand with silt and gra				
		4/25/2022 09:55		Deposits			to subro	brown (5YR 4/3); very fine to very coar und; little granules, angular to subang	ular; little silt;	trace		
182								large pebbles, angular to subround; tr clay nodules within unit.	ace clay; wet;	trace		
				Alluvium				3.5 ft) Sandy silt with gravel (ML); redd nedium plasticity, rapid dilatancy; little v				
183		TCS-2-SS- 182-184.5	TCS-2-VAS- 181-186	Deposits	ML		: coarse	grained sand, angular to subround; little, angular to subround; little, angular to subround; little clay; trace	e small to larg	e		
	7.7	4/25/2022 10:00	(<0.025 ppb) 4/21/2022				-∖ subangı	ılar; soft; wet.				
184		10.00	4/21/2022 14:45	Alluvium Deposits	SM			84.5 ft) Silty sand with gravel (SM); rec				
				Alluvium	SM		little gra	nules, angular to subangular; trace sm to subround; trace clay; wet; trace silt	nall to large pe	bbles,		
185				Deposits	JOIVI		within u	nit.				
-							:∬fine to v	85 ft) Silty sand with gravel (SM); brovery coarse grained, angular to subrour	nd; some silt; l	ittle		
186				Alluvium Deposits	SM		∷∥small to	large pebbles, angular to subround; lit ngular; trace clay; soft; wet; rapid dilata	ttle granules, a	angular		
		TCS-2-SS-					(185-18	7 ft) Silty sand with gravel (SM); brown	(7.5YR 4/4); v			
187		184.5-190		Alluvium			granule	ery coarse g <mark>rain</mark> ed, subangular to subl s, angular to subangular; trace small to	large pebble	s,	(187.0 -	(187.0 -
100		4/25/2022 10:05		Deposits	SM			to subround; trace clay; wet; silt and c TE: Silt and clay observed to be conce			197.0') Normal drilling	197.0') No drilling fluid
188								e outer edges of the core sample. 8 ft) Silty sand with gravel (SM); brown	(7 5VD 5/2)	uon,		used
 189				Alluvium			fine to v	ery coarse grained, angular to subrour	nd; some silt; l	ittle		
103				Deposits	SM		trace gr	very large pebbles, subangular to sub anules, angular to subround; soft; wet;	rapid dilatano	ay; cy.		
190					1			0 ft) Silty sand with gravel (SM); brown ery coarse grained, subangular to sub-				
							very larg	ge pebbles, subangular to subround; lits, subangular to subround; trace clay;	ttle silt; trace	- 1		
191	7.4			Alluvium	SM		∷∥nodules	within unit; NOTE: Silt and clay observed	ved to be	,		
_	7.4			Deposits	Olvi		(190-19	rated located along the outer edges of 2 ft) Silty sand with gravel (SM); brown	(7.5YR 5/3);	very		
192								ery coarse grained, angular to subrour very large pebbles, subangular to sub				
_		TCS-2-SS-					trace gr	anules, angular to subround; soft; wet; 5 ft) Silty sand with gravel (SM); brown	rapid dilatano	y.		
193		190-196 4/25/2022					ine to v	ery coarse grained, angular to subrour	nd; some silť; l	ittlé		
		10:10		Alluvium Deposits	SM			very large pebbles, subangular to sub anules, angular to subround; soft; wet;				
194				Deposits			4					
195					+		(195-19	6 ft) Silty sand with gravel (SM); brown	(7.5YR 5/3):	verv		
				Alluvium Deposits	SM		ine to v	ery coarse grained, angular to subrour very large pebbles, subangular to sub	nd; some silt; l	ittle		
196				·	+		trace gr	anules, angular to subround; soft; wet;	rapid dilatano	y.		
				Alluvium Deposits	SM		ine to v	7 ft) Silty sand with gravel (SM); brown ery coarse grained, angular to subrour	nd; some silt; l	ittle		
197		TCS-2-SS-			+			very large pebbles, subangular to sub anules, angular to subround; soft; wet;	round; little cla	ay;	(197.0 -	(197.0 -
100	8.6	196-199 4/25/2022		Λ II. n. d			. (197-19	9 ft) Sandy silt with gravel (ML); brown	(7.5YR 4/3); I	ow	207.0') Normal drilling	207.0') No drilling fluid
198		10:15		Alluvium Deposits	ML		sand, ai	y, rapid dilatancy; some very fine to ver ngular to subround; little small to very l	arge pebbles,			used
100								ular to subround; little clay; trace granu d; soft; wet.	ıles, subangul	ar to		
199				Alluvium	+			· ·				
200				Deposits	SM							

9	AR	CADI	S		Вс	oring	g Log	g		She	eet: 11 of	12
Date S					Surfac	e Eleva	ation:	587.37 ft amsl	Borin	a No.:	TCS-02	Pilot
Date C	omple	eted: <u>04/24/</u>	2022		Northir	ng (NA	D83):	2100921.24	_			
Drilling		<u>Casca</u>			Easting	-	083):	7615150.98	_ Client:	PG&E		
Drilling			•		Total D	-		232 ft bgs	•		N Remedy Pl	
Drill Ri			Longyear drill		Boreho			4-7 inches	_ Location:	PG&E I	Topock, Need	les California
Driller					•			129.5 ft bgs	- Droiget N	umbor: 1	20126255	
Drilling Logge			ppner / R We: Redner	Si	Sampli Sampli	-		4 inch x 10 ft. Core Barrel Continuous	_ Project N	umber. <u>.</u>	30120233	
Editor:			McGrane		Conve	-		× Yes No	_			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS		Soil Description			Drilling Notes	Drilling Fluid
	œ			Θ.Υ.		CONTRACTOR	1 (400.00	0 (t) Oile (OM) - b	/7. EVD. 4/4).			
				Alluvium Deposits	SM		fine to v	2 ft) Silty sand with gravel (SM); brown ery coarse grained, angular to subrour very large pebbles, subangular to sub anules, angular to subround; soft; wet;	nd; some silt; l round; little cla	ittle ay;		
		TCS-2-SS- 199-205		Alluvium Deposits	SM			2.5 ft) Silty sand with gravel (SM); browery coarse grained, angular to subrour				
203		4/25/2022 10:20		Deposits			:∫ small to	very large pebbles, subangular to sub	round; little gr			
	8.6						(202.5-2	to subround; trace clay; wet; rapid dila 210 ft) Silty sand with gravel (SM); brow	vn (7.5YR 4/4)			
204	0.0		TCS-2-VAS-				fine to v	ery coarse grained, angu <mark>lar</mark> to sub <mark>rour</mark> very large pebbles, subangular to sub	nd; some silt, l round; little gr	ittle anules,		
_			202-207 (2300 ppb)					to subround; little clay; soft; wet; rapid of silt and clay observed in large nodu		TE:		
_205			4/22/2022 11:50									
_												
206				Alluvium	0.4							
-				Deposits	SM							
_207		TCS-2-SS-									(207.0 -	(207.0 -
		205-210 4/25/2022									217.0') Normal drilling	217.0') No drilling fluid
_208		10:25										used
200							U					
209					\							
210												
							(210-21	4 ft) Silty sand with gravel (SM); reddis to very coarse grained, angular to sub	sh brown (5YR	4/3);		
211_							little sm	all to very large pebbles, subangular to	subround; litt	le		
								s, subangular to subround; trace clay; t ular; wet; rapid dilatancy.	trace small co	bbie,		
212_	8			Alluvium	SM							
_				Deposits								
213		TCS-2-SS- 210-216.5										
		4/25/2022 10:30	TCS-2-VAS-									
_214		10.00	211.5-216.5 (120 ppb) 4/23/2022				(214-21	6.5 ft) Silty sand with gravel (SM); redd	lish brown (5)	'R 4/4)·		
			4/23/2022 09:00				very fine	to very coarse grained, angular to sub all to very large pebbles, subangular to	bround; some	silt;		
215				Alluvium	SM		granules	s, angular to subround; trace clay; soft;	; wet; rapid dil			
				Deposits	OW		NOTE	Majority of silt and clay observed in larg	ge nodules.			
216												
				Alluvium	ML	 	(216.5-2	217 ft) Gravelly silt with sand (ML); redo	dish brown (5)	YR 4/4);		
_217				Deposits	1		: subangı	icity, rapid dilatancy; some small to ver ular to subround; little very fine to very	coarse graine	d sand, 📗	(217.0 -	(217.0 -
 218		TCS-2-SS- 216.5-219.5		Alluvium				ılar to subround; little clay; trace granu d; soft; wet.	ıles, subangul	ar to	224.0') Normal drilling	224.0') No drilling fluid
	10.0	4/25/2022 10:35		Deposits	SM		(217-21	9 ft) Silty sand with gravel (SM); dark re				used
	12.3	.0.00					silt; little	y fine to very coarse grained, angular t small to very large pebbles, subangula	ar to subround	d; little		
				Alluvium Deposits	ML			s, subangular to subround; little clay; w 9.5 ft) Sandy silt with gravel (ML); redd				
220					SM			icity, rapid dilatancy; some very fine to				

9	AR	CADI	S		Вс	ring	Log		She	et: 12 of	12
Date S	tarted:	04/01/2	2022		Surface	e Eleva	tion: 587.37 ft amsl	Borin	a No.:	TCS-02	Pilot
Date C	omple	ted: <u>04/24/2</u>	2022		Northin	ıg (NAI	083): <u>2100921.24</u>	Воли	9 110	100 02	1 1100
Drilling	Co.:	<u>Cascac</u>	de		Easting	y (NAD	83): <u>7615150.98</u>	Client:	PG&E		
Drilling	Metho	od: <u>Sonic [</u>	Drilling		Total D	epth:	232 ft bgs	Project:	Final GV	V Remedy P	hase 2A
Drill Ri	д Туре	: Boart L	ongyear drill	head	Boreho	le Diar	neter: 4-7 inches	Location:	PG&E T	opock, Need	lles California
Driller I	Name:	Matt Ar	nold		Depth:	to First	Water: 129.5 ft bgs				
Drilling	Asst:	D Hoep	ppner / R We	est	Sampli	ng Met	hod: 4 inch x 10 ft. Core Barrel	Project N	umber: 3	30126255	
Logge	r:	Ellen R	edner		Sampli	ng Inte	rval: Continuous				
Editor:		Sean N	1cGrane		Conve	ted to	Well: ⊠ Yes □ No				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class	Soil Description			Drilling Notes	Drilling Fluid
		TCS-2-SS- 219.5-223 4/25/2022 10:40	TCS-2-VAS- 220-225 (<0.13 ppb) 4/22/2022 15:10	Alluvium Deposits	SM		sand, subangular to subround; little small to ve subangular to subround; little clay; trace granul subround; soft; wet. (219.5-223 ft) Silty sand with gravel (SM); dark 4/2); very fine to very coarse grained, angular to silt; little clay; little granules, subangular to subround; po rapid dilatancy.	es, subangul reddish gray o subround; s round; little sr orly sorted; w	(5YR ome mall to vet;		
			15.10	Weathered Bedrock -	N/A	× × × × × × × × × × × × × × × × × × ×	(223-227 ft) Sedimentary Rock; reddish brown grained to coarse grained, angular; highly weat hard; friable; pulverized by drilling process; dry	hered; mediu	e m	(224.0 - 232.0') Very hard drilling	(224.0 - 232.0') No drilling fluid used
226 _ 227	12.3			Conglomera	te	× × × × × × × × × × × × × × × × × × ×		(5)(D.5(1), 6)		, J	
 _228 _229		No Sieve Samples Collected	No Groundwater Samples Collected			× × × × × × × × × × × × × × × × × × ×	(227-232 ft) Sedimentary Rock; reddish brown grained to coarse grained, angular; moderately hard; friable; pulverized by drilling process; dry.	weathered; r			
230				Competent Bedrock - Conglomera	N/A	x x x x x x x					
231 232						× × × × × × × × × × × × × × × × × × ×					
		<u> </u>					End of Boring at 232 ft bgs.				
234											
235											
<u> </u>											
236											
_237											
<u> </u>											
238											
-											
239											
-											
240 Abbrev	/iations	: IISCS - I	Inified Soil C	accification	Sveto	m ft – t	reet, bas = below around surface, ams	l – ahove r	mean soc	level NP –	No Pecovory

N/A = Not Applicable, GW = groundwater, ppb = parts per billion, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth to water measured during the first VAS interval, respectively. Apparent partial recoveries can be the result of potential compaction of sediments in the core bag.

9	ARC	ADIS			Temporary	Backfill Log		Sheet: 1 of 12		
Date S		04/24/2022			_ Surface Elevation:	587.37 ft amsl	Well ID:	Well ID: TCS-02 Pilot		
	•	04/27/2022	<u> </u>		Northing (NAD83): 2100921.24 Easting (NAD83): 7615150.98					
Drilling		Cascade					Client: PG&			
Driller I	Method:	Sonic Drilling Matt Arnolo	_		_ Total Depth: _ Borehole Diameter:	232 ft bgs 4-7 inches		GW Remedy Phase 2A E Topock, Needles California		
Drilling		D Hoeppne		est	Borenole Diameter. Depth to First Water		Location. <u>PGo</u>	E TOPOCK, Needles Calliottia		
Logge		Ellen Redn		001	_ Editor:	Sean McGrane	Project Numbe	er: <u>30126255</u>		
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS Class		struction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
 _ 1 _		Fluvial Deposits	sw		(0.0 - 0.5') Steel plate	7" Diameter Borehole		Note: Steel plate used to mark pilot borehole		
2 3 4			NR		(0.5 - 4.5') Cemex #60 (40x70) — Capis Lustre Sand (4.5 - 5.0')		(0.5 - 4.5') 2.1 bags	(0.5 - 4.5') 3 bags (143%) Note: Surface sand seal, used >20% of the calculated volume due to potential voids that formed during drilling.		
_				$ \wedge $	Cemex #2/12 Mesh	***	(4.5 - 5.0') 0.5 bags	(4.5 - 5.0') 0.5 bags (100%) Note: Surface sand seal		
	No Groundwater Samples Collected	Fluvial Deposits Fluvial Deposits	SW							
13 14 15 16 17 17 17		Fluvial Deposits	SM		(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand		
18 19 20	iotiona: L'	Alluvium Deposits	SW Soil C		ion System # = feet		amal = above ====	sea level, NR = No Recovery,		

Temporary Backfill Log Sheet: 2 Surface Elevation: 587.37 ft amsl Well ID: TCS-02 Pilot Date Completed: 04/27/2022 Northing (NAD83): 2100921.24 Drilling Co.: <u>Cascade</u> Easting (NAD83): 7615150.98 Client: PG&E Drilling Method: Sonic Drilling Total Depth: Project: Final GW Remedy Phase 2A 232 ft bgs Driller Name: Matt Arnold Borehole Diameter: 4-7 inches Location: PG&E Topock, Needles California D Hoeppner / R West Depth to First Water: 129.5 ft bgs Drilling Asst: Ellen Redner Editor: Project Number: 30126255 Logger: Sean McGrane Construction Details Geologic Formation USCS Class Material Volumes Installed USCS Code Depth (ft) Groundwater Calculated Note: percentages are the actual volume vs the calculated volume Sample ID Material Volumes 21 22 Alluvium SW Deposits 23 24 Alluvium SP Deposits 26 Alluvium ML Deposits 27 28 (28.0 - 224.0')6" Diameter Borehole Alluvium 29 SM Deposits (5.0 - 221.5')Groundwater (5.0 - 221.5') (5.0 - 221.5') 98 bags (111%) Cemex 8 Mesh 30 (8x16) Lapis Lustre 88.2 bags Samples Note: Backfill sand Sand 31 Alluvium SW Deposits Alluvium 32 SM Deposits Alluvium SW-SC 33 Deposits Alluvium Deposits 35 Alluvium 36 Deposits 37 38 Alluvium Deposits 39 Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, NR = No Recovery,

A	ARCADIS				Temporary E	Backfill Log	S	Sheet: 3 of 12		
Date Starte Date Comp Drilling Co.: Drilling Met Driller Nam Drilling Ass Logger:	oleted: (: (thod: (e: [04/24/2022 04/27/2022 Cascade Sonic Drilling Matt Arnold O Hoeppner Ellen Redner	/RWe	est	_ Surface Elevation: _ Northing (NAD83): _ Easting (NAD83): _ Total Depth: _ Borehole Diameter: _ Depth to First Water: _ Editor:	587.37 ft amsl 2100921.24 7615150.98 232 ft bgs 4-7 inches 129.5 ft bgs Sean McGrane	Client: PG&E Project: Final GW Remedy Phase 2A Location: PG&E Topock, Needles Califor Project Number: 30126255			
	oundwater ample ID	Geologic Formation	USCS	USCS Class	Constr	uction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
50 Group Sa	No undwater amples illected	Alluvium Deposits Alluvium Deposits Alluvium Deposits Alluvium Deposits	SM SM		(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand		

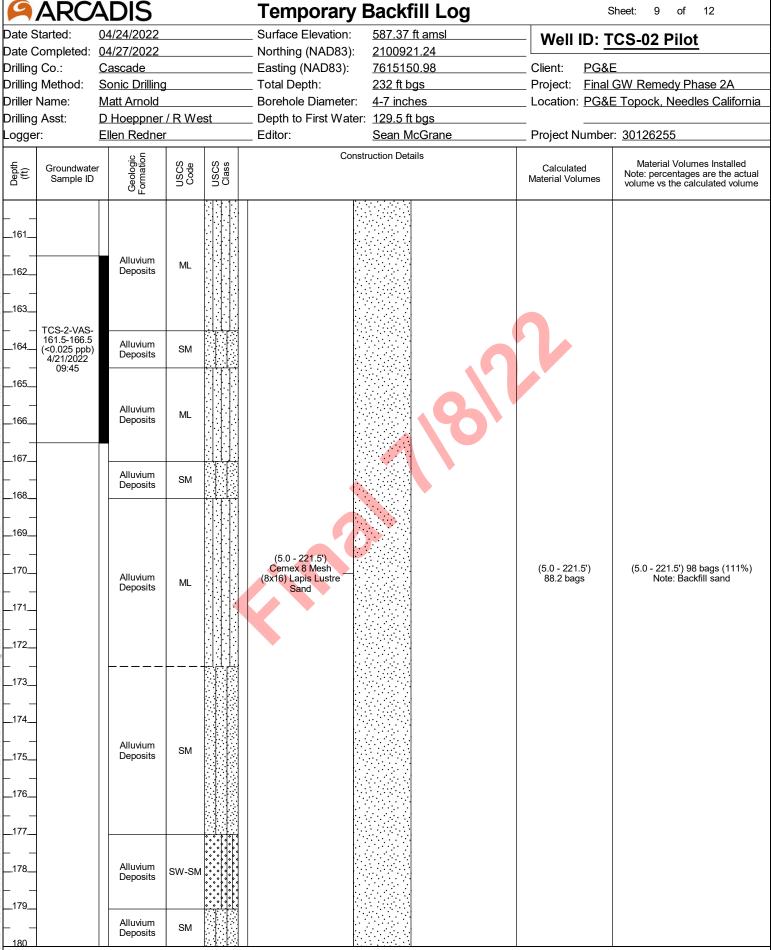
ARCADIS					Temporary Backfill Log			Sheet: 4 of 12	
Date S	tarted:	04/24/2022			_ Surface Elevation:	587.37 ft amsl	Well ID	: TCS-02 Pilot	
Date C	completed:	04/27/2022			_ Northing (NAD83):	- ', '			
Drilling		Cascade			Easting (NAD83): <u>7615150.98</u>		Client: <u>PG&E</u>		
		Sonic Drilling			_ Total Depth:	232 ft bgs	•	nal GW Remedy Phase 2A	
Driller I		Matt Arnold			_ Borehole Diameter:	4-7 inches	Location: <u>P</u>	G&E Topock, Needles California	
Drilling		D Hoeppner		est	_ Depth to First Water:	_		.h 20420055	
Logger	r: 	Ellen Redne	<u> </u>		_ Editor:	Sean McGrane	Project Num	nber: <u>30126255</u>	
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS	Consti	ruction Details	Calculated Material Volume	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
61 62 63		Alluvium Deposits	SM						
 64		Alluvium Deposits	SM				7		
65 66 67 68		Alluvium Deposits	SW-SM						
69		Alluvium Deposits	SM						
	No Groundwater Samples Collected	Alluvium Deposits	SW-SM		(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand	
		Alluvium Deposits	SW-SM					an and lovel NP - No Pennyary	

ARCADIS					Temporary I	Backfill Log	5	Sheet: 5 of 12		
Date S Date C	tarted: completed:	04/24/2022 04/27/2022	4/27/2022 Northing (NAD83): 2100		587.37 ft amsl 2100921.24		CS-02 Pilot			
_	Method: Name: Asst:	hod: <u>Sonic Drilling</u> e: <u>Matt Arnold</u>		Easting (NAD83):Total Depth:Borehole Diameter:Depth to First Water:Editor:	7615150.98 232 ft bgs 4-7 inches 129.5 ft bgs Sean McGrane	Project: <u>Final</u>	GW Remedy Phase 2A E Topock, Needles California			
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS Class	Consti	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
		Alluvium Deposits	SW-SM							
84 85		Alluvium Deposits	SM				?			
86 87		Alluvium Deposits	ML							
88		Alluvium Deposits	SM							
90 91 91 92 93 94 95	No Groundwater Samples Collected	Alluvium Deposits	SW-SM		(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand		
 97		Alluvium Deposits	ML							
98 99		Alluvium Deposits	SW							
100 Abbrev	viations: 115	Alluvium Deposits SCS = Unified	SM Soil C	lassificati	on System ft = feet ha	s = below ground surface ar	nsl = above mean	sea level, NR = No Recovery,		

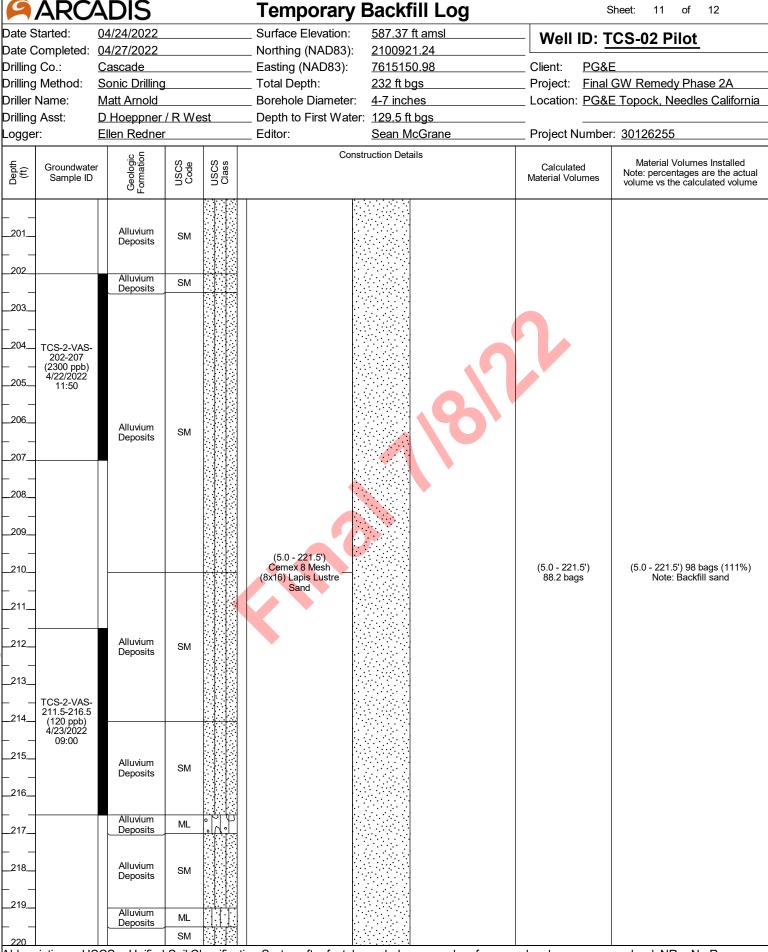
9	ARC	ADIS			Temporary I	Backfill Log	S	Sheet: 6 of 12		
Date S	Started:	04/24/2022			Surface Elevation: 587.37 ft amsl		Well ID: T	CS-02 Pilot		
	-	04/27/2022		Northing (NAD83): 2100921.24		Client: PG&E				
Drilling		Cascade			_ Easting (NAD83):	7615150.98				
Driller I		Sonic Drilling Matt Arnold	J		_ Total Depth: _ Borehole Diameter:	232 ft bgs 4-7 inches	•	GW Remedy Phase 2A Topock, Needles California		
Drilling		D Hoeppner	· / R W	et et	_ Depth to First Water:		Location. <u>FGXL</u>	1 TOPOCK, Needles California		
Logge		Ellen Redne			_ Editor:	Sean McGrane	 Project Number	: 30126255		
						uction Details	<i>.</i>			
Depth (ft)	Groundwate Sample ID	Geologic	USCS	USCS			Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
101 102		Alluvium Deposits	SW							
103										
 104							200			
L _		Alluvium								
105		Deposits	SM							
106										
107										
108										
 109					70					
_	No Groundwater Samples	Alluvium Deposits	SM		(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand		
	Collected				Sand					
111										
112										
113										
114		Alluvium	CM							
<u> </u>		Deposits	SM							
115										
116										
 117		Alluvium Deposits	SM							
[1	1		[:					
118										
		Alluvium	SM							
119		Deposits								
<u> </u>										
120	dational LIC	CS = Unific	1 8011 0	legaificat	ion System ft = feet ha	s = bolow ground surface	amel = above meen	sea level, NR = No Recovery,		

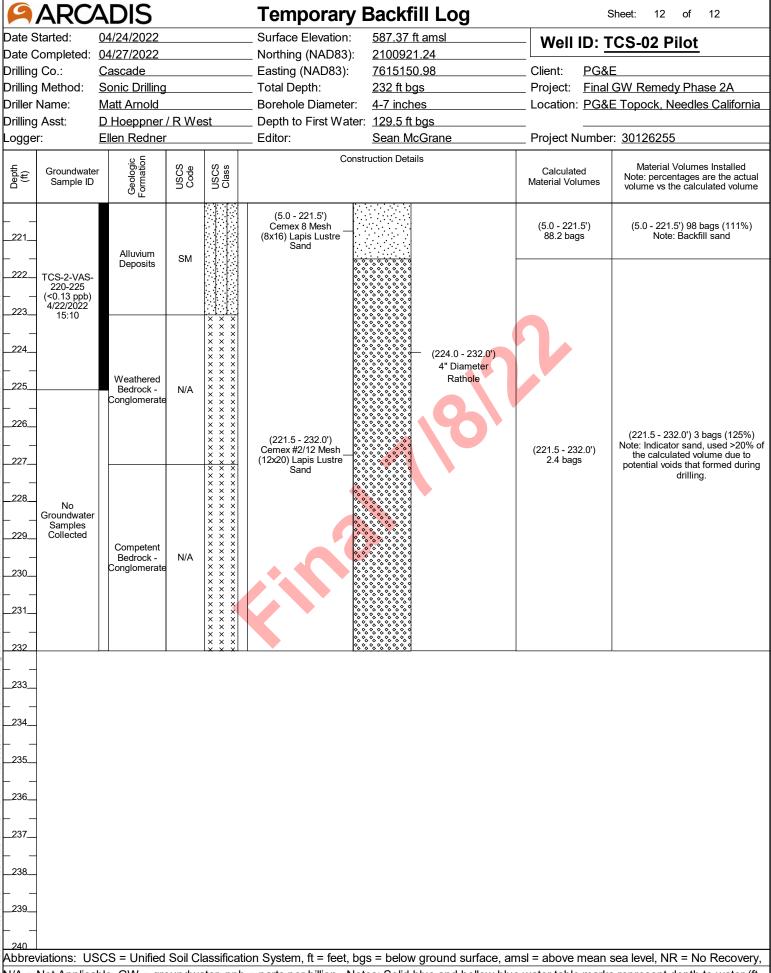
ARCADIS					Temporary I	Backfill Log	S	Sheet: 7 of 12		
Date Starte Date Com Drilling Co Drilling Me Driller Nam Drilling Ass Logger:	pleted: .: ethod: ne: st:	04/24/2022 04/27/2022 Cascade Sonic Drilling Matt Arnold D Hoeppner Ellen Redner	/RWe	est	Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: Depth to First Water: Editor:	587.37 ft amsl 2100921.24 7615150.98 232 ft bgs 4-7 inches 129.5 ft bgs Sean McGrane	Client: PG&I	GW Remedy Phase 2A E Topock, Needles California		
	oundwate Sample ID	Geologic Formation	USCS	USCS Class	Consti	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
		Alluvium Deposits	SM							
Sa Sa	No undwater amples ollected	Alluvium Deposits	SM							
(1 Inte	Sample 27-132 erval did produce) 19/2022	Alluvium Deposits	SM	¥	(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand		
(43 - 4/	S-2-VAS- 31-136 300 ppb) 19/2022 15:10									
135 136		Alluvium Deposits	SM							
137 138 139		Alluvium Deposits	SM							
 ₁₄₀ Abbreviatio	ons: US	Alluvium Deposits SCS = Unified	SM Soil C	lassificati	on System. ft = feet. ba	s = below ground surface	amsl = above mean	sea level, NR = No Recovery,		

ARCADIS					Temporary I	Backfill Log	;	Sheet: 8 of 12		
	Started:	04/24/2022			_ Surface Elevation:	587.37 ft amsl	Well ID: 1	CS-02 Pilot		
	•	04/27/2022	,							
Drilling		Cascade			_ Easting (NAD83):	7615150.98	Client: PG&			
_	Method:	Sonic Drilling	g		_ Total Depth:	232 ft bgs	•	GW Remedy Phase 2A		
	Name:	Matt Arnold			_ Borehole Diameter:	4-7 inches	Location: <u>PG&</u>	E Topock, Needles California		
Drilling		D Hoeppner		est	_ Depth to First Water:	_	Desired Nevels	00400055		
Logge	r.	Ellen Redne	ır		_ Editor:	Sean McGrane	Project Numbe	T: <u>30120255</u>		
Depth (ft)	Groundwate Sample ID		USCS	USCS	Const	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
 141 142		Alluvium Deposits	SM							
143 		Alluvium Deposits	SW-SM				2			
 145		Alluvium Deposits	SM							
146147148149150151152153154155155	TCS-2-VAS- 147-152 (<0.025 ppb) 4/20/2022 11:15	Alluvium Deposits Alluvium Deposits Alluvium Deposits Alluvium Deposits	SM SM SM		(5.0 - 221.5') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 221.5') 88.2 bags	(5.0 - 221.5') 98 bags (111%) Note: Backfill sand		
156 157 158 159 		Alluvium Deposits	SM							



9	ARC/	ADIS			Temporary E	Backfill Log	5	Sheet: 10 of 12	
Date S Date C Drilling Drilling	Started: 04/24/2022 Completed: 04/27/2022 g Co.: Cascade g Method: Sonic Drilling Name: Matt Arnold			est	Surface Elevation: 587.37 ft amsl Northing (NAD83): 2100921.24 Easting (NAD83): 7615150.98 Total Depth: 232 ft bgs Borehole Diameter: 4-7 inches Depth to First Water: 129.5 ft bgs		Client: PG&E Project: Final GW Remedy Phase 2A Location: PG&E Topock, Needles California		
Logger	r:	Ellen Redne	r		_ Editor:	Sean McGrane	Project Number	r: <u>30126255</u>	
Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS	USCS	Constr	uction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
181		Alluvium Deposits	SW-SM						
183	TCS-2-VAS- 181-186 (<0.025 ppb)	Alluvium Deposits	ML						
184	4/21/2022 14:45	Alluvium Deposits	SM						
		Alluvium Deposits	SM						
186		Alluvium Deposits	SM			8			
187 		Alluvium Deposits	SM						
189		Alluvium Deposits	SM		(5.0 - 221.5') Cemex 8 Mesh		(5.0 - 221.5')	(5.0 - 221.5') 98 bags (111%)	
191		Alluvium Deposits	SM		(8x16) Lapis Lustre		88.2 bags	Note: Backfill sand	
192		Alluvium Deposits	SM						
194		Deposits							
195		Alluvium Deposits	SM						
196		Alluvium Deposits	SM						
		Alluvium Deposits	ML						
200		Alluvium Deposits	SM			s = below ground surface, ams	J b	luul ND N D	





N/A = Not Applicable, GW = groundwater, ppb = parts per billion, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth to water measured during the first VAS interval, respectively. Granular backfill material was removed during overdrilling of the pilot borehole.

9	ARC	7 DI	S		Ε	Orilling Log				Sheet:	l of 12
		07/13/				Elevation:	58	37.37 ft amsl	Ι		
	completed:					(NAD83):		100921.24	Borin	g No.: <u>TC</u>	S-02
Drilling	•	Casca			-	(NAD83):		615150.98	Client:	PG&E	
_		Dual F		,	Total De	•		38.5 ft bgs	Project:		medy Phase 2A
_	g Type:	Forem	-			· tor Casing Diameter:		•	Location:	PG&E Topoo	
	Name:	Josh S				ing Diameter:		3 inches		<u>California</u>	
Drilling	Asst:	<u>A. Am</u>	<u>ezqui</u>	ta / D.	Aldona Drill Bit:		15	5 5/8" & 17 5/8" Tricone	Project Nu	ımber: <u>30126</u>	255
Tool-P	usher:	Arnold	Lam	on	Depth to	First Water:	12	29.5 ft bgs			
Rig Ge	eologist:	Ellen F	Redne	er	Convert	ed to Well:	×	Yes No			
.	Drilling Run ((ft)		1000	De	escription		B.00			
Depth (ft)	and Average Penetration R	e		USCS Class	full geolo	ot boring log for gic descriptions)		Drilling notes and observation temporary backfill ma	aterial in drill o	uttings	Drilling Fluid
			ģ	૽૽૽૽૽૽	(0-1.5 ft) Well graded brown (10YR 5/3).	I sand with gravel (SW);		(0.0 - 0.1') Confirmed drill car	sing was lined	l up over pilot	(0.1 - 20.2')
1		S	w 👯		(),			(0.1 - 14.0') Normal drilling			450 gallons of water used; 150 gallons of
		1 L_									water recovered; 300 gallons of water lost
_ 2 _			\	/	(1.5-7.0 ft) No Recov	ery.					-
			\	/				_ (
_ 3 _			'	\ /							
				\ /				(3.0') Observed trace Cemex Sand in drill cuttings. Majority	of drill cutting	gs was bentonite	
4				\/				from the mud tub seal installed	ed during the	oilot borehole	
		N	R	X							
5				/\							
				/ \							
6			1	/ \							
			- 1/	\							
_ 7 _		1	· — 🕌	<u>•ःशः</u> ।	(7 0-10 ft) Well grade	ed sand with gravel (SW);					
			, s		brown (10YR 5/3).	sa sana with graver (OVV),					
8			ؿ					(8.0') Observed little Cemex a	#8 (8x16) Lani	s Lustre Sand in	
		S	w 👯	*(*)*** *******	•			drill cuttings.	, o (on o) Lup		
9			Ġ.								
			٠ • •								
10	(0.0 - 21.2) 1.65 mins/ft		·	٦٠٠٥	(10-12.5 ft) Poorly gra	aded sand with gravel (SF	');				
				\bigcirc : \circ	brown (10YR 5/3).						
11			P ,	~ · · · · · ·							
				.O(
12			. · ·	·/\.•							
 13					(12.5-17 ft) Silty sand brown (10YR 5/4).	with gravel (SM); yellowi	sh				
-			i:								
14								(14.0 - 21.2') Soft drilling			
		ll s	м								
15								(15.0') Observed little Cemex	(#8 (8x16) La	ois Lustre Sand	
			.:		(15.5-17 ft) Very large	e pebbles; potentially from	а	in drill cuttings.			
16			<u>.</u>		boulder pulverized by (10YR 6/2).	drilling; light brownish gr	ay				
				1:18:	,						
17			· — 🔆	૽૽૽ૼ૽ૺ૽૽૽૽	(17-24.5 ft) Well grad	led sand with gravel (SW)	;				
40			. 0		brown (10ÝR 5/3).						
18			ڕٞ								
		S	W 🤾								
19											
 20) :								
	istional LIC		lloifia.	م د من	Classification Su	stom ft - foot bas -	hal	ow ground ourfood amo	l = abaya n	2000 200 101/01	C\M =

9	ARC/	\DIS	5	Drilling Log		Sheet: 2	2 of 12
Date S	tarted:	07/13/20:	22	Surface Elevation:	587.37 ft amsl	Boring No.: TC	S-02
	completed:			Northing (NAD83):	2100921.24		
Drilling		<u>Cascade</u>		Easting (NAD83):	7615150.98	Client: PG&E	
_		Dual Rota	-	Total Depth:	238.5 ft bgs		medy Phase 2A
	• • •		DR 24HD	Conductor Casing Diameter:		Location: PG&E Topod California	ck, ineedies
Drilling Drilling		Josh Sak	uana quita / D. Aldor	Drill Casing Diameter:	16 inches 15 5/8" & 17 5/8" Tricone		255
_		A. Amezo Arnold La	-	Depth to First Water:	129.5 ft bgs	Project Number. 30120	200
		Ellen Rec		Converted to Well:	× Yes No		
J -				Description			
Depth (ft)	Drilling Run (and Average Penetration Ra	0303	Class	(See Pilot boring log for full geologic descriptions)	temporary backfill ma	ons confirming presence of aterial in drill cuttings	Drilling Fluid
 21 22	(0.0 - 21.2) 1.65 mins/ft	_		.5 ft) Well graded sand with gravel (SW); (10YR 5/3).	(21.2 - 41.2') Normal drilling	-94	(21.2 - 41.2') 650 gallons of water used; 200 gallons of
23		SW					water recovered; 450 gallons of water lost
24 25				26 ft) Poorly graded sand with gravel (SP) (10YR 5/3).		•	
26		SP	0 () ° () () () () () () () () () () () () ()	`	(25.0') Observed trace Ceme in drill cuttings.	ex #8 (8x16) Lapis Lustre Sand	
 27		ML		ft) Sandy silt (ML); brown (7.5YR 5/3). ft) Silty sand (SM); brown (7.5YR 5/3).			
28 29 30	(21.2 - 41.2) 2.85 mins/ft	SM					
31 	2.00 111113/11	SW	(31-31) (10YR)	.5 ft) Well graded sand (SW); brown 5/3).]		
32		SM	(31.5-3	32. <mark>5 ft)</mark> Silty sand (SM); brown (7.5YR 5/3).		
33		SW-SC	brown	33 ft) Well graded sand with clay (SW-SC (10YR 5/3). .5 ft) Silty sand (SM); brown (7.5YR 5/3).	() ;		
34 35		SM	(05-50	.5 it) Silty Salid (Silf), blown (7.5 fix 5/5).			
00					(35.0') Observed little Cemes in drill cuttings.	x#8 (8x16) Lapis Lustre Sand	
36		SW	(10YR	•			
37 38 		SW	(36.5-4) brown	18 ft) Well graded sand with gravel (SW); (10YR 5/3).			
39 _ 40							

9	ARC/	DIS		Drilling Log			Sheet:	3 of 12
		07/13/202		Surface Elevation:	587.37 ft amsl	Borin	a Na · TC	25 02
Date C	Completed:			Northing (NAD83):	2100921.24	BOIIII	g No.: <u>TC</u>	,3-02
Drilling	Co.:	Cascade		Easting (NAD83):	7615150.98	Client:	PG&E	
Drilling	Method:	Dual Rota	ary	Total Depth:	238.5 ft bgs	Project:	Final GW Re	medy Phase 2A
Drill Ri	g Type:	<u>Foremost</u>	DR 24HD	Conductor Casing Diameter:	18 inches	Location:	PG&E Topoo	ck, Needles
		Josh Salo	lana	Drill Casing Diameter:	16 inches		California	
Drilling	Asst:	A. Amezo	<u>uita / D. Ald</u>	<u>ona</u> Drill Bit:	15 5/8" & 17 5/8" Tricone	Project Nu	ımber: <u>30126</u>	255
		Arnold La		Depth to First Water:	129.5 ft bgs			
Rig Ge	eologist:	Ellen Red	ner	Converted to Well:	× Yes No			
D 41-	Drilling Run (f	t) LIGGE	Heee	Description	Daillian and a bannat		-	
Depth (ft)	and Average Penetration Ra	Code	USCS Class	(See Pilot boring log for full geologic descriptions)	Drilling notes and observati temporary backfill ma			Drilling Fluid
 41	(21.2 - 41.2) 2.85 mins/ft	_	(36.5) brow	5-48 ft) Well graded sand with gravel (SW) rn (10YR 5/3).	(41.2 - 61.2') Normal drilling			(41.2 - 61.2')
42 43			(41.7	r ft) Small cobble				700 gallons of water used; 300 gallons of water recovered; 400 gallons of water lost
 44		SW						
45					(45.0') Observed trace Ceme	ex #8 (8x16) La	apis Lustre Sand	
46					0,			
47 48								
		SM	(10Y	48.5 ft) Silty sand with gravel (<mark>SM);</mark> brown R 5/3). 5-52 ft) Well graded sa <mark>nd with gravel</mark> (SW)				
49 50	(41.2 - 61.2)	SW	brow	n (10ÝR 5/3).				
 51 52	2.55 mins/ft							
52 53				57 ft) Silty sand with gravel (SM); grayish on (10YR 5/2) with brown (7.5YR 5/3).				
 54		CM						
55 		SM			(55.0') Observed trace Ceme in drill cuttings.	ex #8 (8x16) La	apis Lustre Sand	
56 57								
57 58				63 ft) Silty sand with gravel (SM); grayish on (10YR 5/2).				
59		SM						
 60								

9	ARC	ADIS	<u> </u>	Drilling Log			Sheet:	4 of 12
	Started:	07/13/202		Surface Elevation:	587.37 ft amsl	Dorin	a Na i TC	.e 03
	Completed:			Northing (NAD83):	2100921.24	DOM	g No.: <u>TC</u>	,3-02
Drilling	Co.:	<u>Cascade</u>		Easting (NAD83):	7615150.98	Client:	PG&E	
Drilling	Method:	Dual Rota	ary	Total Depth:	238.5 ft bgs	Project:		medy Phase 2A
	g Type:	<u>Foremost</u>		•		Location:	PG&E Topod	ck, Needles
	Name:	Josh Salo		Drill Casing Diameter:	16 inches	-	California	
Drilling				<u>. Aldona</u> Drill Bit:	15 5/8" & 17 5/8" Tricone	Project Nu	ımber: <u>30126</u>	255
	usher:	Arnold La		Depth to First Water:	129.5 ft bgs	-		
Rig Ge	eologist:	Ellen Red	Iner	Converted to Well:	Yes No			<u> </u>
Depth (ft)	Drilling Run and Averag Penetration R	e Codo	USCS Class	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observati temporary backfill ma			Drilling Fluid
 61	(41.2 - 61.2) 2.55 mins/ft			(57-63 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2).				
62		SM		(62-63 ft) Boulder; pulverized by drilling process	(61.2 - 81.2') Normal drilling	17		(61.2 - 81.2') 650 gallons of water used; 400 gallons of water recovered; 250 gallons of water lost
63 64		SM		(63-64.5 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2) with brown (7.5YR 5/2).				
65 66 67		SW-SM		(64.5-68.5 ft) Well graded sand with silt and gravel (SW-SM); brown (10YR 5/3).	(65.0') Observed trace Ceme in drill cuttings.	ex #8 (8x16) La	apis Lustre Sand	
68 69		SM		(68.5-69.5 ft) Silty sand with gravel (SM); brown (10YR 5/3) with brown (7.5YR 5/3).				
70 71 72	(61.2 - 81.2) 2.40 mins/ft			(69.5-77 ft) Well graded sand with silt and grave (SW-SM); brown (10YR 5/3) with brown (7.5YR 5/3).	el			
73 74 75		SW-SM			(75.0') Observed trace Ceme	ex #8 (8x16) La	apis Lustre Sand	
76 76 77				(75.5-76.5 ft) Cobbles/boulder pulverized by drilling process. (77-83 ft) Well graded sand with silt and gravel (SW-SM); grayish brown (10YR 5/2) with brown				
78 78 79		SW-SM		(7.5YR 5/2).				
80		1 1	<u> </u>					L

9	ARC	ADIS	3	Drilling Log			Sheet:	5 of 12
	tarted:	07/13/20	-	Surface Elevation:	587.37 ft amsl	Paris	a No : TC	.e us
	completed:			Northing (NAD83):	2100921.24	DOLL	g No.: <u>TC</u>	<u> </u>
Drilling	Co.:	Cascade		Easting (NAD83):	7615150.98	Client:	PG&E	
Drilling	Method:	Dual Rota	ary	Total Depth:	238.5 ft bgs	Project:	Final GW Re	medy Phase 2A
	g Type:	<u>Foremos</u>	t DR 24	HD Conductor Casing Diameter:	18 inches	Location:	PG&E Topod	ck, Needles
Driller I		Josh Sal		Drill Casing Diameter:	16 inches		California	
Drilling			•	<u>. Aldona</u> Drill Bit:	15 5/8" & 17 5/8" Tricone	Project Nu	ımber: <u>30126</u>	255
Tool-P		Arnold La		Depth to First Water:	129.5 ft bgs			
Rig Ge	eologist:	Ellen Red	iner	Converted to Well:	Yes No			<u> </u>
Depth (ft)	Drilling Run and Averag Penetration R	e Codo	USCS Class	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observati temporary backfill ma			Drilling Fluid
81	(61.2 - 81.2) 2.40 mins/ft			(77-83 ft) Well graded sand with silt and gravel (SW-SM); grayish brown (10YR 5/2) with browr (7.5YR 5/2).				
 82 83		SW-SM	1	(82-83 ft) Small cobbles pulverized by drilling process.	(81.2 - 101.2') Normal drilling	17		(81.2 - 101.2') 700 gallons of water used; 500 gallons of water recovered; 200 gallons of water lost
84 84 85		SM		(83-85.5 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2) with brown (7.5YR 5/2).	(%)			
 86 		ML		(85.5-87 ft) Sandy silt with gravel (ML); brown (10YR 5/3).	(85.0') Observed trace Ceme in drill cuttings.	x #8 (8x16) La	apis Lustre Sand	
87 88 		SM		(87-89 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2) with brown (7.5YR 5/2).				
89 90	(81.2 - 101.2))		(89-96 ft) Well graded sand with silt and gravel (SW-SM); grayish brown (10YR 5/2) with brown (7.5YR 5/2).				
91 92	2.90 mins/ft							
 93		SW-SM		o o o o				
94 95				(93.6 ft) Boulder/cobble pulverized by drilling process. (94.2-94.4 ft) Silt lens				
95 96				(00.07.5)	(95.0') Observed trace Ceme in drill cuttings.	x #8 (8x16) La	apis Lustre Sand	
 97		ML		(96-97 ft) Sandy silt (ML); brown (10YR 5/3).				
 98 		sw		dravich brown (10VP 5/2) with brown (7.5VP				
99 _100_		SM		(99.5-100 ft) Silty sand with gravel (SM); grayist	1			

9	ARC/	DIS	<u> </u>	Drilling Log			Sheet:	6 of 12
		07/13/20		Surface Elevation:	587.37 ft amsl	Τ	=	
	completed:			Northing (NAD83):	2100921.24	-∣ Boring	No.: <u>TC</u>	S-02
Drilling	•	Cascade		Easting (NAD83):	7615150.98	_ Client: <u>I</u>	PG&E	
_		Dual Rota		Total Depth:	238.5 ft bgs	_		emedy Phase 2A
_		Foremos		•	_	•	PG&E Topo	•
Driller I		Josh Sak		Drill Casing Diameter:	16 inches		California	ok, 1400aioo
Drilling				. Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone	_		255
Tool-P		Arnold La	•	Depth to First Water:	129.5 ft bgs	_ r rojectriar	11501. <u>00120</u>	200
		Ellen Red		Converted to Well:	× Yes No	-		
9			1		100			
Depth	Drilling Run (f and Average	0000		Description	Drilling notes and observat			Drilling Fluid
(ft)	Penetration Ra	te Code	Class	(See Pilot boring log for full geologic descriptions)	temporary backfill m	aterial in drill cut	ttings	Brilling Fidid
 101	(81.2 - 101.2) 2.90 mins/ft			brown (10YR 5/2). (100-102.5 ft) Well graded sand with gravel (SW); brown (7.5YR 5/2) with grayish brown (10YR 5/2).				
⊢ -		SW		• ((101.2 - 120.0') Hard/rough	drilling		(101.2 - 120.0') 950 gallons of water
102			6,000	•				used; 700 gallons of
				, , , , , , , , , , , , , , , , , , ,				water recovered; 250 gallons of water lost
103				(102.5-107 ft) Silty sand with gravel (SM); brow (7.5YR 5/2) with grayish brown (10YR 5/2).	n			
				(102.7 ft) Śmall cobble				
104								
105		SM						
					(105.0') Observed trace Cer Sand in drill cuttings.	nex #8 (8x16) La	pis Lustre	
_106				}				
107								
				(107-112 ft) Silty sand with gravel (SM); brown (7.5YR 5/2) with grayish brown (10YR 5/2).				
108				(7.5 TK 5/2) wat grayish blown (10 TK 5/2).				
103								
 110		SM						
110	(404.0400.0)							
 111	(101.2 - 120.0) 4.36 mins/ft							
' ' ' '								
 112								
' ' ' ~				(112-116.5 ft) Silty sand with gravel (SM); brow	n			
112				(7.5YR 5/2) with grayish brown (10YR 5/2).				
113								
				}				
114		SM		:}				
115					(115.0') Observed trace Cer	nex #8 (8x16) La	pis Lustre	
					Sand in drill cuttings.			
116				<u> </u>				
		SM		(116.5-117 ft) Silty sand with gravel (SM); brow	n			
117				(7.5YR 5/3). (117-122 ft) Silty sand with gravel (SM); brown	_			
- -				(7.5YR 5/2) with grayish brown (10YR 5/2).				
118				((117.5-119.5 ft) Dry to moist				
		SM		1				
_119								
120			1.4:4:4:					

9	ARC	AD	IS			Drilling Log				Sheet:	7 of 12
	tarted:	07/13		2		Surface Elevation:	<u>5</u> 8	87.37 ft amsl	Borin	g No.: TC	.e us
	completed:					Northing (NAD83):		100921.24	DOLLI	g No.: 10	-3-02
Drilling	Co.:	Casc	ade			Easting (NAD83):	<u>76</u>	615150.98	Client:	PG&E	
_		<u>Dual</u>		•		Total Depth:		38.5 ft bgs	Project:		medy Phase 2A
	g Type:	<u>Fore</u>			<u>24</u> F	•			Location:	PG&E Topod	ck, Needles
Driller I			Salda		_	Drill Casing Diameter:		6 inches		California	
Drilling			-		D.	Aldona Drill Bit:		5 5/8" & 17 5/8" Tricone	Project Nu	ımber: <u>30126</u>	255
Tool-P	usner: eologist:	Arno Ellen				Depth to First Water:Converted to Well:	X	29.5 ft bgs Yes No			
Ng Ge	ologist.	LIIEII	Neui	ICI			누	Tes INO			
Depth (ft)	Drilling Run and Averag Penetration R	e C	ISCS Code	USC Clas		Description (See Pilot boring log for full geologic descriptions)		Drilling notes and observati temporary backfill ma			Drilling Fluid
			SM			(117-122 ft) Silty sand with gravel (SM); brown (7.5YR 5/2) with grayish brown (10YR 5/2). (119.5-120.5 ft) Moist (119.5-120.5 ft) Moist (120.5-121.5 ft) Dry to moist (121.5-122 ft) Moist		(120.0 - 140.0') Hard drilling		•	(120.0 - 140.0') 600 gallons of water used; 600 gallons of water recovered; 0 gallons of water lost
122 123						(122-126.5 ft) Silty sand with gravel (SM); brown (7.5YR 5/3).	1				
 124 			SM					100			
125 126						(125-125.5 ft) Moist (125.5-126 ft) Dry to moist		(125.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) I	Lapis Lustre	
						(126-126.5 ft) Moist (126.5-134 ft) Silty sand with gravel (SM); brown (7.5YR 5/3).	ī	9 ,			
128											
129 						(129.5-134 ft) Wet					
130 131	(120.0 - 140.0 2.95 mins/ft		SM								
131 132							1	Į.			
 133											
 134						(134-137 ft) Silty sand with gravel (SM); brown					
 135			SM			(7.5YR 5/3).		(135.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) I	Lapis Lustre	
136			SIVI			(135.5 ft) Moist		Carta in carta igo.			
137						(137-139.5 ft) Silty sand with gravel (SM); yellowish brown (10YR 5/4).	-				
138 139			SM								
139 _140_			SM			(139 ft) Moist	_				

ARC	ADIS	5	Drilling Log			Sheet:	8 of 12
Date Started:	07/13/202		Surface Elevation:	587.37 ft amsl	Borine	y No.: TC	`S_02
Date Completed:	07/22/202	22	Northing (NAD83):	2100921.24	Politié	J NO 10	,3-02
Drilling Co.:	Cascade		Easting (NAD83):	7615150.98	Client:	PG&E	
Drilling Method:	Dual Rota	•	Total Depth:	238.5 ft bgs	,		medy Phase 2A
Drill Rig Type:		DR 24HD	<u> </u>	·		PG&E Topod	ck, Needles
Driller Name:	Josh Salo		Drill Casing Diameter:	16 inches		<u>California</u>	
Drilling Asst:		•	ldona Drill Bit:	15 5/8" & 17 5/8" Tricone	Project Nu	mber: <u>30126</u>	255
Tool-Pusher:	Arnold La		Depth to First Water:	129.5 ft bgs			
Rig Geologist:	Ellen Red	iner	Converted to Well:	× Yes No			
Depth (ft) Drilling Run and Averag Penetration F	e Codo	USCS Class	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observation temporary backfill ma			Drilling Fluid
	SM	[::[:::](7 !	39.5-142 ft) Silty sand with gravel (SM); brown 5YR 5/3). 40 ft) Moist	(140.0 - 160.0') Normal drillin	g		(140.0 - 160.0') 600 gallons of water used; 600 gallons of water recovered; 0 gallons of water lost
142 143	SW-SM	••••••••••••••••••••••••••••••••••••••	42-144.5 ft) Well graded sand with silt and avel (SW-SM); brown (10YR 5/3).				
 144 			14.5-145.5 ft) Silty sand with gravel (SM);	1, 69,			
_145	SM	bro	own (10YR 5/3) with brown (7.5YR 5/3).	(145.0') Observed trace Cem- Sand in drill cuttings.	ex #8 (8x16) L	apis Lustre	
_146		(14 ::::::::::::::::::::::::::::::::::::	45.5-148.5 ft) Silty sand with gravel (SM); llowish brown (10YR 5/4) with brown (7.5YR 4).				
147 _ _ _148_	SM		47 ft) Color change to brown (10YR 5/3) with own (7.5YR 5/3).				
 _149	SM	(14	48.5-150 ft) Silty sand with gravel (SM); brown 5YR 5/3) with brown (10YR 5/3).				
(140.0 - 160.0 2.15 mins/ft			50-151.5 ft) Silty sand with gravel (SM); brown 5YR 5/3) with brown (10YR 5/3).				
	SM		STATES (WILL DOWN (TO TAX SIS).				
	SM	(10	51.5- <mark>152 ft)</mark> Silty sand with gravel (SM); brown DYR 5/3) with brown (7.5YR 5/3). 52-158 ft) Silty sand with gravel (SM); brown				
		(10 (15	DYR 5/3) with brown (7.5YR 5/3). 52.5-153 ft) Wet 53-154 ft) Moist to wet				
154		(15	54-156 ft) Wet				
155	SM			(155.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) L	apis Lustre	
_156		(15	56-158 ft) Moist to wet				
157 							
158 159			58-160 ft) Silty sand with gravel (SM); brown DYR 5/3) with brown (7.5YR 5/3).				
	SM	1: 1:1:1:1	59-159.5 ft) Moist to Wet 59.5-160 ft) Wet				
				· · · · · · · · · · · · · · · · · · ·			

9	ARC	ADIS		Drilling Log			Sheet:	9 of 12
Date S	started:	07/13/202	22	Surface Elevation:	587.37 ft amsl	Borin	g No.: To	CS-02
Date C	Completed:	07/22/202	22	Northing (NAD83):	2100921.24	Domi	9 110 <u>11</u>	30 02
Drilling	Co.:	Cascade		Easting (NAD83):	7615150.98	Client:	PG&E	
Drilling	Method:	Dual Rota	ıry	Total Depth:	•	Project:		emedy Phase 2A
	• • •	<u>Foremost</u>		•		Location:	PG&E Topo	ck, Needles
	Name:	Josh Sald		Drill Casing Diameter:	16 inches		California	
Drilling		-		Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone	Project Nu	ımber: <u>3012</u> 6	3255
		Arnold La		·	129.5 ft bgs			
Rig Ge	eologist:	Ellen Red	ner	Converted to Well:	× Yes No			1
Depth (ft)	Drilling Run (and Averago Penetration R	9 0303	USCS Class	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observatio temporary backfill mat			Drilling Fluid
		ML SM		(160-163.5 ft) Sandy silt with gravel (ML); brown (7.5YR 5/3). (162.5-163.5 ft) Wet (163.5-164.5 ft) Silty sand with gravel (SM); brown (7.5YR 5/3). (164.5-167 ft) Sandy silt with gravel (ML); brown (7.5YR 5/3). (165.5-168.8 ft) Silty sand lens (SM). (166.5 ft) Color change to reddish brown (5YR 5/4). (167-168 ft) Silty sand with gravel (SM); brown (7.5YR 4/3).	(165.0') Observed trace Ceme Sand in drill cuttings.	ex #8 (8x16) L	.apis Lustre	(160.0 - 180.0') 350 gallons of water used; 400 gallons of water recovered; 50 gallons of water gained
	(160.0 - 180.0 1.00 mins/ft	ML		(168-172.5 ft) Sandy silt with gravel (ML); brown (7.5YR 5/3).				
173 174 175		SM		reddish gray (5YR 4/2).	(175.0') Observed trace Ceme	ex #8 (8x16) L	.apis Lustre	(175.0')
176 177 178		Clay On		(177-179 ft) Well graded sand with silt and gravel (SW-SM); dark reddish gray (5YR 4/2).	Sand in drill cuttings.			No drilling fluid used
170 179 180		SW-SM		(179-180 ft) Silty sand with gravel (SM); reddish brown (5YR 5/3).				
Δhhra	viations: IIS	CS = Unif	ling hai	Classification System ft = feet has = h	selow around surface amel	= ahove m	naan saa lawa	I GW =

9	ARC/	\DIS		Drilling Log		Sheet:	10 of 12
Date St		07/13/202		Surface Elevation:	587.37 ft amsl	Boring No.: TO	CS-02
	ompleted:		22	Northing (NAD83):	2100921.24		70 02
Drilling		<u>Cascade</u>		Easting (NAD83):		Client: PG&E	
_		Dual Rota	-	Total Depth:	•	•	emedy Phase 2A
Drill Rig Driller N		Foremost		•		Location: PG&E Topod California	CK, INEEGIES
Drilling		Josh Sald		Drill Casing Diameter: Aldona_ Drill Bit:	16 inches 15 5/8" & 17 5/8" Tricone		255
Tool-Pu		Arnold La			129.5 ft bgs	1 Toject Number. <u>30120</u>	233
Rig Ge		Ellen Red		Converted to Well:	× Yes No		
	Drilling Run (ft)		Description			
Depth (ft)	and Average Penetration Ra	Codo	USCS Class	(See Pilot boring log for full geologic descriptions)	Drilling notes and observation temporary backfill ma		Drilling Fluid
		SW-SM		(180-182 ft) Well graded sand with silt and gravel (SW-SM); reddish brown (5YR 4/3).	(180.0 - 188.0') Soft Drilling		(180.0 - 200.0') 400 gallons of water used; 500 gallons of water recovered; 100 gallons of water gained
182				(100 100 50)			
 183		ML		(182-183.5 ft) Sandy silt with gravel (ML); reddis brown (5YR 5/4).			
184		SM		(183.5-184.5 ft) Silty sand with gravel (SM); reddish brown (5YR 4/3).	(0)		
185		SM		(184.5-185 ft) Silty sand with gravel (SM); brown (7.5YR 4/4). (185-187 ft) Silty sand with gravel (SM); brown	(185.0') Observed trace Ceme Sand in drill cuttings.	ex #8 (8x16) Lapis Lustre	
_186		SM		(7.5YR 4/4).			
187		SM		(187-188 ft) Silty sand with gravel (SM); brown (7.5YR 5/2).			
188				(188-190 ft) Silty sand with gravel (SM); brown	(188.0 - 191.0') Hard drilling		
189		SM		(7.5YR 4/3).			
190	(180.0 - 200.0) 1.55 mins/ft)		(190-192 ft) Silty sand with gravel (SM); brown			
 191		SM		(7.5YR 5/3).	(191.0 - 200.0') Soft drilling		
192				(192-195 ft) Silty sand with gravel (SM); brown			
193				(7.5YR 4/3).			
194		SM					
195				(195-196 ft) Silty sand with gravel (SM); brown	(195.0') Observed trace Ceme	ex #8 (8x16) Lapis Lustre	
 196		SM		(7.5YR 5/3).			
197		SM		(196-197 ft) Silty sand with gravel (SM); brown (7.5YR 4/4).			
		ML		(197-199 ft) Sandy silt with gravel (ML); brown (7.5YR 4/3).			
199		SM		(199-202 ft) Silty sand with gravel (SM); brown (7.5YR 4/4).	-		
200 L	iotiona, IIC	CC - U=#	1: 1: 1: 1: 1 find Coll	Classification System ft - feet has - h	olow ground ourfood area	= above mean acclevel	CW -

9	ARC	ADIS	3	Drilling Log		Sheet:	11 of 12
Date S	tarted:	07/13/20	22	Surface Elevation:	587.37 ft amsl	Boring No.: TO	S-02
	completed:			Northing (NAD83):	2100921.24		
Drilling		Cascade		Easting (NAD83):	7615150.98	Client: PG&E	mady Dhaga 2A
_	Method: g Type:	Dual Rot Foremos	-	Total Depth: HDConductor Casing Diameter:	•	Project: Final GW Results Location: PG&E Topological PG&E Topological PG	emedy Phase 2A
	y rype. Name:	Josh Sal		Drill Casing Diameter:	16 inches	California	DR, INCCUICS
Drilling				. Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone		255
Tool-P		Arnold La	-	Depth to First Water:	129.5 ft bgs	, <u> </u>	
Rig Ge	eologist:	Ellen Red	dner	Converted to Well:	× Yes No		
Depth (ft)	Drilling Run and Averag Penetration R	e 0303		Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observation temporary backfill ma		Drilling Fluid
		SM		(199-202 ft) Silty sand with gravel (SM); brown (7.5YR 4/4).	(200.0 - 220.0') Soft drilling		(200.0 - 220.0') 250 gallons of water used; 500 gallons of water recovered; 250 gallons of water gained
202		SM		(202-202.5 ft) Silty sand with gravel (SM); browr (7.5YR 4/3).			
_203				(202.5-210 ft) Silty sand with gravel (SM); browr (7.5YR 4/4).			
_204					1 7 62		
_205					(205.0') Observed trace Ceme Sand in drill cuttings.	ex #8 (8x16) Lapis Lustre	(205.0') No drilling fluid used
_206 		SM					
_207							
208 _209_							
	(200.0 - 220.0))					
 _211	0.95 mins/ft			(210-214 ft) Silty sand with gravel (SM); reddish brown (5YR 4/3).			
		SM					
214				(214-216.5 ft) Silty sand with gravel (SM); reddish brown (5YR 4/4).			
215_		SM SM		((215.0') Observed trace Cem	ex #8 (8x16) Lapis Lustre	(215.0')
		SM			Sand in drill cuttings.		No drilling fluid used
 _217		ML		(216.5-217 ft) Gravelly silt with sand (ML); reddish brown (5YR 4/4).	_		
218		SM		(217-219 ft) Silty sand with gravel (SM); dark reddish gray (5YR 4/2).			
210							
219 220		ML SM		(219-219.5 ft) Sandy silt with gravel (ML); reddis brown (5YR 4/4).	h		
	.:t:	200 - 11-	·c 1 O - :	Classification System ft - fact has - I	- · · · · · · · · · · · · · · · ·		O)A/ -

Date Completed: 07/22/2022 Northing (NAD83): 2100921.24 Drilling Co.: Cascade Easting (NAD83): 7615150.98 Client: PG&E Drilling Method: Dual Rotary Total Depth: 238.5 ft bgs Project: Final GW Remedy Phase 2 Drill Rig Type: Foremost DR 24HD Conductor Casing Diameter: 18 inches Location: PG&E Topock, Needles Driller Name: Josh Saldana Drill Casing Diameter: 16 inches Drilling Asst: A. Amezquita / D. Aldona Drill Bit: 15 5/8" & 17 5/8" Tricone Rig Geologist: Ellen Redner Converted to Well: Yes No Depth Orilling Run (ft) and Average Penetration Rate (220.0 - 230.0") Soft drilling Project In drill cuttings (220.0 - 238.750 gallons of tused; 120.0 and Northing (NAD83): 1000 gallow water recovered to well: 1000 gallow water recovered to gallons of tused; 120.0 and Northing (NAD83): 1000 gallow water recovered to gallons of tused; 1200 gallow water recovered to gallons of tused; 120.0 and Northing (NAD83): 1000 gallow water recovered to gallons of tused; 1200 gallons of tused; 1200 gallons of tused; 120		<u>ARU</u>	<u> 4</u> 1	<u> </u>		Drilling Log					Sheet:	12 of 12
Company Comp						Surface Elevation:				Borin	a No.: To	CS-02
Drilling Method: Double Road Type: Project: End Commerce (Phase Double Name: Double		•			2	- , ,						
Driff R Type: Foremost DR 24HD	_		<u>Ca</u>	scade		Easting (NAD83):	<u>76</u>	15150.9	98	Client:		
Driller Name: Josh Saldarias Drill Casing Diameter: 15 inches California Color Pusher: Amount James Amount James Drill Casing Diameter: 15 inches Landaria Drill Casing Diameter: Drill Casing Drill Casing Diameter: Drill	_				•			_	js	•		•
Depth of First Water 15 Geologist Compared to Well Depth Depth			<u>Fo</u>	remost	DR 241	HD Conductor Casing Diameter:	<u>18</u>	inches		Location:	•	ck, Needles
Cool Description Cool Description Cool Description Cool Description Cool Description Descrip			<u>Jos</u>	<u>sh Sald</u>	ana	Drill Casing Diameter:						
Company Comp	Orilling	y Asst:	<u>A.</u>	<u>Amezq</u>	<u>uita / D.</u>	<u>. Aldona</u> Drill Bit:	<u>15</u>	5/8" &	<u>17 5/8" Tricone</u>	Project N	umber: <u>30126</u>	6255
Depth politing fun (ft) USCS Code Class Cl	Γool-F	Pusher:				Depth to First Water:	12	9.5 ft bo	ıs			
Deeph (See Plate Device) Log of Log of Plate Device) Log of Log o	Rig G	eologist:	Elle	en Red	ner	Converted to Well:	×	Yes	No			
Corporary backfill material in drill cuttings Corporary backfill material	Denth			USCS	USCS	Description		Drilling	notes and observati	ons confirmin	a presence of	
221						full geologic descriptions)	temporary backfill material in drill co					
223 224 225	 _221			SM		(219.5-223 ft) Silty sand with gravel (SM); dark reddish gray (5YR 4/2).		(220.0 - 2	230.0') Soft drilling	0		(220.0 - 238.5') 750 gallons of water used; 1200 gallons water recovered; 45 gallons of water gair
224 N/A X X X X X X X X X X X X X X X X X X	_222											
225. N/A	223_				$\times \times \times$		+					
226. 227. 228. 229. 220. 220. 221. 222. 223. 231. 232. 234. 235. 236. 237. 238. 238. 238. 239. 231. 232. 233. 234. 235. 236. 237. 238. 238. 238. 239. 230. 231. 232. 233. 234. 235. 236. 237. 238. 238. 238. 239. 239. 230. 231. 232. 233. 234. 235. 236. 237. 237. 238. 238. 238. 239. 239. 230. 231. 232. 233. 234. 235. 236. 237. 238. 238. 238. 239. 239. 230. 231. 231. 232. 233. 234. 235. 236. 237. 238. 238. 238. 239. 239. 239. 230. 230. 230. 231. 232. 233. 234. 235. 236. 237. 238. 238. 238. 239. 239. 239. 239. 230. 230. 230. 230. 230. 230. 230. 230	_224				× × × × × × × × ×							
228. 229. 230. 231. N/A X X X X X X X X X X X X X X X X X X X	_225			N/A	× × × × × ×					ex #2/12 (12)	(20) Lapis Lustre	
228. 229. 230.0 - 238.5) 270 mins/ft 232. 233. N/A 234. 235. 236. 237. 238. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. 239. 240. 240. 250. 250. 270 mins/ft	226_				× × × × × × × × ×		(
229 (220.0 - 238.5) 270 mins/ft (230.0 - 238.5) Hard drilling (230	227_				× × × × × × × × ×	,	'n					
231 231 231 232 233 233 234 234 235 234 234 235 234 235 234 237 238 238 239 240 240 240 240 240 240 240 240 240 240	_228_				× × × × × ×	(6YR 5/4).						
230. 231. 232. 233. N/A	_229				× × × × × × × × ×							
231	_230				× × × × × ×			(230.0 - 2	238.5') Hard drilling			<u> </u>
232	_231				× × × × × × × × ×							
233	_232				× × × × × × × × ×			(232.0') (Observed trace Cem	ex #2/12 (12)	(20) Lapis Lustre	
234	233			N/A	× × × × × ×				5			
235	_234_				× × × × × × × × ×							
236. 237. 238. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. 239. Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth	_235_				× × × × × × × × ×							
End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. Substitutions: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth	_236				× × × × × ×							
End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. Substituting the state of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs. End of Boring at 238.5 ft bgs.	_237				× × × × × × × × ×							
End of Boring at 238.5 ft bgs. 239 240 Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth	_238_				× × × × × ×							
Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth	239_					End of Boring at 238.5 ft bgs.	- 1	1				•
Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth	 240	1										
groundwater, Notes: Solid blue and hollow blue water table marks represent depth to water (ft. bgs.) first encountered from logging and depth		viations: U	SCS	S = Unif	ied Soil	Classification System, ft = feet, bgs = l	oelo	ow groui	nd surface, ams	l = above r	nean sea leve	l, GW =
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	_							•			`	