9	ARC	Δ	DIS			Well Cons	str	ucti	on Log	Sheet: 1 of 9			
Date S	started:	05/	01/2023			_Surface Elevation:	1	520.26	ft amsl	Well ID:	FR-03		
Date C	completed:	05/	04/2023			_Shallow Well Elevation	on: <u>{</u>	517.69	ft amsl*				
Drilling			scade			_Deep Well Elevation:		V/A			G&E		
_			to-Sonic			_Northing (NAD83):	_	210090		•	inal GW Remedy Phase 2A		
Driller I			tt Arnold			_Easting (NAD83):		761686		Location: <u>P</u>	G&E Topock, Needles California		
Drilling			loeppner /	G Alva	rado	_Borehole Diameter:			2 inches				
Logge			n Redner			_Static Water Level:			g for Depths	Project Number: 30126255			
Editor: Total D			an McGran	e		_Development End Da _Well Completion:	ate: <u>:</u>	Flu		 To Be Completed in Well Vault			
TOtal L	лерин.						etructi	on Detai	-	TO BE Comple	sted in Weil vault		
Depth (ft)	Groundwat Sample II		Geologic Formation	USCS	USCS Class		ou dou	on Detai		Calculated Material Volum	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
		П	Fill	GW	M	(0.0 - 66.0') — 6" Sch. 80 PVC			(0.0 - 8.0') 12" Diameter Borehole				
_ 1 _			NA	NA		Casing							
			Alluvium Deposits	GW	X -	(0.0 - 4.0')					Note: Backfill sand and residual		
_ 2 _			Weathered Bedrock -	NA	× × ×	Cemex #2/16 Mesh (16x30) Lapis Lustre					bentonite from the mud tub seal will be removed during the		
			Conglomerate		× × × × × ×	Sand with Granular					excavation to be completed during the installation of the well vault.		
_ 3 _					× × ×	Bentonite					the installation of the well vault.		
					X X X X X X X X X								
_ 4 _			Weathered Bedrock -	NA	$I \times \times \times I$	\(\sigma\)							
			Conglomerate		X								
_ 5 _													
					$I \times \times \times I$								
6					× × × × × ×								
					$ \times \times \times $								
_ 7 _					$ \times \times \times $								
8					X X X				- (8.0 - 163.0') 10.5"				
					× × ×				Diameter Borehole				
_ 9 _					× × × × × × × × ×								
	No				× × ×								
10	Groundwate Samples	r			X X X X X								
	Collected		Weathered		X								
11			Bedrock -	NA	\times \times \times								
			Conglomerate		× × ×	(4.0 - 31.5') Quikrete Portland					(4.0 - 31.5') 100 gallons (122%) Note: Second lift of the grout seal,		
12						Cement Type I, II OR IL, with up to				(4.0 - 31.5') 81.8 gallons	used >20% of the calculated		
					X X X X X	5% Halliburton				2 g	volume due to potential voids that formed during drilling.		
13					X X X	Quik-Gel Bentonite							
14					× × × × × ×								
					× × ×								
15													
					× × ×								
16					$\frac{1}{1} \times \frac{1}{1} \times \frac{1}{1}$								
					\								
17					$ \setminus / $								
<u> </u>			Weathered		$ \setminus / $								
18			Bedrock - Conglomerate	NA									
├ -			Jongiomerale		/								
19					/								
<u> </u>					/ \								

9	ARC	ADIS	5			Well Const	ruction Log	:	Sheet: 2 of 9		
Date S	tarted:	05/01/202	23			_Surface Elevation:	520.26 ft amsl	Well ID: ER-03			
Date C	completed:	05/04/202	23			_Shallow Well Elevation:	517.69 ft amsl*				
Drilling	Co.:	<u>Cascade</u>				_Deep Well Elevation:	N/A	_ Client: PG&E			
_		Roto-Son	ic			_Northing (NAD83):	2100908.17	Project: Final GW Remedy Phase 2A			
Driller		Matt Arno				_Easting (NAD83):	7616862.06	Location: <u>PG&</u> E	E Topock, Needles California		
Drilling	Asst:	D Hoeppr		Alvar	ado	_Borehole Diameter:	10.5-12 inches				
Logge		Ellen Red				_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>		
Editor:		Sean Mc0				_Development End Date		_			
Total D	Depth:	163 ft bgs				_Well Completion:	-	To Be Completed	in Well Vault		
Depth (ft)	Groundwat Sample ID		<u> </u>	Code	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
21	No Groundwate Samples Collected	Compe Bedroc Conglom Conglom Conglom	tent k - I - I - I - I - I - I - I - I - I -	NA NA		(0.0 - 66.0') 6" Sch. 80 PVC Casing (22.5 - 23.5') Kwik-Zip Centralizer (4.0 - 31.5') Quikrete Portland Cement Type I, II OR IL, with up to 5% Halliburton Quik-Gel Bentonite		(4.0 - 31.5') 81.8 gallons	Note: Centralizer had to be trimmed to fit inside drill casing. (4.0 - 31.5') 100 gallons (122%) Note: Second lift of the grout seal, used >20% of the calculated volume due to potential voids that formed during drilling.		
32		Weathe Bedroc Conglom	ered kk -		× × × × × × × × × × × × × × × × × × ×	(31.5 - 52.0') Quikrete Portland Cement Type I, II OR IL, with up to 5% Halliburton Quik-Gel Bentonite		(31.5 - 52.0') 56.8 gallons	(31.5 - 52.0') 100 gallons (176%) Note: First lift of the grout seal, used >20% of the calculated volume due to potential voids that formed during drilling.		

6	ARC	Δ	DIS			Well Const	ruction Log		Sheet: 3 of 9	
Date S		_	01/2023			Surface Elevation:	520.26 ft amsl	Well ID. ED 02		
	ompleted:					_Shallow Well Elevation:		Well ID: ER	R-03	
Drilling	-		scade			_ Deep Well Elevation:	N/A	Client: <u>PG&E</u>	:	
_			to-Sonic			_Northing (NAD83):	2100908.17		- GW Remedy Phase 2A	
Driller I			tt Arnold			_Easting (NAD83):	7616862.06	•	E Topock, Needles California	
Drilling			loeppner /	G Alva	rado	_Borehole Diameter:	10.5-12 inches		- ropook, recoulde california	
Logge			n Redner	<u> </u>	iuuo	_Static Water Level:	See Log for Depths	 Project Numbe	r: 30126255	
Editor:			an McGran	e		_Development End Date:	-		00120200	
Total D			3 ft bgs	<u> </u>		_Well Completion:		— To Be Completed	in Well Vault	
						<u>.</u>	ction Details			
Depth (ft)	Groundwat Sample ID		Geologic Formation	USCS Code	USCS Class			Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
41	No Groundwate Samples Collected		Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate	NA NA		(31.5 - 52.0') G" Sch. 80 PVC Casing (31.5 - 52.0') Quikrete Portland Cement Type I, II OR IL, with up to 5% Halliburton Quik-Gel Bentonite		(31.5 - 52.0') 56.8 gallons	(31.5 - 52.0') 100 gallons (176%) Note: First lift of the grout seal, used >20% of the calculated volume due to potential voids that formed during drilling.	
5354555657		- C	Weathered Bedrock - Conglomerate	NA		(52.0 - 57.5') Cemex #0/30 Mesh (30x50) Lapis Lustre Sand		(52.0 - 57.5') 4.1 bags	(52.0 - 57.5') 6 bags (146%) Note: Transition sand seal, used >20% of the calculated volume due to potential voids that formed during drilling.	
 58			Weathered	NI A	$\mid \bigvee \mid$	(57.5 - 58.0') Enviroplug Medium		(57.5 - 58.0') 0.3 bags	(57.5 - 58.0') 0.5 bags (167%) Note: Bentonite seal, used >20%	
_ 55 _			Bedrock - Conglomerate	NA		Bentonite Chips		U.U Days	of the calculated volume due to	
F0			-			(58.0 - 163.0')		(58.0 - 163.0')	potential voids that formed during drilling.	
59					/ \	Cemex #2/16 Mesh (16x30) Lapis Lustre		78.6 bags		
 60					/ \	Sand				

ARC	A	DIS			Well Const	ruction Log	\$	Sheet: 4 of 9
Date Started:		01/2023			_Surface Elevation:	520.26 ft amsl	Well ID: ER	0.03
Date Complete					Shallow Well Elevation:		- well id: ER	1-03
Drilling Co.:		scade			Deep Well Elevation:	N/A	— Client: <u>PG&E</u>	=
Drilling Method:		to-Sonic			Northing (NAD83):	2100908.17	Project: Final GW Remedy Phase 2A	
Driller Name:		tt Arnold			Easting (NAD83):	7616862.06	•	Topock, Needles California
Drilling Asst:		loeppner / (C Alvar	ado	Borehole Diameter:	10.5-12 inches	Location. <u>r Gal</u>	1 TOPOCK, Needles California
_		n Redner	<u> </u>	auu	Static Water Level:	See Log for Depths	— — — — — — — — — — — — — — — — — — —	- 201262EE
Logger:						•	Project Number	. 30120233
Editor:		an McGrane	9		Development End Date:		 	
Total Depth:	163	3 ft bgs			Well Completion:	•	To Be Completed	in vveii vauit
	nudwater Code Code Code Code Code Code Code Code			USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
61	- L	Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate	NA NA		(66.0 - 156.0') (60.0 - 156.0') (60.0 - 156.0') (60.0 - 156.0') (70.02 - Slot 316L SS Wire Wrap Screen (58.0 - 163.0') Cemex #2/16 Mesh (16x30) Lapis Lustre Sand		(58.0 - 163.0') 78.6 bags	Note: Centralizer had to be trimmed to fit inside drill casing. (58.0 - 163.0') 99 bags (126%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Successfully completed the pre-alignment test using the "Dummy Tool" and swabbed filter pack for approximately 160 minutes to promote settling of the filter pack prior to the installation of the bentonite/transition sand seal. Conducted field sieve test on the filter pack sand prior to installation. Test results were consistent with the manufacture's published grain-size distribution.

6	ARC	۷ ال	•		Well Const	ruction Log		Sheet: 5 of 9	
		05/01/202			Surface Elevation:	520.26 ft amsl			
	started: completed:				Sunace Elevation: Shallow Well Elevation:		─ Well ID: Ef	₹-03	
Date C Drilling		Cascade	.3		Snallow Well Elevation. Deep Well Elevation:	N/A	Client: PG&	=	
_		Roto-Son	io		Northing (NAD83):	2100908.17		GW Remedy Phase 2A	
Driller I					• ,		•		
		Matt Arno		randa	Easting (NAD83): Borehole Diameter:	7616862.06	Location: PG&E Topock, Needles California		
Drilling		D Hoeppr		/arauo	Borenole Dlameter. Static Water Level:	10.5-12 inches		2042C2EE	
Logge Editor:		Ellen Red				See Log for Depths	Project Numbe	1. 30120255	
Editor. Total ⊑		Sean Mc0			Development End Date Well Completion:		To Be Completed	in Wall Vault	
TOTAL	лерит.				·	uction Details	To be Completed	III Well Vault	
Depth (ft)	Groundwat Sample II		USCS	USCS		ICHOIT Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
	No Groundwate Samples Collected	Weather Bedroot Conglom Weather Bedroot Conglom Weather Bedroot Conglom	ered k - NA erate NA erate NA erate NA erate NA erate NA		(58.0 - 163.0') SS Wire Wrap Screen (58.0 - 163.0') Cemex #2/16 Mesh		(58.0 - 163.0') 78.6 bags	(58.0 - 163.0') 99 bags (126%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Successfully completed the pre-alignment test using the "Dummy Tool" and swabbed filter pack for approximately 160 minutes to promote settling of the filter pack prior to the installation of the bentonite/transition sand seal. Conducted field sieve test on the filter pack sand prior to installation. Test results were consistent with the manufacture's published grain-size distribution.	
99									

	^ DC	_	DIC			Well Const			0, 1, 0, 1, 0		
, , =	<u>ARC</u>	_					ruction Log		Sheet: 6 of 9		
Date S			/01/2023			_Surface Elevation:	520.26 ft amsl	Well ID: EF	₹-03		
	ompleted:					_Shallow Well Elevation:					
Drilling			scade			_Deep Well Elevation:	N/A	Client: PG&I			
_			to-Sonic			_Northing (NAD83):	2100908.17	•	GW Remedy Phase 2A		
Driller N			att Arnold	C Alva	rada	_Easting (NAD83): _Borehole Diameter:	7616862.06 10.5-12 inches	Location: PG&I	E Topock, Needles California		
Drilling			Hoeppner / en Redner	<u>G Aiva</u>	Iauu	Static Water Level:	See Log for Depths	Drainet Number: 20126255			
Logger Editor:			an McGran			_Static Water Level. _Development End Date	-	Project Number: <u>30126255</u>			
Total D	epth:		3 ft bgs					To Be Completed in Well Vault			
					(0.12		action Details		Material Volumes Installed		
Depth (ft)	Groundwat Sample II		Geologic Formation	Code	USCS Class			Calculated Material Volumes	Note: percentages are the actual volume vs the calculated volume		
	No Groundwate Samples Collected	r	Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate Conglomerate	NA		(58.0 - 163.0') Cemex #2/16 Mesh (16x30) Lapis Lustre Sand		(58.0 - 163.0') 78.6 bags	(58.0 - 163.0') 99 bags (126%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Successfully completed the pre-alignment test using the "Dummy Tool" and swabbed filter pack for approximately 160 minutes to promote settling of the filter pack prior to the installation of the bentonite/transition sand seal. Conducted field sieve test on the filter pack sand prior to installation. Test results were consistent with the manufacture's published grain-size distribution.		

(A)		A DIC			Well Const			21 1 7 1 0	
, ,		<u>ADIS</u>				ruction Log	· · · · · · · · · · · · · · · · · · ·	Sheet: 7 of 9	
Date Starte		05/01/2023			_Surface Elevation:	520.26 ft amsl	─ Well ID: EF	R-03	
		05/04/2023			_Shallow Well Elevation:				
Drilling Co.		Cascade			_ Deep Well Elevation:	N/A		PG&E	
Drilling Met		Roto-Sonic			_Northing (NAD83):	2100908.17	-	GW Remedy Phase 2A	
Driller Nam Drilling Ass		Matt Arnold	C Alva	rada	Easting (NAD83): Borehole Diameter:	7616862.06 10.5-12 inches	Location: <u>PG&I</u>	E Topock, Needles California	
Logger:		D Hoeppner / Ellen Redner	<u>G Alva</u>	Iauu	Static Water Level:	See Log for Depths	 Project Numbe	r: 20126255	
Editor:		Sean McGran	Α		Static vvater Level. Development End Date:	•	r roject riumbe	1. <u>50 120255</u>	
Total Deptl		163 ft bgs	<u> </u>		Bevelopment End Bate. Well Completion:		— To Be Completed	in Well Vault	
					<u> </u>	ction Details			
	oundwate ample ID		Code	USCS Class			Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
Sa	No undwatei amples ollected	Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate	NA NA		(58.0 - 163.0') G" 0.02-Slot 316L SS Wire Wrap Screen (58.0 - 163.0') Cemex #2/16 Mesh (16x30) Lapis Lustre Sand		(58.0 - 163.0') 78.6 bags	(58.0 - 163.0') 99 bags (126%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Successfully completed the pre-alignment test using the "Dummy Tool" and swabbed filter pack for approximately 160 minutes to promote settling of the filter pack prior to the installation of the bentonite/transition sand seal. Conducted field sieve test on the filter pack sand prior to installation. Test results were consistent with the manufacture's published grain-size distribution.	

9	ARC	ADIS			Well Const	ruction Log	;	Sheet: 8 of 9
Date S	tarted:	05/01/2023			_Surface Elevation:	520.26 ft amsl	Well ID: EF	2-03
Date C	ompleted:	05/04/2023			_Shallow Well Elevation:	517.69 ft amsl*		····
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: PG&I	<u> </u>
-	Method:	Roto-Sonic			_Northing (NAD83):	2100908.17	Project: <u>Final</u>	GW Remedy Phase 2A
Driller I		Matt Arnold			_Easting (NAD83):	7616862.06	Location: PG&I	E Topock, Needles California
Drilling		D Hoeppner		arado	_Borehole Diameter:	10.5-12 inches		
Loggei	r:	Ellen Redne			_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGra	ine		_Development End Date			. 14/ 11/ 1/
Total D	eptn:	163 ft bgs			_Well Completion:		To Be Completed	in vveii vauit
Depth (ft)	Groundwat Sample II		nscs Code	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 141 142		Weathered Bedrock - Conglomera	NA		(66.0 - 156.0')		0-	
142 143		Weathered Bedrock - Conglomera	NA				(3)	
144 145 146		Weathered Bedrock - Metadiorite	NA					
147	No Groundwate Samples Collected	Weatherer Bedrock - Metadiorite	NA		(58.0 - 163.0') Cemex #2/16 Mesh — (16x30) Lapis Lustre Sand		(58.0 - 163.0') 78.6 bags	(58.0 - 163.0') 99 bags (126%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Successfully completed the pre-alignment test using the "Dummy Tool" and swabbed filter pack for approximately 160 minutes to promote settling of the filter pack prior to the installation of the bentonite/transition sand seal. Conducted field sieve test on the filter pack sand prior to installation. Test results were consistent with the manufacture's published grain-size distribution.
157 158 159 		Weatherer Bedrock - Metadiorite Weatherer Bedrock -	NA •		(157.0 - 158.0') Kwik-Zip Centralizer			Note: Centralizer had to be trimmed to fit inside drill casing.

9	ARC	ADIS			Well Const	ruction Log	· · · · · · · · · · · · · · · · · · ·	Sheet: 9 of 9
Date S	Started:	05/01/2023			_Surface Elevation:	520.26 ft amsl	Well ID: EF	2-03
Date C	Completed:	05/04/2023			_Shallow Well Elevation:	517.69 ft amsl*	VVEILID. LI	
Drilling	-	Cascade				N/A	Client: PG&I	
Drilling	Method:	Roto-Sonic			_Northing (NAD83):	2100908.17	Project: Final	GW Remedy Phase 2A
Driller	Name:	Matt Arnold			_Easting (NAD83):	7616862.06	Location: PG&I	E Topock, Needles California
Drilling	Asst:	D Hoeppner /	G Alva	rado	_Borehole Diameter:	10.5-12 inches	<u> </u>	•
Logge		Ellen Redner			_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGran	ie		_Development End Date:			
Total D	Depth:	163 ft bgs			_Well Completion:		▼ To Be Completed	in Well Vault
Depth (ft)	Groundwat Sample ID	Geologic Formation	USCS	USCS Class	Constru	ction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
	No Groundwate Samples Collected	Weathered Bedrock -	NA NA		(156.0 - 161.5') Sch.— 80 PVC Sump and 316L Stainles Steel End Cap		(58.0 - 163.0') 78.6 bags	
		,,			End of Boring at Target Depth of 163 ft bgs.			
164					it bys.			
- -								
165								
<u> </u>								
166								
167								
<u> </u>								
168								
<u> </u>								
169								
<u> </u>								
170								
L -								
171								
L -								
172								
173								
174								
L _								
175								
176								
 177								
178								
1/0								
170								
179								
180								

9	AR	CAD	IS			Вс	ring Lo	9		She	et: 1 of	14
	Started					Surface	e Elevation:	520.26 ft amsl	Rorin	a No :	ER-03 P	ilot
Date 0	Comple	eted: 04/29/				Northin	g (NAD83):	2100908.17	DOLL	ig ivo	EK-03 P	<u>iiOt</u>
Drilling	•	Casca	_				(NAD83):	7616862.06	_ Client:	PG&E		
Drilling	, Metho	od: Roto-S						163 ft bgs	_ Project:	Final GV	V Remedy P	hase 2A
Drill R	ig Type	e: <u>Truck</u>	Mounte	ed Sonic		Boreho	le Diameter:	6-12 inches	_ Location:	PG&E T	opock, Need	lles California
Driller	Name:	Matt A	rnold			Depth t	to First Water:	60.6 ft bgs	_			
Drilling	Asst:	<u>D Hoe</u>	ppner /	G Alvarado)	Sonic [Orilling:	10 ft Core Barrel	_ Project N	lumber: 3	30126255	
Logge	r:	<u>SM / E</u>	ER / JA			Sampli	ng Interval:	Continuous	Bedrock	Sampling	: 10 ft Core	Barrel
Editor	:	<u>Sean</u>	<u>McGrar</u>	ne		Conver	ted to Well:					
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	USCS	USCS Class		Rock Description			Drilling Notes	Drilling Fluid and Properties
				Fill	GW		strong brown (7.	aded gavel with sand (GW); brown (7 5YR 4/6); small to very large pebbles, o very coarse grained sand, subangula	angular to su	bround;	(0.0 - 2.0') Air-knifed for utility	
_ 1 _	24 in.	NA		NA	NA		granules, angula dry.	ar to subround; little small cobbles, and			clearance. Air-knifing to the target	
	100%	IVA		Alluvium Deposits	GW	X	depth of 5 feet bgs was not possible due					
2				Weathered Bedrock - Conglomerate	NA	× × × × × × × × ×	subround; little s (1.5-2.0 ft) Sedir	sand, subangular to round; little <mark>granu</mark> mall cobbles, subangular to su <mark>bro</mark> und nentary Rock - Conglomerat <mark>e;</mark> reddish	l; dry. brown (5YR	4/4);	to bedrock at approximately 2 feet bgs.	
_ 3	42 in. 88%	NA NA	0.0	Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate	NA	X X X X X X X X X X X X X X X X X X X	(6-16 ft) Sedimen fine to very coars subangular to su to hard; massive process. (6-16 ft) Sedime fine to very coars subangular to su hard to hard; maprocess.	to fine grained, subround to angular; so hard. tary Rock - Conglomerate; yellowish rese grained, subangular to subround; subround; highly weathered; competent; reacts with HCL; dry, friable; pulverize grained, subangular to subround; subround; highly weathered; more competents is grained, subangular to subround; subround; highly weathered; more competents with HCL; dry; friable; pulsasive; reacts with HCL; dry; friable; pulsasive; pulsasive	red (5YR 4/6); ome small color pieces mediu zed by drilling	very bbles, im hard ; very bbles, medium	(2.0 - 6.0') Drilled dry with 8-inch core barrel. Sample compacted in bag. Very hard drilling to install 8-inch diameter conductor casing to a depth of 6 feet bgs. (6.0 - 16.0') Drilled dry with 8-inch core barrel. Core barrel was temporarily locked up in formation. Sample compacted in bag.	
10 11 						× × × × × × × × × × × × × × × × × × ×						

ARCADIS						Вс	ring Log	9		She	et: 2 of	14
Date S	Started	03/08/2	2023			Surface	e Elevation:	520.26 ft amsl	Boring	No.:	ER-03 P	ilot
Date C	Comple	ted: <u>04/29/2</u>	2023				g (NAD83):	2100908.17				
Drilling	Co.:	Casca				Easting	(NAD83):	7616862.06		G&E		
Drilling	Metho	od: Roto-S	onic			Total D	•	163 ft bgs	-		<u> V Remedy Pl</u>	
Drill Ri			<u>Mounte</u>	ed Sonic			le Diameter:	6-12 inches	Location: Po	G&E T	opock, Need	les California
Driller						•	o First Water:	•	_			
Drilling		-	-	G Alvarado		Sonic [-	10 ft Core Barrel	Project Number: <u>30126255</u> Bedrock Sampling: <u>10 ft Core Barrel</u>			
Logge		SM / E				-	ng Interval:	Continuous	Bedrock Sar	mpling	: <u>10 ft Core I</u>	Barrel
Editor:		Sean N	<u>/lcGrar</u> ⊺			Conver	ted to Well:					
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	USCS	USCS Class		Rock Description			Drilling Notes	Drilling Fluid and Properties
13 14 15 16	75 in. 63%	NA	0.0	Weathered Bedrock - Conglomerate	NA	X X X X X X X X X X X X X X X X X X X	fine to very coars	ntary Rock - Conglomerate; yellowish r se grained, subangular to subround; so ubround; highly weathered; more compo sssive; reacts with HCL; dry; friable; pul	me small cobble etent pieces med	s, lium		
16 17 18 19 20	66 in. 55%	NA	50.0	Weathered Bedrock - Conglomerate	NA		during coring.	Recovery; top of core potentially washed			(16.0 - 36.0') Smooth drilling, cored and flushed drill casing with water. Driller states the casing was flushed over core barrel to straighten out 6-inch casing. Core sample was drilled in two 10-foot runs without tripping out sample.	(16.0 - 36.0') 753 gallons of drilling fluid added; 735 gallons of drilling fluid recovered; 18 gallons of water lost to formation.
21				Competent Bedrock - Conglomerate		X X X X X X X X X X X X X X X X X X X	very fine to very medium pebble moderately to in medium pebble (21.53-21.55 ft) mineralization oi (22.187 ft) mineralization oi (22.11-22.13 ft) mineralization oi (22.43-22.45 ft) mineralization oi (23.19-23.2 ft) mineralization oi (23.19-23.2 ft) mineralization oi (23.55-23.57 ft) mineralization oi (23.55-23.57 ft) mineralization oi	mentary Rock - Conglomerate; yellowis coarse grained, subangular to subround; slightly tensely fractured; massive; reacts with clasts composed mostly of metadiorite Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface mechanical fracture; 180 degrees; no so so staining; tight aperture; rough surface	d; some granule r weathered; harc HCL; granule to econdary econdary econdary econdary condary econdary econdary econdary econdary	to d;		

9	AR	CADI	S			Во	ring Log	<u> </u>	S	heet: 3 of	14
	Started: Comple	03/08/2 eted: 04/29/2					e Elevation: g (NAD83):	520.26 ft amsl 2100908.17	Boring No	.: <u>ER-03 P</u>	<u>ilot</u>
Drill R Driller	g Metho ig Type Name: g Asst: er:	e: <u>Truck</u> Matt A	Sonic Mounte rnold ppner / ER / JA		- 	Total D Boreho Depth t Sonic D Samplii	le Diameter: o First Water:	10 ft Core Barrel	Project Number: 30126255		
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	USCS	USCS Class		Rock Description		Drilling Notes	Drilling Fluid and Properties
25	66 in. 55%	0.5 mins/ft	50.0	Competent Bedrock - Conglomerate	NA	× × × × × × × × × × × × × × × × × × ×	mineralization of (23.95-24 ft) Meiron oxide stainir (20.5-26 ft) Sedi very fine to very medium pebble moderately to in medium pebble (24.31-24.32 ft) mineralization o	Mechanical fracture; 180 degrees; no se staining; tight aperture; rough surface chanical fracture; 15 degrees; no secong; tight aperture; rough surface; gitight aperture; rough surface. Conglomerate; yellowis coarse grained, subangular to subround clasts, subangular to subround; slightly tensely fractured; massive; reacts with clasts composed mostly of metadiorite Mechanical fracture; 180 degrees; no se staining; tight aperture; rough surface	chdary mineralization; sh red (5YR 4/6); d; some granule to weathered; hard; HCL; granule to becondary		
26				Competent Bedrock - Conglomerate	NA 	× × × × × × × × × × × × × × × × × × ×	mineralization of (24.65-24.67 ft)	Mechanical fracture; 180 degrees; no s staining; tight aperture; rough surface Mechanical fracture; 180 degrees; no s staining; tight aperture; rough surface	secondary		
27282830313132333435	116 in. 97%	1.3 mins/ft	52.6	Competent Bedrock - Conglomerate	NA	X X X X X X X X X X X X X X X X X X X	(24.7-25.5 ft) Inti (25.53-25.55 ft) mineralization of (26-26.3 ft) No Factor of (26-26.3 ft) No Factor of (26-26.3 ft) Sedi (3/4); very fine to medium pebble weathered; hard granule to medium pebble weathered; hard granule to medium (27-27.02 ft) Meor staining; tight (27.53-27.54 ft) mineralization of (27.7-27.8 ft) Meor staining; tight (28.05-28.06 ft) mineralization of (28.76-28.78 ft) mineralization of (29.1-29.3 ft) Maineralization of (29.1-29.3 ft) Maineralization of (30.4-31 ft) Natuoxide staining; of (32.93-32.95 ft) mineralization of (33.2-33.22 ft) Mineralization of (33.92-33.94 ft) mineralization of (34.8-35.8 ft) Natuoxide staining; of (34.8-35.8 ft) Natuoxide staining; of (33.92-33.94 ft) mineralization of (34.8-35.8 ft) Naturalization of (34.8-35.8 ft)	staining, tight aperture; rough surface ensely fractured zone. Mechanical fracture; 180 degrees; no sestaining; tight aperture; rough surface decovery; top of core potentially washed elecovery; slightly to go elecovery; slightly to elecovery; slightly to elecovery; slightly to elecovery; slightly to elecovery; no secon aperture; rough surface. Mechanical fracture; 180 degrees; no secon elecovery;	dish brown (5YR nd; little granule to o moderately live; reacts with HCL; metadiorite. Indianally mineralization decondary mineralization decondary mineralization decondary live; heads with metadiorite. Indianally mineralization decondary lives and mineralization; iron meralization; iron meralization; iron metalization; iron metalization decondary lives accondary lives		
36						×××					

A	<u> POS</u>	DIS)			B(oring Log	<u> </u>		Sheet: 4 of	14
Date Started	l: <u>03</u>	3/08/202	23			Surfac	e Elevation:	520.26 ft amsl	Boring No	.: <u>ER-03 P</u>	ilot
ate Compl	eted: <u>04</u>	/29/202	23			Northir	ng (NAD83):	2100908.17	_ Borning ive	<u>LIX 00 1</u>	<u> </u>
rilling Co.:	<u>C</u> :	ascade				Easting	g (NAD83):	7616862.06	Client: PG&E	<u> </u>	
rilling Meth	od: <u>R</u>	oto-Son	nic			Total D	Depth:	163 ft bgs	Project: <u>Final</u>	GW Remedy Pl	nase 2A
rill Rig Typ	e: <u>Tr</u>	uck Mo	unte	d Sonic		Boreho	ole Diameter:	6-12 inches	Location: PG&I	E Topock, Need	les Califorr
riller Name	: <u>M</u>	att Arno	old			Depth	to First Water:	60.6 ft bgs			
Orilling Asst:	D	Ноеррі	ner /	G Alvarado)	Sonic	Drilling:	10 ft Core Barrel	Project Number	: <u>30126255</u>	
.ogger:	SI	M/ER	/JA			Sampl	ing Interval:	Continuous	Bedrock Sampl	ing: <u>10 ft Core I</u>	Barrel
Editor:		ean Mc		е			rted to Well:		·	J	
Depth (ft)	Drilling and Ave	Run rage C	(%)	Geologic Formation	USCS	USCS		Rock Description		Drilling Notes	Drilling Flu and Properti
	1 mins	'ft	0.0	Weathered Bedrock - Conglomerate Bedrock - Conglomerate Weathered Bedrock - Conglomerate	NA NA NA		during coring. (44.7-46 ft) Sedi 3/4); very fine to medium pebble very intensely fra pebble clasts co (44.8-45.4 ft) Int (45.4-45.41 ft) Mineralization or (45.59-45.6 ft) Mineralization or (45.83-45.85 ft) Mineralization or (45.83-45.85 ft) Mineralization or (46-52.5 ft) No during coring.	mentary Rock - Conglomerate; dark coarse grained, subangular to subroclasts, angular to subangular; mode ctured; massive; reacts with HCL; gmposed mostly of metadiorite. ensely fractured 2 one. echanical fracture; 10 degrees; no staining; open aperture; rough surfechanical fracture; procession ostaining; tight aperture; rough surfechanical fracture; 10 degrees; no staining; tight aperture; rough surfechanical fracture; 10 degrees; no staining; tight aperture; rough surfalecovery; top of core potentially was decovery; top of core potentially was decovery.	reddish brown (5YR bund; little granule to rately weathered; hard; ranule to medium secondary ace. secondary secondary ice.	and sample retrieved.	(36.0 - 56.4 400 gallons of drilling flui added; 39 gallons of drilling flui recovered; gallons of water lost formation
						/	V				
48_				_							_
48⊥ .bbreviation	s: USC	S = Uni	fied S	Soil Classifi	catior	ı Syste	m, ft = feet, ba	s = below ground surface, ar	nsl = above mean :	sea level, GW =	

SA	RC	<u> ADI</u>	S			Bo	oring Log	<u> </u>		Sheet: 5 of	14
ate Start		03/08/2	2023			Surface	e Elevation:	520.26 ft amsl	Boring No	o.: <u>ER-03 P</u>	ilot
ate Com	pleted:	04/29/2	2023			Northir	ıg (NAD83):	2100908.17	_ Borning itte	<u>LIX 00 1</u>	<u></u>
rilling Co	.:	Casca	de			Easting	g (NAD83):	7616862.06	_ Client: PG&		
rilling Me	thod:	Roto-S	Sonic			Total D	epth:	163 ft bgs	_ Project: Final	GW Remedy Pl	nase 2A
rill Rig Ty	ype:	Truck I	Mounte	ed Sonic		Boreho	le Diameter:	6-12 inches	_ Location: <u>PG&</u>	E Topock, Need	les Califor
riller Nan	ne:	Matt A	rnold			Depth:	to First Water:	60.6 ft bgs			
rilling As	st:	D Hoe	ppner /	G Alvarado		Sonic [Orilling:	10 ft Core Barrel	_ Project Number	r: <u>30126255</u>	
.ogger:		SM/E	R/JA			Sampli	ng Interval:	Continuous	_ Bedrock Sampl	ing: 10 ft Core I	Barrel
ditor:		Sean N	<u> McGran</u>			Conve	ted to Well:				
Depth (ft)	Dril and Per	ling Run Average netration Rate	RQD (%)	Geologic Formation	USCS	USCS		Rock Description		Drilling Notes	Drilling Flu and Proper
		mins/ft	0.0	Weathered Bedrock - Conglomerate	NA		during coring.	decovery; top of core potentially wash			
.5354				Weathered Bedrock - Conglomerate	NA		medium pebbles weathered; hard granule to mediu	mentary Rock - Conglomerate; dark i coarse grained, subangular to subro clasts, angular to subangular; mode ; very intensely fractured; massive; re im pebble clasts composed mostly o	und; granule to erately to highly eacts with HCL; f metadiorite.		
.57		nins/ft	0.0	Weathered Bedrock - Conglomerate	NA		(ob-76 π) No Recoring.	covery; core potentially washed out b	ry arming hulus during	(56.0 - 76.0') Cored and flushed drill casing water. Core sample was drilled in two 10-foot runs without tripping out sample. (56.0 - 66.0') Approximately 2 feet of sample tagged inside of core barrel before advancing to approximately 76 feet bgs.	(56.0 - 76. 434 gallons drilling flu added; 40 gallons o drilling flu recovered; gallons o water lost formatior
	1					1	V				
								s = below ground surface, an esent depth to water (ft. bgs.)			

9	AR	CAD	IS			Вс	ring Log	9		She	et: 6 of	14
	Started						e Elevation:	520.26 ft amsl	Boring	No.:	ER-03 P	ilot
	-	ted: <u>04/29</u>					g (NAD83):	2100908.17				
Drilling		<u>Casca</u>					(NAD83):	7616862.06		PG&E	N Dl D	OA
_ ~	Metho			d Conio		Total D	eptn: le Diameter:	163 ft bgs	-		V Remedy P	
	g Type Name:			ed Sonic			to First Water:	6-12 inches	Location. I	FG&E I	ороск, меес	<u>lles California</u>
Drilling				G Alvarado		-	Orilling:	10 ft Core Barrel	_. Project Nu	ımber: 3	30126255	
Logge			ER / JA				ng Interval:	Continuous			: 10 ft Core	Barrel
Editor:			McGrar	ne		-	ted to Well:					
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	USCS	USCS Class		Rock Description			Drilling Notes	Drilling Fluid and Properties
6162636465666	0.0 in. 0.0%	2 mins/ft	0.0	Weathered			coring.		3	∇		
67 68 69 70 71	0.0 in. 0.0%	0.8 mins/ft	0.0	- Bedrock - Conglomerate	NA							

9	AR	CAD	IS			Во	ring Log	3		She	et: 7 of	14
Date S	Started	03/08/	2023			Surface	e Elevation:	520.26 ft amsl	Borino	ı No.:	ER-03 P	ilot
		ted: <u>04/29/</u>					g (NAD83):	2100908.17				<u></u>
Drilling		Casca				_	(NAD83):	7616862.06		PG&E		
Drilling						Total D	•	163 ft bgs	-		V Remedy Pl	
Drill Ri Driller				ed Sonic			le Diameter:	6-12 inches	_ Location: <u>I</u>	PG&E I	opock, Need	les California
Drilling				G Alvarado			to First Water:	10 ft Core Barrel	- ₋ Project Nu	mbor: 3	00126255	
Logge			R / JA	G Alvarauc		Sonic [ng Interval:	Continuous	-		: <u>10 ft Core I</u>	Rarrol
Editor:			McGrar	ne			ted to Well:	× Yes □ No	_ Deditock S	ampiing	. <u>10 it 00ic i</u>	Darroi
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate		Geologic Formation	USCS	USCS Class		Rock Description			Drilling Notes	Drilling Fluid and Properties
73 74 75 76	0.0 in. 0.0%	0.8 mins/ft	0.0	Weathered Bedrock - Conglomerate	NA		coring.	covery; core potentially washed out by	3		(76.0 - 96.0')	(76.0 - 96.0')
	50 in. 42%	1 mins/ft	13.0	Weathered Bedrock - Conglomerate	NA		during coring.	recovery, top or core potentially washe	u out by drilling	illuius	Cored and flushed drill casing with water. Core sample was drilled in two 10-foot runs without tripping out sample. Water recovery estimates may be high throughout log due to fluctuating pump rates. (76.0 - 79.0') Rough drilling. (79.0 - 96.0') Normal drilling.	for 3 gallons of drilling fluid added; 460 gallons of drilling fluid recovered; 110 gallons of water lost to formation.
82				Weathered Bedrock - Conglomerate	NA	× × × × × × × × × × × × × × × × × × ×	3/4); very fine to medium pebble weathered; hard granule to mediu	mentary Rock - Conglomerate; dark re coarse grained, subangular to subrour clasts, angular to subangular; moderat ; very intensely fractured; massive; rea um pebble clasts composed mostly of i	nd; little granule tely to highly acts with HCL;			

9	AR	CAD	S			Во	ring Lo	g		She	et: 8 of	14
	Started:					Surface	e Elevation:	520.26 ft amsl	Boring	:.oN c	ER-03 P	ilot
		ted: <u>04/29/</u>					g (NAD83):	2100908.17				
Drilling		Casca	de			Easting	(NAD83):	7616862.06		PG&E		
Drilling	Metho	od: Roto-S	Sonic			Total D	-	163 ft bgs	-		N Remedy Pl	
Drill Ri	ig Type	: <u>Truck</u>	Mounte	ed Sonic		Boreho	le Diameter:	6-12 inches	Location:	PG&E 1	<u> Fopock, Need</u>	<u>les California</u>
	Name:					Depth t	o First Water:	60.6 ft bgs				
Drilling	Asst:			G Alvarado		Sonic [-	10 ft Core Barrel	Project Nu			
Logge			R/JA			-	ng Interval:	Continuous	Bedrock S	Sampling	g: 10 ft Core	Barrel
Editor:			<u>McGrar</u> ∃			Conver	ted to Well:					
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	epoo SOSN	USCS Class		Rock Description			Drilling Notes	Drilling Fluid and Properties
85 86	50 in. 42%	1 mins/ft	13.0	Weathered Bedrock - Conglomerate	NA	× × × × × × × × × × × × × × × × × × ×	3/4); very fine to medium pebble weathered; hard granule to mediu (85.45-86 ft) Nat smooth surface.		nd; little granùl ely to highly cts with HCL; netadiorite. aining; tight ap	e to		
86878888909192939495	0.0 in. 0.0%	1.3 mins/ft	0.0	Weathered Bedrock - Conglomerate	NA			covery; potentially washed out by drillin	g fluids during			

9	AR	CADI	S			Вс	ring Lo	9	Sh	neet: 9 of	14
Date S	tarted:		2023				e Elevation:	520.26 ft amsl 2100908.17	Boring No.	: <u>ER-03 P</u>	ilot
Date C Drilling		Casca					g (NAD63). g (NAD83):	7616862.06	Client: <u>PG&E</u>		
Drilling						Total D		163 ft bgs	_ Project: <u>Final C</u>		hasa 2A
Drill Ri				ed Sonic			ole Diameter:	6-12 inches	Location: <u>PG&E</u>	-	
Driller I				od Corno			to First Water:		Location: 1 Cal	тороск, песс	iics Gaiiioiriia
Drilling				G Alvarado		Sonic [10 ft Core Barrel	Project Number:	30126255	
Logge		SM / E					ng Interval:	Continuous	Bedrock Samplir		Barrel
Editor:			<u> </u>			-	ted to Well:		_ Boarook Gampiii	.g. <u></u>	
Depth (ft)	Recovery	Drilling Run and Average Penetration	RQD (%)	Geologic Formation	USCS	USCS		Rock Description		Drilling Notes	Drilling Fluid and Properties
	24 in. 20%	1.4 mins/ft	0.0	Weathered Bedrock - Conglomerate	NA		during coring.	ecovery; top of core potentially washed		(96.0 - 116.0') Cored and flushed drill casing with water. Core sample was drilled in two 10-foot runs without tripping out sample.	(96.0 - 116.0') 440 gallons of drilling fluid added; 420 gallons of drilling fluid recovered; 20 gallons of water lost to formation.
105				Weathered Bedrock - Conglomerate	NA	× × × × × × × × × × × × × × × × × × ×	3/4); very fine to medium pebble weathered; hard granule to mediu	imentary Rock - Conglomerate; dark re coarse grained, subangular to subrour clasts, angular to subangular; moderat ; very intensely fractured; massive; rea um pebble clasts composed mostly of t	nd; little granules to tely to highly cits with HCL; metadiorite.		
107	15 in. 13%	1 mins/ft	0.0	Weathered Bedrock - Conglomerate	NA		(106-114.75 ft) N fluids during cori	lo Recovery; top of core potentially wa	shed out by drilling	(106.0 - 110.0') Hard drilling.	

9	AR	CAD	IS			Вс	ring Lo	g		She	et: 10 of	14
Date S		03/08/	/2023				e Elevation:	520.26 ft amsl	Borin	g No.:	ER-03 P	ilot
Date C Drilling		ted: <u>04/29/</u> <u>Casca</u>					ng (NAD83): g (NAD83):	2100908.17 7616862.06	_	PG&E		
Drilling						Total D		163 ft bgs			N Remedy Pl	nase 2A
Drill Ri				ed Sonic			ole Diameter:	6-12 inches	-		-	lles California
Driller						-	to First Water:	_				
Drilling Logge			eppner / ER / JA	G Alvarado		Sonic I	Orilling: ng Interval:	10 ft Core Barrel Continuous	-		30126255 g: 10 ft Core	Rarrel
Editor:			McGrar				rted to Well:	× Yes □ No	_ Dedition	Sampling	j. <u>10 it Cole</u>	Darrei
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate		Geologic Formation	USCS	USCS		Rock Description			Drilling Notes	Drilling Fluid and Properties
	15 in. 13%	1 mins/ft	0.0	Weathered Bedrock - Conglomerate Weathered Bedrock - Conglomerate	NA		(114.75-116 ft) Signal (119) (Sedimentary Rock - Conglomerate; dai ine to coarse grained, subangular to sium pebble clasts, angular to subangul; hard; very intensely fractured; mass um pebble clasts composed mostly of	rk reddish bro ubround; little ilar; moderate ive; reacts wit	wn vly to	(110.0 - 116.0') Normal drilling.	
116	0.0 in. 0.0%	1.1 mins/ft	0.0	Weathered Bedrock - Conglomerate	NA 3		L	Recovery; potentially washed out by dr	illing fluids du	rring	(116.0 - 136.0') Normal drilling, cored and flushed drill casing with water. Core sample was drilled in two 10-foot runs without tripping out sample.	(116.0 - 136.0') 496 gallons of drilling fluid added; 680 gallons of drilling fluid recovered; 184 gallons of formation water generated.
	dation.	. 11000	I I (C)	0-:101:6	4:	- 0	ft ft l	a = bolow ground surface am	-ll		- 11 0\\	

9	AR	CAD	IS			Вс	ring Log	g	SI	neet: 11 of	14
	Started						e Elevation:	520.26 ft amsl	Boring No.	.: ER-03 P	ilot
	-	ted: <u>04/29</u>					g (NAD83):	2100908.17		·	
Drilling		Casca					(NAD83):	7616862.06	Client: PG&E		
_ ~	Metho					Total D		163 ft bgs	•	GW Remedy Pl	
	ig Type			ed Sonic			le Diameter:	6-12 inches	Location: PG&E	Topock, Need	<u>lles California</u>
	Name:					-	to First Water:	_			
Drilling			• •	G Alvarado			Orilling:	10 ft Core Barrel	Project Number:		DI
Logge Editor:			R / JA McGrar			-	ng Interval: ted to Well:	Continuous	Bedrock Samplir	ng: <u>10 it Core</u>	Barrei
Luitor		Drilling Run	IVICOIAI				tou to vvoii.	N 103 110			
Depth (ft)	Recovery	and Average Penetration Rate	RQD (%)	Geologic Formation	Code	USCS Class		Rock Description		Drilling Notes	Drilling Fluid and Properties
	0.0 in. 0.0%	1.1 mins/ft	0.0	Weathered - Bedrock -	NA		coring.	Recovery; potentially washed out by dri			
127	0.0 in. 0.0%	1 mins/ft	0.0	Conglomerate							

9	AR	CADI	S			Во	ring Log	g		She	et: 12 of	14
Date S	Started	: 03/08/	2023		!	Surface	Elevation:	520.26 ft amsl	Boring N	No:	ER-03 P	ilot
Date 0	Comple	eted: 04/29/	2023			Northin	g (NAD83):	2100908.17	Doining i	10	<u> </u>	<u></u>
Drilling	g Co.:	<u>Casca</u>	de			Easting	(NAD83):	7616862.06		&E		
_	g Metho		<u>Sonic</u>			Total D	epth:	163 ft bgs	Project: Fin	al G\	N Remedy Pl	nase 2A
	ig Type			ed Sonic			le Diameter:	6-12 inches	Location: PG	&E 7	opock, Need	les California
	Name:					-	o First Water:	_	_			
Drilling				G Alvarado		Sonic D	-	10 ft Core Barrel	Project Number			
Logge			R/JA			-	ng Interval:	Continuous	Bedrock San	npling	j: <u>10 ft Core l</u>	<u> 3arrel</u>
Editor			<u>McGrar</u> □		 '	Conver	ted to Well:					
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	USCS	USCS		Rock Description			Drilling Notes	Drilling Fluid and Properties
133134135136	0.0 in. 0.0%	1 mins/ft	0.0	Weathered Bedrock - Conglomerate	NA ,		coring.	Recovery; potentially washed out by dril	3		(400.0	400 0 440 00
137 138 139 140 141 142	34 in. 28%	1.1 mins/ft	11.8	Weathered Bedrock - Conglomerate	NA		fluids during cor				(136.0 - 146.0') Cored and flushed drill casing with water. Core sample was drilled in two 10-foot runs without tripping out sample. (136.0 - 143.0') Normal drilling.	(136.0 - 146.0") 245 gallons of drilling fluid added; 320 gallons of drilling fluid recovered; 75 gallons of formation water generated.
143				Weathered Bedrock - Conglomerate Weathered Bedrock - Metadiorite	NA NA	× × × × × × × × × × × × × × × × × × ×	3/1), microcrysta slightly weathere thickness; iron o reacts with HCL (142.5-143 ft) Se and dark reddish	etamorphic Rock - Metadiorite; very dar alline to fine grained, subangular to sub ed; hard; very intensely fractured; mediu xide staining; calcium chlorite seconda ; NOTE: Metadiorite boulder within the edimentary Rock - Conglomerate; pinkis n brown (2.5YR 3/4); microcrystalline to ubround; highly weathered; hard; very in with HCL.	round; fresh to um-bedding ry mineralization, conglomerate. sh white (2.5YR 8 coarse grained.	/2)	(143.0 - 146.0') Hard drilling, potential metadiorite contact.	
<u>م ما ما</u> ۸		11000 - 1	1:6:1	Cail Classifi	+:	Custon	- ft - ft l	a - balaw ground gurfage ama	l — alaava maaa			

9	AR	CAD	IS			Во	ring Log	9		She	et: 13 of	14
	Started						e Elevation:	520.26 ft amsl	Borine	a No.:	ER-03 P	ilot
	-	eted: 04/29/					g (NAD83):	2100908.17				
Drilling		Casca					(NAD83):	<u>7616862.06</u>		PG&E		
_	Metho			ed Sonic		Total D	epth: le Diameter:	163 ft bgs 6-12 inches	-		V Remedy Pl	
	g Type Name:			eu Sonic			o First Water:		Location.	PG&E I	ороск, меео	<u>les California</u>
Drilling				G Alvarado		Sonic [10 ft Core Barrel	Project Nu	umber: 3	30126255	
Logge			R/JA				ng Interval:	Continuous	-		: 10 ft Core	Barrel
Editor:		<u>Sean</u>	McGrar	ne		Conver	ted to Well:					
Depth (ft)	Recovery	Drilling Run and Average Penetration Rate	RQD (%)	Geologic Formation	USCS	USCS Class		Rock Description			Drilling Notes	Drilling Fluid and Properties
145	34 in. 28%	1.1 mins/ft	11.8	Weathered Bedrock - Metadiorite	NA		3/1); microcrysta weathered; hard	amorphic Rock - Metadiorite; very dark alline to fine grained, subangular to sub ; very intensely fractured; massive; iror secondary mineralization, reacts with I	round; highly n oxide stainin	g;		
146147148149150151152153154	0.0 in. 0.0%	0.1 mins/ft	0.0	Weathered Bedrock - Metadiorite	NA		(146-156 ft) No I coring.	Recovery; potentially washed out by dri	lling fluids dur	ing	(146.0 - 163.0') Cored and flushed drill casing with water. Core sample was drilled in two 10-foot runs without tripping out sample. Hard drilling when advancing the 4-inch diameter core barrel, very hard when overdrilling 6-inch diameter drill casing. (153.0') Decrease in drilling water returns. The 6-inch diameter casing bcame	(146.0 - 163.0°) 741 gallons of drilling fluid added; 460 gallons of drilling fluid recovered; 281 gallons of water lost to formation.
155 											locked in the formation and could not be advanced further. The 4-inch diameter core barrel with the sample could not be	

9	AR	CA	DI	S			BC	oring Log	3		She	et: 14 of	14
	tarted:		3/08/2	_			Surface	e Elevation:	520.26 ft amsl	Rorin	u No .	ER-03 Pi	ilot
ate C	omple	ted: <u>0</u>	4/29/2	2023			Northin	ıg (NAD83):	2100908.17		g 1 1 0	<u> </u>	<u>110t</u>
Prilling	Co.:	<u>C</u>	ascac	de			Easting	(NAD83):	7616862.06	_ Client:	PG&E		
rilling	Metho	od: <u>R</u>	oto-S	onic			Total D	epth:	163 ft bgs	_ Project:	Final G\	N Remedy Ph	nase 2A
rill Ri	д Туре	e: <u>T</u>	ruck I	<u> Mounte</u>	d Sonic		Boreho	le Diameter:	6-12 inches	_ Location:	PG&E T	opock, Need	les Califor
riller 1	Name:	<u>N</u>	latt Ar	nold			Depth t	to First Water:	60.6 ft bgs	_			
rilling	Asst:	<u>D</u>	Hoep	opner /	G Alvarado		Sonic [Orilling:	10 ft Core Barrel	_ Project N	umber: 🤇	30126255	
.ogger	r:	<u>s</u>	M / E	R/JA			Sampli	ng Interval:	Continuous	_ Bedrock S	Sampling	: 10 ft Core I	Barrel
Editor:		<u>s</u>	ean N	<u>/IcGran</u>	е		Conver	ted to Well:					
Depth (ft)	Recovery	Drilling and Av Penetr Ra	erage ation	RQD (%)	Geologic Formation	USCS	USCS Class		Rock Description			Drilling Notes	Drilling Flu and Propert
					Weathered Bedrock - Metadiorite	NA		(156-159 ft) No Fifuids during cori	Recovery; top of core potentially washing.	ned out by drilling	g	retrieved. The 8-inch diameter casing was drilled to approximately 143 feet bgs to free 6-inch diameter casing on. Once the 6-inch diameter casing was free it was advanced to total depth and	
	48 in. 57%	0.9 min						3/1); microcrysta- highly weathered staining; calcium broken by drilling calcium chlorite staining; open at (159.3-159.31 ft); mineralization, rusurface; vugged. (159.5-159.52 ft); mineralization, rusurface; vugged. (159.69-159.72 ft); mineralization, rusurface; vugged. (161.75-161.95 ft)	Natural fracture; 180 degrees, calci- eacts with HCL; iron oxide staining; t t) Natural fracture; 30 degrees; calci- eacts with HCL; iron oxide staining; t t) Natural fracture; 45 degrees; calci-	ubround; moder sive; iron oxide eacts with HCL; ure; 35 degrees in HCL; iron oxidum chlorite secight aperture; roum chlorite secium chlorite s	very ; e onday ugh ondary ugh ondary ugh ondary	the core sample retireved on 4/27/23.	
163					Bedrock -	NA		(162-163 ft) Meta 3/1); microcrysta weathered; hard chlorite seconda competent core. (162.15-162.2 ft)	eacts with HCL; tight aperture; smoo amorphic Rock - Metadiorite; very da illine to fine grained, subangular to si ; slightly fractured; massive; iron oxic ry mineralization, reacts with HCL; N Natural fracture; 20 degrees; calciule eacts with HCL; open aperture; rougle	rk greenish gray ubround; slightly le staining; calc IOTE: section o m chlorite seco	y (5G y jum f ndary		
164_									Target Depth of 163 ft bgs.	. sadoo, vagge			
-													
165													
7													
166													
4													
167													
_167													
460													
.168⊥ lbbrev	/iations	s: USC	S = L	Jnified S	Soil Classifi	cation	Syster	n, ft = feet. bas	s = below ground surface, an	nsl = above r	nean sea	a level, GW =	
									esent depth to water (ft. bgs.)				durina dril
round	ıwal c ı.	,			i ia i ioliow k	JIGC W		ne manto repre	bacili depili lo walei (il. bua.i	ιιις αρρισλίι	nate stat	ic ilicasurca i	

ARU	4DI3)	Drilling Log					et: 1	of 9
ate Started:	04/26/202		Surface Elevation:	520	0.26 ft amsl	Boring	No:	ER-0	03 8-inch
ate Completed:	04/28/202	23	Northing (NAD83):	210	00908.17				70 0 111011
rilling Co.:	Cascade		Easting (NAD83):	<u>761</u>	16862.06	_ Client: <u> </u>	PG&E		
Orilling Method:	Roto-Son	ic	Total Depth:	<u> 163</u>	3.0 ft bgs	_ Project: <u> </u>	Final G\	N Rem	edy Phase 2A
rill Rig Type:	Truck Mo	unted S	onic Conductor Casing Diameter:	12	inches	_ Location: <u>I</u>	PG&E 1	Гороск	, Needles
riller Name:	Matt Arno	ld	Drill Casing Diameter:	<u>8 in</u>	nches		<u>Californ</u>	ia	
Orilling Asst:	D Hoeppr	ner / G A	Alvarado Drill Bit:	8-ir	nch cutting shoe	_ Project Nun	nber: 3	01262	55
ool-Pusher:	N/A		Depth to First Water:		6 ft bgs		_		
Rig Geologist:	Ellen Red	ner	•			_			
Drilling Dun	/ft)		Description	T					
Depth (ft) Drilling Run and Average Penetration F	ie Code	USCS Class	(See Pilot boring log for full geologic descriptions)		Drilling notes and observation for borehole in preparation f				Drilling Fluid
	GW	X.	(0-0.5 ft) Well graded gavel with sand (GW); brown (7.5YR 5/4) some strong brown (7.5YR		This "ER-03 8-inch" drilli	• •			
, ¬	NA		4/6).		intermediate reaming step borehole. Additional drill			a to	
- ' -	GW		(0.5-1 ft) Asphalt from old Route 66.		create the target design b			9 10	
	NA NA	××× ×××	(1-1.5 ft) Well graded gavel with sand (GW); yellowish red (5YR 5/6).	1	10.5-inches.				
_ 2		×××	(1.5-2.0 ft) Sedimentary Rock - Conglomerate;		(0.0 - 6.0') Soft drilling. The				
0.0 - 6.0) 0.17 mins/ft	NA	× × × × × × × × × × × × × × × × × × ×	reddish brown (5YR 4/4). (2-6 ft) Sedimentary Rock - Conglomerate; yellowish red (5YR 4/6).		was planned to be flushed prior to flushing the 8-inch diameter driver was not fur diameter casing was flushed casing.	diameter casing. ⁻ nctioning. Therefor	The 7-inc re, the 8-i	h nch	
. 7		X X X X X X X X X X X X X X X X X X X	(6-16 ft) Sedimentary Rock - Conglomerate; yellowish red (5YR 4/6).		(6.0 - 16.0') Soft drilling				(6.0 - 16.0") 368 gallons of wat used; 350 gallons water recovered; gallons of water to
12	NA NA	× × × × × × × × × × × × × × × × × × ×							
17 18 (16.0 - 36.0) 0.70 mins/ft	NA		(16-20.5 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.		(16.0 - 36.0') Soft drilling				(16.0 - 36.0') 170 gallons of wa used; 160 gallons water recovered; gallons of water lo
	SCS - Unif	ied Soil	Classification System, ft = feet, bgs =	belo	w ground surface, an	nsl = above me	an sea	level. (GW =
			hollow blue water table marks represer						

	<u> </u>	Λ Г	NC.			Drilling Log				Olesson		
	ARC					Drilling Log			_	Shee	t: 2	d of 9
Date S			26/202			Surface Elevation:		520.26 ft amsl	Borin	a No.:	ER-	03 8-inch
	completed:			:3		Northing (NAD83):		2100908.17				
Drilling 			scade			Easting (NAD83):		7616862.06	Client:	PG&E		
_			o-Soni			Total Depth:		163.0 ft bgs	Project:			medy Phase 2A
				unted S	sonic	Conductor Casing Diameter			Location:			k, Needles
Driller I Drilling			t Arno		Λ h randa	Drill Casing Diameter:		3 inches	- Droiget Nu	Californi		DEE
Tool-P		<u>И/А</u>		iei / G F	Alvarado	Depth to First Water:		3-inch cutting shoe 60.6 ft bgs	Project Nu		J 1202	200
			n Redi	ner		Converted to Well:	_	× Yes No	-			
9						Description	<u> </u>					
Depth	Drilling Run (and Average		USCS	USCS				Drilling notes and observati				Drilling Fluid
(ft)	Penetration Ř		Code	Class		(See Pilot boring log for full geologic descriptions)		borehole in preparation for	the installatio	n or the well		
			_ <u>NA</u> _	$\overline{\times} \overline{\times} \overline{\times}$	(20 5-26 ft) Sedimentary Rock - Conglomerate						
21				× × ×		red (5YR 4/6).	,					
-				× × × × × ×								
22				× × ×					1 h			
				× × × × × ×								
23			NA	× × ×								
			IVA	× × × × × ×								
24				× × × ×								
				× × × × × ×	(24 7 25 5	ft) Intensely fractured zone.						
25				× × ×	(24.7-25.5	it) intensely fractured zone.						
26		NA) No Recovery; top of core potential	у						
 27				× × ×	(26.3-36 ft	ut by drilling fluids during coring.) Sedimentary Rock - Conglomerate	 };					
				× × × ×	dark reddi	sh brown (5YR 3/4).						
	(16.0 - 36.0)			× × × × × ×								
20	0.70 mins/ft			× × ×	}							
29				× × × × × ×								
				× × × × × ×								
30				× × × × × ×								
				× × × ×								
31				× × × × × ×								
			NA	× × × ×								
32				× × × × × ×								
				× × ×								
33				× × × × × ×								
-				× × ×	1							
34				× × × × × ×								
-				× × ×								
35				X X X								
				× × × × × × × × ×								
36		$\dashv \vdash$		×××) No Recovery; top of core potentiall		(36.0 - 46.0') Soft drilling				(36.0 - 46.0')
<u> </u>				\ /	washed or	út by drilling fluids during coring.						267 gallons of water used; 180 gallons of
37				$ \setminus $								water recovered; 87 gallons of water lost
	(36.0 - 46.0)			\/								J
38	0.60 mins/ft		NA									
 39				/ \								
55				/ \								
 40				<u> </u>							_	
					01							0144

9	ARCADIS ate Started: 04/26/2023				Drill	ling Log					Shee	et: 3	of 9	
Date S	started:	04/20	6/202	3		Surface Eleva	ntion:	<u>52</u> (0.26 ft am	sl	Borine	a No :	ED	03 8-inch
Date C	completed:	04/2	8/202	3		Northing (NAI	D83):	210	00908.17		Domi	g 140	LIX	03 0-IIICII
Drilling	Co.:	Caso	ade			Easting (NAD	83):	<u>76</u> ′	16862.06		_ Client:	PG&E		
Drilling	Method:	Roto	-Soni	С		Total Depth:		<u>163</u>	3.0 ft bgs		Project:	Final G	W Rer	nedy Phase 2A
				unted S	Sonic		asing Diameter:				_ Location:			k, Needles
Driller I			<u>Arnol</u>			Drill Casing D	iameter:		nches		_	<u>Californ</u>		
Drilling			eppn	<u>er / G /</u>	Alvarado					g shoe	Project Nu	ımber: <u>3</u>	01262	255
		<u>N/A</u>				Depth to First			6 ft bgs		_			
Rig Ge	eologist:	<u> Ellen</u>	Redr	ner		Converted to	well:	×	Yes	No				
Depth	Drilling Run (JSCS	USCS		Description	on		Drilling not	tes and observat	ions for reamin	na to open t	he	
(ft)	and Average Penetration R	9 7	Code	Class		(See Pilot borin full geologic des	scriptions)			in preparation for				Drilling Fluid
				\ /		t) No Recovery; top ut by drilling fluids	p of core potentiall during coring.	у						
41				\ /		,g	g							
				$ \setminus $										
42				$ \ \ $										
			NA	X										
43	(36.0 - 46.0)			/\										
_	0.60 mins/ft			/ \										
44				/ \										
				/ \										
45						t) Sedimentary Ro	ck - Conglomerate	;-						
			NA	× × × × × ×		ft) Intensely fract								
46		- 		<u> </u>	1/46 52 5 f	t) No Pocovery: to	p of core potentiall		(46.0 56.0)) Soft drilling				(46.0 - 56.0')
				\ /		ut by drilling fluids			(40.0 - 30.0) Soit drilling				136 gallons of water
47				\ /										used; 90 gallons of water recovered; 46
				\										gallons of water lost
48				\										
				\										
49			NA	V										
			INA	\land										
50				/\										
	(40.0 50.0)			/ \										
51	(46.0 - 56.0) 0.60 mins/ft				ì									
				/ \										
52				/ \	V									
 53			1	× × × ×	(52.5-56 f	t) Sedimentary Ro	ck - Conglomerate	;-						
55				\times \times \times	dark redd	ish brown (5YR 3/4	4).							
54				× × × × × ×										
			NA	\times \times \times	}									
 55				× × × × × ×										
				\times \times \times										
56				× × × × × ×	<u>l</u>									
				\/		No Recovery; core	e potentially washe oring.	d] [(56.0 - 66.0') Soft drilling				(56.0 - 66.0') 155 gallons of water
57				\ /	'	Jg v	J							used; 130 gallons of water recovered; 25
				\ /										gallons of water lost
58	58_ (56.0 - 66.0) NA		NA	\ \ \										
	0.60 mins/ft			\setminus										
59				/ \										
				/ \										
60	. ,			/ \	V	" O :	<u> </u>							

9	ARC	$\Delta \Gamma$)IS			Drilling L	og			Shee	et: 4	of 9
			6/202			Surface Elevation:		520.26 ft amsl	Porin	~ No :	ED	02 0 inch
	Completed:					Northing (NAD83):		2100908.17	Poring	g No.:	EK-	<u>03 8-inch</u>
Drilling	-	Caso				Easting (NAD83):		7616862.06	Client:	PG&E		
_			-Soni			Total Depth:		163.0 ft bgs	- _ Project:		N Rer	nedy Phase 2A
_				ınted S	onic	_ _Conductor Casing Diam		_	Location:			k, Needles
Driller			Arnol			_Drill Casing Diameter:		8 inches	_	Californ		
Drilling					Alvarado	_Drill Bit:		8-inch cutting shoe	_ Project Nu	ımber: 3	01262	255
Tool-P	usher:	N/A				Depth to First Water:		60.6 ft bgs	_	_		
Rig Ge	eologist:	Eller	n Redr	ner		Converted to Well:		× Yes No				
	Drilling Dun	(£1)				Description						
Depth (ft)	Drilling Run (and Average	e	USCS Code	USCS Class		(See Pilot boring log for		Drilling notes and observation for borehole in preparation for	ions for reamir	ng to open t	he II	Drilling Fluid
(11)	Penetration R	ate	Code	Olass		full geologic descriptions)		borefiole in preparation to	i tile iristaliatio	ii oi tile we	"	
						No Recovery; core potentially valing fluids during coring.	washed					
61					out by uni	iling ilulus during config.		¥				
01												
62								$ \Psi $				
02				1								
 63	(56.0 - 66.0)											
05	0.60 mins/ft											
64				1 1								
0-												
65				11								
05												
66												
00								(66.0 - 76.0') Normal drilling				(66.0 - 76.0')
 67				\								143 gallons of water used; 100 gallons of
0/				V								water recovered; 43 gallons of water lost
 68												
00			NA									
 69				Λ								
09				Λ								
70				\mathbb{N}								
	(66.0 - 76.0)											
	0.60 mins/ft											
				1 \								
73												
74												
/3												
		7		<u> </u>	(76-81.8 f	t) No Recovery; top of core pot ut by drilling fluids during corin	entially	(76.0 - 86.0') Normal drilling	1			(76.0 - 86.0')
				\ /	wasned 0	ut by anning halas during corin	y.					204 gallons of water used; 130 gallons of
				\ /								water recovered; 74 gallons of water lost
70	(76.0 - 86.0)			\/								-
78	0.70 mins/ft		NA	X								
 79				/\								
/9				/ \								
 80				/ \								
					OI .c			1			- +	014/

9	ARC	ADI	S		Drilling Log				Sheet	t: 5	5 of 9
		04/26/			Surface Elevation:	52	20.26 ft amsl	Davis	. Na .		00 0 in ab
	Completed:				Northing (NAD83):		100908.17	Boring	3 NO.:	EK.	<u>-03 8-inch</u>
Drilling	•	Casca			Easting (NAD83):		616862.06	Client:	PG&E		
_		Roto-S			Total Depth:		63.0 ft bgs	Project:	Final GV	V Re	medy Phase 2A
_		Truck		ted S			_	•			k, Needles
Driller		Matt A	rnold		Drill Casing Diameter:		inches		California	a	
Drilling	Asst:	D Hoe	ppner	/ G /	Alvarado Drill Bit:	8-	inch cutting shoe	Project Nu	ımber: <u>30</u>	126	255
Tool-P	usher:	N/A			Depth to First Water:	<u>60</u>	0.6 ft bgs				
Rig Ge	eologist:	Ellen F	Redne	r	Converted to Well:	×	Yes No				
	Drilling Run (ft)			Description						
Depth (ft)	and Average	e 03		SCS	(See Pilot boring log for		Drilling notes and observation borehole in preparation for				Drilling Fluid
(1-7)	Penetration R	ate			full geologic descriptions)					-	
					(76-81.8 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.	′					
81		l N	A `	\bigvee	washed out by anning naide daring coming.						
82		1	$-\frac{1}{2}$	$\frac{\times \times}{}$	(81.8-86 ft) Sedimentary Rock - Conglomerate;	4					
			l ×	× × × × × ×	dark reddish brown (5YR 3/4).						
83	(76.0 - 86.0)		×	× × × ×	*						
	0.70 mins/ft		l×	× × × ×							
84		N	, ×	× ×							
			×	× × × ×							
			×	× × × ×							
00			l v	Y Y)						
86			×	× × × × × × × ×							
00		1 -	-		(86-96 ft) No Recovery; potentially washed out be drilling fluids during coring.	by	(86.0 - 92.0') Normal drilling				(86.0 - 92.0') 219 gallons of water
87					drilling lidius during cornig.						used; 165 gallons of
0/											water recovered; 54 gallons of water lost
 88											
00											
 89			\								
03				1							
90				\							
30				\mathbf{M}							
 91	(86.0 - 96.0)			V							
31	0.80 mins/ft	l N	A	Å							
				Λ	*						
52				$/ \setminus$			(92.0 - 96.0') Soft drilling				
93				/ \							
33			- 17								
94			- 17								
54			- 17								
 95			Ш	\							
33			V	\							
 96											
90		-	-		(96-104 ft) No Recovery; top of core potentially	ᅥ	(96.0 - 106.0') Normal drilling	J			(96.0 - 106.0')
 97			\	/	washed out by drilling fluids during coring.						167 gallons of water used; 180 gallons of
91			\	(/							water recovered; 13 gallons of water gained
00	(96.0 - 106.0)			\bigvee							5 ga
98	mins/ft	' N	A	X							
-				/ \							
99			/	\							
100			/	\							
100	riotiona: IIC	200 - 1	lpified	Cail	Classification System ft - feet has -	hal	our ground ourfood amo	l – obovo n		امراما	C\M -

Pate Started: 04/26/2023					Drilling Lo	og				Shee	et: 6	of 9	
Date S	Started:	04/2	6/202	:3		Surface Elevation:		520.26 ft a	amsl	Borine	n No :	ED	-03 8-inch
Date C	Completed:	04/2	8/202	:3		Northing (NAD83):		<u>2100908.</u>	17	_ DOI III	J 140	<u>LIV</u>	-03 0-IIICII
Drilling	Co.:	Caso	cade			Easting (NAD83):		7616862.0)6	_ Client:	PG&E		
Drilling	Method:	Roto	o-Soni	ic		Total Depth:		163.0 ft bo	<u>js</u>	_ Project:	Final G	W Rei	medy Phase 2A
	• • •			unted S	Sonic	Conductor Casing Diam				_ Location:		-	k, Needles
			Arnol			Drill Casing Diameter:		8 inches		<u>California</u>			
Drilling				<u>ier / G /</u>	<u>Alvarado</u>				ing shoe	_ Project Nu	ımber: <u>3</u>	01262	255
		<u>N/A</u>				Depth to First Water:		60.6 ft bgs	_	-			
Rig Ge	eologist:	Eller	Redi	ner	1	Converted to Well:		× Yes	No				
Depth	Drilling Run (USCS	USCS		Description		Drilling	notes and observat	ions for reamir	ıa to open t	he	
(ft)	and Average Penetration R	e .	Code	Class		(See Pilot boring log for full geologic descriptions)			le in preparation fo				Drilling Fluid
				\ /) No Recovery; top of core poter ut by drilling fluids during coring							
101				$ \setminus $									
				$ \setminus /$									
102			NA							No			
				/\									
103	(96.0 - 106.0) mins/ft			/ \									
	111113/11			/ \									
104		-		/ ×	3(104-106	ft) Sedimentary Rock - Conglon							
				× × × × × ×	dark redd	ish brown (5YR 3/4).	iciato,						
105			NA	× × × × × ×									
-				× × × × × ×	}								
106		┧┝		× × × .	} /(106-114.	75 ft) No Recovery; top of core	-4	(106.0 - 1	116.0') Normal drilli	ng			(106.0 - 116.0')
				\		washed out by drilling fluids du	uring		,	3			242 gallons of water used; 170 gallons of
107				\	ooring.								water recovered; 72 gallons of water lost
				\									galloris of water lost
108				$ \setminus $									
				$ \setminus $									
109				$ \setminus $									
110				$ \ \ $									
110			NA	V									
 111_	(106.0 - 116.0		INA	1									
	1.00 mins/ft	$ \cdot $		/\									
112				/ \		•							
113													
_114				/									
_				1	\								
115		1		× × × ×		16 ft) Sedimentary Rock -							
			NA	× × × × × ×	Conglome	erate; dark reddish brown (5YR	3/4).						
116		J L		$\times \times $	1, 10, 10		<u></u>	(1100	100 00 11				(440.0400.0))
<u> </u>				\ /		ft) No Recovery; potentially was fluids during coring.	ned ou	(116.0 - 1	l26.0') Normal drilli	ng			(116.0 - 126.0') 257 gallons of water
_117				$ \setminus /$									used; 220 gallons of water recovered; 37
				$ \setminus /$									gallons of water lost
118	(116.0 - 126.0 0.70 mins/ft)	NA										
	U. / U IIIIIIS/II			/\									
119				/ \									
<u> </u>				/ \									
120				<u>/</u>	<u> </u>			<u> </u>					011

		_										
9	ARC	٩D)IS			Drilling Log	9			Shee	et: 7	of 9
Date S	Started:	04/26	6/202	3		Surface Elevation:		520.26 ft amsl	Borin	u No .	FR.	<u>03 8-inch</u>
Date C	Completed:	04/28	8/202	3		Northing (NAD83):		2100908.17	_ Boiling	9 110	<u></u>	-00 0-IIICII
Drilling	Co.:	Casc	ade			Easting (NAD83):		7616862.06	_ Client:	PG&E		
_	Method:		-Soni			Total Depth:		163.0 ft bgs	_ Project:			medy Phase 2A
	g Type:			<u>ınted S</u>	onic	Conductor Casing Diameter			_ Location:			k, Needles
	Name:		Arnol			Drill Casing Diameter:		8 inches	-	<u>Californ</u>		
Drilling			eppn	er / G <i>A</i>	<u>Alvarado</u>	Drill Bit:		8-inch cutting shoe	_ Project Nu	umber: <u>3</u>	01262	255
	usher:	N/A	Dl-			Depth to First Water:		60.6 ft bgs	-			
Rig Ge	eologist:	Lilen	Redr	ner	I	Converted to Well:	Į	× Yes No				
Depth	Drilling Run		JSCS	USCS		Description		Drilling notes and observat	ions for reamir	na to open t	the	
(ft)	and Averag Penetration R	e 6	Code	Class		(See Pilot boring log for full geologic descriptions)		borehole in preparation fo				Drilling Fluid
					(116-136 by drilling	ft) No Recovery; potentially washe fluids during coring.	d out	t				
121												
400									0-			
122				1 /								
400	(116.0 - 126.0											
123	0.70 mins/ft	'		1 /								
 124												
124									·			
125				1/								
126		_					A	(126.0 - 136.0') Soft drilling				(126.0 - 136.0')
							V	(.200 10010) 5611 4111111119				100 gallons of water used; 70 gallons of
127				V								water recovered; 30 gallons of water lost
 128				V								· ·
			NA	1								
129				Λ								
				\mathbb{N}								
_130				I								
131	(126.0 - 136.0 0.40 mins/ft)										
	0.40 mins/it			11								
132												
133				1								
-												
134												
135												
_136		JL.										
				\		ft) No Recovery; top of core potent ut by drilling fluids during coring.	ially	(136.0 - 143.0') Normal drilli after advancing the 9-inch d	ng. Tripped ou iameter drill ca	it 8-inch cas ising to	sing	(136.0 - 143.0') 148 gallons of water
137				\ /		, 5 5		approximately 146 feet bgs.		3		used; 160 gallons of water recovered; 12
<u> </u>				\ /								gallons of water gained
138	(136.0 - 143.0 1.14 mins/ft)	NA	X								
<u> </u>	1.14 ΠΠS/π			$/ \setminus$								
_139				/ \								
<u> </u>				/ \								
140				/ \	OI :			11				0111

9	ARC/	\DIS		Drilling Log				Sheet:	8 of 9
Date S		04/26/202	20	Surface Elevation:	<u>52</u>	20.26 ft amsl	Boring	n No · FF	R-03 8-inch
Date C	ompleted:	04/28/202	23	Northing (NAD83):	21	100908.17		, <u></u>	(00 0 mon
Drilling	Co.:	<u>Cascade</u>		Easting (NAD83):	<u>76</u>	616862.06	Client:	PG&E	
_		Roto-Son		Total Depth:		63.0 ft bgs	Project:		emedy Phase 2A
_		Truck Mo		<u> </u>			Location:	PG&E Topo	ock, Needles
Driller N		Matt Arno		Drill Casing Diameter:		inches		<u>California</u>	
Drilling			<u>ner / G /</u>	<u> Alvarado</u> Drill Bit:		inch cutting shoe	Project Nu	ımber: <u>3012</u>	6255
Tool-P		<u>N/A</u>		Depth to First Water:).6 ft bgs			
Rig Ge	ologist:	Ellen Red	ner	Converted to Well:	×	Yes No			
Depth	Drilling Run (ft) USCS	USCS	Description		Drilling notes and observation	one for reamin	a to open the	
/ft\	and Average Penetration Ra	Codo	Class	(See Pilot boring log for full geologic descriptions)		borehole in preparation for			Drilling Fluid
 141		NA NA		(136-142 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.	У				
 142	(136.0 - 143.0 1.14 mins/ft						0		
 143		NA	× × × × × × × × × × × × × × × × × × ×	(142-142.5 ft) Metamorphic Rock - Metadiorite; very dark greenish gray (5G 3/1). (142.5-143 ft) Sedimentary Rock - Conglomerate; pinkish white (2.5YR 8/2) and		.0			
_				dark reddish brown (2.5YR 3/4).	_/				
_144			\simeq	(143-146 ft) Metamorphic Rock - Metadiorite; very dark greenish gray (5G 3/1).					
-		NA NA				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
145				- -					
-			\approx		1				
146				(146-156 ft) No Recovery; potentially washed or		(146.0 - 156.0') Hard drilling.	Drilled with 8-	inch diameter	(146.0 - 156.0')
147	(143.0 - 156.0 1.15 mins/ft) NA		by drilling fluids during coring.		core barrel.			598 gallons of water used; 220 gallons of water recovered; 378 gallons of water lost
156 157 158 	(156.0 - 163.0 1.86 mins/ft	NA		(156-159 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.	y	(156.0 - 163.0') Hard drilling. core barrel.	Drilled with 8-	inch diameter	(156.0 - 163.0') 165 gallons of water used; 40 gallons of water recovered; 125 gallons of water lost
 _160		NA		(159-162 ft) Metamorphic Rock - Metadiorite: very dark greenish gray (5G 3/1).					

9	ARC	ADIS	5	Drilling Log			Shee	et: 9 of	9
Date S	Started:	04/26/20		Surface Elevation:	520.26 ft amsl	Porine	n Na ·	ER-03 8	inch
Date C	Completed:	04/28/20	23	Northing (NAD83):	2100908.17	DOLLI	J NO	EK-03 0	-IIICII
Drilling	•	Cascade		Easting (NAD83):	7616862.06	Client:	PG&E		
_	Method:	Roto-Sor		Total Depth:	163.0 ft bgs	Project:	Final G	W Remedy	Phase 2A
_	g Type:	Truck Mo			_	Location:		Topock, Ne	
	Name:	Matt Arno		 Drill Casing Diameter:	8 inches	•	Californ	-	
Drilling				Alvarado Drill Bit:	8-inch cutting shoe	Project Nu			
_	usher:	N/A		Depth to First Water:	60.6 ft bgs		<u>s</u>	0.20200	
	eologist:	Ellen Red	dner	Converted to Well:	× Yes No	-			
9			1	1	T 100 L 110				
Depth	Drilling Run			Description	Drilling notes and observati				rilling Fluid
(ft)	and Averag Penetration R	Rate Code	Class	(See Pilot boring log for full geologic descriptions)	borehole in preparation for	the installation	n of the we	II. D	rilling Fluid
				(159-162 ft) Metamorphic Rock - Metadiorite:					
			\sim	very dark greenish gray (5G 3/1).					
161		l NA	\sim	-					
	(156.0 - 163.0))							
162	1.86 mins/ft								
		NIA		(162-163 ft) Metamorphic Rock - Metadiorite; very dark greenish gray (5G 3/1).					
 163		NA NA	\sim	very dark greenish gray (30 3/1).					
100				End of Boring at Target Depth of 163 ft bgs.					
- _164									
_104						•			
_165									
-									
_166									
_									
_167									
_168									
 169									
_109									
_170									
_171									
172									
_173									
174									
' / ~									
475									
_175									
_176									
_177									
178									
170									
179									
180		200 - 11	:E: ~1 O - ''	Classification System ft - fact has -	holow ground ourfood amo			lovol CW -	

Date Starter	9	ARC/	/DI	5		Drilling Log				Sheet	t: 1	of 8
Thirding Co.: Gascade Easing (NADBS): Total Depth Total Reg Type: Diller Name: D	Date S	started:	04/27/2	023		Surface Elevation:	<u>5</u>	20.26 ft amsl	Borin	a No :	FD.	Ո3 Գ₋inch
Drilling Method: Rote-Senice Truck Mounted Sonic. Conductor Casing Diameter. Driller Name: Matt Arnold Drill Casing Diameter. Drilling Aste: Driller Name: NA Depth to First Water. Rog Geologist: Depth Senior Name: Depth Senior Name: Depth to First Water. Depth	Date C	completed:	04/29/2	023		Northing (NAD83):	2	100908.17	Боги	g 140	<u> </u>	<u>.03 9-111C11</u>
Driller Name: Drilling Asst: Drillin	Drilling	Co.:	Cascad	e		Easting (NAD83):	7	616862.06	Client:	PG&E		
Driller Name: Matt Armold Drill Casing Diameter: Short and Drill Research Drill Casing Diameter: Short Armold Drill Casing Diameter: Short Armold Shor	Drilling	Method:	Roto-Sc	nic		_Total Depth:	1	57.0 ft bgs				•
Deling Asset: D. Hoeppeer J. G. Alvardado Drill Bit. Rig Geologist: Ellen Redmer Converted to Well: S. No.	Drill Ri	g Type:	Truck M	lounted S	Sonic	Conductor Casing Diameter	: <u>1</u>	2 inches	Location:		-	k, Needles
Cool-Publisher NA						_			-			
Page Depth Printing Faun (ft) Pr	_			pner / G	<u>Alvarado</u>				Project No	umber: <u>30</u>	1262	255
Description Grid (fig. 2) Description Grid Average Permitterior Rule Octob Class Octob Class Octob						· · · · · · · · · · · · · · · · · · ·						
Depth Code	Rig Ge	eologist:	Ellen Re	edner			<u> ×</u>	Yes No				
Na		and Average				(See Pilot boring log for						Drilling Fluid
A			GW		(0-0.5 ft)	Well graded gavel with sand (GW);		· ·				
Section Sect	1		NA		(4/6).		$\perp \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$					
NA	_ ' _		GW				#/			•		
3 (00 - 6.0) (0.17 minorit) NA NA (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sellowish red (5/R 4/6). (6-16 t) Sedimentary Rock - Conglomerate: Sedimentary Rock - Co	2		NA	× × ×	yellowish	red (5YR 5/6).	\perp	(0.0 - 6.0') Soft drilling				
3				X X X	(1.5-2.0 ft reddish b	 Sedimentary Rock - Conglomerate rown (5YR 4/4). 	: /					
- 4		(0.0 - 6.0)		$\times \times \times$			Τ					
A	_ 3 _			$\times \times \times$	yellowish	rea (51R 4/6).						
NA				$\times \times \times$	}							
5	_ 4 _		NA	× × ×	}				•			
(6.0 - 16.0) (7 - 10												
10	_ o _			x x x x x								
10				× × ×	}							
7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	_ o _			X X X X X X X X X X X				(6.0 - 16.0') Soft drilling				
gallons of water lost 8				$\times \times \times$	yellowish	red (5YR 4/6).	Y					
8 - 8 - 9 - 10 - 10 - 10 - 10 - 10 - 10 - 10	- ' -			$\times \times \times$	}							
				$\times \times \times$								gamente et trater teet
9	8			× × × ×	}							
				X X X	}							
10	_ 9 _			$\times \times \times$								
				× × ×	}							
	10			× × ×								
		(6.0. 46.0)										
	-''-		NA NA	× × ×	}							
				× × ×								
	12				}							
15				× × ×	}							
15	13											
15				× × × ×	}							
15	14			× × ×								
16				x x x x x	}							
17	15			× × ×	}							
17				× × ×	}							
1718 (16.0 - 26.0)1920	16		1	- 			y	(16.0 - 26.0') Soft drilling				
18				\ /	/ washed o	ut by drilling fluids during coring.						
18 (16.0 - 26.0)	L1/_			$ \setminus $								water recovered; 28
0.20 mins/ft NA	- 10	(16.0 00.0)		\/								James of Hatol look
	18		NA NA	X								
				/ \								
	19			/ \								
				/ '	V							
		viations: US	CS = U	nified Soi	ı I Classific	cation System. ft = feet. bas =	be	low ground surface, ams	sl = above n	nean sea l	level	GW =

9	ARC	ADIS	3	Drilling Log		Shee	: 2 of 8
		04/27/20		Surface Elevation:	520.26 ft amsl	Daving No.	ED 02 0 inch
	Completed:			Northing (NAD83):	2100908.17	Boring No.:	ER-03 9-inch
Drilling	•	Cascade		Easting (NAD83):	7616862.06	- Client: <u>PG&E</u>	
_		Roto-So		Total Depth:	157.0 ft bgs	_	V Remedy Phase 2A
_		Truck Me			_	Location: PG&E T	•
Driller I		Matt Arn		Drill Casing Diameter:	9 inches	<u>Californi</u>	•
Drilling				Alvarado Drill Bit:	9-inch cutting shoe	Project Number: 30	
_		<u>N/A</u>		Depth to First Water:	60.6 ft bgs		
Rig Ge	eologist:	Ellen Re	dner	Converted to Well:	× Yes No		
	Drilling Pun	(ft)		Description			
Depth (ft)	Drilling Run (and Average	e Code		(See Pilot boring log for	Drilling notes and observati borehole in preparation for		
(11)	Penetration R	ate Code	Oldos	full geologic descriptions)	boreriole in preparation for	the instandation of the wen	
		NA					
21			X X X	(20.5-26 ft) Sedimentary Rock - Conglomerate; yellowish red (5YR 4/6).			
			× × × × × ×	(
22			× × × ×	1			
			× × ×				
23	(16.0 - 26.0)		× × × × × ×				
	0.20 mins/ft	NA	× × × ×				
24			× × ×				
			× × × × × ×				
25			$\times \times \times$	(24.7-25.5 ft) Intensely fractured zone.			
25							
20		NA NA		(26-26.3 ft) No Recovery; top of core potentially	(26.0 - 36.0') Normal drilling		(26.0 - 36.0') 84 gallons of water
 27				washed out by drilling fluids during coring. (26.3-36 ft) Sedimentary Rock - Conglomerate;	4		used; 65 gallons of
21				dark reddish brown (5YR 3/4).			water recovered; 19 gallons of water lost
			$\times \times \times$				
28			× × × × × ×				
			× × × ×				
29			× × × × × ×				
			× × ×				
30			× × × ×				
	(00.0.00.0)		X				
31	(26.0 - 36.0) 0.40 mins/ft	NA NA	× × × × × ×				
			× × ×				
32			× × × × × ×				
33			× × × ×	1			
			× × ×				
34			× × × × × ×				
			× × × ×				
35			× × ×				
			× × × × × ×				
36		⊣ 	. 	(36-44.7 ft) No Recovery; top of core potentially	(36.0 - 46.0') Soft drilling		(36.0 - 46.0')
-			\ /	washed out by drilling fluids during coring.	10.0) con drining		87 gallons of water
37			$ \setminus $				used; 35 gallons of water recovered; 52
-			$ \setminus $				gallons of water lost
38	(36.0 - 46.0) 0.20 mins/ft	NA	X				
<u> </u>	0.20 mms/ft		/\				
39			/ \				
<u> </u>			/ \				
40			<u>}</u>	Classification System ft = fact has =	a a la composition of the compos	al — ala av - · · · ·	level CVV =

9	ARC	ADIS	•	Drilling Log			Sheet:	3 of 8
		04/27/202		Surface Elevation:	520.26 ft amsl	Davina	.Na. ED	02 0 inch
	completed:			Northing (NAD83):	2100908.17	Boriné	JNO.: ER	<u>-03 9-inch</u>
Drilling	•	Cascade		Easting (NAD83):	7616862.06	Client:	PG&E	
_		Roto-Son	ic	Total Depth:	157.0 ft bgs	_ Project:		emedy Phase 2A
_		Truck Mo			•	•	PG&E Topo	•
Driller I		Matt Arno		Drill Casing Diameter:	9 inches	_	California	,
Drilling				Alvarado Drill Bit:	9-inch cutting shoe	- Proiect Nu	mber: 30126	255
_		N/A		Depth to First Water:	60.6 ft bgs	- , -		
Rig Ge	eologist:	Ellen Red	ner	Converted to Well:	X Yes No			
	Drilling Dun	(ft)		Description				
Depth (ft)	Drilling Run (and Average	e Code	USCS Class	(See Pilot boring log for	Drilling notes and observat borehole in preparation fo			Drilling Fluid
(11)	Penetration R	ate Code	Olass	full geologic descriptions)	boronoic in preparation to	i trio iristandioi	TOT THE WOIL	
41 42 43 44 45 46	(36.0 - 46.0) 0.20 mins/ft	NA NA NA	× × × × × × × × × × × × × × × × × × ×	(36-44.7 ft) No Recovery; top of core potentially washed out by drilling fluids during coring. (44.7-46 ft) Sedimentary Rock - Conglomerate; dark reddish brown (5YR 3/4). (44.8-45.4 ft) Intensely fractured zone. (46-52.5 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.	(46.0 - 56.0') Soft drilling	3		(46.0 - 56.0') 34 gallons of water
47	(46.0 - 56.0) 0.20 mins/ft	NA		(52.5-56 ft) Sedimentary Rock - Conglomerate; dark reddish brown (5YR 3/4).				34 gallons of water used; 20 gallons of water recovered; 14 gallons of water lost
545556575859	(56.0 - 66.0) 0.20 mins/ft	NA NA	× × × × × × × × × × × × × × × × × × ×	(56-76 ft) No Recovery; core potentially washed out by drilling fluids during coring.	(56.0 - 66.0') Soft drilling			(56.0 - 66.0') 34 gallons of water used; 30 gallons of water recovered; 4 gallons of water lost
60				Classification System # - feet has -				

9	ARC	ΔC	SIC			Drilling	g Log			She	et: 4	1 of 8
			27/202			Surface Elevation:		520.26 ft amsl	Dorin	a Na i	ED	02 0 inch
	Completed:					- _Northing (NAD83):	:	2100908.17	БОП	ig ivo.:	<u>EK</u>	<u>-03 9-inch</u>
Drilling	-		cade			Easting (NAD83):		7616862.06	Client:	PG&E		
Drilling	Method:	Rote	<u>o-Soni</u>	С		Total Depth:		157.0 ft bgs	Project:	Final G	W Re	medy Phase 2A
Drill Ri	g Type:	Truc	ck Mou	unted S	onic	Conductor Casing	Diameter:	12 inches	Location:	PG&E	Topod	k, Needles
		<u>Mat</u>	t Arnol	d		Drill Casing Diame	ter:	9 inches		<u>Californ</u>	<u>iia</u>	
Drilling				<u>er / G /</u>	Alvarado	Drill Bit:		9-inch cutting shoe	Project N	umber: 3	301262	255
		N/A				Depth to First Wat		60.6 ft bgs				
Rig Ge	eologist:	Elle	n Redr	ner		Converted to Well:		× Yes No				
Donth	Drilling Run ((ft)	USCS	USCS		Description		Drilling notes and she	anyatiana far raam	ing to onen	tha	
Depth (ft)	and Average Penetration R	e	Code	Class		(See Pilot boring log	for	Drilling notes and obso	on for the installati	on of the we	ell.	Drilling Fluid
	Chenanon					full geologic description	•					
						No Recovery; core poter ling fluids during coring.	ntially washed					
61												
62												
63	(56.0 - 66.0)											
	0.20 mins/ft											
64												
L -												
65												
66		4						(66.0 - 76.0') Soft drillin	ng .			(66.0 - 76.0')
								(00.0 - 70.0) Soit drillin	ıy			39 gallons of water
67												used; 30 gallons of water recovered; 9
				V								gallons of water lost
68			NA									
				1								
69												
							•					
70												
71	(66.0 - 76.0) 0.20 mins/ft											
	0.20											
72												
73												
-												
74												
-												
75												
76		┨┝		 -	(76-81.8 f	t) No Recovery; top of co	ore potentially	(76.0 - 86.0') Normal dr	rillina			(76.0 - 86.0')
				\ /	washed o	ut by drilling fluids during	g coring.		5			142 gallons of water used; 50 gallons of
77				$ \setminus / $								water recovered; 92
-				\setminus								gallons of water lost
78	(76.0 - 86.0) 0.40 mins/ft		NA	X								
				/\								
79				/ \								
				/ \								
80				/ \	V				 			014/

9	ARC	ADI	S		Drilling Log				Sheet:	: 5	of 8
		04/27/2			Surface Elevation:	52	20.26 ft amsl	Davis	. Na . I)2 0 in ab
	Completed:				Northing (NAD83):		100908.17	Boriné	J NO.: 1	EK-U	<u> 9-inch</u>
Drilling	•	Casca			Easting (NAD83):		316862.06	Client:	PG&E		
_		Roto-S	Sonic		Total Depth:	<u>15</u>	57.0 ft bgs	Project:	Final GW	Rem	edy Phase 2A
Drill Ri	g Type:	Truck	Mounte	d Soni	c Conductor Casing Diameter:	12	2 inches	Location:	PG&E To	pock	, Needles
Driller I	Name:	Matt A	rnold		Drill Casing Diameter:	<u>9</u> i	inches		California	1	
Drilling	Asst:	D Hoe	opner /	G Alva	<u>rado</u> Drill Bit:	9-	inch cutting shoe	Project Nu	ımber: <u>30</u>	12625	55
		N/A			Depth to First Water:	<u>60</u>).6 ft bgs				
Rig Ge	eologist:	Ellen F	Redner		Converted to Well:	×	Yes No				
	Drilling Run ((ft)			Description						
Depth (ft)	and Average	e 03			(See Pilot boring log for		Drilling notes and observation borehole in preparation for				Drilling Fluid
	Penetration R	ate			full geologic descriptions)						
					-81.8 ft) No Recovery; top of core potentially shed out by drilling fluids during coring.						
81		l N	$A \mid X$	/	, , ,						
82		-	$-\frac{1}{x}$	× 1/81	.8-86 ft) Sedimentary Rock - Conglomerate;	-					
				X Juan	k reddish brown (5YR 3/4).						
83	(76.0 - 86.0)		× × × ×	×							
	0.40 mins/ft		x x	× 1							
84		l N	, × ×	×							
			\	× 1							
			x x x	× 1							
05			- X	× 1		•					
 86				×							
00		 -	-	/(86	-96 ft) No Recovery; potentially washed out I ling fluids during coring.	ру	(86.0 - 96.0') Normal drilling				(86.0 - 96.0') 107 gallons of water
 87					ing lidias during coring.						used; 55 gallons of
0/				- []		4					water recovered; 52 gallons of water lost
 88											
00											
 89											
09											
90											
	(86.0 - 96.0)			'							
91	0.40 mins/ft		A								
92				\							
93				\							
				\setminus							
94											
95				\mathbb{I}							
96		$\dashv \vdash \vdash$	-+-		-104 ft) No Recovery; top of core potentially	-	(96.0 - 106.0') Soft drilling				(96.0 - 106.0')
<u> </u>			\	/ was	shed out by drilling fluids during coring.						85 gallons of water used; 40 gallons of
97											water recovered; 45 gallons of water lost
<u> </u>	(00.0 455.5		\	/							ganons of water lost
98	(96.0 - 106.0) 0.30 mins/ft		4 X								
-			/	\							
99			/	\							
<u> </u>			/								
100 _	intiona: IIC	200 - 1	lpified (posification System ft - foot has -	hal	our ground ourfood amo	l = abaya m	200 000 1	ovel (2)// -

9	ARC	۷D)IS			Drilling	Log					Shee	et: 6	of 8
			7/202			Surface Elevation:		520.26	ft amsl		Porine	» No :	ED	02 Q inch
	Completed:					Northing (NAD83):		21009			DOLLI	g NO.:	EK-	<u>03 9-inch</u>
Drilling	Co.:	Caso	cade			Easting (NAD83):		<u>76168</u>	62.06		Client:	PG&E		
Drilling	Method:	Roto	-Soni	С		Total Depth:		157.0	ft bgs		Project:	Final G	W Rei	medy Phase 2A
Drill R	g Type:	<u>Truc</u>	<u>k Μοι</u>	unted S	Sonic	Conductor Casing I	Diameter:	<u>12 incl</u>	nes		Location:	PG&E	Горос	k, Needles
			Arnol			Drill Casing Diamete	er:	9 inche				<u>Californ</u>	ia	
Drilling				er / G /	Alvarado				cutting sho	<u>e</u>	Project Nu	ımber: <u>3</u>	01262	255
		N/A				Depth to First Wate	er:	60.6 ft						
Rig G	eologist:	Ellen	Redr	ner	1	Converted to Well:		× Yes	S No					
Depth	Drilling Run (ft)	JSCS	USCS		Description		Dri	lling notes and	d observatio	ne for reamin	a to open t	tho	
(ft)	and Average Penetration R	e ,	Code	Class		(See Pilot boring log for full geologic description	or ns)		rehole in prep					Drilling Fluid
101 102 102	02 03(96.0 - 106.0) 0.30 mins/ft		NA) No Recovery; top of core ut by drilling fluids during					B			
103 104	(96.0 - 106.0) 0.30 mins/ft						· —.— — — -							
105	05		NA	× × × × × × × × × × × × × × × × × × ×	dark redd	ft) Sedimentary Rock - Co sh brown (5YR 3/4).	onglomerate;		V.),				
106		$+$ \vdash		× × × ×		75 ft) No Recovery; top of		(106	.0 - 116.0') Sc	oft drilling				(106.0 - 116.0')
107				\ /	coring.	washed out by drilling flu	lias during	P						107 gallons of water used; 70 gallons of water recovered; 37 gallons of water lost
108				\setminus										ganoris of water lost
 109														
110			NA					(110	.0 - 120.0') Dr	illing water	returns decre	ease.		
111	(106.0 - 116.0 0.30 mins/ft)	NA	\setminus										
112_														
113														
114														
 115		1-	4	 	1(114 75-1	16 ft) Sedimentary Rock -								
110			NA	× × ×		erate; dark reddish brown								
116			_	× × × × × × × × ×										
117						ft) No Recovery; potential fluids during coring.	ly washed ou	t (116	.0 - 126.0') Sc	oft drilling				(116.0 - 126.0') 71 gallons of water used; 30 gallons of water recovered; 41 gallons of water lost
118	(116.0 - 126.0 0.20 mins/ft)	NA											ganono or water rost
119				$/ \setminus$										
120				/	<u> </u>		-4.1 .	<u> </u>						0111

9	ARC	ADIS	3	Drilling Log		Sheet:	7 of 8
Date S	Started:	04/27/20)23	Surface Elevation:	520.26 ft amsl	Boring No.: ER	03 Q inch
Date C	Completed:	04/29/20)23	Northing (NAD83):	2100908.17	Dorning 140 <u>Liv</u>	<u>05 5-111C11</u>
Drilling	Co.:	Cascade	<u> </u>	Easting (NAD83):	7616862.06	Client: PG&E	
		Roto-So	nic	Total Depth:	157.0 ft bgs	•	emedy Phase 2A
	• • • • • • • • • • • • • • • • • • • •		ounted S	•		Location: PG&E Topo	ck, Needles
Driller		Matt Arn		Drill Casing Diameter:	9 inches	<u>California</u>	_
Drilling			oner / G	Alvarado Drill Bit:	9-inch cutting shoe	Project Number: 30126	3255
		N/A Ellen Re	dnor	Depth to First Water: Converted to Well:	60.6 ft bgs	-	
rig Ge	eologist:	<u> </u>			Yes No		
Depth	Drilling Run (uscs	Description	Drilling notes and observati	ons for reaming to open the	Drilling Fluid
(ft)	and Average Penetration R		Class	full geologic descriptions)		the installation of the well.	Drilling Fluid
				(116-136 ft) No Recovery; potentially washed on by drilling fluids during coring.	ut		
121							
122						n _b	
			-				
123	(116.0 - 126.0 0.20 mins/ft)	$ \rangle $				
	0.20		11 1				
124			$1 \setminus 1$				
125							
400							
_126		7	111		(126.0 - 136.0') Soft drilling		(126.0 - 136.0')
 _127							43 gallons of water used; 15 gallons of
121			1 V				water recovered; 28 gallons of water lost
128		NA					
		INA	1 1				
129			1 /				
			1 //				
_130			1/1				
131	(126.0 - 136.0 0.20 mins/ft)					
	0.20 1111115/10						
132			1/ \				
			1/ \				
133			$\parallel \parallel \parallel \parallel$				
			1/ \				
134							
405							
135							
 136							
130		1 F		(136-142 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.		4/00/00 # 1 1 1	(136.0 - 143.0') 207 gallons of water
137			$ \cdot $	washed out by drilling lidids during coning.		pproximately 140 feet bgs and	used; 150 gallons of
			$ \setminus $		the 9-inch diameter casing b	ecame freed up.	water recovered; 57 gallons of water lost
138	(136.0 - 146.0) _{NA}	$\mid \bigvee$				(136.0 - 146.0') 108 gallons of water
	` 0.90 mins/ft	I INA					used; 0 gallons of water recovered; 108 gallons
139			/ \				of water lost
_			/ \				
140			<u> </u>	V			
I∆hhr≏	viations: IIC	SCS = Hr	ufied Soi	il Classification System ft = feet has = 1	helow around surface amo	si = ahove mean sea leve	(3\// =

9	ARC	ΔΙ	DIS	<u> </u>		Drilling Log				Sheet: 8	3 of 8
,	Started:		/27/202	23		Surface Elevation:	.5	20.26 ft amsl	Poris	a No : ED	02 Q inch
			/29/202			Northing (NAD83):		100908.17	Borin	g No.: <u>ER</u>	<u>-03 9-incn</u>
Drilling	•		scade			Easting (NAD83):		616862.06	Client:	PG&E	
1	Method:	Ro	to-Son	ic		_Total Depth:		57.0 ft bgs	_ Project:	Final GW Re	medy Phase 2A
Drill R	ig Type:	<u>Tru</u>	uck Mo	unted S	onic	Conductor Casing Diameter		•	Location:	PG&E Topod	k, Needles
Driller	Name:	Ma	att Arno	old		Drill Casing Diameter:	9	inches	_	California	
Drilling	g Asst:	<u>D I</u>	Hoeppr	ner / G A	Alvarado	Drill Bit:	9	inch cutting shoe	Project Nu	umber: <u>30126</u>	255
Tool-F	Pusher:	<u>N//</u>	Α			Depth to First Water:	<u>6</u>	0.6 ft bgs	=		
Rig G	eologist:	Elle	<u>en Red</u>	ner		Converted to Well:	×	Yes No			
D	Drilling Run	(ft)	11000	11000		Description		D. 111			
Depth (ft)	and Averag	e ´	USCS Code	USCS Class		(See Pilot boring log for		Drilling notes and observat borehole in preparation fo			Drilling Fluid
	T CHCLI GLIOTT				(126 142	full geologic descriptions)	ls r	Т			
	1			\setminus		ft) No Recovery; top of core potentia ut by drilling fluids during coring.	ıy				
141			NA	$ \ \ \rangle$							
142_			L	<u>[</u>	74.70		_				
= -			NA	× × × × × × × × × × × × × × ×		5 ft) Metamorphic Rock - Metadiorite greenish gray (5G 3/1).	;				
	(136.0 - 146.0			× × ×		3 ft) Sedimentary Rock - erate; pinkish white (2.5YR 8/2) and					
3 L .	0.90 mins/ft				dark redd	ish brown (2.5YR 3/4).	$ _ $	(143.0 - 146.0') Hard drilling in the formation potentially d			
144						ft) Metamorphic Rock - Metadiorite; greenish gray (5G 3/1).		of drilling returns. Attempted working it up and down. The			
190			NA		1	3 7(7		approximately 143 feet bgs.	The 10-inch di	iameter casing	
2 145			INA	\sim	1			was advanced to free up the	9-inch diamet	er casing.	
z · · · ·]						
=					-						
2023-1						ft) No Recovery; potentially washed fluids during coring.	out	(146.0 - 156.0') Hard drilling			(146.0 - 156.0') 207 gallons of water
				by drining halas daming sorming.						used; 175 gallons of	
<u> </u>				1\ /							water recovered; 32 gallons of water lost
				1\ /							
	1										
				$ \ \ $							
1 43_	_			$ \ \ $							
150	1			$ \ \ $							
150_	1			\/							
- - - - - - - - - - - - - - - - - - -	(146.0 - 156.0	,		1 V							
131_	0.80 mins/ft		NA	lλ				(151.0 - 155.0') Driller states			
450	1			1 /\				circulation is potentially caudrill casing up in the formation	sing the drill cu on.	attings to lock the	
[152_ s	1			1 / \							
450				1/\							
153				/ \							
	1			1/\							
<u>154_</u>	1										
				1/ \							
155	1			I/ \							
	1			/							
156			<u></u>	├ <i>></i>	(156- <u>1</u> 59	ft) No Recovery; top of core potentia	iv l	(156.0 - 157.0') Hard drilling	. The 9-inch di	ameter casing	(156.0 - 157.0')
	(156.0 - 157.0 4.00 mins/ft		NA	\times		ut by drilling fluids during coring.	,	would no longer advance. D cutting shoe have potentially	riller states tha	t the teeth on the	109 gallons of water used; 55 gallons of
<u> 157</u>					End of Bo	oring at Target Depth of 157 ft bgs.		diameter casing was tripped	l out and the b	orehole reamed	water recovered; 54
ANE/O	+				•	J J 1		to total depth using the 10-in	ıcıı diamter dri	ıı casıng.	gallons of water lost
158	+										
- P	+										
159	+										
	+										
160		200	<u> </u>	e10 "	Ol. 'C		1.	1 1	-11		OW
±µbbre	viations: US	SUS	s = Unil	ned Soil	Classific	cation System, ft = feet, bgs =	be	iow ground surface, am:	sı = above r	nean sea Ievel.	GW =

ARC	NOIS		Drilling Log				Shee	et: 1	of 9
	04/28/202		Surface Elevation:	520	0.26 ft amsl	Boring	No.:	ER-	03 10.5-inch
ate Completed: <u>(</u>	04/30/202	3	Northing (NAD83):	210	00908.17				00 10.0 11101
•	Cascade		Easting (NAD83):	<u>76</u>	16862.06		PG&E		
Orilling Method:	Roto-Soni	С	Total Depth:	<u>160</u>	3.0 ft bgs	Project: [Final G\	N Ren	nedy Phase 2A
Orill Rig Type:	<u> Truck Μοι</u>	unted S	onic Conductor Casing Diameter:	<u>12</u>	inches	Location: [PG&E 1	<u> Topock</u>	k, Needles
Oriller Name:	Matt Arnol	d	Drill Casing Diameter:	<u>10.</u>	5 inches	<u>(</u>	Californ	ia	
Orilling Asst:	D Hoeppn	er / G <i>A</i>	<u> Alvarado</u> Drill Bit:	<u>10-</u>	inch cutting shoe	Project Nun	nber: <u>3</u>	01262	55
ool-Pusher:	V/A		Depth to First Water:	<u>60.</u>	6 ft bgs				
Rig Geologist:	Ellen Redr	ner	Converted to Well:	\times	Yes No				
Depth (ft) Drilling Run (f and Average Penetration Ra	Code	USCS Class	Description (See Pilot boring log for full geologic descriptions)		Drilling notes and observation borehole in preparation for				Drilling Fluid
	GW	. 7 6	(0-0.5 ft) Well graded gavel with sand (GW):	\dashv	This "ER-03 10.5-inch" drill	ling log docum	nents the	,	(0.0 - 157.0')
· <u>-</u>	NA NA		brown (7.5YR 5/4) some strong brown (7.5YR 4/6).	- 1 1	final reaming step to ream				1021 gallons of water used; 290 gallons of
_ 1			(0.5-1 ft) Asphalt from old Route 66.		design borehole diameter of				water recovered; 73
_	GW	$\times \times \times$	(1-1.5 ft) Well graded gavel with sand (GW); yellowish red (5YR 5/6).	_	(0.0 - 157.0') Used water to fluid after tripping out to replace the	usn the casing le cutting shoe t	back dow for the se	cond	gallons of water los
_ 2	NA NA	× × × × × × × × × × × × × × × × × × ×	(1.5-2.0 ft) Sedimentary Rock - Conglomerate;	- 1 1	time. (0.0 - 6.0') Soft drilling	Ch			
(0.0 - 6.0) 0.17 mins/ft	NA	× × × :	reddish brown (5YR 4/4). (2-6 ft) Sedimentary Rock - Conglomerate; yellowish red (5YR 4/6).		(0.0 - 0.0) Soft dillilling				
- 7 8	NA	× × × × × × × × × × × × × × × × × × ×	(6-16 ft) Sedimentary Rock - Conglomerate; yellowish red (5YR 4/6).		(6.0 - 16.0') Soft drilling				(6.0 - 16.0') 75 gallons of wate used; 20 gallons of water recovered; 5 gallons of water los
	NA		(16-20.5 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.		(16.0 - 26.0') Normal drilling				(16.0 - 26.0') 123 gallons of wate used; 40 gallons oc water recovered; 8 gallons of water los

9	ARC	AD	IS		Drilling Log				Shee	et: 2	2 of 9
	ate Started: 04/28/202 ate Completed: 04/30/202 illing Co.: Cascade				Surface Elevation:	52	20.26 ft amsl	Danis	- NI		00 40 F in als
					Northing (NAD83):		00908.17	Borin	g No.:	EK.	<u>-03 10.5-inch</u>
	•				Easting (NAD83):		316862.06	Client:	PG&E		
_		Roto-S		 C	Total Depth:		33.0 ft bgs	Project:		W Re	medy Phase 2A
_	g Type:			ınted S			•				k, Needles
Driller I		Matt A			Drill Casing Diameter:		0.5 inches		Californ	-	
Drilling	Asst:	D Hoe	eppn	er / G <i>A</i>	Alvarado Drill Bit:	<u>10</u>	-inch cutting shoe	Project Nu	ımber: 3	01262	255
Tool-P	usher:	N/A			Depth to First Water:	<u>60</u>).6 ft bgs				
Rig Ge	eologist:	Ellen I	Redr	ner	Converted to Well:	×	Yes No				
	Drilling Run	(ft)			Description						
Depth (ft)	and Averag Penetration R	e los	SCS ode	USCS Class	(See Pilot boring log for		Drilling notes and observation borehole in preparation for				Drilling Fluid
. ,	Penetration R	ate			full geologic descriptions)						
			NA_	$\geq \leq$		_					
21				× × × × × ×	(20.5-26 ft) Sedimentary Rock - Conglomerate; yellowish red (5YR 4/6).						
				× × ×							
22				\times \times \times							
				× × × × × ×							
23	(16.0 - 26.0)			\times \times \times \times							
	6.50 mins/ft		NA	× × ×							
24				× × × × × ×							
				\times \times \times							
25				× × × × × ×	(24.7-25.5 ft) Intensely fractured zone.						
				× × × × ×		1					
26		J L_		× × × × × ×							
			NA	(26-26.3 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.		(26.0 - 36.0') Normal drilling				(26.0 - 36.0') 171 gallons of water	
27				× × ×	(26.3-36 ft) Sedimentary Rock - Conglomerate;						used; 30 gallons of water recovered; 141
				dark reddish brown (5YR 3/4).						gallons of water lost	
28				×××	\times \times \times						
				\times \times \times							
29				× × × × × ×							
				\times \times \times							
30				× × × × × ×							
				* * * * * * * *							
31	(26.0 - 36.0)			\times \times \times							
	6.50 mins/ft		'	× × × × × ×							
32				× × × ×	·						
				\times \times \times							
33				× × × × × ×							
				\times \times \times							
34				× × ×							
				× × × × × ×							
35				\times \times \times							
				× × ×							
36				× × × × × × × × ×							
		7 [-		\	(36-44.7 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.		(36.0 - 46.0') Soft drilling				(36.0 - 46.0') 121 gallons of water
37				\ /							used; 60 gallons of
				\ /							water recovered; 61 gallons of water lost
38	(36.0 - 46.0)	$\ \cdot\ $		\bigvee							
	0.30 mins/ft	^	۱A	\land							
39				/ \							
				/ \							
40				/ \							
	dational IIC	- 20°	Lloifi	مط کمنا	Classification System ft - fact has - I	مامط	around ourfood one	l _ ala a a		lavial	CW -

9	ARC	۷D)IS			Drilli	ing Log					Shee	et: 3	of 9
			8/202			Surface Elevat		520.26	6 ft amsl		Dorina	. Na .	ED	02 10 E inch
	Completed:					Northing (NAD	83):	21009			DOLIN	J NO.:	ER-	03 10.5-inch
Drilling	Co.:	Caso	ade			Easting (NAD8	•	<u>76168</u>	62.06		Client:	PG&E		
Drilling	Method:	Roto	-Soni	С		Total Depth:		163.0	ft bgs		Project:	Final G\	W Rer	nedy Phase 2A
Drill Ri	g Type:	<u>Trucl</u>	k Mou	unted S	Sonic	Conductor Cas	sing Diameter:	<u>12 incl</u>	hes		Location:	PG&E	Горос	k, Needles
Driller	Name:	<u>Matt</u>	<u>Arnol</u>	d		Drill Casing Dia	ameter:	<u>10.5 in</u>	nches			Californ	<u>ia</u>	
Drilling			eppn	er / G <i>A</i>	Alvarado	Drill Bit:			•	shoe	Project Nu	ımber: 3	01262	255
		N/A				Depth to First \		60.6 ft						
Rig Ge	eologist:	Ellen	Redr	ner		Converted to V	Vell:	× Yes	s No)				
D	Drilling Run (ft) .	1000	11000		Descriptio	n						.	
Depth (ft)	and Average Penetration R	e 6	JSCS Code	USCS Class		(See Pilot boring	log for			and observation for				Drilling Fluid
	renetiation K	ale				full geologic desc								
_				\ /		t) No Recovery; top ut by drilling fluids o								
41				\ /		, 3	3 3							
				\ /										
42				\ /										
			NA	X										
43	(36.0 - 46.0)			\wedge										
	0.30 mins/ft			/ \										
44				/ \										
				/ \										
45		-	+	$\frac{1}{\times \times \times \times}$	(44.7-46 f	t) Sedimentary Roc	k - Conglomerate:		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					
			NA	× × × × × × × × ×	dark reddi	iśh brown (5YR 3/4) I ft) Intensely fractui).							
46				× × × ×	(44.0-45	rity interisery fractui	red zone.							
		1 [t) No Recovery; top ut by drilling fluids o		(46.	0 - 56.0') S	oft drilling				(46.0 - 56.0') 75 gallons of water
				\ /	wasned o	ut by anning naids t	during coring.							used; 15 gallons of
4/				\ /										water recovered; 60 gallons of water lost
40				\ /										Ü
48				\ /										
10				\/										
49			NA	Y										
				\wedge										
50				/\										
	(46.0 F6.0)			/ \										
51	(46.0 - 56.0) 0.30 mins/ft			/ \										
				/ \										
52				/ \	V									
			+	× × ×	(52.5-56 f	t) Sedimentary Roc	k - Conglomerate;	-						
53				\times \times \times	dark reddi	ish brown (5YR 3/4)).							
				\times \times \times	}									
54			NA	$\begin{array}{cccccccccccccccccccccccccccccccccccc$										
				× × × ×										
55				\times \times \times										
				$\begin{array}{cccccccccccccccccccccccccccccccccccc$										
56		+	+	Ĉ Ĉ Ĉ .		No Recovery; core		(56.0	0 - 66.0') S	oft drilling			+	(56.0 - 66.0')
-				\ /	out by dril	ling fluids during co	ring.			_				73 gallons of water used; 20 gallons of
57				\ /										water recovered; 53
-				\ /										gallons of water lost
58	(56.0 - 66.0) 0.30 mins/ft		NA	X										
-				/\										
59				/ \										
-				/ \										
60				/	/ /	0								0111

9	ARC	40	SIC			Drilling L	_og			Shee	et: 4	of 9
			28/202			Surface Elevation:		520.26 ft amsl	Davis			00 40 F in ab
	Completed:					Northing (NAD83):		2100908.17	Borin	g No.:	EK-	<u>-03 10.5-inch</u>
Drilling	-		cade			Easting (NAD83):		7616862.06	_ _ Client:	PG&E		
_			o-Soni	С		Total Depth:		163.0 ft bgs	_ Project:		W Rei	medy Phase 2A
_				unted S	Sonic	Conductor Casing Dia		_	_ Location:			k, Needles
			t Arnol			Drill Casing Diameter:		10.5 inches		Californ		,
Drilling					Alvarado	~		10-inch cutting shoe	– _ Project Nu			255
_		N/A				Depth to First Water:		60.6 ft bgs	_	_		
Rig Ge	eologist:	Eller	n Redr	ner		Converted to Well:		× Yes No				
	Drilling Dun	(#/)				Description						
Depth (ft)	Drilling Run (and Averag	e	USCS Code	USCS Class		(See Pilot boring log for		Drilling notes and observa borehole in preparation for	tions for reamir	ng to open t	he II	Drilling Fluid
(11)	Penetration R	ate	Code	Olass		full geologic descriptions)		boreriole in preparation is	or the mistaliano	ii oi tile we	".	
		T				No Recovery; core potentially ling fluids during coring.	/ washed					
 61					out by arii	iing iiuias during conng.		¥				
01												
62				1				$ \nabla$				
02												
 63	(56.0 - 66.0)											
00	0.30 mins/ft											
64												
0-												
65												
05												
66												
00								(66.0 - 70.0') Normal drilling	9			(66.0 - 70.0')
 67				M								105 gallons of water used; 65 gallons of
0/												water recovered; 40 gallons of water lost
 68				1								
00			NA									
 69												
09												
70												
								(70.0 - 76.0') Soft drilling				
	(66.0 - 76.0)											
	0.40 mins/ft											
73												
74												
/3												
		1		\\	(76-81.8 f	t) No Recovery; top of core pout by drilling fluids during core	otentially	(76.0 - 86.0') Normal drilling	g			(76.0 - 86.0')
				\ /	wasned o	at by anning naids during cor	ıııy.					243 gallons of water used; 80 gallons of
				$ \setminus $								water recovered; 163 gallons of water lost
70	(76.0 - 86.0)			\/								·
78	1.20 mins/ft		NA									
 79				/ \								
 80				/ \	J							
A I I							L 1					014/

9	ARC	<u> </u>	IS		Drilling Log				Shee	et: 5	5 of 9
	Started:	04/28			Surface Elevation:	52	20.26 ft amsl				00.40.5.1
	Completed:				Northing (NAD83):		100908.17	Boriné	3 NO.:	EK.	<u>-03 10.5-inch</u>
Drilling	-	Casca			Easting (NAD83):		316862.06	Client:	PG&E		
_		Roto-			Total Depth:		63.0 ft bgs	Project:		V Re	medy Phase 2A
_	g Type:			ınted S			•	•			k, Needles
Driller I		Matt A			Drill Casing Diameter:).5 inches		Californi	•	,
Drilling					Alvarado Drill Bit:)-inch cutting shoe	Project Nu	ımber: 30	0126	255
_	usher:	N/A			Depth to First Water:	60).6 ft bgs	•			
Rig Ge	eologist:	Ellen	Redr	ner	Converted to Well:	X	Yes No				
	Drilling Pun	(ft)			Description						
Depth (ft)	Drilling Run and Averag	e C	SCS ode	USCS Class	(See Pilot boring log for		Drilling notes and observation borehole in preparation for				Drilling Fluid
(11)	Penetration R	ate	ouc	Olass	full geologic descriptions)		boronoic in proparation for	the motaliane	TOT THE WEI	.	
					(76-81.8 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.						
81			NA		washed out by drilling fluids during coring.						
01											
		1		<u> </u>	(81.8-86 ft) Sedimentary Rock - Conglomerate;	_					
02				× × × × × ×	dark reddish brown (5YR 3/4).						
	(76.0 - 86.0)			\times \times \times							
05	1.20 mins/ft			× × × × × ×							
 84				× × ×							
04	_ .			\times \times \times				•			
				× × × × × ×							
85				\times \times \times		-					
				× × × × × × × × ×							
86		 -	+	<u> </u>	(86-96 ft) No Recovery; potentially washed out b	ру	(86.0 - 96.0') Normal drilling				(86.0 - 96.0')
				\	drilling fluids during coring.						314 gallons of water used; 130 gallons of
87						4					water recovered; 184 gallons of water lost
				\ /							3
88				\ /							
				\							
89				\							
				\							
90				\							
	(86.0 - 96.0)			V							
91	1.50 mins/ft		NA	À							
				/\	Y						
92				$I \setminus$							
				/\							
93				/ \							
- 04				/ \							
94				/ \							
				1							
95				/ \							
96		 -	+	<u></u>	(96-104 ft) No Recovery; top of core potentially	-	(96.0 - 106.0') Normal drilling	1			(96.0 - 106.0')
<u> </u>				\ /	washed out by drilling fluids during coring.						390 gallons of water used; 275 gallons of
97				\ /							water recovered; 115 gallons of water lost
<u> </u>	(00.0 400.5)			\/							ganons of water lost
98	(96.0 - 106.0) 1.30 mins/ft		NA	X							
-				/\							
99				/ \							
<u> </u>				/ \							
100 _	intiona: 110	200 -	Lloifi	ad Cail	Classification System ft - fact has -	hale	out around ourfood amo	l = abaya m		lovol	C\M =

9	ARC	<u> </u>	5	Drilling Log		Sheet:	6 of 9
	Started:	04/28/20		Surface Elevation:	520.26 ft amsl	Daring No. 55	2 02 40 F in ab
	Completed:			Northing (NAD83):	2100908.17	Boring No.: EF	<u>K-U3 1U.5-INCN</u>
Drilling	•	Cascade		Easting (NAD83):	7616862.06	Client: PG&E	
_	Method:	Roto-So	nic	Total Depth:	163.0 ft bgs	Project: Final GW R	emedy Phase 2A
Drill Ri	g Type:	Truck M	ounted S	Sonic Conductor Casing Diameter:	12 inches	Location: PG&E Topo	ock, Needles
	Name:	Matt Arn	old	Drill Casing Diameter:	10.5 inches	<u>California</u>	
Drilling			oner / G	<u>Alvarado</u> Drill Bit:	10-inch cutting shoe	Project Number: 3012	6255
	usher:	<u>N/A</u>		Depth to First Water:	60.6 ft bgs	-	
Rig G	eologist:	Ellen Re	dner	Converted to Well:	× Yes No		
Depth	Drilling Run		USCS	Description	Drilling notes and observati	ons for reaming to open the	
(ft)	and Averag Penetration R			(See Pilot boring log for full geologic descriptions)		the installation of the well.	Drilling Fluid
101 102 103 104	(96.0 - 106.0 1.30 mins/ft	NA	- × × × × × × × × × × × × × × × × × × ×	(96-104 ft) No Recovery; top of core potentially washed out by drilling fluids during coring. (104-106 ft) Sedimentary Rock - Conglomerate; dark reddish brown (5YR 3/4).		3	
105		NA	× × × × × × × × ×				
1061071081091101111112113114115	(106.0 - 116.0 1.40 mins/ft	NA NA	× × × × × × × × × × × × × × × × × × ×	(106-114.75 ft) No Recovery; top of core potentially washed out by drilling fluids during coring. (114.75-116 ft) Sedimentary Rock - Conglomerate; dark reddish brown (5YR 3/4).	(106.0 - 116.0') Normal drillii	ng	(106.0 - 116.0') 530 gallons of water used; 458 gallons of water recovered; 72 gallons of water lost
116 117 118 119 120	(116.0 - 126.0 1.10 mins/ft)) NA		(116-136 ft) No Recovery; potentially washed or by drilling fluids during coring.	ut (116.0 - 126.0') Normal drillii	ng	(116.0 - 126.0') 320 gallons of water used; 135 gallons of water recovered; 185 gallons of water lost
		CC - 11	:c: -1 O - :	Classification System # = feet has =	holow ground ourfood ame		-1 014/

9	ARC	۷D	IS			Drilling I	Log				Shee	et: 7	of 9
Date S	Started:	04/28	3/202	3		Surface Elevation:		520	.26 ft amsl	Borine	. No :	ED	02 10 5 inch
Date C	Completed:	04/30	0/202	3		Northing (NAD83):			0908.17	DOLLI	J NO	EK-	03 10.5-inch
Drilling	Co.:	Casc	ade			Easting (NAD83):		<u>761</u>	6862.06	Client:	PG&E		
Drilling	Method:	Roto-	-Soni	С		Total Depth:		<u>163</u>	.0 ft bgs	Project:	Final G\	W Rer	medy Phase 2A
		<u>Truck</u>	κ Μοι	ınted S	onic	Conductor Casing Dia	ameter:	<u>12 i</u>	nches	Location:			k, Needles
		Matt .				Drill Casing Diameter:			5 inches	=	Californ		
Drilling			eppn	<u>er / G /</u>	Alvarado	Drill Bit:			nch cutting shoe	Project Nu	ımber: <u>3</u>	01262	255
		<u>N/A</u>				Depth to First Water:			6 ft bgs	-			
Rig Ge	eologist:	Ellen	Rear	ner		Converted to Well:		<u> </u> <u> </u> <u> </u>	Yes No				
Depth	Drilling Run (ISCS	USCS		Description			Drilling notes and observati	ions for reamir	ıa to open t	the	D
(ft)	and Average Penetration R	9 c	Code	Class		(See Pilot boring log for full geologic descriptions))		borehole in preparation for				Drilling Fluid
						ft) No Recovery; potentially v fluids during coring.	washed ou	ut					
121													
				\									
122				\ /									
400	(116.0 - 126.0												
_123	1.10 mins/ft	'		1 /									
 _124													
124													
125				11									
_126		4							126.0 - 136.0') Normal drilli				(426.0 426.0)
				1/					120.0 - 130.0) Normal drilli	ng			(126.0 - 136.0') 332 gallons of water used; 170 gallons of
127				V									water recovered; 162 gallons of water lost
400				V									ganons of water lost
128			NA	Ì									
129				Λ			r						
				Λ		4							
130				Λ									
_131	(126.0 - 136.0 1.00 mins/ft)											
	1.00 1111115/11			11									
132													
133				1									
 134													
134													
135													
136		↓						_	100 0 110 00 11				(400 0 440 0)
<u> </u>				\ /		ft) No Recovery; top of core ut by drilling fluids during co		′ '	136.0 - 140.0') Normal drilli	ng			(136.0 - 140.0') 284 gallons of water
137				\ /									used; 80 gallons of water recovered; 204
-				\ /									gallons of water lost
138	(136.0 - 140.0 3.00 mins/ft)	NA	X					138.0 - 140.0') Hard drilling	. Casing gettin	g locked up	o in	
L				/\				t	he formation potentially due eturns. Trip out casing the t	to a decrease	in drilling v	water	
139				/ \					completely sheared off.	34	J		
 140				/ \									
A 1 1					OI :		In an						0144

	4 DC	Λ Ι			Drilling Log				O I .	
9	<u>ARC</u>				Drilling Log				Sheet:	8 of 9
	Started:		/28/202		Surface Elevation:		20.26 ft amsl	Borin	g No.: ER	-03 10.5-inch
	Completed:			23	Northing (NAD83):		100908.17			_
Drilling	Method:		iscade oto-Son	io	Easting (NAD83): Total Depth:		616862.06 63.0 ft bgs	_ Client: _ Project:	PG&E	medy Phase 2A
	g Type:			unted S	·		2 inches	•	PG&E Topod	•
Driller			att Arno		Drill Casing Diameter:		0.5 inches	_ Loodilon.	<u>California</u>	5K, 14000100
Drilling					Alvarado Drill Bit:		0-inch cutting shoe	- Proiect N	umber: 30126	255
_	Pusher:	N/			Depth to First Water:		0.6 ft bgs	,		
Rig G	eologist:	Ell	en Red	ner	Converted to Well:	_	Yes No			
	Drilling Run	(ft)			Description	Ī				
Depth (ft)	and Averag	e ´	USCS Code	USCS Class	(See Pilot boring log for		Drilling notes and observat borehole in preparation fo			Drilling Fluid
(,	Penetration R	ate	0000	0.000	full geologic descriptions)					
141			NA		(136-142 ft) No Recovery; top of core potentially washed out by drilling fluids during coring.	7	(140.0 - 146.0') Hard drilling			(140.0 - 146.0') 161 gallons of water used; 105 gallons of water recovered; 56 gallons of water lost
142			<u></u> -	$\left(\times \times \times \right)$	{(142-142.5 ft) Metamorphic Rock - Metadiorite;	\dashv		1		
 143	(140.0 - 146.0 1 33 mins/ft))	NA	× × × × × × × × × × × × × × × × × × ×	very dark greenish gray (5G 3/1). (142.5-143 ft) Sedimentary Rock - Conglomerate; pinkish white (2.5YR 8/2) and			13		
144	1.33 mins/ft Condark (143				dark reddish brown (2.5YR 3/4). (143-146 ft) Metamorphic Rock - Metadiorite; very dark greenish gray (5G 3/1).		6			
145		NA NA					1			
146		4	L		(146-156 ft) No Recovery; potentially washed or		(146.0 - 156.0') Hard drilling	1		(146.0 - 156.0')
152 153 154 155	(146.0 - 156.0 1.80 mins/ft	0 - 156.0) NA			by drilling fluids during coring.		(151.0 - 155.0') Driller states circulation is potentially caudrill casing up in the formati	sing the drill cu		377 gallons of water used; 260 gallons of water recovered; 117 gallons of water lost
156 157 158 159	(156.0 - 157.0 7.00 mins/ft (157.0 - 163.0 2.17 mins/ft		NA		(156-159 ft) No Recovery; top of core potentially washed out by drilling fluids during coring. (159-162 ft) Metamorphic Rock - Metadiorite:	7	(156.0 - 157.0') Hard drilling the formation potentially due returns. Worked casing up a Tripped casing back out the worn off. Tripped out 9-inch (157.0 - 163.0') Hard drilling clean out the borehole in prethe well.	e to a decrease and down to fre teeth on the c diameter drill Recirculated	e in drilling water ee the casing. utting shoe were casing. drilling water to	(156.0 - 157.0') 577 gallons of water used; 220 gallons of water recovered; 357 gallons of water lost (157.0 - 163.0') 230 gallons of water used; 150 gallons of water recovered; 80 gallons of water lost
			NA		very dark greenish gray (5G 3/1).					
160 ∆bbre	viations: 119		l S = Lloif	ied Soil	Classification System ft = feet_bas =		low ground surface, am	el = ahove r	nean sea level	GW =

9	ARC	ADIS	6	Drilling Log			She	et: 9	of 9
Date S	Started:	04/28/20		Surface Elevation:	520.26 ft amsl	Porine	ı Nısı	ED 02	10 E inch
Date Completed:				Northing (NAD83):	2100908.17	Boring No.: <u>ER-03 10.</u>		10.5-111011	
Drilling		Cascade		Easting (NAD83):	7616862.06	_ Client:	PG&E		
Drilling Method:		Roto-Sonic		Total Depth:	163.0 ft bgs	Project:	roject: Final GW Remedy Phas		ly Phase 2A
_	ig Type:	Truck Mounted Sonic		· · · · · · · · · · · · · · · · · · ·	_	_ Location:	on: PG&E Topock, Needles		leedles
Driller Name:		Matt Arnold		Drill Casing Diameter:	10.5 inches	<u>California</u>			
Drilling Asst:		D Hoepp	ner / G A	Alvarado Drill Bit:	10-inch cutting shoe Project Number: 30126255				
Tool-Pusher:		N/A		Depth to First Water:	60.6 ft bgs	_			
Rig Geologist:		Ellen Red	dner	Converted to Well:	× Yes No				
	D.1111 D.	(6)		Description	T				
Depth (ft)	Drilling Run (and Average Penetration R	e Codo		(See Pilot boring log for		ions for reaming to open the r the installation of the well.		Drilling Fluid	
		ate Code	Class	full geologic descriptions)	porenoie in preparation for the	i trie iristaliatioi	TOI THE WE	:11.	
				(159-162 ft) Metamorphic Rock - Metadiorite:					
-			\sim	very dark greenish gray (5G 3/1).					
161		NA NA	\sim						
-	(157.0 - 163.0 2.17 mins/ft		\sim	1					
162			\sim	(162-163 ft) Metamorphic Rock - Metadiorite;	_	1			
-		NA	\sim	very dark greenish gray (5G 3/1).					
163			\sim	End of Boring at Target Depth of 163 ft bgs.					
				End of borning at Target Depth of 100 it bys.					
164									
Ļ -									
165									
166									
 167									
107									
160	-								
168									
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169	-								
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177	-								
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178	-								
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179									
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_180									
hbro		200 - 11-	:t: C - :1	Classification System ft - fact has -	holow ground gurfage am			Joval CM	, _