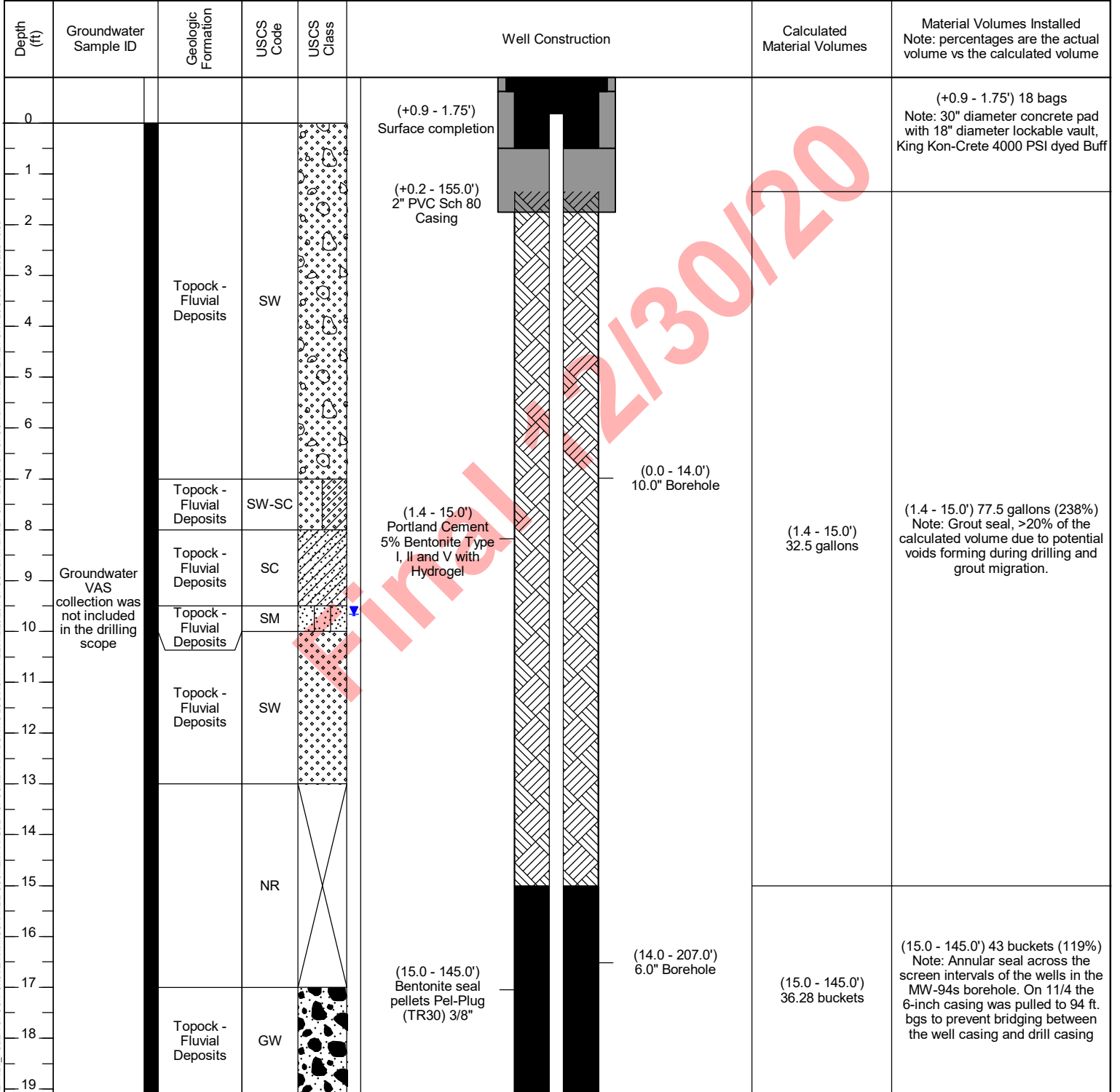


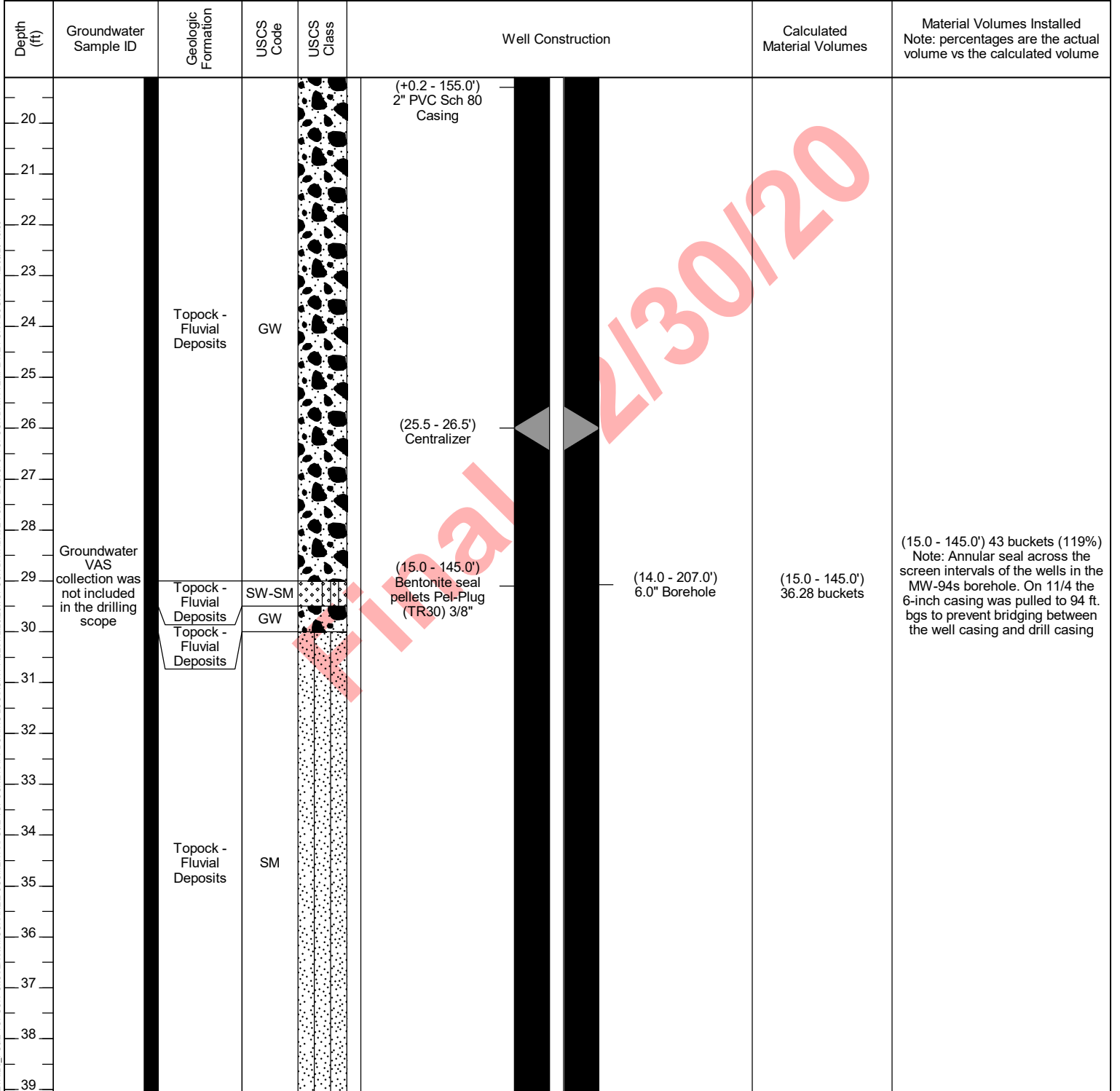
Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	



Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK C:\USERS\SMC\GRANDDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 1/29/2020 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	



Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/29/20 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
40					(+0.2 - 155.0') 2" PVC Sch 80 Casing		
41							
42		Topock - Fluvial Deposits	SM				
43							
44							
45							
46							
47		Topock - Fluvial Deposits	SP				
48							
49	Groundwater VAS collection was not included in the drilling scope	Topock - Fluvial Deposits	SM		(15.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(15.0 - 145.0') 36.28 buckets	(15.0 - 145.0') 43 buckets (119%) Note: Annular seal across the screen intervals of the wells in the MW-94s borehole. On 11/4 the 6-inch casing was pulled to 94 ft. bgs to prevent bridging between the well casing and drill casing
50		Topock - Fluvial Deposits	ML				
51		Topock - Fluvial Deposits	SW				
52							
53		Topock - Fluvial Deposits	SP-SM				
54							
55		Topock - Fluvial Deposits	SM				
56							
57		Topock - Fluvial Deposits	MH				
58		Topock - Fluvial Deposits	SC				
59							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATA TEMPLATE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GPJ 12/29/20 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
60		Topock - Fluvial Deposits	SW-SC		(+0.2 - 155.0') 2" PVC Sch 80 Casing		
61		Topock - Fluvial Deposits	MH				
62		Topock - Fluvial Deposits	SC				
63		Topock - Fluvial Deposits	SC				
64		Topock - Older Alluvium Deposits	SM				
65		Topock - Older Alluvium Deposits	SM				
66			NR				
67							
68							
69	Groundwater VAS collection was not included in the drilling scope				(15.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(15.0 - 145.0') 36.28 buckets	(15.0 - 145.0') 43 buckets (119%) Note: Annular seal across the screen intervals of the wells in the MW-94s borehole. On 11/4 the 6-inch casing was pulled to 94 ft. bgs to prevent bridging between the well casing and drill casing
70							
71							
72							
73		Topock - Older Alluvium Deposits	SM				
74		Topock - Older Alluvium Deposits	SM				
75							
76					(75.5 - 76.5') Centralizer		
77							
78							
79							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_TOPOCK DRAFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
80		Topock - Older Alluvium Deposits	SM	[Symbol]	(+0.2 - 155.0') 2" PVC Sch 80 Casing		
81							
82		Topock - Older Alluvium Deposits	SW-SM	[Symbol]	[Symbol]		(15.0 - 145.0') 43 buckets (119%) Note: Annular seal across the screen intervals of the wells in the MW-94s borehole. On 11/4 the 6-inch casing was pulled to 94 ft. bgs to prevent bridging between the well casing and drill casing
83							
84							
85							
86							
87							
88							
89	Groundwater VAS collection was not included in the drilling scope				(15.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(14.0 - 207.0') 6.0" Borehole	(15.0 - 145.0') 36.28 buckets
90		Topock - Older Alluvium Deposits	SM	[Symbol]	[Symbol]		
91							
92							
93							
94							
95							
96							
97							
98							
99							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
100					(+0.2 - 155.0') 2" PVC Sch 80 Casing		
101							
102							
103							
104							
105							
106							
107							
108							
109	Groundwater VAS collection was not included in the drilling scope	Topock - Older Alluvium Deposits	SM		(15.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(15.0 - 145.0') 36.28 buckets	(15.0 - 145.0') 43 buckets (119%) Note: Annular seal across the screen intervals of the wells in the MW-94s borehole. On 11/4 the 6-inch casing was pulled to 94 ft. bgs to prevent bridging between the well casing and drill casing
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							

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WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
120		Topock - Older Alluvium Deposits	SM	[Dotted Pattern]	(+0.2 - 155.0') 2" PVC Sch 80 Casing				
121									
122									
123									
124									
125									
126					(125.5 - 126.5') Centralizer				
127									
128									
129	Groundwater VAS collection was not included in the drilling scope	Topock - Older Alluvium Deposits	ML	[Dotted Pattern]	(15.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(15.0 - 145.0') 36.28 buckets	(15.0 - 145.0') 43 buckets (119%) Note: Annular seal across the screen intervals of the wells in the MW-94s borehole. On 11/4 the 6-inch casing was pulled to 94 ft. bgs to prevent bridging between the well casing and drill casing		
130									
131									
132									
133									
134		Topock - Older Alluvium Deposits	SM	[Dotted Pattern]	(14.0 - 207.0') 6.0" Borehole				
135									
136									
137									
138									
139									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39



Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
140		Topock - Older Alluvium Deposits	SM		(+0.2 - 155.0') 2" PVC Sch 80 Casing				
141					(15.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"		(15.0 - 145.0') 36.28 buckets	(15.0 - 145.0') 43 buckets (119%) Note: Annular seal across the screen intervals of the wells in the MW-94s borehole. On 11/4 the 6-inch casing was pulled to 94 ft. bgs to prevent bridging between the well casing and drill casing	
142									
143									
144									
145	Groundwater VAS collection was not included in the drilling scope				(145.0 - 150.0') Cemex #0/30 Mesh (30x50) Lapis Lustre Sand	(145.0 - 150.0') 1.7 bags	(145.0 - 150.0') 2 bags (118%) Note: Transition Sand		
146									
147									
148					(14.0 - 207.0') 6.0" Borehole				
149									
150									
151									
152									
153					(150.0 - 179.0') Cemex #3 MESH (8x20) Lapis Lustre Sand	(150.0 - 179.0') 10.3 bags	(150.0 - 179.0') 12 bags (117%) Note: Filter pack		
154									
155									
156					(155.0 - 175.0') 2" 20-Slot Sch 80 PVC Screen				
157									
158									
159									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATA TEMPLATE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39



Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
160 - 179		Topock - Older Alluvium Deposits	SM		(155.0 - 175.0') 2" 20-Slot Sch 80 PVC Screen  (150.0 - 179.0') Cemex #3 MESH (8x20) Lapis Lustre Sand  (175.5 - 176.5') Centralizer  (175.0 - 177.3') Sump and SS End Cap	(150.0 - 179.0') 10.3 bags	(150.0 - 179.0') 12 bags (117%) Note: Filter pack
169	Groundwater VAS collection was not included in the drilling scope						

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
180		Topock - Older Alluvium Deposits	SM				
181		Topock - Older Alluvium Deposits	SW-SM				
182							
183		Topock - Older Alluvium Deposits	SM				
184							
185							
186							
187							
188							
189	Groundwater VAS collection was not included in the drilling scope				(179.0 - 207.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(179.0 - 207.0') 8.7 buckets	(179.0 - 207.0') 10 buckets (115%) Note: Decommissioned rathole
190							
191							
192							
193		Topock - Weathered Bedrock - conglomerate	SC		(14.0 - 207.0') 6.0" Borehole		
194							
195							
196							
197							
198							
199							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_TOPOCK DRAFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 15:39

Date Started: 11/03/2019	Surface Elevation: 467.61 ft amsl	<b>Well ID: MW-94-175</b>
Date Completed: 01/14/2020	Shallow Well Elevation: NA ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 467.79 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103892.87	Project: Final GW Remedy Phase 1
Driller Name: S. Vasquez / E. Ramos	Easting (NAD83): 7620097.91	Location: PG&E Topock, Needles, California
Drilling Asst: L. Amaya / P. Almanza	Borehole Diameter: 6-10 inches	
Logger: JL / SM/ GJ / RC	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Kendra Keon	Development End Date: 12/4/2019	
Total Depth: 207 ft bgs	Well Completion: <input type="checkbox"/> Flush <input checked="" type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
200	Groundwater VAS collection was not included in the drilling scope	Topock - Weathered Bedrock - conglomerate	SC	[Hatched Pattern]	(179.0 - 207.0') Bentonite seal pellets Pel-Plug (TR30) 3/8" (14.0 - 207.0') 6.0" Borehole	(179.0 - 207.0') 8.7 buckets	(179.0 - 207.0') 10 buckets (115%) Note: Decommissioned rathole
201							
202							
203							
204							
205							
206							
207							
208	End of Boring at 207.0 ft bgs.						
209							
210							
211							
212							
213							
214							
215							
216							
217							
218							
219							

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK C:\USERS\SMC\GRANDOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/29/20 15:39

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Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured post development; installed in MW-94d

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
1	84			Topock - Fluvial Deposits	SW		(0.0 - 7.0') Topock - Fluvial Deposits; Well graded sand with gravel (SW); brown (7.5YR 4/4); very fine grained to very coarse grained, angular to round; some granules to very large pebbles, subangular to round; little small cobbles, angular to subangular; trace silt; dry; coarser clast composed of mixed lithology	(0.0 - 7.0') Soft drilling	(0.0 - 12.0') No water used
2									
3									
4									
5									
6									
7									
8	72	Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Fluvial Deposits	SW-SC		(7.0 - 8.0') Topock - Fluvial Deposits; Well graded sand with clay and gravel (SW-SC); brown (7.5YR 5/4); very fine grained to very coarse grained, angular to round; little granules to very large pebbles, angular to subround; little clay; trace silt; trace mica; moist; coarser clast mixed lithology	(7.0 - 17.0') Soft drilling, loss of recovery due to sands falling out of core barrel, 9.5 to 13 disturbed.	
9				Topock - Fluvial Deposits	SC		(8.0 - 9.5') Topock - Fluvial Deposits; Clayey sand with gravel (SC); yellowish brown (10YR 5/6); very fine grained to very coarse grained, angular to round; little granules to large pebbles, subangular to subround; little small cobbles, subround; little clay; trace silt; mica; moist; coarser clast mixed lithology		
10				Topock - Fluvial Deposits	SM		(9.5 - 10.0') Topock - Fluvial Deposits; Silty sand (SM); brown (7.5YR 5/3); very fine grained to very coarse grained, angular to round; little silt; trace granules to very large pebbles, angular to subround; trace small cobbles, subround; moist; coarser clast composed of mixed lithology		
11				Topock - Fluvial Deposits	SW		(10.0 - 13.0') Topock - Fluvial Deposits; Well graded sand (SW); yellowish brown / moderate yellowish brown (10YR 5/4); very fine grained to very coarse grained, angular to round; little granules to medium pebbles, subangular to subround; trace silt; trace clay; little mica; wet; sands composed of mostly quartz, coarser clast mixed lithology		
12	72				NR		(13.0 - 17.0') No recovery (NR); lost core downhole could not retrieve	(12.0 - 17.0') Set temp well to determine static depth to water. Water had to be used to set temp well due to heaving sands on 10/31/19. Water level collected on 11/1/19 after letting water levels equilibrate.	(12.0 - 17.0') 100 gallons of water used; 0 gallons of water recovered; 100 gallons of water lost
13									
14									
15									
16									
17	120			Topock - Fluvial Deposits	GW		(17.0 - 29.0') Topock - Fluvial Deposits; Well graded gravel with sand (GW); yellowish brown / moderate yellowish brown (10YR 5/4); granules to small cobbles, subangular to round; some fine to very coarse grained sand, angular to subround; trace silt; trace mica; wet; coarser clast composed of basalt, granite, metadiorite, quartz	(17.0 - 57.0') Normal drilling	(17.0 - 207.0') No water used
18									
19									
20									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

SOIL BORING LOG: PG&E-TOPOCK C:\USERS\SMC\DOCUMENTS\PG&E-TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATA TEMPLATE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GPJ 12/30/20 14:18

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM/ GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
21	120			Topock - Fluvial Deposits	GW				
22									
23									
24									
25									
26									
27									
28	120	Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Fluvial Deposits	SW-SM		(27'); formation becomes coarser		
29									
30									
31									
32									
33									
34									
35									
36									
37									
38	120			Topock - Fluvial Deposits	SM		(29.0 - 29.5') Topock - Fluvial Deposits; Well graded sand with silt (SW-SM); yellowish brown / moderate yellowish brown (10YR 5/4); very fine grained to very coarse grained, angular to subround; little silt; trace granules to small pebbles, subround to round; trace small cobbles, subround; trace mica; coarser clasts composed of metadiorite; wet		
39									
40									
39	120			Topock - Fluvial Deposits			(29.5 - 30.0') Topock - Fluvial Deposits; Well graded gravel with sand (GW); yellowish brown / moderate yellowish brown (10YR 5/4); granules to small cobbles, subangular to round; some fine to very coarse grained sand, angular to subround; trace silt; trace mica; wet; coarser clast composed of basalt, granite, metadiorite, quartz		
40									
37	120			Topock - Fluvial Deposits			(30.0 - 46.5') Topock - Fluvial Deposits; Silty sand (SM); brown (10YR 5/3); very fine grained to fine grained, subangular to round; some silt; wet; trace medium to coarse grained sand (32.5') very fine grained to medium grained; little silt; laminated; increase grain size sand, interbedded sandy silt lenses 2-4 inches		
38									
37	120			Topock - Fluvial Deposits			(37') very fine grained to fine grained; increase silt, decrease in sand		
38									
39	120			Topock - Fluvial Deposits			(39.2'); some silt; decrease in sand		
40									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid	
41	120	Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Fluvial Deposits	SM		(41') very fine grained; and silt; decrease in sand			
42							(42.5') very fine grained to fine grained; some silt; increase in sand			
43							(43.5') very fine grained; and silt; decrease in sand			
44							(44.5') very fine grained to fine grained; some silt; increase in sand			
45	120			SM	SP	Topock - Fluvial Deposits				(46.5 - 49.5') Topock - Fluvial Deposits; Poorly graded sand (SP); brown (10YR 5/3); very fine grained to fine grained, subangular to round; trace silt; little mica; wet; trace medium sand
46										
47										
48										
49	120			SM	ML	Topock - Fluvial Deposits				(49.5 - 50.5') Topock - Fluvial Deposits; Silty sand (SM); brown (10YR 5/3); very fine grained to fine grained, subangular to round; some silt; trace clay; little mica; wet
50										
51										
52										
53	102	SW	SW	Topock - Fluvial Deposits		(50.5 - 51.0') Topock - Fluvial Deposits; Sandy silt (ML); brown (7.5YR 4/4); no plasticity; some very fine grained sand, subround; little clay; trace mica; moist to wet; medium stiff				
54										
55										
56										
57	102	SP-SM	SP-SM	Topock - Fluvial Deposits		(51.0 - 53.0') Topock - Fluvial Deposits; Well graded sand with gravel (SW); brown (10YR 5/3); very fine grained to very coarse grained, subangular to subround; some granules to very large pebbles, subround to round; trace silt; trace mica; coarser clasts composed of metadiorite; wet				
58										
59										
60										
57	102	SM	SM	Topock - Fluvial Deposits		(52') increase in granules and pebbles, decrease in sand				
58										
59										
60										
57.0	102	MH	MH	Topock - Fluvial Deposits		(57.0 - 57.5') Topock - Fluvial Deposits; Elastic silt with sand (MH); brown (7.5YR 5/3); high plasticity; little very fine to fine grained sand, subround to round; little clay; trace mica; moist; stiff				
58										
59										
60										
57.5	102	SC	SC	Topock - Fluvial Deposits		(57.5 - 59.3') Topock - Fluvial Deposits; Clayey sand with gravel (SC); brown (10YR 4/3); very fine grained to very coarse grained, angular to round; some granules to very large pebbles, subangular to subround; little clay; trace small cobbles, subround; trace silt; trace mica; coarser clasts composed of metadiorite; wet				
58										
59										
60										
59.3	102	SW-SC	SW-SC	Topock - Fluvial Deposits		(59.3 - 61.0') Topock - Fluvial Deposits; Well graded sand with clay and gravel (SW-SC); pale brown (10YR 6/3); very fine grained				
60										

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SOIL BORING LOG: PG&E-TOPOCK-C:\USERS\SMC\DOCUMENTS\PG&E-TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 14:18



Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid	
61	102			Deposits Topock - Fluvial Deposits	SW-SC		to very coarse grained, angular to subround; little granules to very large pebbles, angular to subround; little clay; trace small cobbles, subangular; trace silt; wet; sand composed of mostly quartz, coarser clast mixed lithology			
62				Topock - Fluvial Deposits	MH		(61.0 - 62.5') Topock - Fluvial Deposits; Elastic silt (MH); brown (7.5YR 5/4); high plasticity; and clay; trace very fine to fine grained sand, subround to round; very stiff			
63				Topock - Fluvial Deposits	SC		(62.5 - 63.5') Topock - Fluvial Deposits; Clayey sand with gravel (SC); dark yellowish brown (10YR 4/4); very fine grained to very coarse grained, subangular to subround; some clay; little granules to very large pebbles, angular to subround; trace small cobbles, subangular to subround; trace silt; coarser clast composed of mixed lithology			
64				Topock - Older Alluvium Deposits	SM		(63.5 - 65.5') Topock - Older Alluvium Deposits; Silty sand with gravel (SM); reddish brown / moderate brown (5YR 4/4); very fine grained to very coarse grained, angular to subround; some silt; little granules to large pebbles, angular to subround; trace clay; coarser clasts composed of metadiorite; wet			
65	120	Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope		NR		(65.5 - 67.0') No recovery (NR); sediments fell out of bottom of core barrel			
66										
67										(67.0 - 77.0') Soft drilling
68										
69	120			Topock - Older Alluvium Deposits	SM		(67.0 - 82.4') Topock - Older Alluvium Deposits; Silty sand with gravel (SM); reddish brown / moderate brown (5YR 4/4); very fine grained to very coarse grained, angular to subround; some silt; little granules to very large pebbles, angular to subangular; trace small cobbles, angular to subangular; trace clay; trace mica; coarser clasts composed of metadiorite; wet			
70										
71										
72										
73	120						(72.5'); some granules to very large pebbles, angular to subangular; little silt; little clay			
74									(74'); increase in sand, no clay	
75										
76										
77	120						(77'); decrease in sand, increase in granule and pebbles, silt nodules		(77.0 - 87.0') Soft drilling	
78										
79										
80										

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SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMC\GRAND\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/20/20 14:18



Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
81				Topock - Older Alluvium Deposits	SM				
82									
83	120						(82.4 - 93.3') Topock - Older Alluvium Deposits; Well graded sand with silt and gravel (SW-SM); reddish brown / moderate brown (5YR 4/4); very fine grained to very coarse grained, angular to subround; some granules to very large pebbles, angular to subround; little silt; little mica; coarser clasts composed of metadiorite; wet; silt nodules		
84									
85									
86									
87									
88				Topock - Older Alluvium Deposits	SW-SM			(87.0 - 97.0') Soft drilling	
89									
90		Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope						
91									
92	120								
93									
94							(93.3 - 129.0') Topock - Older Alluvium Deposits; Silty sand with gravel (SM); reddish brown / moderate brown (5YR 4/4); very fine grained to very coarse grained, angular to subround; some granules to very large pebbles, angular to subangular; little silt; trace mica; coarser clasts composed of metadiorite; wet		
95									
96				Topock - Older Alluvium Deposits	SM		(96'); decrease in silt, increase in sand		
97								(97.0 - 107.0') Soft drilling, change in rig geologist.	
98									
99	120						(98.5'); some silt; decrease in sand		
100									

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SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMC\GRAND\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 14:18

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
101									
102									
103							(103'); little silt; increase in sand		
104	120								
105									
106									
107									
108							(107'); some silt; little granules to very large pebbles, angular to subround; trace small cobbles, subangular; decrease in sand	(107.0 - 117.0') Soft drilling	
109									
110		Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Older Alluvium Deposits	SM				
111									
112	120								
113									
114									
115							(114.5'); some granules to very large pebbles, angular to subangular; trace small cobbles, subangular; iron oxide staining; increase in sand, decrease in silt, trace weathered metadiorite		
116									
117									
118									(117.0 - 127.0') Soft drilling
119	120								
120							(119'); decrease in sand, increase in silt		

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

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Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
121				Topock - Older Alluvium Deposits	SM	[Pattern]	(122'); decrease in sand, increase in silt		
122			(124.3'); increase in sand, decrease in silt						
123	120						(127'); decrease in sand, increase in silt		(127.0 - 137.0') Soft drilling
124				Topock - Older Alluvium Deposits	ML	[Pattern]	(129.0 - 130.0') Topock - Older Alluvium Deposits; Sandy silt with gravel (ML); reddish brown / moderate brown (5YR 4/4); no plasticity; some granules to large pebbles, angular to subangular; some very fine to very coarse grained sand, angular to subround; trace mica; coarser clasts composed of metadiorite; wet; soft		
125							(130.0 - 180.5') Topock - Older Alluvium Deposits; Silty sand with gravel (SM); reddish brown (2.5YR 4/4); very fine grained to very coarse grained, angular to subangular; some granules to very large pebbles, angular to subangular; some silt; little mica; coarser clasts composed of metadiorite; wet		
126				Topock - Older Alluvium Deposits	SM	[Pattern]	(134.5'); little granules to very large pebbles, angular to subangular; increase in silt		
127							(137); increase in sand, decrease in silt		(137.0 - 147.0') Soft drilling
128							(139.5'); increase in silt, decrease in sand		
129									
130		Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope						
131									
132	120								
133									
134									
135									
136									
137									
138									
139	120								
140									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMC\GRANEDOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 14:18

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
141									
142									
143	120								
144							(144'); some granules to very large pebbles, angular to subangular; trace small cobbles, subangular; decrease in silt		
145									
146									
147									
148								(147.0 - 157.0') Soft drilling	
149									
150		Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Older Alluvium Deposits	SM		(149'); little silt		
151									
152	120						(152'); increase in sand, decrease in granules and pebbles, no cobbles		
153									
154									
155									
156									
157							(156.5') reddish brown (2.5YR 4/4); little granules to very large pebbles, angular to subangular; trace clay; decrease in sand		
158								(157.0 - 167.0') Soft drilling, change in rig geologist.	
159	120								
160							(159.2'); some granules to very large pebbles, angular to subangular; decrease in sand, decrease in silt		

FINAL 12/5/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMC\GRAND\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 14:18

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
161									
162							(162'); increase in sand, decrease in granules and pebbles, increase in silt, no clay		
163	120								
164							(164'); little clay; moist to wet; increase in granules and pebbles, decrease in sand		
165									
166									
167									
168							(168'); wet; decrease in sand, increase in granules and pebbles	(167.0 - 177.0') Soft drilling	
169									
170		Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Older Alluvium Deposits	SM				
171									
172	120						(172'); trace clay; increase in silt, increase in sand, decrease in granules and pebbles		
173									
174							(174'); little clay; decrease in silt, decrease in granules and pebbles		
175									
176									
177							(177'); trace clay; increase in sand		
178							(178'); increase in silt, no clay	(177.0 - 197.0') Soft drilling, additional recovery do to stretching of finer grained lithology.	
179	252						(179'); trace clay; decrease in silt		
180									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMC\GRAND\DOCUMENTS\PG&E TOPOCK\DRAFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 14:18

Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM / GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
181				Topock - Older Alluvium Deposits	SM		(180.5 - 181.0') Topock - Older Alluvium Deposits; Well graded sand with silt and gravel (SW-SM); reddish brown (2.5YR 4/4); very fine grained to very coarse grained, angular to subround; some granules to very large pebbles, angular to subangular; little silt; trace clay; trace mica; coarser clasts composed of metadiorite; wet		
182				Topock - Older Alluvium Deposits	SM		(181.0 - 186.5') Topock - Older Alluvium Deposits; Silty sand with gravel (SM); reddish brown (2.5YR 4/4); very fine grained to very coarse grained, angular to subround; some granules to very large pebbles, angular to subangular; little silt; trace clay; little mica; coarser clasts composed of metadiorite; wet		
183			(184.0 - 186.5'); some silt; little clay; decrease in sand, increase in silt, increase in clay						
184									
185				Topock - Weathered Bedrock - conglomerate	SC		(186.5 - 207.0') Topock - Weathered Bedrock - conglomerate; Clayey sand with gravel (SC); red (2.5YR 4/6); very fine grained to very coarse grained, angular to subround; some granules to very large pebbles, angular to subangular; little silt; little clay; trace mica; coarser clasts composed of metadiorite; moist to wet; weathered pebble gravel present		
186									
187									
188									
189	252		Groundwater VAS collection was not included in the drilling scope						
190		Sieve samples not collected							
191									
192									
193									
194									
195									
196									
197									
198	120					(192'); trace silt; increase granules and pebbles, increase in sand, decrease silt			
199						(197.5'); little silt; decrease in sand, increase in silt	(197.0 - 207.0') Soft drilling, change in rig geologist.		
200						(199'); trace silt; increase in sand, decrease in silt			

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Date Started: 10/31/2019	Surface Elevation: 467.61 ft amsl	<b>Boring No.: MW-94d</b>
Date Completed: 11/02/2019	Northing (NAD83): 2103892.87	
Drilling Co.: Cascade	Easting (NAD83): 7620097.91	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 207 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Prosonic Truck Mount	Borehole Diameter: 6-10 inches	Location: PG&E Topock, Needles, California
Driller Name: S. Vasquez / E. Ramos	Depth to First Water: 10.6 ft bgs	Project Number: RC000753.0051
Drilling Asst: L. Amaya / P. Almanza	Sampling Method: 4 inch x 10 ft Core Barrel	
Logger: JL / SM/ GJ / RC	Sampling Interval: Continuous	
Editor: Kendra Keon	Converted to Well: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description	Drilling Notes	Drilling Fluid
201	120	Sieve samples not collected	Groundwater VAS collection was not included in the drilling scope	Topock - Weathered Bedrock - conglomerate	SC		(205'); little silt; decrease in sand, increase in silt		
202									
203									
204									
205									
206									
207									
End of Boring at 207.0 ft bgs.									
208									
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220									

Final 12/30/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: blue water table symbol represents depth to water measured during drilling; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-94-175 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\SSM\GRANEDOCUMENTS\PG&E TOPOCK\DRAFT BORING LOGS\GINT FILES\12.28.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 12/30/20 14:18