

Date Started: 01/28/2020	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37
Date Completed: 02/04/2020	Shallow Well Elevation: N/A	
Drilling Co.: Cascade	Deep Well Elevation: N/A	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2101555.8	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7616004.6	Location: PG&E Topock, Topock, California
Drilling Asst: J. Candelaria/F. Sandoval	Borehole Diameter: 12 inches	Project Number: RC000753.0051
Logger: Joe Lantham	Water Level Start: 51.67 ft bgs	
Editor: Sean McGrane	Development End Date: 2/18/2020	
Total Depth: 82 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
1					(0.0 - 0.5') Steel Plate (0.5 - 49.0') 8" Suregrip 17 Casing		Note: Steel plates with BMPs in place
2					(1.0 - 4.0') Temporary Backfill Sand	(1.0 - 4.0') 2.6 bags	(1.0 - 4.0') 3 bags (15%) Note: Wildcat Plastering Sand
3							
4							
5							
6							
7							
8		Topock - Fill	SM				
9					(8.5 - 9.5') Centralizer		
10					(0.0 - 82.0') 12.0" Borehole		
11							
12					(4.0 - 36.0') Portland Cement 3% Bentonite	(4.0 - 36.0') 104.4 gallons	(4.0 - 36.0') 140 gallons (34%) Note: Type I, II, and V with Hydrogel, used >20% of the calculated volume due to potential voids forming during drilling and grout migration
13							
14							
15							
16							
17		Topock - Alluvium Deposits	SM				
18							
19							
20							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, groundwater samples were collected during drilling of the pilot borehole

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\022320\TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 15:51

Date Started: 01/28/2020	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37
Date Completed: 02/04/2020	Shallow Well Elevation: N/A	
Drilling Co.: Cascade	Deep Well Elevation: N/A	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2101555.8	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7616004.6	Location: PG&E Topock, Topock, California
Drilling Asst: J. Candelaria/F. Sandoval	Borehole Diameter: 12 inches	Project Number: RC000753.0051
Logger: Joe Lantham	Water Level Start: 51.67 ft bgs	
Editor: Sean McGrane	Development End Date: 2/18/2020	
Total Depth: 82 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
21		Topock - Alluvium Deposits	SM		(0.5 - 49.0') 8" Suregrip 17 Casing		
22							
23		Topock - Alluvium Deposits	SM		(0.0 - 82.0') 12.0" Borehole	(4.0 - 36.0') 104.4 gallons	(4.0 - 36.0') 140 gallons (34%) Note: Type I, II, and V with Hydrogel, used >20% of the calculated volume due to potential voids forming during drilling and grout migration
24							
25							
26							
27							
28							
29							
30							
31							
32							
33		Topock - Alluvium Deposits	ML		(36.0 - 41.2') Cemex #60	(36.0 - 41.2') 4.5 bags	(36.0 - 41.2') 4.5 bags (0%) Note: Lapis Lustre Sand
34							
35							
36							
37							
38							
39							
40							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, groundwater samples were collected during drilling of the pilot borehole

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK_C:\USERS\SMC\GRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\022320\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 15:51

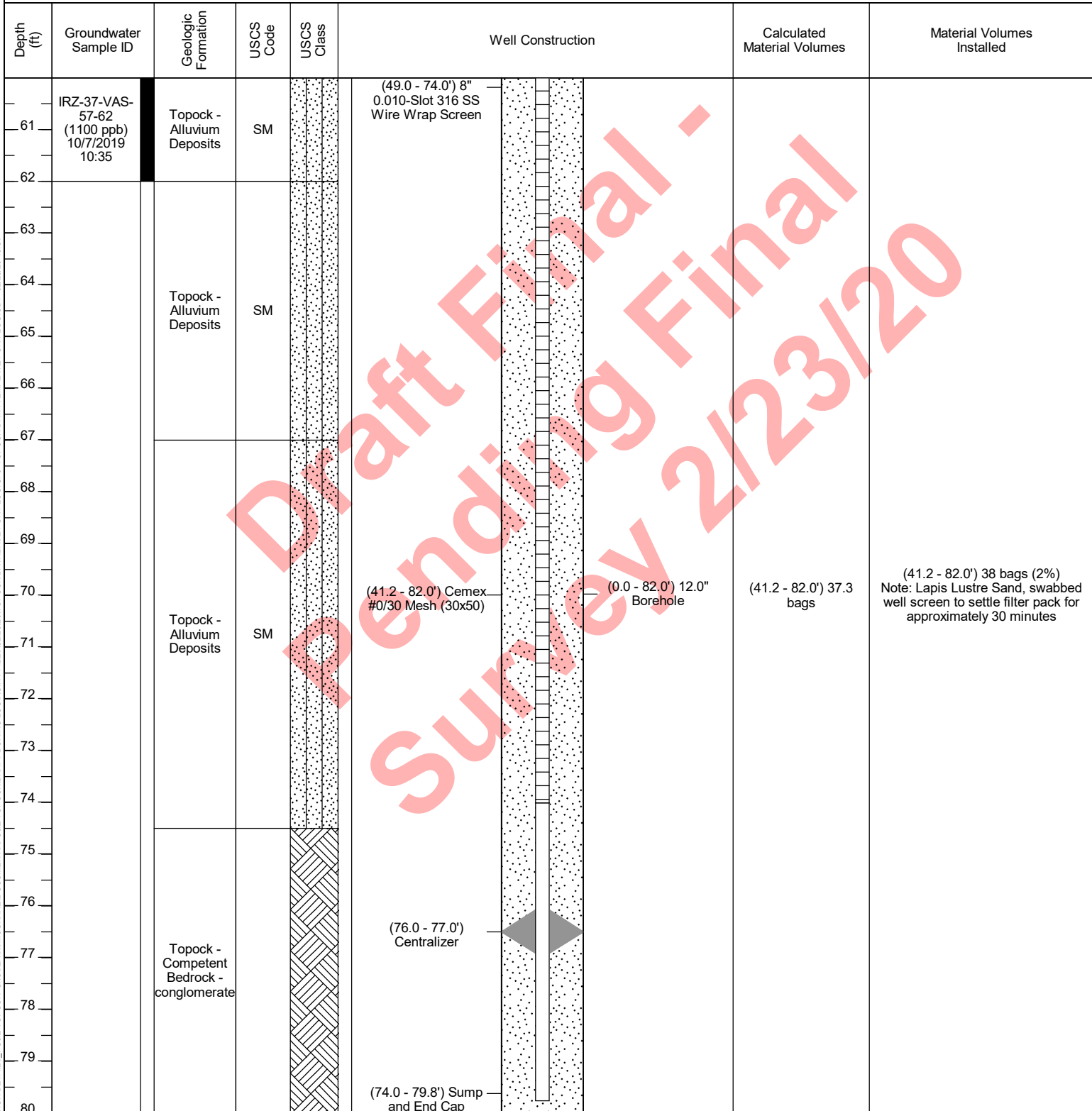
Date Started: 01/28/2020	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37
Date Completed: 02/04/2020	Shallow Well Elevation: N/A	
Drilling Co.: Cascade	Deep Well Elevation: N/A	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2101555.8	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7616004.6	Location: PG&E Topock, Topock, California
Drilling Asst: J. Candelaria/F. Sandoval	Borehole Diameter: 12 inches	Project Number: RC000753.0051
Logger: Joe Lantham	Water Level Start: 51.67 ft bgs	
Editor: Sean McGrane	Development End Date: 2/18/2020	
Total Depth: 82 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
41		Topock - Alluvium Deposits	ML		(0.5 - 49.0') 8" Suregrip 17 Casing (36.0 - 41.2') Cemex #60	(36.0 - 41.2') 4.5 bags	(36.0 - 41.2') 4.5 bags (0%) Note: Lapis Lustre Sand
42							
43		Topock - Alluvium Deposits	SM		(45.5 - 46.5') Centralizer		
44							
45		Topock - Alluvium Deposits	ML		(49.0 - 74.0') 8" 0.010-Slot 316 SS Wire Wrap Screen	(41.2 - 82.0') 37.3 bags	(41.2 - 82.0') 38 bags (2%) Note: Lapis Lustre Sand, swabbed well screen to settle filter pack for approximately 30 minutes
46							
47							
48							
49		Topock - Alluvium Deposits	GP		(0.0 - 82.0') 12.0" Borehole		
50							
51		Topock - Alluvium Deposits	SM		(41.2 - 82.0') Cemex #0/30 Mesh (30x50)		
52							
53		Topock - Alluvium Deposits	SM				
54	IRZ-37-VAS-52-57 (1000 ppb) 10/6/2019 14:30						
55		Topock - Alluvium Deposits	SM				
56							
57		Topock - Alluvium Deposits	SM				
58	IRZ-37-VAS-57-62 (1100 ppb) 10/7/2019 10:35						
59							
60							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, groundwater samples were collected during drilling of the pilot borehole

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK_C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\022320\TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 15:51

Date Started: 01/28/2020	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37
Date Completed: 02/04/2020	Shallow Well Elevation: N/A	
Drilling Co.: Cascade	Deep Well Elevation: N/A	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2101555.8	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7616004.6	Location: PG&E Topock, Topock, California
Drilling Asst: J. Candelaria/F. Sandoval	Borehole Diameter: 12 inches	Project Number: RC000753.0051
Logger: Joe Lantham	Water Level Start: 51.67 ft bgs	
Editor: Sean McGrane	Development End Date: 2/18/2020	
Total Depth: 82 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up	



Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, groundwater samples were collected during drilling of the pilot borehole

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK_C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\022320\TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 15:51

Date Started: 01/28/2020	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37
Date Completed: 02/04/2020	Shallow Well Elevation: N/A	
Drilling Co.: Cascade	Deep Well Elevation: N/A	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2101555.8	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7616004.6	Location: PG&E Topock, Topock, California
Drilling Asst: J. Candelaria/F. Sandoval	Borehole Diameter: 12 inches	
Logger: Joe Lantham	Water Level Start: 51.67 ft bgs	Project Number: RC000753.0051
Editor: Sean McGrane	Development End Date: 2/18/2020	
Total Depth: 82 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
81		Topock - Competent Bedrock - conglomerate			(41.2 - 82.0') Cemex #0/30 Mesh (30x50)	(41.2 - 82.0') 37.3 bags	(41.2 - 82.0') 38 bags (2%) Note: Lapis Lustre Sand, swabbed well screen to settle filter pack for approximately 30 minutes
82					(0.0 - 82.0') 12.0" Borehole		
83					End of Boring at 82.0' bgs.		
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							

Draft Final
Pending Final
Survey 2/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, groundwater samples were collected during drilling of the pilot borehole

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\022320\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 15:51

Date Started:	01/25/2020	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37
Date Completed:	01/26/2020	Northing (NAD83):	2101555.8	
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client: PG&E
Drilling Method:	Sonic Drilling	Total Depth:	82 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Conductor Casing Diameter:	N/A	Location: PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Drill Casing Diameter:	12 inches	
Drilling Asst:	J. Candelaria/F. Sandoval	Drill Bit:	N/A	Project Number: RC000753.0051
Tool-Pusher:	NA	Depth to First Water:	48.25 ft bgs	
Rig Geologist:	Joe Lantham	Converted to Well:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Drilling Run and Average Penetration Rate	USCS Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling Notes	Drilling Fluid			
1	(0.0 - 82.0) 0.08 mins/ft	SM	[Pattern]	(0.0 - 82.0) 12.0" Steel Casing	(0.0 - 15.0') Topock - Fill; Silty sand with gravel (SM); pale yellow (2.5Y 8/2) with very pale brown (10YR 7/3)	(0.0 - 5.0') Soft drilling, observed temporary backfill material plastering sand in drill cuttings (see Photo Log).	(0.0 - 57.0') No water used			
2										
3										
4										
5										
6									(5.0 - 8.0') Soft drilling, observed temporary backfill material plastering sand and Mesh #3 Sand in drill cuttings (see Photo Log).	
7										
8										
9										
10										
11										
12										
13										
14										
15									(15.0 - 27.0') Topock - Alluvium Deposits; Silty sand (SM); very pale brown / grayish orange (10YR 7/4)	
16										
17										
18										
19										
20						(17.0 - 27.0') Rough drilling, had to go back down twice because sands kept falling out of core barrel. Observed temporary backfill material Mesh #3 Sand in drill cuttings (see Photo Log).				

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater

Remarks: blue water table symbol represents depth to water measured during the first VAS interval during drilling of the pilot borehole

IRZ DRILLING LOG_PG&E_TOPOCK C:\USERS\SMC\GRAND\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 15:27

Date Started:	01/25/2020	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37
Date Completed:	01/26/2020	Northing (NAD83):	2101555.8	
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client: PG&E
Drilling Method:	Sonic Drilling	Total Depth:	82 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Conductor Casing Diameter:	N/A	Location: PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Drill Casing Diameter:	12 inches	
Drilling Asst:	J. Candelaria/F. Sandoval	Drill Bit:	N/A	Project Number: RC000753.0051
Tool-Pusher:	NA	Depth to First Water:	48.25 ft bgs	
Rig Geologist:	Joe Lantham	Converted to Well:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Drilling Run and Average Penetration Rate	USCS Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling Notes	Drilling Fluid		
21	(0.0 - 82.0) 0.08 mins/ft	SM	[Pattern]	(0.0 - 82.0') 12.0" Steel Casing					
22									
23									
24									
25									
26									
27									
28						(27.0 - 35.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); brown (7.5YR 4/4)	(27.0 - 32.0') Rough drilling, had to go back down because sands kept falling out of core barrel.		
29									
30									
31			SM		[Pattern]				
32									
33								(32.0 - 37.0') Rough drilling, had to go back down because sands kept falling out of core barrel. Observed temporary backfill material Mesh #3 Sand in drill cuttings (see Photo Log).	
34									
35									
36							(35.0 - 44.0') Topock - Alluvium Deposits; Silt with sand (ML); brown (7.5YR 4/4)		
37									
38			ML		[Pattern]			(37.0 - 47.0') Rough drilling, observed temporary backfill material Mesh #3 Sand in drill cuttings (see Photo Log).	
39									
40									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater

Remarks: blue water table symbol represents depth to water measured during the first VAS interval during drilling of the pilot borehole

IRZ DRILLING LOG_PG&E_TOPOCK_C:\USERS\SMC\GRAND\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02_23_20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 15:27

Date Started:	01/25/2020	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37
Date Completed:	01/26/2020	Northing (NAD83):	2101555.8	
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client: PG&E
Drilling Method:	Sonic Drilling	Total Depth:	82 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Conductor Casing Diameter:	N/A	Location: PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Drill Casing Diameter:	12 inches	
Drilling Asst:	J. Candelaria/F. Sandoval	Drill Bit:	N/A	Project Number: RC000753.0051
Tool-Pusher:	NA	Depth to First Water:	48.25 ft bgs	
Rig Geologist:	Joe Lantham	Converted to Well:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Drilling Run and Average Penetration Rate	USCS Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling Notes	Drilling Fluid
41	(0.0 - 82.0) 0.08 mins/ft	ML	ML	(0.0 - 82.0') 12.0" Steel Casing	(44.0 - 49.0') Topock - Alluvium Deposits; Silty sand with gravel (SM)		
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52	SM	SM	(53.4 - 57.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4)	(57.0 - 60.0') Topock - Alluvium Deposits; Silty sand (SM); reddish brown (5YR 5/4)	(57.0 - 67.0') Normal drilling, observed temporary backfill material Mesh #3 Sand in drill cuttings (see Photo Log).	(57.0 - 82.0') No water used	
53							
54							
55	SM	SM					
56							
57	SM	SM					
58							
59	SM	SM					
60							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater

Remarks: blue water table symbol represents depth to water measured during the first VAS interval during drilling of the pilot borehole

IRZ DRILLING LOG_PG&E_TOPOCK_C:\USERS\MCR\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_022320 15:27

Date Started:	01/25/2020	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37
Date Completed:	01/26/2020	Northing (NAD83):	2101555.8	
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client: PG&E
Drilling Method:	Sonic Drilling	Total Depth:	82 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Conductor Casing Diameter:	N/A	Location: PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Drill Casing Diameter:	12 inches	
Drilling Asst:	J. Candelaria/F. Sandoval	Drill Bit:	N/A	Project Number: RC000753.0051
Tool-Pusher:	NA	Depth to First Water:	48.25 ft bgs	
Rig Geologist:	Joe Lantham	Converted to Well:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	


Depth (ft)	Drilling Run and Average Penetration Rate	USCS Code	USCS Class	Casing Diameter	Description <small>(See Pilot boring log for full geologic descriptions)</small>	Drilling Notes	Drilling Fluid
61		SM			(60.0 - 62.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4)		
62					(62.0 - 67.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4) little light greenish gray (GLEY2 7/1)		
63		SM					
64							
65							
66							
67							
68					(67.0 - 74.5') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4) with light brown (7.5YR 6/3)	(67.0 - 77.0') Normal drilling, observed temporary backfill material Mesh #3 Sand in drill cuttings (see Photo Log).	
69							
70	(0.0 - 82.0) 0.08 mins/ft			(0.0 - 82.0') 12.0" Steel Casing			
71		SM					
72					(72') reddish brown (5YR 5/4) with red (2.5YR 5/6)		
73							
74							
75					(74.5 - 82.0') Topock - Competent Bedrock - conglomerate; red (2.5YR 5/6)		
76							
77							
78							
79							
80						(77.0 - 80.0') Rough drilling, core barrel plugged up.	

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater

Remarks: blue water table symbol represents depth to water measured during the first VAS interval during drilling of the pilot borehole

IRZ DRILLING LOG_PG&E_TOPOCK_C:\USERS\SMC\GRAND\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02_23_20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 15:27

Date Started:	01/25/2020	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37
Date Completed:	01/26/2020	Northing (NAD83):	2101555.8	
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client: PG&E
Drilling Method:	Sonic Drilling	Total Depth:	82 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Conductor Casing Diameter:	N/A	Location: PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Drill Casing Diameter:	12 inches	
Drilling Asst:	J. Candelaria/F. Sandoval	Drill Bit:	N/A	Project Number: RC000753.0051
Tool-Pusher:	NA	Depth to First Water:	48.25 ft bgs	
Rig Geologist:	Joe Lantham	Converted to Well:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Depth (ft)	Drilling Run and Average Penetration Rate	USCS Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling Notes	Drilling Fluid
81	(0.0 - 82.0) 0.08 mins/ft			(0.0 - 82.0') 12.0" Steel Casing		(80.0 - 82.0') Rough drilling, had to go back down three times because sands kept falling out of core barrel. Conducted borehole flush to remove fines in preparation for well installation.	(80.0 - 82.0') 600 gallons of water used; 600 gallons of water recovered; 0 gallons of water lost

End of Boring at 82.0 'bgs.



Final 2/23/20

IRZ DRILLING LOG_PG&E_TOPOCK_C:\USERS\SMC\GRAND\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02_23_20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 15:27

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater

Remarks: blue water table symbol represents depth to water measured during the first VAS interval during drilling of the pilot borehole

Date Started:	10/05/2019	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37 Pilot	
Date Completed:	10/07/2019	Northing (NAD83):	2101555.8		
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client:	PG&E
Drilling Method:	Sonic Drilling	Total Depth:	87 ft bgs	Project:	Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Borehole Diameter:	4-6 inches	Location:	PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Depth to First Water:	48.25 ft bgs		
Drilling Asst:	F. Sandoval/J. Candelaria	Sampling Method:	4 inch x 10 ft. Core Barrel	Project Number:	RC000753.0051
Logger:	Grant Willford	Sampling Interval:	Continuous		
Editor:	Sean McGrane	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	60			Topock - Fill	SM		(0.0 - 15.0') Topock - Fill; Silty sand with gravel (SM); pale yellow (2.5Y 8/2) with very pale brown (10YR 7/3); very fine grained to coarse grained, angular to subround; little granules to medium pebbles, angular to round; little silt; dry	(0.0 - 5.0') Hand augered for utility clearance.	(0.0 - 87.0') No water used	
2										
3										
4										
5										
6	120							(5.0 - 17.0') Soft drilling.		
7										
8										
9										
10										
11										
12		(12'); moist								
13										
14										
15										
16				Topock - Alluvium Deposits	SM		(15.0 - 27.0') Topock - Alluvium Deposits; Silty sand (SM); very pale brown / grayish orange (10YR 7/4); very fine grained to medium grained, angular to subangular; little granules to medium pebbles, angular to subangular; little silt; dry; homogeneous; weak cementation; trace organics 15-15.3			
17										
18							(17.0 - 27.0') Soft drilling. Fine materials filled up/compacted in core bags leading to 7/10 ft recovery. Driller also noted core barrel was full			
19	84									
20										

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval

SOIL BORING LOG: PG&E TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 12:45

Date Started:	10/05/2019	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37 Pilot	
Date Completed:	10/07/2019	Northing (NAD83):	2101555.8		
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client:	PG&E
Drilling Method:	Sonic Drilling	Total Depth:	87 ft bgs	Project:	Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Borehole Diameter:	4-6 inches	Location:	PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Depth to First Water:	48.25 ft bgs		
Drilling Asst:	F. Sandoval/J. Candelaria	Sampling Method:	4 inch x 10 ft. Core Barrel	Project Number:	RC000753.0051
Logger:	Grant Willford	Sampling Interval:	Continuous		
Editor:	Sean McGrane	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								prior to drill cutting collection.	
22									
23									
24	84			Topock - Alluvium Deposits	SM				
25									
26									
27									
28							(27.0 - 35.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); brown (7.5YR 4/4); very fine grained to medium grained, angular to subround; little granules to medium pebbles, angular to subangular; little silt; trace small cobbles, subround; dry; homogeneous; weak cementation	(27.0 - 37.0') Soft drilling 27-35 ft bgs Hard drilling 35-37 ft bgs. Fine materials filled up/compacted in core bags leading to 7/10 ft recovery. Driller also noted core barrel was full prior to drill cutting collection.	
29									
30									
31				Topock - Alluvium Deposits	SM				
32	84								
33									
34									
35									
36							(35.0 - 44.0') Topock - Alluvium Deposits; Silt with sand (ML); brown (7.5YR 4/4); low plasticity; and very fine to medium grained sand, angular to subround; little granules to small pebbles, angular to subangular; dry; very soft to soft; homogeneous; low plasticity when wetted		
37									
38				Topock - Alluvium Deposits	ML			(37.0 - 47.0') Rough drilling.	
39	120								
40									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval

SOIL BORING LOG_PG&E_TOPOCK_C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_02/23/20 12:45

Date Started:	10/05/2019	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37 Pilot	
Date Completed:	10/07/2019	Northing (NAD83):	2101555.8		
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client:	PG&E
Drilling Method:	Sonic Drilling	Total Depth:	87 ft bgs	Project:	Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Borehole Diameter:	4-6 inches	Location:	PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Depth to First Water:	48.25 ft bgs	Project Number:	RC000753.0051
Drilling Asst:	F. Sandoval/J. Candelaria	Sampling Method:	4 inch x 10 ft. Core Barrel		
Logger:	Grant Willford	Sampling Interval:	Continuous		
Editor:	Sean McGrane	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			Topock - Alluvium Deposits	ML				
42									
43									
44									
45		IRZ-37-SS-45-50 10/9/2019 08:15		Topock - Alluvium Deposits	SM		(44.0 - 49.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); very fine grained to very coarse grained, angular to subround; little granules to large pebbles, angular to subangular; little silt; trace clay; dry; moderate cementation	(47.0 - 50.0') Soft drilling.	
46									
47									
48									
49									
50		IRZ-37-SS-50-55 10/9/2019 08:25		Topock - Alluvium Deposits	ML		(49.0 - 53.0') Topock - Alluvium Deposits; Sandy silt with gravel (ML); reddish brown (5YR 5/4); low plasticity; and very fine to very coarse grained sand, angular to subround; little granules to medium pebbles, angular to subangular; trace clay; moist; stiff; mottled; moderate cementation	(50.0 - 52.0') Rough drilling.	
51									
52	120								
53		IRZ-37-VAS-52-57 (1000 ppb) 10/6/2019 14:30		Topock - Alluvium Deposits	GP		(53.0 - 53.4') Topock - Alluvium Deposits; Poorly graded gravel (GP); light greenish gray (GLEY2 7/1); small cobbles; dry; pulverized metadiorite boulder	(52.0 - 55.0') Soft drilling.	
54									
55				Topock - Alluvium Deposits	SM		(53.4 - 57.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4); very fine grained to very coarse grained, angular to subround; some granules to large pebbles, angular to subangular; little silt; trace small cobbles, subangular; trace clay; moist to dry; mottled; strong cementation; iron oxide staining; some red staining on gravel clasts (55'); dry	(55.0 - 57.0') Rough drilling.	
56									
57		IRZ-37-SS-55-60 10/9/2019 08:30						(57.0 - 64.0') Normal drilling conditions.	
58									
59	120			Topock - Alluvium Deposits	SM		(57.0 - 60.0') Topock - Alluvium Deposits; Silty sand (SM); reddish brown (5YR 5/4); very fine grained to very coarse grained, angular to subround; little granules to small pebbles, angular to subangular; little silt; trace clay; wet to moist; iron oxide staining		
60									

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval

SOIL BORING LOG_PG&E_TOPOCK_C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\0223_201\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT_02232012.45

Date Started:	10/05/2019	Surface Elevation:	505.2 ft amsl	Boring No.: IRZ-37 Pilot	
Date Completed:	10/07/2019	Northing (NAD83):	2101555.8		
Drilling Co.:	Cascade	Easting (NAD83):	7616004.6	Client:	PG&E
Drilling Method:	Sonic Drilling	Total Depth:	87 ft bgs	Project:	Final GW Remedy Phase 1
Drill Rig Type:	Boart Longyear Track	Borehole Diameter:	4-6 inches	Location:	PG&E Topock, Topock, California
Driller Name:	Eddie Ramos	Depth to First Water:	48.25 ft bgs	Project Number:	RC000753.0051
Drilling Asst:	F. Sandoval/J. Candelaria	Sampling Method:	4 inch x 10 ft. Core Barrel		
Logger:	Grant Willford	Sampling Interval:	Continuous		
Editor:	Sean McGrane	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	120	IRZ-37-SS-60-65 10/9/2019 08:40	IRZ-37-VAS-57-62 (1100 ppb) 10/7/2019 10:35	Topock - Alluvium Deposits	SM		(60.0 - 62.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4); very fine grained to very coarse grained, angular to subround; some granules to very large pebbles, angular to subround; little silt; trace small cobbles, angular; trace clay; moist; moderate cementation; iron oxide staining		
62				Topock - Alluvium Deposits	SM		(62.0 - 67.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4) little light greenish gray (GLE2 7/1); very fine grained to very coarse grained, angular to subround; little granules to large pebbles, angular to subangular; little silt; coarser clasts composed of metadiorite; dry; mottled; weak cementation; iron oxide staining; some red staining on coarser clasts	(64.0 - 66.5') Rough drilling.	
63				Topock - Alluvium Deposits	SM		(67.0 - 74.5') Topock - Alluvium Deposits; Silty sand with gravel (SM); reddish brown (5YR 5/4) with light brown (7.5YR 6/3); very fine grained to very coarse grained, angular to subround; some silt; little granules to medium pebbles, angular to subangular; trace clay; moist; mottled; moderate cementation; iron oxide staining; 20,50,25,5. Color change from 72-74.5 ft bgs to 5YR 5/4 some 2.5YR 5/6.	(66.5 - 67.0') Soft drilling. (67.0 - 75.0') Normal drilling conditions.	
64	120	IRZ-37-SS-70-75 10/9/2019 08:20		Topock - Alluvium Deposits	SM		(72') reddish brown (5YR 5/4) with red (2.5YR 5/6)		
65				Topock - Alluvium Deposits	SM				
66				Topock - Alluvium Deposits	SM				
67				Topock - Alluvium Deposits	SM				
68	120			Topock - Competent Bedrock - conglomerate			(74.5 - 87.0') Topock - Competent Bedrock - conglomerate; red (2.5YR 5/6); dry; moderate cementation; iron oxide staining; pulverized/highly fractured rock, friable	(75.0 - 77.0') Rough drilling.	
69				Topock - Competent Bedrock - conglomerate					
70				Topock - Competent Bedrock - conglomerate					
71				Topock - Competent Bedrock - conglomerate					
72	120			Topock - Competent Bedrock - conglomerate				(77.0 - 87.0') Rough drilling. Core barrel locked up; had some difficulties getting it out. Lost core downhole after freeing up core barrel	
73				Topock - Competent Bedrock - conglomerate					
74				Topock - Competent Bedrock - conglomerate					
75				Topock - Competent Bedrock - conglomerate					

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval

SOIL BORING LOG_PG&E_TOPOCK_C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 12:45

Date Started: 10/05/2019	Surface Elevation: 505.2 ft amsl	Boring No.: IRZ-37 Pilot
Date Completed: 10/07/2019	Northing (NAD83): 2101555.8	
Drilling Co.: Cascade	Easting (NAD83): 7616004.6	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 87 ft bgs	Project: Final GW Remedy Phase 1
Drill Rig Type: Boart Longyear Track	Borehole Diameter: 4-6 inches	Location: PG&E Topock, Topock, California
Driller Name: Eddie Ramos	Depth to First Water: 48.25 ft bgs	
Drilling Asst: F. Sandoval/J. Candelaria	Sampling Method: 4 inch x 10 ft. Core Barrel	Project Number: RC000753.0051
Logger: Grant Willford	Sampling Interval: Continuous	
Editor: Sean McGrane	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	120			Topock - Competent Bedrock - conglomerate				Recovered core with flapper drill bit.					
82													
83													
84													
85		--no sample-- (Interval did not produce) 10/8/2019 07:35											
86													
87													
88		End of Boring at 87.0 'bgs.											
89													
90													
91													
92													
93													
94													
95													
96													
97													
98													
99													
100													

Final 2/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval

SOIL BORING LOG_PG&E_TOPOCK_C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DRAFT BORING LOGS\GINT FILES\02232012\TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 12:45

Date Started: 10/08/2019	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37 Pilot
Date Completed: 10/08/2019	Northing (NAD83): 2101555.8	
Drilling Co.: Cascade	Easting (NAD83): 7616004.6	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 87 ft bgs	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Borehole Diameter: 4-6 inches	Location: PG&E Topock, Topock, California
Drilling Asst: F. Sandoval/J. Candelaria	Depth to First Water: 48.25 ft bgs	
Logger: Grant Willford	Editor: Sean McGrane	Project Number: RC000753.0051

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
1					(0.0 - 0.5') Steel Plate		Note: Steel plates with BMPs in place
2					(0.5 - 5.0') Choker Sand Seal	(0.5 - 5.0') 2 bags	(0.5 - 5.0') 2 bags (0%) Note: Wildcat Plaster Sand
3							
4		Topock - Fill	SM		(0.0 - 82.0') 6.0" Borehole		
5							
6							
7							
8							
9							
10							
11							
12							
13							
14		Topock - Alluvium Deposits	SM		(5.0 - 72.0') Cemex #3 MESH (8x10)	(5.0 - 72.0') 33.5 bags	(5.0 - 72.0') 26.3 bags (-21%) Note: Lapis Lustre Sand, used >20% of the calculated volume due to potential voids forming during drilling
15							
16							
17							
18							
19							
20							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval Note: Granule backfill material will be excavated from the pilot borehole during drilling for the construction of the well.

TEMP ABANDONMENT LOG_PG&E_TOPOCK C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 10/23/2012 12:57

Date Started: 10/08/2019	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37 Pilot
Date Completed: 10/08/2019	Northing (NAD83): 2101555.8	
Drilling Co.: Cascade	Easting (NAD83): 7616004.6	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 87 ft bgs	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Borehole Diameter: 4-6 inches	Location: PG&E Topock, Topock, California
Drilling Asst: F. Sandoval/J. Candelaria	Depth to First Water: 48.25 ft bgs	
Logger: Grant Willford	Editor: Sean McGrane	Project Number: RC000753.0051

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
21		Topock - Alluvium Deposits	SM				
22							
23		Topock - Alluvium Deposits	SM		(5.0 - 72.0') Cemex #3 MESH (8x10)	(0.0 - 82.0') 6.0" Borehole	(5.0 - 72.0') 33.5 bags
24							
25		Topock - Alluvium Deposits	SM				(5.0 - 72.0') 26.3 bags (-21%) Note: Lapis Lustre Sand, used >20% of the calculated volume due to potential voids forming during drilling
26							
27		Topock - Alluvium Deposits	ML				
28							
29		Topock - Alluvium Deposits	ML				
30							
31		Topock - Alluvium Deposits	ML				
32							
33		Topock - Alluvium Deposits	ML				
34							
35		Topock - Alluvium Deposits	ML				
36							
37		Topock - Alluvium Deposits	ML				
38							
39		Topock - Alluvium Deposits	ML				
40							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval Note: Granule backfill material will be excavated from the pilot borehole during drilling for the construction of the well.

TEMP ABANDONMENT LOG_PG&E_TOPOCK_C:\USERS\SMC\GRAND\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02_23_20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 12:57

Date Started: 10/08/2019	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37 Pilot
Date Completed: 10/08/2019	Northing (NAD83): 2101555.8	
Drilling Co.: Cascade	Easting (NAD83): 7616004.6	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 87 ft bgs	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Borehole Diameter: 4-6 inches	Location: PG&E Topock, Topock, California
Drilling Asst: F. Sandoval/J. Candelaria	Depth to First Water: 48.25 ft bgs	
Logger: Grant Willford	Editor: Sean McGrane	Project Number: RC000753.0051

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
41		Topock - Alluvium Deposits	ML				
42							
43		Topock - Alluvium Deposits	SM				
44							
45							
46							
47		Topock - Alluvium Deposits	ML				
48							
49		Topock - Alluvium Deposits	ML		(5.0 - 72.0') Cemex #3 MESH (8x10)		
50							
51		Topock - Alluvium Deposits	GP				
52							
53	IRZ-37-VAS-52-57 (1000 ppb) 10/6/2019 14:30	Topock - Alluvium Deposits	SM				
54							
55		Topock - Alluvium Deposits	SM				
56							
57		Topock - Alluvium Deposits	SM				
58	IRZ-37-VAS-57-62 (1100 ppb) 10/7/2019 10:35						
59		Topock - Alluvium Deposits	SM				
60							

Final 2/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval Note: Granule backfill material will be excavated from the pilot borehole during drilling for the construction of the well.

TEMP ABANDONMENT LOG_PG&E_TOPOCK_C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DRIFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/23/20 12:57

Date Started: 10/08/2019	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37 Pilot
Date Completed: 10/08/2019	Northing (NAD83): 2101555.8	
Drilling Co.: Cascade	Easting (NAD83): 7616004.6	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 87 ft bgs	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Borehole Diameter: 4-6 inches	Location: PG&E Topock, Topock, California
Drilling Asst: F. Sandoval/J. Candelaria	Depth to First Water: 48.25 ft bgs	
Logger: Grant Willford	Editor: Sean McGrane	Project Number: RC000753.0051

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
61	IRZ-37-VAS-57-62 (1100 ppb) 10/7/2019 10:35	Topock - Alluvium Deposits	SM				
62							
63		Topock - Alluvium Deposits	SM		(5.0 - 72.0') Cemex #3 MESH (8x10)	(5.0 - 72.0') 33.5 bags	(5.0 - 72.0') 26.3 bags (-21%) Note: Lapis Lustre Sand, used >20% of the calculated volume due to potential voids forming during drilling
64							
65							
66							
67							
68		Topock - Alluvium Deposits	SM		(0.0 - 82.0') 6.0" Borehole		
69							
70							
71							
72							
73							
74							
75		Topock - Competent Bedrock - conglomerate			(72.0 - 81.0') Cemex # 2/12 MESH (16x30)	(72.0 - 81.0') 3.9 bags	(72.0 - 81.0') 4 bags (3%) Note: Lapis Lustre Sand
76							
77							
78							
79							
80							

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval Note: Granule backfill material will be excavated from the pilot borehole during drilling for the construction of the well.

TEMP ABANDONMENT LOG_PG&E_TOPOCK C:\USERS\SMC\GRANDOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 10/23/2012 12:57

Date Started: 10/08/2019	Surface Elevation: 505.2 ft amsl	Well ID: IRZ-37 Pilot
Date Completed: 10/08/2019	Northing (NAD83): 2101555.8	
Drilling Co.: Cascade	Easting (NAD83): 7616004.6	Client: PG&E
Drilling Method: Sonic Drilling	Total Depth: 87 ft bgs	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Borehole Diameter: 4-6 inches	Location: PG&E Topock, Topock, California
Drilling Asst: F. Sandoval/J. Candelaria	Depth to First Water: 48.25 ft bgs	
Logger: Grant Willford	Editor: Sean McGrane	Project Number: RC000753.0051

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed
81		Topock - Competent Bedrock - conglomerate			(72.0 - 81.0') Cemex # 2/12 MESH (16x30)	(72.0 - 81.0') 3.9 bags	(72.0 - 81.0') 4 bags (3%) Note: Lapis Lustre Sand
82					(0.0 - 82.0') 6.0" Borehole		
83							
84	--no sample-- (Interval did not produce) 10/8/2019 07:35				(81.0 - 87.0') Bentonite seal chips	(81.0 - 87.0') 0.6 bags	(81.0 - 87.0') 1.5 bags (150%) Note: Puregold Medium Chips, used >20% of the calculated volume due to potential voids forming during drilling
85					(82.0 - 87.0') 4.0" Borehole		
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							

Final 2123120

TEMP ABANDONMENT LOG_PG&E_TOPOCK_C:\USERS\SMC\GRAND\DOCUMENTS\PG&E_TOPOCK\KIDRAFT BORING LOGS\GINT FILES\02.23.20\TOPOCK DATABASE FOR PLOG.GPJ_TOPOCK DATA TEMPLATE FOR PLOG.GDT 10/23/2019 12:57

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, blue water table symbol represents depth to water measured during the first VAS interval Note: Granule backfill material will be excavated from the pilot borehole during drilling for the construction of the well.