

| | | |
|---------------------------------|---|--|
| Date Started: 10/29/2019 | Surface Elevation: 546.77 ft amsl | Well ID: MW-88-107 |
| Date Completed: 01/12/2020 | Shallow Well Elevation: 546.53 ft amsl | |
| Drilling Co.: Cascade | Deep Well Elevation: NA ft amsl | Client: PG&E |
| Drilling Method: Sonic Drilling | Northing (NAD83): 2100541.39 | Project: Final GW Remedy Phase 1 |
| Driller Name: JC / ER / SV | Easting (NAD83): 7614692.85 | Location: PG&E Topock, Needles, California |
| Drilling Asst: LA / OF / PM | Borehole Diameter: 4-10 inches | |
| Logger: J. Latham / C. Bonessi | Static Water Level: See Log for Depths | Project Number: RC000753.0051 |
| Editor: Sean McGrane | Development End Date: 11/13/2019 | |
| Total Depth: 116 ft bgs | Well Completion: <input checked="" type="checkbox"/> Flush <input 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 | |
|------------|-----------------------|--------------------|-----------|------------|---|-----------------------------|--|--|
| 1 | | | | | (+0.1 - 2.3') Surface completion | | (+0.1 - 2.3') 17 bags Note: 30" diameter concrete pad with 18" diameter lockable vault, King Kon-Crete 4000 PSI | |
| 2 | | | | | (0.2 - 87.0') 2" PVC Sch 80 Casing | | | |
| 3 | | | | | <p>(0.0 - 12.0') 10.0" Borehole</p> <p>(1.4 - 75.0') Portland Cement 5% Bentonite Type I, II and V with Hydrogel</p> <p>(12.0 - 116.0') 6.0" Borehole</p> | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | (1.4 - 75.0') 123.7 bags | (1.4 - 75.0') 165 bags (133%) Note: Grout seal, used >20% of the calculated volume due to potential lateral migration or voids that formed during drilling. |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |

Final - Revised 02/23/20

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:17

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: solid blue water table marks represent depth to water (ft. bgs.) measured post development; installed in MW-88

| | | |
|---------------------------------|---|--|
| Date Started: 10/29/2019 | Surface Elevation: 546.77 ft amsl | Well ID: MW-88-107 |
| Date Completed: 01/12/2020 | Shallow Well Elevation: 546.53 ft amsl | |
| Drilling Co.: Cascade | Deep Well Elevation: NA ft amsl | Client: PG&E |
| Drilling Method: Sonic Drilling | Northing (NAD83): 2100541.39 | Project: Final GW Remedy Phase 1 |
| Driller Name: JC / ER / SV | Easting (NAD83): 7614692.85 | Location: PG&E Topock, Needles, California |
| Drilling Asst: LA / OF / PM | Borehole Diameter: 4-10 inches | |
| Logger: J. Latham / C. Bonessi | Static Water Level: See Log for Depths | Project Number: RC000753.0051 |
| Editor: Sean McGrane | Development End Date: 11/13/2019 | |
| Total Depth: 116 ft bgs | Well Completion: <input checked="" type="checkbox"/> Flush <input 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 |
|------------|-----------------------|--------------------|-----------|------------|---|-----------------------------|---|
| 21 | | | | | (0.2 - 87.0') 2" PVC Sch 80 Casing | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | (28.0 - 29.0') Centralizer | | |
| 30 | | | NR | | (1.4 - 75.0') Portland Cement 5% Bentonite Type I, II and V with Hydrogel | (1.4 - 75.0') 123.7 bags | (1.4 - 75.0') 165 bags (133%) Note: Grout seal, used >20% of the calculated volume due to voids that formed during drilling. |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |

Final - Revised 2/3/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: solid blue water table marks represent depth to water (ft. bgs.) measured post development; installed in MW-88

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:17

| | | |
|---------------------------------|---|--|
| Date Started: 10/29/2019 | Surface Elevation: 546.77 ft amsl | Well ID: MW-88-107 |
| Date Completed: 01/12/2020 | Shallow Well Elevation: 546.53 ft amsl | |
| Drilling Co.: Cascade | Deep Well Elevation: NA ft amsl | Client: PG&E |
| Drilling Method: Sonic Drilling | Northing (NAD83): 2100541.39 | Project: Final GW Remedy Phase 1 |
| Driller Name: JC / ER / SV | Easting (NAD83): 7614692.85 | Location: PG&E Topock, Needles, California |
| Drilling Asst: LA / OF / PM | Borehole Diameter: 4-10 inches | |
| Logger: J. Latham / C. Bonessi | Static Water Level: See Log for Depths | Project Number: RC000753.0051 |
| Editor: Sean McGrane | Development End Date: 11/13/2019 | |
| Total Depth: 116 ft bgs | Well Completion: <input checked="" type="checkbox"/> Flush <input 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 |
|------------|-----------------------|--------------------|-----------|------------|---|-----------------------------|---|
| 41 | | | | | (0.2 - 87.0') 2" PVC Sch 80 Casing | | |
| 42 | | | | | | | |
| 43 | | | | | | | |
| 44 | | | | | | | |
| 45 | | | | | | | |
| 46 | | | | | | | |
| 47 | | | | | | | |
| 48 | | | | | | | |
| 49 | | | | | | | |
| 50 | | | NR | | (1.4 - 75.0') Portland Cement 5% Bentonite Type I, II and V with Hydrogel | (1.4 - 75.0') 123.7 bags | (1.4 - 75.0') 165 bags (133%) Note: Grout seal, used >20% of the calculated volume due to voids that formed during drilling. |
| 51 | | | | | | | |
| 52 | | | | | | | |
| 53 | | | | | | | |
| 54 | | | | | | | |
| 55 | | | | | | | |
| 56 | | | | | | | |
| 57 | | | | | | | |
| 58 | | | | | | | |
| 59 | | | | | | | |

Final - Revised 2/3/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: solid blue water table marks represent depth to water (ft. bgs.) measured post development; installed in MW-88

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:17

| | | |
|---------------------------------|---|--|
| Date Started: 10/29/2019 | Surface Elevation: 546.77 ft amsl | Well ID: MW-88-107 |
| Date Completed: 01/12/2020 | Shallow Well Elevation: 546.53 ft amsl | |
| Drilling Co.: Cascade | Deep Well Elevation: NA ft amsl | Client: PG&E |
| Drilling Method: Sonic Drilling | Northing (NAD83): 2100541.39 | Project: Final GW Remedy Phase 1 |
| Driller Name: JC / ER / SV | Easting (NAD83): 7614692.85 | Location: PG&E Topock, Needles, California |
| Drilling Asst: LA / OF / PM | Borehole Diameter: 4-10 inches | |
| Logger: J. Latham / C. Bonessi | Static Water Level: See Log for Depths | Project Number: RC000753.0051 |
| Editor: Sean McGrane | Development End Date: 11/13/2019 | |
| Total Depth: 116 ft bgs | Well Completion: <input checked="" type="checkbox"/> Flush <input 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 |
|------------|-----------------------|--------------------|-----------|------------|---|-----------------------------|---|
| 61 | | | | | (0.2 - 87.0') 2" PVC Sch 80 Casing | | |
| 62 | | | | | | | |
| 63 | | | | | | | |
| 64 | | | | | | | |
| 65 | | | | | | | |
| 66 | | | | | | | |
| 67 | | | | | (1.4 - 75.0') Portland Cement 5% Bentonite Type I, II and V with Hydrogel | (1.4 - 75.0') 123.7 bags | (1.4 - 75.0') 165 bags (133%) Note: Grout seal, used >20% of the calculated volume due to potential lateral migration or voids that formed during drilling. |
| 68 | | | | | (68.0 - 69.0') Centralizer | | |
| 69 | | | | | | | |
| 70 | | | NR | | (12.0 - 116.0') 6.0" Borehole | | |
| 71 | | | | | | | |
| 72 | | | | | | | |
| 73 | | | | | | | |
| 74 | | | | | | | |
| 75 | | | | | | | |
| 76 | | | | | | | |
| 77 | | | | | (75.0 - 85.0') Cemex #60 Mesh (40x70) Lapis Lustre Sand | (75.0 - 85.0') 3.5 bags | (75.0 - 85.0') 3.5 bags (100%) Note: Transition sand |
| 78 | | | | | | | |
| 79 | | | | | | | |

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: solid blue water table marks represent depth to water (ft. bgs.) measured post development; installed in MW-88

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\SMCGRANE\DOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:17

| | | |
|---------------------------------|---|--|
| Date Started: 10/29/2019 | Surface Elevation: 546.77 ft amsl | Well ID: MW-88-107 |
| Date Completed: 01/12/2020 | Shallow Well Elevation: 546.53 ft amsl | |
| Drilling Co.: Cascade | Deep Well Elevation: NA ft amsl | Client: PG&E |
| Drilling Method: Sonic Drilling | Northing (NAD83): 2100541.39 | Project: Final GW Remedy Phase 1 |
| Driller Name: JC / ER / SV | Easting (NAD83): 7614692.85 | Location: PG&E Topock, Needles, California |
| Drilling Asst: LA / OF / PM | Borehole Diameter: 4-10 inches | |
| Logger: J. Latham / C. Bonessi | Static Water Level: See Log for Depths | Project Number: RC000753.0051 |
| Editor: Sean McGrane | Development End Date: 11/13/2019 | |
| Total Depth: 116 ft bgs | Well Completion: <input checked="" type="checkbox"/> Flush <input 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 |
|------------|--|----------------------------|-----------|------------|---|-----------------------------|--|
| 81 | | | | | (0.2 - 87.0') 2" PVC Sch 80 Casing | | |
| 82 | | | | | (75.0 - 85.0') Cemex #60 Mesh (40x70) Lapis Lustre Sand | (75.0 - 85.0') 3.5 bags | (75.0 - 85.0') 3.5 bags (100%) Note: Transition sand |
| 83 | | | NR | | | | |
| 84 | | | | | | | |
| 85 | | | | | | | |
| 86 | | | | | | | |
| 87 | | | | | (87.0 - 107.0') 2" 20-Slot Sch 80 PVC (0.20 slot) Screen | | |
| 88 | | | | | | | |
| 89 | | | | | | | |
| 90 | | | | | (12.0 - 116.0') 6.0" Borehole | | |
| 91 | | Topock - Alluvium Deposits | SM | | | | |
| 92 | | | | | | | |
| 93 | | | | | (85.0 - 111.0') Cemex #3 MESH (8x20) Lapis Lustre Sand | (85.0 - 111.0') 9.2 bags | (85.0 - 111.0') 10 bags (109%) Note: Filter pack |
| 94 | MW-S-VAS-92-97 (26 ppb) 9/22/2019 10:14 | | | | | | |
| 95 | | | | | | | |
| 96 | | | | | | | |
| 97 | | Topock - Alluvium Deposits | ML | | | | |
| 98 | | | | | | | |
| 99 | | | | | | | |

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WELL CONSTRUCTION DETAILS_PG&E_TOPOCK_C:\USERS\SMC\GRANE\DOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DRAFT BORING LOGS\GINT FILES\2021-01-26_US TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:17

| | | |
|---------------------------------|---|--|
| Date Started: 10/29/2019 | Surface Elevation: 546.77 ft amsl | Well ID: MW-88-107 |
| Date Completed: 01/12/2020 | Shallow Well Elevation: 546.53 ft amsl | |
| Drilling Co.: Cascade | Deep Well Elevation: NA ft amsl | Client: PG&E |
| Drilling Method: Sonic Drilling | Northing (NAD83): 2100541.39 | Project: Final GW Remedy Phase 1 |
| Driller Name: JC / ER / SV | Easting (NAD83): 7614692.85 | Location: PG&E Topock, Needles, California |
| Drilling Asst: LA / OF / PM | Borehole Diameter: 4-10 inches | |
| Logger: J. Latham / C. Bonessi | Static Water Level: See Log for Depths | Project Number: RC000753.0051 |
| Editor: Sean McGrane | Development End Date: 11/13/2019 | |
| Total Depth: 116 ft bgs | Well Completion: <input checked="" type="checkbox"/> Flush <input 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 |
|------------|---|---|-----------|------------|---|----------------------------------|---|
| 101 | | Topock - Alluvium Deposits | ML | | (87.0 - 107.0') 2" 20-Slot Sch 80 PVC (0.20 slot) Screen | | |
| 102 | | Topock - Weathered Bedrock - conglomerate | ML | | | | |
| 103 | | | | | | | |
| 104 | | Topock - Weathered Bedrock - conglomerate | ML | | | | |
| 105 | | | | | (85.0 - 111.0') Cemex #3 MESH (8x20) Lapis Lustre Sand | (85.0 - 111.0') 9.2 bags | (85.0 - 111.0') 10 bags (109%) Note: Filter pack |
| 106 | | Topock - Weathered Bedrock - conglomerate | ML | | | | |
| 107 | | | | | | | |
| 108 | | | | | (107.5 - 108.5') Centralizer | (12.0 - 116.0') 6.0" Borehole | |
| 109 | MW-S-VAS-107-112 (6.8 ppb) 9/24/2019 11:14 | | | | (107.0 - 109.3') Sump and End Cap | | |
| 110 | | | | | | | |
| 111 | | Topock - Competent Bedrock - conglomerate | | | | | |
| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | no sample (Interval did not produce) 9/23/2019 10:43 | | | | (111.0 - 116.0') Bentonite seal chips Puregold medium chips | (111.0 - 116.0') 0.75 bags | (111.0 - 116.0') 1 bags (133%) Note: Decommissioned rathole, used >20% of the calculated volume due potential voids that formed during drilling. |
| 115 | | | | | | | |
| 116 | | | | | | | |
| | | | | | End of Boring at 116.0 ft bgs. | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: solid blue water table marks represent depth to water (ft. bgs.) measured post development; installed in MW-88

WELL CONSTRUCTION DETAILS_PG&E_TOPOCK C:\USERS\SMC\GRANDOCUMENTS\PG&E_TOPOCK\DATABASE FOR PLOG.GPJ TOPOCK DRAFT BORING LOGS\GINT FILES\2021-01-26_US TOPOCK DATABASE FOR PLOG.GPJ TOPOCK DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:17

| | | | | | |
|------------------|------------------------|-----------------------|---|--------------------------|----------------------------------|
| Date Started: | 10/19/2019 | Surface Elevation: | 546.77 ft amsl | Boring No.: MW-88 | |
| Date Completed: | 10/22/2019 | Northing (NAD83): | 2100541.39 | | |
| Drilling Co.: | Cascade | Easting (NAD83): | 7614692.85 | Client: | PG&E |
| Drilling Method: | Sonic Drilling | Total Depth: | 116 ft bgs | Project: | Final GW Remedy Phase 1 |
| Drill Rig Type: | Prosonic Truck Mount | Borehole Diameter: | 4-10 inches | Location: | PG&E Topock, Needles, California |
| Driller Name: | JC / ER / SV | Depth to First Water: | 89.6 ft bgs | Project Number: | RC000753.0051 |
| Drilling Asst: | LA / OF / PM | Sampling Method: | 4 inch x 10 ft Core Barrel | Sampling Interval: | Screen Interval |
| Logger: | J. Latham / C. Bonessi | Converted to Well: | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Editor: | Sean McGrane | | | | |

| Depth (ft) | Recovery (in) | Sieve Sample ID | Groundwater Sample ID | Geologic Formation | USCS Code | USCS Class | Soil Description | Drilling Notes | Drilling Fluid |
|------------|---------------|-----------------|-----------------------|--------------------|-----------|------------|--|--|--------------------------------|
| 1 | | | | | | | (0.0 - 87.0') No recovery (NR); core was not collected or logged, see MW-88d geotech log for lithologic descriptions | (2.5') When 6" casing was at 27" it was determined that the 10" conductor casing was only driven to 2.5'. All 6" casing was pulled to allow the 10" conductor casing to be reset to 8' bgs. | (0.0 - 37.0') No watee used |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | 0 | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | 0 | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | 0 | | | | | | | | |
| 19 | | | | | | | | | |
| 20 | | | | | | | | | |

Final - Revised 11/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: groundwater data collected from MW-88d; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-88-107 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMCGRANE\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\2021-01-26_LUSTOPOCK\DATABASE FOR PL LOG.GPJ TOPOCK\DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:16

| | | | | | |
|------------------|------------------------|-----------------------|---|--------------------------|----------------------------------|
| Date Started: | 10/19/2019 | Surface Elevation: | 546.77 ft amsl | Boring No.: MW-88 | |
| Date Completed: | 10/22/2019 | Northing (NAD83): | 2100541.39 | | |
| Drilling Co.: | Cascade | Easting (NAD83): | 7614692.85 | Client: | PG&E |
| Drilling Method: | Sonic Drilling | Total Depth: | 116 ft bgs | Project: | Final GW Remedy Phase 1 |
| Drill Rig Type: | Prosonic Truck Mount | Borehole Diameter: | 4-10 inches | Location: | PG&E Topock, Needles, California |
| Driller Name: | JC / ER / SV | Depth to First Water: | 89.6 ft bgs | Project Number: | RC000753.0051 |
| Drilling Asst: | LA / OF / PM | Sampling Method: | 4 inch x 10 ft Core Barrel | Sampling Interval: | Screen Interval |
| Logger: | J. Latham / C. Bonessi | Converted to Well: | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Editor: | Sean McGrane | | | | |

| Depth (ft) | Recovery (in) | Sieve Sample ID | Groundwater Sample ID | Geologic Formation | USCS Code | USCS Class | Soil Description | Drilling Notes | Drilling Fluid |
|------------|---------------|-----------------|-----------------------|--------------------|-----------|------------|------------------|---|--|
| 21 | | | | | | | | | |
| 22 | | | | | | | | | |
| 23 | | | | | | | | | |
| 24 | 0 | | | | | | | | |
| 25 | | | | | | | | | |
| 26 | | | | | | | | | |
| 27 | | | | | | | | (26.0') Lost core barrel down hole | |
| 28 | | | | | | | | | |
| 29 | | | | | | | | | |
| 30 | | | | | NR | | | | |
| 31 | | | | | | | | | |
| 32 | 0 | | | | | | | (30.0 - 37.0') Rough drilling and borehole keeps collapsing requiring multiple clean out runs. | (30.0 - 37.0') 4 gallons of water used; 0 gallons of water recovered; 4 gallons of water lost |
| 33 | | | | | | | | | |
| 34 | | | | | | | | | |
| 35 | | | | | | | | | |
| 36 | | | | | | | | | |
| 37 | | | | | | | | | |
| 38 | 0 | | | | | | | | (37.0 - 111.0') No water used |
| 39 | | | | | | | | | |
| 40 | | | | | | | | | |

Final - Revised 11/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: groundwater data collected from MW-88d; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-88-107 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\2021-01-26_LUSTOPOCK\DATABASE FOR PL LOG.GPJ TOPOCK\DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:16

| | | |
|--------------------------------------|--|--|
| Date Started: 10/19/2019 | Surface Elevation: 546.77 ft amsl | Boring No.: MW-88 |
| Date Completed: 10/22/2019 | Northing (NAD83): 2100541.39 | |
| Drilling Co.: Cascade | Easting (NAD83): 7614692.85 | Client: PG&E |
| Drilling Method: Sonic Drilling | Total Depth: 116 ft bgs | Project: Final GW Remedy Phase 1 |
| Drill Rig Type: Prosonic Truck Mount | Borehole Diameter: 4-10 inches | Location: PG&E Topock, Needles, California |
| Driller Name: JC / ER / SV | Depth to First Water: 89.6 ft bgs | Project Number: RC000753.0051 |
| Drilling Asst: LA / OF / PM | Sampling Method: 4 inch x 10 ft Core Barrel | |
| Logger: J. Latham / C. Bonessi | Sampling Interval: Screen Interval | |
| 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 | | | | | | | | | |
| 42 | | | | | | | | | |
| 43 | | | | | | | | | |
| 44 | 0 | | | | | | | | |
| 45 | | | | | | | | | |
| 46 | | | | | | | | | |
| 47 | | | | | | | | | |
| 48 | | | | | | | | | |
| 49 | | | | | | | | | |
| 50 | | | | | NR | | | | |
| 51 | | | | | | | | (50.0 - 57.0) Rough drilling. | |
| 52 | 0 | | | | | | | | |
| 53 | | | | | | | | | |
| 54 | | | | | | | | | |
| 55 | | | | | | | | | |
| 56 | | | | | | | | | |
| 57 | | | | | | | | | |
| 58 | 0 | | | | | | | | |
| 59 | | | | | | | | | |
| 60 | | | | | | | | | |

Final - Revised 11/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: groundwater data collected from MW-88d; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-88-107 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\MCGRANE\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\GINT FILES\2021-01-26_LUSTOPOCK\DATABASE FOR PL LOG.GPJ TOPOCK\DATA TEMPLATE FOR PLOG.GDT 02/17/21 19:16

| | | | | | |
|------------------|------------------------|-----------------------|---|--------------------------|----------------------------------|
| Date Started: | 10/19/2019 | Surface Elevation: | 546.77 ft amsl | Boring No.: MW-88 | |
| Date Completed: | 10/22/2019 | Northing (NAD83): | 2100541.39 | | |
| Drilling Co.: | Cascade | Easting (NAD83): | 7614692.85 | Client: | PG&E |
| Drilling Method: | Sonic Drilling | Total Depth: | 116 ft bgs | Project: | Final GW Remedy Phase 1 |
| Drill Rig Type: | Prosonic Truck Mount | Borehole Diameter: | 4-10 inches | Location: | PG&E Topock, Needles, California |
| Driller Name: | JC / ER / SV | Depth to First Water: | 89.6 ft bgs | Project Number: | RC000753.0051 |
| Drilling Asst: | LA / OF / PM | Sampling Method: | 4 inch x 10 ft Core Barrel | | |
| Logger: | J. Latham / C. Bonessi | Sampling Interval: | Screen Interval | | |
| 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 | | | | | | | | | |
| 62 | | | | | | | | | |
| 63 | 0 | | | | | | | (63.0 - 67.0') Rough drilling. | |
| 64 | | | | | | | | | |
| 65 | | | | | | | | | |
| 66 | | | | | | | | | |
| 67 | | | | | | | | | |
| 68 | | | | | | | | | |
| 69 | | | | | | | | | |
| 70 | | | | | NR | | | | |
| 71 | | | | | | | | | |
| 72 | 0 | | | | | | | (72.0') Lost core barrel down hole, first attempt to retrieve failed, retrieve on second attempt. | |
| 73 | | | | | | | | | |
| 74 | | | | | | | | | |
| 75 | | | | | | | | | |
| 76 | | | | | | | | | |
| 77 | | | | | | | | | |
| 78 | 0 | | | | | | | | |
| 79 | | | | | | | | | |
| 80 | | | | | | | | | |

Final - Revised 11/23/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: groundwater data collected from MW-88d; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-88-107 installed in borehole

| | | |
|--------------------------------------|--|--|
| Date Started: 10/19/2019 | Surface Elevation: 546.77 ft amsl | Boring No.: MW-88 |
| Date Completed: 10/22/2019 | Northing (NAD83): 2100541.39 | |
| Drilling Co.: Cascade | Easting (NAD83): 7614692.85 | Client: PG&E |
| Drilling Method: Sonic Drilling | Total Depth: 116 ft bgs | Project: Final GW Remedy Phase 1 |
| Drill Rig Type: Prosonic Truck Mount | Borehole Diameter: 4-10 inches | Location: PG&E Topock, Needles, California |
| Driller Name: JC / ER / SV | Depth to First Water: 89.6 ft bgs | Project Number: RC000753.0051 |
| Drilling Asst: LA / OF / PM | Sampling Method: 4 inch x 10 ft Core Barrel | |
| Logger: J. Latham / C. Bonessi | Sampling Interval: Screen Interval | |
| 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 | 0 | | | | NR | | | | | | |
| 82 | | | | | | | | | | | |
| 83 | | | | | | | | | | | |
| 84 | | | | | | | | | | | |
| 85 | | | | | | | | | | | |
| 86 | | | | | | | | | | | |
| 87 | | | | | | | | | | | |
| 88 | 120 | | | Topock - Alluvium Deposits | SM | | (87.0 - 95.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); brown (7.5YR 5/3); very fine grained to granules, angular to subround; some small to very large pebbles, angular to subround; little silt; little clay; trace small cobbles, angular to subround; coarser clasts composed of metadiorite; moist | | | | |
| 89 | | | | | | | | | | | |
| 90 | | | | | | | | | | | |
| 91 | | | | | | | | | | | |
| 92 | | | | | | | | | | | |
| 93 | | | | | | | | (92.0 - 97.0') Installed sampler screen and test water quality for potential impacts from grout installed for the decommissioning of MW-88d. | | | |
| 94 | | | MW-S-VAS-92-97 (26 ppb) 9/22/2019 10:14 | | | | | | | | |
| 95 | | | | | | | | | | | |
| 96 | | | | Topock - Alluvium Deposits | ML | | (95.0 - 101.0') Topock - Alluvium Deposits; Sandy silt with gravel (ML); brown (7.5YR 5/2); low plasticity; some granules to very large pebbles, angular to subangular; some very fine to very coarse grained sand, angular to subround; little clay; trace small cobbles, angular to subangular; coarser clasts composed of metadiorite; wet; medium stiff | | | | |
| 97 | | | | | | | | | | | |
| 98 | | | | | | | | | | | |
| 99 | | | | | | | | | | | |
| 100 | 120 | | | | | | | (99'); moist | | | |

Final Revised 11/18/20

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: groundwater data collected from MW-88d; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-88-107 installed in borehole

SOIL BORING LOG: PG&E TOPOCK C:\USERS\SMCGRANE\DOCUMENTS\PG&E TOPOCK\DRIFT BORING LOGS\2021-01-26_LUST TOPOCK\DATABASE FOR PL LOG.GPJ TOPOCK\DATA\TEMPLATE FOR PLOG.GDT 02/17/21 19:16

| | | | | | |
|------------------|------------------------|-----------------------|---|--------------------------|-------------------------------------|
| Date Started: | 10/19/2019 | Surface Elevation: | 546.77 ft amsl | Boring No.: MW-88 | |
| Date Completed: | 10/22/2019 | Northing (NAD83): | 2100541.39 | | |
| Drilling Co.: | Cascade | Easting (NAD83): | 7614692.85 | Client: | PG&E |
| Drilling Method: | Sonic Drilling | Total Depth: | 116 ft bgs | Project: | Final GW Remedy Phase 1 |
| Drill Rig Type: | Prosonic Truck Mount | Borehole Diameter: | 4-10 inches | Location: | PG&E Topock, Needles, California |
| Driller Name: | JC / ER / SV | Depth to First Water: | 89.6 ft bgs | Project Number: | RC000753.0051 |
| Drilling Asst: | LA / OF / PM | Sampling Method: | 4 inch x 10 ft Core Barrel | | |
| Logger: | J. Latham / C. Bonessi | Sampling Interval: | Screen Interval | | |
| 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 | |
|--------------------------------|---------------|-----------------|--|--|-----------|------------|---|---|---|--|
| 101 | 120 | | | Topock - Alluvium Deposits | ML | | | | | |
| 102 | | | | Topock - Weathered Bedrock - conglomerate | ML | | (101.0 - 104.0') Topock - Weathered Bedrock - conglomerate; Sandy silt with gravel (ML); reddish brown (5YR 5/4); low plasticity; some very fine to very coarse grained sand, angular to subangular; little granules to very large pebbles, angular to subangular; little clay; coarser clasts composed of metadiorite; moist; medium stiff; strong HCL reaction | | | |
| 104 | | | | Topock - Weathered Bedrock - conglomerate | ML | | (104.0 - 106.0') Topock - Weathered Bedrock - conglomerate; Sandy silt with gravel (ML); brown (7.5YR 5/3); low plasticity; some very fine to very coarse grained sand, angular to subangular; little granules to very large pebbles, angular to subangular; trace small cobbles, angular to subangular; trace clay; wet; very soft to medium stiff; material highly disturbed by reworking of material | (104.0 - 106.0') Recovery was highly disturbed, likely slough. | | |
| 107 | | | | Topock - Weathered Bedrock - conglomerate | ML | | (106.0 - 107.0') Topock - Weathered Bedrock - conglomerate; Sandy silt with gravel (ML); reddish brown (5YR 5/4); low plasticity; some very fine to very coarse grained sand, angular to subangular; little granules to very large pebbles, angular to subangular; little clay; coarser clasts composed of metadiorite; dry; stiff | (107.0 - 116.0') Very hard drilling. | | |
| 108 | 108 | | MW-S-VAS-107-112 (6.8 ppb) 9/24/2019 11:14 | Topock - Competent Bedrock - conglomerate | | | (107.0 - 116.0') Topock - Competent Bedrock - conglomerate; (7.5R 5/1); dry; friable, pulverized (108') brown (7.5YR 5/3) | | | |
| 110 | | | | | | | (110') gray (7.5YR 5/1) | (110.0') Core barrel locked up, run casing over core barrel to free up. | | |
| 111 | | | | | | | | | | |
| 112 | | | | no sample (Interval did not produce) 9/23/2019 10:43 | | | | (113') brown (7.5YR 5/3) | (111.0 - 116.0') gallons of water used; gallons of water recovered; gallons of water lost; Used water to flush the casing water used and recovered not documented | |
| 113 | | | | | | | | | | |
| 114 | | | | | | | | | | |
| 115 | | | | | | | | | | |
| 116 | | | | | | | | | | |
| End of Boring at 116.0 ft bgs. | | | | | | | | | | |
| 117 | | | | | | | | | | |
| 118 | | | | | | | | | | |
| 119 | | | | | | | | | | |
| 120 | | | | | | | | | | |

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: groundwater data collected from MW-88d; apparent partial recoveries can be the result of potential compaction of sediments in the core bag; wells MW-88-107 installed in borehole

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