5.0 Well Installation, Maintenance, and Decommissioning

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This chapter describes well installation, maintenance, and decommissioning activities on the Hanford Site in 2011. Numerous water wells were drilled or hand dug by early settlers for drinking water supplies, beginning in the early half of the 20th Century. Several thousand wells have been drilled since the early 1940s to support the Site's nuclear weapons production program. Since the 1990s, many additional wells have been drilled to support the Site's environmental cleanup mission.

All well types are tracked on the Hanford Site through the Well Information and Document Lookup (WIDL) database, which is available to users of the Hanford Local Area Network. Much of this information (borehole geophysical logging reports and data sheets) is also available to the public through DOE's Environmental Dashboard Application (http://environet.hanford.gov/eda). Other data can be accessed via borehole summary reports (report numbers prefixed by SGW) that are generated for each drilling campaign.

Recognized well types on site include aquifer tubes, borings, groundwater wells, hosted piezometers, independent piezometers, piezometer hosts, soil tubes, lysimeters, and vadose wells (Table 5-1). All wells (cased and uncased), borings, aquifer tubes, soil tubes, piezometers, and other subsurface excavations are required to receive a unique Hanford well identification number. A total of 11,382 unique well identification numbers had been assigned on the Hanford Site by the end of 2011. Ecology also assigns a well identification number to each of these well types.

Figure 5-1 presents the categorization of unique well identification numbers taken from the WIDL database and their approximate geographic designations. Figure 1-1 in Chapter 1 shows how the geographic designations are located across the Hanford Site.

During 2011, a total of 4,034 of these unique well identification numbers were documented to be in use, representing 2,951 wells, 122 piezometers within host wells, 78 lysimeters within host lysimeters, 526 aquifer tubes, and 357 soil tubes. Thus, of the 11,382 wells drilled, 7,328 wells are no longer used or have been decommissioned.

5.1 Monitoring Well Installation

DOE works with the appropriate regulatory agencies to define the need for new wells at the Hanford Site. Each year, DOE proposes new wells to meet the requirements of RCRA detection and assessment groundwater monitoring requirements; characterization, remediation, and monitoring for CERCLA; and long-term monitoring of regional groundwater plumes in accordance with DOE orders based on AEA requirements. These efforts may include new or ongoing RCRA assessment of groundwater contamination, replacement of monitoring wells that go dry because of the declining regional water table, replacement of wells that need to be decommissioned, improvement of spatial coverage for different monitoring networks and plume monitoring, and characterization of subsurface contamination.

New RCRA, CERCLA, and AEA well proposals are reviewed, prioritized, and approved annually in accordance with the Tri-Party Agreement (Ecology et al., 1989) Milestone M-024. All new wells are constructed as either Resource Protection Wells or Water Supply wells in accordance with the Washington State provisions of WAC 173-160. Well requirements are integrated, prioritized, and documented through the budget development process, discussions between DOE and the regulatory agencies, and specific monitoring and characterization requirements.

The *American Recovery and Reinvestment Act of 2009* (ARRA) supplemented baseline funding in 2011 for planning and building new groundwater and deep vadose zone monitoring wells, borehole sampling, treatability tests, and remediation systems in order to achieve the Tri-Party Agreement (Ecology et al., 1989) milestones.

In 2011, a total of 89 new groundwater monitoring wells were installed on the Hanford Site.

During 2011, 89 wells were installed[1] at the Hanford Site (Table 5-2). The approximate locations of the new wells are shown in Figures 5-2 through 5-5.

Water well reports for all newly constructed wells, as required by WAC 173-160, were submitted to Ecology. Detailed well information such as geologic and geophysical descriptions, characterization activities (that is, sediment and groundwater sampling, aquifer testing), and construction records for the new wells are stored in WIDL and consolidated in borehole summary reports. Much of this information is also accessible and available through DOE's Environmental Dashboard Application (http://environet.hanford.gov/eda).

5.2 Borings

In 2011, 49 direct-push and characterization boreholes were drilled, sampled, and decommissioned.

During 2011, 49 direct-push and characterization boreholes were installed. The boreholes supported subsurface characterization of radiological constituents, volatile organics (for example, carbon tetrachloride), or vadose zone property determination (such as moisture content or grain-size distribution). In some instances, vadose zone borings were drilled to the top of the groundwater to obtain a one-time water sample as an opportunity for working cross-project to meet data needs. Table 5-3 provides a summary of the number and general location of the direct-push and characterization boreholes. Figure 5-3 shows the approximate locations of the new borings; Figures 5-3 through 5-5 show area specific locations.

5.3 Maintenance

During 2011, well maintenance tasks included surface modifications on the different well types, such as repair or replacement of locking well caps, surface casing, diagnosis and repair of electrical wiring, and modifications to surface pump and riser pipe discharge components and fittings. Subsurface tasks typically included repair and replacement of sampling pumps, downhole camera surveys, pump and equipment retrieval, and replacement of discharge tubing. Well rehabilitation activities included surging, swabbing, screen brushing, chemical treatment, and over-pumping to improve well performance.

Documentation for well maintenance activities is entered into the Well Maintenance Application database, and accessible through WIDL. This information is also accessible externally through the Environmental Dashboard Application (http://environet.hanford.gov/eda).

5.4 Decommissioning

As part of DOE asset management, wells, boreholes, or other subsurface installations are identified for decommissioning when they are no longer useful for achieving the Hanford Site environmental cleanup mission. Well decommissioning is driven by the *Hanford Site Well Decommissioning Plan* (DOE/RL-2005-70). Decommissioning is defined therein as the properly completed and documented sealing of water or resource-protection wells in compliance with state groundwater protection laws

[1] Wells completed (accepted) in 2011. In some cases, drilling began in 2010.

(WAC 173-160). The plan lays out the basis, decision logic, and implementation process for prioritizing and decommissioning Hanford Site wells.

All candidate wells for decommissioning must be reviewed and approved by Hanford Site contractors, DOE, Ecology, EPA, and other potential well users such as the Pacific Northwest National Laboratory prior to decommissioning. The initial phase of decommissioning includes a thorough records review and physical inspection of each well to confirm the well's location and configuration (the well attributes). Normally, a well becomes a candidate for decommissioning under one of the following conditions:

- The well currently is no longer used for water-level or contaminant monitoring, contaminant extraction, in situ remedial treatment of contaminated groundwater, permitted injection of treated effluent from a remedial action, water supply, or is no longer is a research or technology demonstration well.
- The well has no specified future purpose.
- The well is unusable, abandoned, or its use has been permanently discontinued.
- The well is in such disrepair that its continued use is impractical.
- The well is an environmental, safety, or public health hazard (for example, it does not meet WAC 173-160 requirements for well completion; however, there are special provisions for continued use of a non-WAC 173-160 compliant well).
- The well interferes with environmental remediation, excavation, and/or construction activities.

In 2011, 108 wells (Table 5-4) were physically decommissioned. Decommissioning is performed in accordance with WAC 173-160-460 ("What Is the Decommissioning Process for Resource Protection Wells?"), applicable well decommissioning variances, and conditions defined in the Hanford Facility RCRA Permit (WA78900008967).

Wells are decommissioned (filled with grout) when they are no longer useful for monitoring purposes. In 2011, DOE decommissioned 108 wells.

Decommissioning typically involves backfilling a well with impermeable material in both the annular space and the casing to prevent vertical movement of water and/or contaminants into the vadose zone and groundwater. For wells that are constructed according to WAC 173-160 requirements (compliant), decommissioning is performed by filling the well screen and the casing with an impermeable material (e.g., bentonite or cement grout). For older, noncompliant wells, the casing is either removed and the borehole filled with seal material or the casing is perforated and pressure grouted to create an external annular seal and then internally grouted to the surface. As far as possible, all casing is removed from the ground. A brass survey marker identifying the former well is typically set in cement grout at the ground surface over the decommissioned location. Decommissioning activities result in the permanent removal of a well, borehole, or piezometer from service and from the Hanford Site active well inventory.

A completed water well report form is required to be transmitted by the contractor or in-house driller to Ecology when a well is decommissioned. The report provides the details on the well's final construction and the steps taken to decommission the well.

In 2011, in addition to the physical decommissioning of wells, 13 wells were administratively decommissioned. Administratively decommissioned wells may be wells that can no longer be located and are determined to no longer exist, or more generally, are wells that were physically decommissioned but

still require documentation about such in the well database. Field walk-downs for these 13 wells confirmed that these wells cannot be found.

Each year a very limited number of previously unknown wells are also discovered during the conduct of field activities. Once discovered, these wells are assigned a unique well identification number, assigned an appropriate well status, and added to WIDL. In 2011, eight wells were discovered.

Table 5-1. Hanford Site Well Types

Well Category	Description
Aquifer Tube	A groundwater monitoring site installed along the river shoreline. Generally consists of a small diameter tube (less than one inch) and screen installed using push technology near the water table.
Boring	A borehole or direct push that was decommissioned immediately after drilling. Decommissioning generally would have been performed before the drill rig was removed from the site.
Groundwater Well	A well constructed with the open interval extending below the water table. This is the general case and should not be used if the site could be otherwise classified as an aquifer tube, piezometer, or piezometer host.
Hosted Piezometer	Groundwater monitoring well constructed inside of a host well. In most cases, hosted piezometers are one and one-half inch in diameter with the open interval extending below the water table.
Independent Piezometer	Small diameter, independent, groundwater monitoring well not constructed inside of a host well. In most cases, the independent piezometers are one and one-half inch in diameter.
Lysimeter	Generally an in situ open bottom cylindrical core where the top is coincident with the ground surface, and with walls that prevent horizontal movement of moisture. A lysimeter is used to measure moisture or contaminant changes through time over a specific depth interval.
Piezometer Host	A well with one or more piezometers constructed inside it.
Soil Tube	Vadose zone monitoring site. A small diameter tube (less than two inches in diameter) and possibly a screen are left in place after the drilling is completed for sampling.
Vadose Well	A vadose zone monitoring site where casing (greater than two inches in diameter) is left in place after drilling activities are completed. May have a screen, open bottom, or may be closed.

Table 5-2. Wells Installed in 2011

Operable Unit	Well Name	Well ID	Well Purpose	Construction Depth (ft bgs)	Drilled Depth (ft bgs)	Acceptance Date
100-BC-5	199-B2-15	C7783	Support RI/FS	171.55	193.8	2/22/2011
100-BC-5	199-B2-16	C7784	Support RI/FS	149.07	155.2	2/22/2011
100-BC-5	199-B3-51	C7785	Support RI/FS	150.92	156.2	3/21/2011
100-BC-5	199-B3-52	C7843	Support RI/FS	59.5	60	12/30/2010*
100-BC-5	199-B4-15	C7846	Support RI/FS	84.2	84.3	12/30/2010*
100-BC-5	199-B5-8	C8244	Support RI/FS	123	230.6	3/21/2011
100-BC-5 Total = 6						
100-FR-3	199-F5-55	C7970	Support RI/FS	50	50	3/15/2011
100-FR-3	199-F5-56	C7972	Support RI/FS	49.45	50.9	3/15/2011
100-FR-3 Total = 2						
100-HR-3	199-D3-5	C7620	Support RI/FS	108.8	112.2	5/10/2011
100-HR-3	199-D5-132	C7622	Support RI/FS	110.84	112	5/10/2011
100-HR-3	199-D5-133	C7621	Support RI/FS	109.96	112	5/10/2011
100-HR-3	199-D5-134	C7624	Support RI/FS	145	270	5/10/2011
100-HR-3	199-D5-140	C7866	Support RI/FS	112.9	111.31	5/10/2011
100-HR-3	199-D5-141	C7625	Support RI/FS	174	316.7	5/10/2011
100-HR-3	199-D5-142	C7857	Support RI/FS	87.3	89.8	2/23/2011
100-HR-3	199-D5-143	C8375	Support RI/FS	109.9	118	5/10/2011
100-HR-3	199-D5-144	C8668	Support RI/FS	113.5	114.7	11/9/2011
100-HR-3	199-D6-3	C7623	Support RI/FS	106.1	110.5	5/10/2011
100-HR-3	199-D8-101	C7852	Support RI/FS	72	72	2/23/2011
100-HR-3	199-H1-3	C7581	100-H Pump-and-Treat	47	48.5	4/28/2011
100-HR-3	199-H1-4	C7604	100-H Pump-and-Treat	46.22	48.5	4/26/2011
100-HR-3	199-H1-6	C7606	100-H Pump-and-Treat	40.86	47	4/27/2011
100-HR-3	199-H3-11	C7863	100-H Pump-and-Treat	52.4	55.8	2/23/2011
100-HR-3	199-H4-83	C7861	100-H Pump-and-Treat	42.2	42.25	2/23/2011
100-HR-3	199-H4-84	C7860	Support RI/FS	48	48.6	2/23/2011
100-HR-3	199-H1-7	C7630	Support RI/FS	36.5	37	5/10/2011
100-HR-3	199-H2-1	C7631	Support RI/FS	76.96	189	5/10/2011
100-HR-3	199-H3-10	C7640	Support RI/FS	115.86	230.8	5/10/2011
100-HR-3	199-H3-6	C7626	Support RI/FS	59.5	61.6	5/10/2011
100-HR-3	199-H3-7	C7627	Support RI/FS	57.28	59	5/10/2011

Table 5-2. Wells Installed in 2011

Operable Unit	Well Name	Well ID	Well Purpose	Construction Depth (ft bgs)	Drilled Depth (ft bgs)	Acceptance Date
100-HR-3	199-H3-9	C7639	Support RI/FS	91.14	218.1	5/10/2011
100-HR-3	199-H6-3	C7628	Support RI/FS	67	67.4	5/10/2011
100-HR-3	199-H6-4	C7629	Support RI/FS	61.8	63.6	5/10/2011
100-HR-3 Total = 25						
100-KR-4	199-K-196	C7696	100-K Pump-and-Treat	136.01	139.8	9/29/2011
100-KR-4	199-K-197	C7697	100-K Pump-and-Treat	105.55	108.3	9/29/2011
100-KR-4	199-K-198	C7698	100-K Pump-and-Treat	57.93	101.5	9/30/2011
100-KR-4	199-K-199	C7699	100-K Pump-and-Treat	97	103.1	9/30/2011
100-KR-4	C8205	C8205	Grounding Wells 100-K Substation	181.2	186.4	2/2/2011
100-KR-4	C8226	C8226	Grounding Wells 100-K Substation	191	191	2/2/2011
100-KR-4	199-K-184	C7684	Support RI/FS	167.8	216.1	3/28/2011
100-KR-4	199-K-185	C7685	Support RI/FS	136.5	138.5	3/28/2011
100-KR-4	199-K-186	C7686	Support RI/FS	137.17	167	3/28/2011
100-KR-4	199-K-188	C7688	Support RI/FS	133.1	235	3/28/2011
100-KR-4	199-K-189	C7689	Support RI/FS	159	159	3/28/2011
100-KR-4	199-K-192	C7692	Support RI/FS	188.2	192.9	3/28/2011
100-KR-4	199-K-193	C7693	Support RI/FS	166.3	166.3	3/28/2011
100-KR-4	199-K-194	C7694	Support RI/FS	110.8	147.3	3/28/2011
100-KR-4	199-K-195	C7695	Support RI/FS	128.58	230.5	3/28/2011
100-KR-4 Total = 15						
100-NR-2	199-N-182	C8184	Support RI/FS	109.4	154	9/29/2011
100-NR-2	199-N-183	C8185	Support RI/FS	90.1	117.4	9/29/2011
100-NR-2	199-N-184	C8186	Support RI/FS	84.9	108	9/29/2011
100-NR-2	199-N-185	C8187	Support RI/FS	45.4	92.5	9/29/2011
100-NR-2	199-N-186	C8188	Support RI/FS	91.7	97.3	9/29/2011
100-NR-2	199-N-187	C8189	Support RI/FS	94	94.5	9/29/2011
100-NR-2	199-N-188	C8190	Support RI/FS	83.8	90	9/29/2011
100-NR-2	199-N-189	C8191	Support RI/FS	110.1	117.3	9/29/2011
100-NR-2 Total = 8						
200-BP-5	299-E26-14	C8204	LERF Monitoring Well	218.9	240.6	9/29/2011
100-BP-5 Total = 1						

Table 5-2. Wells Installed in 2011

Operable Unit	Well Name	Well ID	Well Purpose	Construction Depth (ft bgs)	Drilled Depth (ft bgs)	Acceptance Date
200-PO-1	299-E13-120	C8387	Support Site Characterization Grounding Truth in the BC Cribs	59.41	65.2	9/21/2011
200-PO-1	299-E13-121	C8388	Support Site Characterization Grounding Truth in the BC Cribs	59.22	65	9/21/2011
200-PO-1 Total = 2						
200-UP-1	299-W22-90	C8095	S-SX Extraction Well for Technetium-99	292.48	317	11/29/2011
200-UP-1	299-W22-96	C8241	S-SX Monitoring Well	280.68	286.1	10/19/2011
200-UP-1	299-W22-91	C8096	S-SX Extraction Well for Technetium-99	295	307.3	10/19/2011
200-UP-1	299-W22-92	C8097	S-SX Extraction Well for Technetium-99	289.94	307.4	10/19/2011
200-UP-1 Total = 4						
200-ZP-1	299-W10-35	C7573	200 West Pump-and-Treat Expansion	459.7	519	1/20/2011
200-ZP-1	299-W10-36	C8066	200 West Pump-and-Treat Expansion	435	457	11/7/2011
200-ZP-1	299-W11-50	C7020	200 West Pump-and-Treat Expansion	430.41	490	1/20/2011
200-ZP-1	299-W6-13	C8064	200 West Pump-and-Treat Expansion	449.94	451	11/7/2011
200-ZP-1	299-W6-14	C8065	200 West Pump-and-Treat Expansion	475	475.8	11/7/2011
200-ZP-1	299-W9-2	C8201	Monitor Mixed-Waste Trenches 31 and 34, Upgradient	324.57	325	9/29/2011
200-ZP-1 Total = 6						
300-FF-5	399-1-60	C7867	Support IFRC	60.05	72.2	4/5/2011
300-FF-5	399-2-33	C7868	Support IFRC	57.7	69.2	4/5/2011
300-FF-5	399-3-34	C7870	Support IFRC	55.02	63.5	4/5/2011
300-FF-5	399-3-37	C7869	Support IFRC	41.55	59.6	4/5/2011
300-FF-5	399-1-54	C7653	Support RI/FS	44.07	118.5	2/15/2011
300-FF-5	399-1-55	C7654	Support RI/FS	43.05	113	2/15/2011
300-FF-5	399-1-56	C7655	Support RI/FS	40	123.5	2/15/2011

Table 5-2. Wells Installed in 2011

Operable Unit	Well Name	Well ID	Well Purpose	Construction Depth (ft bgs)	Drilled Depth (ft bgs)	Acceptance Date
300-FF-5	399-1-57	C7656	Support RI/FS	80	118.5	2/15/2011
300-FF-5	399-1-58	C7657	Support RI/FS	55.55	126	2/15/2011
300-FF-5	399-1-59	C7659	Support RI/FS	62.03	148.7	2/15/2011
300-FF-5	399-1-61	C8026	Support RI/FS	46	58	4/5/2011
300-FF-5	399-1-62	C8027	Support RI/FS	38.24	48	4/5/2011
300-FF-5	399-1-63	C8028	Support RI/FS	41	55.5	4/5/2011
300-FF-5	399-1-64	C8029	Support RI/FS	38.91	48	4/5/2011
300-FF-5	399-2-32	C7660	Support RI/FS	42.8	121	2/15/2011
300-FF-5	399-3-33	C7663	Support RI/FS	55.2	135	2/15/2011
300-FF-5	399-3-38	C8030	Support RI/FS	50.09	56.8	4/5/2011
300-FF-5	399-4-15	C7662	Support RI/FS	62.86	146	2/15/2011
300-FF-5	399-6-3	C7658	Support RI/FS	56.9	128.6	2/15/2011
300-FF-5	399-6-5	C8245	Support RI/FS	58.05	156	2/15/2011
300-FF-5 Total = 20						
Grand Total = 89						

bgs = below ground surface

IFRC = Integrated Field-Scale Subsurface Research Challenge

LERF = Liquid Effluent Retention Facility

RI/FS = Remedial Investigation/Feasibility Study

*Completed in late 2010; reported here because they were not included in 2010 report (DOE/RL-2011-01, *Hanford Site Groundwater Monitoring Report for 2010*).

Table 5-3. Borings Installed in 2011

Operable Unit	Project or Location	Well ID	Drill Depth (ft)	Type of Boring
200-UP-1	216-S-19 Waste Site	C8145	16	Direct-push
200-UP-1	Adjacent to 216-S-19 Waste Site	C8154	16	Direct-push
200-UP-1	Adjacent to 216-S-19 Waste Site	C8155	16	Direct-push
200-UP-1	Adjacent to 216-S-19 Waste Site	C8156	16	Direct-push
200-UP-1	Adjacent to 216-S-19 Waste Site	C8157	16	Direct-push
200-UP-1	Adjacent to 216-S-19 Waste Site	C8158	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8146	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8147	16	Direct-push
200-UP-1	Adjacent to 216-S-19 Waste Site	C8148	16	Direct-push
200-UP-1	200-W-27 Waste Site	C8149	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8150	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8151	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8152	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8153	16	Direct-push
200-UP-1	216-S-19 Waste Site	C8159	16	Direct-push
200-UP-1 Total = 15				
100-HR-3	116-D-7 Waste Site	C7851	69	Characterization
100-HR-3	116-DR-9 Waste Site	C7850	72.3	Characterization
100-HR-3	116-H-1 Waste Site	C7864	50.8	Characterization
100-HR-3 Total = 3				
100-FR-3	118-F-1 Waste Site	C7971	33.5	Characterization
100-FR-3	600-127 Waste Site	C8221	3.2	Direct-push
100-FR-3	600-127 Waste Site	C8222	2.3	Direct-push
100-FR-3	600-127 Waste Site	C8220	5.3	Direct-push
100-FR-3	600-127 Waste Site	C8219	4	Direct-push
100-FR-3	600-127 Waste Site	C8218	4	Direct-push
100-FR-3 Total = 6				
200-UP-1	Underground Diesel Storage Tank at Plutonium Finishing Plant	C8431	13	Direct-push
200-UP-1	Underground Diesel Storage Tank at Plutonium Finishing Plant	C8432	13	Direct-push
200-UP-1	Underground Diesel Storage Tank at Plutonium Finishing Plant	C8433	13	Direct-push

Table 5-3. Borings Installed in 2011

Operable Unit	Project or Location	Well ID	Drill Depth (ft)	Type of Boring
200-UP-1	Underground Diesel Storage Tank at Plutonium Finishing Plant	C8434	13	Direct-push
200-UP-1	Underground Diesel Storage Tank at Plutonium Finishing Plant	C8435	13	Direct-push
200-UP-1 Total = 5				
100-KR-4	100-K-42 Waste Site	C8307	39	Direct-push
100-KR-4	100-K-42 Waste Site	C8308	40	Direct-push
100-KR-4	100-K-42 Waste Site	C8309	40	Direct-push
100-KR-4	100-K-42 Waste Site	C8310	40	Direct-push
100-KR-4	100-K-42 Waste Site	C8311	40	Direct-push
100-KR-4	100-K-42 Waste Site	C8312	38	Direct-push
100-KR-4	100-K-42 Waste Site	C8313	36.5	Direct-push
100-KR-4	100-K-42 Waste Site	C8314	34	Direct-push
100-KR-4	100-K-42 Waste Site	C8315	36.5	Direct-push
100-KR-4	100-K-42 Waste Site	C8316	37	Direct-push
100-KR-4	118-KE-1 Waste Site	C8658	39	Direct-push
100-KR-4	118-KE-1 Waste Site	C8659	24	Direct-push
100-KR-4	118-KE-1 Waste Site	C8660	26.5	Direct-push
100-KR-4	118-KE-1 Waste Site	C8661	39	Direct-push
100-KR-4	118-KE-1 Waste Site	C8662	27	Direct-push
100-KR-4	118-KE-1 Waste Site	C8663	40	Direct-push
100-KR-4	100-K-42 Waste Site	C8664	40	Direct-push
100-KR-4	118-KE-1 Waste Site	C8665	38	Direct-push
100-KR-4	118-KE-1 Waste Site	C8666	20	Direct-push
100-KR-4	118-KE-1 Waste Site	C8667	56	Direct-push
100-KR-4 Total = 20				
Grand Total = 49				

Table 5-4. Wells Decommissioned in 2011

Operable Unit or Location	Well Name	Well ID	Out of Service Date
100-FR-3	699-65-38	A5299	3/30/11
100-FR-3 Total = 1			
100-HR-3	199-D2-8	C3040	6/15/11
100-HR-3	199-D5-140	C7866	6/15/11
100-HR-3 Total = 2			
100-KR-4	199-K-195	C7695	4/29/11
100-KR-4	199-K-29	A5480	1/21/2011
100-KR-4	199-K-30	A4655	1/21/2011
100-KR-4 Total = 3			
100-NR-2	199-N-170	C7035	9/9/11
100-NR-2	199-N-174	C7039	7/6/11
100-NR-2	199-N-175	C7040	7/6/11
100-NR-2	199-N-176	C7041	7/6/11
100-NR-2	199-N-177	C7042	7/6/11
100-NR-2	199-N-178	C7043	7/6/11
100-NR-2	199-N-179	C7044	7/6/11
100-NR-2	199-N-180	C7045	7/6/11
100-NR-2	199-N-181	C7046	7/6/11
100-NR-2	199-N-26	A4675	5/3/11
100-NR-2 Total = 10			
200-BP-5	699-55-40	A5255	5/19/11
200-BP-5	699-56-40A	A8881	5/17/11
200-BP-5	699-56-40B	A8882	5/3/11
200-BP-5	699-56-40C	A8883	5/9/11
200-BP-5	699-56-41	A8884	5/11/11
200-BP-5	699-56-42A	A8885	5/23/11
200-BP-5	699-56-42B	A8886	6/7/11
200-BP-5	699-56-42C	A8887	5/24/11
200-BP-5	699-56-42D	A8888	6/23/11
200-BP-5	699-56-42E	A8889	6/29/11

Table 5-4. Wells Decommissioned in 2011

Operable Unit or Location	Well Name	Well ID	Out of Service Date
200-BP-5	699-56-42F	A8890	6/14/11
200-BP-5	699-57-41B	A8897	4/29/11
200-BP-5	699-57-41C	A8898	6/1/11
200-BP-5	699-57-41D	A8899	6/1/11
200-BP-5	699-57-41E	A8900	4/20/11
200-BP-5	699-57-42	A8902	4/18/11
200-BP-5	699-58-41A	A8908	3/11/11
200-BP-5	699-58-41C	A8910	3/11/11
200-BP-5	699-58-41D	A8911	3/30/11
200-BP-5	699-58-41E	A8912	3/21/11
200-BP-5	699-58-41F	A8913	4/6/11
200-BP-5	C7788	C7788	4/19/11
200-BP-5	C8031	C8031	3/11/11
200-BP-5 Total = 23			
200-PO-1	699-16-5	A8339	5/6/11
200-PO-1	699-17-15	A8356	5/16/11
200-PO-1	699-17-25C	A8360	5/23/11
200-PO-1	699-17-26G	A8367	5/25/11
200-PO-1	699-17-26H	A8368	5/23/11
200-PO-1	699-17-27D	C3545	5/26/11
200-PO-1	699-18-27C	A8385	5/26/11
200-PO-1	699-20-25	A8422	5/16/11
200-PO-1	699-26-28	C5576	5/17/11
200-PO-1	699-26-29A	A8469	5/4/11
200-PO-1	699-28-23	A8483	4/21/11
200-PO-1	699-30-16	A8495	4/6/11
200-PO-1	699-30-25A	A8496	4/20/11
200-PO-1	699-30-25B	A8497	4/15/11
200-PO-1	699-31-23	A8505	4/15/11
200-PO-1	699-33-21B	A8528	4/13/11

Table 5-4. Wells Decommissioned in 2011

Operable Unit or Location	Well Name	Well ID	Out of Service Date
200-PO-1	699-33-30	A8530	4/15/11
200-PO-1	699-34-19	A8536	4/8/11
200-PO-1	699-34-20	A8537	4/12/11
200-PO-1	699-38-34A	A8596	4/28/11
200-PO-1	699-38-9	A8592	5/18/11
200-PO-1	699-39-2A	A8602	5/18/11
200-PO-1	699-39-E2	A8618	5/18/11
200-PO-1	699-40-32	A8640	4/28/11
200-PO-1	699-40-33C	A8642	4/26/11
200-PO-1	699-41-10	A8649	5/16/11
200-PO-1	699-41-20	A8651	3/22/11
200-PO-1	699-42-21	A8665	3/24/11
200-PO-1	699-42-27	A8666	5/18/11
200-PO-1	699-42-29	A8667	5/25/11
200-PO-1	699-43-18	A8680	3/21/11
200-PO-1	699-43-23	A8681	4/4/11
200-PO-1	699-44-27	A8706	5/20/11
200-PO-1	699-44-28	A8707	5/20/11
200-PO-1	699-45-24	A8719	3/29/11
200-PO-1	699-45-26	A8720	3/24/11
200-PO-1	699-46-15	A8728	3/4/11
200-PO-1	699-47-24	A8746	6/8/11
200-PO-1	699-48-17	A8763	3/7/11
200-PO-1	699-48-22	A8765	3/17/11
200-PO-1	699-49-13C	A8786	3/8/11
200-PO-1	699-49-21	A8789	3/18/11
200-PO-1	699-52-17	A8832	3/2/11
200-PO-1	699-52-18B	A8834	3/2/11
200-PO-1	699-54-15A	A8853	3/3/11
200-PO-1	B2882	B2882	7/19/11

Table 5-4. Wells Decommissioned in 2011

Operable Unit or Location	Well Name	Well ID	Out of Service Date
200-PO-1	B8053	B8053	6/14/11
200-PO-1	B8054	B8054	6/20/11
200-PO-1	B8055	B8055	6/13/11
200-PO-1	B8056	B8056	6/14/11
200-PO-1	B8057	B8057	6/16/11
200-PO-1	B8857	B8857	6/3/11
200-PO-1	B8858	B8858	6/3/11
200-PO-1	B8859	B8859	6/3/11
200-PO-1	B8860	B8860	6/3/11
200-PO-1	B8861	B8861	6/3/11
200-PO-1	B8862	B8862	6/3/11
200-PO-1	B8863	B8863	6/3/11
200-PO-1	B8864	B8864	6/3/11
200-PO-1	C3337	C3337	6/8/11
200-PO-1	C3338	C3338	6/10/11
200-PO-1	C3366	C3366	6/14/11
200-PO-1	C3367	C3367	6/14/11
200-PO-1	C3539	C3539	6/10/11
200-PO-1	C3543	C3543	6/20/11
200-PO-1	C3655	C3655	6/21/11
200-PO-1	HWDS49	C3355	6/8/11
200-PO-1 Total = 67			
Monument North (Wahluke Slope)	699-98-54C	A9098	9/17/11
Monument North (Wahluke Slope)	C8450	C8450	9/17/11
Wahluke Slope Total = 2			
Grand Total = 108			

Figure 5-1. Categorization of Unique Well Identification Numbers

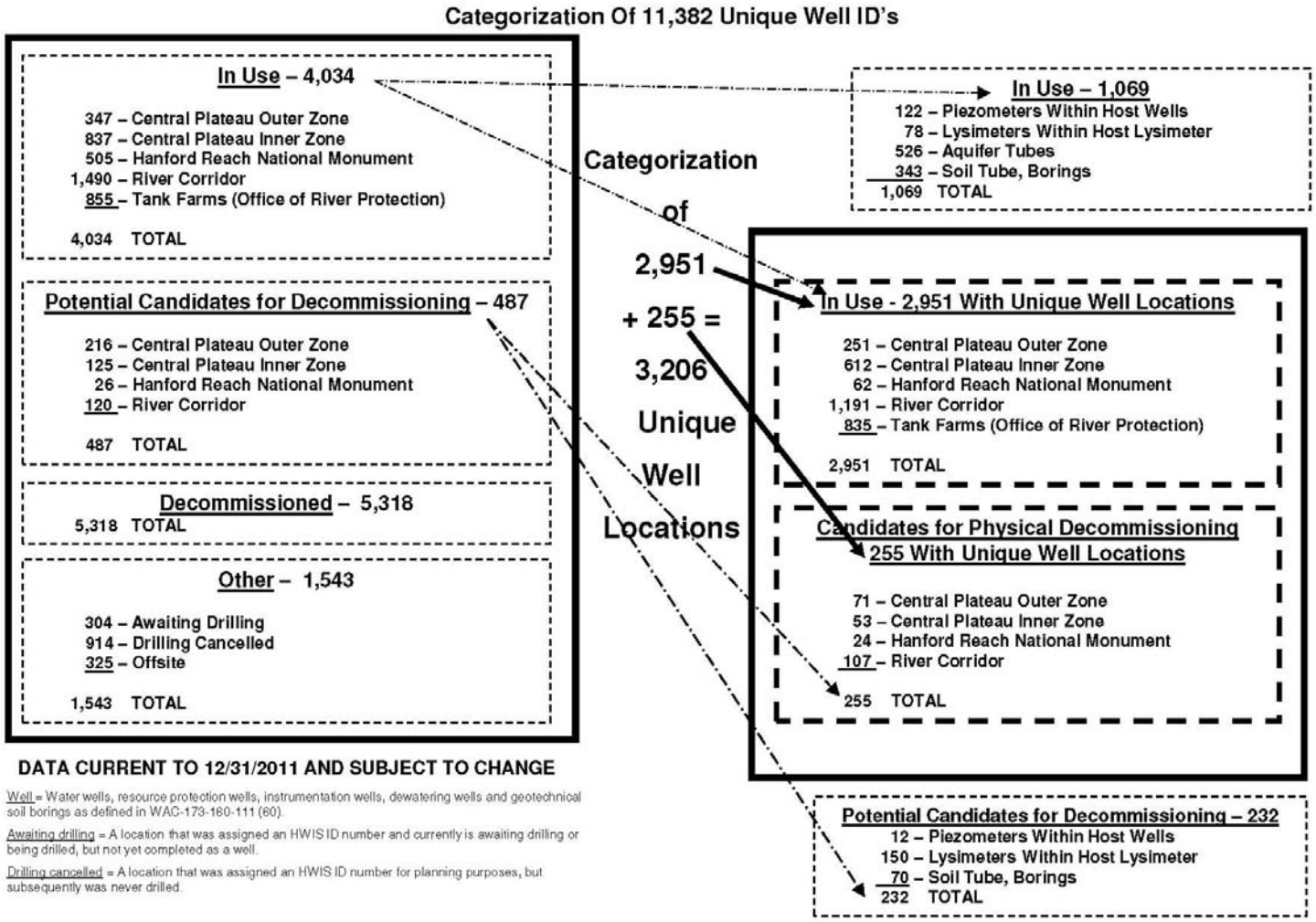
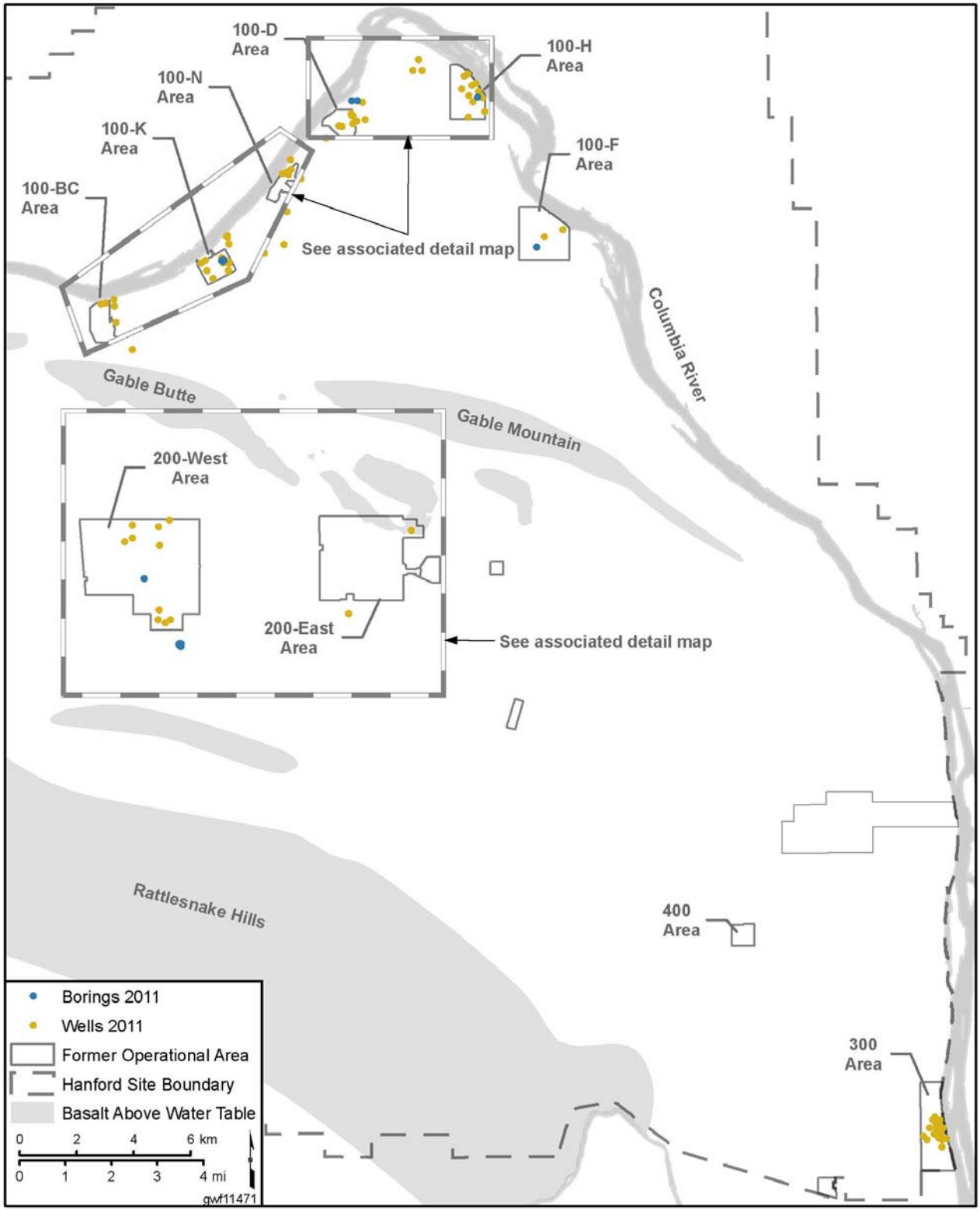


Figure 5-2. Hanford Site Well Installations, 2011



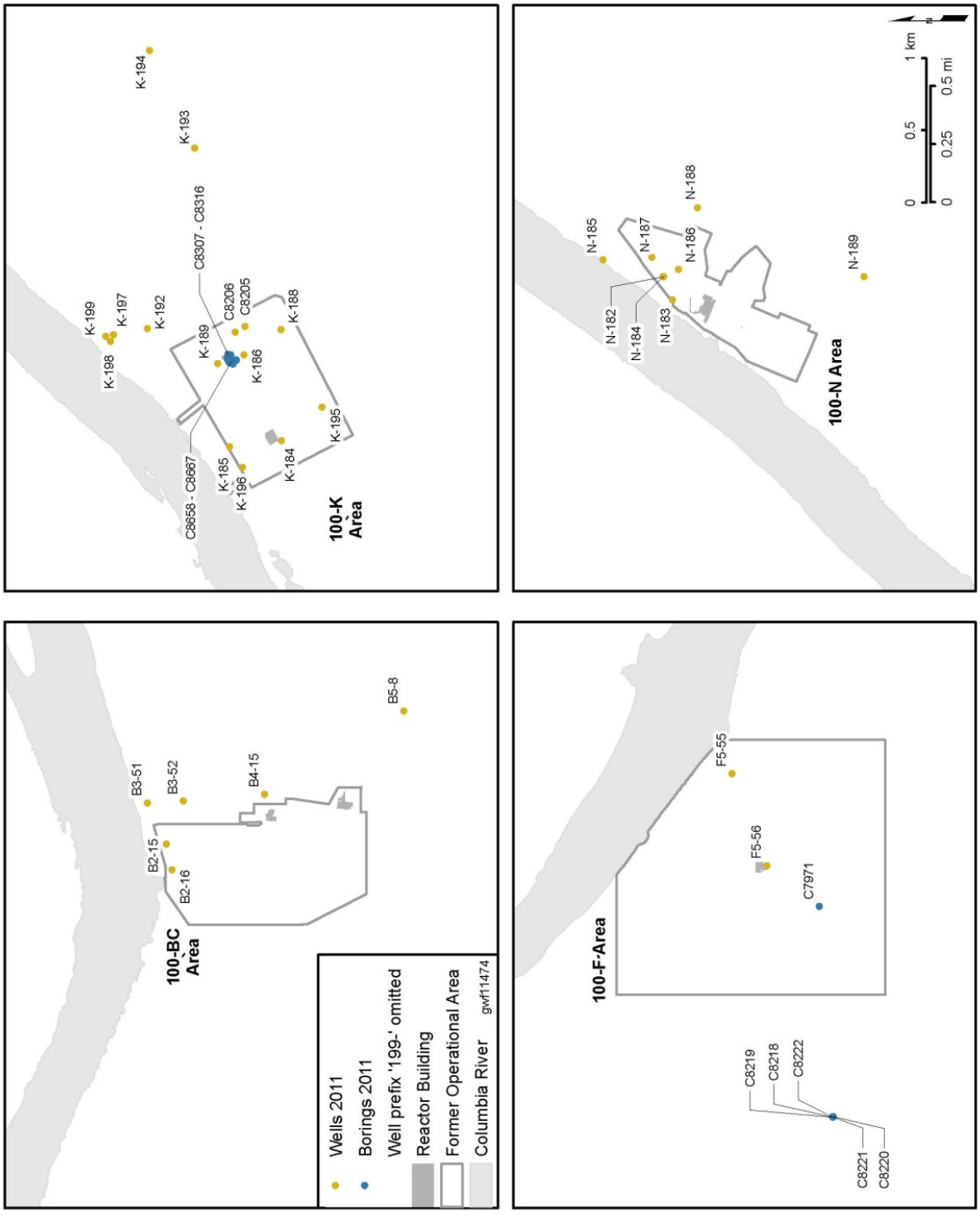


Figure 5-3. 100-BC-5, 100-KR-4, 100-FR-3 and 199-NR-2 Well Installations, 2011

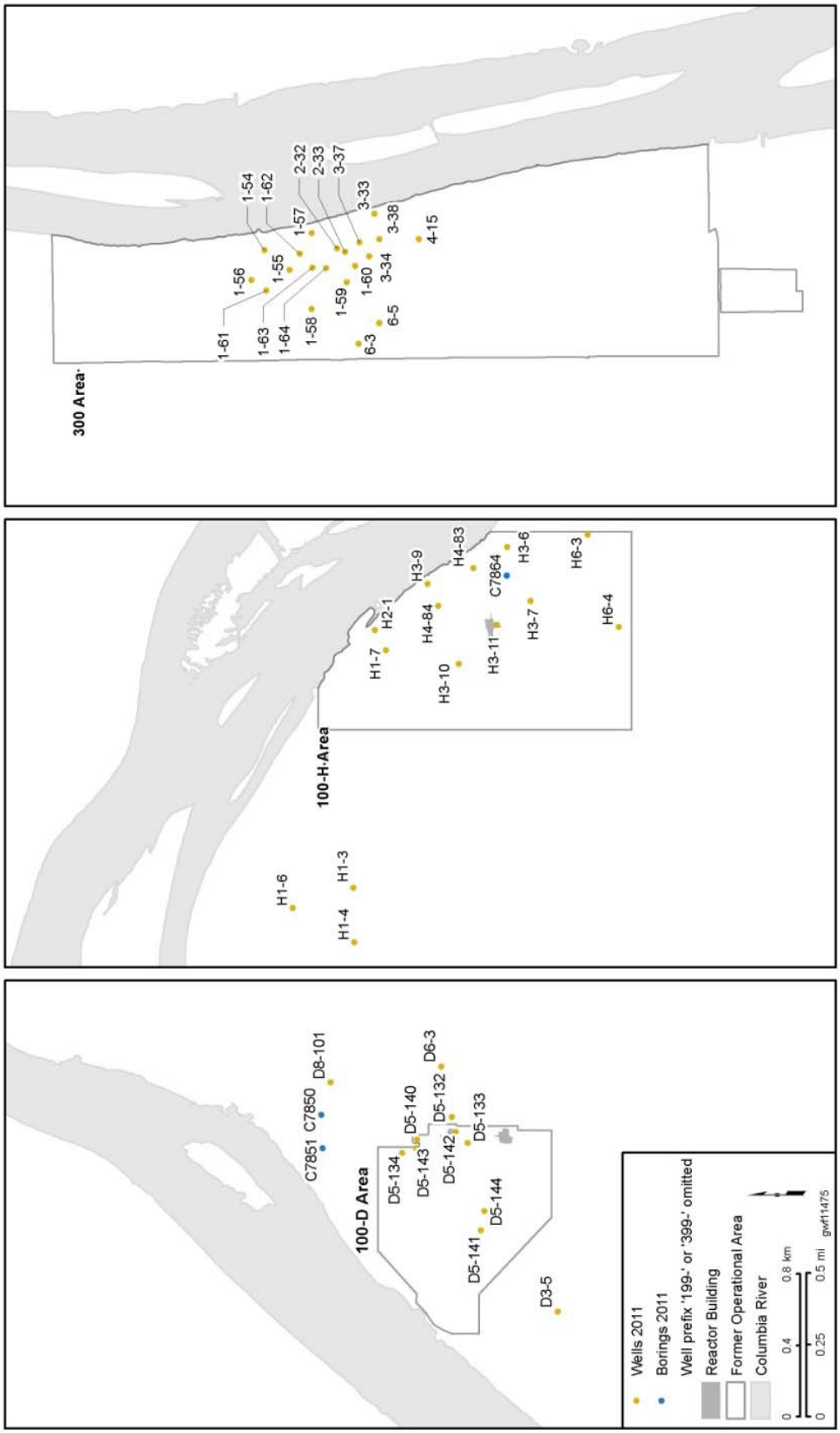


Figure 5-4. 100-HR-3 and 300-FF-5 Well Installations, 2011

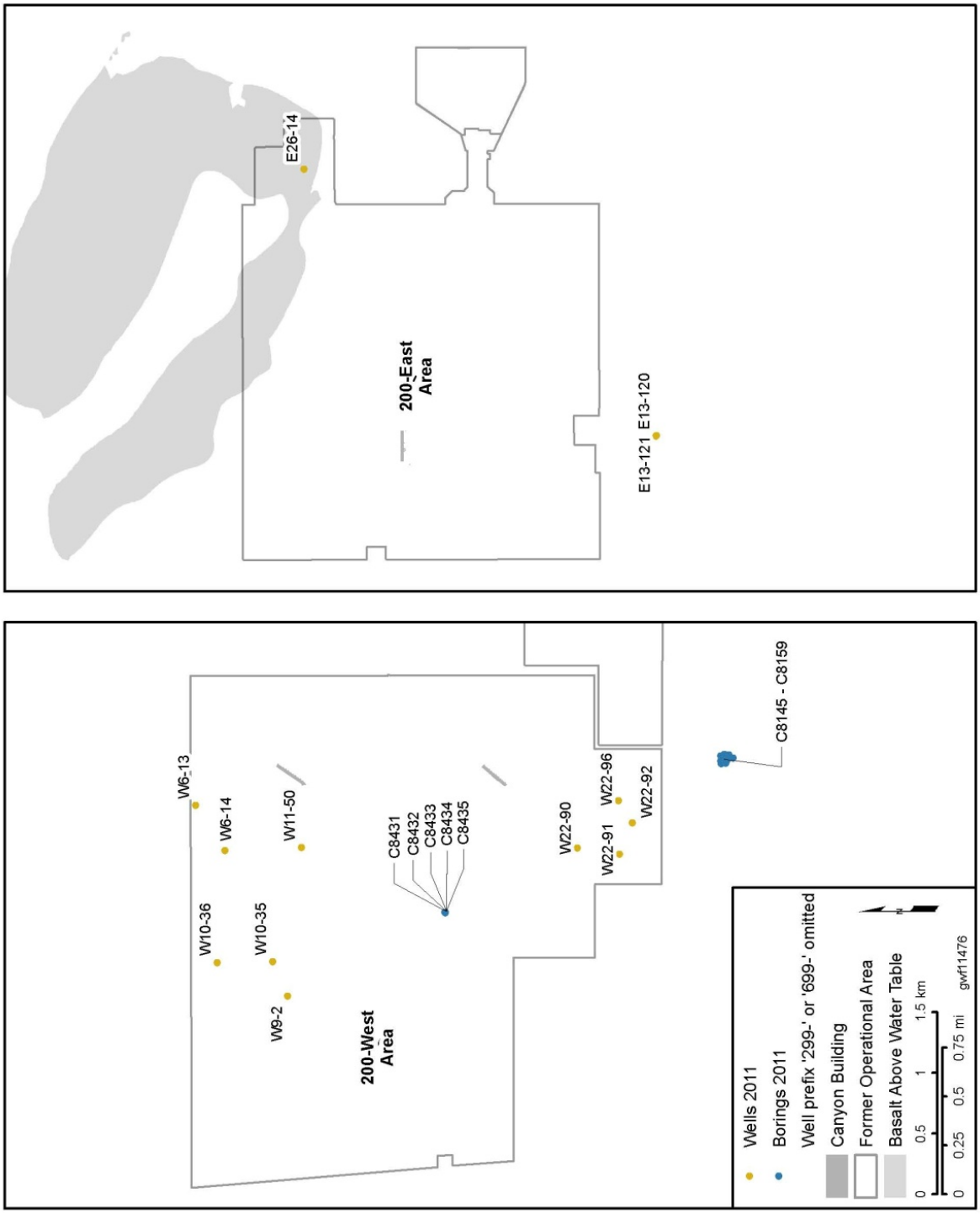


Figure 5-5. 200 East Area and 200 West Area Well Installations, 2011

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