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# PRELIMINARY ASSESSMENT OF FACTORS AFFECTING WELL YIELDS IN THE FRACTURED-ROCK TERRANE OF FREDERICK COUNTY AND PORTIONS OF CARROLL AND MONTGOMERY COUNTIES, MARYLAND

by

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## KEY RESULTS

A pilot study was conducted in an area comprising Frederick County and the nearby areas surrounding Poolesville (Montgomery County), Taneytown, Mt. Airy, and Westminster (Carroll County), Maryland, to evaluate factors related to well yields. Data from 2,315 wells were analyzed in a preliminary assessment to determine what, if any, relation exists between well yield and geology, well depth, well construction, or other factors affecting ground-water availability in the fractured-rock terrane. The key results of the study are:

- Well use is a significant factor in the determination of well yield. Differences in the construction of public-supply and industrial wells allow for greater variation in well depth and diameter. These well uses also benefit from better location selection and siting. Well yields are significantly higher ($P < 0.05$) in public-supply wells and industrial wells than in domestic wells. Commercial and institutional wells do not have statistically different yields, nor do industrial and institutional wells. Domestic well yields are significantly different (lower) from all other well uses.
- Commercial, domestic, industrial, institutional, and public-supply wells in the Piedmont have greater median well yields and variability in well yields than wells in the Blue Ridge, although these differences were not statistically significant.
- Lithology and topography are site factors that may have a statistically significant impact on well yield; however, this is not consistently demonstrated throughout all well-use groups.
- Depth to bedrock (overburden thickness) and position of the water table relative to the bedrock-overburden interface do not demonstrate any statistically significant influence on well yield.
- Distance to a mapped fault appears to have no effect on well yield, but this result may be unduly influenced by the map scale of this study.

# INTRODUCTION

## BACKGROUND

### Water Sources and Demand for Water

In Maryland, drinking-water supplies come from either surface- or ground-water resources. In the fractured-rock terrane of Maryland, ground water occurs in joints or fractures in the solid rock. These joints and fractures have limited storage capacity; therefore, the overburden above the bedrock is a major source of recharge (fig. 1). To produce water, wells in the fractured-rock terrane must intersect water-bearing fractures (fig. 2). Previous research has established that it is not only the number of fractures intersected by the well, but the aperture, length, and connectivity to other fractures that determines the productivity of a well (Caswell, 1979).

In 2010, the total population in the State of Maryland was approximately 5.7 million people (U.S. Census Bureau, 2012). This represented a 9-percent increase in population from the 2000 census. The counties in the study area, including Frederick, Carroll, and Montgomery Counties, experienced population increases of 19.5, 10.8, and 11.3 percent, respectively. According to the 2011 Maryland Department of the Environment's (MDE) report to the Governor titled, "Maryland's Capacity Development Program for Public Drinking Water Systems", 86 percent of Maryland's population is served by community water systems and 14 percent is served by individual wells. Of the 3,432 public-water systems in the State, 3,373 use ground water as their sole water source. Future demand for water is expected to increase, reflecting a projected growth in Maryland's population to roughly 6.4 million people by 2025 (U.S. Census Bureau, 2012).

### Ensuring Enough Water and Preparing for Drought

Droughts in 1998-1999 and 2001-2002, along with increasing population projections, prompted the State of Maryland to reevaluate the availability of water resources within the State. The effects of drought resulted in the implementation of building restrictions and moratoriums in several municipalities, the failure of hundreds of domestic wells within the State, and threatened the ability of public-water systems to meet demand as sources became increasingly stressed.

### The "Wolman Report" and Assessing Maryland Water Resources

In July 2008, the Advisory Committee on the Management and Protection of the State's Water Resources issued its final report identifying the challenges Maryland faces regarding use of its water resources and outlining a strategy to achieve sustainability (State of Maryland, 2008). The committee, informally known as the Wolman Committee, recognized several issues that may affect ground-water availability, including increased demand due to projected population growth and agricultural irrigation; changing land-use patterns that may threaten water quality; competition between ground-water users, including domestic, recreational, agricultural, and power-producers; and climate change, leading to significantly warmer and drier periods. The report recommended both basic data acquisition and development of a Statewide water-supply plan, including the availability of ground water in fractured-rock terranes.

## PURPOSE AND SCOPE

This report presents an evaluation of the relation between various site and well-construction factors and well yields in the fractured-rock aquifers in Frederick County and parts of Montgomery and Carroll Counties. This study is intended to provide a starting point for additional studies covering the remaining fractured-rock terrane of Maryland. Analysis of factors that influence well yield will help in the selection of well sites and for water-supply planning and development.

### LOCATION OF STUDY AREA

This study was conducted in a pilot area comprising Frederick County and the nearby areas surrounding Poolesville (Montgomery County), and Taneytown, Mt. Airy, and Westminster (Carroll County). In Maryland, the fractured-rock terrane extends from the Fall Line westward to Garrett County and encompasses the Piedmont, Blue Ridge, Valley and Ridge, and Appalachian Plateau physiographic provinces (figs. 3 and 4). The study area was selected because it is an area of rapid growth with increasing water demand, there are a variety of water uses, and there is a range of geologic and hydrologic terranes with diverse land use. The study area is located in a region that was severely affected by the droughts of 1999 and 2002.

### PREVIOUS INVESTIGATIONS

Earlier workers have examined the highly variable yields of wells completed in the fractured rocks of Maryland with respect to site factors (such as lithology and topographic setting) and construction factors (such as well depth). The Maryland Geological Survey (MGS) published a series of bulletins describing water resources of various counties in the 1950s and early 1960s (Dingman and Meyer, 1954; Overbeck, 1954; Dingman and Ferguson, 1956; Meyer, 1958; Overbeck and Slaughter, 1958; Slaughter, 1962), and updated some of the county studies in the late 1970s to mid-1990s (Nutter, 1977; Duigon and Dine, 1987; Otton and others, 1988; Duigon and Dine, 1991; Dine and others, 1995). Nutter and Otton (1969) described ground-water occurrence in the Maryland Piedmont, and associated certain geologic units with areas of higher or lower than average well yields. A series of quadrangle atlases (e.g., Otton and others, 1975; Duigon, 1981; Duigon and others, 1994a-b; Weigle and Hilleary, 1981) included maps of areas where well yields could be expected to be higher or lower than average, based on the distribution of yields of wells in the geologic units underlying the areas of the quadrangles.

### ACKNOWLEDGMENTS

This report is part of a regional assessment of the water resources of Maryland's fractured-rock terrane, which was designed to address some of the recommendations of the Advisory Committee on the Management and Protection of the State's Water Resources. Cooperative funding came from MDE and the U.S. Geological Survey (USGS) Maryland-Delaware-D.C. Water Science Center. Phung Pham (MGS) and Sarah Cook (formerly MGS) inventoried wells and conducted other tasks for MGS. Heather Quinn (MGS) provided many insightful discussions. Donajean Appel (MGS) assisted with data input and with editing and manuscript preparation. Steve Curtin (USGS) and other USGS staff provided database management. Colleague reviews by Brandon Fleming (USGS), Tom Devilbiss (Carroll County Department of Land Use, Planning, and Development), and Harry Hansen (MGS [retired]) provided insightful comments.

## GEOLOGIC SETTING

Maryland exhibits diverse geologic and physiographic terranes (fig. 3) consisting of rocks and sediments that range in age from over 1 billion years (Wetherill and others, 1966; Aleinikoff and others, 2004) to recent decades (Costa, 1975). The Fall Line, which extends through the State from eastern Cecil County to Washington, D.C., marks the eastern edge of the outcropping fractured-rock terrane in Maryland. Eastward of the Fall Line, these rocks dip progressively deeper beneath unconsolidated sediments that form the Coastal Plain. This study encompasses parts of the Blue Ridge and Piedmont physiographic provinces in Maryland, both of which have distinct characteristics.

The Piedmont consists of gently rolling hills, with elevations typically between 400 and 700 feet (ft) above sea level (Duigon and Dine, 1987). Brezinski (2004d) described the Piedmont as metamorphosed phyllites, schists, basalts, marbles, and granites which underwent intense deformation and metamorphism during the formation of the Appalachian Mountains. The rocks underwent a generally lower degree of metamorphism in the western portion of the Piedmont and higher-grade metamorphism towards the East (Reger and Cleaves, 2008).

The Piedmont includes siliciclastic rocks of Triassic age in northeastern Frederick, northwestern Carroll, and western Montgomery Counties. The Triassic rocks are located in two separate basins, the Gettysburg Basin to the

north of the study area and the Culpeper Basin, located to the south. In the Gettysburg Basin, units include the New Oxford and Gettysburg Formations, and in the Culpeper Basin, the units include the Balls Bluff Siltstone, Leesburg Formation and Manassas Formation (Nutter, 1975).

The Blue Ridge province primarily consists of a large, anticlinal fold whose limbs form both the Catoctin Mountain and South Mountain ridges, which consist of Lower Cambrian quartzite. The two ridges are separated by Precambrian gneiss and metamorphosed, volcanic rock of the Middletown Valley (Reger and Cleaves, 2008).

# METHODS OF INVESTIGATION

This study is based on an evaluation of data from 2,315 wells. Data were obtained from the USGS Ground-Water Site Inventory (GWSI) portion of the USGS National Water Inventory System (NWIS) database. Most of the data represent wells that have been inventoried over time for a variety of projects; additional wells were inventoried in the area specifically for this project. Field inventorying for water wells typically consists of a visit to the site, where the well-permit number is obtained from the well tag or other means. Since 1973, State regulations require a metal tag with the well-permit number stamped on it to be affixed to the well casing, and the location of the well is recorded on the well-completion report, either on a map (for older wells) or by determining the latitude and longitude (for wells inventoried more recently). These data are combined with information provided by the well driller in the State-required well-completion report, which describes specifics of the well's construction, including the depth, casing, and yield. After the field inventory, the well is assigned a local well name (e.g., FR Df 35), and the information is then entered into GWSI.

## WELL SELECTION

Wells in this study were retrieved from GWSI, based on the geographic location of the study area. Further restrictions on the retrieved data were made based on the completeness of the available well records. Wells without yield data were eliminated from consideration; however, if a well was listed as a dry hole in the well-completion report, the well was included, and the well yield assigned a value of zero. Well yields are determined by several techniques and by various time-duration pumping tests. Most public-supply wells are subject to long-term pumping tests (24 hours or longer), while domestic wells are usually evaluated by a short-term pumping test (30 minutes to a few hours). The variability in well-yield determination adds some uncertainty to the data; however, the error is assumed to be evenly distributed among the data (Mark Duigon, MGS [retired], personal commun., 2012).

For the final dataset, the well-driller's completion reports were reviewed and any missing information was updated, if available. Additional information was obtained from data files at MGS. The wells selected for this report represent a composite of the ground-water conditions in the study area across a 60-year time span, including all seasons and local weather and climate conditions. These data provide a robust view of both the hydrogeologic conditions and ground-water availability from fractured-rock wells in the study area. It is assumed that water levels, yields, and other data reflect an average representation of hydrogeologic conditions.

## ASSIGNMENT OF LITHOLOGIC UNITS

Although the geology of the study area has been mapped by many geologists (Jonas and Stose, 1938; Edwards, 1993a-b; Muller, 1994; Brezinski, 2004a-d; Brezinski and Edwards, 2004; Brezinski and others, 2004; Brezinski and Southworth, 2004; Reger and Edwards, 2004; Reger and others, 2004; Brezinski and Fauth, 2005; Southworth and others, 2007; Brezinski, 2009; Brezinski and Bell, 2009; Brezinski and Fauth, 2009) and many of the geologic maps have been digitized in several quadrangles, a complete and current digital map of the geology of the region is not available as of 2012 (fig. 5). Due to the lack of a single geologic-base map, the authors found grouping wells by geologic unit to be prohibitively difficult. Geologic units were not contiguous or necessarily equivalent across maps due to changes in interpretations of local geologic history over time and among many different mappers.

While the authors of this study used these quadrangle geological maps to investigate discrepancies in well-completion reports or for clarification of well location and position, it was determined that a map offering full

coverage of the study area would be more suitable. Furthermore, it was recognized that several geologic units had similar lithologic qualities that would lend themselves to being evaluated together. Many workers have identified lithology and geologic units as an important factor influencing well yield (Taylor and Royer, 1981; Knopman and Hollyday, 1993; Henriksen, 1995; Moore and others, 2002). This study followed an approach similar to that of Moore and others (2002) by combining several geologic units into major lithologic types that have similar characteristics. Considering that the study area includes over 36 recognized geologic formations, only some of which are correlative across different base maps, we chose to use gross lithology as a starting point for investigation.

Therefore, to evaluate the effect of geologic/lithologic factors on well yield, the authors used the 2001 "Preliminary Lithogeochemical Map of Near-Surface Rock Types in the Chesapeake Bay Watershed, Virginia and Maryland" (Peper and others, 2001) as a base map (fig. 6). This map, which provided full coverage of the study area, was developed by classifying geologic map units from the 1968 "Geologic Map of Maryland" (Cleaves and others, 1968) by composition, mineralogy, and texture, with a focus on key water-reactive mineral components. It displays the distribution of near-surface rock types as lithogeochemical units and was intended as a tool for hydrologists to investigate relationships between rock types and water quality.

The geologic unit penetrated by each well was originally identified from data retrieved from GWSI. For wells missing the geologic unit assignment, driller's reports and comparisons to geologic maps in the study area were made in order to complete the records. Geologic units were then assigned to one of four lithologic categories: carbonate, fine-grained siliciclastic, coarse-grained siliciclastic, or igneous (tab. 1) based on the classification scheme of the Peper and others' (2001) map. Well yields for each lithologic group were then evaluated. As a preliminary evaluation, we also selected domestic wells (which had the largest sample size) and compared well yields and depths of wells completed in the Triassic-age rocks to those completed in non-Triassic-age siliciclastic rocks of the Piedmont and Blue Ridge, as well as the carbonate rocks of the Piedmont (figs. 7 to 10) Wells completed in the Triassic rocks, on average, have greater well yields than wells located in equivalent rock types in the Piedmont and Blue Ridge. Not unexpectedly, wells located in carbonate rocks have the largest average yields for equivalent depths. Rocks of the Triassic and Piedmont terranes with similar lithologies are combined in this report to evaluate factors affecting well yield.

Several geologic units, such as the Sams Creek Formation, New Oxford Formation and Gettysburg Shale, are listed in multiple lithologic categories. Each of these units contain several distinct lithologies. For example, the New Oxford Formation typically consists of a dark reddish siltstone/shale and micaceous arkose lithology (which would be classified as a fine-grained siliciclastic rock) and a basal quartz-pebble conglomerate with pebbles and cobbles reaching up to 5 inches in diameter (coarse-grained siliciclastic) (Reger and others, 2004). Wells that were identified in these units were further investigated using driller's reports to determine which lithologic category was more appropriate. Additional descriptions of these units can be found on the individual quadrangle maps (fig. 5).

## DATA ANALYSIS

Data analysis includes descriptive statistics of wells and subsets of wells, and statistical tests for trends (Spearman rank-correlation test) and differences between groups (Kruskal-Wallis One-Way Analysis of Variance on Ranks [ANOVA] and Mann-Whitney Rank Sum Test). Differences between well groups were considered to be statistically different if $P<0.05$ (that is, if there was less than a 5-percent chance of incorrectly concluding that there is a true association between the variables). In this report, references to statistical significance refer to the Kruskal-Wallis ANOVA test at the $P<0.05$ significance level, unless otherwise specified. Well yields for different categories of wells were also visually compared using box-and-whisker plots and other graphical representations.

After an initial evaluation, we determined that several well-use categories (as defined by GWSI) lacked enough wells (less than five) to provide meaningful analysis. For that reason, the well-use categories of aquaculture, fire, irrigation, recreation, and stock were not included in the analysis. Well-use categories are presented in table 2.

Other well uses were similar in nature, both in quantities of water needed and well construction, and were, therefore, combined into a larger data set (figs. 11 and 12; tabs. 3 and 4). Yields from public-supply and industrial wells were not significantly different from each other and could, therefore, be reasonably combined into a single group. Similarly, the yields of commercial and institutional wells, and industrial and institutional wells were not significantly different from each other. Commercial and institutional wells were combined into a single group

based on the additional similarity of well depth and the fact that institutional and public-supply wells were not statistically similar. Domestic wells comprise the vast majority of the dataset and have unique well-construction and water needs. In order to preserve this dataset and prevent undue influence on other smaller datasets, domestic wells were evaluated in a separate category (tab. 2). For the reasons previously mentioned, wells in a topographic setting with less than five wells in the dataset were removed from further study. Previous studies have concluded that, for fractured rock, the variation in well yield remains large regardless of specific factors such as lithology or topography. Consequently, the yield of any individual well is not accurately predictable (Cederstrom, 1972; Duigon and Dine, 1987). Nonetheless, studies have also concluded that large datasets may still be used to infer reasonable well yields for groups of similar wells (Knopman and Hollyday, 1993). For this study, the selected wells are not randomly sampled and are, in part, dependent upon representation in the GWSI database.

# RESULTS

## WELL YIELDS IN RELATION TO WELL-SITE CHARACTERISTICS

### Well Use

Well yields are significantly higher ($P < 0.05$) in public-supply wells and industrial wells than in domestic wells. Commercial and institutional wells do not have statistically different yields, nor do industrial and institutional wells. Domestic well yields are significantly different (lower) from all other well uses (figs. 11 and 12; tabs. 3 and 4)

The yield of a well in fractured rock is largely dependent upon the size and distribution of the water-bearing fractures intersecting the well bore. As Moore and others (2002) point out, measured well yield is also frequently a function of the well owner's water requirements, and *not* a measurement of the site's maximum yield potential. The required well yield may significantly influence the construction and development of a particular well; more care is given to the selection of drill sites and construction parameters for wells intended for public supply than for those intended for domestic consumption.

Public-supply wells and, to a similar extent, institutional, commercial, and industrial wells, have higher demands placed on them, greater freedom in siting the well (due to larger or multiple properties), greater funds available for construction and development (allowing the potential to drill deeper or larger diameter wells), and the greatest interest in extracting and maximizing the potential yield. Domestic wells, by comparison, are typically drilled in order to meet a minimum yield and depth requirement set by local government regulations (Duigon and Dine, 1987). Drilling for domestic wells is typically stopped upon reaching the minimum amount of water and storage capacity needed, and the location is limited to the extent of the homeowner's property, which may or may not be ideally situated for maximum water yield. Other considerations on small properties that may affect well placement (and subsequent yield) include house location and distance to house from well, distance from septic systems, road setbacks, and other property boundaries in accordance with local zoning (Duigon and Dine, 1987).

### Physiographic Province

This study also suggests that well yield is related to the physiographic province of the well (fig. 13). Physiographic province integrates the combined influence of multiple, independent factors such as lithology, topography, and geologic structure, which can be useful when differentiating wells into similar groupings for comparison (Reger and Cleaves, 2008).

Commercial, domestic, industrial, and public-supply wells in the Piedmont have greater median well yields and variability in well yields than wells in the Blue Ridge (fig. 14 and tab. 5), although these differences were not statistically significant. Despite these findings, this study organizes well groups by well use *and* physiographic province for visual comparison.

## Depth to Bedrock (Overburden Thickness)

Well yields were evaluated with respect to depth to bedrock. In central Maryland, depth to bedrock is typically estimated by the length of casing of a well, since well-construction regulations in central Maryland require wells to have a minimum casing length of 20 ft and a minimum seating distance of 2 ft into competent bedrock (Code of Maryland Regulations, 2012). While casing length is commonly used as a surrogate for depth to bedrock, it is not necessarily reliable. In this study, depth-to-bedrock values were determined from interpreting well-completion reports, instead of using casing length as a surrogate. Several wells appear to be either partially cased into the overburden, or (more commonly) cased very deeply into the bedrock (figs. 15 to 17). Several factors may contribute to this, including older wells that may predate health regulations, inaccuracies in the reported bedrock location, and misinterpretations of bedrock or overburden material.

In Maryland, overburden thickness (referred to as "saprolite" by Nutter and Otton [1969], but which usually only consists of the weathered portion of the overburden) typically ranges from 0 to 100 ft in depth, with an average depth of 45 ft (Nutter and Otton, 1969). Both Dingman and others (1954) and Nutter and Otton (1969) note that decomposed and weathered rock is typically thickest beneath rolling uplands and hills and thinnest beneath lowland areas due to higher erosion rates in the valleys.

Despite the difference in overburden thickness between topographic highs and lows, we saw no significant relation between thicknesses of overburden and well yield (figs. 18 to 20). There was a general trend of somewhat greater-than-average overburden depth across well types in the Blue Ridge than in the Piedmont, but greater variability and the thickest overburdens were seen in the Piedmont (fig. 21). As noted previously, yields in Piedmont wells were also slightly higher than those in the Blue Ridge.

In igneous and metamorphic rock, depth to bedrock (overburden thickness) is an indicator of the total volume of available ground water because water is stored primarily in the overburden, from which water is transmitted to wells via fractures and contacts (secondary porosity). These conduits have very little storage capacity; therefore, recharge from the overburden is a critical process necessary for sufficient well yield (Dowd and Marshall, 1995). While the exact nature of the connections between fractures and overburden may not be well understood, the importance of it as storage available for drawdown is recognized (Heath, 1989; Dowd and Marshall, 1995).

## Position of Water Table Relative To Bedrock-Overburden Interface

The location of the water table relative to the bedrock/overburden interface does not seem to have any significant correlation with well yield (figs. 22 to 24). With few exceptions, the water table can be found within 100 ft of the bedrock/overburden interface, and, for the majority of wells, the location of the water table is within 50 ft of the interface.

Overburden characteristics are dependent upon the lithology, texture, and structure of the parent-rock material. Permeability of overburden is typically greatest within the soil zone (0 to 3 ft) and decreases with depth until near the saprolite/bedrock interface, where it appears to increase (fig. 25). The increase, which has been noted by many drillers in the region, may be due to coarser-grain sizes (boulders and sand) at the unweathered bedrock surface (Nutter and Otton, 1969).

In fractured-rock terrane, fracture frequency and width is typically greatest at shallow depths, normally within the first 300 ft below land surface (Taylor and Royer, 1981). Assuming the well has intersected these fractures, the supply of water to the well is also dependent upon the connectivity of the fractures to each other and to a source of recharge such as the saturated overburden or a surface-water body. Henriksen (1995) considered ground-water levels, recharge rates, and infiltration processes in near-surface/bedrock systems to be especially important, and Cederstrom (1972) also noted that wells that tap surface-water or saturated recharge zones, unsurprisingly, have higher yields. Parizek and Siddiqui (1976) found that in carbonate aquifer systems, yields of wells were very closely related to the water-table position and the location of the production zones or fractured openings in the well.

## Lithologic Unit

Wells located in carbonate or coarse-grained siliciclastic lithologies have generally higher yields than wells located in fine-grained siliciclastics or igneous lithologies (figs. 26 to 28; tabs. 6 to 8) (carbonate lithologies, as grouped in this study, only appear in the Piedmont terrane).Wells in the Piedmont show more variability in yield.

Commercial and institutional wells in both coarse- and fine-grained siliciclastic rocks (fig. 26; tab. 6) in the Piedmont appear to have more variability in yield and higher median well yields than those in the Blue Ridge; however, these differences are not statistically significant (median well yields of 10 gallons per minute [gpm] for both coarse-grained siliciclastic and fine-grained siliciclastic lithologies in the Piedmont, compared to 5 gpm and 3 gpm in the Blue Ridge). Igneous lithologies have the same median well yield (10 gpm) for both the Blue Ridge and the Piedmont. Wells in carbonate rocks in the Piedmont have the highest yields among commercial and institutional wells at 15 gpm.

Domestic wells (fig. 27; tab. 7) are similar to the commercial and institutional wells in that carbonate lithologies produce the highest median well yield (10 gpm). Fine-grained and coarse-grained siliciclastic rocks and igneous rocks have similar median well yields in the Piedmont (8 gpm), whereas there is more variation in wells in the Blue Ridge (3.5, 5, and 7 gpm, respectively). There are statistically significant differences between the well yields of wells in carbonate lithologies and fine-grained siliciclastics in the Blue Ridge and Piedmont, as well as igneous lithologies of both provinces, and coarse-grained siliciclastics in the Blue Ridge. However, there is not a significant difference between well yields located in carbonate and coarse-grained siliciclastics in the Piedmont.

Yields from coarse-grained siliciclastic public-supply and industrial-supply wells are significantly higher in wells in the Piedmont (median yield, 95 gpm) than in the Blue Ridge (median yield, 12 gpm). Wells in carbonate rocks also have a median yield of 43 gpm in the Piedmont (fig. 28; tab. 8). Fine-grained siliciclastic wells have a median well yield of 38 gpm in the Piedmont, followed by igneous rocks of the Blue Ridge (30 gpm), although these differences are not statistically significant.

Previous researchers have found similar results and suggest that while lithology is an important factor, there is a high degree of variability within each lithologic unit. Natural heterogeneity, including variation in composition, bedding, fracturing, and dissolution, could explain differences in yield between and *within* geologic units or lithologies. This may be especially true for wells that are clustered fairly close together spatially, yet report very different yields (Lattman and Parizek, 1964; Summers, 1972; Gustafson, 1986; Banks and others, 1993; Knopman and Hollyday, 1993; Krasny, 1993; Henriksen, 1995). Cederstrom (1972) also points out that well-yield variability within a single lithology or geologic unit may also be due in fact to the availability of recharge and the heterogeneity of the fractures as well.

## Topography

Wells in valleys and flats typically have higher yields in the study area (figs. 29 to 31; tabs. 9 to 11). The highest median yields for commercial and institutional wells occur in Piedmont upland draws and valleys (15 gpm and 14 gpm, respectively); flats have a somewhat lower median yield (12 gpm). Hillsides and hilltops in the Piedmont and Blue Ridge have the lowest median yields. However, none of these groups are significantly different from each other.

Domestic wells located in valleys in the Piedmont and Blue Ridge have the highest median well yield (10 and 11 gpm, respectively), along with Piedmont flats (10 gpm). Upland draws (8 gpm), Blue Ridge flats (8 gpm), hillsides (8 gpm in the Piedmont and 7 gpm in the Blue Ridge) and hilltops (7 gpm in the Piedmont and 6 gpm in the Blue Ridge) have slightly lower yields. In the Blue Ridge, only the yields from wells in valleys and hilltops are significantly different. Valleys and flats in the Piedmont are also statistically different from hilltop locations in the Blue Ridge.

Public-supply and industrial wells demonstrate a lack of statistically significant differences between topographic locations. Piedmont and Blue Ridge wells have the largest median well yields (60 gpm), followed by wells located in the flat portions of the Piedmont (50 gpm). Hillsides in the Blue Ridge and Piedmont have median well yields of 25 gpm and 20 gpm, respectively, and hilltops in the Blue Ridge and Piedmont have a median yield of 12 gpm and 23 gpm, respectively.

Generally speaking, ground-water circulation and the water table are controlled by the topography of a region and mimic topography in a muted way (Duigon and Dine, 1987). Moore and others (2002) note that as elevation and slope increase, there is a tendency for well yields to decrease. This may be a result of the increased depth to water, a decreased saturated thickness of overburden, or a predominance of competent rock with few fractures. Valleys and draws tend to have higher yields than hillsides or slopes (Taylor and Royer, 1981; Yin and Brook, 1992; Henriksen, 1995; Moore and others, 2002). This is a likely result because valleys tend to form where underlying rocks are already weakened or fractured, causing preferential erosion. The remaining rock may also

have a higher percentage of fractures. Furthermore, valleys have larger collection areas for recharge than hill slopes and also function as sites for water discharge.

It should be noted that all topographic information in this study was taken directly from the well-inventory data provided to GWSI. Although the topographic terms are standardized, individual interpretations of a given site are not. Due to subjective differences in the GWSI-user base, these data can be inconsistent. This may be further complicated for wells in the Piedmont of Maryland by the sometimes-obscure nature of the well location in relation to local topography. For example, what may appear to be a flat surface can, in fact, be a hilltop in the gently rolling hills of the Piedmont. Any topographic location that represented less than five wells was eliminated from further consideration.

Henriksen (1995) found that only wells in the valleys and flats, combined, were significantly different from other well locations. The current study had similar findings based on its preliminary analysis. However, after reviewing many well-drillers' methods, Yin and Brook (1992) suggest that topography alone is not a good predictor of well yield, and, therefore, the "lay of the land" approach to determining ideal well locations for high yields is not particularly useful.

## Distance From Mapped Faults

Geologic structures, including faults, folds, fractures, bedding planes, and foliation, have been theorized by many workers to influence well yields in the fractured-rock terrane (Cederstrom, 1972; Caswell, 1979; Taylor and Royer, 1981; Dowd and Marshall, 1995; Allen and Michel, 1998; Rawling and others, 2001; Luczaj, 2010). This study focused only on large, map-scale faults identified on the geological base maps used in this study (fig. 5).

An examination of the 153 wells located (as measured by geographic information system [GIS] or physical map inspection) within a 500-ft radius of a mapped fault showed no clear relation between distance from a fault and well yield (figs. 32 and 33). This result, however, may be obfuscated by a combination of factors including inaccuracies in well and fault locations due to mapping or scale issues, uncertainty in accurate strike and dip measurements, and evidence that the faults are actually intersected by the well bore.

Although several researchers have found faults and structures to be positively correlated with increased well yields, perhaps as zones of increased fracture density, others have suggested that faults act as barriers to ground-water flow and may, in some cases, compartmentalize aquifers (Caswell, 1979; Allen and Michel, 1998; Luczaj, 2010). The differences in results are most likely attributable to differences in lithology and deformational history. Areas where crystalline rocks were deformed in a more brittle regime may be favorable for increasing well yield as the rock is more highly fractured. On the other hand, plastic deformation may produce a fine gouge that is impermeable to ground water (Cederstrom, 1972).

Well yield may also be influenced by the physical orientation of a fault. Taylor and Royer (1981) found that well yield decreased with increasing dip of strata and postulated that this may be due to the fact that openings or bedding-plane fractures in horizontal (or nearly horizontal) strata are more likely to be intersected by the vertical borehole than more steeply dipping planes. More horizontal strata also allow easier access for water to the borehole as the cone of depression develops during pumping of the well.

However, as Moore and others (2002) point out, there are significant physical difficulties to obtaining accurate data due to geo-referencing inaccuracies in the locations of wells and the faults themselves. Especially in the Piedmont and Blue Ridge provinces of Maryland, the exact location and accurate identification of faults is hampered by a lack of good outcrop exposure due to thick overburden and dense vegetative cover. The nature of the faults, including orientation of strike and dip and relative motion can be very difficult to isolate, as many mapped faults are based on the omission or repetition of stratigraphy rather than a visible fault contact. Furthermore, in order for a fault or joint to contribute water to a well, it must intersect the borehole, an occurrence difficult to document in wells lacking geophysical logs. Knopman and Hollyday (1993) conclude that more accurate identification of fault zones, fracture size and concentration, dip of rock strata, and folding patterns could increase our ability to predict water availability.

# DISCUSSION

There are two approaches to assessing ground-water availability: one based on water budgets and one based on well yields. The water-budget approach can provide estimates of ground-water availability in the area under consideration; however, by estimating total ground-water discharge to the stream draining the basin, it does not actually answer the question of how much water a well drilled at a particular location might yield. This study investigated several factors related to well siting and construction in order to provide a preliminary assessment of factors related to well yield.

## FACTORS AFFECTING WELL YIELDS

This study suggests that well use is the largest factor affecting well yield in the study area. Well use has a large impact on expected yield as construction factors such as depth and diameter allow for greater storage and an increased likelihood of fracture intersection with the borehole. Lithologic unit and topography are two additional site factors that may have a statistically significant impact on well yield; however, this is not consistently demonstrated throughout all well-use groups. Commercial and institutional well uses do not appear to be influenced by either factor. Public-supply and industrial wells do not demonstrate significantly different well yields based upon topographic location; however, there are differences between wells located in coarse-grained siliciclastic lithologies in the Piedmont and Blue Ridge (Piedmont yields are significantly higher). Data from domestic wells indicate that carbonate lithologies produce better yields than fine-grained siliciclastic- or igneous-rock types in the Blue Ridge and the Piedmont, and coarse-grained siliciclastic lithologies of the Blue Ridge. However, well yields in carbonates were indistinguishable from those in coarse-grained siliciclastics in the Piedmont. Well yields in Blue Ridge valleys and hilltops were significantly different for domestic wells, as were valleys and flats in the Piedmont from hilltops in the Blue Ridge. These factors should be considered by municipalities and other well-water users to ascertain which areas are likely to be most productive (Taylor and Royer, 1981).

## RECOMMENDATIONS FOR FURTHER STUDY

Although this study did not demonstrate a correlation between distance to a mapped fault and well yield, there is published evidence of a correlation between distance to a fracture trace and well yield (Cohen, 2007). One suggested avenue of future research is Fracture (or Lineament) Trace Analysis (FTA). FTA uses aerial photography or other remote-sensing techniques to image the surface features of a given area or property. The premise of the technique is that underlying geologic characteristics, such as faults, fractures, zones of weakness, or geologic contacts, are all areas where water may be preferentially concentrated and thus may be identifiable by changes in vegetation, soil color, or other visible features that can be exploited to locate optimum sites for well drilling and development. Several researchers have found a positive correlation between distance to fractures or lineaments and well yield using FTA (Lattman and Parizek, 1964; LaRiccia and Rauch, 1977; Dinger and others, 2002; Cohen, 2007). FTA holds promise as a worthwhile future study.

Another factor significant to well yield may be distance of wells from surface-water bodies. Several researchers suggest a positive correlation between greater well yields and shorter distances to a surface-water body (Moore and others, 2002; Cohen, 2007). The surface water may provide additional or exceptional recharge to water wells and, therefore, allow for greater yields. The drawback to a direct connection between surface water and ground water, especially in karst terrane, is that it results in the introduction of contaminants to the well. Furthermore, excessive pumping of a well that is supplied in part by surface water may reduce flow or lower water levels to a degree that it affects biological, recreational, or energy uses of the surface-water body. Considering the amount of karst topography in the region, this may be an especially interesting and fruitful avenue of investigation (Brezinski, 2004d).

At the scale of this investigation, there are likely many more unmapped or unidentified faults than those currently recognized. A smaller scale study, focused on a particular quadrangle or smaller area of interest may produce more definitive results regarding the relation between faults and well yield in the Blue Ridge and Piedmont of Maryland. There are several springs located along faults in the Hagerstown Valley, suggesting that certain faults may act as good conduits for ground water in Maryland (Mark Duigon, Maryland Geological Survey

[retired], personal commun., 2012). The area surrounding these springs may be a good starting point for future work.

This study considered well yields in relation to individual factors. Evaluation of the combined effects of factors was beyond the scope of this study. Factor analysis and principle components analysis are two mathematically-based data-evaluation methods that can be used to assess the effects of multiple variables or observations. These methods can identify and extract common causes of variation within data and could be applied to the variables of this study with potentially useful results.

Lastly, as a result of the difficulties in finding a digital geologic map that reflects current geologic interpretations of the study area and provides complete coverage of the region, additional geologic mapping is suggested as a course of future study. Geologic maps reflect our understanding of an area's geologic history as well as the current conditions. They are instrumental to a variety of geologic studies, from predictions of karst development or availability of mineral resources, to water quality and ground-water-contaminant transport.

## SUMMARY AND CONCLUSIONS

A pilot study was conducted in an area comprising Frederick County and the nearby areas surrounding Poolesville (Montgomery County), Taneytown, Mt. Airy, and Westminster (Carroll County), Maryland. Data from 2,315 wells were obtained from the USGS Ground Water Site Inventory portion of the National Water Information System and were analyzed to provide preliminary evaluation of the relations between well yields and well use, physiographic province, depth to bedrock, position of the water table, lithologic unit, topography, and distance to mapped faults.

Results of this study indicate well use, lithology, and topography demonstrate various levels of influence on the yield of wells in fractured-rock terrane. Well yields are significantly higher ($P < 0.05$) in public-supply wells and industrial wells than in domestic wells. Commercial and institutional wells do not have statistically different yields, nor do industrial and institutional wells. Domestic well yields are significantly different (lower) from all other well uses. Physiographic province does not appear to have a statistically significant influence on wells in the same well-use category. Depth to bedrock (overburden thickness), position of the water table relative to the bedrock/overburden interface, and distance to a mapped fault do not demonstrate any significant influence on well yield. It is possible to get a general estimate of what a well might produce by analyzing a large group of similarly located wells; however, the inability to predict individual well yields remains. Further study based on fracture (lineament) trace analysis, factor analysis, or principle components may elucidate connections between well-site and construction factors and well yield. This study also demonstrated the need for additional geologic mapping in the fractured-rock terrane.

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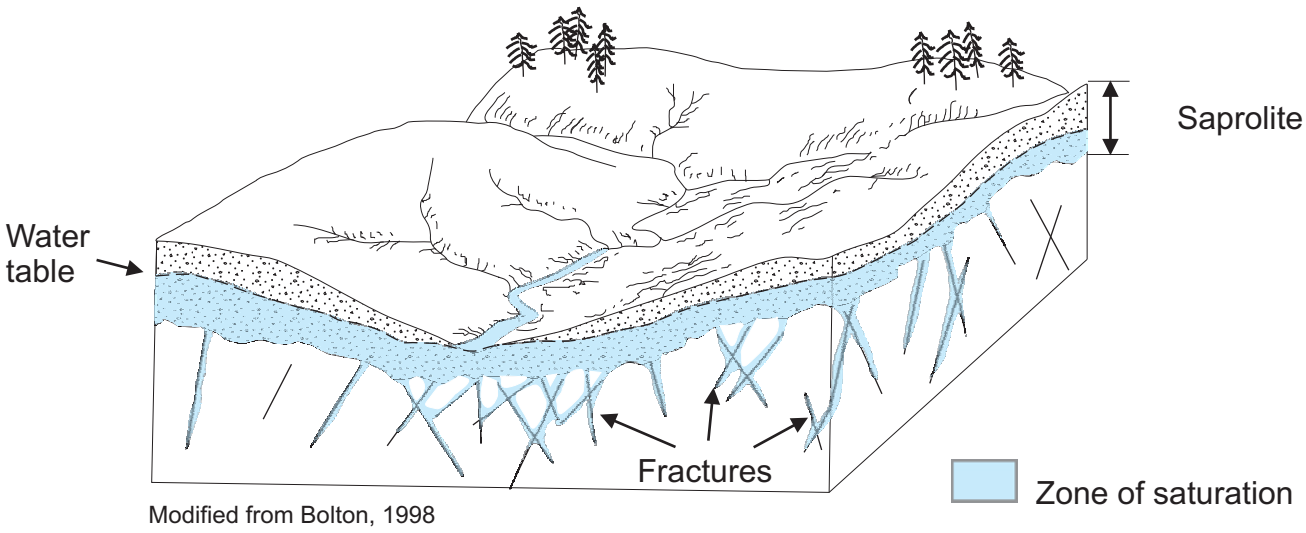



**Figure 1. Diagram showing ground water in fractured-rock terrane. (Modified from Bolton, 1998)**

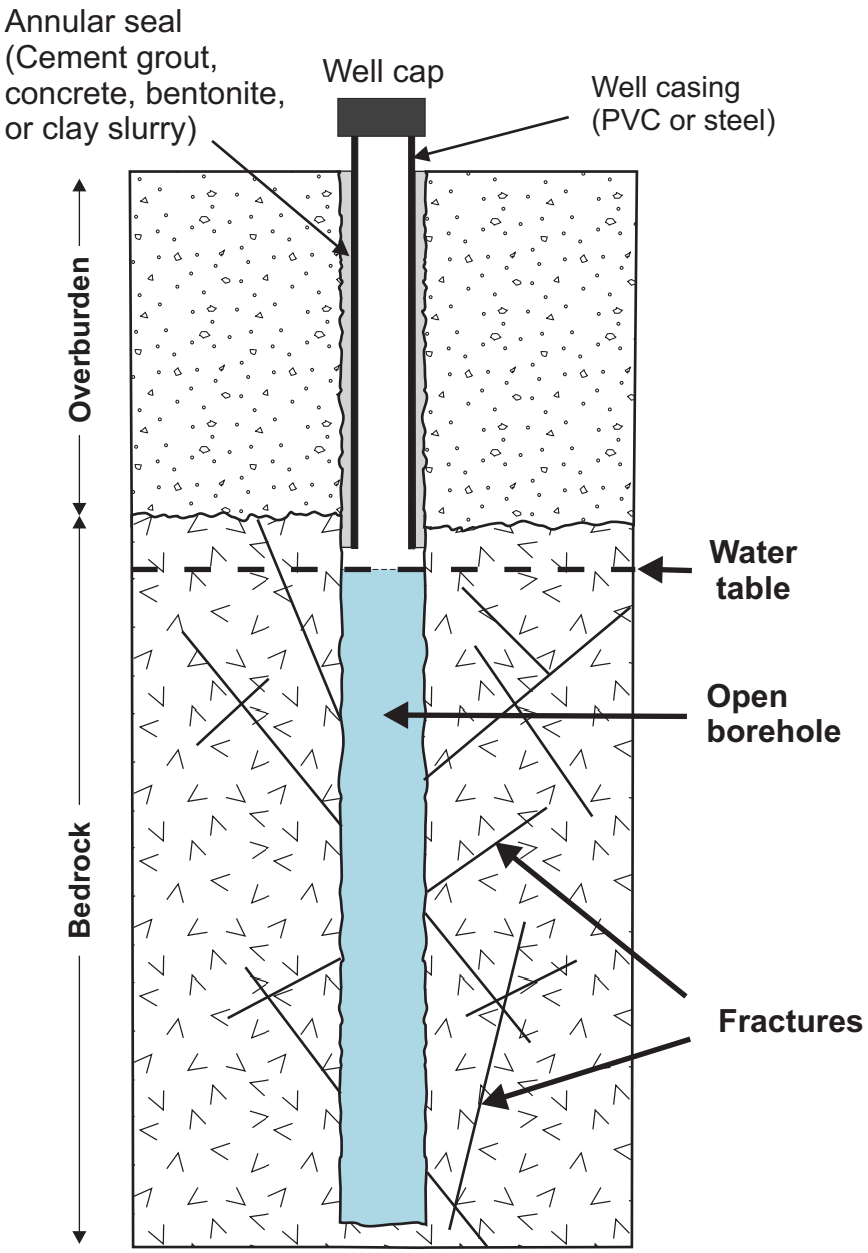



**Figure 2. Diagram showing typical well construction in fractured-rock terrane.**

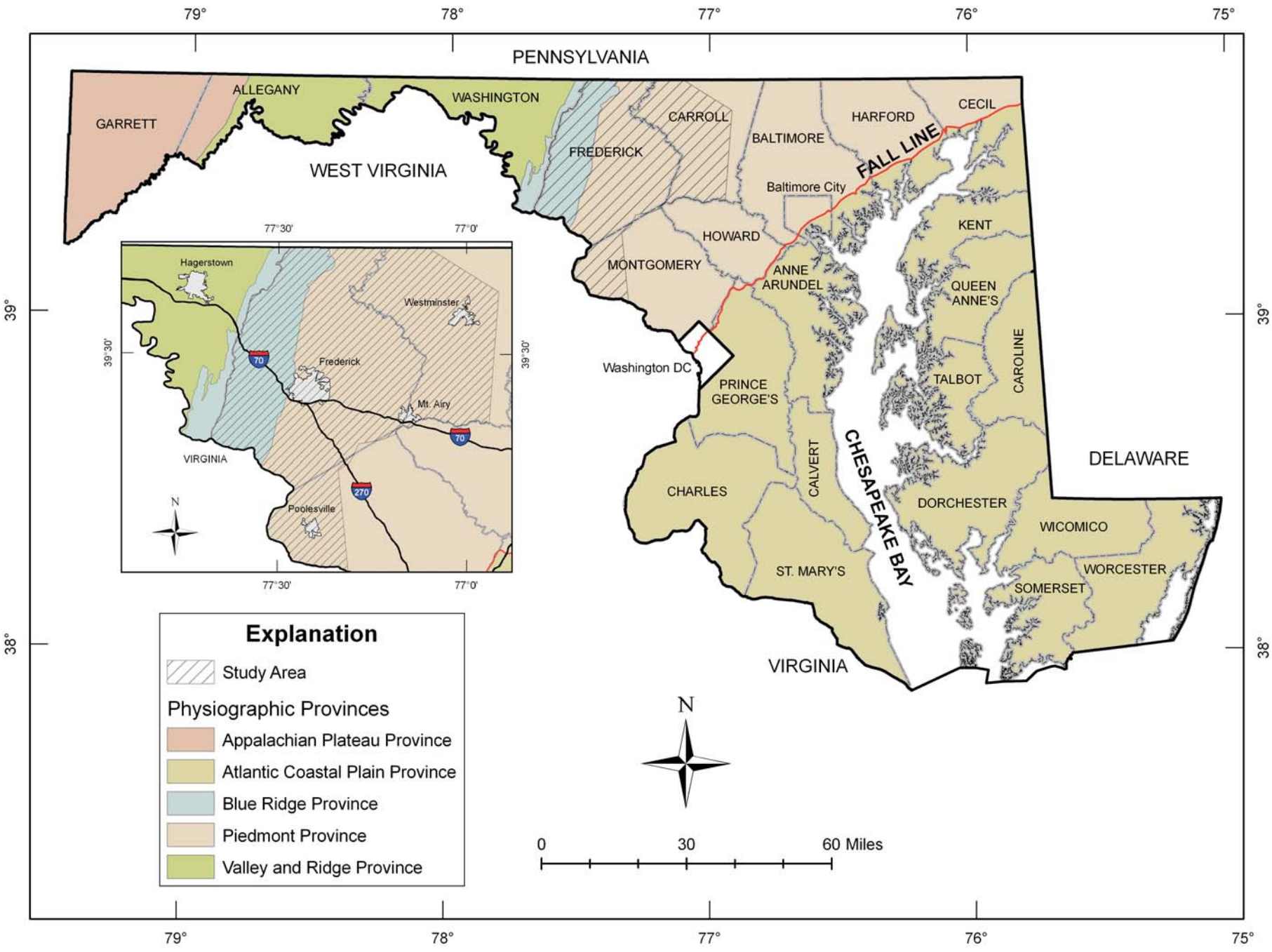



**Figure 3. Map showing the physiographic provinces of Maryland and location of the pilot study area.**

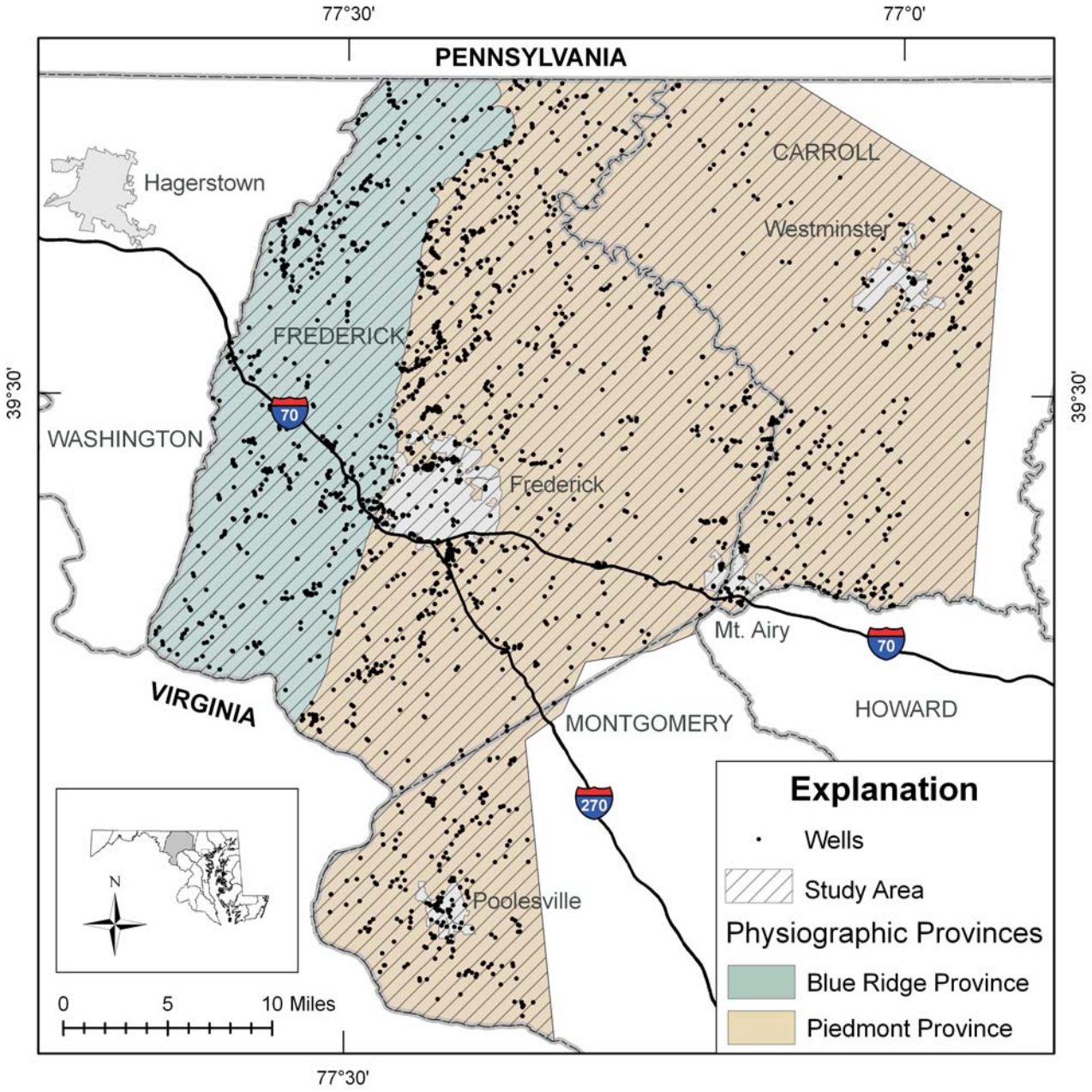



**Figure 4. Map showing locations of wells in the study area.**

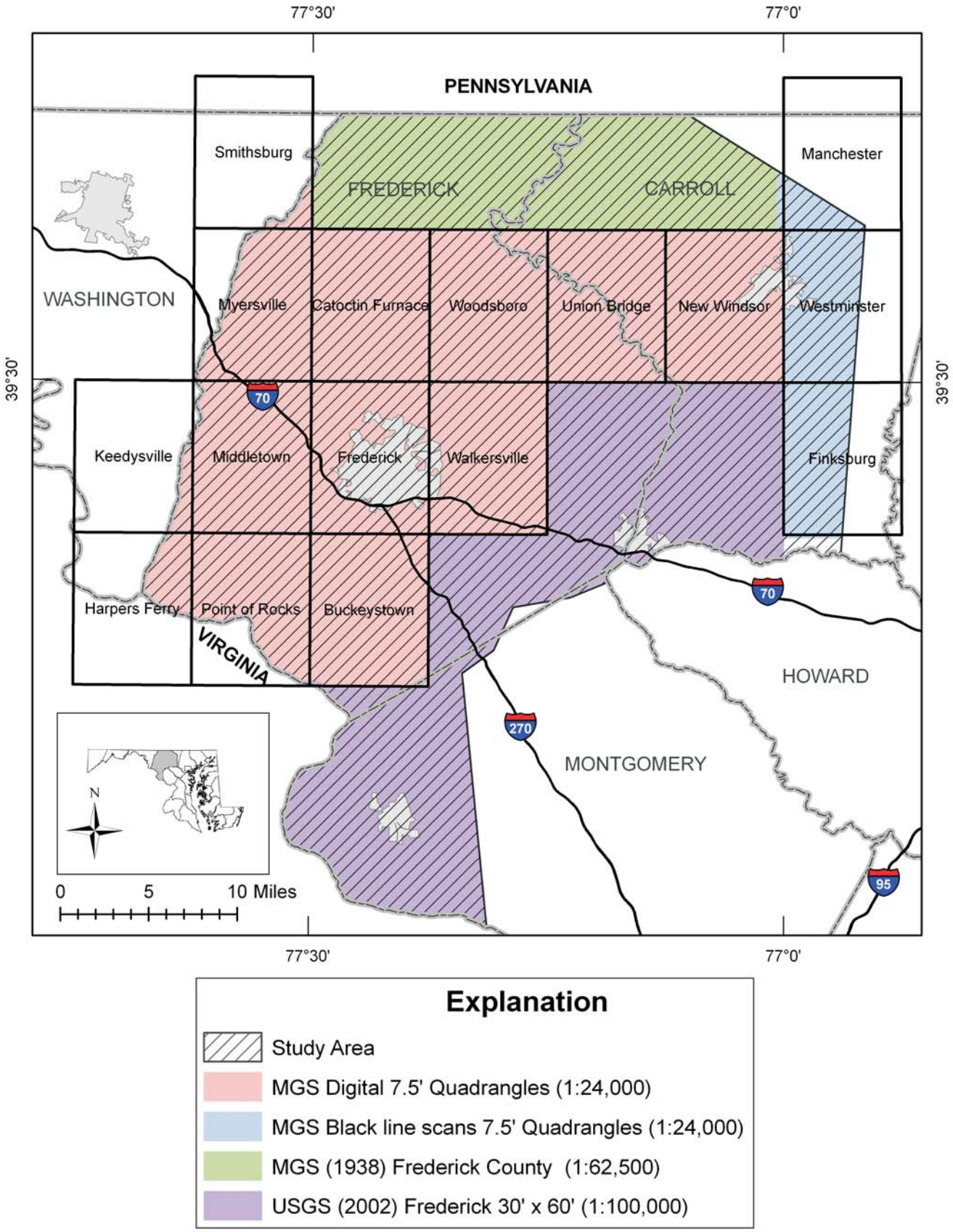



**Figure 5. Geologic map source compilation used in this study.**

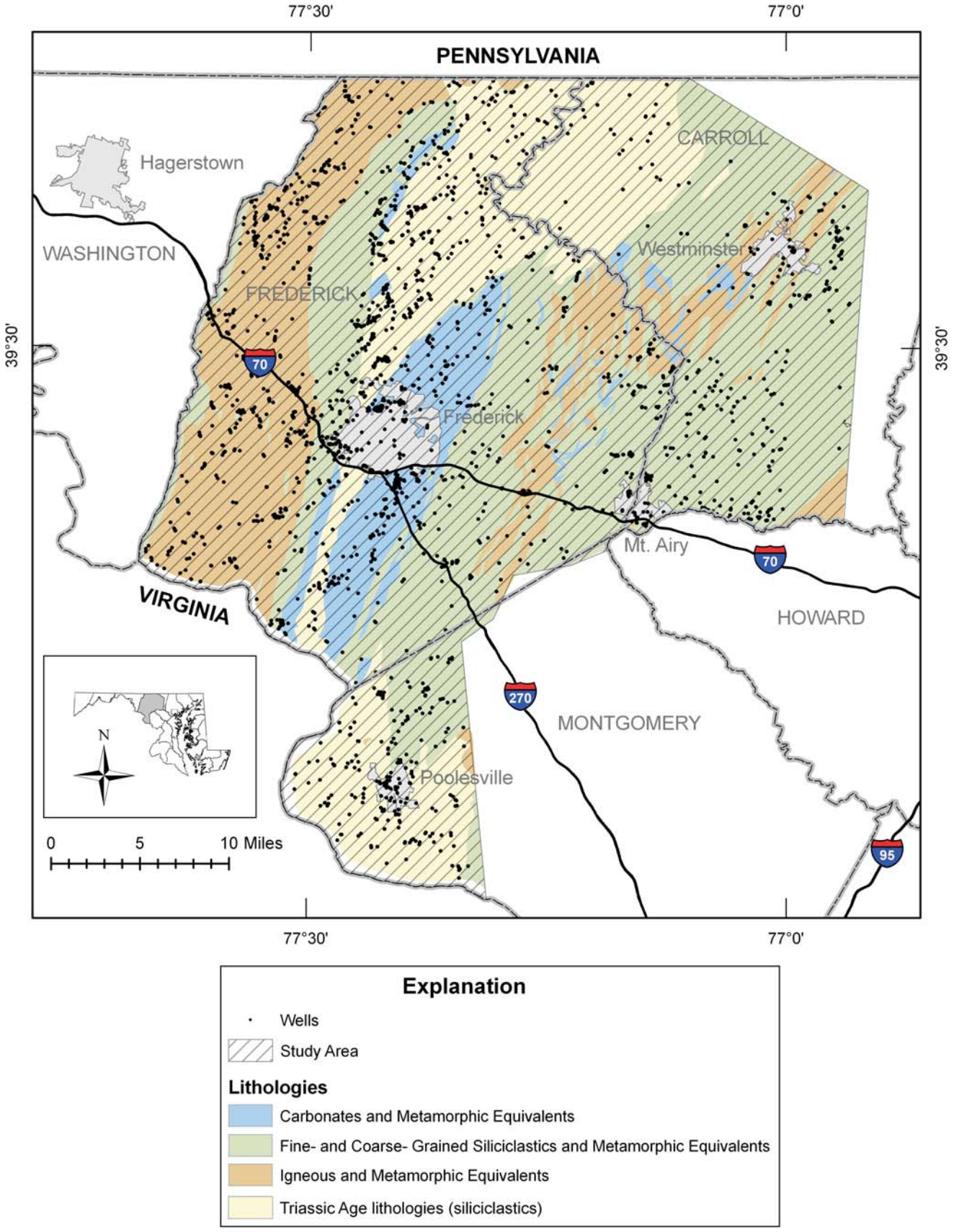



**Figure 6. Lithologic-unit map used in this study.**

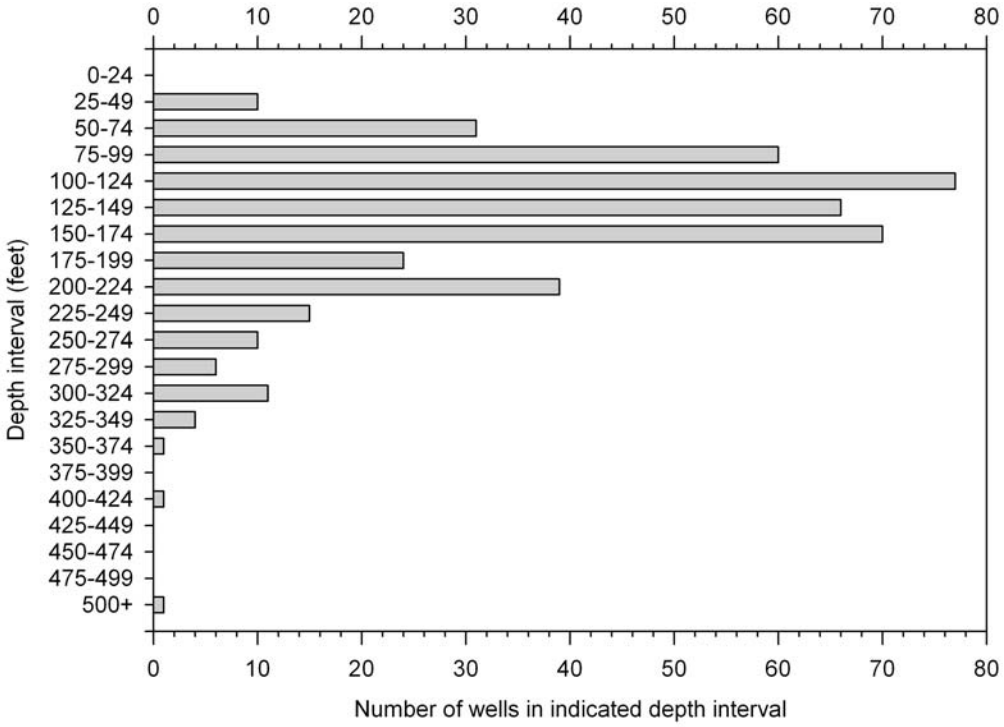



**Figure 7a. Distribution of well depths for domestic wells in the Triassic Basin in the study area.**

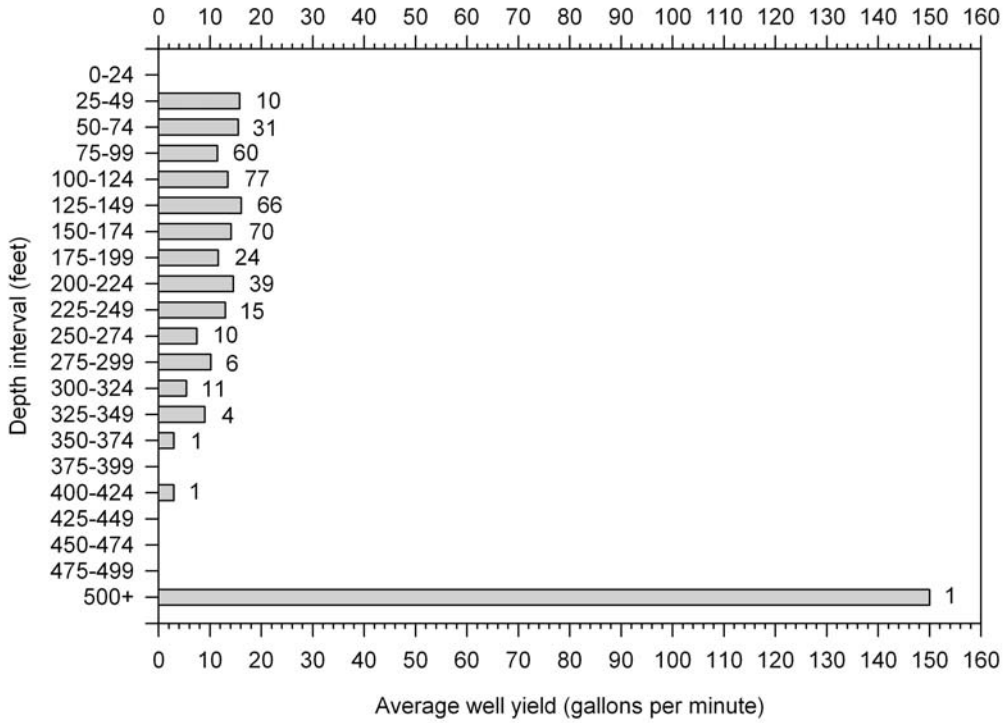



**Figure 7b. Distribution of average well yields for well-depth ranges for domestic wells in the Triassic Basin in the study area. Number next to bar indicates number of wells in the indicated range.**

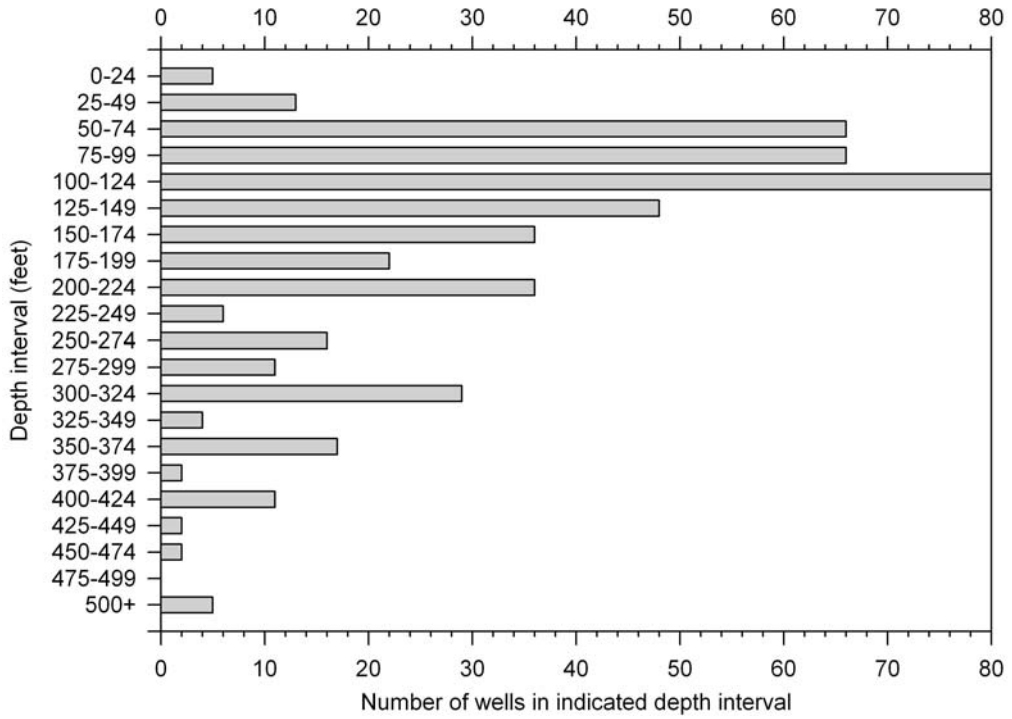



**Figure 8a. Distribution of well depths for domestic wells in siliciclastic rocks in the Piedmont part of the study area.**

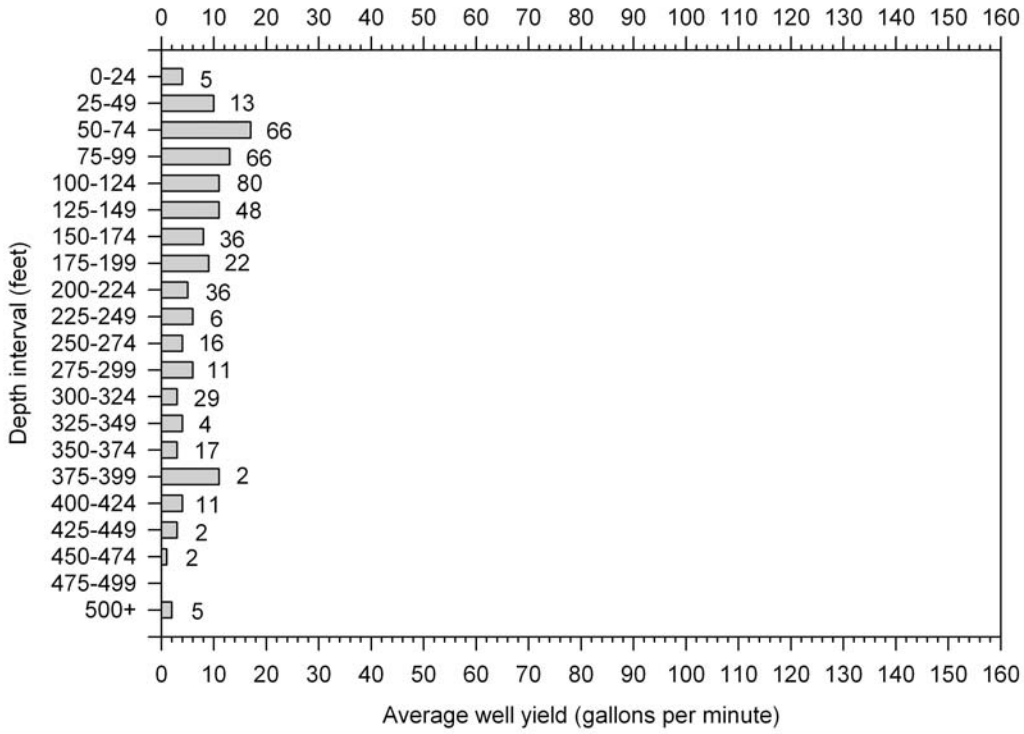



**Figure 8b. Distribution of average well yields for well-depth ranges for domestic wells in siliciclastic rocks in the Piedmont part of the study area. Number next to bar indicates number of wells in the indicated range.**

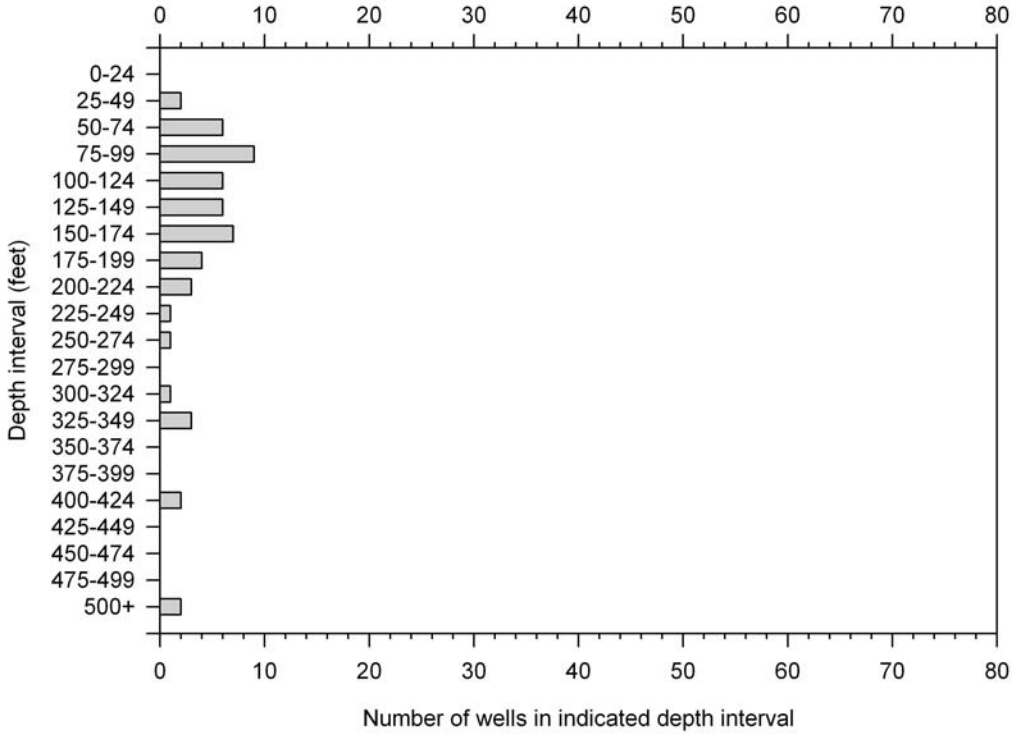



**Figure 9a. Distribution of well depths for domestic wells in siliciclastic rocks in the Blue Ridge part of the study area.**

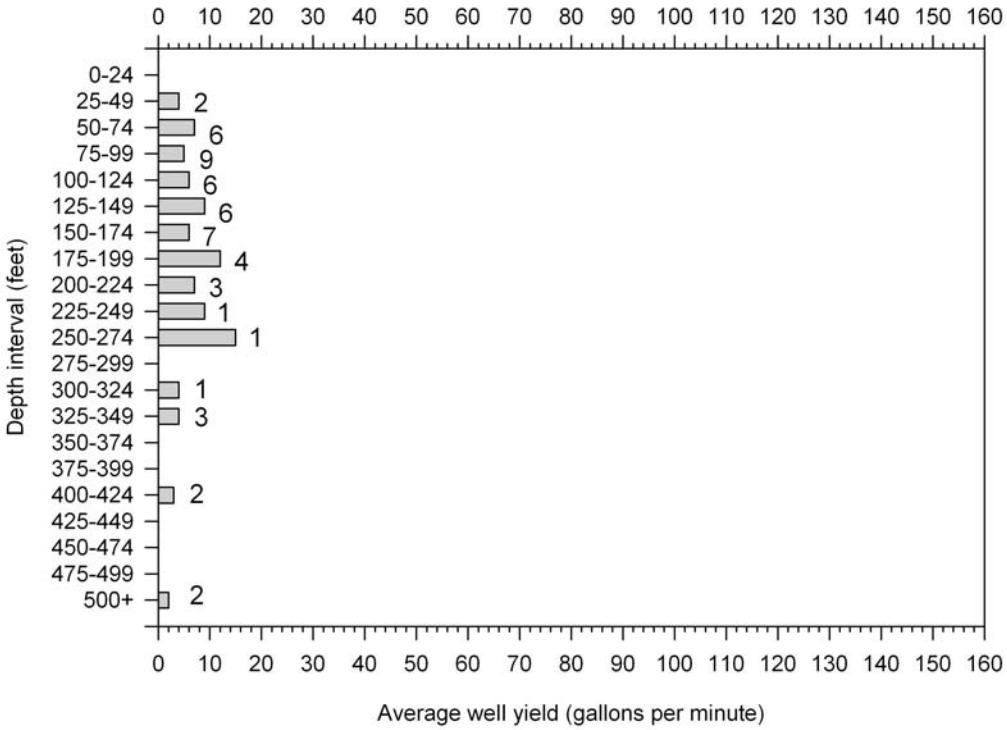



**Figure 9b. Distribution of average well yields for well-depth ranges for domestic wells in siliciclastic rocks in the Blue Ridge part of the study area. Number next to bar indicates number of wells in the indicated range.**

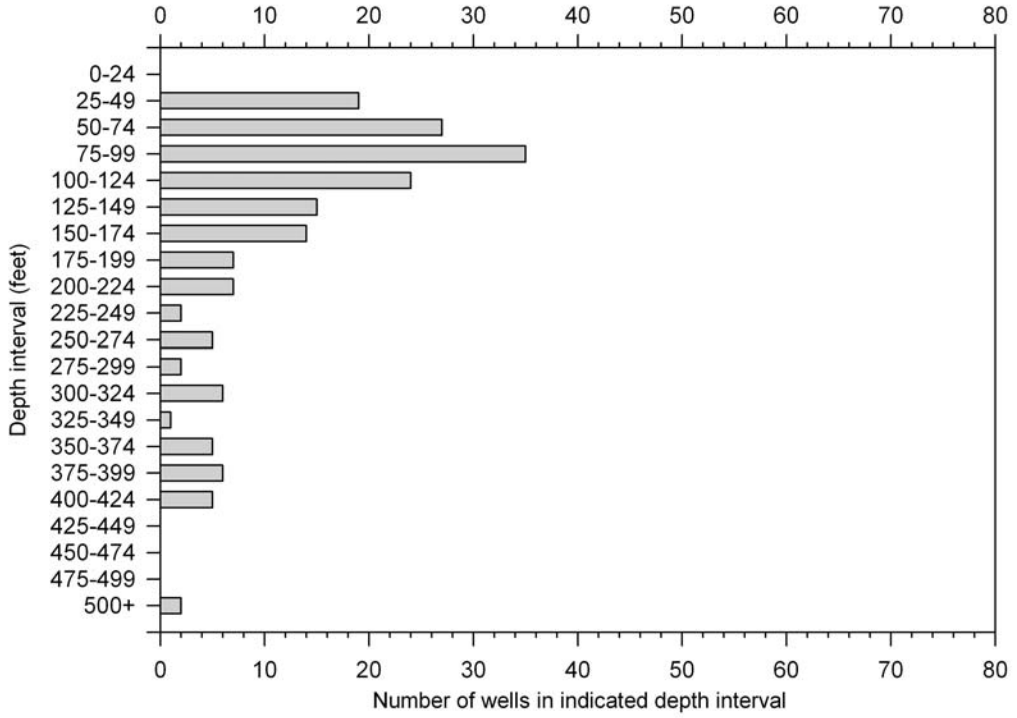



**Figure 10a. Distribution of well depths for domestic wells in carbonate rocks in the Piedmont part of the study area.**

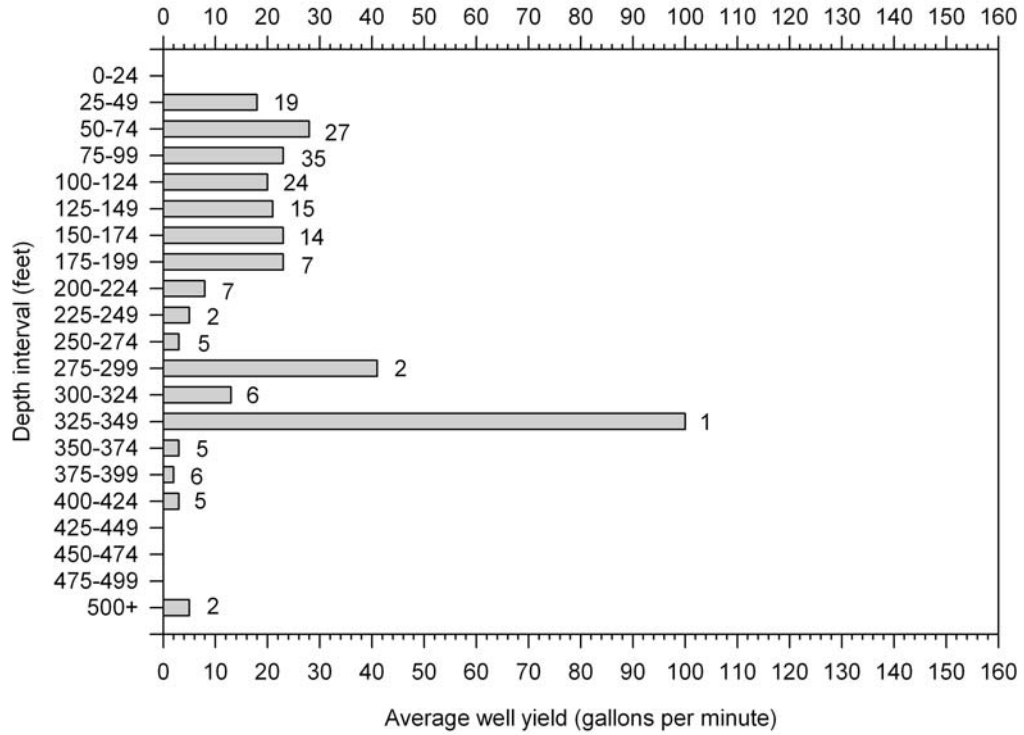



**Figure 10b. Distribution of average well yields for well-depth ranges for domestic wells in carbonate rocks in the Piedmont part of the study area. Number next to bar indicates number of wells in the indicated range.**

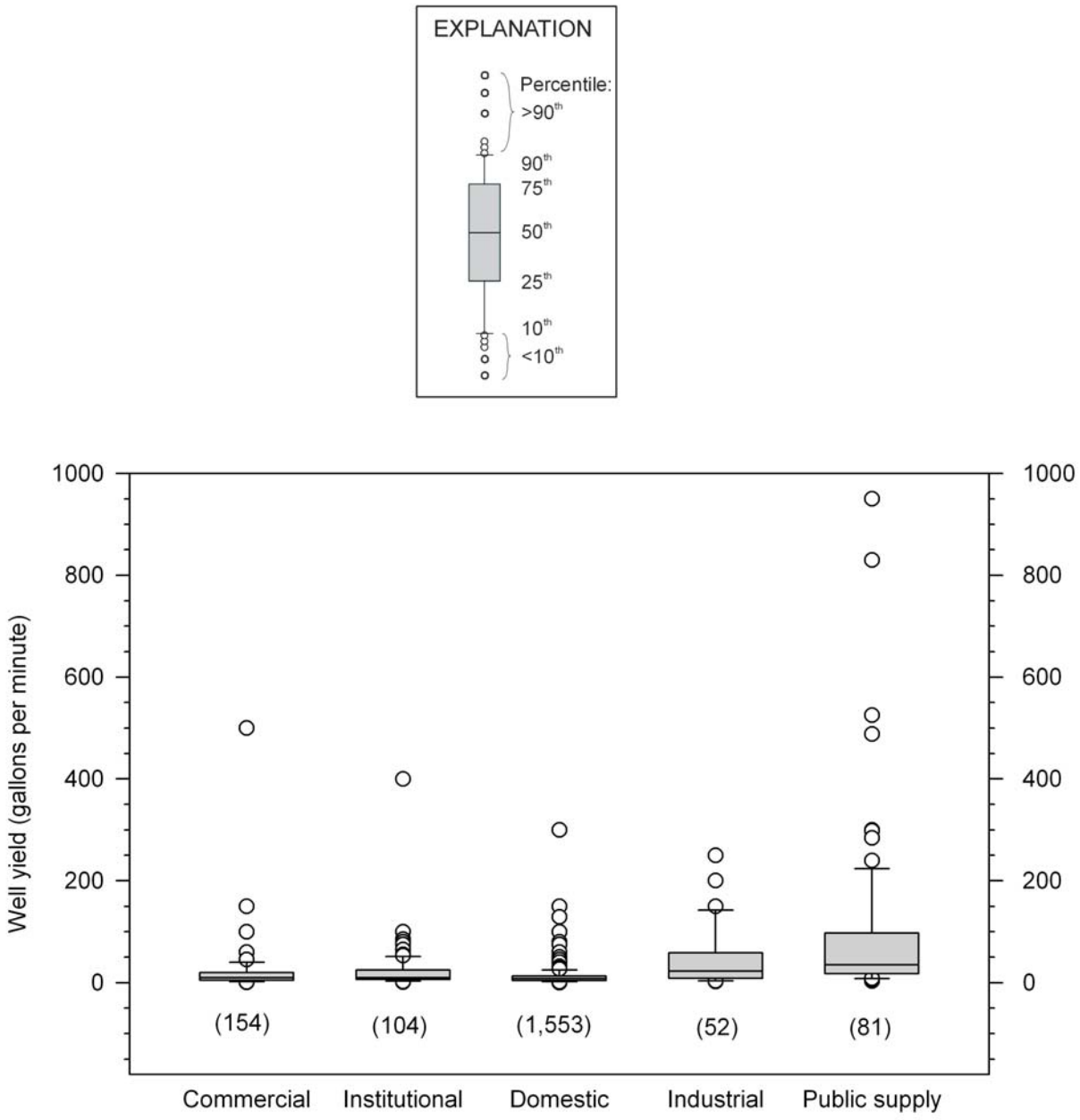



**Figure 11. Box-and-whisker plot of well yields, grouped by well use. Sample size for each grouping is indicated by number in parenthesis.**

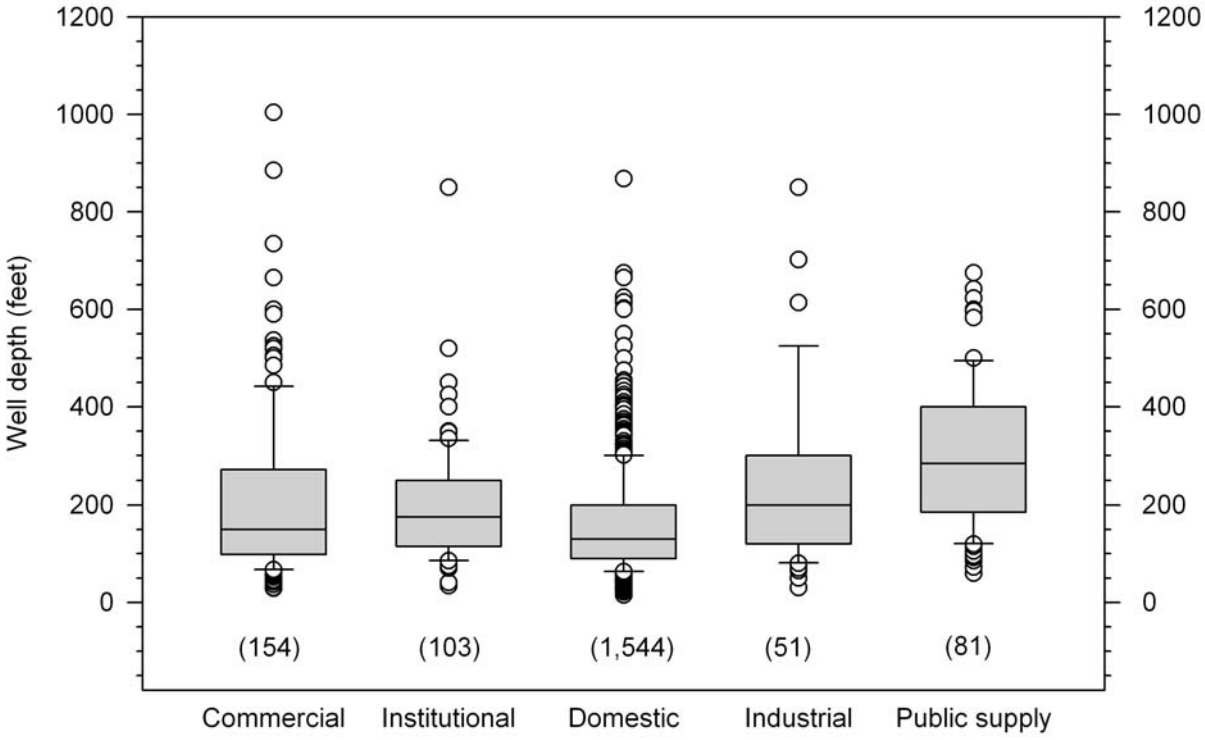



**Figure 12. Box-and-whisker plot of well depths, grouped by well use. Sample size for each grouping is indicated by number in parenthesis. Explanation of box-and-whisker plots is shown in figure 11.**

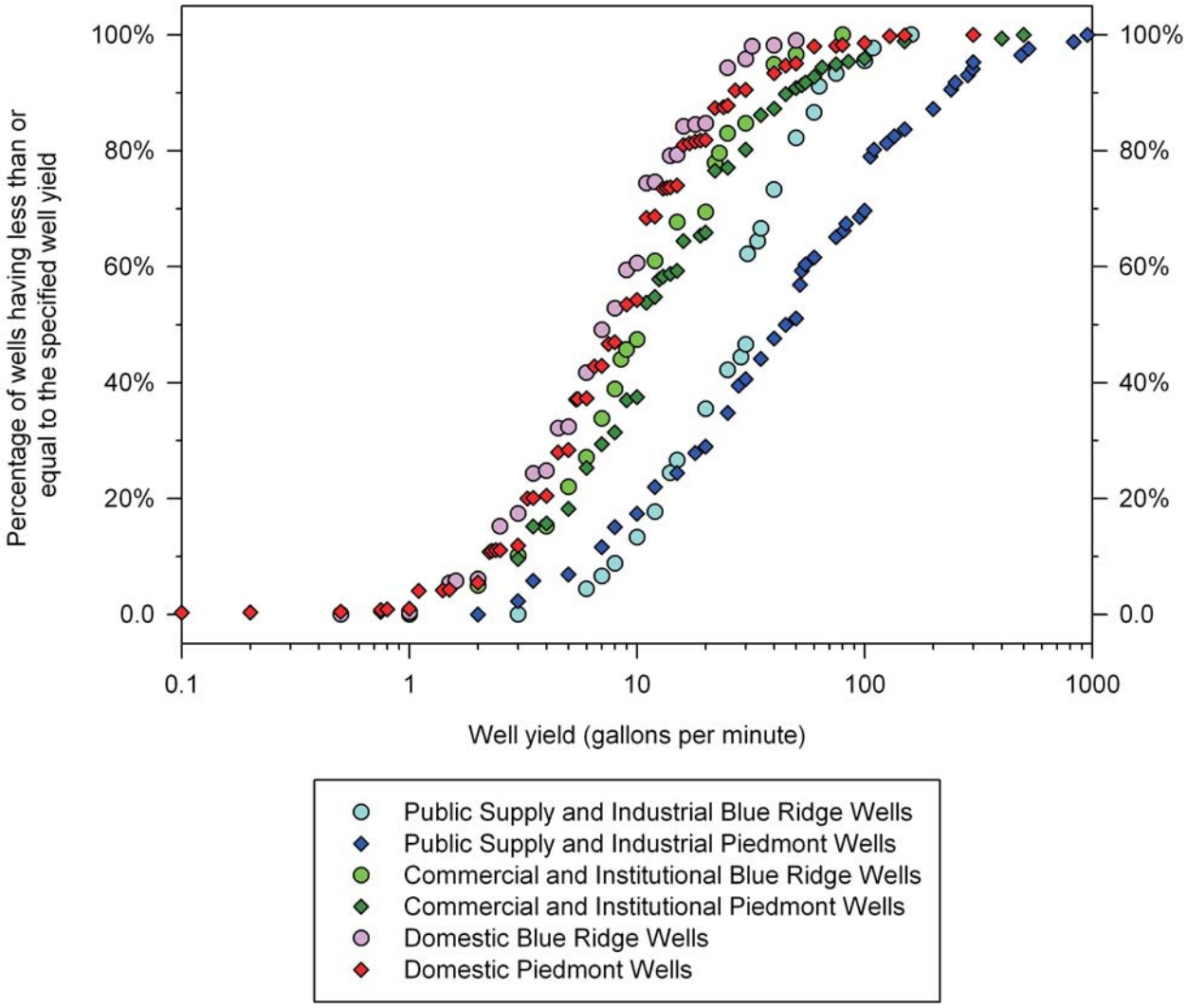



**Figure 13. Graph of cumulative percentage of well yields, grouped by well use and physiographic province.**

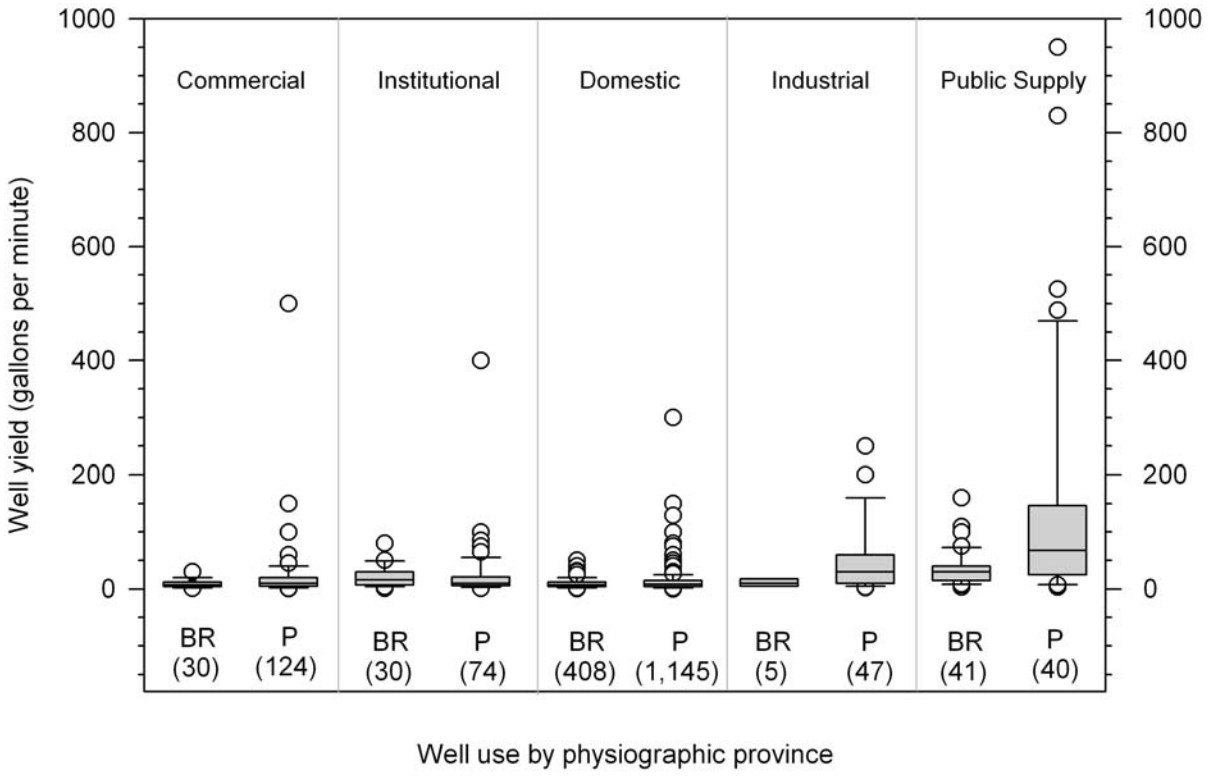



**Figure 14. Box-and-whisker plot of well yields, grouped by well use and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

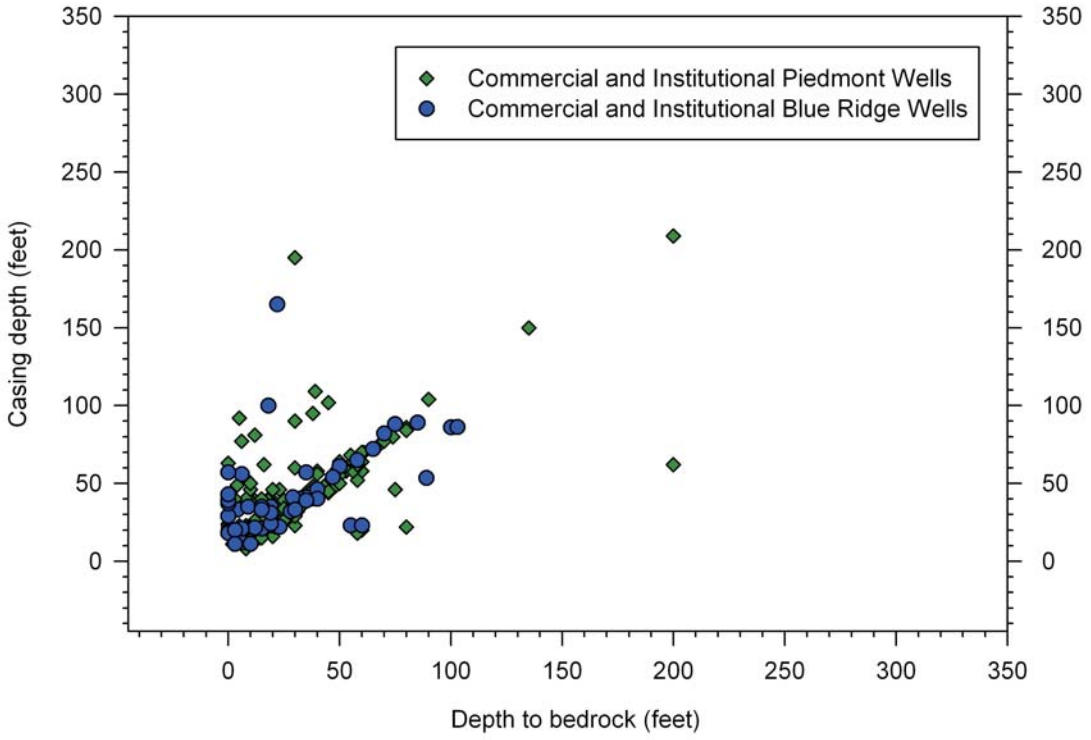



**Figure 15. Graph of depth to bedrock versus casing depth for commercial and institutional well uses.**

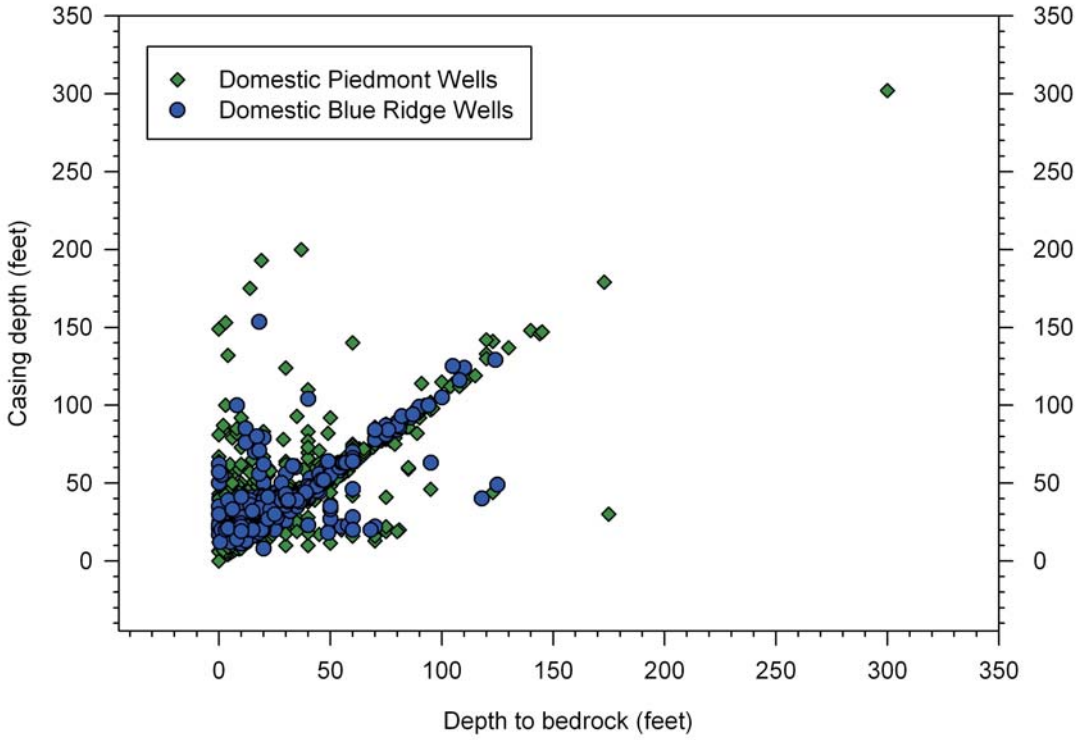



**Figure 16. Graph of depth to bedrock versus casing depth for domestic well use.**

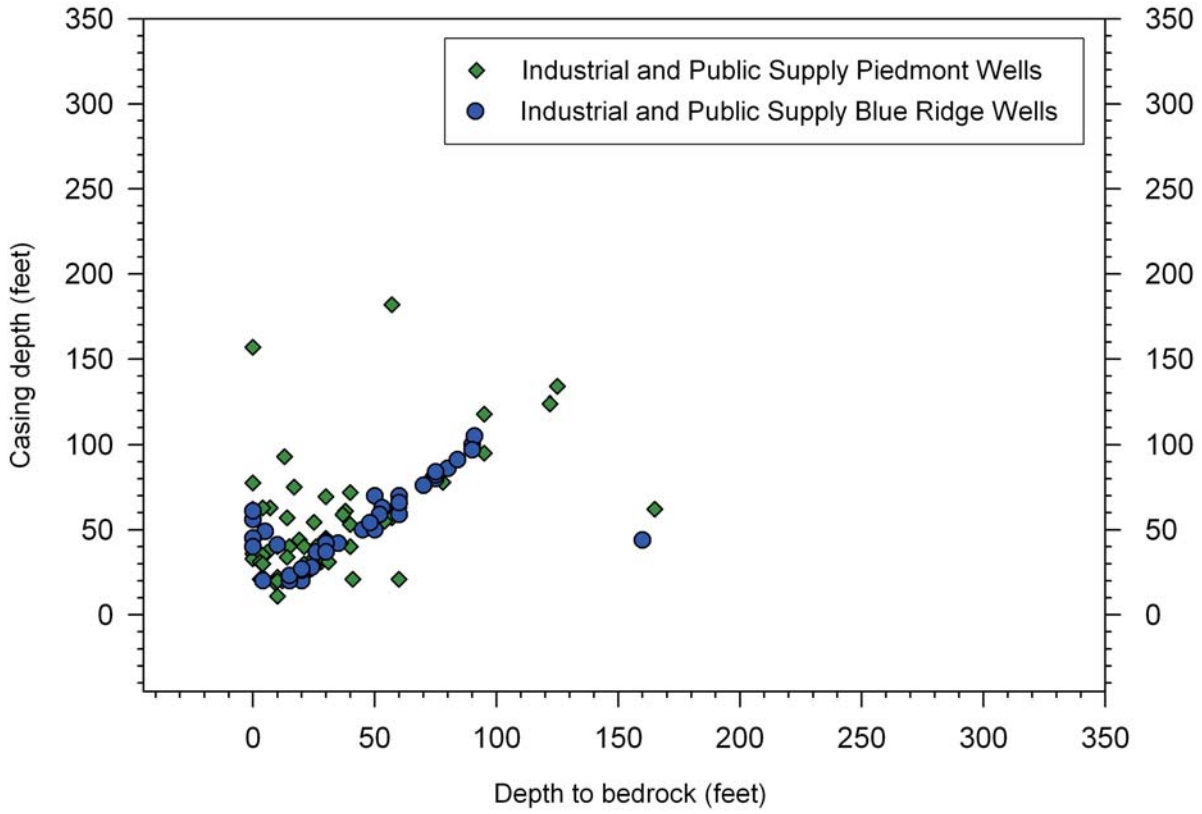



**Figure 17. Graph of depth to bedrock versus casing depth for public-supply and industrial well uses.**

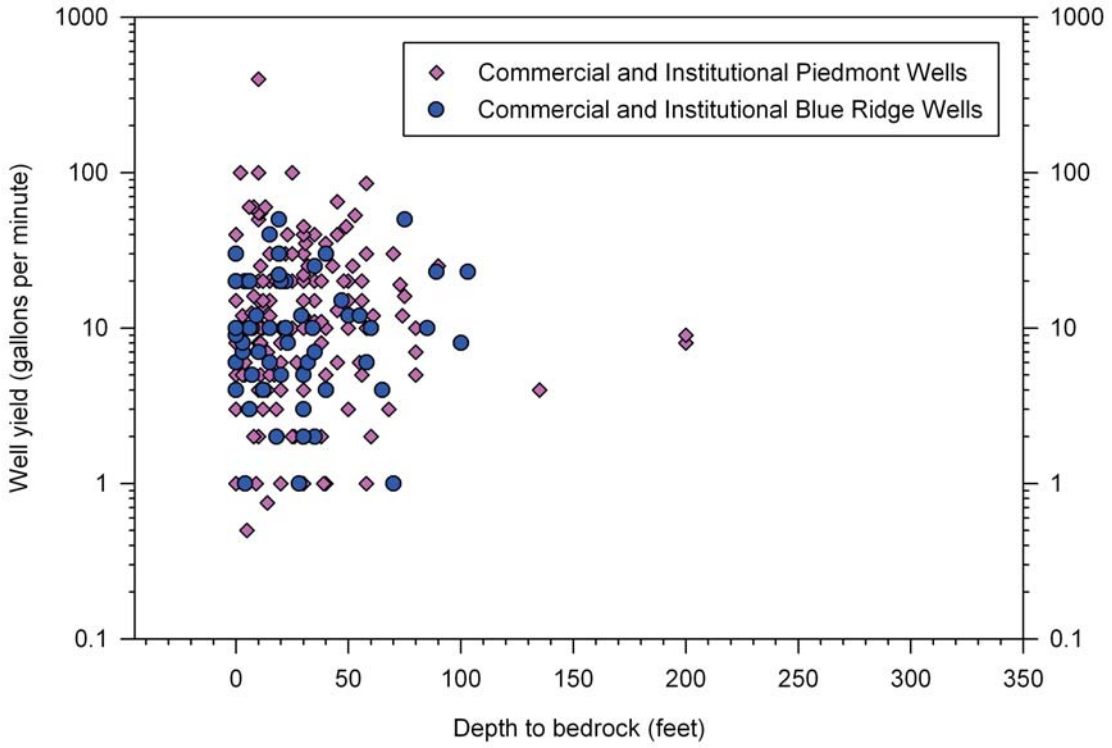



**Figure 18. Graph of commercial and institutional well yields versus depth to bedrock.**

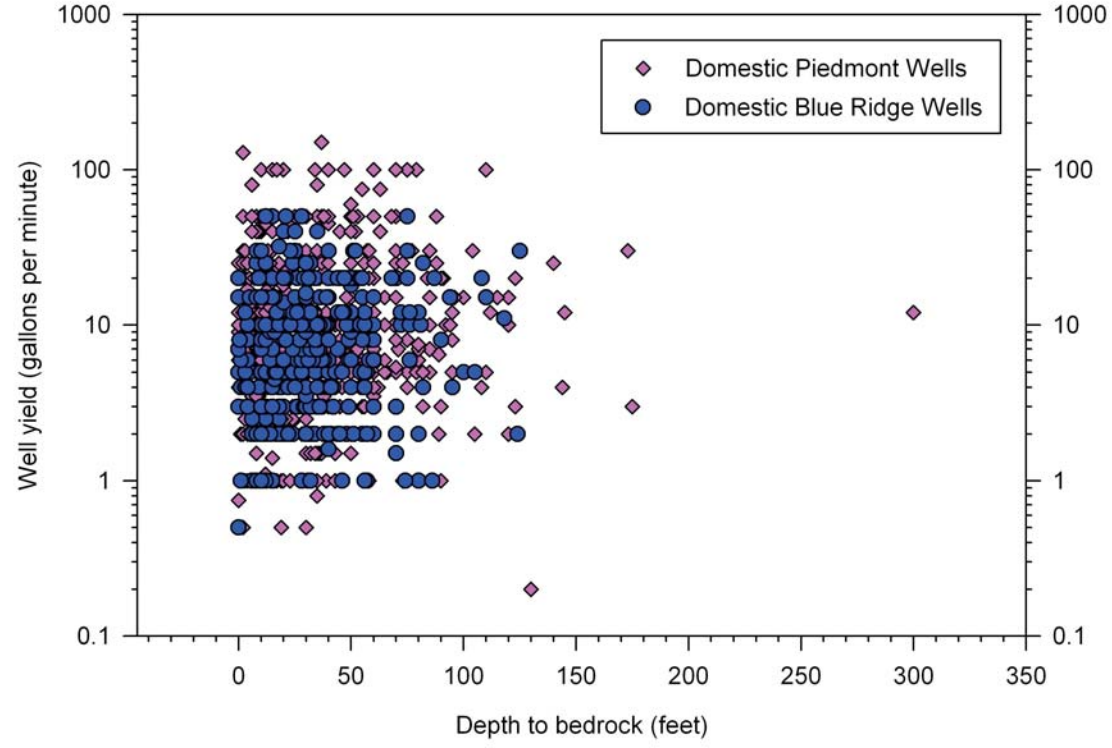



**Figure 19. Graph of domestic well yields versus depth to bedrock.**

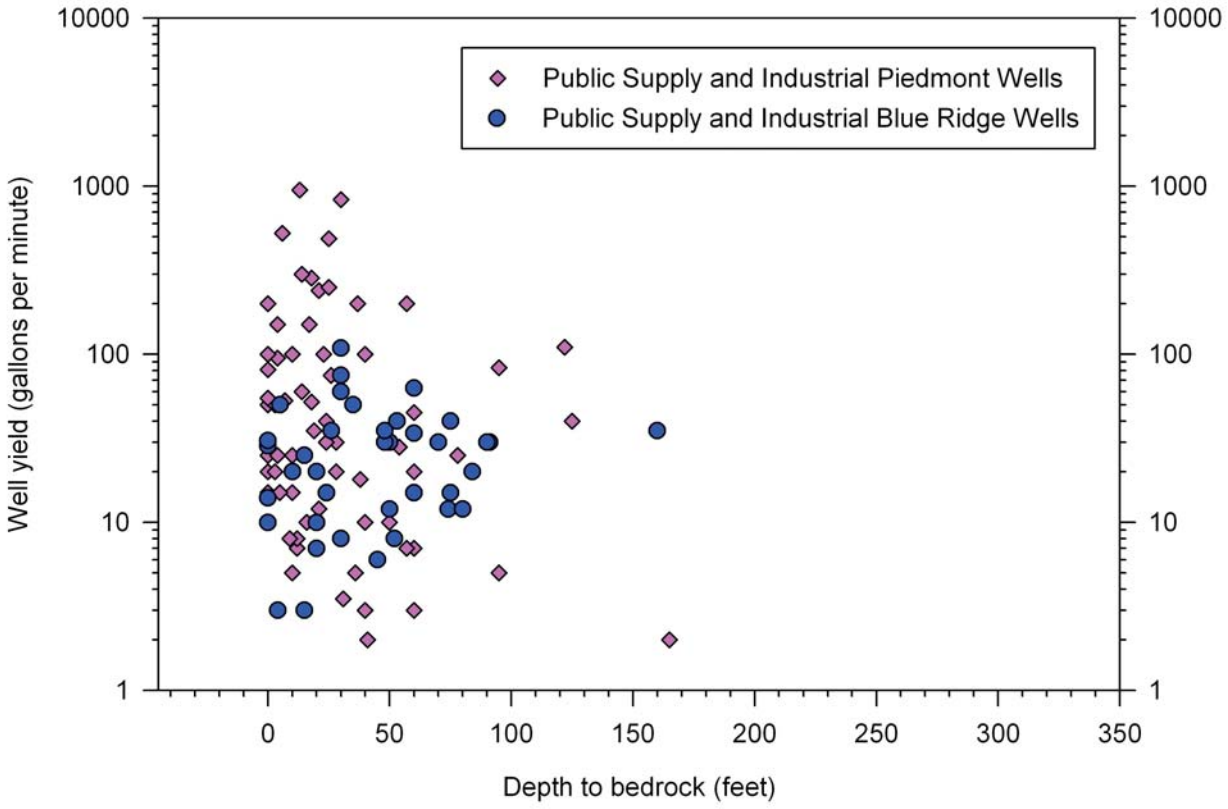



**Figure 20. Graph of public-supply and industrial well yields versus depth to bedrock.**

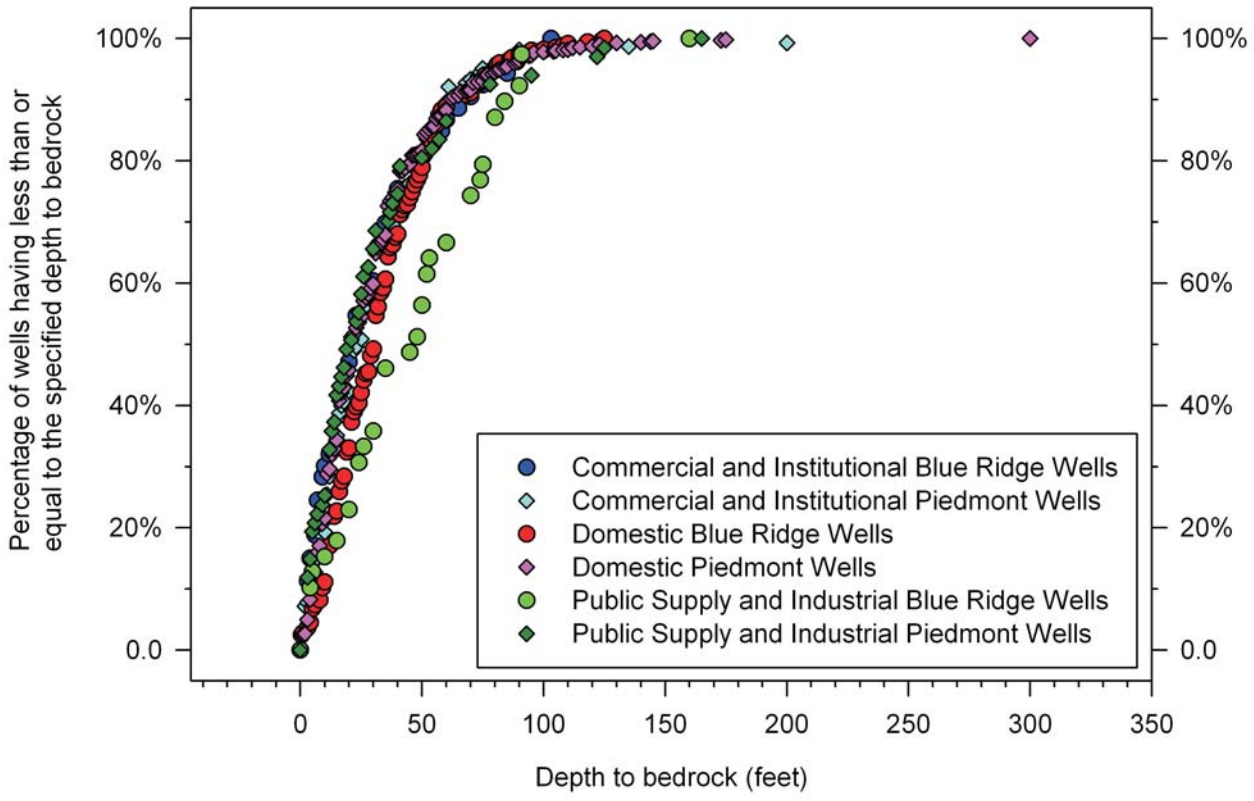



**Figure 21. Graph of cumulative percentage of depth to bedrock, grouped by well use and physiographic province.**

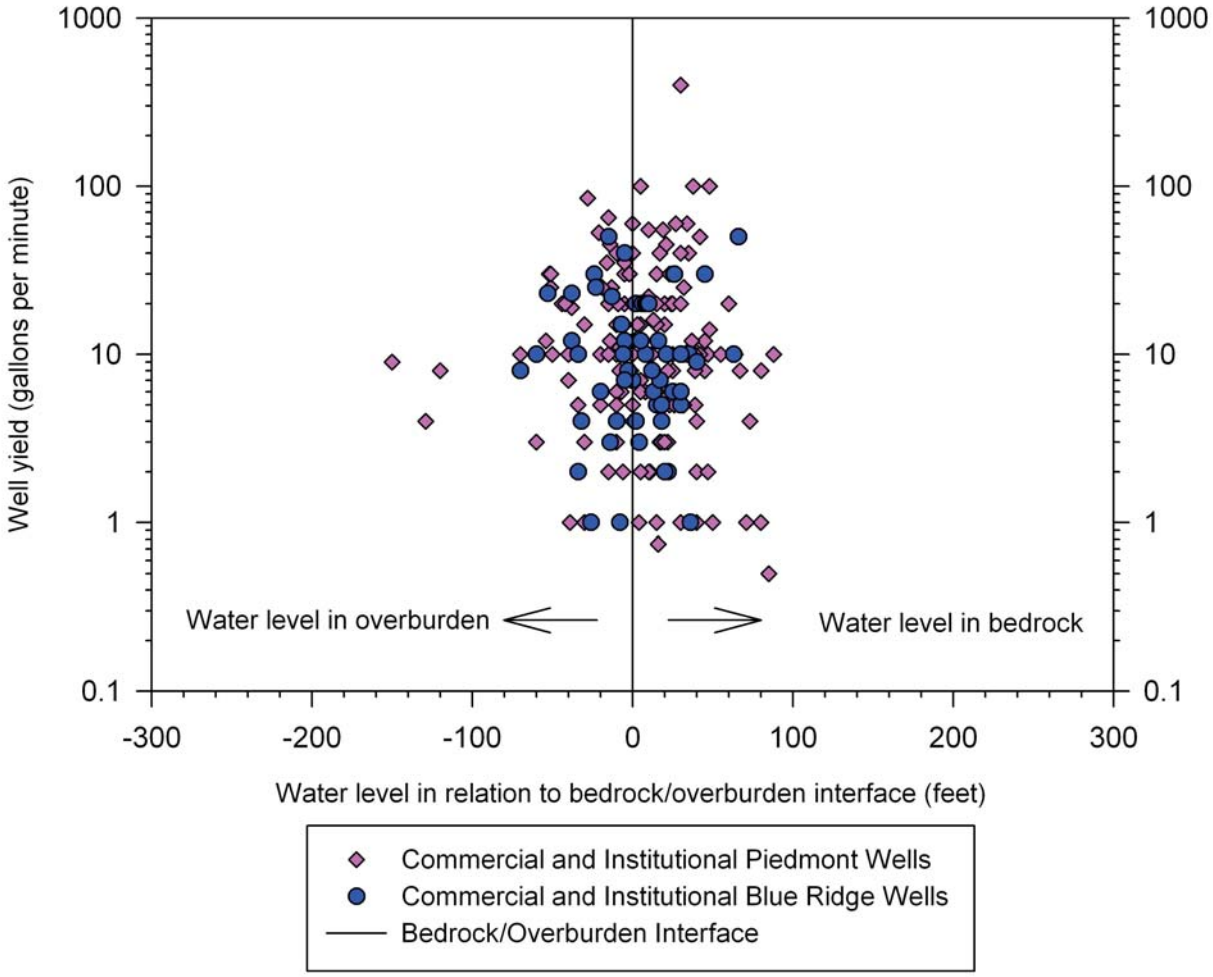



**Figure 22. Graph of water level in relation to the bedrock/overburden interface versus yield for commercial and institutional well uses.**

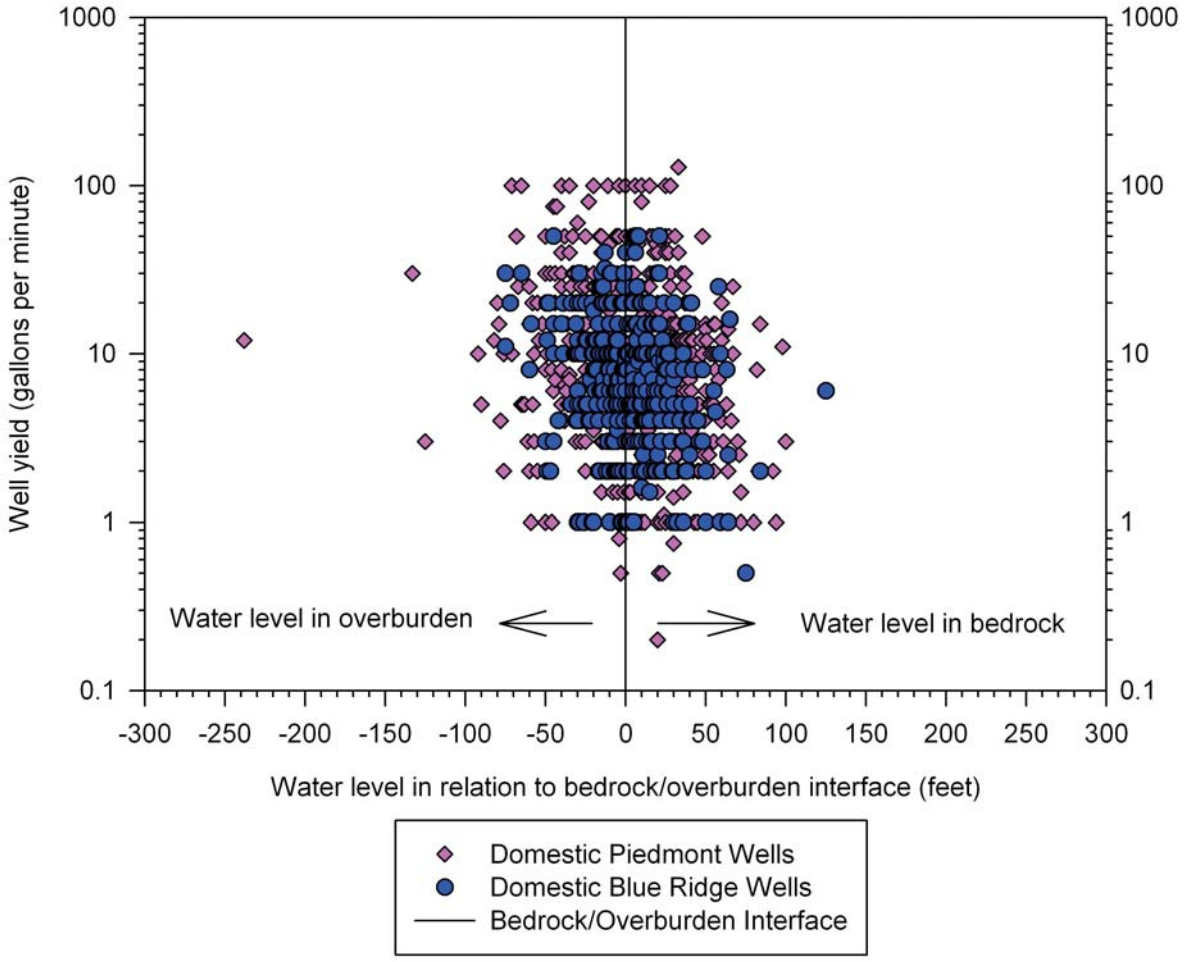



**Figure 23. Graph of water level in relation to the bedrock/overburden interface versus yield for domestic well use.**

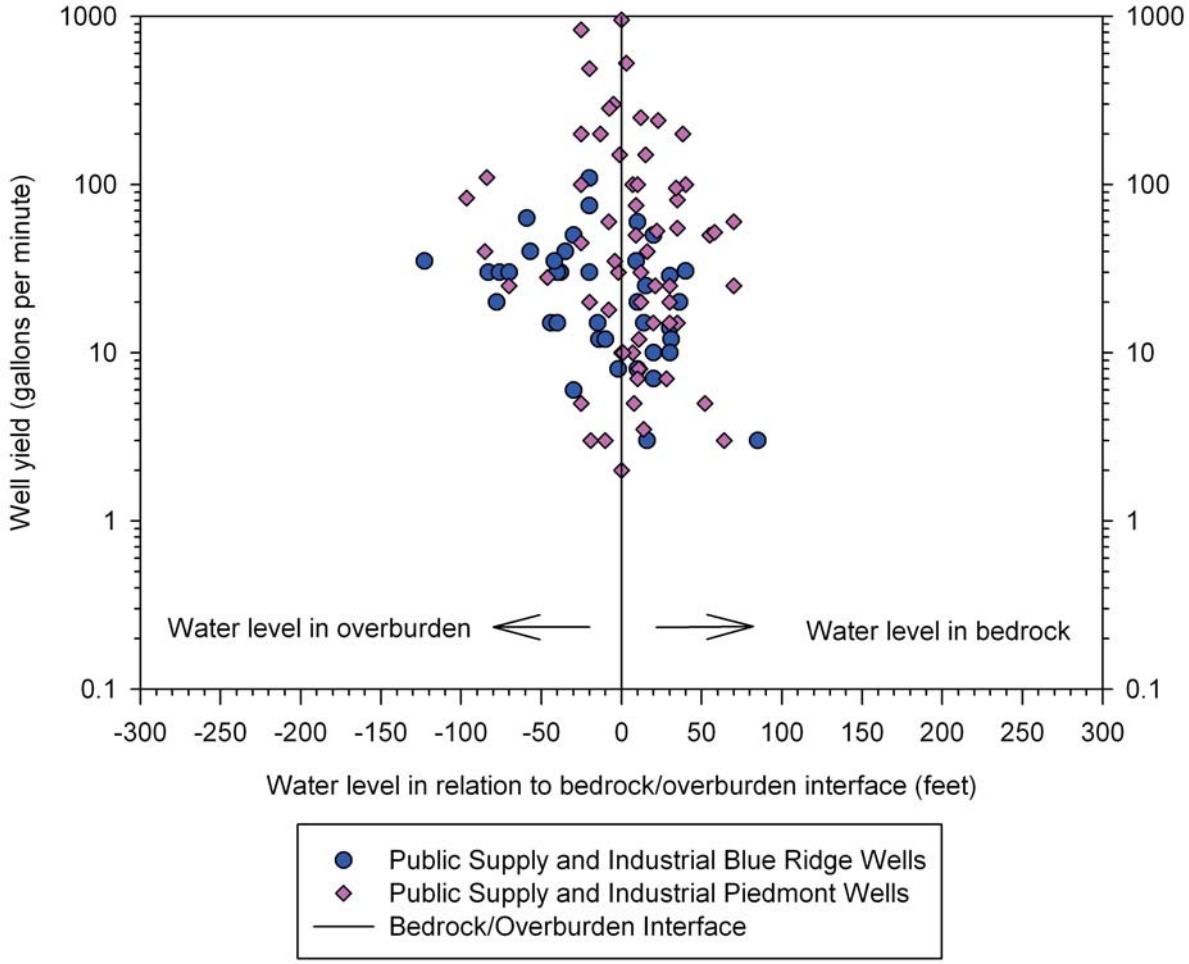
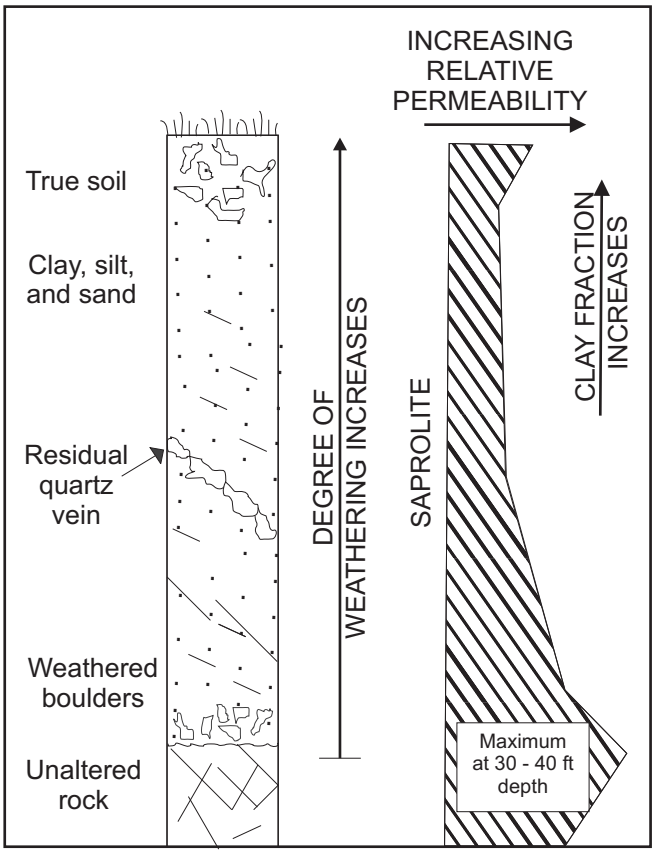



**Figure 24. Graph of water level in relation to the bedrock/overburden interface versus yield for public-supply and industrial well uses.**




Modified from Nutter and Otton (1969)

**Figure 25. Generalized composition and relative permeability of saprolite.**

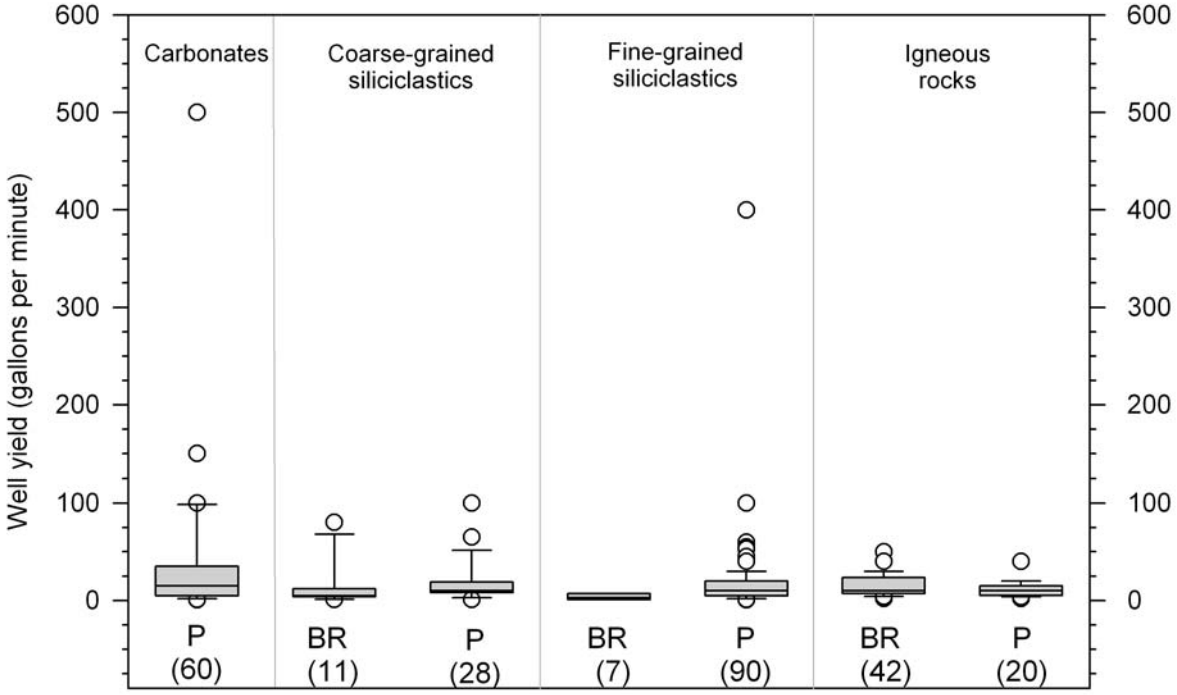



**Figure 26. Box-and-whisker plot of well yields in commercial and institutional wells, grouped by lithologic unit and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

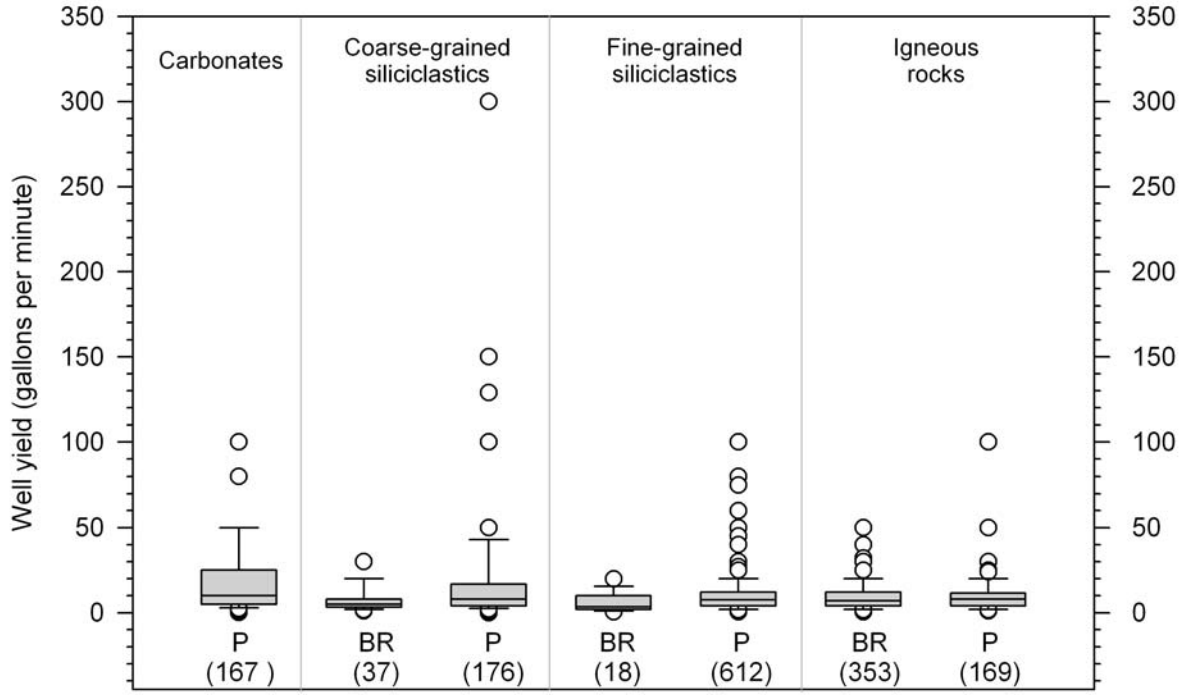



**Figure 27. Box-and-whisker plot of well yields in domestic wells, grouped by lithologic unit and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

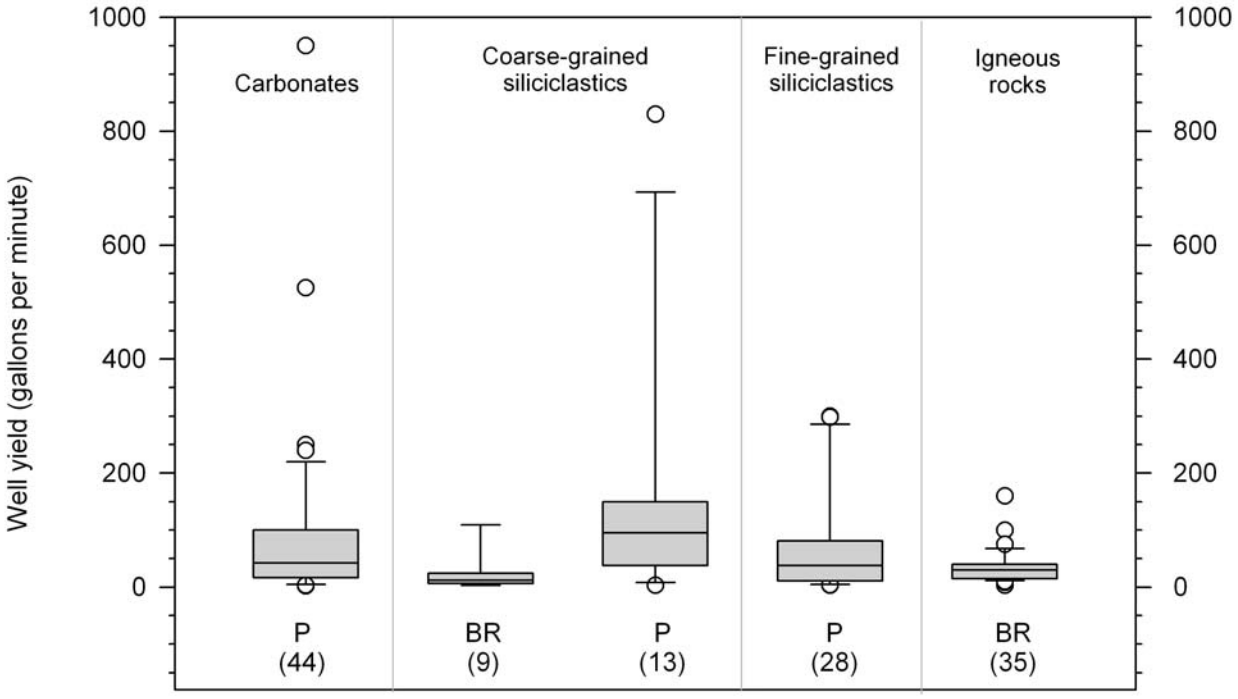



**Figure 28. Box-and-whisker plot of well yields in public-supply and industrial wells, grouped by lithologic unit and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

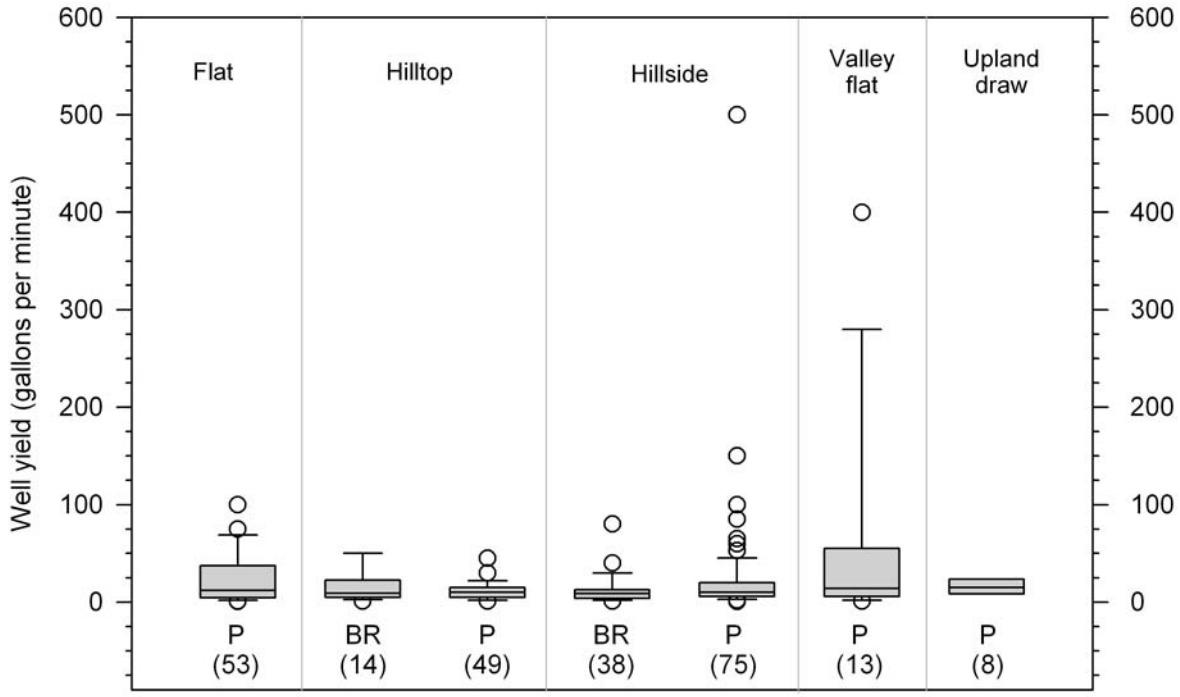



**Figure 29. Box-and-whisker plot of well yields in commercial and institutional wells, grouped by topography and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

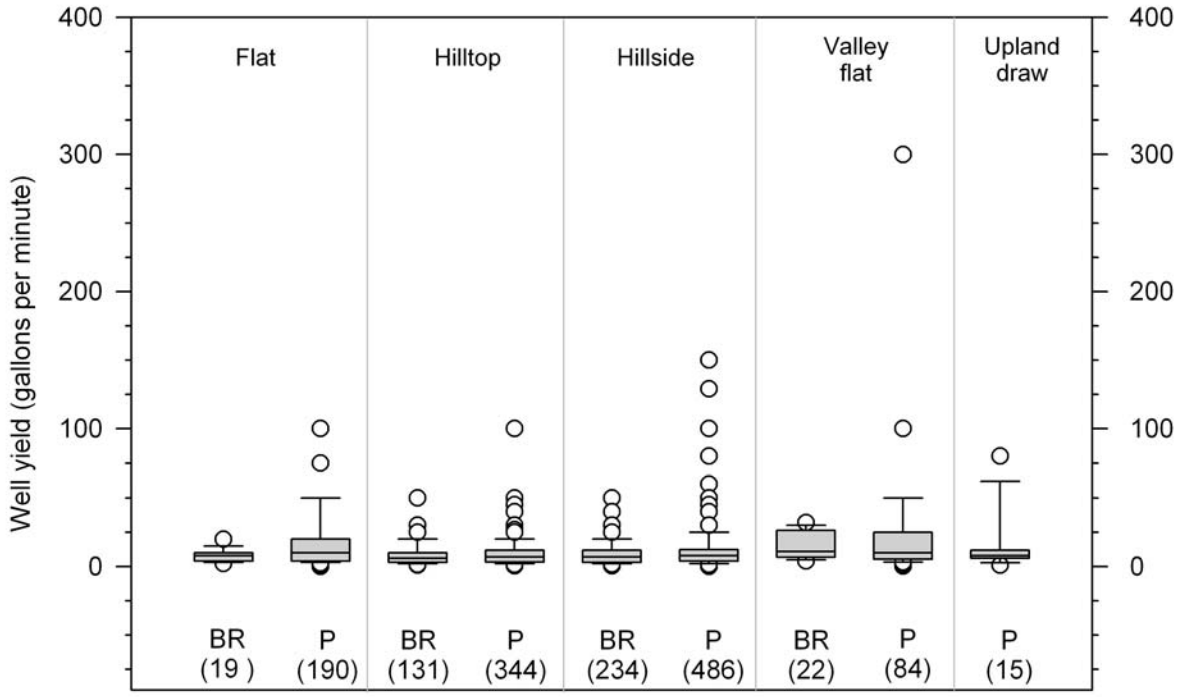



**Figure 30. Box-and-whisker plot of well yields in domestic wells, grouped by topography and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

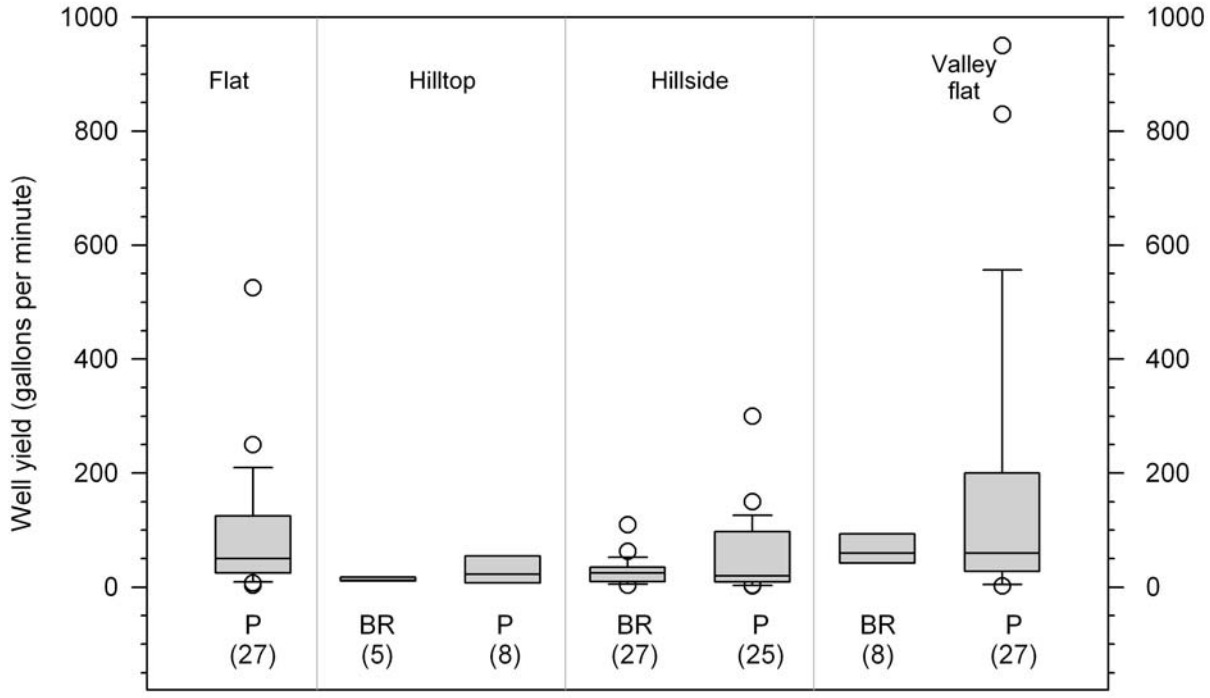



**Figure 31. Box-and-whisker plot of well yields in public-supply and industrial wells, grouped by topography and physiographic province. Sample size for each grouping is indicated by number in parentheses below physiographic province (BR, Blue Ridge; P, Piedmont). Explanation of box-and-whisker plots is shown in figure 11.**

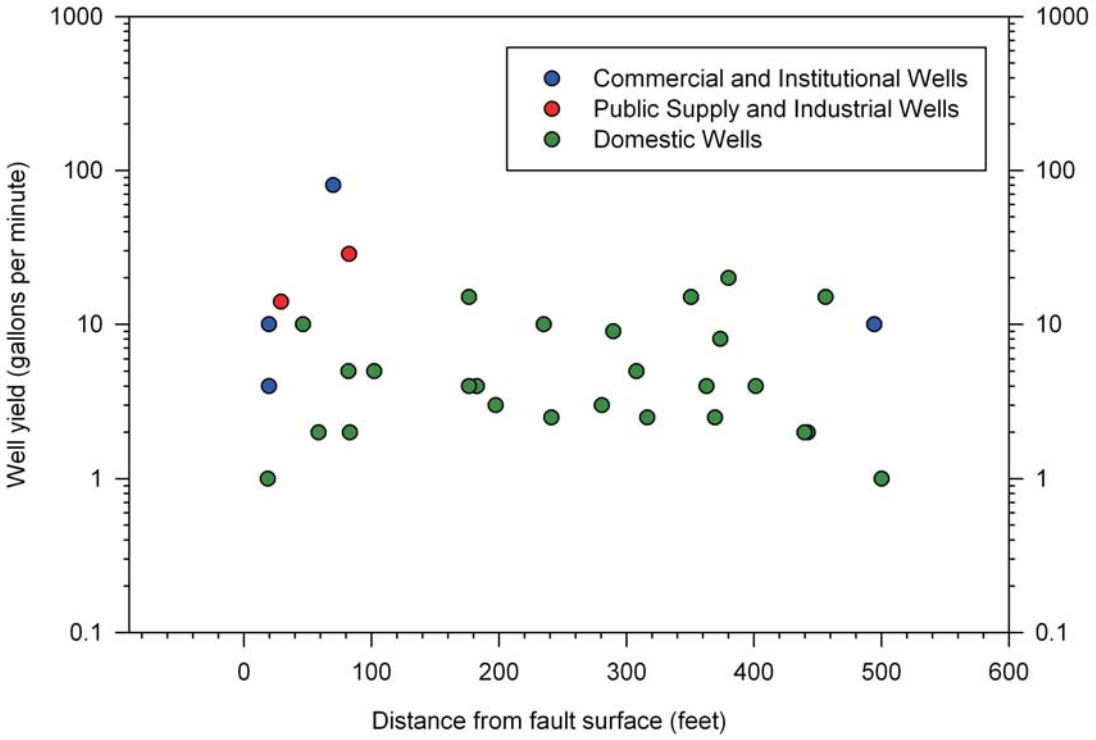



**Figure 32. Graph of well yield versus distance from a fault surface for wells in the Blue Ridge Province.**

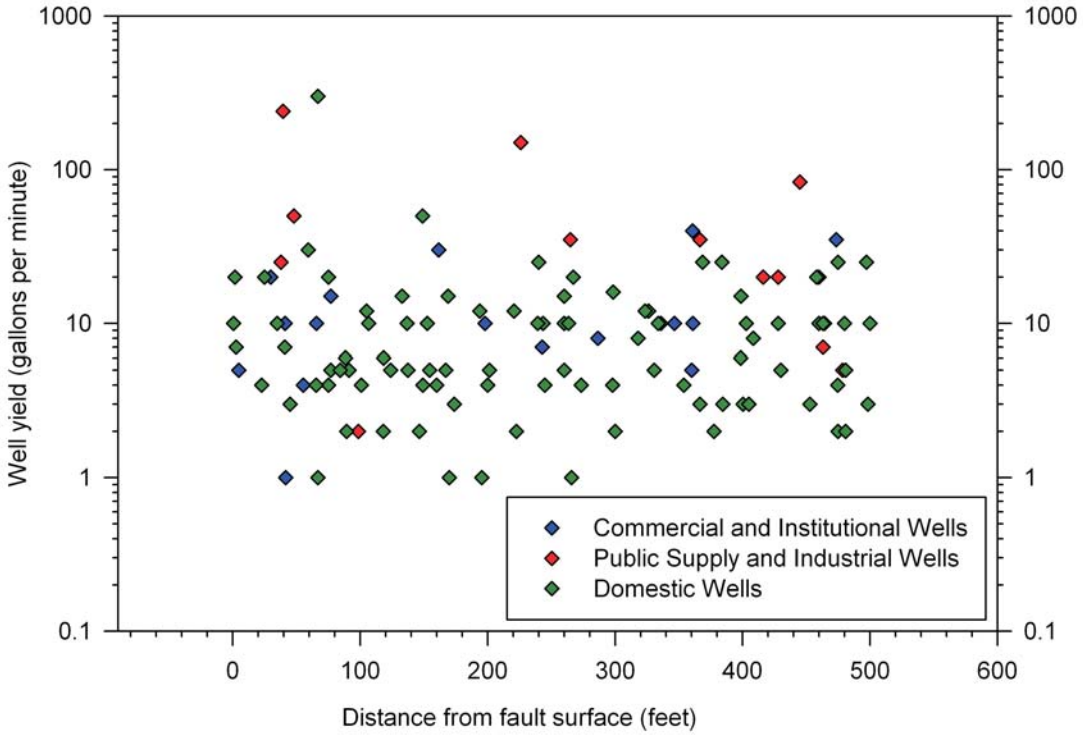



**Figure 33. Graph of well yield versus distance from a fault surface for wells in the Piedmont Province.**

## Table 1. Lithologic units and corresponding geologic units of represented wells

[Geologic units that appear in more than one column contain more than one distinct lithology. See text for further explanation.]

| Carbonate and metamorphic equivalents | Fine-grained siliciclastics and metamorphic equivalents | Coarse-grained siliciclastics and metamorphic equivalents | Igneous and metamorphic equivalents |
|---|---|---|---|
| Frederick Limestone | Araby Formation | Antietam Formation | Catoctin Metabasalt |
| Grove Limestone | Balls Bluff Siltstone | Colluvium | Gneiss Complex |
| Leesburg Limestone | Gettysburg Shale | Gettysburg Shale | Diabase Dikes and Sills |
| Conglomerate | Gillis Formation | Loudoun Formation | Jurassic Diabase |
| Member | Harpers Formation | Manassas Sandstone | Libertytown Metarhyolite |
| of Bull Run | Ijamsville Formation | New Oxford Formation | Loch Raven Schist |
| Formation | Marburg Formation | New Oxford Formation | Metarhyolite and |
| Sams Creek Metabasalt | New Oxford Formation | Basal Conglomerate | associated |
| Tomstown Dolomite | Pleasant Grove Schist | Quaternary Alluvium | pyroclastic |
| Wakefield Marble | Sams Creek Metabasalt | Saprolite | sediments |
| | Urbana Formation | Sugarloaf Mountain | Morgan Run Formation |
| | | Quartzite | Prettyboy Schist |
| | | Swift Run Formation | Sams Creek Metabasalt |
| | | Terrace Deposits | |
| | | Weverton Formation | |

**Table 2. Well uses and number of wells in each category**

[GWSI, Ground-Water Site Inventory]

| Well use | GWSI code | Number of wells | Number of wells in combined categories |
|---|---|---|---|
| Commercial | C | 154 | 258 |
| Institutional | T | 104 | |
| Domestic | H | 1,553 | 1,553 |
| Industrial | N | 52 | 133 |
| Public supply | P | 81 | |

**Table 3. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for different well uses**

[Values in gallons per minute; n, number; %, percent]

| Percentile | Commercial (n=154) | Institutional (n=104) | Domestic (n=1,553) | Industrial (n=52) | Public supply (n=81) |
|---|---|---|---|---|---|
| 10% | 2 | 3 | 2 | 5 | 10 |
| 25% | 5 | 6.5 | 4 | 9 | 20 |
| 50% | 10 | 10 | 8 | 22.5 | 35 |
| 75% | 20 | 25 | 13 | 57.5 | 95 |
| 90% | 40 | 50 | 25 | 125 | 160 |

**Table 4. 10th, 25th, 50th, 75th, and 90th percentile well-depth values for different well uses**

[Values in feet; n, number; %, percent]

| Percentile | Commercial (n=154) | Institutional (n=103) | Domestic (n=1,544) | Industrial (n=51) | Public supply (n=81) |
|---|---|---|---|---|---|
| 10% | 68 | 87 | 64 | 87 | 125 |
| 25% | 99 | 115 | 80 | 120 | 190 |
| 50% | 150 | 175 | 130 | 200 | 285 |
| 75% | 270 | 250 | 200 | 300 | 400 |
| 90% | 435 | 325 | 300 | 525 | 475 |

**Table 5. 10th, 25th, 50th, 75th, and 90th percentile well-yield values by well use and physiographic province**

[Values in gallons per minute; n, number; %, percent]

| Percentile | Commercial | | Institutional | | Domestic | | Industrial | | Public supply | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Blue Ridge (n=30) | Piedmont (n=124) | Blue Ridge (n=30) | Piedmont (n=74) | Blue Ridge (n=408) | Piedmont (n=1,145) | Blue Ridge (n=5) | Piedmont (n=47) | Blue Ridge (n=41) | Piedmont (n=40) |
| 10% | 2 | 2 | 5 | 3 | 2 | 2 | 3 | 5 | 10 | 8.5 |
| 25% | 4 | 5 | 7 | 6 | 4 | 4 | 6 | 10 | 15 | 25 |
| 50% | 7 | 10 | 16 | 10 | 7 | 8 | 10 | 30 | 30 | 67.5 |
| 75% | 12 | 20 | 30 | 20 | 12 | 15 | 15 | 60 | 40 | 142.5 |
| 90% | 20 | 40 | 45 | 55 | 20 | 25 | 20 | 150 | 63 | 394 |

**Table 6. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for commercial and institutional wells, by lithology and physiographic province**

[Values in gallons per minute; n, number; %, percent; n/a, not applicable]

| Percentile | Carbonates and metamorphic equivalents | | Coarse-grained siliciclastics and metamorphic equivalents | | Fine-grained siliciclastics and metamorphic equivalents | | Igneous and metamorphic equivalents | |
|---|---|---|---|---|---|---|---|---|
| | Blue Ridge | Piedmont (n=60) | Blue Ridge (n=11) | Piedmont (n=28) | Blue Ridge (n=7) | Piedmont (n=90) | Blue Ridge (n=42) | Piedmont (n=20) |
| 10% | n/a | 2 | 2 | 3 | 1 | 2 | 5 | 4.25 |
| 25% | n/a | 5 | 4 | 8 | 1 | 5 | 7 | 5.5 |
| 50% | n/a | 15 | 5 | 10 | 3 | 10 | 10 | 10 |
| 75% | n/a | 35 | 12 | 18 | 7 | 20 | 23 | 15 |
| 90% | n/a | 92.5 | 20 | 50 | 20 | 30 | 30 | 20 |

**Table 7. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for domestic wells, by lithology and physiographic province**

[Values in gallons per minute; n, number; %, percent; n/a, not applicable]

| Percentile | Carbonates and metamorphic equivalents | | Coarse-grained siliciclastics and metamorphic equivalents | | Fine-grained siliciclastics and metamorphic equivalents | | Igneous and metamorphic equivalents | |
|---|---|---|---|---|---|---|---|---|
| | Blue Ridge | Piedmont (n=167) | Blue Ridge (n=37) | Piedmont (n=176) | Blue Ridge (n=18) | Piedmont (n=612) | Blue Ridge (n=353) | Piedmont (n=169) |
| 10% | n/a | 3 | 2 | 2.5 | 1 | 2 | 2 | 2 |
| 25% | n/a | 5 | 3.5 | 4 | 2 | 4 | 4 | 4 |
| 50% | n/a | 10 | 5 | 8 | 3.5 | 7.5 | 7 | 8 |
| 75% | n/a | 25 | 8 | 16.5 | 10 | 12 | 12 | 11 |
| 90% | n/a | 50 | 20 | 40 | 15 | 20 | 20 | 20 |

**Table 8. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for public-supply and industrial wells, by lithology and physiographic province**

[Values in gallons per minute; n, number; %, percent; n/a, not applicable]

| Percentile | Carbonates and metamorphic equivalents | | Coarse-grained siliciclastics and metamorphic equivalents | | Fine-grained siliciclastics and metamorphic equivalents | Igneous and metamorphic equivalents |
|---|---|---|---|---|---|---|
| | Blue Ridge | Piedmont (n=44) | Blue Ridge (n=9) | Piedmont (n=13) | Piedmont (n=28) | Blue Ridge (n=35) |
| 10% | n/a | 5 | 3 | 15 | 5 | 12 |
| 25% | n/a | 17.5 | 7 | 50 | 11 | 15 |
| 50% | n/a | 42.5 | 12 | 95 | 37.5 | 30 |
| 75% | n/a | 100 | 20 | 150 | 79 | 40 |
| 90% | n/a | 200 | 109 | 488 | 284 | 63 |

**Table 9. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for commercial and institutional wells, by topographic position and physiographic province**

[Values in gallons per minute; n, number; %, percent]

| Percentile | Flat | Hilltop | | Hillside | | Valley | Upland Draw |
|---|---|---|---|---|---|---|---|
| | Piedmont (n=53) | Blue Ridge (n=14) | Piedmont (n=49) | Blue Ridge (n=38) | Piedmont (n=75) | Piedmont (n=13) | Piedmont (n=8) |
| 10% | 2 | 4 | 2 | 2 | 3 | 3 | 6 |
| 25% | 5 | 5 | 5 | 4 | 6 | 7 | 9 |
| 50% | 12 | 9 | 10 | 8.75 | 10 | 14 | 15 |
| 75% | 35 | 22 | 15 | 12 | 20 | 55 | 22.5 |
| 90% | 60 | 50 | 22 | 30 | 40 | 100 | 30 |

**Table 10. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for domestic wells, by topographic position and physiographic province**

[Values in gallons per minute; n, number; %, percent]

| Percentile | Flat | | Hilltop | | Hillside | | Valley | | Upland Draw |
|---|---|---|---|---|---|---|---|---|---|
| | Blue Ridge (n=19) | Piedmont (n=190) | Blue Ridge (n=131) | Piedmont (n=344) | Blue Ridge (n=234) | Piedmont (n=486) | Blue Ridge (n=22) | Piedmont (n=84) | Piedmont (n=15) |
| 10% | 3 | 3 | 2 | 2 | 2 | 2 | 5 | 3.3 | 4 |
| 25% | 4 | 4 | 3 | 3.25 | 3 | 4 | 7 | 5.5 | 6 |
| 50% | 8 | 10 | 6 | 7 | 7 | 8 | 11 | 10 | 8 |
| 75% | 10 | 20 | 10 | 12 | 12 | 12 | 25 | 25 | 12 |
| 90% | 15 | 50 | 20 | 20 | 20 | 25 | 30 | 50 | 50 |

**Table 11. 10th, 25th, 50th, 75th, and 90th percentile well-yield values for public-supply and industrial wells, by topographic position and physiographic province**

[Values in gallons per minute; n, number; %, percent]

| Percentile | Flat | Hilltop | | Hillside | | Valley | |
|---|---|---|---|---|---|---|---|
| | Piedmont (n=27) | Blue Ridge (n=5) | Piedmont (n=8) | Blue Ridge (n=27) | Piedmont (n=25) | Blue Ridge (n=8) | Piedmont (n=27) |
| 10% | 10 | 10 | 3 | 6 | 3.5 | 30 | 5 |
| 25% | 25 | 12 | 7.5 | 10 | 10 | 45 | 28 |
| 50% | 50 | 12 | 22.5 | 25 | 20 | 60 | 60 |
| 75% | 125 | 15 | 54 | 35 | 95 | 87.5 | 200 |
| 90% | 200 | 20 | 100 | 50 | 110 | 160 | 488 |

## Appendix 1. Records of wells used in this report.

Abbreviations and codes used in Appendix 1:

| Column headings: | |
|---|---|
| BLS | Below land surface |
| gpm | Gallons per minute |
| ft | feet |

| Physiographic provinces: | |
|---|---|
| P | Piedmont |
| BR | Blue Ridge |

| Topographic settings: | |
|---|---|
| F | Flat |
| G | Floodplain |
| H | Hilltop |
| S | Hillside |
| T | Terrace |
| V | Valley flat |
| W | Upland draw |

| Well use: | |
|---|---|
| C | Commercial |
| D | Dewater |
| F | Fire |
| H | Domestic |
| I | Irrigation |
| J | Industrial (cooling) |
| N | Industrial |
| O | Observation |
| P | Public supply |
| Q | Aquaculture |
| R | Recreation |
| S | Stock |
| T | Institutional |
| U | Unused |
| Z | Other |

| Lithology | |
|---|---|
| I | Igneous rocks and metamorphic equivalents |
| FSC | Fine-grained siliciclastic rocks and metamorphic equivalents |
| CSC | Coarse-grained siliciclastic rocks and metamorphic equivalents |
| C | Carbonate rocks |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Ab 1 | CL-00-1949 | -77.229164 | 39.674721 | P | F | H | - | 79 | 7.5 | 12 | 24 | 65 | - | FSC |
| CL Ab 2 | CL-00-8702 | -77.204719 | 39.715832 | P | F | H | - | 46 | 10.5 | 4 | 11 | - | - | FSC |
| CL Ab 3 | CL-01-0339 | -77.203056 | 39.716389 | P | H | H | - | 100 | 14 | 4 | 20 | 100 | - | FSC |
| CL Ab 4 | CL-00-2256 | -77.203331 | 39.715557 | P | H | H | 6 | 125 | 8 | 3.5 | 20 | 125 | 14 | FSC |
| CL Ab 5 | CL-00-5728 | -77.208611 | 39.713612 | P | F | H | 6 | 92 | 12 | 2.5 | 25 | 92 | 19 | FSC |
| CL Ab 6 | CL-00-2275 | -77.198059 | 39.698055 | P | H | H | 4 | 78 | 4 | 25 | 40 | 50 | 36 | FSC |
| CL Ab 7 | CL-00-2636 | -77.184166 | 39.678055 | P | H | H | 10 | 201 | 10 | 3 | 49 | 201 | 39 | FSC |
| CL Ab 13 | CL-67-0409 | -77.180557 | 39.674168 | P | H | H | 6 | 95 | 20 | 50 | 23 | 93 | 17 | FSC |
| CL Ab 78 | CL-73-2365 | -77.22583 | 39.681667 | P | S | H | 10 | 240 | 20 | 40 | 23 | 240 | 13 | - |
| CL Ab 101 | CL-81-3696 | -77.213059 | 39.69389 | P | F | H | - | 150 | 21 | 10 | 20 | 95 | - | FSC |
| CL Ab 102 | CL-73-1497 | -77.211388 | 39.688057 | P | F | H | 10 | 250 | 21 | 5 | 60 | 250 | 50 | - |
| CL Ac 1 | CL-00-6111 | -77.162778 | 39.67 | P | S | H | - | 45 | - | 3 | 40 | 45 | - | FSC |
| CL Ac 2 | CL-01-1458 | -77.145278 | 39.668611 | P | F | H | 4 | 108 | 15.7 | 4 | 11.5 | - | 7.5 | FSC |
| CL Ac 4 | CL-00-8961 | -77.123611 | 39.682778 | P | F | H | 14 | 81 | 17 | 7 | 27 | - | 13 | CSC |
| CL Ac 5 | CL-00-4117 | -77.1475 | 39.688333 | P | F | H | 6 | 88 | 21 | 3 | 15.5 | - | 9.5 | CSC |
| CL Ac 6 | CL-00-1947 | -77.147222 | 39.688889 | P | F | H | 10 | 103 | 25 | 3 | 22 | - | 12 | CSC |
| CL Ac 7 | CL-00-2679 | -77.136667 | 39.698611 | P | H | H | - | 80 | 20 | 1.5 | 20 | - | - | FSC |
| CL Ac 8 | CL-00-7816 | -77.125278 | 39.714722 | P | S | H | 7 | 61 | - | 7.5 | 19 | - | 12 | FSC |
| CL Ac 11 | CL-00-7879 | -77.164444 | 39.706111 | P | F | U | 5 | 107 | - | 3 | 20 | 107 | 15 | FSC |
| CL Ac 12 | CL-00-4235 | -77.138889 | 39.689167 | P | F | H | 6 | 60 | 10.5 | 4 | 9 | - | 3 | CSC |
| CL Ac 68 | CL-73-0639 | -77.142219 | 39.674999 | P | H | H | 12 | 115 | 18 | 10 | 40 | 100 | 28 | - |
| CL Ba 59 | CL-93-0358 | -77.300835 | 39.6175 | P | S | H | - | 300 | 39 | 5 | 45 | 100 | - | FSC |
| CL Bb 9 | CL-00-2294 | -77.171387 | 39.66111 | P | F | N | 78 | 300 | 78 | 25 | 8 | 125 | -70 | FSC |
| CL Bb 41 | CL-67-0338 | -77.175003 | 39.658054 | P | V | P | - | 600 | 131 | 298 | 39 | 400 | - | FSC |
| CL Bb 54 | CL-67-0528 | -77.237221 | 39.5975 | P | H | H | 18 | 160 | 37 | 4 | 51 | 158 | 33 | FSC |
| CL Bb 175 | CL-94-0548 | -77.231392 | 39.618889 | P | S | H | 3 | 140 | 37 | 15 | 59 | 83 | -3 | FSC |
| CL Bb 176 | CL-88-1433 | -77.171112 | 39.629166 | P | S | H | 6 | 250 | 20 | 12 | 29 | 39 | 23 | FSC |
| CL Bc 3 | CL-00-9057 | -77.103306 | 39.593306 | P | H | H | 16 | 93 | 16 | 12 | 58 | 75 | 42 | I |
| CL Bc 4 | CL-00-3408 | -77.11 | 39.593611 | P | S | H | - | 75 | 5 | 8 | 40 | - | - | I |
| CL Bc 5 | CL-01-0210 | -77.140278 | 39.649722 | P | S | H | - | 98 | 3 | 8 | 12 | 90 | - | FSC |
| CL Bc 6 | CL-00-5512 | -77.131972 | 39.637167 | P | S | H | 0 | 97 | 12 | 3 | 6 | - | 6 | FSC |
| CL Bc 7 | CL-00-3447 | -77.135667 | 39.639361 | P | H | H | 0 | 78 | 6.5 | 0.75 | 30 | - | 30 | CSC |
| CL Bc 8 | CL-01-4493 | -77.152583 | 39.646722 | P | F | H | 0 | 133 | 12 | 6 | 12 | 133 | 12 | FSC |
| CL Bc 13 | CL-01-5175 | -77.101944 | 39.634722 | P | S | H | 11 | 50 | 14 | 25 | 4 | 15 | -7 | CSC |
| CL Bc 16 | CL-72-0308 | -77.112503 | 39.632778 | P | S | U | 40 | 673 | 60 | 50 | 17 | 17 | -23 | CSC |
| CL Bc 171 | CL-73-3069 | -77.144997 | 39.599445 | P | S | H | 55 | 280 | 55 | 3 | 45 | 80 | -10 | I |
| CL Bd 13 | CL-00-6553 | -77.058052 | 39.652222 | P | H | S | - | 47 | 4 | 15 | 17 | 17 | - | I |
| CL Bd 87 | CL-73-2917 | -77.061386 | 39.592499 | P | S | H | - | 85 | 50 | 8 | 40 | 45 | - | I |
| CL Bd 124 | CL-88-1687 | -76.983681 | 39.611164 | P | H | H | 94 | 110 | 100 | 10 | 23 | 34 | -71 | I |
| CL Bd 175 | CL-88-0449 | -77.014168 | 39.58889 | P | S | P | 14 | 241 | 57 | 300 | - | - | - | FSC |
| CL Bd 179 | CL-81-0294 | -76.993057 | 39.560555 | P | F | P | 95 | 623 | 118 | 83 | -1.5 | 84 | -96.5 | FSC |
| CL Bd 181 | CL-88-1581 | -77.043198 | 39.59922 | P | H | H | 20 | 300 | 40 | 4 | 80 | 199 | 60 | I |
| CL Bd 182 | CL-88-1580 | -77.043037 | 39.599472 | P | H | H | 30 | 200 | 124 | 5 | 93 | 132 | 63 | I |
| CL Bd 183 | CL-88-1585 | -77.042656 | 39.600025 | P | S | H | 60 | 200 | 140 | 12 | 88 | 92 | 28 | I |
| CL Bd 184 | CL-88-1579 | -77.041756 | 39.600037 | P | H | H | 15 | 160 | 28 | 12 | 62 | 73 | 47 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Bd 185 | CL-88-1589 | -77.041946 | 39.600235 | P | S | H | 26 | 320 | 40 | 4 | 75 | 201 | 49 | I |
| CL Bd 186 | CL-94-1731 | -77.041664 | 39.600113 | P | H | H | 5 | 175 | 62 | 10 | 65 | 69 | 60 | I |
| CL Bd 187 | CL-88-1587 | -77.043076 | 39.600548 | P | S | H | 120 | 400 | 142 | 2 | 44 | 296 | -76 | I |
| CL Bd 188 | CL-73-9322 | -77.019531 | 39.609852 | P | H | H | 28 | 603 | 42 | 1 | 100 | 270 | 72 | I |
| CL Bd 190 | CL-94-4218 | -77.027954 | 39.601971 | P | H | H | 4 | 300 | 39 | 2 | 96 | 300 | 92 | I |
| CL Bd 192 | CL-88-0072 | -77.012398 | 39.625965 | P | S | H | 25 | 100 | 30 | 10 | 39 | 51 | 14 | FSC |
| CL Bd 193 | CL-88-0071 | -77.012764 | 39.626156 | P | S | U | 45 | 100 | 48 | 10 | 37 | 46 | -8 | FSC |
| CL Bd 194 | CL-73-5720 | -77.004044 | 39.619862 | P | H | H | 14 | 300 | 21 | 3 | 75 | 300 | 61 | I |
| CL Bd 195 | CL-73-4138 | -77.000969 | 39.619541 | P | H | H | 12 | 100 | 22 | 12 | - | - | - | I |
| CL Bd 196 | CL-73-2823 | -77.000763 | 39.619427 | P | S | H | 31 | 190 | 43 | 19 | 40 | 185 | 9 | I |
| CL Be 1 | CL-00-1480 | -76.93914 | 39.61547 | P | W | H | 10 | 90 | 11 | 4 | 40 | - | 30 | FSC |
| CL Be 3 | CL-00-5640 | -76.94758 | 39.62597 | P | H | H | 40 | 80 | 10 | 20 | 40 | - | 0 | FSC |
| CL Be 4 | CL-00-5894 | -76.93481 | 39.59786 | P | H | H | 10 | 258 | 10 | 11 | 108 | 223 | 77.99 | FSC |
| CL Be 5 | CL-01-2831 | -76.95378 | 39.59356 | P | S | H | 18 | 95 | 19.5 | 8 | 50 | - | 32 | FSC |
| CL Be 6 | CL-01-0017 | -76.968792 | 39.592692 | P | V | H | 3 | 22 | 4 | 16 | 17 | 17 | 14 | I |
| CL Be 7 | CL-00-0038 | -76.996067 | 39.588461 | P | W | C | 48 | 58 | 48 | 20 | 4 | 15 | -44 | FSC |
| CL Be 10 | CL-00-3952 | -76.997864 | 39.613992 | P | F | H | - | 55 | - | 24 | 40 | - | - | I |
| CL Be 11 | CL-01-2054 | -76.97465 | 39.622633 | P | H | H | - | 54 | 6 | 15 | 30 | - | - | FSC |
| CL Be 13 | CL-00-6604 | -76.959647 | 39.617639 | P | W | H | 20 | 53 | 22 | 12 | 19 | - | -1 | FSC |
| CL Be 14 | CL-01-2941 | -76.962211 | 39.612472 | P | W | S | 2 | 69 | 52 | 20 | 20 | 25 | 18 | FSC |
| CL Be 15 | CL-00-4785 | -76.965131 | 39.611847 | P | H | H | 18 | 70 | - | 4 | 35 | - | 17 | FSC |
| CL Be 24 | CL-00-0692 | -76.999058 | 39.604631 | P | W | C | - | 46 | - | 8 | 9 | 20 | - | FSC |
| CL Be 122 | CL-73-6764 | -76.976456 | 39.623776 | P | H | H | 8 | 175 | 20 | 4 | 15 | 97 | 7 | I |
| CL Be 123 | CL-88-2448 | -76.984169 | 39.610653 | P | H | H | 85 | 150 | 90 | 10 | 9 | 85 | -76 | I |
| CL Be 125 | CL-88-1777 | -76.983452 | 39.611431 | P | H | H | 92 | 115 | 100 | 10 | 47 | 60 | -45 | FSC |
| CL Be 126 | CL-81-0299 | -76.950958 | 39.603004 | P | H | H | 21 | 300 | 25 | 2.5 | 70 | 275 | 49 | FSC |
| CL Be 127 | CL-73-9242 | -76.950729 | 39.60387 | P | H | H | 14 | 350 | 20 | 4.5 | 72 | 192 | 58 | FSC |
| CL Be 128 | CL-81-0619 | -76.946907 | 39.595104 | P | H | H | 50 | 150 | 57 | 15 | 32 | 62 | -18 | FSC |
| CL Be 129 | CL-81-0325 | -76.946388 | 39.595123 | P | H | H | 8 | 250 | 20 | 4 | 48 | 220 | 40 | FSC |
| CL Be 130 | CL-74-0688 | -76.946075 | 39.59528 | P | H | H | 16 | 125 | 20 | 12 | 38 | 53 | 22 | FSC |
| CL Be 131 | CL-81-5675 | -76.945831 | 39.59454 | P | H | H | 11 | 300 | 18 | 3 | 50 | 246 | 39 | FSC |
| CL Be 132 | CL-73-9401 | -76.944466 | 39.595711 | P | H | H | 35 | 265 | 43 | 3 | 49 | 101 | 14 | FSC |
| CL Be 133 | CL-73-8982 | -76.94545 | 39.595554 | P | H | H | 51 | 150 | 61 | 10 | 51 | 113 | 0 | FSC |
| CL Be 134 | CL-73-9027 | -76.946701 | 39.595806 | P | H | H | 56 | 130 | 56 | 25 | 60 | 92 | 4 | FSC |
| CL Be 135 | CL-73-6875 | -76.946907 | 39.598637 | P | H | H | 20 | 350 | 60 | 5 | 40 | 85 | 20 | FSC |
| CL Be 135a | CL-73-6875 | -76.946907 | 39.598637 | P | H | H | 20 | 350 | 60 | 5 | 40 | 85 | 20 | FSC |
| CL Be 136 | CL-73-2703 | -76.946892 | 39.598991 | P | H | H | 15 | 300 | 19 | 1 | 50 | 300 | 35 | FSC |
| CL Be 137 | CL-92-0230 | -76.948608 | 39.58374 | P | S | H | 62 | 300 | 66 | 6 | 43 | 249 | -19 | FSC |
| CL Be 138 | CL-88-0663 | -76.946495 | 39.587761 | P | S | H | 144 | 550 | 146 | 4 | 66 | 288 | -78 | FSC |
| CL Be 139 | CL-88-0663 | -76.946388 | 39.587776 | P | S | U | - | 200 | - | 0 | - | - | - | FSC |
| CL Be 140 | CL-88-0665 | -76.945038 | 39.587517 | P | H | H | 14 | 250 | 20 | 8 | 70 | 98 | 56 | FSC |
| CL Be 141 | CL-88-0665 | -76.945 | 39.587502 | P | H | U | - | 300 | - | 0 | - | - | - | FSC |
| CL Be 142 | CL-88-0665 | -76.945 | 39.587502 | P | H | U | - | 200 | - | 0 | - | - | - | FSC |
| CL Be 143 | CL-81-2901 | -76.947082 | 39.590103 | P | H | H | 4 | 200 | 20 | 10 | 65 | 80 | 61 | FSC |
| CL Be 144 | CL-73-9975 | -76.94236 | 39.589775 | P | H | H | 76 | 140 | 83 | 10 | 35 | 106 | -41 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Be 145 | CL-74-0444 | -76.942375 | 39.589489 | P | H | H | 50 | 370 | 63 | 1.5 | 86 | 199 | 36 | FSC |
| CL Be 146 | CL-74-0588 | -76.942566 | 39.58913 | P | H | H | 10 | 300 | 20 | 2.5 | 81 | 260 | 71 | FSC |
| CL Be 147 | CL-81-0545 | -76.942741 | 39.588818 | P | H | H | 8 | 300 | 20 | 1.5 | 80 | 275 | 72 | FSC |
| CL Be 148 | CL-81-0545 | -76.94278 | 39.58889 | P | H | U | - | 450 | - | 0 | - | - | - | FSC |
| CL Be 149 | CL-81-0545 | -76.94278 | 39.58889 | P | H | U | - | 400 | - | 0 | - | - | - | FSC |
| CL Be 150 | CL-94-3772 | -76.941132 | 39.588837 | P | H | H | 30 | 400 | 38 | 1.5 | 50 | 400 | 20 | FSC |
| CL Be 151 | CL-81-0093 | -76.94101 | 39.588783 | P | H | U | 8 | 175 | 19 | 8.5 | 60 | 73 | 52 | FSC |
| CL Cb 2 | CL-01-1091 | -77.175552 | 39.576668 | P | S | U | 35 | 200 | 35 | 5 | 31 | - | -4 | FSC |
| CL Cc 49 | CL-71-0255 | -77.101669 | 39.530556 | P | H | T | 80 | 96 | 22 | 7 | 40 | 96 | -40 | I |
| CL Cd 1 | CL-00-7488 | -77.0294 | 39.5808 | P | H | H | 53 | 108 | 53 | 7 | 40 | 90 | -13 | I |
| CL Cd 2 | CL-00-2477 | -77.0373 | 39.5819 | P | H | H | 5 | 65 | 35 | 2 | 20 | - | 15 | I |
| CL Cd 3 | CL-00-2769 | -77.0025 | 39.5736 | P | V | H | 79 | 80 | 79 | 100 | 8 | 75 | -71 | CSC |
| CL Cd 4 | CL-00-0707 | -77.0031 | 39.5689 | P | S | H | 110 | 125 | 115 | 5 | 20 | 120 | -90 | I |
| CL Cd 5 | CL-00-2091 | -77.006 | 39.5639 | P | S | H | 37 | 55 | 37 | 25 | 35 | 40 | -2 | I |
| CL Cd 6 | CL-00-6093 | -77.006 | 39.5641 | P | S | H | 30 | 80 | 62 | 50 | 35 | 75 | 5 | I |
| CL Cd 14 | CL-01-2343 | -77.0141 | 39.5533 | P | V | U | 0 | 55 | 51 | 20 | 15 | 25 | 15 | I |
| CL Cd 16 | CL-00-9072 | -77.008057 | 39.558613 | P | V | N | 23 | 169 | 26 | 100 | 30 | 40 | 7 | C |
| CL Cd 18 | CL-00-5582 | -77.070274 | 39.551109 | P | V | N | 10 | 65 | 11 | 100 | 20 | 40 | 10 | C |
| CL Cd 19 | CL-00-6964 | -77.0337 | 39.5512 | P | S | H | - | 88 | 30 | 3 | 62 | - | - | I |
| CL Cd 23 | CL-01-4794 | -77.071114 | 39.567223 | P | S | J | 28 | 167 | 30 | 2 | 28 | 30 | 0 | I |
| CL Cd 27 | CL-66-0360 | -77.0408 | 39.561 | P | V | U | 16 | 127 | 38 | 12 | 48 | 115 | 32 | I |
| CL Cd 28 | CL-66-0360 | -77.0394 | 39.5606 | P | V | H | 65 | 127 | 68 | 10 | 61 | 125 | -4 | C |
| CL Cd 36 | CL-73-1106 | -77.080559 | 39.546391 | P | V | H | 40 | 65 | 44 | 25 | 15 | 63 | -25 | C |
| CL Cd 42 | CL-73-3098 | -77.035553 | 39.541943 | P | H | H | 17 | 94 | 52 | 10 | 47 | 85 | 30 | I |
| CL Cd 145 | CL-73-3252 | -77.055557 | 39.549446 | P | V | N | 41 | 300 | 21 | 2 | 41 | 245 | 0 | I |
| CL Cd 181 | CL-81-2221 | -77.036392 | 39.578888 | P | S | H | 6 | 165 | 50 | 10 | 30 | 120 | 24 | I |
| CL Cd 182 | CL-74-0353 | -77.03333 | 39.576946 | P | H | H | - | 264 | 21 | 6 | 31 | 152 | - | I |
| CL Cd 183 | CL-94-5121 | -77.016754 | 39.536137 | P | S | H | 90 | 160 | 92 | 20 | 35 | 41 | -55 | I |
| CL Cd 184 | CL-94-5122 | -77.0187 | 39.537117 | P | H | H | 84 | 100 | 86 | 20 | 45 | 63 | -39 | I |
| CL Cd 185 | CL-94-5123 | -77.0187 | 39.537178 | P | H | H | 95 | 110 | 97 | 12 | 41 | 68 | -54 | I |
| CL Cd 186 | CL-94-4732 | -77.017311 | 39.538036 | P | S | H | 300 | 320 | 302 | 12 | 62 | 105 | -238 | I |
| CL Cd 187 | CL-94-4731 | -77.016182 | 39.537823 | P | H | H | 96 | 280 | 98 | 15 | 69 | 87 | -27 | I |
| CL Ce 2 | CL-00-2599 | -76.991386 | 39.578335 | P | V | N | 57 | 850 | 57 | 200 | 32 | 40 | -25 | C |
| CL Ce 2a | CL-02-0705 | -76.991386 | 39.578335 | P | V | N | 57 | 850 | 182 | 7 | 85 | 250 | -13.56 | C |
| CL Ce 3 | CL-00-2598 | -76.992999 | 39.578748 | P | V | N | 37 | 116 | 59 | 200 | 24 | 29 | -13 | C |
| CL Ce 4 | - | -76.990717 | 39.579344 | P | S | C | - | 885 | - | 500 | - | - | - | C |
| CL Ce 13 | CL-01-2066 | -76.9467 | 39.5473 | P | S | H | 15 | 64 | 18.7 | 10 | 14 | 35 | -1 | FSC |
| CL Ce 14 | CL-01-3100 | -76.9573 | 39.5525 | P | H | H | 6 | 66 | 6 | 12 | 20 | - | 14 | FSC |
| CL Ce 15 | CL-01-3430 | -76.9568 | 39.5548 | P | H | C | 30 | 79 | 34 | 22 | 40 | 45 | 10 | FSC |
| CL Ce 17 | CL-00-1879 | -76.9416 | 39.5729 | P | H | H | 20 | 132 | 18 | 5 | 75 | 110 | 55 | FSC |
| CL Ce 21 | CL-01-5047 | -76.9779 | 39.58 | P | H | H | 8 | 112 | 29 | 2 | 41 | - | 33 | I |
| CL Ce 22 | CL-01-2366 | -76.9779 | 39.58 | P | H | H | - | 265 | 19 | 11 | 40 | 260 | - | I |
| CL Ce 27 | CL-00-0575 | -76.9924 | 39.5524 | P | S | H | - | 90 | - | 12 | 60 | - | - | FSC |
| CL Ce 28 | CL-01-1448 | -76.9924 | 39.5524 | P | S | H | 20 | 130 | 24 | 1 | 100 | - | 80 | FSC |
| CL Ce 29 | CL-01-4949 | -76.9911 | 39.5434 | P | W | C | 20 | 94 | 46 | 30 | 35 | - | 15 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Ce 30 | CL-00-4970 | -76.9952 | 39.5352 | P | H | H | 55 | 60 | 57 | 5 | 20 | 40 | -35 | FSC |
| CL Ce 31 | CL-00-1638 | -76.9949 | 39.5344 | P | H | H | 13 | 48 | 12 | 20 | 15 | - | 2 | FSC |
| CL Ce 41 | - | -76.993639 | 39.579417 | P | F | U | - | 320 | 9 | 45 | - | - | - | FSC |
| CL Ce 42 | - | -76.993639 | 39.579417 | P | V | U | - | 822 | 8 | 8 | - | - | - | FSC |
| CL Ce 44 | CL-00-7981 | -76.9923 | 39.5819 | P | S | I | 0 | 255 | 250 | 6 | 60 | 230 | 60 | FSC |
| CL Ce 45 | - | -76.996333 | 39.58275 | P | S | I | - | 140 | 90 | 300 | - | - | - | FSC |
| CL Ce 49 | CL-00-0190 | -76.996861 | 39.567306 | P | S | C | - | 200 | 92 | 150 | 55 | 100 | - | C |
| CL Ce 204 | CL-68-0303 | -76.952499 | 39.570557 | P | S | S | - | 455 | 40.75 | 7 | 50 | 440 | - | C |
| CL Ce 206 | CL-73-2293 | -76.986023 | 39.54343 | P | H | H | 52 | 128 | 57 | 10 | 60 | 95 | 8 | FSC |
| CL Ce 207 | CL-95-1158 | -76.985764 | 39.54316 | P | H | H | 24 | 300 | 43 | 2.4 | 55 | 86 | 31 | FSC |
| CL Ce 209 | CL-95-1334 | -76.978874 | 39.54052 | P | H | H | 15 | 500 | 21 | 1 | 109 | 324 | 94 | FSC |
| CL Ce 211 | CL-95-1334 | -76.978889 | 39.540554 | P | H | U | - | 600 | - | 0 | - | - | - | FSC |
| CL Ce 212 | CL-95-1334 | -76.978889 | 39.540554 | P | H | U | - | 600 | - | 0 | - | - | - | FSC |
| CL Ce 213 | CL-95-1334 | -76.978889 | 39.540554 | P | H | U | - | 600 | - | 0 | - | - | - | FSC |
| CL Ce 214 | CL-88-3314 | -76.979202 | 39.54084 | P | H | H | 35 | 375 | 37 | 20 | 40 | 300 | 5 | FSC |
| CL Ce 216 | CL-81-6013 | -76.974617 | 39.543377 | P | H | H | 12 | 350 | 36 | 1.1 | 36 | 198 | 24 | FSC |
| CL Ce 217 | CL-81-6005 | -76.975365 | 39.542622 | P | H | H | 15 | 325 | 40 | 1.4 | 45 | 175 | 30 | FSC |
| CL Ce 218 | CL-81-6005 | -76.975281 | 39.542499 | P | H | U | - | 250 | - | 0 | - | - | - | FSC |
| CL Ce 219 | CL-81-6569 | -76.975784 | 39.543083 | P | H | H | 4 | 100 | 19 | 1 | 16 | 44 | 12 | FSC |
| CL Ce 220 | CL-88-0579 | -76.977432 | 39.543098 | P | H | H | 25 | 275 | 42 | 4 | 25 | 134 | 0 | FSC |
| CL Ce 221 | CL-81-4238 | -76.954498 | 39.531006 | P | S | H | 16 | 205 | 20 | 4 | 38 | 200 | 22 | FSC |
| CL Ce 222 | CL-94-2184 | -76.951233 | 39.52166 | P | S | H | 49 | 270 | 82 | 3 | 58 | 260 | 9 | FSC |
| CL Ce 223 | CL-94-1991 | -76.951508 | 39.521919 | P | S | H | 8 | 270 | 83 | 3 | 58 | 260 | 50 | FSC |
| CL Ce 224 | CL-94-1942 | -76.951859 | 39.522232 | P | H | H | 8 | 350 | 24 | 3.5 | 49 | 340 | 41 | FSC |
| CL Ce 225 | CL-74-0439 | -76.941963 | 39.577797 | P | H | H | 5 | 400 | 19 | 2 | 88 | 400 | 83 | FSC |
| CL Ce 226 | CL-73-2980 | -76.941963 | 39.57711 | P | H | H | 20 | 160 | 21 | 5 | 40 | 160 | 20 | FSC |
| CL Ce 227 | CL-92-0361 | -76.944221 | 39.575485 | P | S | H | - | 80 | 23 | 10 | 40 | 44 | - | FSC |
| CL Ce 228 | CL-88-2854 | -76.949722 | 39.58205 | P | S | H | 50 | 180 | 64 | 18 | 40 | 46 | -10 | FSC |
| CL Ce 229 | CL-88-2854 | -76.949722 | 39.581944 | P | S | U | - | 280 | - | 0 | - | - | - | FSC |
| CL Ce 230 | CL-95-0346 | -76.941254 | 39.578724 | P | S | H | 13 | 250 | 44 | 10 | 40 | 250 | 27 | FSC |
| CL Ce 231 | CL-73-5704 | -76.941391 | 39.578609 | P | S | U | 35 | 160 | 19 | 5 | 47 | 70 | 12 | FSC |
| CL Ce 233 | CL-73-4586 | -76.940781 | 39.579132 | P | S | H | 10 | 145 | 20 | 4 | 50 | 85 | 40 | FSC |
| CL Ce 236 | CL-88-0755 | -76.948265 | 39.565693 | P | H | H | 16 | 350 | 20 | 1 | 50 | 300 | 34 | FSC |
| CL Ce 237 | CL-88-0646 | -76.949371 | 39.565296 | P | S | H | 19 | 350 | 24 | 1 | 62 | 300 | 43 | FSC |
| CL Ce 238 | CL-88-0748 | -76.948509 | 39.565487 | P | H | H | 12 | 175 | 20 | 8 | 56 | 62 | 44 | FSC |
| CL Ce 239 | CL-94-3554 | -76.933105 | 39.536572 | P | H | H | 89 | 300 | 99 | 6.5 | 51 | 107 | -38 | I |
| CL Ce 240 | CL-74-0056 | -76.933105 | 39.536408 | P | H | H | 108 | 403 | 112 | 4 | 70 | 318 | -38 | I |
| CL Ce 242 | CL-94-4155 | -76.934059 | 39.535477 | P | H | H | 25 | 220 | 30 | 10 | 40 | 200 | 15 | I |
| CL Ce 244 | CL-88-1144 | -76.954636 | 39.549038 | P | H | H | 36 | 200 | 42 | 8 | 48 | 86 | 12 | FSC |
| CL Ce 245 | CL-92-0673 | -76.953926 | 39.549244 | P | H | U | 56 | 300 | 62 | 3.5 | 63 | 242 | 7 | FSC |
| CL Ce 246 | CL-95-0425 | -76.954132 | 39.549324 | P | H | H | 13 | 300 | 77 | 5 | 50 | 105 | 37 | FSC |
| CL Ce 247 | CL-95-0425 | -76.95417 | 39.549446 | P | H | U | - | - | - | 0 | - | - | - | FSC |
| CL Ce 248 | CL-92-0671 | -76.954689 | 39.54895 | P | H | H | 45 | 350 | 51 | 2 | 42 | 300 | -3 | FSC |
| CL Ce 249 | CL-94-1878 | -76.954864 | 39.548576 | P | H | H | 11 | 350 | 20 | 1 | 46 | 251 | 35 | FSC |
| CL Ce 250 | CL-92-0674 | -76.954689 | 39.548298 | P | H | H | 25 | 350 | 30 | 2 | 31 | 300 | 6 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Ce 251 | CL-88-2966 | -76.959633 | 39.546848 | P | H | H | 35 | 400 | 39 | 1 | 45 | 360 | 10 | FSC |
| CL Ce 252 | CL-88-2808 | -76.959496 | 39.547073 | P | H | H | 35 | 200 | 40 | 3 | 30 | 105 | -5 | FSC |
| CL Ce 253 | CL-88-2807 | -76.959564 | 39.546963 | P | H | H | 35 | 450 | 40 | 0.8 | 31 | 360 | -4 | FSC |
| CL Ce 254 | CL-88-2828 | -76.958786 | 39.547768 | P | H | H | 55 | 200 | 59 | 10 | 50 | 98 | -5 | FSC |
| CL Ce 255 | CL-88-2038 | -76.958694 | 39.547909 | P | H | H | 35 | 275 | 40 | 7.5 | 56 | 63 | 21 | FSC |
| CL Dc 10 | CL-73-1002 | -77.084999 | 39.426666 | P | F | H | - | 145 | 105 | 10 | 30 | 145 | - | I |
| CL Dc 56 | CL-72-0545 | -77.118057 | 39.418888 | P | H | H | 18 | 72 | 20 | 5 | 18 | 23 | 0 | I |
| CL Dc 74 | CL-72-0048 | -77.103615 | 39.476666 | P | S | H | - | 100 | 22 | 7 | 55 | 80 | - | I |
| CL Dc 82 | CL-73-0048 | -77.103889 | 39.475555 | P | S | H | 10 | 105 | 20 | 8 | 35 | 45 | 25 | I |
| CL Dc 91 | CL-72-0783 | -77.106392 | 39.490002 | P | S | H | - | 133 | 22 | 7 | 50 | 70 | - | I |
| CL Dc 102 | CL-00-0103 | -77.095558 | 39.464722 | P | W | H | - | 54 | - | 8 | - | - | - | I |
| CL Dc 123 | CL-73-0741 | -77.126389 | 39.419445 | P | S | H | - | 110 | 23 | 15 | 40 | - | - | I |
| CL Dc 125 | CL-73-1261 | -77.091392 | 39.431389 | P | S | H | 20 | 300 | 22 | 3 | 120 | - | 100 | I |
| CL Dc 127 | CL-73-0380 | -77.114998 | 39.456665 | P | V | H | 20 | 80 | 60 | 15 | 30 | 45 | 10 | I |
| CL Dc 131 | CL-73-1615 | -77.088608 | 39.453609 | P | H | H | 18 | 120 | 24 | 8 | 40 | 120 | 22 | I |
| CL Dc 132 | CL-73-1757 | -77.1 | 39.446667 | P | H | H | 25 | 200 | 30 | 3 | 40 | 200 | 15 | I |
| CL Dc 133 | CL-73-1850 | -77.103615 | 39.446388 | P | V | H | 13 | 188 | 83 | 4 | 79 | 133 | 66 | I |
| CL Dc 135 | CL-73-2029 | -77.101944 | 39.490002 | P | V | H | 3 | 220 | 153 | 10 | 60 | 220 | 57 | I |
| CL Dc 142 | CL-73-1005 | -77.113609 | 39.481945 | P | S | H | 10 | 98 | 41 | 15 | 38 | 83 | 28 | I |
| CL Dc 148 | CL-72-0375 | -77.084442 | 39.461113 | P | H | H | - | 75 | 28 | 10 | 35 | - | - | I |
| CL Dc 152 | CL-67-0297 | -77.114441 | 39.459721 | P | S | H | - | 66 | 24 | 10 | 34 | 56 | - | I |
| CL Dc 153 | CL-70-0392 | -77.104164 | 39.42889 | P | S | H | 15 | 60 | 21 | 30 | 30 | 60 | 15 | I |
| CL Dc 154 | CL-73-0154 | -77.102501 | 39.439167 | P | H | H | - | 128 | 25 | 8 | 58 | 128 | - | I |
| CL Dc 157 | CL-73-2289 | -77.083611 | 39.428055 | P | F | H | 3 | 65 | 24 | 30 | 20 | 65 | 17 | I |
| CL Dc 162 | CL-73-1709 | -77.120834 | 39.418888 | P | S | H | - | 265 | 22 | 5 | 40 | 265 | - | I |
| CL Dc 163 | CL-71-0236 | -77.092781 | 39.480556 | P | V | H | 15 | 60 | 20 | 30 | 10 | 60 | -5 | I |
| CL Dc 164 | CL-71-0262 | -77.09111 | 39.482498 | P | W | H | 15 | 100 | 20 | 10 | 25 | 100 | 10 | I |
| CL Dc 166 | CL-00-2114 | -77.119163 | 39.46389 | P | H | H | - | 137 | 12 | 2 | 60 | 137 | - | I |
| CL Dc 168 | CL-81-2464 | -77.089996 | 39.452778 | P | H | H | - | 125 | - | 13 | 35 | 35 | - | - |
| CL Dc 169 | CL-81-1415 | -77.086113 | 39.450832 | P | S | H | - | 165 | 64 | 12 | 68 | 68 | - | - |
| CL Dd 1 | - | -77.054443 | 39.452778 | P | S | T | - | 189 | - | 3.5 | - | - | - | I |
| CL Dd 9 | CL-00-7023 | -77.07917 | 39.491665 | P | H | T | 58 | 205 | 18 | 1 | 62 | - | 4 | FSC |
| CL Dd 21 | CL-69-0397 | -77.05278 | 39.425835 | P | - | H | 5 | 141 | 23 | 3 | 75 | 125 | 70 | I |
| CL Dd 22 | CL-72-0076 | -77.02417 | 39.422222 | P | - | H | 12 | 56 | 35 | 10 | 10 | 30 | -2 | I |
| CL Dd 23 | CL-71-0301 | -77.035004 | 39.430557 | P | - | H | 3 | 306 | 42.25 | 2.5 | 55 | 304 | 52 | I |
| CL Dd 25 | CL-72-0067 | -77.013336 | 39.416943 | P | - | H | 3 | 100 | 100 | 8 | 20 | 100 | 17 | I |
| CL Dd 26 | CL-70-0244 | -77.014725 | 39.432499 | P | - | H | 8 | 175 | 82 | 8 | 34 | 165 | 26 | I |
| CL Dd 27 | CL-66-0548 | -77.023331 | 39.442223 | P | - | H | 14 | 172 | 26 | 5 | 60 | 160 | 46 | I |
| CL Dd 33 | CL-68-0009 | -77.076668 | 39.465557 | P | S | H | 20 | 115 | 25 | 6 | 24 | 113 | 4 | I |
| CL Dd 35 | CL-68-0491 | -77.068054 | 39.465557 | P | S | H | - | 98 | 20 | 6 | 75 | 90 | - | I |
| CL Dd 49 | CL-73-1064 | -77 | 39.489166 | P | H | H | 9 | 130 | 59 | 12 | 45 | 120 | 36 | FSC |
| CL Dd 78 | CL-73-1801 | -77.019722 | 39.466389 | P | W | H | 15 | 85 | 25 | 6 | 38 | 50 | 23 | FSC |
| CL Dd 79 | CL-73-1874 | -77.01889 | 39.489445 | P | S | H | 62 | 200 | 64 | 4 | 35 | 42 | -27 | FSC |
| CL Dd 84 | CL-73-1327 | -77.071945 | 39.453609 | P | S | H | 8 | 85 | 85 | 15 | 45 | 60 | 37 | I |
| CL Dd 87 | CL-73-3417 | -77.080002 | 39.468334 | P | V | H | 8 | 85 | 30 | 8 | 30 | 85 | 22 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Dd 93 | CL-73-0803 | -77.048058 | 39.416943 | P | - | H | - | 85 | 60 | 10 | 30 | 35 | - | I |
| CL Dd 100 | CL-73-2945 | -77.037498 | 39.476112 | P | S | H | - | 100 | 21 | 5 | 60 | 100 | - | FSC |
| CL Dd 101 | CL-73-1014 | -77.049164 | 39.417221 | P | - | H | - | 125 | 24 | 8 | 15 | 50 | - | I |
| CL Dd 102 | CL-73-0889 | -77.074448 | 39.469444 | P | H | H | - | 120 | 59 | 6 | 40 | 120 | - | I |
| CL Dd 108 | CL-73-1374 | -77.072502 | 39.473332 | P | H | H | 8 | 160 | 32 | 10 | 75 | - | 67 | I |
| CL Dd 109 | CL-73-1811 | -77.043335 | 39.459999 | P | H | H | 50 | 205 | 92 | 6 | 60 | 90 | 10 | FSC |
| CL Dd 110 | CL-73-0305 | -77.019722 | 39.435555 | P | - | H | - | 105 | 32 | 9 | 45 | 45 | - | I |
| CL Dd 116 | CL-72-0863 | -77.012222 | 39.463333 | P | S | H | 2 | 265 | 20 | 2 | 40 | 260 | 38 | FSC |
| CL Dd 117 | CL-73-1860 | -77.015274 | 39.462502 | P | H | H | 10 | 125 | 22 | 5 | 30 | 100 | 20 | FSC |
| CL Dd 118 | CL-73-0107 | -77.055557 | 39.440834 | P | - | H | - | 109 | 63 | 8 | 43 | - | - | I |
| CL Dd 133 | CL-73-1194 | -77.050835 | 39.456944 | P | S | H | 7 | 120 | 20 | 12 | 45 | 120 | 38 | FSC |
| CL Dd 137 | CL-70-0342 | -77.067497 | 39.450279 | P | V | C | 17 | 306 | 25 | 5 | 40 | 300 | 23 | FSC |
| CL Dd 146 | CL-69-0502 | -77.010002 | 39.497223 | P | H | C | 25 | 212 | 32 | 2 | 65 | 210 | 40 | I |
| CL Dd 149 | CL-67-0127 | -77.022781 | 39.475277 | P | H | C | 75 | 74 | 46 | 16 | 28 | - | -47 | FSC |
| CL Dd 151 | CL-67-0132 | -77.071945 | 39.489166 | P | F | H | 3 | 120 | 5 | 4 | 45 | 120 | 42 | I |
| CL Dd 156 | CL-68-0096 | -77.001114 | 39.426666 | P | - | H | - | 81 | 48 | 6 | 30 | 50 | - | I |
| CL Dd 159 | CL-68-0197 | -77.003891 | 39.454723 | P | W | H | - | 180 | 20 | 1 | 30 | 180 | - | FSC |
| CL Dd 162 | CL-67-0121 | -77.003891 | 39.481945 | P | V | H | 17 | 245 | 21.75 | 1 | 9 | 230 | -8 | FSC |
| CL Dd 164 | CL-72-0745 | -77.067497 | 39.47889 | P | H | H | - | 95 | 40 | 12 | 45 | - | - | I |
| CL Dd 166 | CL-73-1596 | -77.023331 | 39.421112 | P | - | H | 16 | 203 | 38 | 12 | 52 | 170 | 36 | I |
| CL Dd 185 | CL-00-3772 | -77.060837 | 39.459999 | P | H | H | - | 107 | 12 | 2 | 60 | - | - | FSC |
| CL Dd 186 | CL-69-0009 | -77.057503 | 39.467499 | P | S | H | - | 66 | 23 | 8 | 20 | 25 | - | FSC |
| CL Dd 189 | CL-71-0426 | -77.056663 | 39.447777 | P | - | H | 9 | 150 | 44 | 6 | 25 | 140 | 16 | I |
| CL Dd 192 | CL-88-1675 | -77.006386 | 39.417778 | P | H | H | - | 405 | 124 | 3 | 64 | 270 | - | I |
| CL Dd 193 | CL-88-2108 | -77.004723 | 39.418335 | P | S | H | - | 205 | 78 | 10 | 24 | 51 | - | I |
| CL De 1 | CL-01-4167 | -76.944168 | 39.41861 | P | S | C | 73 | 180 | - | 19 | 35 | 110 | -38 | FSC |
| CL De 4 | CL-00-1794 | -76.943337 | 39.468334 | P | S | C | 45 | 161 | 102 | 13 | 25 | 150 | -20 | I |
| CL De 12 | CL-00-0110 | -76.998337 | 39.498333 | P | H | H | - | 76 | 12 | 20 | - | - | - | I |
| CL Ec 2 | CL-00-7298 | -77.14917 | 39.366943 | P | S | H | 20 | 68 | - | 2 | 32 | - | 12 | FSC |
| CL Ec 3 | CL-00-7814 | -77.144722 | 39.366943 | P | S | H | 10 | 55 | 10 | 3 | 35 | - | 25 | FSC |
| CL Ec 4 | CL-00-8312 | -77.157776 | 39.364445 | P | S | U | 70 | 93 | - | 2 | 25 | 93 | -45 | FSC |
| CL Ec 5 | CL-00-9823 | -77.164719 | 39.364445 | P | H | U | 24 | 95 | 24 | 5 | 53 | 88 | 29 | FSC |
| CL Ec 7 | CL-02-0589 | -77.109444 | 39.37389 | P | S | S | 50 | 70 | 31 | 22 | 39 | 50 | -11 | FSC |
| CL Ec 8 | CL-02-1256 | -77.089722 | 39.374443 | P | S | H | 30 | 129 | 10 | 5 | 48 | 129 | 18 | FSC |
| CL Ec 9 | - | -77.105553 | 39.36861 | P | V | H | - | 41 | 30 | 3.3 | - | - | - | FSC |
| CL Ec 13 | - | -77.160278 | 39.366943 | P | S | U | - | 253 | 23 | 20 | 34 | - | - | FSC |
| CL Ec 14 | - | -77.158058 | 39.36639 | P | S | U | - | 100 | - | 6 | 34 | - | - | FSC |
| CL Ec 16 | CL-68-0340 | -77.147499 | 39.374168 | P | S | U | 37 | 430 | 40 | 38 | 20 | 430 | -17 | FSC |
| CL Ec 18 | - | -77.127777 | 39.366943 | P | S | U | - | - | - | 1 | - | - | - | FSC |
| CL Ec 19 | - | -77.128052 | 39.366943 | P | S | U | - | - | - | 1 | - | - | - | FSC |
| CL Ec 20 | CL-72-0333 | -77.144165 | 39.37389 | P | S | U | 18 | 300 | 20 | 7 | 50 | 300 | 32 | FSC |
| CL Ec 21 | - | -77.122498 | 39.387779 | P | S | H | - | 95 | 74 | 9 | 35 | - | - | I |
| CL Ec 29 | CL-73-2389 | -77.084168 | 39.414722 | P | S | H | 20 | 200 | 23 | 5 | 10 | 60 | -10 | I |
| CL Ec 31 | CL-73-1068 | -77.103889 | 39.377777 | P | H | H | - | 200 | 24 | 1.5 | 20 | 200 | - | I |
| CL Ec 35 | CL-73-1221 | -77.105408 | 39.378458 | P | H | H | 51 | 140 | 53 | 10 | 70 | 140 | 19 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Ec 37 | CL-71-0228 | -77.085831 | 39.411945 | P | S | H | 18 | 122 | 25.5 | 9 | 5 | 50 | -13 | I |
| CL Ec 38 | CL-67-0361 | -77.083885 | 39.415279 | P | H | H | - | 88 | 23 | 8 | 54 | 65 | - | I |
| CL Ec 46 | CL-67-0608 | -77.115837 | 39.38028 | P | H | H | 18 | 124 | 21 | 2 | 48 | - | 30 | I |
| CL Ec 47 | CL-69-0286 | -77.155281 | 39.362499 | P | S | H | 75 | 125 | 22 | 4 | 75 | 110 | 0 | FSC |
| CL Ec 48 | CL-68-0027 | -77.15583 | 39.362221 | P | S | H | 60 | 220 | 20 | 5 | 50 | 220 | -10 | FSC |
| CL Ec 52 | CL-68-0308 | -77.087502 | 39.370556 | P | H | H | 26 | 133 | 26 | 6 | 60 | 133 | 34 | FSC |
| CL Ec 54 | CL-69-0138 | -77.10611 | 39.36861 | P | S | H | 40 | 93 | 69.5 | 10 | 40 | 88 | 0 | FSC |
| CL Ec 56 | CL-72-0578 | -77.124443 | 39.413334 | P | H | H | - | 90 | 48 | 10 | 35 | 55 | - | I |
| CL Ec 59 | CL-70-0363 | -77.121948 | 39.387501 | P | S | H | 145 | 150 | 147 | 12 | 70 | 75 | -75 | I |
| CL Ec 62 | CL-72-0430 | -77.159721 | 39.371387 | P | H | U | 20 | 350 | 42 | 1 | 40 | - | 20 | I |
| CL Ec 66 | CL-71-0387 | -77.156113 | 39.358334 | P | S | H | 15 | 145 | 30 | 1 | 10 | 130 | -5 | FSC |
| CL Ec 67 | CL-71-0306 | -77.15583 | 39.358055 | P | S | H | 35 | 320 | 40 | 1 | 80 | 320 | 45 | FSC |
| CL Ec 68 | CL-72-0356 | -77.141388 | 39.363888 | P | S | H | 15 | 160 | 18 | 4 | 30 | 160 | 15 | FSC |
| CL Ec 69 | CL-72-0762 | -77.09861 | 39.404167 | P | H | H | - | 158 | 18 | 2 | 50 | 158 | - | I |
| CL Ec 70 | CL-71-0200 | -77.084442 | 39.370277 | P | S | H | 40 | 89 | 42 | 7 | 30 | 50 | -10 | FSC |
| CL Ec 74 | CL-00-2271 | -77.112503 | 39.410832 | P | S | H | - | 64 | 34 | 8 | - | - | - | I |
| CL Ec 75 | CL-73-2722 | -77.089531 | 39.383057 | P | V | U | - | 248 | 21 | 25 | 26 | 210 | - | I |
| CL Ec 77 | CL-72-0849 | -77.096108 | 39.39611 | P | S | H | 21 | 96 | 23 | 11 | 30 | 70 | 9 | I |
| CL Ec 82 | CL-73-4731 | -77.101387 | 39.413055 | P | S | H | - | 300 | 21 | 1 | 50 | 300 | - | I |
| CL Ec 88 | CL-68-0027 | -77.15583 | 39.362221 | P | S | U | 30 | - | - | 0 | - | - | - | I |
| CL Ec 89 | CL-68-0027 | -77.15583 | 39.362221 | P | S | U | 40 | - | - | 0 | - | - | - | I |
| CL Ec 90 | CL-68-0027 | -77.15583 | 39.362221 | P | S | U | 20 | - | - | 0 | - | - | - | I |
| CL Ec 91 | CL-68-0279 | -77.15583 | 39.362221 | P | S | U | 3 | - | - | 0 | - | - | - | I |
| CL Ec 92 | CL-81-1764 | -77.16111 | 39.359165 | P | W | C | 27 | 205 | 39 | 6 | 20 | 50 | -7 | FSC |
| CL Ec 93 | CL-73-9335 | -77.147499 | 39.357224 | P | V | P | 10 | 400 | 20 | 5 | 62 | 400 | 52 | FSC |
| CL Ec 95 | CL-73-2535 | -77.147224 | 39.357498 | P | V | P | 3 | 150 | 21 | 50 | 12 | 75 | 9 | FSC |
| CL Ec 96 | CL-04-0987 | -77.14917 | 39.356945 | P | V | U | - | 78 | 22 | 10 | 5 | 25 | - | FSC |
| CL Ec 97 | CL-05-0505 | -77.14917 | 39.356945 | P | V | U | 15 | 295 | 20.5 | 5 | 40 | - | 25 | FSC |
| CL Ec 98 | CL-04-7799 | -77.14917 | 39.356945 | P | V | U | - | 96 | 21 | 8 | 14 | - | - | FSC |
| CL Ec 99 | CL-04-7800 | -77.14917 | 39.356945 | P | V | U | - | 125 | 21 | 7 | 50 | 125 | - | FSC |
| CL Ec 100 | CL-04-7378 | -77.14917 | 39.356945 | P | V | U | 35 | 140 | 12 | 1.9 | - | - | - | FSC |
| CL Ec 101 | CL-05-0506 | -77.14917 | 39.356945 | P | V | U | - | - | - | 0 | - | - | - | FSC |
| CL Ec 102 | CL-73-9874 | -77.145554 | 39.357777 | P | S | T | 40 | 325 | 56 | 5 | 30 | 325 | -10 | FSC |
| CL Ec 103 | CL-73-6740 | -77.146942 | 39.355835 | P | H | T | 11 | 185 | 21 | 5 | 50 | 185 | 39 | FSC |
| CL Ec 103a | CL-73-9460 | -77.146942 | 39.355835 | P | H | T | 11 | 300 | 21 | 8 | 50 | 300 | 39 | FSC |
| CL Ec 104 | CL-73-6740 | -77.145836 | 39.354999 | P | H | U | 11 | 185 | - | 0 | - | - | - | FSC |
| CL Ec 106 | CL-81-0573 | -77.140556 | 39.395832 | P | H | H | - | 260 | 28 | 2 | 29 | 154 | - | FSC |
| CL Ec 108 | CL-81-5018 | -77.146385 | 39.392223 | P | H | H | 34 | 225 | 39 | 12 | 42 | 45 | 8 | FSC |
| CL Ec 109 | CL-81-5025 | -77.144722 | 39.393612 | P | S | H | 34 | 285 | 40 | 12 | 42 | 45 | 8 | - |
| CL Ec 110 | CL-81-3219 | -77.147224 | 39.398613 | P | S | H | 45 | 245 | 51 | 12 | 86 | 93 | 41 | - |
| CL Ec 111 | CL-81-3177 | -77.146668 | 39.395001 | P | S | H | 70 | 403 | 82 | 5.4 | 74 | 341 | 4 | - |
| CL Ec 112 | CL-81-4345 | -77.140556 | 39.396389 | P | S | H | - | 400 | 38 | 3 | 37 | 130 | - | - |
| CL Ec 113 | CL-74-0487 | -77.141945 | 39.393612 | P | H | H | - | 400 | 28 | 5 | 25 | 180 | - | - |
| CL Ec 114 | CL-81-2356 | -77.141388 | 39.392776 | P | S | H | 26 | 80 | 28 | 25 | 40 | 75 | 14 | - |
| CL Ec 115 | CL-81-0404 | -77.142502 | 39.395557 | P | S | H | - | 320 | 28 | 3 | 25 | 190 | - | - |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Ec 116 | CL-81-3226 | -77.144447 | 39.396668 | P | S | H | - | 280 | 84 | 4 | 46 | 141 | - | - |
| CL Ec 142 | CL-81-3225 | -77.14448 | 39.396841 | P | S | H | 80 | 200 | 89 | 7.5 | 45 | 126 | -35 | FSC |
| CL Ed 1 | - | -77.010834 | 39.355278 | P | S | U | - | 100 | 20 | 25 | - | - | - | FSC |
| CL Ed 2 | - | -77.011108 | 39.354721 | P | S | U | - | 100 | 30 | 20 | - | - | - | FSC |
| CL Ed 4 | CL-00-4289 | -77.00972 | 39.354721 | P | S | U | 8 | 176 | 8 | 5.25 | 8 | 85 | 0 | FSC |
| CL Ed 10 | CL-02-3059 | -77.062775 | 39.361111 | P | S | H | 50 | 64 | 11.5 | 25 | 30 | 30 | -20 | I |
| CL Ed 26 | CL-71-0469 | -77.035835 | 39.374443 | P | H | H | 40 | 64 | 18 | 8 | 40 | 50 | 0 | FSC |
| CL Ed 27 | CL-70-0315 | -77.034447 | 39.375832 | P | - | H | 30 | 100 | 33 | 30 | 35 | 100 | 5 | I |
| CL Ed 32 | CL-73-1696 | -77.017776 | 39.404167 | P | - | H | - | 100 | 22 | 10 | 35 | - | - | I |
| CL Ed 34 | CL-67-0144 | -77.013886 | 39.408333 | P | - | H | - | 96 | 70 | 8 | 46 | 82 | - | I |
| CL Ed 39 | CL-72-0113 | -77.017502 | 39.36861 | P | H | H | 15 | 56 | 30 | 10 | 40 | 40 | 25 | FSC |
| CL Ed 54 | CL-73-1047 | -77.01667 | 39.400555 | P | - | H | - | 100 | 53 | 25 | 17 | 60 | - | I |
| CL Ed 80 | CL-71-0152 | -77.03333 | 39.413887 | P | - | H | - | 150 | 78 | 6 | 33 | 149 | - | I |
| CL Ed 82 | CL-67-0147 | -77.07222 | 39.391945 | P | - | H | - | 80 | 23 | 10 | 28 | 38 | - | I |
| CL Ed 83 | CL-71-0276 | -77.026947 | 39.366943 | P | H | H | 60 | 100 | 65 | 15 | 30 | 100 | -30 | FSC |
| CL Ed 84 | CL-70-0430 | -77.057777 | 39.368889 | P | S | H | 39 | 70 | 39 | 15 | 40 | 50 | 1 | I |
| CL Ed 85 | CL-72-0292 | -77.049721 | 39.405556 | P | - | H | - | 200 | 27 | 2 | 60 | 200 | - | I |
| CL Ed 89 | CL-73-0635 | -77.060837 | 39.361111 | P | S | H | 40 | 140 | 28 | 30 | 40 | 140 | 0 | I |
| CL Ed 90 | CL-71-0046 | -77.076111 | 39.411945 | P | - | H | - | 130 | 130 | 7 | 43 | 130 | - | I |
| CL Ed 93 | CL-67-0254 | -77.056663 | 39.377224 | P | - | H | 35 | 65 | 35 | 10 | 30 | 35 | -5 | I |
| CL Ed 95 | CL-73-1365 | -77.017776 | 39.364166 | P | S | H | 35 | 110 | 93 | 10 | 35 | 100 | 0 | FSC |
| CL Ed 96 | CL-72-0170 | -77.019165 | 39.366943 | P | H | H | 75 | 140 | 88 | 10 | 30 | 140 | -45 | FSC |
| CL Ed 97 | CL-68-0047 | -77.068886 | 39.371944 | P | H | H | 30 | 88 | 30 | 5 | 55 | 65 | 25 | I |
| CL Ed 99 | CL-69-0060 | -77.074722 | 39.376388 | P | - | H | - | 110 | 18 | 4 | 40 | 110 | - | I |
| CL Ed 100 | CL-73-2061 | -77.006111 | 39.384724 | P | - | H | 50 | 145 | 60 | 20 | 30 | 70 | -20 | I |
| CL Ed 105 | CL-72-0111 | -77.003052 | 39.369446 | P | H | H | 25 | 203 | 30 | 4 | 45 | 198 | 20 | I |
| CL Ed 110 | CL-69-0101 | -77.028336 | 39.382221 | P | - | H | 5 | 65 | 20 | 10 | 40 | 50 | 35 | I |
| CL Ed 112 | CL-71-0388 | -77.057503 | 39.369999 | P | S | H | 49 | 100 | 50 | 8 | 55 | 55 | 6 | I |
| CL Ed 113 | CL-72-0392 | -77.015274 | 39.369721 | P | H | H | 3 | 120 | 20 | 8 | 50 | 120 | 47 | FSC |
| CL Ed 120 | CL-73-7789 | -77.08139 | 39.368889 | P | H | H | 24 | 120 | 26 | 5 | 40 | 115 | 16 | I |
| CL Ed 121 | CL-81-1831 | -77.076386 | 39.367779 | P | S | H | 14 | 350 | 20 | 2 | 60 | 330 | 46 | I |
| CL Ed 122 | CL-73-6790 | -77.071945 | 39.365276 | P | S | H | 20 | 305 | 28 | 2 | 48 | 90 | 28 | I |
| CL Ed 123 | CL-73-0759 | -77.068611 | 39.363609 | P | S | H | 36 | 400 | 47 | 15 | 120 | - | 84 | I |
| CL Ed 124 | CL-81-2447 | -77.058334 | 39.364445 | P | H | C | 58 | 125 | 61 | 10 | 50 | 58 | -8 | I |
| CL Ed 125 | CL-81-1340 | -77.041664 | 39.371387 | P | H | H | 2 | 145 | 61 | 12 | 34 | 130 | 32 | I |
| CL Ed 126 | CL-81-5802 | -77.031113 | 39.371113 | P | H | H | 50 | 260 | 57 | 6 | 38 | 176 | -12 | FSC |
| CL Ed 127 | CL-73-2239 | -77.020836 | 39.360001 | P | S | C | 5 | 60 | 23 | 20 | 20 | 20 | 15 | I |
| CL Ed 128 | CL-73-7299 | -77.019447 | 39.360279 | P | S | N | 10 | 120 | 40 | 15 | 45 | 120 | 35 | I |
| CL Ed 129 | CL-88-0938 | -77.012497 | 39.361111 | P | H | H | 24 | 165 | 39 | 10 | 35 | 80 | 11 | I |
| CL Ed 130 | CL-88-0564 | -77.012779 | 39.354443 | P | V | H | 15 | 145 | 23 | 10 | 7 | 12 | -8 | I |
| CL Ed 131 | CL-88-1195 | -77.04361 | 39.365833 | P | S | H | 30 | 150 | 40 | 12 | 45 | 50 | 15 | FSC |
| CL Ed 132 | CL-73-7789 | -77.08139 | 39.368889 | P | H | U | - | - | - | 0 | - | - | - | FSC |
| CL Ed 133 | CL-73-1804 | -77.027222 | 39.363056 | P | H | P | 40 | 150 | 40 | 3 | 30 | 150 | -10 | FSC |
| CL Ed 134 | CL-73-2984 | -77.028336 | 39.361946 | P | H | P | 60 | 115 | 65 | 7 | - | - | - | FSC |
| CL Ed 135 | CL-73-9722 | -77.029442 | 39.363056 | P | S | P | 50 | 165 | 51 | 10 | 51 | 75 | 1 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL Ed 136 | CL-05-7723 | -77.03611 | 39.361111 | P | S | N | 38 | 200 | 61 | 18 | 30 | - | -8 | FSC |
| CL Ed 137 | CL-05-7416 | -77.038612 | 39.361389 | P | S | U | 56 | 300 | 56 | 1.5 | 38 | 75 | -18 | FSC |
| CL Ed 138 | CL-05-7621 | -77.038612 | 39.361389 | P | S | U | 32 | 215 | 32 | 2 | 44 | - | 12 | FSC |
| CL Ed 139 | CL-74-0385 | -77.039444 | 39.365833 | P | H | H | 18 | 165 | 21 | 10 | 46 | 88 | 28 | FSC |
| CL Ed 140 | CL-81-0384 | -77.060837 | 39.361946 | P | S | H | 30 | 185 | 38 | 10 | 50 | 185 | 20 | I |
| CL Ed 141 | CL-73-5213 | -77.058334 | 39.364445 | P | H | C | 55 | 165 | 68 | 6 | 45 | 160 | -10 | I |
| CL Ed 142 | CL-73-3973 | -77.058334 | 39.364445 | P | H | C | 40 | 165 | 58 | 5 | 55 | 165 | 15 | I |
| FR Ad 2 | FR-01-4515 | -77.463333 | 39.712502 | BR | W | H | 35 | 36 | 35 | 10 | 15 | 25 | -20 | I |
| FR Ad 3 | FR-00-6084 | -77.45 | 39.689445 | BR | S | H | 6 | 130 | 33 | 2.5 | 70 | 110 | 64 | I |
| FR Ad 4 | FR-00-6682 | -77.461388 | 39.704723 | BR | V | H | - | 86 | 45 | 5 | 35 | 50 | - | I |
| FR Ad 5 | FR-01-5063 | -77.456108 | 39.7 | BR | V | H | 15 | 50 | 16 | 10 | 15 | 40 | 0 | I |
| FR Ad 6 | FR-01-4437 | -77.455559 | 39.7 | BR | V | H | 12 | 47 | 13 | 5 | 12 | 30 | 0 | I |
| FR Ad 7 | FR-00-9642 | -77.464165 | 39.70861 | BR | V | H | 32 | 62 | 32 | 10 | 5 | 25 | -27 | I |
| FR Ad 8 | FR-01-0459 | -77.464165 | 39.71667 | BR | V | H | 30 | 45 | 35.5 | 10 | 10 | 15 | -20 | I |
| FR Ad 9 | FR-01-0480 | -77.463333 | 39.704166 | BR | V | H | 1 | 45 | 20 | 6 | 10 | 30 | 9 | I |
| FR Ad 10 | FR-01-1098 | -77.436668 | 39.708332 | BR | V | H | 44 | 60 | 45 | 7 | 30 | 50 | -14 | I |
| FR Ad 12 | - | -77.459724 | 39.704166 | BR | S | T | - | 200 | - | 30 | - | - | - | I |
| FR Ad 13 | - | -77.459999 | 39.703888 | BR | V | T | - | 185 | - | 30 | 5 | - | - | I |
| FR Ad 14 | - | -77.459724 | 39.703888 | BR | V | T | - | 185 | - | 30 | 5 | - | - | I |
| FR Ad 15 | FR-01-4613 | -77.454719 | 39.674168 | BR | S | H | 10 | 35 | 11 | 8 | 15 | 28 | 5 | I |
| FR Ad 16 | FR-01-8014 | -77.452499 | 39.685276 | BR | S | H | 35 | 55 | 37 | 8 | 16 | 40 | -19 | I |
| FR Ad 17 | FR-02-1170 | -77.471664 | 39.675556 | BR | S | H | 44 | 56 | 46 | 12 | 20 | 35 | -24 | I |
| FR Ad 18 | FR-01-7898 | -77.419441 | 39.705276 | BR | S | H | 20 | 38 | 22 | 8 | 20 | 31 | 0 | I |
| FR Ad 19 | FR-02-3518 | -77.429726 | 39.716389 | BR | S | H | 25 | 70 | 34 | 10 | 20 | 50 | -5 | I |
| FR Ad 20 | FR-02-4156 | -77.484444 | 39.695278 | BR | S | H | 15 | 70 | 21 | 15 | 18 | 45 | 3 | I |
| FR Ad 21 | FR-02-5151 | -77.490837 | 39.691387 | BR | S | H | 38 | 45 | 40.5 | 10 | 18 | 36 | -20 | I |
| FR Ad 23 | FR-73-1438 | -77.491943 | 39.688888 | BR | S | H | 4 | 102 | 19 | 4 | 45 | - | 41 | I |
| FR Ad 24 | FR-73-7153 | -77.487221 | 39.694443 | BR | S | H | 10 | 250 | 20 | 3 | 10 | 245 | 0 | I |
| FR Ad 25 | FR-73-0699 | -77.463059 | 39.70861 | BR | S | H | 37 | 200 | 39 | 6 | 30 | 100 | -7 | I |
| FR Ad 26 | FR-73-8005 | -77.459442 | 39.701668 | BR | S | H | 30 | 300 | 41 | 3.5 | 25 | 300 | -5 | I |
| FR Ad 27 | FR-73-7054 | -77.459168 | 39.701389 | BR | S | H | 68 | 140 | 20 | 20 | 20 | 135 | -48 | I |
| FR Ad 28 | FR-73-0528 | -77.449722 | 39.703609 | BR | S | H | 10 | 322 | 41 | 2 | 20 | - | 10 | I |
| FR Ad 29 | FR-73-7029 | -77.448891 | 39.703888 | BR | S | H | 36 | 150 | 41 | 10 | 5 | 150 | -31 | I |
| FR Ad 30 | FR-73-3144 | -77.43 | 39.718613 | BR | S | H | 21 | 175 | 25 | 8 | 20 | 100 | -1 | I |
| FR Ad 31 | FR-73-2249 | -77.449722 | 39.689445 | BR | S | H | 8 | 223 | 17 | 30 | 29 | 35 | 21 | I |
| FR Ad 32 | FR-73-7090 | -77.449722 | 39.689999 | BR | S | H | 34 | 250 | 39 | 8 | 48 | 250 | 14 | I |
| FR Ad 33 | FR-73-4712 | -77.4375 | 39.679443 | BR | H | U | 5 | 200 | 17 | 15 | 52 | 62 | 47 | I |
| FR Ad 34 | FR-73-5767 | -77.436386 | 39.679165 | BR | H | H | 10 | 400 | 19 | 2 | 60 | 90 | 50 | I |
| FR Ad 35 | FR-73-5457 | -77.467224 | 39.677502 | BR | S | H | 30 | 150 | 34 | 25 | 29 | 150 | -1 | I |
| FR Ad 37 | FR-73-3239 | -77.468613 | 39.677223 | BR | S | H | 35 | 100 | 39 | 10 | 3 | 100 | -32 | I |
| FR Ad 38 | FR-73-0646 | -77.471108 | 39.675835 | BR | S | H | 49 | 320 | 64 | 3 | 52 | - | 3 | I |
| FR Ad 39 | FR-65-0149 | -77.45639 | 39.68 | BR | F | T | 0 | 115 | 43 | 30 | 45 | - | 45 | I |
| FR Ad 40 | FR-73-3721 | -77.459442 | 39.704723 | BR | S | T | 3 | 300 | 20 | 7 | 20 | 295 | 17 | I |
| FR Ae 1 | FR-00-0846 | -77.358612 | 39.674168 | P | S | H | 79 | 179 | 75 | 5 | 16 | 179 | -63 | C |
| FR Ae 3 | FR-00-6384 | -77.368057 | 39.672222 | P | H | H | 24 | 53 | 32.75 | 10 | 25 | - | 1 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ae 4 | FR-00-3738 | -77.358887 | 39.676945 | BR | H | H | - | 125 | 125 | 20 | 40 | 100 | - | CSC |
| FR Ae 5 | FR-00-0855 | -77.334724 | 39.688332 | P | H | H | 3 | 100 | 6 | 7 | 21 | 100 | 18 | FSC |
| FR Ae 9 | FR-00-4141 | -77.345833 | 39.715 | P | H | H | - | 75 | 10 | 1.5 | 20 | 75 | - | FSC |
| FR Ae 10 | FR-01-9863 | -77.354164 | 39.713333 | P | S | S | - | 150 | 31 | 10 | 37 | 94 | - | FSC |
| FR Ae 14 | FR-00-9906 | -77.35083 | 39.686943 | P | S | H | 73 | 164 | 77 | 1 | 14 | 164 | -59 | FSC |
| FR Ae 16 | FR-01-4611 | -77.41667 | 39.672222 | BR | S | H | - | 50 | 46 | 6 | 10 | 40 | - | CSC |
| FR Ae 17 | FR-00-6376 | -77.406387 | 39.68 | BR | S | H | - | 87 | 85 | 20 | 52 | 57 | - | I |
| FR Ae 20 | FR-01-7845 | -77.414444 | 39.702221 | BR | S | H | 18 | 35 | 19 | 10 | 12 | 32 | -6 | I |
| FR Ae 21 | FR-01-3825 | -77.350555 | 39.718887 | P | V | H | 28 | 42 | 32 | 4 | 10 | 12.5 | -18 | FSC |
| FR Ae 22 | FR-01-4796 | -77.350281 | 39.718334 | P | S | H | 42 | 65 | 42 | 3 | 11 | 14 | -31 | FSC |
| FR Ae 24 | FR-00-0095 | -77.335281 | 39.689167 | P | V | H | - | 83 | 10 | 15 | 30 | - | - | FSC |
| FR Ae 27 | FR-01-2899 | -77.343056 | 39.713333 | P | V | H | 30 | 40 | 38 | 8 | 10 | 34 | -20 | FSC |
| FR Ae 28 | - | -77.353332 | 39.681946 | BR | S | T | - | 850 | - | 80 | 10 | - | - | CSC |
| FR Ae 31 | - | -77.373337 | 39.7 | BR | V | P | - | 161 | 20 | 160 | 4.5 | 12 | - | I |
| FR Ae 35 | FR-00-8937 | -77.383057 | 39.667221 | P | S | H | - | 23 | 23 | 3 | 15 | 23 | - | FSC |
| FR Ae 37 | FR-65-0432 | -77.380554 | 39.698612 | BR | S | P | 30 | 212 | 43 | 109 | 10 | 175 | -20 | CSC |
| FR Ae 38 | FR-69-0288 | -77.371391 | 39.699722 | BR | V | P | - | 250 | 76 | 100 | 39 | - | - | I |
| FR Ae 40 | FR-73-5184 | -77.398331 | 39.668056 | BR | H | H | 15 | 325 | 41 | 1 | 45 | 55 | 30 | CSC |
| FR Ae 41 | FR-73-5147 | -77.396385 | 39.691113 | BR | S | H | 100 | 300 | 105 | 5 | 87 | 300 | -13 | CSC |
| FR Ae 42 | FR-73-5784 | -77.394165 | 39.692223 | BR | S | H | 125 | 200 | 49 | 30 | 50 | 200 | -75 | CSC |
| FR Ae 43 | FR-73-3906 | -77.348053 | 39.7 | P | H | H | 65 | 170 | 72 | 5 | 35 | 170 | -30 | CSC |
| FR Ae 44 | FR-73-8113 | -77.356392 | 39.698612 | BR | S | H | 9 | 125 | 21 | 15 | 30 | 115 | 21 | I |
| FR Ae 45 | FR-73-5146 | -77.35611 | 39.697777 | BR | S | H | 43 | 325 | 48 | 5 | 40 | 325 | -3 | I |
| FR Ae 46 | FR-73-2025 | -77.348892 | 39.71611 | P | H | H | 25 | 320 | 32 | 4 | 30 | 320 | 5 | FSC |
| FR Ae 47 | FR-73-2806 | -77.339165 | 39.718613 | P | F | H | 3 | 433 | 21 | 1 | 15 | 332 | 12 | I |
| FR Ae 48 | FR-73-3694 | -77.339165 | 39.719166 | P | F | H | 8 | 275 | 20 | 3 | 22 | 275 | 14 | I |
| FR Ae 49 | FR-73-4725 | -77.370834 | 39.668335 | P | S | H | 173 | 200 | 179 | 30 | 40 | 200 | -133 | C |
| FR Ae 50 | FR-71-0001 | -77.402779 | 39.715557 | BR | S | T | 3 | 85 | 11 | 8 | 15 | - | 12 | I |
| FR Ae 51 | FR-04-8064 | -77.405556 | 39.691387 | BR | S | T | 15 | 145 | 35 | 40 | 10 | - | -5 | I |
| FR Ae 52 | FR-73-8689 | -77.405281 | 39.691387 | BR | S | T | 15 | 335 | 33 | 6 | 45 | 300 | 30 | I |
| FR Ae 53 | FR-73-8351 | -77.393608 | 39.693333 | BR | S | P | 84 | 400 | 91 | 20 | 6 | 220 | -78 | I |
| FR Ae 54 | FR-73-8245 | -77.334999 | 39.686943 | P | V | C | 12 | 225 | 81 | 10 | 100 | 200 | 88 | FSC |
| FR Ae 55 | FR-03-6224 | -77.334724 | 39.68639 | P | V | N | 16 | 117 | - | 10 | 23 | 105 | 7 | FSC |
| FR Ae 56 | FR-73-8095 | -77.355003 | 39.676109 | P | S | U | 14 | 700 | 28 | 20 | 60 | 700 | 46 | FSC |
| FR Ae 57 | FR-73-3688 | -77.345276 | 39.676109 | P | V | T | 10 | 300 | 22 | 55 | 20 | 300 | 10 | FSC |
| FR Ae 58 | FR-73-2668 | -77.345558 | 39.676109 | P | V | T | 11 | 300 | 21 | 55 | 30 | 300 | 19 | FSC |
| FR Ae 59 | FR-73-8096 | -77.34417 | 39.676666 | P | V | T | 10 | 425 | 50 | 400 | 40 | 425 | 30 | FSC |
| FR Ae 60 | FR-73-8105 | -77.341392 | 39.68111 | P | V | U | 10 | 475 | 47 | 500 | 40 | 475 | 30 | FSC |
| FR Af 2 | FR-00-6437 | -77.283608 | 39.671944 | P | H | H | 2 | 50 | 41.8 | 0.5 | 25 | - | 23 | FSC |
| FR Af 4 | FR-00-4267 | -77.311111 | 39.711666 | P | H | H | 6 | 66 | 6 | 40 | - | - | - | FSC |
| FR Af 5 | FR-01-7602 | -77.308891 | 39.703609 | P | H | H | 4 | 135 | 12 | 3 | 27 | 130 | 23 | FSC |
| FR Af 6 | FR-00-8553 | -77.286941 | 39.708057 | P | H | H | 20 | 81 | 23 | 1 | 40 | 81 | 20 | FSC |
| FR Af 7 | FR-01-3997 | -77.28611 | 39.70861 | P | H | H | 4 | 146 | 12 | 9 | 23 | 140 | 19 | FSC |
| FR Af 8 | FR-01-0211 | -77.288887 | 39.696667 | P | S | H | - | 100 | 7 | 30 | 15 | 75 | - | FSC |
| FR Af 9 | FR-00-0115 | -77.274445 | 39.689724 | P | F | H | - | 67 | 4 | 3 | 7 | 67 | - | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Af 10 | FR-00-7713 | -77.316948 | 39.683056 | P | H | H | 6 | 91 | 29.5 | 5 | 20 | 91 | 14 | FSC |
| FR Af 11 | FR-01-0212 | -77.287224 | 39.680557 | P | S | H | - | 55 | 6.5 | 80 | 8 | 40 | - | FSC |
| FR Af 12 | FR-01-5405 | -77.261108 | 39.686112 | P | S | H | 4 | 98 | 9 | 8 | 11 | 75 | 7 | FSC |
| FR Af 13 | FR-02-1846 | -77.292503 | 39.668335 | P | S | S | - | 109 | 16 | 7 | 20 | 25 | - | FSC |
| FR Af 14 | FR-00-5620 | -77.303612 | 39.705833 | P | S | H | 4 | 72 | 8 | 15 | 17.5 | - | 13.5 | FSC |
| FR Af 16 | FR-01-8379 | -77.305557 | 39.700554 | P | S | S | - | 70 | 10 | 7 | 40 | 65 | - | FSC |
| FR Af 19 | FR-01-6612 | -77.254166 | 39.670834 | P | S | I | 3 | 123 | 10 | 0.5 | 60 | 123 | 57 | FSC |
| FR Af 21 | FR-72-0027 | -77.285553 | 39.690277 | P | S | H | 25 | 170 | 40 | 10 | 30 | 170 | 5 | I |
| FR Af 22 | FR-72-0106 | -77.285553 | 39.689724 | P | S | H | 34 | 95 | 40 | 100 | 40 | 95 | 6 | I |
| FR Af 23 | FR-71-0473 | -77.276947 | 39.674168 | P | H | H | - | 202 | 20 | 50 | 30 | 200 | - | FSC |
| FR Af 24 | FR-03-5425 | -77.3125 | 39.697777 | P | S | Z | - | 161 | 23 | 5 | 30 | 97 | - | FSC |
| FR Af 25 | FR-72-0319 | -77.288887 | 39.708057 | P | S | H | - | 302 | 35.5 | 8 | 25 | - | - | FSC |
| FR Af 26 | FR-73-5865 | -77.328331 | 39.716389 | P | S | H | 17 | 200 | 20 | 15 | 30 | 195 | 13 | I |
| FR Af 27 | FR-73-7155 | -77.318337 | 39.7 | P | G | U | 5 | 365 | 41 | 65 | 0.5 | 15 | -4.5 | I |
| FR Af 28 | FR-73-2704 | -77.309166 | 39.702778 | P | S | H | 20 | 145 | 31 | 15 | 20 | 145 | 0 | FSC |
| FR Af 29 | FR-73-2705 | -77.308609 | 39.703335 | P | S | H | 20 | 145 | 31 | 15 | 20 | 145 | 0 | FSC |
| FR Af 30 | FR-73-3321 | -77.309998 | 39.702221 | P | S | D | 26 | 120 | 32 | 15 | 30 | 120 | 4 | FSC |
| FR Af 31 | FR-73-6160 | -77.273331 | 39.712502 | P | F | H | 14 | 200 | 19 | 4 | 30 | 160 | 16 | FSC |
| FR Af 32 | FR-73-8650 | -77.272499 | 39.713333 | P | F | H | 15 | 225 | 20 | 15 | 30 | 70 | 15 | FSC |
| FR Af 33 | FR-73-4363 | -77.260002 | 39.685276 | P | S | H | 10 | 280 | 21 | 6 | 39 | 280 | 29 | FSC |
| FR Af 34 | FR-73-3771 | -77.250832 | 39.682777 | P | S | H | 7 | 125 | 41 | 12 | 40 | 50 | 5 | FSC |
| FR Af 35 | FR-73-6332 | -77.312225 | 39.677502 | P | H | H | 9 | 125 | 19 | 20 | 22 | 125 | 13 | I |
| FR Af 36 | FR-73-5601 | -77.326668 | 39.703335 | P | V | C | 12 | 200 | 20 | 14 | 60 | 200 | 48 | FSC |
| FR Af 37 | FR-73-5970 | -77.307777 | 39.717224 | P | S | C | 60 | 150 | 20 | 10 | 40 | 145 | -20 | FSC |
| FR Af 38 | FR-03-9421 | -77.294724 | 39.708332 | P | S | R | 25 | 100 | 24 | 1 | 20 | - | -5 | FSC |
| FR Af 40 | FR-73-6411 | -77.253334 | 39.684166 | P | S | H | 6 | 325 | 20 | 8 | 42 | 95 | 36 | - |
| FR Af 41 | FR-88-0426 | -77.328331 | 39.717777 | P | S | H | 8 | 200 | 38 | 50 | 23 | 200 | 15 | I |
| FR Ag 1 | FR-00-5983 | -77.241386 | 39.679722 | P | H | H | 8 | 62 | 12 | 6 | 18 | - | 10 | FSC |
| FR Ag 2 | FR-00-4398 | -77.246666 | 39.709721 | P | F | H | 13 | 135 | 13.5 | 12 | 40 | 85 | 27 | FSC |
| FR Ag 4 | FR-73-3802 | -77.241943 | 39.705555 | P | F | H | - | 170 | 19 | 6 | 55 | 170 | - | FSC |
| FR Ag 5 | FR-73-4293 | -77.241943 | 39.705276 | P | F | H | - | 170 | 20 | 15 | 40 | 170 | - | FSC |
| FR Bc 1 | FR-00-7635 | -77.557221 | 39.583057 | BR | S | U | 9 | 44 | 9 | 3 | 17 | 30 | 8 | FSC |
| FR Bc 2 | FR-00-2633 | -77.558334 | 39.586945 | BR | S | H | 30 | 59.5 | 33 | 20 | 21 | 21 | -9 | I |
| FR Bc 3 | FR-00-8781 | -77.556389 | 39.601112 | BR | S | H | 12 | 33 | 12 | 2.5 | 23 | 28 | 11 | I |
| FR Bc 4 | FR-00-1212 | -77.558609 | 39.589169 | BR | S | H | - | 47 | 12 | 5 | 28 | 39 | - | I |
| FR Bc 6 | FR-01-4123 | -77.557221 | 39.58333 | BR | S | H | 50 | 95 | 33 | 9 | 71 | 95 | 21 | I |
| FR Bc 7 | FR-01-9307 | -77.556946 | 39.588055 | BR | S | H | 16 | 90 | 26 | 4.5 | 72 | 90 | 56 | I |
| FR Bc 8 | FR-02-1610 | -77.557221 | 39.606388 | BR | F | H | 10 | 65.9 | 23 | 2 | 20 | 40 | 10 | I |
| FR Bc 9 | FR-02-1510 | -77.557503 | 39.60611 | BR | F | H | 16 | 42 | 20 | 10 | 22 | 30 | 6 | I |
| FR Bc 10 | FR-00-8732 | -77.508331 | 39.619999 | BR | V | H | 40 | 54 | 45 | 30 | 30.5 | 30.5 | -9.5 | I |
| FR Bc 11 | FR-00-8731 | -77.507774 | 39.621387 | BR | V | H | 25 | 40 | 25 | 30 | 24 | 24 | -1 | I |
| FR Bc 12 | FR-01-6647 | -77.508057 | 39.634167 | BR | S | H | 40 | 56 | 46 | 20 | 32 | 32 | -8 | I |
| FR Bc 13 | FR-01-9846 | -77.511108 | 39.638054 | BR | S | H | 14 | 48 | 36 | 6 | 34 | 40 | 20 | I |
| FR Bc 14 | - | -77.527496 | 39.607224 | BR | H | H | - | 80 | 13 | 9 | 30 | - | - | I |
| FR Bc 15 | FR-02-5165 | -77.507774 | 39.65361 | BR | S | H | 25 | 32 | 20 | 15 | 8 | 20 | -17 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Bc 17 | FR-73-4742 | -77.573059 | 39.583889 | BR | S | H | 48 | 125 | 53 | 10 | 48 | 125 | 0 | I |
| FR Bc 18 | FR-73-5903 | -77.569443 | 39.599724 | BR | S | H | 47 | 125 | 52 | 20 | 8 | 125 | -39 | I |
| FR Bc 19 | FR-73-5252 | -77.568886 | 39.604999 | BR | S | H | 55 | 175 | 59 | 15 | 24 | 175 | -31 | I |
| FR Bc 20 | FR-73-3588 | -77.560949 | 39.617735 | BR | S | H | 10 | 250 | 21 | 10 | 34 | 250 | 24 | FSC |
| FR Bc 21 | FR-73-6096 | -77.561668 | 39.618057 | BR | S | H | 50 | 200 | 55 | 4 | 45 | 200 | -5 | I |
| FR Bc 22 | FR-73-2154 | -77.559723 | 39.619999 | BR | S | H | 0 | 442 | 17 | 0.5 | 75 | 125 | 75 | I |
| FR Bc 23 | FR-73-2374 | -77.559998 | 39.620556 | BR | S | H | 9 | 205 | 18 | 4 | 49 | 60 | 40 | I |
| FR Bc 24 | FR-73-1280 | -77.559166 | 39.621666 | BR | H | H | 12 | 140 | 20 | 25 | 70 | 140 | 58 | I |
| FR Bc 25 | FR-73-8274 | -77.558334 | 39.620277 | BR | S | H | 55 | 250 | 63 | 4 | 38 | 250 | -17 | I |
| FR Bc 26 | FR-73-5086 | -77.556389 | 39.619721 | BR | S | H | 36 | 225 | 43 | 4 | 39 | 225 | 3 | I |
| FR Bc 27 | FR-73-0821 | -77.558052 | 39.614166 | BR | S | H | 24 | 220 | 29 | 5 | 30 | 220 | 6 | I |
| FR Bc 28 | FR-73-3004 | -77.556389 | 39.609444 | BR | H | H | 10 | 375 | 23 | 1 | 12 | 375 | 2 | I |
| FR Bc 29 | FR-73-7057 | -77.557777 | 39.604168 | BR | H | H | 30 | 400 | 35 | 2 | 48 | 400 | 18 | I |
| FR Bc 30 | FR-73-1665 | -77.557777 | 39.599167 | BR | H | H | 30 | 100 | 26 | 12 | 25 | 90 | -5 | I |
| FR Bc 31 | FR-73-7025 | -77.565002 | 39.593056 | BR | S | H | 4 | 150 | 20 | 3 | 40 | 150 | 36 | I |
| FR Bc 32 | FR-73-3541 | -77.559166 | 39.593887 | BR | S | H | 27 | 100 | 31 | 8 | 25 | 100 | -2 | I |
| FR Bc 33 | FR-73-4941 | -77.558052 | 39.593334 | BR | S | H | 30 | 116 | 36 | 10 | 30 | 110 | 0 | I |
| FR Bc 34 | FR-73-7677 | -77.557503 | 39.586388 | BR | S | H | 60 | 300 | 28 | 6 | 50 | 300 | -10 | I |
| FR Bc 35 | FR-73-5034 | -77.555557 | 39.584446 | BR | S | H | 35 | 125 | 43 | 40 | 41 | 125 | 6 | I |
| FR Bc 36 | FR-73-5195 | -77.553886 | 39.590279 | BR | H | H | 22 | 175 | 28 | 10 | 33 | 175 | 11 | I |
| FR Bc 37 | FR-73-7526 | -77.555557 | 39.58889 | BR | S | H | 34 | 200 | 40 | 5 | 16 | 200 | -18 | I |
| FR Bc 38 | FR-73-4220 | -77.557221 | 39.590279 | BR | S | H | 45 | 180 | 44 | 12 | 25 | 130 | -20 | I |
| FR Bc 39 | FR-73-0566 | -77.547775 | 39.603054 | BR | H | H | 12 | 75 | 20 | 10 | 22 | 75 | 10 | I |
| FR Bc 40 | FR-73-2655 | -77.547501 | 39.60389 | BR | H | H | 15 | 100 | 23 | 7 | 15 | 100 | 0 | I |
| FR Bc 41 | FR-73-4093 | -77.547501 | 39.604721 | BR | S | H | 39 | 125 | 43 | 10 | 27 | 125 | -12 | I |
| FR Bc 42 | FR-73-2950 | -77.546669 | 39.604721 | BR | H | H | 11 | 200 | 33 | 4 | 45 | 55 | 34 | I |
| FR Bc 43 | FR-73-1373 | -77.544724 | 39.604721 | BR | S | H | 15 | 120 | 20 | 50 | 21 | 120 | 6 | I |
| FR Bc 44 | FR-73-1969 | -77.544167 | 39.60611 | BR | S | H | 32 | 100 | 37 | 10 | 45 | 100 | 13 | I |
| FR Bc 45 | FR-73-1233 | -77.546112 | 39.606667 | BR | S | H | 1 | 322 | 18 | 1 | 60 | - | 59 | I |
| FR Bc 46 | FR-73-1188 | -77.54583 | 39.607224 | BR | S | H | 18 | 130 | 56 | 10 | 45 | - | 27 | I |
| FR Bc 47 | FR-73-1232 | -77.545555 | 39.607498 | BR | S | H | 21 | 154 | 41 | 50 | 42 | - | 21 | I |
| FR Bc 48 | FR-73-2536 | -77.545555 | 39.607224 | BR | S | H | 35 | 100 | 39 | 10 | 18 | 100 | -17 | I |
| FR Bc 49 | FR-73-1643 | -77.541946 | 39.612499 | BR | S | H | 49 | 151 | 18 | 8 | 50 | - | 1 | I |
| FR Bc 50 | FR-73-1051 | -77.541664 | 39.613056 | BR | S | H | 10 | 170 | 20 | 5 | 30 | 170 | 20 | I |
| FR Bc 51 | FR-73-1657 | -77.541115 | 39.613609 | BR | S | H | 9 | 126 | 18 | 20 | 50 | - | 41 | I |
| FR Bc 52 | FR-73-0743 | -77.540832 | 39.612499 | BR | S | H | 28 | 70 | 32 | 50 | 35 | 70 | 7 | I |
| FR Bc 53 | FR-73-1281 | -77.540276 | 39.613335 | BR | S | H | 15 | 115 | 22 | 20 | 30 | 115 | 15 | I |
| FR Bc 54 | FR-73-3192 | -77.557777 | 39.622223 | BR | S | H | 12 | 200 | 20 | 3 | 20 | 200 | 8 | I |
| FR Bc 55 | FR-73-8223 | -77.542221 | 39.615276 | BR | H | H | 35 | 175 | 41 | 10 | 55 | 175 | 20 | I |
| FR Bc 56 | FR-73-7041 | -77.542503 | 39.614445 | BR | H | H | 28 | 150 | 33 | 5 | 30 | 150 | 2 | I |
| FR Bc 57 | FR-73-4811 | -77.541389 | 39.613888 | BR | S | U | 36 | 175 | 40 | 12 | 15 | 175 | -21 | I |
| FR Bc 58 | FR-73-6478 | -77.53833 | 39.613888 | BR | S | H | 36 | 175 | 41 | 7 | 60 | 175 | 24 | I |
| FR Bc 59 | FR-73-4215 | -77.535278 | 39.612499 | BR | S | H | 21 | 210 | 29 | 20 | 25 | 210 | 4 | I |
| FR Bc 60 | FR-73-1624 | -77.534721 | 39.613335 | BR | S | H | 25 | 122 | 30 | 5 | 20 | 122 | -5 | I |
| FR Bc 61 | FR-73-4894 | -77.53389 | 39.613056 | BR | S | H | 50 | 125 | 56 | 12 | 25 | 125 | -25 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Bc 62 | FR-73-1960 | -77.534447 | 39.611946 | BR | S | H | 34 | 130 | 39 | 20 | 6 | 130 | -28 | I |
| FR Bc 63 | FR-73-2093 | -77.52861 | 39.610001 | BR | S | H | 29 | 75 | 33 | 6 | 15 | 75 | -14 | I |
| FR Bc 64 | FR-73-6454 | -77.532776 | 39.619446 | BR | S | H | 50 | 100 | 35 | 18 | 30 | 100 | -20 | I |
| FR Bc 65 | FR-73-2905 | -77.53333 | 39.620556 | BR | S | H | 6 | 225 | 17 | 2 | 35 | 225 | 29 | I |
| FR Bc 66 | FR-73-7905 | -77.526947 | 39.627224 | BR | S | H | 48 | 80 | 55 | 20 | 46 | 80 | -2 | I |
| FR Bc 67 | FR-73-4038 | -77.526108 | 39.628334 | BR | S | H | 12 | 75 | 19 | 15 | 28 | 75 | 16 | I |
| FR Bc 68 | FR-73-1933 | -77.525002 | 39.629166 | BR | S | H | 25 | 85 | 29 | 40 | 12 | 85 | -13 | I |
| FR Bc 69 | FR-73-5251 | -77.525559 | 39.630554 | BR | S | H | 42 | 225 | 47 | 4 | 20 | 225 | -22 | I |
| FR Bc 70 | FR-73-8037 | -77.52417 | 39.63028 | BR | S | H | 30 | 250 | 41 | 3 | 22 | 250 | -8 | I |
| FR Bc 71 | FR-73-1509 | -77.53083 | 39.587502 | BR | S | H | 16 | 150 | 17 | 9 | 24 | 41 | 8 | I |
| FR Bc 72 | FR-73-5754 | -77.541115 | 39.59 | BR | S | H | 12 | 400 | 20 | 1 | 48 | 400 | 36 | I |
| FR Bc 73 | FR-73-4260 | -77.541946 | 39.59 | BR | S | H | 60 | 250 | 20 | 3 | 10 | 230 | -50 | I |
| FR Bc 75 | FR-73-3074 | -77.534447 | 39.593887 | BR | S | H | 32 | 120 | 37 | 25 | 17 | 120 | -15 | I |
| FR Bc 76 | FR-73-2528 | -77.53389 | 39.593887 | BR | S | H | 40 | 150 | 46 | 5 | 10 | 150 | -30 | I |
| FR Bc 77 | FR-73-2961 | -77.53333 | 39.593887 | BR | S | H | 24 | 125 | 29 | 7 | 20 | 125 | -4 | I |
| FR Bc 78 | FR-73-8041 | -77.523056 | 39.591667 | BR | S | H | 20 | 150 | 34 | 40 | 20 | 150 | 0 | I |
| FR Bc 80 | FR-73-8350 | -77.526947 | 39.584721 | BR | S | H | 8 | 125 | 21 | 25 | 15 | 125 | 7 | I |
| FR Bc 81 | FR-73-5463 | -77.527222 | 39.591389 | BR | H | H | 15 | 75 | 30 | 20 | 28 | 70 | 13 | I |
| FR Bc 82 | FR-73-3967 | -77.526108 | 39.596943 | BR | S | H | 4 | 75 | 39 | 10 | 10 | 70 | 6 | I |
| FR Bc 83 | FR-73-6569 | -77.525002 | 39.600834 | BR | H | H | 75 | 84 | 81 | 20 | 61 | 84 | -14 | I |
| FR Bc 84 | FR-73-1482 | -77.525002 | 39.601112 | BR | H | H | 38 | 120 | 42 | 6 | 35 | 120 | -3 | I |
| FR Bc 85 | FR-73-7033 | -77.521668 | 39.604168 | BR | S | H | 80 | 125 | 87 | 12 | 31 | 125 | -49 | I |
| FR Bc 86 | FR-73-1435 | -77.503334 | 39.622501 | BR | V | H | 24 | 30 | 28 | 25 | 10 | 30 | -14 | I |
| FR Bc 87 | FR-73-1434 | -77.500557 | 39.631111 | BR | S | H | 38 | 95 | 43 | 10 | 30 | 95 | -8 | I |
| FR Bc 88 | FR-73-7585 | -77.515831 | 39.625832 | BR | S | H | 17 | 100 | 21 | 12 | 30 | 100 | 13 | I |
| FR Bc 89 | FR-73-0845 | -77.513611 | 39.640835 | BR | V | H | 10 | 125 | 20 | 7 | 20 | 60 | 10 | I |
| FR Bc 90 | FR-73-4281 | -77.513054 | 39.61639 | BR | S | H | 20 | 85 | 41 | 10 | 40 | 50 | 20 | I |
| FR Bc 91 | FR-73-2676 | -77.506111 | 39.610279 | BR | S | H | 10 | 215 | 24 | 4 | 25 | 150 | 15 | I |
| FR Bc 92 | FR-73-1617 | -77.503334 | 39.610279 | BR | S | H | 32 | 75 | 40 | 12 | 14 | 70 | -18 | I |
| FR Bc 93 | FR-73-3605 | -77.504723 | 39.600834 | BR | S | H | 49 | 200 | 53 | 6 | 34 | 200 | -15 | I |
| FR Bc 94 | FR-73-8345 | -77.5 | 39.592777 | BR | S | H | 6 | 500 | 32 | 1 | 70 | 500 | 64 | I |
| FR Bc 95 | FR-71-0089 | -77.519722 | 39.631943 | BR | S | R | 0 | 162 | 62 | 40 | 30 | - | 30 | I |
| FR Bc 96 | FR-65-0699 | -77.519722 | 39.616943 | BR | S | T | 0 | 116 | 39 | 9 | 40 | - | 40 | I |
| FR Bc 97 | FR-71-0448 | -77.512497 | 39.619721 | BR | S | T | 19 | 70 | 35 | 30 | 45 | - | 26 | I |
| FR Bd 1 | - | -77.431663 | 39.607777 | BR | V | U | - | - | - | 20 | - | - | - | I |
| FR Bd 5 | - | -77.483612 | 39.642223 | BR | S | T | - | 40.5 | - | 8.5 | - | - | - | I |
| FR Bd 6 | FR-01-8989 | -77.473892 | 39.646668 | BR | H | T | 35 | 230 | 57 | 25 | 12 | 38 | -23 | I |
| FR Bd 7 | FR-02-5349 | -77.446114 | 39.643055 | BR | V | U | 30 | 180 | 42.5 | 3.6 | 0 | 168 | -30 | I |
| FR Bd 8 | FR-02-5350 | -77.446388 | 39.643612 | BR | V | R | 15 | 127 | 28 | 24 | 0 | 105 | -15 | I |
| FR Bd 11 | FR-00-5395 | -77.418335 | 39.646946 | BR | S | H | 10 | 43 | 16 | 2 | 5 | 34 | -5 | CSC |
| FR Bd 12 | FR-00-6300 | -77.497223 | 39.63361 | BR | V | H | 30 | 65 | 43 | 15 | 25 | 30 | -5 | I |
| FR Bd 14 | FR-01-0809 | -77.419998 | 39.607498 | P | S | H | - | 44 | 39 | 10 | 15 | 30 | - | C |
| FR Bd 15 | FR-00-3530 | -77.43333 | 39.584446 | P | F | T | 135 | 163 | 150 | 4 | 6 | 163 | -129 | FSC |
| FR Bd 16 | FR-00-0555 | -77.422501 | 39.599445 | P | S | H | - | 40 | 10 | 6 | 18 | - | - | - |
| FR Bd 17 | FR-01-7865 | -77.425278 | 39.6 | P | S | H | - | 47 | 39 | 15 | 15 | 15 | - | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Bd 18 | FR-01-7962 | -77.423614 | 39.599167 | P | S | H | 35 | 50 | 43 | 10 | 15 | 18 | -20 | CSC |
| FR Bd 19 | FR-01-0482 | -77.419724 | 39.596111 | P | S | H | 20 | 38 | 22 | 10 | 23 | 28 | 3 | FSC |
| FR Bd 20 | FR-00-7083 | -77.422775 | 39.598057 | P | S | H | 6 | 48 | 33 | 10 | 16 | - | 10 | CSC |
| FR Bd 21 | FR-00-1033 | -77.425552 | 39.583889 | P | S | H | 50 | 77 | 36 | 10 | 22 | - | -28 | FSC |
| FR Bd 22 | FR-00-4660 | -77.431663 | 39.589169 | P | S | C | 0 | 52 | 36 | 15 | 20 | 30 | 20 | CSC |
| FR Bd 23 | FR-00-4603 | -77.431663 | 39.589169 | P | S | H | 0 | 52 | 36 | 5 | 25 | 30 | 25 | CSC |
| FR Bd 24 | FR-00-7043 | -77.430557 | 39.589169 | P | S | H | - | 114 | 8 | 2 | 50 | 100 | - | C |
| FR Bd 25 | FR-00-8556 | -77.486946 | 39.600834 | BR | S | H | 21 | 27 | 22 | 8 | 10 | - | -11 | I |
| FR Bd 27 | FR-02-5351 | -77.464165 | 39.64611 | BR | H | T | 10 | 144 | 11 | 7 | 10 | 126 | 0 | I |
| FR Bd 30 | FR-03-1559 | -77.424446 | 39.643055 | P | S | R | 60 | 161 | 62.5 | 103 | 13.45 | 31.46 | -46.55 | I |
| FR Bd 31 | - | -77.470276 | 39.645001 | BR | H | T | 19 | 150 | 24 | 22 | 6 | 140 | -13 | I |
| FR Bd 32 | - | -77.464447 | 39.649445 | BR | H | U | 27 | 250 | 32 | 5 | 20 | - | -7 | I |
| FR Bd 33 | - | -77.470558 | 39.64611 | BR | H | T | 19 | 250 | 31 | 50 | 85 | 199 | 66 | I |
| FR Bd 34 | FR-03-2795 | -77.451111 | 39.634445 | BR | V | H | 18 | 230 | 18 | 32 | 5 | 200 | -13 | I |
| FR Bd 35 | FR-03-9187 | -77.487503 | 39.644444 | BR | S | P | 60 | 250 | 66 | 33.9 | - | - | - | I |
| FR Bd 36 | FR-03-9186 | -77.488335 | 39.643612 | BR | S | P | 60 | 250 | 59 | 63 | 1 | - | -59 | I |
| FR Bd 37 | FR-05-0745 | -77.485558 | 39.647778 | BR | T | T | 89 | 350 | 53.5 | 23 | 51 | - | -38 | I |
| FR Bd 38 | FR-05-0746 | -77.485001 | 39.648613 | BR | T | T | 103 | 450 | 86.2 | 23 | 50 | - | -53 | I |
| FR Bd 40 | FR-66-0492 | -77.480553 | 39.651669 | BR | S | - | - | 180 | 75.5 | 40 | 58.34 | 87.5 | - | I |
| FR Bd 41 | FR-66-0489 | -77.479721 | 39.6525 | BR | S | - | 37 | 160 | 46.1 | 33 | 54.23 | - | 17.23 | I |
| FR Bd 42 | - | -77.482498 | 39.650555 | BR | S | U | - | 120 | - | 26 | 9 | - | - | I |
| FR Bd 43 | FR-66-0490 | -77.483055 | 39.642502 | BR | S | - | 10 | 120 | 27 | 74 | 29 | 70 | 19 | I |
| FR Bd 44 | FR-66-0491 | -77.484726 | 39.642776 | BR | S | Z | 36 | 250 | 45.5 | 8.5 | 20.41 | 53 | -15.59 | I |
| FR Bd 45 | FR-69-0274 | -77.421669 | 39.5975 | P | F | H | 45 | 320 | 52 | 3 | 40 | 320 | -5 | CSC |
| FR Bd 46 | FR-70-0206 | -77.425003 | 39.600277 | P | S | H | 60 | 75 | 72 | 25 | 35 | 75 | -25 | C |
| FR Bd 47 | FR-69-0114 | -77.420555 | 39.597221 | P | F | H | 90 | 370 | 98 | 1 | 40 | 370 | -50 | CSC |
| FR Bd 48 | FR-69-0437 | -77.428055 | 39.584168 | P | S | H | 0 | 115 | 81 | 12 | 30 | - | 30 | CSC |
| FR Bd 49 | FR-71-0428 | -77.440277 | 39.62611 | BR | V | R | 18 | 202 | 30 | 19 | 9.68 | 22 | -8.32 | CSC |
| FR Bd 50 | FR-71-0582 | -77.420281 | 39.596943 | P | F | H | 60 | 68 | 63 | 50 | 22 | 68 | -38 | CSC |
| FR Bd 51 | FR-71-0573 | -77.420555 | 39.5975 | P | F | H | 37 | 45 | 40 | 50 | 12 | 45 | -25 | CSC |
| FR Bd 52 | FR-72-0200 | -77.427498 | 39.584999 | P | S | H | 100 | 121 | 115 | 15 | 48 | - | -52 | CSC |
| FR Bd 53 | FR-69-0503 | -77.423614 | 39.598888 | P | S | H | 112 | 167 | 118 | 12 | 30 | 167 | -82 | CSC |
| FR Bd 55 | FR-73-1875 | -77.495552 | 39.60611 | BR | S | H | 17 | 200 | 22 | 2 | 40 | 200 | 23 | I |
| FR Bd 56 | FR-73-7957 | -77.495834 | 39.604999 | BR | S | H | 10 | 275 | 28 | 4 | 55 | 275 | 45 | I |
| FR Bd 57 | FR-73-7134 | -77.494163 | 39.605835 | BR | S | H | 28 | 500 | 41 | 1 | 28 | 500 | 0 | I |
| FR Bd 58 | FR-73-5319 | -77.495003 | 39.604721 | BR | S | H | 12 | 320 | 21 | 1 | 62 | 320 | 50 | I |
| FR Bd 59 | FR-73-7002 | -77.493614 | 39.604721 | BR | S | H | 10 | 140 | 22 | 5 | 25 | 135 | 15 | I |
| FR Bd 60 | FR-73-8178 | -77.491386 | 39.600277 | BR | S | H | 12 | 300 | 20 | 2 | 30 | 300 | 18 | I |
| FR Bd 61 | FR-73-7684 | -77.492226 | 39.600834 | BR | S | H | 8 | 500 | 19 | 1 | 40 | 500 | 32 | I |
| FR Bd 62 | FR-73-4679 | -77.487221 | 39.601112 | BR | S | H | 12 | 100 | 20 | 8 | 60 | 100 | 48 | I |
| FR Bd 63 | FR-73-4678 | -77.486389 | 39.601944 | BR | S | H | 12 | 355 | 20 | 8 | 75 | 355 | 63 | I |
| FR Bd 64 | FR-73-3904 | -77.485001 | 39.601944 | BR | S | H | 45 | 75 | 51 | 20 | 50 | 75 | 5 | I |
| FR Bd 65 | FR-73-7902 | -77.482498 | 39.60611 | BR | S | H | 29 | 100 | 39 | 20 | 38 | 100 | 9 | I |
| FR Bd 66 | FR-73-7227 | -77.491943 | 39.632221 | BR | S | H | 37 | 200 | 41 | 3 | 65 | 200 | 28 | I |
| FR Bd 67 | FR-73-2913 | -77.491669 | 39.63333 | BR | S | H | 16 | 125 | 20 | 10 | 26 | 51 | 10 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Bd 68 | FR-73-2324 | -77.494721 | 39.63333 | BR | S | H | 39 | 95 | 44 | 15 | 29 | 95 | -10 | I |
| FR Bd 69 | FR-73-6301 | -77.495003 | 39.63333 | BR | V | H | 23 | 75 | 28 | 30 | 14 | 70 | -9 | I |
| FR Bd 70 | FR-73-3162 | -77.495552 | 39.643612 | BR | S | H | 60 | 75 | 64 | 15 | 15 | 75 | -45 | I |
| FR Bd 71 | FR-73-1497 | -77.495552 | 39.643612 | BR | S | U | 36 | 70 | 40 | 20 | 20 | 70 | -16 | I |
| FR Bd 74 | FR-73-0670 | -77.472778 | 39.66639 | BR | S | H | 10 | 70 | 19 | 30 | 30 | 70 | 20 | I |
| FR Bd 75 | FR-73-6930 | -77.425552 | 39.619999 | P | V | H | 59 | 175 | 66 | 10 | 10 | 175 | -49 | FSC |
| FR Bd 76 | FR-73-6192 | -77.425278 | 39.619721 | P | S | H | 55 | 175 | 63 | 15 | 10 | 175 | -45 | FSC |
| FR Bd 77 | FR-73-7395 | -77.424164 | 39.620556 | P | S | H | 58 | 425 | 64 | 5 | 0 | 425 | -58 | FSC |
| FR Bd 78 | FR-73-6553 | -77.420555 | 39.621387 | P | H | H | 34 | 400 | 40 | 2 | 45 | 400 | 11 | FSC |
| FR Bd 79 | FR-73-6193 | -77.426109 | 39.619446 | P | S | H | 36 | 330 | 41 | 4 | 8 | 330 | -28 | FSC |
| FR Bd 80 | FR-73-6191 | -77.426109 | 39.619167 | P | S | H | 58 | 200 | 63 | 20 | 14 | 200 | -44 | FSC |
| FR Bd 81 | FR-73-4020 | -77.426109 | 39.618332 | P | S | H | 50 | 120 | 44 | 10 | 40 | 120 | -10 | FSC |
| FR Bd 82 | FR-73-2886 | -77.426109 | 39.617779 | P | S | H | 65 | 150 | 70 | 5 | 25 | 150 | -40 | FSC |
| FR Bd 83 | FR-73-4040 | -77.426109 | 39.6175 | P | S | H | 65 | 350 | 71 | 6 | 20 | 350 | -45 | FSC |
| FR Bd 84 | FR-73-6555 | -77.428886 | 39.611946 | P | S | H | 73 | 105 | 80 | 25 | 6 | 105 | -67 | FSC |
| FR Bd 85 | FR-73-2186 | -77.430275 | 39.609722 | P | S | H | 82 | 300 | 88 | 3 | 25 | 300 | -57 | FSC |
| FR Bd 86 | FR-73-7763 | -77.426666 | 39.608891 | P | S | H | 115 | 126 | 119 | 15 | 55 | 126 | -60 | FSC |
| FR Bd 87 | FR-73-7779 | -77.426109 | 39.609722 | P | S | H | 56 | 300 | 63 | 3 | 60 | 300 | 4 | FSC |
| FR Bd 88 | FR-73-7279 | -77.425835 | 39.609722 | P | H | H | 35 | 175 | 41 | 15 | 52 | 175 | 17 | FSC |
| FR Bd 89 | FR-73-8030 | -77.424721 | 39.600834 | P | S | H | 19 | 400 | 193 | 2 | 40 | 380 | 21 | C |
| FR Bd 90 | FR-73-1356 | -77.422501 | 39.598888 | P | S | H | 0 | 45 | 43 | 5 | 30 | 45 | 30 | CSC |
| FR Bd 91 | FR-73-6843 | -77.418335 | 39.595554 | P | F | H | 63 | 140 | 70 | 75 | 20 | 140 | -43 | FSC |
| FR Bd 92 | FR-73-6488 | -77.426109 | 39.584721 | P | S | H | 91 | 185 | 114 | 20 | 75 | 175 | -16 | FSC |
| FR Bd 93 | FR-73-1053 | -77.425003 | 39.584721 | P | S | H | 140 | 173 | 148 | 25 | 80 | 173 | -60 | FSC |
| FR Bd 94 | FR-73-7216 | -77.424164 | 39.602501 | P | V | N | 95 | 200 | 95 | 5 | 70 | 140 | -25 | C |
| FR Bd 95 | FR-73-8549 | -77.424446 | 39.584446 | P | V | T | 200 | 250 | 209 | 8 | 80 | 250 | -120 | FSC |
| FR Bd 97 | FR-03-1047 | -77.464447 | 39.619721 | BR | S | R | 0 | 115 | 77 | 20 | 30 | 50 | 30 | FSC |
| FR Bd 98 | FR-72-0438 | -77.467499 | 39.618332 | BR | S | R | 67 | 100 | 74 | 7 | 8 | 100 | -59 | FSC |
| FR Bd 99 | FR-02-7361 | -77.436386 | 39.587223 | BR | S | R | 85 | 175 | 91 | 7 | 60 | 125 | -25 | FSC |
| FR Bd 100 | FR-04-3754 | -77.435837 | 39.592499 | BR | S | R | 33 | 308 | 43 | 20 | 26 | 69 | -7 | FSC |
| FR Bd 101 | FR-04-3755 | -77.434166 | 39.591389 | P | S | U | 50 | 50 | 50 | 25 | 10 | - | -40 | FSC |
| FR Bd 102 | FR-04-2286 | -77.423614 | 39.643055 | P | S | T | 0 | 100 | 40 | 20 | 25 | 80 | 25 | FSC |
| FR Bd 111 | FR-81-1264 | -77.487778 | 39.645279 | BR | S | U | 20 | 263 | 137 | 65 | 35.31 | 72.92 | 15.31 | FSC |
| FR Bd 112 | FR-81-1263 | -77.487778 | 39.645279 | BR | S | U | 6 | 105 | 82 | 15 | 36 | 110 | 30 | FSC |
| FR Bd 113 | FR-81-1265 | -77.487778 | 39.645279 | BR | S | U | 6 | 80 | 56 | 6 | 36 | 80 | 30 | FSC |
| FR Bd 114 | FR-81-1284 | -77.480003 | 39.648056 | BR | S | U | 20 | 145 | 84 | 60 | 4.5 | 56.93 | -15.5 | FSC |
| FR Be 1 | - | -77.408608 | 39.62389 | P | F | P | - | 192 | 73 | 150 | 10 | - | - | CSC |
| FR Be 6 | FR-01-0973 | -77.364998 | 39.663055 | P | H | H | 23 | 60 | 58 | 5 | 12 | 50 | -11 | C |
| FR Be 7 | FR-00-7349 | -77.364723 | 39.595001 | P | H | H | 85 | 136 | - | 5 | 50 | 100 | -35 | FSC |
| FR Be 8 | FR-00-0902 | -77.368057 | 39.621666 | P | S | H | 52 | 191 | 52 | 20 | 21 | 42 | -31 | FSC |
| FR Be 9 | FR-00-6276 | -77.353058 | 39.605556 | P | S | H | 0 | 126 | 6 | 6 | 50 | 90 | 50 | FSC |
| FR Be 10 | FR-00-1071 | -77.334999 | 39.586945 | P | H | S | 8 | 87 | 8 | 6 | 20 | 87 | 12 | FSC |
| FR Be 11 | FR-01-0906 | -77.371391 | 39.587776 | P | W | H | 6 | 113 | 6 | 8 | 28 | - | 22 | FSC |
| FR Be 12 | FR-01-6416 | -77.395836 | 39.647221 | P | F | H | 22 | 45 | 41 | 10 | 10 | 32 | -12 | C |
| FR Be 13 | FR-01-5210 | -77.400559 | 39.65 | P | S | H | 0 | 109 | 30 | 10 | 10 | 20 | 10 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Be 14 | FR-01-4247 | -77.404442 | 39.650555 | P | V | H | 82 | 117 | 90 | 5 | 18 | - | -64 | FSC |
| FR Be 15 | FR-01-7363 | -77.40361 | 39.630001 | P | V | H | 0 | 100.5 | 64 | 25 | - | - | - | CSC |
| FR Be 15a | FR-00-0876 | -77.40361 | 39.630001 | P | V | H | 0 | 67 | 67 | 10 | 48 | 67 | 48 | CSC |
| FR Be 16 | FR-00-8736 | -77.416115 | 39.644165 | P | V | H | - | 45 | 24 | 4 | 10 | 34 | - | FSC |
| FR Be 17 | FR-01-3197 | -77.394447 | 39.655834 | P | S | H | - | 33 | 27 | 4 | 15 | 25 | - | FSC |
| FR Be 18 | FR-01-1772 | -77.401108 | 39.649723 | P | H | H | - | 99.5 | 12 | 15 | 33 | 39 | - | FSC |
| FR Be 19 | FR-01-0810 | -77.393059 | 39.660557 | P | F | H | - | - | 69 | 20 | 20 | 30 | - | CSC |
| FR Be 20 | FR-01-8544 | -77.391945 | 39.663055 | BR | S | N | 45 | 50 | 50 | 6 | 15 | 42 | -30 | CSC |
| FR Be 22 | FR-02-1659 | -77.349724 | 39.663055 | P | V | H | - | 65 | 21 | 20 | 18 | 40 | - | FSC |
| FR Be 24 | FR-00-8707 | -77.389725 | 39.614445 | P | F | H | 28 | 130 | 26 | 2 | 36.5 | - | 8.5 | FSC |
| FR Be 26 | FR-00-0913 | -77.378609 | 39.614723 | P | F | H | 9 | 94 | 9 | 2.25 | 21 | 94 | 12 | FSC |
| FR Be 27 | FR-01-2813 | -77.393333 | 39.608334 | P | F | H | - | 107 | 12 | 4 | 15 | 100 | - | FSC |
| FR Be 28 | FR-01-0506 | -77.393333 | 39.609444 | P | F | H | - | 100 | 12 | 3 | 31 | 90 | - | FSC |
| FR Be 29 | FR-00-1021 | -77.39917 | 39.630833 | P | V | H | - | 82 | 74 | 6 | 18 | - | - | - |
| FR Be 30 | FR-00-0956 | -77.379723 | 39.616112 | P | F | U | 4 | 88 | 2 | 4 | 16.5 | 88 | 12.5 | - |
| FR Be 35 | FR-04-0827 | -77.410553 | 39.620277 | P | F | U | 0 | 303 | 135 | 350 | 25 | 72 | 25 | - |
| FR Be 36 | FR-67-0623 | -77.388054 | 39.645557 | P | F | H | - | 49 | 49 | 20 | 15 | - | - | - |
| FR Be 37 | FR-68-0349 | -77.396111 | 39.637779 | P | F | U | - | 307 | 35 | 2 | - | - | - | - |
| FR Be 38 | FR-69-0518 | -77.410004 | 39.615002 | P | V | P | 25 | 105 | 29 | 488 | 5 | 47 | -20 | CSC |
| FR Be 39 | FR-72-0327 | -77.41111 | 39.615002 | P | V | P | 30 | 294 | 69.5 | 830 | 5 | 55 | -25 | CSC |
| FR Be 40 | FR-71-0513 | -77.397499 | 39.601666 | P | H | H | 60 | 210 | 70 | 50 | 65 | 210 | 5 | FSC |
| FR Be 41 | FR-71-0569 | -77.380554 | 39.649723 | P | S | H | 3 | 222 | 41 | 20 | 40 | - | 37 | FSC |
| FR Be 42 | FR-72-0090 | -77.369163 | 39.653889 | P | H | H | 12 | 80 | 20 | 20 | 8 | 24 | -4 | FSC |
| FR Be 43 | FR-72-0241 | -77.349167 | 39.625832 | P | H | H | 39 | 245 | 45 | 8 | 25 | 245 | -14 | FSC |
| FR Be 44 | FR-72-0105 | -77.346947 | 39.638332 | P | H | H | 10 | 195 | 20 | 10 | 20 | 195 | 10 | FSC |
| FR Be 45 | FR-72-0311 | -77.335556 | 39.610001 | P | S | H | 8 | 170 | 20 | 5 | 60 | 170 | 52 | FSC |
| FR Be 46 | FR-73-0087 | -77.379997 | 39.614445 | P | S | H | 35 | 170 | 42 | 12 | 45 | 170 | 10 | FSC |
| FR Be 47 | FR-73-0039 | -77.381111 | 39.614445 | P | S | H | 35 | 170 | 42 | 3 | 35 | 170 | 0 | FSC |
| FR Be 48 | FR-71-0177 | -77.393059 | 39.606667 | P | H | H | 30 | 125 | 40 | 25 | 40 | 125 | 10 | FSC |
| FR Be 53 | FR-02-9011 | -77.381943 | 39.613888 | P | H | H | - | 109 | 21 | 8 | 30 | 50 | - | FSC |
| FR Be 58 | FR-02-8868 | -77.379723 | 39.614723 | P | S | H | - | 124 | 20 | 10 | 40 | 65 | - | FSC |
| FR Be 59 | FR-02-4989 | -77.379723 | 39.615276 | P | S | H | 6 | 100 | 13 | 3 | 10 | 100 | 4 | FSC |
| FR Be 61 | FR-71-0279 | -77.374168 | 39.594723 | P | H | S | 35 | 225 | 40 | 25 | 40 | 225 | 5 | FSC |
| FR Be 62 | FR-04-2001 | -77.394165 | 39.610832 | P | V | U | 21 | 120 | 21 | 25 | 10 | 80 | -11 | FSC |
| FR Be 63 | FR-70-0419 | -77.410278 | 39.612499 | P | V | U | 0 | 102 | 17 | 5 | 45 | - | 45 | FSC |
| FR Be 64 | FR-03-9644 | -77.400833 | 39.640556 | P | V | N | 54 | 94 | 55 | 28 | 8 | 51 | -46 | C |
| FR Be 65 | FR-73-0549 | -77.378334 | 39.656666 | P | S | T | 80 | 170 | 84 | 10 | 40 | 170 | -40 | FSC |
| FR Be 66 | FR-73-2582 | -77.380554 | 39.66667 | P | V | H | 25 | 220 | 41 | 13.5 | 18 | 28 | -7 | C |
| FR Be 67 | FR-73-8471 | -77.375832 | 39.649445 | P | V | H | 25 | 100 | 37 | 10 | 12 | 100 | -13 | FSC |
| FR Be 68 | FR-73-6221 | -77.388054 | 39.645557 | P | S | H | 175 | 350 | 30 | 3 | 50 | 150 | -125 | FSC |
| FR Be 69 | FR-73-8212 | -77.401665 | 39.642502 | P | V | H | 52 | 68 | 56 | 40 | 12 | 68 | -40 | FSC |
| FR Be 70 | FR-73-6809 | -77.397499 | 39.638611 | P | S | H | 88 | 175 | 94 | 25 | 54 | 175 | -34 | FSC |
| FR Be 71 | FR-73-2174 | -77.397224 | 39.637501 | P | S | H | 35 | 275 | 40 | 10 | 19 | 275 | -16 | FSC |
| FR Be 72 | FR-73-8626 | -77.415001 | 39.615555 | P | V | P | 21 | 400 | 30 | 240 | 44 | 45 | 23 | C |
| FR Be 73 | FR-73-8625 | -77.414719 | 39.615276 | P | V | U | 31 | 100 | - | 50 | - | 90 | - | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Be 75 | FR-73-1748 | -77.396942 | 39.601387 | P | H | H | 55 | 170 | 61 | 6 | 40 | 170 | -15 | FSC |
| FR Be 76 | FR-73-1611 | -77.396385 | 39.600834 | P | H | H | 75 | 170 | 79 | 8 | 60 | 170 | -15 | FSC |
| FR Be 77 | FR-73-1689 | -77.396668 | 39.594723 | P | V | H | 30 | 110 | 36 | 30 | 5 | 110 | -25 | FSC |
| FR Be 78 | FR-73-2280 | -77.402222 | 39.591667 | P | V | H | 4 | 125 | 20 | 10 | 25 | 120 | 21 | FSC |
| FR Be 79 | FR-73-2275 | -77.403053 | 39.591389 | P | V | H | 3 | 200 | 40 | 10 | 25 | 120 | 22 | FSC |
| FR Be 80 | FR-73-2914 | -77.412498 | 39.585834 | P | H | H | 58 | 225 | 65 | 10 | 45 | 225 | -13 | FSC |
| FR Be 81 | FR-73-4787 | -77.414169 | 39.586388 | P | H | H | 50 | 150 | 64 | 10 | 30 | 75 | -20 | FSC |
| FR Be 82 | FR-73-2569 | -77.414444 | 39.585556 | P | H | H | 65 | 145 | 69 | 15 | 40 | 145 | -25 | FSC |
| FR Be 83 | FR-73-2707 | -77.415001 | 39.585834 | P | H | - | 50 | 190 | 59 | 10 | 55 | 190 | 5 | FSC |
| FR Be 84 | FR-73-8542 | -77.392776 | 39.583889 | P | V | H | 25 | 150 | 41 | 10 | 6 | 150 | -19 | FSC |
| FR Be 85 | FR-73-8534 | -77.390831 | 39.586666 | P | V | H | 14 | 175 | 175 | 15 | 69 | 90 | 55 | FSC |
| FR Be 86 | FR-73-4250 | -77.392776 | 39.588333 | P | V | H | 10 | 205 | 36.5 | 4 | 40 | 50 | 30 | FSC |
| FR Be 87 | FR-73-8640 | -77.380554 | 39.589169 | P | F | H | - | 170 | 63 | 10 | 50 | 170 | - | FSC |
| FR Be 88 | FR-73-8508 | -77.383057 | 39.591946 | P | F | H | 13 | 250 | 20 | 17 | 40 | 70 | 27 | FSC |
| FR Be 89 | FR-73-4570 | -77.380554 | 39.593613 | P | V | H | 15 | 220 | 38 | 8 | 30 | 220 | 15 | FSC |
| FR Be 90 | FR-73-1934 | -77.375 | 39.593887 | P | V | H | 10 | 200 | 19 | 7 | 42 | 200 | 32 | FSC |
| FR Be 91 | FR-73-4087 | -77.396942 | 39.609444 | P | S | S | 15 | 200 | 22 | 15 | 29 | 200 | 14 | FSC |
| FR Be 92 | FR-73-4236 | -77.395836 | 39.615002 | P | V | H | 40 | 300 | 41 | 3 | 40 | 50 | 0 | FSC |
| FR Be 93 | FR-73-8547 | -77.388054 | 39.611946 | P | H | T | 50 | 180 | 64 | 15 | 40 | 175 | -10 | FSC |
| FR Be 94 | FR-73-5641 | -77.386948 | 39.612499 | P | S | H | 56 | 200 | 62 | 12 | 48 | 200 | -8 | FSC |
| FR Be 95 | FR-73-7955 | -77.386948 | 39.614445 | P | S | H | 40 | 175 | 48 | 15 | 55 | 175 | 15 | FSC |
| FR Be 96 | FR-73-4654 | -77.386108 | 39.613609 | P | S | H | 35 | 125 | 43 | 30 | 38 | 125 | 3 | FSC |
| FR Be 97 | FR-73-5634 | -77.381668 | 39.613609 | P | S | H | 55 | 200 | 62 | 8 | 45 | 200 | -10 | FSC |
| FR Be 98 | FR-73-6559 | -77.38028 | 39.614445 | P | S | H | 0 | 175 | 41 | 8 | 40 | 100 | 40 | FSC |
| FR Be 99 | FR-73-4476 | -77.38028 | 39.615002 | P | S | H | 35 | 170 | 46 | 10 | 40 | 170 | 5 | FSC |
| FR Be 100 | FR-73-8346 | -77.364441 | 39.638054 | P | S | H | 38 | 225 | 45 | 8 | 20 | 225 | -18 | FSC |
| FR Be 101 | FR-73-4359 | -77.363335 | 39.647499 | P | H | H | 8 | 145 | 20 | 15 | 15 | 145 | 7 | FSC |
| FR Be 102 | FR-73-6656 | -77.356392 | 39.640556 | P | S | H | 3 | 140 | - | 10 | 15 | 135 | 12 | FSC |
| FR Be 103 | FR-73-6546 | -77.355835 | 39.657501 | P | S | H | 30 | 200 | 41 | 10 | 35 | 195 | 5 | FSC |
| FR Be 104 | FR-73-5462 | -77.357224 | 39.658054 | P | S | H | 30 | 150 | 41 | 15 | 30 | 145 | 0 | FSC |
| FR Be 105 | FR-73-7232 | -77.356941 | 39.659168 | P | S | H | 30 | 100 | 40 | 25 | 30 | 90 | 0 | FSC |
| FR Be 106 | FR-73-5401 | -77.359444 | 39.658611 | P | H | H | 10 | 100 | 21 | 10 | 40 | 90 | 30 | FSC |
| FR Be 107 | FR-73-2784 | -77.362221 | 39.662498 | P | S | H | 22 | 250 | 29 | 2 | 20 | 225 | -2 | C |
| FR Be 108 | FR-73-3991 | -77.369446 | 39.665554 | P | V | H | 60 | 100 | 66 | 8 | 10 | 100 | -50 | C |
| FR Be 109 | FR-73-4380 | -77.353889 | 39.652779 | P | S | H | 8 | 120 | 20 | 10 | 15 | 120 | 7 | FSC |
| FR Be 110 | FR-73-8203 | -77.348335 | 39.630833 | P | S | H | 30 | 200 | 41 | 6 | 40 | 200 | 10 | FSC |
| FR Be 111 | FR-73-1955 | -77.354721 | 39.630833 | P | H | H | 10 | 120 | 19 | 20 | 25 | 120 | 15 | FSC |
| FR Be 112 | FR-73-8299 | -77.351112 | 39.627499 | P | V | H | 27 | 170 | 41 | 15 | 30 | 170 | 3 | FSC |
| FR Be 113 | FR-73-6844 | -77.362778 | 39.624443 | P | S | H | 33 | 195 | 39 | 15 | 20 | 195 | -13 | FSC |
| FR Be 114 | FR-73-2813 | -77.369721 | 39.620834 | P | H | H | 10 | 145 | 22 | 50 | 41 | 145 | 31 | FSC |
| FR Be 115 | FR-73-8077 | -77.349724 | 39.620556 | P | V | H | 5 | 220 | 21 | 20 | 15 | 215 | 10 | FSC |
| FR Be 116 | FR-73-5392 | -77.371948 | 39.585556 | P | F | H | 35 | 170 | 40 | 20 | 43 | 170 | 8 | FSC |
| FR Be 118 | FR-73-7850 | -77.353615 | 39.605835 | P | S | H | 3 | 160 | 20 | 7 | 20 | 160 | 17 | FSC |
| FR Be 119 | FR-73-2240 | -77.341667 | 39.585556 | P | H | H | 25 | 240 | 32 | 30 | 40 | 240 | 15 | FSC |
| FR Be 127 | FR-94-1257 | -77.35611 | 39.624168 | P | F | H | 0 | 200 | 39 | 15 | 12 | 200 | 12 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Bf 1 | FR-00-7615 | -77.330833 | 39.654999 | P | S | H | 9 | 103 | 7.6 | 3.5 | 10 | 103 | 1 | FSC |
| FR Bf 2 | FR-00-8425 | -77.315277 | 39.636944 | P | S | H | 3 | 110 | 6 | 1 | 39 | 110 | 36 | FSC |
| FR Bf 3 | FR-00-1790 | -77.305 | 39.654446 | P | H | H | 4 | 132 | 132 | 2 | 41 | 132 | 37 | FSC |
| FR Bf 4 | FR-00-0582 | -77.319725 | 39.614723 | P | S | H | 25 | 82 | - | 5.5 | 30 | 82 | 5 | FSC |
| FR Bf 5 | FR-00-9881 | -77.318611 | 39.605556 | P | H | H | 5 | 68 | 12 | 10 | 21 | 40 | 16 | FSC |
| FR Bf 7 | FR-01-9475 | -77.277496 | 39.589722 | P | W | H | 3 | 87 | 17.3 | 6 | 16 | 87 | 13 | FSC |
| FR Bf 8 | FR-00-3937 | -77.276108 | 39.59 | P | S | - | 13 | 217 | 9.5 | 12 | 37 | 172 | 24 | FSC |
| FR Bf 9 | FR-00-9882 | -77.327774 | 39.645279 | P | V | H | 7 | 92 | 12 | 8 | 23 | - | 16 | FSC |
| FR Bf 10 | FR-00-8099 | -77.275833 | 39.660557 | P | V | H | - | 72 | 10 | 3 | 12 | 70 | - | FSC |
| FR Bf 16 | FR-00-4897 | -77.285553 | 39.631111 | P | G | S | 3 | 165 | 8 | 15 | 19 | 115 | 16 | FSC |
| FR Bf 19 | FR-00-9384 | -77.280281 | 39.649723 | P | H | S | 9 | 201 | 8 | 3.5 | 3 | 201 | -6 | FSC |
| FR Bf 21 | FR-72-0096 | -77.318611 | 39.604168 | P | H | H | 0 | 170 | 40 | 4 | 45 | 170 | 45 | FSC |
| FR Bf 22 | FR-72-0092 | -77.272499 | 39.658054 | P | H | H | 31 | 95 | 36 | 5 | 25 | 94 | -6 | FSC |
| FR Bf 23 | FR-71-0538 | -77.315559 | 39.638054 | P | H | H | 10 | 170 | 20 | 5 | 25 | 170 | 15 | FSC |
| FR Bf 24 | FR-71-0405 | -77.3125 | 39.591667 | P | H | H | 0 | 85 | 21 | 9 | 45 | 80 | 45 | FSC |
| FR Bf 25 | FR-72-0270 | -77.312775 | 39.591667 | P | H | H | 6 | 105 | 21 | 7 | 25 | 100 | 19 | FSC |
| FR Bf 26 | FR-72-0371 | -77.306114 | 39.60611 | P | H | H | 33 | 295 | 38 | 7 | 48 | 295 | 15 | FSC |
| FR Bf 27 | FR-72-0298 | -77.318611 | 39.600277 | P | H | H | 25 | 145 | 29 | 5 | 45 | 145 | 20 | I |
| FR Bf 28 | FR-66-0371 | -77.319168 | 39.60611 | P | S | T | 0 | 205 | 20 | 20 | 30 | - | 30 | FSC |
| FR Bf 29 | FR-73-7716 | -77.321114 | 39.62611 | P | H | H | 70 | 125 | 22 | 30 | 30 | 50 | -40 | I |
| FR Bf 30 | FR-73-2703 | -77.315277 | 39.625832 | P | S | H | 15 | 175 | 23 | 10 | - | - | - | FSC |
| FR Bf 31 | FR-73-2045 | -77.319168 | 39.631668 | P | S | H | 15 | 150 | 22 | 6 | 22 | 150 | 7 | I |
| FR Bf 32 | FR-73-2774 | -77.314163 | 39.629444 | P | S | H | 15 | 100 | 22 | 20 | 22 | 100 | 7 | FSC |
| FR Bf 33 | FR-73-7923 | -77.322777 | 39.634998 | P | F | H | 5 | 200 | 22 | 15 | 55 | - | 50 | FSC |
| FR Bf 34 | FR-73-7246 | -77.323608 | 39.640556 | P | F | H | 30 | 275 | 41 | 25 | 2 | 275 | -28 | FSC |
| FR Bf 35 | FR-73-8269 | -77.330833 | 39.657223 | P | H | H | 10 | 220 | 41 | 5 | 30 | 220 | 20 | FSC |
| FR Bf 36 | FR-73-7433 | -77.285278 | 39.596111 | P | S | H | 8 | 290 | 21 | 5 | 50 | 285 | 42 | FSC |
| FR Bf 37 | FR-81-4865 | -77.308609 | 39.656113 | P | S | H | 2 | 275 | 19 | 6 | 48 | 275 | 46 | - |
| FR Cb 1 | FR-01-6375 | -77.603615 | 39.53611 | BR | S | C | 30 | 116 | 33 | 5 | 60 | 90 | 30 | CSC |
| FR Cb 2 | FR-01-5545 | -77.605003 | 39.522499 | BR | S | R | 20 | 155 | - | 2 | 50 | 155 | 30 | CSC |
| FR Cb 3 | - | -77.607224 | 39.525833 | BR | S | R | - | 70 | 28 | 20 | 35 | - | - | CSC |
| FR Cb 5 | FR-00-5540 | -77.583885 | 39.52639 | BR | S | U | 20 | 50 | 20 | 1 | 35 | 50 | 15 | CSC |
| FR Cb 6 | FR-00-1678 | -77.588059 | 39.546391 | BR | S | H | 18 | 88 | 21 | 4 | 30 | - | 12 | I |
| FR Cb 9 | FR-04-1469 | -77.587776 | 39.526112 | BR | H | C | 0 | 95 | 29 | 6 | 25 | - | 25 | I |
| FR Cb 11 | FR-67-0047 | -77.605278 | 39.5275 | BR | S | P | 0 | 400 | 40 | 14 | 30 | - | 30 | CSC |
| FR Cb 12 | FR-67-0047 | -77.605553 | 39.527222 | BR | S | P | 0 | 295 | 45 | 28.6 | 30 | - | 30 | CSC |
| FR Cb 13 | FR-67-0047 | -77.6 | 39.525002 | BR | W | P | 0 | 384 | 61 | 30.6 | 40 | - | 40 | I |
| FR Cb 14 | FR-67-0047 | -77.6 | 39.525002 | BR | W | U | 0 | 380 | 31 | 23.4 | 30 | - | 30 | I |
| FR Cb 15 | FR-73-6655 | -77.600281 | 39.525276 | BR | W | P | 160 | 300 | 44 | 35 | 37 | 300 | -123 | I |
| FR Cb 16 | FR-73-6552 | -77.601112 | 39.517776 | BR | S | C | 15 | 145 | 21 | 10 | 50 | 145 | 35 | I |
| FR Cb 17 | FR-73-5062 | -77.586388 | 39.511944 | BR | S | H | 18 | 300 | 21 | 2 | 55 | 240 | 37 | I |
| FR Cb 18 | FR-05-7253 | -77.584999 | 39.511112 | BR | H | R | 0 | 130 | 23 | 5 | 30 | - | 30 | I |
| FR Cb 19 | FR-72-0700 | -77.584168 | 39.510555 | BR | H | H | 31 | 302 | 38 | 2 | 40 | - | 9 | I |
| FR Cb 20 | FR-88-0673 | -77.594963 | 39.529888 | BR | S | H | 14 | 350 | 39 | 9 | 14 | 116 | 0 | I |
| FR Cb 21 | FR-88-2731 | -77.586212 | 39.520981 | BR | H | H | 18 | 500 | 41 | 2.5 | 38 | 500 | 20 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Cc 1 | FR-01-8254 | -77.544441 | 39.571945 | BR | S | H | 8 | 89 | 23.2 | 2 | 20 | 70 | 12 | I |
| FR Cc 2 | FR-00-9075 | -77.526947 | 39.551945 | BR | S | H | 20 | 42 | 24 | 10 | 15 | - | -5 | I |
| FR Cc 3 | FR-02-1916 | -77.550835 | 39.574165 | BR | V | U | 5 | 92 | 7 | 6 | 10 | 89 | 5 | I |
| FR Cc 4 | - | -77.549446 | 39.579166 | BR | H | H | - | 53 | - | 12 | 3 | - | - | I |
| FR Cc 7 | FR-01-1010 | -77.517776 | 39.523056 | BR | S | H | 0 | 23 | 23 | 20 | 10 | 10 | 10 | CSC |
| FR Cc 10 | FR-02-0996 | -77.547226 | 39.521946 | BR | S | H | 28 | 40 | 35 | 10 | 19 | 31 | -9 | I |
| FR Cc 11 | FR-01-9589 | -77.547775 | 39.564445 | BR | S | H | 30 | 125 | 36 | 16 | 95 | 125 | 65 | I |
| FR Cc 12 | FR-01-9826 | -77.532501 | 39.581665 | BR | S | H | 0 | 74 | 30 | 15 | 6 | 20 | 6 | I |
| FR Cc 13 | FR-02-2492 | -77.555557 | 39.525002 | BR | S | H | 3 | 25 | 25 | 5 | 20 | 25 | 17 | I |
| FR Cc 20 | FR-65-0338 | -77.557221 | 39.582222 | BR | S | C | - | 190 | 17 | 3 | 45 | - | - | I |
| FR Cc 21 | FR-69-0318 | -77.549446 | 39.582222 | BR | S | R | 15 | 145 | 27 | 4 | 20 | 145 | 5 | I |
| FR Cc 22 | FR-73-5180 | -77.551109 | 39.575001 | BR | V | H | 75 | 175 | 87 | 30 | 10 | 175 | -65 | I |
| FR Cc 23 | FR-69-0219 | -77.549721 | 39.572498 | BR | S | F | 10 | 400 | 19 | 1 | 35 | 400 | 25 | I |
| FR Cc 24 | FR-73-1209 | -77.542503 | 39.575001 | BR | S | H | 35 | 185 | 39 | 5 | 50 | 165 | 15 | I |
| FR Cc 25 | FR-73-2187 | -77.51667 | 39.564445 | BR | S | H | 60 | 160 | 46 | 10 | 15 | 160 | -45 | I |
| FR Cc 26 | FR-73-4218 | -77.51667 | 39.563888 | BR | S | H | 32 | 425 | 33 | 10 | 50 | 200 | 18 | I |
| FR Cc 27 | FR-73-6432 | -77.512222 | 39.569168 | BR | S | H | 18 | 245 | 25 | 12 | 41 | 63 | 23 | I |
| FR Cc 28 | FR-73-7949 | -77.5 | 39.58139 | BR | S | C | 47 | 300 | 54 | 15 | 40 | 300 | -7 | I |
| FR Cc 29 | FR-73-1215 | -77.500275 | 39.579166 | BR | S | H | 0 | 100 | 35 | 3 | 48 | 58 | 48 | I |
| FR Cc 30 | FR-73-7086 | -77.5 | 39.551388 | BR | S | H | 55 | 150 | 63 | 8 | 35 | 150 | -20 | CSC |
| FR Cc 31 | FR-73-1660 | -77.500275 | 39.558056 | BR | S | H | 58 | 151 | 23 | 8 | 100 | - | 42 | CSC |
| FR Cc 32 | FR-73-5408 | -77.500275 | 39.555557 | BR | S | H | 3 | 175 | 19 | 4 | 31 | 175 | 28 | CSC |
| FR Cc 33 | FR-73-2550 | -77.569443 | 39.560833 | BR | S | U | 55 | 300 | 62 | 8 | 12 | 300 | -43 | CSC |
| FR Cc 34 | FR-72-0403 | -77.564446 | 39.513054 | BR | S | C | 100 | 150 | 86 | 8 | 30 | - | -70 | I |
| FR Cc 35 | FR-73-1215 | -77.500275 | 39.579166 | BR | S | - | 0 | 300 | - | 0 | - | - | - | I |
| FR Cc 36 | FR-81-0320 | -77.543419 | 39.510922 | BR | S | H | 30 | 300 | 39 | 3 | 43 | 300 | 13 | I |
| FR Cc 37 | FR-81-3909 | -77.534515 | 39.513222 | BR | S | H | 41 | 405 | 53 | 2 | 125 | 405 | 84 | I |
| FR Cc 38 | FR-73-4857 | -77.535973 | 39.505337 | BR | H | H | 35 | 275 | 41 | 5 | 44 | 275 | 9 | I |
| FR Cc 39 | FR-73-5334 | -77.536041 | 39.50605 | BR | H | H | 12 | 250 | 20 | 2 | 50 | 240 | 38 | I |
| FR Cc 40 | FR-73-8579 | -77.535744 | 39.507145 | BR | S | H | 30 | 235 | 56 | 15 | 68 | 235 | 38 | I |
| FR Cc 41 | FR-81-4566 | -77.535698 | 39.508507 | BR | S | H | 33 | 400 | 61 | 2 | 26 | 238 | -7 | I |
| FR Cc 42 | FR-81-3788 | -77.580032 | 39.515869 | BR | S | H | 26 | 150 | 41 | 6 | 20 | 150 | -6 | I |
| FR Cc 43 | FR-81-3791 | -77.579063 | 39.516624 | BR | S | H | 34 | 400 | 41 | 2 | 56 | 146 | 22 | I |
| FR Cc 44 | FR-81-3792 | -77.578628 | 39.516884 | BR | S | H | 46 | 525 | 55 | 1 | 43 | 165 | -3 | I |
| FR Cc 45 | FR-94-0341 | -77.580177 | 39.527535 | BR | H | H | 29 | 200 | 39 | 6 | 42 | 200 | 13 | I |
| FR Cc 46 | FR-88-4509 | -77.579392 | 39.529556 | BR | S | H | 28 | 475 | 40 | 1 | -2 | 103 | -30 | I |
| FR Cc 47 | FR-88-4816 | -77.578781 | 39.530323 | BR | H | H | 24 | 410 | 40 | 12 | 5 | 365 | -19 | I |
| FR Cd 1 | FR-00-7200 | -77.419167 | 39.514168 | P | H | H | - | 85 | 22 | 3 | 17 | 42 | - | FSC |
| FR Cd 2 | FR-00-8108 | -77.445274 | 39.53389 | P | S | H | - | 38 | 25 | 3 | 20 | 37 | - | CSC |
| FR Cd 4 | FR-00-3423 | -77.417503 | 39.540554 | P | F | H | 50 | 78.5 | 22 | 8 | 4 | 15 | -46 | FSC |
| FR Cd 5 | FR-01-6557 | -77.438057 | 39.503056 | P | F | H | - | 82 | 14 | 6 | 40 | 60 | - | FSC |
| FR Cd 7 | FR-01-4072 | -77.425003 | 39.530834 | P | V | H | 40 | 62 | 42 | 6 | 25 | 50 | -15 | FSC |
| FR Cd 8 | FR-01-0095 | -77.432503 | 39.524445 | P | F | H | - | 48 | 46 | 10 | 13 | 15 | - | FSC |
| FR Cd 9 | FR-00-6531 | -77.431114 | 39.521668 | P | V | H | - | 64 | 60 | 4 | 35 | 50 | - | CSC |
| FR Cd 10 | FR-00-5576 | -77.445 | 39.516945 | P | V | H | 30 | 41 | 41 | 12 | 25 | - | -5 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Cd 11 | FR-01-9957 | -77.446388 | 39.517502 | P | V | H | 0 | 34 | 33 | 8 | 8 | 22 | 8 | CSC |
| FR Cd 12 | FR-00-9108 | -77.449722 | 39.518612 | P | S | H | - | 23 | - | 5 | 15 | - | - | CSC |
| FR Cd 13 | FR-00-7020 | -77.452225 | 39.51889 | P | F | H | - | 21 | 21 | 3 | 10 | 21 | - | CSC |
| FR Cd 14 | FR-01-2163 | -77.448891 | 39.518612 | P | V | H | - | 21 | 21 | 4 | 10 | - | - | CSC |
| FR Cd 15 | FR-08-979A | -77.448059 | 39.518333 | P | V | H | - | 15 | 15 | 4 | 7 | 12 | - | CSC |
| FR Cd 17 | FR-01-2388 | -77.434723 | 39.568054 | P | S | H | 15 | 63 | 23 | 5 | 2 | 55 | -13 | CSC |
| FR Cd 18 | FR-01-4940 | -77.417503 | 39.543888 | P | F | H | 23 | 44 | 23 | 5 | 25 | - | 2 | FSC |
| FR Cd 19 | FR-02-4278 | -77.43333 | 39.576668 | P | F | H | 8 | 105 | 11 | 5 | 20 | 90 | 12 | CSC |
| FR Cd 20 | FR-69-0021 | -77.419441 | 39.550556 | P | S | H | 15 | 270 | 20 | 2 | 30 | 270 | 15 | C |
| FR Cd 21 | FR-69-0524 | -77.432503 | 39.582779 | P | S | H | 40 | 67 | 44 | 3 | 35 | 60 | -5 | C |
| FR Cd 22 | FR-70-0173 | -77.432221 | 39.511112 | P | H | H | - | 122 | 19 | 25 | 30 | - | - | FSC |
| FR Cd 23 | FR-69-0040 | -77.433609 | 39.510555 | P | S | H | 12 | 130 | 40.5 | 4 | 40 | - | 28 | FSC |
| FR Cd 24 | FR-69-0039 | -77.433609 | 39.511112 | P | S | H | 12 | 115 | 43.5 | 5 | 30 | - | 18 | FSC |
| FR Cd 25 | FR-70-0239 | -77.43333 | 39.510834 | P | S | H | - | 182 | 17 | 5 | 30 | - | - | FSC |
| FR Cd 26 | FR-71-0159 | -77.433609 | 39.577778 | P | V | H | - | 52 | 18 | 300 | 10 | - | - | CSC |
| FR Cd 27 | FR-72-0249 | -77.4375 | 39.502777 | P | V | H | 0 | 125 | 21 | 12 | 35 | 120 | 35 | FSC |
| FR Cd 28 | FR-72-0297 | -77.434166 | 39.521668 | P | H | H | 120 | 170 | 130 | 10 | 28 | 170 | -92 | CSC |
| FR Cd 29 | FR-72-0041 | -77.437775 | 39.521389 | P | S | H | 75 | 115 | 81 | 100 | 40 | 115 | -35 | CSC |
| FR Cd 30 | FR-71-0410 | -77.435554 | 39.520557 | P | H | H | 70 | 103 | 86 | 50 | 20 | - | -50 | CSC |
| FR Cd 31 | FR-73-0145 | -77.437225 | 39.530834 | P | V | H | 10 | 42 | 21 | 100 | 35 | - | -5 | CSC |
| FR Cd 32 | FR-71-0058 | -77.4375 | 39.523888 | P | F | H | 70 | 165 | 83 | 100 | 30 | 165 | -40 | CSC |
| FR Cd 33 | FR-04-1470 | -77.41667 | 39.541111 | P | F | H | 14 | 100 | 14 | 4 | 50 | 75 | 36 | FSC |
| FR Cd 34 | FR-04-4485 | -77.416946 | 39.539722 | P | F | H | - | 172 | 15 | 20 | 25 | - | - | FSC |
| FR Cd 37 | FR-04-0949 | -77.416946 | 39.536945 | P | F | H | - | 75 | 31 | 12 | 35 | - | - | FSC |
| FR Cd 39 | FR-70-0430 | -77.43333 | 39.580002 | P | V | T | 39 | 520 | 109 | 1 | 0 | - | -39 | FSC |
| FR Cd 40 | FR-04-1080 | -77.426666 | 39.575279 | P | V | Q | 15 | 300 | 38 | 20 | 25 | - | 10 | FSC |
| FR Cd 41 | FR-73-5051 | -77.425003 | 39.575001 | P | V | Q | 15 | 400 | 23 | 40 | 10 | 20 | -5 | FSC |
| FR Cd 42 | FR-73-5052 | -77.421669 | 39.57111 | P | V | Q | 1 | 405 | 37 | 70 | 25 | 35 | 24 | FSC |
| FR Cd 43 | FR-73-7861 | -77.427223 | 39.575832 | P | V | Q | 18 | 325 | 26 | 60 | 20 | 300 | 2 | FSC |
| FR Cd 44 | FR-73-7937 | -77.422226 | 39.574722 | P | V | Q | 2 | 305 | 41 | 50 | 10 | 280 | 8 | FSC |
| FR Cd 45 | FR-73-7935 | -77.419998 | 39.571945 | P | V | Q | 12 | 305 | 26 | 60 | 15 | 290 | 3 | FSC |
| FR Cd 46 | FR-01-1354 | -77.428055 | 39.534168 | P | V | U | 5 | 111 | - | 20 | 8 | 16 | 3 | FSC |
| FR Cd 47 | FR-03-0054 | -77.498611 | 39.580833 | BR | S | U | 35 | 120 | 25 | 20 | 8 | 20 | -27 | FSC |
| FR Cd 48 | FR-73-3700 | -77.498886 | 39.564167 | BR | H | H | 4 | 150 | 20 | 8 | 40 | 145 | 36 | CSC |
| FR Cd 49 | FR-73-5072 | -77.499443 | 39.56361 | BR | H | H | 10 | 175 | 25 | 20 | 40 | 170 | 30 | CSC |
| FR Cd 50 | FR-73-3375 | -77.499168 | 39.562779 | BR | H | H | 4 | 150 | 20 | 6 | 30 | 145 | 26 | CSC |
| FR Cd 51 | FR-73-8506 | -77.433891 | 39.579445 | P | V | C | 58 | 150 | 52 | 30 | 6 | 130 | -52 | FSC |
| FR Cd 52 | FR-73-4858 | -77.433609 | 39.579166 | P | V | H | 35 | 175 | 39 | 30 | 3 | 175 | -32 | FSC |
| FR Cd 53 | FR-73-8268 | -77.418053 | 39.551388 | P | V | H | 29 | 300 | 41 | 3 | 15 | 300 | -14 | C |
| FR Cd 54 | FR-73-1803 | -77.421944 | 39.548611 | P | V | H | 18 | 400 | 25 | 7 | 20 | 400 | 2 | CSC |
| FR Cd 55 | FR-73-4463 | -77.422501 | 39.546944 | P | F | H | 33 | 400 | 41 | 2 | 45 | 400 | 12 | CSC |
| FR Cd 56 | FR-73-7399 | -77.420281 | 39.548054 | P | S | H | 19 | 625 | 39 | 0.5 | 40 | 200 | 21 | CSC |
| FR Cd 57 | FR-73-0683 | -77.419998 | 39.547222 | P | S | H | 10 | 395 | 19 | 1 | 35 | 395 | 25 | CSC |
| FR Cd 58 | FR-73-0682 | -77.419724 | 39.547501 | P | S | H | 10 | 300 | 20 | 1 | 30 | 300 | 20 | CSC |
| FR Cd 59 | FR-73-2891 | -77.419167 | 39.548611 | P | F | H | 25 | 118 | 30 | 50 | 20 | 118 | -5 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Cd 60 | FR-73-3367 | -77.417778 | 39.542778 | P | F | H | 34 | 95 | 39 | 12 | 23 | 95 | -11 | FSC |
| FR Cd 61 | FR-73-7863 | -77.422501 | 39.543888 | P | S | H | 80 | 300 | 87 | 2 | 25 | 300 | -55 | CSC |
| FR Cd 62 | FR-73-7554 | -77.44278 | 39.543888 | P | S | C | 25 | 205 | 39 | 20 | 25 | 90 | 0 | FSC |
| FR Cd 63 | FR-73-8055 | -77.444168 | 39.542778 | P | S | H | 95 | 180 | 46 | 5 | 30 | 180 | -65 | FSC |
| FR Cd 64 | FR-73-1802 | -77.43333 | 39.536667 | P | S | H | 15 | 80 | 23 | 15 | 12 | 80 | -3 | FSC |
| FR Cd 65 | FR-73-8389 | -77.418335 | 39.540833 | P | F | H | 27 | 200 | 41 | 30 | 20 | 200 | -7 | FSC |
| FR Cd 66 | FR-73-8486 | -77.417503 | 39.536667 | P | F | H | 37 | 100 | 44 | 15 | 10 | 100 | -27 | FSC |
| FR Cd 67 | FR-73-8472 | -77.417503 | 39.53389 | P | F | H | 55 | 100 | 20 | 75 | 10 | 15 | -45 | FSC |
| FR Cd 68 | FR-73-6646 | -77.419998 | 39.533054 | P | F | H | 60 | 250 | 65 | 4 | 35 | 250 | -25 | FSC |
| FR Cd 69 | FR-73-1153 | -77.436943 | 39.525555 | P | F | H | 75 | 115 | 78 | 10 | 18 | 115 | -57 | CSC |
| FR Cd 70 | FR-73-3449 | -77.43 | 39.524445 | P | F | H | 88 | 165 | 96 | 50 | 20 | 165 | -68 | CSC |
| FR Cd 71 | FR-73-0726 | -77.428612 | 39.525276 | P | F | H | 55 | 100 | 64 | 10 | 30 | 95 | -25 | FSC |
| FR Cd 72 | FR-73-2909 | -77.426666 | 39.525833 | P | F | H | 60 | 95 | 66 | 12 | 25 | 95 | -35 | FSC |
| FR Cd 73 | FR-73-8523 | -77.432221 | 39.523334 | P | F | H | 50 | 100 | 58 | 5 | 30 | 95 | -20 | CSC |
| FR Cd 74 | FR-73-0153 | -77.448891 | 39.522221 | P | S | C | 30 | 120 | 39 | 5 | 10 | 120 | -20 | CSC |
| FR Cd 75 | FR-70-0366 | -77.455276 | 39.521668 | BR | S | C | 28 | 270 | 32 | 1 | 2 | 270 | -26 | CSC |
| FR Cd 76 | FR-73-1607 | -77.438614 | 39.519444 | P | F | H | 123 | 162 | 141 | 20 | 43 | 162 | -80 | CSC |
| FR Cd 77 | FR-73-6227 | -77.442223 | 39.518055 | P | F | H | 120 | 175 | 133 | 15 | 41 | 175 | -79 | CSC |
| FR Cd 78 | FR-73-2327 | -77.450554 | 39.516945 | P | S | H | 90 | 210 | 96 | 3 | 29 | 40 | -61 | CSC |
| FR Cd 79 | FR-73-5768 | -77.445274 | 39.5075 | P | S | H | 50 | 365 | 60 | 5 | 20 | 30 | -30 | CSC |
| FR Cd 80 | FR-73-1011 | -77.445274 | 39.506943 | P | S | H | 40 | 120 | 46 | 10 | 10 | 120 | -30 | CSC |
| FR Cd 81 | FR-73-8364 | -77.448059 | 39.50528 | P | S | H | 105 | 350 | 114 | 2 | 45 | 350 | -60 | CSC |
| FR Cd 82 | FR-73-4166 | -77.431946 | 39.508335 | P | S | H | 15 | 205 | 40.5 | 4 | 20 | 30 | 5 | FSC |
| FR Cd 83 | FR-73-3697 | -77.432503 | 39.509167 | P | S | H | 1 | 342 | 41 | 2 | 65 | 75 | 64 | FSC |
| FR Cd 84 | FR-73-7573 | -77.434166 | 39.50861 | P | S | H | 22 | 220 | 60 | 6 | 30 | 200 | 8 | FSC |
| FR Cd 85 | FR-73-6410 | -77.433891 | 39.507778 | P | S | H | 2 | 185 | 45 | 5 | 55 | 175 | 53 | FSC |
| FR Cd 86 | FR-73-8205 | -77.433891 | 39.5075 | P | S | H | 30 | 300 | 41 | 3 | 5 | 300 | -25 | FSC |
| FR Cd 87 | FR-73-7985 | -77.43528 | 39.50639 | P | F | H | 40 | 300 | 46 | 3 | 38 | 300 | -2 | FSC |
| FR Cd 88 | FR-65-0524 | -77.441109 | 39.500557 | P | F | H | - | 69 | 30 | 20 | 30 | - | - | FSC |
| FR Cd 89 | FR-73-7399 | -77.420281 | 39.548054 | P | S | H | - | - | - | 0 | - | - | - | CSC |
| FR Cd 90 | FR-73-7399 | -77.420281 | 39.548054 | P | S | H | - | - | - | 0 | - | - | - | CSC |
| FR Cd 91 | FR-73-7399 | -77.420281 | 39.548054 | P | S | H | - | - | - | 0 | - | - | - | CSC |
| FR Cd 92 | FR-73-7399 | -77.420281 | 39.548054 | P | S | H | - | - | - | 0 | - | - | - | CSC |
| FR Cd 93 | FR-81-1946 | -77.385559 | 39.546112 | P | S | H | - | 100 | 63 | 20 | 20 | 100 | - | FSC |
| FR Ce 5 | FR-01-3075 | -77.363609 | 39.572498 | P | H | H | - | 150 | 15 | 10 | 30 | 50 | - | FSC |
| FR Ce 6 | FR-01-1684 | -77.354721 | 39.500557 | P | F | H | - | 264 | 25 | 2 | 20 | 100 | - | C |
| FR Ce 8 | FR-02-2021 | -77.363609 | 39.519722 | P | W | H | 6 | 275 | 20 | 80 | 16 | 16 | 10 | C |
| FR Ce 9 | FR-02-1753 | -77.410278 | 39.528889 | P | F | H | - | 115 | - | 9 | 5 | 6 | - | FSC |
| FR Ce 10 | FR-01-7308 | -77.413055 | 39.515835 | P | F | H | 2 | 113 | 23.5 | 10 | 6 | 28 | 4 | FSC |
| FR Ce 12 | FR-00-9062 | -77.388054 | 39.535557 | P | F | H | 15 | 138 | 15 | 10 | 50 | 90 | 35 | FSC |
| FR Ce 13 | FR-01-6631 | -77.400833 | 39.525276 | P | S | H | 2 | 126 | 12 | 30 | 30 | 40 | 28 | FSC |
| FR Ce 14 | FR-01-3076 | -77.381111 | 39.554722 | P | F | H | - | 152 | 27 | 4 | 30 | 75 | - | FSC |
| FR Ce 15 | - | -77.383057 | 39.555279 | P | F | H | - | 147 | - | 6 | - | - | - | FSC |
| FR Ce 18 | FR-69-0150 | -77.344719 | 39.52111 | P | F | H | 35 | 395 | 41 | 1.5 | 30 | 395 | -5 | C |
| FR Ce 20 | FR-69-0384 | -77.34417 | 39.520832 | P | F | H | 8 | 58 | 16 | 30 | - | - | - | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ce 21 | FR-70-0124 | -77.34417 | 39.520279 | P | F | H | 40 | 145 | 77 | 20 | 60 | 100 | 20 | C |
| FR Ce 22 | FR-66-0596 | -77.34417 | 39.515278 | P | H | U | 20 | 325 | 25 | 3.5 | 28 | 325 | 8 | C |
| FR Ce 23 | FR-70-0289 | -77.343887 | 39.515556 | P | H | H | 8 | 395 | 42 | 3 | 40 | 395 | 32 | C |
| FR Ce 30 | FR-71-0607 | -77.338333 | 39.535278 | P | S | H | - | 140 | 139 | 10 | 70 | 100 | - | C |
| FR Ce 31 | FR-72-0227 | -77.345833 | 39.537777 | P | S | H | 42 | 162 | 58 | 6 | 30 | - | -12 | CSC |
| FR Ce 32 | FR-71-0437 | -77.400559 | 39.52639 | P | H | H | - | 223 | 43 | 27 | 30 | - | - | FSC |
| FR Ce 33 | FR-72-0238 | -77.337776 | 39.53611 | P | V | H | 130 | 868 | 137 | 0.2 | 150 | - | -14 | C |
| FR Ce 34 | FR-73-0175 | -77.386665 | 39.5625 | P | F | H | 5 | 100 | 38 | 15 | 30 | - | 25 | FSC |
| FR Ce 35 | FR-73-0207 | -77.354446 | 39.573055 | P | H | S | 10 | 220 | 23 | 70 | - | - | - | FSC |
| FR Ce 36 | FR-73-0190 | -77.39389 | 39.529999 | P | S | H | 2 | 295 | 19 | 12 | - | - | - | FSC |
| FR Ce 37 | FR-73-0096 | -77.381668 | 39.540001 | P | H | H | 10 | 170 | 20 | 20 | 50 | 170 | 40 | FSC |
| FR Ce 38 | FR-73-0199 | -77.412224 | 39.523613 | P | S | H | 2 | 125 | 21 | 20 | 25 | 120 | 23 | FSC |
| FR Ce 39 | FR-71-0104 | -77.36528 | 39.576111 | P | H | H | 20 | 165 | 34 | 100 | 48 | 165 | 28 | FSC |
| FR Ce 40 | FR-00-7543 | -77.415558 | 39.537224 | P | H | H | - | 55 | 16 | 3 | 10 | 50 | - | FSC |
| FR Ce 41 | FR-01-1354 | -77.416115 | 39.537224 | P | H | H | 5 | 110 | 5 | 20 | 8 | 16 | 3 | FSC |
| FR Ce 42 | FR-04-3308 | -77.416115 | 39.540001 | P | F | T | - | 160 | 21 | 100 | 30 | - | - | FSC |
| FR Ce 43 | FR-00-6465 | -77.41667 | 39.540554 | P | F | H | 8 | 72 | 12 | 10 | 10 | 18 | 2 | FSC |
| FR Ce 45 | FR-02-9265 | -77.416115 | 39.537498 | P | H | H | - | 109 | 26 | 10 | 26 | 35 | - | FSC |
| FR Ce 46 | FR-69-0054 | -77.416389 | 39.537498 | P | H | H | - | 130 | 35 | 8 | 30 | - | - | FSC |
| FR Ce 49 | FR-70-0112 | -77.394722 | 39.527779 | P | F | H | - | 95 | 27 | 10 | 28 | 95 | - | FSC |
| FR Ce 50 | FR-71-0519 | -77.381943 | 39.540279 | P | H | H | 10 | 220 | 20 | 12 | 40 | - | 30 | FSC |
| FR Ce 51 | FR-72-0645 | -77.382774 | 39.538887 | P | H | H | 10 | 170 | 20 | 8 | 45 | 165 | 35 | FSC |
| FR Ce 52 | FR-73-0086 | -77.386948 | 39.533611 | P | H | H | 2 | 225 | 21 | 5 | 40 | 220 | 38 | FSC |
| FR Ce 53 | FR-66-0111 | -77.394165 | 39.525002 | P | S | H | - | 189 | 32 | 10 | 30 | - | - | FSC |
| FR Ce 54 | FR-73-1626 | -77.383614 | 39.570835 | P | S | H | 10 | 145 | 20 | 6 | 60 | 145 | 50 | FSC |
| FR Ce 55 | FR-73-4505 | -77.385559 | 39.56139 | P | S | H | 25 | 115 | 39 | 25 | 6 | 115 | -19 | FSC |
| FR Ce 56 | FR-73-5410 | -77.386948 | 39.554722 | P | S | H | 23 | 170 | 27 | 10 | 15 | 170 | -8 | FSC |
| FR Ce 57 | FR-73-2619 | -77.398888 | 39.551388 | P | H | H | 10 | 145 | 22 | 15 | 20 | 145 | 10 | FSC |
| FR Ce 58 | FR-73-0978 | -77.399445 | 39.548611 | P | H | H | 23 | 120 | 27 | 8 | 22 | 120 | -1 | CSC |
| FR Ce 59 | FR-73-6808 | -77.413055 | 39.538055 | P | F | C | 18 | 505 | 39 | 20 | 42 | 60 | 24 | FSC |
| FR Ce 61 | FR-73-8315 | -77.416115 | 39.536945 | P | F | H | 5 | 100 | 20 | 20 | 25 | 100 | 20 | FSC |
| FR Ce 62 | FR-73-6034 | -77.411941 | 39.533611 | P | F | H | 3 | 180 | 55 | 5 | 30 | 175 | 27 | FSC |
| FR Ce 63 | FR-73-1749 | -77.412224 | 39.523056 | P | F | H | 2 | 125 | 20 | 25 | 30 | 120 | 28 | FSC |
| FR Ce 64 | FR-73-6539 | -77.398888 | 39.524445 | P | S | H | 31 | 180 | 36 | 8 | 35 | 180 | 4 | FSC |
| FR Ce 65 | FR-73-5762 | -77.393608 | 39.528332 | P | F | H | 10 | 250 | 20 | 4 | 54 | 250 | 44 | FSC |
| FR Ce 66 | FR-73-5347 | -77.395279 | 39.531666 | P | S | H | 34 | 270 | 40 | 8 | 32 | 270 | -2 | FSC |
| FR Ce 67 | FR-73-2936 | -77.387497 | 39.533054 | P | S | H | 10 | 245 | 20 | 6 | 45 | 245 | 35 | FSC |
| FR Ce 68 | FR-73-1296 | -77.388336 | 39.535557 | P | H | H | 15 | 160 | 23 | 20 | 30 | 160 | 15 | FSC |
| FR Ce 69 | FR-73-1344 | -77.385277 | 39.538887 | P | H | H | 15 | 170 | 22 | 10 | 51 | 170 | 36 | FSC |
| FR Ce 70 | FR-73-8292 | -77.3825 | 39.540554 | P | H | H | 30 | 370 | 41 | 3 | 50 | 370 | 20 | FSC |
| FR Ce 71 | FR-73-7767 | -77.375275 | 39.508057 | P | S | H | 18 | 403 | 39 | 2 | 30 | 385 | 12 | C |
| FR Ce 72 | FR-73-2485 | -77.376389 | 39.505833 | P | S | H | 30 | 362 | 38 | 4 | 60 | 65 | 30 | C |
| FR Ce 73 | FR-73-3155 | -77.375 | 39.504444 | P | S | H | 10 | 404 | 62 | 4 | 30 | 40 | 20 | C |
| FR Ce 74 | FR-73-5610 | -77.373337 | 39.503613 | P | F | H | 38 | 250 | 40 | 4 | 30 | 110 | -8 | C |
| FR Ce 75 | FR-73-4828 | -77.370552 | 39.500832 | P | F | H | 18 | 160 | 27 | 15 | 20 | 30 | 2 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ce 76 | FR-73-1041 | -77.373611 | 39.509724 | P | S | H | 58 | 100 | 65 | 30 | 25 | - | -33 | C |
| FR Ce 77 | FR-73-3440 | -77.370277 | 39.506943 | P | F | H | 15 | 100 | 22 | 50 | 35 | 100 | 20 | C |
| FR Ce 78 | FR-73-8438 | -77.372223 | 39.539444 | P | F | H | 30 | 300 | 41 | 3 | 35 | 300 | 5 | FSC |
| FR Ce 79 | FR-73-6095 | -77.37278 | 39.539722 | P | S | H | 3 | 125 | 20 | 8 | 85 | 120 | 32 | FSC |
| FR Ce 80 | FR-73-7952 | -77.373611 | 39.542778 | P | H | H | 30 | 300 | 40 | 4 | 60 | 300 | 30 | FSC |
| FR Ce 81 | FR-73-4843 | -77.375275 | 39.544167 | P | H | H | 10 | 220 | 20 | 4 | 45 | 220 | 35 | FSC |
| FR Ce 82 | FR-73-6417 | -77.371948 | 39.558334 | P | S | H | 32 | 220 | 39 | 20 | 42 | 220 | 10 | FSC |
| FR Ce 83 | FR-73-7702 | -77.370003 | 39.564724 | P | S | H | 10 | 225 | 23 | 10 | 5 | 65 | -5 | FSC |
| FR Ce 84 | FR-73-5640 | -77.364441 | 39.575279 | P | F | H | 10 | 200 | 20 | 20 | 40 | 200 | 30 | FSC |
| FR Ce 85 | FR-73-7756 | -77.36528 | 39.575554 | P | F | H | 30 | 225 | 39 | 15 | 58 | 225 | 28 | FSC |
| FR Ce 86 | FR-73-0668 | -77.36667 | 39.576668 | P | F | T | 10 | 220 | 20 | 50 | 52 | 220 | 42 | CSC |
| FR Ce 87 | FR-73-1496 | -77.351112 | 39.576668 | P | F | H | 15 | 220 | 22 | 7 | 55 | 165 | 40 | FSC |
| FR Ce 88 | FR-73-6581 | -77.349441 | 39.582501 | P | H | H | 31 | 150 | 39 | 20 | 60 | 150 | 29 | FSC |
| FR Ce 89 | FR-73-5159 | -77.392502 | 39.52861 | P | F | H | 8 | 200 | 21 | 15 | 25 | 195 | 17 | FSC |
| FR Ce 90 | FR-73-7983 | -77.382774 | 39.571388 | P | S | H | 68 | 207 | 21 | 50 | 30 | 40 | -38 | CSC |
| FR Ce 94 | FR-81-3209 | -77.388336 | 39.559166 | P | S | H | - | 175 | 62 | 30 | 41 | 175 | - | FSC |
| FR Ce 95 | FR-81-2279 | -77.368332 | 39.576668 | P | H | H | - | 225 | 41 | 20 | 45 | 225 | - | FSC |
| FR Cf 1 | FR-01-0039 | -77.31667 | 39.541668 | P | F | P | 4 | 200 | 35 | 150 | 3 | 45 | -1 | C |
| FR Cf 2 | FR-00-8238 | -77.271111 | 39.504444 | P | S | H | 6 | - | 10 | 10 | 25 | 25 | 19 | FSC |
| FR Cf 3 | FR-01-0122 | -77.28833 | 39.516945 | P | S | H | - | 102 | 13 | 2 | 30 | 102 | - | FSC |
| FR Cf 4 | FR-01-0423 | -77.290276 | 39.518055 | P | H | H | 6 | 53 | 10 | 15 | 28 | 40 | 22 | FSC |
| FR Cf 7 | FR-01-2558 | -77.315559 | 39.5275 | P | S | H | - | 95 | 10.5 | 20 | 20 | 25 | - | C |
| FR Cf 8 | FR-01-3950 | -77.31472 | 39.536667 | P | S | U | 1.5 | 50 | 20 | 30 | 20 | - | 18.5 | C |
| FR Cf 10 | FR-01-9773 | -77.331108 | 39.533054 | P | S | S | 55 | 115 | 80 | 9 | 12 | 46 | -43 | C |
| FR Cf 12 | FR-01-3382 | -77.32917 | 39.546665 | P | H | H | - | 59 | 8 | 1 | 40 | - | - | FSC |
| FR Cf 16 | FR-01-8504 | -77.321663 | 39.511112 | P | H | H | 4 | 60 | 24 | 7 | 18 | 26 | 14 | C |
| FR Cf 17 | FR-01-8324 | -77.260559 | 39.516388 | P | S | H | 45 | 66 | 48 | 8 | 5 | 52 | -40 | I |
| FR Cf 18 | FR-00-4324 | -77.269722 | 39.522499 | P | H | H | - | 96 | 10 | 6 | 34 | 76 | - | FSC |
| FR Cf 20 | FR-01-3286 | -77.307503 | 39.550556 | P | S | H | 0 | 29 | 26 | 6 | 18 | 22 | 18 | C |
| FR Cf 22 | FR-00-3874 | -77.295555 | 39.535 | P | W | H | 8 | 82 | 12 | 7 | 19 | 19 | 11 | C |
| FR Cf 23 | FR-00-7072 | -77.313332 | 39.557221 | P | H | H | 5 | 58 | 8 | 10 | - | - | - | CSC |
| FR Cf 24 | FR-01-1696 | -77.298058 | 39.556946 | P | H | H | 30 | 123 | 17.5 | 0.5 | 27 | - | -3 | FSC |
| FR Cf 28 | FR-00-7504 | -77.251389 | 39.581944 | P | S | H | 10 | 80 | 15 | 15 | 30 | 60 | 20 | FSC |
| FR Cf 29 | FR-02-3178 | -77.308334 | 39.549721 | P | F | H | 14 | 47 | 14 | 25 | 20 | 20 | 6 | C |
| FR Cf 30 | FR-01-2165 | -77.315559 | 39.535 | P | F | U | - | 88 | 11.5 | 20 | 20 | 25 | - | C |
| FR Cf 33 | FR-01-7390 | -77.265831 | 39.56361 | P | S | H | 24 | 110 | 31 | 10 | 53 | 90 | 29 | FSC |
| FR Cf 36 | FR-68-0470 | -77.326386 | 39.5 | P | W | H | 15 | 95 | 23 | 50 | 10 | 95 | -5 | C |
| FR Cf 37 | FR-66-0440 | -77.307221 | 39.557221 | P | S | N | 165 | 386 | 62 | 2 | - | - | - | C |
| FR Cf 39 | FR-69-0250 | -77.304169 | 39.554722 | P | V | S | 30 | 154 | 34 | 6 | 30 | 150 | 0 | C |
| FR Cf 40 | FR-70-0254 | -77.330276 | 39.535557 | P | S | H | 20 | 145 | 42 | 10 | 25 | 65 | 5 | C |
| FR Cf 41 | FR-71-0581 | -77.3 | 39.574444 | P | S | H | 4 | 110 | 21 | 5 | 32 | 109 | 28 | FSC |
| FR Cf 42 | FR-72-0061 | -77.299721 | 39.574165 | P | S | H | 5 | 220 | 25 | 8 | 33 | - | 28 | FSC |
| FR Cf 43 | FR-72-0107 | -77.272224 | 39.574444 | P | H | H | 35 | 120 | 22 | 5 | 60 | 119 | 25 | FSC |
| FR Cf 44 | FR-72-0422 | -77.264725 | 39.577221 | P | H | H | 50 | 170 | 55 | 4 | 38 | 170 | -12 | FSC |
| FR Cf 45 | FR-71-0381 | -77.309448 | 39.562222 | P | H | S | 35 | 160 | 44 | 100 | 20 | 160 | -15 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Cf 47 | FR-03-4608 | -77.313614 | 39.530834 | P | S | P | - | 297 | 36 | 20 | 3 | 178 | - | C |
| FR Cf 48 | FR-73-7972 | -77.310554 | 39.530834 | P | V | N | 40 | 70 | 53 | 100 | 15 | 60 | -25 | C |
| FR Cf 49 | FR-05-5162 | -77.301666 | 39.522499 | P | S | N | 36 | 348 | 42 | 5 | - | 226 | - | C |
| FR Cf 50 | FR-72-0623 | -77.303886 | 39.578335 | P | S | U | 8 | 395 | 19 | 15 | 38 | 395 | 30 | C |
| FR Cf 51 | FR-73-3804 | -77.300835 | 39.583057 | P | S | H | 10 | 225 | 20 | 7 | 38 | 225 | 28 | FSC |
| FR Cf 53 | FR-02-0905 | -77.269722 | 39.573891 | P | S | N | 122 | 200 | 124 | 110 | 38 | 150 | -84 | FSC |
| FR Cf 54 | FR-73-6805 | -77.267219 | 39.575001 | P | S | C | 6 | 150 | 77 | 60 | 40 | 140 | 34 | FSC |
| FR Cf 56 | FR-81-4568 | -77.329719 | 39.547501 | P | S | H | 6 | 175 | 79 | 40 | 20 | 100 | 14 | FSC |
| FR Cg 2 | - | -77.233055 | 39.530834 | P | F | H | - | 71 | 11 | 4.5 | - | - | - | I |
| FR Cg 3 | FR-01-8739 | -77.233055 | 39.53278 | P | F | H | 36 | 100 | 36 | 6 | 40 | - | 4 | I |
| FR Cg 4 | FR-00-3471 | -77.233612 | 39.525833 | P | F | H | 80 | 100 | - | 7 | 36 | 36 | -44 | I |
| FR Cg 5 | FR-00-9383 | -77.228332 | 39.576668 | P | S | H | 10 | 81 | 21 | 10 | 22 | 60 | 12 | FSC |
| FR Cg 6 | FR-01-2220 | -77.231941 | 39.529999 | P | F | H | 10 | 58 | 21 | 12 | 24 | 39 | 14 | I |
| FR Cg 7 | FR-00-2276 | -77.217499 | 39.571388 | P | S | S | 8 | 98 | 8 | 1.8 | 10 | - | 2 | I |
| FR Cg 9 | FR-01-3951 | -77.217499 | 39.570835 | P | S | H | - | - | - | 7 | 31 | 86 | - | FSC |
| FR Cg 10 | FR-01-9359 | -77.222778 | 39.571667 | P | S | H | - | 120 | 17 | 14 | 48 | - | - | FSC |
| FR Cg 11 | - | -77.177223 | 39.509167 | P | S | H | - | 349 | - | 8 | - | - | - | I |
| FR Cg 12 | - | -77.16861 | 39.513332 | P | V | H | - | 64 | - | 25 | - | - | - | I |
| FR Cg 16 | FR-05-3176 | -77.180832 | 39.5275 | P | S | H | 14 | 250 | 18 | 2.5 | 30 | 249 | 16 | I |
| FR Cg 17 | - | -77.181389 | 39.527222 | P | S | U | - | 270 | - | 0.5 | - | - | - | I |
| FR Cg 18 | - | -77.181663 | 39.5275 | P | S | U | - | 260 | - | 1 | - | - | - | I |
| FR Cg 20 | FR-72-0131 | -77.245834 | 39.561943 | P | V | H | 35 | 165 | 41 | 8 | 10 | 165 | -25 | FSC |
| FR Cg 21 | FR-73-2208 | -77.229721 | 39.53333 | P | S | C | 68 | 110 | 75 | 3 | 8 | 110 | -60 | FSC |
| FR Cg 22 | FR-73-1870 | -77.233055 | 39.540279 | P | S | T | 3 | 125 | 20 | 12 | 40 | 120 | 37 | FSC |
| FR Cg 23 | FR-73-3785 | -77.232224 | 39.541111 | P | F | R | 30 | 145 | 61 | 6 | 30 | 40 | 0 | FSC |
| FR Cg 24 | FR-73-7880 | -77.220276 | 39.555 | P | H | H | 81 | 280 | 20 | 1 | 35 | 280 | -46 | FSC |
| FR Cg 25 | FR-73-7207 | -77.219444 | 39.556389 | P | H | H | 15 | 220 | 20 | 3 | 30 | 210 | 15 | FSC |
| FR Cg 26 | FR-73-1307 | -77.21917 | 39.558334 | P | H | H | 3 | 402 | 36 | 1 | - | - | - | FSC |
| FR Cg 27 | FR-73-1932 | -77.218056 | 39.560833 | P | S | H | 60 | 180 | 45 | 2 | 35 | 170 | -25 | FSC |
| FR Cg 28 | FR-73-3634 | -77.21667 | 39.561943 | P | S | H | 58 | 395 | 63 | 1 | 66 | 395 | 8 | FSC |
| FR Cg 29 | FR-73-8152 | -77.209442 | 39.51667 | P | S | H | 25 | 220 | 41 | 4 | 25 | 220 | 0 | I |
| FR Ch 2 | FR-73-3174 | -77.142502 | 39.503334 | P | S | H | 20 | 282 | 38 | 2 | 48 | 58 | 28 | I |
| FR Ch 3 | FR-73-3860 | -77.14167 | 39.504166 | P | S | H | 28 | 153 | 20 | 3 | 26 | 140 | -2 | I |
| FR Ch 4 | FR-73-0550 | -77.137779 | 39.507221 | P | S | H | 10 | 500 | 24 | 2 | 35 | - | 25 | I |
| FR Ch 5 | FR-73-2050 | -77.15583 | 39.515835 | P | S | H | 123 | 182 | 44 | 3 | 95 | 105 | -28 | I |
| FR Db 1 | FR-00-7477 | -77.586113 | 39.459999 | BR | H | S | 6 | 49 | 14.5 | 35 | 6 | 6 | 0 | I |
| FR Db 4 | FR-00-3293 | -77.614166 | 39.495556 | BR | S | H | 21 | 70 | 21 | 6 | 39 | 58 | 18 | I |
| FR Db 5 | FR-00-3218 | -77.61994 | 39.497215 | BR | S | H | - | 69.5 | 51 | 5 | 39 | 59 | - | I |
| FR Db 6 | FR-73-4556 | -77.601944 | 39.454723 | BR | H | H | 40 | 150 | 41 | 5 | 50 | 97 | 10 | I |
| FR Db 7 | FR-73-6540 | -77.60083 | 39.435555 | BR | S | H | 44 | 100 | 48 | 20 | 35 | 100 | -9 | I |
| FR Db 8 | FR-70-0284 | -77.619163 | 39.483055 | BR | S | R | 12 | 130 | 54 | 15 | 35 | 110 | 23 | I |
| FR Db 9 | FR-73-3223 | -77.592224 | 39.467777 | BR | S | N | 75 | 250 | 82 | 15 | 31 | 96 | -44 | I |
| FR Db 10 | FR-94-0115 | -77.599464 | 39.450279 | BR | H | H | 49 | 200 | 60 | 20 | 46 | 200 | -3 | I |
| FR Db 11 | FR-73-8445 | -77.600403 | 39.450302 | BR | S | H | 20 | 185 | 62 | 6 | 30 | 150 | 10 | I |
| FR Db 12 | FR-88-4876 | -77.600403 | 39.45137 | BR | H | H | 70 | 525 | 84 | 1.5 | 85 | 165 | 15 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Db 13 | FR-73-7436 | -77.601769 | 39.452213 | BR | S | H | 87 | 145 | 94 | 20 | 86 | 145 | -1 | I |
| FR Db 14 | FR-88-1569 | -77.601891 | 39.453194 | BR | S | H | 56 | 200 | 63 | 12 | 50 | 200 | -6 | I |
| FR Db 15 | FR-73-7214 | -77.587898 | 39.46732 | BR | H | H | 44 | 300 | 51 | 2 | 45 | 300 | 1 | I |
| FR Db 16 | FR-73-5282 | -77.587936 | 39.468288 | BR | H | H | 30 | 125 | 41 | 8 | 30 | 120 | 0 | I |
| FR Db 17 | FR-73-5250 | -77.587776 | 39.468533 | BR | H | H | 60 | 385 | 66 | 2 | 50 | 300 | -10 | I |
| FR Db 18 | FR-73-3557 | -77.585869 | 39.466972 | BR | H | H | 57 | 200 | 62 | 5 | 29 | 200 | -28 | I |
| FR Db 19 | FR-73-2889 | -77.583962 | 39.468864 | BR | H | H | 55 | 195 | 60 | 8 | 48 | 195 | -7 | I |
| FR Db 20 | FR-73-3559 | -77.583908 | 39.469391 | BR | H | H | 82 | 175 | 91 | 25 | 66 | 175 | -16 | I |
| FR Db 21 | FR-73-3130 | -77.58448 | 39.468723 | BR | H | H | 40 | 150 | 46 | 15 | 52 | 150 | 12 | I |
| FR Db 22 | FR-73-4255 | -77.584984 | 39.468742 | BR | H | H | 108 | 250 | 116 | 20 | 36 | 80 | -72 | I |
| FR Db 23 | FR-73-7999 | -77.585312 | 39.467499 | BR | S | H | 74 | 425 | 79 | 1 | 53 | 425 | -21 | I |
| FR Db 24 | FR-94-4467 | -77.589394 | 39.419628 | BR | H | H | 50 | 300 | 59 | 4 | 27 | 300 | -23 | I |
| FR Db 25 | FR-73-5090 | -77.590385 | 39.419792 | BR | H | H | 22 | 100 | 27 | 4 | 35 | 78 | 13 | I |
| FR Db 26 | FR-88-0026 | -77.613388 | 39.42717 | BR | H | H | 50 | 175 | 55 | 6 | 31 | 175 | -19 | I |
| FR Db 27 | FR-88-0027 | -77.614151 | 39.427933 | BR | H | H | 54 | 300 | 63 | 5 | 30 | 300 | -24 | I |
| FR Db 28 | FR-88-0022 | -77.614357 | 39.430103 | BR | H | H | 56 | 175 | 63 | 5 | 31 | 175 | -25 | I |
| FR Db 29 | FR-88-0024 | -77.613556 | 39.427864 | BR | H | H | 56 | 600 | 63 | 1 | 30 | 160 | -26 | I |
| FR Dc 1 | FR-00-6004 | -77.504997 | 39.426945 | BR | S | H | - | 50 | 7 | 8 | 14 | 14 | - | I |
| FR Dc 2 | - | -77.544167 | 39.445278 | BR | S | U | - | 104 | - | 15 | 50 | - | - | I |
| FR Dc 3 | FR-02-0551 | -77.575836 | 39.492779 | BR | S | H | 35 | 58 | 35.5 | 10 | 44 | 49 | 9 | I |
| FR Dc 4 | FR-01-2162 | -77.5 | 39.439445 | BR | H | H | - | 112 | 14 | 3 | 20 | 110 | - | I |
| FR Dc 5 | FR-01-2160 | -77.500275 | 39.442223 | BR | H | H | - | 113 | 15 | 8 | 15 | 35 | - | I |
| FR Dc 6 | FR-01-1210 | -77.50222 | 39.452221 | BR | S | H | - | 130 | 13 | 2 | 30 | 125 | - | I |
| FR Dc 7 | FR-00-9503 | -77.53833 | 39.494446 | BR | S | H | - | 66 | 45 | 10 | 15 | 25 | - | I |
| FR Dc 8 | FR-00-6422 | -77.529724 | 39.491943 | BR | S | H | 0 | 21 | 21 | 7 | 5 | 12 | 5 | CSC |
| FR Dc 9 | FR-01-9697 | -77.537224 | 39.455002 | BR | F | H | 20 | 93 | 8 | 10 | 33 | 33 | 13 | I |
| FR Dc 10 | FR-00-6161 | -77.576942 | 39.434166 | BR | S | H | - | 129 | 56 | 10 | 35 | 35 | - | I |
| FR Dc 11 | FR-01-1938 | -77.575554 | 39.4375 | BR | H | H | 0 | 50 | 50 | 5 | 10 | 10 | 10 | CSC |
| FR Dc 12 | FR-01-8227 | -77.571663 | 39.440834 | BR | V | H | 40 | 60 | - | 8 | 30 | 35 | -10 | I |
| FR Dc 13 | FR-01-0944 | -77.558052 | 39.446945 | BR | S | C | 6 | 69 | 12 | 10 | 14 | 60 | 8 | I |
| FR Dc 14 | FR-00-5695 | -77.559723 | 39.449165 | BR | S | H | 20 | 45 | 21 | 10 | 6 | 33 | -14 | I |
| FR Dc 15 | FR-00-9088 | -77.574997 | 39.456665 | BR | S | H | - | 103 | 38 | 10 | 30 | 50 | - | I |
| FR Dc 16 | FR-01-8163 | -77.52639 | 39.438888 | BR | F | P | - | 130 | - | 30 | 30 | 60 | - | I |
| FR Dc 17 | FR-00-8920 | -77.50222 | 39.428055 | BR | S | U | 12 | 67 | 67 | 5 | 38 | 45 | 4.7 | I |
| FR Dc 19 | FR-00-7979 | -77.579719 | 39.452221 | BR | H | H | - | 117 | 17 | 6 | 30 | 50 | - | I |
| FR Dc 26 | FR-00-6424 | -77.502502 | 39.436943 | BR | S | H | - | 95 | 10 | 1 | 45 | 90 | - | I |
| FR Dc 27 | - | -77.501663 | 39.422779 | BR | S | U | - | 100 | - | 25 | - | - | - | I |
| FR Dc 31 | - | -77.554169 | 39.444168 | BR | S | U | - | 375 | - | 30 | 60 | - | - | I |
| FR Dc 37 | FR-04-8794 | -77.514442 | 39.447224 | BR | V | P | 30 | 465 | 42 | 60 | 40 | - | 10 | I |
| FR Dc 38 | FR-65-0491 | -77.514442 | 39.447224 | BR | V | P | - | 160 | 32.5 | 40 | 9 | - | - | I |
| FR Dc 39 | FR-65-0491 | -77.514168 | 39.447224 | BR | V | P | - | 160 | 44 | 60 | 10 | - | - | I |
| FR Dc 40 | FR-69-0071 | -77.568886 | 39.4925 | BR | H | C | 40 | 395 | 46 | 4 | 30 | 395 | -10 | I |
| FR Dc 41 | FR-70-0509 | -77.567497 | 39.492222 | BR | H | U | 110 | 375 | 44 | 4 | 50 | 180 | -60 | I |
| FR Dc 42 | FR-73-7278 | -77.566391 | 39.491943 | BR | H | N | 10 | 220 | 41 | 20 | 46 | 185 | 36 | I |
| FR Dc 43 | FR-69-0500 | -77.568886 | 39.490276 | BR | S | U | 12 | 286 | 19 | 8 | 35 | 286 | 23 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dc 44 | FR-69-0500 | -77.56778 | 39.489445 | BR | S | N | 4 | 614 | 20 | 3 | 20 | - | 16 | I |
| FR Dc 45 | FR-73-8007 | -77.516113 | 39.442501 | BR | S | P | 53 | 475 | 63 | 40 | 18 | 475 | -35 | I |
| FR Dc 46 | FR-73-8006 | -77.515831 | 39.44278 | BR | S | P | 75 | 400 | 84 | 40 | 18 | 400 | -57 | I |
| FR Dc 47 | FR-73-8006 | -77.515556 | 39.44278 | BR | S | U | 50 | 500 | 63 | 6 | 5 | 500 | -45 | I |
| FR Dc 48 | FR-73-6400 | -77.516945 | 39.44389 | BR | H | P | 74 | 300 | 80 | 12 | 105 | 300 | 31 | I |
| FR Dc 49 | FR-73-6399 | -77.517219 | 39.444721 | BR | H | P | 80 | 425 | 86 | 12 | 66 | 425 | -14 | I |
| FR Dc 50 | FR-73-6398 | -77.51667 | 39.444721 | BR | H | P | 75 | 450 | 80 | 15 | 89 | 450 | 14 | I |
| FR Dc 51 | FR-73-1944 | -77.514168 | 39.447498 | BR | V | P | 48 | 500 | 54 | 30 | 10 | 500 | -38 | I |
| FR Dc 52 | FR-73-1943 | -77.514442 | 39.447224 | BR | V | P | 30 | 265 | 37 | 75 | 10 | 265 | -20 | I |
| FR Dc 53 | FR-73-1706 | -77.515274 | 39.447224 | BR | V | U | 28 | 215 | 33 | 10 | 10 | 215 | -18 | I |
| FR Dc 54 | FR-73-1602 | -77.515556 | 39.447224 | BR | V | U | 10 | 304 | 31 | 22 | 20 | 304 | 10 | I |
| FR Dc 55 | FR-66-0605 | -77.504997 | 39.431946 | BR | S | P | 15 | 265 | 23 | 25 | 30 | 265 | 15 | I |
| FR Dc 56 | FR-69-0207 | -77.509445 | 39.431946 | BR | S | P | 50 | 220 | 70 | 30 | 30 | 220 | -20 | I |
| FR Dc 57 | FR-73-0070 | -77.510277 | 39.431389 | BR | W | P | 70 | 300 | 76 | 30 | 30 | 300 | -40 | I |
| FR Dc 58 | FR-73-2825 | -77.513886 | 39.430832 | BR | S | P | 90 | 300 | 97 | 30 | 7 | 300 | -83 | I |
| FR Dc 59 | FR-73-2824 | -77.514442 | 39.43111 | BR | S | P | 48 | 150 | 54 | 35 | 6 | 150 | -42 | I |
| FR Dc 60 | FR-73-3729 | -77.518333 | 39.433613 | BR | S | P | 26 | 205 | 37 | 35 | 35 | 45 | 9 | I |
| FR Dc 61 | FR-73-7558 | -77.521111 | 39.429165 | BR | S | P | 60 | 675 | 70 | 15 | 20 | 675 | -40 | I |
| FR Dc 62 | FR-73-8045 | -77.508614 | 39.429165 | BR | S | P | 91 | 642 | 105 | 30 | 15 | 642 | -76 | I |
| FR Dc 63 | FR-04-6540 | -77.507225 | 39.430279 | BR | S | C | 20 | 130 | 23 | 20 | 22 | - | 2 | I |
| FR Dc 64 | FR-72-0051 | -77.502502 | 39.420555 | BR | S | R | 42 | 290 | 49 | 15 | 50 | 290 | 8 | I |
| FR Dc 67 | FR-81-2653 | -77.567497 | 39.446667 | BR | S | H | - | 100 | 42 | 12 | 4 | 100 | - | I |
| FR Dc 68 | FR-81-0079 | -77.574722 | 39.447224 | BR | S | H | - | 175 | 98 | 10 | 30 | 175 | - | I |
| FR Dc 70 | FR-88-4810 | -77.530327 | 39.493393 | BR | S | H | 31 | 425 | 43 | 1 | 21 | 425 | -10 | I |
| FR Dc 71 | FR-88-1353 | -77.549896 | 39.483776 | BR | S | H | 51 | 425 | 59 | 2 | 45 | 149 | -6 | I |
| FR Dc 72 | FR-73-5201 | -77.55703 | 39.481232 | BR | H | H | 70 | 125 | 78 | 20 | 49 | 125 | -21 | I |
| FR Dc 73 | FR-81-3155 | -77.556404 | 39.479599 | BR | H | H | 54 | 150 | 63 | 20 | 40 | 150 | -14 | I |
| FR Dc 74 | FR-73-5682 | -77.555069 | 39.478455 | BR | H | H | 48 | 323 | 60 | 2 | 50 | 60 | 2 | I |
| FR Dc 75 | FR-94-0098 | -77.553719 | 39.476128 | BR | H | H | 19 | 242 | 42 | 10 | 78 | 192 | 59 | I |
| FR Dc 76 | FR-73-7435 | -77.553886 | 39.47625 | BR | H | H | 32 | 150 | 39 | 7 | 10 | 150 | -22 | I |
| FR Dc 77 | FR-81-4883 | -77.560257 | 39.478672 | BR | H | H | 34 | 200 | 60 | 10 | 40 | 200 | 6 | I |
| FR Dc 78 | FR-81-2312 | -77.560432 | 39.477741 | BR | H | H | 29 | 205 | 39 | 3 | 75 | 185 | 46 | I |
| FR Dc 80 | FR-73-2023 | -77.560158 | 39.476269 | BR | H | H | 20 | 165 | 21 | 5 | 10 | 40 | -10 | I |
| FR Dc 81 | FR-81-5757 | -77.547272 | 39.466034 | BR | H | H | 18 | 300 | 80 | 6 | 45 | 290 | 27 | I |
| FR Dc 82 | FR-73-5480 | -77.543297 | 39.464184 | BR | H | H | 94 | 175 | 100 | 15 | 54 | 175 | -40 | I |
| FR Dc 83 | FR-73-8513 | -77.542847 | 39.464455 | BR | S | H | 87 | 150 | 94 | 20 | 38 | 150 | -49 | I |
| FR Dc 84 | FR-88-0088 | -77.541496 | 39.458012 | BR | H | H | 33 | 200 | 41 | 7 | 24 | 200 | -9 | I |
| FR Dc 85 | FR-73-6978 | -77.541908 | 39.457535 | BR | H | H | 24 | 205 | 41 | 5 | 50 | 80 | 26 | I |
| FR Dc 86 | FR-94-1738 | -77.541374 | 39.455936 | BR | H | H | 30 | 250 | 39 | 10 | 50 | 250 | 20 | I |
| FR Dc 87 | FR-81-1417 | -77.512138 | 39.462517 | BR | S | H | 80 | 600 | 89 | 1 | 60 | 600 | -20 | I |
| FR Dc 88 | FR-81-1017 | -77.512917 | 39.461121 | BR | S | H | 16 | 150 | 26 | 15 | 55 | - | 39 | I |
| FR Dc 90 | FR-81-3872 | -77.509788 | 39.467197 | BR | S | H | 28 | 225 | 39 | 7 | 45 | 225 | 17 | I |
| FR Dc 91 | FR-81-4242 | -77.515137 | 39.465748 | BR | S | H | 76 | 150 | 86 | 10 | 46 | 150 | -30 | I |
| FR Dc 92 | FR-81-3964 | -77.51429 | 39.465389 | BR | S | H | 60 | 300 | 70 | 6 | 46 | 300 | -14 | I |
| FR Dc 93 | FR-81-5334 | -77.513382 | 39.465042 | BR | S | H | 40 | 265 | 45 | 6 | 40 | 265 | 0 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dc 94 | FR-88-3230 | -77.511459 | 39.464584 | BR | S | H | 86 | 525 | 92 | 1 | 57 | 191 | -29 | I |
| FR Dc 95 | FR-94-4990 | -77.5121 | 39.464741 | BR | S | H | 40 | 400 | 104 | 1.6 | 50 | 400 | 10 | I |
| FR Dc 96 | FR-81-2769 | -77.516861 | 39.467091 | BR | H | H | 20 | 225 | 79 | 5 | 60 | 100 | 40 | I |
| FR Dc 97 | FR-81-3268 | -77.516975 | 39.467526 | BR | H | H | 10 | 150 | 21 | 10 | 30 | 150 | 20 | I |
| FR Dc 98 | FR-81-3175 | -77.517624 | 39.467457 | BR | H | H | 76 | 200 | 84 | 6 | 46 | 200 | -30 | I |
| FR Dc 99 | FR-81-4122 | -77.518318 | 39.46841 | BR | H | H | 72 | 200 | 80 | 12 | 42 | 200 | -30 | I |
| FR Dc 100 | FR-81-3199 | -77.518402 | 39.468185 | BR | H | H | 75 | 150 | 80 | 50 | 30 | 150 | -45 | I |
| FR Dc 101 | FR-73-8723 | -77.521805 | 39.471119 | BR | H | H | 95 | 200 | 63 | 4 | 65 | 175 | -30 | I |
| FR Dc 102 | FR-81-1033 | -77.521217 | 39.471008 | BR | H | H | 58 | 225 | 63 | 6 | 53 | 86 | -5 | I |
| FR Dc 103 | FR-73-6970 | -77.52179 | 39.470955 | BR | H | H | 80 | 400 | 84 | 2 | 63 | 400 | -17 | I |
| FR Dc 104 | FR-73-6681 | -77.521355 | 39.471355 | BR | H | H | 81 | 175 | 86 | 10 | 60 | 175 | -21 | I |
| FR Dc 105 | FR-73-2830 | -77.506653 | 39.477909 | BR | H | H | - | 100 | 42 | 20 | 30 | 90 | - | I |
| FR Dc 106 | FR-81-2612 | -77.568939 | 39.44862 | BR | H | H | 22 | 450 | 41 | 2 | 18 | 145 | -4 | I |
| FR Dc 107 | FR-81-1679 | -77.569794 | 39.447578 | BR | H | H | 56 | 300 | 63 | 4 | 25 | 300 | -31 | I |
| FR Dc 108 | FR-73-6416 | -77.570068 | 39.44717 | BR | H | H | 47 | 125 | 52 | 20 | 45 | 125 | -2 | I |
| FR Dc 109 | FR-73-8059 | -77.570953 | 39.445797 | BR | H | H | 55 | 125 | 63 | 20 | 25 | 125 | -30 | I |
| FR Dc 110 | FR-81-2356 | -77.572601 | 39.448593 | BR | H | H | 82 | 300 | 93 | 4 | 40 | 300 | -42 | I |
| FR Dc 111 | FR-73-7846 | -77.572166 | 39.448212 | BR | H | H | 10 | 125 | 22 | 15 | 30 | 50 | 20 | I |
| FR Dc 112 | FR-81-0878 | -77.573402 | 39.447006 | BR | H | H | 56 | 200 | 63 | 10 | 17 | 81 | -39 | I |
| FR Dc 113 | FR-73-7920 | -77.582207 | 39.466122 | BR | H | H | 57 | 475 | 63 | 1 | 55 | 475 | -2 | I |
| FR Dc 114 | FR-81-2158 | -77.582481 | 39.46645 | BR | H | H | 26 | 305 | 44 | 3 | 42 | 105 | 16 | I |
| FR Dc 115 | FR-81-5550 | -77.582741 | 39.466476 | BR | H | H | 15 | 420 | 78 | 6 | 70 | 420 | 55 | I |
| FR Dc 116 | FR-81-3090 | -77.556457 | 39.451069 | BR | H | H | 31 | 225 | 39 | 20 | 55 | 225 | 24 | CSC |
| FR Dc 117 | FR-81-3163 | -77.557968 | 39.449368 | BR | S | H | 46 | 125 | 52 | 20 | 21 | 125 | -25 | I |
| FR Dc 118 | FR-94-1287 | -77.523315 | 39.424072 | BR | S | H | 53 | 200 | 59 | 10 | 24 | 200 | -29 | I |
| FR Dc 119 | FR-94-1288 | -77.522446 | 39.424026 | BR | S | H | 31 | 200 | 39 | 10 | 20 | 200 | -11 | I |
| FR Dc 120 | FR-94-1284 | -77.522568 | 39.425468 | BR | S | H | 72 | 175 | 79 | 10 | 43 | 175 | -29 | I |
| FR Dc 121 | FR-94-1283 | -77.522636 | 39.425522 | BR | S | H | 60 | 250 | 70 | 8 | 42 | 250 | -18 | I |
| FR Dc 122 | FR-94-1277 | -77.520035 | 39.423237 | BR | S | H | 90 | 200 | 99 | 8 | 30 | 200 | -60 | I |
| FR Dc 123 | FR-94-1268 | -77.520454 | 39.423405 | BR | S | H | 52 | 150 | 59 | 20 | 24 | 150 | -28 | I |
| FR Dc 124 | FR-94-1289 | -77.521126 | 39.42329 | BR | S | H | 51 | 250 | 59 | 30 | 22 | 250 | -29 | I |
| FR Dc 125 | FR-73-3001 | -77.523018 | 39.419437 | BR | S | H | 15 | 250 | 21 | 4 | 26 | 250 | 11 | I |
| FR Dc 126 | FR-94-1265 | -77.518784 | 39.421894 | BR | S | H | 52 | 175 | 59 | 20 | 31 | 175 | -21 | I |
| FR Dc 127 | FR-88-0329 | -77.577049 | 39.416763 | BR | H | H | 45 | 525 | 56 | 2 | 43 | 152 | -2 | I |
| FR Dc 128 | FR-81-5885 | -77.551392 | 39.441509 | BR | S | H | 36 | 180 | 38 | 15 | 37 | 180 | 1 | I |
| FR Dc 129 | FR-73-7640 | -77.550903 | 39.44006 | BR | S | H | 46 | 175 | 52 | 5 | 40 | 175 | -6 | I |
| FR Dc 130 | FR-73-6889 | -77.550522 | 39.439507 | BR | H | H | 54 | 150 | 60 | 20 | 53 | 150 | -1 | I |
| FR Dc 131 | FR-81-5973 | -77.551544 | 39.436127 | BR | S | H | 31 | 200 | 38 | 6 | 54 | 96 | 23 | I |
| FR Dc 132 | FR-73-5498 | -77.550316 | 39.435173 | BR | S | H | 15 | 405 | 20 | 3 | 30 | 375 | 15 | I |
| FR Dc 133 | FR-73-4082 | -77.550781 | 39.434799 | BR | S | H | 10 | 400 | 20 | 2 | 40 | 400 | 30 | I |
| FR Dc 135 | FR-73-7322 | -77.58165 | 39.430225 | BR | S | H | 41 | 200 | 47 | 4 | 40 | 200 | -1 | I |
| FR Dc 136 | FR-73-4275 | -77.581978 | 39.431572 | BR | H | H | 15 | 150 | 32 | 4 | 27 | 130 | 12 | I |
| FR Dc 137 | FR-73-4280 | -77.582497 | 39.432266 | BR | H | H | 25 | 140 | 30 | 4 | 28 | 130 | 3 | I |
| FR Dc 138 | FR-73-4069 | -77.582725 | 39.432613 | BR | H | H | 4 | 100 | 21 | 10 | 40 | 95 | 36 | I |
| FR Dc 139 | FR-81-1573 | -77.569252 | 39.448368 | BR | H | H | 57 | 500 | 63 | 2 | 10 | 143 | -47 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dd 1 | - | -77.444168 | 39.43111 | P | F | T | - | - | - | 75 | - | - | - | C |
| FR Dd 3 | FR-01-0805 | -77.453331 | 39.440834 | P | S | T | 45 | 140 | 45 | 65 | 30 | - | -15 | CSC |
| FR Dd 5 | - | -77.467224 | 39.44611 | BR | F | U | - | 996 | - | 70 | - | - | - | CSC |
| FR Dd 7 | FR-00-6768 | -77.495834 | 39.421665 | BR | S | H | 18 | 154 | 153.5 | 5 | 53 | 73 | 35 | CSC |
| FR Dd 8 | FR-00-9443 | -77.497498 | 39.422222 | BR | S | C | 18 | 100 | 100 | 2 | 40 | 94 | 22 | CSC |
| FR Dd 9 | FR-02-2652 | -77.469719 | 39.429165 | P | S | H | 16 | 209 | 23 | 3 | - | 209 | - | CSC |
| FR Dd 10 | - | -77.496666 | 39.421391 | BR | S | U | - | 500 | 8 | 10 | 15 | - | - | CSC |
| FR Dd 13 | FR-01-5755 | -77.495003 | 39.441944 | BR | V | P | 35 | 85 | 42 | 50 | 5 | 11 | -30 | I |
| FR Dd 14 | FR-01-5111 | -77.475281 | 39.425835 | BR | S | H | 50 | 85 | 27 | 10 | 30 | 60 | -20 | FSC |
| FR Dd 15 | FR-00-3580 | -77.466392 | 39.435276 | BR | S | H | 0 | 124 | - | 3 | 6 | 110 | 6 | CSC |
| FR Dd 16 | FR-00-7489 | -77.470833 | 39.429722 | P | H | H | - | 88 | 35 | 3 | 30 | 70 | - | FSC |
| FR Dd 17 | FR-00-8522 | -77.472221 | 39.430832 | BR | H | H | - | 122 | 9 | 2.5 | 20 | 40 | - | FSC |
| FR Dd 18 | FR-00-8327 | -77.475555 | 39.45 | BR | S | H | 8 | 88 | 12 | 2.5 | 48 | 77 | 40 | CSC |
| FR Dd 20 | FR-00-5369 | -77.477501 | 39.45639 | BR | S | H | - | 90 | 6 | 3.5 | 36 | 80 | - | CSC |
| FR Dd 21 | FR-01-1215 | -77.470833 | 39.457222 | BR | S | H | - | 105 | 18 | 1 | 20 | 100 | - | FSC |
| FR Dd 22 | FR-01-2513 | -77.464996 | 39.456944 | BR | H | H | - | 130 | 28 | 15 | 30 | 50 | - | FSC |
| FR Dd 23 | FR-01-1590 | -77.464165 | 39.456944 | BR | H | H | 70 | 90 | 22 | 3 | 25 | 80 | -45 | FSC |
| FR Dd 24 | FR-01-4599 | -77.458885 | 39.455833 | BR | H | H | 5 | 80 | 13 | 5 | 35 | 70 | 30 | CSC |
| FR Dd 25 | FR-01-3047 | -77.456108 | 39.450832 | P | S | H | 19 | 93 | 23 | 12 | 23 | 76 | 4 | FSC |
| FR Dd 26 | FR-01-4022 | -77.449448 | 39.445 | P | F | H | - | 70 | 60 | 3 | - | - | - | CSC |
| FR Dd 29 | FR-00-7021 | -77.477501 | 39.452221 | BR | S | H | 21 | 62 | 21 | 6 | 30 | 45 | 9 | CSC |
| FR Dd 30 | FR-00-3728 | -77.467224 | 39.448055 | BR | S | H | 30 | 70 | 30 | 6 | 35 | 55 | 5 | FSC |
| FR Dd 31 | FR-00-9943 | -77.469444 | 39.464722 | BR | S | H | - | 104 | 12 | 2 | 30 | 104 | - | CSC |
| FR Dd 33 | FR-01-8452 | -77.44278 | 39.463612 | P | H | H | - | 75 | 25 | 9 | 32 | 48 | - | FSC |
| FR Dd 35 | FR-00-5057 | -77.435554 | 39.469723 | P | H | S | - | 100 | 14 | 6 | 25 | 80 | - | FSC |
| FR Dd 37 | FR-00-9916 | -77.43333 | 39.470833 | P | H | H | - | 90 | 15 | 5 | 10 | 86 | - | FSC |
| FR Dd 40 | FR-00-8873 | -77.424446 | 39.477501 | P | V | T | - | 34 | - | 3 | 2 | 30 | - | FSC |
| FR Dd 41 | FR-00-8581 | -77.430832 | 39.485554 | P | S | H | - | 69 | 33 | 4 | 20 | 50 | - | FSC |
| FR Dd 43 | FR-01-6558 | -77.453888 | 39.49361 | P | F | H | 0 | 25 | 25 | 4 | 10 | 23 | 10 | CSC |
| FR Dd 44 | FR-01-8451 | -77.457779 | 39.489723 | P | S | P | - | 214 | 100 | 50 | 25 | 50 | - | CSC |
| FR Dd 45 | FR-01-0139 | -77.420281 | 39.471943 | P | H | H | 70 | 81 | 75 | 15 | 60 | - | -10 | C |
| FR Dd 46 | FR-00-9076 | -77.420281 | 39.433613 | P | S | H | 20 | 65 | 24 | 10 | 30 | 40 | -10.53 | C |
| FR Dd 47 | FR-01-0382 | -77.485275 | 39.424168 | BR | H | H | 55 | 160 | 22 | 2 | 43 | 150 | -12 | FSC |
| FR Dd 48 | FR-00-9421 | -77.484444 | 39.421944 | BR | S | H | - | 135 | 16 | 0.5 | 25 | 130 | - | FSC |
| FR Dd 49 | FR-00-6680 | -77.486664 | 39.419167 | BR | H | H | - | 128 | 20 | 2.5 | 50 | 120 | - | FSC |
| FR Dd 50 | FR-01-2439 | -77.47139 | 39.422222 | BR | H | H | - | 75 | 15 | 8 | 33 | 65 | - | CSC |
| FR Dd 51 | FR-01-2438 | -77.471664 | 39.421665 | BR | S | H | 40 | 77 | 23 | 4 | 30 | 65 | -10 | CSC |
| FR Dd 52 | FR-01-3309 | -77.481392 | 39.426388 | BR | S | H | - | 100 | 11 | 5 | 10 | 50 | - | FSC |
| FR Dd 53 | FR-01-7490 | -77.485558 | 39.427502 | BR | S | H | 18 | 36 | 20 | 5 | 9 | 30 | -9 | CSC |
| FR Dd 54 | FR-00-8026 | -77.486946 | 39.444443 | BR | S | H | 30 | 60 | 36 | 15 | 20 | - | -10 | CSC |
| FR Dd 56 | FR-00-9476 | -77.486389 | 39.445 | BR | S | U | - | 80 | 33 | 3 | 25 | 50 | - | CSC |
| FR Dd 57 | FR-01-1901 | -77.493889 | 39.44389 | BR | S | H | 20 | 84 | 50 | 3 | 22 | 25 | 2 | I |
| FR Dd 59 | FR-01-4519 | -77.444168 | 39.41667 | P | S | C | 12 | 125 | 15.5 | 10 | 35 | 70 | 23 | CSC |
| FR Dd 60 | FR-01-2164 | -77.448891 | 39.417221 | P | S | C | - | 30 | 22 | 20 | 15 | 20 | - | CSC |
| FR Dd 61 | FR-00-4759 | -77.449722 | 39.416943 | P | S | H | 30 | 41 | 32 | 15 | 17 | 19 | -13 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dd 63 | FR-01-9348 | -77.467781 | 39.422779 | P | F | C | 25 | 214 | 28 | 10 | 10 | 180 | -15 | CSC |
| FR Dd 65 | FR-02-2294 | -77.444443 | 39.499168 | P | F | H | - | 56 | 22 | 10 | 8 | 22 | - | CSC |
| FR Dd 66 | FR-01-3077 | -77.436943 | 39.422222 | P | V | H | - | 92 | 9 | 25 | 10 | - | - | C |
| FR Dd 68 | FR-01-1300 | -77.495552 | 39.446945 | BR | S | C | 55 | 76 | 23 | 12 | 17 | - | -38 | I |
| FR Dd 70 | FR-01-0807 | -77.453888 | 39.471943 | P | S | H | - | 98 | 39 | 2 | 10 | 80 | - | C |
| FR Dd 73 | FR-01-0812 | -77.460831 | 39.479443 | BR | S | H | - | 140 | 14 | 1.5 | 20 | 120 | - | FSC |
| FR Dd 74 | - | -77.469719 | 39.486111 | BR | V | U | - | 21.1 | - | 4.4 | 8.51 | 8.76 | - | FSC |
| FR Dd 76 | FR-01-1056 | -77.459442 | 39.477779 | BR | H | H | - | 105 | 9 | 20 | 30 | 40 | - | FSC |
| FR Dd 77 | FR-00-9493 | -77.477501 | 39.420834 | BR | H | H | - | 73 | 18 | 6 | 20 | 30 | - | FSC |
| FR Dd 79 | FR-04-9969 | -77.495552 | 39.448334 | BR | S | P | - | 455 | 62 | 40 | 12 | - | - | I |
| FR Dd 82 | FR-04-5773 | -77.451386 | 39.474167 | P | V | T | 40 | 200 | 46 | 35 | 35 | - | -5 | C |
| FR Dd 83 | - | -77.460281 | 39.440277 | P | S | U | - | 84 | - | 3 | - | - | - | C |
| FR Dd 84 | FR-70-0032 | -77.459724 | 39.440556 | P | V | U | - | 320 | - | 0.5 | - | - | - | C |
| FR Dd 85 | FR-70-0232 | -77.459999 | 39.439999 | P | S | U | - | 220 | - | 3 | - | - | - | C |
| FR Dd 86 | FR-70-0232 | -77.459168 | 39.439445 | P | S | S | 50 | 129 | 83 | 100 | 50 | 129 | 0 | C |
| FR Dd 88 | FR-69-0034 | -77.449448 | 39.495834 | P | F | S | - | 204 | 39 | 5 | 35 | - | - | C |
| FR Dd 89 | FR-70-0417 | -77.455002 | 39.472778 | BR | S | H | 110 | 255 | 124 | 15 | 51 | - | -59 | FSC |
| FR Dd 90 | FR-70-0355 | -77.418335 | 39.451389 | P | F | Z | 20 | 160 | 48 | 12 | 30 | 160 | 10 | FSC |
| FR Dd 91 | FR-70-0017 | -77.430557 | 39.457222 | P | S | R | 18 | 245 | 25 | 5 | 15 | 245 | -3 | FSC |
| FR Dd 92 | FR-69-0430 | -77.432777 | 39.454166 | P | V | H | 20 | 45 | 27.5 | 50 | 30 | 45 | 10 | C |
| FR Dd 93 | FR-69-0183 | -77.433052 | 39.453888 | P | V | H | 40 | 70 | 49 | 50 | 35 | 70 | -5 | C |
| FR Dd 94 | FR-70-0151 | -77.429726 | 39.451389 | P | F | H | 50 | 220 | 57 | 3 | 35 | 220 | -15 | C |
| FR Dd 95 | FR-70-0353 | -77.430557 | 39.450832 | P | F | H | 32 | 145 | 40 | 20 | 35 | 145 | 3 | C |
| FR Dd 96 | FR-70-0380 | -77.438332 | 39.448334 | P | V | H | - | 150 | 18 | 40 | - | - | - | C |
| FR Dd 97 | FR-70-0031 | -77.438332 | 39.450279 | P | S | H | - | 162 | 17 | 20 | 30 | - | - | C |
| FR Dd 98 | FR-70-0236 | -77.436943 | 39.449165 | P | F | H | - | 90 | 38 | 50 | - | - | - | C |
| FR Dd 99 | FR-70-0093 | -77.438057 | 39.450279 | P | F | H | 20 | 98 | 83 | 40 | 45 | - | 25 | C |
| FR Dd 100 | FR-70-0470 | -77.436386 | 39.449722 | P | F | H | 20 | 100 | 39 | 50 | 20 | - | 0 | C |
| FR Dd 101 | FR-70-0060 | -77.437225 | 39.451111 | P | F | H | - | 142 | 86 | 8 | 35 | - | - | C |
| FR Dd 102 | FR-69-0429 | -77.424721 | 39.451668 | P | F | H | 50 | 320 | 61 | 5 | 40 | 320 | -10 | C |
| FR Dd 103 | FR-69-0479 | -77.423889 | 39.451111 | P | F | H | 60 | 81 | 74 | 100 | 40 | 81 | -20 | C |
| FR Dd 104 | FR-70-0023 | -77.424721 | 39.451389 | P | F | H | 40 | 195 | 73 | 10 | 35 | 195 | -5 | C |
| FR Dd 105 | FR-70-0024 | -77.424721 | 39.451111 | P | F | H | 95 | 102 | 102 | 8 | 35 | 102 | -60 | C |
| FR Dd 106 | FR-70-0073 | -77.424164 | 39.451946 | P | F | H | 43 | 210 | 50 | 6 | 40 | 210 | -3 | C |
| FR Dd 107 | FR-70-0113 | -77.423332 | 39.450554 | P | F | H | 10 | 220 | 40 | 4 | 35 | 220 | 25 | C |
| FR Dd 108 | FR-70-0362 | -77.424164 | 39.451389 | P | F | H | 85 | 88 | 86 | 30 | 35 | 88 | -50 | C |
| FR Dd 109 | FR-69-0334 | -77.422501 | 39.452499 | P | F | H | 45 | 58 | 48 | 20 | 40 | 58 | -5 | C |
| FR Dd 110 | FR-69-0247 | -77.424164 | 39.449165 | P | F | H | 15 | 240 | 20 | 6 | 40 | 240 | 25 | C |
| FR Dd 111 | FR-69-0372 | -77.424164 | 39.449722 | P | F | H | 35 | 95 | 41 | 15 | 35 | 95 | 0 | C |
| FR Dd 112 | FR-69-0331 | -77.423332 | 39.450279 | P | F | H | 35 | 395 | 44 | 2 | 35 | 395 | 0 | C |
| FR Dd 113 | FR-69-0067 | -77.423614 | 39.45 | P | F | H | 35 | 315 | 41 | 50 | 35 | 315 | 0 | C |
| FR Dd 114 | FR-69-0215 | -77.423058 | 39.450832 | P | F | H | 15 | 60 | 20.5 | 50 | 30 | 60 | 15 | C |
| FR Dd 115 | FR-69-0530 | -77.424446 | 39.449165 | P | F | H | 20 | 145 | 28 | 20 | 35 | 145 | 15 | C |
| FR Dd 116 | FR-69-0529 | -77.424446 | 39.448612 | P | F | H | 10 | 220 | 20 | 7 | 40 | 220 | 30 | C |
| FR Dd 117 | FR-69-0428 | -77.422775 | 39.451946 | P | F | H | 30 | 83 | 37 | 50 | 38 | 83 | 8 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dd 118 | FR-70-0295 | -77.424446 | 39.45 | P | F | H | 45 | 133 | 71 | 10 | 35 | 133 | -10 | C |
| FR Dd 119 | FR-70-0393 | -77.424446 | 39.449444 | P | F | H | 17 | 70 | 27 | 100 | 32 | 70 | 15 | C |
| FR Dd 120 | FR-69-0362 | -77.424446 | 39.452499 | P | F | H | 50 | 145 | 61 | 40 | 35 | 145 | -15 | C |
| FR Dd 121 | FR-70-0328 | -77.424164 | 39.452778 | P | F | H | 70 | 220 | 78 | 5 | 40 | 220 | -30 | C |
| FR Dd 122 | FR-70-0370 | -77.423058 | 39.452778 | P | F | H | 90 | 100 | 95 | 20 | 32 | 100 | -58 | C |
| FR Dd 123 | FR-69-0373 | -77.425552 | 39.449722 | P | H | H | 50 | 80 | 61 | 40 | 35 | 80 | -15 | C |
| FR Dd 124 | FR-69-0046 | -77.425278 | 39.450279 | P | F | H | 60 | 105 | 69 | 25 | 35 | 105 | -25 | C |
| FR Dd 125 | FR-69-0213 | -77.426109 | 39.450554 | P | F | H | 75 | 395 | 84 | 5 | 40 | 395 | -35 | C |
| FR Dd 126 | FR-70-0202 | -77.426109 | 39.45 | P | H | H | 48 | 100 | 53 | 15 | 35 | 100 | -13 | C |
| FR Dd 127 | FR-69-0427 | -77.426941 | 39.451668 | P | F | H | 35 | 365 | 44 | 4 | 35 | 365 | 0 | C |
| FR Dd 128 | FR-69-0374 | -77.426109 | 39.451668 | P | F | H | 40 | 245 | 50 | 4 | 35 | 245 | -5 | C |
| FR Dd 129 | FR-69-0478 | -77.431389 | 39.449722 | P | F | H | 25 | 85 | 31 | 50 | 35 | 85 | 10 | C |
| FR Dd 130 | FR-67-0289 | -77.426392 | 39.448334 | P | H | H | 110 | 170 | 115 | 100 | 45 | 170 | -65 | C |
| FR Dd 131 | FR-69-0531 | -77.42778 | 39.448334 | P | F | H | 20 | 185 | 30 | 15 | 35 | 185 | 15 | C |
| FR Dd 132 | FR-70-0072 | -77.428612 | 39.448612 | P | F | H | 27 | 180 | 35 | 50 | 35 | 180 | 8 | C |
| FR Dd 133 | FR-70-0359 | -77.42778 | 39.448891 | P | F | H | 25 | 70 | 35 | 50 | 30 | 70 | 5 | C |
| FR Dd 134 | FR-70-0155 | -77.46667 | 39.41861 | P | V | H | 35 | 45 | 28 | 20 | 25 | 40 | -10 | CSC |
| FR Dd 135 | FR-72-0124 | -77.424721 | 39.477779 | P | S | H | 35 | 90 | 40 | 6 | 20 | 90 | -15 | FSC |
| FR Dd 136 | FR-71-0560 | -77.432503 | 39.485001 | P | H | H | - | 105 | 21 | 12 | 30 | 100 | - | FSC |
| FR Dd 137 | FR-72-0014 | -77.431663 | 39.483891 | P | H | H | - | 105 | 22 | 15 | 30 | 90 | - | FSC |
| FR Dd 138 | FR-72-0015 | -77.432221 | 39.484165 | P | H | H | - | 105 | 22 | 15 | 30 | 95 | - | FSC |
| FR Dd 139 | FR-72-0332 | -77.419998 | 39.490833 | P | H | H | 30 | 220 | 40 | 2 | 45 | 220 | 15 | FSC |
| FR Dd 140 | FR-72-0474 | -77.440559 | 39.497776 | P | S | H | 45 | 80 | 50 | 40 | 10 | 80 | -35 | FSC |
| FR Dd 141 | FR-72-0157 | -77.440834 | 39.460556 | P | S | S | - | 122 | 47 | 50 | 40 | - | - | FSC |
| FR Dd 142 | FR-69-0420 | -77.466392 | 39.420834 | P | S | H | 58 | 285 | 67 | 6 | 60 | 250 | 2 | CSC |
| FR Dd 143 | FR-72-0458 | -77.423332 | 39.489445 | P | H | H | 35 | 120 | 41 | 4 | 25 | 120 | -10 | FSC |
| FR Dd 144 | FR-72-0490 | -77.419441 | 39.49139 | P | H | H | 35 | 195 | 41 | 6 | 55 | 195 | 20 | FSC |
| FR Dd 145 | FR-72-0497 | -77.431663 | 39.485279 | P | H | H | 30 | 120 | 34 | 20 | 35 | 120 | 5 | FSC |
| FR Dd 146 | FR-72-0541 | -77.441666 | 39.459721 | P | H | T | 20 | 130 | 30 | 30 | 18 | - | -2 | FSC |
| FR Dd 147 | FR-72-0730 | -77.444443 | 39.462223 | P | S | H | 5 | 160 | 39 | 15 | 35 | - | 30 | FSC |
| FR Dd 148 | - | -77.42083 | 39.456944 | P | H | U | - | 355 | 20 | 7 | - | - | - | FSC |
| FR Dd 150 | - | -77.421669 | 39.45861 | P | H | P | - | 205 | 20 | 100 | 33 | - | - | C |
| FR Dd 153 | - | -77.422501 | 39.457222 | P | H | U | - | 205 | 22 | 4 | - | - | - | C |
| FR Dd 154 | FR-72-0637 | -77.422501 | 39.490555 | P | H | H | 3 | 182 | 22 | 5 | 38 | - | 35 | FSC |
| FR Dd 155 | FR-70-0170 | -77.458611 | 39.416943 | P | S | H | 35 | 145 | 42 | 50 | 38 | 145 | 3 | CSC |
| FR Dd 156 | FR-70-0511 | -77.41861 | 39.49139 | P | H | H | - | 165 | 21 | 5 | 45 | 160 | - | FSC |
| FR Dd 157 | FR-69-0344 | -77.419167 | 39.489445 | P | H | H | - | 165 | 21 | 7 | 45 | - | - | FSC |
| FR Dd 158 | FR-71-0585 | -77.41861 | 39.488888 | P | H | H | - | 180 | 21 | 10 | 65 | 175 | - | FSC |
| FR Dd 159 | FR-70-0102 | -77.419724 | 39.490276 | P | H | H | 30 | 100 | 30 | 5 | 25 | 90 | -5 | FSC |
| FR Dd 160 | FR-70-0465 | -77.41861 | 39.492222 | P | S | H | - | 160 | 18 | 8 | 40 | 150 | - | FSC |
| FR Dd 161 | FR-69-0426 | -77.418335 | 39.491943 | P | S | H | - | 65 | 19 | 12 | 30 | - | - | FSC |
| FR Dd 162 | FR-73-0398 | -77.420555 | 39.489723 | P | H | H | - | 170 | 36 | 6 | 40 | 130 | - | FSC |
| FR Dd 163 | FR-66-0412 | -77.420281 | 39.490555 | P | H | H | 75 | 165 | 41 | 5 | 50 | 158 | -25 | FSC |
| FR Dd 164 | FR-66-0822 | -77.418892 | 39.489723 | P | S | H | 75 | 185 | 19 | 8 | 65 | - | -10 | FSC |
| FR Dd 165 | FR-69-0408 | -77.417503 | 39.488609 | P | V | H | 19 | 125 | 19 | 7 | 40 | - | 21 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dd 167 | FR-71-0500 | -77.417778 | 39.489723 | P | S | H | 55 | 195 | 61 | 12 | 35 | 195 | -20 | FSC |
| FR Dd 168 | FR-69-0436 | -77.419998 | 39.491943 | P | H | H | - | 108 | 24 | 6 | 50 | 90 | - | FSC |
| FR Dd 170 | FR-66-0810 | -77.421112 | 39.490833 | P | H | H | - | 165 | 13 | 3 | 70 | - | - | FSC |
| FR Dd 173 | FR-04-4282 | -77.421944 | 39.490002 | P | H | H | 13 | 135 | 13 | 3 | 40 | - | 27 | FSC |
| FR Dd 174 | FR-72-0459 | -77.420281 | 39.4925 | P | H | H | 37 | 220 | 43 | 7 | 52 | 220 | 15 | FSC |
| FR Dd 175 | FR-69-0333 | -77.419167 | 39.491943 | P | H | H | 15 | 165 | 20 | 50 | 40 | 155 | 25 | FSC |
| FR Dd 176 | FR-69-0438 | -77.496666 | 39.421391 | BR | S | P | 30 | 400 | - | 8 | 40 | - | 10 | CSC |
| FR Dd 177 | FR-73-5317 | -77.477501 | 39.479721 | BR | S | H | 30 | 225 | 34 | 9 | 54 | 225 | 24 | CSC |
| FR Dd 179 | FR-05-1109 | -77.491669 | 39.472221 | BR | S | P | 20 | 190 | 27 | 20 | 30 | - | 10 | CSC |
| FR Dd 180 | FR-73-2531 | -77.493332 | 39.459168 | BR | S | P | 52 | 275 | 59 | 8 | 50 | 275 | -2 | I |
| FR Dd 181 | FR-73-1900 | -77.495003 | 39.45 | BR | S | T | 6 | 125 | 21 | 20 | 15 | 120 | 9 | I |
| FR Dd 182 | FR-73-1770 | -77.478889 | 39.421391 | BR | S | H | 20 | 400 | 38 | 2 | 29 | 400 | 9 | FSC |
| FR Dd 183 | FR-73-8382 | -77.477219 | 39.421665 | BR | S | I | 15 | 205 | 48 | 20 | 20 | 200 | 5 | FSC |
| FR Dd 184 | FR-72-0481 | -77.474724 | 39.421112 | BR | H | C | 20 | 150 | 23 | 5 | 35 | 150 | 15 | CSC |
| FR Dd 185 | FR-73-8305 | -77.462219 | 39.419167 | P | S | C | 200 | 485 | 62 | 9 | 50 | 450 | -150 | C |
| FR Dd 187 | FR-65-0593 | -77.461113 | 39.419998 | P | F | U | 80 | 125 | 50 | 10 | 15 | - | -65 | C |
| FR Dd 188 | FR-04-2737 | -77.444168 | 39.416943 | P | F | C | 20 | 205 | 19 | 1 | 100 | - | 80 | CSC |
| FR Dd 189 | FR-01-2146 | -77.46833 | 39.423889 | P | F | U | 5 | - | 21 | 30 | 18 | 18 | 13 | CSC |
| FR Dd 190 | FR-03-7629 | -77.468887 | 39.424168 | P | F | U | - | 64 | 60 | 40 | 20 | 20 | - | CSC |
| FR Dd 191 | FR-73-0071 | -77.472504 | 39.425835 | P | S | C | 40 | 220 | 44 | 1 | 10 | 220 | -30 | FSC |
| FR Dd 192 | FR-73-8185 | -77.475281 | 39.426388 | BR | S | C | 30 | 425 | 40 | 3 | 16 | 425 | -14 | FSC |
| FR Dd 193 | FR-73-6570 | -77.474724 | 39.439445 | BR | S | C | 4 | 250 | 33 | 1 | 40 | 200 | 36 | FSC |
| FR Dd 193a | FR-73-1455 | -77.474724 | 39.439445 | BR | S | C | 4 | 250 | 33 | 20 | 10 | - | 6 | FSC |
| FR Dd 194 | FR-73-8151 | -77.474441 | 39.439445 | BR | S | C | 35 | 525 | 41 | 2 | 1 | 525 | -34 | FSC |
| FR Dd 195 | FR-71-0357 | -77.480278 | 39.426945 | BR | S | C | 0 | 186 | 18 | 4 | 2 | 185 | 2 | FSC |
| FR Dd 196 | FR-73-1778 | -77.424164 | 39.423332 | P | F | I | 9 | 125 | 20 | 12 | 25 | 120 | 16 | FSC |
| FR Dd 197 | FR-73-2750 | -77.446114 | 39.463333 | P | H | T | 15 | 122 | 40 | 6 | 32 | 42 | 17 | FSC |
| FR Dd 198 | FR-69-0203 | -77.428612 | 39.474724 | P | F | P | 125 | 220 | 134 | 40 | 40 | 220 | -85 | FSC |
| FR Dd 199 | FR-67-0245 | -77.430557 | 39.487221 | P | H | T | 0 | 145 | 21 | 20 | 60 | - | 60 | FSC |
| FR Dd 200 | FR-73-6528 | -77.428055 | 39.489445 | P | S | H | 15 | 205 | 39 | 40 | 48 | 195 | 33 | FSC |
| FR Dd 201 | FR-73-5582 | -77.427498 | 39.491665 | P | S | H | 9 | 125 | 19 | 5 | 30 | 85 | 21 | FSC |
| FR Dd 202 | FR-73-2467 | -77.425278 | 39.490833 | P | S | H | 35 | 120 | 39 | 10 | 20 | 120 | -15 | FSC |
| FR Dd 203 | FR-73-3446 | -77.417221 | 39.49139 | P | H | H | 28 | 203 | 39 | 8 | 45 | 55 | 17 | FSC |
| FR Dd 204 | FR-73-4963 | -77.417778 | 39.490276 | P | H | H | 10 | 150 | 20 | 10 | 35 | 140 | 25 | FSC |
| FR Dd 205 | FR-73-4034 | -77.41667 | 39.488888 | P | H | H | 60 | 175 | 75 | 7 | 35 | 170 | -25 | FSC |
| FR Dd 206 | FR-69-0546 | -77.495834 | 39.446945 | BR | S | C | 32 | 450 | 40 | 6 | 45 | - | 13 | I |
| FR Dd 207 | FR-73-8075 | -77.495834 | 39.447498 | BR | S | C | 29 | 145 | 41 | 12 | 45 | 100 | 16 | I |
| FR Dd 208 | FR-73-0669 | -77.458054 | 39.418335 | P | S | U | 25 | 270 | 30 | 10 | 8 | 270 | -17 | I |
| FR Dd 209 | FR-73-2513 | -77.485001 | 39.423889 | BR | H | T | 70 | 295 | 82 | 1 | 62 | 295 | -8 | FSC |
| FR Dd 214 | FR-73-6168 | -77.470833 | 39.482224 | BR | S | H | - | 200 | 41 | 5 | 55 | 200 | - | CSC |
| FR Dd 215 | FR-88-0607 | -77.445 | 39.471668 | P | S | H | - | 400 | 64 | 3 | 40 | 141 | - | FSC |
| FR Dd 216 | FR-81-1722 | -77.477776 | 39.47889 | BR | S | H | - | 300 | 63 | 4 | 70 | 300 | - | CSC |
| FR Dd 217 | FR-73-7996 | -77.465553 | 39.46389 | BR | S | H | 1 | 403 | 55 | 4 | 45 | 380 | 44 | FSC |
| FR Dd 218 | FR-81-3547 | -77.444168 | 39.471943 | P | S | H | 6 | 300 | 44 | 10 | 40 | 200 | 34 | FSC |
| FR De 1 | FR-01-2231 | -77.414169 | 39.448334 | P | F | H | 18 | 87 | 18 | 25 | 20 | 25 | 2 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR De 3 | FR-01-0978 | -77.33667 | 39.431946 | P | H | H | 6 | 41 | - | 5 | 18 | 20 | 12 | FSC |
| FR De 4 | FR-01-0120 | -77.334168 | 39.452778 | P | S | H | 8 | 97 | 14 | 10 | 20 | 25 | 12 | C |
| FR De 5 | FR-01-2735 | -77.346664 | 39.422222 | P | H | H | - | 40 | 34 | 10 | 15 | - | - | CSC |
| FR De 6 | FR-01-3826 | -77.367775 | 39.464722 | P | F | U | 23 | 40 | 28 | 10 | 25 | - | 2 | CSC |
| FR De 7 | FR-01-6280 | -77.359726 | 39.471111 | P | F | H | 40 | 123 | 51 | 45 | 30 | - | -10 | C |
| FR De 9 | FR-01-5852 | -77.356667 | 39.474998 | P | S | H | 38 | 65 | 59 | 22 | 32 | 40 | -6 | C |
| FR De 10 | FR-00-9930 | -77.35611 | 39.475834 | P | S | H | 19 | 111 | 18 | 2.5 | 30 | 100 | 11 | C |
| FR De 11 | FR-00-4190 | -77.371109 | 39.474167 | P | F | H | 3 | 83 | 6 | 10 | 16 | - | 13 | C |
| FR De 12 | FR-01-4256 | -77.371391 | 39.485001 | P | F | H | 23 | 84 | 23 | 15 | 30 | 30 | 7 | C |
| FR De 13 | FR-00-8891 | -77.354164 | 39.486111 | P | F | U | 21 | 70 | 21 | 100 | 15 | 15 | -6 | C |
| FR De 15 | FR-01-6192 | -77.368332 | 39.465 | P | F | H | 13 | 71 | 45 | 30 | 48 | 48 | 35 | C |
| FR De 16 | FR-01-7513 | -77.403053 | 39.485001 | P | S | H | 14 | 55 | 18 | 13 | 5 | 5.3 | -9 | C |
| FR De 17 | FR-00-8269 | -77.385002 | 39.474724 | P | S | H | - | 43 | 21 | 10 | 15 | 20 | - | C |
| FR De 20 | FR-01-7512 | -77.402779 | 39.465832 | P | S | C | - | 37 | 30 | 10 | 12 | - | - | C |
| FR De 21 | FR-00-4439 | -77.39917 | 39.447498 | P | H | U | - | 22 | 4.5 | 10 | 10 | - | - | C |
| FR De 25 | FR-00-9424 | -77.397781 | 39.441666 | P | H | C | - | 100 | 14.5 | 20 | 30 | - | - | C |
| FR De 26 | FR-02-3104 | -77.410004 | 39.455833 | P | S | H | 10 | 70 | 19 | 6 | 20 | 60 | 10 | C |
| FR De 27 | - | -77.399445 | 39.439724 | P | F | U | - | 200 | - | 80 | 28 | - | - | C |
| FR De 28 | - | -77.399719 | 39.440277 | P | S | C | - | 735 | - | 30 | 28 | - | - | C |
| FR De 29 | - | -77.401108 | 39.441387 | P | V | N | - | 30 | - | 30 | - | - | - | C |
| FR De 30 | - | -77.400833 | 39.440277 | P | S | U | - | 235 | - | 30 | 20 | - | - | C |
| FR De 31 | - | -77.400833 | 39.440277 | P | S | U | - | 350 | - | 30 | - | - | - | C |
| FR De 32 | - | -77.410004 | 39.419998 | P | F | U | - | 68 | - | 50 | - | - | - | C |
| FR De 33 | - | -77.344444 | 39.493057 | P | V | S | - | 72 | - | 10 | - | - | - | C |
| FR De 34 | FR-02-2022 | -77.344444 | 39.493057 | P | V | H | 15 | 330 | 26 | 100 | 25 | 30 | 10 | C |
| FR De 35 | - | -77.355278 | 39.485001 | P | V | U | - | - | 20 | 60 | 10 | - | - | C |
| FR De 36 | - | -77.384445 | 39.466946 | P | V | H | - | 169 | 59 | 15 | - | - | - | C |
| FR De 37 | FR-01-5831 | -77.356941 | 39.474445 | P | S | H | 21 | 96 | 26 | 22 | - | 70 | - | C |
| FR De 40 | FR-01-6562 | -77.361114 | 39.455833 | P | S | S | 30 | 105 | 52.5 | 10 | 50 | 60 | 20 | C |
| FR De 41 | - | -77.375832 | 39.435001 | P | F | H | - | 90 | - | 7 | 35 | - | - | C |
| FR De 43 | - | -77.375557 | 39.436943 | P | H | S | 68 | 595 | 123 | 22 | 80 | - | 12 | C |
| FR De 44 | - | -77.35611 | 39.485001 | P | V | P | - | 92 | - | 100 | 16 | 24 | - | C |
| FR De 47 | FR-65-0017 | -77.349167 | 39.486668 | P | F | P | - | 165 | 14.5 | 135 | 24.13 | 35.41 | - | C |
| FR De 48 | FR-66-0555 | -77.355278 | 39.485001 | P | V | U | - | 72 | 56 | 250 | 15 | 20 | - | C |
| FR De 49 | FR-70-0002 | -77.333885 | 39.493332 | P | F | H | 40 | 105 | 47 | 7 | 30 | 100 | -10 | C |
| FR De 51 | FR-04-4852 | -77.357498 | 39.489166 | P | S | Z | 10 | 175 | 11.5 | 50 | 22 | 24 | 12 | C |
| FR De 52 | FR-69-0375 | -77.375 | 39.494167 | P | H | H | 15 | 160 | 26 | 3 | 40 | 160 | 25 | C |
| FR De 53 | FR-69-0419 | -77.396111 | 39.481945 | P | F | C | - | 280 | 42 | 2 | 40 | - | - | C |
| FR De 54 | FR-69-0018 | -77.402779 | 39.468056 | P | S | C | 20 | 103 | 16 | 30 | - | - | - | C |
| FR De 55 | FR-69-0414 | -77.383057 | 39.449722 | P | S | H | 15 | 100 | 33 | 5 | 40 | - | 25 | C |
| FR De 57 | FR-70-0019 | -77.39917 | 39.46667 | P | H | S | 40 | 80 | 48 | 100 | 35 | 80 | -5 | C |
| FR De 58 | FR-70-0020 | -77.413055 | 39.473888 | P | H | H | 35 | 70 | 41 | 30 | 30 | 70 | -5 | C |
| FR De 59 | FR-68-0080 | -77.404724 | 39.453888 | P | H | U | 12 | 294 | 24 | 1 | 30 | - | 18 | C |
| FR De 60 | FR-68-0080 | -77.404167 | 39.453609 | P | H | U | 11 | 204 | 20 | 1 | 30 | - | 19 | C |
| FR De 61 | FR-68-0080 | -77.403892 | 39.454166 | P | H | N | 12 | 204 | 20 | 8 | 23.5 | - | 11.5 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR De 62 | - | -77.404442 | 39.454166 | P | H | U | 12 | 150 | 21 | 2 | 30 | - | 18 | C |
| FR De 64 | FR-05-2808 | -77.402496 | 39.454723 | P | H | U | 60 | 260 | - | 1 | - | - | - | C |
| FR De 65 | FR-05-2808 | -77.402496 | 39.454723 | P | H | U | 10 | 230 | - | 1.5 | - | - | - | C |
| FR De 66 | FR-05-2808 | -77.414169 | 39.455002 | P | V | N | 14 | 80 | 21 | 60 | - | - | - | C |
| FR De 69 | FR-70-0149 | -77.401108 | 39.455276 | P | V | N | 24 | 100 | 27 | 30 | 22 | 38 | -2 | C |
| FR De 74 | FR-65-0279 | -77.342781 | 39.461388 | P | H | S | - | 150 | 43 | 20 | 35 | - | - | C |
| FR De 75 | - | -77.34417 | 39.455555 | P | S | S | - | 145 | 47 | 20 | 40 | - | - | C |
| FR De 76 | FR-65-0280 | -77.340836 | 39.455276 | P | V | H | - | 70 | 37 | 25 | 20 | - | - | C |
| FR De 80 | FR-70-0220 | -77.371109 | 39.41667 | P | F | H | 47 | 62 | 53 | 100 | 36 | 62 | -11 | C |
| FR De 83 | FR-72-0037 | -77.361389 | 39.478611 | P | V | P | 13 | 300 | 93 | 950 | 13 | 25 | 0 | C |
| FR De 84 | FR-72-0701 | -77.416389 | 39.45639 | P | V | U | - | 400 | 26 | 70 | - | - | - | C |
| FR De 85 | FR-72-0701 | -77.406387 | 39.455833 | P | V | U | 8 | 415 | 20 | 125 | - | - | - | C |
| FR De 86 | FR-73-0701 | -77.40583 | 39.456112 | P | V | U | 8 | 415 | 20 | 15 | 4 | - | -4 | C |
| FR De 88 | FR-73-3024 | -77.410278 | 39.424721 | P | F | I | 18 | 82 | 41 | 100 | 15 | 25 | -3 | C |
| FR De 89 | FR-68-0044 | -77.41111 | 39.441666 | P | F | T | 30 | 150 | 29 | 15 | 45 | 150 | 15 | C |
| FR De 90 | FR-73-3249 | -77.398888 | 39.441113 | P | F | C | 18 | 282 | 40 | 3 | 35 | 45 | 17 | C |
| FR De 91 | FR-72-0514 | -77.400559 | 39.455002 | P | F | C | 15 | 105 | 29 | 15 | 20 | 85 | 5 | C |
| FR De 92 | FR-73-5459 | -77.401108 | 39.455833 | P | F | J | 36 | 175 | 39 | 36 | 26 | 78 | -10 | C |
| FR De 93 | FR-73-6446 | -77.404724 | 39.456665 | P | F | U | 19 | 250 | 24 | 7.5 | 38 | 178 | 19 | C |
| FR De 94 | FR-73-6530 | -77.403892 | 39.457501 | P | F | U | 15 | 250 | 19 | 10 | 37 | 110 | 22 | C |
| FR De 95 | FR-03-0030 | -77.402779 | 39.46667 | P | F | C | 13 | 76 | 15 | 60 | 13 | 13 | 0 | C |
| FR De 96 | FR-65-0448 | -77.398613 | 39.485554 | P | F | C | 0 | 130 | 24 | 10 | 25 | - | 25 | C |
| FR De 97 | FR-73-0110 | -77.396385 | 39.492779 | P | H | C | 30 | 320 | 37 | 4 | 30 | - | 0 | C |
| FR De 98 | FR-72-0396 | -77.389725 | 39.469444 | P | H | U | 0 | 500 | 46 | 20 | 40 | - | 40 | C |
| FR De 99 | FR-72-0396 | -77.389999 | 39.469444 | P | H | N | 0 | 702 | 40 | 20 | 30 | - | 30 | C |
| FR De 100 | FR-72-0396 | -77.390274 | 39.469166 | P | H | N | 0 | 462 | 40 | 55 | 35 | - | 35 | C |
| FR De 101 | FR-72-0396 | -77.390831 | 39.469166 | P | S | N | 0 | 500 | 41 | 81 | - | - | - | C |
| FR De 102 | FR-72-0187 | -77.36667 | 39.461113 | P | H | T | 0 | 400 | 63 | 1 | 40 | - | 40 | C |
| FR De 103 | FR-73-0377 | -77.356941 | 39.485279 | P | F | U | 10 | 85 | 49 | 200 | 25 | - | 15 | C |
| FR De 105 | - | -77.361946 | 39.479168 | P | F | P | 6 | 120 | 37 | 525 | 9 | 11 | 3 | C |
| FR De 106 | FR-73-7866 | -77.416115 | 39.489166 | P | H | H | 60 | 160 | 73 | 10 | 30 | 150 | -30 | FSC |
| FR De 107 | FR-73-5024 | -77.409721 | 39.499443 | P | S | H | 35 | 95 | 40 | 6 | 36 | 95 | 1 | FSC |
| FR Df 2 | FR-01-4895 | -77.253609 | 39.483055 | P | H | H | - | 86 | 23 | 15 | 20 | 45 | - | I |
| FR Df 8 | FR-01-4828 | -77.290832 | 39.452221 | P | H | H | 25 | 73 | - | 5 | 26 | 73 | 1 | FSC |
| FR Df 9 | - | -77.309723 | 39.454723 | P | S | H | 15 | 81 | 20 | 5 | 40 | 75 | 25 | FSC |
| FR Df 10 | FR-00-6996 | -77.329445 | 39.453335 | P | H | C | 8 | 100 | 8 | 10 | 40 | 40 | 32 | FSC |
| FR Df 12 | FR-01-0250 | -77.296387 | 39.428333 | P | H | H | - | 56.5 | 13 | 6 | 10 | 49 | - | I |
| FR Df 14 | FR-00-6275 | -77.31667 | 39.450832 | P | S | H | - | 123 | 21 | 2 | 40 | 119 | - | FSC |
| FR Df 19 | FR-00-0014 | -77.329445 | 39.453335 | P | H | U | - | 120 | - | 0.5 | 30 | - | - | FSC |
| FR Df 20 | FR-69-0302 | -77.3125 | 39.492222 | P | S | H | 30 | 95 | 35 | 10 | 20 | 95 | -10 | C |
| FR Df 23 | FR-69-0151 | -77.332497 | 39.459446 | P | S | H | 38 | 47 | 42 | 50 | 22 | 47 | -16 | C |
| FR Df 26 | FR-65-0328 | -77.332222 | 39.453056 | P | S | H | - | 110 | - | 10 | 40 | 100 | - | FSC |
| FR Df 27 | FR-73-6714 | -77.325554 | 39.453335 | P | S | C | 30 | 505 | 40 | 1 | 45 | 125 | 15 | FSC |
| FR Df 28 | FR-73-4224 | -77.32222 | 39.453888 | P | S | C | 8 | 270 | 53 | 2 | 19 | 270 | 11 | FSC |
| FR Df 29 | FR-68-0099 | -77.308052 | 39.462502 | P | S | H | 15 | 260 | 28 | 2 | 60 | 260 | 45 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Df 30 | FR-73-7635 | -77.270554 | 39.47361 | P | H | C | 74 | 150 | 80 | 12 | 20 | 150 | -54 | FSC |
| FR Df 31 | FR-66-0670 | -77.254723 | 39.482498 | P | S | C | 0 | 100 | 19 | 8 | 45 | 45 | 45 | FSC |
| FR Df 32 | FR-67-0566 | -77.250832 | 39.420555 | P | H | T | 15 | 105 | 15 | 5 | - | 40 | - | FSC |
| FR Df 33 | FR-72-0433 | -77.271668 | 39.423611 | P | H | C | 49 | 302 | 59 | 45 | 35 | - | -14 | FSC |
| FR Df 34 | - | -77.31028 | 39.417499 | P | S | R | 30 | 245 | 78 | 15 | 25 | 200 | -5 | FSC |
| FR Df 35 | FR-73-0852 | -77.317497 | 39.421391 | P | S | O | 20.5 | 302 | 26 | 3 | 30 | - | 9.5 | FSC |
| FR Df 36 | FR-73-6714 | -77.325554 | 39.453335 | P | S | U | - | 300 | - | 0 | - | - | - | FSC |
| FR Df 37 | FR-73-6714 | -77.325554 | 39.453335 | P | S | - | - | 300 | - | 0 | - | - | - | FSC |
| FR Df 38 | FR-73-6714 | -77.325554 | 39.453335 | P | S | U | - | 300 | - | 0 | - | - | - | FSC |
| FR Df 39 | FR-73-6714 | -77.325554 | 39.453335 | P | S | U | - | 405 | - | 0 | - | - | - | FSC |
| FR Df 40 | FR-81-0779 | -77.25 | 39.46389 | P | S | H | 17 | 120 | 21 | 10 | 12 | 38 | -5 | I |
| FR Df 41 | FR-81-0771 | -77.252777 | 39.463333 | P | H | H | 23 | 260 | 24 | 1 | 12 | 105 | -11 | I |
| FR Dg 7 | - | -77.244721 | 39.47361 | P | S | H | - | 42 | 20 | 15 | 34 | - | - | FSC |
| FR Dg 8 | FR-00-5297 | -77.240555 | 39.482777 | P | S | H | 20 | 62 | 23 | 6 | 25 | 52 | 5 | FSC |
| FR Dg 9 | - | -77.240555 | 39.484444 | P | H | S | 6 | 57 | 12 | 12 | 20 | - | 14 | FSC |
| FR Dg 13 | FR-00-3840 | -77.185837 | 39.479168 | P | H | T | 50 | 90 | 50 | 10 | 40 | 75 | -10 | FSC |
| FR Dg 14 | FR-00-9936 | -77.177498 | 39.49361 | P | W | H | 42 | 71 | 42 | 5 | 35 | - | -7 | FSC |
| FR Dg 15 | FR-01-1579 | -77.172226 | 39.469166 | P | T | H | - | 90 | 22 | 15 | 30 | 46 | - | FSC |
| FR Dg 19 | - | -77.248611 | 39.419724 | P | H | U | - | 186 | 24 | 5 | 30 | - | - | FSC |
| FR Dg 20 | FR-73-1486 | -77.247498 | 39.485554 | P | S | C | 60 | 70 | 64 | 10 | 26 | 70 | -34 | FSC |
| FR Dg 21 | FR-66-0509 | -77.245003 | 39.48333 | P | S | F | 0 | 114 | 62 | 20 | 30 | - | 30 | FSC |
| FR Dg 22 | FR-73-3184 | -77.24028 | 39.484722 | P | F | C | 12 | 250 | 26 | 3 | 30 | 245 | 18 | FSC |
| FR Dg 23 | FR-73-6120 | -77.193054 | 39.496666 | P | S | T | 30 | 320 | 35 | 1 | 80 | 320 | 50 | FSC |
| FR Dg 24 | FR-73-6129 | -77.190552 | 39.476666 | P | S | H | 85 | 125 | 59 | 15 | 55 | 110 | -30 | FSC |
| FR Dg 25 | FR-73-7371 | -77.186386 | 39.476387 | P | S | H | 35 | 110 | 61 | 80 | 12 | 75 | -23 | FSC |
| FR Dg 26 | FR-73-5285 | -77.184998 | 39.473057 | P | S | H | 15 | 225 | 20 | 4 | 40 | 220 | 25 | FSC |
| FR Dg 27 | FR-73-7780 | -77.173058 | 39.478054 | P | H | H | 40 | 125 | 61 | 30 | 20 | 100 | -20 | FSC |
| FR Dg 28 | FR-71-0125 | -77.2 | 39.434723 | P | S | T | 40 | 100 | 46 | 10 | 25 | 35 | -15 | FSC |
| FR Dg 29 | FR-73-2413 | -77.248054 | 39.431946 | P | H | T | 50 | 400 | 55 | 10 | 105 | 400 | 55 | I |
| FR Dg 30 | FR-73-2406 | -77.248337 | 39.432221 | P | S | T | 12 | 300 | 22 | 15 | 15 | 300 | 3 | I |
| FR Dh 6 | FR-73-2510 | -77.16333 | 39.493332 | P | F | H | 43 | 202 | 59 | 4 | 35 | 45 | -8 | FSC |
| FR Dh 8 | FR-73-2480 | -77.154999 | 39.491943 | P | S | H | 71 | 162 | 80 | 7 | 78 | 80 | 7 | FSC |
| FR Dh 9 | FR-73-7660 | -77.154999 | 39.490555 | P | H | H | 15 | 120 | 27 | 20 | 30 | 120 | 15 | FSC |
| FR Dh 10 | FR-73-0847 | -77.152496 | 39.493057 | P | H | H | 50 | 220 | 55 | 2 | 61 | 220 | 11 | FSC |
| FR Dh 11 | FR-73-4013 | -77.143608 | 39.499168 | P | H | H | 35 | 320 | 39 | 1 | 30 | 320 | -5 | FSC |
| FR Dh 12 | FR-73-4261 | -77.142776 | 39.499168 | P | S | H | 35 | 320 | 40 | 5 | 30 | 320 | -5 | FSC |
| FR Dh 13 | FR-73-5893 | -77.144165 | 39.497223 | P | H | H | 60 | 300 | 62 | 4 | 49 | 112 | -11 | FSC |
| FR Dh 14 | FR-73-7541 | -77.139168 | 39.499443 | P | S | H | 5 | 200 | 21 | 5 | 40 | 90 | 35 | FSC |
| FR Dh 15 | FR-73-4405 | -77.142219 | 39.495277 | P | S | H | 2 | 183 | 18 | 5 | 23 | 33 | 21 | FSC |
| FR Dh 16 | FR-73-6155 | -77.134445 | 39.493332 | P | H | H | 43 | 320 | 39 | 1.5 | 45 | 310 | 2 | FSC |
| FR Dh 17 | FR-73-8316 | -77.128609 | 39.477779 | P | S | H | 50 | 100 | 61 | 60 | 20 | 80 | -30 | FSC |
| FR Dh 18 | FR-73-4066 | -77.128334 | 39.476387 | P | S | H | 4 | 150 | 44 | 12 | 35 | 145 | 31 | FSC |
| FR Dh 19 | FR-73-2892 | -77.125 | 39.470001 | P | H | H | 45 | 200 | 47 | 5 | 50 | 54 | 5 | FSC |
| FR Dh 20 | FR-73-1735 | -77.125832 | 39.47028 | P | S | U | 20 | 120 | 20 | 1 | 40 | - | 20 | FSC |
| FR Dh 21 | FR-73-2094 | -77.126114 | 39.47028 | P | S | H | 20 | 120 | 20 | 1 | 40 | 120 | 20 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Dh 22 | FR-73-6790 | -77.127502 | 39.470001 | P | H | H | 11 | 240 | 21 | 3 | 45 | 240 | 34 | FSC |
| FR Dh 23 | FR-73-0945 | -77.131668 | 39.464443 | P | S | U | 131 | 370 | 126 | 2 | 61 | 260 | -70 | FSC |
| FR Dh 24 | FR-73-1442 | -77.147499 | 39.468613 | P | H | H | 28 | 140 | 28 | 4 | 60 | 140 | 32 | FSC |
| FR Dh 25 | FR-73-4142 | -77.151665 | 39.469166 | P | H | H | 29 | 122 | 35 | 10 | 60 | 60 | 31 | FSC |
| FR Dh 26 | FR-73-2696 | -77.152779 | 39.469166 | P | S | H | 15 | 105 | 29 | 8 | 45 | 60 | 30 | FSC |
| FR Dh 27 | FR-73-1912 | -77.153336 | 39.468613 | P | H | H | 20 | 116 | 21 | 10 | 30 | 30 | 10 | FSC |
| FR Dh 28 | FR-73-6154 | -77.154724 | 39.469723 | P | S | H | 15 | 190 | 21 | 5 | 60 | 150 | 45 | FSC |
| FR Dh 29 | FR-73-3464 | -77.165001 | 39.47028 | P | S | H | 25 | 105 | 39 | 25 | 40 | 105 | 15 | FSC |
| FR Dh 30 | FR-73-0547 | -77.159164 | 39.465 | P | S | H | 18 | 160 | 20 | 5 | 40 | 160 | 22 | FSC |
| FR Dh 31 | FR-73-2247 | -77.160553 | 39.463055 | P | S | H | 35 | 220 | 39 | 2 | 55 | 220 | 20 | FSC |
| FR Dh 32 | FR-73-5284 | -77.160278 | 39.462776 | P | S | H | 15 | 150 | 20 | 5 | 40 | 150 | 25 | FSC |
| FR Dh 33 | FR-73-2642 | -77.159721 | 39.462223 | P | H | H | 3 | 200 | 22 | 3 | 30 | 195 | 27 | FSC |
| FR Dh 34 | FR-73-5114 | -77.150559 | 39.452499 | P | S | H | 30 | 185 | 44 | 2 | 50 | 185 | 20 | FSC |
| FR Dh 35 | FR-73-2748 | -77.150833 | 39.451946 | P | S | H | 15 | 110 | 21 | 5 | 40 | 110 | 25 | FSC |
| FR Dh 36 | FR-73-3887 | -77.146942 | 39.451668 | P | S | H | 43 | 100 | 41 | 10 | 41 | 41 | -2 | FSC |
| FR Dh 37 | FR-73-1784 | -77.135559 | 39.452499 | P | S | H | 50 | 74 | 48 | 25 | 25 | 30 | -25 | FSC |
| FR Dh 38 | FR-73-2112 | -77.134163 | 39.451946 | P | S | H | 5 | 100 | 22 | 9 | 40 | 60 | 35 | FSC |
| FR Dh 39 | FR-73-1790 | -77.133057 | 39.452778 | P | H | H | 5 | 100 | 20 | 8 | 50 | 75 | 45 | FSC |
| FR Dh 40 | FR-73-3427 | -77.130554 | 39.444721 | P | H | H | 27 | 95 | 33 | 10 | 42 | 60 | 15 | FSC |
| FR Dh 41 | FR-73-5722 | -77.134445 | 39.443054 | P | H | H | 10 | 180 | 92 | 3 | 65 | 180 | 55 | FSC |
| FR Dh 42 | FR-73-7531 | -77.135559 | 39.443054 | P | S | H | 15 | 300 | 40 | 2 | 60 | 300 | 45 | FSC |
| FR Dh 43 | FR-73-2255 | -77.131668 | 39.464443 | P | S | H | 58 | 105 | 58 | 30 | 30 | 100 | -28 | FSC |
| FR Dh 44 | FR-73-6403 | -77.110001 | 39.495834 | P | S | H | 80 | 125 | 19 | 6 | 43 | 120 | -37 | I |
| FR Dh 45 | FR-73-8527 | -77.110275 | 39.495277 | P | H | U | 45 | 230 | 50 | 2 | 43 | 120 | -2 | I |
| FR Dh 46 | FR-73-1824 | -77.110275 | 39.486389 | P | H | H | 42 | 65 | 48 | 20 | 35 | 65 | -7 | FSC |
| FR Dh 47 | FR-73-7157 | -77.115555 | 39.483612 | P | H | H | 104 | 145 | 112 | 30 | 60 | 145 | -44 | FSC |
| FR Dh 48 | FR-73-2566 | -77.118332 | 39.485554 | P | H | H | 3 | 100 | 33 | 15 | - | - | - | I |
| FR Dh 49 | FR-73-8312 | -77.118889 | 39.484444 | P | S | H | 40 | 205 | 38 | 10 | 25 | 150 | -15 | I |
| FR Dh 50 | FR-73-6764 | -77.119446 | 39.482777 | P | S | H | 36 | 150 | 40 | 7 | 59 | 91 | 23 | I |
| FR Dh 51 | FR-73-7437 | -77.121109 | 39.480835 | P | H | U | 77 | 328 | 126 | 4 | 100 | 218 | 23 | I |
| FR Dh 52 | FR-73-7472 | -77.1175 | 39.481945 | P | S | H | 89 | 455 | 82 | 2 | 100 | 363 | 11 | FSC |
| FR Dh 53 | FR-73-7414 | -77.118614 | 39.480556 | P | S | H | 57 | 145 | 67 | 30 | 61 | 110 | 4 | FSC |
| FR Dh 54 | FR-73-5209 | -77.119446 | 39.471111 | P | S | H | 41 | 365 | 41 | 4 | 40 | 105 | -1 | FSC |
| FR Dh 55 | FR-73-4349 | -77.120003 | 39.470554 | P | H | H | 30 | 300 | 40 | 2 | 50 | 270 | 20 | FSC |
| FR Dh 56 | FR-73-4535 | -77.120552 | 39.470554 | P | H | H | 8 | 220 | 19 | 2 | 40 | 220 | 32 | FSC |
| FR Dh 57 | FR-73-6130 | -77.121948 | 39.47028 | P | H | H | 15 | 200 | 19 | 3 | 50 | 200 | 35 | FSC |
| FR Dh 58 | FR-73-5474 | -77.12278 | 39.470554 | P | S | H | 5 | 260 | 20 | 2 | 60 | 260 | 55 | FSC |
| FR Dh 59 | FR-73-6754 | -77.119446 | 39.470001 | P | H | H | 66 | 120 | 71 | 5 | 30 | 73 | -36 | FSC |
| FR Dh 60 | FR-73-4351 | -77.120003 | 39.466389 | P | S | H | 50 | 303 | 38 | 1.5 | 60 | 70 | 10 | FSC |
| FR Dh 61 | FR-73-1417 | -77.120003 | 39.464443 | P | H | H | 5 | 100 | 21 | 7 | 40 | 60 | 35 | FSC |
| FR Dh 62 | FR-73-3041 | -77.120003 | 39.463333 | P | S | H | 3 | 250 | 25 | 1 | 25 | 245 | 22 | FSC |
| FR Dh 63 | FR-73-2594 | -77.122223 | 39.463612 | P | S | H | 30 | 120 | 35 | 3 | 30 | 120 | 0 | FSC |
| FR Dh 64 | FR-73-3117 | -77.121109 | 39.457222 | P | H | H | 20 | 85 | 41 | 10 | 30 | 50 | 10 | FSC |
| FR Dh 65 | FR-73-7192 | -77.123611 | 39.453609 | P | S | H | 20 | 300 | 46 | 4 | 29 | 250 | 9 | FSC |
| FR Dh 66 | FR-73-4305 | -77.123611 | 39.452221 | P | S | H | 12 | 120 | 23 | 8 | 60 | 90 | 48 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ea 1 | FR-00-9422 | -77.669724 | 39.335278 | BR | S | H | - | 69 | 20 | 3 | 25 | 50 | - | I |
| FR Ea 2 | FR-00-1476 | -77.669724 | 39.333057 | BR | S | H | - | 43 | 33 | 2.5 | 23 | - | - | I |
| FR Ea 3 | FR-73-7244 | -77.66667 | 39.337776 | BR | S | H | 76 | 115 | 84 | 12 | 46 | 80 | -30 | I |
| FR Eb 1 | FR-01-1628 | -77.59639 | 39.395279 | BR | S | H | 12 | 76 | 76 | 8 | 12 | 30 | 0 | I |
| FR Eb 2 | FR-00-7296 | -77.588608 | 39.389999 | BR | F | H | 0 | 62 | 62 | 3 | 35 | 50 | 35 | CSC |
| FR Eb 3 | FR-01-2454 | -77.611389 | 39.401112 | BR | H | H | - | 72 | 24 | 6 | 40 | 60 | - | I |
| FR Eb 4 | FR-01-7298 | -77.608612 | 39.403332 | BR | H | U | 20 | 108 | 22 | 30 | 50 | 78 | 30 | I |
| FR Eb 5 | FR-00-5035 | -77.608612 | 39.404999 | BR | H | H | - | 100 | 22 | 10 | 30 | 60 | - | I |
| FR Eb 6 | FR-01-5504 | -77.636108 | 39.373612 | BR | F | H | 20 | 100 | 20 | 20 | 8 | 12 | -12 | I |
| FR Eb 7 | - | -77.636948 | 39.375557 | BR | F | U | 0 | 23.9 | 23.9 | 5 | - | - | - | I |
| FR Eb 9 | FR-00-6664 | -77.628334 | 39.340279 | BR | S | S | 20 | 75 | 23 | 9 | 8 | 60 | -12 | I |
| FR Eb 10 | FR-01-6104 | -77.630837 | 39.34111 | BR | S | H | - | 100 | 20 | 7 | 14.5 | 85 | - | I |
| FR Eb 11 | FR-00-5083 | -77.62722 | 39.389999 | BR | F | H | - | 70 | 26 | 4 | 30 | 40 | - | I |
| FR Eb 12 | FR-00-4902 | -77.609169 | 39.402779 | BR | F | U | 6 | 80 | 30 | 5 | 15 | 18 | 9 | I |
| FR Eb 14 | FR-00-4189 | -77.619721 | 39.345833 | BR | F | H | 12 | 85 | 85 | 10 | 22 | - | 10 | I |
| FR Eb 15 | FR-01-1539 | -77.632225 | 39.394722 | BR | F | H | - | 65 | 12 | 8 | 35 | 50 | - | I |
| FR Eb 16 | FR-01-1023 | -77.595001 | 39.393055 | BR | F | H | 18 | 64 | 18 | 10 | 25 | - | 7 | I |
| FR Eb 17 | FR-00-1263 | -77.644165 | 39.333889 | BR | V | H | - | 77 | 15 | 5 | 42 | 68 | - | I |
| FR Eb 18 | FR-01-6158 | -77.642219 | 39.336388 | BR | H | C | 22 | 99 | 22 | 20 | 30 | 30 | -19 | I |
| FR Eb 19 | FR-00-9113 | -77.60833 | 39.339169 | BR | F | H | 0.5 | 54 | 12 | 8 | 25 | 25 | 24.5 | I |
| FR Eb 20 | FR-01-1627 | -77.611114 | 39.34528 | BR | S | C | 6 | 56 | 56 | 3 | 10 | 40 | 4 | I |
| FR Eb 21 | FR-01-1383 | -77.610275 | 39.345001 | BR | H | H | 28 | 50 | 50 | 6 | 12 | 18 | -16 | I |
| FR Eb 22 | - | -77.64389 | 39.356945 | BR | F | H | - | 55 | - | 4 | - | - | - | I |
| FR Eb 25 | - | -77.625 | 39.364166 | BR | F | H | - | 108 | - | 7 | 40 | - | - | I |
| FR Eb 29 | FR-73-7365 | -77.639999 | 39.351944 | BR | V | H | 18 | 250 | 34 | 4 | 30 | 240 | 12 | I |
| FR Eb 30 | FR-73-6310 | -77.639168 | 39.350555 | BR | V | H | 3 | 125 | 20 | 12 | 10 | 25 | 7 | I |
| FR Eb 31 | FR-73-3222 | -77.638611 | 39.350277 | BR | V | H | 50 | 150 | 55 | 20 | 16 | 150 | -34 | I |
| FR Eb 32 | FR-73-2314 | -77.638886 | 39.35 | BR | V | H | 26 | 125 | 28 | 12 | 12 | 31 | -14 | I |
| FR Eb 33 | FR-68-0108 | -77.609169 | 39.402779 | BR | H | T | 23 | 87 | 22 | 8 | 20 | 24 | -3 | I |
| FR Eb 34 | FR-73-1806 | -77.616943 | 39.348332 | BR | S | T | 30 | 203 | 33 | 2 | 50 | 155 | 20 | I |
| FR Eb 35 | FR-04-5596 | -77.593887 | 39.352501 | BR | H | N | 20 | 183 | 20 | 10 | 40 | 60 | 20 | I |
| FR Eb 36 | FR-73-7910 | -77.591942 | 39.353611 | BR | S | T | 58 | 300 | 65 | 6 | 38 | 300 | -20 | I |
| FR Eb 37 | FR-02-8131 | -77.638726 | 39.405535 | BR | S | U | 0 | 255 | 26 | 15 | - | - | - | I |
| FR Eb 38 | FR-04-5900 | -77.639442 | 39.406666 | BR | S | H | 35 | 205 | 39 | 6 | 160 | 195 | 125 | CSC |
| FR Eb 39 | FR-73-7248 | -77.588249 | 39.414402 | BR | H | H | 23 | 200 | 33 | 10 | 25 | 200 | 2 | I |
| FR Eb 40 | FR-73-8495 | -77.588798 | 39.413792 | BR | H | H | 36 | 400 | 41 | 3 | 25 | 400 | -11 | I |
| FR Eb 41 | FR-73-7711 | -77.58741 | 39.414764 | BR | H | H | 12 | 250 | 22 | 50 | 20 | 110 | 8 | I |
| FR Eb 42 | FR-73-5639 | -77.589966 | 39.411934 | BR | H | H | 19 | 225 | 20 | 4 | 41 | 112 | 22 | I |
| FR Eb 43 | FR-88-4413 | -77.601456 | 39.413818 | BR | H | H | 33 | 300 | 41 | 6 | 40 | 300 | 7 | I |
| FR Eb 44 | FR-88-4411 | -77.600784 | 39.413212 | BR | H | H | 32 | 400 | 39 | 3 | 42 | 132 | 10 | I |
| FR Eb 45 | FR-88-4417 | -77.600365 | 39.413254 | BR | H | H | 32 | 675 | 39 | 1 | 37 | 160 | 5 | I |
| FR Ec 1 | FR-00-4714 | -77.578888 | 39.373612 | BR | S | H | 8 | 100 | 100 | 2 | 10 | 40 | 2 | I |
| FR Ec 3 | - | -77.571945 | 39.415554 | BR | H | H | - | 75 | - | 5 | - | - | - | I |
| FR Ec 5 | FR-01-7340 | -77.556946 | 39.358334 | BR | F | H | - | 110 | 35 | 10 | 8 | 12 | - | I |
| FR Ec 6 | FR-01-9689 | -77.510834 | 39.363335 | BR | H | C | 22 | 165 | 165 | 10 | 85 | - | 63 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ec 7 | FR-00-5018 | -77.552223 | 39.358334 | BR | F | H | 8 | 58 | 14 | 15 | 25 | - | 17 | I |
| FR Ec 8 | FR-01-0328 | -77.57222 | 39.355835 | BR | V | H | - | 70 | 29.5 | 20 | 10 | 15 | - | I |
| FR Ec 9 | FR-00-4357 | -77.554169 | 39.358612 | BR | F | H | - | 71 | 22 | 3 | 30 | 55 | - | I |
| FR Ec 10 | FR-01-2891 | -77.575279 | 39.373055 | BR | S | S | 10 | 131 | 23 | 2 | 30 | 110 | 20 | I |
| FR Ec 11 | FR-01-9524 | -77.529999 | 39.361668 | BR | F | H | 40 | 62 | 40 | 10 | 41 | - | 1 | I |
| FR Ec 12 | FR-00-8294 | -77.506386 | 39.335834 | P | S | H | 5 | 58 | 9 | 15 | 25 | 40 | 20 | CSC |
| FR Ec 13 | FR-00-8295 | -77.507225 | 39.333889 | P | S | H | 6 | 60 | 10 | 15 | 45 | 60 | 39 | CSC |
| FR Ec 14 | FR-00-3756 | -77.531387 | 39.362221 | BR | F | C | 7 | 72 | 12 | 5 | 25 | 35 | 18 | I |
| FR Ec 15 | FR-00-6783 | -77.540276 | 39.341946 | BR | S | H | 20 | 83 | 24 | 6 | 30 | 60 | 10 | I |
| FR Ec 16 | FR-01-9825 | -77.540276 | 39.337502 | BR | F | H | 20 | 76 | 23 | 14 | 30 | 67 | -17 | I |
| FR Ec 17 | FR-00-7902 | -77.510834 | 39.363335 | BR | H | C | 65 | 86 | 72 | 4 | 33 | 74 | -32 | CSC |
| FR Ec 19 | FR-05-1571 | -77.512779 | 39.345833 | BR | S | R | 14 | 145 | 19.7 | 12 | 25 | - | 11 | CSC |
| FR Ec 20 | FR-72-0469 | -77.523056 | 39.3675 | BR | S | U | 100 | 255 | 23 | 20 | - | - | - | CSC |
| FR Ec 21 | FR-72-0469 | -77.52417 | 39.368057 | BR | S | U | 40 | 220 | 21 | 46 | - | - | - | CSC |
| FR Ec 22 | FR-72-0469 | -77.523613 | 39.368889 | BR | S | U | 90 | 302 | 20 | 40 | 20 | - | -70 | CSC |
| FR Ec 23 | FR-72-0469 | -77.52861 | 39.36861 | BR | S | U | - | 262 | - | 0 | - | - | - | CSC |
| FR Ec 24 | FR-73-2468 | -77.553337 | 39.362778 | BR | S | U | 20 | 302 | 38 | 2 | 10 | 30 | -10 | CSC |
| FR Ec 25 | FR-68-0100 | -77.548058 | 39.359165 | BR | H | T | 75 | 220 | 88 | 50 | 60 | 220 | -15 | I |
| FR Ec 26 | FR-73-0448 | -77.536667 | 39.363335 | BR | F | P | 90 | 345 | 100 | 30 | 20 | 134 | -70 | I |
| FR Ec 27 | FR-73-0108 | -77.53611 | 39.363056 | BR | F | U | 82 | 345 | 93 | 15 | 22 | 345 | -60 | I |
| FR Ec 28 | FR-73-0106 | -77.535004 | 39.363888 | BR | F | U | 80 | 370 | 87 | 12 | 18 | 370 | -62 | I |
| FR Ec 29 | FR-66-0841 | -77.535278 | 39.361668 | BR | H | H | 0 | 159 | 57 | 7 | 30 | - | 30 | I |
| FR Ec 30 | FR-70-0052 | -77.53389 | 39.361111 | BR | S | H | 12 | 288 | 25 | 5 | 30 | 285 | 18 | I |
| FR Ec 31 | FR-73-1751 | -77.531944 | 39.362221 | BR | F | C | 50 | 175 | 61 | 12 | 45 | 170 | -5 | I |
| FR Ec 32 | FR-72-0230 | -77.531387 | 39.361111 | BR | S | C | 85 | 125 | 89 | 10 | 25 | 115 | -60 | I |
| FR Ec 33 | FR-69-0379 | -77.530281 | 39.361111 | BR | S | H | 118 | 145 | 40 | 11 | 43 | - | -75 | I |
| FR Ec 34 | FR-01-2029 | -77.526665 | 39.362221 | BR | S | C | 7 | 67 | 21 | 10 | 28 | 44 | 21 | I |
| FR Ec 35 | FR-68-0070 | -77.500832 | 39.368889 | BR | S | P | 0 | 324 | 56 | 10 | 30 | - | 30 | FSC |
| FR Ec 36 | FR-73-3302 | -77.499725 | 39.370277 | BR | S | P | 5 | 350 | 49 | 50 | 25 | 35 | 20 | FSC |
| FR Ec 37 | FR-70-0221 | -77.501389 | 39.406666 | BR | S | P | 20 | 320 | 26 | 7 | 40 | 280 | 20 | CSC |
| FR Ec 38 | FR-70-0192 | -77.500557 | 39.407223 | BR | S | U | 80 | 300 | 40 | 4 | 35 | 300 | -45 | CSC |
| FR Ec 39 | FR-70-0457 | -77.500275 | 39.406944 | BR | S | P | 50 | 400 | 50 | 12 | 40 | 400 | -10 | CSC |
| FR Ec 40 | FR-73-2888 | -77.514999 | 39.381943 | BR | S | H | 28 | 395 | 33 | 1 | 29 | 395 | 1 | I |
| FR Ec 41 | FR-69-0070 | -77.51889 | 39.349167 | BR | S | T | 60 | 200 | 23 | 10 | 26 | - | -34 | I |
| FR Ec 42 | FR-73-7958 | -77.513886 | 39.334721 | BR | S | U | 10 | 300 | 19 | 2 | 60 | 300 | 50 | I |
| FR Ec 43 | FR-81-5284 | -77.528892 | 39.365833 | BR | H | - | 53 | 300 | 60 | 100 | 33 | 300 | -20 | I |
| FR Ec 44 | FR-88-3269 | -77.501236 | 39.398167 | BR | S | H | 105 | 325 | 125 | 5 | 71 | 325 | -34 | CSC |
| FR Ec 45 | FR-88-3268 | -77.501076 | 39.39843 | BR | S | H | 70 | 550 | 83 | 2 | 66 | 550 | -4 | CSC |
| FR Ec 46 | FR-88-3267 | -77.500855 | 39.39875 | BR | S | H | 124 | 525 | 129 | 2 | 75 | 165 | -49 | CSC |
| FR Ec 47 | FR-73-4668 | -77.509979 | 39.389973 | BR | S | H | 25 | 243 | 41 | 5 | 55 | 65 | 30 | I |
| FR Ec 48 | FR-73-4669 | -77.510002 | 39.390148 | BR | S | H | 26 | 223 | 40 | 20 | 50 | 60 | 24 | I |
| FR Ec 49 | FR-94-1952 | -77.511803 | 39.393543 | BR | S | H | 24 | 425 | 39 | 2 | 43 | 140 | 19 | I |
| FR Ec 50 | FR-73-8790 | -77.543701 | 39.386303 | BR | H | H | 30 | 425 | 41 | 3 | 33 | 164 | 3 | I |
| FR Ec 51 | FR-81-1841 | -77.543701 | 39.386086 | BR | H | H | 28 | 275 | 39 | 10 | 45 | 275 | 17 | I |
| FR Ec 52 | FR-81-0313 | -77.543365 | 39.386147 | BR | H | H | 10 | 350 | 41 | 8 | 40 | 300 | 30 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ec 53 | FR-81-0388 | -77.546333 | 39.411293 | BR | H | H | 30 | 250 | 40 | 4 | 40 | 250 | 10 | I |
| FR Ec 54 | FR-73-7596 | -77.546478 | 39.41124 | BR | S | H | 10 | 125 | 20 | 7 | 20 | 120 | 10 | I |
| FR Ec 55 | FR-73-8379 | -77.547325 | 39.412449 | BR | S | H | 35 | 140 | 40 | 7 | 30 | 140 | -5 | I |
| FR Ec 56 | FR-88-0360 | -77.577393 | 39.416511 | BR | H | H | 40 | 550 | 48 | 2 | 34 | 167 | -6 | I |
| FR Ec 57 | FR-88-0334 | -77.57769 | 39.415688 | BR | H | H | 41 | 525 | 47 | 2 | 25 | 140 | -16 | I |
| FR Ed 2 | - | -77.441948 | 39.404167 | P | S | H | 37 | 615 | 200 | 150 | - | - | - | CSC |
| FR Ed 6 | FR-01-7553 | -77.430557 | 39.335278 | P | F | H | 40 | 81 | 43 | 10 | 28 | 39 | -12 | C |
| FR Ed 7 | FR-00-3418 | -77.420281 | 39.355278 | P | F | H | 33 | 67 | 33 | 3 | - | - | - | C |
| FR Ed 8 | FR-01-7866 | -77.438889 | 39.361668 | P | F | H | 20 | 48 | 30 | 15 | 20 | 21 | 0 | C |
| FR Ed 9 | FR-02-1637 | -77.45417 | 39.374443 | P | F | S | 13 | 115 | 2.5 | 15 | 25 | 50 | 12 | C |
| FR Ed 10 | FR-00-3474 | -77.425552 | 39.348057 | P | F | H | 33 | 72 | 35 | 3 | 50 | - | 17 | C |
| FR Ed 12 | FR-01-1013 | -77.451111 | 39.337502 | P | F | H | - | 146 | 27 | 2 | 30 | 140 | - | C |
| FR Ed 13 | - | -77.491112 | 39.348888 | P | F | H | - | 92 | - | 10 | - | - | - | FSC |
| FR Ed 15 | FR-01-0155 | -77.494163 | 39.373333 | BR | H | H | - | 76 | 24 | 8 | 36 | - | - | CSC |
| FR Ed 16 | FR-00-9627 | -77.468613 | 39.390835 | P | H | H | - | 82 | 15 | 10 | 15 | 20 | - | FSC |
| FR Ed 17 | FR-10-560A | -77.460556 | 39.395557 | P | F | C | 8 | 68 | 12 | 10 | 15 | 50 | 7 | CSC |
| FR Ed 19 | - | -77.473335 | 39.413887 | P | F | H | - | 65 | - | 7 | - | - | - | FSC |
| FR Ed 20 | FR-00-6051 | -77.455559 | 39.415001 | P | H | C | - | 76 | 22 | 3 | 35 | 50 | - | CSC |
| FR Ed 21 | FR-01-1685 | -77.449448 | 39.416111 | P | S | C | 25 | 93 | 25 | 10 | 10 | 25 | -15 | CSC |
| FR Ed 22 | FR-02-0807 | -77.488892 | 39.391945 | BR | H | S | - | 84 | 39.5 | 10 | - | - | - | CSC |
| FR Ed 25 | FR-01-5110 | -77.448059 | 39.375832 | P | S | H | - | 150 | 37 | 12 | 50 | 100 | - | C |
| FR Ed 27 | FR-00-4032 | -77.439163 | 39.390556 | P | H | H | 20 | 45 | 20 | 10 | 25 | 32 | 5 | C |
| FR Ed 29 | FR-00-3354 | -77.418053 | 39.397499 | P | F | U | 24 | 106 | 24 | 3 | 70 | - | 46 | C |
| FR Ed 30 | FR-01-2389 | -77.417778 | 39.398334 | P | F | H | 15 | 103 | 15 | 3 | 23 | 90 | 8 | C |
| FR Ed 31 | FR-00-4681 | -77.417503 | 39.399445 | P | F | H | 6 | 116 | 10 | 14 | 70 | 72 | 24.7 | C |
| FR Ed 33 | - | -77.433609 | 39.399445 | P | H | C | - | 100 | - | 10 | - | - | - | C |
| FR Ed 34 | - | -77.433891 | 39.400555 | P | H | U | - | 170 | - | 4.5 | - | - | - | C |
| FR Ed 35 | FR-00-2909 | -77.433891 | 39.400555 | P | H | C | 25 | 55 | 30 | 30 | 20 | 20 | -5 | C |
| FR Ed 36 | FR-00-2910 | -77.432777 | 39.4 | P | H | C | 10 | 90 | 35 | 20 | 30 | 40 | 20 | C |
| FR Ed 37 | FR-01-6075 | -77.433609 | 39.4 | P | H | U | 24 | 58 | 26 | 20 | 31 | 42 | 7 | C |
| FR Ed 38 | FR-02-0351 | -77.43528 | 39.400276 | P | W | C | 12 | 82 | 14 | 20 | 12 | 58 | 0 | C |
| FR Ed 39 | FR-01-7707 | -77.493889 | 39.409443 | BR | S | H | - | 150 | 12 | 2.5 | 57 | 140 | - | FSC |
| FR Ed 40 | FR-00-8982 | -77.462502 | 39.3675 | P | S | H | - | 102 | 24 | 20 | 30 | 60 | - | CSC |
| FR Ed 41 | FR-00-1555 | -77.41861 | 39.376667 | P | S | H | 7 | 370 | 34 | 2.25 | 27 | 240 | 20 | C |
| FR Ed 43 | - | -77.421387 | 39.349167 | P | V | H | - | 90 | - | 5 | - | - | - | C |
| FR Ed 44 | FR-02-1468 | -77.466942 | 39.410557 | P | W | H | - | 67 | 57 | 10 | 10 | 20 | - | FSC |
| FR Ed 45 | FR-01-2019 | -77.464165 | 39.411388 | P | H | H | - | 90 | - | 15 | 10 | - | - | CSC |
| FR Ed 46 | FR-01-6434 | -77.464722 | 39.411388 | P | H | H | - | 108 | 25 | 16 | 15 | 30 | - | FSC |
| FR Ed 47 | FR-01-0814 | -77.46833 | 39.415279 | P | H | H | - | 60 | 10 | 10 | 10 | 40 | - | FSC |
| FR Ed 48 | FR-00-8444 | -77.468887 | 39.414722 | P | H | H | - | 70 | - | 15 | 8 | 25 | - | FSC |
| FR Ed 49 | FR-01-0507 | -77.464165 | 39.410557 | P | H | H | - | 90 | 21 | 20 | 8 | 8 | - | CSC |
| FR Ed 50 | FR-01-0628 | -77.463608 | 39.410278 | P | H | H | - | 77 | 12 | 4 | 3 | 70 | - | CSC |
| FR Ed 54 | - | -77.470833 | 39.412777 | P | F | U | - | 30 | 26 | 1 | - | - | - | CSC |
| FR Ed 57 | FR-00-9521 | -77.438889 | 39.403057 | P | V | H | 30 | 82 | 30 | 8 | 30 | 50 | 0 | C |
| FR Ed 58 | FR-02-3704 | -77.473892 | 39.413055 | P | S | H | 70 | 87 | 13 | 20 | 55 | 60 | -15 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ed 60 | FR-02-5622 | -77.431389 | 39.346943 | P | F | N | 25 | 156 | 54.5 | 250 | 37 | - | 12 | C |
| FR Ed 61 | FR-02-6835 | -77.434723 | 39.34639 | P | F | U | 0 | 77 | 77 | 173 | 25 | - | 25 | C |
| FR Ed 62 | FR-02-6836 | -77.432503 | 39.348057 | P | F | N | 0 | 87 | 77.5 | 200 | 38.3 | 43 | 38.3 | C |
| FR Ed 63 | - | -77.434448 | 39.345001 | P | F | N | - | 166 | 70 | 125 | 29 | 31.5 | - | C |
| FR Ed 72 | - | -77.418335 | 39.369721 | P | H | H | - | 150 | - | 15 | - | - | - | C |
| FR Ed 74 | FR-71-0285 | -77.419724 | 39.368889 | P | H | U | - | 475 | - | 0 | - | - | - | C |
| FR Ed 75 | FR-71-0285 | -77.419167 | 39.369446 | P | H | U | - | 300 | - | 0 | - | - | - | C |
| FR Ed 76 | FR-71-0285 | -77.41861 | 39.369999 | P | S | U | 1 | 455 | 83 | 15 | 100 | - | 12.6 | C |
| FR Ed 77 | FR-71-0285 | -77.418053 | 39.369721 | P | H | U | - | 772 | 22 | 2 | 35 | - | - | C |
| FR Ed 78 | - | -77.429443 | 39.364445 | P | V | U | - | 60 | 27 | 70 | - | - | - | C |
| FR Ed 79 | FR-70-0076 | -77.43 | 39.364445 | P | V | S | 12 | 220 | 62 | 100 | 20 | - | 8 | C |
| FR Ed 80 | FR-71-0246 | -77.478615 | 39.391666 | P | V | U | 40 | 202 | 70 | 160 | 7 | 100 | -33 | C |
| FR Ed 81 | FR-71-0246 | -77.477501 | 39.390556 | P | V | U | 70 | 102 | 84 | 140 | 11 | 100 | -59 | C |
| FR Ed 85 | FR-72-0112 | -77.473335 | 39.386944 | P | V | H | 10 | 125 | 20 | 100 | 6 | 125 | -4 | FSC |
| FR Ed 86 | FR-72-0291 | -77.484444 | 39.380833 | P | S | H | 50 | 95 | 54 | 50 | 46 | 95 | -4 | C |
| FR Ed 87 | FR-72-0001 | -77.44278 | 39.403332 | P | H | H | 2 | 140 | 42 | 50 | 50 | - | 48 | CSC |
| FR Ed 88 | FR-66-0688 | -77.457779 | 39.409443 | P | H | H | 40 | 130 | 83 | 50 | 25 | 125 | -15 | CSC |
| FR Ed 89 | FR-73-7406 | -77.484169 | 39.340279 | P | F | C | 20 | 245 | 39 | 8 | 45 | 185 | 25 | CSC |
| FR Ed 90 | FR-73-4329 | -77.420555 | 39.376388 | P | H | U | 10 | 380 | - | 0 | - | - | - | CSC |
| FR Ed 91 | FR-73-4333 | -77.420555 | 39.376388 | P | H | U | 10 | 500 | - | 0 | - | - | - | CSC |
| FR Ed 92 | FR-73-4336 | -77.420555 | 39.376388 | P | H | U | 4 | 260 | - | 0 | - | - | - | CSC |
| FR Ed 93 | FR-73-4385 | -77.417221 | 39.389446 | P | S | U | 20 | 300 | - | 4 | - | - | - | CSC |
| FR Ed 94 | FR-73-4382 | -77.416946 | 39.389168 | P | S | U | 15 | 300 | - | 10 | - | - | - | CSC |
| FR Ed 95 | FR-73-4341 | -77.41667 | 39.362499 | P | S | U | 25 | 220 | 35 | 0.5 | - | - | - | CSC |
| FR Ed 96 | FR-72-0641 | -77.499443 | 39.41 | BR | S | P | 15 | 300 | 20 | 3 | 100 | 300 | 85 | CSC |
| FR Ed 98 | FR-73-1919 | -77.479446 | 39.415001 | BR | S | T | 35 | 300 | 39 | 7 | 30 | 300 | -5 | FSC |
| FR Ed 99 | FR-73-5603 | -77.473053 | 39.408611 | P | F | I | 15 | 525 | 105 | 12 | 48 | 525 | 33 | FSC |
| FR Ed 100 | FR-73-8585 | -77.440559 | 39.403889 | P | H | T | 16 | 325 | 62 | 10 | 80 | 305 | 64 | C |
| FR Ed 101 | FR-05-6406 | -77.459999 | 39.396668 | P | F | P | 0 | 235 | 33 | 15 | 20 | - | 20 | CSC |
| FR Ed 102 | FR-71-0127 | -77.460831 | 39.396668 | P | F | C | 30 | 220 | 23 | 30 | 25 | 220 | -5 | CSC |
| FR Ed 103 | FR-73-5883 | -77.476669 | 39.385555 | P | S | H | 7 | 140 | 57 | 7 | 65 | 140 | 58 | FSC |
| FR Ed 104 | FR-69-0442 | -77.487778 | 39.389446 | BR | S | T | 0 | 85 | 37 | 10 | 30 | - | 30 | CSC |
| FR Ed 105 | FR-73-4429 | -77.484444 | 39.380833 | P | F | C | 90 | 110 | 104 | 25 | 39 | 110 | -51 | C |
| FR Ed 106 | FR-73-2647 | -77.483055 | 39.379723 | P | F | C | 30 | 120 | 90 | 45 | 51 | 61 | 21 | C |
| FR Ed 107 | FR-81-0311 | -77.423332 | 39.364723 | P | F | U | 7 | 160 | 22 | 80 | 50 | 160 | 43 | C |
| FR Ed 108 | FR-81-0312 | -77.421669 | 39.364166 | P | S | U | 5 | 120 | 23 | 100 | 30 | 120 | 25 | C |
| FR Ed 109 | FR-72-0304 | -77.423058 | 39.362778 | P | F | U | 42 | 102 | 53 | 30 | - | - | - | C |
| FR Ed 110 | FR-72-0304 | -77.422775 | 39.364166 | P | F | U | 8 | 82 | 18 | 200 | - | - | - | C |
| FR Ed 111 | FR-72-0304 | -77.421112 | 39.364723 | P | S | U | 3 | 102 | 18 | 200 | - | - | - | C |
| FR Ed 113 | FR-65-0439 | -77.42778 | 39.350834 | P | F | N | 0 | 195 | 36 | 50 | 55 | - | 55 | C |
| FR Ed 116 | FR-73-4320 | -77.474167 | 39.351944 | P | S | H | 3 | 175 | 20 | 5 | 35 | 170 | 32 | CSC |
| FR Ed 117 | FR-88-3023 | -77.458054 | 39.372223 | P | S | H | 30 | 125 | 40 | 25 | 62 | 125 | 32 | CSC |
| FR Ee 2 | FR-00-0772 | -77.407501 | 39.382221 | P | F | H | 40 | 155 | 110 | 30 | 30 | 60 | -10 | C |
| FR Ee 3 | FR-00-1461 | -77.406113 | 39.389168 | P | F | C | 30 | 350 | 195 | 40 | 30 | 150 | 0 | C |
| FR Ee 4 | - | -77.404442 | 39.413887 | P | F | F | 35 | 61 | 29.7 | 275 | 13 | 21 | -22 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ee 8 | - | -77.403892 | 39.344166 | P | S | H | - | 100 | - | 10 | - | - | - | C |
| FR Ee 10 | FR-02-1848 | -77.389999 | 39.370834 | P | S | C | 22 | 100 | 32.5 | 30 | 45 | 50 | 23 | C |
| FR Ee 11 | FR-01-1459 | -77.388611 | 39.362221 | P | S | H | 10 | 109 | 15 | 14 | 60 | 95 | 50 | C |
| FR Ee 12 | FR-02-0132 | -77.385559 | 39.358891 | P | S | H | - | 83 | 37 | 10 | 40 | - | - | FSC |
| FR Ee 13 | FR-00-3369 | -77.378609 | 39.35611 | P | V | R | 9 | 253 | 12 | 12 | 8 | - | -1 | FSC |
| FR Ee 14 | - | -77.382774 | 39.357498 | P | S | H | - | 50 | 23 | 10 | 26 | - | - | FSC |
| FR Ee 15 | FR-01-3945 | -77.401108 | 39.337502 | P | S | H | 24 | 105 | 17 | 3 | 40 | 105 | 16 | FSC |
| FR Ee 19 | FR-01-6696 | -77.3675 | 39.365555 | P | S | H | 0 | 76 | 6 | 5 | 12 | 40 | 12 | FSC |
| FR Ee 20 | FR-01-2390 | -77.338059 | 39.386665 | P | F | H | - | 95 | 6 | 4 | 16 | 80 | - | FSC |
| FR Ee 21 | FR-66-0082 | -77.338059 | 39.394722 | P | S | T | 3 | 74 | 40 | 5 | 35 | 55 | 32 | FSC |
| FR Ee 22 | FR-00-3648 | -77.34111 | 39.39611 | P | V | H | 11 | 68 | 11 | 3 | 40 | - | 29 | FSC |
| FR Ee 23 | FR-00-5222 | -77.356392 | 39.392776 | P | H | H | - | 100 | 6 | 3 | 45 | 70 | - | FSC |
| FR Ee 24 | FR-00-9475 | -77.360275 | 39.395557 | P | S | H | 55 | 108 | 57 | 10 | 30 | 50 | -25 | FSC |
| FR Ee 27 | FR-01-7930 | -77.409721 | 39.387222 | P | F | C | 20 | 282 | 24 | 4 | 60 | - | 40 | C |
| FR Ee 28 | FR-02-3529 | -77.406944 | 39.393055 | P | F | H | 19 | 116 | 22.5 | 5 | 60 | - | 41 | C |
| FR Ee 29 | - | -77.40667 | 39.392776 | P | F | H | - | 68 | - | 0.1 | - | - | - | C |
| FR Ee 30 | FR-01-7435 | -77.40667 | 39.392776 | P | F | H | 29 | 87 | 78 | 10 | 57 | 70 | 28 | C |
| FR Ee 32 | - | -77.383888 | 39.355835 | P | H | H | - | 162 | - | 5 | - | - | - | FSC |
| FR Ee 35 | FR-00-9749 | -77.378891 | 39.4 | P | F | H | 10 | 90 | 15 | 10 | 63 | - | 53 | C |
| FR Ee 36 | FR-02-1782 | -77.380554 | 39.398334 | P | F | H | - | 87 | 22 | 10 | 41 | 60 | - | C |
| FR Ee 37 | FR-02-0723 | -77.378059 | 39.384998 | P | V | H | - | 117 | 8 | 10 | 38 | 100 | - | FSC |
| FR Ee 38 | FR-02-7730 | -77.410278 | 39.384998 | P | F | P | - | 305 | 19 | 50 | 50 | 75 | - | C |
| FR Ee 40 | FR-04-2240 | -77.410553 | 39.385555 | P | F | U | 8 | 200 | 8 | 2 | 153 | - | 145 | C |
| FR Ee 41 | FR-04-2713 | -77.410278 | 39.384724 | P | F | U | 7 | 200 | 7 | 0 | - | - | - | C |
| FR Ee 42 | FR-66-0657 | -77.412224 | 39.384724 | P | F | P | - | 60 | 29 | 35 | 45 | 54 | - | C |
| FR Ee 44 | FR-68-0075 | -77.408608 | 39.396946 | P | F | C | - | 165 | 21.5 | 100 | 60 | - | - | C |
| FR Ee 45 | FR-67-0530 | -77.400833 | 39.392223 | P | F | N | 18 | 292 | 22 | 52 | 76.1 | 115.4 | 58.1 | C |
| FR Ee 48 | FR-67-0530 | -77.405281 | 39.391388 | P | F | U | 18 | 125 | 20 | 10 | 85 | - | 44.3 | C |
| FR Ee 49 | FR-02-5830 | -77.409447 | 39.390556 | P | F | C | 2 | 140 | 11 | 100 | 50 | 70 | 48 | C |
| FR Ee 50 | FR-02-6152 | -77.407219 | 39.394444 | P | F | U | 31 | 82 | 31 | 100 | 32 | - | 1 | C |
| FR Ee 52 | FR-68-0084 | -77.407219 | 39.39389 | P | F | H | 53 | 180 | 53 | 50 | 80 | 180 | 27 | C |
| FR Ee 52a | FR-04-7888 | -77.407219 | 39.39389 | P | F | H | 53 | 95 | 53 | 50 | 48 | - | -5 | C |
| FR Ee 53 | FR-04-6747 | -77.407219 | 39.390278 | P | F | U | 20 | 110 | 45 | 100 | 30 | - | 10 | C |
| FR Ee 54 | FR-66-0737 | -77.408608 | 39.389999 | P | F | C | 38 | 590 | 95 | 2 | 85 | 590 | 47 | C |
| FR Ee 55 | FR-68-0183 | -77.407219 | 39.390278 | P | F | C | 5 | 520 | 92 | 0.5 | 90 | 520 | 85 | C |
| FR Ee 56 | FR-05-7311 | -77.406387 | 39.393612 | P | F | C | 32 | 115 | 34 | 25 | 64 | - | 32 | C |
| FR Ee 59 | FR-68-0191 | -77.406387 | 39.393612 | P | F | C | 80 | 130 | 86 | 5 | 80 | 100 | 0 | C |
| FR Ee 60 | FR-05-0773 | -77.409447 | 39.388889 | P | F | C | 18 | 665 | 27 | 3 | 40 | - | 22 | C |
| FR Ee 61 | FR-02-5961 | -77.407219 | 39.387779 | P | F | U | 2 | 180 | 11 | 300 | 35 | 60 | 33 | C |
| FR Ee 62 | FR-65-0399 | -77.403892 | 39.393333 | P | F | U | 3 | 340 | 182 | 6 | - | 200 | - | C |
| FR Ee 64 | FR-65-0459 | -77.403892 | 39.393055 | P | F | N | - | 120 | 23.5 | 52 | 21 | 80 | - | C |
| FR Ee 65 | FR-68-0176 | -77.410004 | 39.386665 | P | F | C | 8 | 63 | 23 | 60 | 35 | 63 | 27 | C |
| FR Ee 67 | FR-69-0209 | -77.408608 | 39.390556 | P | F | C | 10 | 310 | 50 | 8 | 9 | 300 | -1 | C |
| FR Ee 68 | FR-68-0401 | -77.408333 | 39.398888 | P | F | C | - | 200 | 71 | 10 | 30 | - | - | C |
| FR Ee 69 | FR-03-4498 | -77.404999 | 39.388611 | P | F | U | - | 178 | 28 | 4 | 35 | - | - | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ee 70 | FR-68-0148 | -77.392219 | 39.402222 | P | V | U | 33 | 100 | 33 | 1.1 | - | - | - | C |
| FR Ee 71 | FR-68-0148 | -77.392219 | 39.402222 | P | V | F | 3 | 200 | 111 | 15 | 50 | 80 | 47 | C |
| FR Ee 72 | FR-68-0468 | -77.404999 | 39.388611 | P | F | C | 3 | 207 | 33 | 10 | 50 | - | 47 | C |
| FR Ee 73 | FR-03-1766 | -77.404999 | 39.388054 | P | F | C | - | 600 | 18 | 5 | 100 | - | - | C |
| FR Ee 74 | FR-69-0393 | -77.387222 | 39.396668 | P | V | C | - | 160 | 21 | 7 | - | - | - | C |
| FR Ee 75 | FR-69-0354 | -77.408608 | 39.392776 | P | H | C | 10 | 120 | 46 | 8 | - | - | - | C |
| FR Ee 77 | FR-68-0020 | -77.406944 | 39.393055 | P | F | H | 18 | 155 | 21 | 5 | 81 | 140 | 63 | C |
| FR Ee 80 | - | -77.406944 | 39.391388 | P | F | U | - | 96 | - | 50 | - | - | - | C |
| FR Ee 81 | FR-65-0440 | -77.406944 | 39.391388 | P | F | U | - | 125 | 13 | 10 | 35 | - | - | C |
| FR Ee 82 | FR-01-6779 | -77.407776 | 39.390278 | P | F | H | 22 | 103 | 32 | 45 | 30 | - | 8 | C |
| FR Ee 83 | FR-69-0392 | -77.406387 | 39.564445 | P | F | C | 10 | 195 | 20 | 4 | - | - | - | C |
| FR Ee 84 | FR-70-0005 | -77.351944 | 39.371944 | P | V | U | 19 | 115 | 29 | 6 | 25 | - | 6 | C |
| FR Ee 85 | FR-65-0413 | -77.404167 | 39.413055 | P | V | U | 13 | 251 | 37 | 238 | 8.5 | 133.5 | -4.5 | C |
| FR Ee 86 | FR-65-0413 | -77.403892 | 39.413334 | P | V | U | 10 | 193 | 17 | 70 | 7.91 | 140 | -2.09 | C |
| FR Ee 87 | FR-70-0304 | -77.408333 | 39.392223 | P | H | C | 9 | 395 | 20 | 1 | 80 | 315 | 71 | C |
| FR Ee 88 | FR-70-0299 | -77.40667 | 39.390278 | P | F | P | 10 | 72 | 22 | 25 | 40 | - | 30 | C |
| FR Ee 89 | FR-73-1028 | -77.408058 | 39.386112 | P | H | U | 70 | 365 | 74 | 142 | 45 | 206 | -25 | C |
| FR Ee 90 | FR-73-3847 | -77.406944 | 39.374168 | P | S | U | 30 | 145 | 41 | 150 | 48 | 58 | 18 | C |
| FR Ee 91 | FR-73-4409 | -77.401665 | 39.381943 | P | H | U | 40 | 300 | - | 5 | - | - | - | C |
| FR Ee 92 | FR-73-4332 | -77.401665 | 39.381943 | P | H | U | 38 | 400 | - | 30 | - | - | - | C |
| FR Ee 93 | FR-73-4338 | -77.401665 | 39.381943 | P | W | U | 20 | 300 | - | 35 | - | - | - | C |
| FR Ee 94 | FR-73-4410 | -77.401665 | 39.381943 | P | H | U | 10 | 380 | - | 10 | - | - | - | C |
| FR Ee 95 | FR-73-4331 | -77.415832 | 39.361668 | P | V | U | 20 | 300 | 0 | 0 | - | - | - | C |
| FR Ee 96 | FR-73-4346 | -77.416115 | 39.362499 | P | S | U | 4 | 250 | - | 0.5 | - | - | - | C |
| FR Ee 97 | FR-73-4340 | -77.41111 | 39.363888 | P | S | U | 40 | 400 | - | 5 | - | - | - | C |
| FR Ee 98 | FR-73-4334 | -77.410835 | 39.363888 | P | S | U | 40 | 300 | - | 0.5 | - | - | - | C |
| FR Ee 99 | FR-73-4337 | -77.410278 | 39.363888 | P | S | H | 29 | 665 | 37 | 10 | 27 | 41 | -2 | C |
| FR Ee 101 | FR-01-5173 | -77.404167 | 39.41 | P | F | U | 15 | 160 | 16 | 30 | 30 | 160 | 15 | C |
| FR Ee 102 | FR-73-4499 | -77.408333 | 39.376945 | P | F | U | 8 | 200 | 39 | 40 | 45 | 55 | 37 | C |
| FR Ee 103 | FR-73-1093 | -77.406387 | 39.396389 | P | F | C | 50 | 82 | 59 | 20 | 65 | 82 | 15 | C |
| FR Ee 104 | FR-71-0354 | -77.40667 | 39.391388 | P | F | U | 3 | 100 | 43 | 50 | 61 | 100 | 58 | C |
| FR Ee 105 | FR-04-3161 | -77.400276 | 39.412498 | P | F | U | 0 | 190 | 29 | 250 | 16 | 29 | 16 | C |
| FR Ee 106 | FR-73-0750 | -77.399445 | 39.391666 | P | F | U | 45 | 86 | 51 | 12 | 70 | 86 | 25 | C |
| FR Ee 107 | FR-73-1284 | -77.399719 | 39.392502 | P | F | C | 45 | 170 | 51 | 40 | 80 | 170 | 35 | C |
| FR Ee 108 | FR-72-0210 | -77.408333 | 39.388332 | P | F | U | 3 | 835 | 16 | 200 | 20 | 835 | 17 | C |
| FR Ee 109 | FR-73-2370 | -77.404999 | 39.390278 | P | F | U | 5 | 214 | 79 | 15 | 66 | 70 | 61 | C |
| FR Ee 110 | FR-73-0739 | -77.403892 | 39.385834 | P | F | U | 55 | 70 | 59 | 50 | 50 | 70 | -5 | C |
| FR Ee 111 | FR-04-3498 | -77.396942 | 39.378613 | P | F | C | 0 | 435 | 20 | 3 | 20 | - | 20 | C |
| FR Ee 112 | FR-73-6453 | -77.39167 | 39.397778 | P | S | N | 3 | 270 | 31 | 20 | 15 | 265 | 12 | C |
| FR Ee 113 | FR-73-8325 | -77.389725 | 39.398056 | P | F | N | 60 | 275 | - | 3 | 41 | 275 | -19 | C |
| FR Ee 114 | FR-72-0519 | -77.388611 | 39.396668 | P | F | C | 14 | 200 | 22 | 7 | 19 | - | 5 | C |
| FR Ee 115 | FR-72-0520 | -77.384445 | 39.391388 | P | S | N | 9 | 142 | 19 | 8 | 20 | - | 11 | C |
| FR Ee 116 | FR-73-1697 | -77.386108 | 39.393612 | P | S | N | 5 | 225 | 21 | 15 | 35 | 225 | 30 | C |
| FR Ee 117 | FR-73-4168 | -77.384445 | 39.392223 | P | S | C | 25 | 75 | 28 | 20 | 10 | 75 | -15 | C |
| FR Ee 118 | FR-73-4829 | -77.385559 | 39.391945 | P | H | C | 26 | 375 | 29 | 2 | 20 | 375 | -6 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ee 119 | FR-73-3248 | -77.386108 | 39.391666 | P | S | C | 4 | 450 | 19 | 6 | 12 | 450 | 8 | C |
| FR Ee 120 | FR-73-7584 | -77.38472 | 39.391666 | P | H | C | 12 | 225 | 39 | 10 | 20 | 225 | 8 | C |
| FR Ee 121 | FR-73-5955 | -77.38472 | 39.391666 | P | H | C | 10 | 425 | 39 | 2 | 20 | 425 | 10 | C |
| FR Ee 122 | FR-73-5190 | -77.384163 | 39.391945 | P | S | N | 10 | 300 | 20 | 5 | 18 | 300 | 8 | C |
| FR Ee 123 | FR-73-4554 | -77.384445 | 39.374168 | P | F | P | 26 | 200 | 40 | 75 | 35 | 190 | 9 | FSC |
| FR Ee 124 | FR-73-4555 | -77.409164 | 39.373055 | P | F | U | 15 | 350 | 18 | 35 | 35 | 340 | 20 | FSC |
| FR Ee 125 | FR-73-2639 | -77.3825 | 39.353054 | P | H | R | 25 | 300 | 31 | 1 | 20 | 300 | -5 | FSC |
| FR Ee 126 | FR-73-7186 | -77.369721 | 39.398334 | P | S | H | 51 | 125 | 61 | 50 | 18 | 41 | -33 | C |
| FR Ee 127 | FR-67-0335 | -77.35833 | 39.392502 | P | S | T | 0 | 300 | 23 | 1 | 30 | - | 30 | FSC |
| FR Ee 128 | FR-73-6740 | -77.348892 | 39.394722 | P | S | C | 14 | 405 | 19 | 0.75 | 30 | 395 | 16 | FSC |
| FR Ee 129 | FR-73-1739 | -77.363335 | 39.352501 | P | S | R | 0 | 300 | 24 | 50 | 33 | 43 | 33 | FSC |
| FR Ee 130 | FR-71-0217 | -77.362503 | 39.378056 | P | S | C | 50 | 220 | 60 | 3 | 20 | 220 | -30 | FSC |
| FR Ee 132 | FR-73-6453 | -77.39167 | 39.397778 | P | S | U | - | 515 | - | 0 | - | - | - | FSC |
| FR Ee 133 | FR-73-6453 | -77.39167 | 39.397778 | P | S | U | - | 220 | - | 0 | - | - | - | FSC |
| FR Ef 1 | FR-01-5094 | -77.270554 | 39.38139 | P | S | T | 30 | 75 | 30 | 10 | 15 | 20 | -15 | I |
| FR Ef 3 | FR-00-7037 | -77.279442 | 39.3825 | P | H | H | 15 | 80 | 23.5 | 4 | 9 | 65 | -6 | I |
| FR Ef 4 | FR-01-2496 | -77.299721 | 39.410278 | P | H | H | - | 100 | - | 1 | 22 | 100 | - | I |
| FR Ef 5 | FR-01-3946 | -77.252777 | 39.343613 | P | S | H | 28 | 54 | 30 | 5 | 20 | 54 | -8 | FSC |
| FR Ef 8 | - | -77.270279 | 39.370834 | P | V | N | - | - | - | 35 | 1 | - | - | FSC |
| FR Ef 9 | - | -77.270279 | 39.370834 | P | V | U | - | 54 | - | 5 | 1 | - | - | FSC |
| FR Ef 11 | FR-00-8552 | -77.291664 | 39.347221 | P | V | H | 4 | 32 | - | 5 | 2 | 32 | -2 | I |
| FR Ef 12 | FR-01-8831 | -77.321945 | 39.360832 | P | S | H | 10 | 91 | 9.5 | 1 | 30 | 91 | 20 | FSC |
| FR Ef 13 | FR-00-0105 | -77.311668 | 39.345554 | P | S | H | 0 | 112 | 0 | 10 | 40 | 40 | 40 | - |
| FR Ef 14 | FR-01-9251 | -77.31472 | 39.373612 | P | H | H | 20 | 119 | 23 | 10 | 45 | 69 | 25 | FSC |
| FR Ef 15 | FR-01-8208 | -77.297226 | 39.385555 | P | H | U | 30 | 80 | 30 | 20 | 32 | 65 | 2 | FSC |
| FR Ef 18 | FR-01-4602 | -77.324165 | 39.40361 | P | S | H | 15 | 75 | 24 | 7 | 30 | 60 | 15 | I |
| FR Ef 20 | FR-01-3641 | -77.32917 | 39.406387 | P | S | H | 70 | - | 16 | 8 | 70 | 80 | 0 | I |
| FR Ef 21 | FR-00-9628 | -77.301941 | 39.407501 | P | S | H | - | 50 | 6 | 10 | 28 | 35 | - | I |
| FR Ef 23 | FR-02-1936 | -77.264168 | 39.400276 | P | S | H | 8 | 167 | 8 | 2 | 20 | 167 | 12 | I |
| FR Ef 24 | FR-00-9090 | -77.273888 | 39.3825 | P | H | H | - | 79 | 17.5 | 5 | 20 | 40 | - | I |
| FR Ef 26 | FR-73-0852 | -77.328056 | 39.415279 | P | S | U | 2 | 442 | 21 | 3 | 30 | - | 28 | I |
| FR Ef 27 | FR-73-0852 | -77.325836 | 39.414722 | P | S | U | 2 | 300 | 38 | 5 | 30 | - | 28 | I |
| FR Ef 28 | FR-71-0369 | -77.311943 | 39.412498 | P | S | P | 21 | 400 | 40 | 12 | 32 | - | 11 | FSC |
| FR Ef 29 | FR-73-3442 | -77.273888 | 39.383888 | P | S | T | 4 | 310 | 49 | 5 | 30 | 300 | 26 | I |
| FR Ef 30 | FR-73-3424 | -77.274445 | 39.384167 | P | S | T | 11 | 120 | 20 | 10 | 50 | 120 | 39 | FSC |
| FR Ef 31 | FR-73-3455 | -77.275002 | 39.384445 | P | S | T | 4 | 310 | 49 | 5 | 30 | 300 | 26 | I |
| FR Ef 32 | FR-04-6476 | -77.275833 | 39.38361 | P | H | T | 38 | 400 | 46 | 11 | 30 | - | -8 | FSC |
| FR Ef 33 | FR-73-4879 | -77.26889 | 39.383888 | P | S | C | 23 | 60 | 24 | 40 | 40 | 60 | -3 | I |
| FR Ef 34 | FR-69-0051 | -77.267776 | 39.382778 | P | S | T | 10 | 104 | 12 | 15 | 25 | - | 15 | I |
| FR Ef 35 | FR-67-0472 | -77.270554 | 39.381943 | P | S | C | 23 | 265 | 46 | 8 | 15 | - | -8 | I |
| FR Ef 36 | FR-73-2439 | -77.297501 | 39.386112 | P | S | C | 30 | 180 | 30 | 10 | 30 | 180 | 0 | I |
| FR Ef 37 | FR-73-2401 | -77.296669 | 39.386112 | P | S | U | 18 | 100 | 19 | 15 | 30 | 100 | 12 | I |
| FR Ef 38 | FR-68-0045 | -77.321388 | 39.343334 | P | S | T | 45 | 100 | 44 | 6 | 65 | 80 | 20 | FSC |
| FR Ef 39 | FR-73-5336 | -77.268608 | 39.362778 | P | H | T | 30 | 150 | 60 | 20 | 30 | 40 | 0 | FSC |
| FR Ef 40 | FR-67-0495 | -77.274445 | 39.348888 | P | F | C | 60 | 77 | 58 | 2 | 45 | 77 | -15 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Ef 41 | FR-71-0438 | -77.266388 | 39.340557 | P | W | T | 80 | 200 | 22 | 10 | 10 | 190 | -70 | FSC |
| FR Ef 43 | FR-73-6080 | -77.31667 | 39.367222 | P | H | H | 8 | 225 | 21 | 2 | 50 | 225 | 42 | FSC |
| FR Ef 44 | FR-73-6614 | -77.297501 | 39.386112 | P | S | C | 20 | 140 | 33 | 6 | 25 | 140 | 5 | I |
| FR Ef 46 | FR-71-0369 | -77.311943 | 39.412498 | P | S | P | 31 | 300 | 31 | 3.5 | 45 | - | 14 | FSC |
| FR Ef 47 | FR-71-0099 | -77.266388 | 39.340557 | P | W | T | 0 | 230 | 20 | 10 | 12 | - | 12 | FSC |
| FR Ef 51 | FR-73-2491 | -77.319931 | 39.341518 | P | S | H | 45 | 117 | 53 | 12 | - | - | - | FSC |
| FR Eg 3 | FR-00-5996 | -77.181946 | 39.365833 | P | S | H | 10 | 70 | 10 | 3 | 50 | - | 40 | FSC |
| FR Eg 4 | FR-00-9856 | -77.209999 | 39.370556 | P | S | C | 14 | 29 | 15 | 4 | 4 | 29 | -10 | FSC |
| FR Eg 6 | FR-01-9806 | -77.23111 | 39.37389 | P | S | C | 20 | 42 | 23.5 | 10 | 15 | 16 | -5 | FSC |
| FR Eg 7 | FR-01-4023 | -77.235001 | 39.336945 | P | S | H | 7 | 90 | 7 | 10 | 30 | 40 | 23 | FSC |
| FR Eg 8 | FR-01-4468 | -77.229164 | 39.334721 | P | H | T | 50 | 120 | - | 3 | 40 | 120 | -10 | FSC |
| FR Eg 9 | FR-01-6528 | -77.182777 | 39.348332 | P | S | C | 30 | 90 | 32 | 12 | 30 | 54 | 0 | FSC |
| FR Eg 10 | FR-00-3495 | -77.223335 | 39.368889 | P | H | H | 30 | 110 | 10 | 10 | 30 | 98 | 0 | FSC |
| FR Eg 16 | FR-01-1208 | -77.240837 | 39.41639 | P | H | H | 5 | 72 | - | 2 | 42 | 66 | 37 | I |
| FR Eg 19 | FR-67-0319 | -77.218887 | 39.387779 | P | S | R | 20 | 70 | 21 | 30 | 20 | 70 | 0 | I |
| FR Eg 20 | FR-73-7721 | -77.182777 | 39.413887 | P | S | H | 54 | 145 | 61 | 8 | 60 | 145 | 6 | FSC |
| FR Eg 21 | FR-73-7932 | -77.18 | 39.413055 | P | S | H | 25 | 200 | 31 | 4 | 25 | 200 | 0 | FSC |
| FR Eg 22 | FR-73-6811 | -77.178337 | 39.412224 | P | S | H | 46 | 205 | 61 | 4 | 65 | 190 | 19 | FSC |
| FR Eg 23 | FR-73-7432 | -77.177223 | 39.413334 | P | S | H | 38 | 140 | 42 | 15 | 35 | 135 | -3 | FSC |
| FR Eg 24 | FR-73-3233 | -77.176109 | 39.413055 | P | H | H | 52 | 120 | 57 | 7 | 61 | 120 | 9 | FSC |
| FR Eg 25 | FR-73-3587 | -77.175835 | 39.412498 | P | H | H | 52 | 145 | 57 | 6 | 46 | 145 | -6 | FSC |
| FR Eg 26 | FR-73-6968 | -77.170555 | 39.413612 | P | S | H | 38 | 125 | 40 | 6 | 30 | 125 | -8 | FSC |
| FR Eg 27 | FR-73-8016 | -77.169998 | 39.413612 | P | H | H | 31 | 165 | 39 | 4 | 52 | 140 | 21 | FSC |
| FR Eg 28 | FR-73-6991 | -77.16667 | 39.398888 | P | S | H | 43 | 145 | 44 | 10 | 40 | 135 | -3 | FSC |
| FR Eg 29 | FR-05-0709 | -77.191391 | 39.36861 | P | S | C | 30 | 44 | 30 | 10 | 30 | 35 | 0 | FSC |
| FR Eg 30 | FR-73-3962 | -77.171387 | 39.367779 | P | S | N | 60 | 120 | 63 | 45 | 35 | 120 | -25 | FSC |
| FR Eg 31 | FR-73-3963 | -77.171112 | 39.367779 | P | F | N | 30 | 140 | 45 | 60 | 100 | 140 | 10 | FSC |
| FR Eg 32 | FR-73-3964 | -77.171112 | 39.36861 | P | F | N | 40 | 205 | 72 | 10 | 40 | 205 | 0 | FSC |
| FR Eg 33 | FR-73-0148 | -77.171669 | 39.353611 | P | F | C | 3 | 120 | 19 | 10 | 45 | 120 | 42 | FSC |
| FR Eg 34 | FR-73-6048 | -77.190002 | 39.399166 | P | H | H | - | 150 | 21 | 10 | 30 | 145 | - | FSC |
| FR Eg 35 | FR-73-8754 | -77.188057 | 39.400833 | P | S | H | - | 160 | 43 | 15 | 37 | 150 | - | FSC |
| FR Eh 1 | - | -77.164444 | 39.379723 | P | V | P | 14 | 125 | 34 | 60 | 6 | 8 | -8 | FSC |
| FR Eh 2 | - | -77.164719 | 39.380554 | P | V | P | - | 96 | 30 | 106 | 20 | 60 | - | FSC |
| FR Eh 3 | FR-00-8430 | -77.162224 | 39.395001 | P | H | H | 40 | 106 | - | 8 | 30 | 80 | -10 | FSC |
| FR Eh 5 | FR-01-8296 | -77.160835 | 39.397778 | P | V | H | 20 | 53 | 11 | 8 | 10 | 35 | -10 | FSC |
| FR Eh 6 | FR-01-8854 | -77.164719 | 39.380554 | P | V | U | 30 | 55 | 37.5 | 24.7 | - | - | - | FSC |
| FR Eh 7 | FR-01-9181 | -77.164719 | 39.380554 | P | V | U | 37 | 89 | 38 | 24.5 | - | - | - | FSC |
| FR Eh 8 | FR-01-9182 | -77.164719 | 39.380554 | P | V | U | 36 | 79.5 | 41.5 | 26.7 | - | - | - | FSC |
| FR Eh 9 | FR-01-9183 | -77.164719 | 39.380554 | P | V | U | 21 | 99.5 | 49 | 26.7 | - | - | - | FSC |
| FR Eh 10 | FR-73-2380 | -77.16333 | 39.383888 | P | V | P | 18 | 260 | 23 | 284 | 10.5 | 33.8 | -7.5 | FSC |
| FR Eh 11 | FR-81-0088 | -77.165276 | 39.3825 | P | S | U | 50 | 103 | 22 | 40 | 30 | 90 | -36.63 | FSC |
| FR Eh 12 | FR-81-0087 | -77.165276 | 39.38333 | P | S | U | 70 | 200 | 40 | 15 | 40 | 180 | -30 | FSC |
| FR Eh 13 | FR-81-0090 | -77.163055 | 39.382221 | P | S | P | 0 | 180 | 62 | 100 | 40 | 160 | 40 | FSC |
| FR Eh 14 | FR-81-0089 | -77.163887 | 39.38139 | P | S | U | 65 | 143 | 40 | 7 | 40 | 133 | -25 | FSC |
| FR Eh 16 | FR-73-5289 | -77.161941 | 39.412224 | P | S | H | 85 | 185 | 60 | 7 | 50 | 60 | -35 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Eh 17 | FR-73-7903 | -77.160835 | 39.413055 | P | S | H | 70 | 150 | 80 | 10 | 40 | 150 | -30 | FSC |
| FR Eh 18 | FR-73-6871 | -77.160553 | 39.413887 | P | S | H | 69 | 185 | 73 | 10 | 55 | 185 | -14 | FSC |
| FR Eh 19 | FR-73-5295 | -77.162224 | 39.414166 | P | S | H | 20 | 265 | 67 | 8 | 50 | 75 | 30 | FSC |
| FR Eh 20 | FR-73-5298 | -77.162781 | 39.415554 | P | S | H | - | 345 | 42 | 3 | 40 | 335 | - | FSC |
| FR Eh 21 | FR-73-5294 | -77.163612 | 39.415001 | P | H | H | 30 | 285 | 64 | 4 | 50 | 75 | 20 | FSC |
| FR Eh 22 | FR-73-1345 | -77.164169 | 39.413612 | P | H | H | 10 | 350 | 23 | 1 | 60 | - | 50 | FSC |
| FR Fb 1 | FR-00-5176 | -77.645836 | 39.333057 | BR | H | H | 5 | 63 | 12 | 15 | 12 | 41 | 7 | I |
| FR Fb 2 | FR-00-1475 | -77.587776 | 39.324165 | BR | H | H | - | 115 | 41 | 2.5 | 24 | 32 | - | I |
| FR Fb 3 | FR-00-7202 | -77.619446 | 39.33139 | BR | F | H | - | 88 | 13 | 4 | 35 | 67 | - | I |
| FR Fb 4 | FR-01-5833 | -77.650314 | 39.31931 | BR | S | H | 17 | 80 | 80 | 5 | 20 | 50 | 3 | I |
| FR Fb 5 | FR-00-8422 | -77.663887 | 39.328056 | BR | S | H | - | 109 | 107 | 3 | 30 | 90 | - | I |
| FR Fb 6 | FR-00-6532 | -77.66333 | 39.325832 | BR | S | H | - | 50 | 12 | 3 | 20 | 35 | - | I |
| FR Fb 7 | FR-00-6426 | -77.657501 | 39.322224 | BR | S | H | - | 112 | 42 | 3 | 55 | 82 | - | I |
| FR Fb 8 | FR-00-7905 | -77.623886 | 39.327778 | BR | F | H | 16 | 70 | 70 | 5 | 20 | 30 | 4 | I |
| FR Fb 9 | FR-02-3312 | -77.63333 | 39.315556 | BR | S | U | 9 | 67 | 9 | 7 | 25 | 47 | 16 | I |
| FR Fb 11 | - | -77.627777 | 39.318054 | BR | V | U | - | 315 | 12 | 100 | 5 | - | - | I |
| FR Fb 13 | FR-73-5481 | -77.646385 | 39.330555 | BR | H | H | 46 | 125 | 50 | 12 | 31 | 125 | -15 | I |
| FR Fb 14 | FR-73-6100 | -77.626663 | 39.327221 | BR | H | C | 34 | 325 | 41 | 10 | 28 | 325 | -6 | I |
| FR Fb 15 | FR-72-0104 | -77.621876 | 39.310702 | BR | G | C | 40 | 537 | 40 | 30 | 16 | - | -24 | I |
| FR Fb 16 | FR-69-0535 | -77.612363 | 39.308974 | BR | G | U | 35 | 125 | 37 | 15 | 17 | 40 | -18 | I |
| FR Fb 17 | FR-73-3627 | -77.612295 | 39.30887 | BR | G | P | 24 | 350 | 28 | 15 | 9 | 350 | -15 | I |
| FR Fb 18 | FR-73-2326 | -77.601387 | 39.321945 | BR | H | H | 38 | 295 | 45 | 2 | 33 | 295 | -5 | I |
| FR Fb 19 | FR-73-5109 | -77.60083 | 39.321667 | BR | H | H | 18 | 350 | 20 | 2 | 40 | 285 | 22 | I |
| FR Fc 4 | FR-01-4941 | -77.510559 | 39.295277 | P | S | H | 23 | 94 | 23 | 10 | - | - | - | C |
| FR Fc 6 | FR-01-1009 | -77.529999 | 39.28611 | P | S | H | 77 | 93 | 77 | 30 | 30 | - | -47 | CSC |
| FR Fc 9 | FR-01-0314 | -77.581947 | 39.327778 | BR | S | H | 18 | 71 | 71 | 3 | 40 | 55 | 22 | I |
| FR Fc 14 | FR-01-0806 | -77.537498 | 39.274723 | P | S | H | - | 77 | 77 | 10 | 20 | 40 | - | FSC |
| FR Fc 16 | FR-05-1703 | -77.525833 | 39.275276 | P | F | C | 31 | 46 | 32 | 35 | 15 | - | -16 | C |
| FR Fc 17 | FR-68-0224 | -77.525559 | 39.274445 | P | F | C | - | 98 | 70 | 100 | 15 | - | - | C |
| FR Fc 18 | FR-03-6663 | -77.526665 | 39.276112 | P | F | N | - | 150 | 22 | 10 | 40 | - | - | C |
| FR Fc 19 | FR-67-0394 | -77.526947 | 39.275833 | P | F | N | 28 | 130 | 31 | 20 | - | - | - | C |
| FR Fc 20 | FR-68-0025 | -77.528053 | 39.275833 | P | F | U | 20 | 305 | 25 | 5 | 30 | - | 10 | C |
| FR Fc 21 | FR-68-0025 | -77.528053 | 39.275833 | P | F | U | 15 | 225 | 30 | 20 | 25 | 80 | 10 | C |
| FR Fc 24 | - | -77.530281 | 39.270832 | P | T | R | 29 | 135 | 41 | 40 | - | - | - | C |
| FR Fc 26 | FR-69-0376 | -77.528892 | 39.278057 | P | V | P | 4 | 345 | 30 | 25 | 25 | 325 | 21 | C |
| FR Fc 27 | FR-69-0377 | -77.529167 | 39.272499 | P | V | H | 30 | 65 | 36 | 50 | 24 | 40 | -6 | C |
| FR Fc 28 | FR-03-7290 | -77.538055 | 39.2775 | P | S | U | 303 | 423 | 307 | 50 | 63 | - | -240 | C |
| FR Fc 30 | - | -77.553332 | 39.294966 | BR | T | H | - | 150 | 42 | 7 | - | - | - | I |
| FR Fc 31 | FR-72-0029 | -77.531944 | 39.278057 | P | H | P | 0 | 583 | 157 | 25 | 70 | - | 70 | CSC |
| FR Fc 32 | FR-72-0165 | -77.526108 | 39.273888 | P | F | C | 35 | 75 | 44 | 40 | 25 | 50 | -10 | C |
| FR Fc 33 | FR-72-0255 | -77.522499 | 39.266109 | P | S | H | 9 | 115 | 41 | 40 | 36 | - | 27 | C |
| FR Fc 34 | FR-66-0697 | -77.523613 | 39.267502 | P | V | H | 22 | 165 | 14 | 40 | 40 | - | 18 | C |
| FR Fc 35 | FR-65-0592 | -77.520279 | 39.275276 | P | S | C | - | 70 | 31 | 20 | 15 | 70 | - | C |
| FR Fc 36 | FR-03-3501 | -77.531387 | 39.315834 | BR | H | U | 0 | 735 | 17 | 0.07 | 190 | - | 190 | C |
| FR Fc 38 | FR-03-5168 | -77.524719 | 39.318333 | BR | S | T | 9 | 140 | 35 | 12 | 14 | 72 | 5 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Fc 39 | FR-04-8622 | -77.523613 | 39.318611 | BR | S | T | 12 | 170 | 21.5 | 4 | 30 | - | 18 | CSC |
| FR Fc 40 | FR-73-6728 | -77.576386 | 39.327499 | BR | H | H | 55 | 150 | 60 | 20 | 40 | 150 | -15 | I |
| FR Fc 41 | FR-73-7571 | -77.58139 | 39.326111 | BR | H | H | 52 | 150 | 60 | 30 | 37 | 150 | -15 | I |
| FR Fc 42 | FR-73-2259 | -77.581108 | 39.326111 | BR | H | H | 47 | 122 | 50 | 12 | 42 | 52 | -5 | I |
| FR Fc 43 | FR-73-1094 | -77.580559 | 39.325832 | BR | H | H | 4 | 125 | 20 | 8 | 30 | 120 | 26 | I |
| FR Fc 44 | FR-73-2114 | -77.580002 | 39.325001 | BR | H | H | 35 | 250 | 42 | 4 | 40 | 250 | 5 | I |
| FR Fc 45 | FR-73-1508 | -77.575554 | 39.321388 | BR | H | H | 35 | 220 | 41 | 3 | 50 | 220 | 15 | I |
| FR Fc 46 | FR-73-2995 | -77.574722 | 39.32111 | BR | H | H | 54 | 180 | 58 | 10 | 38 | 180 | -16 | I |
| FR Fc 47 | FR-73-2795 | -77.574448 | 39.320557 | BR | H | H | 42 | 200 | 47 | 3 | 35 | 200 | -7 | I |
| FR Fc 48 | FR-73-5265 | -77.574165 | 39.320278 | BR | S | H | 12 | 150 | 20 | 5 | 30 | 145 | 18 | I |
| FR Fc 49 | FR-73-2641 | -77.574165 | 39.320278 | BR | H | H | 4 | 150 | 22 | 10 | 30 | 145 | 26 | I |
| FR Fc 50 | FR-73-6521 | -77.576942 | 39.327499 | BR | S | H | 20 | 150 | 39 | 20 | 30 | 50 | 10 | I |
| FR Fc 51 | FR-73-5163 | -77.576942 | 39.327778 | BR | H | H | 14 | 320 | 20 | 2 | 30 | 315 | 16 | I |
| FR Fc 52 | FR-65-0445 | -77.527496 | 39.274723 | P | F | N | 19 | 98 | 44 | 35 | 15 | 98 | -4 | C |
| FR Fc 53 | FR-73-6533 | -77.526108 | 39.277779 | P | F | N | 12 | 525 | 20 | 7 | 22 | 525 | 10 | C |
| FR Fc 54 | FR-73-0622 | -77.538887 | 39.273888 | P | F | U | 60 | 73 | 63 | 25 | 15 | 73 | -45 | C |
| FR Fc 55 | FR-70-0474 | -77.523613 | 39.318611 | BR | S | T | 0 | 282 | 57 | 20 | 10 | - | 10 | CSC |
| FR Fd 1 | FR-00-1216 | -77.472778 | 39.313057 | P | F | U | 0 | 954 | 245 | 95 | 21 | 180 | 21 | CSC |
| FR Fd 4 | - | -77.472504 | 39.3125 | P | F | U | - | 60 | 20 | 100 | - | - | - | CSC |
| FR Fd 7 | FR-00-1295 | -77.472221 | 39.313332 | P | F | U | 12 | 1209 | 400 | 80 | 24 | - | 12 | CSC |
| FR Fd 8 | - | -77.426666 | 39.316113 | P | S | U | - | 110 | - | 5 | - | - | - | CSC |
| FR Fd 10 | FR-01-1410 | -77.44722 | 39.3 | P | F | S | 45 | 99 | 48 | 9 | 16 | 68 | -29 | CSC |
| FR Fd 11 | FR-00-7022 | -77.492775 | 39.28389 | P | S | T | - | 179 | 8 | 10 | 19 | 79 | - | CSC |
| FR Fd 12 | FR-01-6955 | -77.498611 | 39.273334 | P | S | H | 45 | 127 | 17 | 7 | 42 | 120 | -3 | CSC |
| FR Fd 13 | FR-02-0054 | -77.493332 | 39.271389 | P | S | R | 59 | 115 | 38 | 8 | 56 | 90 | -3 | CSC |
| FR Fd 15 | FR-01-7426 | -77.480553 | 39.261112 | P | F | U | 41 | 164 | 43 | 2 | 33 | 120 | -8 | CSC |
| FR Fd 16 | FR-01-9971 | -77.479164 | 39.260277 | P | F | H | 17 | 49 | 18 | 24 | 18 | 29 | 1 | C |
| FR Fd 17 | FR-01-1495 | -77.468056 | 39.308334 | P | F | H | 15 | 96 | 23 | 19 | 34 | - | 19 | C |
| FR Fd 18 | FR-00-9710 | -77.488335 | 39.307499 | P | H | H | - | 95 | 12 | 2 | 25 | 25 | - | CSC |
| FR Fd 19 | FR-00-9713 | -77.488052 | 39.30611 | P | H | H | - | 79 | 22 | 3 | 30 | 50 | - | CSC |
| FR Fd 20 | FR-00-9919 | -77.487221 | 39.303612 | P | S | H | - | 62 | 21.5 | 10 | 35 | 40 | - | CSC |
| FR Fd 21 | FR-01-0327 | -77.488335 | 39.308334 | P | H | H | - | 86 | 6 | 5 | 40 | 60 | - | CSC |
| FR Fd 22 | FR-01-1583 | -77.493332 | 39.30611 | P | H | H | - | 135 | 22 | 8 | 25 | 100 | - | CSC |
| FR Fd 23 | FR-00-6143 | -77.497498 | 39.302502 | P | S | H | - | 100 | - | 10 | 30 | - | - | CSC |
| FR Fd 24 | FR-00-9711 | -77.498611 | 39.301945 | P | S | H | - | 127 | 30 | 2 | 10 | 90 | - | CSC |
| FR Fd 25 | FR-00-9707 | -77.488335 | 39.304722 | P | F | H | - | 165 | 23 | 12 | 30 | 70 | - | CSC |
| FR Fd 26 | FR-01-9551 | -77.482498 | 39.301388 | P | F | H | - | 52 | 22 | 7 | 12 | 12 | - | C |
| FR Fd 27 | FR-02-1424 | -77.464165 | 39.314445 | P | F | H | 26 | 184 | 26 | 4 | 32 | - | 6 | C |
| FR Fd 29 | FR-01-7213 | -77.478332 | 39.305557 | P | F | H | 12 | 93 | 42 | 12 | 26 | 50 | 14 | C |
| FR Fd 30 | FR-02-0278 | -77.457222 | 39.318611 | P | F | H | 18 | 96 | 23 | 10 | 60 | 70 | 42 | C |
| FR Fd 31 | FR-00-3512 | -77.47139 | 39.307221 | P | F | U | - | 54.5 | 54.5 | 4 | 23 | - | - | C |
| FR Fd 32 | FR-02-0719 | -77.481392 | 39.316113 | P | S | H | 20 | 27.5 | 23.5 | 10 | 8.5 | 10 | -11.5 | CSC |
| FR Fd 33 | FR-02-0322 | -77.474998 | 39.308334 | P | F | H | 4 | 68 | 9 | 15 | 6 | 12 | 2 | C |
| FR Fd 34 | FR-00-3497 | -77.480278 | 39.310833 | P | F | H | 18 | 70 | 18 | 6 | 30 | - | 12 | C |
| FR Fd 35 | FR-02-1012 | -77.457497 | 39.303612 | P | F | H | 15 | 34 | 16 | 6 | 10 | 28 | -5 | C |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Fd 37 | FR-00-4975 | -77.433891 | 39.325832 | P | F | H | - | 86 | 23 | 6 | 25 | 35 | - | C |
| FR Fd 38 | FR-00-7236 | -77.429726 | 39.327778 | P | F | H | 3 | 38 | - | 10 | 10 | - | 7 | C |
| FR Fd 39 | FR-02-2012 | -77.429726 | 39.277222 | P | H | H | 12 | 150 | 42 | 8 | 35 | 150 | 23 | FSC |
| FR Fd 40 | - | -77.428612 | 39.27639 | P | S | U | - | 64.4 | 64.4 | 2 | - | - | - | FSC |
| FR Fd 42 | FR-01-9772 | -77.471947 | 39.306946 | P | F | H | 2 | 92 | 7 | 3 | 20 | 82 | 18 | C |
| FR Fd 50 | FR-69-0185 | -77.480553 | 39.331665 | P | S | N | 17 | 250 | 75 | 150 | 32 | 222 | 15 | CSC |
| FR Fd 51 | FR-69-0196 | -77.479446 | 39.330276 | P | F | U | 24 | 275 | 63 | 45 | 17 | - | -7 | CSC |
| FR Fd 56 | FR-66-0024 | -77.454445 | 39.330002 | P | F | H | 20 | 65 | 34 | 12 | 28 | - | 8 | C |
| FR Fd 57 | FR-68-0441 | -77.463059 | 39.330002 | P | H | H | - | 260 | 57 | 4 | 40 | - | - | C |
| FR Fd 61 | FR-67-0283 | -77.463333 | 39.251945 | P | F | H | 34 | 145 | 36 | 1.5 | 37 | 138 | 3 | FSC |
| FR Fd 62 | FR-67-0062 | -77.433052 | 39.330833 | P | V | H | - | 65 | 43 | 100 | 15 | - | - | C |
| FR Fd 63 | FR-66-0590 | -77.451111 | 39.281387 | P | F | S | - | 100 | 85 | 25 | 30 | - | - | C |
| FR Fd 64 | FR-66-0378 | -77.475281 | 39.308887 | P | F | H | - | 205 | 23 | 3 | 35 | - | - | C |
| FR Fd 65 | FR-66-0116 | -77.458885 | 39.312222 | P | F | H | 60 | 165 | 16 | 3.5 | 40 | - | -20 | C |
| FR Fd 66 | FR-66-0824 | -77.458611 | 39.312222 | P | F | H | 43 | 375 | 48 | 1 | 40 | 375 | -3 | C |
| FR Fd 67 | FR-69-0317 | -77.448891 | 39.33139 | P | F | H | 55 | 145 | 59 | 5 | 40 | 145 | -15 | C |
| FR Fd 68 | FR-69-0133 | -77.483333 | 39.318333 | P | S | H | 40 | 68 | 48 | 100 | 40 | 68 | 0 | CSC |
| FR Fd 69 | FR-05-4747 | -77.467781 | 39.312222 | P | F | T | 11 | 348 | 21 | 25 | - | - | - | C |
| FR Fd 70 | FR-70-0070 | -77.431114 | 39.328056 | P | F | H | 10 | 100 | 25 | 7 | 23 | - | 13 | C |
| FR Fd 71 | FR-70-0022 | -77.431663 | 39.328056 | P | F | H | 20 | 75 | 32 | 10 | 25 | 75 | 5 | C |
| FR Fd 72 | FR-69-0050 | -77.473892 | 39.308056 | P | F | H | 35 | 165 | 19 | 7 | - | - | - | C |
| FR Fd 73 | FR-66-0447 | -77.477501 | 39.307777 | P | F | H | 22 | 125 | 25 | 4 | 30 | 122 | 8 | C |
| FR Fd 74 | FR-66-0006 | -77.474998 | 39.309723 | P | F | H | - | 285 | 22 | 2 | 50 | - | - | C |
| FR Fd 83 | FR-72-0338 | -77.4925 | 39.270279 | P | H | H | 36 | 170 | 42 | 20 | 42 | 170 | 6 | CSC |
| FR Fd 84 | FR-70-0451 | -77.494446 | 39.285 | P | H | H | 0 | 165 | 19 | 10 | 55 | 150 | 55 | CSC |
| FR Fd 85 | FR-73-8338 | -77.426666 | 39.292499 | P | S | U | 15 | 405 | 40 | 134 | 20 | 179 | 5 | CSC |
| FR Fd 86 | FR-73-7125 | -77.3 | 39.325001 | P | F | N | 28 | 525 | 41 | 30 | 40 | 525 | 12 | FSC |
| FR Fd 87 | FR-73-7534 | -77.3 | 39.325279 | P | F | N | 24 | 280 | 32 | 40 | 40 | 280 | 16 | FSC |
| FR Fd 88 | FR-03-3888 | -77.432503 | 39.332501 | P | F | C | 0 | 225 | 29 | 5 | 20 | 60 | 20 | C |
| FR Fd 89 | FR-05-0941 | -77.433052 | 39.319443 | P | S | T | 58 | 75 | 62 | 85 | 30 | 75 | -28 | C |
| FR Fd 90 | FR-73-5666 | -77.433052 | 39.319443 | P | S | T | 25 | 75 | 34 | 100 | 30 | 70 | 5 | C |
| FR Fd 91 | FR-73-8136 | -77.474167 | 39.308887 | P | F | F | 21 | 225 | 60 | 20 | 40 | 200 | 19 | C |
| FR Fd 93 | FR-81-5667 | -77.491943 | 39.27861 | P | S | H | 14 | 260 | 57 | 15 | 45 | 250 | 31 | CSC |
| FR Fe 1 | FR-01-3375 | -77.348892 | 39.326111 | P | H | C | 20 | 80 | - | 6 | 32 | 80 | 12 | FSC |
| FR Fe 2 | FR-01-7206 | -77.344444 | 39.325001 | P | H | H | 10 | 76 | 8 | 8 | 30 | 55 | 20 | FSC |
| FR Fe 3 | FR-00-6679 | -77.378891 | 39.332501 | P | S | H | - | 86 | 11 | 4 | 35 | 52 | - | FSC |
| FR Fe 4 | - | -77.378891 | 39.332501 | P | S | S | - | 85 | 10 | 10 | - | - | - | FSC |
| FR Fe 5 | - | -77.364723 | 39.330833 | P | H | H | - | 60 | - | 10 | - | - | - | FSC |
| FR Fe 7 | - | -77.396385 | 39.253613 | P | S | H | - | 59 | 23 | 24 | - | - | - | CSC |
| FR Fe 8 | FR-00-8657 | -77.357224 | 39.322224 | P | H | H | 25 | 59 | 25 | 6 | 40 | - | 15 | FSC |
| FR Fe 10 | FR-01-4839 | -77.401108 | 39.309723 | P | H | T | 3 | 100 | 14 | 8 | 70 | 92 | 67 | FSC |
| FR Fe 11 | FR-00-9216 | -77.394997 | 39.25 | P | S | H | 20 | 87.6 | 42 | 20 | 20 | 45 | 0 | FSC |
| FR Fe 14 | - | -77.355553 | 39.267223 | P | H | H | - | 75 | 30 | 5 | - | - | - | FSC |
| FR Fe 16 | FR-00-4471 | -77.355553 | 39.270557 | P | F | H | 10 | 102 | 12 | 5 | 16 | 30 | 6 | FSC |
| FR Fe 19 | FR-02-0824 | -77.336945 | 39.27639 | P | H | H | 38 | 146 | 40 | 3.5 | 76 | - | 38 | I |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR Fe 20 | FR-01-9734 | -77.349441 | 39.290001 | P | H | H | 16 | 128 | 22 | 2.5 | 48 | - | 32 | FSC |
| FR Fe 23 | FR-01-1708 | -77.359726 | 39.310001 | P | S | H | - | 58 | 12 | 4 | 20 | 50 | - | FSC |
| FR Fe 24 | FR-72-0275 | -77.372498 | 39.260834 | P | V | U | 90 | 443 | 93.5 | 50 | 10 | - | -80 | FSC |
| FR Fe 25 | FR-73-1214 | -77.399445 | 39.311668 | P | H | C | 38 | 200 | 48 | 8 | 60 | 200 | 22 | FSC |
| FR Fe 26 | FR-72-0411 | -77.360001 | 39.321667 | P | S | U | 50 | 82 | 60 | 100 | 27 | 82 | -23 | FSC |
| FR Fe 27 | FR-73-4954 | -77.354446 | 39.325001 | P | F | C | 0 | 125 | 19 | 40 | 30 | 125 | 30 | FSC |
| FR Fe 28 | FR-73-3978 | -77.357224 | 39.328056 | P | F | F | 35 | 405 | 57 | 30 | 40 | 405 | 5 | FSC |
| FR Fe 29 | FR-03-6146 | -77.356941 | 39.327221 | P | F | T | - | 250 | 64 | 30 | 35 | 35 | - | FSC |
| FR Fe 30 | FR-73-3308 | -77.356667 | 39.327221 | P | F | T | 70 | 250 | 77 | 30 | 19 | 62 | -51 | FSC |
| FR Fe 31 | FR-73-8546 | -77.349167 | 39.324444 | P | H | C | 61 | 400 | 70 | 12 | 47 | 400 | -14 | FSC |
| FR Fe 32 | FR-69-0444 | -77.344444 | 39.326946 | P | F | C | 35 | 400 | 41 | 2 | 40 | 400 | 5 | FSC |
| FR Fe 33 | FR-69-0464 | -77.34333 | 39.326946 | P | F | C | 15 | 370 | 18 | 20 | 40 | 370 | 25 | FSC |
| FR Fe 34 | FR-73-1210 | -77.343056 | 39.326668 | P | F | C | 15 | 320 | 22 | 12 | 60 | 320 | 45 | FSC |
| FR Fe 35 | FR-73-1930 | -77.343887 | 39.326668 | P | F | C | 15 | 300 | 23 | 30 | 40 | 300 | 25 | FSC |
| FR Fe 36 | FR-73-5167 | -77.343887 | 39.326389 | P | F | C | 35 | 500 | 42 | 11 | 72 | 500 | 37 | FSC |
| FR Fe 37 | FR-73-5167 | -77.343887 | 39.326389 | P | F | U | - | 300 | - | 3 | - | - | - | FSC |
| FR Fe 38 | FR-73-5167 | -77.343887 | 39.326389 | P | F | U | - | 400 | - | 3 | - | - | - | FSC |
| FR Ff 3 | FR-01-8508 | -77.302498 | 39.301945 | P | H | H | 10 | 86 | 18 | 5 | 10 | 20 | 0 | I |
| FR Ff 4 | FR-01-3338 | -77.330276 | 39.3125 | P | S | H | 18 | 58 | 19 | 5 | 16 | 32 | -2 | I |
| FR Ff 6 | FR-02-0830 | -77.330276 | 39.314999 | P | S | H | 15 | 90 | 20 | 6 | 16 | 80 | 1 | I |
| FR Ff 9 | FR-73-5909 | -77.269722 | 39.324444 | P | S | U | 10 | 220 | 19 | 2 | 40 | 160 | 30 | I |
| FR Ff 10 | FR-73-2667 | -77.328331 | 39.31361 | P | S | U | 31 | 282 | 40 | 1 | 32 | 42 | 1 | I |
| FR Ff 12 | FR-71-0568 | -77.313332 | 39.286667 | P | S | C | 35 | 120 | 40 | 20 | 30 | 120 | -5 | I |
| FR Ff 13 | FR-73-3238 | -77.298058 | 39.311668 | P | S | C | 56 | 145 | 64 | 20 | 14 | 145 | -42 | I |
| FR Ff 14 | FR-71-0061 | -77.278053 | 39.327778 | P | S | T | 35 | 120 | 39 | 15 | 30 | 120 | -5 | FSC |
| FR Fg 1 | FR-73-6036 | -77.232498 | 39.329445 | P | S | T | 52 | 200 | 60 | 25 | 39 | 200 | -13 | FSC |
| FR Gd 1 | FR-00-8037 | -77.443611 | 39.246387 | P | S | H | 22 | 71 | 30 | 16 | 39 | 52 | 17 | C |
| FR Gd 2 | FR-00-3829 | -77.428337 | 39.236111 | P | S | S | 8 | 80 | 9 | 5 | 45 | 75 | 37 | C |
| FR Gd 3 | FR-00-3411 | -77.428337 | 39.236111 | P | S | S | 8 | 80 | 9 | 5 | 45 | 75 | 37 | C |
| FR Gd 5 | - | -77.449084 | 39.227572 | P | V | H | - | 305 | 49 | 17 | 20.7 | - | - | CSC |
| FR Ge 1 | FR-00-4586 | -77.403892 | 39.244167 | P | S | H | 35 | 70 | 25 | 30 | 10 | - | -25 | FSC |
| MO Cb 1 | MO-00-0265 | -77.42083 | 39.217224 | P | S | H | 10 | 80 | 15 | 7 | 10 | 75 | 0 | CSC |
| MO Cb 7 | MO-00-3723 | -77.455276 | 39.185276 | P | S | H | 30 | 74 | 30 | 2.5 | 40 | 50 | 10 | CSC |
| MO Cb 11 | - | -77.450554 | 39.195557 | P | H | H | - | 94 | - | 30 | - | - | - | CSC |
| MO Cb 14 | MO-01-2458 | -77.426392 | 39.218334 | P | S | T | 25 | 71 | 26 | 20 | 28 | 39 | 3 | CSC |
| MO Cb 15 | MO-02-8678 | -77.452102 | 39.21559 | P | S | U | 16 | 250 | 28 | 15 | 49 | 180 | 33 | CSC |
| MO Cb 18 | - | -77.485617 | 39.178576 | P | V | R | - | 140 | 50 | 20 | 15.6 | - | - | CSC |
| MO Cb 20 | MO-09-0053 | -77.419724 | 39.220001 | P | S | C | - | 148 | 42 | 12 | 39 | 122 | - | CSC |
| MO Cb 21 | MO-00-5547 | -77.445831 | 39.18 | P | H | T | - | 150 | 28 | 3 | 19 | 86 | - | CSC |
| MO Cb 22 | MO-06-0438 | -77.446663 | 39.180279 | P | W | T | - | 100 | 22 | 25 | 31 | 80 | - | CSC |
| MO Cb 23 | MO-08-0206 | -77.43 | 39.223332 | P | H | H | - | 114 | 24 | 8 | 38 | 93 | - | CSC |
| MO Cb 24 | MO-09-0097 | -77.425003 | 39.22028 | P | H | C | - | 125 | 24 | 15 | 30 | 100 | - | CSC |
| MO Cb 25 | MO-02-0176 | -77.448608 | 39.16861 | P | H | H | 4 | 100 | 18 | 3 | 21 | 71 | 17 | CSC |
| MO Cb 26 | MO-72-0191 | -77.465979 | 39.195083 | P | V | U | 20 | 885 | 38 | 75 | 1.6 | - | -18.4 | CSC |
| MO Cb 27 | MO-02-0191 | -77.46623 | 39.195097 | P | V | U | - | 75 | 18 | 8 | 1.7 | - | - | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO Cb 28 | - | -77.454445 | 39.191113 | P | H | H | - | 310 | 37 | 15 | 26 | - | - | CSC |
| MO Cb 29 | MO-73-0284 | -77.449165 | 39.210556 | P | V | C | 10 | 1004 | 40 | 100 | 47.8 | 197.8 | 37.8 | CSC |
| MO Cb 30 | MO-73-0173 | -77.454445 | 39.185555 | P | H | I | 12 | 115 | 40 | 8 | 54 | 101 | 42 | CSC |
| MO Cb 31 | MO-73-1131 | -77.423058 | 39.220001 | P | S | H | 15 | 110 | 45 | 10 | 28 | 66 | 13 | CSC |
| MO Cb 32 | MO-73-0899 | -77.423332 | 39.217777 | P | S | H | 6 | 85 | - | 8 | 31 | 69 | 25 | CSC |
| MO Cb 33 | MO-73-0293 | -77.422226 | 39.179722 | P | H | H | 16 | 100 | - | 6 | 30 | 86 | 14 | CSC |
| MO Cb 36 | MO-73-0281 | -77.421045 | 39.215193 | P | S | H | 2 | 100 | 60 | 15 | 45 | - | 43 | CSC |
| MO Cb 37 | MO-73-2213 | -77.465279 | 39.188057 | P | S | H | 2 | 140 | 87 | 129 | 35 | 140 | 33 | CSC |
| MO Cc 1 | MO-00-3371 | -77.349724 | 39.247223 | P | H | H | 20 | 90 | 30 | 10 | 30 | 50 | 10 | FSC |
| MO Cc 2 | MO-00-0835 | -77.370552 | 39.247776 | P | S | H | - | 125 | - | 45 | 26 | 63 | - | FSC |
| MO Cc 3 | MO-00-3256 | -77.370834 | 39.246944 | P | S | H | 40 | 112 | 66 | 30 | 35 | 50 | -5 | FSC |
| MO Cc 4 | MO-00-3240 | -77.363609 | 39.248612 | P | V | H | 20 | 48 | 20 | 4.5 | 25 | 35 | 5 | FSC |
| MO Cc 5 | MO-00-4585 | -77.348892 | 39.246666 | P | H | H | - | 100 | 33 | 3 | 22 | 95 | - | FSC |
| MO Cc 6 | MO-00-9514 | -77.365555 | 39.176109 | P | S | H | - | 165 | 32 | 0.5 | 18 | - | - | FSC |
| MO Cc 9 | MO-00-1105 | -77.352501 | 39.190834 | P | S | H | - | 55 | 18 | 30 | 20 | 35 | - | FSC |
| MO Cc 10 | MO-00-3675 | -77.371666 | 39.203335 | P | H | H | 30 | 74 | 40 | 30 | 30 | 40 | 0 | FSC |
| MO Cc 11 | - | -77.361114 | 39.214443 | P | H | H | - | 88 | 10 | 9 | 40 | - | - | FSC |
| MO Cc 13 | - | -77.394722 | 39.198334 | P | H | T | - | 100 | - | 7 | 20.16 | - | - | FSC |
| MO Cc 16 | - | -77.376663 | 39.217224 | P | H | U | - | 400 | - | 0.25 | - | - | - | FSC |
| MO Cc 17 | - | -77.376389 | 39.217777 | P | S | H | - | 86 | - | 4 | - | - | - | FSC |
| MO Cc 18 | MO-00-3637 | -77.369446 | 39.207779 | P | H | H | - | 74 | 68 | 10 | 40 | 60 | - | FSC |
| MO Cc 21 | - | -77.411392 | 39.179443 | P | H | I | - | 62 | 16 | 14 | 29.54 | - | - | FSC |
| MO Cc 22 | - | -77.415276 | 39.173611 | P | H | H | - | 86 | 46 | 20 | 28 | 60 | - | FSC |
| MO Cc 23 | MO-00-0259 | -77.412224 | 39.231945 | P | H | H | 7 | 85 | - | 20 | 45 | 70 | 38 | FSC |
| MO Cc 24 | MO-00-4447 | -77.352776 | 39.244167 | P | H | H | - | 86 | 48 | 12 | 42 | 65 | - | FSC |
| MO Cc 25 | MO-03-8281 | -77.392776 | 39.224445 | P | H | T | 56 | 200 | 58 | 5 | 22 | 160 | -34 | FSC |
| MO Cc 26 | MO-03-2638 | -77.33667 | 39.191666 | P | S | T | 60 | 92 | 70 | 10 | 10 | 40 | -50 | FSC |
| MO Cc 27 | MO-03-1147 | -77.335831 | 39.176388 | P | S | U | 44 | 110 | 48 | 20 | 38 | 65 | -6 | FSC |
| MO Cc 28 | MO-07-0049 | -77.415001 | 39.169998 | P | S | H | - | 120 | 92 | 15 | 26 | 111 | - | FSC |
| MO Cc 30 | MO-73-0590 | -77.379166 | 39.203056 | P | V | H | 26 | 124 | 46 | 15 | 41 | 111 | 15 | FSC |
| MO Cc 31 | MO-73-0502 | -77.409447 | 39.182499 | P | S | N | 60 | 160 | 21 | 20 | 40 | 160 | -20 | FSC |
| MO Cc 32 | MO-73-1646 | -77.386108 | 39.205002 | P | S | H | 31 | 200 | 46 | 3 | - | - | - | FSC |
| MO Cc 33 | MO-73-0692 | -77.415001 | 39.174446 | P | S | H | - | 80 | 43 | 40 | 30 | 80 | - | FSC |
| MO Cc 34 | MO-73-0910 | -77.360275 | 39.214443 | P | H | H | 22 | 125 | 55 | 15 | 54 | 118 | 32 | FSC |
| MO Cc 35 | MO-73-0560 | -77.404442 | 39.188332 | P | H | H | - | 300 | 38 | 1 | 50 | 300 | - | FSC |
| MO Cc 37 | MO-67-0040 | -77.358055 | 39.215 | P | H | T | 56 | 98 | 58 | 15 | 26 | 81 | -30 | FSC |
| MO Cc 38 | MO-73-0987 | -77.376946 | 39.223057 | P | S | H | 31 | 105 | 42 | 5 | 26 | 88 | -5 | FSC |
| MO Cc 39 | MO-73-0579 | -77.379166 | 39.227501 | P | S | S | - | 105 | 43 | 10 | 29 | 86 | - | FSC |
| MO Cc 40 | MO-73-0776 | -77.375 | 39.222221 | P | S | H | 35 | 125 | 42 | 5 | 26 | 113 | -9 | FSC |
| MO Cc 41 | MO-73-1198 | -77.394997 | 39.200554 | P | S | H | 36 | 210 | 46 | 1.5 | 21 | 195 | -15 | FSC |
| MO Cc 42 | MO-73-0458 | -77.40889 | 39.196945 | P | S | H | 11 | 160 | 42 | 2 | 38 | 149 | 27 | FSC |
| MO Cc 45 | MO-71-0013 | -77.396111 | 39.169445 | P | S | H | - | 125 | 89 | 10 | 30.2 | 111 | - | FSC |
| MO Cc 46 | MO-69-0145 | -77.396942 | 39.196945 | P | S | H | 30 | 125 | 37 | 3 | 26 | 118 | -4 | FSC |
| MO Cc 47 | MO-69-0187 | -77.378891 | 39.220554 | P | S | T | 20 | 145 | 24 | 6 | 35 | 60 | 15 | FSC |
| MO Cc 50 | MO-73-1637 | -77.34861 | 39.248055 | P | H | H | 37 | 210 | 45 | 1.5 | 36 | 179 | -1 | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO Cc 51 | MO-73-1192 | -77.351387 | 39.246944 | P | H | H | 32 | 200 | 46 | 1.5 | 24 | 190 | -8 | FSC |
| MO Cc 53 | MO-73-0966 | -77.34639 | 39.213055 | P | S | H | 10 | 105 | 43 | 4 | 21 | 64 | 11 | FSC |
| MO Cc 54 | MO-73-1759 | -77.353332 | 39.211945 | P | S | H | 23 | 110 | 43 | 20 | - | 78 | - | FSC |
| MO Cc 55 | MO-73-1333 | -77.354721 | 39.187779 | P | S | H | - | 443 | 61 | 1.5 | 34.08 | 60 | - | FSC |
| MO Cc 56 | MO-73-1557 | -77.356392 | 39.18 | P | S | H | 32 | 170 | 44 | 3 | 31 | 129 | -1 | FSC |
| MO Cc 57 | MO-73-1184 | -77.394997 | 39.228611 | P | H | H | 39 | 150 | 46 | 12 | 29 | 128 | -10 | FSC |
| MO Cc 59 | MO-73-1317 | -77.401665 | 39.204723 | P | S | H | 32 | 210 | 45 | 1 | 60 | 175 | 28 | FSC |
| MO Cc 60 | MO-73-0983 | -77.407501 | 39.178333 | P | S | H | - | 125 | 100 | 15 | 37.26 | 99 | - | FSC |
| MO Cc 61 | MO-73-1193 | -77.380554 | 39.18111 | P | S | H | 33 | 130 | 43 | 10 | 28 | 111 | -5 | FSC |
| MO Cc 63 | MO-73-0015 | -77.374168 | 39.224167 | P | S | H | 18 | 125 | 20 | 5 | 36 | 97 | 18 | FSC |
| MO Cc 64 | MO-73-0524 | -77.373337 | 39.222778 | P | H | H | 3 | 200 | 43 | 3 | 50 | 200 | 47 | FSC |
| MO Cc 66 | MO-73-0337 | -77.4 | 39.194443 | P | S | H | 29 | 105 | 42 | 6 | 31 | 86 | 2 | FSC |
| MO Cc 67 | MO-73-1012 | -77.382225 | 39.207222 | P | S | H | 21 | 105 | 44 | 15 | 31 | 58 | 10 | FSC |
| MO Cc 68 | MO-73-0656 | -77.411392 | 39.205833 | P | H | H | 12 | 125 | 42 | 12 | 38 | 109 | 26 | FSC |
| MO Da 2 | - | -77.512636 | 39.140849 | P | V | R | - | 135 | 36 | 40 | 8 | - | - | FSC |
| MO Da 3 | MO-73-0045 | -77.511665 | 39.153332 | P | H | H | 12 | 85 | 21 | 45 | 31 | 73 | 19 | FSC |
| MO Da 4 | MO-73-0831 | -77.511948 | 39.153057 | P | H | H | 12 | 85 | 42 | 5 | 26 | 73 | 14 | FSC |
| MO Db 1 | - | -77.41667 | 39.145557 | P | S | H | - | 62 | 40 | 5 | 8.14 | 65.14 | - | CSC |
| MO Db 2 | MO-00-7344 | -77.485558 | 39.127499 | P | H | H | 30 | 150 | 44 | 3 | 45 | 135 | 15 | FSC |
| MO Db 3 | MO-00-7345 | -77.486114 | 39.148613 | P | S | H | 90 | 110 | 97 | 20 | 35 | 70 | -55 | FSC |
| MO Db 4 | MO-00-1430 | -77.423058 | 39.145832 | P | S | H | - | 76 | 24 | 8 | 21 | 63 | - | CSC |
| MO Db 5 | - | -77.418892 | 39.144165 | P | S | T | - | 175 | - | 8 | - | - | - | CSC |
| MO Db 6 | MO-00-1297 | -77.416946 | 39.142776 | P | S | T | 7 | 175 | 38 | 12.5 | 10 | 125 | 3 | CSC |
| MO Db 7 | MO-00-1298 | -77.41667 | 39.142223 | P | S | T | 5 | 150 | 20 | 3 | 25 | 140 | 20 | CSC |
| MO Db 8 | MO-00-4665 | -77.422501 | 39.12611 | P | H | H | 20 | 165 | 22 | 10 | 22 | 120 | 2 | CSC |
| MO Db 12 | MO-00-3903 | -77.441391 | 39.13028 | P | S | H | 28 | 81 | 32 | 8 | 28 | 56 | 0 | CSC |
| MO Db 13 | - | -77.465836 | 39.112499 | P | H | S | - | 231 | 100 | 20 | 20 | - | - | CSC |
| MO Db 15 | MO-01-7659 | -77.419167 | 39.14611 | P | S | H | 10 | 94 | 12 | 10 | 16 | 55 | 6 | CSC |
| MO Db 16 | MO-00-4313 | -77.478332 | 39.127499 | P | S | T | - | 205 | 40 | 20 | 22 | 173 | - | FSC |
| MO Db 17 | MO-04-1677 | -77.426666 | 39.147499 | P | S | H | 12 | 83 | 35 | 4.5 | 31 | 62 | 19 | CSC |
| MO Db 18 | MO-02-4601 | -77.41667 | 39.146946 | P | S | T | 8 | 95 | 40 | 16 | 21 | 63 | 13 | CSC |
| MO Db 19 | MO-03-1959 | -77.42083 | 39.123333 | P | S | H | 4 | 141 | 10 | 17 | 15 | 100 | 11 | CSC |
| MO Db 20 | MO-03-1960 | -77.420281 | 39.123612 | P | S | H | 5 | 245 | 12 | 15 | 15 | 120 | 10 | CSC |
| MO Db 21 | MO-04-4078 | -77.419998 | 39.123612 | P | S | H | 30 | 325 | 21.5 | 20 | 25 | - | -5 | CSC |
| MO Db 23 | - | -77.419167 | 39.124722 | P | S | Z | - | 325 | 13 | 40 | 20 | - | - | FSC |
| MO Db 24 | MO-03-9308 | -77.41667 | 39.134167 | P | S | U | 36 | 467 | 37 | 18 | 13.3 | - | -22.7 | FSC |
| MO Db 25 | MO-04-9668 | -77.48111 | 39.130001 | P | S | T | 43 | 200 | 48 | 25 | 24 | 38 | -19 | FSC |
| MO Db 26 | MO-04-9669 | -77.477219 | 39.129166 | P | S | T | 53 | 145 | 58 | 53 | 32 | 55 | -21 | FSC |
| MO Db 27 | MO-67-0069 | -77.474167 | 39.136112 | P | S | T | 38 | 190 | 40 | 20 | 29 | 70 | -9 | FSC |
| MO Db 28 | - | -77.467719 | 39.09949 | P | S | P | - | 125 | 30 | 12 | 9 | - | - | FSC |
| MO Db 29 | MO-05-0460 | -77.417778 | 39.146668 | P | H | C | - | 103 | 45 | 15 | 28 | 67 | - | CSC |
| MO Db 30 | MO-06-0325 | -77.416389 | 39.14611 | P | H | C | - | 143 | 41 | 10 | 46 | 121 | - | CSC |
| MO Db 31 | MO-07-0112 | -77.443054 | 39.104999 | P | S | H | - | 200 | 18 | 6 | 40 | 200 | - | CSC |
| MO Db 32 | MO-07-0147 | -77.440559 | 39.134167 | P | S | H | - | 122 | 26 | 8 | 31 | 93 | - | CSC |
| MO Db 33 | MO-09-0113 | -77.440834 | 39.137222 | P | S | S | - | 165 | 38 | 7 | 39 | 122 | - | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO Db 34 | MO-01-0166 | -77.416946 | 39.146389 | P | H | C | - | 185 | 25 | 5 | 36 | 171 | - | CSC |
| MO Db 35 | MO-09-0154 | -77.445831 | 39.103054 | P | S | H | - | 125 | 43 | 4 | 35 | 102 | - | FSC |
| MO Db 36 | MO-04-4079 | -77.41861 | 39.108891 | P | V | U | - | 280 | 23 | 150 | 2.4 | 156.4 | - | FSC |
| MO Db 37 | - | -77.428055 | 39.117222 | P | S | S | - | 340 | 26 | 20 | 0.35 | - | - | FSC |
| MO Db 38 | - | -77.419167 | 39.123612 | P | S | U | - | 210 | - | 65 | - | - | - | FSC |
| MO Db 39 | - | -77.432503 | 39.095001 | P | H | H | - | 140 | - | 2 | - | - | - | FSC |
| MO Db 40 | - | -77.432221 | 39.093613 | P | S | H | - | 170 | - | 5 | 62.67 | - | - | FSC |
| MO Db 42 | - | -77.425835 | 39.094444 | P | S | H | - | 120 | - | 8 | - | - | - | FSC |
| MO Db 43 | MO-05-0389 | -77.474724 | 39.165554 | P | S | H | - | 82 | 52 | 4 | 5 | - | - | FSC |
| MO Db 44 | MO-02-0083 | -77.445274 | 39.156666 | P | S | H | - | 120 | 20 | 20 | 29 | 93 | - | CSC |
| MO Db 46 | MO-02-0162 | -77.49778 | 39.162777 | P | S | H | - | 102 | 23 | 10 | 58.6 | 73.6 | - | FSC |
| MO Db 47 | MO-73-1584 | -77.422226 | 39.135834 | P | V | P | - | 600 | 62 | 50 | 33 | 143 | - | CSC |
| MO Db 48 | MO-73-0426 | -77.452774 | 39.136391 | P | S | H | 6 | 325 | 42 | 6 | 32 | - | 26 | FSC |
| MO Db 49 | MO-73-0740 | -77.449448 | 39.134445 | P | S | H | 6 | 245 | 41 | 3 | 50 | 245 | 44 | CSC |
| MO Db 50 | MO-73-1889 | -77.458885 | 39.15889 | P | H | H | 15 | 100 | 42 | 12 | 30 | 79 | 15 | CSC |
| MO Db 51 | MO-73-0369 | -77.446114 | 39.163334 | P | S | H | - | 155 | 45 | 5 | 30 | - | - | CSC |
| MO Db 52 | MO-73-1463 | -77.43972 | 39.141666 | P | V | S | 22 | 150 | 45 | 6 | 20 | 105 | -2 | CSC |
| MO Db 53 | MO-73-1469 | -77.453056 | 39.163887 | P | H | H | 8 | 230 | - | 3 | 45 | 230 | 37 | CSC |
| MO Db 59 | MO-73-1497 | -77.471108 | 39.160278 | P | S | H | 2 | 140 | 84 | 15 | 40 | 140 | 38 | FSC |
| MO Db 60 | MO-73-1462 | -77.463333 | 39.104168 | P | S | I | - | 170 | 45 | 4 | 41 | 130 | - | FSC |
| MO Db 61 | MO-73-1544 | -77.455276 | 39.120556 | P | S | H | 31 | 150 | 50 | 20 | 29 | 71 | -2 | CSC |
| MO Db 68 | MO-73-1869 | -77.476944 | 39.133888 | P | G | U | 30 | 250 | 40 | 150 | 13.2 | - | -16.8 | CSC |
| MO Db 71 | MO-73-1894 | -77.457222 | 39.162224 | P | H | H | 30 | 125 | 42 | 20 | 35 | 120 | 5 | CSC |
| MO Db 72 | MO-73-0634 | -77.464165 | 39.104168 | P | S | H | 12 | 155 | 45 | 2 | 58 | 136 | 46 | FSC |
| MO Db 77 | MO-73-1316 | -77.472504 | 39.161388 | P | S | H | 70 | 205 | 83 | 25 | 30 | 40 | -40 | FSC |
| MO Db 78 | MO-73-0944 | -77.426392 | 39.11639 | P | S | H | 12 | 125 | 45 | 3 | 31 | 109 | 19 | CSC |
| MO Db 80 | MO-73-2145 | -77.424446 | 39.147221 | P | F | H | 3 | 120 | 42 | 25 | 8.2 | 120 | 5.2 | CSC |
| MO Db 81 | MO-73-2338 | -77.45 | 39.158611 | P | S | H | 2 | 200 | 44 | 4 | 6.4 | 200 | 4.4 | CSC |
| MO Db 82 | MO-73-2127 | -77.488609 | 39.163887 | P | H | H | 0 | 200 | 149 | 20 | 60 | 200 | 60 | CSC |
| MO Db 83 | MO-88-1536 | -77.498054 | 39.14611 | P | H | H | 63 | 170 | 72 | 40 | 55 | 160 | -8 | CSC |
| MO Dc 2 | MO-00-4919 | -77.360001 | 39.09111 | P | S | H | 48 | - | 50 | 7 | 80 | 80 | -8 | CSC |
| MO Dc 3 | MO-00-1116 | -77.385559 | 39.162777 | P | S | H | 20 | 70 | 22 | 20 | 16 | 22 | -4 | FSC |
| MO Dc 6 | - | -77.416115 | 39.148334 | P | S | H | - | 72 | - | 3 | - | - | - | CSC |
| MO Dc 7 | MO-00-9163 | -77.413055 | 39.131943 | P | S | H | 20 | 135 | 28 | 15 | 42 | 75 | 22 | CSC |
| MO Dc 8 | - | -77.368614 | 39.125832 | P | S | S | - | 203 | - | 6 | - | - | - | CSC |
| MO Dc 11 | - | -77.404167 | 39.124722 | P | S | S | - | 97 | - | 8 | - | - | - | CSC |
| MO Dc 13 | | -77.368332 | 39.105278 | P | S | S | - | 137 | - | 20 | - | - | - | CSC |
| MO Dc 14 | MO-06-0163 | -77.396668 | 39.158333 | P | W | H | - | 74 | 22 | 16 | 22 | 58 | - | CSC |
| MO Dc 15 | MO-03-5127 | -77.408058 | 39.123333 | P | S | S | - | 155 | 22 | 10 | 30 | 140 | - | CSC |
| MO Dc 16 | MO-03-5552 | -77.405281 | 39.120834 | P | S | H | 10 | 155 | 15 | 10 | 30 | 120 | 20 | CSC |
| MO Dc 17 | MO-03-5831 | -77.406944 | 39.120556 | P | S | I | - | 317 | 23.5 | 80 | 25 | 40 | - | CSC |
| MO Dc 18 | MO-70-0014 | -77.412224 | 39.141666 | P | H | P | 7 | 597 | 63 | 53 | 29 | 166 | 22 | CSC |
| MO Dc 19 | MO-70-0046 | -77.414719 | 39.142776 | P | S | P | 4 | 450 | 63 | 95 | 38 | 125 | 34 | CSC |
| MO Dc 20 | MO-05-0553 | -77.347221 | 39.135555 | P | S | H | - | 165 | - | 7 | 39 | 136 | - | CSC |
| MO Dc 21 | MO-06-0179 | -77.390556 | 39.099724 | P | H | H | - | 120 | 22 | 4 | 19 | 111 | - | FSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO Dc 22 | MO-66-0144 | -77.364998 | 39.123612 | P | S | H | 20 | 145 | 22 | 18 | 41 | 123 | 21 | CSC |
| MO Dc 23 | MO-07-0038 | -77.375275 | 39.10611 | P | S | H | - | 165 | 24 | 6 | 47 | 149 | - | CSC |
| MO Dc 24 | MO-07-0149 | -77.403053 | 39.115555 | P | S | H | - | 160 | 23 | 6 | 10 | 160 | - | CSC |
| MO Dc 25 | MO-08-0016 | -77.40667 | 39.140835 | P | S | H | - | 143 | 31 | 12 | 26 | 121 | - | CSC |
| MO Dc 26 | MO-07-0304 | -77.402496 | 39.114445 | P | S | H | - | 143 | 20 | 3 | 18 | 116 | - | CSC |
| MO Dc 27 | MO-68-0230 | -77.385834 | 39.099167 | P | S | H | 3 | 64 | 30 | 30 | 40 | 50 | 37 | FSC |
| MO Dc 28 | MO-04-4441 | -77.415001 | 39.115833 | P | H | C | 20 | 400 | 20 | 30 | - | - | - | FSC |
| MO Dc 29 | MO-03-9309 | -77.411392 | 39.134167 | P | V | U | 37 | 315 | 33 | 60 | 11.78 | 187.62 | -25.22 | FSC |
| MO Dc 31 | MO-73-0075 | -77.405281 | 39.142776 | P | S | P | - | 285 | 82 | 100 | 12.2 | 80.8 | - | CSC |
| MO Dc 32 | - | -77.391945 | 39.14611 | P | S | H | 16 | 106 | 21 | 5 | - | 79 | - | CSC |
| MO Dc 33 | MO-01-0156 | -77.343613 | 39.132221 | P | S | U | 55 | 105 | 20 | 10 | 21 | 67 | -34 | CSC |
| MO Dc 34 | MO-01-0074 | -77.396668 | 39.130001 | P | S | H | - | 145 | 28 | 8 | 41 | 122 | - | CSC |
| MO Dc 35 | MO-00-0103 | -77.405281 | 39.138054 | P | S | H | 60 | 165 | 42 | 20 | 26 | 131 | -34 | CSC |
| MO Dc 36 | MO-00-0072 | -77.397499 | 39.0975 | P | H | S | - | 205 | 47 | 11 | 31 | 185 | - | CSC |
| MO Dc 37 | MO-02-0036 | -77.376114 | 39.105278 | P | H | H | - | 200 | 22 | 3 | 41 | 180 | - | CSC |
| MO Dc 38 | MO-00-0165 | -77.343056 | 39.128056 | P | H | H | - | 105 | 22 | 7 | 20 | 89 | - | CSC |
| MO Dc 39 | MO-03-0121 | -77.392502 | 39.146389 | P | H | H | 6 | 160 | 60 | 12 | 66 | 141 | 60 | CSC |
| MO Dc 40 | MO-73-1124 | -77.413055 | 39.151112 | P | V | H | 8 | 130 | 43 | 40 | 28 | 105 | 20 | CSC |
| MO Dc 41 | MO-73-0489 | -77.40361 | 39.120556 | P | V | H | 8 | 125 | 42 | 30 | 30 | 111 | 22 | CSC |
| MO Dc 42 | MO-73-0549 | -77.388611 | 39.100834 | P | S | I | 31 | 120 | 40 | 15 | 31 | 112 | 0 | CSC |
| MO Dc 43 | MO-73-0728 | -77.416115 | 39.151112 | P | V | H | 2 | 131 | 46 | 15 | 12 | 20 | 10 | CSC |
| MO Dc 44 | MO-73-0597 | -77.396668 | 39.158611 | P | S | H | 22 | 65 | 24 | 20 | 21 | 50 | -1 | CSC |
| MO Dc 45 | MO-73-1367 | -77.390556 | 39.153889 | P | S | H | 45 | 160 | 63 | 2 | 58.67 | 160 | 13.67 | FSC |
| MO Dc 46 | MO-73-1368 | -77.389168 | 39.15139 | P | S | H | 24 | 130 | 44 | 10 | 44 | 130 | -8 | FSC |
| MO Dc 47 | MO-73-0645 | -77.395836 | 39.084168 | P | F | H | 19 | 165 | 25 | 10 | 43 | 146 | 24 | FSC |
| MO Dc 48 | MO-73-0950 | -77.359169 | 39.10389 | P | W | H | 12 | 105 | 30 | 7 | 29 | 86 | 17 | CSC |
| MO Dc 49 | MO-73-0417 | -77.391945 | 39.097778 | P | S | H | 8 | 205 | 41 | 3 | 12 | - | 4 | FSC |
| MO Dc 50 | MO-05-5253 | -77.416115 | 39.15139 | P | S | T | 16 | 105 | 38 | 10 | 41 | 76 | 25 | CSC |
| MO Dc 55 | MO-03-5558 | -77.413612 | 39.148334 | P | V | H | 12 | 92 | 45 | 12 | 28 | 46 | 16 | CSC |
| MO Dc 56 | MO-73-1139 | -77.403892 | 39.110001 | P | S | H | 39 | 125 | 42 | 1 | 12 | 121 | -27 | CSC |
| MO Dc 58 | MO-03-0075 | -77.407501 | 39.143055 | P | S | P | - | 285 | 82 | 100 | 12.2 | 80.8 | - | CSC |
| MO Dc 59 | MO-73-1896 | -77.411941 | 39.154724 | P | S | U | 2 | 260 | 42 | 4 | 5.37 | 260 | 3.37 | CSC |
| MO Dc 63 | MO-73-0711 | -77.405556 | 39.162777 | P | S | H | - | 100 | 42 | 10 | 50 | - | - | FSC |
| MO Dc 64 | MO-73-1774 | -77.403892 | 39.165001 | P | S | H | - | 150 | 48 | 4 | 50.5 | 83 | - | FSC |
| MO Dc 65 | MO-73-1915 | -77.401665 | 39.131111 | P | S | H | 9 | 130 | 48 | 4 | 29 | 93 | 20 | CSC |
| MO Dc 67 | MO-66-0479 | -77.402222 | 39.163055 | P | S | H | 50 | 81 | 52 | 15 | 13.4 | 58 | -36.6 | FSC |
| MO Dc 68 | MO-73-1840 | -77.390556 | 39.155834 | P | S | H | 12 | 250 | 42 | 3 | 40 | 245 | 28 | FSC |
| MO Dc 69 | MO-73-1770 | -77.349441 | 39.105835 | P | S | H | 10 | 150 | 50 | 7 | 41 | 89 | 31 | CSC |
| MO Dc 70 | MO-73-1749 | -77.346108 | 39.095276 | P | S | H | 10 | 110 | 46 | 8 | 36 | 72 | 26 | CSC |
| MO Dc 71 | MO-73-1701 | -77.390831 | 39.163612 | P | S | H | 16 | 210 | 46 | 2 | 34 | 169 | 18 | FSC |
| MO Dc 72 | MO-73-2284 | -77.408333 | 39.131111 | P | V | U | 7 | 275 | 41 | 12 | - | - | - | FSC |
| MO Dc 73 | MO-73-1941 | -77.402779 | 39.14611 | P | H | H | 8 | 130 | 43 | 3 | 29.3 | 98 | 21.3 | CSC |
| MO Dc 74 | MO-73-1861 | -77.344719 | 39.127777 | P | S | N | 15 | 130 | 40 | 3 | 79 | 101 | 64 | CSC |
| MO Dc 75 | MO-73-1616 | -77.385559 | 39.130001 | P | S | H | 2 | 260 | 42 | 4 | 30.66 | 260 | 28.66 | CSC |
| MO Dc 76 | MO-73-0034 | -77.344719 | 39.132778 | P | S | H | 12 | 110 | 16 | 3 | 19 | 96 | 7 | CSC |

**Appendix 1, continued.**

| Well number | Permit number | Longitude, decimal degrees | Latitude decimal degrees | Physiographic province | Topographic setting | Well use | Depth to bedrock (ft BLS) | Depth of well (ft BLS) | Casing depth (ft BLS) | Yield (gpm) | Static water level (ft BLS) | Pumping water level (ft BLS) | Static water level minus depth to bedrock (ft ) | Lithology code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MO Dc 77 | MO-73-1902 | -77.395279 | 39.133888 | P | S | H | 10 | 130 | 73 | 8 | 29 | 98 | 19 | CSC |
| MO Dc 78 | MO-73-2082 | -77.402222 | 39.165001 | P | S | H | - | 180 | - | 4 | 20 | 180 | - | FSC |
| MO Dc 79 | MO-73-2229 | -77.371109 | 39.103054 | P | S | H | 7 | 130 | 42 | 3 | 29 | 98 | 22 | CSC |
| MO Dc 80 | MO-73-1149 | -77.366943 | 39.098332 | P | S | H | 10 | 100 | 42 | 5 | 41.92 | 88 | 31.92 | CSC |
| MO Dc 81 | MO-73-0490 | -77.349167 | 39.10389 | P | S | H | 6 | 105 | - | 6 | 47 | 91 | 41 | CSC |
| MO Dc 82 | MO-73-2330 | -77.382225 | 39.09639 | P | S | H | 28 | 170 | - | 5 | 32 | 105 | 4 | FSC |
| MO Dc 83 | MO-73-2420 | -77.396942 | 39.098332 | P | S | H | 11 | 190 | 42 | 6 | 49 | 148 | 38 | CSC |
| MO Dc 84 | MO-73-2494 | -77.404167 | 39.162777 | P | S | H | 29 | 130 | 42 | 4 | 36 | 91 | 7 | FSC |
| MO Dc 85 | MO-73-1968 | -77.35 | 39.136665 | P | S | H | 15 | 160 | 65 | 20 | 45 | 160 | 30 | CSC |
| MO Dc 87 | MO-94-0288 | -77.403892 | 39.149723 | P | V | H | - | 250 | 250 | 2.3 | 30 | 240 | - | - |
| MO Dc 89 | MO-81-2738 | -77.381668 | 39.098332 | P | H | H | 15 | 190 | 50 | 4 | 35 | 125 | 20 | FSC |
| MO Ec 1 | MO-00-3008 | -77.341392 | 39.078335 | P | V | H | 45 | 84 | 48 | 6 | 33 | 84 | -12 | CSC |
| MO Ec 2 | MO-00-3830 | -77.340553 | 39.075554 | P | V | H | 17 | 75 | 21 | 2 | 15 | 75 | -2 | CSC |
| MO Ec 3 | - | -77.340279 | 39.076389 | P | V | H | - | 38 | - | 4 | - | - | - | CSC |
| MO Ec 4 | MO-00-3006 | -77.341392 | 39.078888 | P | S | H | 24 | 95 | 31 | 2.5 | 35 | 95 | 11 | CSC |
| MO Ec 5 | MO-00-7664 | -77.347778 | 39.079166 | P | S | H | 35 | 157 | 38 | 12 | 60 | 83 | 25 | CSC |
| MO Ec 6 | MO-08-0033 | -77.340553 | 39.069168 | P | V | Z | - | 124 | 40 | 30 | 28 | 36 | - | CSC |
| MO Ec 9 | MO-06-0395 | -77.339722 | 39.076668 | P | S | H | - | 118 | - | 10 | 50 | 100 | - | CSC |
| MO Ec 10 | MO-73-2833 | -77.416115 | 39.080833 | P | G | U | 23 | 855 | 26 | 400 | 8.65 | 23.45 | -14.35 | CSC |
| MO Ed 12 | MO-73-0596 | -77.331108 | 39.078888 | P | S | H | 16 | 165 | 23 | 3 | 35.5 | 140 | 19.5 | - |

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The Maryland Department of Natural Resources (DNR) seeks to balance the preservation and enhancement of the living and physical resources of the state with prudent extraction and utilization policies that benefit the citizens of Maryland. This publication provides information that will increase your understanding of how DNR strives to reach that goal through the earth science assessments conducted by the Maryland Geological Survey.

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