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Revision 0

WMA C October through December 2015 Quarterly Groundwater Monitoring Report

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Richland, Washington 99352

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Terms

AEA	*Atomic Energy Act of 1954*
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
DWS	drinking water standard
EMM	Elephant Mountain Member
RCRA	*Resource Conservation and Recovery Act of 1976*
TEDF	Treated Effluent Disposal Facility
WMA	Waste Management Area

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1 Purpose

This report provides the October through December 2015 quarterly monitoring results at the 241-C Tank Farm (also referred to as Single-Shell Tank Waste Management Area [WMA] C). This report meets two requirements at WMA C: requirements of 04-TPD-083, "Agreement on Content of Tank Waste Retrieval Work Plans," in which quarterly groundwater monitoring sample results are to be provided to the Washington State Department of Ecology during tank retrievals, and quarterly *Resource Conservation and Recovery Act of 1976* (RCRA) assessment requirements. Based on historical data at WMA C, tank retrieval activities have not affected groundwater. However, WMA C has been determined to have affected groundwater from historical releases and, as a consequence, is in a RCRA groundwater quality assessment program in accordance with WAC 173-303-400, "Dangerous Waste Regulations," "Interim Status Facility Standards," and by reference, 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Subpart F, "Ground-Water Monitoring."

Tank retrievals at WMA C began November 18, 1998, as provided in HNF-5267, *Waste Retrieval Sluicing System Campaign Number 3 Solids Volume Transferred Calculation*. The retrievals were required to remove existing liquid supernate and sludge from the 16 underground storage tanks as defined in RPP-22393, *241-C-102, 241-C-104, 241-C-107, 241-C-108, and 241-C-112 Tanks Waste Retrieval Work Plan*. Other work plans, as provided in RPP-22393, direct retrieval requirements at the other 11 tanks in WMA C. Currently, retrieval has been completed or retrieved to the limit of the retrieval technology at 12 tanks and is ongoing at 3 tanks, with 1 tank complete, but in review, as provided in HNF-EP-0182, *Waste Tank Summary Report for Month Ending December 31, 2015*.

The 04-TPD-083 letter agreed to the quarterly analyses as tank retrieval activities were ongoing, as provided in PNNL-13024, *RCRA Groundwater Monitoring Plan for Single-Shell Tank Waste Management Area C at the Hanford Site*. The agreed-upon analyses include the following RCRA and *Atomic Energy Act of 1954* (AEA) constituents: anions, cyanide, metals, gross beta, technetium-99, total uranium, and low-level gamma scan.

The WMA C monitoring network has grown, and the controlling documents have changed since retrieval began in 1998. Initially, the monitoring network consisted of five monitoring wells, which increased to nine in 2004 per PNNL-13024-ICN-4, *Interim Change Notice for RCRA Groundwater Monitoring Plan for Single-Shell Tank Waste Management Area C at the Hanford Site*. An assessment program was initiated in July 2009 when a critical mean exceedance for specific conductance was verified in downgradient well 299-E27-14 (Figure 1). During the initial assessment, the dangerous waste constituent cyanide was found in the downgradient WMA C monitoring wells but not in upgradient well 299-E27-22. Other dangerous waste constituents potentially associated with WMA C have not been found in the groundwater. Because of the continued presence of cyanide downgradient of WMA C over several years, it was determined that past releases from WMA C had affected and continued to affect the groundwater. As a result, DOE/RL-2009-77, *Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Area C*, was created, and it superseded PNNL-13024. DOE/RL-2009-77 required the addition of three monitoring wells (299-E27-24, 299-E27-25, and 299-E27-155) to the WMA C monitoring network. Wells 299-E27-24 and 299-E27-25 were installed in 2010. Well 299-E27-155, a 2008 *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) well, was added because of the presence of cyanide at this well in December 2009. Because DOE/RL-2009-77 was RCRA focused, AEA constituents were not captured in this document. Thus, in October 2013, TPA-CN-578, *Tri-Party Agreement Change Notice Form: Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit, DOE/RL-2001-49 Rev. 1*, was finalized incorporating the AEA requirements (e.g., gross beta, technetium-99, total uranium, and low-level gamma scan) for all

12 WMA C monitoring wells. Table A-1 (Appendix A) provides the key attributes of the monitoring wells in the WMA C monitoring well network.

Groundwater monitoring objectives for CERCLA, RCRA, and AEA often differ slightly, and the contaminants monitored are not always the same. For RCRA-regulated units, monitoring focuses on nonradioactive dangerous waste constituents. Radionuclides (source, special nuclear, and byproduct materials) may be monitored in some RCRA unit wells to support objectives of monitoring under AEA or CERCLA. Pursuant to RCRA, the source, special nuclear, and byproduct material components of radioactive mixed wastes are not regulated under RCRA and are regulated by the U.S. Department of Energy acting pursuant to its AEA authority. Therefore, while this report may be used to satisfy RCRA reporting requirements, inclusion of information on radionuclides in such context is for information only and may not be used to create conditions or other restrictions set forth in any RCRA permit.

2 Geology

The interpretation of geology beneath WMA C continues to evolve, and the most current interpretations are documented in CP-57037, *Model Package Report: Plateau to River Groundwater Transport Model Version 7.1*. CP-57037 incorporated the solid geologic framework from the recently completed Hanford Site South Geoframework Model (ECF-Hanford-13-0029, *Development of the Hanford South Geologic Framework Model, Hanford Site, Washington*) that includes updated geologic and hydraulic data collected from January 2009 through December 2013. Below is a general discussion of the geology beneath WMA C from basalt upward. The environmental calculation files discussed in this section and CP-57037 can be found in Appendix F of DOE/RL-2009-127, *Remedial Investigation Report for the 200-BP-5 Groundwater Operable Unit* (published July 2015).

The Columbia Plateau is recognized as the Earth's youngest flood-basalt province, formed between 6 and 16.5 million years ago (RHO-BW-SA-318 P, *Paleodrainage of the Columbia River System on the Columbia Plateau of Washington State: A Summary*). Several individual flows occurred over the 10 plus million years, and the uppermost flow in the area of WMA C is the Elephant Mountain Member (EMM) of the Saddle Mountains Basalt units. The EMM has been characterized as consisting of two flows that erupted approximately 10.5 million years ago. In the region near WMA C, the younger EMM flow is not present (RHO-BWI-ST-4, *Geologic Studies of the Columbia Plateau, A Status Report October 1979*; WHC-SD-EN-EV-024, *Site Characterization Report for the Liquid Effluent Retention Facility*); however, the oldest EMM flow (Elephant Mountain I) is continuous throughout the area.

Regionally, Elephant Mountain I has been reported to range in thickness from 12 m (39 ft), where partially eroded, to greater than 35.1 m (115 ft) north of the eastern part of the 200 East Area (WHC-SD-EN-EV-024). Closer to WMA C, well 299-E26-8 extended through Elephant Mountain I with a thickness of 27.4 m (90 ft). The reason Elephant Mountain I was eroded in this area is the meandering nature of the ancestral Columbia River across the Pasco Basin. Beneath WMA C, the basalt dips predominantly to the south-southwest (PNNL-12261, *Revised Hydrogeology for the Suprabasalt Aquifer System, 200-East Area and Vicinity, Hanford Site, Washington*).

PNNL-12261 refined the hydrostratigraphic conceptual model for the 200 East Area Ringold Formation through visual depictions; however, geologic interpretation suggest no remaining Ringold sediments exist beneath WMA C. The Ringold was deposited in the late Miocene (approximately 8.5 million years ago) when the ancestral Columbia River was diverted eastward around the uplifting Umtanum Ridge and into the Pasco Basin (RHO-BW-SA-318 P). The river system flowed through Sentinel Gap to the west side of Gable Mountain and throughout the central Pasco Basin to the Wallula Gap (RHO-BWI-ST-14, *Subsurface Geology of the Cold Creek Syncline*). Approximately 2 to 3.4 million years ago, the Columbia River appeared to change its course in the Columbia River Gorge and began a headward erosion of the Ringold Formation through the Pasco Basin (RHO-BW-SA-318 P), including beneath WMA C. Deposition after erosion is associated with the timing of Cold Creek Unit sediments.

A remnant mound of Cold Creek gravels disconformably overlies the Elephant Mountain I beneath most of WMA C; however, the height of the mound only extends to the bottom screen portion of wells 299-E27-7 and 299-E27-22. The Cold Creek gravels increase in thickness to the south and engulf the screen portion of well 299-E27-24, which is screened across the bottom 6.1 m (20 ft) of the aquifer. Further to the west of the 241-C Tank Farm (beneath wells 299-E27-13, 299-E27-21, and 299-E27-23), the Cold Creek gravels are interpreted to have been scoured away by the more recent glacio-fluvial cataclysmic Ice Age floods.

The Hanford formation is the informal name for the glacio-fluvial deposits from cataclysmic Ice Age floods. Sources for floodwaters included Glacial Lake Missoula, pluvial Lake Bonneville, and ice-margin

lakes that formed around the margins of the Columbia Plateau (Baker et al., 1991, "Quaternary Geology of the Columbia Plateau"). The earliest Ice Age floods occurred about 1 to 2 million years ago and continued floods occurred until 15,000 calendar years ago (Bjornstad, 2006, *On the Trail of the Ice Age Floods: A Geological Field Guide to the Mid-Columbia Basin*). The Hanford formation consists of mostly unconsolidated sediments that cover a wide range in grain size, from pebble- to boulder-size gravel, fine- to coarse-grained sand, silty sand, and silt. The Hanford formation is further subdivided into silt-, sand-, and gravel-dominated facies. The sediment of interest beneath WMA C and within the unconfined aquifer is the gravel-dominated facies, except where Cold Creek gravels are present. The gravel-dominated facies represents the main, high-energy flood currents deposited in this area (CP-57037, Figure 4-3).

Hydraulic conductivity values assigned to both the paleo-channel Hanford and Cold Creek gravels are 17,000 m/day (CP-57037, Figure 4-2). ECF-Hanford-13-0031, *Fate and Transport Modeling for Baseline Conditions for Remedial Investigation/ Feasibility Studies of the 200-BP-5 and 200-PO-1 Groundwater Operable Units*, assigned an effective porosity of 0.2 for these two sediments. It should be noted that hydraulic conductivities of major hydrogeologic units are variable and with limited groundwater pumping tests due to contaminated groundwater conditions, the variability of hydraulic parameters beneath WMA C is uncertain.

3 Groundwater Flow and Rate

Various assessments of hydraulic parameters derived from past tests and recent evaluations have been applied to estimate the fate and transport of contaminants beneath WMA C. Estimation of groundwater flow rates are required by 40 CFR 265.94(d)(4), "Recordkeeping and Reporting," because of the presence of the dangerous waste constituent cyanide. Hydraulic parameters used to estimate rates of groundwater flow at WMA C include effective porosity (n_e) and hydraulic conductivity values (K). The effective porosity is estimated at 0.2, and the hydraulic conductivity is estimated at 17,000 m/day (55,774 ft/day). The other hydraulic parameter, the hydraulic gradient (G) of the water table, is based on the monthly average water level evaluations measured from a regional 52-well, low-gradient monitoring network across the 200 East Area from January 2015 through December 2015 (Figure 2). The rational for this new network is that it provides a regional approach to the dynamic low-gradient water table, which is needed because the areal extent of the well network at WMA C is not sufficient to obtain interpretations of the groundwater gradient or direction with confidence. A discussion of the methods used to develop the regional water table interpretation is provided in SGW-58828, *Water Table Maps for the Hanford Site 200 East Area, 2013 and 2014*.

In the following subsections, groundwater measurements and associated trend surface results are presented for deriving the inferred groundwater flow rate and direction at WMA C. Section 3.1 discusses the groundwater gradient determination associated with the 52-well, low-gradient regional monitoring network, and Section 3.2 discusses the development of an inferred groundwater flow direction for WMA C.

3.1 Groundwater Gradient Determination

The measurements and gradient calculations associated with the 52-well, low-gradient monitoring network across the 200 East Area from January through December 2014 are provided in SGW-58828. The January to December 2015 WMA C groundwater gradient was calculated from the monthly average 52-well, low-gradient monitoring network from January 2015 through December 2015 (Figure 2). The estimated gradient is approximately 1×10^{-5} m/m and is used to calculate the inferred groundwater flow rate at WMA C for this quarterly report. The flow rate is used to provide the cyanide contaminant migration rate as required in 40 CFR 265.93(d)(7)(i), "Preparation, Evaluation, and Response."

The measurement error associated with the January 2015 through December 2015 water levels was assumed to be relatively small as several measures were taken to minimize potential sources of measurement error, (e.g., adjustments for well casing deviation from vertical and resurveys of well casing elevations). Even with these measures, the 200 East Area water level measurements still had residual errors greater than the local difference in the water table (i.e., a small signal to noise ratio). To minimize measurement error, data for each well were averaged over a yearly period. The data were analyzed by generating digital grids of the water table. The gridding method was inverse distance to a power set to emphasize spatial averaging. The weighting power was set to 4, which is above the normal default value of 2 for the inverse distance method. This resulted in a greater decline in the weighting factors with distance placing more emphasis on measurements near a particular grid node rather than farther away. The smoothing factor was set to 750 m (2,460 ft). This parameter is essentially the minimum separation distance of a measurement from a grid node. This prevents any single measurement from having a larger effect on a grid node calculation. Because of the spatial averaging employed, contour lines generated from the grid will not always honor the measured values. However, the contour lines will represent the underlying trend in the data (SGW-58828).

Additional contributions associated with the difficulty of deriving a groundwater gradient in the 200 East Area are the variable seasonal gradients linked with the propagation of high Columbia River runoff levels (stages) in the later spring and early summer (SGW-58561, *WMA C Quarterly October through*

December 2014 Quarterly Groundwater Monitoring Report). Another temporal effect on the unconfined aquifer is a significant increase in discharges from the Treated Effluent Disposal Facility (TEDF), located southeast of the 200 East Area. Prior to 2014, TEDF discharges were approximately 10^6 L/month. In 2014, discharges of >10^8 L/month were observed during 5 of the 12 months (SGW-58561). In 2015, above average discharges of >10^7 L/month were observed from March through September, except for August. In DOE/RL-2011-01, *Hanford Site Groundwater Monitoring Report for 2010* (Section 9.0), it was shown that significant discharges (~10^8 L/month) from TEDF caused groundwater elevations to increase within the 200 East Area. Such increases have been shown to affect the flow direction and gradient within the 200 East Area. It is believed that the significant temporary discharge increase from TEDF in 2014 decreased the gradient magnitude beneath 200 East Area based on comparison with the average gradient measurements between 2013 and 2014 (Figures 3 and 4). It is likely that consecutive 2015 discharges of >10^7 L/month have also affected the flow rate beneath the 200 East Area. The combination of these effects appears to have caused the water levels to increase 5 mm. Large volume discharges are periodically planned from TEDF over the next several years, which will likely reduce flow rates compared to flow rates determined from 2011 to early 2014. The slower flow rates also appear to be linked to temporary increases in certain groundwater contaminants such as nitrate, sulfate, and other contaminants linked to early releases within the 241-C Tank Farm.

Using the hydraulic parameters discussed in this section, the estimated groundwater flow rate (V) beneath WMA C is 0.85 m/day (2.8 ft/day) or 310 m (1020 ft) per year, based on the formula $V = (K*G)/n_e$ (Driscoll, 1986, *Groundwater and Wells*). This derived groundwater flow rate is approximately three times higher than last quarter's calculated flow rate. The higher flow rate reflects an increased gradient and is consistent with the decreased TEDF discharges (6×10^6 L/month) from October 2015 through December 2015. Prior to the three months of decreased TEDF discharges, discharges at TEDF averaged 1.3×10^8 L/month from March 2015 through September 2015, causing the water table near WMA C to increase 5 mm. The prolonged hydraulic damming associated with TEDF discharges appears to have slowed the groundwater flow rate and increased groundwater contamination beneath WMA C. As a result of the increased gradient, during this quarter, migration of groundwater contaminants from beneath infiltration sites appears to have shifted into downgradient WMA C wells which display increased contaminant concentrations. The increased flow rate for this quarter is not typical of past flow rates and is thought to be limited to a short period while the gradient equilibrates. Average flow rates over the past 4 years are thought to be approximately 0.2 m/day based on several time-derived log plot comparisons of technetium-99-to-nitrate ratios for upgradient-downgradient well pairs at WMA C and WMA A-AX. For example, wells 299-E27-23, 299-E27-21, and 299-E24-22 display similar technetium-99-to-nitrate ratios over time, as presented in Figure 5 (Figure 1 shows the location of WMA A-AX wells). The time delay between increases appears to be attributed to the migration time between wells. These are the only wells to show gradual trends approaching technetium-99-to-nitrate ratios of 100 or higher. The migration rate, approximately 0.2 m/day, is consistent with a 4-year travel time, when the groundwater flow direction last shifted, for the equivalent technetium-99-to-nitrate ratio to migrate from well 299-E27-21 to well 299-E24-22.

3.2 Groundwater Flow Determination

The regional 52-well, low-gradient monitoring network is now used for determining a groundwater trend surface direction at WMA C because of the precision measurements and areal extent (Figure 2). Corrected water level measurements from this 52-well, low-gradient monitoring network enables a more complete understanding of the flow direction across the 200 East Area and at WMA C.

The average WMA C groundwater flow direction derived from the 52-well, low-gradient monitoring network from January 2015 through December 2015 along with log plot comparisons of

technetium-99-to-nitrate ratios for upgradient-downgradient well pairs at WMA C and WMA A-AX appears to define an estimated flow direction of south-southeast as depicted in Figure 1. This direction is used to provide the cyanide contaminant migration direction as required in 40 CFR 265.93(d)(7)(i).

The flow direction interpretation above appears to agree with several log plot comparisons of technetium-99-to-nitrate ratios for upgradient-downgradient well pairs at WMA C and WMA A-AX. For example, wells 299-E27-23, 299-E27-21, and 299-E24-22 display similar ratios over time as presented in Figure 5. The time delay between increases could be attributed to the time for migration between wells. These are the only wells to show gradual trends approaching technetium-99-to-nitrate ratios of 100 pCi/mg or higher. A well pair with similar, low technetium-99-to-nitrate ratios possibly inferring a south-southeast migration direction is 299-E27-7 and 299-E25-40. A final well pair with similar technetium-99-to-nitrate ratios possibly inferring a south-southeast migration direction is 299-E27-14 and 299-E24-33. However, the recent technetium-99 trends at well pair 299-E27-14 and 299-E24-33 are not similar. A possible explanation for the different technetium-99 trend at well 299-E24-33 may be mixing from multiple upgradient release sources or the contaminants migrating from well 299-E27-14 encounter less transmissive sediments altering the contaminant migration towards well 299-E24-33 and an additional source of vadose zone contamination present near well 299-E24-33. PNNL-15141, *Investigation of Accelerated Casing Corrosion in Two Well at Waste Management Area A-AX*, discusses perched water discovered at depth during drilling well 299-E24-33.

4 Quarterly Results Discussion

During December 2015, all 12 WMA C wells were successfully sampled as scheduled. The following subsections discuss the results for constituents analyzed per the 04-TPD-083 letter and DOE/RL-2009-77. Appendix B provides all 1,157 analytical results derived from the December 2015 sampling event at WMA C. Additional metals were analyzed this quarter with implementation of a new scheduling program. The program integrated metal analysis by U.S. Environmental Protection Agency methods 6010 and 6020 and added some additional constituents.

4.1 Field Parameters

The December pH measurements from WMA C monitoring wells ranged between 7.77 and 8.44. The minimum pH was reported at well 299-E27-155, and the maximum was reported at well 299-E27-15. Except for well 299-E27-14, wells screened across the upper part of the aquifer with short screen intervals (e.g., 299-E27-12, 299-E27-13, and 299-E27-15) generally have the greatest pH values, ranging from 8.22 to 8.44 this quarter. The pH at well 299-E27-14 has averaged 7.99 since 2010. The wells screened across the bottom of the aquifer (e.g., 299-E27-24 and 299-E27-155) have generally had the lowest pH values, averaging less than 7.85 since 2010. However, the most recent pH values at well 299-E27-24 have been 8.18, 8.1, and 8.08, approximately 0.2 pH units higher than previous results. The pH in this well appears to be changing and may reflect vertical migration from the upper part of the aquifer where pH levels are generally higher. The wells with long screen intervals (e.g., extending approximately 9 m [30 ft] into the aquifer) (wells 299-E27-4, 299-E27-7, 299-E27-21, 299-E27-22, and 299-E27-23) have intermediate pH levels, ranging from 7.86 to 8.09 this quarter. The lower pH levels within the deeper part of the aquifer near well 299-E27-155 are more reflective of the background geometric mean as reported in DOE/RL-96-61, *Hanford Site Background: Part 3, Groundwater Background*.

Specific conductance measurements in the 12 WMA C wells ranged between 386 and 1,044 µS/cm. The lowest value was observed at upgradient well 299-E27-12, and the greatest specific conductance was observed at cross gradient well 299-E27-25 followed closely by downgradient well 299-E27-14. Elevated

specific conductance was found in wells with elevated nitrate and sulfate concentrations. The specific conductance values observed were consistent with the calculated sum of the major anions and cations.

4.2 Nitrate and Sulfate

This section discusses results for nitrate and sulfate from the December 2015 sampling event. In the following subsection, nitrate concentrations are expressed in terms of the nitrate (NO_3^-) ion, as opposed to nitrogen in nitrate. For comparison purposes, the drinking water standard (DWS) of 10 mg/L for nitrogen in nitrate is approximately equal to 45 mg/L (45,000 µg/L) of nitrate as NO_3^-, using a molecular conversion of 4.43 times the nitrogen in nitrate concentration.

4.2.1 Nitrate

Nitrate equaled or exceeded 45,000 µg/L in five WMA C wells this quarter (299-E27-14, 299-E27-21, 299-E27-24, 299-E27-25, and 299-E27-155) (Figure 6). Three of the five wells above the DWS are south of WMA C (299-E27-14, 299-E27-21, and 299-E27-24). The source of elevated nitrate at well 299-E27-25 may be related to unplanned releases associated with discharges to the 216-B-2 ditches (DOE/RL-2011-118, *Hanford Site Groundwater Monitoring for 2011*, Section 3.4.1.7). Continued increases since 2014 at well 299-E27-155 have resulted in concentrations exceeding 45,000 µg/L. The increases at well 299-E27-155 may be associated with TEDF discharges causing a change in groundwater flow.

Of the four wells screened at the top of the aquifer (299-E27-12, 299-E27-13, 299-E27-14, and 299-E27-15), 299-E27-14 is the only well with nitrate concentrations exceeding 45,000 µg/L. The nitrate concentrations at well 299-E27-14 have varied between 83,200 to 118,000 µg/L since 2011 (Figure 6). Peak yearly concentrations generally occur in September, when water levels beneath WMA C increase due to lagged effects of the high Columbia River stage that occurs in the spring. Conceptually, the nitrate concentrations increase during this time frame due to a two-step process. First, as a result of less mixing of infiltrating nitrate laden pore water from the vadose zone during low gradient periods (lower groundwater flow rate), nitrate concentrations in the aquifer increase. When the gradient increases, the higher concentrated plume moves into well 299-E27-14. This conceptual model bases the changing nitrate concentration on groundwater flow rates and constant infiltration from the vadose zone. Based on this conceptual model and the degree of spreading downgradient, it appears the zone of infiltration from the vadose zone is near well 299-E27-14. The other three wells screened across the top of the aquifer have historically had the lowest nitrate concentrations at WMA C and ranged from 8,850 to 20,400 µg/L this quarter (Figure 7).

The two deepest wells near WMA C (299-E27-24 and 299-E27-155) are screened at the bottom of the unconfined aquifer. Nitrate levels at well 299-E27-24 have been stable, returning similar concentrations since being completed in December 2010. Over this period, the concentrations have ranged between 65,500 and 73,500 µg/L. In December 2015, the concentration was 70,800 µg/L. The concentration in well 299-E27-155 decreased significantly between September 2012 and December 2013 (51,000 to 24,000 µg/L) but, since then, it has increased. In December, the concentration was to 66,400 µg/L, a new high (Figure 6). The increasing concentrations coincide with increased TEDF discharges and may indicate a flow direction change.

The wells northwest, north, and northeast of WMA C (299-E27-4, 299-E27-22, and 299-E27-25, respectively), which have longer screen intervals than those screened near the top of the aquifer, had shown mixed nitrate trends (Figures 6 and 7). More recently, it appears nitrate is now trending up at all wells. This may be associated with continued migration of the nitrate plume from unplanned releases associated with discharges to the 216-B-2 ditches to the north.

Nitrate concentrations at wells south and southwest of WMA C (299-E27-21 and 299-E27-23, respectively) have not varied by more than 6,000 µg/L over the past 2 years (Figures 6 and 7).

4.2.2 Sulfate

The highest sulfate concentrations at WMA C continued to be at wells 299-E27-14, 299-E27-24, and 299-E27-25 (Figure 8). Results from these wells continue to exceed the secondary DWS of 250,000 µg/L. Concentrations at the remainder of the wells in December 2015 ranged up to 220,000 µg/L. The sulfate and nitrate concentration trends at these two wells relative to those observed in upgradient wells continue to suggest a past release of contaminants containing elevated nitrate and sulfate to the groundwater from within WMA C. Well 299-E27-14 is screened across the upper part of the aquifer, and well 299-E27-24 is screened across the bottom of the aquifer. Data from these wells suggest nitrate and sulfate have migrated vertically through the aquifer. Sulfate trend results at well 299-E27-14 decreased from September 2012 to March 2014 but, since then, have been on an increasing trend. At well 299-E27-24, sulfate concentrations have been stable, ranging between 287,000 and 313,000 µg/L since installation of this well. However, in September, the concentration rose to a new high of 320,000 µg/L.

Sulfate concentrations at well 299-E27-25 have been slowly increasing since this well was installed in 2010. The concentrations at well 299-E27-25 rose to a high of 323,000 µg/L in September 2015. While concentrations in December were slightly lower, 320,000 µg/L, the trend at well 299-E27-25 appears to mimic the past trend at well 299-E27-10, located near the 216-B-2 ditches (Figure 9). The comparable sulfate trends between these wells and historical southward groundwater flow direction indicate that these wells are likely being affected by past releases from the 216-B-2 ditches (DOE/RL-2011-01, Section 9.1.10.3).

4.3 Cyanide

The dangerous waste constituent cyanide was detected at seven WMA C wells in December 2015. Cyanide increased to 5 µg/L in December in wells 299-E27-4 and 299-E27-22. Because of the dominant less than detect values since the flow direction change, these results appear to be suspect. Two of the wells have continued to have concentrations at or below 4 µg/L (299-E27-21 and 299-E27-23) and appear to reflect a low-concentration plume. The other three wells (299-E27-14, 299-E27-24, and 299-E27-155), which have had cyanide levels above 4 µg/L for several years, are associated with low-concentration plumes associated with the 241-C Tank Farm. Although cyanide concentrations had diminished at these wells between 2012 and 2014, concentrations appear to be rebounding to levels observed prior to the groundwater flow direction change. These increases most likely reflect slower groundwater flow conditions and continued infiltration from the vadose zone associated with the prolonged increased TEDF discharges between March and September of 2015. Though concentrations are increasing beneath the 241-C Tank Farm the concentrations are significantly less than the 200 µg/L DWS. The highest cyanide concentration in December 2015 was 14.9 µg/L at well 299-E27-24.

Low concentrations of cyanide within the groundwater beneath the 241-C Tank Farm have been detected consistently since January 1999 (Figure 10). However, it is believed that the existing cyanide contamination is not associated with tank retrieval activities but was caused by unplanned releases from early operations at the 241-C Tank Farm for the following reasons:

- The vadose zone is greater than 76 m (250 ft) thick.
- Vertical vadose zone liquid transport is slow (<50 cm/yr).
- Potential tank retrieval activity releases would be a very small fraction of the effective porosity.
- Tank retrieval activities did not start until November 18, 1998.

As required by 40 CFR 265.94(d)(4), a groundwater flow rate was derived using hydraulic parameters for the 200-BP-5 RI baseline risk assessment as well as continued refinement of the groundwater gradient from the 52-well, low-gradient monitoring network in 200 East Area. The estimated values from these evaluations are used to determine the cyanide migration rate. Based on the discussion in Section 3.1, the current cyanide migration rate is estimated at 0.85 m/day (2.8 ft/day) or 310 m (1,020 ft) per year. The flow direction over the past year has been predominantly south-southeast (Figure 1).

Additionally, 40 CFR 265.94(d)(4) requires a determination of the extent of cyanide contamination. Because concentrations have been near detection limits at wells 299-E27-14 and 299-E27-24, detectable levels of cyanide are not considered to be significantly farther southeast of these wells, as depicted in Figure 11. The contamination near well 299-E27-14 is bounded to the north by the nondetect groundwater results for cyanide at other wells surrounding WMA C. The depiction of cyanide extension southeast of wells 299-E27-14 and 299-E27-24 in Figure 11 reflects an attempt to be consistent with recent cyanide concentrations and groundwater flow interpretations of a progressive shift from southwest to south-southeast near WMA C. A secondary area of elevated cyanide in the lower part of the aquifer southeast of well 299-E27-155 is also inferred in Figure 11. Well 299-E27-155 is screened across the lower 10.7 m (35 ft) of the aquifer, and the aquifer at this well was measured at 16.8 m (55 ft) thick when installed in 2007. The greatest cyanide concentrations at this well were observed in the deepest discrete sample intervals during drilling. The inference at depth of a secondary area of slightly elevated concentrations of cyanide is uncertain but is inferred from previous observations of low levels of cyanide concentrations at well 299-E27-155 and the lack of historically consistent cyanide concentrations in wells between this well and the west/southwest WMA C boundary. Two additional plumes of cyanide have been interpreted around wells 299-E27-7 and 299-E27-23 because of the persistent detections since March 2014. Cyanide was detected infrequently or was not detected in the other wells.

4.4 Technetium-99

AEA samples for technetium-99 were collected and analyzed for all 12 WMA C wells in December 2015. The activity levels exceeded the 900 pCi/L DWS in seven wells (299-E27-4, 299-E27-13, 299-E27-14, 299-E27-21, 299-E27-23, 299-E27-24, and 299-E27-155) (Figure 12). A 2011 groundwater flow direction change affected activity levels at these wells. Technetium-99 activities at wells west of WMA C (299-E27-13, 299-E27-23, and 299-E27-155) have decreased by >60 percent (Figure 12). However, since mid-2014, technetium-99 has more than tripled at well 299-E27-13 (2,000 pCi/L in March 2014 to 6,910 pCi/L in December 2015). Concurrently, concentrations at wells south and southeast of WMA C (299-E27-14, 299-E27-21, and 299-E27-24) increased by approximately 200 percent or more. More recently, technetium-99 at well 299-E27-14 has decreased. Activity levels at wells 299-E27-21 and 299-E27-24 have maintained near historical high levels (Figure 12). The activity level at four other WMA C wells (299-E27-12, 299-E27-15, 299-E27-22, and 299-E27-25) has never exceeded the DWS. These wells have been or are considered upgradient wells.

An assessment of the technetium-99 results with other contaminants is provided in SGW-56777, *WMA C October Through December 2013 Quarterly Groundwater Monitoring Report*. The outcome of the assessment indicates that two or more technetium-99-laden sources have affected the groundwater at WMA C. The technetium-99-to-nitrate signature, used in the assessment, indicates that the technetium-99 near well 299-E27-23 has migrated toward well 299-E27-21. In addition, part of the technetium-99-to-nitrate signature recognized at well 299-E27-23 has migrated to well 299-E27-14. The migration of the technetium-99 plume appears to be consistent with the predominant southeast flow direction since 2011.

4.5 Uranium

AEA samples for uranium were collected and analyzed at all 12 WMA C wells in December, and none of the results exceeded the 30 µg/L DWS. Six uranium concentrations exceeded regional background levels of 4 µg/L (DOE/RL-96-61) in December 2015 (Figure 13).

Elevated uranium concentrations exist primarily south and west of WMA C. These areas (in the past and currently) have elevated technetium-99 concentrations, with the exception of upgradient well 299-E27-22. Elevated levels of uranium also extend into the deeper part of the aquifer, at wells 299-E27-24 and 299-E27-155.

4.6 Nickel

Filtered nickel results continue to exceed background at nearly all WMA C wells (Figure 14). Nickel concentrations increase and decrease sporadically (see wells 299-E27-4 and 299-E27-13 in Figure 14). Video surveys at WMA C wells have shown minor well screen corrosion. Videos of other wells with more significant encrustation associated with well screen corrosion (299-E33-337 and 299-E33-339) were reviewed for comparison. In addition, solid sample results of the amorphous encrusted material from well 299-E33-337 were reviewed. Based on this review, it appears the most logical explanation for the elevated nickel, at present, is minor stainless steel screen corrosion.

4.7 Low-Level Gamma

Samples for low-level gamma were collected and analyzed for all 12 WMA C wells in December 2015. All results were below detection limits.

5 Conclusion

Because of the continued presence of cyanide, a dangerous waste constituent, above detection levels in wells at WMA C, the RCRA groundwater quality assessment program continues. The greatest measured cyanide concentration was 14.9 µg/L and is much lower than the DWS of 200 µg/L.

As required by 40 CFR 265.94(d)(4), a groundwater flow rate was derived from past hydraulic tests and ongoing groundwater gradient evaluations for determining the rate of migration of cyanide. Based on the discussion in Section 3.1, the current cyanide migration rate is estimated at 0.85 m/day (2.8 ft/day) or 310 m/yr (1,020 ft/yr). The average flow direction over the past year has been predominantly south-southeast flow direction, as provided in Figure 1.

Additionally, 40 CFR 265.94(d)(4) requires a determination of the extent of cyanide contamination in groundwater. Because concentrations have been near detection limits at wells 299-E27-14 and 299-E27-24, detectable levels of cyanide are not considered to be significantly farther south-southwest of these wells (Figure 11). A northerly extension of the elevated cyanide concentrations from well 299-E27-14 is bounded by a dominant trend of nondetect groundwater results at other wells surrounding WMA C. The depiction of cyanide extension southeast of wells 299-E27-14 and 299-E27-24 in Figure 11 reflects an attempt to be consistent with recent cyanide results and groundwater flow interpretations of a progressive shift from southwest to south-southeast near WMA C. A secondary area of elevated cyanide at depth southeast of well 299-E27-155 also is inferred in Figure 11. Well 299-E27-155 is screened across the lower 10.7 m (35 ft) of the aquifer, and the aquifer at this well was measured at 16.8 m (55 ft) thick when installed in 2007. The greatest cyanide concentrations were observed in the deepest discrete sample intervals during drilling. The inference at depth of a secondary area of slightly elevated cyanide concentrations is uncertain but inferred from previous observations of low levels of cyanide concentrations at well 299-E27-155 and the lack of consistent cyanide concentrations in wells between this well and the west/southwest WMA C

boundary. Two additional smaller plumes of cyanide were interpreted around wells 299-E27-7 and 299-E27-23 because of the previous detected levels at these wells.

Observations of elevated concentrations of nitrate, sulfate, and technetium-99 appear to be associated with past releases from WMA C because these constituents are much higher in the downgradient wells compared to upgradient wells, and they exceed their respective groundwater DWSs. In addition, past sampling result at WMA C has revealed that elevated contaminant concentrations in the upper part of the aquifer vary more than in the deeper part of the aquifer. These observations suggest that variable groundwater flow rates may be tied to the variability in contaminant concentrations seen in the downgradient upper aquifer wells. Finally, the contamination has extended throughout the aquifer thickness at WMA C. Because of the stable concentrations in the lower aquifer, the contaminant extent may be larger in the lower part of the aquifer than in the upper part of the aquifer. Alternatively, the lower aquifer sediment may have lower hydraulic conductivity than the upper aquifer and may reduce groundwater movement.

Plans to develop a regional low-gradient monitoring network in order to derive a more reliable gradient flow direction for WMA C have been completed. This monitoring network is discussed in SGW-58828 and is now used to estimate the groundwater gradient magnitude and flow direction for WMA C. The network consists of 52 wells across the 200 East Area (see Figure 2). The change in flow direction between 2013 (see Figure 3) and the current flow direction is attributed to increased discharges to TEDF, as discussed further in Section 3.1.

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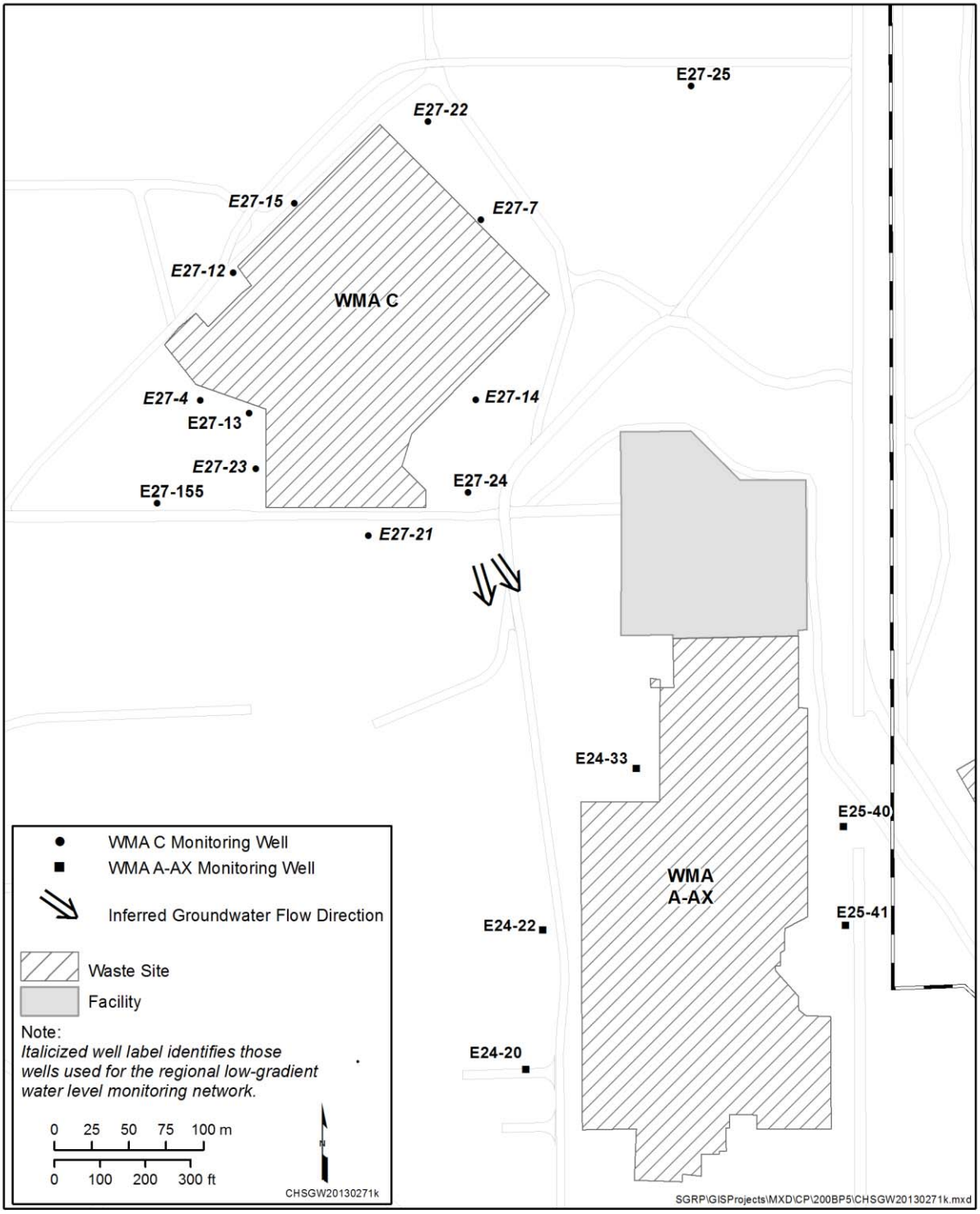

Note: The range in direction of the groundwater flow inferred by the arrows reflects the 200 East Area January 2015 to December 2015 average monthly water level measurements from the 52-well, low-gradient monitoring network (Figure 2) and log plot comparisons of technetium-99-to-nitrate ratios for upgradient-downgradient well pairs at WMA C and WMA A-AX, as applied at WMA C.

Figure 1. WMA C Monitoring Wells

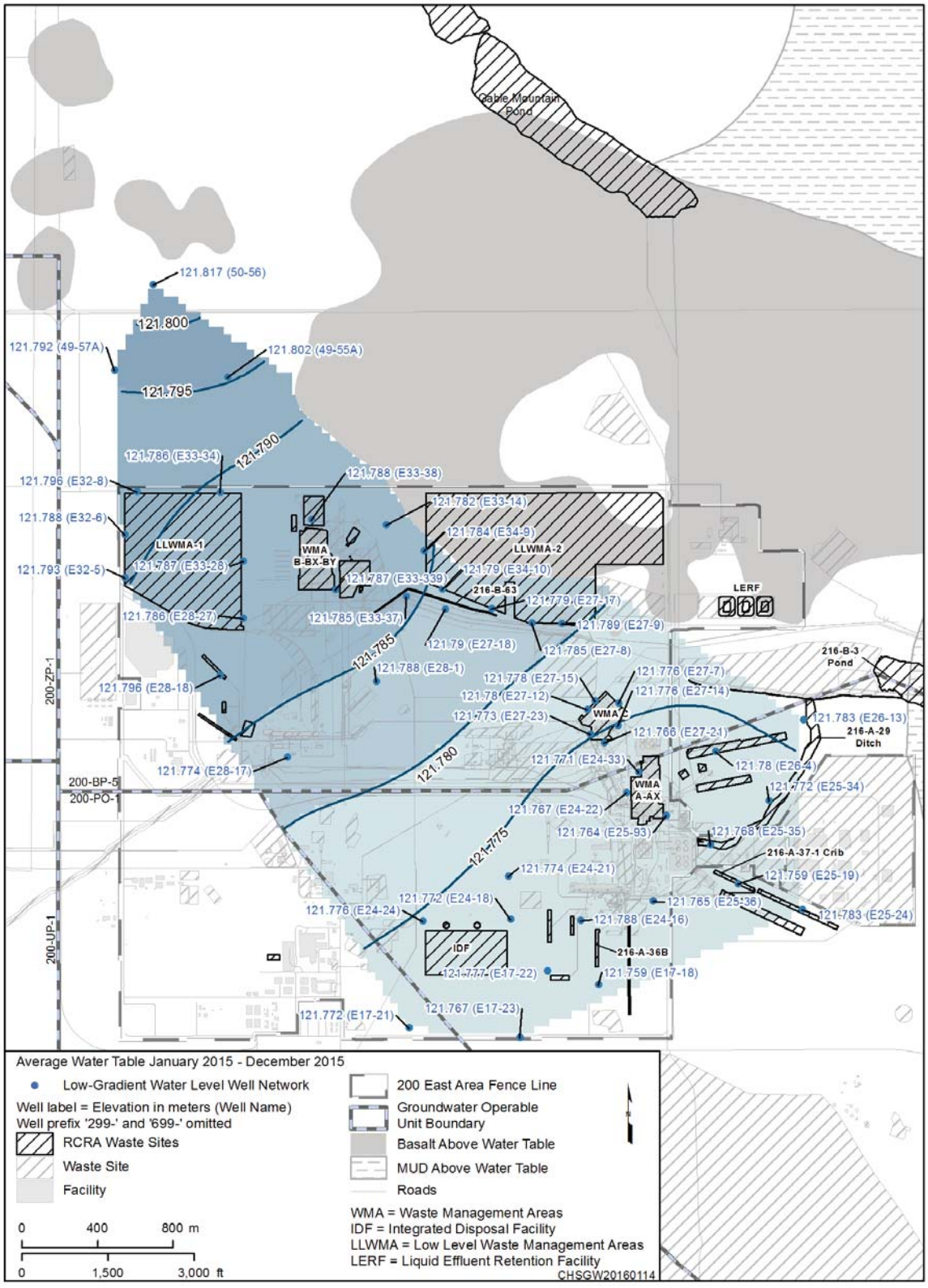

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Figure 2. January 2015 through December 2015 Annual Average 200 East Area Regional Water Table Measurements and Associated Isopleths

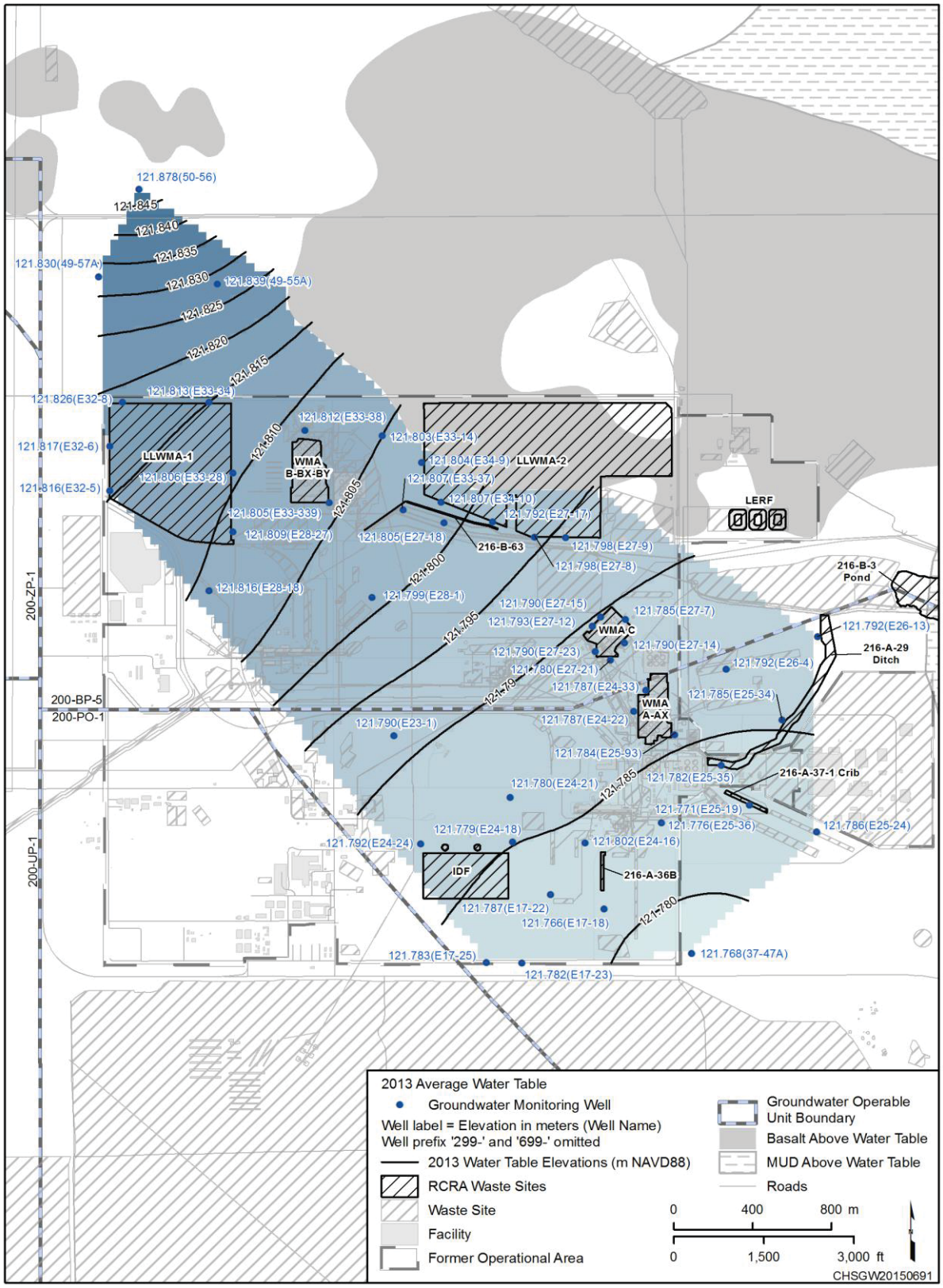

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Figure 3. 2013 Annual Average 200 East Area Regional Water Table Measurements and Associated Isopleths

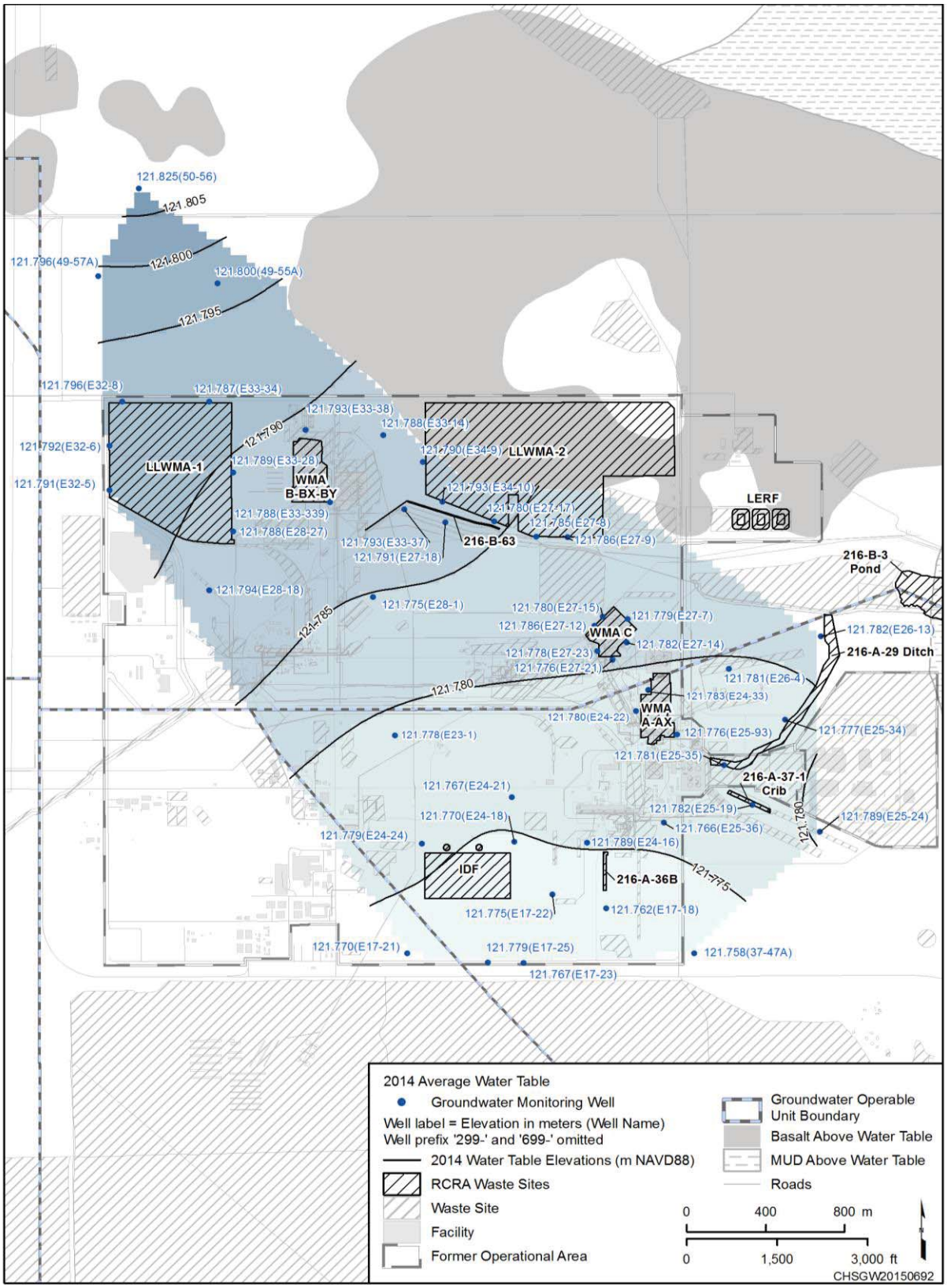

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Figure 4. 2014 Annual Average 200 East Area Regional Water Table Measurements and Associated Isopleths

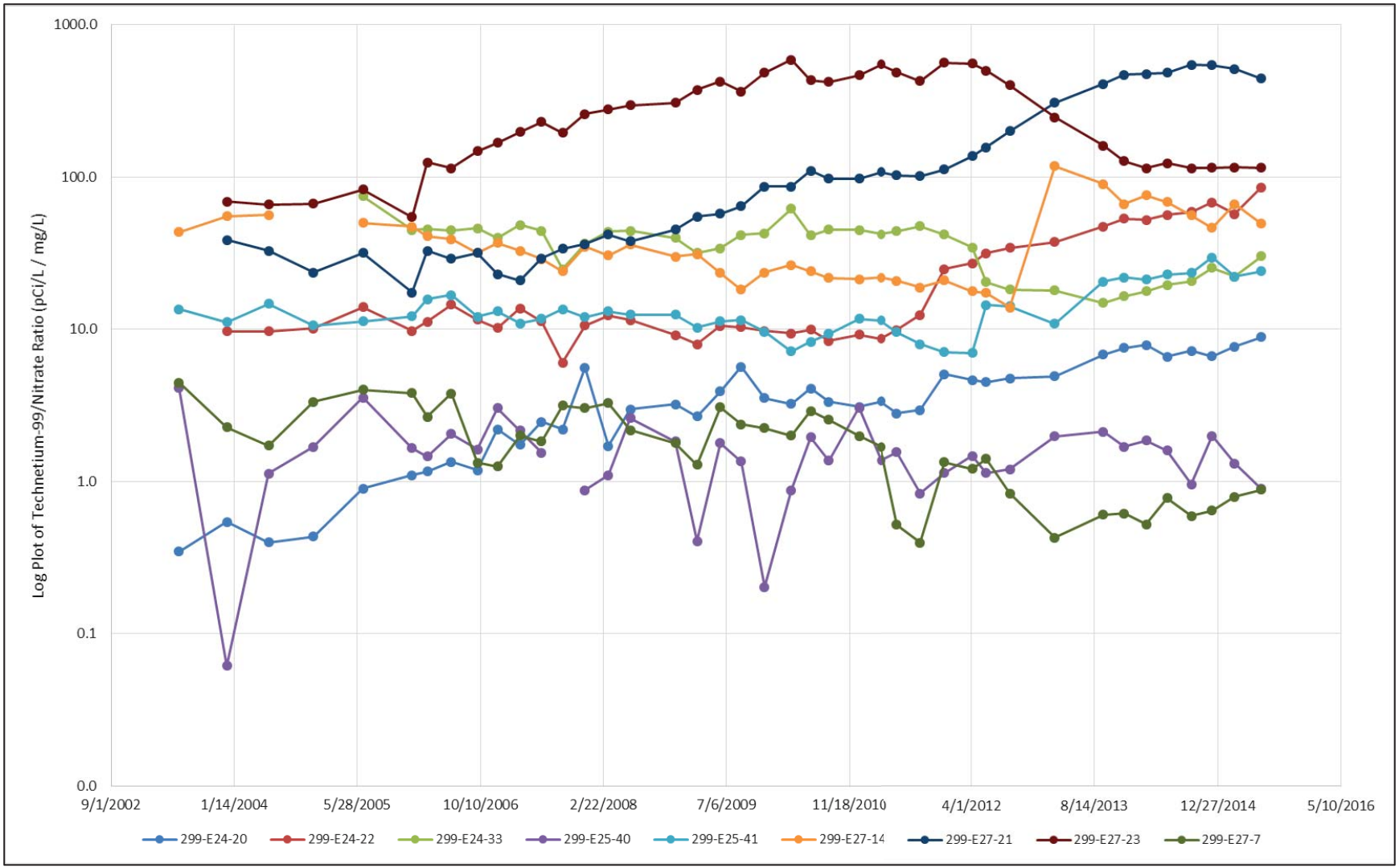

Figure 5. Trend Plot of Technetium-99-to-Nitrate for WMA C and WMA A-AX Wells

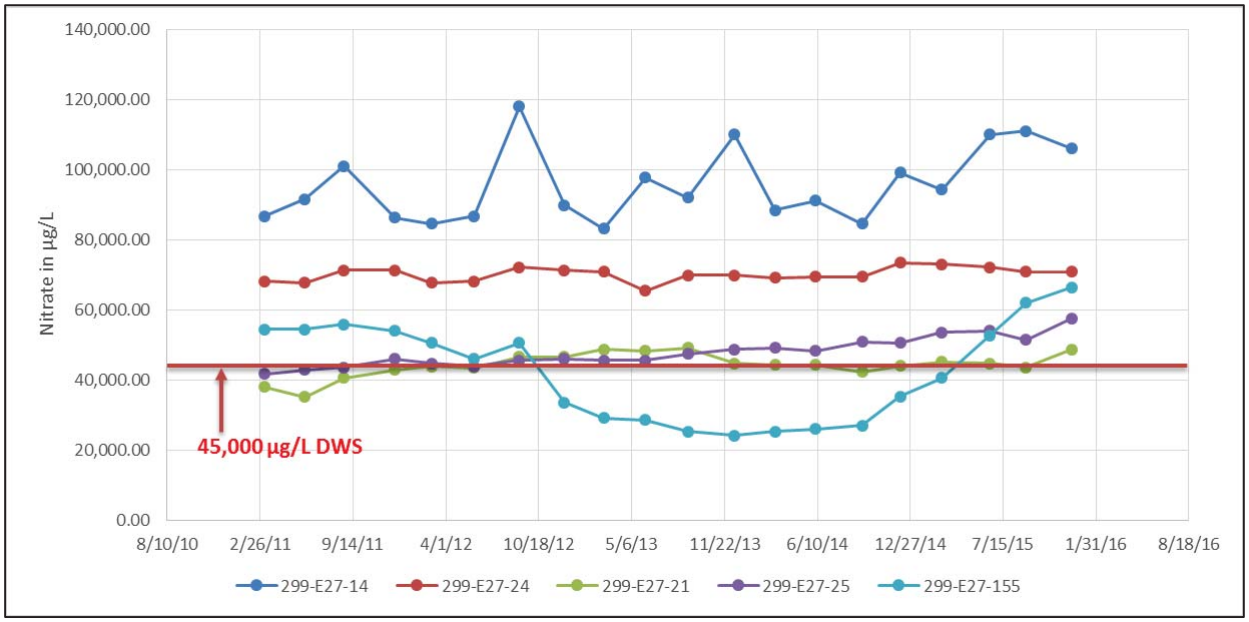

Figure 6. Nitrate Trend at Wells 299-E27-14, 299-E27-21, 299-E27-24, 299-E27-25, and 299-E27-155 (45,000 µg/L represents the DWS as nitrate)

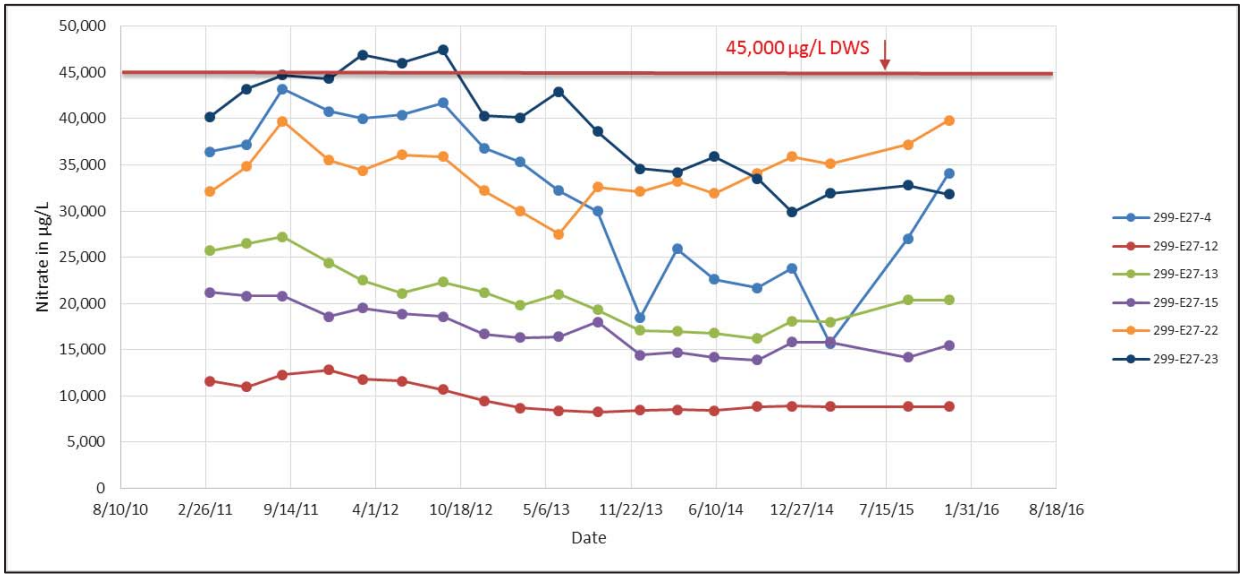

Figure 7. Nitrate Trend at Wells 299-E27-4, 299-E27-12, 299-E27-13, 299-E27-15, 299-E27-21, 299-E27-22, and 299-E27-23 (45,000 µg/L represents the DWS as nitrate)

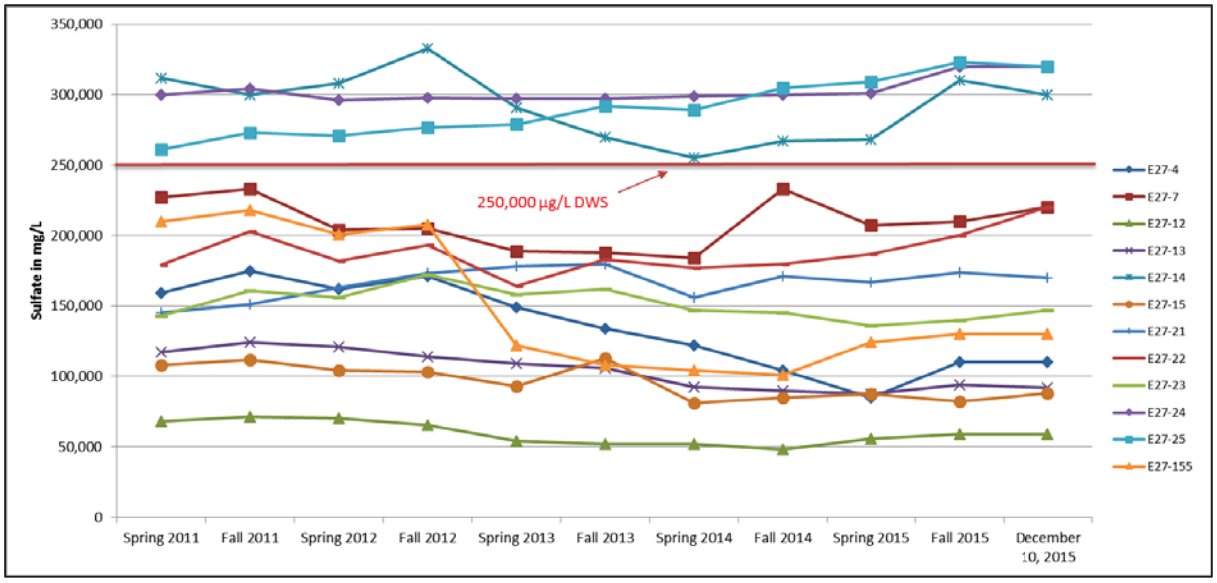

Figure 8. Sulfate Results at WMA C Wells (250,000 µg/L represents the secondary DWS)

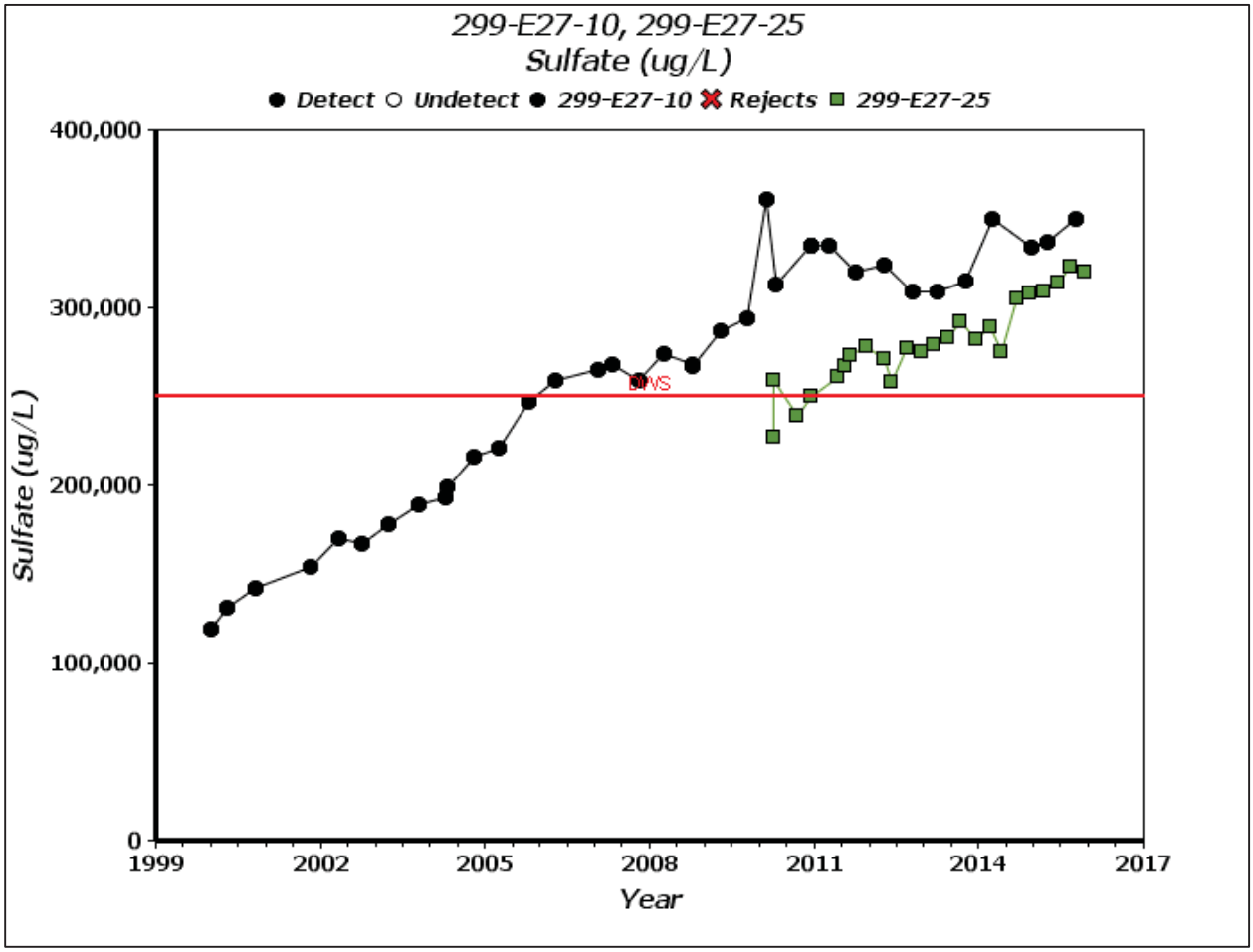

Figure 9. Sulfate Trend Results at Wells 299-E27-10 and 299-E27-25 (250,000 µg/L represents the secondary DWS)

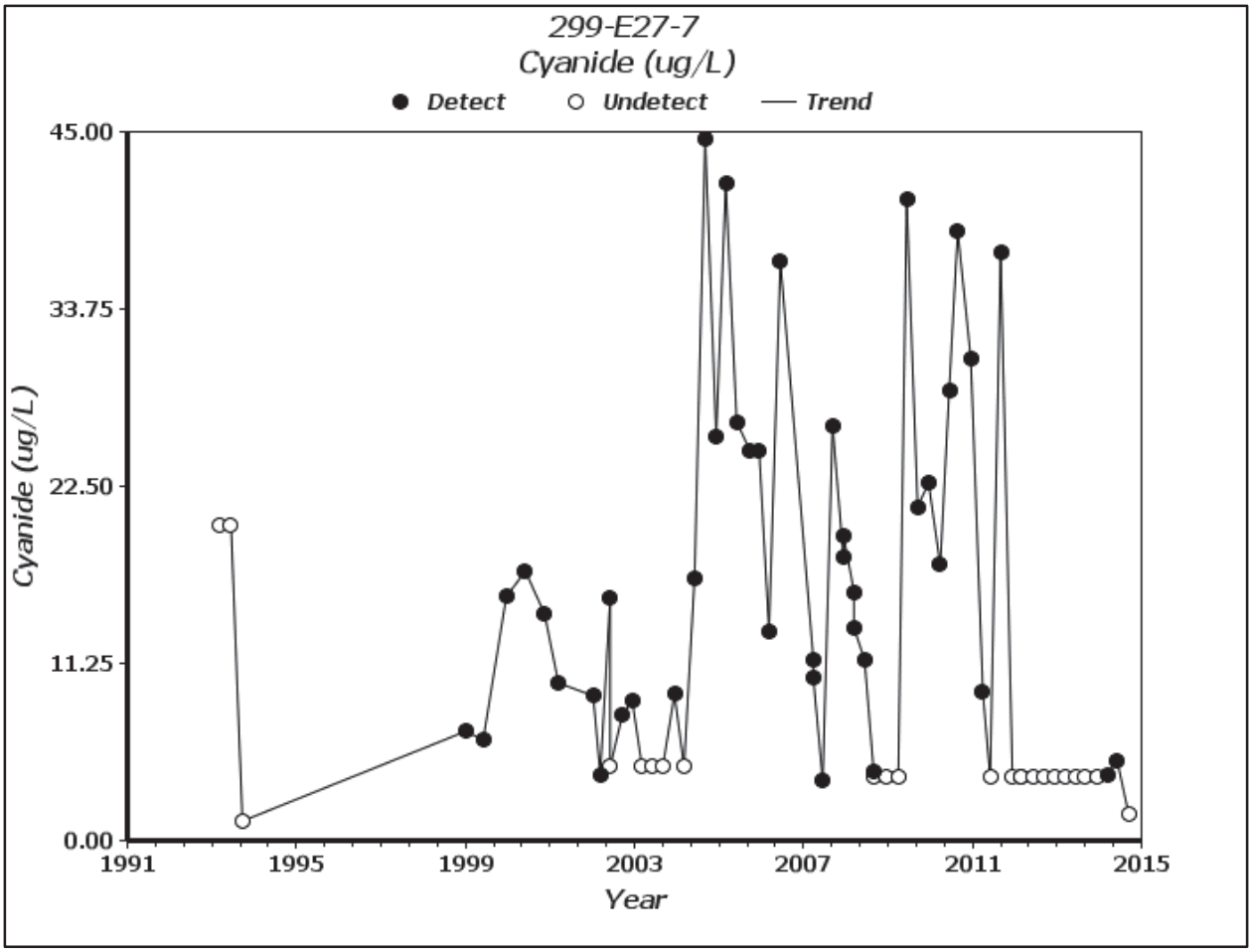

Figure 10. Cyanide Results at Well 299-E27-7

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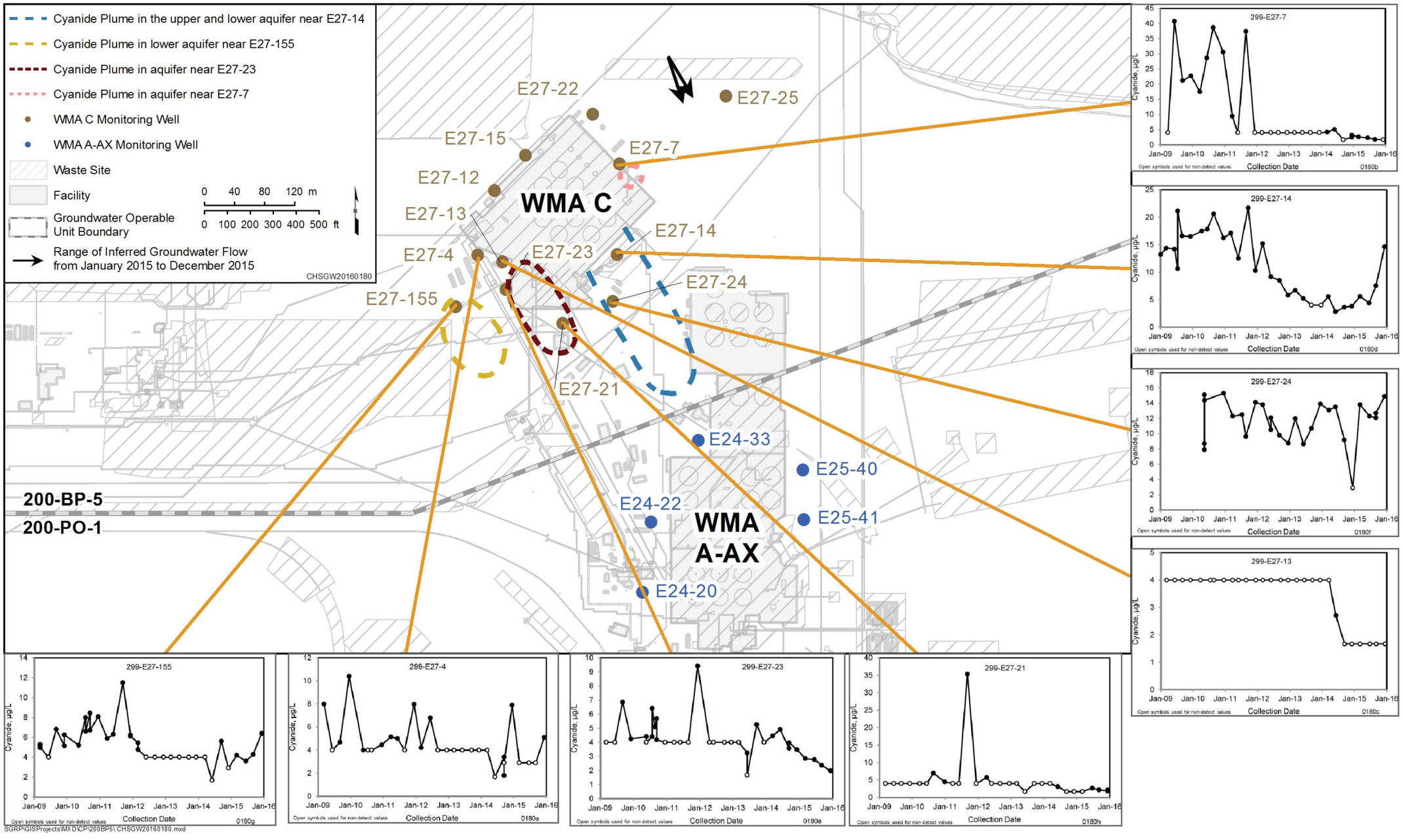

Figure 11. Interpretation of the 2 µg/L Cyanide Isopleth in the Upper 4 m and Lower 4 m of the Aquifer at Waste Management Area C and Cyanide Trend Results at Select WMA C Wells

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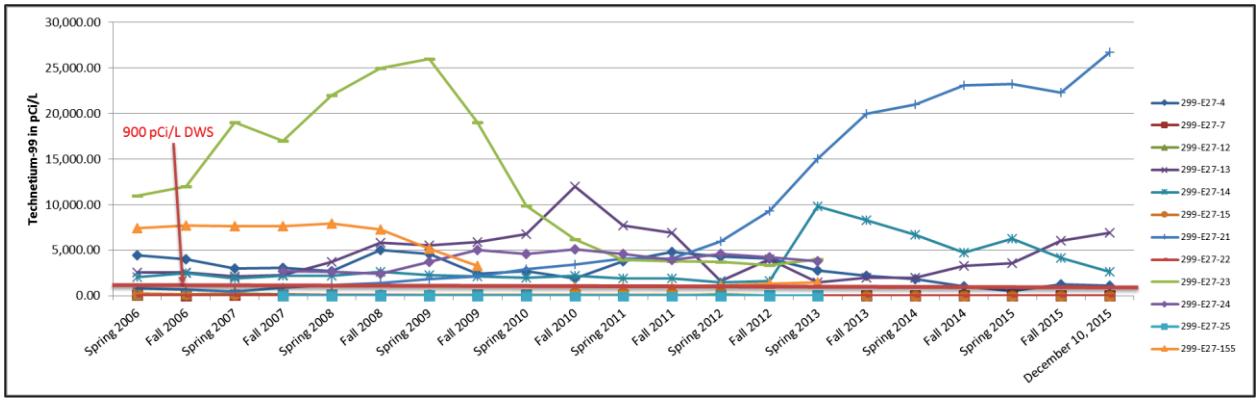

Figure 12. Technetium-99 Results at WMA C Wells

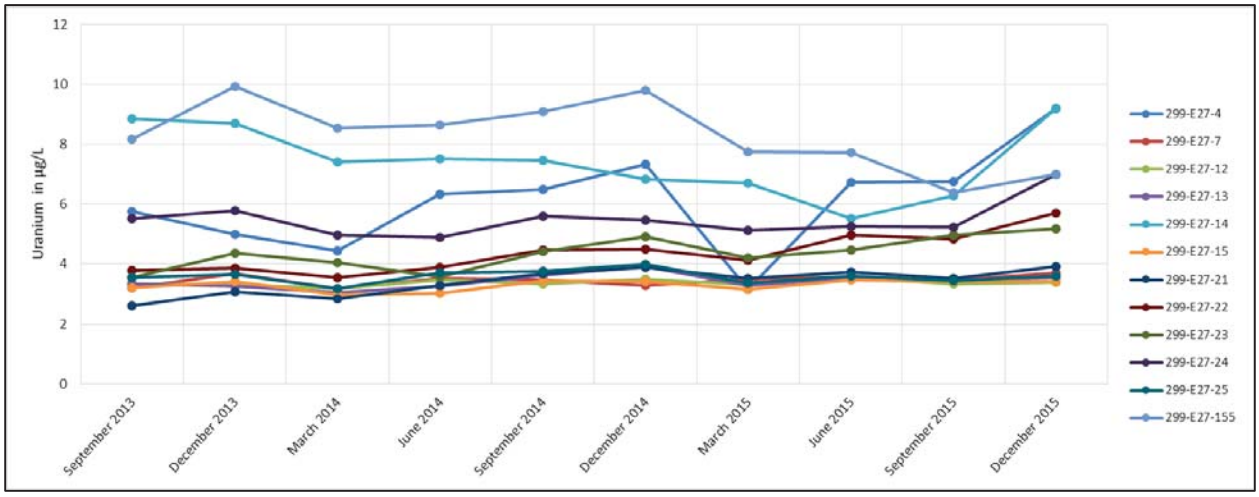

Figure 13. Uranium Results at WMA C Wells

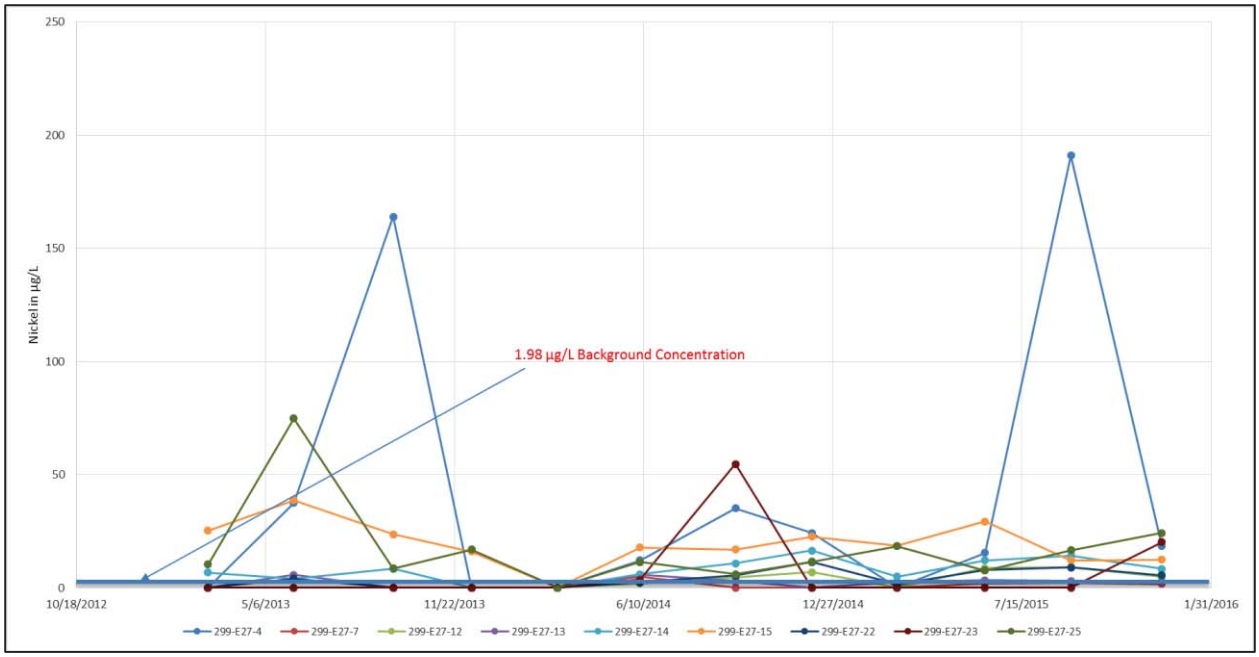

Figure 14. Filtered Nickel Results at WMA C Wells

Appendix A

Waste Management Area C Groundwater Monitoring Well Attributes

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Table A-1. Waste Management Area C Groundwater Monitoring Well Attributes

Well Name	Construction Date	Screen Top (m [ft] bgs)	Screen Bottom (m [ft] bgs)	Water Level Date	Depth to Water (m [ft] bgs)	Screened Water Column (m [ft])	Estimated Depth to Basalt (m [ft] bgs)	Percentage of Screen in Aquifer
299-E27-4[TM]	2003	82.4 (270.3)	93.1 (305.3)	12/4/2013	82.6 (271.1)	9.9 (32.6)	97.8 (321)	68.5
299-E27-7[TM]	1982	73.5 (241)	85.6 (281)	12/4/2013	72.8 (238.7)	13.5 (44.2)	87.5 (287)	88.5
299-E27-12[T]	1989	75.1 (246.5)	81.6 (267.6)	12/4/2013	79.5 (260.7)	2.1 (6.9)	93 (305)	15.8
299-E27-13[T]	1989	77.3 (253.6)	83.7 (274.7)	12/10/2013	82.1 (269.4)	1.6 (5.3)	96.6 (317)	16.4
299-E27-14[T]	1989	74.9 (245.8)	81.3 (266.8)	12/4/2013	78.8 (258.5)	2.6 (8.4)	95.1 (312)	15.7
299-E27-15[T]	1989	72.5 (238)	78.9 (259)	12/4/2013	77.3 (253.5)	1.8 (5.8)	89.6 (294)	14.5
299-E27-155[B]	2007	115.9 (380.4)	105.3 (345.4)	12/10/2013	85.7 (281.2)	10.7 (35)	102.4 (336)*	61.4
299-E27-21[TM]	2003	82.7 (271.4)	93.4 (306.4)	12/4/2013	83 (272.2)	10.4 (34.2)	100.3 (329)	60.2
299-E27-22[TM]	2003	69.5 (228.1)	81.7 (268)	12/4/2013	70.4 (231.1)	11.2 (36.9)	81.7 (268)*	100
299-E27-23[TM]	2003	83.4 (273.5)	94 (308.5)	12/4/2013	83.6 (274.4)	10.4 (34.1)	100 (328)	63.6
299-E27-24[B]	2010	89.8 (294.6)	95.9 (314.6)	12/13/2013	80.9 (265.3)	6.1 (20)	96 (315)*	40.2
299-E27-25[T]	2010	63.7 (209.1)	69.9 (229.2)	12/13/2013	65.1 (213.6)	4.8 (15.6)	75 (246)*	48.2

* Actual depth is based on drilling depth to basalt.

bgs = below ground surface

B = screened across the bottom of the aquifer

T = screened across the top of the aquifer

TM = screened across the top and middle part of the aquifer

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Appendix B

Groundwater Analytical Data for Waste Management Area C, December 2015

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Terms

DF	dilution factor
EQL	estimated quantitation limit
GC	gas chromatograph
GFAA	graphite-furnace atomic absorption
IDL	instrument detection limit
MDA	minimum detectable activity
MDL	method detection limit
MS	mass spectrometer
MSA	method of standard additions
NTU	nephelometric turbidity unit
PCB	polychlorinated biphenyl
PQL	practical quantitation limit
QC	quality control
RDL	required detection limit
TIC	tentatively identified compound

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The following are definitions of review qualifiers and laboratory qualifiers.

Notes:

The "Filtered" column indicates if the samples were (Y) or were not (N) filtered when they were collected in the field.

Review qualifiers:

A Chain of custody problem.

F The result is undergoing further review.

G The result as undergone further review and is considered good.

H The result exceeded hold time. When nitrate is flagged, and no flag is seen for nitrite from the sample number, the initial analysis exceeded the calibration range for nitrate, and the diluted analysis was rerun out of hold time. Generally, the result is acceptable as long as the sample was refrigerated prior to the rerun.

Y The result as undergone further review and is considered suspect.

Lab qualifiers:

* INORGANICS – Duplicate analysis not within control limits.

+ INORGANICS – Correlation coefficient for method of standard additions (MSA) is < 0.995.

> WETCHEM – Result greater than quantifiable range or greater than upper limit of the analysis range.

A ORGANICS – Valid for tentatively identified compounds (TICs) only: the TIC is a suspected aldol-condensation product.

B INORGANICS and WETCHEM – The analyte was detected at a value less than the contract required detection limit (RDL) but greater than or equal to the instrument detection limit/method detection limit (IDL/MDL) (as appropriate).

B flag (INORGANIC and WETCHEM) – [analyte] ≥ MDL

< Estimated quantitation limit (EQL)

= 5 times or 10 times the MDL

ORGANICS – The analyte was detected in both the associated quality control (QC) blank and in the sample.

RADIONUCLIDES – The associated QC sample blank has a result >= 2 times the minimum detectable activity (MDA) and, after corrections, result is >= MDA for this sample.

C INORGANICS/WETCHEM – The analyte was detected in both the sample and the associated QC blank, and the sample concentration was <= 5 times the blank concentration.

ORGANICS (PESTICIDE only) – The identification of a pesticide confirmed by gas chromatograph/mass spectrometer (GC/MS).

D ALL – Analyte was reported at a secondary dilution factor (DF), typically DF > 1 (i.e., the primary preparation required dilution either to bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.

E INORGANICS – Reported value is estimated because of interference.

ORGANICS – Concentration exceeds the calibration range of the GC/MS.

J ORGANICS – Estimated value: (1) constituent detected at a level less than the RDL or practical quantitation limit (PQL) and greater than or equal to the MDL, and (2) estimated concentration for TICs.

M INORGANICS – Duplicate precision criteria not met.

N ALL (except GC/MS based analysis) – Spike and/or spike duplicate sample recovery is outside control limits.

ORGANICS (GC/MS only) – Presumptive evidence of compound based on mass spectral library search.

P ORGANICS (polychlorinated biphenyl [PCB] only) – Aroclor target analyte with greater than 25 percent difference between column analyses.

Q ORGANICS (dioxins and PCB-congeners only) – Estimated maximum concentration. Used if one of the qualitative identification criteria is not met (e.g., chlorine isotopic ratios outside of theoretical range).

S INORGANICS – Reported value determined by MSA.

T ORGANICS (GC/MS only) – Spike and/or spike duplicate sample recovery is outside of control limits.

U ALL – Analyzed for but not detected above limiting criteria. Limiting criteria may be any of the following: value reported < 0, value reported < counting error, value reported < total analytical error, or value_rptd <=contract MDL/IDL/MDA/PQL. Note: When another qualifier accompanies a “U” qualifier, the result is always considered nondetected. The qualifier combinations “UJ” and “UL” indicate that the result was nondetected, but the detection limit (i.e., value reported in the VALUE_RPTD or MIN_DETECTABLE_ACTIVITY [rad analysis only] fields) was estimated.

W INORGANICS – Post-digestion spike recovery for graphite-furnace atomic absorption (GFAA) out of control limit. Sample absorbency < 50 percent of spike absorbency.

X ALL – The result-specific translation of this qualifier code is provided in the hardcopy data report and/or case narrative. Additional result-specific translation information may also be found in the RESULT_COMMENT field for this record.

Y Same as X if more than one flag is required.

Z Same as X and Y if more than two flags are required.

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B33CY9	12/14/2015	N	Alkalinity	113,000	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Aluminum	19	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Aluminum	19	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Antimony	0.45	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Antimony	0.54	µg/L		
299-E27-12	B33HV3	12/14/2015	N	Antimony-125	1.51	pCi/L	U	
299-E27-12	B33D00	12/14/2015	Y	Arsenic	6.8	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Arsenic	5.9	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Barium	36	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Barium	37	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Beryllium	0.14	µg/L	U	
299-E27-12	B33Y12	12/14/2015	N	Beryllium	0.14	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Boron	8	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Boron	6.8	µg/L	U	
299-E27-12	B33Y12	12/14/2015	N	Cadmium	0.13	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Cadmium	0.13	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Calcium	46,000	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Calcium	46,000	µg/L		
299-E27-12	B33HV3	12/14/2015	N	Cesium-134	-0.0162	pCi/L	U	
299-E27-12	B33HV3	12/14/2015	N	Cesium-137	-0.178	pCi/L	U	
299-E27-12	B33CY8	12/14/2015	N	Chloride	12,000	µg/L	D	
299-E27-12	B33Y12	12/14/2015	N	Chromium	10	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Chromium	1.6	µg/L	BC	
299-E27-12	B33D00	12/14/2015	Y	Cobalt	0.43	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Cobalt	0.21	µg/L	U	
299-E27-12	B33HV3	12/14/2015	N	Cobalt-60	0.783	pCi/L	U	
299-E27-12	B33D00	12/14/2015	Y	Copper	2	µg/L	U	
299-E27-12	B33Y12	12/14/2015	N	Copper	2	µg/L	U	
299-E27-12	B33CY9	12/14/2015	N	Cyanide	2.9	µg/L	U	
299-E27-12	B33HV3	12/14/2015	N	Europium-152	0.402	pCi/L	U	
299-E27-12	B33HV3	12/14/2015	N	Europium-154	-0.888	pCi/L	U	
299-E27-12	B33HV3	12/14/2015	N	Europium-155	0.37	pCi/L	U	
299-E27-12	B33CY8	12/14/2015	N	Fluoride	240	µg/L	D	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B33HV3	12/14/2015	N	Gross beta	5.42	pCi/L		
299-E27-12	B33Y12	12/14/2015	N	Iron	70	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Iron	16	µg/L	U	
299-E27-12	B33Y12	12/14/2015	N	Lead	0.2	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Lead	0.2	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Magnesium	13,000	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Magnesium	14,000	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Manganese	1.3	µg/L	B	
299-E27-12	B33D00	12/14/2015	Y	Manganese	1.1	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Molybdenum	1.8	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Molybdenum	2	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Nickel	4.9	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Nickel	7.5	µg/L		
299-E27-12	B33CY8	12/14/2015	N	Nitrate	8,850	µg/L	D	
299-E27-12	B33CY8	12/14/2015	N	Nitrite	125	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Potassium	6,200	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Potassium	6,300	µg/L		
299-E27-12	B33HV3	12/14/2015	N	Potassium-40	-17.1	pCi/L	U	
299-E27-12	B33D00	12/14/2015	Y	Selenium	3.5	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Selenium	2.8	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Silver	0.041	µg/L	U	
299-E27-12	B33Y12	12/14/2015	N	Silver	0.1	µg/L	C	
299-E27-12	B33D00	12/14/2015	Y	Sodium	12,000	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Sodium	12,000	µg/L		
299-E27-12	B33KM9	12/14/2015	N	Specific Conductance	386	µS/cm		
299-E27-12	B33KN2	12/14/2015	N	Specific Conductance	387	µS/cm		
299-E27-12	B33KN1	12/14/2015	N	Specific Conductance	386	µS/cm		
299-E27-12	B33KN0	12/14/2015	N	Specific Conductance	386	µS/cm		
299-E27-12	B33D00	12/14/2015	Y	Strontium	220	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Strontium	220	µg/L		
299-E27-12	B33CY8	12/14/2015	N	Sulfate	59,000	µg/L	D	
299-E27-12	B33HV3	12/14/2015	N	Technetium-99	9.69	pCi/L		
299-E27-12	B33KM9	12/14/2015	N	Temperature	16.6	Deg C		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B33KN2	12/14/2015	N	Temperature	16.6	Deg C		
299-E27-12	B33KN0	12/14/2015	N	Temperature	16.6	Deg C		
299-E27-12	B33KN1	12/14/2015	N	Temperature	16.6	Deg C		
299-E27-12	B33D00	12/14/2015	Y	Thallium	0.05	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Thallium	0.034	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Thorium	0.18	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Thorium	0.094	µg/L	U	
299-E27-12	B33D00	12/14/2015	Y	Tin	0.77	µg/L	BC	
299-E27-12	B33Y12	12/14/2015	N	Tin	0.68	µg/L	U	
299-E27-12	B33KN2	12/14/2015	N	Turbidity	1.15	NTU		
299-E27-12	B33KN1	12/14/2015	N	Turbidity	1.1	NTU		
299-E27-12	B33KN0	12/14/2015	N	Turbidity	1.39	NTU		
299-E27-12	B33KM9	12/14/2015	N	Turbidity	1.48	NTU		
299-E27-12	B33D00	12/14/2015	Y	Uranium	3.4	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Uranium	3.4	µg/L		
299-E27-12	B33Y12	12/14/2015	N	Vanadium	18	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Vanadium	18	µg/L		
299-E27-12	B33D00	12/14/2015	Y	Zinc	7.3	µg/L	B	
299-E27-12	B33Y12	12/14/2015	N	Zinc	16	µg/L	B	
299-E27-12	B33KN0	12/14/2015	N	pH Measurement	8.23	unitless		
299-E27-12	B33KM9	12/14/2015	N	pH Measurement	8.24	unitless		
299-E27-12	B33KN2	12/14/2015	N	pH Measurement	8.22	unitless		
299-E27-12	B33KN1	12/14/2015	N	pH Measurement	8.22	unitless		
299-E27-13	B33D01	12/14/2015	N	Alkalinity	102,000	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Aluminum	15	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Aluminum	15	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Antimony	1	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Antimony	1	µg/L	U	
299-E27-13	B33HV6	12/14/2015	N	Antimony-125	-5.72	pCi/L	U	
299-E27-13	B33D01	12/14/2015	N	Arsenic	6.5	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Arsenic	6.83	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Barium	41.7	µg/L		
299-E27-13	B33D01	12/14/2015	N	Barium	41.2	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-13	B33D03	12/14/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Beryllium	0.2	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Boron	15	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Boron	15	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Cadmium	0.11	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Cadmium	0.11	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Calcium	52,600	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Calcium	52,900	µg/L		
299-E27-13	B33HV6	12/14/2015	N	Cesium-134	-0.0055	pCi/L	U	
299-E27-13	B33HV6	12/14/2015	N	Cesium-137	-1.52	pCi/L	U	
299-E27-13	B33D02	12/14/2015	N	Chloride	17,000	µg/L	D	
299-E27-13	B33D01	12/14/2015	N	Chromium	13.3	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Chromium	5	µg/L	B	
299-E27-13	B33D01	12/14/2015	N	Cobalt	0.126	µg/L	B	
299-E27-13	B33D03	12/14/2015	Y	Cobalt	0.1	µg/L	U	
299-E27-13	B33HV6	12/14/2015	N	Cobalt-60	0.552	pCi/L	U	
299-E27-13	B33D01	12/14/2015	N	Copper	1.01	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Copper	0.35	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Cyanide	1.67	µg/L	U	
299-E27-13	B33HV6	12/14/2015	N	Europium-152	9.15	pCi/L	U	
299-E27-13	B33HV6	12/14/2015	N	Europium-154	14.1	pCi/L	U	
299-E27-13	B33HV6	12/14/2015	N	Europium-155	14.9	pCi/L	U	
299-E27-13	B33D02	12/14/2015	N	Fluoride	240	µg/L	D	
299-E27-13	B33HV6	12/14/2015	N	Gross beta	4,150	pCi/L		
299-E27-13	B33D01	12/14/2015	N	Iron	40.4	µg/L	B	
299-E27-13	B33D03	12/14/2015	Y	Iron	30	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Lead	0.5	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Lead	0.5	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Magnesium	15,200	µg/L		
299-E27-13	B33D01	12/14/2015	N	Magnesium	14,900	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Manganese	1	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Manganese	1.57	µg/L	B	
299-E27-13	B33D01	12/14/2015	N	Molybdenum	2.22	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-13	B33D03	12/14/2015	Y	Molybdenum	2.16	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Nickel	2.82	µg/L		
299-E27-13	B33D01	12/14/2015	N	Nickel	5.68	µg/L		
299-E27-13	B33D02	12/14/2015	N	Nitrate	20,400	µg/L	D	
299-E27-13	B33D02	12/14/2015	N	Nitrite	125	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Potassium	6,930	µg/L		
299-E27-13	B33D01	12/14/2015	N	Potassium	6,820	µg/L		
299-E27-13	B33HV6	12/14/2015	N	Potassium-40	1.07	pCi/L	U	
299-E27-13	B33D01	12/14/2015	N	Selenium	5.36	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Selenium	5.91	µg/L		
299-E27-13	B33D01	12/14/2015	N	Silver	0.1	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Silver	0.1	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Sodium	12,800	µg/L		
299-E27-13	B33D01	12/14/2015	N	Sodium	12,600	µg/L		
299-E27-13	B33KN3	12/14/2015	N	Specific Conductance	475	µS/cm		
299-E27-13	B33KN5	12/14/2015	N	Specific Conductance	474	µS/cm		
299-E27-13	B33KN6	12/14/2015	N	Specific Conductance	474	µS/cm		
299-E27-13	B33KN4	12/14/2015	N	Specific Conductance	474	µS/cm		
299-E27-13	B33D03	12/14/2015	Y	Strontium	283	µg/L		
299-E27-13	B33D01	12/14/2015	N	Strontium	281	µg/L		
299-E27-13	B33D02	12/14/2015	N	Sulfate	92,000	µg/L	D	
299-E27-13	B33HV6	12/14/2015	N	Technetium-99	6,910	pCi/L		
299-E27-13	B33KN3	12/14/2015	N	Temperature	17	Deg C		
299-E27-13	B33KN4	12/14/2015	N	Temperature	17	Deg C		
299-E27-13	B33KN5	12/14/2015	N	Temperature	17	Deg C		
299-E27-13	B33KN6	12/14/2015	N	Temperature	17	Deg C		
299-E27-13	B33D01	12/14/2015	N	Thallium	0.45	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Thallium	0.45	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Thorium	0.383	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Thorium	0.383	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Tin	1	µg/L	U	
299-E27-13	B33D03	12/14/2015	Y	Tin	1	µg/L	U	
299-E27-13	B33KN3	12/14/2015	N	Turbidity	1.25	NTU		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-13	B33KN5	12/14/2015	N	Turbidity	2.04	NTU		
299-E27-13	B33KN6	12/14/2015	N	Turbidity	2.25	NTU		
299-E27-13	B33KN4	12/14/2015	N	Turbidity	0.96	NTU		
299-E27-13	B33D03	12/14/2015	Y	Uranium	3.56	µg/L		
299-E27-13	B33D01	12/14/2015	N	Uranium	3.64	µg/L		
299-E27-13	B33D01	12/14/2015	N	Vanadium	19.6	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Vanadium	19.5	µg/L		
299-E27-13	B33D03	12/14/2015	Y	Zinc	3.5	µg/L	U	
299-E27-13	B33D01	12/14/2015	N	Zinc	3.5	µg/L	U	
299-E27-13	B33KN3	12/14/2015	N	pH Measurement	8.27	unitless		
299-E27-13	B33KN4	12/14/2015	N	pH Measurement	8.27	unitless		
299-E27-13	B33KN5	12/14/2015	N	pH Measurement	8.27	unitless		
299-E27-13	B33KN6	12/14/2015	N	pH Measurement	8.26	unitless		
299-E27-14	B33D07	12/8/2015	N	Alkalinity	81,000	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Aluminum	17.3	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Aluminum	96.4	µg/L	C	
299-E27-14	B33D09	12/8/2015	Y	Antimony	1.7	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Antimony	1.7	µg/L	U	
299-E27-14	B33HV9	12/8/2015	N	Antimony-125	0.211	pCi/L	U	
299-E27-14	B33D09	12/8/2015	Y	Arsenic	7.4	µg/L	B	
299-E27-14	B33D07	12/8/2015	N	Arsenic	7.3	µg/L	B	
299-E27-14	B33D09	12/8/2015	Y	Barium	103	µg/L		
299-E27-14	B33D07	12/8/2015	N	Barium	104	µg/L		
299-E27-14	B33D07	12/8/2015	N	Beryllium	0.35	µg/L	U	
299-E27-14	B33D09	12/8/2015	Y	Beryllium	0.35	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Boron	11.5	µg/L	BC	
299-E27-14	B33D09	12/8/2015	Y	Boron	10.3	µg/L	BC	
299-E27-14	B33D07	12/8/2015	N	Cadmium	0.1	µg/L	U	
299-E27-14	B33D09	12/8/2015	Y	Cadmium	0.1	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Calcium	135,000	µg/L	D	
299-E27-14	B33D09	12/8/2015	Y	Calcium	140,000	µg/L	D	
299-E27-14	B33HV9	12/8/2015	N	Cesium-134	-0.221	pCi/L	U	
299-E27-14	B33HV9	12/8/2015	N	Cesium-137	-0.346	pCi/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-14	B33D05	12/8/2015	N	Chloride	43,000	µg/L	D	
299-E27-14	B33D09	12/8/2015	Y	Chromium	5.9	µg/L	B	
299-E27-14	B33D07	12/8/2015	N	Chromium	14.6	µg/L		
299-E27-14	B33D07	12/8/2015	N	Cobalt	0.27	µg/L	B	
299-E27-14	B33D09	12/8/2015	Y	Cobalt	0.33	µg/L	B	
299-E27-14	B33HV9	12/8/2015	N	Cobalt-60	-0.364	pCi/L	U	
299-E27-14	B33D09	12/8/2015	Y	Copper	0.68	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Copper	1.2	µg/L		
299-E27-14	B33D07	12/8/2015	N	Cyanide	14.6	µg/L		
299-E27-14	B33KN8	12/8/2015	N	Dissolved Oxygen	8,470	µg/L		
299-E27-14	B33KN7	12/8/2015	N	Dissolved Oxygen	8,480	µg/L		
299-E27-14	B33KP0	12/8/2015	N	Dissolved Oxygen	8,460	µg/L		
299-E27-14	B33KN9	12/8/2015	N	Dissolved Oxygen	8,460	µg/L		
299-E27-14	B33HV9	12/8/2015	N	Europium-152	-0.48	pCi/L	U	
299-E27-14	B33HV9	12/8/2015	N	Europium-154	-0.273	pCi/L	U	
299-E27-14	B33HV9	12/8/2015	N	Europium-155	1.73	pCi/L	U	
299-E27-14	B33D05	12/8/2015	N	Fluoride	370	µg/L	BD	
299-E27-14	B33HV9	12/8/2015	N	Gross beta	669	pCi/L		Q
299-E27-14	B33D09	12/8/2015	Y	Iron	24.8	µg/L	B	
299-E27-14	B33D07	12/8/2015	N	Iron	159	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Lead	0.17	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Lead	0.27	µg/L	BC	
299-E27-14	B33D09	12/8/2015	Y	Magnesium	36,200	µg/L		
299-E27-14	B33D07	12/8/2015	N	Magnesium	34,600	µg/L	D	
299-E27-14	B33D07	12/8/2015	N	Manganese	5	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Manganese	1.2	µg/L	B	
299-E27-14	B33D07	12/8/2015	N	Molybdenum	2.7	µg/L	B	
299-E27-14	B33D09	12/8/2015	Y	Molybdenum	2.8	µg/L	B	
299-E27-14	B33D07	12/8/2015	N	Nickel	11.6	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Nickel	8.5	µg/L		
299-E27-14	B33D05	12/8/2015	N	Nitrate	106,000	µg/L	D	Q
299-E27-14	B33D05	12/8/2015	N	Nitrite	624	µg/L	U	
299-E27-14	B33KN7	12/8/2015	N	Oxidation Reduction Potential	257.8	RmV		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-14	B33KN9	12/8/2015	N	Oxidation Reduction Potential	257.2	RmV		
299-E27-14	B33KN8	12/8/2015	N	Oxidation Reduction Potential	257.4	RmV		
299-E27-14	B33KP0	12/8/2015	N	Oxidation Reduction Potential	256.3	RmV		
299-E27-14	B33D09	12/8/2015	Y	Potassium	9,800	µg/L		
299-E27-14	B33D07	12/8/2015	N	Potassium	10,400	µg/L		
299-E27-14	B33HV9	12/8/2015	N	Potassium-40	-14.7	pCi/L	U	
299-E27-14	B33D09	12/8/2015	Y	Selenium	20.8	µg/L		
299-E27-14	B33D07	12/8/2015	N	Selenium	19.2	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Silver	0.82	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Silver	0.82	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Sodium	23,900	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Sodium	21,700	µg/L		
299-E27-14	B33KN7	12/8/2015	N	Specific Conductance	1,022	µS/cm		
299-E27-14	B33KP0	12/8/2015	N	Specific Conductance	1,004	µS/cm		
299-E27-14	B33KN8	12/8/2015	N	Specific Conductance	1,010	µS/cm		
299-E27-14	B33KN9	12/8/2015	N	Specific Conductance	1,006	µS/cm		
299-E27-14	B33D07	12/8/2015	N	Strontium	818	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Strontium	811	µg/L		
299-E27-14	B33D05	12/8/2015	N	Sulfate	300,000	µg/L	D	
299-E27-14	B33HV9	12/8/2015	N	Technetium-99	2,620	pCi/L		
299-E27-14	B33KN9	12/8/2015	N	Temperature	18.6	Deg C		
299-E27-14	B33KN8	12/8/2015	N	Temperature	18.6	Deg C		
299-E27-14	B33KP0	12/8/2015	N	Temperature	18.6	Deg C		
299-E27-14	B33KN7	12/8/2015	N	Temperature	18.6	Deg C		
299-E27-14	B33D09	12/8/2015	Y	Thallium	0.55	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Thallium	0.55	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Thorium	0.55	µg/L	U	
299-E27-14	B33D09	12/8/2015	Y	Thorium	0.55	µg/L	U	
299-E27-14	B33D09	12/8/2015	Y	Tin	1.1	µg/L	U	
299-E27-14	B33D07	12/8/2015	N	Tin	1.1	µg/L	U	
299-E27-14	B33HV9	12/8/2015	N	Tritium	882	pCi/L		
299-E27-14	B33KN8	12/8/2015	N	Turbidity	4.76	NTU		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-14	B33KN7	12/8/2015	N	Turbidity	4.62	NTU		
299-E27-14	B33KN9	12/8/2015	N	Turbidity	4.7	NTU		
299-E27-14	B33KP0	12/8/2015	N	Turbidity	4.87	NTU		
299-E27-14	B33D07	12/8/2015	N	Uranium	9	µg/L		
299-E27-14	B33D09	12/8/2015	Y	Uranium	9.2	µg/L		
299-E27-14	B33D07	12/8/2015	N	Vanadium	15.3	µg/L	B	
299-E27-14	B33D09	12/8/2015	Y	Vanadium	16.9	µg/L	B	
299-E27-14	B33D07	12/8/2015	N	Zinc	13	µg/L	B	
299-E27-14	B33D09	12/8/2015	Y	Zinc	9.3	µg/L	U	
299-E27-14	B33KN9	12/8/2015	N	pH Measurement	7.95	unitless		
299-E27-14	B33KP0	12/8/2015	N	pH Measurement	7.95	unitless		
299-E27-14	B33KN8	12/8/2015	N	pH Measurement	7.94	unitless		
299-E27-14	B33KN7	12/8/2015	N	pH Measurement	7.94	unitless		
299-E27-15	B33D10	12/10/2015	N	Alkalinity	215,000	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Aluminum	15	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Aluminum	15	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Antimony	1	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Antimony	1	µg/L	U	
299-E27-15	B33HW3	12/10/2015	N	Antimony-125	-0.242	pCi/L	U	
299-E27-15	B33D10	12/10/2015	N	Arsenic	6.68	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Arsenic	6.63	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Barium	38.8	µg/L		
299-E27-15	B33D10	12/10/2015	N	Barium	39.1	µg/L		
299-E27-15	B33D10	12/10/2015	N	Beryllium	0.2	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Boron	15	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Boron	15	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Cadmium	0.11	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Cadmium	0.11	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Calcium	48,100	µg/L		
299-E27-15	B33D10	12/10/2015	N	Calcium	48,100	µg/L		
299-E27-15	B33HW3	12/10/2015	N	Cesium-134	0.548	pCi/L	U	
299-E27-15	B33HW3	12/10/2015	N	Cesium-137	-0.387	pCi/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-15	B33D11	12/10/2015	N	Chloride	16,000	µg/L	D	
299-E27-15	B33D12	12/10/2015	Y	Chromium	3.13	µg/L	B	
299-E27-15	B33D10	12/10/2015	N	Chromium	21.2	µg/L		
299-E27-15	B33D10	12/10/2015	N	Cobalt	0.206	µg/L	B	
299-E27-15	B33D12	12/10/2015	Y	Cobalt	0.829	µg/L	B	
299-E27-15	B33HW3	12/10/2015	N	Cobalt-60	-0.989	pCi/L	U	
299-E27-15	B33D12	12/10/2015	Y	Copper	0.35	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Copper	1.27	µg/L		
299-E27-15	B33D10	12/10/2015	N	Cyanide	1.67	µg/L	U	
299-E27-15	B33HW3	12/10/2015	N	Europium-152	2.55	pCi/L	U	
299-E27-15	B33HW3	12/10/2015	N	Europium-154	-5.09	pCi/L	U	
299-E27-15	B33HW3	12/10/2015	N	Europium-155	6.7	pCi/L	U	
299-E27-15	B33D11	12/10/2015	N	Fluoride	240	µg/L	D	
299-E27-15	B33HW3	12/10/2015	N	Gross beta	15.8	pCi/L		
299-E27-15	B33D10	12/10/2015	N	Iron	75.5	µg/L	B	
299-E27-15	B33D12	12/10/2015	Y	Iron	48.1	µg/L	B	
299-E27-15	B33D10	12/10/2015	N	Lead	0.5	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Lead	0.5	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Magnesium	16,700	µg/L		
299-E27-15	B33D10	12/10/2015	N	Magnesium	16,600	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Manganese	2.82	µg/L	B	
299-E27-15	B33D10	12/10/2015	N	Manganese	3	µg/L	B	
299-E27-15	B33D10	12/10/2015	N	Molybdenum	2.59	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Molybdenum	2.48	µg/L		
299-E27-15	B33D10	12/10/2015	N	Nickel	19.4	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Nickel	12.5	µg/L		
299-E27-15	B33D11	12/10/2015	N	Nitrate	15,500	µg/L	D	Q
299-E27-15	B33D11	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-15	B33KP2	12/10/2015	N	Oxidation Reduction Potential	76.1	mV		
299-E27-15	B33KP4	12/10/2015	N	Oxidation Reduction Potential	78	mV		
299-E27-15	B33KP3	12/10/2015	N	Oxidation Reduction Potential	77.8	mV		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-15	B33KP1	12/10/2015	N	Oxidation Reduction Potential	77	mV		
299-E27-15	B33D12	12/10/2015	Y	Potassium	7,180	µg/L		
299-E27-15	B33D10	12/10/2015	N	Potassium	7,250	µg/L		
299-E27-15	B33HW3	12/10/2015	N	Potassium-40	2.13	pCi/L	U	
299-E27-15	B33D12	12/10/2015	Y	Selenium	6.55	µg/L		
299-E27-15	B33D10	12/10/2015	N	Selenium	6.21	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Silver	0.1	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Silver	0.1	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Sodium	14,300	µg/L		
299-E27-15	B33D10	12/10/2015	N	Sodium	14,400	µg/L		
299-E27-15	B33KP4	12/10/2015	N	Specific Conductance	455	µS/cm		
299-E27-15	B33KP3	12/10/2015	N	Specific Conductance	454	µS/cm		
299-E27-15	B33KP1	12/10/2015	N	Specific Conductance	453	µS/cm		
299-E27-15	B33KP2	12/10/2015	N	Specific Conductance	454	µS/cm		
299-E27-15	B33D10	12/10/2015	N	Strontium	293	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Strontium	290	µg/L		
299-E27-15	B33D11	12/10/2015	N	Sulfate	88,000	µg/L	D	
299-E27-15	B33HW3	12/10/2015	N	Technetium-99	13.3	pCi/L		
299-E27-15	B33KP1	12/10/2015	N	Temperature	18.4	Deg C		
299-E27-15	B33KP4	12/10/2015	N	Temperature	18.3	Deg C		
299-E27-15	B33KP3	12/10/2015	N	Temperature	18.3	Deg C		
299-E27-15	B33KP2	12/10/2015	N	Temperature	18.4	Deg C		
299-E27-15	B33D12	12/10/2015	Y	Thallium	0.45	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Thallium	0.45	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Thorium	0.383	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Thorium	0.383	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Tin	1	µg/L	U	
299-E27-15	B33D12	12/10/2015	Y	Tin	1	µg/L	U	
299-E27-15	B33KP2	12/10/2015	N	Turbidity	1.18	NTU		
299-E27-15	B33KP1	12/10/2015	N	Turbidity	1.37	NTU		
299-E27-15	B33KP4	12/10/2015	N	Turbidity	1.29	NTU		
299-E27-15	B33KP3	12/10/2015	N	Turbidity	0.99	NTU		
299-E27-15	B33D12	12/10/2015	Y	Uranium	3.42	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-15	B33D10	12/10/2015	N	Uranium	3.52	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Vanadium	17.9	µg/L		
299-E27-15	B33D10	12/10/2015	N	Vanadium	18.7	µg/L		
299-E27-15	B33D12	12/10/2015	Y	Zinc	3.5	µg/L	U	
299-E27-15	B33D10	12/10/2015	N	Zinc	3.5	µg/L	U	
299-E27-15	B33KP1	12/10/2015	N	pH Measurement	8.44	unitless		
299-E27-15	B33KP4	12/10/2015	N	pH Measurement	8.35	unitless		
299-E27-15	B33KP3	12/10/2015	N	pH Measurement	8.37	unitless		
299-E27-15	B33KP2	12/10/2015	N	pH Measurement	8.4	unitless		
299-E27-155	B33HW6	12/8/2015	N	1,1,1,2-Tetrachloroethane	0.09	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,1,1-Trichloroethane	0.07	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,1,2,2-Tetrachloroethane	0.1	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,1,2-Trichloroethane	0.15	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,1-Dichloroethane	0.07	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,1-Dichloroethene	0.08	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,2,3-Trichloropropane	0.15	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,2-Dibromo-3-chloropropane	0.41	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,2-Dibromoethane	0.13	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,2-Dichloroethane	0.1	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,2-Dichloroethene (Total)	0.15	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,2-Dichloropropane	0.1	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,4-Dichlorobenzene	0.12	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1,4-Dichlorobenzene	0.94	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	1-Butanol	12	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	2,4-Dichlorophenol	0.94	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	2-Butanone	0.52	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	2-Hexanone	0.22	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	2-Methylphenol (cresol, o-)	0.94	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	2-Nitrophenol	1.4	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	4-Methyl-2-pentanone	0.12	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B33HW6	12/8/2015	N	Acetone	0.34	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Acetonitrile	2	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Acrolein	2.8	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Acrylonitrile	0.58	µg/L	U	
299-E27-155	B33D13	12/8/2015	N	Alkalinity	161,000	µg/L		
299-E27-155	B33HW6	12/8/2015	N	Allyl Chloride	0.11	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Aluminum	19	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Aluminum	19	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Americium-241	0.376	pCi/L		
299-E27-155	B33KR3	12/8/2015	Y	Antimony	0.45	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Antimony	0.23	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Antimony-125	1.84	pCi/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Arsenic	4.6	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Arsenic	4	µg/L		
299-E27-155	B33KR3	12/8/2015	Y	Barium	62	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Barium	64	µg/L		
299-E27-155	B33HW6	12/8/2015	N	Benzene	0.06	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Beryllium	0.14	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Beryllium	0.14	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Bis(2-ethylhexyl) phthalate	1.8	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Boron	18	µg/L	B	
299-E27-155	B33KR3	12/8/2015	Y	Boron	18	µg/L	B	
299-E27-155	B33HW6	12/8/2015	N	Bromodichloromethane	0.09	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Bromoform	0.17	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Bromomethane	0.25	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Cadmium	0.13	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Cadmium	0.13	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Calcium	87,000	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Calcium	84,000	µg/L		
299-E27-155	B33HW6	12/8/2015	N	Carbon Disulfide	0.05	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Carbon Tetrachloride	0.13	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Carbon-14	-1.84	pCi/L	U	
299-E27-155	B33HW5	12/8/2015	N	Cesium-134	1.39	pCi/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B33HW5	12/8/2015	N	Cesium-137	0.855	pCi/L	U	
299-E27-155	B33JM6	12/8/2015	N	Chloride	23,000	µg/L	D	
299-E27-155	B33HW6	12/8/2015	N	Chlorobenzene	0.15	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Chloroethane	0.1	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Chloroform	0.37	µg/L	J	
299-E27-155	B33HW6	12/8/2015	N	Chloromethane	0.08	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Chloroprene	0.1	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Chromium	5.5	µg/L	B	
299-E27-155	B33KR3	12/8/2015	Y	Chromium	5.7	µg/L	B	
299-E27-155	B33Y16	12/8/2015	N	Cobalt	0.21	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Cobalt	0.21	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Cobalt-60	-0.404	pCi/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Copper	2	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Copper	2	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Cyanide	6.4	µg/L		
299-E27-155	B33HW6	12/8/2015	N	Dibromochloromethane	0.13	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Dibromomethane	0.21	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Dichlorodifluoromethane	0.08	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Ethyl Cyanide	1.4	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Ethyl Methacrylate	0.11	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Ethylbenzene	0.09	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Europium-152	0.938	pCi/L	U	
299-E27-155	B33HW5	12/8/2015	N	Europium-154	-0.773	pCi/L	U	
299-E27-155	B33HW5	12/8/2015	N	Europium-155	0.297	pCi/L	U	
299-E27-155	B33JM6	12/8/2015	N	Fluoride	200	µg/L	D	
299-E27-155	B33HW5	12/8/2015	N	Gross beta	356	pCi/L		Q
299-E27-155	B33HW7	12/8/2015	N	Hexavalent Chromium	5.1	µg/L		
299-E27-155	B33HW5	12/8/2015	N	Iodine-129	3.01	pCi/L		
299-E27-155	B33HW6	12/8/2015	N	Iodomethane	0.09	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Iron	38	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Iron	200	µg/L		
299-E27-155	B33HW6	12/8/2015	N	Isobutyl Alcohol	8.7	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Lead	0.2	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B33KR3	12/8/2015	Y	Lead	0.2	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Magnesium	26,000	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Magnesium	25,000	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Manganese	0.74	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Manganese	0.74	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Mercury	0.06	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Methacrylonitrile	0.5	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Methyl Methacrylate	0.26	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Methylene Chloride	0.27	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Molybdenum	1.2	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Molybdenum	0.97	µg/L	B	
299-E27-155	B33HW6	12/8/2015	N	Naphthalene	0.94	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Neptunium-237	0.0425	pCi/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Nickel	2.5	µg/L	BC	
299-E27-155	B33Y16	12/8/2015	N	Nickel	2.4	µg/L	BC	
299-E27-155	B33JM6	12/8/2015	N	Nitrate	66,400	µg/L	D	Q
299-E27-155	B33JM6	12/8/2015	N	Nitrite	125	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Pentachlorophenol	1.2	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Phenol	1.9	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Plutonium-238	0	pCi/L	U	
299-E27-155	B33HW5	12/8/2015	N	Plutonium-239/240	-0.0253	pCi/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Potassium	10,000	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Potassium	9,700	µg/L		
299-E27-155	B33HW5	12/8/2015	N	Potassium-40	-18.2	pCi/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Selenium	6.3	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Selenium	5.1	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Silver	0.05	µg/L	B	
299-E27-155	B33KR3	12/8/2015	Y	Silver	0.09	µg/L	B	
299-E27-155	B33KR3	12/8/2015	Y	Sodium	29,000	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Sodium	28,000	µg/L		
299-E27-155	B33HW4	12/8/2015	N	Specific Conductance	724	µS/cm		
299-E27-155	B33Y16	12/8/2015	N	Strontium	440	µg/L		
299-E27-155	B33KR3	12/8/2015	Y	Strontium	460	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B33HW5	12/8/2015	N	Strontium-90	0.0933	pCi/L	U	
299-E27-155	B33HW6	12/8/2015	N	Styrene	0.07	µg/L	U	
299-E27-155	B33JM6	12/8/2015	N	Sulfate	130,000	µg/L	D	
299-E27-155	B33HW5	12/8/2015	N	Technetium-99	1470	pCi/L		
299-E27-155	B33HW4	12/8/2015	N	Temperature	19.1	Deg C		
299-E27-155	B33HW6	12/8/2015	N	Tetrachloroethene	0.18	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Tetrahydrofuran	1.1	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Thallium	0.034	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Thallium	0.034	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Thorium	0.094	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Thorium	0.094	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Thorium-228	0.27	pCi/L		
299-E27-155	B33HW5	12/8/2015	N	Thorium-230	0.0329	pCi/L	U	
299-E27-155	B33HW5	12/8/2015	N	Thorium-232	0	pCi/L	U	
299-E27-155	B33Y16	12/8/2015	N	Tin	0.68	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Tin	0.68	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Toluene	0.07	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Trichloroethene	0.25	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Trichloromonofluoromethane	0.11	µg/L	U	
299-E27-155	B33HW5	12/8/2015	N	Tritium	4,350	pCi/L		
299-E27-155	B33HW4	12/8/2015	N	Turbidity	0.54	NTU		
299-E27-155	B33Y16	12/8/2015	N	Uranium	6.2	µg/L		
299-E27-155	B33KR3	12/8/2015	Y	Uranium	7	µg/L		
299-E27-155	B33KR3	12/8/2015	Y	Vanadium	15	µg/L		
299-E27-155	B33Y16	12/8/2015	N	Vanadium	14	µg/L		
299-E27-155	B33HW6	12/8/2015	N	Vinyl Acetate	0.18	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Vinyl Chloride	0.08	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	Xylenes (Total)	0.2	µg/L	U	
299-E27-155	B33Y16	12/8/2015	N	Zinc	7.1	µg/L	U	
299-E27-155	B33KR3	12/8/2015	Y	Zinc	7.1	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	*cis*-1,2-Dichloroethylene	0.09	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	*cis*-1,3-Dichloropropene	0.07	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B33HW4	12/8/2015	N	pH Measurement	7.77	unitless		
299-E27-155	B33HW6	12/8/2015	N	*trans*-1,2-Dichloroethylene	0.08	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	*trans*-1,3-Dichloropropene	0.08	µg/L	U	
299-E27-155	B33HW6	12/8/2015	N	*trans*-1,4-Dichloro-2-butene	0.29	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Alkalinity	99,000	µg/L		
299-E27-21	B33D16	12/8/2015	N	Alkalinity	100,000	µg/L		
299-E27-21	B33D15	12/8/2015	N	Aluminum	15	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Aluminum	15	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Aluminum	15	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Aluminum	15	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Antimony	1	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Antimony	1	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Antimony	1	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Antimony	1	µg/L	U	
299-E27-21	B33HW9	12/8/2015	N	Antimony-125	7.11	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Antimony-125	7.25	pCi/L	U	
299-E27-21	B33D15	12/8/2015	N	Arsenic	5.49	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Arsenic	5.53	µg/L		
299-E27-21	B33D16	12/8/2015	N	Arsenic	5.75	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Arsenic	6.02	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Barium	50.7	µg/L		
299-E27-21	B33D15	12/8/2015	N	Barium	50.7	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Barium	51.2	µg/L		
299-E27-21	B33D16	12/8/2015	N	Barium	52.1	µg/L		
299-E27-21	B33D16	12/8/2015	N	Beryllium	0.2	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Beryllium	0.2	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Boron	15	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Boron	15	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Boron	15	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Boron	15	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B33D15	12/8/2015	N	Cadmium	0.11	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Cadmium	0.11	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Cadmium	0.11	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Cadmium	0.11	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Calcium	83,700	µg/L		
299-E27-21	B33D16	12/8/2015	N	Calcium	85,000	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Calcium	86,300	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Calcium	84,600	µg/L		
299-E27-21	B33HX0	12/8/2015	N	Cesium-134	1.47	pCi/L	U	
299-E27-21	B33HW9	12/8/2015	N	Cesium-134	-0.399	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Cesium-137	0.525	pCi/L	U	
299-E27-21	B33HW9	12/8/2015	N	Cesium-137	-2.03	pCi/L	U	
299-E27-21	B33D17	12/8/2015	N	Chloride	25,000	µg/L	D	
299-E27-21	B33D18	12/8/2015	N	Chloride	25,000	µg/L	D	
299-E27-21	B33D19	12/8/2015	Y	Chromium	8.82	µg/L	B	
299-E27-21	B33D20	12/8/2015	Y	Chromium	9.01	µg/L	B	
299-E27-21	B33D16	12/8/2015	N	Chromium	9.19	µg/L	B	
299-E27-21	B33D15	12/8/2015	N	Chromium	9.3	µg/L	B	
299-E27-21	B33D15	12/8/2015	N	Cobalt	0.1	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Cobalt	0.1	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Cobalt	0.1	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Cobalt	0.166	µg/L	B	
299-E27-21	B33HW9	12/8/2015	N	Cobalt-60	0.103	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Cobalt-60	0.748	pCi/L	U	
299-E27-21	B33D15	12/8/2015	N	Copper	0.476	µg/L	B	
299-E27-21	B33D20	12/8/2015	Y	Copper	0.35	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Copper	0.35	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Copper	0.69	µg/L	B	
299-E27-21	B33D16	12/8/2015	N	Cyanide	2.09	µg/L	B	
299-E27-21	B33D15	12/8/2015	N	Cyanide	1.88	µg/L	B	
299-E27-21	B33HW9	12/8/2015	N	Europium-152	5.06	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Europium-152	-0.681	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Europium-154	1.67	pCi/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B33HW9	12/8/2015	N	Europium-154	0.317	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Europium-155	-5.74	pCi/L	U	
299-E27-21	B33HW9	12/8/2015	N	Europium-155	-0.894	pCi/L	U	
299-E27-21	B33D18	12/8/2015	N	Fluoride	210	µg/L	D	
299-E27-21	B33D17	12/8/2015	N	Fluoride	210	µg/L	D	
299-E27-21	B33HX0	12/8/2015	N	Gross beta	14,700	pCi/L		Q
299-E27-21	B33HW9	12/8/2015	N	Gross beta	14,100	pCi/L		Q
299-E27-21	B33D20	12/8/2015	Y	Iron	30	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Iron	30	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Iron	30	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Iron	30	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Lead	0.5	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Lead	0.5	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Lead	0.5	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Lead	0.5	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Magnesium	24,800	µg/L		
299-E27-21	B33D15	12/8/2015	N	Magnesium	24,200	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Magnesium	24,400	µg/L		
299-E27-21	B33D16	12/8/2015	N	Magnesium	24,500	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Manganese	1	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Manganese	1	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Manganese	1	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Manganese	1	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Molybdenum	1.77	µg/L	C	
299-E27-21	B33D19	12/8/2015	Y	Molybdenum	1.81	µg/L	C	
299-E27-21	B33D16	12/8/2015	N	Molybdenum	1.83	µg/L	C	
299-E27-21	B33D20	12/8/2015	Y	Molybdenum	1.84	µg/L	C	
299-E27-21	B33D16	12/8/2015	N	Nickel	0.5	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Nickel	0.5	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Nickel	0.5	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Nickel	0.5	µg/L	U	
299-E27-21	B33D18	12/8/2015	N	Nitrate	48,700	µg/L	D	Q
299-E27-21	B33D17	12/8/2015	N	Nitrate	48,700	µg/L	D	Q

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B33D18	12/8/2015	N	Nitrite	125	µg/L	U	
299-E27-21	B33D17	12/8/2015	N	Nitrite	125	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Potassium	9,120	µg/L		
299-E27-21	B33D15	12/8/2015	N	Potassium	8,810	µg/L		
299-E27-21	B33D16	12/8/2015	N	Potassium	8,970	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Potassium	8,940	µg/L		
299-E27-21	B33HW9	12/8/2015	N	Potassium-40	55.4	pCi/L	U	
299-E27-21	B33HX0	12/8/2015	N	Potassium-40	28.2	pCi/L	U	
299-E27-21	B33D16	12/8/2015	N	Selenium	12.8	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Selenium	12.2	µg/L		Q
299-E27-21	B33D19	12/8/2015	Y	Selenium	16.7	µg/L		Q
299-E27-21	B33D15	12/8/2015	N	Selenium	13.5	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Silver	0.1	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Silver	0.1	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Silver	0.1	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Silver	0.1	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Sodium	17,300	µg/L		
299-E27-21	B33D16	12/8/2015	N	Sodium	17,400	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Sodium	16,900	µg/L		
299-E27-21	B33D15	12/8/2015	N	Sodium	17,300	µg/L		
299-E27-21	B33HW8	12/8/2015	N	Specific Conductance	672	µS/cm		
299-E27-21	B33D19	12/8/2015	Y	Strontium	419	µg/L		
299-E27-21	B33D15	12/8/2015	N	Strontium	420	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Strontium	410	µg/L		
299-E27-21	B33D16	12/8/2015	N	Strontium	416	µg/L		
299-E27-21	B33D17	12/8/2015	N	Sulfate	170,000	µg/L	D	
299-E27-21	B33D18	12/8/2015	N	Sulfate	170,000	µg/L	D	
299-E27-21	B33HW9	12/8/2015	N	Technetium-99	26,700	pCi/L		
299-E27-21	B33HX0	12/8/2015	N	Technetium-99	25,000	pCi/L		
299-E27-21	B33HW8	12/8/2015	N	Temperature	18.4	Deg C		
299-E27-21	B33D19	12/8/2015	Y	Thallium	0.45	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Thallium	0.45	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Thallium	0.45	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B33D20	12/8/2015	Y	Thallium	0.45	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Thorium	0.383	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Thorium	0.383	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Thorium	0.383	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Thorium	0.383	µg/L	U	
299-E27-21	B33D15	12/8/2015	N	Tin	1	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Tin	1	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Tin	1	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Tin	1	µg/L	U	
299-E27-21	B33HW8	12/8/2015	N	Turbidity	0.21	NTU		
299-E27-21	B33D15	12/8/2015	N	Uranium	3.88	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Uranium	3.92	µg/L		
299-E27-21	B33D16	12/8/2015	N	Uranium	3.98	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Uranium	3.89	µg/L		
299-E27-21	B33D19	12/8/2015	Y	Vanadium	19.2	µg/L		
299-E27-21	B33D16	12/8/2015	N	Vanadium	19.6	µg/L		
299-E27-21	B33D20	12/8/2015	Y	Vanadium	20.3	µg/L		
299-E27-21	B33D15	12/8/2015	N	Vanadium	19.1	µg/L		
299-E27-21	B33D15	12/8/2015	N	Zinc	3.5	µg/L	U	
299-E27-21	B33D20	12/8/2015	Y	Zinc	3.5	µg/L	U	
299-E27-21	B33D16	12/8/2015	N	Zinc	3.5	µg/L	U	
299-E27-21	B33D19	12/8/2015	Y	Zinc	3.5	µg/L	U	
299-E27-21	B33HW8	12/8/2015	N	pH Measurement	7.96	unitless		
299-E27-22	B33D22	12/10/2015	N	Alkalinity	87,000	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Aluminum	19	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Aluminum	19	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Antimony	0.23	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Antimony	0.44	µg/L		
299-E27-22	B33HX2	12/10/2015	N	Antimony-125	-1.95	pCi/L	U	A
299-E27-22	B33Y15	12/10/2015	N	Arsenic	4.9	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Arsenic	6.2	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Barium	64	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Barium	61	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-22	B33D23	12/10/2015	Y	Beryllium	0.14	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Beryllium	0.14	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Boron	7.7	µg/L	B	
299-E27-22	B33Y15	12/10/2015	N	Boron	6.8	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Cadmium	0.13	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Cadmium	0.13	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Calcium	97,000	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Calcium	99,000	µg/L		
299-E27-22	B33HX2	12/10/2015	N	Cesium-134	0.595	pCi/L	U	A
299-E27-22	B33HX2	12/10/2015	N	Cesium-137	0.942	pCi/L	U	A
299-E27-22	B33D21	12/10/2015	N	Chloride	41,000	µg/L	D	
299-E27-22	B33D23	12/10/2015	Y	Chromium	3.8	µg/L	BC	
299-E27-22	B33Y15	12/10/2015	N	Chromium	8.9	µg/L	B	
299-E27-22	B33Y15	12/10/2015	N	Cobalt	0.21	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Cobalt	0.32	µg/L	B	
299-E27-22	B33HX2	12/10/2015	N	Cobalt-60	0.166	pCi/L	U	A
299-E27-22	B33D23	12/10/2015	Y	Copper	2	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Copper	2	µg/L	U	
299-E27-22	B33D22	12/10/2015	N	Cyanide	5.2	µg/L		
299-E27-22	B33HX2	12/10/2015	N	Europium-152	1.44	pCi/L	U	A
299-E27-22	B33HX2	12/10/2015	N	Europium-154	-2.15	pCi/L	U	A
299-E27-22	B33HX2	12/10/2015	N	Europium-155	-2.7	pCi/L	U	A
299-E27-22	B33D21	12/10/2015	N	Fluoride	210	µg/L	D	
299-E27-22	B33HX2	12/10/2015	N	Gross beta	12.5	pCi/L		A
299-E27-22	B33D23	12/10/2015	Y	Iron	16	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Iron	29	µg/L	B	
299-E27-22	B33D23	12/10/2015	Y	Lead	0.2	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Lead	0.2	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Magnesium	27,000	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Magnesium	28,000	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Manganese	0.91	µg/L	B	
299-E27-22	B33Y15	12/10/2015	N	Manganese	0.74	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Molybdenum	2.2	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-22	B33Y15	12/10/2015	N	Molybdenum	2.2	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Nickel	3.3	µg/L	B	
299-E27-22	B33D23	12/10/2015	Y	Nickel	5.6	µg/L		
299-E27-22	B33D21	12/10/2015	N	Nitrate	39,800	µg/L	D	Q
299-E27-22	B33D21	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Potassium	9,600	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Potassium	9,300	µg/L		
299-E27-22	B33HX2	12/10/2015	N	Potassium-40	0.0564	pCi/L	U	A
299-E27-22	B33Y15	12/10/2015	N	Selenium	11	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Selenium	13	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Silver	0.041	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Silver	0.041	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Sodium	18,000	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Sodium	18,000	µg/L		
299-E27-22	B33HX1	12/10/2015	N	Specific Conductance	774	µS/cm		
299-E27-22	B33D23	12/10/2015	Y	Strontium	500	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Strontium	500	µg/L		
299-E27-22	B33D21	12/10/2015	N	Sulfate	220,000	µg/L	D	
299-E27-22	B33HX2	12/10/2015	N	Technetium-99	25.8	pCi/L		A
299-E27-22	B33HX1	12/10/2015	N	Temperature	18.4	Deg C		
299-E27-22	B33Y15	12/10/2015	N	Thallium	0.034	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Thallium	0.2	µg/L	B	
299-E27-22	B33Y15	12/10/2015	N	Thorium	0.094	µg/L	U	
299-E27-22	B33D23	12/10/2015	Y	Thorium	0.24	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Tin	0.9	µg/L	BC	
299-E27-22	B33D23	12/10/2015	Y	Tin	1.5	µg/L	BC	
299-E27-22	B33HX1	12/10/2015	N	Turbidity	0.33	NTU		
299-E27-22	B33Y15	12/10/2015	N	Uranium	5.8	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Uranium	5.7	µg/L		
299-E27-22	B33Y15	12/10/2015	N	Vanadium	15	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Vanadium	15	µg/L		
299-E27-22	B33D23	12/10/2015	Y	Zinc	7.1	µg/L	U	
299-E27-22	B33Y15	12/10/2015	N	Zinc	7.1	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-22	B33HX1	12/10/2015	N	pH Measurement	7.99	unitless		
299-E27-23	B33D24	12/10/2015	N	Alkalinity	226,000	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Aluminum	15	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Aluminum	15	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Antimony	1	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Antimony	1	µg/L	U	
299-E27-23	B33HX5	12/10/2015	N	Antimony-125	-0.02	pCi/L	U	
299-E27-23	B33D26	12/10/2015	Y	Arsenic	5.48	µg/L		
299-E27-23	B33D24	12/10/2015	N	Arsenic	6.15	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Barium	52.3	µg/L		
299-E27-23	B33D24	12/10/2015	N	Barium	55	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Beryllium	0.2	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Boron	15	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Boron	15	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Cadmium	0.11	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Cadmium	0.11	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Calcium	74,300	µg/L		
299-E27-23	B33D24	12/10/2015	N	Calcium	74,900	µg/L		
299-E27-23	B33HX5	12/10/2015	N	Cesium-134	-0.88	pCi/L	U	
299-E27-23	B33HX5	12/10/2015	N	Cesium-137	-0.44	pCi/L	U	
299-E27-23	B33D25	12/10/2015	N	Chloride	23,300	µg/L	D	
299-E27-23	B33D26	12/10/2015	Y	Chromium	4	µg/L	B	
299-E27-23	B33D24	12/10/2015	N	Chromium	4.25	µg/L	B	
299-E27-23	B33D26	12/10/2015	Y	Cobalt	0.466	µg/L	B	
299-E27-23	B33D24	12/10/2015	N	Cobalt	0.282	µg/L	B	
299-E27-23	B33HX5	12/10/2015	N	Cobalt-60	0.41	pCi/L	U	
299-E27-23	B33D26	12/10/2015	Y	Copper	0.45	µg/L	B	
299-E27-23	B33D24	12/10/2015	N	Copper	0.632	µg/L	B	
299-E27-23	B33D24	12/10/2015	N	Cyanide	1.98	µg/L	B	
299-E27-23	B33HX5	12/10/2015	N	Europium-152	4.15	pCi/L	U	
299-E27-23	B33HX5	12/10/2015	N	Europium-154	-1.61	pCi/L	U	
299-E27-23	B33HX5	12/10/2015	N	Europium-155	-2.65	pCi/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-23	B33D25	12/10/2015	N	Fluoride	195	µg/L	B	
299-E27-23	B33HX5	12/10/2015	N	Gross beta	2,230	pCi/L		
299-E27-23	B33D24	12/10/2015	N	Iron	30	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Iron	30	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Lead	0.5	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Lead	0.5	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Magnesium	21,300	µg/L		
299-E27-23	B33D24	12/10/2015	N	Magnesium	20,900	µg/L		
299-E27-23	B33D24	12/10/2015	N	Manganese	3.03	µg/L	B	
299-E27-23	B33D26	12/10/2015	Y	Manganese	3.61	µg/L	B	
299-E27-23	B33D26	12/10/2015	Y	Molybdenum	1.73	µg/L		
299-E27-23	B33D24	12/10/2015	N	Molybdenum	1.65	µg/L		
299-E27-23	B33D24	12/10/2015	N	Nickel	18.1	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Nickel	20.3	µg/L		
299-E27-23	B33D25	12/10/2015	N	Nitrate	31,800	µg/L	D	
299-E27-23	B33D25	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Potassium	8,180	µg/L		
299-E27-23	B33D24	12/10/2015	N	Potassium	8,240	µg/L		
299-E27-23	B33HX5	12/10/2015	N	Potassium-40	0.00	pCi/L	UX	
299-E27-23	B33D26	12/10/2015	Y	Selenium	7.29	µg/L		
299-E27-23	B33D24	12/10/2015	N	Selenium	6.61	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Silver	0.1	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Silver	0.1	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Sodium	15,300	µg/L		
299-E27-23	B33D24	12/10/2015	N	Sodium	15,400	µg/L		
299-E27-23	B33KP7	12/10/2015	N	Specific Conductance	627	µS/cm		
299-E27-23	B33KP5	12/10/2015	N	Specific Conductance	627	µS/cm		
299-E27-23	B33KP8	12/10/2015	N	Specific Conductance	8	µS/cm		
299-E27-23	B33KP6	12/10/2015	N	Specific Conductance	627	µS/cm		
299-E27-23	B33D24	12/10/2015	N	Strontium	372	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Strontium	369	µg/L		
299-E27-23	B33D25	12/10/2015	N	Sulfate	147,000	µg/L	D	
299-E27-23	B33HX5	12/10/2015	N	Technetium-99	4,010	pCi/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-23	B33KP7	12/10/2015	N	Temperature	18.9	Deg C		
299-E27-23	B33KP6	12/10/2015	N	Temperature	18.9	Deg C		
299-E27-23	B33KP5	12/10/2015	N	Temperature	18.9	Deg C		
299-E27-23	B33KP8	12/10/2015	N	Temperature	19	Deg C		
299-E27-23	B33D24	12/10/2015	N	Thallium	0.45	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Thallium	0.45	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Thorium	0.383	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Thorium	0.383	µg/L	U	
299-E27-23	B33D24	12/10/2015	N	Tin	1	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Tin	1	µg/L	U	
299-E27-23	B33KP7	12/10/2015	N	Turbidity	0.15	NTU		
299-E27-23	B33KP6	12/10/2015	N	Turbidity	0.16	NTU		
299-E27-23	B33KP5	12/10/2015	N	Turbidity	0.16	NTU		
299-E27-23	B33KP8	12/10/2015	N	Turbidity	0.19	NTU		
299-E27-23	B33D24	12/10/2015	N	Uranium	5.21	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Uranium	5.19	µg/L		
299-E27-23	B33D24	12/10/2015	N	Vanadium	19.6	µg/L		
299-E27-23	B33D26	12/10/2015	Y	Vanadium	18.8	µg/L		
299-E27-23	B33D24	12/10/2015	N	Zinc	3.5	µg/L	U	
299-E27-23	B33D26	12/10/2015	Y	Zinc	3.5	µg/L	U	
299-E27-23	B33KP8	12/10/2015	N	pH Measurement	7.94	unitless		
299-E27-23	B33KP7	12/10/2015	N	pH Measurement	7.93	unitless		
299-E27-23	B33KP6	12/10/2015	N	pH Measurement	7.93	unitless		
299-E27-23	B33KP5	12/10/2015	N	pH Measurement	7.93	unitless		
299-E27-24	B33D28	12/8/2015	N	Alkalinity	86,000	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Aluminum	17.3	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Aluminum	28.9	µg/L	BC	
299-E27-24	B33D28	12/8/2015	N	Antimony	1.7	µg/L	U	
299-E27-24	B33D29	12/8/2015	Y	Antimony	1.7	µg/L	U	
299-E27-24	B33HX7	12/8/2015	N	Antimony-125	0.412	pCi/L	U	
299-E27-24	B33D28	12/8/2015	N	Arsenic	5.5	µg/L	B	
299-E27-24	B33D29	12/8/2015	Y	Arsenic	7.1	µg/L	B	
299-E27-24	B33D29	12/8/2015	Y	Barium	102	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-24	B33D28	12/8/2015	N	Barium	74.3	µg/L		
299-E27-24	B33D28	12/8/2015	N	Beryllium	0.35	µg/L	U	
299-E27-24	B33D29	12/8/2015	Y	Beryllium	0.35	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Boron	17.9	µg/L	BC	
299-E27-24	B33D29	12/8/2015	Y	Boron	10.3	µg/L	BC	
299-E27-24	B33D29	12/8/2015	Y	Cadmium	0.12	µg/L	B	
299-E27-24	B33D28	12/8/2015	N	Cadmium	0.1	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Calcium	147,000	µg/L	D	
299-E27-24	B33D29	12/8/2015	Y	Calcium	155,000	µg/L	D	
299-E27-24	B33HX7	12/8/2015	N	Cesium-134	0.327	pCi/L	U	
299-E27-24	B33HX7	12/8/2015	N	Cesium-137	-0.103	pCi/L	U	
299-E27-24	B33D27	12/8/2015	N	Chloride	41,000	µg/L	D	
299-E27-24	B33D29	12/8/2015	Y	Chromium	8.2	µg/L	B	
299-E27-24	B33D28	12/8/2015	N	Chromium	12.9	µg/L		
299-E27-24	B33D28	12/8/2015	N	Cobalt	0.47	µg/L	B	
299-E27-24	B33D29	12/8/2015	Y	Cobalt	0.23	µg/L	B	
299-E27-24	B33HX7	12/8/2015	N	Cobalt-60	0.873	pCi/L	U	
299-E27-24	B33D28	12/8/2015	N	Copper	2.6	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Copper	0.82	µg/L	B	
299-E27-24	B33D28	12/8/2015	N	Cyanide	14.9	µg/L		
299-E27-24	B33HX7	12/8/2015	N	Europium-152	2.47	pCi/L	U	
299-E27-24	B33HX7	12/8/2015	N	Europium-154	1.63	pCi/L	U	
299-E27-24	B33HX7	12/8/2015	N	Europium-155	0.545	pCi/L	U	
299-E27-24	B33D27	12/8/2015	N	Fluoride	360	µg/L	BD	
299-E27-24	B33HX7	12/8/2015	N	Gross beta	931	pCi/L		Q
299-E27-24	B33D29	12/8/2015	Y	Iron	26.1	µg/L	B	
299-E27-24	B33D28	12/8/2015	N	Iron	151	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Lead	0.18	µg/L	BC	
299-E27-24	B33D28	12/8/2015	N	Lead	0.55	µg/L	BC	
299-E27-24	B33D29	12/8/2015	Y	Magnesium	34,400	µg/L		
299-E27-24	B33D28	12/8/2015	N	Magnesium	33,900	µg/L		
299-E27-24	B33D28	12/8/2015	N	Manganese	8.3	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Manganese	1.7	µg/L	B	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-24	B33D29	12/8/2015	Y	Molybdenum	4.2	µg/L	B	
299-E27-24	B33D28	12/8/2015	N	Molybdenum	3.1	µg/L	B	
299-E27-24	B33D28	12/8/2015	N	Nickel	9.4	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Nickel	9.6	µg/L		
299-E27-24	B33D27	12/8/2015	N	Nitrate	70,800	µg/L	D	Q
299-E27-24	B33D27	12/8/2015	N	Nitrite	624	µg/L	U	
299-E27-24	B33D29	12/8/2015	Y	Potassium	10,600	µg/L		
299-E27-24	B33D28	12/8/2015	N	Potassium	10,500	µg/L		
299-E27-24	B33HX7	12/8/2015	N	Potassium-40	-65.8	pCi/L	U	
299-E27-24	B33D28	12/8/2015	N	Selenium	14.5	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Selenium	21.8	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Silver	0.82	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Silver	0.82	µg/L	U	
299-E27-24	B33D29	12/8/2015	Y	Sodium	27,200	µg/L		
299-E27-24	B33D28	12/8/2015	N	Sodium	27,100	µg/L		
299-E27-24	B33HX6	12/8/2015	N	Specific Conductance	988	µS/cm		
299-E27-24	B33D28	12/8/2015	N	Strontium	640	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Strontium	884	µg/L		
299-E27-24	B33D27	12/8/2015	N	Sulfate	320,000	µg/L	D	
299-E27-24	B33HX7	12/8/2015	N	Technetium-99	3,800	pCi/L		
299-E27-24	B33HX6	12/8/2015	N	Temperature	18.2	Deg C		
299-E27-24	B33D29	12/8/2015	Y	Thallium	0.55	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Thallium	0.55	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Thorium	0.55	µg/L	U	
299-E27-24	B33D29	12/8/2015	Y	Thorium	0.55	µg/L	U	
299-E27-24	B33D28	12/8/2015	N	Tin	1.1	µg/L	U	
299-E27-24	B33D29	12/8/2015	Y	Tin	1.1	µg/L	U	
299-E27-24	B33HX6	12/8/2015	N	Turbidity	0.69	NTU		
299-E27-24	B33D28	12/8/2015	N	Uranium	4.9	µg/L		
299-E27-24	B33D29	12/8/2015	Y	Uranium	7	µg/L		
299-E27-24	B33D28	12/8/2015	N	Vanadium	13.8	µg/L	B	
299-E27-24	B33D29	12/8/2015	Y	Vanadium	15.2	µg/L	B	
299-E27-24	B33D29	12/8/2015	Y	Zinc	10.6	µg/L	B	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-24	B33D28	12/8/2015	N	Zinc	15.6	µg/L	B	
299-E27-24	B33HX6	12/8/2015	N	pH Measurement	8.08	unitless		
299-E27-25	B33D30	12/10/2015	N	Alkalinity	77,200	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Aluminum	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Aluminum	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Antimony	1	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Antimony	1	µg/L	U	
299-E27-25	B33HY0	12/10/2015	N	Antimony-125	9.76	pCi/L	U	
299-E27-25	B33D32	12/10/2015	Y	Arsenic	4.77	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Arsenic	5.47	µg/L		
299-E27-25	B33D30	12/10/2015	N	Barium	72.2	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Barium	69.2	µg/L		
299-E27-25	B33D30	12/10/2015	N	Beryllium	0.2	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Boron	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Boron	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Cadmium	0.171	µg/L	B	
299-E27-25	B33D32	12/10/2015	Y	Cadmium	0.131	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Calcium	128,000	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Calcium	128,000	µg/L		
299-E27-25	B33HY0	12/10/2015	N	Cesium-134	1.37	pCi/L	U	
299-E27-25	B33HY0	12/10/2015	N	Cesium-137	1.43	pCi/L	U	
299-E27-25	B33D31	12/10/2015	N	Chloride	67,000	µg/L	D	
299-E27-25	B33D32	12/10/2015	Y	Chromium	4.77	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Chromium	55.3	µg/L		
299-E27-25	B33D30	12/10/2015	N	Cobalt	0.842	µg/L	B	
299-E27-25	B33D32	12/10/2015	Y	Cobalt	0.637	µg/L	B	
299-E27-25	B33HY0	12/10/2015	N	Cobalt-60	-1.13	pCi/L	U	
299-E27-25	B33D32	12/10/2015	Y	Copper	0.964	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Copper	2.68	µg/L		
299-E27-25	B33D30	12/10/2015	N	Cyanide	1.67	µg/L	U	
299-E27-25	B33HY0	12/10/2015	N	Europium-152	-4.25	pCi/L	U	
299-E27-25	B33HY0	12/10/2015	N	Europium-154	-0.936	pCi/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-25	B33HY0	12/10/2015	N	Europium-155	-4.63	pCi/L	U	
299-E27-25	B33D31	12/10/2015	N	Fluoride	210	µg/L	D	
299-E27-25	B33HY0	12/10/2015	N	Gross beta	16.8	pCi/L		
299-E27-25	B33D32	12/10/2015	Y	Iron	30	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Iron	212	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Lead	0.5	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Lead	0.5	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Magnesium	35,100	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Magnesium	34,900	µg/L		
299-E27-25	B33D30	12/10/2015	N	Manganese	7.69	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Manganese	5.49	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Molybdenum	2.55	µg/L		
299-E27-25	B33D30	12/10/2015	N	Molybdenum	4.75	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Nickel	24.2	µg/L		
299-E27-25	B33D30	12/10/2015	N	Nickel	31	µg/L		
299-E27-25	B33D31	12/10/2015	N	Nitrate	57,500	µg/L	D	Q
299-E27-25	B33D31	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Potassium	9,740	µg/L		
299-E27-25	B33D30	12/10/2015	N	Potassium	9,850	µg/L		
299-E27-25	B33HY0	12/10/2015	N	Potassium-40	8.6	pCi/L	U	
299-E27-25	B33D32	12/10/2015	Y	Selenium	17.4	µg/L		
299-E27-25	B33D30	12/10/2015	N	Selenium	18.1	µg/L		
299-E27-25	B33D30	12/10/2015	N	Silver	0.1	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Silver	0.1	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Sodium	19,700	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Sodium	19,400	µg/L		
299-E27-25	B33KP9	12/10/2015	N	Specific Conductance	1,044	µS/cm		
299-E27-25	B33KR1	12/10/2015	N	Specific Conductance	1,043	µS/cm		
299-E27-25	B33KR2	12/10/2015	N	Specific Conductance	1,042	µS/cm		
299-E27-25	B33KR0	12/10/2015	N	Specific Conductance	1,044	µS/cm		
299-E27-25	B33D30	12/10/2015	N	Alkalinity	77,200	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Aluminum	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Aluminum	15	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-25	B33D30	12/10/2015	N	Antimony	1	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Antimony	1	µg/L	U	
299-E27-25	B33HY0	12/10/2015	N	Antimony-125	9.76	pCi/L	U	
299-E27-25	B33D32	12/10/2015	Y	Arsenic	4.77	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Arsenic	5.47	µg/L		
299-E27-25	B33D30	12/10/2015	N	Barium	72.2	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Barium	69.2	µg/L		
299-E27-25	B33D30	12/10/2015	N	Beryllium	0.2	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Boron	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Boron	15	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Cadmium	0.171	µg/L	B	
299-E27-25	B33D32	12/10/2015	Y	Cadmium	0.131	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Calcium	128,000	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Calcium	128,000	µg/L		
299-E27-25	B33HY0	12/10/2015	N	Cesium-134	1.37	pCi/L	U	
299-E27-25	B33HY0	12/10/2015	N	Cesium-137	1.43	pCi/L	U	
299-E27-25	B33D31	12/10/2015	N	Chloride	67,000	µg/L	D	
299-E27-25	B33D32	12/10/2015	Y	Chromium	4.77	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Chromium	55.3	µg/L		
299-E27-25	B33D30	12/10/2015	N	Cobalt	0.842	µg/L	B	
299-E27-25	B33D32	12/10/2015	Y	Cobalt	0.637	µg/L	B	
299-E27-25	B33HY0	12/10/2015	N	Cobalt-60	-1.13	pCi/L	U	
299-E27-25	B33D32	12/10/2015	Y	Copper	0.964	µg/L	B	
299-E27-25	B33D30	12/10/2015	N	Copper	2.68	µg/L		
299-E27-25	B33D30	12/10/2015	N	Cyanide	1.67	µg/L	U	
299-E27-25	B33HY0	12/10/2015	N	Europium-152	-4.25	pCi/L	U	
299-E27-25	B33HY0	12/10/2015	N	Europium-154	-0.936	pCi/L	U	
299-E27-25	B33HY0	12/10/2015	N	Europium-155	-4.63	pCi/L	U	
299-E27-25	B33D31	12/10/2015	N	Fluoride	210	µg/L	D	
299-E27-25	B33HY0	12/10/2015	N	Gross beta	16.8	pCi/L		
299-E27-25	B33D32	12/10/2015	Y	Iron	30	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Iron	212	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-25	B33D32	12/10/2015	Y	Lead	0.5	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Lead	0.5	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Magnesium	35,100	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Magnesium	34,900	µg/L		
299-E27-25	B33D30	12/10/2015	N	Manganese	7.69	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Manganese	5.49	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Molybdenum	2.55	µg/L		
299-E27-25	B33D30	12/10/2015	N	Molybdenum	4.75	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Nickel	24.2	µg/L		
299-E27-25	B33D30	12/10/2015	N	Nickel	31	µg/L		
299-E27-25	B33D31	12/10/2015	N	Nitrate	57,500	µg/L	D	Q
299-E27-25	B33D31	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Potassium	9,740	µg/L		
299-E27-25	B33D30	12/10/2015	N	Potassium	9,850	µg/L		
299-E27-25	B33HY0	12/10/2015	N	Potassium-40	8.6	pCi/L	U	
299-E27-25	B33D32	12/10/2015	Y	Selenium	17.4	µg/L		
299-E27-25	B33D30	12/10/2015	N	Selenium	18.1	µg/L		
299-E27-25	B33D30	12/10/2015	N	Silver	0.1	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Silver	0.1	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Sodium	19,700	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Sodium	19,400	µg/L		
299-E27-25	B33KP9	12/10/2015	N	Specific Conductance	1044	µS/cm		
299-E27-25	B33KR1	12/10/2015	N	Specific Conductance	1043	µS/cm		
299-E27-25	B33KR2	12/10/2015	N	Specific Conductance	1042	µS/cm		
299-E27-25	B33KR0	12/10/2015	N	Specific Conductance	1044	µS/cm		
299-E27-25	B33D30	12/10/2015	N	Strontium	638	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Strontium	640	µg/L		
299-E27-25	B33D31	12/10/2015	N	Sulfate	320,000	µg/L	D	
299-E27-25	B33HY0	12/10/2015	N	Technetium-99	2.14	pCi/L	U	
299-E27-25	B33KR2	12/10/2015	N	Temperature	18.1	Deg C		
299-E27-25	B33KR1	12/10/2015	N	Temperature	18.1	Deg C		
299-E27-25	B33KR0	12/10/2015	N	Temperature	18.1	Deg C		
299-E27-25	B33KP9	12/10/2015	N	Temperature	18.1	Deg C		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-25	B33D32	12/10/2015	Y	Thallium	0.45	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Thallium	0.45	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Thorium	0.383	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Thorium	0.383	µg/L	U	
299-E27-25	B33D30	12/10/2015	N	Tin	1	µg/L	U	
299-E27-25	B33D32	12/10/2015	Y	Tin	1	µg/L	U	
299-E27-25	B33KR0	12/10/2015	N	Turbidity	2.95	NTU		
299-E27-25	B33KR1	12/10/2015	N	Turbidity	2.21	NTU		
299-E27-25	B33KR2	12/10/2015	N	Turbidity	1.81	NTU		
299-E27-25	B33KP9	12/10/2015	N	Turbidity	3.38	NTU		
299-E27-25	B33D30	12/10/2015	N	Uranium	3.66	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Uranium	3.6	µg/L		
299-E27-25	B33D30	12/10/2015	N	Vanadium	13.9	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Vanadium	12.7	µg/L		
299-E27-25	B33D30	12/10/2015	N	Zinc	20.3	µg/L		
299-E27-25	B33D32	12/10/2015	Y	Zinc	15.8	µg/L		
299-E27-25	B33KP9	12/10/2015	N	pH Measurement	8	unitless		
299-E27-25	B33KR1	12/10/2015	N	pH Measurement	8	unitless		
299-E27-25	B33KR0	12/10/2015	N	pH Measurement	8.01	unitless		
299-E27-25	B33KR2	12/10/2015	N	pH Measurement	8.01	unitless		
299-E27-4	B33D34	12/10/2015	N	Alkalinity	150,000	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Aluminum	17.3	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Aluminum	17.3	µg/L	U	
299-E27-4	B33D35	12/10/2015	Y	Antimony	1.7	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Antimony	1.7	µg/L	U	
299-E27-4	B33HY2	12/10/2015	N	Antimony-125	0.0254	pCi/L	U	
299-E27-4	B33D35	12/10/2015	Y	Arsenic	7	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Arsenic	7.3	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Barium	61.9	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Barium	49.2	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Beryllium	0.35	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Beryllium	0.44	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Boron	7.6	µg/L	B	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-4	B33D34	12/10/2015	N	Boron	15.5	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Cadmium	0.14	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Cadmium	0.19	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Calcium	77,800	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Calcium	82,900	µg/L		
299-E27-4	B33HY2	12/10/2015	N	Cesium-134	0.416	pCi/L	U	
299-E27-4	B33HY2	12/10/2015	N	Cesium-137	1.41	pCi/L	U	
299-E27-4	B33D33	12/10/2015	N	Chloride	21,000	µg/L	D	
299-E27-4	B33D34	12/10/2015	N	Chromium	18.6	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Chromium	3.2	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Cobalt	0.25	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Cobalt	0.25	µg/L	B	
299-E27-4	B33HY2	12/10/2015	N	Cobalt-60	-0.045	pCi/L	U	
299-E27-4	B33D34	12/10/2015	N	Copper	1.6	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Copper	0.68	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Cyanide	5.1	µg/L		
299-E27-4	B33HY2	12/10/2015	N	Europium-152	-1.57	pCi/L	U	
299-E27-4	B33HY2	12/10/2015	N	Europium-154	1.96	pCi/L	U	
299-E27-4	B33HY2	12/10/2015	N	Europium-155	0.888	pCi/L	U	
299-E27-4	B33D33	12/10/2015	N	Fluoride	210	µg/L	D	
299-E27-4	B33HY2	12/10/2015	N	Gross beta	282	pCi/L		
299-E27-4	B33D35	12/10/2015	Y	Iron	12.8	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Iron	47.2	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Lead	0.3	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Lead	0.19	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Magnesium	19,900	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Magnesium	20,300	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Manganese	0.88	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Manganese	1	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Molybdenum	1.6	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Molybdenum	1.2	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Nickel	26.3	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Nickel	18.5	µg/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-4	B33D33	12/10/2015	N	Nitrate	34,100	µg/L	D	Q
299-E27-4	B33D33	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Potassium	8,690	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Potassium	9,850	µg/L		
299-E27-4	B33HY2	12/10/2015	N	Potassium-40	2.1	pCi/L	U	
299-E27-4	B33D34	12/10/2015	N	Selenium	6.7	µg/L	C	
299-E27-4	B33D35	12/10/2015	Y	Selenium	10.9	µg/L		
299-E27-4	B33D34	12/10/2015	N	Silver	0.91	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Silver	0.97	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Sodium	18,100	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Sodium	20,700	µg/L		
299-E27-4	B33HY1	12/10/2015	N	Specific Conductance	616	µS/cm		
299-E27-4	B33D35	12/10/2015	Y	Strontium	347	µg/L		
299-E27-4	B33D34	12/10/2015	N	Strontium	421	µg/L		
299-E27-4	B33D33	12/10/2015	N	Sulfate	110,000	µg/L	D	
299-E27-4	B33HY2	12/10/2015	N	Technetium-99	1110	pCi/L		
299-E27-4	B33HY1	12/10/2015	N	Temperature	19.2	Deg C		
299-E27-4	B33D34	12/10/2015	N	Thallium	0.55	µg/L	U	
299-E27-4	B33D35	12/10/2015	Y	Thallium	0.55	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Thorium	0.55	µg/L	U	
299-E27-4	B33D35	12/10/2015	Y	Thorium	0.55	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Tin	2	µg/L	C	
299-E27-4	B33D35	12/10/2015	Y	Tin	1.3	µg/L	BC	
299-E27-4	B33HY1	12/10/2015	N	Turbidity	3.52	NTU		
299-E27-4	B33D34	12/10/2015	N	Uranium	8.8	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Uranium	9.2	µg/L		
299-E27-4	B33D35	12/10/2015	Y	Vanadium	15.6	µg/L	B	
299-E27-4	B33D34	12/10/2015	N	Vanadium	15.1	µg/L	B	
299-E27-4	B33D35	12/10/2015	Y	Zinc	9.3	µg/L	U	
299-E27-4	B33D34	12/10/2015	N	Zinc	9.3	µg/L	U	
299-E27-4	B33HY1	12/10/2015	N	pH Measurement	7.86	unitless		
299-E27-7	B33D36	12/10/2015	N	Alkalinity	87,400	µg/L		
299-E27-7	B33D36	12/10/2015	N	Aluminum	15	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-7	B33D37	12/10/2015	Y	Aluminum	15	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Antimony	1	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Antimony	1	µg/L	U	
299-E27-7	B33HY5	12/10/2015	N	Antimony-125	-0.868	pCi/L	U	
299-E27-7	B33D36	12/10/2015	N	Arsenic	5.21	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Arsenic	4.63	µg/L	B	
299-E27-7	B33D36	12/10/2015	N	Barium	63.2	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Barium	63.6	µg/L		
299-E27-7	B33D36	12/10/2015	N	Beryllium	0.2	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Beryllium	0.2	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Boron	15	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Boron	15	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Cadmium	0.11	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Cadmium	0.11	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Calcium	93,200	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Calcium	95,000	µg/L		
299-E27-7	B33HY5	12/10/2015	N	Cesium-134	1.3	pCi/L	U	
299-E27-7	B33HY5	12/10/2015	N	Cesium-137	-1.51	pCi/L	U	
299-E27-7	B33HY6	12/10/2015	N	Chloride	40,000	µg/L	D	
299-E27-7	B33D37	12/10/2015	Y	Chromium	2.58	µg/L	B	
299-E27-7	B33D36	12/10/2015	N	Chromium	8.13	µg/L	B	
299-E27-7	B33D36	12/10/2015	N	Cobalt	0.104	µg/L	B	
299-E27-7	B33D37	12/10/2015	Y	Cobalt	0.193	µg/L	B	
299-E27-7	B33HY5	12/10/2015	N	Cobalt-60	-0.13	pCi/L	U	
299-E27-7	B33D36	12/10/2015	N	Copper	0.527	µg/L	B	
299-E27-7	B33D37	12/10/2015	Y	Copper	0.35	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Cyanide	1.67	µg/L	U	
299-E27-7	B33HY4	12/10/2015	N	Dissolved Oxygen	7,540	µg/L		
299-E27-7	B33HY5	12/10/2015	N	Europium-152	-1.13	pCi/L	U	
299-E27-7	B33HY5	12/10/2015	N	Europium-154	-3.12	pCi/L	U	
299-E27-7	B33HY5	12/10/2015	N	Europium-155	3.26	pCi/L	U	
299-E27-7	B33HY6	12/10/2015	N	Fluoride	190	µg/L	D	
299-E27-7	B33HY5	12/10/2015	N	Gross beta	29.8	pCi/L		

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-7	B33HY5	12/10/2015	N	Iodine-129	3.14	pCi/L		
299-E27-7	B33D37	12/10/2015	Y	Iron	30	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Iron	559	µg/L		
299-E27-7	B33D36	12/10/2015	N	Lead	0.5	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Lead	0.5	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Magnesium	26,300	µg/L		
299-E27-7	B33D36	12/10/2015	N	Magnesium	26,000	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Manganese	1.44	µg/L	B	
299-E27-7	B33D36	12/10/2015	N	Manganese	3.97	µg/L	B	
299-E27-7	B33D36	12/10/2015	N	Molybdenum	2.27	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Molybdenum	2.25	µg/L		
299-E27-7	B33D36	12/10/2015	N	Nickel	2.81	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Nickel	1.76	µg/L	B	
299-E27-7	B33HY6	12/10/2015	N	Nitrate	39,000	µg/L	D	Q
299-E27-7	B33HY6	12/10/2015	N	Nitrite	125	µg/L	U	
299-E27-7	B33HY4	12/10/2015	N	Oxidation Reduction Potential	94.8	mV		
299-E27-7	B33D37	12/10/2015	Y	Potassium	9,340	µg/L		
299-E27-7	B33D36	12/10/2015	N	Potassium	9,220	µg/L		
299-E27-7	B33HY5	12/10/2015	N	Potassium-40	4.17	pCi/L	U	
299-E27-7	B33D36	12/10/2015	N	Selenium	14.6	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Selenium	13.3	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Silver	0.1	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Silver	0.1	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Sodium	17100	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Sodium	17400	µg/L		
299-E27-7	B33HY4	12/10/2015	N	Specific Conductance	782	µS/cm		
299-E27-7	B33D37	12/10/2015	Y	Strontium	516	µg/L		
299-E27-7	B33D36	12/10/2015	N	Strontium	519	µg/L		
299-E27-7	B33HY6	12/10/2015	N	Sulfate	220,000	µg/L	D	
299-E27-7	B33HY5	12/10/2015	N	Technetium-99	34.1	pCi/L		
299-E27-7	B33HY4	12/10/2015	N	Temperature	18.6	Deg C		
299-E27-7	B33D36	12/10/2015	N	Thallium	0.45	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Thallium	0.45	µg/L	U	

Table B-1. December 2015 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical Units Reported	Lab Qualifier	Review Qualifier
299-E27-7	B33D37	12/10/2015	Y	Thorium	0.383	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Thorium	0.383	µg/L	U	
299-E27-7	B33D36	12/10/2015	N	Tin	1	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Tin	1	µg/L	U	
299-E27-7	B33HY5	12/10/2015	N	Tritium	773	pCi/L		
299-E27-7	B33HY4	12/10/2015	N	Turbidity	4.76	NTU		
299-E27-7	B33D37	12/10/2015	Y	Uranium	3.66	µg/L		
299-E27-7	B33D36	12/10/2015	N	Uranium	3.7	µg/L		
299-E27-7	B33D37	12/10/2015	Y	Vanadium	13.3	µg/L		
299-E27-7	B33D36	12/10/2015	N	Vanadium	13.6	µg/L		
299-E27-7	B33D36	12/10/2015	N	Zinc	3.5	µg/L	U	
299-E27-7	B33D37	12/10/2015	Y	Zinc	3.5	µg/L	U	
299-E27-7	B33HY4	12/10/2015	N	pH Measurement	8.09	unitless		