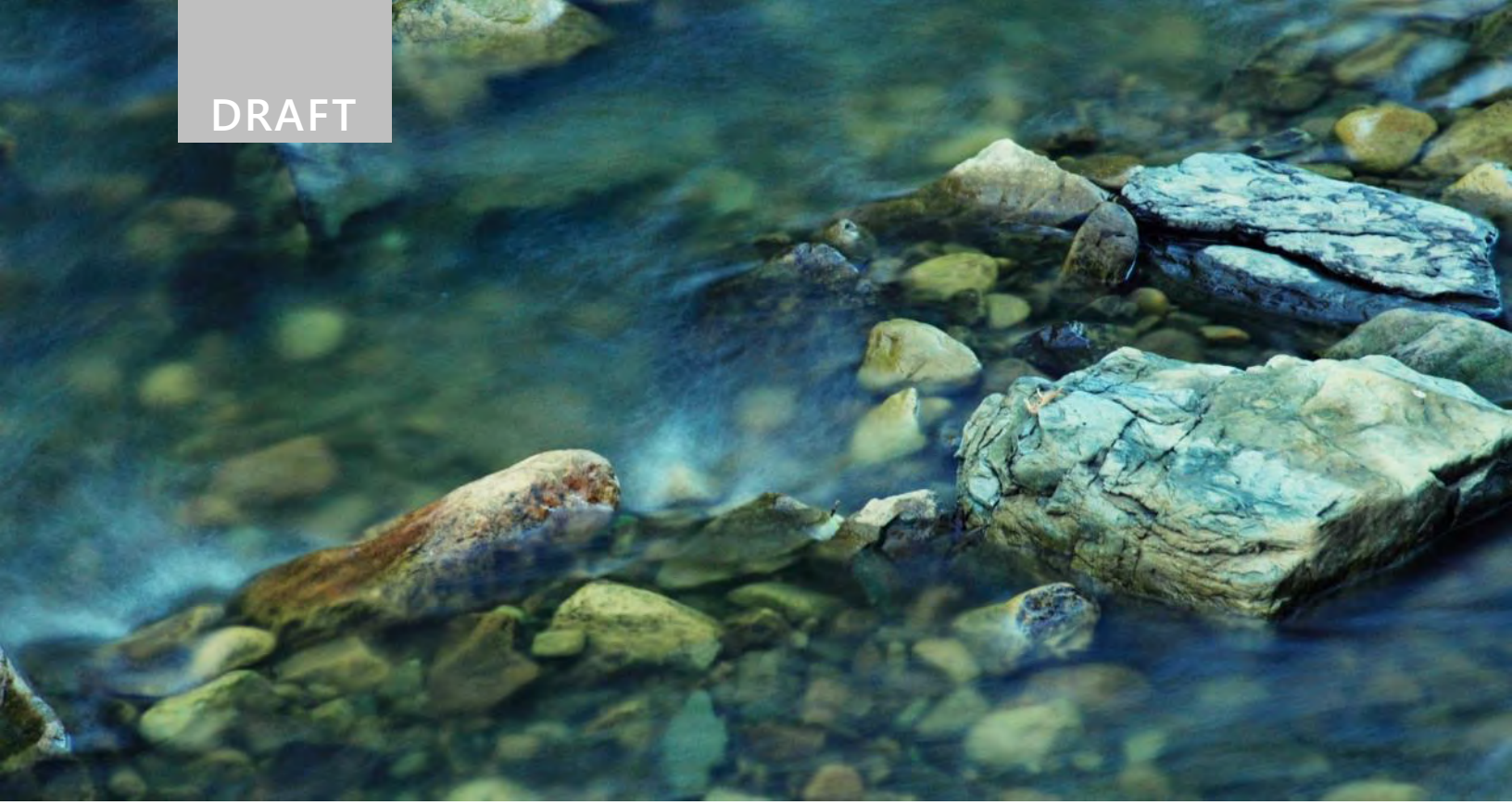

May 21, 2018
Yakima Valley Dairies

ANCHOR QEA

Groundwater Monitoring Data Report
Yakima Valley Dairies
First Quarter 2018
SDWA-10-2013-0080

Prepared for
Cow Palace, LLC
George DeRuyter & Son Dairy, LLC/D&A Dairy, LLC/George & Margaret, LLC
Liberty Dairy, LLC/H&S Bosma Dairy

DRAFT

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Signature Page

EPA Docket No. SDWA-10-2013-0080

Groundwater Monitoring Data Report
First Quarter 2018

Prepared by:

_____ Date: May 21, 2018

Mark Larsen
Project Coordinator, Anchor QEA, LLC

_____ Date: May 21, 2018

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DISTRIBUTION LIST

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ABBREVIATIONS

2018 QAPP	Updated *Groundwater Monitoring Quality Assurance Project Plan* (Anchor QEA 2018a)
AOC	Administrative Order on Consent
Cascade	Cascade Analytical, Inc.
Dairies	Yakima Valley Dairies
EPA	U.S. Environmental Protection Agency
foot/foot	foot per foot
QAPP	*Groundwater Monitoring Quality Assurance Project Plan*
MCL	maximum contaminant level
MDL	method detection limit
mg/L	milligrams per liter
MRL	method reporting limit
mV	millivolt
NAVD88	North American Vertical Datum of 1988
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
ORP	oxidation-reduction potential
OSHA	Occupational Safety and Health Administration
QA/QC	quality assurance/quality control
Report	Quarterly Groundwater Monitoring Data Report
SM	Standard Method
SMCL	secondary maximum contaminant level
SOP	Standard Operating Procedure
SOW	Statement of Work
TKN	total Kjeldahl nitrogen
WQX	Water Quality Exchange
Yakima Valley Dairies	1) Cow Palace, LLC; 2) D&A Dairy, LLC (also known as D and A Dairy L.L.C.), George DeRuyter & Son Dairy, LLC, and George & Margaret, LLC; and 3) Liberty Dairy, LLC, and its associated dairy facility H&S Bosma Dairy

Executive Summary

The 1) Cow Palace, LLC; 2) D&A Dairy, LLC (also known as D and A Dairy L.L.C.), George DeRuyter & Son Dairy, LLC, and George & Margaret, LLC; and 3) Liberty Dairy, LLC, and its associated dairy facility H&S Bosma Dairy (Yakima Valley Dairies) present this Quarterly Groundwater Monitoring Data Report (Report) for the Yakima Valley Dairies (Dairies). The Report is prepared in accordance with requirements identified in Section III.E of the Statement of Work (SOW; Appendix B of Administrative Order on Consent [AOC] SDWA-10-2013-0080). Groundwater monitoring at the Dairies is required by the AOC in accordance with the *Groundwater Monitoring Quality Assurance Project Plan* (QAPP) originally prepared by Arcadis in June 2013 (Arcadis 2013a), updated by Inland Earth Sciences in August 2015 (IES 2015), and updated by Anchor QEA, LLC, in February 2018 (2018 QAPP; Anchor QEA 2018a).

Pursuant to Section III.E of the AOC SOW, the objectives of groundwater monitoring are to establish a baseline of groundwater quality information at the Dairies to evaluate whether actions taken to reduce nitrogen loading are effective over time and to collect information to supplement and verify existing information on the environmental setting at the Dairies, including further clarification of the hydraulic gradient of the aquifer beneath the Dairies. After 8 years of quarterly groundwater monitoring (32 quarters), the nitrate levels in the monitoring wells that are downgradient of the Dairies' nitrogen sources will be evaluated. For any individual monitoring well where the nitrate level is not trending downward, additional source control actions will be required in accordance with Section III.G of the AOC SOW.

There are 26 groundwater monitoring wells installed at the Dairies, including 7 groundwater monitoring wells installed by the U.S. Environmental Protection Agency (EPA) in 2012 and 19 groundwater monitoring wells installed by the Dairies as part of the AOC in 2013. Twenty-three of the monitoring wells were completed at the top of the shallow surficial aquifer (at the water table), and three of the monitoring wells were completed deeper in the surficial aquifer. All the wells were installed in the surficial aquifer, which is used as a source of drinking water. All the wells were designed and installed according to Washington State regulations and the original QAPP (Arcadis 2013a).

This is the 19th Report prepared under the AOC SOW. The First Quarter 2018 groundwater monitoring event was conducted from March 18 to March 19, 2018. As approved in the 2018 QAPP, the first, third, and fourth quarters of each year are considered quarterly monitoring events, and a subset of the wells are sampled. Sixteen of the 26 monitoring wells at the site were sampled in accordance with the sampling procedures outlined in the 2018 QAPP. The 16 wells sampled in the quarterly monitoring program are shown in Table 1. Manual groundwater elevation measurements were completed in all 26 wells at the site.

Groundwater samples were analyzed for the following:

- Nitrate as nitrogen
- Nitrite as nitrogen
- Ammonia
- Total Kjeldahl nitrogen (TKN)
- Total phosphorus
- Inorganic anions (chloride, fluoride, sulfate)
- Total metals (calcium, potassium, magnesium, sodium)
- Alkalinity (total and bicarbonate)

These results are presented in Figures 23 through 27.

Nitrate was measured as nitrogen (Nitrate-N). The nitrate results are presented spatially on a map in Figure 17A. Historical nitrate concentrations since 2013 are presented in Figure 17B and charted in Figures 18 through 22. The monitoring well network includes wells that are located upgradient and downgradient of the Dairies. There are four groundwater monitoring wells located upgradient of the Dairy facilities' footprint. All four wells are screened at the water table. The nitrate concentrations in the four upgradient wells have been consistently below the nitrate maximum contaminant level (MCL) and are not sampled during quarterly events. The upgradient wells will be sampled in the annual event scheduled for Second Quarter 2018.

Nitrate concentrations (reported in milligrams per liter [mg/L]) in the downgradient monitoring wells that are screened at the water table for First Quarter 2018 are as follows:

Downgradient Well	Nitrate (mg/L)
DC-03	192
DC-04	32.9
DC-05	33.6
DC-07	NS
DC-09	NS
DC-14	2.86
YVD-05	NS
YVD-06	NS
YVD-07	NS
YVD-08	46.3
YVD-09	48.5
YVD-10	91.4
YVD-11	61.8
YVD-12	13.6
YVD-13	25.8

Downgradient Well	Nitrate (mg/L)
YVD-14R	90.2
YVD-15	24.4
YVD-16	20.3
YVD-17	NS

Note:
NS: Not sampled; well has consistently been below the MCL and is only sampled during the second quarter.

Nitrate concentrations in the downgradient water table groundwater monitoring wells ranged from 2.86 to 192 mg/L. The drinking water standard, or MCL, for nitrate is 10 mg/L. Nitrate concentrations in 1 of the downgradient water table wells were less than the MCL; nitrate concentrations in 12 of the downgradient water table wells exceeded the MCL.

Three downgradient groundwater monitoring wells were constructed with well screens positioned at depths that were estimated by EPA to approximate the depth of a typical residential drinking water well in the area. Each of these deeper wells was paired at the same location with a water table well. The results for each well pair, with the water table well listed above its deeper counterpart, are as follows:

Well Placement	Shallow/Deep Well Pair	Nitrate (mg/L)	Shallow/Deep Well Pair	Nitrate (mg/L)	Shallow/Deep Well Pair	Nitrate (mg/L)
Shallow Well	YVD-13	25.8	DC-03	192	DC-05	33.6
Deep Well	YVD-18	27.7	DC-03D	32.6	DC-05D	12.6

The results from two of the three well pairs (DC-03/DC-03D and DC-05/DC-05D) show higher nitrate concentrations at the top of the water table and lower concentrations at depth. While the nitrate concentrations in the YVD-13/YVD-18 well pair are similar, the nitrate concentration in the deeper well (YVD-18) is slightly higher.

Depth to groundwater from the top of the well casings ranged from 34.07 feet to 222.37 feet. In general, depth to groundwater was greatest in wells located in areas of the site that were topographically higher, with the exception of well YVD-02. Comparatively, depth to groundwater was less in wells located in areas of the site that were topographically lower.

The groundwater gradient at the site is generally to the southwest at an average hydraulic gradient of 0.024 foot per foot (foot/foot). Hydraulic gradients are greater in the topographically higher areas in the northern section of the site, with an average of 0.047 foot/foot. As groundwater flows to the southwest toward the center of the Yakima River valley, hydraulic gradients decrease to approximately 0.011 foot/foot in the central portion of the site and then decrease further to 0.0046 foot/foot in the southern portion of the site. The estimated average linear groundwater flow

velocities for the shallow surficial aquifer at the Dairies range from 3.9 to 22.9 feet per day across the site.

Site groundwater is primarily classified as calcium-bicarbonate-type water, which was present in groundwater samples collected from 10 monitoring wells. Calcium-sulfate-type waters were present in groundwater samples collected from five monitoring wells, and groundwater in one well was classified as "no dominant type."

Total dissolved ions and nitrate increase in concentration in the downgradient direction from wells YVD-02 to DC-03, as shown in Figure 23. Wells YVD-02 and YVD-07 were not sampled during First Quarter 2018. The average nitrate and total dissolved ion concentrations from the first quarter results of the years 2014 through 2017 are shown in Figure 23.

Trends in groundwater concentrations are summarized in the *2017 Annual Report* (Anchor QEA 2018b) and will be updated each year following the fourth quarter groundwater monitoring event. The results of the First Quarter 2018 sampling generally support the conclusions presented in the *2017 Annual Report* and are listed as follows:

- Nitrate concentrations in all northern wells and upgradient wells have remained below the nitrate MCL since Third Quarter 2016 and Second Quarter 2015, respectively.
- Nitrate concentrations have also been consistently below the nitrate MCL in downgradient wells DC-07 and YVD-17 since the beginning of the monitoring program.
- Nitrate concentrations in the east downgradient wells, west downgradient wells, and central wells (Figures 18, 19, and 20, respectively) have, with two exceptions, remained stable or are decreasing. The two wells with upward trends are discussed below.
- In 2017, nitrite, ammonia, and TKN were not detected above the method detection limit in all sampled wells. These analytes have been non-detect since Second Quarter 2017, with the exception of two low level detections of ammonia during the First Quarter 2018 event (0.10 mg/L at DC-05 and 0.17 mg/L at YVD-14R).
- Detected phosphorus concentrations were all below 0.10 mg/L. All detected phosphorus concentrations have been below 0.10 mg/L since First Quarter 2017. Phosphorous concentrations in the upgradient wells are not significantly different than concentrations in the central, northern, and downgradient wells.

Significant upward trends had been noted in groundwater nitrate concentrations in only two wells (YVD-08 and YVD-11; based on Mann-Kendall trend analyses conducted in Fourth Quarter 2017).[1] Nitrate concentrations decreased for both wells during the last two quarters (Fourth Quarter 2017

[1] Trend conclusions are based on Mann-Kendall trend analyses of available nitrate data with 95% confidence level (alpha = 0.05) to determine if a trend exists. The slope of the trend is then determined by the Thiel-Sen analysis. Both analyses were performed in ProUCL version 5.1.

and First Quarter 2018). An updated trend analysis will be performed for these wells after more data are available.

1 Report Organization

This Quarterly Groundwater Monitoring Data Report (Report) includes the following sections:

- Executive Summary
- Section 1 – Report Organization
- Section 2 – Introduction
- Section 3 – Groundwater Monitoring Activities
- Section 4 – Soil and Groundwater Characteristics
- Section 5 – Analytical Program
- Section 6 – Data Validation and Usability
- Section 7 – Groundwater Sampling Results
- Section 8 – Summary and Conclusions
- Section 9 – References
- Section 10 – Certifications

2 Introduction

The 1) Cow Palace, LLC; 2) D&A Dairy, LLC (also known as D and A Dairy L.L.C.), George DeRuyter & Son Dairy, LLC, and George & Margaret, LLC; and 3) Liberty Dairy, LLC, and its associated dairy facility H&S Bosma Dairy (Yakima Valley Dairies) present this Report for the Yakima Valley Dairies (Dairies). The Report is prepared in accordance with requirements identified in Section III.E of the Statement of Work (SOW; Appendix B of Administrative Order on Consent [AOC] SDWA-10-2013-0080). Groundwater monitoring at the Dairies is required by the AOC in accordance with the most recently updated *Groundwater Monitoring Quality Assurance Project Plan* (2018 QAPP; Anchor QEA 2018a).

Pursuant to Section III.E of the AOC SOW, the objectives of groundwater monitoring are to establish a baseline of groundwater quality information at the Dairies to evaluate whether actions taken to reduce nitrogen loading are effective over time and to collect information to supplement and verify existing information on the environmental setting at the Dairies, including further clarification of the hydraulic gradient of the aquifer beneath the Dairies. After 8 years of quarterly groundwater monitoring (32 quarters), the nitrate levels in the monitoring wells that are downgradient of the Dairies' nitrogen sources will be evaluated. For any individual monitoring well where the nitrate level is not trending downward, additional source control actions will be required in accordance with Section III.G of the AOC SOW.

2.1 Location and Setting

The Dairies are located in the easternmost portion of the Toppenish Basin and the westernmost portion of the Benton Basin within the southcentral part of the Yakima Basin, just south of the Rattlesnake Hills in Yakima County, Washington.

The Dairies are located approximately 10 road miles northwest of Sunnyside, Washington. A site vicinity map is presented in Figure 1. The Dairies occupy portions or all of Sections 25, 26, 27, 35, and 36 of Township 11 North, Range 21 East; Sections 19, 30, 31, and 32 of Township 11 North, Range 22 East; Section 1 of Township 10 North, Range 21 East; and Sections 6 and 7 of Township 10 North, Range 22 East, Willamette Meridian. Figure 2A shows the location of the Dairies, the installed monitoring wells, and general topography of the area. Figure 2B shows an aerial photograph of the Dairies. Figure 3A shows the general facility plan for the Dairies, which includes land use information within the Dairies boundary.

Figures 3B, 3C, and 3D present a facility plan for each individual Dairy; these include facility-specific features, such as dairy production areas, irrigation and domestic water wells, pipelines, and outfalls. One outfall is located within the footprint of Liberty Dairy, as shown in Figure 3D. Discharge from the outfall is non-contact process water related to milk plate cooler. Cooling water from the plate cooler is discharged to Sunnyside Valley Irrigation District Joint Drain 26-6. This outfall is not covered by a

National Pollutant Discharge Elimination System (NPDES) permit. There are no outfalls within the footprint of Cow Palace Dairy. One outfall is located within the footprint of the George DeRuyter & Son Dairy-owned property, as shown in Figure 3C. Discharge from the outfall is non-contact process water related to milk plate cooler. Cooling water from the plate cooler is discharged to the Roza Irrigation District drain. This outfall is not covered by a NPDES permit. There are no French drains, sewer pipes, stormwater drains, or tile drains within the footprint of the Dairies.

Topography of the Dairies site consists of gently rolling hills within the Yakima River valley. Topography slopes from topographic highs along bounding hills and ridges to the north toward the Yakima River in the south. Land use is predominantly large dairy farms, which are concentrated animal feeding operations, and irrigated cropland, including corn fields, apple and cherry orchards, and grape vineyards. Residences are interspersed throughout the area and are serviced by private water wells for drinking water.

2.2 Regional Geology and Hydrogeology

The information presented in this section is summarized from the U.S. Geological Survey publication *Hydrogeologic Framework of the Yakima River Basin Aquifer System, Washington* (Vaccaro et al. 2009), the U.S. Environmental Protection Agency (EPA) publication *Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley, Washington* (EPA 2012), and the U.S. Geological Survey publication *Environmental Setting of the Granger Drain and DR2 Basins* (USGS 2007).

The Dairies are located within the Toppenish and Benton Basins in the southeastern part of the Lower Yakima Valley. The western boundary of the Benton Basin abuts the eastern boundary of the Toppenish Basin. The Toppenish and Benton basins consist of fine- and coarse-grained sediments overlying a sequence of three major basalt flows. The structural setting is created by bounding ridges, such as the Rattlesnake Mountains, Ahtanum Ridge, Toppenish Ridge, and Horse Heaven Hills. The uppermost basalts of the Saddle Mountain Unit of the Columbia River Basalt Group are typically exposed in these upland ridges. This unit averages more than 500 feet thick. The underlying Wanapum unit averages 600 feet thick. These units are separated by the Mabton Interbed, which has an average thickness of 70 feet.

The local area of the Dairies is bounded on the north by the Rattlesnake Hills and on the south by Snipes Mountain. Basalts of the Saddle Mountains Basalt Formation outcrop on both of these ridges and are believed to underlie the unconsolidated surficial deposits in the basin. The unconsolidated sediments fall into four broad groups that pinch out along the flanks of the bounding ridges. The oldest are Miocene-age sands and gravels deposited by the ancestral Columbia and Yakima rivers. Overlying these are Pleistocene- to Quaternary-aged alluvial fan deposits eroded from the bounding ridges. Surficial sediments consist of silt loess deposits of varying thickness. The loess deposits are spatially heterogeneous and discontinuous (USGS 2007). The thickness of these sedimentary units

decreases from an average of more than 500 feet in the Toppenish Basin to less than 200 feet in the lower Benton Basin. Surface soils and drainage classification, as mapped by the Natural Resources Conservation Service within the footprint of the Dairies' facilities, are illustrated in Appendix A.

There are two main aquifers in the Toppenish and Benton Basins. These include a surficial unconfined-to-semiconfined alluvial aquifer contained within the unconsolidated sediments and an extensive basalt aquifer of great thickness underlying the sedimentary deposits. The basalt aquifer is believed to be semi-isolated from the surficial aquifer and stream systems. Groundwater flow within the surficial aquifer generally follows topography, with natural recharge occurring along the bounding ridges and on the sides of the valley and discharge occurring to the Yakima River. The unconsolidated sediments of the surficial aquifer have an internal structure that strongly controls groundwater movement. As the water moves through these sediments, it tends to follow preferential flow paths composed of coarser sediment. Locally, the flow direction may be modified by geologic structures and by irrigation practices, drains, ditches, canals, and other hydrologic features. In the topographically higher areas near the bounding ridges, the depth to the water table can exceed 200 feet. The water table is found at shallower depths to the south in the direction of the Yakima River. Near the Yakima River, depth to water may be less than 10 feet, especially during the irrigation season from March through October. Flow within the uppermost portions of the underlying basalt aquifer also generally follows this pattern.

3 Groundwater Monitoring Activities

Investigation efforts were initiated as a result of the March 19, 2013 AOC. As stated in Section 2, the objectives of groundwater monitoring are to establish a baseline of groundwater quality information at the Dairies to evaluate whether actions taken to reduce nitrogen loading are effective over time and to collect information to supplement and verify existing information on the environmental setting at the Dairies, including further clarification of the hydraulic gradient of the aquifer beneath the Dairies. As part of the ongoing activities, a conceptual site model was developed and will be updated and modified as necessary (Figures 4 and 5).

The original *Groundwater Monitoring Quality Assurance Project Plan* (QAPP; Arcadis 2013a), dated June 21, 2013, was conditionally approved with modification by EPA on June 19, 2013. Field investigation activities pursuant to the QAPP were initiated on June 27, 2013. Drilling and monitoring well construction activities of the 19 AOC wells began on June 27, 2013, and concluded on August 23, 2013. Well development activities began on August 26, 2013, and concluded September 4, 2013. A quarterly groundwater monitoring program was initiated in September 2013. The QAPP was revised and updated by Inland Earth Sciences on August 28, 2015 (IES 2015). The updated 2018 QAPP was conditionally approved by EPA on February 28, 2018.

3.1 Groundwater Monitoring Well Network

A total of 26 groundwater monitoring wells comprise the well network in the groundwater monitoring program: 19 wells installed as part of the AOC in 2013 (YVD wells) and 7 wells installed by EPA in 2012 (DC wells). Twenty-three wells have screens that intersect the first water and monitor impacts at the water table of the shallow surficial aquifer; three wells are screened in deeper zones of the surficial aquifer, approximately 45 feet below the water table.

Well YVD-14 was destroyed by agricultural harvesting activities sometime during the month of June 2015. Well YVD-14 was abandoned and decommissioned on December 2, 2015. Well YVD-14R was installed approximately 20 feet west of the previous location of well YVD-14 on December 3 to December 5, 2015, as a replacement well for well YVD-14.

Personnel from Anchor QEA, LLC, performed quarterly groundwater monitoring of the 16 wells included in the quarterly groundwater monitoring program from March 18 through March 19, 2018. The locations of the monitoring wells are shown in Figures 2A and 2B. The wells sampled in the quarterly monitoring program are listed in Table 1. The location and construction information for the monitoring wells is presented in Table 2. Groundwater monitoring was performed in accordance with the sampling procedures documented in the 2018 QAPP.

3.1.1 Synoptic Static Depth to Water Measurement

A set of synoptic water level measurements was collected from all 26 wells in the monitoring network on March 18, 2018, using an electronic water level meter. Depth to water measurements were recorded to the nearest 0.01 foot at the indicated reference point on each well casing. Static depth to water measurement was recorded on the Water Level Survey Form presented in Appendix D of the 2018 QAPP. The depth to water measurements were collected from the 26 wells in as short a time period as possible (approximately 6 hours) to provide a "snapshot" of groundwater elevations and to reduce the effect of atmospheric pressure changes or precipitation effects on the water levels. Groundwater elevations in the North American Vertical Datum of 1988 (NAVD88) were calculated by subtracting the depth to water measurements from the surveyed reference point at the top of each well casing. The recorded groundwater measurements for First Quarter 2018 are summarized in Table 3.

3.1.2 Sample Collection

Groundwater samples were collected using low-flow purging and sampling procedures described in the Standard Operating Procedure (SOP) entitled *Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells* presented in Appendix E of the 2018 QAPP. Low-flow sample collection minimizes the impact of the purging process on groundwater chemistry and results in a smaller volume of purge water generated.

The low-flow sample collection method requires water quality indicator parameters and water levels to be measured during purging. Stabilization of the water quality indicator parameters and groundwater levels is a prerequisite to sample collection. Analyte specifications for field parameters and stabilization criteria are presented in Table 5 of the 2018 QAPP.

Purging and sampling of the monitoring wells was performed with dedicated 1-inch-diameter stainless steel Solinst Model 407 bladder pumps with polytetrafluoroethylene (Teflon) bladders installed in each well.

Groundwater field parameters collected during purging included pH, temperature, specific conductance, turbidity, dissolved oxygen, and oxidation reduction potential. Water quality parameters were measured using a portable turbidimeter and a YSI Professional Plus multi-parameter water quality meter with a flow-through cell. Parameters were measured every 3 to 5 minutes during well purging until the parameters stabilized to the requirements set forth in Appendix E of the 2018 QAPP. Observations regarding odors present, the color and amount of sediment/turbidity, or foreign matter (if present) were noted in the comments section of the Field Sampling Data Sheet. Recorded field data measurements are presented in Table 4.

Sample collection was performed after both the depth to water from the top of the well casing and all field parameters stabilized within the requirements stated in this section for at least three consecutive readings. Samples were transported to the analytical laboratory and analyzed in accordance with the 2018 QAPP.

3.1.3 Sample Handling and Custody

All samples were accompanied by a chain-of-custody record. When custody of samples was transferred, the individuals relinquishing and receiving the samples signed and dated the chain-of-custody record. The chain-of-custody record documents the custody transfer from the sampler, often through another agent (e.g., a shipping/transport company), to the laboratory sample custodian.

Prior to shipment, samples were packaged properly, and a chain-of-custody record accompanied each shipping container. All shipping containers were sealed with custody seals for shipment/transport to the laboratory unless the samples were hand-delivered to the laboratory. Custody seals were placed in a manner that would indicate if the container was opened during shipment. Courier names and other pertinent information were documented on the chain-of-custody record. All shipments were accompanied by the chain-of-custody record identifying the contents of the shipment. The original record and one copy were included in the shipment, and an additional copy was retained by the sampler and provided to the Dairies' Project Coordinator. All shipping documentation (e.g., freight bills) was retained as part of the chain-of-custody documentation by the Dairies' Project Coordinator.

All samples collected for laboratory analyses were delivered to Cascade Analytical, Inc. (Cascade), located at 1008 W. Ahtanum Road in Union Gap, Washington. Upon arrival at the laboratory, the Cascade sample custodian accepted custody of the samples from the carrier and entered information about the shipment into a sample receipt log that included the initials of the person delivering the package and the status of the custody seals on the containers. The sample custodian logged in the samples according to the laboratory SOP. Following sample analysis, the unused portions of all samples were disposed of by Cascade in accordance with their laboratory SOP. A total of two sample delivery groups were submitted to the analytical laboratory; the delivery groups and collection dates are as follows:

Sample Delivery Group	Samples Collected	Date Received by Lab
870610	March 18, 2018	March 19, 2018
870634	March 19, 2018	March 19, 2018

Field Sampling Data Sheets were completed for each sample and indicate what type of samples were collected, sample identification, sample bottle types and volumes collected, field parameter measurements, and other pertinent information (including significant events and observations that

occurred during sampling activities). Sufficient information was noted on field sampling forms to enable participants to reconstruct events that occurred and to refresh the memory of field personnel, if needed (Appendix B). Original copies of all field forms and chain-of-custody documents were retained by the Dairies' Field Lead in the project files.

3.1.3.1 Sample Containers, Preservatives, and Hold Times

Field personnel, in coordination with the analytical laboratory, determined the number and type of sample containers needed for a given sampling event, including enough sample containers for the quality assurance/quality control (QA/QC) samples, in addition to the containers required for the actual well sampling. Preservatives were required for Standard Method (SM) 4500 NH3-G, SM 4500-P E, and EPA Methods 351.2 and 200.7 analyses. All sample containers, as well as deionized water for the collection of field blank samples, were provided by Cascade.

3.1.4 Measurement of Final Water Level

Low-flow sampling methods were used, and a consistent, stabilized water level was maintained during sampling.

3.1.5 Equipment Decontamination

Non-dedicated equipment was decontaminated to prevent cross-contamination between monitoring wells. All other equipment and materials were either dedicated to a particular well or disposable. The following decontamination procedures were followed for non-dedicated equipment:

- The equipment was cleaned with a solution of phosphate-free detergent, such as Liquinox, and potable water.
- The equipment was rinsed three successive times with deionized water.

Water used for decontamination was disposed of in the immediate vicinity away from the nearest monitoring well. All disposable items, such as paper towels, disposable gloves, and washcloths, were deposited into garbage bags and disposed of in a solid-waste container.

3.1.6 Health and Safety

Anchor QEA prepared a *Project Health and Safety Plan* (Anchor QEA 2016b). Work activities referenced in this Report were conducted in accordance with applicable Occupational Safety and Health Administration (OSHA) rules and regulations, as well as those specifically established in the *Project Health and Safety Plan* (Anchor QEA 2016b). All personnel involved in the work were current with respect to required OSHA training and refresher requirements of 29 Code of Federal Regulations Part 1920.120. The work was conducted in Level-D personal protective equipment.

4 Soil and Groundwater Characteristics

The following section summarizes soil and groundwater conditions encountered during subsurface soil boring and well installation efforts conducted at the Dairies. Specific information for each soil boring is provided in the *Groundwater Monitoring Well Installation Report* (ARCADIS 2013b).

4.1 Subsurface Soil Characteristics

Soil boring and groundwater monitoring well drilling efforts were conducted from June 2013 through August 2013. Borehole field observations are provided in geologic borehole logs provided in Appendix A of the *Groundwater Monitoring Well Installation Report* (ARCADIS 2013b). Figure 6 illustrates the locations of geologic cross sections across the site. Figures 7 through 14 present geologic cross sections. The geologic cross sections have been recreated and modified from their original format to improve appearance, usability, and ease of interpretation. The scale of the cross sections has been reduced from 50 times vertical exaggeration to 10 times vertical exaggeration to more clearly illustrate the geological features.

Lithology and borings depths varied throughout most of the site. Site geology in most borings typically consisted of finer-grained materials in the upper portion of borings and coarser-grained material in the lower portion of borings. A silt loam, likely equivalent to Warden silt loam soils, was typically encountered in most borings at the surface or within 20 feet of the surface. Silt loam thickness was greatest in the areas where wells YVD-13 and YVD-18 are located (Figures 8 and 11, respectively) and in the upland areas where wells DC-01 and YVD-04 are located (Figures 7 and 9, respectively). Silt loam in these areas ranged from 23 to 57 feet thick. The silt loam typically pinched out with distance from the upland borings toward lower-elevation borings. In areas where the silt loam layer was deeper, such as in the area containing well DC-01, the silt loam interbeds with the sand and gravelly sand sediments that typically dominate the lithology of borings located further downslope (Figure7).

Several borings encountered a partially cemented layer of sand and gravel (e.g., wells YVD-08, YVD-12, YVD-13/18, and YVD-15) located either beneath or interbedded with the silt loam. This partially cemented layer was generally 5 to 10 feet thick and slow to drill. Lithology beneath the cemented layer varied from 10 to 20 feet of silt loam in some borings (e.g., well YVD-13) and sand in other borings (e.g., well YVD-12).

Various layers of sand, gravelly sand, and sandy gravel dominated most of the borings completed at the Dairies. Sand and gravel were typically poorly graded. Lenses of silty sand and clayey sand were encountered in some of the borings. These lenses typically were present in the deeper portion of borings.

Three borings—from wells DC-01, YVD-02, and YVD-03—penetrated weathered basalt, which was encountered in borings YVD-02 and YVD-03 at 12 and 184 feet below ground surface, respectively. The depth to the surface of the weathered basalt greatly increased in a short distance from these two wells in the downslope direction. Basalt was not encountered in the nearest downslope wells, including YVD-04, YVD-06, and YVD-07. Total depths of these wells ranged from 168 to 245 feet below ground surface, thus indicating that the depth to the top of the basalt increases downslope.

4.2 Groundwater Characteristics

The unconfined surficial aquifer is situated in gravelly sand or sandy gravel. Depth to water was measured from a surveyed reference point on the top of the well casing. The measured depth to water below the top of the well casing in the 26 wells on March 18, 2018, ranged from 34.07 feet at well YVD-02 to 222.37 feet at well YVD-04. Depth to groundwater varies considerably across the site. Depth to groundwater was greatest in wells located in areas of the site that are topographically higher (e.g., wells YVD-04, YVD-05, YVD-06, YVD-07, YVD-08, and YVD-09), with the exception of well YVD-02. Well YVD-02 is located in the northernmost area of the site, where the depth to the underlying basalt bedrock is relatively shallow. Comparatively, depth to groundwater was less in wells located in areas of the site that are topographically lower toward the center of the Yakima Valley (e.g., wells YVD-14R, YVD-15, YVD-17, DC-03, and DC-04).

Groundwater elevations in the surficial aquifer measured on March 18, 2018, ranged from 1,254.90 feet NAVD88 in well YVD-02 to 823.45 feet NAVD88 in well YVD-12. A summary of historical depth to water measurements and groundwater elevations is presented in Table 5. Figure 15 presents surficial aquifer water table groundwater elevation contours developed from the synoptic water level measurement event on March 18, 2018. The groundwater elevation in well YVD-03 appears anomalous when compared to groundwater elevations in nearby wells and was not used to create the groundwater elevation contour map in Figure 15. As can be seen in geologic cross section A-A' (Figure 7,) well YVD-03 is screened in the underlying basalt and weathered basalt aquifer.

As can be seen in Figure 15, groundwater generally flows in a northeast to southwest direction. The average hydraulic gradient is 0.024 foot per foot (foot/foot). Greater hydraulic gradients exist in the topographically higher upslope areas in the northern section of the site, with an average of 0.047 foot/foot. As groundwater flows to the southwest toward the center of the Yakima River valley, hydraulic gradients decrease to 0.011 foot/foot in the central portion of the site and then decrease further to 0.0046 foot/foot in the southern portion of the site.

Comparison of groundwater elevations in the three shallow/deep monitoring well pairs (YVD-13/YVD-18, DC-03/DC-03D, and DC-05/DC-05D) indicates downward vertical hydraulic gradients as calculated using data collected during the synoptic measurement event on

March 18, 2018. There are downward vertical gradients of 0.002, 0.0088, and 0.0023 at well pairs DC-03/DC-03D, DC-05/DC-05D, andYVD-13/YVD-18, respectively. This is inconsistent with the general trend of vertical hydraulic gradients. The vertical gradients of these three well pairs have generally been downward at DC-05/DC-05D and upward at DC-03/DC-03D and YVD-13/YVD-18 since the beginning of the AOC groundwater monitoring program in Third Quarter 2013.

4.3 Continuous Groundwater Elevation Monitoring

Continuous long-term groundwater elevations are being monitored using Solinst Levelogger Junior Edge pressure transducers in six monitoring wells to evaluate seasonal fluctuations and trends in groundwater elevations. Two pressure transducers were installed in one of the shallow/deep monitoring well pairs to evaluate differences in hydraulic head and vertical gradients between the shallow and deep portions of the surficial aquifer. Wells with transducers include DC-03, the DC-05/DC-05D well pair, YVD-03, YVD-08, and YVD-11. Additionally, a Solinst Barologger Edge barometric pressure transducer was deployed at well YVD-08 to provide the basis to compensate water levels for barometric pressure changes. Water levels often exhibit a response to barometric pressure (i.e., a rise in barometric pressure will often result in a decrease in groundwater elevation). The sensitivity of the water level response to pressure is termed "barometric efficiency." Although barometric pressure compensation is calculated for each transducer, some fluctuation will be present due to the barometric efficiency of the aquifer.

Levelogger transducers were suspended in the well screen intervals below the water table at a depth where the transducers would remain fully submerged throughout seasonal changes in the water level. Further, the transducers were appropriately rated for the respective anticipated head in each well. Transducers were secured within the steel surface casing to prevent vandalism or tampering.

Transducers have been recording water levels in hourly increments since 12:00 p.m. on October 15, 2013. During data downloads, water levels in wells were manually gauged using an electronic water level meter. Following the data download, water level data were compensated for changes in barometric pressure and recalibrated with concurrent field-verified groundwater elevation measurements. The resulting groundwater hydrographs are presented in Figures 16A through 16G.

Hydrographs of the groundwater elevations in the wells in Figures 16A through 16G show that there are short-term fluctuations that occur over the course of a few days to a week and seasonal fluctuations in groundwater elevations at the site with an overall long-term decreasing trend in elevations, as shown in Figure 16A.

Groundwater elevations in wells DC-03 (Figure 16B) and DC-05 (Figure 16C) exhibit short-term fluctuations of approximately 0.1 foot and seasonal fluctuations of approximately 2 feet, with maximum elevations in late summer/early fall and minimum elevations in spring. Groundwater

elevations in both wells show a consistent long-term trend of gradually decreasing elevations since measurements began in 2013.

Groundwater elevations in well DC-05D (Figure 16D) exhibit the same trend and seasonal fluctuations as well DC-05. Analysis of the groundwater elevation data reveals a consistent periodic daily fluctuation in groundwater elevations of approximately 1 foot. These fluctuations suggest repetitive drawdown and recharge cycles from the pumping of nearby irrigation well GDS-IR-01 (Figure 3C). Groundwater elevations are generally lower in well DC-05D compared to water levels in well DC-05, indicating a slight downward vertical hydraulic gradient.

Groundwater elevations in well YVD-03 (Figure 16E) exhibit short-term temporal fluctuations of approximately 0.5 to 1 foot. Long-term groundwater elevations in well YVD-03 gradually increased from the beginning of the measurement period in 2013 to April 2015, with elevations increasing approximately 3 feet over this period. Since April 2015, elevations in well YVD-03 consistently declined through Fourth Quarter 2016. Since December 2016, groundwater elevations in well YVD-03 appear to have stabilized.

Groundwater elevations in well YVD-08 (Figure 16F) exhibit short-term temporal fluctuations of approximately 0.5 to 1 foot. Long-term groundwater elevations in well YVD-08 gradually increased from the beginning of the measurement period in 2013 to April 2015. Elevations began to decline in April 2015 and continued to decline through First Quarter 2018.

Groundwater elevations in well YVD-11 exhibit short-term fluctuations of approximately 0.1 foot (Figure 16G). There was a consistent long-term trend of declining groundwater elevations in well YVD-11 from the beginning of the measurement period in 2013 to September 2016, as shown in Figure 16G. Elevations decreased slightly from the beginning of the monitoring period until Fourth Quarter 2015. The rate of decrease increased as of Fourth Quarter 2015 and continued through Third Quarter 2016. Groundwater elevations stabilized with minor seasonal variations from Third Quarter 2016 through Third Quarter 2017. Since Third Quarter 2017, groundwater elevations have increased approximately 1.5 feet.

4.4 Human Influences on Groundwater Flow

Human influences in the Yakima River valley may affect the hydrology and hydrogeology in and around the Dairies. These human influences include, but are not limited to, water extraction wells, large septic systems, stormwater basins/structures, irrigation ditches/pipelines, surface water structures such as ponds, and field irrigation methods. Many of these structures are depicted in Figures 3B, 3C, and 3D.

Supply wells and regional wells withdraw water for irrigation, residential use, and other farming uses. These wells may withdraw consistent volumes of water year-round or large volumes of water

seasonally. Supply wells will likely affect the local hydraulic regime of the underlying aquifer, particularly within the area of well influence. Leakage of irrigation water from the Roza and Sunnyside irrigation canals is a source of recharge to the upper surficial aquifer during months when flow is present in the canals.

4.5 Average Linear Groundwater Flow Velocity

A potential average linear groundwater flow velocity for the surficial alluvial aquifer can be estimated based on the measured groundwater gradient and the observed characteristics of the aquifer material. The average linear velocity of groundwater flow (V_x) is determined according to the following equation:

Equation 1

$$V_x = \frac{K}{n_e} \times I$$

where:

K	=	hydraulic conductivity of the aquifer material
I	=	hydraulic gradient of the aquifer
n_e	=	effective porosity of the aquifer material

No direct testing or analysis of hydraulic conductivity or effective porosity was performed for the surficial alluvial aquifer. Measurements of hydraulic conductivity and effective porosity are typically made using methods such as aquifer tests (e.g., pumping tests or slug tests) or physical analysis of aquifer material (e.g., permeameter testing, grain-size analysis). However, an estimate of the average linear groundwater velocity can be made using data (developed by others) for hydraulic conductivities and effective porosities of materials similar to those composing the surficial alluvial aquifer.

Review of the boring logs for wells completed at the Dairies indicate that the shallow surficial aquifer is chiefly composed of the following materials:

- Sands of fine grain size
- Sands of medium grain size with fine gravels
- Gravelly sands of medium to coarse grain size with fine to coarse gravels
- Sandy gravels of fine grain size with fine to coarse sands

Estimated values for hydraulic conductivity and effective porosity of the shallow surficial aquifer material are obtained from *Method 9100, Saturated Hydraulic Conductivity, Saturated Leachate*

Conductivity, and Intrinsic Permeability (EPA 1986) and *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil* (Yu et al. 1993), respectively. Values of hydraulic conductivity (*K*) and effective porosity (n_e) for materials similar to the shallow surficial aquifer were selected from the previously referenced literature. The selected values are presented in Table 6.

The hydraulic gradient (*I*) of the shallow surficial aquifer as measured on March 18, 2018, averages 0.024 foot/foot across the Dairies site. Hydraulic gradients vary over one order of magnitude from the topographically higher northern sections to the southern areas of the Dairies. Hydraulic gradients in the topographically higher areas average 0.047 foot/foot. Hydraulic gradients decrease to approximately 0.011 foot/foot in the central portion of the Dairies and further decrease to 0.0046 foot/foot in the southern portion of the Dairies. A calculated range of average linear groundwater flow velocities in feet per day is presented in Table 6 based on the average and specific gradients. The estimated linear groundwater flow velocities for the surficial aquifer using the site average hydraulic gradient range from 3.9 to 22.9 feet per day, depending on the lithologic formation material.

The average linear groundwater flow velocities presented in Table 6 are a range of estimated possible values only; they are calculated using data elements (hydraulic conductivity and effective porosity) that are not site-specific and may not reflect the actual conditions present at the Dairies. However, this range of calculated groundwater velocity, based on values of material properties and hydraulic conductivity presented in literature together with the measured site-specific hydraulic gradients, is the best estimate of groundwater velocity that can be determined at this time.

5 Analytical Program

5.1 Analytical Methods

Groundwater samples were analyzed for the following:

- Nitrate (as nitrogen) by EPA Method 300.0
- Nitrite (as nitrogen) by EPA Method 300.0
- Ammonia by SM 4500-NH3 G
- Total phosphorus by SM 4500-P E
- Total Kjeldahl nitrogen (TKN) by EPA Method 351.2
- Inorganic anions (chloride, fluoride, sulfate) by EPA Method 300.0
- Metals (calcium, potassium, magnesium, sodium) by EPA Method 200.7
- Alkalinity (total and bicarbonate) by Standard Method 2320B

Table 4 of the 2018 QAPP presents the analytes, method, container, preservation method, and holding times for the groundwater samples collected during the groundwater monitoring event. Because of the 48-hour holding time for nitrate analysis by EPA Method 300.0, samples were either delivered to the laboratory via a courier service or hand-delivered each day. Cascade analyzed the samples immediately upon receipt to ensure holding time compliance. Analytical laboratory reports are presented in Appendix C.

5.2 Quality Control

This section presents the field and laboratory QC requirements for groundwater monitoring sampling.

5.2.1 Field Quality Control Samples

The groundwater monitoring sampling included the collection of field QC samples, including field duplicates and field blanks. Field QC samples were collected at the required frequency as specified in the 2018 QAPP.

5.2.2 Laboratory Quality Control Procedures

Laboratory QC procedures included the following:

- Nitrate analysis of water samples according to EPA Method 300.0
- Instrument calibration and standards as defined in the associated EPA method or Standard Method
- Laboratory blank measurements at a minimum 5% or one-per-batch frequency
- Accuracy and precision measurements at a minimum of 1 in 20 or one-per-set frequency

- Data reduction and reporting according to laboratory SOP requirements
- Laboratory documentation according to laboratory SOP requirements

5.3 Data Validation and Usability

All data underwent review and validation as described in Section 4 of the 2018 QAPP. The Data Validation Report is presented in Appendix D.

5.4 Data Management

All field data collected during the groundwater monitoring sampling were recorded on Field Sampling Data Sheets (Appendix B). Pertinent information, such as field parameter measurements, was transferred to an Excel spreadsheet.

The analytical data obtained from the laboratory are maintained in an electronic data management tool. Additionally, the data are provided to EPA in accordance with the procedures presented in *EPA Region 10 Monitoring and Analytical Data Deliverables Data Submission Process for Water Quality Exchange (WQX) Compatible Deliverables for Yakima Dairies (Docket No. SDWA-10-2013-0080)* and *EPA Region 10 Geographic Information System Data Deliverable Guidance for Yakima Dairies (Docket No. SDWA-10-2013-0080)*. Data submitted to EPA are provided in the requested format, which is consistent with the examples provided by EPA to the Dairies. Data are available via the Storage and Retrieval and Water Quality Exchange Data Warehouse (http://www.epa.gov/waterdata/storage-and-retrieval-and-water-quality-exchange) under the Organization ID *YAKIMAVLYDAIRIES_WQX*.

5.5 Corrective Actions

No corrective actions were required for the First Quarter 2018 sampling event.

6 Data Validation and Usability

6.1 Data Review, Verification, and Validation

All data underwent a Stage 2 validation, which included a data package completeness review. Data were validated in accordance with EPA National Functional Guidelines. The Data Validation Report is presented in Appendix D. Any deviation from the 2018 QAPP was either documented within the body of this Report or in the Data Validation Report. Results met project data quality goals and criteria and are usable for all purposes. There were no qualified results for the First Quarter 2018 groundwater monitoring event.

7 Groundwater Sampling Results

Groundwater field parameter measurements for the First Quarter 2018 sampling event are presented in Table 4. Groundwater analytical results for First Quarter 2018 are presented in Table 7. A summary of historical groundwater sampling results is presented in Table 8. Additionally, a summary of the cation/anion balance is presented in Appendix E.

7.1 Field Parameters

Groundwater field parameters collected during well purging included dissolved oxygen, pH, oxidation-reduction potential (ORP), specific conductance, temperature, and turbidity. Parameters were measured every 3 to 5 minutes during well purging until the parameters stabilized to the requirements set forth in Appendix E of the 2018 QAPP. A summary of the final measurements recorded during the purging of each well are presented in Table 4.

Dissolved oxygen measures the concentration of molecular oxygen dissolved in groundwater. Oxygen's limited solubility, as described by Henry's law, is directly related to atmospheric pressure and inversely related to water temperature and salinity. The solubility of oxygen increases proportionately with hydrostatic pressure (i.e., depth). In dilute solutions at sea level, the solubility of oxygen ranges between 7.0 and 10.0 milligrams per liter (mg/L) at temperatures ranging between 15 °C to 31 °C (APHA 1981).

The primary chemical characteristic of molecular oxygen is its ability to accept electrons from (oxidize) other species in water. Aerobic bacteria utilize dissolved oxygen as part of their metabolic processes. This results in the oxidation of organic carbon, hydrogen sulfide, ammonium, molecular nitrogen, and other reductants. An important aspect of these biochemical reactions is their irreversibility; dissolved oxygen is always consumed and never produced as a result of bacterial metabolism. Groundwater sources usually contain a low level of dissolved oxygen compared to surface waters. A dissolved oxygen level less than 1.0 mg/L is considered indicative of anaerobic conditions.

Dissolved oxygen in the measured wells ranged from 043 mg/L in well DC-03D to 11.29 mg/L in well YVD-18.

ORP is a measure of the intensity or activity of an aqueous environment or soil to mediate reactions of important elements in biological systems (e.g., oxygen, nitrogen, manganese, iron, sulfur, and carbon) and other metallic elements (EPA 2013). ORP is the tendency of a chemical species to acquire electrons and thereby be reduced. Each species has its own intrinsic reduction potential; the more positive the potential, the greater the species' affinity for electrons and tendency to be reduced.

In aqueous solutions, ORP is the tendency of the solution to either gain or lose electrons when it is subject to change by introduction of a new species. A solution with a higher (more positive) ORP than the new species will tend to gain electrons from the new species (i.e., to be reduced by oxidizing the new species) and a solution with a lower (more negative) ORP will tend to lose electrons to the new species (i.e., to be oxidized by reducing the new species). The transfer of electrons between chemical species determines the ORP of an aqueous solution. It does not characterize the capacity of the system for oxidation or reduction, in much the same way that pH does not characterize the buffering capacity of the system. A numerically positive ORP represents an environment conducive to the oxidation of an introduced substance by reduction of the original media.

Groundwater typically contains both reduced and oxidized species; however, what is termed the redox buffer capacity of an aquifer is normally dominated by the chemistry of the aquifer matrix. In most natural groundwater systems, iron is the dominant (by one to three orders of magnitude) buffering species involved in redox reactions.

The denitrification (NO_3 to N_2) reaction ($3CH_2O + 4NO_3^- = 2N_2 + 3HCO_3^- + H^+ + 2H_2O$) consumes organic matter in groundwater (Vance 1996). Denitrification can occur under ORP conditions in the range of +100 millivolts (mV) to +250 mV. Water in contact with air will have an ORP in the range of +350 mV to +500 mV.

Most work with oxidation/reduction reactions involves solutions in closed systems that are in a state of equilibrium. In groundwater with more than one oxidation/reduction species, ORP cannot be accurately measured unless the reactants are at thermodynamic equilibrium. Some redox reactions can take from 10 to 1,000 years to reach equilibrium. However, environmental processes are typically in disequilibrium, caused by the following:

- Flowing groundwater conditions
- Biological activity
- Reactions of light bioactive elements (carbon, hydrogen, oxygen, and sulfur), which most often involve the breaking of covalent bonds, a process that is normally slow
- Electrochemical reactions of exposed active mineral surfaces

ORP ranged from +103.3 mV in well DC-03D to +160.3 mV in well DC-04.

The measured pH ranged from 6.91 to 7.81 standard units, with the lowest reading measured in well YVD-14R and the highest reading measured in well YVD-18.

Specific conductance is a measurement of the dissolved material in an aqueous solution, which relates to the ability of the media to conduct an electrical current. The greater the amount of dissolved material in a media, the higher the specific conductance value. Specific conductance in water depends on the concentration of ions, mobility, valence, relative concentrations, and the

temperature of the solution. Natural waters have specific conductance that are usually much less than 1 micromho per centimeter. An estimate of total dissolved solids in mg/L can be made by multiplying specific conductance in micromhos per centimeter by a factor ranging from 0.55 to 0.9, depending on the concentration of soluble component. The presence of charged ionic species allows current to be conducted through the solution, but other undissociated species in the solution complicate the relationship between specific conductance and total dissolved solids. As a field parameter, specific conductance may best reflect major ion chemistry in groundwater, as it is less affected by either volatilization or small-scale heterogeneity. Comparing temporal and spatial specific conductance measurements can provide an approximation of the mobility of the ionic species in the system. Specific conductance ranged from 770 to 2,757 microsiemens per centimeter, with the lowest reading measured in well DC-05D and the highest reading measured in well DC-03.

Groundwater temperature measurements ranged from 11.7 °C to 15.3 °C in wells YVD-11 and YVD-13, respectively. Groundwater temperature measurements are made at the surface and do not necessarily indicate the water temperature of the aquifer.

The lowest turbidity reading was 0.16 nephelometric turbidity units (NTUs) in wells YVD-14R and YVD-13. The highest turbidity reading of 28.8 NTUs was recorded in well DC-14.

7.2 Nitrate

Nitrate (as nitrogen) was detected above the MDL in all 16 monitoring wells sampled (Figure 17A). Detected concentrations range from 2.86 mg/L in well DC-14 to 197 mg/L in well DC-03.
First Quarter 2018 nitrate concentrations are presented in Table 7 and Figure 17A.

Nitrate was detected in one well, DC-14 (2.86 mg/L), at a concentration less than the maximum contaminant level (MCL) of 10 mg/L.

Nitrate was detected in the following 15 wells at concentrations greater than the MCL of 10 mg/L:

- DC-03 (192 mg/L)
- DC-04 (32.9 mg/L)
- DC-05D (12.6 mg/L)
- YVD-09 (48.5 mg/L)
- YVD-11 (61.8 mg/L)
- YVD-13 (25.8 mg/L)
- YVD-15 (24.4 mg/L)
- YVD-18 (27.7 mg/L)
- DC-03D (32.6 mg/L)
- DC-05 (33.6 mg/L)
- YVD-08 (46.3 mg/L)
- YVD-10 (91.4 mg/L)
- YVD-12 (13.6 mg/L)
- YVD-14R (90.2 mg/L)
- YVD-16 (20.3 mg/L)

Nitrate concentrations in well pairs generally showed lower detected concentrations in the deep well compared to the shallow well, except for well pair YVD-13/YVD-18. Nitrate was detected in

well pair DC-03 (shallow) and DC-03D (deep) at 192 and 32.6 mg/L, respectively. Nitrate was detected in well pair DC-05 (shallow) and DC-05D (deep) at 33.6 and 12.6 mg/L, respectively. Nitrate was detected in well pair YVD-13 (shallow) and YVD-18 (deep) 25.8 and 27.7 mg/L, respectively.

Historical nitrate concentrations are presented in Figure 17B. The 26 monitoring wells are subdivided into the following groupings:

- East downgradient wells (DC-04, DC-05, DC-05D, YVD-15, and YVD-17)
- West downgradient wells (DC-03, DC-03D, DC-07, YVD-12, YVD-13, YVD-14/14R, and YVD-18)
- Central wells (YVD-08, YVD-09, YVD-10, YVD-11, and YVD-16)
- Northern wells (DC-09, DC-14, YVD-05, YVD-06, and YVD-07)
- Upgradient wells (DC-01, YVD-02, YVD-03, and YVD-04)

Nitrate concentration trend plots for the east downgradient wells, west downgradient wells, central wells, northern wells, and upgradient wells are presented in Figures 18 through 22, respectively.

Total dissolved ions and nitrate increase in concentration in the downgradient direction from wells YVD 02 to DC-03, as shown in Figure 23. Wells YVD-02 and YVD-07 were not sampled during First Quarter 2018. The average nitrate and total dissolved ion concentrations from the first quarter results of the years 2014 through 2017 are shown in Figure 23.

7.3 Nitrite

Nitrite was not detected above the MRL of 0.05 mg/L in any of the monitoring wells in First Quarter 2018 (First Quarter 2018 nitrite concentrations are presented in Table 7 and Figure 24).

7.4 Ammonia

Ammonia was detected above the MRL of 0.07 mg/L in two monitoring wells in First Quarter 2018. The detected concentrations ranged from 0.10 mg/L in well DC-05 to 0.17 mg/L in well YVD-14R. First Quarter 2018 ammonia concentrations are presented in Table 7 and Figure 24.

7.5 Total Kjeldahl Nitrogen

TKN was not detected above the MRL of 0.5 mg/L in any of the monitoring wells in First Quarter 2018. First Quarter 2018 TKN concentrations are presented in Table 7 and Figure 24.

7.6 Total Phosphorus

Total phosphorus was not detected above the MRL of 0.07 mg/L in any of the monitoring wells in First Quarter 2018. First Quarter 2018 phosphorous concentrations are presented in Table 7 and Figure 24.

7.7 Inorganic Anions

Inorganic anions analyzed included chloride, fluoride, and sulfate. The analytical results for the First Quarter 2018 sampling event are presented in Table 7 and Figure 25. A summary of the results is discussed in the following subsections.

7.7.1 Chloride

Detected chloride concentrations ranged from 21.7 mg/L in well YVD-15 to 156 mg/L in well DC-03. All chloride concentrations were less than the SMCL of 250 mg/L.

7.7.2 Fluoride

Detected fluoride concentrations ranged from 0.11 mg/L in well YVD-11 to 0.35 mg/L in well YVD-12. Fluoride was not detected above the MRL of 0.1 mg/L in three wells (DC-03D, DC-04, and YVD-10). All detected concentrations are below the SMCL for fluoride of 2.0 mg/L.

7.7.3 Sulfate

Detected sulfate concentrations ranged from 17.8 mg/L in well DC-14 to 249 mg/L in well YVD-13. All sulfate concentrations were less than the SMCL of 250 mg/L.

7.8 Metals

The metals analyzed in First Quarter 2018 were calcium, magnesium, potassium, and sodium. The analytical results for the First Quarter 2018 sampling event are presented in Table 7 and Figure 26. A summary of the results is discussed in the following subsections.

7.8.1 Calcium

Calcium concentrations ranged from 67.5 mg/L in well YVD-18 to 296 mg/L in well YVD-10.

7.8.2 Magnesium

Magnesium concentrations ranged from 22.00 mg/L at well YVD-18 to 67.00 mg/L in well DC-03.

7.8.3 Potassium

Potassium concentrations ranged from 2.30 mg/L in well YVD-12 to 7.80 mg/L in well YVD-09.

7.8.4 Sodium

Sodium concentrations ranged from 25.8 mg/L in a duplicate sample collected at well YVD-11 to 180 mg/L in well DC-03.

7.9 Alkalinity

Alkalinity analyses included bicarbonate alkalinity and total alkalinity. The analytical results for the First Quarter 2018 sampling event are presented in Table 7 and Figure 27. A summary of the results is discussed in the following subsections.

7.9.1 Bicarbonate Alkalinity

Bicarbonate concentrations ranged from 111 mg/L at well YVD-18 to 529 mg/L in well DC-03D.

7.9.2 Total Alkalinity

Total alkalinity concentrations ranged from 111 mg/L at well YVD-18 to 529 mg/L in well DC-03D.

7.10 Water Type Classifications

Analytical results for cations and anions were used to construct Stiff diagrams and Piper diagrams. These diagrams are used to evaluate the natural water chemistry of the shallow surficial aquifer, describe water type classifications, and map hydrochemical facies.

7.10.1 Anion and Cation Balance

A worksheet displaying the calculation of the anion and cation balance for the samples for First Quarter 2018 is presented in Appendix E. The total cation concentration was calculated as the sum of calcium, magnesium, sodium, and potassium. The total anion concentration was calculated as the sum of chloride, sulfate, and bicarbonate; nitrate was also included because this anion was present at significant concentrations in many samples. This information is summarized in a table with the calculated milliequivalents per liter (equivalent weight or equivalent mass) for the groundwater analytical results. The ion balances for the groundwater samples were within +/-3.4%. The average ion balances of the groundwater samples were +/-1.0%, indicating that the major-ion laboratory analyses were generally of good quality.

7.10.2 Stiff Diagrams

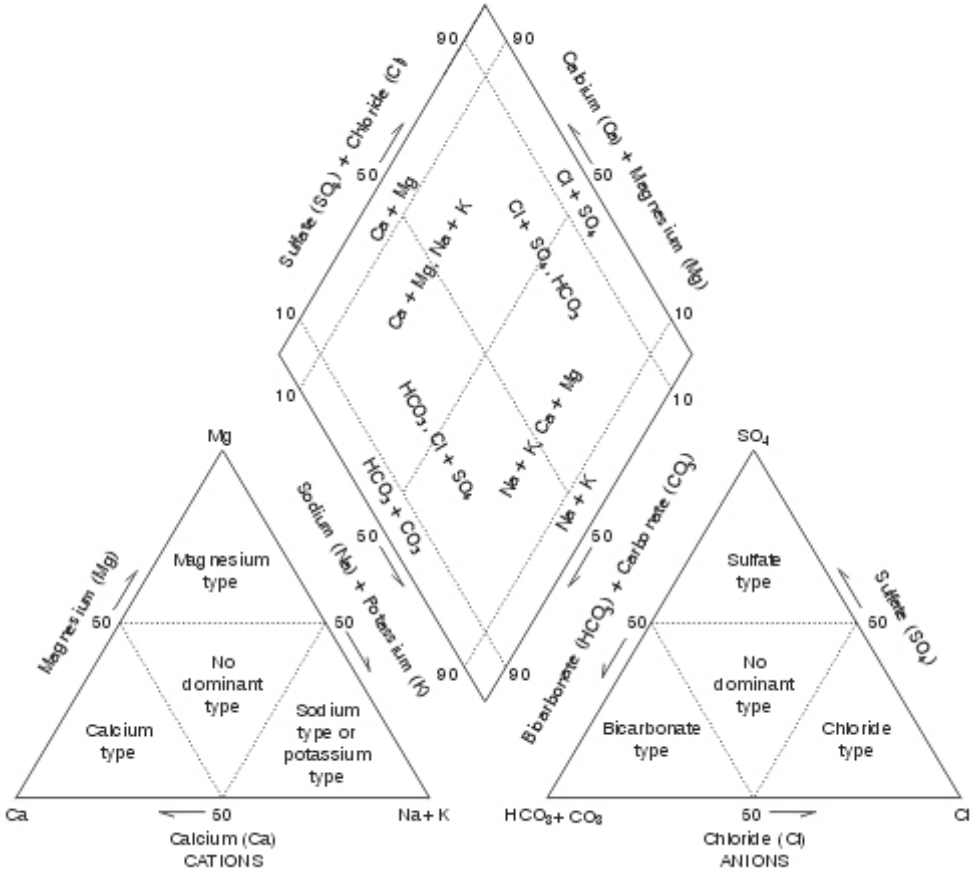
Stiff diagrams are used to graphically compare the cation and anion concentrations for wells throughout the site both spatially and over time. A polygonal shape is created from four parallel horizontal lines extending on either side of a vertical zero axis. Cations are plotted on the left of the zero axis, one to each horizontal axis, and anions are plotted to the right, extending along a given horizontal axis. Stiff diagrams are useful in making rapid visual comparison between water of different sources; generally, waters with the same polygonal shapes are derived from the same source. The larger the area of the polygonal shape, the greater the concentrations of the various ions associated with the depicted sample. Figures 28A through 28F present Stiff diagrams for the 16 wells sampled in First Quarter 2018. Figure 29 presents the Stiff diagrams next to their respective sample

point on a facility base map. Concentrations in the Stiff diagrams are expressed in milliequivalents per liter and require a specific conversion for each individual ion concentration.

7.10.3 Piper Diagrams

Piper diagrams illustrate the geochemical characteristics of each sample point within the lithological flow path by plotting dissolved ion concentrations (expressed in milliequivalents per liter) on two-dimensional trilinear diagrams shown in Chart 1. Each trilinear diagram represents the relative percentages of three ions. Cations are represented in the left trilinear diagram, while anions are represented in the right trilinear diagram. The apex of each of the triangles represents 100% of the ion shown at that corner. For example, water compositions with more than 50% relative calcium ions would plot in the bottom left corner of the cation diagram and would be considered calcium dominant. Compositions with less than 50% of each of the represented cations would plot in the center of the diagram and would therefore be considered to have no dominant type. Each of the data points from the cation and anion diagrams are then projected into the quadrilateral above. The quadrilateral represents the water composition with respect to the six represented ions.

Chart 1
Piper Diagram Displaying Relative Ion Composition (Bartos and Ogle 2002)



The Piper diagrams were constructed in general accordance with ASTM International D5754-95 *Standard Guide for Displaying the Results of Chemical Analyses of Groundwater for Major Ions and Trace Elements – Trilinear Diagrams for Two or More Analyses* (2006). Figure 30 presents a Piper diagram of general water quality for all 26 well samples. The wells are divided into well groups (based on location and with respect to groundwater gradient) and shown on individual Piper diagrams in Figures 31 through 33. Individual data points within each sample group demonstrate the changes in the hydrochemical facies throughout the groundwater flow path through the Dairies site.

Group 1 consists of nine wells (DC-03, DC-03D, YVD-04, YVD-05, YVD-08, YVD-09, YVD-12, YVD-13, and YVD-18), of which seven are sampled quarterly (YVD-04 and YVD-05 have had nitrate concentrations consistently below the MCL and are only sampled annually in the second quarter of each year), located within the western portion of the Dairies (Figure 31). The Group 1 wells' groundwater is generally calcium-sulfate type in the downgradient wells (DC-03, YVD-08, YVD-12, YVD-13, and YVD-18). Well YVD-09, which is located approximately between the upgradient and

downgradient portions of the Dairies site, has groundwater classified as "no dominant type." Groundwater in well DC-03D, which is a downgradient well screened in a deeper zone of the surficial aquifer, is calcium-bicarbonate type.

Group 2 consists of 10 wells (DC-01, DC-04, DC-07, DC-14, YVD-03, YVD-06, YVD-10, YVD-14R, YVD-15, and YVD-17), of which five are sampled quarterly (DC-04, DC-14, YVD-10, YVD-14R, and YVD-15), located within in the central portion of the Dairies (Figure 32). Group 2 wells' groundwater is calcium-bicarbonate type. Historically, groundwater in well YVD-10 has fluctuated between calcium-bicarbonate and calcium-sulfate type. First Quarter 2018 is the second consecutive quarter that groundwater in well YVD-10 has been classified as calcium-bicarbonate type; it had been classified as calcium-sulfate-type water from First Quarter 2017 through Third Quarter 2017.

Group 3 consists of seven wells (DC-05, DC-05D, DC-09, YVD-02, YVD-07, YVD-11, and YVD-16), of which four are sampled quarterly (DC-05, DC-05D, YVD-11, and YVD-16), located within the eastern portion of the Dairies (Figure 33). The Group 3 wells' groundwater has historically been calcium-bicarbonate type. Currently, the groundwater in wells YVD-11 and DC-05D fluctuates between calcium-bicarbonate type and calcium-sulfate type.

8 Summary and Conclusions

Trends in groundwater concentrations are summarized in the *2017 Annual Report* (Anchor QEA 2018b) and will be updated each year following the fourth quarter groundwater monitoring event. The results of the First Quarter 2018 sampling generally support the conclusions presented in the *2017 Annual Report* and are listed as follows:

- Nitrate concentrations in all northern wells and upgradient wells have remained below the nitrate MCL since Third Quarter 2016 and Second Quarter 2015, respectively.
- Nitrate concentrations have also been consistently below the nitrate MCL in downgradient wells DC-07 and YVD-17 since the beginning of the monitoring program.
- Nitrate concentrations in the east downgradient wells, west downgradient wells, and central wells (Figures 18, 19, and 20, respectively) have, with two exceptions, remained stable or are decreasing. The two wells with upward trends are discussed below.
- In 2017, nitrite, ammonia, and TKN were not detected above the method detection limit in all sampled wells. These analytes have been non-detect since Second Quarter 2017, with the exception of two low-level detections of ammonia during the First Quarter 2018 event (0.10 mg/L at well DC-05 and 0.17 mg/L at well YVD-14R).
- Detected phosphorus concentrations were all below 0.10 mg/L. All detected phosphorus concentrations have been below 0.10 mg/L since First Quarter 2017. Phosphorous concentrations in the upgradient wells are not significantly different than concentrations in the central, northern, and downgradient wells.

Significant upward trends in groundwater nitrate concentrations have been noted in only two wells (YVD-08 and YVD-11; based on Mann-Kendall trend analyses conducted in Fourth Quarter 2017).[2] Nitrate concentrations decreased for the last two quarters (Fourth Quarter 2017 and First Quarter 2018) in both wells. Nitrate trends for these wells will be updated after more data are available.

Groundwater in the surficial aquifer flows in a north-northeast to south-southwest direction with little seasonal change in hydraulic gradient. Groundwater hydrographs shown in Figures 16A through 16G show that groundwater elevations have been generally decreasing in the surficial aquifer since monitoring began in 2013, with the exception of well YVD-11, which has shown stable to increasing elevations since Third Quarter 2016. Groundwater elevations in the surficial aquifer fluctuate seasonally, with the highest elevations in the third quarter and lowest elevations in the first quarter, suggesting groundwater recharge from agricultural irrigation activities from March through October.

[2] Trend conclusions are based on Mann-Kendall trend analyses of available nitrate data with 95% confidence level (alpha = 0.05) to determine if a trend exists. The slope of the trend is then determined by the Thiel-Sen analysis. Both analyses were performed in ProUCL version 5.1.

Groundwater in the surficial aquifer in the location of the Dairies from First Quarter 2018 is calcium-bicarbonate type in 10 wells and calcium-sulfate-type water in five wells. Groundwater in one well (YVD-09) is classified as "no dominant type."

9 References

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10 Certifications

Cow Palace Certification

I certify under the penalty of law that this document and all attachments were prepared by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel gathered and evaluated the information submitted. Based on my inquiry of any and all persons directly responsible for gathering and analyzing the information obtained, I certify that the information contained in or accompanying this submittal is, to the best of my knowledge and belief, true, accurate, and complete. As to those identified portion(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Cow Palace, LLC

Signature	
Name	Adam Dolsen
Title	Member
Date	5-13-18

George DeRuyter & Son Dairy, LLC, D&A Dairy, LLC, and George & Margaret, LLC, Certification

I certify under the penalty of law that this document and all attachments were prepared by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel gathered and evaluated the information submitted. Based on my inquiry of any and all persons directly responsible for gathering and analyzing the information obtained, I certify that the information contained in or accompanying this submittal is, to the best of my knowledge and belief, true, accurate, and complete. As to those identified portion(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George DeRuyter & Son Dairy, LLC, D&A Dairy, LLC (also known as D and A Dairy L.L.C.), and George & Margaret, LLC

Signature	Dan DeRuyter
Name	Dan DeRuyter
Title	Member
Date	5/11/18

Liberty Dairy Certification

I certify under the penalty of law that this document and all attachments were prepared by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel gathered and evaluated the information submitted. Based on my inquiry of any and all persons directly responsible for gathering and analyzing the information obtained, I certify that the information contained in or accompanying this submittal is, to the best of my knowledge and belief, true, accurate, and complete. As to those identified portion(s) of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Liberty Dairy, LLC (and its associated dairy facility H&S Bosma Dairy)

Signature	Henry W Bosma
Name	Henry Bosma
Title	Partner
Date	5-11-18

Tables

Table 1
Groundwater Monitoring Frequency

Well ID	Manual Groundwater Elevation Measurements (Quarterly)	Long-Term Groundwater Elevation Measurements (Continuous)	Groundwater Sampling Frequency	
			Quarterly	Annually (Second Quarter Event)
DC-01	X			X
DC-03	X	X	X	X
DC-03D	X		X	X
DC-04	X		X	X
DC-05	X	X	X	X
DC-05D	X	X	X	X
DC-07	X			X
DC-09	X			X
DC-14	X		X	X
YVD-02	X			X
YVD-03	X	X		X
YVD-04	X			X
YVD-05	X			X
YVD-06	X			X
YVD-07	X			X
YVD-08	X	X	X	X
YVD-09	X		X	X
YVD-10	X		X	X
YVD-11	X	X	X	X
YVD-12	X		X	X
YVD-13	X		X	X
YVD-14R	X		X	X
YVD-15	X		X	X
YVD-16	X		X	X
YVD-17	X			X
YVD-18	X		X	X

Table 2
Monitoring Well Construction Details

Well ID	Coordinates		Top of Casing Elevation (feet NAVD88)	Ground Surface Elevation (feet NAVD88)	Surface Completion	Well Depth (feet bgs)	Casing and Screen Material	Screen Slot Size (inches)	Screen Length (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Elevation of Top of Screen (feet NAVD88)	Elevation of Base of Screen (feet NAVD88)	Depth to Top of Filter Pack (feet bgs)	Depth to Bottom of Filter Pack (feet bgs)
	Latitude	Longitude													
Monitoring Wells															
DC-01	46.418795	-120.138185	1199.17	1199.64	Flush	160.0	Schedule 40 PVC	0.020	20.0	140.0	160.0	1059.6	1039.6	136.0	160.0
DC-03	46.386289	-120.146145	910.58	911.04	Flush	85.0	Schedule 40 PVC	0.020	20.0	62.5	82.5	848.5	828.5	58.5	85.0
DC-03D	46.386220	-120.146054	911.33	908.83	Stick-up	116.1	Schedule 40 PVC	0.020	9.5	106.1	115.6	802.7	793.2	100.0	116.5
DC-04	46.382446	-120.131129	877.22	877.62	Flush	51.0	Schedule 40 PVC	0.020	20.0	29.5	49.5	848.1	828.1	24.5	51.0
DC-05	46.382358	-120.120237	911.95	912.35	Flush	86.0	Schedule 40 PVC	0.020	20.0	63.5	83.5	848.9	828.9	59.5	86.0
DC-05D	46.382517	-120.120210	915.91	913.55	Stick-up	126.8	Schedule 40 PVC	0.020	9.5	116.8	126.3	796.8	787.3	114.0	128.0
DC-07	46.389612	-120.141671	889.29	889.78	Flush	61.0	Schedule 40 PVC	0.020	20.0	38.5	58.5	851.3	831.3	34.5	61.0
DC-09	46.404230	-120.120858	1048.60	1048.97	Flush	196.0	Schedule 40 PVC	0.020	20.0	173.5	193.5	875.5	855.5	169.5	196.0
DC-14	46.404240	-120.139685	1036.61	1036.92	Flush	151.0	Schedule 40 PVC	0.020	20.0	128.5	148.5	908.4	888.4	124.5	151.0
YVD-02	46.422601	-120.113697	1288.97	1285.81	Stick-up	35.0	Schedule 40 PVC	0.020	19.5	15.0	34.5	1270.8	1251.3	13.0	36.0
YVD-03	46.414227	-120.139638	1120.68	1118.15	Stick-up	200.1	Schedule 40 PVC	0.020	19.5	180.1	199.6	938.1	918.6	176.0	202.0
YVD-04	46.408062	-120.156224	1118.66	1116.06	Stick-up	245.2	Schedule 40 PVC	0.020	19.5	225.2	244.7	890.9	871.4	220.0	248.0
YVD-05	46.404457	-120.142790	1051.78	1052.26	Flush	182.2	Schedule 40 PVC	0.020	19.5	162.2	181.7	890.1	870.6	156.0	208.0
YVD-06	46.407671	-120.137191	1053.51	1053.88	Flush	169.0	Schedule 40 PVC	0.020	19.5	149.0	168.5	904.9	885.4	144.0	170.0
YVD-07	46.404432	-120.125205	1073.03	1070.59	Stick-up	168.3	Schedule 40 PVC	0.020	19.5	148.3	167.8	922.3	902.8	145.0	169.0
YVD-08	46.396920	-120.152771	1014.38	1011.92	Stick-up	182.5	Schedule 40 PVC	0.020	19.5	162.5	182.0	849.4	829.9	155.0	188.0
YVD-09	46.396832	-120.144078	966.81	964.28	Stick-up	122.3	Schedule 40 PVC	0.020	19.5	102.3	121.8	862.0	842.5	9.5	128.0
YVD-10	46.396978	-120.136165	958.00	955.45	Stick-up	103.1	Schedule 40 PVC	0.020	19.5	83.1	102.6	872.4	852.9	76.0	103.5
YVD-11	46.393446	-120.123627	967.91	965.51	Stick-up	116.9	Schedule 40 PVC	0.020	19.5	96.9	116.4	868.6	849.1	94.0	117.3
YVD-12	46.389730	-120.166996	961.91	959.51	Stick-up	151.4	Schedule 40 PVC	0.020	19.5	131.4	150.9	828.1	808.6	127.0	154.0
YVD-13	46.389708	-120.151673	965.59	963.07	Stick-up	141.0	Schedule 40 PVC	0.020	19.5	121.0	140.5	842.1	822.6	117.0	148.0
YVD-14R	46.389532	-120.145124	920.19	918.80	Stick-up	93.0	Schedule 40 PVC	0.020	20.0	72.0	92.0	846.8	826.8	69.0	93.0
YVD-15	46.389802	-120.137153	940.61	938.08	Stick-up	105.1	Schedule 40 PVC	0.020	19.5	85.1	104.6	853.0	833.5	81.0	128.0
YVD-16	46.389586	-120.114783	975.90	972.99	Stick-up	122.1	Schedule 40 PVC	0.020	19.5	102.1	121.6	870.9	851.4	100.5	127.0
YVD-17	46.380761	-120.142067	866.73	864.28	Stick-up	47.7	Schedule 40 PVC	0.020	19.5	27.7	47.2	836.6	817.1	25.0	58.0
YVD-18	46.389758	-120.151671	965.74	963.42	Stick-up	179.9	Schedule 40 PVC	0.020	9.5	169.9	179.4	793.5	784.0	166.0	181.5
Decommissioned Wells															
YVD-14	46.389536	-120.145067	920.19	917.64	Stick-up	91.0	Schedule 40 PVC	0.020	19.5	71.0	90.5	846.6	827.1	66.0	98.0

Notes:
Latitude and longitude in decimal degrees based on World Geodetic Survey 1984.
bgs: below ground surface
NAVD88: North American Vertical Datum of 1988
PVC: polyvinyl chloride

Table 3
Summary of Groundwater Elevations – First Quarter 2018

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
DC-01	3/18/2018	1199.17	150.74	1048.43
DC-03	3/18/2018	910.58	74.54	836.04
DC-03D	3/18/2018	911.33	75.30	836.03
DC-04	3/18/2018	877.22	36.89	840.33
DC-05	3/18/2018	911.95	71.06	840.89
DC-05D	3/18/2018	915.91	75.43	840.48
DC-07	3/18/2018	889.29	46.45	842.84
DC-09	3/18/2018	1048.60	146.19	902.41
DC-14	3/18/2018	1036.61	133.83	902.78
YVD-02	3/18/2018	1288.97	34.07	1254.90
YVD-03	3/18/2018	1120.68	191.55	929.13
YVD-04	3/18/2018	1118.66	222.37	896.29
YVD-05	3/18/2018	1051.78	169.38	882.40
YVD-06	3/18/2018	1053.51	106.37	947.14
YVD-07	3/18/2018	1073.03	156.76	916.27
YVD-08	3/18/2018	1014.38	172.17	842.21
YVD-09	3/18/2018	966.81	112.56	854.25
YVD-10	3/18/2018	958.00	92.49	865.51
YVD-11	3/18/2018	967.91	108.10	859.81
YVD-12	3/18/2018	961.91	138.46	823.45
YVD-13	3/18/2018	965.59	128.47	837.12
YVD-14R	3/18/2018	921.41	79.40	842.01
YVD-15	3/18/2018	940.61	94.96	845.65
YVD-16	3/18/2018	975.90	114.49	861.41
YVD-17	3/18/2018	866.73	38.54	828.19
YVD-18	3/18/2018	965.74	128.72	837.02

Notes:

BTOC: below top of casing

NAVD88: North American Vertical Datum of 1988

Table 4
Field Parameter Measurements – First Quarter 2018

Well ID	Sample Date	Bladder Pump Type (portable or dedicated)	Purge Time (minutes)	Volume Purged (liters)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm)	pH (standard units)	Oxidation/Reduction Potential (mV)	Turbidity (NTUs)
DC-03	3/18/2018	Dedicated	15	2.0	14.6	7.80	2757	7.16	130.5	0.62
DC-03D	3/18/2018	Dedicated	15	2.6	14.4	0.43	1500	6.97	103.3	0.28
DC-04	3/18/2018	Dedicated	15	3.3	13.6	7.73	1231	7.07	160.3	0.27
DC-05	3/18/2018	Dedicated	18	2.1	12.8	7.42	1183	7.23	152.3	0.43
DC-05D	3/18/2018	Dedicated	15	3.0	14.2	7.43	770	7.75	121.0	1.21
DC-14	3/19/2018	Dedicated	18	3.9	14.3	4.00	806	7.00	132.8	28.8
YVD-08	3/19/2018	Dedicated	30	2.5	13.3	5.54	1396	7.29	146.4	13.2
YVD-09	3/19/2018	Dedicated	30	7.0	14.7	7.03	1440	7.19	141.1	15.4
YVD-10	3/18/2018	Dedicated	24	3.7	14.0	6.79	2349	7.05	132.5	6.41
YVD-11	3/19/2018	Dedicated	15	1.3	11.7	7.87	1482	6.97	139.3	1.85
YVD-12	3/19/2018	Dedicated	15	2.4	13.5	7.41	1023	7.47	125.0	0.37
YVD-13	3/19/2018	Dedicated	15	4.0	15.3	6.88	1072	7.75	137.4	0.16
YVD-14R	3/18/2018	Dedicated	15	3.2	14.6	2.17	2133	6.91	131.3	0.16
YVD-15	3/18/2018	Dedicated	15	2.4	13.7	6.49	1204	7.31	151.9	3.38
YVD-16	3/19/2018	Dedicated	15	2.8	13.2	8.02	936	7.36	148.7	1.55
YVD-18	3/19/2018	Dedicated	15	3.2	15.2	11.29	920	7.81	142.6	0.21

Notes:
µS/cm: microsiemens per centimeter
mg/L: milligrams per liter
mV: millivolt
NTU: nephelometric turbidity unit

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
DC-01	9/16/2013	1199.17	150.45	1048.72
DC-01	12/9/2013	1199.17	150.66	1048.51
DC-01	3/16/2014	1199.17	150.43	1048.74
DC-01	6/1/2014	1199.17	150.50	1048.67
DC-01	9/21/2014	1199.17	150.32	1048.85
DC-01	12/14/2014	1199.17	150.20	1048.97
DC-01	3/5/2015	1199.17	150.35	1048.82
DC-01	6/15/2015	1199.17	150.41	1048.76
DC-01	9/21/2015	1199.17	150.50	1048.67
DC-01	12/13/2015	1199.17	150.46	1048.71
DC-01	3/8/2016	1199.17	150.53	1048.64
DC-01	6/19/2016	1199.17	150.70	1048.47
DC-01	9/25/2016	1199.17	150.70	1048.47
DC-01	12/11/2016	1199.17	150.65	1048.52
DC-01	3/5/2017	1199.17	150.55	1048.62
DC-01	6/4/2017	1199.17	150.68	1048.49
DC-01	9/27/2017	1199.17	150.81	1048.36
DC-01	12/3/2017	1199.17	150.74	1048.43
DC-01	3/18/2018	1199.17	150.74	1048.43
DC-03	9/16/2013	910.58	72.43	838.15
DC-03	12/9/2013	910.58	72.55	838.03
DC-03	3/16/2014	910.58	73.62	836.96
DC-03	6/1/2014	910.58	73.25	837.33
DC-03	9/21/2014	910.58	72.26	838.32
DC-03	12/14/2014	910.58	72.40	838.18
DC-03	3/5/2015	910.58	73.60	836.98
DC-03	6/15/2015	910.58	73.12	837.46
DC-03	9/21/2015	910.58	72.35	838.23
DC-03	12/13/2015	910.58	73.64	837.94
DC-03	3/8/2016	910.58	73.99	836.59
DC-03	6/19/2016	910.58	73.84	836.74
DC-03	9/25/2016	910.58	72.87	837.71
DC-03	12/11/2016	910.58	72.93	837.65
DC-03	3/5/2017	910.58	74.20	836.38
DC-03	6/4/2017	910.58	74.21	836.37
DC-03	9/27/2017	910.58	72.81	837.77
DC-03	12/3/2017	910.58	73.11	837.47
DC-03	3/18/2018	910.58	74.54	836.04
DC-03D	9/16/2013	911.33	73.03	838.30
DC-03D	12/9/2013	911.33	73.16	838.17
DC-03D	3/16/2014	911.33	74.35	836.98
DC-03D	6/1/2014	911.33	73.90	837.43
DC-03D	9/21/2014	911.33	72.87	838.46

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
DC-03D	12/14/2014	911.33	73.13	838.20
DC-03D	3/5/2015	911.33	74.28	837.05
DC-03D	6/15/2015	911.33	73.72	837.61
DC-03D	9/21/2015	911.33	72.96	838.37
DC-03D	12/13/2015	911.33	73.31	838.02
DC-03D	3/8/2016	911.33	74.66	836.67
DC-03D	6/19/2016	911.33	74.47	836.86
DC-03D	9/25/2016	911.33	73.44	837.89
DC-03D	12/11/2016	911.33	73.73	837.60
DC-03D	3/5/2017	911.33	75.05	836.28
DC-03D	6/4/2017	911.33	74.88	836.45
DC-03D	9/27/2017	911.33	73.42	837.91
DC-03D	12/3/2017	911.33	73.80	837.53
DC-03D	3/18/2018	911.33	75.30	836.03
DC-04	9/16/2013	877.22	31.75	845.47
DC-04	12/9/2013	877.22	32.61	844.61
DC-04	3/16/2014	877.22	34.55	842.67
DC-04	6/1/2014	877.22	34.65	842.57
DC-04	9/21/2014	877.22	31.99	845.23
DC-04	12/14/2014	877.22	32.98	844.24
DC-04	3/5/2015	877.22	34.31	842.91
DC-04	6/15/2015	877.22	34.70	842.52
DC-04	9/21/2015	877.22	33.61	843.61
DC-04	12/13/2015	877.22	34.38	842.84
DC-04	3/8/2016	877.22	35.60	841.62
DC-04	6/19/2016	877.22	34.74	842.48
DC-04	9/25/2016	877.22	33.81	843.41
DC-04	12/11/2016	877.22	34.33	842.89
DC-04	3/5/2017	877.22	35.45	841.77
DC-04	6/4/2017	877.22	35.63	841.59
DC-04	9/27/2017	877.22	34.42	842.80
DC-04	12/3/2017	877.22	35.17	842.05
DC-04	3/18/2018	877.22	36.89	840.33
DC-05	9/16/2013	911.95	67.78	844.17
DC-05	12/9/2013	911.95	68.28	843.67
DC-05	3/16/2014	911.95	69.25	842.70
DC-05	6/1/2014	911.95	70.15	841.80
DC-05	9/21/2014	911.95	69.43	842.52
DC-05	12/14/2014	911.95	68.80	843.15
DC-05	3/5/2015	911.95	69.33	842.62
DC-05	6/15/2015	911.95	70.28	841.67
DC-05	9/21/2015	911.95	69.94	842.01
DC-05	12/13/2015	911.95	69.59	842.36

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
DC-05	3/8/2016	911.95	70.58	841.37
DC-05	6/19/2016	911.95	71.43	840.52
DC-05	9/25/2016	911.95	71.08	840.87
DC-05	12/11/2016	911.95	70.24	841.71
DC-05	3/5/2017	911.95	70.98	840.97
DC-05	6/4/2017	911.95	71.81	840.14
DC-05	9/27/2017	911.95	71.14	840.81
DC-05	12/3/2017	911.95	70.50	841.45
DC-05	3/18/2018	911.95	71.06	840.89
DC-05D	9/16/2013	915.91	71.92	843.99
DC-05D	12/9/2013	915.91	72.04	843.87
DC-05D	3/16/2014	915.91	73.83	842.08
DC-05D	6/1/2014	915.91	74.80	841.11
DC-05D	9/21/2014	915.91	73.78	842.13
DC-05D	12/14/2014	915.91	73.02	842.89
DC-05D	3/5/2015	915.91	73.66	842.25
DC-05D	6/15/2015	915.91	74.71	841.20
DC-05D	9/21/2015	915.91	74.38	841.53
DC-05D	12/13/2015	915.91	73.88	842.03
DC-05D	3/8/2016	915.91	74.70	841.21
DC-05D	6/19/2016	915.91	75.71	840.20
DC-05D	9/25/2016	915.91	75.40	840.51
DC-05D	12/11/2016	915.91	74.65	841.26
DC-05D	3/5/2017	915.91	74.96	840.95
DC-05D	6/4/2017	915.91	75.94	839.97
DC-05D	9/27/2017	915.91	75.47	840.44
DC-05D	12/3/2017	915.91	74.64	841.27
DC-05D	3/18/2018	915.91	75.43	840.48
DC-07	9/16/2013	889.29	44.76	844.53
DC-07	12/9/2013	889.29	44.15	845.14
DC-07	3/16/2014	889.29	44.76	844.53
DC-07	6/1/2014	889.29	35.12	854.17
DC-07	9/21/2014	889.29	44.59	844.70
DC-07	12/14/2014	889.29	44.13	845.16
DC-07	3/5/2015	889.29	44.90	844.39
DC-07	6/15/2015	889.29	45.30	843.99
DC-07	9/21/2015	889.29	45.08	844.21
DC-07	12/13/2015	889.29	44.65	844.64
DC-07	3/8/2016	889.29	45.50	843.79
DC-07	6/19/2016	889.29	46.16	843.13
DC-07	9/25/2016	889.29	45.69	843.60
DC-07	12/11/2016	889.29	45.61	843.68
DC-07	3/5/2017	889.29	46.27	843.02

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
DC-07	6/4/2017	889.29	46.54	842.75
DC-07	9/27/2017	889.29	46.11	843.18
DC-07	12/3/2017	889.29	45.73	843.56
DC-07	3/18/2018	889.29	46.45	842.84
DC-09	9/16/2013	1048.60	147.16	901.44
DC-09	12/9/2013	1048.60	143.10	905.50
DC-09	3/16/2014	1048.60	139.81	908.79
DC-09	6/1/2014	1048.60	142.53	906.07
DC-09	9/21/2014	1048.60	143.67	904.93
DC-09	12/14/2014	1048.60	139.42	909.18
DC-09	3/5/2015	1048.60	137.83	910.77
DC-09	6/15/2015	1048.60	146.33	902.27
DC-09	9/21/2015	1048.60	151.28	897.32
DC-09	12/13/2015	1048.60	147.46	901.14
DC-09	3/8/2016	1048.60	146.70	901.90
DC-09	6/19/2016	1048.60	151.03	897.57
DC-09	9/25/2016	1048.60	151.98	896.62
DC-09	12/11/2016	1048.60	148.71	899.89
DC-09	3/5/2017	1048.60	146.24	902.36
DC-09	6/4/2017	1048.60	148.62	899.98
DC-09	9/27/2017	1048.60	151.56	897.04
DC-09	12/3/2017	1048.60	149.27	899.33
DC-09	3/18/2018	1048.60	146.19	902.41
DC-14	9/16/2013	1036.61	131.08	905.53
DC-14	12/9/2013	1036.61	131.10	905.51
DC-14	3/16/2014	1036.61	130.32	906.29
DC-14	6/1/2014	1036.61	130.02	906.59
DC-14	9/21/2014	1036.61	130.25	906.36
DC-14	12/14/2014	1036.61	137.91	898.70
DC-14	3/5/2015	1036.61	129.51	907.10
DC-14	6/15/2015	1036.61	129.37	907.24
DC-14	9/21/2015	1036.61	130.28	906.33
DC-14	12/13/2015	1036.61	130.71	905.90
DC-14	3/8/2016	1036.61	131.26	905.35
DC-14	6/19/2016	1036.61	131.89	904.72
DC-14	9/25/2016	1036.61	132.76	903.85
DC-14	12/11/2016	1036.61	133.45	903.16
DC-14	3/5/2017	1036.61	133.81	902.80
DC-14	6/4/2017	1036.61	133.81	902.80
DC-14	9/27/2017	1036.61	134.16	902.45
DC-14	12/3/2017	1036.61	134.48	902.13
DC-14	3/18/2018	1036.61	133.83	902.78

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-02	9/16/2013	1288.97	24.21	1264.76
YVD-02	12/9/2013	1288.97	32.85	1256.12
YVD-02	3/16/2014	1288.97	34.45	1254.52
YVD-02	6/1/2014	1288.97	22.10	1266.87
YVD-02	9/21/2014	1288.97	26.14	1262.83
YVD-02	12/14/2014	1288.97	33.01	1255.96
YVD-02	3/5/2015	1288.97	34.42	1254.55
YVD-02	6/15/2015	1288.97	19.69	1269.28
YVD-02	9/21/2015	1288.97	25.36	1263.61
YVD-02	12/13/2015	1288.97	33.25	1255.72
YVD-02	3/8/2016	1288.97	33.93	1255.04
YVD-02	6/19/2016	1288.97	27.49	1261.48
YVD-02	9/25/2016	1288.97	27.72	1261.25
YVD-02	12/11/2016	1288.97	32.52	1256.45
YVD-02	3/5/2017	1288.97	27.34	1261.63
YVD-02	6/4/2017	1288.97	26.97	1262.00
YVD-02	9/27/2017	1288.97	28.08	1260.89
YVD-02	12/3/2017	1288.97	33.83	1255.14
YVD-02	3/18/2018	1288.97	34.07	1254.90
YVD-03	9/16/2013	1120.68	189.88	930.80
YVD-03	12/9/2013	1120.68	190.42	930.26
YVD-03	3/16/2014	1120.68	189.10	931.58
YVD-03	6/1/2014	1120.68	188.97	931.71
YVD-03	9/21/2014	1120.68	189.04	931.64
YVD-03	12/14/2014	1120.68	188.73	931.95
YVD-03	3/5/2015	1120.68	187.92	932.76
YVD-03	6/15/2015	1120.68	188.70	931.98
YVD-03	9/21/2015	1120.68	189.63	931.05
YVD-03	12/13/2015	1120.68	189.85	930.83
YVD-03	3/8/2016	1120.68	190.64	930.04
YVD-03	6/19/2016	1120.68	191.31	929.37
YVD-03	9/25/2016	1120.68	191.61	929.07
YVD-03	12/11/2016	1120.68	191.25	929.43
YVD-03	3/5/2017	1120.68	190.85	929.83
YVD-03	6/4/2017	1120.68	191.20	929.48
YVD-03	9/27/2017	1120.68	191.77	928.91
YVD-03	12/3/2017	1120.68	191.61	929.07
YVD-03	3/18/2018	1120.68	191.55	929.13
YVD-04	9/16/2013	1118.66	220.55	898.11
YVD-04	12/9/2013	1118.66	223.50	895.16
YVD-04	3/16/2014	1118.66	222.20	896.46
YVD-04	6/1/2014	1118.66	221.04	897.62
YVD-04	9/21/2014	1118.66	220.67	897.99

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-04	12/14/2014	1118.66	221.30	897.36
YVD-04	3/5/2015	1118.66	220.72	897.94
YVD-04	6/15/2015	1118.66	221.61	897.05
YVD-04	9/21/2015	1118.66	221.99	896.67
YVD-04	12/13/2015	1118.66	221.71	896.95
YVD-04	3/8/2016	1118.66	220.74	897.92
YVD-04	6/19/2016	1118.66	221.50	897.16
YVD-04	9/25/2016	1118.66	221.05	897.61
YVD-04	12/11/2016	1118.66	221.07	897.59
YVD-04	3/5/2017	1118.66	220.89	897.77
YVD-04	6/4/2017	1118.66	221.83	896.83
YVD-04	9/27/2017	1118.66	222.49	896.17
YVD-04	12/3/2017	1118.66	222.38	896.28
YVD-04	3/18/2018	1118.66	222.37	896.29
YVD-05	9/16/2013	1051.78	167.50	884.28
YVD-05	12/9/2013	1051.78	166.35	885.43
YVD-05	3/16/2014	1051.78	165.40	886.38
YVD-05	6/1/2014	1051.78	165.58	886.20
YVD-05	9/21/2014	1051.78	166.01	885.77
YVD-05	12/14/2014	1051.78	165.35	886.43
YVD-05	3/5/2015	1051.78	164.86	886.92
YVD-05	6/15/2015	1051.78	166.04	885.74
YVD-05	9/21/2015	1051.78	168.04	883.74
YVD-05	12/13/2015	1051.78	167.75	884.03
YVD-05	3/8/2016	1051.78	167.71	884.07
YVD-05	6/19/2016	1051.78	168.45	883.33
YVD-05	9/25/2016	1051.78	168.97	882.81
YVD-05	12/11/2016	1051.78	168.51	883.27
YVD-05	3/5/2017	1051.78	167.98	883.80
YVD-05	6/4/2017	1051.78	168.07	883.71
YVD-05	9/27/2017	1051.78	169.83	881.95
YVD-05	12/3/2017	1051.78	169.67	882.11
YVD-05	3/18/2018	1051.78	169.38	882.40
YVD-06	9/16/2013	1053.51	110.65	942.86
YVD-06	12/9/2013	1053.51	108.21	945.30
YVD-06	3/16/2014	1053.51	105.98	947.53
YVD-06	6/1/2014	1053.51	106.49	947.02
YVD-06	9/21/2014	1053.51	108.02	945.49
YVD-06	12/14/2014	1053.51	106.32	947.19
YVD-06	3/5/2015	1053.51	104.68	948.83
YVD-06	6/15/2015	1053.51	106.37	947.14
YVD-06	9/21/2015	1053.51	109.01	944.50
YVD-06	12/13/2015	1053.51	108.72	944.79

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-06	3/8/2016	1053.51	108.90	944.61
YVD-06	6/19/2016	1053.51	111.03	942.48
YVD-06	9/25/2016	1053.51	112.05	941.46
YVD-06	12/11/2016	1053.51	NM	
YVD-06	3/5/2017	1053.51	107.89	945.62
YVD-06	6/4/2017	1053.51	109.14	944.37
YVD-06	9/27/2017	1053.51	110.99	942.52
YVD-06	12/3/2017	1053.51	109.30	944.21
YVD-06	3/18/2018	1053.51	106.37	947.14
YVD-07	9/16/2013	1073.03	157.99	915.04
YVD-07	12/9/2013	1073.03	157.26	915.77
YVD-07	3/16/2014	1073.03	153.95	919.08
YVD-07	6/1/2014	1073.03	153.87	919.16
YVD-07	9/21/2014	1073.03	155.93	917.10
YVD-07	12/14/2014	1073.03	155.40	917.63
YVD-07	3/5/2015	1073.03	153.42	919.61
YVD-07	6/15/2015	1073.03	154.30	918.73
YVD-07	9/21/2015	1073.03	157.09	915.94
YVD-07	12/13/2015	1073.03	158.05	914.98
YVD-07	3/8/2016	1073.03	157.96	915.07
YVD-07	6/19/2016	1073.03	158.75	914.28
YVD-07	9/25/2016	1073.03	160.29	912.74
YVD-07	12/11/2016	1073.03	160.00	913.03
YVD-07	3/5/2017	1073.03	157.59	915.44
YVD-07	6/4/2017	1073.03	157.56	915.47
YVD-07	9/27/2017	1073.03	159.81	913.22
YVD-07	12/3/2017	1073.03	159.30	913.73
YVD-07	3/18/2018	1073.03	156.76	916.27
YVD-08	9/16/2013	1014.38	170.83	843.55
YVD-08	12/9/2013	1014.38	171.08	843.30
YVD-08	3/16/2014	1014.38	170.66	843.72
YVD-08	6/1/2014	1014.38	170.50	843.88
YVD-08	9/21/2014	1014.38	170.50	843.88
YVD-08	12/14/2014	1014.38	170.22	844.16
YVD-08	3/5/2015	1014.38	169.83	844.55
YVD-08	6/15/2015	1014.38	170.13	844.25
YVD-08	9/21/2015	1014.38	170.67	843.71
YVD-08	12/13/2015	1014.38	170.63	843.75
YVD-08	3/8/2016	1014.38	171.00	843.38
YVD-08	6/19/2016	1014.38	171.51	842.87
YVD-08	9/25/2016	1014.38	171.75	842.63
YVD-08	12/11/2016	1014.38	171.52	842.86
YVD-08	3/5/2017	1014.38	171.16	843.22

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-08	6/4/2017	1014.38	171.87	842.51
YVD-08	9/27/2017	1014.38	172.30	842.08
YVD-08	12/3/2017	1014.38	171.95	842.43
YVD-08	3/18/2018	1014.38	172.17	842.21
YVD-09	9/16/2013	966.81	111.14	855.67
YVD-09	12/9/2013	966.81	109.93	856.88
YVD-09	3/16/2014	966.81	109.65	857.16
YVD-09	6/1/2014	966.81	109.95	856.86
YVD-09	9/21/2014	966.81	110.08	856.73
YVD-09	12/14/2014	966.81	109.90	856.91
YVD-09	3/5/2015	966.81	109.95	856.86
YVD-09	6/15/2015	966.81	110.35	856.46
YVD-09	9/21/2015	966.81	110.83	855.98
YVD-09	12/13/2015	966.81	110.89	855.92
YVD-09	3/8/2016	966.81	111.16	855.65
YVD-09	6/19/2016	966.81	111.41	855.40
YVD-09	9/25/2016	966.81	111.68	855.13
YVD-09	12/11/2016	966.81	111.84	854.97
YVD-09	3/5/2017	966.81	111.92	854.89
YVD-09	6/4/2017	966.81	112.29	854.52
YVD-09	9/27/2017	966.81	112.50	854.31
YVD-09	12/3/2017	966.81	112.59	854.22
YVD-09	3/18/2018	966.81	112.56	854.25
YVD-10	9/16/2013	958.00	90.04	867.96
YVD-10	12/9/2013	958.00	89.20	868.80
YVD-10	3/16/2014	958.00	89.39	868.61
YVD-10	6/1/2014	958.00	90.35	867.65
YVD-10	9/21/2014	958.00	90.41	867.59
YVD-10	12/14/2014	958.00	88.76	869.24
YVD-10	3/5/2015	958.00	89.90	868.10
YVD-10	6/15/2015	958.00	91.10	866.90
YVD-10	9/21/2015	958.00	91.85	866.15
YVD-10	12/13/2015	958.00	91.52	866.48
YVD-10	3/8/2016	958.00	91.91	866.09
YVD-10	6/19/2016	958.00	92.92	865.08
YVD-10	9/25/2016	958.00	92.99	865.01
YVD-10	12/11/2016	958.00	93.02	864.98
YVD-10	3/5/2017	958.00	93.24	864.76
YVD-10	6/4/2017	958.00	93.70	864.30
YVD-10	9/27/2017	958.00	93.39	864.61
YVD-10	12/3/2017	958.00	92.86	865.14
YVD-10	3/18/2018	958.00	92.49	865.51

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-11	9/16/2013	967.91	106.03	861.88
YVD-11	12/9/2013	967.91	105.77	862.14
YVD-11	3/16/2014	967.91	105.72	862.19
YVD-11	6/1/2014	967.91	106.07	861.84
YVD-11	9/21/2014	967.91	106.04	861.87
YVD-11	12/14/2014	967.91	106.08	861.83
YVD-11	3/5/2015	967.91	106.18	861.73
YVD-11	6/15/2015	967.91	106.67	861.24
YVD-11	9/21/2015	967.91	106.52	861.39
YVD-11	12/13/2015	967.91	106.88	861.03
YVD-11	3/8/2016	967.91	107.58	860.33
YVD-11	6/19/2016	967.91	108.52	859.39
YVD-11	9/25/2016	967.91	108.95	858.96
YVD-11	12/11/2016	967.91	108.90	859.01
YVD-11	3/5/2017	967.91	109.08	858.83
YVD-11	6/4/2017	967.91	109.31	858.60
YVD-11	9/27/2017	967.91	108.75	859.16
YVD-11	12/3/2017	967.91	107.73	860.18
YVD-11	3/18/2018	967.91	108.10	859.81
YVD-12	9/16/2013	961.91	138.50	823.41
YVD-12	12/9/2013	961.91	138.34	823.57
YVD-12	3/16/2014	961.91	137.55	824.36
YVD-12	6/1/2014	961.91	137.61	824.30
YVD-12	9/21/2014	961.91	137.45	824.46
YVD-12	12/14/2014	961.91	137.25	824.66
YVD-12	3/5/2015	961.91	136.52	825.39
YVD-12	6/15/2015	961.91	137.85	824.06
YVD-12	9/21/2015	961.91	138.95	822.96
YVD-12	12/13/2015	961.91	138.11	823.80
YVD-12	3/8/2016	961.91	138.26	823.65
YVD-12	6/19/2016	961.91	139.23	822.68
YVD-12	9/25/2016	961.91	139.13	822.78
YVD-12	12/11/2016	961.91	138.56	823.35
YVD-12	3/5/2017	961.91	138.02	823.89
YVD-12	6/4/2017	961.91	138.90	823.01
YVD-12	9/27/2017	961.91	139.05	822.86
YVD-12	12/3/2017	961.91	138.48	823.43
YVD-12	3/18/2018	961.91	138.46	823.45
YVD-13	9/16/2013	965.59	127.43	838.16
YVD-13	12/9/2013	965.59	127.25	838.34
YVD-13	3/16/2014	965.59	127.58	838.01
YVD-13	6/1/2014	965.59	127.59	838.00
YVD-13	9/21/2014	965.59	127.29	838.30

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-13	12/14/2014	965.59	127.20	838.39
YVD-13	3/5/2015	965.59	127.35	838.24
YVD-13	6/15/2015	965.59	127.60	837.99
YVD-13	9/21/2015	965.59	127.36	838.23
YVD-13	12/13/2015	965.59	127.13	838.46
YVD-13	3/8/2016	965.59	127.87	837.72
YVD-13	6/19/2016	965.59	128.17	837.42
YVD-13	9/25/2016	965.59	127.88	837.71
YVD-13	12/11/2016	965.59	127.57	838.02
YVD-13	3/5/2017	965.59	127.92	837.67
YVD-13	6/4/2017	965.59	128.49	837.10
YVD-13	9/27/2017	965.59	128.05	837.54
YVD-13	12/3/2017	965.59	127.88	837.71
YVD-13	3/18/2018	965.59	128.47	837.12
YVD-14	9/16/2013	920.19	77.30	842.89
YVD-14	12/9/2013	920.19	76.97	843.22
YVD-14	3/16/2014	920.19	77.45	842.74
YVD-14	6/1/2014	920.19	77.61	842.58
YVD-14	9/21/2014	920.19	77.28	842.91
YVD-14	12/14/2014	920.19	76.90	843.29
YVD-14	3/5/2015	920.19	77.51	842.68
YVD-14	6/17/2015	NM	NM	
YVD-14	9/21/2015	NM	NM	
YVD-14R	12/13/2015	921.41	77.76	843.65
YVD-14R	3/8/2016	921.41	78.53	842.88
YVD-14R	6/19/2016	921.41	79.03	842.38
YVD-14R	9/25/2016	921.41	78.68	842.73
YVD-14R	12/11/2016	921.41	78.57	842.84
YVD-14R	3/5/2017	921.41	79.14	842.27
YVD-14R	6/4/2017	921.41	79.53	841.88
YVD-14R	9/27/2017	921.41	78.93	842.48
YVD-14R	12/3/2017	921.41	78.72	842.69
YVD-14R	3/18/2018	921.41	79.40	842.01
YVD-15	9/16/2013	940.61	90.34	850.27
YVD-15	12/9/2013	940.61	90.49	850.12
YVD-15	3/16/2014	940.61	91.62	848.99
YVD-15	6/1/2014	940.61	92.57	848.04
YVD-15	9/21/2014	940.61	88.84	851.77
YVD-15	12/14/2014	940.61	90.56	850.05
YVD-15	3/5/2015	940.61	92.03	848.58
YVD-15	6/15/2015	940.61	93.22	847.39
YVD-15	9/21/2015	940.61	93.43	847.18
YVD-15	12/13/2015	940.61	93.21	847.40

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-15	3/8/2016	940.61	93.83	846.78
YVD-15	6/19/2016	940.61	94.70	845.91
YVD-15	9/25/2016	940.61	94.70	845.91
YVD-15	12/11/2016	940.61	94.44	846.17
YVD-15	3/5/2017	940.61	94.96	845.65
YVD-15	6/4/2017	940.61	95.52	845.09
YVD-15	9/27/2017	940.61	95.16	845.45
YVD-15	12/3/2017	940.61	94.74	845.87
YVD-15	3/18/2018	940.61	94.96	845.65
YVD-16	9/16/2013	975.90	112.95	862.95
YVD-16	12/9/2013	975.90	112.84	863.06
YVD-16	3/16/2014	975.90	112.50	863.40
YVD-16	6/1/2014	975.90	112.62	863.28
YVD-16	9/21/2014	975.90	113.02	862.88
YVD-16	12/14/2014	975.90	112.86	863.04
YVD-16	3/5/2015	975.90	112.42	863.48
YVD-16	6/15/2015	975.90	112.85	863.05
YVD-16	9/21/2015	975.90	113.95	861.95
YVD-16	12/13/2015	975.90	114.04	861.86
YVD-16	3/8/2016	975.90	114.51	861.39
YVD-16	6/19/2016	975.90	115.18	860.72
YVD-16	9/25/2016	975.90	115.67	860.23
YVD-16	12/11/2016	975.90	115.17	860.73
YVD-16	3/5/2017	975.90	114.90	861.00
YVD-16	6/4/2017	975.90	115.51	860.39
YVD-16	9/27/2017	975.90	115.32	860.58
YVD-16	12/3/2017	975.90	114.86	861.04
YVD-16	3/18/2018	975.90	114.49	861.41
YVD-17	9/16/2013	866.73	32.07	834.66
YVD-17	12/9/2013	866.73	34.81	831.92
YVD-17	3/16/2014	866.73	37.97	828.76
YVD-17	6/1/2014	866.73	35.50	831.23
YVD-17	9/21/2014	866.73	31.86	834.87
YVD-17	12/14/2014	866.73	34.74	831.99
YVD-17	3/5/2015	866.73	37.79	828.94
YVD-17	6/15/2015	866.73	34.57	832.16
YVD-17	9/21/2015	866.73	31.92	834.81
YVD-17	12/13/2015	866.73	35.16	831.57
YVD-17	3/8/2016	866.73	37.47	829.26
YVD-17	6/19/2016	866.73	35.37	831.36
YVD-17	9/25/2016	866.73	32.31	834.42
YVD-17	12/11/2016	866.73	35.20	831.53
YVD-17	3/5/2017	866.73	37.88	828.85

Table 5
Historical Groundwater Elevations

Well ID	Date of Measurement	Reference Point Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet NAVD88)
YVD-17	6/4/2017	866.73	36.13	830.60
YVD-17	9/27/2017	866.73	31.22	835.51
YVD-17	12/3/2017	866.73	34.65	832.08
YVD-17	3/18/2018	866.73	38.54	828.19
YVD-18	9/16/2013	965.74	127.49	838.25
YVD-18	12/9/2013	965.74	127.45	838.29
YVD-18	3/16/2014	965.74	127.75	837.99
YVD-18	6/1/2014	965.74	127.69	838.05
YVD-18	9/21/2014	965.74	127.33	838.41
YVD-18	12/14/2014	965.74	127.33	838.41
YVD-18	3/5/2015	965.74	127.46	838.28
YVD-18	6/15/2015	965.74	127.71	838.03
YVD-18	9/21/2015	965.74	127.42	838.32
YVD-18	12/13/2015	965.74	127.24	838.50
YVD-18	3/8/2016	965.74	128.05	837.69
YVD-18	6/19/2016	965.74	128.29	837.45
YVD-18	9/25/2016	965.74	127.92	837.82
YVD-18	12/11/2016	965.74	127.66	838.08
YVD-18	3/5/2017	965.74	128.01	837.73
YVD-18	6/4/2017	965.74	128.54	837.20
YVD-18	9/27/2017	965.74	128.14	837.60
YVD-18	12/3/2017	965.74	127.95	837.79
YVD-18	3/18/2018	965.74	128.72	837.02

Notes:
BTOC: below top of casing
NAVD88: North American Vertical Datum of 1988
NM: not measured due to well damage

Table 6

Estimated Possible Average Linear Groundwater Flow Velocities – First Quarter 2018

Material	Hydraulic Conductivity[1, 2] [K] (feet per day)	Effective Porosity[3] [n_e]	K/n_e	Estimated Possible Average Linear Groundwater Flow Velocities [V_X] (feet per day)			
				First Quarter 2018 Hydraulic Gradients			
				Site Average I[4]	Upslope I	Central I	Southern I
				-0.024	*-0.047*	*-0.011*	*-0.0046*
Fine sand	53	0.33	161	3.9	7.5	1.8	0.7
Medium sand to fine gravel	131	0.32	409	9.8	19.2	4.5	1.9
Medium sand to coarse gravel	164	0.30	547	13.1	25.7	6.0	2.5
Fine gravel	267	0.28	954	22.9	44.8	10.5	4.4

Notes:

1. Hydraulic conductivities obtained from U.S. Environmental Protection Agency Method 9100, Saturated Hydraulic Conductivity, Saturated Leachate Conductivity, and Intrinsic Permeability, Chapter 6 – Properties; Publication SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods; 1986.
2. Hydraulic conductivities presented are for well-sorted (poorly graded) material.
3. Effective porosity obtained from *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*; Environmental Assessment and Information Sciences Division, Argonne National Laboratory; Argonne, Illinois; April 1993.
4. Hydraulic gradient [I] in feet per foot.

Table 7
Groundwater Analytical Results - First Quarter 2018

				Analyte	Calcium			Magnesium			Potassium			Sodium			Chloride		
				Analytical Method	EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-03	YVD-031818-04	3/18/2018	N	870610	**280**	-	-	**67.00**	-	-	**3.01**	-	-	**180**	-	-	**156**	-	-
DC-03D	YVD-031818-02	3/18/2018	N	870610	**199**	-	-	**42.65**	-	-	**3.02**	-	-	**70.0**	-	-	**66.1**	-	-
DC-04	YVD-031818-07	3/18/2018	N	870610	**182**	-	-	**32.10**	-	-	**4.02**	-	-	**35.6**	-	-	**34.5**	-	-
DC-05	YVD-031818-03	3/18/2018	N	870610	**116**	-	-	**42.35**	-	-	**2.94**	-	-	**75.0**	-	-	**33.0**	-	-
DC-05	YVD-031818-05	3/18/2018	FD	870610	**116**	-	-	**42.85**	-	-	**2.94**	-	-	**75.0**	-	-	**33.1**	-	-
DC-05D	YVD-031818-08	3/18/2018	N	870610	**82.0**	-	-	**27.50**	-	-	**3.97**	-	-	**41.2**	-	-	**27.4**	-	-
DC-14	YVD-031918-20	3/19/2018	N	870634	**95.0**	-	-	**22.55**	-	-	**4.56**	-	-	**58.0**	-	-	**47.9**	-	-
YVD-08	YVD-031918-15	3/19/2018	N	870634	**134**	-	-	**45.95**	-	-	**5.40**	-	-	**90.5**	-	-	**103**	-	-
YVD-09	YVD-031918-18	3/19/2018	N	870634	**108**	-	-	**35.90**	-	-	**7.80**	-	-	**166**	-	-	**69.2**	-	-
YVD-10	YVD-031818-06	3/18/2018	N	870610	**296**	-	-	**61.00**	-	-	**2.60**	-	-	**123**	-	-	**121**	-	-
YVD-11	YVD-031918-12	3/19/2018	N	870634	**223**	-	-	**51.50**	-	-	**2.98**	-	-	**26.0**	-	-	**91.4**	-	-
YVD-11	YVD-031918-14	3/19/2018	FD	870634	**222**	-	-	**50.50**	-	-	**2.94**	-	-	**25.8**	-	-	**89.1**	-	-
YVD-12	YVD-031918-13	3/19/2018	N	870610	**98.0**	-	-	**35.25**	-	-	**2.30**	-	-	**70.5**	-	-	**97.7**	-	-
YVD-13	YVD-031918-19	3/19/2018	N	870634	**96.0**	-	-	**25.45**	-	-	**3.82**	-	-	**102**	-	-	**63.0**	-	-
YVD-14R	YVD-031818-11	3/18/2018	N	870610	**232**	-	-	**60.00**	-	-	**3.96**	-	-	**127**	-	-	**102**	-	-
YVD-15	YVD-031818-09	3/18/2018	N	870610	**104**	-	-	**46.60**	-	-	**3.25**	-	-	**94.5**	-	-	**21.7**	-	-
YVD-16	YVD-031918-16	3/19/2018	N	870634	**88.5**	-	-	**30.25**	-	-	**5.25**	-	-	**79.0**	-	-	**34.4**	-	-
YVD-18	YVD-031918-17	3/19/2018	N	870634	**67.5**	-	-	**22.00**	-	-	**3.78**	-	-	**83.0**	-	-	**68.2**	-	-

Table 7
Groundwater Analytical Results - First Quarter 2018

				Analyte	Fluoride			Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)		
				Analytical Method	EPA 300.0			EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-03	YVD-031818-04	3/18/2018	N	870610	**0.19**	-	-	**192**	-	-	0.05	U	-	**111**	-	-	0.07	U	-
DC-03D	YVD-031818-02	3/18/2018	N	870610	0.1	U	-	**32.6**	-	-	0.05	U	-	**86.1**	-	-	0.07	U	-
DC-04	YVD-031818-07	3/18/2018	N	870610	0.1	U	-	**32.9**	-	-	0.05	U	-	**115**	-	-	0.07	U	-
DC-05	YVD-031818-03	3/18/2018	N	870610	0.14	U	-	**33.6**	-	-	0.05	U	-	**97.4**	-	-	**0.10**	-	-
DC-05	YVD-031818-05	3/18/2018	FD	870610	**0.14**	-	-	**33.8**	-	-	0.05	U	-	**96.7**	-	-	0.07	U	-
DC-05D	YVD-031818-08	3/18/2018	N	870610	**0.25**	-	-	**12.6**	-	-	0.05	U	-	**108**	-	-	0.07	U	-
DC-14	YVD-031918-20	3/19/2018	N	870634	**0.31**	-	-	**2.86**	-	-	0.05	U	-	**17.8**	-	-	0.07	U	-
YVD-08	YVD-031918-15	3/19/2018	N	870634	**0.15**	-	-	**46.3**	-	-	0.05	U	-	**183**	-	-	0.07	U	-
YVD-09	YVD-031918-18	3/19/2018	N	870634	**0.34**	-	-	**48.5**	-	-	0.05	U	-	**180**	-	-	0.07	U	-
YVD-10	YVD-031818-06	3/18/2018	N	870610	0.1	U	-	**91.4**	-	-	0.05	U	-	**202**	-	-	0.07	U	-
YVD-11	YVD-031918-12	3/19/2018	N	870634	**0.11**	-	-	**61.8**	-	-	0.05	U	-	**103**	-	-	0.07	U	-
YVD-11	YVD-031918-14	3/19/2018	FD	870634	**0.12**	-	-	**61.2**	-	-	0.05	U	-	**100**	-	-	0.07	U	-
YVD-12	YVD-031918-13	3/19/2018	N	870610	**0.35**	-	-	**13.6**	-	-	0.05	U	-	**167**	-	-	0.07	U	-
YVD-13	YVD-031918-19	3/19/2018	N	870634	**0.34**	-	-	**25.8**	-	-	0.05	U	-	**249**	-	-	0.07	U	-
YVD-14R	YVD-031818-11	3/18/2018	N	870610	**0.13**	-	-	**90.2**	-	-	0.05	U	-	**128**	-	-	**0.17**	-	-
YVD-15	YVD-031818-09	3/18/2018	N	870610	**0.32**	-	-	**24.4**	-	-	0.05	U	-	**129**	-	-	0.07	U	-
YVD-16	YVD-031918-16	3/19/2018	N	870634	**0.20**	-	-	**20.3**	-	-	0.05	U	-	**106**	-	-	0.07	U	-
YVD-18	YVD-031918-17	3/19/2018	N	870634	**0.34**	-	-	**27.7**	-	-	0.05	U	-	**161**	-	-	0.07	U	-

Table 7
Groundwater Analytical Results - First Quarter 2018

				Analyte	Total Kjeldahl Nitrogen (TKN)			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
				Analytical Method	EPA 351.2			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-03	YVD-031818-04	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**374**	-	-	**374**	-	-
DC-03D	YVD-031818-02	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**529**	-	-	**529**	-	-
DC-04	YVD-031818-07	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**377**	-	-	**377**	-	-
DC-05	YVD-031818-03	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**364**	-	-	**364**	-	-
DC-05	YVD-031818-05	3/18/2018	FD	870610	0.5	U	-	0.07	U	-	**356**	-	-	**356**	-	-
DC-05D	YVD-031818-08	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**198**	-	-	**198**	-	-
DC-14	YVD-031918-20	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**372**	-	-	**372**	-	-
YVD-08	YVD-031918-15	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**250**	-	-	**250**	-	-
YVD-09	YVD-031918-18	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**350**	-	-	**350**	-	-
YVD-10	YVD-031818-06	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**527**	-	-	**527**	-	-
YVD-11	YVD-031918-12	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**386**	-	-	**386**	-	-
YVD-11	YVD-031918-14	3/19/2018	FD	870634	0.5	U	-	0.07	U	-	**387**	-	-	**387**	-	-
YVD-12	YVD-031918-13	3/19/2018	N	870610	0.5	U	-	0.07	U	-	**181**	-	-	**181**	-	-
YVD-13	YVD-031918-19	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**138**	-	-	**138**	-	-
YVD-14R	YVD-031818-11	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**514**	-	-	**514**	-	-
YVD-15	YVD-031818-09	3/18/2018	N	870610	0.5	U	-	0.07	U	-	**397**	-	-	**397**	-	-
YVD-16	YVD-031918-16	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**297**	-	-	**297**	-	-
YVD-18	YVD-031918-17	3/19/2018	N	870634	0.5	U	-	0.07	U	-	**111**	-	-	**111**	-	-

Table 7
Groundwater Analytical Results – First Quarter 2018

Notes:
Bold: detected result
- : not applicable
(as N): reported as nitrogen
(as CaCO3): reported as calcium carbonate
EPA: U.S. Environmental Protection Agency
FD: field duplicate
mg/L: milligrams per liter
N: normal sample
SM: Standard Method
U: The compound was analyzed for but not detected. The associated value is the compound reporting limit, or the compound is considered non-detect at the listed value due to associated blank contamination.

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-01	DC-01-130104	01/04/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-01	DC-01-130924	09/24/2013	N	SWI0178	**88.9**	-	-	**32.5**	-	-	**6.10**	-	-	**43.0**	-	-	**44**	-	-	0.5	U	-
DC-01	DC-01-131211	12/11/2013	N	SWL0063	**91.4**	-	-	**32.6**	-	-	**5.94**	-	-	**41.9**	-	-	**47.8**	-	-	5	U	-
DC-01	DC-01-140318	03/18/2014	N	SXC0095	**90.5**	-	-	**31.4**	-	-	**5.93**	-	-	**40.2**	-	-	**48.2**	-	-	5	U	-
DC-01	DC-01-140602	06/02/2014	N	SXF0017	**88.6**	-	-	**31.9**	-	-	**6.74**	-	-	**41.8**	-	-	**41.4**	-	-	2	U	-
DC-01	DC-01-140923	09/23/2014	N	SXI0158	**89.4**	-	-	**31.2**	-	-	**6.02**	-	-	**44.3**	J+	MSD	**41.8**	-	-	5	U	-
DC-01	DC-01-141216	12/16/2014	N	SXL0121	**92.8**	-	-	**34.0**	-	-	**6.18**	-	-	**43.1**	-	-	**85.7**	-	-	5	U	-
DC-01	DC-01-150316	03/16/2015	N	5904471	**91.0**	-	-	**32.0**	-	-	**6.50**	-	-	**44.0**	-	-	**44**	-	-	5	U	-
DC-01	DC-01-150616	06/16/2015	N	59010751	**91.0**	J+	MSD	**33.0**	J+	MSD	**6.20**	J+	MSD	**42.0**	J+	MSD	**42**	-	-	5	U	-
DC-01	DC-01-150923	09/23/2015	N	59020281	**83.0**	-	-	**32.0**	-	-	**6.00**	-	-	**43.0**	-	-	**37**	-	-	5	U	-
DC-01	YVD-D1-150923	09/23/2015	FD	59020281	**85.0**	-	-	**33.0**	-	-	**6.10**	-	-	**43.0**	-	-	**43**	-	-	0.5	U	-
DC-01	DC-01-151214	12/14/2015	N	59025431	**97.0**	-	-	**34.0**	-	-	**6.80**	-	-	**48.0**	-	-	**38**	-	-	5	U	-
DC-01	DC-01-160308	03/08/2016	N	59029711	**83.0**	-	-	**30.0**	-	-	**6.20**	-	-	**42.0**	-	-	**40**	-	-	5	U	-
DC-01	DC-01-160620	6/20/2016	N	59037101	**83.0**	-	-	**31.0**	-	-	**6.50**	-	-	**46.0**	-	-	**40**	-	-	5	U	-
DC-01	DC-01-160928	9/28/2016	N	K1611629	**80.6**	-	-	**28.5**	-	-	**5.76**	-	-	**41.6**	-	-	**34.0**	-	-	**0.25**	-	-
DC-01	DC-01-161212	12/12/2016	N	K1615045	**81.1**	-	-	**27.9**	-	-	**5.52**	-	-	**40.4**	-	-	**31.9**	-	-	**0.39**	-	-
DC-01	YVD-030817-18	3/8/2017	N	K1702324	**80.8**	-	-	**27**	-	-	**5.13**	-	-	**37.4**	-	-	**32.6**	-	-	**0.39**	-	-
DC-01	YVD-060417-03	6/4/2017	N	K1705702	**83.4**	-	-	**26.2**	-	-	**5.22**	-	-	**37.4**	-	-	**32.9**	-	-	**0.4**	-	-
DC-01	YVD-060417-05	6/4/2017	FD	K1705702	**83.0**	-	-	**25.7**	-	-	**5.08**	-	-	**36.9**	-	-	**33.2**	-	-	**0.38**	-	-
DC-01	YVD-092517-13	9/25/2017	N	K1710333	**78.9**	-	-	**26.1**	-	-	**5.31**	-	-	**39.1**	-	-	**33.2**	-	-	**0.37**	-	-
DC-01	YVD-120617-31	12/6/2017	N	K1713157	**83.7**	-	-	**28.1**	-	-	**5.56**	-	-	**40.6**	-	-	**33.2**	-	-	**0.37**	-	-
DC-03	DC-03-130102	01/02/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-03	DC-03-130918	09/18/2013	N	SWI0138	**284**	-	-	**73.7**	-	-	**2.73**	-	-	**173**	-	-	**176**	-	-	5	U	-
DC-03	DC-03-131212	12/12/2013	N	SWL0078	**280**	-	-	**75.0**	-	-	**3.29**	-	-	**172**	-	-	**172**	-	-	5	U	-
DC-03	YVD-D3-131212	12/12/2013	FD	SWL0078	**292**	-	-	**77.3**	-	-	**3.53**	-	-	**181**	-	-	**142**	-	-	5	U	-
DC-03	DC-03-140319	03/19/2014	N	SXC0107	**261**	-	-	**66.8**	-	-	**2.91**	-	-	**165**	-	-	**159**	J	FDP	5	U	-
DC-03	YVD-D3-140319	03/19/2014	FD	SXC0107	**261**	-	-	**66.7**	-	-	**2.81**	-	-	**166**	-	-	**128**	J	FDP	5	U	-
DC-03	DC-03-140604	06/04/2014	N	SXF0025	**259**	-	-	**67.7**	-	-	**3.11**	-	-	**177**	-	-	**201**	-	-	10	U	-
DC-03	DC-03-140924	09/24/2014	N	SXI0173	**291**	-	-	**77.1**	-	-	**3.28**	-	-	**178**	-	-	**147**	-	-	5	U	-
DC-03	DC-03-141217	12/17/2014	N	SXL0144	**274**	-	-	**74.9**	-	-	**3.76**	-	-	**185**	-	-	**157**	-	-	10	U	-
DC-03	YVD-D4-141217	12/17/2014	FD	SXL0144	**271**	-	-	**72.6**	-	-	**3.19**	-	-	**180**	-	-	**182**	-	-	5	U	-
DC-03	DC-03-150318	03/18/2015	N	5904651	**260**	-	-	**73.0**	-	-	**3.30**	J-	MSD	**180**	-	-	**160**	-	-	5	U	-
DC-03	YVD-D4-150318	03/18/2015	FD	5904651	**270**	-	-	**74.0**	-	-	**3.60**	J-	MSD	**180**	-	-	**150**	-	-	2.5	U	-
DC-03	DC-03-150617	06/17/2015	N	59011021	**290**	-	-	**78.0**	J	RPD	**3.60**	J	RPD	**190**	J	RPD	**170**	-	-	5	U	-
DC-03	YVD-D4-150617	06/17/2015	FD	59011021	**290**	-	-	**77.0**	J	RPD	**3.60**	J	RPD	**190**	J	RPD	**180**	-	-	5	U	-
DC-03	DC-03-150925	09/25/2015	N	59020431	**270**	-	-	**73.0**	-	-	**3.30**	-	-	**180**	-	-	**140**	-	-	10	U	-
DC-03	YVD-D4-150925	09/25/2015	FD	59020431	**260**	-	-	**69.0**	-	-	**3.20**	-	-	**180**	-	-	**140**	-	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-01	DC-01-130104	01/04/2013	N	EPA01	**9.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-01	DC-01-130924	09/24/2013	N	SWI0178	**11.1**	-	-	0.2	U	-	**223**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-01	DC-01-131211	12/11/2013	N	SWL0063	**11.5**	-	-	2	U	-	**280**	J-	MSD	-	-	-	0.02	R	MSD	0.2	U	-
DC-01	DC-01-140318	03/18/2014	N	SXC0095	**11.2**	-	-	2	U	-	**250**	J-	MSD	-	-	-	**0.101**	-	-	**0.304**	-	-
DC-01	DC-01-140602	06/02/2014	N	SXF0017	**9.76**	-	-	0.8	U	-	**224**	J-	MSD	-	-	-	0.1	U	-	**0.45**	-	-
DC-01	DC-01-140923	09/23/2014	N	SXI0158	**9**	-	-	2	U	-	**216**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
DC-01	DC-01-141216	12/16/2014	N	SXL0121	**18.9**	-	-	2	U	-	**463**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-01	DC-01-150316	03/16/2015	N	5904471	**11**	-	-	2	U	-	**220**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-01	DC-01-150616	06/16/2015	N	59010751	**9.5**	-	-	2	U	-	**200**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-01	DC-01-150923	09/23/2015	N	59020281	**8.6**	-	-	2	U	-	**200**	-	-	-	-	-	**0.13**	-	-	0.25	R	MSD
DC-01	YVD-D1-150923	09/23/2015	FD	59020281	**10**	-	-	0.2	U	-	**210**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
DC-01	DC-01-151214	12/14/2015	N	59025431	**8.8**	-	-	2	U	-	**220**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-01	DC-01-160308	03/08/2016	N	59029711	**8.6**	-	-	2	U	-	**210**	J+	MSD	-	-	-	0.11	R	FBK, FDI	0.25	R	MSD
DC-01	DC-01-160620	6/20/2016	N	59037101	**9.2**	-	-	2	U	-	**220**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-01	DC-01-160928	9/28/2016	N	K1611629	**9.15**	-	-	0.10	U	-	**193**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
DC-01	DC-01-161212	12/12/2016	N	K1615045	**8.89**	J	HTQ	0.10	UJ	HTQ	**191**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-01	YVD-030817-18	3/8/2017	N	K1702324	**9.0**	-	-	0.10	U	-	**175**	-	-	-	-	-	1	U	-	0.5	U	-
DC-01	YVD-060417-03	6/4/2017	N	K1705702	**8.2**	-	-	0.10	U	-	**203**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-01	YVD-060417-05	6/4/2017	FD	K1705702	**8.2**	-	-	0.10	U	-	**203**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-01	YVD-092517-13	9/25/2017	N	K1710333	**8.41**	-	-	0.10	U	-	**194**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-01	YVD-120617-31	12/6/2017	N	K1713157	**8.81**	-	-	0.10	U	-	**182**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03	DC-03-130102	01/02/2013	N	EPA01	**190**	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	-	-	-
DC-03	DC-03-130918	09/18/2013	N	SWI0138	**166**	-	-	2	U	-	**176**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-03	DC-03-131212	12/12/2013	N	SWL0078	**174**	-	-	2	U	-	**176**	-	-	-	-	-	0.02	U	-	0.2	U	-
DC-03	YVD-D3-131212	12/12/2013	FD	SWL0078	**182**	-	-	2	U	-	**160**	-	-	-	-	-	0.02	U	-	0.8311	U	ERL
DC-03	DC-03-140319	03/19/2014	N	SXC0107	**195**	-	-	2	U	-	**189**	J	FDP	-	-	-	0.1	U	-	**0.938**	J-	MSD
DC-03	YVD-D3-140319	03/19/2014	FD	SXC0107	**164**	-	-	2	U	-	**150**	J	FDP	-	-	-	0.1	U	-	**0.718**	J-	MSD
DC-03	DC-03-140604	06/04/2014	N	SXF0025	**234**	-	-	4	U	-	**214**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-03	DC-03-140924	09/24/2014	N	SXI0173	**170**	-	-	2	U	-	**166**	-	-	-	-	-	0.1	U	-	**2.27**	J+	MSD
DC-03	DC-03-141217	12/17/2014	N	SXL0144	**193**	-	-	4	U	-	**182**	-	-	-	-	-	**0.18**	J+	BK, MB	0.25	R	MSD
DC-03	YVD-D4-141217	12/17/2014	FD	SXL0144	**156**	-	-	10	U	-	**211**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
DC-03	DC-03-150318	03/18/2015	N	5904651	**180**	-	-	2	U	-	**160**	-	-	-	-	-	0.1	U	-	**0.45**	J-	MSD
DC-03	YVD-D4-150318	03/18/2015	FD	5904651	**180**	-	-	1	U	-	**160**	-	-	-	-	-	**0.12**	-	-	**0.53**	J-	MSD
DC-03	DC-03-150617	06/17/2015	N	59011021	**180**	J-	MSD, FD	2	U	-	**170**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
DC-03	YVD-D4-150617	06/17/2015	FD	59011021	**10**	J-	MSD, FD	2	U	-	**180**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
DC-03	DC-03-150925	09/25/2015	N	59020431	**180**	-	-	4	U	-	**150**	-	-	-	-	-	**0.1**	-	-	0.25	U	-
DC-03	YVD-D4-150925	09/25/2015	FD	59020431	**180**	-	-	4	U	-	**160**	-	-	-	-	-	**0.2**	-	-	0.25	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-01	DC-01-130104	01/04/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-01	DC-01-130924	09/24/2013	N	SWI0178	-	-	-	-	-	-	**0.123**	-	-	-	-	-	**110**	-	-	**110**	-	-
DC-01	DC-01-131211	12/11/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**0.186**	-	-	**159**	-	-	**160**	-	-
DC-01	DC-01-140318	03/18/2014	N	SXC0095	**0.079**	-	-	-	-	-	-	-	-	-	-	-	**159**	-	-	**160**	-	-
DC-01	DC-01-140602	06/02/2014	N	SXF0017	**0.81**	-	-	-	-	-	-	-	-	-	-	-	**164**	-	-	**165**	-	-
DC-01	DC-01-140923	09/23/2014	N	SXI0158	**0.12**	-	-	-	-	-	-	-	-	-	-	-	**154**	-	-	**155**	-	-
DC-01	DC-01-141216	12/16/2014	N	SXL0121	0.1	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
DC-01	DC-01-150316	03/16/2015	N	5904471	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
DC-01	DC-01-150616	06/16/2015	N	59010751	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
DC-01	DC-01-150923	09/23/2015	N	59020281	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
DC-01	YVD-D1-150923	09/23/2015	FD	59020281	0.25	U	-	-	-	-	-	-	-	-	-	-	**160**	-	-	**160**	-	-
DC-01	DC-01-151214	12/14/2015	N	59025431	**0.3**	J	FDP	-	-	-	-	-	-	-	-	-	**170**	J	FDP	**170**	J	FDP
DC-01	DC-01-160308	03/08/2016	N	59029711	**0.26**	-	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
DC-01	DC-01-160620	6/20/2016	N	59037101	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
DC-01	DC-01-160928	9/28/2016	N	K1611629	-	-	-	**0.009**	J	-	-	-	-	-	-	-	**147**	-	-	**147**	-	-
DC-01	DC-01-161212	12/12/2016	N	K1615045	-	-	-	**0.040**	-	-	-	-	-	-	-	-	**144**	-	-	**144**	-	-
DC-01	YVD-030817-18	3/8/2017	N	K1702324	-	-	-	**0.008**	J	-	-	-	-	-	-	-	**148**	-	-	**148**	-	-
DC-01	YVD-060417-03	6/4/2017	N	K1705702	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**147**	-	-	**147**	-	-
DC-01	YVD-060417-05	6/4/2017	FD	K1705702	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**147**	-	-	**147**	-	-
DC-01	YVD-092517-13	9/25/2017	N	K1710333	-	-	-	0.010	U	-	-	-	-	-	-	-	**148**	-	-	**148**	-	-
DC-01	YVD-120617-31	12/6/2017	N	K1713157	-	-	-	**0.010**	-	-	-	-	-	-	-	-	**146**	-	-	**146**	-	-
DC-03	DC-03-130102	01/02/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-03	DC-03-130918	09/18/2013	N	SWI0138	-	-	-	-	-	-	0.1	U	-	-	-	-	**435**	-	-	**435**	-	-
DC-03	DC-03-131212	12/12/2013	N	SWL0078	-	-	-	-	-	-	-	-	-	**0.221**	-	-	**474**	-	-	**475**	-	-
DC-03	YVD-D3-131212	12/12/2013	FD	SWL0078	-	-	-	-	-	-	-	-	-	**0.244**	-	-	**459**	-	-	**460**	-	-
DC-03	DC-03-140319	03/19/2014	N	SXC0107	**0.057**	-	-	-	-	-	-	-	-	-	-	-	**459**	-	-	**460**	-	-
DC-03	YVD-D3-140319	03/19/2014	FD	SXC0107	**0.062**	-	-	-	-	-	-	-	-	-	-	-	**469**	-	-	**470**	-	-
DC-03	DC-03-140604	06/04/2014	N	SXF0025	**0.12**	-	-	-	-	-	-	-	-	-	-	-	**425**	-	-	**425**	-	-
DC-03	DC-03-140924	09/24/2014	N	SXI0173	**0.073**	J+	FBK	-	-	-	-	-	-	-	-	-	**409**	-	-	**410**	-	-
DC-03	DC-03-141217	12/17/2014	N	SXL0144	0.1	UJ	MSD	-	-	-	-	-	-	-	-	-	**429**	-	-	**430**	-	-
DC-03	YVD-D4-141217	12/17/2014	FD	SXL0144	**0.13**	J-	MSD	-	-	-	-	-	-	-	-	-	**423**	-	-	**425**	-	-
DC-03	DC-03-150318	03/18/2015	N	5904651	0.25	U	-	-	-	-	-	-	-	-	-	-	**420**	-	-	**420**	-	-
DC-03	YVD-D4-150318	03/18/2015	FD	5904651	0.25	U	-	-	-	-	-	-	-	-	-	-	**410**	-	-	**410**	-	-
DC-03	DC-03-150617	06/17/2015	N	59011021	0.25	U	-	-	-	-	-	-	-	-	-	-	**460**	-	-	**460**	-	-
DC-03	YVD-D4-150617	06/17/2015	FD	59011021	0.25	U	-	-	-	-	-	-	-	-	-	-	**450**	-	-	**450**	-	-
DC-03	DC-03-150925	09/25/2015	N	59020431	0.25	U	-	-	-	-	-	-	-	-	-	-	**390**	-	-	**390**	-	-
DC-03	YVD-D4-150925	09/25/2015	FD	59020431	0.25	U	-	-	-	-	-	-	-	-	-	-	**460**	-	-	**460**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-03	DC-03-151216	12/16/2015	N	59025501	**260**	-	-	**75.0**	-	-	**3.50**	-	-	**160**	-	-	**170**	-	-	5	U	-
DC-03	YVD-D4-151216	12/16/2015	FD	59025501	**250**	-	-	**75.0**	-	-	**3.50**	-	-	**160**	-	-	**160**	-	-	2.5	U	-
DC-03	DC-03-160310	03/10/2016	N	59029941	**270**	-	-	**72.0**	-	-	**3.10**	-	-	**180**	-	-	**150**	-	-	5	U	-
DC-03	YVD-D4-160310	03/10/2016	FD	59029941	**270**	-	-	**72.0**	-	-	**3.00**	-	-	**180**	-	-	**160**	-	-	5	U	-
DC-03	DC-03-160623	6/23/2016	N	59037371	**270**	-	-	**73.0**	-	-	**3.50**	-	-	**190**	-	-	**150**	-	-	5	U	-
DC-03	YVD-D4-160623	6/23/2016	FD	59037371	**250**	-	-	**71.0**	-	-	**3.30**	-	-	**180**	-	-	**160**	-	-	2.5	U	-
DC-03	DC-03-160927	9/27/2016	N	K1611565	**265**	-	-	**72.4**	-	-	**2.85**	-	-	**182**	-	-	**136**	-	-	**0.2**	J	-
DC-03	DC-03-D2-160927	9/27/2016	FD	K1611565	**262**	-	-	**71.9**	-	-	**2.87**	-	-	**183**	-	-	**137**	-	-	**0.19**	J	-
DC-03	DC-03-161212	12/12/2016	N	K1615029	**254**	-	-	**65.7**	-	-	**3.05**	-	-	**167**	-	-	**131**	-	-	**0.24**	-	-
DC-03	YVD-030817-13	3/8/2017	N	K1702324	**267**	-	-	**66**	-	-	**2.58**	-	-	**159**	-	-	**150**	-	-	**0.22**	-	-
DC-03	YVD-060517-02	6/5/2017	N	K1705702	**271**	-	-	**61.6**	-	-	**2.49**	-	-	**157**	-	-	**152**	-	-	**0.24**	-	-
DC-03	YVD-060517-04	6/5/2017	FD	K1705702	**269**	-	-	**70.6**	-	-	**2.49**	-	-	**158**	-	-	**152**	-	-	**0.28**	-	-
DC-03	YVD-092617-22	9/26/2017	N	K1710333	**279**	-	-	**68.9**	-	-	**2.92**	-	-	**159**	-	-	**154**	-	-	**0.24**	-	-
DC-03	YVD-120417-10	12/4/2017	N	K1713026	**274**	-	-	**69.4**	-	-	**2.76**	-	-	**161**	-	-	**161**	-	-	**0.24**	-	-
DC-03	YVD-031818-04	3/18/2018	N	870610	**280**	-	-	**67.00**	-	-	**3.01**	-	-	**180**	-	-	**156**	-	-	**0.19**	-	-
DC-03D	DC-03D-130918	09/18/2013	N	SWI0138	**198**	-	-	**44.0**	-	-	**2.71**	-	-	**62.1**	-	-	**56**	-	-	5	U	-
DC-03D	DC-03D-131212	12/12/2013	N	SWL0073	**194**	-	-	**43.3**	-	-	**2.67**	-	-	**59.7**	-	-	**67.9**	-	-	5	U	-
DC-03D	DC-03D-140319	03/19/2014	N	SXC0107	**200**	-	-	**43.9**	-	-	**2.67**	-	-	**57.5**	-	-	**65.9**	-	-	5	U	-
DC-03D	DC-03D-140603	06/03/2014	N	SXF0017	**179**	-	-	**40.9**	-	-	**2.66**	-	-	**59.0**	-	-	**65.5**	-	-	2	U	-
DC-03D	DC-03D-140923	09/23/2014	N	SXI0173	**216**	-	-	**46.6**	-	-	**3.40**	-	-	**67.8**	-	-	**59.5**	-	-	2.5	U	-
DC-03D	DC-03D-141217	12/17/2014	N	SXL0121	**203**	-	-	**46.8**	-	-	**2.92**	-	-	**60.7**	-	-	**62.8**	-	-	2.5	U	-
DC-03D	DC-03D-150317	03/17/2015	N	5904651	**210**	-	-	**48.0**	-	-	**3.00**	J-	MSD	**68.0**	-	-	**63**	-	-	2.5	U	-
DC-03D	DC-03D-150617	06/17/2015	N	59011021	**210**	-	-	**48.0**	J	RPD	**3.20**	J	RPD	**68.0**	J	RPD	**71**	-	-	2.5	U	-
DC-03D	DC-03D-150925	09/25/2015	N	59020431	**200**	-	-	**47.0**	-	-	**3.00**	-	-	**65.0**	-	-	**58**	-	-	10	U	-
DC-03D	DC-03D-151216	12/16/2015	N	59025501	**210**	-	-	**50.0**	-	-	**3.20**	-	-	**69.0**	-	-	**70**	-	-	2.5	U	-
DC-03D	DC-03D-160310	03/10/2016	N	59029941	**200**	-	-	**47.0**	-	-	**3.00**	-	-	**68.0**	-	-	**65**	-	-	2.5	U	-
DC-03D	DC-03D-160623	6/23/2016	N	59037371	**200**	-	-	**47.0**	-	-	**3.00**	-	-	**70.0**	-	-	**65**	-	-	5	U	-
DC-03D	DC-03D-160927	9/27/2016	N	K1611565	**188**	-	-	**47.1**	-	-	**2.73**	-	-	**63.0**	-	-	**58.7**	-	-	**0.1**	J	-
DC-03D	DC-03D-161212	12/12/2016	N	K1615029	**200**	-	-	**44.8**	-	-	**2.98**	-	-	**65.0**	-	-	**57.8**	-	-	**0.12**	J	-
DC-03D	YVD-030817-14	3/8/2017	N	K1702324	**196**	-	-	**43.4**	-	-	**2.75**	-	-	**61.3**	-	-	**59.5**	-	-	**0.16**	J	-
DC-03D	YVD-030817-16	3/8/2017	FD	K1702324	**194**	-	-	**42.7**	-	-	**2.69**	-	-	**60.2**	-	-	**59.1**	-	-	**0.17**	J	-
DC-03D	YVD-060517-09	6/5/2017	N	K1705702	**203**	-	-	**41.3**	-	-	**2.66**	-	-	**59.7**	-	-	**58.7**	-	-	**0.13**	J	-
DC-03D	YVD-092617-24	9/26/2017	N	K1710333	**194**	-	-	**44.2**	-	-	**3.16**	-	-	**67.1**	-	-	**60.1**	-	-	**0.12**	J	-
DC-03D	YVD-120417-08	12/4/2017	N	K1713026	**195**	-	-	**41.5**	-	-	**2.64**	-	-	**60.9**	-	-	**57.9**	-	-	**0.17**	J	-
DC-03D	YVD-031818-02	3/18/2018	N	870610	**199**	-	-	**42.65**	-	-	**3.02**	-	-	**70.0**	-	-	**66.1**	-	-	0.1	U	-
DC-04	DC-04-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-04	DC-04-130920	09/20/2013	N	SWI0142	**141**	-	-	**25.5**	-	-	**3.45**	-	-	**32.1**	-	-	**39.4**	-	-	5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-03	DC-03-151216	12/16/2015	N	59025501	**200**	-	-	2	U	-	**130**	-	-	-	-	-	**0.18**	J-	MSD	0.25	R	MSD
DC-03	YVD-D4-151216	12/16/2015	FD	59025501	**170**	-	-	1	U	-	**130**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-03	DC-03-160310	03/10/2016	N	59029941	**180**	-	-	2	U	-	**170**	J	DUP	-	-	-	0.1	U	-	**0.94**	J-	DP, MS
DC-03	YVD-D4-160310	03/10/2016	FD	59029941	**190**	-	-	2	U	-	**180**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	DP, MS
DC-03	DC-03-160623	6/23/2016	N	59037371	**180**	-	-	2	U	-	**160**	-	-	-	-	-	**0.12**	J-	MSD	0.25	U	-
DC-03	YVD-D4-160623	6/23/2016	FD	59037371	**170**	-	-	1	U	-	**160**	-	-	-	-	-	**0.11**	J-	MSD	0.25	U	-
DC-03	DC-03-160927	9/27/2016	N	K1611565	**163**	-	-	0.10	U	-	**139**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
DC-03	DC-03-D2-160927	9/27/2016	FD	K1611565	**163**	-	-	0.10	U	-	**138**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
DC-03	DC-03-161212	12/12/2016	N	K1615029	**168**	J	HTQ	0.10	U	-	**112**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03	YVD-030817-13	3/8/2017	N	K1702324	**179**	-	-	**0.12**	-	-	**104**	-	-	-	-	-	1	U	-	0.5	U	-
DC-03	YVD-060517-02	6/5/2017	N	K1705702	**181**	-	-	0.10	U	-	**147**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03	YVD-060517-04	6/5/2017	FD	K1705702	**182**	-	-	0.10	U	-	**122**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03	YVD-092617-22	9/26/2017	N	K1710333	**192**	-	-	0.10	U	-	**115**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03	YVD-120417-10	12/4/2017	N	K1713026	**207**	-	-	0.10	U	-	**108**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03	YVD-031818-04	3/18/2018	N	870610	**192**	-	-	0.05	U	-	**111**	-	-	0.07	U	-	-	-	-	0.5	U	-
DC-03D	DC-03D-130918	09/18/2013	N	SWI0138	**46.4**	-	-	2	U	-	**101**	-	-	-	-	-	0.1	U	-	**0.255**	-	-
DC-03D	DC-03D-131212	12/12/2013	N	SWL0073	**38.9**	-	-	2	U	-	**99.1**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
DC-03D	DC-03D-140319	03/19/2014	N	SXC0107	**42.5**	-	-	2	U	-	**106**	-	-	-	-	-	**0.127**	-	-	**0.427**	J-	MSD
DC-03D	DC-03D-140603	06/03/2014	N	SXF0017	**42**	-	-	0.8	U	-	**103**	J-	MSD	-	-	-	0.1	U	-	**0.468**	-	-
DC-03D	DC-03D-140923	09/23/2014	N	SXI0173	**38**	-	-	1	U	-	**89.4**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-03D	DC-03D-141217	12/17/2014	N	SXL0121	**38.6**	-	-	1	U	-	**92.2**	-	-	-	-	-	0.1	U	-	**0.282**	J-	MSD
DC-03D	DC-03D-150317	03/17/2015	N	5904651	**37**	-	-	1	U	-	**87**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-03D	DC-03D-150617	06/17/2015	N	59011021	**42**	J-	MSD	1	U	-	**93**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
DC-03D	DC-03D-150925	09/25/2015	N	59020431	**33**	-	-	4	U	-	**86**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-03D	DC-03D-151216	12/16/2015	N	59025501	**36**	-	-	1	U	-	**94**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-03D	DC-03D-160310	03/10/2016	N	59029941	**37**	-	-	1	U	-	**90**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	DP, MS
DC-03D	DC-03D-160623	6/23/2016	N	59037371	**36**	-	-	2	U	-	**89**	-	-	-	-	-	**0.11**	J-	MSD	0.25	U	-
DC-03D	DC-03D-160927	9/27/2016	N	K1611565	**32.8**	-	-	0.10	U	-	**90.9**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
DC-03D	DC-03D-161212	12/12/2016	N	K1615029	**33.8**	J	HTQ	0.10	U	-	**90.7**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03D	YVD-030817-14	3/8/2017	N	K1702324	**32.9**	-	-	**0.05**	J	-	**80.8**	-	-	-	-	-	1	U	-	0.5	U	-
DC-03D	YVD-030817-16	3/8/2017	FD	K1702324	**32.8**	-	-	**0.04**	J	-	**79.6**	-	-	-	-	-	1	U	-	0.5	U	-
DC-03D	YVD-060517-09	6/5/2017	N	K1705702	**31.9**	-	-	0.10	U	-	**91.6**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03D	YVD-092617-24	9/26/2017	N	K1710333	**33.2**	-	-	0.10	U	-	**101**	-	-	-	-	-	0.050	U	-	0.5	R	MSD
DC-03D	YVD-120417-08	12/4/2017	N	K1713026	**33.6**	-	-	0.10	U	-	**86.7**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-03D	YVD-031818-02	3/18/2018	N	870610	**32.6**	-	-	0.05	U	-	**86.1**	-	-	0.07	U	-	-	-	-	0.5	U	-
DC-04	DC-04-130103	01/03/2013	N	EPA01	**26**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-04	DC-04-130920	09/20/2013	N	SWI0142	-	-	-	-	-	-	**93.6**	-	-	-	-	-	0.1	U	-	**3.03**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-03	DC-03-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**400**	-	-	**400**	-	-
DC-03	YVD-D4-151216	12/16/2015	FD	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**380**	-	-	**380**	-	-
DC-03	DC-03-160310	03/10/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**460**	-	-	**460**	-	-
DC-03	YVD-D4-160310	03/10/2016	FD	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**480**	-	-	**480**	-	-
DC-03	DC-03-160623	6/23/2016	N	59037371	0.25	U	-	-	-	-	-	-	-	-	-	-	**420**	-	-	**420**	-	-
DC-03	YVD-D4-160623	6/23/2016	FD	59037371	0.25	U	-	-	-	-	-	-	-	-	-	-	**410**	-	-	**410**	-	-
DC-03	DC-03-160927	9/27/2016	N	K1611565	-	-	-	**0.006**	J	-	-	-	-	-	-	-	**425**	-	-	**425**	-	-
DC-03	DC-03-D2-160927	9/27/2016	FD	K1611565	-	-	-	0.010	U	-	-	-	-	-	-	-	**427**	-	-	**427**	-	-
DC-03	DC-03-161212	12/12/2016	N	K1615029	-	-	-	**0.199**	-	-	-	-	-	-	-	-	**371**	-	-	**371**	-	-
DC-03	YVD-030817-13	3/8/2017	N	K1702324	-	-	-	**0.006**	J	-	-	-	-	-	-	-	**381**	-	-	**381**	-	-
DC-03	YVD-060517-02	6/5/2017	N	K1705702	-	-	-	**0.022**	-	-	-	-	-	-	-	-	**358**	-	-	**358**	-	-
DC-03	YVD-060517-04	6/5/2017	FD	K1705702	-	-	-	**0.019**	-	-	-	-	-	-	-	-	**360**	-	-	**360**	-	-
DC-03	YVD-092617-22	9/26/2017	N	K1710333	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**329**	-	-	**329**	-	-
DC-03	YVD-120417-10	12/4/2017	N	K1713026	-	-	-	0.017	U	MBK	-	-	-	-	-	-	**333**	-	-	**333**	-	-
DC-03	YVD-031818-04	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**374**	-	-	**374**	-	-
DC-03D	DC-03D-130918	09/18/2013	N	SWI0138	-	-	-	-	-	-	0.1	U	-	-	-	-	**509**	-	-	**510**	-	-
DC-03D	DC-03D-131212	12/12/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	0.06	U	-	**559**	-	-	**560**	-	-
DC-03D	DC-03D-140319	03/19/2014	N	SXC0107	0.05	U	-	-	-	-	-	-	-	-	-	-	**564**	-	-	**565**	-	-
DC-03D	DC-03D-140603	06/03/2014	N	SXF0017	**0.074**	J+	FBK	-	-	-	-	-	-	-	-	-	**542**	-	-	**543**	-	-
DC-03D	DC-03D-140923	09/23/2014	N	SXI0173	**0.098**	-	-	-	-	-	-	-	-	-	-	-	**514**	-	-	**515**	-	-
DC-03D	DC-03D-141217	12/17/2014	N	SXL0121	0.1	U	-	-	-	-	-	-	-	-	-	-	**514**	-	-	**515**	-	-
DC-03D	DC-03D-150317	03/17/2015	N	5904651	0.25	U	-	-	-	-	-	-	-	-	-	-	**530**	-	-	**530**	-	-
DC-03D	DC-03D-150617	06/17/2015	N	59011021	0.25	U	-	-	-	-	-	-	-	-	-	-	**530**	-	-	**530**	-	-
DC-03D	DC-03D-150925	09/25/2015	N	59020431	0.25	U	-	-	-	-	-	-	-	-	-	-	**610**	-	-	**610**	-	-
DC-03D	DC-03D-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**590**	-	-	**590**	-	-
DC-03D	DC-03D-160310	03/10/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**580**	-	-	**580**	-	-
DC-03D	DC-03D-160623	6/23/2016	N	59037371	0.25	U	-	-	-	-	-	-	-	-	-	-	**530**	-	-	**530**	-	-
DC-03D	DC-03D-160927	9/27/2016	N	K1611565	-	-	-	**0.006**	J	-	-	-	-	-	-	-	**546**	-	-	**546**	-	-
DC-03D	DC-03D-161212	12/12/2016	N	K1615029	-	-	-	**0.085**	-	-	-	-	-	-	-	-	**544**	-	-	**544**	-	-
DC-03D	YVD-030817-14	3/8/2017	N	K1702324	-	-	-	**0.008**	J	-	-	-	-	-	-	-	**537**	-	-	**537**	-	-
DC-03D	YVD-030817-16	3/8/2017	FD	K1702324	-	-	-	**0.008**	J	-	-	-	-	-	-	-	**555**	-	-	**555**	-	-
DC-03D	YVD-060517-09	6/5/2017	N	K1705702	-	-	-	**0.006**	J	-	-	-	-	-	-	-	**533**	-	-	**533**	-	-
DC-03D	YVD-092617-24	9/26/2017	N	K1710333	-	-	-	**0.011**	-	-	-	-	-	-	-	-	**537**	-	-	**537**	-	-
DC-03D	YVD-120417-08	12/4/2017	N	K1713026	-	-	-	0.011	U	MBK	-	-	-	-	-	-	**525**	-	-	**525**	-	-
DC-03D	YVD-031818-02	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**529**	-	-	**529**	-	-
DC-04	DC-04-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-04	DC-04-130920	09/20/2013	N	SWI0142	-	-	-	-	-	-	0.1	U	-	-	-	-	**305**	-	-	**305**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-04	DC-04-130924	09/24/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-04	DC-04-131212	12/12/2013	N	SWL0073	**148**	-	-	**28.4**	-	-	**3.51**	-	-	**31.7**	-	-	**41.1**	-	-	5	U	-
DC-04	DC-04-140318	03/18/2014	N	SXC0107	**153**	-	-	**28.0**	-	-	**3.58**	-	-	**30.4**	-	-	**42**	-	-	5	U	-
DC-04	DC-04-140603	06/03/2014	N	SXF0017	**134**	-	-	**28.9**	-	-	**3.65**	-	-	**32.3**	-	-	**36.2**	-	-	2	U	-
DC-04	DC-04-140923	09/23/2014	N	SXI0173	**174**	-	-	**34.2**	-	-	**4.51**	-	-	**35.5**	-	-	**39.7**	-	-	2.5	U	-
DC-04	DC-04-141217	12/17/2014	N	SXL0121	**182**	-	-	**35.7**	-	-	**4.34**	-	-	**34.9**	-	-	**42.7**	-	-	2.5	U	-
DC-04	DC-04-150317	03/17/2015	N	5904651	**180**	-	-	**34.0**	-	-	**3.90**	J-	MSD	**36.0**	-	-	**41**	-	-	2.5	U	-
DC-04	DC-04-150617	06/17/2015	N	59010961	**180**	-	-	**34.0**	-	-	**4.10**	J+	MSD	**36.0**	J+	MSD	**46**	-	-	5	U	-
DC-04	DC-04-150924	09/24/2015	N	59020391	**160**	-	-	**36.0**	-	-	**3.90**	-	-	**33.0**	-	-	**48**	-	-	2.5	U	-
DC-04	YVD-D3-150924	09/24/2015	FD	59020391	**170**	-	-	**37.0**	-	-	**4.10**	-	-	**35.0**	-	-	**53**	-	-	2.5	U	-
DC-04	DC-04-151215	12/15/2015	N	59025431	**180**	-	-	**36.0**	-	-	**4.20**	-	-	**36.0**	-	-	**46**	-	-	2.5	U	-
DC-04	DC-04-160309	03/09/2016	N	59029711	**190**	-	-	**36.0**	-	-	**4.00**	-	-	**36.0**	-	-	**53**	-	-	2.5	U	-
DC-04	DC-04-160621	6/21/2016	N	59037271	**200**	-	-	**40.0**	-	-	**4.40**	-	-	**39.0**	-	-	**50**	-	-	2.5	U	-
DC-04	DC-04-160926	9/26/2016	N	K1611506	**194**	-	-	**40.6**	-	-	**4.50**	-	-	**38.2**	-	-	**43.4**	-	-	**0.12**	J	-
DC-04	DC-04-161216	12/12/2016	N	K1615174	**214**	-	-	**39.7**	-	-	**4.11**	-	-	**36.9**	-	-	**44.7**	-	-	**0.15**	J	-
DC-04	YVD-031017-31	3/10/2017	N	K1702448	**219**	-	-	**36.3**	-	-	**3.75**	-	-	**32.4**	-	-	**43.1**	-	-	**0.16**	J	-
DC-04	YVD-031017-33	3/10/2017	FD	K1702448	**219**	-	-	**36.3**	-	-	**3.74**	-	-	**32.3**	-	-	**43.2**	-	-	**0.16**	J	-
DC-04	YVD-060617-26	6/6/2017	N	K1705833	**202**	-	-	**37.0**	-	-	**3.96**	-	-	**34.7**	-	-	**38.6**	-	-	**0.13**	J	-
DC-04	YVD-092517-06	9/25/2017	N	K1710274	**192**	-	-	**37**	-	-	**4.06**	-	-	**35.9**	-	-	**35.2**	-	-	**0.14**	J	-
DC-04	YVD-120517-24	12/5/2017	N	K1713091	**188**	-	-	**32.7**	-	-	**3.62**	-	-	**32.7**	-	-	**34.3**	-	-	**0.12**	J	-
DC-04	YVD-031818-07	3/18/2018	N	870610	**182**	-	-	**32.10**	-	-	**4.02**	-	-	**35.6**	-	-	**34.5**	-	-	0.1	U	-
DC-05	DC-05-130104	01/04/2013	N	EPA01	-		-	-		-	-		-	-		-	-		-	-		-
DC-05	DC-05-130920	09/20/2013	N	SWI0142	**129**		-	**48.5**		-	**2.88**		-	**64.2**		-	**36.7**		-	5	U	-
DC-05	DC-05-130924	09/24/2013	N	SWI0175	-		-	-		-	-		-	-		-	-		-	-		-
DC-05	DC-05-131212	12/12/2013	N	SWL0073	**130**	-	-	**50.2**	-	-	**3.92**	-	-	**64.2**	-	-	**35.9**	-	-	5	U	-
DC-05	DC-05-140318	03/18/2014	N	SXC0107	**133**	-	-	**49.7**	-	-	**2.90**	-	-	**59.4**	-	-	**33**	-	-	5	U	-
DC-05	DC-05-140603	06/03/2014	N	SXF0017	**118**	-	-	**46.7**	-	-	**3.25**	-	-	**61.3**	-	-	**31.6**	-	-	2	U	-
DC-05	DC-05-140923	09/23/2014	N	SXI0173	**140**	-	-	**53.5**	-	-	**3.86**	-	-	**71.0**	-	-	**35**	-	-	2.5	U	-
DC-05	DC-05-141217	12/17/2014	N	SXL0121	**147**	-	-	**58.9**	-	-	**3.41**	-	-	**59.0**	-	-	**34.4**	-	-	2.5	U	-
DC-05	DC-05-150317	03/17/2015	N	5904541	**150**	-	-	**58.0**	-	-	**3.00**	-	-	**61.0**	-	-	**36**	-	-	**2**	-	-
DC-05	DC-05-150616	06/16/2015	N	59010961	**140**	-	-	**57.0**	-	-	**3.00**	J+	MSD	**64.0**	J+	MSD	**35**	-	-	2	U	-
DC-05	YVD-D2-150616	06/16/2015	FD	59010961	**140**	-	-	**56.0**	-	-	**3.30**	J+	MSD	**64.0**	J+	MSD	**35**	-	-	5	U	-
DC-05	DC-05-150923	09/23/2015	N	59020391	**130**	-	-	**57.0**	-	-	**3.10**	-	-	**56.0**	-	-	**33**	-	-	2	U	-
DC-05	DC-05-151215	12/15/2015	N	59025431	**140**	-	-	**55.0**	-	-	**2.90**	-	-	**51.0**	-	-	**29**	-	-	2	U	-
DC-05	DC-05-160309	03/09/2016	N	59029711	**140**	-	-	**54.0**	-	-	**2.90**	-	-	**53.0**	-	-	**35**	-	-	2	U	-
DC-05	DC-05-160621	6/21/2016	N	59037151	**130**	-	-	**54.0**	-	-	**2.80**	-	-	**53.0**	-	-	**34**	-	-	2	U	-
DC-05	DC-05-160926	9/26/2016	N	K1611506	**119**	-	-	**49.7**	-	-	**2.89**	-	-	**54.9**	-	-	**26.5**	-	-	**0.15**	J	-
DC-05	DC-05-D1-160926	9/26/2016	FD	K1611506	**124**	-	-	**52.5**	-	-	**3.06**	-	-	**58.1**	-	-	**26.6**	-	-	**0.16**	J	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-04	DC-04-130924	09/24/2013	N	SWI0175	**31.7**	-	-	2	U	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-04	DC-04-131212	12/12/2013	N	SWL0073	**36.7**	-	-	2	U	-	**110**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
DC-04	DC-04-140318	03/18/2014	N	SXC0107	**37.3**	-	-	2	U	-	**107**	-	-	-	-	-	0.1	U	-	**0.707**	J-	MSD
DC-04	DC-04-140603	06/03/2014	N	SXF0017	**36.4**	-	-	0.8	U	-	**104**	J-	MSD	-	-	-	0.1	U	-	**0.645**	-	-
DC-04	DC-04-140923	09/23/2014	N	SXI0173	**37.8**	-	-	1	U	-	**108**	-	-	-	-	-	0.1	U	-	**0.524**	J+	MSD
DC-04	DC-04-141217	12/17/2014	N	SXL0121	**40.8**	-	-	1	U	-	**120**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-04	DC-04-150317	03/17/2015	N	5904651	**39**	-	-	1	U	-	**110**	-	-	-	-	-	0.1	U	-	**0.33**	J-	MSD
DC-04	DC-04-150617	06/17/2015	N	59010961	**42**	-	-	2	U	-	**110**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-04	DC-04-150924	09/24/2015	N	59020391	**48**	J+	MSD	1	U	-	**140**	J-	MSD	-	-	-	0.1	UJ	MSD	**0.25**	J-	MSD
DC-04	YVD-D3-150924	09/24/2015	FD	59020391	**53**	J+	MSD	1	U	-	**150**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
DC-04	DC-04-151215	12/15/2015	N	59025431	**48**	-	-	1	U	-	**130**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-04	DC-04-160309	03/09/2016	N	59029711	**53**	-	-	1	U	-	**150**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
DC-04	DC-04-160621	6/21/2016	N	59037271	**50**	-	-	1	U	-	**150**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
DC-04	DC-04-160926	9/26/2016	N	K1611506	**44.1**	-	-	0.10	U	-	**142**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
DC-04	DC-04-161216	12/12/2016	N	K1615174	**45.2**	-	-	0.10	U	-	**155**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-04	YVD-031017-31	3/10/2017	N	K1702448	**46.0**	-	-	0.10	U	-	**153**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-04	YVD-031017-33	3/10/2017	FD	K1702448	**45.7**	-	-	0.10	U	-	**152**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-04	YVD-060617-26	6/6/2017	N	K1705833	**38.4**	-	-	0.10	U	-	**129**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-04	YVD-092517-06	9/25/2017	N	K1710274	**33.7**	-	-	0.10	U	-	**140**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-04	YVD-120517-24	12/5/2017	N	K1713091	**33.8**	J	HTQ	0.10	U	-	**121**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
DC-04	YVD-031818-07	3/18/2018	N	870610	**32.9**	-	-	0.05	U	-	**115**	-	-	0.07	U	-	-	-	-	0.5	U	-
DC-05	DC-05-130104	01/04/2013	N	EPA01	**32**		-	-		-	-		-	-	-	-	-		-	-		-
DC-05	DC-05-130920	09/20/2013	N	SWI0142	-		-	-		-	**154**		-	-	-	-	**0.255**		-	0.25	U	-
DC-05	DC-05-130924	09/24/2013	N	SWI0175	**33.6**		-	2	U	-	-		-	-	-	-	-		-	-		-
DC-05	DC-05-131212	12/12/2013	N	SWL0073	**42.6**	-	-	2	U	-	**178**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
DC-05	DC-05-140318	03/18/2014	N	SXC0107	**33.1**	-	-	2	U	-	**150**	-	-	-	-	-	**0.131**	-	-	**0.558**	J-	MSD
DC-05	DC-05-140603	06/03/2014	N	SXF0017	**32.6**	-	-	0.8	U	-	**128**	J-	MSD	-	-	-	0.1	U	-	**0.581**	-	-
DC-05	DC-05-140923	09/23/2014	N	SXI0173	**35.8**	-	-	1	U	-	**122**	-	-	-	-	-	0.1	U	-	**0.998**	J+	MSD
DC-05	DC-05-141217	12/17/2014	N	SXL0121	**33.4**	-	-	1	U	-	**141**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-05	DC-05-150317	03/17/2015	N	5904541	**38**	J-	MSD	0.8	U	-	**140**	J-	MSD	-	-	-	0.1	U	-	**0.27**	J-	MSD
DC-05	DC-05-150616	06/16/2015	N	59010961	**37**	-	-	0.8	U	-	**120**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-05	YVD-D2-150616	06/16/2015	FD	59010961	**41**	-	-	2	U	-	**110**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-05	DC-05-150923	09/23/2015	N	59020391	**38**	J+	MSD	0.8	U	-	**110**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
DC-05	DC-05-151215	12/15/2015	N	59025431	**38**	-	-	0.8	U	-	**120**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-05	DC-05-160309	03/09/2016	N	59029711	**43**	-	-	0.8	U	-	**140**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
DC-05	DC-05-160621	6/21/2016	N	59037151	**36**	-	-	0.8	U	-	**130**	-	-	-	-	-	0.1	UJ	-	0.25	U	-
DC-05	DC-05-160926	9/26/2016	N	K1611506	**32.1**	-	-	0.10	U	-	**114**	-	-	-	-	-	0.050	U	-	0.5	R	MSD
DC-05	DC-05-D1-160926	9/26/2016	FD	K1611506	**32.2**	-	-	0.10	U	-	**114**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-04	DC-04-130924	09/24/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-04	DC-04-131212	12/12/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	**0.104**	-	-	**315**	-	-	**315**	-	-
DC-04	DC-04-140318	03/18/2014	N	SXC0107	**0.13**	-	-	-	-	-	-	-	-	-	-	-	**325**	-	-	**325**	-	-
DC-04	DC-04-140603	06/03/2014	N	SXF0017	**0.24**	J+	FBK	-	-	-	-	-	-	-	-	-	**310**	-	-	**310**	-	-
DC-04	DC-04-140923	09/23/2014	N	SXI0173	**0.29**	-	-	-	-	-	-	-	-	-	-	-	**317**	-	-	**320**	-	-
DC-04	DC-04-141217	12/17/2014	N	SXL0121	**0.17**	-	-	-	-	-	-	-	-	-	-	-	**329**	-	-	**330**	-	-
DC-04	DC-04-150317	03/17/2015	N	5904651	0.25	U	-	-	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
DC-04	DC-04-150617	06/17/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**330**	-	-	**330**	-	-
DC-04	DC-04-150924	09/24/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**400**	-	-	**400**	-	-
DC-04	YVD-D3-150924	09/24/2015	FD	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**380**	-	-	**380**	-	-
DC-04	DC-04-151215	12/15/2015	N	59025431	0.25	UJ	FDP	-	-	-	-	-	-	-	-	-	**400**	J	FDP	**400**	J	FDP
DC-04	DC-04-160309	03/09/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**390**	-	-	**390**	-	-
DC-04	DC-04-160621	6/21/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**360**	-	-	**360**	-	-
DC-04	DC-04-160926	9/26/2016	N	K1611506	-	-	-	**0.137**	-	-	-	-	-	-	-	-	**374**	-	-	**374**	-	-
DC-04	DC-04-161216	12/12/2016	N	K1615174	-	-	-	**0.052**	-	-	-	-	-	-	-	-	**384**	-	-	**384**	-	-
DC-04	YVD-031017-31	3/10/2017	N	K1702448	-	-	-	**0.035**	J	FDP	-	-	-	-	-	-	**375**	-	-	**375**	-	-
DC-04	YVD-031017-33	3/10/2017	FD	K1702448	-	-	-	**0.053**	J	FDP	-	-	-	-	-	-	**383**	-	-	**383**	-	-
DC-04	YVD-060617-26	6/6/2017	N	K1705833	-	-	-	**0.085**	-	-	-	-	-	-	-	-	**390**	-	-	**390**	-	-
DC-04	YVD-092517-06	9/25/2017	N	K1710274	-	-	-	**0.044**	-	-	-	-	-	-	-	-	**391**	-	-	**391**	-	-
DC-04	YVD-120517-24	12/5/2017	N	K1713091	-	-	-	**0.037**	-	-	-	-	-	-	-	-	**388**	-	-	**388**	-	-
DC-04	YVD-031818-07	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**377**	-	-	**377**	-	-
DC-05	DC-05-130104	01/04/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-
DC-05	DC-05-130920	09/20/2013	N	SWI0142	-	-	-	-	-	-	0.1	U	-	-	-	-	**414**		-	**415**		-
DC-05	DC-05-130924	09/24/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-
DC-05	DC-05-131212	12/12/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	**0.723**	-	-	**424**	-	-	**425**	-	-
DC-05	DC-05-140318	03/18/2014	N	SXC0107	**0.06**	-	-	-	-	-	-	-	-	-	-	-	**404**	-	-	**405**	-	-
DC-05	DC-05-140603	06/03/2014	N	SXF0017	**0.28**	J+	FBK	-	-	-	-	-	-	-	-	-	**412**	-	-	**413**	-	-
DC-05	DC-05-140923	09/23/2014	N	SXI0173	**0.16**	-	-	-	-	-	-	-	-	-	-	-	**408**	-	-	**410**	-	-
DC-05	DC-05-141217	12/17/2014	N	SXL0121	**0.13**	-	-	-	-	-	-	-	-	-	-	-	**414**	-	-	**415**	-	-
DC-05	DC-05-150317	03/17/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**430**	-	-	**430**	-	-
DC-05	DC-05-150616	06/16/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**410**	-	-	**410**	-	-
DC-05	YVD-D2-150616	06/16/2015	FD	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**410**	-	-	**410**	-	-
DC-05	DC-05-150923	09/23/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**440**	-	-	**440**	-	-
DC-05	DC-05-151215	12/15/2015	N	59025431	0.25	UJ	FDP	-	-	-	-	-	-	-	-	-	**440**	J	FDP	**440**	J	FDP
DC-05	DC-05-160309	03/09/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**410**	-	-	**410**	-	-
DC-05	DC-05-160621	6/21/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**390**	-	-	**390**	-	-
DC-05	DC-05-160926	9/26/2016	N	K1611506	-	-	-	**0.031**	-	-	-	-	-	-	-	-	**346**	-	-	**346**	-	-
DC-05	DC-05-D1-160926	9/26/2016	FD	K1611506	-	-	-	**0.028**	-	-	-	-	-	-	-	-	**364**	-	-	**364**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-05	DC-05-161216	12/16/2016	N	K1615174	**129**	-	-	**45.4**	-	-	**2.60**	-	-	**47.9**	-	-	**28.6**	-	-	**0.19**	J	-
DC-05	YVD-D5-161216	12/16/2016	FD	K1615174	**128**	-	-	**48.0**	-	-	**2.65**	-	-	**49.6**	-	-	**28.9**	-	-	**0.19**	J	-
DC-05	YVD-030717-09	3/7/2017	N	K1702324	**117**	-	-	**43.5**	-	-	**2.61**	-	-	**58.3**	-	-	**28.5**	-	-	**0.2**	J	-
DC-05	YVD-060717-30	6/7/2017	N	K1705833	**122**	-	-	**47.1**	-	-	**2.82**	-	-	**63.9**	-	-	**26.8**	-	-	**0.16**	J	-
DC-05	YVD-060717-32	6/7/2017	FD	K1705833	**122**	-	-	**45.8**	-	-	**2.77**	-	-	**62.6**	-	-	**26.3**	-	-	**0.16**	J	-
DC-05	YVD-092517-04	9/25/2017	N	K1710274	**126**	-	-	**49.7**	-	-	**2.99**	-	-	**62.0**	-	-	**28.1**	-	-	**0.19**	J	-
DC-05	YVD-120517-16	12/5/2017	N	K1713091	**119**	-	-	**42.5**	-	-	**2.52**	-	-	**59.1**	-	-	**31.9**	-	-	**0.18**	J	-
DC-05	YVD-120517-18	12/5/2017	FD	K1713091	**120**	-	-	**43.1**	-	-	**2.53**	-	-	**60.0**	-	-	**31.3**	-	-	**0.19**	J	-
DC-05	YVD-031818-03	3/18/2018	N	870610	**116**	-	-	**42.35**	-	-	**2.94**	-	-	**75.0**	-	-	**33.0**	-	-	0.14	U	-
DC-05	YVD-031818-05	3/18/2018	FD	870610	**116**	-	-	**42.85**	-	-	**2.94**	-	-	**75.0**	-	-	**33.1**	-	-	**0.14**	-	-
DC-05D	DC-05D-130920	09/20/2013	N	SWI0142	**86.7**	-	-	**30.3**	-	-	**3.67**	-	-	**40.5**	-	-	**43.6**	-	-	5	U	-
DC-05D	DC-05D-130924	09/24/2013	N	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-05D	DC-05D-131211	12/11/2013	N	SWL0073	**81.8**	-	-	**28.8**	-	-	**3.52**	-	-	**37.5**	-	-	**32.3**	-	-	5	U	-
DC-05D	DC-05D-140318	03/18/2014	N	SXC0095	**86.2**	-	-	**29.4**	-	-	**3.73**	-	-	**36.7**	-	-	**33.4**	-	-	5	U	-
DC-05D	DC-05D-140602	06/02/2014	N	SXF0017	**67.4**	-	-	**24.6**	-	-	**4.99**	-	-	**34.3**	-	-	**30.6**	-	-	2	U	-
DC-05D	DC-05D-140922	09/22/2014	N	SXI0148	**83.3**	-	-	**30.2**	-	-	**3.56**	-	-	**37.8**	-	-	**30.9**	-	-	2	U	-
DC-05D	DC-05D-141216	12/16/2014	N	SXL0121	**78.9**	-	-	**29.5**	-	-	**5.18**	-	-	**36.8**	-	-	**35.9**	-	-	5	U	-
DC-05D	DC-05D-150317	03/17/2015	N	5904541	**78.0**	-	-	**29.0**	-	-	**4.60**	-	-	**39.0**	-	-	**31**	-	-	2	U	-
DC-05D	DC-05D-150616	06/16/2015	N	59010961	**79.0**	-	-	**30.0**	-	-	**4.70**	J+	MSD	**41.0**	J+	MSD	**34**	-	-	2	U	-
DC-05D	DC-05D-150923	09/23/2015	N	59020391	**74.0**	-	-	**31.0**	-	-	**4.40**	-	-	**38.0**	-	-	**31**	-	-	2	U	-
DC-05D	YVD-D2-150923	09/23/2015	FD	59020391	**73.0**	-	-	**30.0**	-	-	**4.40**	-	-	**38.0**	-	-	**33**	-	-	0.5	U	-
DC-05D	DC-05D-151215	12/15/2015	N	59025431	**78.0**	-	-	**29.0**	-	-	**4.40**	-	-	**39.0**	-	-	**30**	-	-	2	U	-
DC-05D	DC-05D-160309	03/09/2016	N	59029711	**81.0**	-	-	**30.0**	-	-	**4.30**	-	-	**41.0**	-	-	**33**	-	-	2	U	-
DC-05D	DC-05D-160621	6/21/2016	N	59037271	**78.0**	-	-	**30.0**	-	-	**4.10**	-	-	**41.0**	-	-	**32**	-	-	2	U	-
DC-05D	DC-05D-160926	9/26/2016	N	K1611506	**81.4**	-	-	**28.4**	-	-	**3.93**	-	-	**39.4**	J	MSD	**25.6**	-	-	**0.26**	-	-
DC-05D	DC-05D-161214	12/14/2016	N	K1615126	**78.1**	-	-	**27.5**	-	-	**3.90**	-	-	**38.2**	-	-	**25.7**	-	-	**0.28**	-	-
DC-05D	YVD-030717-12	3/7/2017	N	K1702324	**76.4**	-	-	**26.5**	-	-	**3.64**	-	-	**35.6**	-	-	**26.3**	-	-	**0.32**	-	-
DC-05D	YVD-060717-34	6/7/2017	N	K1705833	**79.1**	-	-	**27.3**	-	-	**3.78**	-	-	**37.4**	-	-	**23.9**	-	-	**0.29**	-	-
DC-05D	YVD-092517-02	9/25/2017	N	K1710274	**79.2**	-	-	**28.9**	-	-	**3.91**	-	-	**38.7**	-	-	**25.2**	-	-	**0.28**	-	-
DC-05D	YVD-092517-03	9/25/2017	FD	K1710274	**80.6**	-	-	**29.1**	-	-	**4.02**	-	-	**38.9**	-	-	**24.9**	-	-	**0.27**	-	-
DC-05D	YVD-120517-20	12/5/2017	N	K1713091	**81.2**	-	-	**27.1**	-	-	**3.69**	-	-	**37.6**	-	-	**26.6**	-	-	**0.28**	-	-
DC-05D	YVD-031818-08	3/18/2018	N	870610	**82.0**	-	-	**27.50**	-	-	**3.97**	-	-	**41.2**	-	-	**27.4**	-	-	**0.25**	-	-
DC-07	DC-07-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-07	DC-07-130918	09/18/2013	N	SWI0123	**122**	-	-	**18.4**	-	-	1.00	U	-	**45.7**	-	-	**30.5**	-	-	5	U	-
DC-07	YVD-D1-130918	09/18/2013	FD	SWI0123	**122**	-	-	**18.5**	-	-	1.00	U	-	**46.1**	-	-	**32.8**	-	-	5	U	-
DC-07	DC-07-131210	12/10/2013	N	SWL0055	**27.5**	-	-	**11.5**	-	-	**3.82**	-	-	**38.4**	-	-	**31**	-	-	5	U	-
DC-07	DC-07-140316	03/16/2014	N	SXC0081	**88.4**	-	-	**15.4**	-	-	**1.04**	-	-	**33.5**	-	-	**26.5**	-	-	2	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-05	DC-05-161216	12/16/2016	N	K1615174	**33.7**	-	-	0.10	U	-	**108**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05	YVD-D5-161216	12/16/2016	FD	K1615174	**33.3**	-	-	0.10	U	-	**107**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05	YVD-030717-09	3/7/2017	N	K1702324	**32.9**	J	HTQ	0.10	U	-	**97.6**	-	-	-	-	-	1	U	-	0.5	U	-
DC-05	YVD-060717-30	6/7/2017	N	K1705833	**30.8**	-	-	0.10	U	-	**102**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05	YVD-060717-32	6/7/2017	FD	K1705833	**30.7**	-	-	0.10	U	-	**102**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05	YVD-092517-04	9/25/2017	N	K1710274	**30.7**	-	-	0.10	U	-	**107**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05	YVD-120517-16	12/5/2017	N	K1713091	**34.5**	J	HTQ	0.10	U	-	**88.8**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
DC-05	YVD-120517-18	12/5/2017	FD	K1713091	**33.9**	J	HTQ	0.10	U	-	**89.3**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
DC-05	YVD-031818-03	3/18/2018	N	870610	**33.6**	-	-	0.05	U	-	**97.4**	-	-	**0.10**	-	-	-	-	-	0.5	U	-
DC-05	YVD-031818-05	3/18/2018	FD	870610	**33.8**	-	-	0.05	U	-	**96.7**	-	-	0.07	U	-	-	-	-	0.5	U	-
DC-05D	DC-05D-130920	09/20/2013	N	SWI0142	-	-	-	-	-	-	**167**	-	-	-	-	-	0.1	U	-	**0.361**	-	-
DC-05D	DC-05D-130924	09/24/2013	N	SWI0178	**14.6**	-	-	0.2	U	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-05D	DC-05D-131211	12/11/2013	N	SWL0073	**16**	-	-	2	U	-	**145**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
DC-05D	DC-05D-140318	03/18/2014	N	SXC0095	**12.8**	-	-	2	U	-	**137**	J-	MSD	-	-	-	**0.182**	-	-	0.25	U	-
DC-05D	DC-05D-140602	06/02/2014	N	SXF0017	**3.36**	-	-	0.8	U	-	**122**	J-	MSD	-	-	-	**0.163**	-	-	**0.591**	-	-
DC-05D	DC-05D-140922	09/22/2014	N	SXI0148	**11.7**	-	-	0.8	U	-	**127**	-	-	-	-	-	0.1	U	-	**0.424**	-	-
DC-05D	DC-05D-141216	12/16/2014	N	SXL0121	**7.9**	-	-	0.2	U	-	**140**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-05D	DC-05D-150317	03/17/2015	N	5904541	**7.7**	J-	MSD	0.8	U	-	**120**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-05D	DC-05D-150616	06/16/2015	N	59010961	**8.6**	-	-	0.8	U	-	**120**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-05D	DC-05D-150923	09/23/2015	N	59020391	**8.9**	J+	MSD	0.8	U	-	**120**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
DC-05D	YVD-D2-150923	09/23/2015	FD	59020391	**10**	J+	MSD	0.2	U	-	**120**	J-	MSD	-	-	-	**0.16**	J	MSD	0.25	UJ	MSD
DC-05D	DC-05D-151215	12/15/2015	N	59025431	**9.9**	-	-	0.8	U	-	**120**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-05D	DC-05D-160309	03/09/2016	N	59029711	**13**	-	-	0.8	U	-	**140**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
DC-05D	DC-05D-160621	6/21/2016	N	59037271	**12**	-	-	0.8	U	-	**130**	-	-	-	-	-	**0.13**	J-	MSD	0.25	R	MSD
DC-05D	DC-05D-160926	9/26/2016	N	K1611506	**11.2**	-	-	0.10	U	-	**113**	-	-	-	-	-	0.050	U	-	0.5	R	MSD
DC-05D	DC-05D-161214	12/14/2016	N	K1615126	**11.2**	-	-	0.10	U	-	**114**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05D	YVD-030717-12	3/7/2017	N	K1702324	**11.6**	J	HTQ	0.10	U	-	**105**	-	-	-	-	-	1	U	-	0.5	U	-
DC-05D	YVD-060717-34	6/7/2017	N	K1705833	**10.8**	-	-	0.10	U	-	**101**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05D	YVD-092517-02	9/25/2017	N	K1710274	**11.1**	-	-	0.10	U	-	**118**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05D	YVD-092517-03	9/25/2017	FD	K1710274	**11**	-	-	0.10	U	-	**115**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-05D	YVD-120517-20	12/5/2017	N	K1713091	**11.9**	J	HTQ	0.10	U	-	**112**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
DC-05D	YVD-031818-08	3/18/2018	N	870610	**12.6**	-	-	0.05	U	-	**108**	-	-	0.07	U	-	-	-	-	0.5	U	-
DC-07	DC-07-130103	01/03/2013	N	EPA01	**2.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-07	DC-07-130918	09/18/2013	N	SWI0123	**4.3**	-	-	2	U	-	**168**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-07	YVD-D1-130918	09/18/2013	FD	SWI0123	**4.3**	-	-	2	U	-	**179**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-07	DC-07-131210	12/10/2013	N	SWL0055	**4.7**	-	-	2	U	-	**117**	-	-	-	-	-	0.02	UJ	MSD	0.4366	UJ	RL, MSI
DC-07	DC-07-140316	03/16/2014	N	SXC0081	**4.72**	-	-	0.8	U	-	**78.9**	-	-	-	-	-	**0.116**	-	-	0.25	U	-

Table 8
Historical Groundwater Analytical Results

				Analyte	Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
				Analytical Method	EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-05	DC-05-161216	12/16/2016	N	K1615174	-	-	-	**0.048**	-	-	-	-	-	-	-	-	**348**	-	-	**348**	-	-
DC-05	YVD-D5-161216	12/16/2016	FD	K1615174	-	-	-	**0.04**	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
DC-05	YVD-030717-09	3/7/2017	N	K1702324	-	-	-	**0.026**	-	-	-	-	-	-	-	-	**367**	-	-	**367**	-	-
DC-05	YVD-060717-30	6/7/2017	N	K1705833	-	-	-	**0.059**	J	FDP	-	-	-	-	-	-	**364**	-	-	**364**	-	-
DC-05	YVD-060717-32	6/7/2017	FD	K1705833	-	-	-	**0.031**	J	FDP	-	-	-	-	-	-	**364**	-	-	**364**	-	-
DC-05	YVD-092517-04	9/25/2017	N	K1710274	-	-	-	**0.039**	-	-	-	-	-	-	-	-	**368**	-	-	**368**	-	-
DC-05	YVD-120517-16	12/5/2017	N	K1713091	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**364**	-	-	**364**	-	-
DC-05	YVD-120517-18	12/5/2017	FD	K1713091	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**366**	-	-	**366**	-	-
DC-05	YVD-031818-03	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**364**	-	-	**364**	-	-
DC-05	YVD-031818-05	3/18/2018	FD	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**356**	-	-	**356**	-	-
DC-05D	DC-05D-130920	09/20/2013	N	SWI0142	-	-	-	-	-	-	**0.163**	-	-	-	-	-	**214**	-	-	**215**	-	-
DC-05D	DC-05D-130924	09/24/2013	N	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-05D	DC-05D-131211	12/11/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	0.06	U	-	**209**	-	-	**210**	-	-
DC-05D	DC-05D-140318	03/18/2014	N	SXC0095	**0.072**	-	-	-	-	-	-	-	-	-	-	-	**209**	-	-	**210**	-	-
DC-05D	DC-05D-140602	06/02/2014	N	SXF0017	**0.56**	J+	FBK	-	-	-	-	-	-	-	-	-	**214**	-	-	**215**	-	-
DC-05D	DC-05D-140922	09/22/2014	N	SXI0148	**0.057**	-	-	-	-	-	-	-	-	-	-	-	**203**	-	-	**205**	-	-
DC-05D	DC-05D-141216	12/16/2014	N	SXL0121	**0.39**	-	-	-	-	-	-	-	-	-	-	-	**199**	-	-	**200**	-	-
DC-05D	DC-05D-150317	03/17/2015	N	5904541	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
DC-05D	DC-05D-150616	06/16/2015	N	59010961	**0.27**	-	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
DC-05D	DC-05D-150923	09/23/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**200**	-	-	**200**	-	-
DC-05D	YVD-D2-150923	09/23/2015	FD	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**220**	-	-	**220**	-	-
DC-05D	DC-05D-151215	12/15/2015	N	59025431	0.25	UJ	FDP	-	-	-	-	-	-	-	-	-	**230**	J	FDP	**230**	J	FDP
DC-05D	DC-05D-160309	03/09/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**220**	-	-	**220**	-	-
DC-05D	DC-05D-160621	6/21/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
DC-05D	DC-05D-160926	9/26/2016	N	K1611506	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**209**	-	-	**209**	-	-
DC-05D	DC-05D-161214	12/14/2016	N	K1615126	-	-	-	**0.015**	-	-	-	-	-	-	-	-	**202**	-	-	**202**	-	-
DC-05D	YVD-030717-12	3/7/2017	N	K1702324	-	-	-	**0.041**	-	-	-	-	-	-	-	-	**206**	-	-	**206**	-	-
DC-05D	YVD-060717-34	6/7/2017	N	K1705833	-	-	-	**0.012**	-	-	-	-	-	-	-	-	**201**	-	-	**201**	-	-
DC-05D	YVD-092517-02	9/25/2017	N	K1710274	-	-	-	**0.024**	J	FDP	-	-	-	-	-	-	**207**	-	-	**207**	-	-
DC-05D	YVD-092517-03	9/25/2017	FD	K1710274	-	-	-	**0.008**	J	FDP	-	-	-	-	-	-	**207**	-	-	**207**	-	-
DC-05D	YVD-120517-20	12/5/2017	N	K1713091	-	-	-	**0.013**	-	-	-	-	-	-	-	-	**202**	-	-	**202**	-	-
DC-05D	YVD-031818-08	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**198**	-	-	**198**	-	-
DC-07	DC-07-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-07	DC-07-130918	09/18/2013	N	SWI0123	-	-	-	-	-	-	0.1	U	-	-	-	-	**315**	-	-	**315**	-	-
DC-07	YVD-D1-130918	09/18/2013	FD	SWI0123	-	-	-	-	-	-	0.1	U	-	-	-	-	**295**	-	-	**295**	-	-
DC-07	DC-07-131210	12/10/2013	N	SWL0055	-	-	-	-	-	-	-	-	-	**0.0648**	-	-	**260**	-	-	**260**	-	-
DC-07	DC-07-140316	03/16/2014	N	SXC0081	**0.11**	-	-	-	-	-	-	-	-	-	-	-	**260**	-	-	**260**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-07	DC-07-140602	06/02/2014	N	SXF0008	**93.7**	-	-	**16.5**	-	-	1.00	U	-	**36.3**	-	-	**28.2**	-	-	2	U	-
DC-07	DC-07-140922	09/22/2014	N	SXI0148	**87.1**	-	-	**16.1**	-	-	1.00	U	-	**33.7**	-	-	**29.8**	-	-	2	U	-
DC-07	DC-07-141216	12/16/2014	N	SXL0108	**83.6**	-	-	**15.1**	-	-	1.00	U	-	**30.6**	-	-	**24.2**	-	-	2	U	-
DC-07	YVD-D2-141216	12/16/2014	FD	SXL0108	**84.2**	-	-	**15.1**	-	-	1.00	U	-	**30.8**	-	-	**25.6**	-	-	0.5	U	-
DC-07	DC-07-150317	03/17/2015	N	5904541	**94.0**	-	-	**17.0**	-	-	**1.00**	-	-	**35.0**	-	-	**29**	-	-	2	U	-
DC-07	DC-07-150617	06/17/2015	N	59011021	**97.0**	-	-	**17.0**	J	RPD	1.00	U	-	**37.0**	J	RPD	**32**	-	-	2	U	-
DC-07	DC-07-150924	09/24/2015	N	59020391	**76.0**	-	-	**15.0**	-	-	1.00	U	-	**33.0**	-	-	**30**	-	-	2	U	-
DC-07	DC-07-151215	12/15/2015	N	59025501	**87.0**	-	-	**16.0**	-	-	1.00	U	-	**34.0**	-	-	**29**	-	-	2	U	-
DC-07	DC-07-160309	03/09/2016	N	59029941	**91.0**	-	-	**17.0**	-	-	**1.10**	-	-	**36.0**	-	-	**31**	-	-	2	U	-
DC-07	DC-07-160621	6/21/2016	N	59037271	**96.0**	-	-	**18.0**	-	-	**1.20**	-	-	**38.0**	-	-	**33**	-	-	2	U	-
DC-07	DC-07-160926	9/26/2016	N	K1611565	**82.3**	-	-	**15.0**	-	-	**1.06**	-	-	**36.6**	-	-	**24.4**	-	-	0.2	U	-
DC-07	DC-07-161214	12/14/2016	N	K1615083	**77.0**	-	-	**13.1**	-	-	**1.05**	-	-	**32.0**	-	-	**19.2**	-	-	0.2	U	-
DC-07	YVD-030917-25	3/9/2017	N	K1702448	**87.9**	-	-	**14.4**	-	-	**1.03**	-	-	**32.1**	-	-	**21.4**	-	-	0.2	U	-
DC-07	YVD-060617-18	6/6/2017	N	K1705754	**82.8**	-	-	**14.3**	-	-	**1.10**	-	-	**34.6**	-	-	**24.5**	-	-	**0.11**	J	-
DC-07	YVD-092517-12	9/25/2017	N	K1710333	**86.1**	-	-	**13.9**	-	-	**1.14**	-	-	**34.5**	-	-	**25.4**	-	-	**0.09**	J	-
DC-07	YVD-120417-14	12/4/2017	N	K1713026	**80.9**	-	-	**13.3**	-	-	**1.17**	-	-	**33.0**	-	-	**25.7**	-	-	**0.18**	J	-
DC-09	DC-09-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-09	DC-09-130923	09/23/2013	N	SWI0178	**34.0**	-	-	**8.4**	-	-	**2.75**	-	-	**39.7**	-	-	-	-	-	-	-	-
DC-09	DC-09-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	**16.2**	-	-	0.5	U	-
DC-09	DC-09-131211	12/11/2013	N	SWL0063	**34.8**	-	-	**7.9**	-	-	**2.48**	-	-	**39.1**	-	-	**17.4**	-	-	0.5	U	-
DC-09	DC-09-140317	03/17/2014	N	SXC0095	**35.4**	-	-	**8.4**	-	-	**2.88**	-	-	**36.5**	-	-	**15.6**	-	-	**0.82**	-	-
DC-09	DC-09-140602	06/02/2014	N	SXF0008	**33.9**	-	-	**8.3**	-	-	**2.92**	-	-	**38.1**	-	-	**15.9**	-	-	0.5	U	-
DC-09	YVD-D3-140602	06/02/2014	FD	SXF0008	**34.2**	-	-	**8.7**	-	-	**3.08**	-	-	**37.9**	-	-	**15.8**	-	-	0.5	U	-
DC-09	DC-09-140923	09/23/2014	N	SXI0158	**32.2**	-	-	**6.8**	-	-	**1.94**	-	-	**38.9**	J+	MSD	**15.8**	-	-	0.5	U	-
DC-09	DC-09-141216	12/16/2014	N	SXL0108	**35.3**	-	-	**8.0**	-	-	**2.48**	-	-	**39.1**	-	-	**16.3**	-	-	0.5	U	-
DC-09	DC-09-150316	03/16/2015	N	5904541	**36.0**	-	-	**8.0**	-	-	**2.60**	-	-	**43.0**	-	-	**17**	-	-	**0.6**	-	-
DC-09	DC-09-150616	06/16/2015	N	59010751	**34.0**	J+	MSD	**8.1**	J+	MSD	**2.30**	J+	MSD	**38.0**	J+	MSD	**16**	-	-	0.5	U	-
DC-09	DC-09-150923	09/23/2015	N	59020281	**33.0**	-	-	**8.1**	-	-	**2.50**	-	-	**40.0**	-	-	**16**	-	-	0.5	U	-
DC-09	DC-09-151214	12/14/2015	N	59025431	**34.0**	-	-	**8.2**	-	-	**2.70**	-	-	**40.0**	-	-	**16**	-	-	0.5	U	-
DC-09	DC-09-160308	03/08/2016	N	59029711	**35.0**	-	-	**8.8**	-	-	**3.30**	-	-	**39.0**	-	-	**16**	-	-	0.5	U	-
DC-09	YVD-D2-160308	03/08/2016	FD	59029711	**34.0**	-	-	**8.6**	-	-	**3.10**	-	-	**39.0**	-	-	**16**	-	-	0.5	U	-
DC-09	DC-09-160621	6/21/2016	N	59037151	**32.0**	-	-	**7.5**	-	-	**2.20**	-	-	**41.0**	-	-	**17**	-	-	**0.51**	-	-
DC-09	DC-09-160929	9/29/2016	N	K1611704	**30.6**	-	-	**6.25**	-	-	**2.00**	-	-	**39.3**	-	-	**14.8**	-	-	**0.38**	-	-
DC-09	DC-09-D4-160929	9/29/2016	FD	K1611704	**30.4**	-	-	**6.22**	-	-	**1.98**	-	-	**38.8**	-	-	**14.9**	-	-	**0.38**	-	-
DC-09	DC-09-161215	12/15/2016	N	K1615126	**33.0**	-	-	**6.65**	-	-	**1.99**	-	-	**38.9**	-	-	**15.0**	-	-	**0.41**	-	-
DC-09	YVD-D4-161215	12/15/2016	FD	K1615126	**32.8**	-	-	**6.62**	-	-	**1.98**	-	-	**37.8**	-	-	**15.0**	-	-	**0.42**	-	-
DC-09	YVD-031317-36	3/13/2017	N	K1702489	**33.8**	-	-	**6.75**	-	-	**2.00**	-	-	**38.8**	-	-	**14.6**	-	-	**0.44**	-	-
DC-09	YVD-060717-27	6/7/2017	N	K1705833	**33.3**	-	-	**6.88**	-	-	**1.97**	-	-	**39.3**	-	-	**14.7**	-	-	**0.40**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-07	DC-07-140602	06/02/2014	N	SXF0008	0.8	U	-	0.8	U	-	**105**	-	-	-	-	-	0.1	U	-	**0.34**	-	-
DC-07	DC-07-140922	09/22/2014	N	SXI0148	**4.88**	-	-	0.8	U	-	**98.2**	-	-	-	-	-	0.1	U	-	**0.487**	-	-
DC-07	DC-07-141216	12/16/2014	N	SXL0108	**2.8**	-	-	0.8	U	-	**80.4**	-	-	-	-	-	0.1	U	-	**0.261**	-	-
DC-07	YVD-D2-141216	12/16/2014	FD	SXL0108	**2.92**	-	-	0.2	U	-	**82.1**	-	-	-	-	-	0.1	U	-	**0.305**	-	-
DC-07	DC-07-150317	03/17/2015	N	5904541	**4.6**	J-	MSD	0.8	U	-	**83**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-07	DC-07-150617	06/17/2015	N	59011021	**4**	J-	MSD	0.8	U	-	**93**	-	-	-	-	-	0.1	U	-	**0.28**	J-	MSD
DC-07	DC-07-150924	09/24/2015	N	59020391	**2.7**	J+	MSD	0.8	U	-	**95**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
DC-07	DC-07-151215	12/15/2015	N	59025501	**2.5**	-	-	0.8	U	-	**70**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-07	DC-07-160309	03/09/2016	N	59029941	**2.2**	-	-	0.8	U	-	**78**	J	DUP	-	-	-	0.1	U	-	0.25	R	, FDP, M
DC-07	DC-07-160621	6/21/2016	N	59037271	**4.8**	-	-	0.8	U	-	**96**	-	-	-	-	-	**0.1**	J-	MSD	0.25	R	MSD
DC-07	DC-07-160926	9/26/2016	N	K1611565	**2.74**	-	-	0.10	U	-	**92.3**	-	-	-	-	-	0.050	U	-	0.5	R	MSD
DC-07	DC-07-161214	12/14/2016	N	K1615083	**1.44**	-	-	0.10	U	-	**72.4**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-07	YVD-030917-25	3/9/2017	N	K1702448	**2.58**	-	-	0.10	U	-	**59.8**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-07	YVD-060617-18	6/6/2017	N	K1705754	**2.42**	-	-	0.10	U	-	**70.4**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-07	YVD-092517-12	9/25/2017	N	K1710333	**2.34**	-	-	0.10	U	-	**94.2**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-07	YVD-120417-14	12/4/2017	N	K1713026	**2.92**	-	-	0.10	U	-	**81.9**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-09	DC-09-130103	01/03/2013	N	EPA01	**6**	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	-	-	-
DC-09	DC-09-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	**0.447**	-	-
DC-09	DC-09-130926	09/26/2013	N	SWI0190	**6.02**	-	-	0.2	U	-	**30.7**	-	-	-	-	-	-	-	-	-	-	-
DC-09	DC-09-131211	12/11/2013	N	SWL0063	**6.78**	-	-	0.2	U	-	**34.4**	J-	MSD	-	-	-	0.02	R	MSD	0.2	U	-
DC-09	DC-09-140317	03/17/2014	N	SXC0095	**5.85**	-	-	0.2	U	-	**28.8**	J-	MSD	-	-	-	0.1	U	-	**0.251**	-	-
DC-09	DC-09-140602	06/02/2014	N	SXF0008	**6.18**	-	-	0.2	U	-	**29.4**	-	-	-	-	-	**0.106**	-	-	**0.279**	-	-
DC-09	YVD-D3-140602	06/02/2014	FD	SXF0008	**5.97**	-	-	0.2	U	-	**29.1**	-	-	-	-	-	0.1	U	-	**0.359**	-	-
DC-09	DC-09-140923	09/23/2014	N	SXI0158	**6.01**	-	-	0.2	U	-	**29.6**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
DC-09	DC-09-141216	12/16/2014	N	SXL0108	**5.94**	-	-	0.2	U	-	**30.2**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-09	DC-09-150316	03/16/2015	N	5904541	**5.9**	J-	MSD	0.2	U	-	**29**	J-	MSD	-	-	-	**0.15**	-	-	0.25	UJ	MSD
DC-09	DC-09-150616	06/16/2015	N	59010751	**5.8**	-	-	0.2	U	-	**28**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-09	DC-09-150923	09/23/2015	N	59020281	**5.8**	-	-	0.2	U	-	**30**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
DC-09	DC-09-151214	12/14/2015	N	59025431	**5.9**	-	-	0.2	U	-	**31**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
DC-09	DC-09-160308	03/08/2016	N	59029711	**5.7**	-	-	0.2	U	-	**31**	J+	MSD	-	-	-	0.25	R	FBK, FDP	0.25	R	MSD
DC-09	YVD-D2-160308	03/08/2016	FD	59029711	**5.7**	-	-	0.2	U	-	**31**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
DC-09	DC-09-160621	6/21/2016	N	59037151	**5.9**	-	-	0.2	U	-	**32**	-	-	-	-	-	0.1	UJ	-	0.25	U	-
DC-09	DC-09-160929	9/29/2016	N	K1611704	**5.53**	-	-	0.10	U	-	**29.8**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
DC-09	DC-09-D4-160929	9/29/2016	FD	K1611704	**5.53**	-	-	0.10	U	-	**29.6**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
DC-09	DC-09-161215	12/15/2016	N	K1615126	**5.62**	-	-	0.10	U	-	**30.6**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-09	YVD-D4-161215	12/15/2016	FD	K1615126	**5.61**	-	-	0.10	U	-	**30.6**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-09	YVD-031317-36	3/13/2017	N	K1702489	**5.54**	-	-	0.10	U	-	**28.2**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-09	YVD-060717-27	6/7/2017	N	K1705833	**5.55**	-	-	0.10	U	-	**30.3**	-	-	-	-	-	0.050	U	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-07	DC-07-140602	06/02/2014	N	SXF0008	**0.12**	-	-	-	-	-	-	-	-	-	-	-	**245**	-	-	**245**	-	-
DC-07	DC-07-140922	09/22/2014	N	SXI0148	**0.19**	-	-	-	-	-	-	-	-	-	-	-	**215**	-	-	**215**	-	-
DC-07	DC-07-141216	12/16/2014	N	SXL0108	0.1	U	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
DC-07	YVD-D2-141216	12/16/2014	FD	SXL0108	0.1	U	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
DC-07	DC-07-150317	03/17/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**240**	-	-	**240**	-	-
DC-07	DC-07-150617	06/17/2015	N	59011021	0.25	U	-	-	-	-	-	-	-	-	-	-	**230**	-	-	**230**	-	-
DC-07	DC-07-150924	09/24/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**240**	-	-	**240**	-	-
DC-07	DC-07-151215	12/15/2015	N	59025501	**0.41**	J-	MSD	-	-	-	-	-	-	-	-	-	**240**	-	-	**240**	-	-
DC-07	DC-07-160309	03/09/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**280**	-	-	**280**	-	-
DC-07	DC-07-160621	6/21/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**250**	-	-	**250**	-	-
DC-07	DC-07-160926	9/26/2016	N	K1611565	-	-	-	**0.057**	-	-	-	-	-	-	-	-	**204**	-	-	**204**	-	-
DC-07	DC-07-161214	12/14/2016	N	K1615083	-	-	-	**0.078**	-	-	-	-	-	-	-	-	**218**	-	-	**218**	-	-
DC-07	YVD-030917-25	3/9/2017	N	K1702448	-	-	-	**0.093**	-	-	-	-	-	-	-	-	**255**	-	-	**255**	-	-
DC-07	YVD-060617-18	6/6/2017	N	K1705754	-	-	-	**0.061**	-	-	-	-	-	-	-	-	**232**	-	-	**232**	-	-
DC-07	YVD-092517-12	9/25/2017	N	K1710333	-	-	-	**0.058**	-	-	-	-	-	-	-	-	**235**	-	-	**235**	-	-
DC-07	YVD-120417-14	12/4/2017	N	K1713026	-	-	-	**0.064**	-	-	-	-	-	-	-	-	**221**	-	-	**221**	-	-
DC-09	DC-09-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-09	DC-09-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	0.1	U	-	-	-	-	**44.7**	-	-	**45**	-	-
DC-09	DC-09-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-09	DC-09-131211	12/11/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**0.125**	-	-	**129**	-	-	**130**	-	-
DC-09	DC-09-140317	03/17/2014	N	SXC0095	**0.18**	-	-	-	-	-	-	-	-	-	-	-	**144**	-	-	**145**	-	-
DC-09	DC-09-140602	06/02/2014	N	SXF0008	**0.22**	J	FDP	-	-	-	-	-	-	-	-	-	**129**	-	-	**130**	-	-
DC-09	YVD-D3-140602	06/02/2014	FD	SXF0008	**0.16**	J	FDP	-	-	-	-	-	-	-	-	-	**129**	-	-	**130**	-	-
DC-09	DC-09-140923	09/23/2014	N	SXI0158	0.05	U	-	-	-	-	-	-	-	-	-	-	**124**	-	-	**125**	-	-
DC-09	DC-09-141216	12/16/2014	N	SXL0108	**0.13**	-	-	-	-	-	-	-	-	-	-	-	**129**	-	-	**130**	-	-
DC-09	DC-09-150316	03/16/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
DC-09	DC-09-150616	06/16/2015	N	59010751	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
DC-09	DC-09-150923	09/23/2015	N	59020281	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
DC-09	DC-09-151214	12/14/2015	N	59025431	**0.3**	J	FDP	-	-	-	-	-	-	-	-	-	**150**	J	FDP	**150**	J	FDP
DC-09	DC-09-160308	03/08/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
DC-09	YVD-D2-160308	03/08/2016	FD	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
DC-09	DC-09-160621	6/21/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
DC-09	DC-09-160929	9/29/2016	N	K1611704	-	-	-	**0.016**	-	-	-	-	-	-	-	-	**129**	-	-	**129**	-	-
DC-09	DC-09-D4-160929	9/29/2016	FD	K1611704	-	-	-	**0.013**	-	-	-	-	-	-	-	-	**128**	-	-	**128**	-	-
DC-09	DC-09-161215	12/15/2016	N	K1615126	-	-	-	**0.009**	J	-	-	-	-	-	-	-	**127**	-	-	**127**	-	-
DC-09	YVD-D4-161215	12/15/2016	FD	K1615126	-	-	-	**0.007**	J	-	-	-	-	-	-	-	**127**	-	-	**127**	-	-
DC-09	YVD-031317-36	3/13/2017	N	K1702489	-	-	-	**0.024**	-	-	-	-	-	-	-	-	**124**	-	-	**124**	-	-
DC-09	YVD-060717-27	6/7/2017	N	K1705833	-	-	-	**0.029**	-	-	-	-	-	-	-	-	**126**	-	-	**126**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-09	YVD-092617-23	9/26/2017	N	K1710333	**32.9**	-	-	**6.71**	-	-	**1.98**	-	-	**38.5**	-	-	**14.7**	-	-	**0.40**	-	-
DC-09	YVD-120417-09	12/4/2017	N	K1713026	**33.0**	-	-	**6.50**	-	-	**1.86**	-	-	**37.3**	-	-	**15.1**	-	-	**0.43**	-	-
DC-14	DC-14-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-14	DC-14-130917	09/17/2013	N	SWI0113	**121**	-	-	**32.3**	-	-	**5.85**	-	-	**94.9**	-	-	**80.2**	-	-	0.5	U	-
DC-14	DC-14-131211	12/11/2013	N	SWL0063	**91.2**	-	-	**23.9**	-	-	**4.71**	-	-	**94.0**	-	-	**64.4**	-	-	5	U	-
DC-14	DC-14-140318	03/18/2014	N	SXC0095	**107**	-	-	**28.4**	-	-	**5.25**	-	-	**87.0**	-	-	**71.8**	-	-	5	U	-
DC-14	DC-14-140602	06/02/2014	N	SXF0017	**95.9**	-	-	**26.3**	-	-	**5.37**	-	-	**83.2**	-	-	**56.1**	-	-	1	U	-
DC-14	DC-14-140923	09/23/2014	N	SXI0158	**106**	-	-	**27.6**	-	-	**4.95**	-	-	**88.6**	J+	MSD	**63.7**	-	-	1	U	-
DC-14	DC-14-141216	12/16/2014	N	SXL0108	**110**	-	-	**31.5**	-	-	**5.57**	-	-	**84.5**	-	-	**74.4**	-	-	1	U	-
DC-14	DC-14-150316	03/16/2015	N	5904541	**140**	-	-	**38.0**	-	-	**6.10**	-	-	**100**	-	-	**80**	-	-	1	U	-
DC-14	DC-14-150616	06/16/2015	N	59010961	**120**	-	-	**33.0**	-	-	**6.50**	J+	MSD	**85.0**	J+	MSD	**76**	-	-	1	U	-
DC-14	DC-14-150924	09/24/2015	N	59020391	**130**	-	-	**42.0**	-	-	**6.30**	-	-	**92.0**	-	-	**96**	-	-	1	U	-
DC-14	DC-14-151214	12/14/2015	N	59025351	**150**	-	-	**43.0**	-	-	**6.60**	-	-	**100**	-	-	**90**	-	-	1	U	-
DC-14	YVD-D1-151214	12/14/2015	FD	59025351	**150**	-	-	**43.0**	-	-	**6.60**	-	-	**100**	-	-	**85**	-	-	0.5	U	-
DC-14	DC-14-160309	03/09/2016	N	59029711	**130**	-	-	**38.0**	-	-	**6.60**	-	-	**95.0**	-	-	**82**	-	-	1	U	-
DC-14	DC-14-160620	6/20/2016	N	59037151	**120**	-	-	**36.0**	-	-	**6.00**	-	-	**92.0**	-	-	**75**	-	-	1	U	-
DC-14	DC-14-160929	9/29/2016	N	K1611704	**97.2**	-	-	**28.9**	-	-	**4.75**	-	-	**74.9**	-	-	**56.4**	-	-	**0.30**	-	-
DC-14	DC-14-161216	12/16/2016	N	K1615174	**93.3**	-	-	**22.3**	-	-	**4.37**	-	-	**68.8**	-	-	**53.9**	-	-	**0.36**	-	-
DC-14	YVD-031317-38	3/14/2017	N	K1702542	**91.0**	-	-	**24.4**	-	-	**4.57**	-	-	**68.4**	-	-	**49.6**	-	-	**0.34**	-	-
DC-14	YVD-060617-19	6/6/2017	N	K1705754	**97.7**	-	-	**24.4**	-	-	**4.40**	-	-	**65.2**	-	-	**49.2**	-	-	**0.34**	-	-
DC-14	YVD-092517-11	9/25/2017	N	K1710274	**98.2**	-	-	**24.5**	-	-	**4.63**	-	-	**64.3**	-	-	**43.3**	-	-	**0.34**	-	-
DC-14	YVD-120617-27	12/6/2017	N	K1713157	**100**	-	-	**23.5**	-	-	**4.49**	-	-	**60.5**	-	-	**46.4**	-	-	**0.35**	-	-
DC-14	YVD-120617-29	12/6/2017	FD	K1713157	**97.7**	-	-	**22.8**	-	-	**4.44**	-	-	**60.6**	-	-	**46.0**	-	-	**0.34**	-	-
DC-14	YVD-031918-20	3/19/2018	N	870634	**95.0**	-	-	**22.55**	-	-	**4.56**	-	-	**58.0**	-	-	**47.9**	-	-	**0.31**	-	-
YVD-02	YVD-02-130924	09/24/2013	N	SWI0178	**20.4**	-	-	**5.9**	-	-	**3.50**	-	-	**8.6**	-	-	**3.85**	-	-	0.5	U	-
YVD-02	YVD-02-140316	03/16/2014	N	SXC0081	**90.8**	-	-	**71.7**	-	-	**12.60**	-	-	**88.6**	-	-	**3.93**	-	-	**1.02**	-	-
YVD-02	YVD-02-140602	06/02/2014	N	SXF0008	**62.7**	-	-	**48.7**	-	-	**8.53**	-	-	**23.0**	-	-	**2.75**	-	-	0.5	U	-
YVD-02	YVD-02-140921	09/21/2014	N	SXI0148	**29.6**	-	-	**13.7**	J	FDP	**4.53**	-	-	**11.6**	J	FDP	**2.64**	-	-	0.5	U	-
YVD-02	YVD-D1-140921	09/21/2014	FD	SXI0148	**35.8**	-	-	**18.2**	J	FDP	**5.05**	-	-	**15.7**	J	FDP	**2.2**	-	-	0.5	U	-
YVD-02	YVD-02-141215	12/15/2014	N	SXL0103	**35.7**	-	-	**17.4**	-	-	**5.35**	-	-	**16.1**	-	-	**2.9**	J+	MSD	0.5	U	-
YVD-02	YVD-02-150615	06/15/2015	N	59010751	**32.0**	J+	MSD	**16.0**	J+	MSD	**4.10**	J+	MSD	**12.0**	J+	MSD	**2.6**	-	-	0.5	U	-
YVD-02	YVD-02-150923	09/23/2015	N	59020281	**28.0**	-	-	**17.0**	-	-	**4.80**	-	-	**14.0**	-	-	**2.5**	-	-	0.5	U	-
YVD-02	YVD-02-151214	12/14/2015	N	59025351	**38.0**	-	-	**23.0**	-	-	**6.30**	-	-	**25.0**	-	-	**2.6**	-	-	0.5	U	-
YVD-02	YVD-02-160308	03/08/2016	N	59029521	**32.0**	-	-	**20.0**	-	-	**5.80**	-	-	**22.0**	-	-	**3**	-	-	**0.57**	-	-
YVD-02	YVD-02-160620	6/20/2016	N	59037101	**25.0**	-	-	**10.0**	-	-	**4.20**	-	-	**9.7**	-	-	**2.9**	-	-	0.5	U	-
YVD-02	YVD-02-160928	9/28/2016	N	K1611629	**17.2**	-	-	**4.6**	-	-	**3.41**	-	-	**5.07**	-	-	**2.79**	J	DUP	**0.16**	J	-
YVD-02	YVD-030817-15	3/8/2017	N	K1702324	**30.2**	-	-	**7.2**	-	-	**3.51**	-	-	**7.06**	-	-	**3.85**	-	-	**0.21**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-09	YVD-092617-23	9/26/2017	N	K1710333	**5.47**	-	-	0.10	U	-	**32.5**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-09	YVD-120417-09	12/4/2017	N	K1713026	**5.80**	-	-	0.10	U	-	**30.6**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-14	DC-14-130103	01/03/2013	N	EPA01	**26**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-14	DC-14-130917	09/17/2013	N	SWI0113	**12**	-	-	0.2	U	-	**34.2**	-	-	-	-	-	**0.115**	-	-	**0.31**	-	-
DC-14	DC-14-131211	12/11/2013	N	SWL0063	**5.8**	-	-	2	U	-	**33.9**	J-	MSD	-	-	-	0.02	R	MSD	0.2	U	-
DC-14	DC-14-140318	03/18/2014	N	SXC0095	**10.6**	-	-	2	U	-	**35.7**	J-	MSD	-	-	-	0.1	U	-	0.25	U	-
DC-14	DC-14-140602	06/02/2014	N	SXF0017	**6.46**	-	-	0.4	U	-	**24.2**	J-	MSD	-	-	-	0.1	U	-	**0.367**	-	-
DC-14	DC-14-140923	09/23/2014	N	SXI0158	**8.9**	-	-	0.4	U	-	**25.9**	-	-	-	-	-	0.1	R	MSD	**0.315**	-	-
DC-14	DC-14-141216	12/16/2014	N	SXL0108	**10.4**	-	-	0.4	U	-	**29.8**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-14	DC-14-150316	03/16/2015	N	5904541	**18**	J-	MSD	0.4	U	-	**38**	J-	MSD	-	-	-	**0.16**	-	-	0.25	UJ	MSD
DC-14	DC-14-150616	06/16/2015	N	59010961	**12**	-	-	0.4	U	-	**29**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
DC-14	DC-14-150924	09/24/2015	N	59020391	**22**	J+	MSD	0.4	U	-	**42**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
DC-14	DC-14-151214	12/14/2015	N	59025351	**21**	-	-	0.4	U	-	**39**	-	-	-	-	-	0.1	R	MSD	0.25	UJ	MSD
DC-14	YVD-D1-151214	12/14/2015	FD	59025351	**22**	-	-	0.2	U	-	**41**	-	-	-	-	-	0.1	R	MSD	0.25	UJ	MSD
DC-14	DC-14-160309	03/09/2016	N	59029711	**16**	-	-	0.4	U	-	**39**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
DC-14	DC-14-160620	6/20/2016	N	59037151	**16**	-	-	0.4	U	-	**38**	-	-	-	-	-	0.1	U	-	0.25	U	-
DC-14	DC-14-160929	9/29/2016	N	K1611704	**7.19**	-	-	0.10	U	-	**23.1**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
DC-14	DC-14-161216	12/16/2016	N	K1615174	**4.45**	-	-	0.10	U	-	**21.9**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-14	YVD-031317-38	3/14/2017	N	K1702542	**4.34**	-	-	0.10	U	-	**20.8**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-14	YVD-060617-19	6/6/2017	N	K1705754	**3.86**	-	-	0.10	U	-	**26.9**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-14	YVD-092517-11	9/25/2017	N	K1710274	**2.41**	-	-	0.10	U	-	**23.9**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-14	YVD-120617-27	12/6/2017	N	K1713157	**2.52**	-	-	0.10	U	-	**20.3**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
DC-14	YVD-120617-29	12/6/2017	FD	K1713157	**2.52**	-	-	0.10	U	-	**20.0**	-	-	-	-	-	0.050	U	-	0.5	U	-
DC-14	YVD-031918-20	3/19/2018	N	870634	**2.86**	-	-	0.05	U	-	**17.8**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-02	YVD-02-130924	09/24/2013	N	SWI0178	**0.41**	-	-	0.2	U	-	**5.77**	-	-	-	-	-	**0.146**	-	-	0.25	U	-
YVD-02	YVD-02-140316	03/16/2014	N	SXC0081	0.2	U	-	0.2	U	-	**66.9**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-02	YVD-02-140602	06/02/2014	N	SXF0008	0.2	U	-	0.2	U	-	**3.12**	-	-	-	-	-	0.1	U	-	**0.49**	-	-
YVD-02	YVD-02-140921	09/21/2014	N	SXI0148	0.2	U	-	0.2	U	-	**13.8**	-	-	-	-	-	0.1	U	-	**0.274**	-	-
YVD-02	YVD-D1-140921	09/21/2014	FD	SXI0148	0.2	U	-	0.2	U	-	**15.6**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-02	YVD-02-141215	12/15/2014	N	SXL0103	**0.22**	J	DUP	0.2	U	-	**33.6**	J+	MSD, DUP	-	-	-	0.1	U	-	**0.358**	-	-
YVD-02	YVD-02-150615	06/15/2015	N	59010751	**0.23**	-	-	0.2	U	-	**3.2**	J-	MSD	-	-	-	**0.11**	-	-	0.25	UJ	MSD
YVD-02	YVD-02-150923	09/23/2015	N	59020281	0.2	U	-	0.2	U	-	**9.5**	-	-	-	-	-	0.1	U	-	**0.25**	J-	MSD
YVD-02	YVD-02-151214	12/14/2015	N	59025351	0.2	U	-	0.2	U	-	**24**	-	-	-	-	-	0.1	R	MSD	**0.76**	J-	MSD
YVD-02	YVD-02-160308	03/08/2016	N	59029521	0.2	U	-	0.2	U	-	**54**	-	-	-	-	-	0.1	UJ	RPD	**0.25**	J-	MSD
YVD-02	YVD-02-160620	6/20/2016	N	59037101	**0.31**	-	-	0.2	U	-	**8**	J-	MSD	-	-	-	0.1	U	-	**0.35**	J-	MSD
YVD-02	YVD-02-160928	9/28/2016	N	K1611629	**0.13**	-	-	0.10	U	-	**3.13**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-02	YVD-030817-15	3/8/2017	N	K1702324	**5.40**	-	-	0.10	U	-	**11.7**	-	-	-	-	-	1	U	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
DC-09	YVD-092617-23	9/26/2017	N	K1710333	-	-	-	0.010	U	-	-	-	-	-	-	-	**132**	-	-	**132**	-	-
DC-09	YVD-120417-09	12/4/2017	N	K1713026	-	-	-	0.014	U	MBK	-	-	-	-	-	-	**129**	-	-	**129**	-	-
DC-14	DC-14-130103	01/03/2013	N	EPA01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC-14	DC-14-130917	09/17/2013	N	SWI0113	-	-	-	-	-	-	**0.199**	-	-	-	-	-	**454**	-	-	**455**	-	-
DC-14	DC-14-131211	12/11/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**0.167**	-	-	**434**	-	-	**435**	-	-
DC-14	DC-14-140318	03/18/2014	N	SXC0095	**0.26**	-	-	-	-	-	-	-	-	-	-	-	**494**	-	-	**495**	-	-
DC-14	DC-14-140602	06/02/2014	N	SXF0017	**0.42**	J+	FBK	-	-	-	-	-	-	-	-	-	**425**	-	-	**425**	-	-
DC-14	DC-14-140923	09/23/2014	N	SXI0158	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**424**	-	-	**425**	-	-
DC-14	DC-14-141216	12/16/2014	N	SXL0108	**0.14**	-	-	-	-	-	-	-	-	-	-	-	**429**	-	-	**430**	-	-
DC-14	DC-14-150316	03/16/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**490**	-	-	**490**	-	-
DC-14	DC-14-150616	06/16/2015	N	59010961	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**430**	-	-	**430**	-	-
DC-14	DC-14-150924	09/24/2015	N	59020391	**0.31**	-	-	-	-	-	-	-	-	-	-	-	**470**	-	-	**470**	-	-
DC-14	DC-14-151214	12/14/2015	N	59025351	**0.35**	-	-	-	-	-	-	-	-	-	-	-	**550**	-	-	**550**	-	-
DC-14	YVD-D1-151214	12/14/2015	FD	59025351	**0.38**	-	-	-	-	-	-	-	-	-	-	-	**540**	-	-	**540**	-	-
DC-14	DC-14-160309	03/09/2016	N	59029711	**0.33**	-	-	-	-	-	-	-	-	-	-	-	**490**	-	-	**490**	-	-
DC-14	DC-14-160620	6/20/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**460**	-	-	**460**	-	-
DC-14	DC-14-160929	9/29/2016	N	K1611704	-	-	-	**0.009**	J	-	-	-	-	-	-	-	**394**	-	-	**394**	-	-
DC-14	DC-14-161216	12/16/2016	N	K1615174	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**361**	-	-	**361**	-	-
DC-14	YVD-031317-38	3/14/2017	N	K1702542	-	-	-	**0.074**	-	-	-	-	-	-	-	-	**359**	-	-	**359**	-	-
DC-14	YVD-060617-19	6/6/2017	N	K1705754	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**386**	-	-	**386**	-	-
DC-14	YVD-092517-11	9/25/2017	N	K1710274	-	-	-	**0.005**	J	-	-	-	-	-	-	-	**382**	-	-	**382**	-	-
DC-14	YVD-120617-27	12/6/2017	N	K1713157	-	-	-	**0.020**	-	-	-	-	-	-	-	-	**378**	-	-	**378**	-	-
DC-14	YVD-120617-29	12/6/2017	FD	K1713157	-	-	-	**0.021**	-	-	-	-	-	-	-	-	**372**	-	-	**372**	-	-
DC-14	YVD-031918-20	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**372**	-	-	**372**	-	-
YVD-02	YVD-02-130924	09/24/2013	N	SWI0178	-	-	-	-	-	-	**0.124**	-	-	-	-	-	**54.9**	-	-	**55**	-	-
YVD-02	YVD-02-140316	03/16/2014	N	SXC0081	**0.54**	-	-	-	-	-	-	-	-	-	-	-	**199**	-	-	**200**	-	-
YVD-02	YVD-02-140602	06/02/2014	N	SXF0008	**3.8**	-	-	-	-	-	-	-	-	-	-	-	**82.2**	-	-	**82.5**	-	-
YVD-02	YVD-02-140921	09/21/2014	N	SXI0148	**1.2**	J	FDP	-	-	-	-	-	-	-	-	-	**89.4**	-	-	**90**	-	-
YVD-02	YVD-D1-140921	09/21/2014	FD	SXI0148	**0.86**	J	FDP	-	-	-	-	-	-	-	-	-	**89.4**	-	-	**90**	-	-
YVD-02	YVD-02-141215	12/15/2014	N	SXL0103	**0.61**	-	-	-	-	-	-	-	-	-	-	-	**94.7**	-	-	**95**	-	-
YVD-02	YVD-02-150615	06/15/2015	N	59010751	**1.1**	-	-	-	-	-	-	-	-	-	-	-	**75**	J+	FBK	**75**	J+	FBK
YVD-02	YVD-02-150923	09/23/2015	N	59020281	**1**	J+	FBK		-	-	-	-	-	-	-	-	**95**	-	-	**95**	-	-
YVD-02	YVD-02-151214	12/14/2015	N	59025351	**0.68**	-	-	-	-	-	-	-	-	-	-	-	**100**	-	-	**100**	-	-
YVD-02	YVD-02-160308	03/08/2016	N	59029521	**0.59**	-	-	-	-	-	-	-	-	-	-	-	**110**	J	FDP	**110**	J	FDP
YVD-02	YVD-02-160620	6/20/2016	N	59037101	**0.52**	-	-	-	-	-	-	-	-	-	-	-	**75**	-	-	**75**	-	-
YVD-02	YVD-02-160928	9/28/2016	N	K1611629	-	-	-	**0.092**	-	-	-	-	-	-	-	-	**72**	-	-	**72**	-	-
YVD-02	YVD-030817-15	3/8/2017	N	K1702324	-	-	-	**0.099**	-	-	-	-	-	-	-	-	**103**	-	-	**103**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-02	YVD-060617-14	6/6/2017	N	K1705754	**20.9**	-	-	**4.85**	-	-	**3.00**	-	-	**5.95**	-	-	**3.03**	-	-	**0.16**	J	-
YVD-02	YVD-060617-16	6/6/2017	FD	K1705754	**20.2**	-	-	**4.74**	-	-	**3.00**	-	-	**5.91**	-	-	**2.95**	-	-	**0.15**	J	-
YVD-02	YVD-092617-20	9/26/2017	N	K1710333	**17.7**	-	-	**4.64**	-	-	**3.06**	-	-	**5.2**	-	-	**2.63**	-	-	**0.15**	J	-
YVD-02	YVD-120417-02	12/4/2017	N	K1713026	**20.0**	-	-	**7.43**	-	-	**3.18**	-	-	**9.59**	-	-	**2.37**	-	-	**0.29**	-	-
YVD-02	YVD-120417-04	12/4/2017	FD	K1713026	**19.6**	-	-	**7.74**	-	-	**3.08**	-	-	**9.58**	-	-	**2.20**	-	-	**0.31**	-	-
YVD-03	YVD-03-130916	09/16/2013	N	SWI0113	**57.5**	-	-	**24.3**	-	-	**9.00**	-	-	**43.0**	-	-	**14**	-	-	**0.74**	-	-
YVD-03	YVD-03-131210	12/10/2013	N	SWL0063	**48.7**	-	-	**20.4**	-	-	**6.67**	-	-	**40.2**	-	-	**14.3**	-	-	1	U	-
YVD-03	YVD-03-140317	03/17/2014	N	SXC0081	**51.2**	-	-	**18.2**	-	-	**4.10**	-	-	**37.6**	-	-	**13.3**	-	-	**1.03**	-	-
YVD-03	YVD-03-140602	06/02/2014	N	SXF0008	**46.4**	-	-	**16.8**	-	-	**3.93**	-	-	**36.8**	-	-	**10.7**	-	-	0.5	U	-
YVD-03	YVD-03-140923	09/23/2014	N	SXI0158	**52.2**	-	-	**19.5**	-	-	**4.66**	J	FDP	**40.7**	J+	MSD	**11.8**	-	-	**0.62**	-	-
YVD-03	YVD-D3-140923	09/23/2014	FD	SXI0158	**45.4**	-	-	**16.2**	-	-	**3.62**	J	FDP	**38.0**	J+	MSD	**12.1**	-	-	**0.65**	-	-
YVD-03	YVD-03-141215	12/15/2014	N	SXL0108	**51.7**	-	-	**19.3**	-	-	**4.47**	-	-	**39.1**	-	-	**12.9**	-	-	**0.54**	-	-
YVD-03	YVD-03-150316	03/16/2015	N	5904541	**46.0**	-	-	**17.0**	-	-	**3.90**	-	-	**39.0**	-	-	**13**	-	-	**0.84**	-	-
YVD-03	YVD-03-150616	06/16/2015	N	59010751	**50.0**	J+	MSD	**20.0**	J+	MSD	**6.10**	J+	MSD	**37.0**	J+	MSD	**12**	-	-	**0.68**	-	-
YVD-03	YVD-03-150922	09/22/2015	N	59020141	**43.0**	-	-	**19.0**	-	-	**6.50**	-	-	**40.0**	-	-	**14**	-	-	**0.66**	-	-
YVD-03	YVD-03-151214	12/14/2015	N	59025351	**49.0**	-	-	**22.0**	-	-	**7.80**	-	-	**43.0**	-	-	**14**	-	-	**0.74**	-	-
YVD-03	YVD-03-160307	03/07/2016	N	59029521	**43.0**	-	-	**20.0**	-	-	**7.10**	-	-	**40.0**	-	-	**13**	-	-	**0.72**	-	-
YVD-03	YVD-03-160620	6/20/2016	N	59037151	**46.0**	-	-	**21.0**	-	-	**7.70**	-	-	**40.0**	-	-	**14**	-	-	**0.76**	-	-
YVD-03	YVD-03-160929	9/29/2016	N	K1611758	**43.2**	-	-	**18.3**	-	-	**6.89**	-	-	**41.4**	-	-	**11.7**	-	-	**0.61**	-	-
YVD-03	YVD-03-161213	12/13/2016	N	K1615045	**40.0**	-	-	**17.4**	-	-	**6.57**	-	-	**38.9**	-	-	**11.6**	-	-	**0.69**	-	-
YVD-03	YVD-030617-02	3/6/2017	N	K1702228	**41.6**	-	-	**17.3**	-	-	**6.53**	-	-	**38.5**	-	-	**11.4**	-	-	**0.6**	-	-
YVD-03	YVD-030617-03	3/6/2017	FD	K1702228	**41.5**	-	-	**17.3**	-	-	**6.48**	-	-	**38.4**	-	-	**11.6**	-	-	**0.65**	-	-
YVD-03	YVD-060517-13	6/5/2017	N	K1705702	**41.9**	-	-	**18.1**	-	-	**6.27**	-	-	**36.4**	-	-	**11.9**	-	-	**0.66**	-	-
YVD-03	YVD-092517-05	9/25/2017	N	K1710274	**41.6**	-	-	**18.7**	-	-	**6.85**	-	-	**40.9**	-	-	**11.6**	-	-	**0.66**	-	-
YVD-03	YVD-120517-19	12/5/2017	N	K1713091	**41.9**	-	-	**17.4**	-	-	**6.39**	-	-	**38.0**	-	-	**11.1**	-	-	**0.64**	-	-
YVD-04	YVD-04-130916	09/16/2013	N	SWI0113	**37.4**	-	-	**11.2**	-	-	**4.23**	-	-	**49.2**	-	-	**14.9**	-	-	0.5	U	-
YVD-04	YVD-04-131210	12/10/2013	N	SWL0063	**38.2**	-	-	**11.7**	-	-	**4.44**	-	-	**49.9**	-	-	**15**	-	-	1	U	-
YVD-04	YVD-04-140317	03/17/2014	N	SXC0081	**37.7**	-	-	**11.6**	-	-	**4.46**	-	-	**47.8**	-	-	**15.1**	-	-	**0.63**	-	-
YVD-04	YVD-04-140602	06/02/2014	N	SXF0008	**36.8**	-	-	**11.5**	-	-	**4.41**	-	-	**50.5**	-	-	**14.3**	-	-	1	U	-
YVD-04	YVD-04-140923	09/23/2014	N	SXI0158	**37.8**	-	-	**11.5**	-	-	**4.49**	-	-	**52.2**	J+	MSD	**15.3**	-	-	0.5	U	-
YVD-04	YVD-04-141215	12/15/2014	N	SXL0108	**38.8**	-	-	**12.4**	-	-	**4.62**	-	-	**50.0**	-	-	**15.2**	-	-	0.5	U	-
YVD-04	YVD-04-150315	03/15/2015	N	5904471	**38.0**	-	-	**12.0**	-	-	**4.70**	-	-	**52.0**	-	-	**16**	-	-	0.5	U	-
YVD-04	YVD-04-150615	06/15/2015	N	59010751	**38.0**	J+	MSD	**8.5**	J+	MSD	**4.70**	J+	MSD	**49.0**	J+	MSD	**15**	-	-	0.5	U	-
YVD-04	YVD-04-150922	09/22/2015	N	59020141	**36.0**	-	-	**11.0**	-	-	**4.60**	-	-	**51.0**	-	-	**15**	-	-	0.5	U	-
YVD-04	YVD-04-151213	12/13/2015	N	59025351	**39.0**	-	-	**12.0**	-	-	**4.90**	-	-	**53.0**	-	-	**15**	-	-	0.5	U	-
YVD-04	YVD-04-160307	03/07/2016	N	59029521	**36.0**	-	-	**12.0**	-	-	**4.60**	-	-	**51.0**	-	-	**14**	-	-	0.5	U	-
YVD-04	YVD-04-160620	6/20/2016	N	59037101	**36.0**	-	-	**12.0**	-	-	**4.80**	-	-	**53.0**	-	-	**15**	-	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-02	YVD-060617-14	6/6/2017	N	K1705754	**0.20**	-	-	0.10	U	-	**3.43**	J	FDP	-	-	-	0.050	U	-	0.5	U	-
YVD-02	YVD-060617-16	6/6/2017	FD	K1705754	**0.20**	-	-	0.10	U	-	**12.2**	J	FDP	-	-	-	0.050	U	-	0.5	U	-
YVD-02	YVD-092617-20	9/26/2017	N	K1710333	**0.17**	-	-	0.10	U	-	**4.79**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-02	YVD-120417-02	12/4/2017	N	K1713026	**0.22**	-	-	0.10	U	-	**16.1**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-02	YVD-120417-04	12/4/2017	FD	K1713026	**0.20**	-	-	0.10	U	-	**15.8**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-03	YVD-03-130916	09/16/2013	N	SWI0113	**4.75**	-	-	**0.49**	-	-	**70.7**	-	-	-	-	-	0.1	U	-	**0.488**	-	-
YVD-03	YVD-03-131210	12/10/2013	N	SWL0063	**5.96**	-	-	0.4	U	-	**54.8**	J-	MSD	-	-	-	0.02	R	MSD	0.2	U	-
YVD-03	YVD-03-140317	03/17/2014	N	SXC0081	**4.75**	-	-	0.2	U	-	**38**	-	-	-	-	-	**0.249**	-	-	0.25	U	-
YVD-03	YVD-03-140602	06/02/2014	N	SXF0008	**3.86**	-	-	0.2	U	-	**36**	-	-	-	-	-	0.1	U	-	**0.261**	-	-
YVD-03	YVD-03-140923	09/23/2014	N	SXI0158	**3.97**	-	-	0.2	U	-	**34.7**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
YVD-03	YVD-D3-140923	09/23/2014	FD	SXI0158	**4.04**	-	-	0.2	U	-	**34.4**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
YVD-03	YVD-03-141215	12/15/2014	N	SXL0108	**4.27**	-	-	0.2	U	-	**37**	-	-	-	-	-	0.1	U	-	**0.4**	-	-
YVD-03	YVD-03-150316	03/16/2015	N	5904541	**4.1**	J-	MSD	0.2	U	-	**33**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-03	YVD-03-150616	06/16/2015	N	59010751	**4**	-	-	0.2	U	-	**41**	J-	MSD	-	-	-	**0.12**	-	-	0.25	UJ	MSD
YVD-03	YVD-03-150922	09/22/2015	N	59020141	**4.9**	-	-	0.2	U	-	**51**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-03	YVD-03-151214	12/14/2015	N	59025351	**4.9**	-	-	0.2	U	-	**51**	-	-	-	-	-	0.1	R	MSD	0.25	UJ	MSD
YVD-03	YVD-03-160307	03/07/2016	N	59029521	**4.6**	-	-	0.2	U	-	**47**	-	-	-	-	-	0.1	UJ	RPD	0.25	UJ	MSD
YVD-03	YVD-03-160620	6/20/2016	N	59037151	**4.6**	-	-	0.2	U	-	**61**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-03	YVD-03-160929	9/29/2016	N	K1611758	**4.39**	-	-	0.10	U	-	**44.4**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-03	YVD-03-161213	12/13/2016	N	K1615045	**4.47**	-	-	0.10	U	-	**43.3**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-03	YVD-030617-02	3/6/2017	N	K1702228	**4.42**	-	-	0.10	U	-	**40.7**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-03	YVD-030617-03	3/6/2017	FD	K1702228	**4.48**	-	-	0.10	U	-	**40.7**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-03	YVD-060517-13	6/5/2017	N	K1705702	**4.61**	-	-	0.10	U	-	**46.4**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-03	YVD-092517-05	9/25/2017	N	K1710274	**4.45**	-	-	0.10	U	-	**46.3**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-03	YVD-120517-19	12/5/2017	N	K1713091	**4.52**	-	-	0.10	U	-	**50.8**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-04	YVD-04-130916	09/16/2013	N	SWI0113	**4.45**	-	-	0.2	U	-	**39.1**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-04	YVD-04-131210	12/10/2013	N	SWL0063	**4.64**	-	-	0.4	U	-	**42.2**	J-	MSD	-	-	-	0.02	R	MSD	0.2	U	-
YVD-04	YVD-04-140317	03/17/2014	N	SXC0081	**4.03**	-	-	0.2	U	-	**35.2**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-04	YVD-04-140602	06/02/2014	N	SXF0008	**3.78**	-	-	0.4	U	-	**36.2**	-	-	-	-	-	**0.113**	-	-	0.25	U	-
YVD-04	YVD-04-140923	09/23/2014	N	SXI0158	**3.87**	-	-	0.2	U	-	**35.8**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
YVD-04	YVD-04-141215	12/15/2014	N	SXL0108	**3.81**	-	-	0.2	U	-	**35.8**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-04	YVD-04-150315	03/15/2015	N	5904471	**4.3**	-	-	0.2	U	-	**34**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-04	YVD-04-150615	06/15/2015	N	59010751	**4**	-	-	0.2	U	-	**34**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-04	YVD-04-150922	09/22/2015	N	59020141	**3.9**	-	-	0.2	U	-	**35**	-	-	-	-	-	**0.13**	-	-	0.25	UJ	MSD
YVD-04	YVD-04-151213	12/13/2015	N	59025351	**4.1**	-	-	0.2	U	-	**36**	-	-	-	-	-	0.1	R	MSD	0.25	UJ	MSD
YVD-04	YVD-04-160307	03/07/2016	N	59029521	**3.7**	-	-	0.2	U	-	**34**	-	-	-	-	-	0.1	UJ	RPD	0.25	UJ	MSD
YVD-04	YVD-04-160620	6/20/2016	N	59037101	**4**	-	-	0.2	U	-	**35**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-02	YVD-060617-14	6/6/2017	N	K1705754	-	-	-	**0.093**	-	-	-	-	-	-	-	-	**81**	-	-	**81**	-	-
YVD-02	YVD-060617-16	6/6/2017	FD	K1705754	-	-	-	**0.081**	-	-	-	-	-	-	-	-	**67**	-	-	**67**	-	-
YVD-02	YVD-092617-20	9/26/2017	N	K1710333	-	-	-	**0.09**	-	-	-	-	-	-	-	-	**75**	-	-	**75**	-	-
YVD-02	YVD-120417-02	12/4/2017	N	K1713026	-	-	-	**0.080**	-	-	-	-	-	-	-	-	**89**	-	-	**89**	-	-
YVD-02	YVD-120417-04	12/4/2017	FD	K1713026	-	-	-	**0.074**	-	-	-	-	-	-	-	-	**93**	-	-	**93**	-	-
YVD-03	YVD-03-130916	09/16/2013	N	SWI0113	-	-	-	-	-	-	**0.89**	-	-	-	-	-	**209**	-	-	**210**	-	-
YVD-03	YVD-03-131210	12/10/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**1.02**	-	-	**214**	-	-	**215**	-	-
YVD-03	YVD-03-140317	03/17/2014	N	SXC0081	**0.23**	-	-	-	-	-	-	-	-	-	-	-	**219**	-	-	**220**	-	-
YVD-03	YVD-03-140602	06/02/2014	N	SXF0008	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**206**	-	-	**208**	-	-
YVD-03	YVD-03-140923	09/23/2014	N	SXI0158	**0.33**	J	FDP	-	-	-	-	-	-	-	-	-	**199**	-	-	**200**	-	-
YVD-03	YVD-D3-140923	09/23/2014	FD	SXI0158	**0.24**	J	FDP	-	-	-	-	-	-	-	-	-	**199**	-	-	**200**	-	-
YVD-03	YVD-03-141215	12/15/2014	N	SXL0108	**0.76**	-	-	-	-	-	-	-	-	-	-	-	**199**	-	-	**200**	-	-
YVD-03	YVD-03-150316	03/16/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
YVD-03	YVD-03-150616	06/16/2015	N	59010751	**0.59**	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	**200**	-	-
YVD-03	YVD-03-150922	09/22/2015	N	59020141	0.25	U	-	-	-	-	-	-	-	-	-	-	**220**	-	-	**220**	-	-
YVD-03	YVD-03-151214	12/14/2015	N	59025351	**0.78**	-	-	-	-	-	-	-	-	-	-	-	**230**	-	-	**230**	-	-
YVD-03	YVD-03-160307	03/07/2016	N	59029521	**0.34**	-	-	-	-	-	-	-	-	-	-	-	**150**	J	FDP	**150**	J	FDP
YVD-03	YVD-03-160620	6/20/2016	N	59037151	**0.47**	-	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-03	YVD-03-160929	9/29/2016	N	K1611758	-	-	-	**0.047**	-	-	-	-	-	-	-	-	**196**	-	-	**196**	-	-
YVD-03	YVD-03-161213	12/13/2016	N	K1615045	-	-	-	**0.11**	-	-	-	-	-	-	-	-	**189**	-	-	**189**	-	-
YVD-03	YVD-030617-02	3/6/2017	N	K1702228	-	-	-	**0.083**	J	FDP	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-03	YVD-030617-03	3/6/2017	FD	K1702228	-	-	-	**0.061**	J	FDP	-	-	-	-	-	-	**192**	-	-	**192**	-	-
YVD-03	YVD-060517-13	6/5/2017	N	K1705702	-	-	-	**0.045**	-	-	-	-	-	-	-	-	**189**	-	-	**189**	-	-
YVD-03	YVD-092517-05	9/25/2017	N	K1710274	-	-	-	**0.038**	-	-	-	-	-	-	-	-	**193**	-	-	**193**	-	-
YVD-03	YVD-120517-19	12/5/2017	N	K1713091	-	-	-	**0.047**	-	-	-	-	-	-	-	-	**181**	-	-	**181**	-	-
YVD-04	YVD-04-130916	09/16/2013	N	SWI0113	-	-	-	-	-	-	0.1	U	-	-	-	-	**184**	-	-	**185**	-	-
YVD-04	YVD-04-131210	12/10/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**0.112**	-	-	**203**	-	-	**205**	-	-
YVD-04	YVD-04-140317	03/17/2014	N	SXC0081	**0.078**	-	-	-	-	-	-	-	-	-	-	-	**209**	-	-	**210**	-	-
YVD-04	YVD-04-140602	06/02/2014	N	SXF0008	**0.053**	-	-	-	-	-	-	-	-	-	-	-	**191**	-	-	**193**	-	-
YVD-04	YVD-04-140923	09/23/2014	N	SXI0158	**0.061**	-	-	-	-	-	-	-	-	-	-	-	**188**	-	-	**190**	-	-
YVD-04	YVD-04-141215	12/15/2014	N	SXL0108	0.1	U	-	-	-	-	-	-	-	-	-	-	**188**	-	-	**190**	-	-
YVD-04	YVD-04-150315	03/15/2015	N	5904471	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-04	YVD-04-150615	06/15/2015	N	59010751	0.25	U	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-04	YVD-04-150922	09/22/2015	N	59020141	0.25	U	-	-	-	-	-	-	-	-	-	-	**200**	-	-	**200**	-	-
YVD-04	YVD-04-151213	12/13/2015	N	59025351	**0.39**	-	-	-	-	-	-	-	-	-	-	-	**200**	-	-	**200**	-	-
YVD-04	YVD-04-160307	03/07/2016	N	59029521	0.25	U	-	-	-	-	-	-	-	-	-	-	**250**	J	FDP	**250**	J	FDP
YVD-04	YVD-04-160620	6/20/2016	N	59037101	0.25	U	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-04	YVD-D1-160620	6/20/2016	FD	59037101	**35.0**	-	-	**12.0**	-	-	**4.50**	-	-	**51.0**	-	-	**15**	-	-	0.5	U	-
YVD-04	YVD-04-160928	9/28/2016	N	K1611629	**34.7**	-	-	**10.7**	-	-	**4.42**	-	-	**48.5**	-	-	**13.2**	-	-	**0.21**	-	-
YVD-04	YVD-04-D3-160928	9/28/2016	FD	K1611629	**34.7**	-	-	**10.9**	-	-	**4.49**	-	-	**49.9**	-	-	**13.2**	-	-	**0.20**	-	-
YVD-04	YVD-04-161213	12/13/2016	N	K1615045	**35.2**	-	-	**10.9**	-	-	**4.43**	-	-	**47.5**	-	-	**13.2**	-	-	**0.23**	-	-
YVD-04	YVD-031017-28	3/10/2017	N	K1702448	**37.8**	-	-	**10.9**	-	-	**4.25**	-	-	**46.7**	-	-	**13.2**	-	-	**0.21**	-	-
YVD-04	YVD-060517-11	6/5/2017	N	K1705702	**36.5**	-	-	**9.85**	-	-	**4.05**	-	-	**44.4**	-	-	**13.0**	-	-	**0.22**	-	-
YVD-04	YVD-092517-07	9/25/2017	N	K1710274	**37.2**	-	-	**11.7**	-	-	**4.62**	-	-	**51.1**	-	-	**12.9**	-	-	**0.21**	-	-
YVD-04	YVD-120417-13	12/4/2017	N	K1713091	**36.5**	-	-	**10.9**	-	-	**4.29**	-	-	**49.9**	-	-	**13.2**	-	-	**0.24**	-	-
YVD-05	YVD-05-130917	09/17/2013	N	SWI0113	**66.0**	-	-	**31.0**	-	-	**6.95**	-	-	**46.2**	-	-	**10.2**	-	-	0.5	U	-
YVD-05	YVD-05-131211	12/11/2013	N	SWL0063	**41.5**	-	-	**17.0**	-	-	**3.33**	-	-	**45.5**	-	-	**10**	-	-	1	U	-
YVD-05	YVD-05-140317	03/17/2014	N	SXC0081	**33.7**	-	-	**13.5**	-	-	**2.75**	-	-	**43.1**	-	-	**8.4**	-	-	**1.3**	-	-
YVD-05	YVD-05-140601	06/01/2014	N	SXF0008	**30.8**	-	-	**13.2**	-	-	**2.84**	-	-	**43.9**	-	-	**8.4**	-	-	1	U	-
YVD-05	YVD-05-140922	09/22/2014	N	SXI0148	**31.6**	-	-	**13.7**	-	-	**2.75**	-	-	**45.1**	-	-	**7.6**	-	-	1	U	-
YVD-05	YVD-05-141215	12/15/2014	N	SXL0103	**36.9**	-	-	**17.0**	-	-	**4.21**	-	-	**45.5**	-	-	**4.56**	J+	MSD, FD	1	U	-
YVD-05	YVD-D1-141215	12/15/2014	FD	SXL0103	**34.2**	-	-	**15.0**	-	-	**3.54**	-	-	**44.9**	-	-	**7.8**	J+	MSD, FD	0.5	U	-
YVD-05	YVD-05-150316	03/16/2015	N	5904471	**33.0**	-	-	**15.0**	-	-	**3.60**	-	-	**47.0**	-	-	**8**	-	-	1	U	-
YVD-05	YVD-05-150616	06/16/2015	N	59010751	**35.0**	J+	MSD	**16.0**	J+	MSD	**4.00**	J+	MSD	**47.0**	J+	MSD	**8.9**	-	-	1	U	-
YVD-05	YVD-05-150922	09/22/2015	N	59020281	**42.0**	-	-	**20.0**	-	-	**4.90**	-	-	**51.0**	-	-	**8.8**	-	-	1	U	-
YVD-05	YVD-05-151214	12/14/2015	N	59025351	**37.0**	-	-	**17.0**	-	-	**4.30**	-	-	**52.0**	-	-	**7.9**	-	-	1	U	-
YVD-05	YVD-05-160307	03/07/2016	N	59029521	**32.0**	-	-	**15.0**	-	-	**3.60**	-	-	**48.0**	-	-	**8.3**	-	-	1	U	-
YVD-05	YVD-D1-160307	03/07/2016	FD	59029521	**32.0**	-	-	**15.0**	-	-	**3.60**	-	-	**48.0**	-	-	**8.7**	-	-	**0.59**	-	-
YVD-05	YVD-05-160620	6/20/2016	N	59037151	**31.0**	-	-	**14.0**	-	-	**3.40**	-	-	**48.0**	-	-	**9.1**	-	-	1	U	-
YVD-05	YVD-05-160928	9/28/2016	N	K1611698	**32.1**	-	-	**13.8**	-	-	**3.54**	-	-	**48.5**	-	-	**8.37**	-	-	**0.44**	-	-
YVD-05	YVD-05-161215	12/15/2016	N	K1615174	**33.3**	-	-	**13.1**	-	-	**3.37**	-	-	**46.5**	-	-	**8.30**	-	-	**0.48**	-	-
YVD-05	YVD-031317-32	3/13/2017	N	K1702489	**31.4**	-	-	**14.1**	-	-	**3.44**	-	-	**46.0**	-	-	**7.89**	-	-	**0.49**	-	-
YVD-05	YVD-031317-34	3/13/2017	FD	K1702489	**31.4**	-	-	**14.0**	-	-	**3.38**	-	-	**45.6**	-	-	**7.92**	-	-	**0.48**	-	-
YVD-05	YVD-060617-23	6/6/2017	N	K1705754	**31.6**	-	-	**13.9**	-	-	**3.51**	-	-	**48.1**	-	-	**8.12**	-	-	**0.47**	-	-
YVD-05	YVD-092517-09	9/25/2017	N	K1710274	**35.3**	-	-	**14.6**	-	-	**3.61**	-	-	**48.4**	-	-	**8.01**	-	-	**0.47**	-	-
YVD-05	YVD-120517-15	12/5/2017	N	K1713091	**31.3**	-	-	**13.5**	-	-	**3.36**	-	-	**46.5**	-	-	**7.92**	-	-	**0.51**	-	-
YVD-06	YVD-06-130917	09/17/2013	N	SWI0113	**46.0**	-	-	**12.8**	-	-	**4.07**	-	-	**17.6**	-	-	**3.13**	-	-	0.5	U	-
YVD-06	YVD-06-131209	12/09/2013	N	SWL0055	**31.2**	J	FDP	**5.3**	J	FDP	**1.76**	-	-	**13.0**	J	FDP	**2.73**	-	-	0.5	U	-
YVD-06	YVD-D1-131209	12/09/2013	FD	SWL0055	**38.9**	J	FDP	**6.6**	J	FDP	**2.24**	-	-	**16.5**	J	FDP	8	U	-	5	U	-
YVD-06	YVD-06-140316	03/16/2014	N	SXC0081	**40.1**	-	-	**7.6**	-	-	**2.68**	-	-	**16.2**	-	-	**3.47**	-	-	**0.58**	-	-
YVD-06	YVD-D1-140316	03/16/2014	FD	SXC0081	**40.5**	-	-	**7.8**	-	-	**2.74**	-	-	**16.6**	-	-	**3.16**	-	-	**0.55**	-	-
YVD-06	YVD-06-140601	06/01/2014	N	SXF0008	**37.8**	-	-	**6.5**	-	-	**2.28**	-	-	**16.7**	-	-	**2.88**	J	DUP	0.5	U	-
YVD-06	YVD-D1-140601	06/01/2014	FD	SXF0008	**38.3**	-	-	**6.6**	-	-	**2.30**	-	-	**16.9**	-	-	**2.95**	-	-	0.5	U	-
YVD-06	YVD-06-140921	09/21/2014	N	SXI0148	**41.3**	-	-	**8.5**	-	-	**2.69**	-	-	**17.4**	-	-	**2.45**	-	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-04	YVD-D1-160620	6/20/2016	FD	59037101	**4**	-	-	0.2	U	-	**36**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-04	YVD-04-160928	9/28/2016	N	K1611629	**3.67**	-	-	0.10	U	-	**31.4**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-04	YVD-04-D3-160928	9/28/2016	FD	K1611629	**3.68**	-	-	0.10	U	-	**32.2**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-04	YVD-04-161213	12/13/2016	N	K1615045	**3.74**	-	-	0.10	U	-	**31.7**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-04	YVD-031017-28	3/10/2017	N	K1702448	**3.70**	-	-	0.10	U	-	**32.9**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-04	YVD-060517-11	6/5/2017	N	K1705702	**3.53**	-	-	0.10	U	-	**33.4**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-04	YVD-092517-07	9/25/2017	N	K1710274	**3.57**	-	-	0.10	U	-	**32.7**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-04	YVD-120417-13	12/4/2017	N	K1713091	**3.79**	-	-	0.10	U	-	**32.5**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-05	YVD-05-130917	09/17/2013	N	SWI0113	**4.9**	-	-	0.2	U	-	**76.8**	-	-	-	-	-	**0.112**	-	-	**0.435**	-	-
YVD-05	YVD-05-131211	12/11/2013	N	SWL0063	**4.36**	-	-	0.4	U	-	**68.4**	J-	MSD	-	-	-	0.02	R	MSD	0.2	U	-
YVD-05	YVD-05-140317	03/17/2014	N	SXC0081	**3.3**	-	-	0.4	U	-	**52.7**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-05	YVD-05-140601	06/01/2014	N	SXF0008	**3**	-	-	0.4	U	-	**50.5**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-05	YVD-05-140922	09/22/2014	N	SXI0148	**2.82**	-	-	0.4	U	-	**48.1**	-	-	-	-	-	0.1	U	-	**0.259**	-	-
YVD-05	YVD-05-141215	12/15/2014	N	SXL0103	**1.5**	J	DP, DU	0.4	U	-	**27.7**	J+	SD, FDP, DU	-	-	-	0.1	U	-	**0.272**	-	-
YVD-05	YVD-D1-141215	12/15/2014	FD	SXL0103	**2.65**	J	DP, DU	0.2	U	-	**46**	J+	SD, FDP, DU	-	-	-	0.1	U	-	**0.264**	-	-
YVD-05	YVD-05-150316	03/16/2015	N	5904471	**2.8**	-	-	0.4	U	-	**47**	-	-	-	-	-	0.1	U	-	0.25	UJ	-
YVD-05	YVD-05-150616	06/16/2015	N	59010751	**3.1**	-	-	0.4	U	-	**49**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	-
YVD-05	YVD-05-150922	09/22/2015	N	59020281	**3**	-	-	0.4	U	-	**51**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
YVD-05	YVD-05-151214	12/14/2015	N	59025351	**2.8**	-	-	0.4	U	-	**48**	-	-	-	-	-	0.1	R	MSD	**0.6**	J-	MSD
YVD-05	YVD-05-160307	03/07/2016	N	59029521	**2.7**	-	-	0.4	U	-	**47**	-	-	-	-	-	0.1	UJ	RPD	0.25	UJ	MSD
YVD-05	YVD-D1-160307	03/07/2016	FD	59029521	**2.9**	-	-	0.2	U	-	**48**	-	-	-	-	-	0.1	UJ	RPD	0.25	UJ	MSD
YVD-05	YVD-05-160620	6/20/2016	N	59037151	**3**	-	-	0.4	U	-	**49**	-	-	-	-	-	0.1	U	-	0.25	U	MSD
YVD-05	YVD-05-160928	9/28/2016	N	K1611698	**3.12**	-	-	0.10	U	-	**46.7**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
YVD-05	YVD-05-161215	12/15/2016	N	K1615174	**3.15**	-	-	0.10	U	-	**49.0**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-05	YVD-031317-32	3/13/2017	N	K1702489	**2.88**	-	-	0.10	U	-	**41.5**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-05	YVD-031317-34	3/13/2017	FD	K1702489	**2.91**	-	-	0.10	U	-	**41.4**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-05	YVD-060617-23	6/6/2017	N	K1705754	**2.90**	-	-	0.10	U	-	**48.0**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-05	YVD-092517-09	9/25/2017	N	K1710274	**2.82**	-	-	0.10	U	-	**46.6**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-05	YVD-120517-15	12/5/2017	N	K1713091	**2.81**	-	-	0.10	U	-	**41.8**	-	-	-	-	-	0.050	U	MBK	0.5	UJ	MSD
YVD-06	YVD-06-130917	09/17/2013	N	SWI0113	**0.51**	-	-	0.2	U	-	**8.14**	-	-	-	-	-	0.1	U	-	**0.4**	-	-
YVD-06	YVD-06-131209	12/09/2013	N	SWL0055	**0.49**	J	FDP	0.2	U	-	**8.53**	-	-	-	-	-	0.02	UJ	MSD	**0.62**	J	K,MSD,F
YVD-06	YVD-D1-131209	12/09/2013	FD	SWL0055	**6.4**	J	FDP	2	U	-	**9.1**	-	-	-	-	-	0.02	UJ	MSD	**0.4**	J	K,MSD,F
YVD-06	YVD-06-140316	03/16/2014	N	SXC0081	**0.61**	-	-	0.2	U	-	**8.33**	-	-	-	-	-	0.1	U	-	**0.297**	-	-
YVD-06	YVD-D1-140316	03/16/2014	FD	SXC0081	**0.62**	-	-	0.2	U	-	**8.18**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-06	YVD-06-140601	06/01/2014	N	SXF0008	**0.51**	-	-	0.2	U	-	**7.59**	-	-	-	-	-	**0.172**	-	-	0.25	U	-
YVD-06	YVD-D1-140601	06/01/2014	FD	SXF0008	**0.56**	-	-	0.2	U	-	**7.63**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-06	YVD-06-140921	09/21/2014	N	SXI0148	**0.44**	-	-	0.2	U	-	**7.98**	-	-	-	-	-	**0.139**	-	-	**0.359**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-04	YVD-D1-160620	6/20/2016	FD	59037101	0.25	U	-	-	-	-	-	-	-	-	-	-	**180**	-	-	**180**	-	-
YVD-04	YVD-04-160928	9/28/2016	N	K1611629	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**187**	-	-	**187**	-	-
YVD-04	YVD-04-D3-160928	9/28/2016	FD	K1611629	-	-	-	**0.008**	J	-	-	-	-	-	-	-	**185**	-	-	**185**	-	-
YVD-04	YVD-04-161213	12/13/2016	N	K1615045	-	-	-	**0.026**	-	-	-	-	-	-	-	-	**181**	-	-	**181**	-	-
YVD-04	YVD-031017-28	3/10/2017	N	K1702448	-	-	-	**0.018**	-	-	-	-	-	-	-	-	**167**	-	-	**167**	-	-
YVD-04	YVD-060517-11	6/5/2017	N	K1705702	-	-	-	**0.006**	J	-	-	-	-	-	-	-	**182**	-	-	**182**	-	-
YVD-04	YVD-092517-07	9/25/2017	N	K1710274	-	-	-	**0.026**	-	-	-	-	-	-	-	-	**188**	-	-	**188**	-	-
YVD-04	YVD-120417-13	12/4/2017	N	K1713091	-	-	-	**0.013**	-	-	-	-	-	-	-	-	**185**	-	-	**185**	-	-
YVD-05	YVD-05-130917	09/17/2013	N	SWI0113	-	-	-	-	-	-	**1.62**	-	-	-	-	-	**184**	-	-	**185**	-	-
YVD-05	YVD-05-131211	12/11/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**0.462**	-	-	**174**	-	-	**175**	-	-
YVD-05	YVD-05-140317	03/17/2014	N	SXC0081	**0.14**	-	-	-	-	-	-	-	-	-	-	-	**174**	-	-	**175**	-	-
YVD-05	YVD-05-140601	06/01/2014	N	SXF0008	**0.15**	-	-	-	-	-	-	-	-	-	-	-	**164**	-	-	**165**	-	-
YVD-05	YVD-05-140922	09/22/2014	N	SXI0148	**0.2**	-	-	-	-	-	-	-	-	-	-	-	**159**	-	-	**160**	-	-
YVD-05	YVD-05-141215	12/15/2014	N	SXL0103	**0.29**	J	FDP	-	-	-	-	-	-	-	-	-	**154**	-	-	**155**	-	-
YVD-05	YVD-D1-141215	12/15/2014	FD	SXL0103	**0.44**	J	FDP	-	-	-	-	-	-	-	-	-	**153**	-	-	**155**	-	-
YVD-05	YVD-05-150316	03/16/2015	N	5904471	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**160**	-	-	**160**	-	-
YVD-05	YVD-05-150616	06/16/2015	N	59010751	**0.51**	-	-	-	-	-	-	-	-	-	-	-	**170**	-	-	**170**	-	-
YVD-05	YVD-05-150922	09/22/2015	N	59020281	**0.8**	-	-	-	-	-	-	-	-	-	-	-	**160**	-	-	**160**	-	-
YVD-05	YVD-05-151214	12/14/2015	N	59025351	**0.65**	-	-	-	-	-	-	-	-	-	-	-	**180**	-	-	**180**	-	-
YVD-05	YVD-05-160307	03/07/2016	N	59029521	0.25	U	-	-	-	-	-	-	-	-	-	-	**160**	J	FDP	**160**	J	FDP
YVD-05	YVD-D1-160307	03/07/2016	FD	59029521	0.25	U	-	-	-	-	-	-	-	-	-	-	**170**	J	FDP	**170**	J	FDP
YVD-05	YVD-05-160620	6/20/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**170**	-	-	**170**	-	-
YVD-05	YVD-05-160928	9/28/2016	N	K1611698	-	-	-	**0.01**	-	-	-	-	-	-	-	-	**171**	-	-	**171**	-	-
YVD-05	YVD-05-161215	12/15/2016	N	K1615174	-	-	-	**0.04**	-	-	-	-	-	-	-	-	**163**	-	-	**163**	-	-
YVD-05	YVD-031317-32	3/13/2017	N	K1702489	-	-	-	**0.03**	-	-	-	-	-	-	-	-	**166**	-	-	**166**	-	-
YVD-05	YVD-031317-34	3/13/2017	FD	K1702489	-	-	-	**0.02**	-	-	-	-	-	-	-	-	**168**	-	-	**168**	-	-
YVD-05	YVD-060617-23	6/6/2017	N	K1705754	-	-	-	**0.016**	-	-	-	-	-	-	-	-	**168**	-	-	**168**	-	-
YVD-05	YVD-092517-09	9/25/2017	N	K1710274	-	-	-	**0.012**	-	-	-	-	-	-	-	-	**173**	-	-	**173**	-	-
YVD-05	YVD-120517-15	12/5/2017	N	K1713091	-	-	-	**0.015**	-	-	-	-	-	-	-	-	**171**	-	-	**171**	-	-
YVD-06	YVD-06-130917	09/17/2013	N	SWI0113	-	-	-	-	-	-	**0.41**	-	-	-	-	-	**149**	-	-	**150**	-	-
YVD-06	YVD-06-131209	12/09/2013	N	SWL0055	-	-	-	-	-	-	-	-	-	0.06	U	-	**154**	-	-	**155**	-	-
YVD-06	YVD-D1-131209	12/09/2013	FD	SWL0055	-	-	-	-	-	-	-	-	-	0.06	U	-	**159**	-	-	**160**	-	-
YVD-06	YVD-06-140316	03/16/2014	N	SXC0081	**0.14**	-	-	-	-	-	-	-	-	-	-	-	**174**	-	-	**175**	-	-
YVD-06	YVD-D1-140316	03/16/2014	FD	SXC0081	**0.13**	-	-	-	-	-	-	-	-	-	-	-	**159**	-	-	**160**	-	-
YVD-06	YVD-06-140601	06/01/2014	N	SXF0008	**0.064**	-	-	-	-	-	-	-	-	-	-	-	**156**	-	-	**158**	-	-
YVD-06	YVD-D1-140601	06/01/2014	FD	SXF0008	**0.057**	-	-	-	-	-	-	-	-	-	-	-	**153**	-	-	**155**	-	-
YVD-06	YVD-06-140921	09/21/2014	N	SXI0148	**0.18**	-	-	-	-	-	-	-	-	-	-	-	**149**	-	-	**150**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-06	YVD-06-141215	12/15/2014	N	SXL0103	**40.3**	-	-	**7.8**	-	-	**2.58**	-	-	**16.9**	-	-	**2.5**	J+	MSD	0.5	U	-
YVD-06	YVD-06-150316	03/16/2015	N	5904471	**38.0**	-	-	**6.8**	-	-	**2.20**	-	-	**17.0**	-	-	**2.8**	-	-	0.5	U	-
YVD-06	YVD-06-150616	06/16/2015	N	59010751	**40.0**	J+	MSD	**7.0**	J+	MSD	**2.20**	J+	MSD	**17.0**	J+	MSD	**2.7**	-	-	0.5	U	-
YVD-06	YVD-06-150922	09/22/2015	N	59020141	**41.0**	-	-	**9.8**	-	-	**3.10**	-	-	**17.0**	-	-	**2.8**	-	-	0.5	U	-
YVD-06	YVD-06-151214	12/14/2015	N	59025351	**42.0**	-	-	**7.3**	-	-	**2.40**	-	-	**18.0**	-	-	**2.4**	-	-	0.5	U	-
YVD-06	YVD-06-160307	03/07/2016	N	59029521	**38.0**	-	-	**7.2**	-	-	**2.50**	-	-	**17.0**	-	-	**2.8**	-	-	0.5	U	-
YVD-06	YVD-06-160620	6/20/2016	N	59037151	**37.0**	-	-	**6.6**	-	-	**2.30**	-	-	**17.0**	-	-	**3.1**	-	-	0.5	U	-
YVD-06	YVD-06-160929	9/29/2016	N	K1611704	**35.7**	-	-	**6.1**	-	-	**2.26**	-	-	**17.1**	-	-	**2.64**	-	-	**0.20**	-	-
YVD-06	YVD-06-161215	12/15/2016	N	K1615126	**33.5**	-	-	**5.7**	-	-	**2.12**	-	-	**17.1**	-	-	**3.14**	-	-	**0.23**	-	-
YVD-06	YVD-030617-04	3/6/2017	N	K1702228	**35.2**	-	-	**5.8**	-	-	**2.20**	-	-	**17.0**	-	-	**2.83**	-	-	**0.29**	-	-
YVD-06	YVD-060617-21	6/6/2017	N	K1705754	**36.9**	-	-	**6.07**	-	-	**2.17**	-	-	**16.3**	-	-	**2.54**	-	-	**0.19**	J	-
YVD-06	YVD-092617-17	9/26/2017	N	K1710333	**35**	-	-	**5.82**	-	-	**1.97**	-	-	**15.6**	-	-	**2.94**	-	-	**0.23**	-	-
YVD-06	YVD-092617-18	9/26/2017	FD	K1710333	**34.6**	-	-	**5.77**	-	-	**2.03**	-	-	**16.1**	-	-	**2.95**	-	-	**0.22**	-	-
YVD-06	YVD-120517-17	12/5/2017	N	K1713091	**34.7**	-	-	**5.81**	-	-	**2.11**	-	-	**17.3**	-	-	**3.23**	-	-	**0.25**	-	-
YVD-07	YVD-07-130923	09/23/2013	N	SWI0178	**27.7**	-	-	**16.2**	-	-	**5.03**	-	-	**37.7**	-	-	-	-	-	-	-	-
YVD-07	YVD-07-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	**7.53**	-	-	0.5	U	-
YVD-07	YVD-07-131210	12/10/2013	N	SWL0055	**99.2**	-	-	**16.0**	-	-	1.00	U	-	**40.4**	-	-	**8.46**	-	-	**0.55**	-	-
YVD-07	YVD-07-140316	03/16/2014	N	SXC0081	**33.4**	-	-	**14.1**	-	-	**4.45**	-	-	**42.5**	-	-	**11.6**	-	-	**0.83**	-	-
YVD-07	YVD-07-140604	06/04/2014	N	SXF0025	**38.4**	-	-	**18.3**	-	-	**5.57**	-	-	**44.5**	-	-	**9.74**	-	-	1	U	-
YVD-07	YVD-07-140922	09/22/2014	N	SXI0158	**31.4**	-	-	**12.7**	-	-	**4.05**	-	-	**42.7**	J+	MSD	**10.3**	-	-	1	U	-
YVD-07	YVD-07-141216	12/16/2014	N	SXL0108	**29.9**	-	-	**12.2**	-	-	**3.83**	-	-	**40.6**	-	-	**8.76**	-	-	1	U	-
YVD-07	YVD-07-150316	03/16/2015	N	5904541	**37.0**	-	-	**15.0**	-	-	**4.30**	-	-	**50.0**	-	-	**15**	-	-	1	U	-
YVD-07	YVD-D2-150316	03/16/2015	FD	5904541	**35.0**	-	-	**14.0**	-	-	**4.30**	-	-	**48.0**	-	-	**16**	-	-	**0.65**	-	-
YVD-07	YVD-07-150616	06/16/2015	N	59010751	**34.0**	J+	MSD	**14.0**	J+	MSD	**4.20**	J+	MSD	**43.0**	J+	MSD	**13**	-	-	0.5	U	-
YVD-07	YVD-D1-150616	06/16/2015	FD	59010751	**35.0**	J+	MSD	**14.0**	J+	MSD	**4.20**	J+	MSD	**44.0**	J+	MSD	**14**	-	-	0.5	U	-
YVD-07	YVD-07-150923	09/23/2015	N	59020281	**33.0**	-	-	**14.0**	-	-	**4.20**	-	-	**48.0**	-	-	**9.9**	-	-	1	U	-
YVD-07	YVD-07-151214	12/14/2015	N	59025431	**30.0**	-	-	**13.0**	-	-	**4.50**	-	-	**48.0**	-	-	**6.7**	-	-	1	U	-
YVD-07	YVD-07-160308	03/08/2016	N	59029711	**25.0**	-	-	**11.0**	-	-	**4.00**	-	-	**42.0**	-	-	**6.7**	-	-	1	U	-
YVD-07	YVD-07-160621	6/21/2016	N	59037151	**19.0**	-	-	**9.0**	-	-	**3.50**	-	-	**37.0**	-	-	**6.2**	-	-	1	U	-
YVD-07	YVD-07-160929	9/29/2016	N	K1611704	**17.8**	-	-	**7.14**	-	-	**3.31**	-	-	**34.0**	-	-	**5.3**	-	-	**0.40**	-	-
YVD-07	YVD-07-161213	12/13/2016	N	K1615083	**25.9**	-	-	**10.2**	-	-	**3.59**	-	-	**36.6**	-	-	**6.38**	-	-	**0.40**	-	-
YVD-07	YVD-030717-07	3/7/2017	N	K1702324	**17.6**	-	-	**6.47**	-	-	**2.83**	-	-	**31.4**	-	-	**5.34**	-	-	**0.43**	-	-
YVD-07	YVD-060517-15	6/5/2017	N	K1705754	**19.4**	-	-	**7.31**	-	-	**2.98**	-	-	**32.9**	-	-	**6.07**	-	-	**0.39**	-	-
YVD-07	YVD-092617-21	9/26/2017	N	K1710333	**25.4**	-	-	**9.27**	-	-	**3.26**	-	-	**34.0**	-	-	**7.45**	-	-	**0.35**	-	-
YVD-07	YVD-120417-11	12/4/2017	N	K1713026	**29.5**	-	-	**11.1**	-	-	**3.56**	-	-	**36.1**	-	-	**8.32**	-	-	**0.37**	-	-
YVD-08	YVD-08-130919	09/19/2013	N	SWI0138	**126**	-	-	**43.8**	-	-	**6.03**	-	-	**88.3**	-	-	**145**	-	-	5	U	-
YVD-08	YVD-08-131211	12/11/2013	N	SWL0063	**134**	-	-	**53.8**	-	-	**7.55**	-	-	**82.2**	-	-	**123**	-	-	5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-06	YVD-06-141215	12/15/2014	N	SXL0103	**0.45**	J	DUP	0.2	U	-	**7.47**	J+	MSD, DUP	-	-	-	0.1	U	-	0.25	U	-
YVD-06	YVD-06-150316	03/16/2015	N	5904471	**0.99**	-	-	0.2	U	-	**10**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-06	YVD-06-150616	06/16/2015	N	59010751	**0.53**	-	-	0.2	U	-	**7.9**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-06	YVD-06-150922	09/22/2015	N	59020141	**0.51**	-	-	0.2	U	-	**7.9**	-	-	-	-	-	**0.11**	-	-	0.25	UJ	MSD
YVD-06	YVD-06-151214	12/14/2015	N	59025351	**0.51**	-	-	0.2	U	-	**8**	-	-	-	-	-	0.1	R	MSD	**0.57**	J-	MSD
YVD-06	YVD-06-160307	03/07/2016	N	59029521	**0.51**	-	-	0.2	U	-	**7.8**	-	-	-	-	-	0.1	UJ	RPD	0.25	UJ	MSD
YVD-06	YVD-06-160620	6/20/2016	N	59037151	**0.53**	-	-	0.2	U	-	**8.1**	-	-	-	-	-	0.1	U	-	**0.42**	-	-
YVD-06	YVD-06-160929	9/29/2016	N	K1611704	**0.55**	-	-	0.10	U	-	**8.55**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-06	YVD-06-161215	12/15/2016	N	K1615126	**0.70**	-	-	0.10	U	-	**10.2**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-06	YVD-030617-04	3/6/2017	N	K1702228	**0.61**	-	-	0.10	U	-	**8.38**	-	-	-	-	-	**0.021**	J	-	0.5	U	FBK
YVD-06	YVD-060617-21	6/6/2017	N	K1705754	**0.51**	-	-	0.10	U	-	**8.44**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-06	YVD-092617-17	9/26/2017	N	K1710333	**0.62**	-	-	0.10	U	-	**9.61**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-06	YVD-092617-18	9/26/2017	FD	K1710333	**0.62**	-	-	0.10	U	-	**9.58**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-06	YVD-120517-17	12/5/2017	N	K1713091	**0.73**	-	-	0.10	U	-	**9.87**	-	-	-	-	-	0.050	U	MBK	0.5	UJ	MSD
YVD-07	YVD-07-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	**0.395**	-	-
YVD-07	YVD-07-130926	09/26/2013	N	SWI0190	**4.4**	-	-	0.2	U	-	**37.4**	-	-	-	-	-	-	-	-	-	-	-
YVD-07	YVD-07-131210	12/10/2013	N	SWL0055	**5.3**	-	-	0.2	U	-	**50**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
YVD-07	YVD-07-140316	03/16/2014	N	SXC0081	**3.9**	-	-	0.2	U	-	**69.2**	-	-	-	-	-	**0.116**	-	-	0.25	U	-
YVD-07	YVD-07-140604	06/04/2014	N	SXF0025	**3.36**	-	-	0.4	U	-	**57**	-	-	-	-	-	0.1	U	-	**0.348**	J-	MSD
YVD-07	YVD-07-140922	09/22/2014	N	SXI0158	**5.52**	-	-	0.4	U	-	**51.8**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
YVD-07	YVD-07-141216	12/16/2014	N	SXL0108	**2.92**	-	-	0.4	U	-	**51.2**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-07	YVD-07-150316	03/16/2015	N	5904541	**4**	J-	MSD	0.4	U	-	**73**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-07	YVD-D2-150316	03/16/2015	FD	5904541	**4.2**	J-	MSD	0.2	U	-	**70**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-07	YVD-07-150616	06/16/2015	N	59010751	**3.3**	-	-	0.4	U	-	**74**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-07	YVD-D1-150616	06/16/2015	FD	59010751	**3.5**	-	-	0.2	U	-	**74**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-07	YVD-07-150923	09/23/2015	N	59020281	**4.7**	-	-	0.4	U	-	**68**	-	-	-	-	-	**0.22**	-	-	0.25	R	MSD
YVD-07	YVD-07-151214	12/14/2015	N	59025431	**2.4**	-	-	0.4	U	-	**59**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-07	YVD-07-160308	03/08/2016	N	59029711	**1.8**	-	-	0.4	U	-	**49**	J+	MSD	-	-	-	**1.1**	J+	FBK, FDI	0.25	U	-
YVD-07	YVD-07-160621	6/21/2016	N	59037151	**1.2**	-	-	0.4	U	-	**31**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-07	YVD-07-160929	9/29/2016	N	K1611704	**1.37**	-	-	0.10	U	-	**37.1**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-07	YVD-07-161213	12/13/2016	N	K1615083	**2.15**	-	-	0.10	U	-	**64.0**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-07	YVD-030717-07	3/7/2017	N	K1702324	**1.74**	J	HTQ	0.10	UJ	HTQ	**25.4**	-	-	-	-	-	1	U	-	0.5	U	-
YVD-07	YVD-060517-15	6/5/2017	N	K1705754	**2.07**	-	-	0.10	U	-	**33.5**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-07	YVD-092617-21	9/26/2017	N	K1710333	**3.47**	-	-	0.10	U	-	**51.0**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-07	YVD-120417-11	12/4/2017	N	K1713026	**4.40**	-	-	0.10	U	-	**56.5**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-08	YVD-08-130919	09/19/2013	N	SWI0138	**8**	-	-	2	U	-	**105**	-	-	-	-	-	0.1	U	-	**0.935**	J+	FBK
YVD-08	YVD-08-131211	12/11/2013	N	SWL0063	**22.5**	-	-	2	U	-	**273**	J-	MSD	-	-	-	0.02	R	MSD	0.75	U	ERL

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-06	YVD-06-141215	12/15/2014	N	SXL0103	0.1	U	-	-	-	-	-	-	-	-	-	-	**149**	-	-	**150**	-	-
YVD-06	YVD-06-150316	03/16/2015	N	5904471	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
YVD-06	YVD-06-150616	06/16/2015	N	59010751	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
YVD-06	YVD-06-150922	09/22/2015	N	59020141	0.25	U	-	-	-	-	-	-	-	-	-	-	**170**	-	-	**170**	-	-
YVD-06	YVD-06-151214	12/14/2015	N	59025351	0.25	U	-	-	-	-	-	-	-	-	-	-	**170**	-	-	**170**	-	-
YVD-06	YVD-06-160307	03/07/2016	N	59029521	0.25	U	-	-	-	-	-	-	-	-	-	-	**160**	J	FDP	**160**	J	FDP
YVD-06	YVD-06-160620	6/20/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
YVD-06	YVD-06-160929	9/29/2016	N	K1611704	-	-	-	**0.022**	-	-	-	-	-	-	-	-	**145**	-	-	**145**	-	-
YVD-06	YVD-06-161215	12/15/2016	N	K1615126	-	-	-	**0.010**	-	-	-	-	-	-	-	-	**136**	-	-	**136**	-	-
YVD-06	YVD-030617-04	3/6/2017	N	K1702228	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**142**	-	-	**142**	-	-
YVD-06	YVD-060617-21	6/6/2017	N	K1705754	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**144**	-	-	**144**	-	-
YVD-06	YVD-092617-17	9/26/2017	N	K1710333	-	-	-	**0.009**	J	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-06	YVD-092617-18	9/26/2017	FD	K1710333	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-06	YVD-120517-17	12/5/2017	N	K1713091	-	-	-	**0.021**	-	-	-	-	-	-	-	-	**137**	-	-	**137**	-	-
YVD-07	YVD-07-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	**0.516**	-	-	-	-	-	**79.4**	-	-	**80**	-	-
YVD-07	YVD-07-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-07	YVD-07-131210	12/10/2013	N	SWL0055	-	-	-	-	-	-	-	-	-	0.06	U	-	**135**	-	-	**135**	-	-
YVD-07	YVD-07-140316	03/16/2014	N	SXC0081	**0.22**	-	-	-	-	-	-	-	-	-	-	-	**134**	-	-	**135**	-	-
YVD-07	YVD-07-140604	06/04/2014	N	SXF0025	**0.69**	-	-	-	-	-	-	-	-	-	-	-	**137**	-	-	**138**	-	-
YVD-07	YVD-07-140922	09/22/2014	N	SXI0158	**0.2**	-	-	-	-	-	-	-	-	-	-	-	**134**	-	-	**135**	-	-
YVD-07	YVD-07-141216	12/16/2014	N	SXL0108	0.1	U	-	-	-	-	-	-	-	-	-	-	**133**	-	-	**135**	-	-
YVD-07	YVD-07-150316	03/16/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-07	YVD-D2-150316	03/16/2015	FD	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-07	YVD-07-150616	06/16/2015	N	59010751	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
YVD-07	YVD-D1-150616	06/16/2015	FD	59010751	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-07	YVD-07-150923	09/23/2015	N	59020281	0.25	U	-	-	-	-	-	-	-	-	-	-	**160**	-	-	**160**	-	-
YVD-07	YVD-07-151214	12/14/2015	N	59025431	**0.97**	J	FDP	-	-	-	-	-	-	-	-	-	**140**	J	FDP	**140**	J	FDP
YVD-07	YVD-07-160308	03/08/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-07	YVD-07-160621	6/21/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**100**	-	-	**100**	-	-
YVD-07	YVD-07-160929	9/29/2016	N	K1611704	-	-	-	**0.020**	-	-	-	-	-	-	-	-	**113**	-	-	**113**	-	-
YVD-07	YVD-07-161213	12/13/2016	N	K1615083	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**120**	-	-	**120**	-	-
YVD-07	YVD-030717-07	3/7/2017	N	K1702324	-	-	-	**0.019**	-	-	-	-	-	-	-	-	**107**	-	-	**107**	-	-
YVD-07	YVD-060517-15	6/5/2017	N	K1705754	-	-	-	**0.004**	J	-	-	-	-	-	-	-	**105**	-	-	**105**	-	-
YVD-07	YVD-092617-21	9/26/2017	N	K1710333	-	-	-	**0.022**	-	-	-	-	-	-	-	-	**116**	-	-	**116**	-	-
YVD-07	YVD-120417-11	12/4/2017	N	K1713026	-	-	-	**0.022**	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
YVD-08	YVD-08-130919	09/19/2013	N	SWI0138	-	-	-	-	-	-	0.1	U	-	-	-	-	**354**	-	-	**355**	-	-
YVD-08	YVD-08-131211	12/11/2013	N	SWL0063	-	-	-	-	-	-	-	-	-	**1.46**	-	-	**259**	-	-	**260**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-08	YVD-08-140317	03/17/2014	N	SXC0095	**122**	-	-	**42.0**	-	-	**5.30**	-	-	**75.1**	-	-	**128**	-	-	5	U	-
YVD-08	YVD-08-140602	06/02/2014	N	SXF0017	**138**	-	-	**64.6**	-	-	**11.20**	-	-	**78.3**	-	-	**118**	-	-	2	U	-
YVD-08	YVD-08-140923	09/23/2014	N	SXI0173	**103**	-	-	**36.3**	-	-	**5.87**	-	-	**76.9**	-	-	**122**	-	-	2.5	U	-
YVD-08	YVD-08-141216	12/16/2014	N	SXL0108	**111**	-	-	**41.4**	-	-	**5.92**	-	-	**77.2**	-	-	**126**	-	-	2.5	U	-
YVD-08	YVD-08-150317	03/17/2015	N	5904541	**110**	-	-	**40.0**	-	-	**5.90**	-	-	**77.0**	-	-	**120**	-	-	2.5	U	-
YVD-08	YVD-D3-150317	03/17/2015	FD	5904541	**100**	-	-	**39.0**	-	-	**5.70**	-	-	**76.0**	-	-	**130**	-	-	0.5	U	-
YVD-08	YVD-08-150617	06/17/2015	N	59010961	**110**	-	-	**40.0**	-	-	**6.00**	J+	MSD	**82.0**	J+	MSD	**120**	-	-	2.5	U	-
YVD-08	YVD-D3-150617	06/17/2015	FD	59010961	**110**	-	-	**39.0**	-	-	**5.70**	J+	MSD	**77.0**	J+	MSD	**140**	-	-	5	U	-
YVD-08	YVD-08-150924	09/24/2015	N	59020391	**110**	-	-	**44.0**	-	-	**5.60**	-	-	**82.0**	-	-	**120**	-	-	2.5	U	-
YVD-08	YVD-08-151215	12/15/2015	N	59025501	**120**	-	-	**44.0**	-	-	**6.20**	-	-	**85.0**	-	-	**120**	-	-	2.5	U	-
YVD-08	YVD-D3-151215	12/15/2015	FD	59025501	**120**	-	-	**46.0**	-	-	**6.20**	-	-	**85.0**	-	-	**110**	-	-	5	U	-
YVD-08	YVD-08-160310	03/10/2016	N	59029941	**120**	-	-	**44.0**	-	-	**5.60**	-	-	**87.0**	-	-	**120**	-	-	2.5	U	-
YVD-08	YVD-08-160622	6/22/2016	N	59037271	**120**	-	-	**46.0**	-	-	**5.90**	-	-	**87.0**	-	-	**110**	-	-	2.5	U	-
YVD-08	YVD-D3-160622	6/22/2016	FD	59037271	**120**	-	-	**46.0**	-	-	**6.00**	-	-	**88.0**	-	-	**120**	-	-	0.5	U	-
YVD-08	YVD-08-160927	9/27/2016	N	K1611565	**120**	-	-	**47.0**	-	-	**4.95**	-	-	**84.7**	-	-	**96.0**	-	-	**0.18**	J	-
YVD-08	YVD-08-161213	12/13/2016	N	K1615045	**122**	-	-	**41.9**	-	-	**5.10**	-	-	**84.5**	-	-	**89.3**	-	-	**0.23**	-	-
YVD-08	YVD-030917-24	3/9/2017	N	K1702448	**136**	-	-	**44.4**	-	-	**4.95**	-	-	**83.4**	-	-	**95.2**	-	-	**0.20**	J	-
YVD-08	YVD-060717-29	6/7/2017	N	K1705833	**139**	-	-	**48.3**	-	-	**5.13**	-	-	**92.1**	-	-	**94.3**	-	-	**0.17**	J	-
YVD-08	YVD-092617-19	9/26/2017	N	K1710333	**137**	-	-	**44.3**	-	-	**5.12**	-	-	**89.3**	-	-	**98.0**	-	-	**0.19**	J	-
YVD-08	YVD-120517-23	12/5/2017	N	K1713157	**147**	-	-	**48.1**	-	-	**5.23**	-	-	**93.2**	-	-	**98.8**	-	-	**0.20**	J	-
YVD-08	YVD-031918-15	3/19/2018	N	870634	**134**	-	-	**45.95**	-	-	**5.40**	-	-	**90.5**	-	-	**103**	-	-	**0.15**	-	-
YVD-09	YVD-09-130919	09/19/2013	N	SWI0138	**107**	-	-	**39.3**	-	-	**8.21**	-	-	**189**	-	-	**96.3**	-	-	5	U	-
YVD-09	YVD-09-131212	12/12/2013	N	SWL0078	**109**	-	-	**42.0**	-	-	**9.21**	-	-	**176**	-	-	**87.2**	-	-	5	U	-
YVD-09	YVD-09-140319	03/19/2014	N	SXC0107	**109**	-	-	**40.8**	-	-	**9.33**	-	-	**173**	-	-	**104**	-	-	**5.5**		-
YVD-09	YVD-09-140603	06/03/2014	N	SXF0025	**113**	-	-	**44.5**	-	-	**10.10**	-	-	**193**	-	-	**89.8**	-	-	5	U	-
YVD-09	YVD-09-140924	09/24/2014	N	SXI0173	**118**	-	-	**41.7**	-	-	**8.88**	-	-	**203**	-	-	**68.2**	-	-	5	U	-
YVD-09	YVD-09-141217	12/17/2014	N	SXL0121	**130**	-	-	**56.3**	-	-	**12.90**	-	-	**187**	-	-	**85**	-	-	5	U	-
YVD-09	YVD-09-150318	03/18/2015	N	5904651	**110**	-	-	**46.0**	-	-	**9.30**	J-	MSD	**190**	-	-	**74**	-	-	5	U	-
YVD-09	YVD-09-150617	06/17/2015	N	59010961	**110**	-	-	**43.0**	-	-	**9.80**	J+	MSD	**190**	J+	MSD	**89**	-	-	5	U	-
YVD-09	YVD-09-150923	09/23/2015	N	59020391	**110**	-	-	**46.0**	-	-	**9.60**	-	-	**180**	-	-	**78**	-	-	0.5	U	-
YVD-09	YVD-09-151215	12/15/2015	N	59025501	**110**	-	-	**42.0**	-	-	**9.60**	-	-	**190**	-	-	**77**	-	-	5	U	-
YVD-09	YVD-09-160310	03/10/2016	N	59029941	**110**	-	-	**42.0**	-	-	**9.20**	-	-	**190**	-	-	**72**	-	-	5	U	-
YVD-09	YVD-09-160622	6/22/2016	N	59037271	**100**	-	-	**42.0**	-	-	**8.90**	-	-	**190**	-	-	**76**	-	-	5	U	-
YVD-09	YVD-09-160929	9/29/2016	N	K1611704	**103**	-	-	**41.2**	-	-	**7.62**	-	-	**184**	-	-	**66.7**	-	-	**0.34**	-	-
YVD-09	YVD-09-161213	12/13/2016	N	K1615045	**107**	-	-	**38.1**	-	-	**8.42**	-	-	**185**	-	-	**59.8**	-	-	**0.40**	-	-
YVD-09	YVD-D2-161213	12/13/2016	FD	K1615045	**108**	-	-	**37.1**	-	-	**8.04**	-	-	**181**	-	-	**61.4**	-	-	**0.40**	-	-
YVD-09	YVD-031317-35	3/13/2017	N	K1702489	**108**	-	-	**39.2**	-	-	**7.78**	-	-	**185**	-	-	**63.9**	-	-	**0.37**	-	-
YVD-09	YVD-060517-08	6/5/2017	N	K1705702	**110**	-	-	**39.4**	-	-	**6.98**	-	-	**163**	-	-	**62.6**	-	-	**0.39**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-08	YVD-08-140317	03/17/2014	N	SXC0095	**14.3**	-	-	2	U	-	**173**	J-	MSD	-	-	-	**0.146**	-	-	**0.702**	-	-
YVD-08	YVD-08-140602	06/02/2014	N	SXF0017	**14.7**	-	-	0.8	U	-	**175**	J-	MSD	-	-	-	0.1	U	-	**1.12**	-	-
YVD-08	YVD-08-140923	09/23/2014	N	SXI0173	**8.1**	-	-	1	U	-	**107**	-	-	-	-	-	0.1	U	-	**0.867**	J+	MSD
YVD-08	YVD-08-141216	12/16/2014	N	SXL0108	**14**	-	-	1	U	-	**140**	-	-	-	-	-	0.1	U	-	**0.369**	-	-
YVD-08	YVD-08-150317	03/17/2015	N	5904541	**13**	J-	MSD	1	U	-	**130**	J-	MSD	-	-	-	0.1	U	-	**0.39**	J-	MSD
YVD-08	YVD-D3-150317	03/17/2015	FD	5904541	**14**	J-	MSD	0.2	U	-	**150**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-08	YVD-08-150617	06/17/2015	N	59010961	**19**	-	-	1	U	-	**140**	-	-	-	-	-	**0.14**	-	-	**0.26**	J-	MSD, FD
YVD-08	YVD-D3-150617	06/17/2015	FD	59010961	**19**	-	-	0.2	U	-	**170**	-	-	-	-	-	0.1	U	-	**0.86**	J-	MSD, FD
YVD-08	YVD-08-150924	09/24/2015	N	59020391	**20**	J+	MSD	1	U	-	**170**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
YVD-08	YVD-08-151215	12/15/2015	N	59025501	**26**	-	-	1	U	-	**190**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-08	YVD-D3-151215	12/15/2015	FD	59025501	**26**	-	-	0.2	U	-	**180**	-	-	-	-	-	**0.15**	J-	MSD	0.25	R	MSD
YVD-08	YVD-08-160310	03/10/2016	N	59029941	**32**	-	-	1	U	-	**210**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	DP, MS
YVD-08	YVD-08-160622	6/22/2016	N	59037271	**34**	-	-	1	U	-	**200**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
YVD-08	YVD-D3-160622	6/22/2016	FD	59037271	**34**	-	-	0.2	U	-	**200**	-	-	-	-	-	0.1	UJ	BK, MS	0.25	R	MSD
YVD-08	YVD-08-160927	9/27/2016	N	K1611565	**30.6**	-	-	0.10	U	-	**193**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
YVD-08	YVD-08-161213	12/13/2016	N	K1615045	**34.5**	J	HTQ	0.10	U	-	**182**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-08	YVD-030917-24	3/9/2017	N	K1702448	**37.3**	J	HTQ	0.10	U	-	**203**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-08	YVD-060717-29	6/7/2017	N	K1705833	**44.0**	-	-	0.10	U	-	**194**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-08	YVD-092617-19	9/26/2017	N	K1710333	**38.6**	J	HTQ	0.10	U	-	**213**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-08	YVD-120517-23	12/5/2017	N	K1713157	**49.3**	-	-	0.10	U	-	**184**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-08	YVD-031918-15	3/19/2018	N	870634	**46.3**	-	-	0.05	U	-	**183**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-09	YVD-09-130919	09/19/2013	N	SWI0138	**74.7**	-	-	2	U	-	**236**	-	-	-	-	-	0.1	U	-	0.533	R	FBK
YVD-09	YVD-09-131212	12/12/2013	N	SWL0078	**64.4**	-	-	2	U	-	**193**	-	-	-	-	-	0.02	U	-	0.661	U	ERL
YVD-09	YVD-09-140319	03/19/2014	N	SXC0107	**62.4**	-	-	2	U	-	**214**	-	-	-	-	-	0.1	U	-	**0.653**	J-	MSD
YVD-09	YVD-09-140603	06/03/2014	N	SXF0025	**57.1**	-	-	2	U	-	**214**	-	-	-	-	-	0.1	U	-	**0.613**	J-	MSD
YVD-09	YVD-09-140924	09/24/2014	N	SXI0173	**48**	-	-	2	U	-	**166**	-	-	-	-	-	0.1	U	-	**0.502**	J+	MSD
YVD-09	YVD-09-141217	12/17/2014	N	SXL0121	**53.9**	-	-	2	U	-	**223**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-09	YVD-09-150318	03/18/2015	N	5904651	**47**	-	-	2	U	-	**190**	-	-	-	-	-	**0.14**	-	-	0.25	UJ	MSD
YVD-09	YVD-09-150617	06/17/2015	N	59010961	**54**	-	-	2	U	-	**230**	-	-	-	-	-	**0.14**	-	-	**0.37**	J-	MSD
YVD-09	YVD-09-150923	09/23/2015	N	59020391	**56**	J+	MSD	0.2	U	-	**270**	J-	MSD	-	-	-	**0.21**	J	MSD	**0.26**	J-	MSD
YVD-09	YVD-09-151215	12/15/2015	N	59025501	**52**	-	-	2	U	-	**250**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-09	YVD-09-160310	03/10/2016	N	59029941	**48**	-	-	2	U	-	**250**	J	DUP	-	-	-	**0.12**	-	-	0.25	UJ	DP, MS
YVD-09	YVD-09-160622	6/22/2016	N	59037271	**49**	-	-	2	U	-	**260**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
YVD-09	YVD-09-160929	9/29/2016	N	K1611704	**43.2**	-	-	0.10	U	-	**243**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-09	YVD-09-161213	12/13/2016	N	K1615045	**42.8**	J	HTQ	0.10	U	-	**238**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-09	YVD-D2-161213	12/13/2016	FD	K1615045	**43.3**	J	HTQ	0.10	U	-	**240**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-09	YVD-031317-35	3/13/2017	N	K1702489	**44.3**	-	-	**0.04**	J	-	**225**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-09	YVD-060517-08	6/5/2017	N	K1705702	**44.6**	-	-	0.10	U	-	**237**	-	-	-	-	-	0.050	U	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-08	YVD-08-140317	03/17/2014	N	SXC0095	**0.13**	-	-	-	-	-	-	-	-	-	-	-	**294**	-	-	**295**	-	-
YVD-08	YVD-08-140602	06/02/2014	N	SXF0017	**2.7**	-	-	-	-	-	-	-	-	-	-	-	**279**	-	-	**280**	-	-
YVD-08	YVD-08-140923	09/23/2014	N	SXI0173	**0.35**	-	-	-	-	-	-	-	-	-	-	-	**249**	-	-	**250**	-	-
YVD-08	YVD-08-141216	12/16/2014	N	SXL0108	**0.34**	-	-	-	-	-	-	-	-	-	-	-	**264**	-	-	**265**	-	-
YVD-08	YVD-08-150317	03/17/2015	N	5904541	**0.67**	-	-	-	-	-	-	-	-	-	-	-	**230**	-	-	**230**	-	-
YVD-08	YVD-D3-150317	03/17/2015	FD	5904541	**0.49**	-	-	-	-	-	-	-	-	-	-	-	**240**	-	-	**240**	-	-
YVD-08	YVD-08-150617	06/17/2015	N	59010961	**0.53**	-	-	-	-	-	-	-	-	-	-	-	**280**	J	FDP	**280**	J	FDP
YVD-08	YVD-D3-150617	06/17/2015	FD	59010961	**0.39**	-	-	-	-	-	-	-	-	-	-	-	**220**	J	FDP	**220**	J	FDP
YVD-08	YVD-08-150924	09/24/2015	N	59020391	**0.31**	-	-	-	-	-	-	-	-	-	-	-	**260**	-	-	**260**	-	-
YVD-08	YVD-08-151215	12/15/2015	N	59025501	**0.33**	J-	MSD	-	-	-	-	-	-	-	-	-	**260**	-	-	**260**	-	-
YVD-08	YVD-D3-151215	12/15/2015	FD	59025501	**0.27**	J-	MSD	-	-	-	-	-	-	-	-	-	**250**	-	-	**250**	-	-
YVD-08	YVD-08-160310	03/10/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**240**	-	-	**240**	-	-
YVD-08	YVD-08-160622	6/22/2016	N	59037271	**0.31**	-	-	-	-	-	-	-	-	-	-	-	**230**	-	-	**230**	-	-
YVD-08	YVD-D3-160622	6/22/2016	FD	59037271	**0.28**	-	-	-	-	-	-	-	-	-	-	-	**230**	-	-	**230**	-	-
YVD-08	YVD-08-160927	9/27/2016	N	K1611565	-	-	-	**0.049**	-	-	-	-	-	-	-	-	**239**	-	-	**239**	-	-
YVD-08	YVD-08-161213	12/13/2016	N	K1615045	-	-	-	**0.058**	-	-	-	-	-	-	-	-	**222**	-	-	**222**	-	-
YVD-08	YVD-030917-24	3/9/2017	N	K1702448	-	-	-	**0.018**	-	-	-	-	-	-	-	-	**263**	-	-	**263**	-	-
YVD-08	YVD-060717-29	6/7/2017	N	K1705833	-	-	-	**0.025**	-	-	-	-	-	-	-	-	**236**	-	-	**236**	-	-
YVD-08	YVD-092617-19	9/26/2017	N	K1710333	-	-	-	**0.01**	-	-	-	-	-	-	-	-	**271**	-	-	**271**	-	-
YVD-08	YVD-120517-23	12/5/2017	N	K1713157	-	-	-	**0.013**	-	-	-	-	-	-	-	-	**233**	-	-	**233**	-	-
YVD-08	YVD-031918-15	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**250**	-	-	**250**	-	-
YVD-09	YVD-09-130919	09/19/2013	N	SWI0138	-	-	-	-	-	-	0.232	R	FBK	-	-	-	**369**	-	-	**370**	-	-
YVD-09	YVD-09-131212	12/12/2013	N	SWL0078	-	-	-	-	-	-	-	-	-	**0.647**	-	-	**384**	-	-	**385**	-	-
YVD-09	YVD-09-140319	03/19/2014	N	SXC0107	**0.53**	-	-	-	-	-	-	-	-	-	-	-	**388**	-	-	**390**	-	-
YVD-09	YVD-09-140603	06/03/2014	N	SXF0025	**0.72**	-	-	-	-	-	-	-	-	-	-	-	**367**	-	-	**368**	-	-
YVD-09	YVD-09-140924	09/24/2014	N	SXI0173	**0.32**	J+	FBK	-	-	-	-	-	-	-	-	-	**359**	-	-	**360**	-	-
YVD-09	YVD-09-141217	12/17/2014	N	SXL0121	**1.3**	-	-	-	-	-	-	-	-	-	-	-	**359**	-	-	**360**	-	-
YVD-09	YVD-09-150318	03/18/2015	N	5904651	**0.38**	-	-	-	-	-	-	-	-	-	-	-	**350**	-	-	**350**	-	-
YVD-09	YVD-09-150617	06/17/2015	N	59010961	**0.36**	-	-	-	-	-	-	-	-	-	-	-	**350**	-	-	**350**	-	-
YVD-09	YVD-09-150923	09/23/2015	N	59020391	**0.27**	-	-	-	-	-	-	-	-	-	-	-	**330**	-	-	**330**	-	-
YVD-09	YVD-09-151215	12/15/2015	N	59025501	**0.25**	J-	MSD	-	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
YVD-09	YVD-09-160310	03/10/2016	N	59029941	**0.33**	-	-	-	-	-	-	-	-	-	-	-	**360**	-	-	**360**	-	-
YVD-09	YVD-09-160622	6/22/2016	N	59037271	**0.29**	-	-	-	-	-	-	-	-	-	-	-	**350**	-	-	**350**	-	-
YVD-09	YVD-09-160929	9/29/2016	N	K1611704	-	-	-	**0.016**	-	-	-	-	-	-	-	-	**347**	-	-	**347**	-	-
YVD-09	YVD-09-161213	12/13/2016	N	K1615045	-	-	-	**0.048**	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
YVD-09	YVD-D2-161213	12/13/2016	FD	K1615045	-	-	-	**0.078**	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
YVD-09	YVD-031317-35	3/13/2017	N	K1702489	-	-	-	**0.025**	-	-	-	-	-	-	-	-	**329**	-	-	**329**	-	-
YVD-09	YVD-060517-08	6/5/2017	N	K1705702	-	-	-	**0.007**	J	-	-	-	-	-	-	-	**341**	-	-	**341**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-09	YVD-092617-29	9/26/2017	N	K1710381	**109**	-	-	**37.2**	-	-	**8.07**	-	-	**175**	-	-	**61.0**	-	-	**0.38**	-	-
YVD-09	YVD-092617-30	9/26/2017	FD	K1710381	**109**	-	-	**37.4**	-	-	**8.11**	-	-	**176**	-	-	**61.1**	-	-	**0.38**	-	-
YVD-09	YVD-120517-21	12/5/2017	N	K1713091	**108**	-	-	**35.9**	-	-	**7.27**	-	-	**174**	-	-	**63.0**	-	-	**0.38**	-	-
YVD-09	YVD-031918-18	3/19/2018	N	870634	**108**	-	-	**35.90**	-	-	**7.80**	-	-	**166**	-	-	**69.2**	-	-	**0.34**	-	-
YVD-10	YVD-10-130917	09/17/2013	N	SWI0123	**216**	-	-	**51.8**	-	-	**3.28**	-	-	**104**	-	-	**95.4**	-	-	5	U	-
YVD-10	YVD-10-131212	12/12/2013	N	SWL0078	**202**	-	-	**55.6**	-	-	**4.49**	-	-	**102**	-	-	**91.4**	-	-	5	U	-
YVD-10	YVD-10-140319	03/19/2014	N	SXC0107	**218**	-	-	**54.0**	-	-	**3.93**	-	-	**96.8**	-	-	**86.8**	-	-	5	U	-
YVD-10	YVD-10-140603	06/03/2014	N	SXF0025	**232**	-	-	**58.6**	-	-	**4.07**	-	-	**103**	-	-	**94.3**	-	-	5	U	-
YVD-10	YVD-10-140924	09/24/2014	N	SXI0173	**276**	-	-	**65.8**	-	-	**3.86**	-	-	**116**	-	-	**115**	-	-	5	U	-
YVD-10	YVD-10-141217	12/17/2014	N	SXL0144	**248**	-	-	**60.4**	-	-	**3.88**	-	-	**110**	-	-	**97.9**	-	-	5	U	-
YVD-10	YVD-10-150318	03/18/2015	N	5904651	**400**	-	-	**92.0**	-	-	**4.00**	J-	MSD	**130**	-	-	**180**	-	-	5	U	-
YVD-10	YVD-10-150617	06/17/2015	N	59010961	**390**	-	-	**95.0**	-	-	**4.60**	J+	MSD	**130**	J+	MSD	**39**	-	-	5	U	-
YVD-10	YVD-10-150923	09/23/2015	N	59020391	**330**	-	-	**89.0**	-	-	**4.30**	-	-	**120**	-	-	**160**	-	-	5	U	-
YVD-10	YVD-10-151214	12/14/2015	N	59025351	**350**	-	-	**84.0**	-	-	**4.30**	-	-	**120**	-	-	**150**	-	-	5	U	-
YVD-10	YVD-10-160309	03/09/2016	N	59029711	**310**	-	-	**73.0**	-	-	**4.10**	-	-	**120**	-	-	**140**	-	-	5	U	-
YVD-10	YVD-10-160621	6/21/2016	N	59037271	**270**	-	-	**73.0**	-	-	**4.50**	-	-	**110**	-	-	**120**	-	-	5	U	-
YVD-10	YVD-10-160929	9/29/2016	N	K1611698	**286**	-	-	**63.1**	-	-	**2.48**	-	-	**114**	-	-	**105**	-	-	0.2	U	MBK
YVD-10	YVD-10-161212	12/12/2016	N	K1615029	**303**	-	-	**66.9**	-	-	**2.68**	-	-	**118**	-	-	**141**	-	-	**0.10**	J	-
YVD-10	YVD-030917-27	3/9/2017	N	K1702448	**569**	-	-	**128**	-	-	**2.89**	-	-	**133**	-	-	**173**	-	-	**0.09**	J	-
YVD-10	YVD-060617-22	6/6/2017	N	K1705754	**349**	-	-	**76.7**	-	-	**2.57**	-	-	**119**	-	-	**125**	-	-	**0.14**	J	-
YVD-10	YVD-092617-31	9/26/2017	N	K1710381	**316**	-	-	**66.7**	-	-	**2.56**	-	-	**111**	-	-	**113**	-	-	**0.09**	J	-
YVD-10	YVD-120517-30	12/5/2017	N	K1713091	**327**	-	-	**67.3**	-	-	**2.37**	-	-	**114**	-	-	**128**	-	-	**0.11**	J	-
YVD-10	YVD-031818-06	3/18/2018	N	870610	**296**	-	-	**61.00**	-	-	**2.60**	-	-	**123**	-	-	**121**	-	-	0.1	U	-
YVD-11	YVD-11-130923	09/23/2013	N	SWI0178	**183**	-	-	**51.9**	-	-	**5.44**	J	FDP	**23.2**	-	-	-	-	-	-	-	-
YVD-11	YVD-D2-130923	09/23/2013	FD	SWI0178	**175**	-	-	**46.0**	-	-	**3.60**	J	FDP	**23.0**	-	-	-	-	-	-	-	-
YVD-11	YVD-11-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	**54.7**	-	-	5	U	-
YVD-11	YVD-D3-130926	09/26/2013	FD	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	**61.4**	-	-	5	U	-
YVD-11	YVD-11-131212	12/12/2013	N	SWL0073	**171**	-	-	**43.4**	-	-	**3.37**	-	-	**23.2**	-	-	**58.7**	-	-	5	U	-
YVD-11	YVD-11-140318	03/18/2014	N	SXC0107	**183**	-	-	**44.4**	-	-	**3.15**	-	-	**22.2**	-	-	**61.6**	-	-	5	U	-
YVD-11	YVD-11-140603	06/03/2014	N	SXF0017	**176**	-	-	**50.3**	-	-	**5.38**	-	-	**26.1**	-	-	**67.2**	-	-	5	U	-
YVD-11	YVD-11-140924	09/24/2014	N	SXI0173	**193**	-	-	**47.9**	-	-	**3.86**	-	-	**25.6**	-	-	**67.2**	-	-	2.5	U	-
YVD-11	YVD-11-141217	12/17/2014	N	SXL0121	**198**	-	-	**53.6**	-	-	**4.77**	-	-	**25.6**	-	-	**72.1**	-	-	5	U	-
YVD-11	YVD-11-150317	03/17/2015	N	5904651	**190**	-	-	**51.0**	-	-	**4.30**	J-	MSD	**26.0**	-	-	**76**	-	-	5	U	-
YVD-11	YVD-11-150616	06/16/2015	N	59010961	**200**	-	-	**50.0**	-	-	**3.20**	J+	MSD	**27.0**	J+	MSD	**86**	-	-	5	U	-
YVD-11	YVD-11-150923	09/23/2015	N	59020281	**200**	-	-	**55.0**	-	-	**3.40**	-	-	**25.0**	-	-	**90**	-	-	5	U	-
YVD-11	YVD-11-151215	12/15/2015	N	59025431	**210**	-	-	**60.0**	-	-	**5.20**	-	-	**25.0**	-	-	**100**	-	-	5	U	-
YVD-11	YVD-D2-151215	12/15/2015	FD	59025431	**210**	-	-	**58.0**	-	-	**4.90**	-	-	**25.0**	-	-	**98**	-	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-09	YVD-092617-29	9/26/2017	N	K1710381	**44.1**	J	HTQ	0.10	U	-	**223**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-09	YVD-092617-30	9/26/2017	FD	K1710381	**44.1**	J	HTQ	0.10	U	-	**224**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-09	YVD-120517-21	12/5/2017	N	K1713091	**46.9**	-	-	0.10	U	-	**211**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-09	YVD-031918-18	3/19/2018	N	870634	**48.5**	-	-	0.05	U	-	**180**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-10	YVD-10-130917	09/17/2013	N	SWI0123	**95**		-	2	U	-	**199**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-10	YVD-10-131212	12/12/2013	N	SWL0078	**86.9**	-	-	2	U	-	**174**	-	-	-	-	-	0.02	U	-	0.6495	U	ERL
YVD-10	YVD-10-140319	03/19/2014	N	SXC0107	**77.6**	-	-	2	U	-	**163**	-	-	-	-	-	**0.109**	-	-	**0.507**	J-	MSD
YVD-10	YVD-10-140603	06/03/2014	N	SXF0025	**86.1**	-	-	2	U	-	**188**	-	-	-	-	-	**0.105**	-	-	**0.577**	J-	MSD
YVD-10	YVD-10-140924	09/24/2014	N	SXI0173	**97.2**	-	-	2	U	-	**217**	-	-	-	-	-	0.1	U	-	**0.443**	J+	MSD
YVD-10	YVD-10-141217	12/17/2014	N	SXL0144	**78.7**	-	-	2	U	-	**180**	-	-	-	-	-	0.5	U	-	0.25	R	MSD
YVD-10	YVD-10-150318	03/18/2015	N	5904651	**120**	-	-	2	U	-	**370**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-10	YVD-10-150617	06/17/2015	N	59010961	**20**	-	-	2	U	-	**110**	-	-	-	-	-	**0.12**	-	-	**0.44**	J-	MSD
YVD-10	YVD-10-150923	09/23/2015	N	59020391	**120**	J+	MSD	2	U	-	**370**	J-	MSD	-	-	-	**0.72**	J	MSD	0.25	UJ	MSD
YVD-10	YVD-10-151214	12/14/2015	N	59025351	**120**	-	-	2	U	-	**360**	-	-	-	-	-	0.1	R	MSD	0.25	UJ	MSD
YVD-10	YVD-10-160309	03/09/2016	N	59029711	**98**	-	-	2	U	-	**280**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
YVD-10	YVD-10-160621	6/21/2016	N	59037271	**96**	-	-	2	U	-	**240**	-	-	-	-	-	**0.11**	J-	MSD	0.25	R	MSD
YVD-10	YVD-10-160929	9/29/2016	N	K1611698	**84**	-	-	0.10	U	-	**223**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
YVD-10	YVD-10-161212	12/12/2016	N	K1615029	**109**	J	HTQ	0.10	U	-	**191**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-10	YVD-030917-27	3/9/2017	N	K1702448	**123**	J	HTQ	0.10	U	-	**799**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-10	YVD-060617-22	6/6/2017	N	K1705754	**99.4**	-	-	0.10	U	-	**368**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-10	YVD-092617-31	9/26/2017	N	K1710381	**93.9**	J	HTQ	0.10	U	-	**265**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-10	YVD-120517-30	12/5/2017	N	K1713091	**109**	J	HTQ	0.10	U	-	**224**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-10	YVD-031818-06	3/18/2018	N	870610	**91.4**	-	-	0.05	U	-	**202**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-11	YVD-11-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-11	YVD-D2-130923	09/23/2013	FD	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-11	YVD-11-130926	09/26/2013	N	SWI0190	**38.4**	-	-	2	U	-	**207**	-	-	-	-	-	-	-	-	-	-	-
YVD-11	YVD-D3-130926	09/26/2013	FD	SWI0190	**46.2**	-	-	2	U	-	**228**	-	-	-	-	-	-	-	-	-	-	-
YVD-11	YVD-11-131212	12/12/2013	N	SWL0073	**49.9**	-	-	2	U	-	**208**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
YVD-11	YVD-11-140318	03/18/2014	N	SXC0107	**43.7**	-	-	2	U	-	**193**	-	-	-	-	-	0.1	U	-	**0.503**	J-	MSD
YVD-11	YVD-11-140603	06/03/2014	N	SXF0017	**49.1**	-	-	2	U	-	**203**	J-	MSD	-	-	-	0.1	U	-	**0.564**	-	-
YVD-11	YVD-11-140924	09/24/2014	N	SXI0173	**46.6**	-	-	1	U	-	**159**	-	-	-	-	-	0.1	U	-	**0.453**	J+	MSD
YVD-11	YVD-11-141217	12/17/2014	N	SXL0121	**49.1**	-	-	2	U	-	**158**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-11	YVD-11-150317	03/17/2015	N	5904651	**52**	-	-	2	U	-	**150**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-11	YVD-11-150616	06/16/2015	N	59010961	**56**	-	-	2	U	-	**140**	-	-	-	-	-	0.1	U	-	**0.31**	J-	MSD
YVD-11	YVD-11-150923	09/23/2015	N	59020281	**66**	-	-	2	U	-	**130**	-	-	-	-	-	**0.12**	-	-	0.25	R	MSD
YVD-11	YVD-11-151215	12/15/2015	N	59025431	**74**	-	-	2	U	-	**140**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-11	YVD-D2-151215	12/15/2015	FD	59025431	**70**	-	-	0.2	U	-	**130**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-09	YVD-092617-29	9/26/2017	N	K1710381	-	-	-	**0.029**	-	-	-	-	-	-	-	-	**351**	-	-	**351**	-	-
YVD-09	YVD-092617-30	9/26/2017	FD	K1710381	-	-	-	**0.039**	-	-	-	-	-	-	-	-	**415**	-	-	**415**	-	-
YVD-09	YVD-120517-21	12/5/2017	N	K1713091	-	-	-	**0.009**	J	-	-	-	-	-	-	-	**351**	-	-	**351**	-	-
YVD-09	YVD-031918-18	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**350**	-	-	**350**	-	-
YVD-10	YVD-10-130917	09/17/2013	N	SWI0123	-	-	-	-	-	-	**0.148**	-	-	-	-	-	**464**	-	-	**465**	-	-
YVD-10	YVD-10-131212	12/12/2013	N	SWL0078	-	-	-	-	-	-	-	-	-	**1.4**	-	-	**459**	-	-	**460**	-	-
YVD-10	YVD-10-140319	03/19/2014	N	SXC0107	**0.77**	-	-	-	-	-	-	-	-	-	-	-	**489**	-	-	**490**	-	-
YVD-10	YVD-10-140603	06/03/2014	N	SXF0025	**0.8**	-	-	-	-	-	-	-	-	-	-	-	**487**	-	-	**488**	-	-
YVD-10	YVD-10-140924	09/24/2014	N	SXI0173	**0.48**	J+	FBK	-	-	-	-	-	-	-	-	-	**523**	-	-	**525**	-	-
YVD-10	YVD-10-141217	12/17/2014	N	SXL0144	**0.69**	J-	MSD	-	-	-	-	-	-	-	-	-	**503**	-	-	**505**	-	-
YVD-10	YVD-10-150318	03/18/2015	N	5904651	**0.42**	-	-	-	-	-	-	-	-	-	-	-	**590**	-	-	**590**	-	-
YVD-10	YVD-10-150617	06/17/2015	N	59010961	**0.72**	-	-	-	-	-	-	-	-	-	-	-	**600**	-	-	**600**	-	-
YVD-10	YVD-10-150923	09/23/2015	N	59020391	**0.56**	-	-	-	-	-	-	-	-	-	-	-	**620**	-	-	**620**	-	-
YVD-10	YVD-10-151214	12/14/2015	N	59025351	**0.58**	-	-	-	-	-	-	-	-	-	-	-	**600**	-	-	**600**	-	-
YVD-10	YVD-10-160309	03/09/2016	N	59029711	**0.42**	-	-	-	-	-	-	-	-	-	-	-	**520**	-	-	**520**	-	-
YVD-10	YVD-10-160621	6/21/2016	N	59037271	**0.71**	-	-	-	-	-	-	-	-	-	-	-	**510**	-	-	**510**	-	-
YVD-10	YVD-10-160929	9/29/2016	N	K1611698	-	-	-	**0.028**	-	-	-	-	-	-	-	-	**513**	-	-	**513**	-	-
YVD-10	YVD-10-161212	12/12/2016	N	K1615029	-	-	-	**0.074**	-	-	-	-	-	-	-	-	**524**	-	-	**524**	-	-
YVD-10	YVD-030917-27	3/9/2017	N	K1702448	-	-	-	**0.066**	-	-	-	-	-	-	-	-	**637**	-	-	**637**	-	-
YVD-10	YVD-060617-22	6/6/2017	N	K1705754	-	-	-	**0.036**	-	-	-	-	-	-	-	-	**525**	-	-	**525**	-	-
YVD-10	YVD-092617-31	9/26/2017	N	K1710381	-	-	-	**0.011**	-	-	-	-	-	-	-	-	**523**	-	-	**523**	-	-
YVD-10	YVD-120517-30	12/5/2017	N	K1713091	-	-	-	**0.023**	-	-	-	-	-	-	-	-	**540**	-	-	**540**	-	-
YVD-10	YVD-031818-06	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**527**	-	-	**527**	-	-
YVD-11	YVD-11-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	0.1	UJ	FDP	-	-	-	**254**	J	FDP	**255**	J	FDP
YVD-11	YVD-D2-130923	09/23/2013	FD	SWI0178	-	-	-	-	-	-	**0.753**	J	FDP	-	-	-	**199**	J	FDP	**200**	J	FDP
YVD-11	YVD-11-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-11	YVD-D3-130926	09/26/2013	FD	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-11	YVD-11-131212	12/12/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	**0.245**	-	-	**294**	-	-	**295**	-	-
YVD-11	YVD-11-140318	03/18/2014	N	SXC0107	**0.17**	-	-	-	-	-	-	-	-	-	-	-	**324**	-	-	**325**	-	-
YVD-11	YVD-11-140603	06/03/2014	N	SXF0017	**0.84**	-	-	-	-	-	-	-	-	-	-	-	**312**	-	-	**313**	-	-
YVD-11	YVD-11-140924	09/24/2014	N	SXI0173	**0.17**	J+	FBK	-	-	-	-	-	-	-	-	-	**294**	-	-	**295**	-	-
YVD-11	YVD-11-141217	12/17/2014	N	SXL0121	**0.46**	-	-	-	-	-	-	-	-	-	-	-	**289**	-	-	**290**	-	-
YVD-11	YVD-11-150317	03/17/2015	N	5904651	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**290**	-	-	**290**	-	-
YVD-11	YVD-11-150616	06/16/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**290**	-	-	**290**	-	-
YVD-11	YVD-11-150923	09/23/2015	N	59020281	0.25	U	-	-	-	-	-	-	-	-	-	-	**310**	-	-	**310**	-	-
YVD-11	YVD-11-151215	12/15/2015	N	59025431	**0.59**	J	FDP	-	-	-	-	-	-	-	-	-	**110**	J	FDP	**110**	J	FDP
YVD-11	YVD-D2-151215	12/15/2015	FD	59025431	**1.5**	J	FDP	-	-	-	-	-	-	-	-	-	**360**	J	FDP	**360**	J	FDP

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-11	YVD-11-160309	03/09/2016	N	59029711	**200**	-	-	**53.0**	-	-	**3.30**	-	-	**25.0**	-	-	**99**	-	-	5	U	-
YVD-11	YVD-11-160621	6/21/2016	N	59037151	**200**	-	-	**56.0**	-	-	**3.50**	-	-	**27.0**	-	-	**120**	-	-	5	U	-
YVD-11	YVD-11-160927	9/27/2016	N	K1611629	**204**	-	-	**52.6**	-	-	**3.13**	-	-	**26.1**	-	-	**82.0**	-	-	**0.18**	J	-
YVD-11	YVD-11-161214	12/14/2016	N	K1615126	**209**	-	-	**57.8**	-	-	**4.82**	-	-	**25.6**	-	-	**82.5**	-	-	**0.19**	J	-
YVD-11	YVD-031317-37	3/13/2017	N	K1702489	**235**	-	-	**62.1**	-	-	**3.02**	-	-	**25.5**	-	-	**102**	-	-	**0.21**	-	-
YVD-11	YVD-060517-10	6/5/2017	N	K1705702	**271**	-	-	**69.1**	-	-	**2.98**	-	-	**24.9**	-	-	**129**	-	-	**0.18**	J	-
YVD-11	YVD-092617-26	9/26/2017	N	K1710381	**276**	-	-	**68.6**	-	-	**3.24**	-	-	**28.8**	-	-	**135**	-	-	**0.17**	J	-
YVD-11	YVD-120417-06	12/4/2017	N	K1713026	**248**	-	-	**58.6**	-	-	**2.78**	-	-	**25.8**	-	-	**110**	-	-	**0.16**	J	-
YVD-11	YVD-031918-12	3/19/2018	N	870634	**223**	-	-	**51.50**	-	-	**2.98**	-	-	**26.0**	-	-	**91.4**	-	-	**0.11**	-	-
YVD-11	YVD-031918-14	3/19/2018	FD	870634	**222**	-	-	**50.50**	-	-	**2.94**	-	-	**25.8**	-	-	**89.1**	-	-	**0.12**	-	-
YVD-12	YVD-12-130919	09/19/2013	N	SWI0142	**98.6**	-	-	**37.5**	-	-	**3.14**	-	-	**77.3**	-	-	**98.2**	-	-	5	U	-
YVD-12	YVD-12-130925	09/25/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-12	YVD-12-131211	12/11/2013	N	SWL0073	**93.5**	-	-	**36.2**	-	-	**3.63**	-	-	**73.2**	-	-	**97**	-	-	5	U	-
YVD-12	YVD-12-140318	03/18/2014	N	SXC0095	**92.9**	-	-	**35.9**	-	-	**3.27**	-	-	**73.4**	-	-	**95.2**	-	-	5	U	-
YVD-12	YVD-12-140603	06/03/2014	N	SXF0017	**92.6**	-	-	**34.9**	-	-	**2.96**	-	-	**70.7**	-	-	**8.33**	-	-	0.5	U	-
YVD-12	YVD-12-140922	09/22/2014	N	SXI0148	**98.4**	-	-	**39.1**	-	-	**3.13**	-	-	**77.9**	-	-	**78.5**	-	-	5	U	-
YVD-12	YVD-D2-140922	09/22/2014	FD	SXI0148	**99.3**	-	-	**39.0**	-	-	**3.00**	-	-	**77.8**	-	-	**82.4**	-	-	2	U	-
YVD-12	YVD-12-141216	12/16/2014	N	SXL0121	**99.3**	-	-	**39.6**	-	-	**3.23**	-	-	**71.8**	-	-	**84.1**	-	-	5	U	-
YVD-12	YVD-12-150317	03/17/2015	N	5904541	**93.0**	-	-	**37.0**	-	-	**3.60**	-	-	**73.0**	-	-	**75**	-	-	5	U	-
YVD-12	YVD-12-150617	06/17/2015	N	59010961	**90.0**	-	-	**35.0**	-	-	**2.60**	J+	MSD	**83.0**	J+	MSD	**84**	-	-	5	U	-
YVD-12	YVD-12-150924	09/24/2015	N	59020391	**92.0**	-	-	**39.0**	-	-	**3.50**	-	-	**73.0**	-	-	**78**	-	-	5	U	-
YVD-12	YVD-12-151216	12/16/2015	N	59025501	**95.0**	-	-	**37.0**	-	-	**3.10**	-	-	**74.0**	-	-	**76**	-	-	5	U	-
YVD-12	YVD-12-160309	03/09/2016	N	59029941	**95.0**	-	-	**35.0**	-	-	**2.60**	-	-	**73.0**	-	-	**73**	-	-	5	U	-
YVD-12	YVD-D3-160309	03/09/2016	FD	59029941	**95.0**	-	-	**36.0**	-	-	**2.50**	-	-	**72.0**	-	-	**79**	-	-	0.5	U	-
YVD-12	YVD-12-160622	6/22/2016	N	59037271	**89.0**	-	-	**36.0**	-	-	**2.90**	-	-	**72.0**	-	-	**90**	-	-	5	U	-
YVD-12	YVD-12-160929	9/29/2016	N	K1611704	**88.9**	-	-	**37.2**	-	-	**2.28**	-	-	**67.7**	-	-	**83.5**	-	-	**0.33**	-	-
YVD-12	YVD-12-161213	12/13/2016	N	K1615083	**93.4**	-	-	**33.6**	-	-	**2.29**	-	-	**67.9**	-	-	**81.7**	-	-	**0.33**	-	-
YVD-12	YVD-030917-20	3/9/2017	N	K1702404	**97.3**	-	-	**35.4**	-	-	**2.27**	-	-	**67.4**	-	-	**91.7**	-	-	**0.38**	-	-
YVD-12	YVD-060617-25	6/6/2017	N	K1705833	**98.4**	-	-	**35.8**	-	-	**2.24**	-	-	**66.5**	-	-	**94.1**	-	-	**0.32**	-	-
YVD-12	YVD-092517-15	9/25/2017	N	K1710333	**97.6**	-	-	**34.2**	-	-	**2.27**	-	-	**64.4**	-	-	**94.7**	-	-	**0.34**	-	-
YVD-12	YVD-120417-03	12/4/2017	N	K1713026	**89.7**	-	-	**32.9**	-	-	**2.06**	-	-	**70.8**	-	-	**85.4**	-	-	**0.41**	-	-
YVD-12	YVD-031918-13	3/19/2018	N	870610	**98.0**	-	-	**35.25**	-	-	**2.30**	-	-	**70.5**	-	-	**97.7**	-	-	**0.35**	-	-
YVD-13	YVD-13-130919	09/19/2013	N	SWI0138	**102**	-	-	**29.9**	-	-	**4.30**	-	-	**114**	-	-	**90.3**	-	-	5	U	-
YVD-13	YVD-13-131211	12/11/2013	N	SWL0073	**101**	-	-	**29.4**	-	-	**4.16**	-	-	**110**	-	-	**77.8**	-	-	5	U	-
YVD-13	YVD-13-140318	03/18/2014	N	SXC0095	**102**	-	-	**29.3**	-	-	**4.27**	-	-	**106**	-	-	**80.3**	-	-	5	U	-
YVD-13	YVD-13-140603	06/03/2014	N	SXF0017	**94.8**	-	-	**27.7**	-	-	**3.70**	-	-	**113**	-	-	**39.7**	-	-	2	U	-
YVD-13	YVD-13-140923	09/23/2014	N	SXI0173	**104**	-	-	**29.0**	-	-	**4.40**	-	-	**118**	-	-	**81.7**	-	-	5	U	-

Table 8
Historical Groundwater Analytical Results

				Analyte	Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
				Analytical Method	EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-11	YVD-11-160309	03/09/2016	N	59029711	**65**	-	-	2	U	-	**140**	J+	MSD	-	-	-	**0.14**	J	FDP	0.25	R	MSD
YVD-11	YVD-11-160621	6/21/2016	N	59037151	**71**	-	-	2	U	-	**130**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-11	YVD-11-160927	9/27/2016	N	K1611629	**48.9**	J	HTQ	0.10	U	-	**100**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-11	YVD-11-161214	12/14/2016	N	K1615126	**55.5**	-	-	0.10	U	-	**104**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-11	YVD-031317-37	3/13/2017	N	K1702489	**77.3**	-	-	**0.06**	J	-	**99.8**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-11	YVD-060517-10	6/5/2017	N	K1705702	**97.1**	-	-	0.10	U	-	**133**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-11	YVD-092617-26	9/26/2017	N	K1710381	**103**	J	HTQ	0.10	UJ	HTQ	**219**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-11	YVD-120417-06	12/4/2017	N	K1713026	**84.8**	-	-	0.10	U	-	**124**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-11	YVD-031918-12	3/19/2018	N	870634	**61.8**	-	-	0.05	U	-	**103**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-11	YVD-031918-14	3/19/2018	FD	870634	**61.2**	-	-	0.05	U	-	**100**	-	-	0.07	U	-	-	-	-	-	-	-
YVD-12	YVD-12-130919	09/19/2013	N	SWI0142	-	-	-	-	-	-	**245**	-	-	-	-	-	0.1	U	-	0.608	R	FBK
YVD-12	YVD-12-130925	09/25/2013	N	SWI0175	**15**	-	-	2	U	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-12	YVD-12-131211	12/11/2013	N	SWL0073	**20.1**	-	-	2	U	-	**262**	-	-	-	-	-	0.02	UJ	MSD	0.23	R	MSD, FB
YVD-12	YVD-12-140318	03/18/2014	N	SXC0095	**17**	-	-	2	U	-	**236**	J-	MSD	-	-	-	**0.248**	-	-	**0.564**	-	-
YVD-12	YVD-12-140603	06/03/2014	N	SXF0017	**1.44**	-	-	0.2	U	-	**21.3**	J-	MSD	-	-	-	0.1	U	-	**0.415**	-	-
YVD-12	YVD-12-140922	09/22/2014	N	SXI0148	**13.3**	-	-	2	U	-	**200**	-	-	-	-	-	0.1	U	-	**0.669**	-	-
YVD-12	YVD-D2-140922	09/22/2014	FD	SXI0148	**15.5**	-	-	0.8	U	-	**200**	-	-	-	-	-	0.1	U	-	**0.653**	-	-
YVD-12	YVD-12-141216	12/16/2014	N	SXL0121	**15.1**	-	-	2	U	-	**228**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-12	YVD-12-150317	03/17/2015	N	5904541	**14**	J-	MSD	2	U	-	**190**	J-	MSD	-	-	-	0.1	U	-	**0.56**	J-	MSD
YVD-12	YVD-12-150617	06/17/2015	N	59010961	**12**	-	-	2	U	-	**180**	-	-	-	-	-	0.1	U	-	**0.35**	J-	MSD
YVD-12	YVD-12-150924	09/24/2015	N	59020391	**15**	J+	MSD	2	U	-	**210**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
YVD-12	YVD-12-151216	12/16/2015	N	59025501	**14**	-	-	2	U	-	**180**	-	-	-	-	-	0.1	R	MSD	**0.58**	J-	MSD
YVD-12	YVD-12-160309	03/09/2016	N	59029941	**13**	-	-	2	U	-	**170**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-12	YVD-D3-160309	03/09/2016	FD	59029941	**15**	-	-	0.2	U	-	**180**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-12	YVD-12-160622	6/22/2016	N	59037271	**14**	-	-	2	U	-	**180**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
YVD-12	YVD-12-160929	9/29/2016	N	K1611704	**13.5**	-	-	0.10	U	-	**158**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-12	YVD-12-161213	12/13/2016	N	K1615083	**12.2**	-	-	0.10	U	-	**150**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-12	YVD-030917-20	3/9/2017	N	K1702404	**13.4**	-	-	0.10	U	-	**227**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-12	YVD-060617-25	6/6/2017	N	K1705833	**13.6**	-	-	0.10	U	-	**155**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-12	YVD-092517-15	9/25/2017	N	K1710333	**14.0**	-	-	0.10	U	-	**177**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-12	YVD-120417-03	12/4/2017	N	K1713026	**13.4**	-	-	0.10	U	-	**169**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-12	YVD-031918-13	3/19/2018	N	870610	**13.6**	-	-	0.05	U	-	**167**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-13	YVD-13-130919	09/19/2013	N	SWI0138	**27.6**	-	-	2	U	-	**365**	-	-	-	-	-	0.1	U	-	0.395	R	FBK
YVD-13	YVD-13-131211	12/11/2013	N	SWL0073	**21.7**	-	-	2	U	-	**278**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
YVD-13	YVD-13-140318	03/18/2014	N	SXC0095	**24.2**	-	-	2	U	-	**312**	J-	MSD	-	-	-	**0.288**		-	**0.613**	-	-
YVD-13	YVD-13-140603	06/03/2014	N	SXF0017	**12.4**	-	-	0.8	U	-	**151**	J-	MSD	-	-	-	**0.103**		-	**0.727**	-	-
YVD-13	YVD-13-140923	09/23/2014	N	SXI0173	**26.7**	-	-	2	U	-	**328**	-	-	-	-	-	0.1	U	-	**9.13**	J+	MSD

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-11	YVD-11-160309	03/09/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
YVD-11	YVD-11-160621	6/21/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**340**	-	-	**340**	-	-
YVD-11	YVD-11-160927	9/27/2016	N	K1611629	-	-	-	**0.071**	-	-	-	-	-	-	-	-	**375**	-	-	**375**	-	-
YVD-11	YVD-11-161214	12/14/2016	N	K1615126	-	-	-	**0.421**	-	-	-	-	-	-	-	-	**352**	-	-	**352**	-	-
YVD-11	YVD-031317-37	3/13/2017	N	K1702489	-	-	-	**0.016**	-	-	-	-	-	-	-	-	**353**	-	-	**353**	-	-
YVD-11	YVD-060517-10	6/5/2017	N	K1705702	-	-	-	**0.029**	-	-	-	-	-	-	-	-	**341**	-	-	**341**	-	-
YVD-11	YVD-092617-26	9/26/2017	N	K1710381	-	-	-	**0.006**	J	-	-	-	-	-	-	-	**347**	-	-	**347**	-	-
YVD-11	YVD-120417-06	12/4/2017	N	K1713026	-	-	-	0.015	U	MBK	-	-	-	-	-	-	**361**	-	-	**361**	-	-
YVD-11	YVD-031918-12	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**386**	-	-	**386**	-	-
YVD-11	YVD-031918-14	3/19/2018	FD	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**387**	-	-	**387**	-	-
YVD-12	YVD-12-130919	09/19/2013	N	SWI0142	-	-	-	-	-	-	**0.356**	J+	FBK	-	-	-	**204**	-	-	**205**	-	-
YVD-12	YVD-12-130925	09/25/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-12	YVD-12-131211	12/11/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	**0.218**	-	-	**194**	-	-	**195**	-	-
YVD-12	YVD-12-140318	03/18/2014	N	SXC0095	**0.22**	-	-	-	-	-	-	-	-	-	-	-	**204**	-	-	**205**	-	-
YVD-12	YVD-12-140603	06/03/2014	N	SXF0017	**0.28**	J+	FBK	-	-	-	-	-	-	-	-	-	**199**	-	-	**200**	-	-
YVD-12	YVD-12-140922	09/22/2014	N	SXI0148	**0.25**	-	-	-	-	-	-	-	-	-	-	-	**189**	-	-	**190**	-	-
YVD-12	YVD-D2-140922	09/22/2014	FD	SXI0148	**0.2**	-	-	-	-	-	-	-	-	-	-	-	**194**	-	-	**195**	-	-
YVD-12	YVD-12-141216	12/16/2014	N	SXL0121	**0.25**	-	-	-	-	-	-	-	-	-	-	-	**194**	-	-	**195**	-	-
YVD-12	YVD-12-150317	03/17/2015	N	5904541	**0.31**	-	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-12	YVD-12-150617	06/17/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-12	YVD-12-150924	09/24/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-12	YVD-12-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
YVD-12	YVD-12-160309	03/09/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**210**	-	-	**210**	-	-
YVD-12	YVD-D3-160309	03/09/2016	FD	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**200**	-	-	**200**	-	-
YVD-12	YVD-12-160622	6/22/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**190**	-	-	**190**	-	-
YVD-12	YVD-12-160929	9/29/2016	N	K1611704	-	-	-	**0.026**	-	-	-	-	-	-	-	-	**188**	-	-	**188**	-	-
YVD-12	YVD-12-161213	12/13/2016	N	K1615083	-	-	-	**0.018**	-	-	-	-	-	-	-	-	**183**	-	-	**183**	-	-
YVD-12	YVD-030917-20	3/9/2017	N	K1702404	-	-	-	**0.008**	J	-	-	-	-	-	-	-	**132**	-	-	**132**	-	-
YVD-12	YVD-060617-25	6/6/2017	N	K1705833	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**183**	-	-	**183**	-	-
YVD-12	YVD-092517-15	9/25/2017	N	K1710333	-	-	-	0.010	U	-	-	-	-	-	-	-	**188**	-	-	**188**	-	-
YVD-12	YVD-120417-03	12/4/2017	N	K1713026	-	-	-	0.013	U	MBK	-	-	-	-	-	-	**186**	-	-	**186**	-	-
YVD-12	YVD-031918-13	3/19/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**181**	-	-	**181**	-	-
YVD-13	YVD-13-130919	09/19/2013	N	SWI0138	-	-	-	-	-	-	0.175	R	FBK	-	-	-	**134**	-	-	**135**	-	-
YVD-13	YVD-13-131211	12/11/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	**0.11**	-	-	**139**	-	-	**140**	-	-
YVD-13	YVD-13-140318	03/18/2014	N	SXC0095	**0.17**	-	-	-	-	-	-	-	-	-	-	-	**134**	-	-	**135**	-	-
YVD-13	YVD-13-140603	06/03/2014	N	SXF0017	**0.078**	J+	FBK	-	-	-	-	-	-	-	-	-	**129**	-	-	**130**	-	-
YVD-13	YVD-13-140923	09/23/2014	N	SXI0173	0.05	U	-	-	-	-	-	-	-	-	-	-	**124**	-	-	**125**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-13	YVD-13-141217	12/17/2014	N	SXL0121	**114**	-	-	**33.1**	-	-	**4.74**	-	-	**119**	-	-	**86.5**	-	-	5	U	-
YVD-13	YVD-13-150317	03/17/2015	N	5904541	**100**	-	-	**30.0**	-	-	**4.00**	-	-	**120**	-	-	**72**	-	-	5	U	-
YVD-13	YVD-13-150617	06/17/2015	N	59010961	**110**	-	-	**30.0**	-	-	**4.40**	J+	MSD	**120**	J+	MSD	**81**	-	-	5	U	-
YVD-13	YVD-13-150924	09/24/2015	N	59020391	**98.0**	-	-	**31.0**	-	-	**4.10**	-	-	**110**	-	-	**70**	-	-	5	U	-
YVD-13	YVD-13-151216	12/16/2015	N	59025501	**100**	-	-	**30.0**	-	-	**4.30**	-	-	**120**	-	-	**69**	-	-	5	U	-
YVD-13	YVD-13-160309	03/09/2016	N	59029941	**100**	-	-	**29.0**	-	-	**4.20**	-	-	**120**	-	-	**85**	-	-	5	U	-
YVD-13	YVD-13-160622	6/22/2016	N	59037271	**100**	-	-	**30.0**	-	-	**4.20**	-	-	**120**	-	-	**76**	-	-	5	U	-
YVD-13	YVD-13-160928	9/28/2016	N	K1611698	**101**	-	-	**28.1**	-	-	**3.91**	-	-	**113**	-	-	**60.0**	-	-	**0.30**	-	-
YVD-13	YVD-13-161214	12/13/2016	N	K1615083	**100**	-	-	**27.5**	-	-	**4.02**	-	-	**111**	-	-	**57.3**	-	-	**0.33**	-	-
YVD-13	YVD-030717-08	3/7/2017	N	K1702324	**96.9**	-	-	**26.7**	-	-	**3.63**	-	-	**105**	-	-	**52.8**	-	-	**0.35**	-	-
YVD-13	YVD-030717-10	3/7/2017	FD	K1702324	**97.3**	-	-	**27.1**	-	-	**3.71**	-	-	**107**	-	-	**53.6**	-	-	**0.37**	-	-
YVD-13	YVD-060717-33	6/7/2017	N	K1705833	**99.0**	-	-	**27.9**	-	-	**3.83**	-	-	**114**	-	-	**54.6**	-	-	**0.30**	-	-
YVD-13	YVD-092617-25	9/26/2017	N	K1710333	**94.9**	-	-	**24.5**	-	-	**3.66**	-	-	**105**	-	-	**52.8**	-	-	**0.33**	-	-
YVD-13	YVD-120417-07	12/4/2017	N	K1713026	**93.4**	-	-	**24.5**	-	-	**3.41**	-	-	**102**	-	-	**53.9**	-	-	**0.36**	-	-
YVD-13	YVD-031918-19	3/19/2018	N	870634	**96.0**	-	-	**25.45**	-	-	**3.82**	-	-	**102**	-	-	**63.0**	-	-	**0.34**	-	-
YVD-14	YVD-14-130918	09/18/2013	N	SWI0123	**260**	-	-	**65.4**	-	-	**3.45**	-	-	**110**	-	-	**118**	-	-	5	U	-
YVD-14	YVD-14-131212	12/12/2013	N	SWL0078	**249**	-	-	**65.6**	-	-	**3.29**	-	-	**108**	-	-	**104**	-	-	5	U	-
YVD-14	YVD-14-140319	03/19/2014	N	SXC0107	**248**	-	-	**64.5**	-	-	**3.37**	-	-	**102**	-	-	**108**	-	-	5	U	-
YVD-14	YVD-14-140604	06/04/2014	N	SXF0025	**240**	-	-	**63.2**	-	-	**3.46**	-	-	**112**	-	-	**109**	-	-	5	U	-
YVD-14	YVD-14-140924	09/24/2014	N	SXI0173	**268**	-	-	**72.0**	-	-	**4.10**	-	-	**124**	-	-	**110**	-	-	5	U	-
YVD-14	YVD-14-141217	12/17/2014	N	SXL0121	**252**	-	-	**70.9**	-	-	**3.83**	-	-	**113**	-	-	**110**	-	-	5	U	-
YVD-14	YVD-14-150318	03/18/2015	N	5904651	**260**	-	-	**70.0**	-	-	**3.60**	J-	MSD	**130**	-	-	**110**	-	-	5	U	-
YVD-14R	YVD-14R-151216	12/16/2015	N	59025501	**250**	-	-	**69.0**	-	-	**4.40**	-	-	**120**	-	-	**110**	-	-	5	U	-
YVD-14R	YVD-14R-160309	03/09/2016	N	59029941	**250**	-	-	**67.0**	-	-	**4.40**	-	-	**130**	-	-	**110**	-	-	5	U	-
YVD-14R	YVD-14R-160622	6/22/2016	N	59037271	**230**	-	-	**67.0**	-	-	**4.30**	-	-	**130**	-	-	**110**	-	-	5	U	-
YVD-14R	YVD-14R-160928	9/28/2016	N	K1611698	**252**	-	-	**65.9**	-	-	**4.05**	-	-	**126**	-	-	**95.7**	-	-	**0.16**	J	-
YVD-14R	YVD-14R-161212	12/12/2016	N	K1615029	**251**	-	-	**65.7**	-	-	**4.09**	-	-	**119**	-	-	**94.7**	-	-	**0.24**	-	-
YVD-14R	YVD-D1-161212	12/12/2016	FD	K1615029	**255**	-	-	**66.5**	-	-	**4.17**	-	-	**121**	-	-	**93.3**	-	-	**0.19**	-	-
YVD-14R	YVD-030917-19	3/9/2017	N	K1702404	**257**	-	-	**66.1**	-	-	**3.80**	-	-	**117**	-	-	**97.0**	-	-	**0.18**	J	-
YVD-14R	YVD-030917-21	3/9/2017	FD	K1702404	**251**	-	-	**65.2**	-	-	**3.75**	-	-	**115**	-	-	**95.0**	-	-	**0.19**	J	-
YVD-14R	YVD-060517-06	6/5/2017	N	K1705702	**243**	-	-	**62.3**	-	-	**3.53**	-	-	**110**	-	-	**98.4**	-	-	**0.20**	-	-
YVD-14R	YVD-092517-14	9/25/2017	N	K1710333	**238**	-	-	**61.2**	-	-	**3.85**	-	-	**121**	-	-	**99.8**	-	-	**0.18**	J	-
YVD-14R	YVD-120417-12	12/4/2017	N	K1713026	**230**	-	-	**59.3**	-	-	**3.54**	-	-	**116**	-	-	**98.3**	-	-	**0.22**	-	-
YVD-14R	YVD-031818-11	3/18/2018	N	870610	**232**	-	-	**60.00**	-	-	**3.96**	-	-	**127**	-	-	**102**	-	-	**0.13**	-	-
YVD-15	YVD-15-130917	09/17/2013	N	SWI0123	**125**	-	-	**51.6**	-	-	**2.73**	-	-	**127**	-	-	**62.8**	-	-	5	U	-
YVD-15	YVD-15-131212	12/12/2013	N	SWL0078	**131**	-	-	**59.4**	-	-	**4.48**	-	-	**114**	-	-	**120**	-	-	5	U	-
YVD-15	YVD-15-140319	03/19/2014	N	SXC0107	**124**	-	-	**57.9**	-	-	**5.23**	-	-	**93.5**	-	-	**54.9**	-	-	5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-13	YVD-13-141217	12/17/2014	N	SXL0121	**27.3**	-	-	2	U	-	**355**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-13	YVD-13-150317	03/17/2015	N	5904541	**24**	J-	MSD	2	U	-	**290**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-13	YVD-13-150617	06/17/2015	N	59010961	**27**	-	-	2	U	-	**310**	-	-	-	-	-	0.1	U	-	**0.68**	J-	MSD
YVD-13	YVD-13-150924	09/24/2015	N	59020391	**26**	J+	MSD	2	U	-	**330**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
YVD-13	YVD-13-151216	12/16/2015	N	59025501	**26**	-	-	2	U	-	**310**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-13	YVD-13-160309	03/09/2016	N	59029941	**32**	-	-	2	U	-	**390**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	DP, MS
YVD-13	YVD-13-160622	6/22/2016	N	59037271	**28**	-	-	2	U	-	**390**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
YVD-13	YVD-13-160928	9/28/2016	N	K1611698	**23.5**	J	HTQ	0.10	U	-	**321**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
YVD-13	YVD-13-161214	12/13/2016	N	K1615083	**23.1**	-	-	0.10	U	-	**313**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-13	YVD-030717-08	3/7/2017	N	K1702324	**23.3**	J	HTQ	**0.05**	J	HTQ	**277**	-	-	-	-	-	1	U	-	0.5	U	-
YVD-13	YVD-030717-10	3/7/2017	FD	K1702324	**23.7**	J	HTQ	**0.04**	J	HTQ	**280**	-	-	-	-	-	1	U	-	0.5	U	-
YVD-13	YVD-060717-33	6/7/2017	N	K1705833	**22.7**	-	-	0.10	U	-	**282**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-13	YVD-092617-25	9/26/2017	N	K1710333	**23.2**	-	-	0.10	U	-	**298**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-13	YVD-120417-07	12/4/2017	N	K1713026	**24.3**	-	-	0.10	U	-	**271**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-13	YVD-031918-19	3/19/2018	N	870634	**25.8**	-	-	0.05	U	-	**249**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-14	YVD-14-130918	09/18/2013	N	SWI0123	**112**	-	-	2	U	-	**213**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-14	YVD-14-131212	12/12/2013	N	SWL0078	**105**	-	-	2	U	-	**186**	-	-	-	-	-	0.02	U	-	0.7957	U	ERL
YVD-14	YVD-14-140319	03/19/2014	N	SXC0107	**101**	-	-	2	U	-	**190**	-	-	-	-	-	0.1	U	-	**0.562**	J-	MSD
YVD-14	YVD-14-140604	06/04/2014	N	SXF0025	**102**	-	-	2	U	-	**191**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-14	YVD-14-140924	09/24/2014	N	SXI0173	**96.7**	-	-	2	U	-	**178**	-	-	-	-	-	**0.107**	-	-	0.25	U	-
YVD-14	YVD-14-141217	12/17/2014	N	SXL0121	**96.1**	-	-	2	U	-	**185**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-14	YVD-14-150318	03/18/2015	N	5904651	**91**	-	-	2	U	-	**180**	-	-	-	-	-	**0.11**	-	-	0.25	UJ	MSD
YVD-14R	YVD-14R-151216	12/16/2015	N	59025501	**98**	-	-	2	U	-	**160**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-14R	YVD-14R-160309	03/09/2016	N	59029941	**100**	-	-	2	U	-	**180**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	DP, MS
YVD-14R	YVD-14R-160622	6/22/2016	N	59037271	**110**	-	-	2	U	-	**150**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
YVD-14R	YVD-14R-160928	9/28/2016	N	K1611698	**92.1**	J	HTQ	0.10	U	-	**140**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
YVD-14R	YVD-14R-161212	12/12/2016	N	K1615029	**92.3**	J	HTQ	0.10	UJ	HTQ	**158**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-D1-161212	12/12/2016	FD	K1615029	**92.3**	J	HTQ	0.10	UJ	HTQ	**155**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-030917-19	3/9/2017	N	K1702404	**91.1**	-	-	0.10	U	-	**147**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-030917-21	3/9/2017	FD	K1702404	**92.2**	J	HTQ	0.10	U	-	**151**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-060517-06	6/5/2017	N	K1705702	**95.7**	-	-	0.10	U	-	**142**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-092517-14	9/25/2017	N	K1710333	**97.3**	-	-	0.10	U	-	**138**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-120417-12	12/4/2017	N	K1713026	**96.7**	-	-	0.10	U	-	**124**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-14R	YVD-031818-11	3/18/2018	N	870610	**90.2**	-	-	0.05	U	-	**128**	-	-	**0.17**	-	-	-	-	-	0.5	U	-
YVD-15	YVD-15-130917	09/17/2013	N	SWI0123	**72.5**	-	-	2	U	-	**51.5**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-15	YVD-15-131212	12/12/2013	N	SWL0078	**71.2**	-	-	2	U	-	**114**	-	-	-	-	-	0.02	U	-	0.2	U	-
YVD-15	YVD-15-140319	03/19/2014	N	SXC0107	**47.4**	-	-	2	U	-	**44.7**	-	-	-	-	-	**0.112**	-	-	**0.553**	J-	MSD

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-13	YVD-13-141217	12/17/2014	N	SXL0121	0.1	U	-	-	-	-	-	-	-	-	-	-	**124**	-	-	**125**	-	-
YVD-13	YVD-13-150317	03/17/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
YVD-13	YVD-13-150617	06/17/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-13	YVD-13-150924	09/24/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
YVD-13	YVD-13-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-13	YVD-13-160309	03/09/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**140**	-	-	**140**	-	-
YVD-13	YVD-13-160622	6/22/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
YVD-13	YVD-13-160928	9/28/2016	N	K1611698	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**133**	-	-	**133**	-	-
YVD-13	YVD-13-161214	12/13/2016	N	K1615083	-	-	-	**0.047**	-	-	-	-	-	-	-	-	**132**	-	-	**132**	-	-
YVD-13	YVD-030717-08	3/7/2017	N	K1702324	-	-	-	**0.010**	J	-	-	-	-	-	-	-	**138**	-	-	**138**	-	-
YVD-13	YVD-030717-10	3/7/2017	FD	K1702324	-	-	-	**0.009**	J	-	-	-	-	-	-	-	**139**	-	-	**139**	-	-
YVD-13	YVD-060717-33	6/7/2017	N	K1705833	-	-	-	**0.014**	-	-	-	-	-	-	-	-	**134**	-	-	**134**	-	-
YVD-13	YVD-092617-25	9/26/2017	N	K1710333	-	-	-	0.010	U	-	-	-	-	-	-	-	**142**	-	-	**142**	-	-
YVD-13	YVD-120417-07	12/4/2017	N	K1713026	-	-	-	0.015	U	MBK	-	-	-	-	-	-	**141**	-	-	**141**	-	-
YVD-13	YVD-031918-19	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**138**	-	-	**138**	-	-
YVD-14	YVD-14-130918	09/18/2013	N	SWI0123	-	-	-	-	-	-	0.1	U	-	-	-	-	**605**	-	-	**605**	-	-
YVD-14	YVD-14-131212	12/12/2013	N	SWL0078	-	-	-	-	-	-	-	-	-	0.06	U	-	**544**	-	-	**545**	-	-
YVD-14	YVD-14-140319	03/19/2014	N	SXC0107	0.05	U	-	-	-	-	-	-	-	-	-	-	**634**	-	-	**635**	-	-
YVD-14	YVD-14-140604	06/04/2014	N	SXF0025	**0.078**	-	-	-	-	-	-	-	-	-	-	-	**569**	-	-	**570**	-	-
YVD-14	YVD-14-140924	09/24/2014	N	SXI0173	**0.087**	J+	FBK	-	-	-	-	-	-	-	-	-	**554**	-	-	**555**	-	-
YVD-14	YVD-14-141217	12/17/2014	N	SXL0121	0.1	U	-	-	-	-	-	-	-	-	-	-	**539**	-	-	**540**	-	-
YVD-14	YVD-14-150318	03/18/2015	N	5904651	0.25	U	-	-	-	-	-	-	-	-	-	-	**530**	-	-	**530**	-	-
YVD-14R	YVD-14R-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**550**	-	-	**550**	-	-
YVD-14R	YVD-14R-160309	03/09/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**600**	-	-	**600**	-	-
YVD-14R	YVD-14R-160622	6/22/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**490**	-	-	**490**	-	-
YVD-14R	YVD-14R-160928	9/28/2016	N	K1611698	-	-	-	**0.015**	-	-	-	-	-	-	-	-	**535**	-	-	**535**	-	-
YVD-14R	YVD-14R-161212	12/12/2016	N	K1615029	-	-	-	**0.058**	-	-	-	-	-	-	-	-	**578**	-	-	**578**	-	-
YVD-14R	YVD-D1-161212	12/12/2016	FD	K1615029	-	-	-	**0.092**	-	-	-	-	-	-	-	-	**571**	-	-	**571**	-	-
YVD-14R	YVD-030917-19	3/9/2017	N	K1702404	-	-	-	**0.020**	-	-	-	-	-	-	-	-	**526**	-	-	**526**	-	-
YVD-14R	YVD-030917-21	3/9/2017	FD	K1702404	-	-	-	**0.019**	-	-	-	-	-	-	-	-	**514**	-	-	**514**	-	-
YVD-14R	YVD-060517-06	6/5/2017	N	K1705702	-	-	-	**0.038**	-	-	-	-	-	-	-	-	**505**	-	-	**505**	-	-
YVD-14R	YVD-092517-14	9/25/2017	N	K1710333	-	-	-	**0.018**	-	-	-	-	-	-	-	-	**515**	-	-	**515**	-	-
YVD-14R	YVD-120417-12	12/4/2017	N	K1713026	-	-	-	**0.024**	-	-	-	-	-	-	-	-	**504**	-	-	**504**	-	-
YVD-14R	YVD-031818-11	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**514**	-	-	**514**	-	-
YVD-15	YVD-15-130917	09/17/2013	N	SWI0123	-	-	-	-	-	-	0.1	U	-	-	-	-	**514**	-	-	**515**	-	-
YVD-15	YVD-15-131212	12/12/2013	N	SWL0078	-	-	-	-	-	-	-	-	-	**0.238**	-	-	**494**	-	-	**495**	-	-
YVD-15	YVD-15-140319	03/19/2014	N	SXC0107	**0.22**	-	-	-	-	-	-	-	-	-	-	-	**534**	-	-	**535**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-15	YVD-15-140603	06/03/2014	N	SXF0025	**138**	-	-	**64.7**	-	-	**5.20**	-	-	**110**	-	-	**82.5**	-	-	5	U	-
YVD-15	YVD-15-140924	09/24/2014	N	SXI0173	**132**	-	-	**56.9**	-	-	**3.11**	-	-	**135**	-	-	**58.7**	-	-	5	U	-
YVD-15	YVD-15-141217	12/17/2014	N	SXL0121	**175**	-	-	**81.6**	-	-	**3.67**	-	-	**60.3**	-	-	**57.6**	-	-	5	U	-
YVD-15	YVD-15-150317	03/17/2015	N	5904651	**280**	-	-	**130.0**	-	-	**8.40**	J-	MSD	**160**	-	-	**65**	-	-	5	U	-
YVD-15	YVD-15-150617	06/17/2015	N	59011021	**140**	-	-	**66.0**	J	RPD	**4.60**	J	RPD	**110**	J	RPD	**42**	-	-	0.5	U	-
YVD-15	YVD-15-150925	09/25/2015	N	59020431	**98.0**	-	-	**46.0**	-	-	**3.90**	-	-	**80.0**	-	-	**22**	-	-	5	U	-
YVD-15	YVD-15-151215	12/15/2015	N	59025431	**120**	-	-	**59.0**	-	-	**4.10**	-	-	**80.0**	-	-	**37**	-	-	5	U	-
YVD-15	YVD-15-160309	03/09/2016	N	59029711	**120**	-	-	**60.0**	-	-	**4.20**	-	-	**75.0**	-	-	**32**	-	-	5	U	-
YVD-15	YVD-15-160621	6/21/2016	N	59037271	**110**	-	-	**56.0**	-	-	**3.50**	-	-	**74.0**	-	-	**26**	-	-	5	U	-
YVD-15	YVD-15-160928	9/28/2016	N	K1611629	**112**	-	-	**50.9**	-	-	**3.15**	-	-	**66.2**	-	-	**22.5**	-	-	**0.29**	-	-
YVD-15	YVD-15-161215	12/15/2016	N	K1615126	**113**	-	-	**50.4**	-	-	**3.40**	-	-	**59.1**	-	-	**22.1**	-	-	**0.32**	-	-
YVD-15	YVD-030917-23	3/9/2017	N	K1702404	**119**	-	-	**52.9**	-	-	**2.95**	-	-	**55.3**	-	-	**23.0**	-	-	**0.34**	-	-
YVD-15	YVD-060617-20	6/6/2017	N	K1705754	**126**	-	-	**54.6**	-	-	**2.98**	-	-	**62.9**	-	-	**21.8**	-	-	**0.32**	-	-
YVD-15	YVD-092517-10	9/25/2017	N	K1710333	**112**	-	-	**50.2**	-	-	**3.21**	-	-	**74.5**	-	-	**22.1**	-	-	**0.35**	-	-
YVD-15	YVD-120517-28	12/5/2017	N	K1713091	**112**	-	-	**48.0**	-	-	**2.89**	-	-	**78.6**	-	-	**21.8**	-	-	**0.34**	-	-
YVD-15	YVD-031818-09	3/18/2018	N	870610	**104**	-	-	**46.60**	-	-	**3.25**	-	-	**94.5**	-	-	**21.7**	-	-	**0.32**	-	-
YVD-16	YVD-16-130923	09/23/2013	N	SWI0178	**85.0**	-	-	**32.9**	-	-	**6.16**	-	-	**81.7**	-	-	-	-	-	-	-	-
YVD-16	YVD-16-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	**44.1**	-	-	5	U	-
YVD-16	YVD-16-131212	12/12/2013	N	SWL0073	**87.7**	-	-	**32.1**	-	-	**5.25**	-	-	**79.8**	-	-	**46.7**	-	-	5	U	-
YVD-16	YVD-16-140318	03/18/2014	N	SXC0107	**105.0**	-	-	**53.2**	-	-	**15.00**	-	-	**75.5**	-	-	**46.1**	-	-	5	U	-
YVD-16	YVD-16-140603	06/03/2014	N	SXF0017	**86.3**	-	-	**37.0**	-	-	**8.47**	-	-	**78.4**	-	-	**36.7**	-	-	2	U	-
YVD-16	YVD-16-140923	09/23/2014	N	SXI0173	**99.2**	-	-	**38.9**	-	-	**7.48**	-	-	**94.1**	-	-	**38**	-	-	2.5	U	-
YVD-16	YVD-16-141217	12/17/2014	N	SXL0121	**94.9**	-	-	**37.1**	-	-	**6.77**	-	-	**83.7**	-	-	**37.9**	-	-	2.5	U	-
YVD-16	YVD-D3-141217	12/17/2014	FD	SXL0121	**92.9**	-	-	**36.2**	-	-	**6.27**	-	-	**81.7**	-	-	**39.9**	-	-	0.5	U	-
YVD-16	YVD-16-150317	03/17/2015	N	5904651	**93.0**	-	-	**34.0**	-	-	**6.10**	J-	MSD	**87.0**	-	-	**39**	-	-	2.5	U	-
YVD-16	YVD-16-150616	06/16/2015	N	59010961	**96.0**	-	-	**35.0**	-	-	**6.20**	J+	MSD	**91.0**	J+	MSD	**43**	-	-	2.5	U	-
YVD-16	YVD-16-150923	09/23/2015	N	59020281	**88.0**	-	-	**37.0**	-	-	**6.50**	-	-	**85.0**	-	-	**39**	-	-	2.5	U	-
YVD-16	YVD-16-151215	12/15/2015	N	59025431	**89.0**	-	-	**34.0**	-	-	**5.70**	-	-	**85.0**	-	-	**38**	-	-	2.5	U	-
YVD-16	YVD-16-160309	03/09/2016	N	59029711	**90.0**	-	-	**36.0**	-	-	**7.40**	-	-	**86.0**	-	-	**39**	-	-	2.5	U	-
YVD-16	YVD-16-160621	6/21/2016	N	59037151	**85.0**	-	-	**33.0**	-	-	**5.90**	-	-	**86.0**	-	-	**42**	-	-	2.5	U	-
YVD-16	YVD-D2-160621	6/21/2016	FD	59037151	**86.0**	-	-	**34.0**	-	-	**6.00**	-	-	**88.0**	-	-	**40**	-	-	0.5	U	-
YVD-16	YVD-16-160928	9/28/2016	N	K1611629	**92.4**	-	-	**33.2**	-	-	**5.69**	-	-	**90.2**	-	-	**33.3**	-	-	**0.22**	-	-
YVD-16	YVD-16-161215	12/15/2016	N	K1615126	**88.4**	-	-	**31.1**	-	-	**5.59**	-	-	**82.5**	-	-	**33.7**	-	-	**0.24**	-	-
YVD-16	YVD-030917-22	3/9/2017	N	K1702404	**87.1**	-	-	**31.2**	-	-	**5.16**	-	-	**79.8**	-	-	**33.9**	-	-	**0.25**	-	-
YVD-16	YVD-060517-12	6/5/2017	N	K1705754	**86.8**	-	-	**31.6**	-	-	**5.08**	-	-	**83.0**	-	-	**33.6**	-	-	**0.25**	-	-
YVD-16	YVD-092617-28	9/26/2017	N	K1710381	**89**	-	-	**31.7**	-	-	**5.44**	-	-	**84.1**	-	-	**32.8**	-	-	**0.23**	-	-
YVD-16	YVD-120517-22	12/5/2017	N	K1713091	**87.9**	-	-	**30.1**	-	-	**5.17**	-	-	**80.1**	-	-	**33.3**	-	-	**0.24**	-	-
YVD-16	YVD-031918-16	3/19/2018	N	870634	**88.5**	-	-	**30.25**	-	-	**5.25**	-	-	**79.0**	-	-	**34.4**	-	-	**0.20**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-15	YVD-15-140603	06/03/2014	N	SXF0025	**88.1**	-	-	2	U	-	**39**	-	-	-	-	-	0.1	U	-	**0.475**	J-	MSD
YVD-15	YVD-15-140924	09/24/2014	N	SXI0173	**54.8**	-	-	2	U	-	**50.7**	-	-	-	-	-	**0.246**	-	-	**1.19**	J+	MSD
YVD-15	YVD-15-141217	12/17/2014	N	SXL0121	**66.9**	-	-	2	U	-	**53.4**	-	-	-	-	-	0.1	U	-	**0.414**	J-	MSD
YVD-15	YVD-15-150317	03/17/2015	N	5904651	**67**	-	-	2	U	-	**53**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-15	YVD-15-150617	06/17/2015	N	59011021	**39**	J-	MSD, HT	0.2	U	-	**59**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
YVD-15	YVD-15-150925	09/25/2015	N	59020431	**14**	-	-	2	U	-	**47**	-	-	-	-	-	0.1	U	-	2.5	U	-
YVD-15	YVD-15-151215	12/15/2015	N	59025431	**38**	-	-	2	U	-	**40**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-15	YVD-15-160309	03/09/2016	N	59029711	**36**	-	-	2	U	-	**65**	J+	MSD	-	-	-	0.1	UJ	FDP	0.25	R	MSD
YVD-15	YVD-15-160621	6/21/2016	N	59037271	**31**	-	-	2	U	-	**86**	-	-	-	-	-	**0.13**	J-	MSD	0.25	R	MSD
YVD-15	YVD-15-160928	9/28/2016	N	K1611629	**26.6**	-	-	0.10	U	-	**108**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-15	YVD-15-161215	12/15/2016	N	K1615126	**25.5**	-	-	0.10	U	-	**108**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-15	YVD-030917-23	3/9/2017	N	K1702404	**25.0**	J	HTQ	0.10	U	-	**125**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-15	YVD-060617-20	6/6/2017	N	K1705754	**23.0**	-	-	0.10	U	-	**143**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-15	YVD-092517-10	9/25/2017	N	K1710333	**21.8**	-	-	0.10	U	-	**167**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-15	YVD-120517-28	12/5/2017	N	K1713091	**22.7**	J	HTQ	0.10	U	-	**145**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-15	YVD-031818-09	3/18/2018	N	870610	**24.4**	-	-	0.05	U	-	**129**	-	-	0.07	U	-	-	-	-	0.5	U	-
YVD-16	YVD-16-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	-	-	-	-	-	-	0.1	U	-	**0.375**	-	-
YVD-16	YVD-16-130926	09/26/2013	N	SWI0190	**28.8**	-	-	2	U	-	**140**	-	-	-	-	-	-	-	-	-	-	-
YVD-16	YVD-16-131212	12/12/2013	N	SWL0073	**28.8**	-	-	2	U	-	**163**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
YVD-16	YVD-16-140318	03/18/2014	N	SXC0107	**23.5**	-	-	2	U	-	**130**	-	-	-	-	-	0.1	U	-	**1.01**	J-	MSD
YVD-16	YVD-16-140603	06/03/2014	N	SXF0017	**21.9**	-	-	0.8	U	-	**131**	J-	MSD	-	-	-	0.1	U	-	**0.741**	-	-
YVD-16	YVD-16-140923	09/23/2014	N	SXI0173	**21.4**	-	-	1	U	-	**114**	-	-	-	-	-	0.1	U	-	**0.747**	J+	MSD
YVD-16	YVD-16-141217	12/17/2014	N	SXL0121	**20.6**	-	-	1	U	-	**118**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-16	YVD-D3-141217	12/17/2014	FD	SXL0121	**22.4**	-	-	0.2	U	-	**130**	-	-	-	-	-	0.1	U	-	**0.29**	J-	MSD
YVD-16	YVD-16-150317	03/17/2015	N	5904651	**22**	-	-	1	U	-	**120**	-	-	-	-	-	**0.11**	-	-	**0.29**	J-	MSD
YVD-16	YVD-16-150616	06/16/2015	N	59010961	**23**	-	-	1	U	-	**120**	-	-	-	-	-	**0.1**	-	-	0.25	UJ	MSD
YVD-16	YVD-16-150923	09/23/2015	N	59020281	**23**	-	-	1	U	-	**130**	-	-	-	-	-	0.1	U	-	0.25	R	MSD
YVD-16	YVD-16-151215	12/15/2015	N	59025431	**22**	-	-	1	U	-	**120**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-16	YVD-16-160309	03/09/2016	N	59029711	**23**	-	-	1	U	-	**130**	J+	MSD	-	-	-	**0.15**	J	FDP	0.25	R	MSD
YVD-16	YVD-16-160621	6/21/2016	N	59037151	**22**	-	-	1	U	-	**120**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-16	YVD-D2-160621	6/21/2016	FD	59037151	**22**	-	-	0.2	U	-	**120**	-	-	-	-	-	0.1	U	-	0.25	U	-
YVD-16	YVD-16-160928	9/28/2016	N	K1611629	**19.7**	-	-	0.10	U	-	**110**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-16	YVD-16-161215	12/15/2016	N	K1615126	**19.7**	-	-	0.10	U	-	**112**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-16	YVD-030917-22	3/9/2017	N	K1702404	**20.1**	J	HTQ	0.10	U	-	**113**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-16	YVD-060517-12	6/5/2017	N	K1705754	**19.7**	-	-	0.10	U	-	**117**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-16	YVD-092617-28	9/26/2017	N	K1710381	**19.1**	J	HTQ	0.10	U	-	**115**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-16	YVD-120517-22	12/5/2017	N	K1713091	**19.8**	J	HTQ	0.10	U	-	**110**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-16	YVD-031918-16	3/19/2018	N	870634	**20.3**	-	-	0.05	U	-	**106**	-	-	0.07	U	-	-	-	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-15	YVD-15-140603	06/03/2014	N	SXF0025	**0.31**	-	-	-	-	-	-	-	-	-	-	-	**509**	-	-	**510**	-	-
YVD-15	YVD-15-140924	09/24/2014	N	SXI0173	**0.072**	J+	FBK	-	-	-	-	-	-	-	-	-	**541**	-	-	**545**	-	-
YVD-15	YVD-15-141217	12/17/2014	N	SXL0121	**0.17**	-	-	-	-	-	-	-	-	-	-	-	**518**	-	-	**520**	-	-
YVD-15	YVD-15-150317	03/17/2015	N	5904651	**0.27**	-	-	-	-	-	-	-	-	-	-	-	**550**	-	-	**550**	-	-
YVD-15	YVD-15-150617	06/17/2015	N	59011021	0.25	U	-	-	-	-	-	-	-	-	-	-	**550**	-	-	**550**	-	-
YVD-15	YVD-15-150925	09/25/2015	N	59020431	0.25	U	-	-	-	-	-	-	-	-	-	-	**480**	-	-	**480**	-	-
YVD-15	YVD-15-151215	12/15/2015	N	59025431	0.25	UJ	FDP	-	-	-	-	-	-	-	-	-	**540**	J	FDP	**540**	J	FDP
YVD-15	YVD-15-160309	03/09/2016	N	59029711	0.25	U	-	-	-	-	-	-	-	-	-	-	**520**	-	-	**520**	-	-
YVD-15	YVD-15-160621	6/21/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**430**	-	-	**430**	-	-
YVD-15	YVD-15-160928	9/28/2016	N	K1611629	-	-	-	**0.023**	-	-	-	-	-	-	-	-	**401**	-	-	**401**	-	-
YVD-15	YVD-15-161215	12/15/2016	N	K1615126	-	-	-	**0.095**	-	-	-	-	-	-	-	-	**395**	-	-	**395**	-	-
YVD-15	YVD-030917-23	3/9/2017	N	K1702404	-	-	-	**0.011**	-	-	-	-	-	-	-	-	**395**	-	-	**395**	-	-
YVD-15	YVD-060617-20	6/6/2017	N	K1705754	-	-	-	**0.017**	-	-	-	-	-	-	-	-	**399**	-	-	**399**	-	-
YVD-15	YVD-092517-10	9/25/2017	N	K1710333	-	-	-	0.010	U	-	-	-	-	-	-	-	**412**	-	-	**412**	-	-
YVD-15	YVD-120517-28	12/5/2017	N	K1713091	-	-	-	**0.013**	-	-	-	-	-	-	-	-	**414**	-	-	**414**	-	-
YVD-15	YVD-031818-09	3/18/2018	N	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	**397**	-	-	**397**	-	-
YVD-16	YVD-16-130923	09/23/2013	N	SWI0178	-	-	-	-	-	-	0.1	U	-	-	-	-	**189**	-	-	**190**	-	-
YVD-16	YVD-16-130926	09/26/2013	N	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-16	YVD-16-131212	12/12/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	0.06	U	-	**309**	-	-	**310**	-	-
YVD-16	YVD-16-140318	03/18/2014	N	SXC0107	**1.4**	-	-	-	-	-	-	-	-	-	-	-	**298**	-	-	**300**	-	-
YVD-16	YVD-16-140603	06/03/2014	N	SXF0017	**0.83**	-	-	-	-	-	-	-	-	-	-	-	**287**	-	-	**288**	-	-
YVD-16	YVD-16-140923	09/23/2014	N	SXI0173	**0.22**	-	-	-	-	-	-	-	-	-	-	-	**303**	-	-	**305**	-	-
YVD-16	YVD-16-141217	12/17/2014	N	SXL0121	**0.25**	J	FDP	-	-	-	-	-	-	-	-	-	**298**	-	-	**300**	-	-
YVD-16	YVD-D3-141217	12/17/2014	FD	SXL0121	**0.1**	J	FDP	-	-	-	-	-	-	-	-	-	**308**	-	-	**310**	-	-
YVD-16	YVD-16-150317	03/17/2015	N	5904651	0.25	U	-	-	-	-	-	-	-	-	-	-	**310**	-	-	**310**	-	-
YVD-16	YVD-16-150616	06/16/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**310**	-	-	**310**	-	-
YVD-16	YVD-16-150923	09/23/2015	N	59020281	0.25	U	-	-	-	-	-	-	-	-	-	-	**330**	-	-	**330**	-	-
YVD-16	YVD-16-151215	12/15/2015	N	59025431	0.25	UJ	FDP	-	-	-	-	-	-	-	-	-	**350**	J	FDP	**350**	J	FDP
YVD-16	YVD-16-160309	03/09/2016	N	59029711	**0.27**	-	-	-	-	-	-	-	-	-	-	-	**300**	-	-	**300**	-	-
YVD-16	YVD-16-160621	6/21/2016	N	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**300**	-	-	**300**	-	-
YVD-16	YVD-D2-160621	6/21/2016	FD	59037151	0.25	U	-	-	-	-	-	-	-	-	-	-	**300**	-	-	**300**	-	-
YVD-16	YVD-16-160928	9/28/2016	N	K1611629	-	-	-	**0.016**	-	-	-	-	-	-	-	-	**301**	-	-	**301**	-	-
YVD-16	YVD-16-161215	12/15/2016	N	K1615126	-	-	-	**0.068**	-	-	-	-	-	-	-	-	**298**	-	-	**298**	-	-
YVD-16	YVD-030917-22	3/9/2017	N	K1702404	-	-	-	**0.045**	-	-	-	-	-	-	-	-	**295**	-	-	**295**	-	-
YVD-16	YVD-060517-12	6/5/2017	N	K1705754	-	-	-	**0.021**	-	-	-	-	-	-	-	-	**298**	-	-	**298**	-	-
YVD-16	YVD-092617-28	9/26/2017	N	K1710381	-	-	-	**0.016**	-	-	-	-	-	-	-	-	**309**	-	-	**309**	-	-
YVD-16	YVD-120517-22	12/5/2017	N	K1713091	-	-	-	**0.048**	-	-	-	-	-	-	-	-	**294**	-	-	**294**	-	-
YVD-16	YVD-031918-16	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**297**	-	-	**297**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-17	YVD-17-130919	09/19/2013	N	SWI0142	**72.7**	-	-	**35.8**	-	-	**8.32**	-	-	**12.2**	-	-	**3.1**	-	-	0.5	U	-
YVD-17	YVD-17-130924	09/24/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-17	YVD-17-131210	12/10/2013	N	SWL0055	**54.2**	-	-	**28.4**	-	-	**5.25**	-	-	**7.9**	-	-	**2.98**	-	-	0.5	U	-
YVD-17	YVD-17-140316	03/16/2014	N	SXC0081	**36.0**	-	-	**17.6**	-	-	**1.73**	-	-	**6.1**	-	-	**3.45**	-	-	**0.65**	-	-
YVD-17	YVD-17-140601	06/01/2014	N	SXF0008	**42.3**	-	-	**18.5**	-	-	**2.22**	-	-	**8.7**	-	-	**3.17**	-	-	0.5	U	-
YVD-17	YVD-17-140922	09/22/2014	N	SXI0148	**47.5**	-	-	**21.2**	-	-	**2.91**	-	-	**9.9**	-	-	**2.87**	-	-	0.5	U	-
YVD-17	YVD-17-141215	12/15/2014	N	SXL0103	**42.1**	-	-	**17.8**	-	-	**1.84**	-	-	**9.2**	-	-	**2.99**	J+	MSD	0.5	U	-
YVD-17	YVD-17-150316	03/16/2015	N	5904471	**33.0**	-	-	**17.0**	-	-	**1.40**	-	-	**6.3**	-	-	**3.5**	-	-	**0.5**	-	-
YVD-17	YVD-D1-150316	03/16/2015	FD	5904471	**33.0**	-	-	**17.0**	-	-	**1.50**	-	-	**6.2**	-	-	**3.5**	-	-	**0.51**	-	-
YVD-17	YVD-17-150617	06/17/2015	N	59010961	**41.0**	-	-	**18.0**	-	-	**1.80**	J+	MSD	**8.7**	J+	MSD	**3**	-	-	0.5	U	-
YVD-17	YVD-17-150924	09/24/2015	N	59020391	**40.0**	-	-	**18.0**	-	-	**2.00**	-	-	**9.0**	-	-	**3.1**	-	-	**0.6**	-	-
YVD-17	YVD-17-151216	12/16/2015	N	59025501	**38.0**	-	-	**17.0**	-	-	**1.40**	-	-	**8.0**	-	-	**2.6**	-	-	0.5	U	-
YVD-17	YVD-17-160310	03/10/2016	N	59029941	**35.0**	-	-	**16.0**	-	-	**1.20**	-	-	**6.4**	-	-	**2.8**	-	-	0.5	U	-
YVD-17	YVD-17-160623	6/23/2016	N	59037371	**39.0**	-	-	**18.0**	-	-	**1.60**	-	-	**8.3**	-	-	**3.4**	-	-	0.5	U	-
YVD-17	YVD-17-160926	9/26/2016	N	K1611565	**40.8**	-	-	**17.3**	-	-	**1.59**	-	-	**8.3**	-	-	**2.91**	-	-	**0.32**	-	-
YVD-17	YVD-17-161215	12/15/2016	N	K1615174	**39.6**	-	-	**15.8**	-	-	**1.46**	-	-	**7.4**	-	-	**2.42**	-	-	**0.34**	-	-
YVD-17	YVD-031017-29	3/10/2017	N	K1702448	**36.6**	-	-	**15.7**	-	-	**0.26**	-	-	**5.4**	-	-	**2.65**	-	-	**0.33**	-	-
YVD-17	YVD-060617-24	6/6/2017	N	K1705754	**40.2**	-	-	**15.8**	-	-	**1.16**	-	-	**7.81**	-	-	**2.40**	-	-	**0.35**	-	-
YVD-17	YVD-092517-08	9/25/2017	N	K1710274	**43.1**	-	-	**16.4**	-	-	**1.73**	-	-	**9.5**	-	-	**2.89**	-	-	**0.37**	-	-
YVD-17	YVD-120517-26	12/5/2017	N	K1713091	**43.6**	-	-	**15.4**	-	-	**1.55**	-	-	**9.87**	-	-	**2.71**	-	-	**0.39**	-	-
YVD-18	YVD-18-130919	09/19/2013	N	SWI0142	**42.9**	-	-	**13.7**	-	-	**3.22**	-	-	**78.3**	-	-	**61.4**	-	-	5	U	-
YVD-18	YVD-18-130925	09/25/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-18	YVD-18-131211	12/11/2013	N	SWL0073	**50.4**	-	-	**17.1**	-	-	**3.02**	-	-	**71.3**	-	-	**62.9**	-	-	5	U	-
YVD-18	YVD-D2-131211	12/11/2013	FD	SWL0073	**50.2**	-	-	**16.7**	-	-	**3.06**	-	-	**70.9**	-	-	**66.5**	-	-	5	U	-
YVD-18	YVD-18-140318	03/18/2014	N	SXC0095	**51.7**	-	-	**16.5**	-	-	**3.30**	-	-	**77.5**	-	-	**66.7**	-	-	5	U	-
YVD-18	YVD-D2-140318	03/18/2014	FD	SXC0095	**52.0**	-	-	**16.6**	-	-	**3.26**	-	-	**78.0**	-	-	**62.1**	-	-	5	U	-
YVD-18	YVD-18-140603	06/03/2014	N	SXF0017	**46.8**	-	-	**15.4**	-	-	**3.24**	-	-	**77.7**	-	-	**64**	-	-	2	U	-
YVD-18	YVD-18-140923	09/23/2014	N	SXI0173	**48.5**	-	-	**15.6**	-	-	**3.80**	-	-	**81.6**	-	-	**54.7**	-	-	2.5	U	-
YVD-18	YVD-18-141216	12/16/2014	N	SXL0121	**52.7**	-	-	**17.7**	-	-	**3.63**	-	-	**81.8**	-	-	**59.6**	-	-	2.5	U	-
YVD-18	YVD-18-150317	03/17/2015	N	5904541	**56.0**	-	-	**19.0**	-	-	**3.50**	-	-	**87.0**	-	-	**64**	-	-	2.5	U	-
YVD-18	YVD-18-150617	06/17/2015	N	59010961	**55.0**	-	-	**18.0**	-	-	**4.10**	J+	MSD	**86.0**	J+	MSD	**65**	-	-	2.5	U	-
YVD-18	YVD-18-150924	09/24/2015	N	59020391	**52.0**	-	-	**19.0**	-	-	**3.50**	-	-	**77.0**	-	-	**63**	-	-	2.5	U	-
YVD-18	YVD-18-151216	12/16/2015	N	59025501	**60.0**	-	-	**20.0**	-	-	**4.00**	-	-	**91.0**	-	-	**66**	-	-	2.5	U	-
YVD-18	YVD-18-160309	03/09/2016	N	59029941	**62.0**	-	-	**21.0**	-	-	**3.80**	-	-	**89.0**	-	-	**63**	-	-	2.5	U	-
YVD-18	YVD-18-160622	6/22/2016	N	59037271	**55.0**	-	-	**19.0**	-	-	**3.70**	-	-	**86.0**	-	-	**61**	-	-	2.5	U	-
YVD-18	YVD-18-160928	9/28/2016	N	K1611629	**58.2**	-	-	**19.7**	-	-	**3.75**	-	-	**83.8**	-	-	**56.8**	-	-	**0.36**	-	-
YVD-18	YVD-18-161214	12/14/2016	N	K1615083	**62.5**	-	-	**19.6**	-	-	**3.69**	-	-	**82.5**	-	-	**56.3**	-	-	**0.38**	-	-
YVD-18	YVD-D3-161214	12/14/2016	FD	K1615083	**60.6**	-	-	**20.1**	-	-	**3.82**	-	-	**84.0**	-	-	**56.4**	-	-	**0.37**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-17	YVD-17-130919	09/19/2013	N	SWI0142	-	-	-	-	-	-	**6.48**	-	-	-	-	-	0.1	U	-	2.5	U	-
YVD-17	YVD-17-130924	09/24/2013	N	SWI0175	**0.8**	-	-	0.2	U	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-17	YVD-17-131210	12/10/2013	N	SWL0055	**0.68**	-	-	0.2	U	-	**6.64**	-	-	-	-	-	0.02	UJ	MSD	0.29	R	BK, MSI
YVD-17	YVD-17-140316	03/16/2014	N	SXC0081	**1.07**	-	-	0.2	U	-	**6.42**	-	-	-	-	-	**0.166**	-	-	0.25	U	-
YVD-17	YVD-17-140601	06/01/2014	N	SXF0008	**0.67**	-	-	0.2	U	-	**5.74**	-	-	-	-	-	0.1	U	-	**0.287**	-	-
YVD-17	YVD-17-140922	09/22/2014	N	SXI0148	**0.96**	-	-	0.2	U	-	**5.08**	-	-	-	-	-	0.1	U	-	**0.293**	-	-
YVD-17	YVD-17-141215	12/15/2014	N	SXL0103	**0.66**	J	DUP	0.2	U	-	**6.01**	J+	MSD, DUP	-	-	-	0.1	U	-	0.25	U	-
YVD-17	YVD-17-150316	03/16/2015	N	5904471	**1.1**	-	-	0.2	U	-	**5.7**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-17	YVD-D1-150316	03/16/2015	FD	5904471	**1.2**	-	-	0.2	U	-	**5.7**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-17	YVD-17-150617	06/17/2015	N	59010961	**0.59**	-	-	0.2	U	-	**5.4**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-17	YVD-17-150924	09/24/2015	N	59020391	0.2	U	-	**1.2**	-	-	**5.6**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
YVD-17	YVD-17-151216	12/16/2015	N	59025501	**0.55**	-	-	0.2	U	-	**5.4**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-17	YVD-17-160310	03/10/2016	N	59029941	**0.32**	-	-	0.2	U	-	**4.8**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	FDP
YVD-17	YVD-17-160623	6/23/2016	N	59037371	**0.55**	-	-	0.2	U	-	**5.3**	-	-	-	-	-	0.1	R	MSD	0.25	U	-
YVD-17	YVD-17-160926	9/26/2016	N	K1611565	**1.16**	-	-	0.10	U	-	**7.9**	-	-	-	-	-	0.050	U	MBK	0.5	R	MSD
YVD-17	YVD-17-161215	12/15/2016	N	K1615174	**0.59**	-	-	0.10	U	-	**6.0**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-17	YVD-031017-29	3/10/2017	N	K1702448	**0.42**	-	-	0.10	U	-	**6.3**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-17	YVD-060617-24	6/6/2017	N	K1705754	**0.50**	-	-	0.10	U	-	**6.02**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-17	YVD-092517-08	9/25/2017	N	K1710274	**0.99**	-	-	0.10	U	-	**7.17**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-17	YVD-120517-26	12/5/2017	N	K1713091	**0.71**	-	-	0.10	U	-	**7.53**	-	-	-	-	-	0.050	U	-	0.5	UJ	MSD
YVD-18	YVD-18-130919	09/19/2013	N	SWI0142	-	-	-	-	-	-	**122**	-	-	-	-	-	0.1	U	-	0.456	R	FBK
YVD-18	YVD-18-130925	09/25/2013	N	SWI0175	**13.6**	-	-	2	U	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-18	YVD-18-131211	12/11/2013	N	SWL0073	**14.2**	J	FDP	2	U	-	**116**	-	-	-	-	-	0.02	UJ	MSD	1.5	UJ	MSD
YVD-18	YVD-D2-131211	12/11/2013	FD	SWL0073	**23.5**	J	FDP	2	U	-	**129**	-	-	-	-	-	0.02	UJ	MSD	0.2	UJ	MSD
YVD-18	YVD-18-140318	03/18/2014	N	SXC0095	**18.8**	-	-	2	U	-	**147**	J-	MSD	-	-	-	**0.134**	J	FDP	**0.358**	-	-
YVD-18	YVD-D2-140318	03/18/2014	FD	SXC0095	**17.1**	-	-	2	U	-	**140**	J-	MSD	-	-	-	**0.28**	J	FDP	**0.342**	-	-
YVD-18	YVD-18-140603	06/03/2014	N	SXF0017	**16.9**	-	-	0.8	U	-	**135**	J-	MSD	-	-	-	0.1	U	-	**0.796**	-	-
YVD-18	YVD-18-140923	09/23/2014	N	SXI0173	**13.8**	-	-	1	U	-	**111**	-	-	-	-	-	0.1	U	-	**0.335**	J+	MSD
YVD-18	YVD-18-141216	12/16/2014	N	SXL0121	**16.5**	-	-	1	U	-	**131**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-18	YVD-18-150317	03/17/2015	N	5904541	**20**	J-	MSD	1	U	-	**140**	J-	MSD	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-18	YVD-18-150617	06/17/2015	N	59010961	**17**	-	-	1	U	-	**120**	-	-	-	-	-	0.1	U	-	0.25	UJ	MSD
YVD-18	YVD-18-150924	09/24/2015	N	59020391	**20**	J+	MSD	1	U	-	**140**	J-	MSD	-	-	-	0.1	UJ	MSD	0.25	UJ	MSD
YVD-18	YVD-18-151216	12/16/2015	N	59025501	**23**	-	-	1	U	-	**150**	-	-	-	-	-	0.1	R	MSD	0.25	R	MSD
YVD-18	YVD-18-160309	03/09/2016	N	59029941	**22**	-	-	1	U	-	**150**	J	DUP	-	-	-	0.1	U	-	0.25	UJ	DP, MS
YVD-18	YVD-18-160622	6/22/2016	N	59037271	**21**	-	-	1	U	-	**140**	-	-	-	-	-	0.1	UJ	MSD	0.25	R	MSD
YVD-18	YVD-18-160928	9/28/2016	N	K1611629	**20.5**	-	-	0.10	U	-	**135**	-	-	-	-	-	0.050	U	MBK	0.5	U	-
YVD-18	YVD-18-161214	12/14/2016	N	K1615083	**21.5**	-	-	0.10	U	-	**139**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-18	YVD-D3-161214	12/14/2016	FD	K1615083	**21.5**	-	-	0.10	U	-	**142**	-	-	-	-	-	**0.115**	-	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-17	YVD-17-130919	09/19/2013	N	SWI0142	-	-	-	-	-	-	**3.64**	-	-	-	-	-	**213**	-	-	**215**	-	-
YVD-17	YVD-17-130924	09/24/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-17	YVD-17-131210	12/10/2013	N	SWL0055	-	-	-	-	-	-	-	-	-	**1.61**	-	-	**169**	-	-	**170**	-	-
YVD-17	YVD-17-140316	03/16/2014	N	SXC0081	**0.3**	-	-	-	-	-	-	-	-	-	-	-	**144**	-	-	**145**	-	-
YVD-17	YVD-17-140601	06/01/2014	N	SXF0008	**0.52**	-	-	-	-	-	-	-	-	-	-	-	**169**	-	-	**170**	-	-
YVD-17	YVD-17-140922	09/22/2014	N	SXI0148	**0.36**	-	-	-	-	-	-	-	-	-	-	-	**183**	-	-	**185**	-	-
YVD-17	YVD-17-141215	12/15/2014	N	SXL0103	**0.19**	-	-	-	-	-	-	-	-	-	-	-	**168**	-	-	**170**	-	-
YVD-17	YVD-17-150316	03/16/2015	N	5904471	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
YVD-17	YVD-D1-150316	03/16/2015	FD	5904471	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
YVD-17	YVD-17-150617	06/17/2015	N	59010961	**0.25**	-	-	-	-	-	-	-	-	-	-	-	**160**	-	-	**160**	-	-
YVD-17	YVD-17-150924	09/24/2015	N	59020391	**0.26**	-	-	-	-	-	-	-	-	-	-	-	**170**	-	-	**170**	-	-
YVD-17	YVD-17-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**180**	-	-	**180**	-	-
YVD-17	YVD-17-160310	03/10/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**150**	-	-	**150**	-	-
YVD-17	YVD-17-160623	6/23/2016	N	59037371	0.25	U	-	-	-	-	-	-	-	-	-	-	**170**	-	-	**170**	-	-
YVD-17	YVD-17-160926	9/26/2016	N	K1611565	-	-	-	**0.095**	-	-	-	-	-	-	-	-	**182**	-	-	**182**	-	-
YVD-17	YVD-17-161215	12/15/2016	N	K1615174	-	-	-	**0.103**	-	-	-	-	-	-	-	-	**154**	-	-	**157**	J	-
YVD-17	YVD-031017-29	3/10/2017	N	K1702448	-	-	-	**0.038**	-	-	-	-	-	-	-	-	**142**	-	-	**156**	J	-
YVD-17	YVD-060617-24	6/6/2017	N	K1705754	-	-	-	**0.055**	-	-	-	-	-	-	-	-	**167**	-	-	**167**	-	-
YVD-17	YVD-092517-08	9/25/2017	N	K1710274	-	-	-	**0.046**	-	-	-	-	-	-	-	-	**179**	-	-	**179**	-	-
YVD-17	YVD-120517-26	12/5/2017	N	K1713091	-	-	-	**0.036**	-	-	-	-	-	-	-	-	**187**	-	-	**187**	-	-
YVD-18	YVD-18-130919	09/19/2013	N	SWI0142	-	-	-	-	-	-	0.1	U	-	-	-	-	**119**	-	-	**120**	-	-
YVD-18	YVD-18-130925	09/25/2013	N	SWI0175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YVD-18	YVD-18-131211	12/11/2013	N	SWL0073	-	-	-	-	-	-	-	-	-	0.06	U	-	**109**	-	-	**110**	-	-
YVD-18	YVD-D2-131211	12/11/2013	FD	SWL0073	-	-	-	-	-	-	-	-	-	0.06	U	-	**114**	-	-	**115**	-	-
YVD-18	YVD-18-140318	03/18/2014	N	SXC0095	**0.068**	-	-	-	-	-	-	-	-	-	-	-	**119**	-	-	**120**	-	-
YVD-18	YVD-D2-140318	03/18/2014	FD	SXC0095	**0.082**	-	-	-	-	-	-	-	-	-	-	-	**124**	-	-	**125**	-	-
YVD-18	YVD-18-140603	06/03/2014	N	SXF0017	**0.071**	J+	FBK	-	-	-	-	-	-	-	-	-	**117**	-	-	**118**	-	-
YVD-18	YVD-18-140923	09/23/2014	N	SXI0173	**0.086**	-	-	-	-	-	-	-	-	-	-	-	**114**	-	-	**115**	-	-
YVD-18	YVD-18-141216	12/16/2014	N	SXL0121	0.1	U	-	-	-	-	-	-	-	-	-	-	**114**	-	-	**115**	-	-
YVD-18	YVD-18-150317	03/17/2015	N	5904541	0.25	U	-	-	-	-	-	-	-	-	-	-	**110**	-	-	**110**	-	-
YVD-18	YVD-18-150617	06/17/2015	N	59010961	0.25	U	-	-	-	-	-	-	-	-	-	-	**110**	-	-	**110**	-	-
YVD-18	YVD-18-150924	09/24/2015	N	59020391	0.25	U	-	-	-	-	-	-	-	-	-	-	**120**	-	-	**120**	-	-
YVD-18	YVD-18-151216	12/16/2015	N	59025501	0.25	UJ	MSD	-	-	-	-	-	-	-	-	-	**120**	-	-	**120**	-	-
YVD-18	YVD-18-160309	03/09/2016	N	59029941	0.25	U	-	-	-	-	-	-	-	-	-	-	**120**	-	-	**120**	-	-
YVD-18	YVD-18-160622	6/22/2016	N	59037271	0.25	U	-	-	-	-	-	-	-	-	-	-	**130**	-	-	**130**	-	-
YVD-18	YVD-18-160928	9/28/2016	N	K1611629	-	-	-	**0.013**	-	-	-	-	-	-	-	-	**114**	-	-	**114**	-	-
YVD-18	YVD-18-161214	12/14/2016	N	K1615083	-	-	-	**0.043**	-	-	-	-	-	-	-	-	**111**	-	-	**111**	-	-
YVD-18	YVD-D3-161214	12/14/2016	FD	K1615083	-	-	-	**0.019**	-	-	-	-	-	-	-	-	**111**	-	-	**111**	-	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-18	YVD-030617-05	3/6/2017	N	K1702324	**65.4**	-	-	**20.5**	-	-	**3.39**	-	-	**78.8**	-	-	**55.9**	-	-	**0.40**	-	-
YVD-18	YVD-060717-31	6/7/2017	N	K1705833	**65.2**	-	-	**21.4**	-	-	**3.82**	-	-	**81.8**	-	-	**57.0**	-	-	**0.34**	-	-
YVD-18	YVD-092617-27	9/26/2017	N	K1710333	**58.5**	-	-	**18.3**	-	-	**3.64**	-	-	**77.0**	-	-	**54.8**	-	-	**0.38**	-	-
YVD-18	YVD-120417-05	12/4/2017	N	K1713026	**62.6**	-	-	**20.0**	-	-	**3.62**	-	-	**81.6**	-	-	**58.9**	-	-	**0.40**	-	-
YVD-18	YVD-031918-17	3/19/2018	N	870634	**67.5**	-	-	**22.00**	-	-	**3.78**	-	-	**83.0**	-	-	**68.2**	-	-	**0.34**	-	-
Equipment Blank	YVD-EB-130918	09/18/2013	EB	SWI0123	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-130925	09/25/2013	EB	SWI0175	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-131212	12/12/2013	EB	SWL0078	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-140317	03/17/2014	EB	SXC0081	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-140318	03/18/2014	EB	SXC0095	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-140319	03/19/2014	EB	SXC0107	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-140604	06/04/2014	EB	SXF0025	1	U	-	0.5	U	-	1	U	-	0.5	U	-	**1.46**	-	-	0.5	U	-
Equipment Blank	YVD-EB-140924	09/24/2014	EB	SXI0173	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-141217	12/17/2014	EB	SXL0144	1	U	-	0.5	U	-	1	U	-	0.5	U	-	**0.9**	-	-	0.5	U	-
Equipment Blank	YVD-EB-150617	06/17/2015	EB	59011021	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-150925	09/25/2015	EB	59020431	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-151216	12/16/2015	EB	59025501	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-160310	03/10/2016	EB	59029941	1	U	-	0.5	U	-	1	U	-	**1.1**	-	-	**1.1**	-	-	**0.67**	-	-
Equipment Blank	YVD-EB-160623	6/23/2016	EB	59037371	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Equipment Blank	YVD-EB-160926	9/26/2016	EB	K1611506	**0.097**	-	-	**0.0346**	-	-	**0.1**	J	-	**0.13**	J	-	0.2	U	-	0.2	U	-
Equipment Blank	YVD-EB-160927	9/27/2016	EB	K1611629	**0.011**	J	-	**0.0004**	J	-	0.2	U	-	**0.04**	J	-	0.1	U	-	0.1	U	-
Equipment Blank	YVD-EB-160928	9/28/2016	EB	K1611629	**0.05**	J	-	0.05	U	-	0.2	U	-	**0.04**	J	-	**0.03**	J	-	0.1	U	-
Equipment Blank	YVD-EB1-161214	12/14/2016	EB	K1615083	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Equipment Blank	YVD-EB2-161215	12/15/2016	EB	K1615126	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Equipment Blank	YVD-EB3-161216	12/16/2016	EB	K1615174	0.035	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Field Blank	YVD-F1-130916	09/16/2013	FB	SWI0113	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-130917	09/17/2013	FB	SWI0113	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-130918	09/18/2013	FB	SWI0123	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-130918	09/18/2013	FB	SWI0138	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F5-130919	09/19/2013	FB	SWI0142	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F6-130923	09/23/2013	FB	SWI0178	1	U	-	0.5	U	-	1	U	-	0.5	U	-	-	-	-	-	-	-
Field Blank	YVD-F7-130924	09/24/2013	FB	SWI0175	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F7-130926	09/26/2013	FB	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-131209	12/09/2013	FB	SWL0055	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-131210	12/10/2013	FB	SWL0063	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-131211	12/11/2013	FB	SWL0073	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-131212	12/12/2013	FB	SWL0078	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-18	YVD-030617-05	3/6/2017	N	K1702324	**23.7**	J	HTQ	**0.04**	J	HTQ	**140**	-	-	-	-	-	1	U	-	0.5	U	-
YVD-18	YVD-060717-31	6/7/2017	N	K1705833	**22.9**	-	-	0.10	U	-	**135**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-18	YVD-092617-27	9/26/2017	N	K1710333	**21.6**	-	-	0.10	U	-	**137**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-18	YVD-120417-05	12/4/2017	N	K1713026	**24.4**	-	-	0.10	U	-	**144**	-	-	-	-	-	0.050	U	-	0.5	U	-
YVD-18	YVD-031918-17	3/19/2018	N	870634	**27.7**	-	-	0.05	U	-	**161**	-	-	0.07	U	-	-	-	-	0.5	U	-
Equipment Blank	YVD-EB-130918	09/18/2013	EB	SWI0123	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Equipment Blank	YVD-EB-130925	09/25/2013	EB	SWI0175	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Equipment Blank	YVD-EB-131212	12/12/2013	EB	SWL0078	0.2	U	-	0.2	U	-	0.5	U	-	0.02	U	-	0.02	U	-	0.2	U	-
Equipment Blank	YVD-EB-140317	03/17/2014	EB	SXC0081	0.2	U	-	0.2	U	-	0.5	U	-	**0.124**	-	-	**0.124**	-	-	0.25	U	-
Equipment Blank	YVD-EB-140318	03/18/2014	EB	SXC0095	0.2	U	-	0.2	U	-	0.5	U	-	**0.13**	-	-	**0.13**	-	-	0.25	U	-
Equipment Blank	YVD-EB-140319	03/19/2014	EB	SXC0107	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Equipment Blank	YVD-EB-140604	06/04/2014	EB	SXF0025	0.2	U	-	0.2	U	-	**1.24**	-	-	0.1	U	-	0.1	U	-	0.25	U	-
Equipment Blank	YVD-EB-140924	09/24/2014	EB	SXI0173	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	**1.2**	-	-
Equipment Blank	YVD-EB-141217	12/17/2014	EB	SXL0144	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Equipment Blank	YVD-EB-150617	06/17/2015	EB	59011021	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	**0.37**	-	-
Equipment Blank	YVD-EB-150925	09/25/2015	EB	59020431	0.2	U	-	0.2	U	-	0.5	U	-	**0.1**	-	-	**0.1**	-	-	**0.38**	-	-
Equipment Blank	YVD-EB-151216	12/16/2015	EB	59025501	0.2	U	-	0.2	U	-	0.5	U	-	**0.12**	J-	MSD	**0.12**	J-	MSD	0.25	U	-
Equipment Blank	YVD-EB-160310	03/10/2016	EB	59029941	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	**1.9**	-	-
Equipment Blank	YVD-EB-160623	6/23/2016	EB	59037371	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	**0.43**	-	-
Equipment Blank	YVD-EB-160926	9/26/2016	EB	K1611506	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	MBK	0.050	U	MBK	0.5	R	MSD
Equipment Blank	YVD-EB-160927	9/27/2016	EB	K1611629	0.05	UJ	HTQ	0.05	UJ	HTQ	**0.08**	J	-	0.050	U	MBK	0.050	U	MBK	0.5	U	-
Equipment Blank	YVD-EB-160928	9/28/2016	EB	K1611629	0.05	U	-	0.05	U	-	**0.51**	-	-	0.050	U	MBK	0.050	U	MBK	0.5	U	-
Equipment Blank	YVD-EB1-161214	12/14/2016	EB	K1615083	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Equipment Blank	YVD-EB2-161215	12/15/2016	EB	K1615126	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Equipment Blank	YVD-EB3-161216	12/16/2016	EB	K1615174	0.1	U	-	0.10	U	-	**0.4**	-	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-F1-130916	09/16/2013	FB	SWI0113	0.2	U	-	0.2	U	-	**0.53**	-	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-130917	09/17/2013	FB	SWI0113	0.2	U	-	0.2	U	-	**0.51**	-	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-130918	09/18/2013	FB	SWI0123	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F4-130918	09/18/2013	FB	SWI0138	0.2	U	-	0.2	U	-	0.5	U	-	**0.12**	-	-	**0.12**	-	-	0.25	U	-
Field Blank	YVD-F5-130919	09/19/2013	FB	SWI0142	-	-	-	-	-	-	0.5	U	-	0.1	U	-	0.1	U	-	**0.373**	-	-
Field Blank	YVD-F6-130923	09/23/2013	FB	SWI0178	-	-	-	-	-	-	-	-	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F7-130924	09/24/2013	FB	SWI0175	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F7-130926	09/26/2013	FB	SWI0190	0.2	U	-	0.2	U	-	0.5	U	-	-	-	-	-	-	-	-	-	-
Field Blank	YVD-F1-131209	12/09/2013	FB	SWL0055	0.2	U	-	0.2	U	-	0.5	U	-	0.02	U	-	0.02	U	-	**0.33**	-	-
Field Blank	YVD-F2-131210	12/10/2013	FB	SWL0063	0.2	U	-	0.2	U	-	0.5	U	-	0.02	U	-	0.02	U	-	**3.7**	-	-
Field Blank	YVD-F3-131211	12/11/2013	FB	SWL0073	0.2	U	-	0.2	U	-	0.5	U	-	0.02	U	-	0.02	U	-	**0.43**	-	-
Field Blank	YVD-F4-131212	12/12/2013	FB	SWL0078	0.2	U	-	0.2	U	-	0.5	U	-	0.02	U	-	0.02	U	-	0.2	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
YVD-18	YVD-030617-05	3/6/2017	N	K1702324	-	-	-	**0.024**	-	-	-	-	-	-	-	-	**110**	-	-	**110**	-	-
YVD-18	YVD-060717-31	6/7/2017	N	K1705833	-	-	-	**0.018**	-	-	-	-	-	-	-	-	**114**	-	-	**114**	-	-
YVD-18	YVD-092617-27	9/26/2017	N	K1710333	-	-	-	**0.018**	-	-	-	-	-	-	-	-	**115**	-	-	**115**	-	-
YVD-18	YVD-120417-05	12/4/2017	N	K1713026	-	-	-	0.017	U	MBK	-	-	-	-	-	-	**114**	-	-	**114**	-	-
YVD-18	YVD-031918-17	3/19/2018	N	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	**111**	-	-	**111**	-	-
Equipment Blank	YVD-EB-130918	09/18/2013	EB	SWI0123	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-130925	09/25/2013	EB	SWI0175	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-131212	12/12/2013	EB	SWL0078	-	-	-	-	-	-	-	-	-	0.06	U	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-140317	03/17/2014	EB	SXC0081	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-140318	03/18/2014	EB	SXC0095	-	-	-	**0.05**	-	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-140319	03/19/2014	EB	SXC0107	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-140604	06/04/2014	EB	SXF0025	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-140924	09/24/2014	EB	SXI0173	-	-	-	**0.062**	-	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-141217	12/17/2014	EB	SXL0144	-	-	-	0.1	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-150617	06/17/2015	EB	59011021	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Equipment Blank	YVD-EB-150925	09/25/2015	EB	59020431	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Equipment Blank	YVD-EB-151216	12/16/2015	EB	59025501	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Equipment Blank	YVD-EB-160310	03/10/2016	EB	59029941	-	-	-	0.25	U	-	-	-	-	-	-	-	**15**	-	-	**15**	-	-
Equipment Blank	YVD-EB-160623	6/23/2016	EB	59037371	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Equipment Blank	YVD-EB-160926	9/26/2016	EB	K1611506	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Equipment Blank	YVD-EB-160927	9/27/2016	EB	K1611629	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Equipment Blank	YVD-EB-160928	9/28/2016	EB	K1611629	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Equipment Blank	YVD-EB1-161214	12/14/2016	EB	K1615083	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Equipment Blank	YVD-EB2-161215	12/15/2016	EB	K1615126	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Equipment Blank	YVD-EB3-161216	12/16/2016	EB	K1615174	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-F1-130916	09/16/2013	FB	SWI0113	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F2-130917	09/17/2013	FB	SWI0113	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-130918	09/18/2013	FB	SWI0123	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F4-130918	09/18/2013	FB	SWI0138	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F5-130919	09/19/2013	FB	SWI0142	-	-	-	-	-	-	**0.243**	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F6-130923	09/23/2013	FB	SWI0178	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F7-130924	09/24/2013	FB	SWI0175	-	-	-	-	-	-	0.1	U	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F7-130926	09/26/2013	FB	SWI0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Blank	YVD-F1-131209	12/09/2013	FB	SWL0055	-	-	-	-	-	-	-	-	-	0.06	U	-	4	U	-	4	U	-
Field Blank	YVD-F2-131210	12/10/2013	FB	SWL0063	-	-	-	-	-	-	-	-	-	0.06	U	-	4	U	-	4	U	-
Field Blank	YVD-F3-131211	12/11/2013	FB	SWL0073	-	-	-	-	-	-	-	-	-	0.06	U	-	4	U	-	4	U	-
Field Blank	YVD-F4-131212	12/12/2013	FB	SWL0078	-	-	-	-	-	-	-	-	-	0.06	U	-	4	U	-	4	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
Field Blank	YVD-F1-140316	03/16/2014	FB	SXC0081	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-140317	03/17/2014	FB	SXC0095	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-140318	03/18/2014	FB	SXC0107	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-140319	03/19/2014	FB	SXC0107	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-140601	06/01/2014	FB	SXF0008	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-140602	06/02/2014	FB	SXF0017	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-140603	06/03/2014	FB	SXF0025	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-140921	09/21/2014	FB	SXI0148	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-140922	09/22/2014	FB	SXI0148	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-140923	09/23/2014	FB	SXI0158	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-140924	09/24/2014	FB	SXI0173	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-141215	12/15/2014	FB	SXL0103	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-141215	12/15/2014	FB	SXL0108	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-141216	12/16/2014	FB	SXL0121	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-141217	12/17/2014	FB	SXL0144	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-150315	03/15/2015	FB	5904471	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-150316	03/16/2015	FB	5904541	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-150317	03/17/2015	FB	5904651	**1.2**	-	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-150615	06/15/2015	FB	59010751	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-150616	06/16/2015	FB	59010961	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-150617	06/17/2015	FB	59011021	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-150922	09/22/2015	FB	59020141	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-150923	09/23/2015	FB	59020281	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-150923	09/23/2015	FB	59020391	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-150924	09/24/2015	FB	59020391	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F5-150925	09/25/2015	FB	59020431	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-151213	12/13/2015	FB	59025351	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-151214	12/14/2015	FB	59025431	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-151215	12/15/2015	FB	59025501	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-151216	12/16/2015	FB	59025501	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-160307	03/07/2016	FB	59029521	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-160308	03/08/2016	FB	59029711	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-160309	03/09/2016	FB	59029941	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-160310	03/10/2016	FB	59029941	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F1-160620	6/20/2016	FB	59037101	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F2-160621	6/21/2016	FB	59037151	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F3-160622	6/22/2016	FB	59037271	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-F4-160623	6/23/2016	FB	59037371	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Field Blank	YVD-FB-160926	9/26/2016	FB	K1611506	0.02	U	MBK	**0.0025**	J	-	**0.08**	J	-	**0.03**	J	-	0.2	U	-	0.2	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
Field Blank	YVD-F1-140316	03/16/2014	FB	SXC0081	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-140317	03/17/2014	FB	SXC0095	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-140318	03/18/2014	FB	SXC0107	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F4-140319	03/19/2014	FB	SXC0107	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-140601	06/01/2014	FB	SXF0008	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-140602	06/02/2014	FB	SXF0017	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-140603	06/03/2014	FB	SXF0025	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-140921	09/21/2014	FB	SXI0148	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-140922	09/22/2014	FB	SXI0148	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-140923	09/23/2014	FB	SXI0158	0.2	U	-	0.2	U	-	0.5	U	-	**0.128**	-	-	**0.128**	-	-	0.25	U	-
Field Blank	YVD-F4-140924	09/24/2014	FB	SXI0173	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-141215	12/15/2014	FB	SXL0103	0.2	UJ	DUP	0.2	U	-	0.5	UJ	DUP	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-141215	12/15/2014	FB	SXL0108	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-141216	12/16/2014	FB	SXL0121	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F4-141217	12/17/2014	FB	SXL0144	0.2	R	HTQ	0.2	R	HTQ	0.5	U	-	**0.101**	-	-	**0.101**	-	-	0.25	U	-
Field Blank	YVD-F1-150315	03/15/2015	FB	5904471	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-150316	03/16/2015	FB	5904541	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-150317	03/17/2015	FB	5904651	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-150615	06/15/2015	FB	59010751	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-150616	06/16/2015	FB	59010961	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-150617	06/17/2015	FB	59011021	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-150922	09/22/2015	FB	59020141	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	**0.26**	-	-
Field Blank	YVD-F2-150923	09/23/2015	FB	59020281	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-150923	09/23/2015	FB	59020391	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F4-150924	09/24/2015	FB	59020391	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F5-150925	09/25/2015	FB	59020431	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-151213	12/13/2015	FB	59025351	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-151214	12/14/2015	FB	59025431	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-151215	12/15/2015	FB	59025501	0.2	U	-	0.2	U	-	0.5	U	-	0.1	R	MSD	0.1	R	MSD	0.25	U	-
Field Blank	YVD-F4-151216	12/16/2015	FB	59025501	0.2	U	-	0.2	U	-	0.5	U	-	0.1	R	MSD	0.1	R	MSD	0.25	U	-
Field Blank	YVD-F1-160307	03/07/2016	FB	59029521	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-160308	03/08/2016	FB	59029711	0.2	U	-	0.2	U	-	0.5	U	-	**0.19**	-	-	**0.19**	-	-	0.25	U	-
Field Blank	YVD-F3-160309	03/09/2016	FB	59029941	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	**0.3**	-	-
Field Blank	YVD-F4-160310	03/10/2016	FB	59029941	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F1-160620	6/20/2016	FB	59037101	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F2-160621	6/21/2016	FB	59037151	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-F3-160622	6/22/2016	FB	59037271	0.2	U	-	0.2	U	-	0.5	U	-	**0.22**	-	-	**0.22**	-	-	**0.36**	-	-
Field Blank	YVD-F4-160623	6/23/2016	FB	59037371	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Field Blank	YVD-FB-160926	9/26/2016	FB	K1611506	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	MBK	0.050	U	MBK	0.5	R	MSD

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
Field Blank	YVD-F1-140316	03/16/2014	FB	SXC0081	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F2-140317	03/17/2014	FB	SXC0095	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-140318	03/18/2014	FB	SXC0107	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F4-140319	03/19/2014	FB	SXC0107	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F1-140601	06/01/2014	FB	SXF0008	-	-	-	0.05	U	-	-	-	-	-	-	-	**4.25**	-	-	**4.25**	-	-
Field Blank	YVD-F2-140602	06/02/2014	FB	SXF0017	-	-	-	**0.061**	-	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-140603	06/03/2014	FB	SXF0025	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F1-140921	09/21/2014	FB	SXI0148	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F2-140922	09/22/2014	FB	SXI0148	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-140923	09/23/2014	FB	SXI0158	-	-	-	0.05	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F4-140924	09/24/2014	FB	SXI0173	-	-	-	**0.054**	-	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F1-141215	12/15/2014	FB	SXL0103	-	-	-	0.1	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F2-141215	12/15/2014	FB	SXL0108	-	-	-	0.1	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-141216	12/16/2014	FB	SXL0121	-	-	-	0.1	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F4-141217	12/17/2014	FB	SXL0144	-	-	-	0.1	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F1-150315	03/15/2015	FB	5904471	-	-	-	0.25	U	-	-	-	-	-	-	-	**15**	-	-	**15**	-	-
Field Blank	YVD-F2-150316	03/16/2015	FB	5904541	-	-	-	0.25	U	-	-	-	-	-	-	-	**7.5**	-	-	**7.5**	-	-
Field Blank	YVD-F3-150317	03/17/2015	FB	5904651	-	-	-	0.25	U	-	-	-	-	-	-	-	**4.5**	-	-	**4.5**	-	-
Field Blank	YVD-F1-150615	06/15/2015	FB	59010751	-	-	-	0.25	U	-	-	-	-	-	-	-	**10**	-	-	**10**	-	-
Field Blank	YVD-F2-150616	06/16/2015	FB	59010961	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F3-150617	06/17/2015	FB	59011021	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F1-150922	09/22/2015	FB	59020141	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F2-150923	09/23/2015	FB	59020281	-	-	-	**0.26**	-	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-150923	09/23/2015	FB	59020391	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F4-150924	09/24/2015	FB	59020391	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F5-150925	09/25/2015	FB	59020431	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F1-151213	12/13/2015	FB	59025351	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F2-151214	12/14/2015	FB	59025431	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F3-151215	12/15/2015	FB	59025501	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F4-151216	12/16/2015	FB	59025501	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F1-160307	03/07/2016	FB	59029521	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F2-160308	03/08/2016	FB	59029711	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-160309	03/09/2016	FB	59029941	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F4-160310	03/10/2016	FB	59029941	-	-	-	0.25	U	-	-	-	-	-	-	-	**13**	-	-	**13**	-	-
Field Blank	YVD-F1-160620	6/20/2016	FB	59037101	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F2-160621	6/21/2016	FB	59037151	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Field Blank	YVD-F3-160622	6/22/2016	FB	59037271	-	-	-	0.25	U	-	-	-	-	-	-	-	**5**	-	-	**5**	-	-
Field Blank	YVD-F4-160623	6/23/2016	FB	59037371	-	-	-	0.25	U	-	-	-	-	-	-	-	**10**	-	-	**10**	-	-
Field Blank	YVD-FB-160926	9/26/2016	FB	K1611506	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Calcium			Magnesium			Potassium			Sodium			Chloride			Fluoride		
Analytical Method					EPA 200.7			EPA 200.7			EPA 200.7			EPA 200.7			EPA 300			EPA 300.0		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
Field Blank	YVD-FB-160927	9/27/2016	FB	K1611565	0.02	U	MBK	0.05	U	-	0.2	U	-	0.2	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-FB-160928	9/28/2016	FB	K1611629	**0.05**	J	-	0.05	U	-	0.2	U	-	**0.05**	J	-	0.1	U	-	0.1	U	-
Field Blank	YVD-FB-160929	9/29/2016	FB	K1611698	**0.07**	J	-	0.05	U	-	0.2	U	-	**0.05**	J	-	0.2	U	-	0.2	U	-
Field Blank	YVD-FB1-161212	12/12/2016	FB	K1615029	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Field Blank	YVD-FB2-161213	12/13/2016	FB	K1615045	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Field Blank	YVD-FB3-161214	12/14/2016	FB	K1615083	0.021	U	MBK	0.0053	U	-	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Field Blank	YVD-FB4-161215	12/15/2016	FB	K1615126	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Field Blank	YVD-FB5-161216	12/16/2016	FB	K1615174	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.2	U	-	0.2	U	-
Field Blank	YVD-030617-01	3/6/2017	FB	K1702228	0.021	U	MBK	0.0053	U	MBK	**0.08**	J	-	**0.04**	J	-	0.2	U	-	0.2	U	-
Field Blank	YVD-030717-06	3/7/2017	FB	K1702324	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-030817-11	3/8/2017	FB	K1702324	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-030917-17	3/9/2017	FB	K1702404	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-031017-26	3/10/2017	FB	K1702448	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-031317-30	3/13/2017	FB	K1702489	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-060417-01	6/4/2017	FB	K1705702	0.025	U	MBK	0.0053	U	MBK	0.021	U	-	**0.11**	J	-	21	U	-	0.2	U	-
Field Blank	YVD-060517-07	6/5/2017	FB	K1705702	0.029	U	MBK	0.0053	U	MBK	**0.06**	J	-	**0.11**	J	-	0.2	U	-	0.2	U	-
Field Blank	YVD-060617-17	6/6/2017	FB	K1705754	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.2	U	-	0.2	U	-
Field Blank	YVD-060717-28	6/7/2017	FB	K1705833	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	**0.02**	J	-	0.2	U	-	0.2	U	-
Field Blank	YVD-092517-01	9/25/2017	FB	K1710274	0.021	U	MBK	**0.0018**	J	-	0.21	U	MBK	0.21	U	MBK	0.20	U	-	0.20	U	-
Field Blank	YVD-092617-16	9/26/2017	FB	K1710333	0.026	U	MBK	0.0076	U	MBK	**0.09**	J	-	0.21	U	MBK	0.20	U	-	0.20	U	-
Field Blank	YVD-120417-01	12/4/2017	FB	K1713026	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	-	0.20	U	-	0.20	U	-
Field Blank	YVD-120517-32	12/5/2017	FB	K1713091	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	**0.07**	J	-	**0.42**	-	-	0.20	U	-
Field Blank	YVD-120617-25	12/6/2017	FB	K1713157	0.021	U	MBK	0.0053	U	MBK	0.21	U	-	0.21	U	MBK	0.20	U	-	0.20	U	-
Field Blank	YVD-031818-01	3/18/2018	FB	870610	0.4	U	-	0.06	U	-	0.62	U	-	0.7	U	-	0.1	U	-	0.1	U	-
Field Blank	YVD-031918-10	3/19/2018	FB	870634	0.4	U	-	0.06	U	-	0.62	U	-	0.7	U	-	0.1	U	-	0.1	U	-
Blank Check	WW-1	4/25/2016	BC	59032861	1.7	U	-	0.83	U	-	**190**	-	-	**400**	-	-	160	U	-	100	U	-
Blank Check	DW-1	4/25/2016	BC	59032861	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-
Blank Check	DI-1	4/25/2016	BC	59032861	1	U	-	0.5	U	-	1	U	-	0.5	U	-	0.8	U	-	0.5	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Nitrate (as N)			Nitrite (as N)			Sulfate			Ammonia (as N)			Ammonia (as N)			Total Kjeldahl Nitrogen (TKN)		
Analytical Method					EPA 300.0			EPA 300.0			EPA 300.0			SM4500 NH3-G			EPA 350.1			EPA 351.2		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
Field Blank	YVD-FB-160927	9/27/2016	FB	K1611565	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	MBK	0.050	U	MBK	0.5	R	MSD
Field Blank	YVD-FB-160928	9/28/2016	FB	K1611629	0.05	U	-	0.05	U	-	**3.61**	-	-	0.050	U	MBK	0.050	U	MBK	0.5	U	-
Field Blank	YVD-FB-160929	9/29/2016	FB	K1611698	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	MBK	0.050	U	MBK	0.5	R	MSD
Field Blank	YVD-FB1-161212	12/12/2016	FB	K1615029	0.1	U	HTQ	0.10	UJ	HTQ	0.2	U	MBK	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-FB2-161213	12/13/2016	FB	K1615045	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-FB3-161214	12/14/2016	FB	K1615083	0.1	U	-	0.10	U	-	**0.35**	-	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-FB4-161215	12/15/2016	FB	K1615126	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-FB5-161216	12/16/2016	FB	K1615174	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-030617-01	3/6/2017	FB	K1702228	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	**0.2**	J	-
Field Blank	YVD-030717-06	3/7/2017	FB	K1702324	0.1	UJ	HTQ	0.10	UJ	HTQ	0.2	U	-	1	U	-	1	U	-	0.5	U	-
Field Blank	YVD-030817-11	3/8/2017	FB	K1702324	0.1	U	-	0.10	U	-	0.03	J	-	1	U	-	1	U	-	0.5	U	-
Field Blank	YVD-030917-17	3/9/2017	FB	K1702404	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-031017-26	3/10/2017	FB	K1702448	0.1	U	-	0.10	U	-	0.26	-	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-031317-30	3/13/2017	FB	K1702489	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-060417-01	6/4/2017	FB	K1705702	5.3	U	-	21	U	-	5.3	U	-	0.050	U	-	0.050	U	-	**0.7**	-	-
Field Blank	YVD-060517-07	6/5/2017	FB	K1705702	0.1	U	-	0.10	U	-	**0.25**	-	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-060617-17	6/6/2017	FB	K1705754	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-060717-28	6/7/2017	FB	K1705833	0.1	U	-	0.10	U	-	0.2	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-092517-01	9/25/2017	FB	K1710274	0.10	U	-	0.10	U	-	0.20	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-092617-16	9/26/2017	FB	K1710333	0.10	U	-	0.10	U	-	**0.86**	-	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-120417-01	12/4/2017	FB	K1713026	0.10	U	-	0.10	U	-	0.20	U	-	0.050	U	-	0.050	U	-	0.5	U	-
Field Blank	YVD-120517-32	12/5/2017	FB	K1713091	0.10	U	HTQ	0.10	UJ	HTQ	**0.71**	-	-	0.050	U	-	0.050	U	-	0.5	UJ	MSD
Field Blank	YVD-120617-25	12/6/2017	FB	K1713157	0.10	U	-	0.10	U	-	0.20	U	-	0.050	U	MBK	0.050	U	MBK	0.5	U	-
Field Blank	YVD-031818-01	3/18/2018	FB	870610	0.05	U	-	0.05	U	-	0.1	U	-	0.07	U	-	-	-	-	0.5	U	-
Field Blank	YVD-031918-10	3/19/2018	FB	870634	0.05	U	-	0.05	U	-	0.1	U	-	0.07	U	-	-	-	-	0.5	U	-
Blank Check	WW-1	4/25/2016	BC	59032861	40	U	-	40	U	-	100	U	-	**0.33**	-	-	**0.33**	-	-	**1.4**	-	-
Blank Check	DW-1	4/25/2016	BC	59032861	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-
Blank Check	DI-1	4/25/2016	BC	59032861	0.2	U	-	0.2	U	-	0.5	U	-	0.1	U	-	0.1	U	-	0.25	U	-

Table 8
Historical Groundwater Analytical Results

Analyte					Phosphorus			Phosphorus			Phosphorus			Phosphorus			Alkalinity, Bicarbonate (as CaCO3)			Alkalinity, Total (as CaCO3)		
Analytical Method					EPA 365.1			EPA 365.3			EPA 365.4			SM4500 P-E			SM2320B			SM2320B		
Well ID	Sample Name	Sample Date	Sample Type	Sample Group	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code	Result (mg/L)	Qualifier	Validation Code
Field Blank	YVD-FB-160927	9/27/2016	FB	K1611565	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-FB-160928	9/28/2016	FB	K1611629	-	-	-	0.01	U	-	-	-	-	-	-	-	15	U	-	15	U	-
Field Blank	YVD-FB-160929	9/29/2016	FB	K1611698	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-FB1-161212	12/12/2016	FB	K1615029	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-FB2-161213	12/13/2016	FB	K1615045	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-FB3-161214	12/14/2016	FB	K1615083	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-FB4-161215	12/15/2016	FB	K1615126	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-FB5-161216	12/16/2016	FB	K1615174	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-030617-01	3/6/2017	FB	K1702228	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-030717-06	3/7/2017	FB	K1702324	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-030817-11	3/8/2017	FB	K1702324	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-030917-17	3/9/2017	FB	K1702404	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-031017-26	3/10/2017	FB	K1702448	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-031317-30	3/13/2017	FB	K1702489	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-060417-01	6/4/2017	FB	K1705702	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-060517-07	6/5/2017	FB	K1705702	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-060617-17	6/6/2017	FB	K1705754	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-060717-28	6/7/2017	FB	K1705833	-	-	-	0.01	U	-	-	-	-	-	-	-	2	U	-	2	U	-
Field Blank	YVD-092517-01	9/25/2017	FB	K1710274	-	-	-	0.010	U	-	-	-	-	-	-	-	2.0	U	-	2.0	U	-
Field Blank	YVD-092617-16	9/26/2017	FB	K1710333	-	-	-	0.010	U	-	-	-	-	-	-	-	2.0	U	-	2.0	U	-
Field Blank	YVD-120417-01	12/4/2017	FB	K1713026	-	-	-	0.010	U	-	-	-	-	-	-	-	15	U	MBK	15	U	-
Field Blank	YVD-120517-32	12/5/2017	FB	K1713091	-	-	-	0.010	U	-	-	-	-	-	-	-	15	U	MBK	15	U	-
Field Blank	YVD-120617-25	12/6/2017	FB	K1713157	-	-	-	0.010	U	-	-	-	-	-	-	-	15	U	MBK	15	U	-
Field Blank	YVD-031818-01	3/18/2018	FB	870610	-	-	-	-	-	-	-	-	-	0.07	U	-	5	U	-	5	U	-
Field Blank	YVD-031918-10	3/19/2018	FB	870634	-	-	-	-	-	-	-	-	-	0.07	U	-	5	U	-	5	U	-
Blank Check	WW-1	4/25/2016	BC	59032861	-	-	-	0.25	U	-	-	-	-	-	-	-	**110**	-	-	**110**	-	-
Blank Check	DW-1	4/25/2016	BC	59032861	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-
Blank Check	DI-1	4/25/2016	BC	59032861	-	-	-	0.25	U	-	-	-	-	-	-	-	4	U	-	4	U	-

Table 8
Historical Groundwater Analytical Results

Notes:
Bold: detected result
- : not applicable
(as N): reported as nitrogen
(as CaCO3): reported as calcium carbonate
BC: blank check
DUP: Laboratory duplicate relative percent difference was outside acceptance limits.
EB: equipment blank
EPA: U.S. Environmental Protection Agency
ERL: elevated reporting limit
FB: field blank
FBK: field blank contamination
FD: field duplicate
FDP: Field duplicate relative percent difference exceeded acceptance limits.
HTQ: holding time violation
J: The compound was positively identified; however, the associated numerical value is an estimated concentration.
J-: The result is an estimated quantity, but the result may be biased low.
J+: The result is an estimated quantity, but the result may be biased high.
MBK: method blank contamination
mg/L: milligrams per liter
MSD: Matrix spike/matrix spike duplicate percent recoveries were outside acceptance limits.
N: normal sample
R: The sample results are rejected as unusable. The compound may or may not be present in the sample.
RPD: Relative percent difference was outside acceptance limits.
SM: Standard Method
U: The compound was analyzed for but not detected. The associated value is the compound reporting limit, or the compound is considered non-detect at the listed value due to associated blank contamination.
UJ: The compound was not detected above the reported sample reporting limit; however, the reporting limit is approximate and may or may not represent the actual limit of quantitation.

Figures

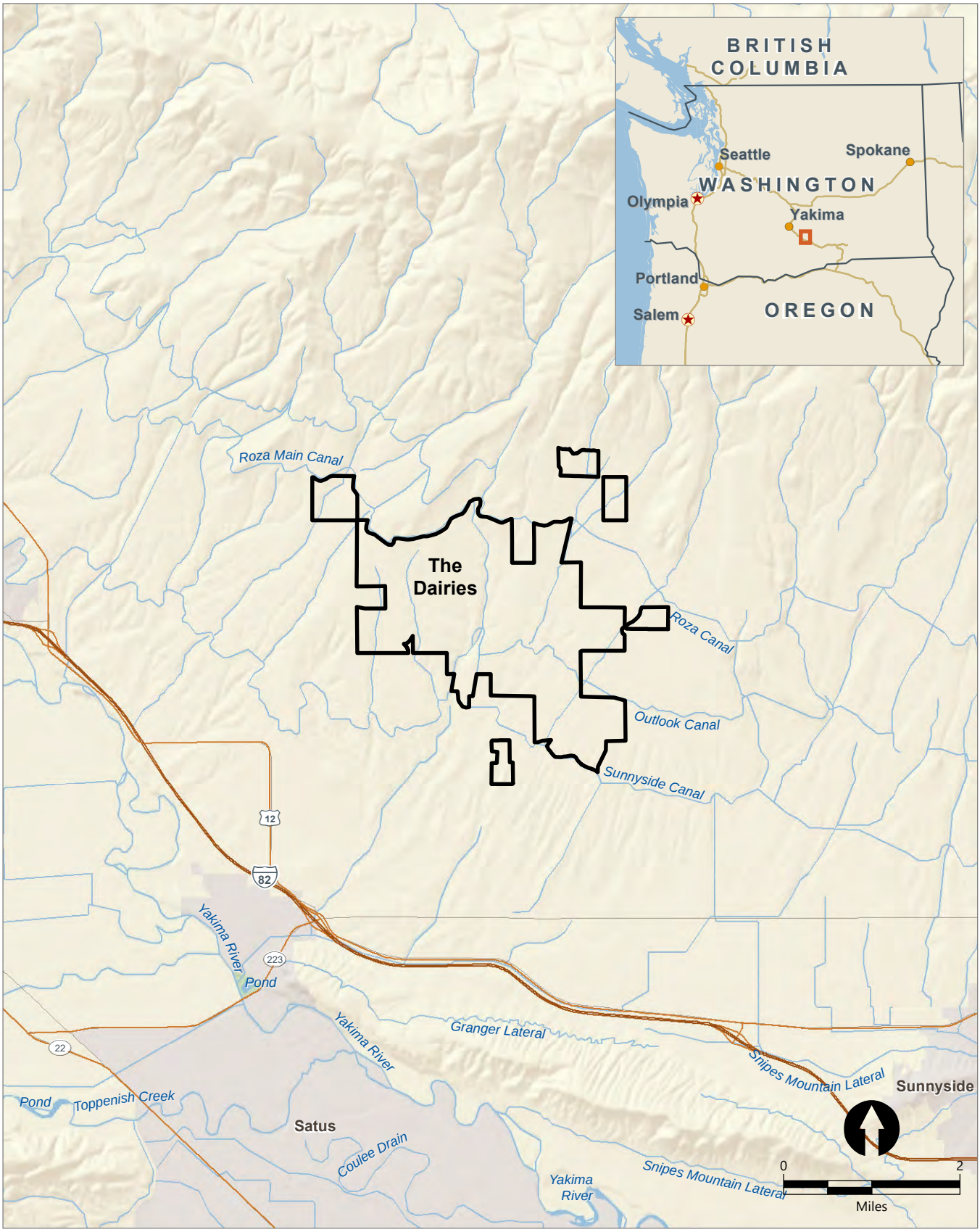

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Figure 1
Site Vicinity Map
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

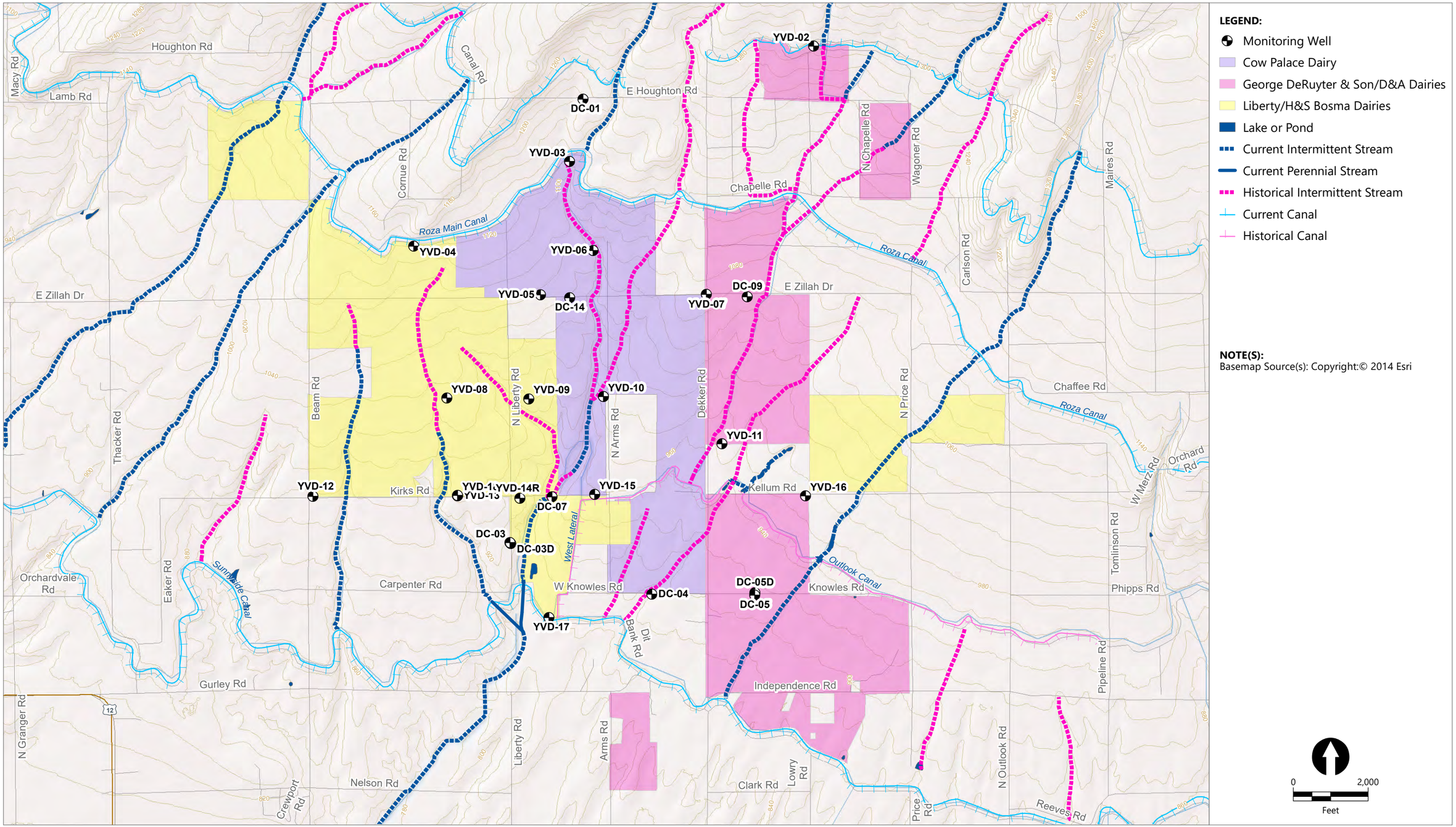

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Figure 2A
Site Map
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

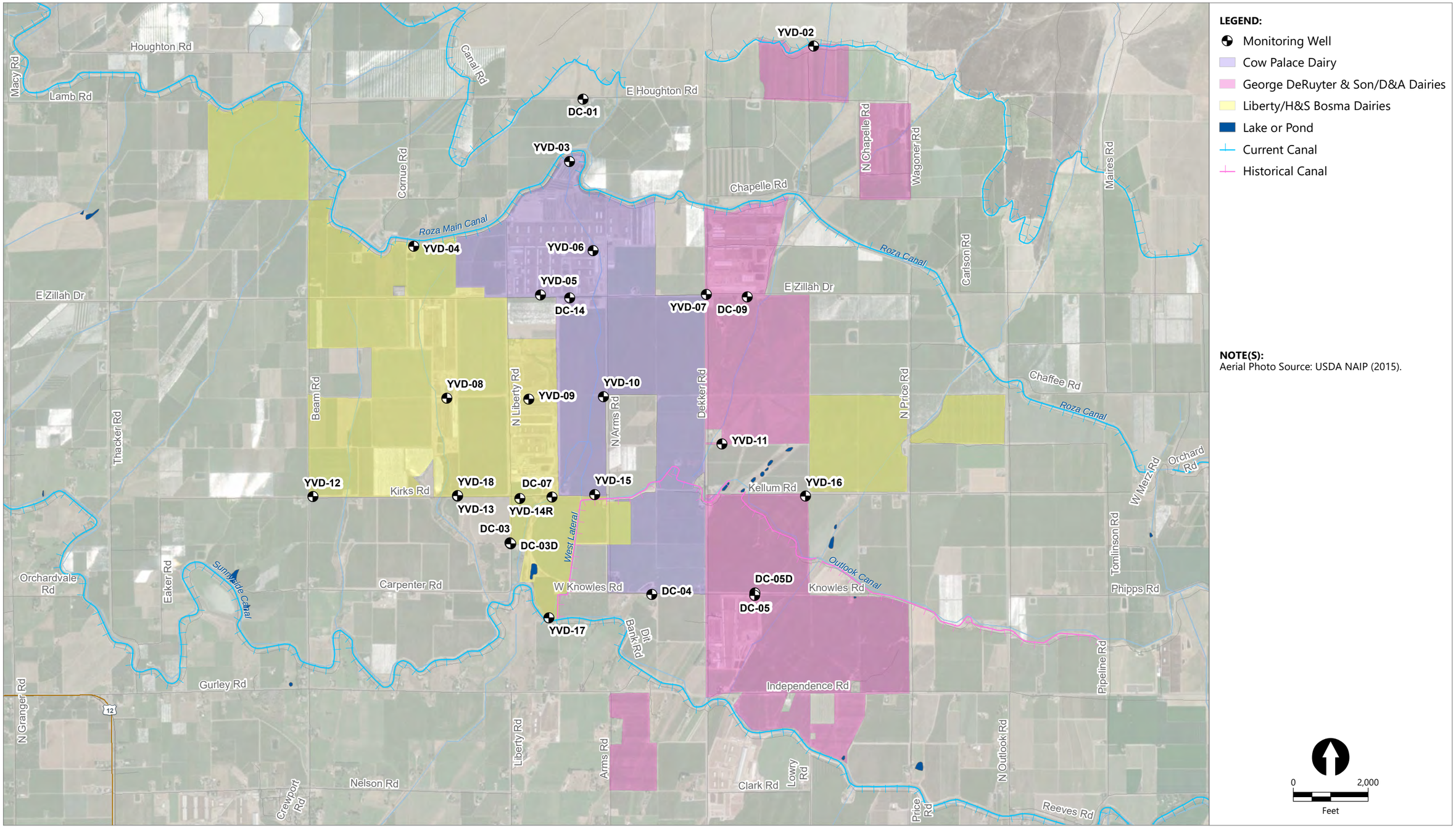

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Figure 2B
Aerial Photograph
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

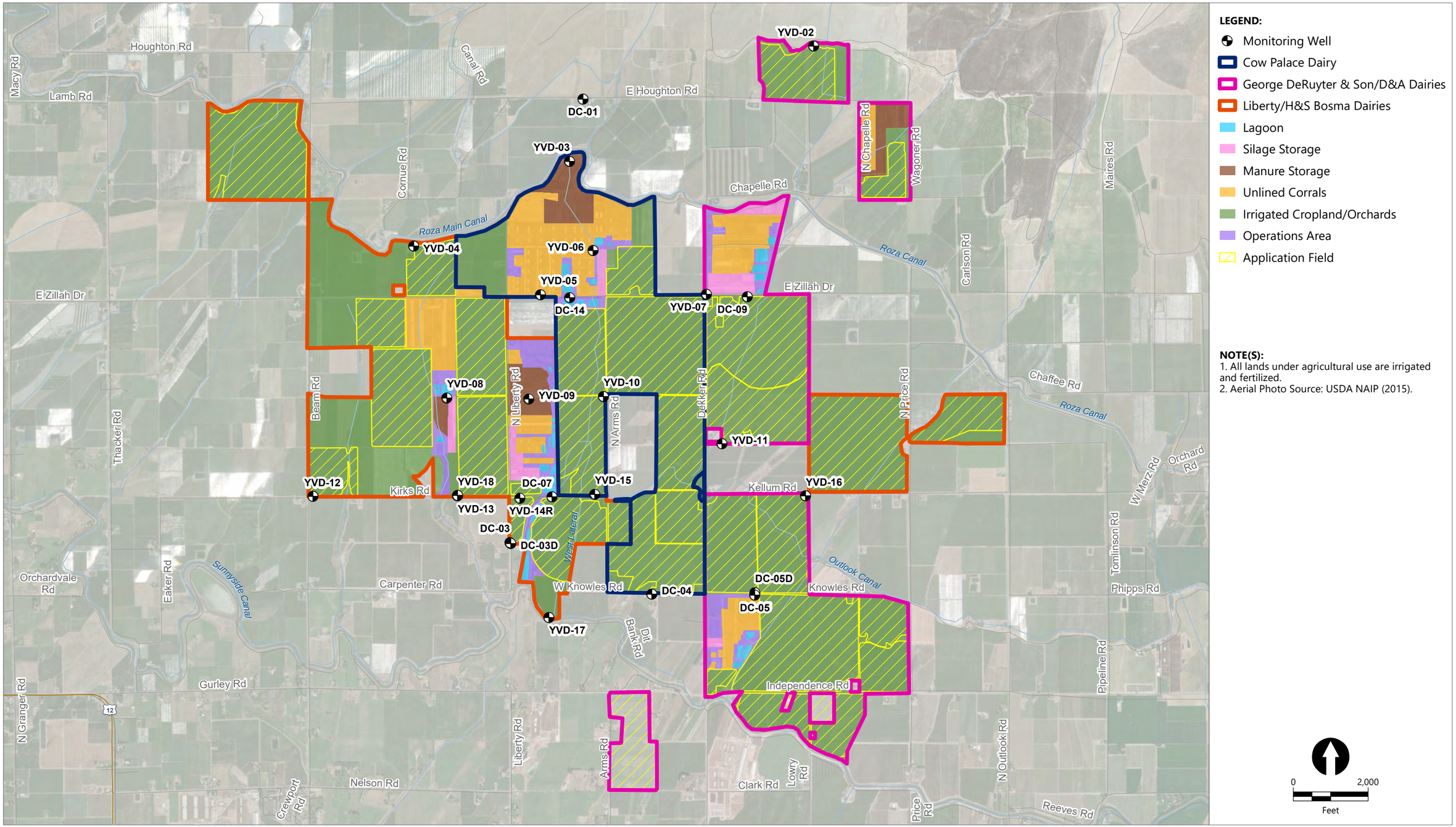

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Figure 3A
General Facility Plan
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

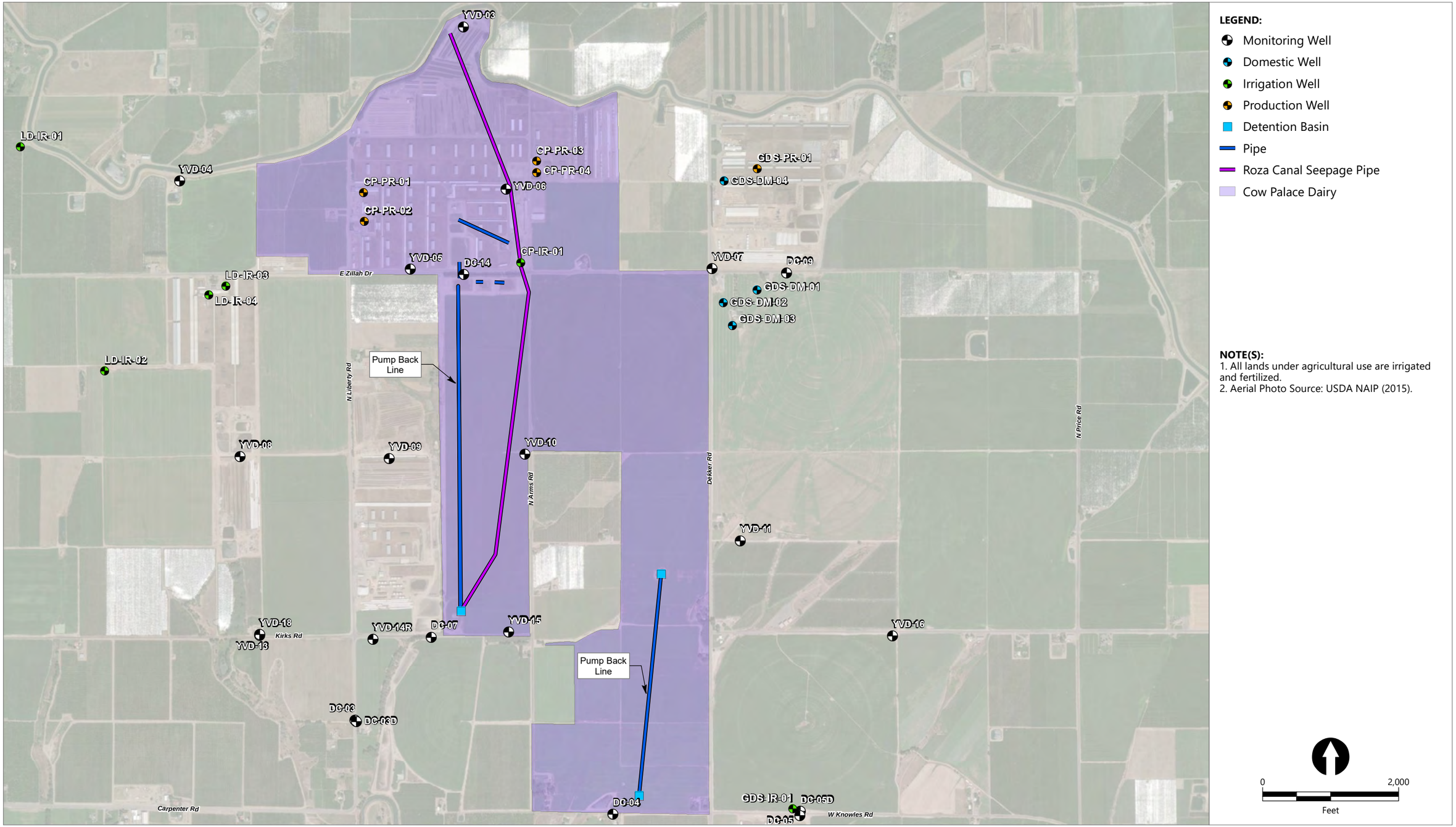

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Figure 3B
Facility Plan – Cow Palace Dairy
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

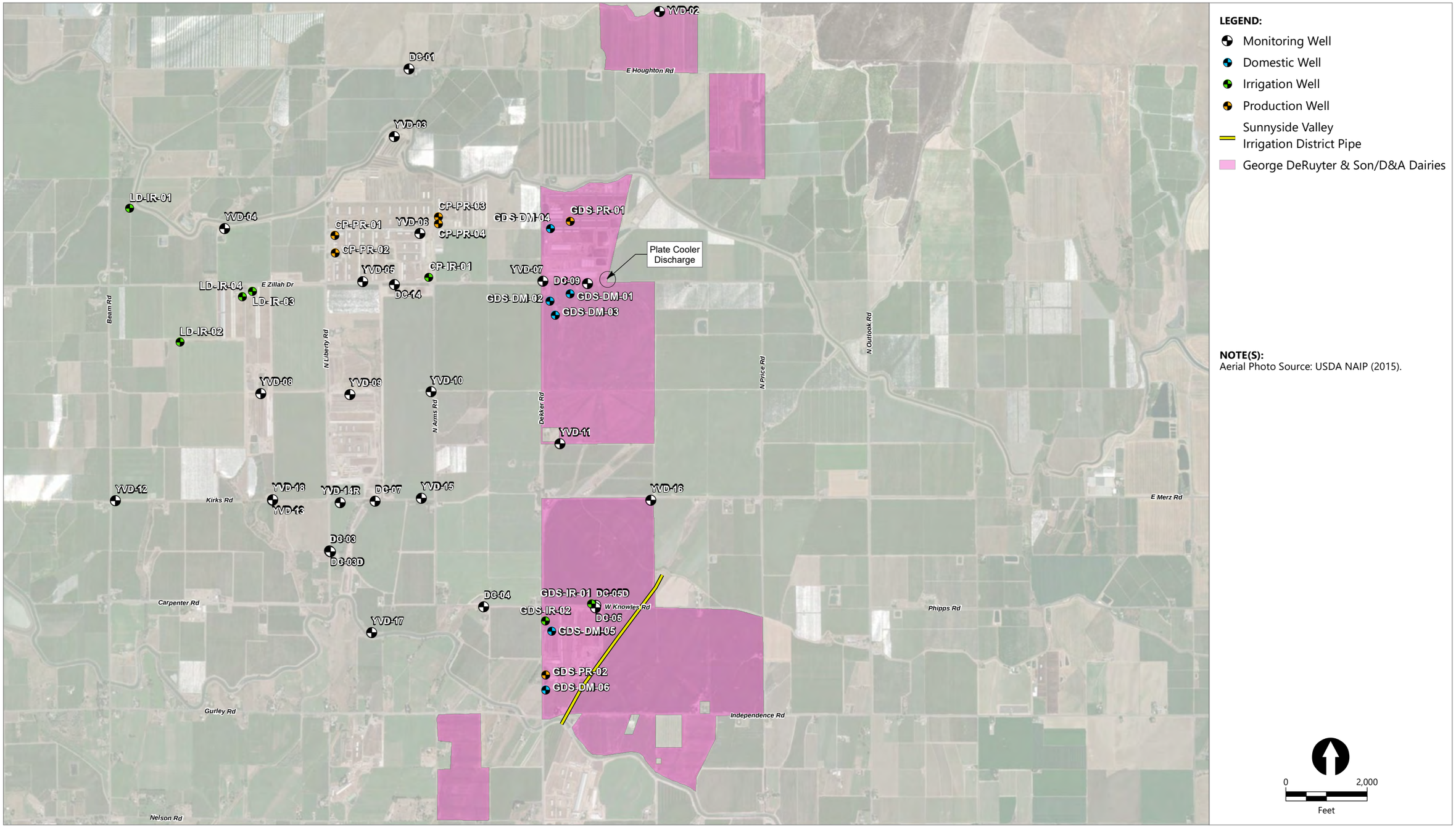

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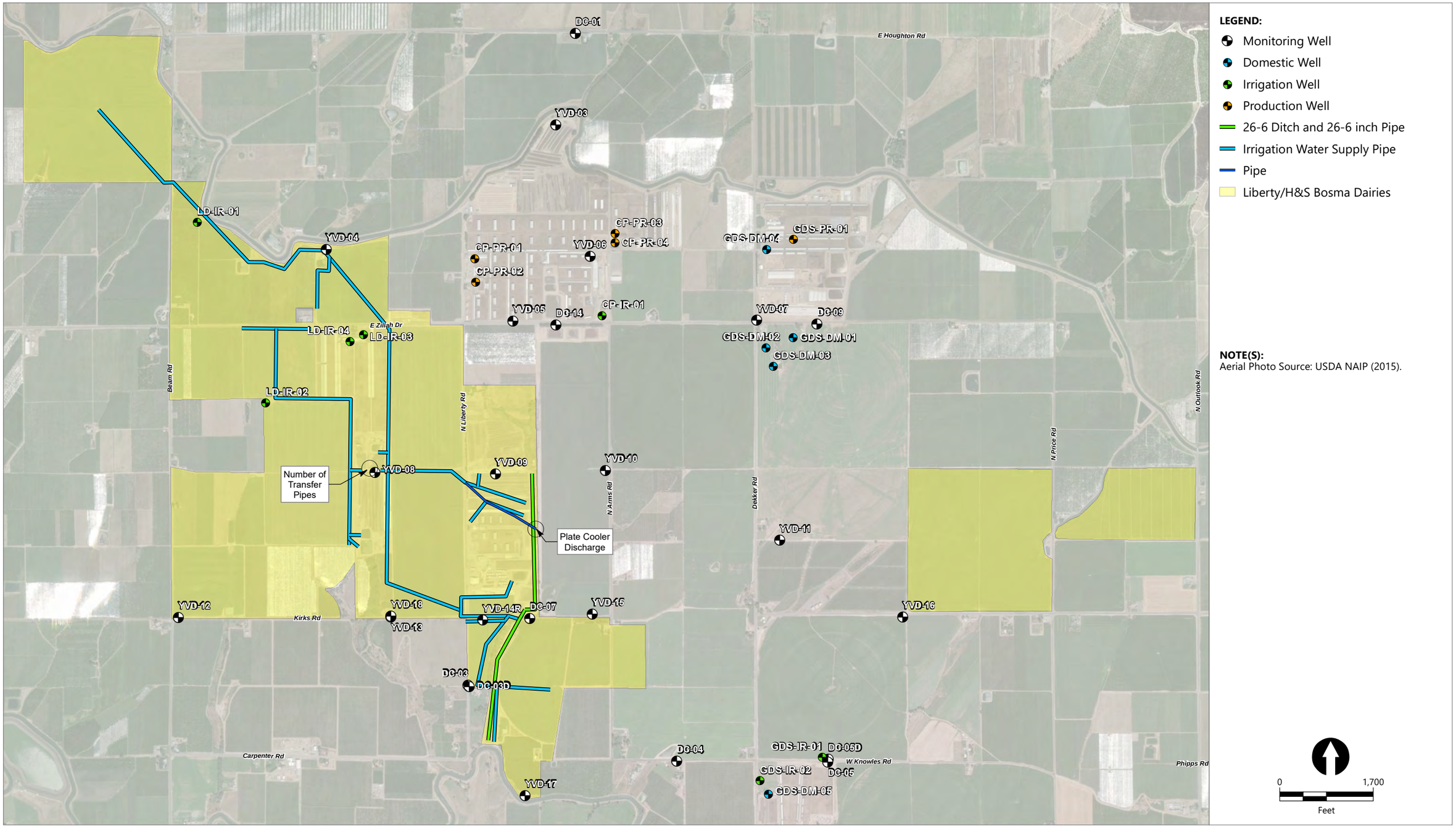
Figure 3C
Facility Plan – George DeRuyter & Son/D&A Dairies
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Monitoring Well
- Domestic Well
- Irrigation Well
- Production Well
- 26-6 Ditch and 26-6 inch Pipe
- Irrigation Water Supply Pipe
- Pipe
- Liberty/H&S Bosma Dairies

NOTE(S):
Aerial Photo Source: USDA NAIP (2015).

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Figure 3D
Facility Plan – Liberty/H&S Bosma Dairies
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

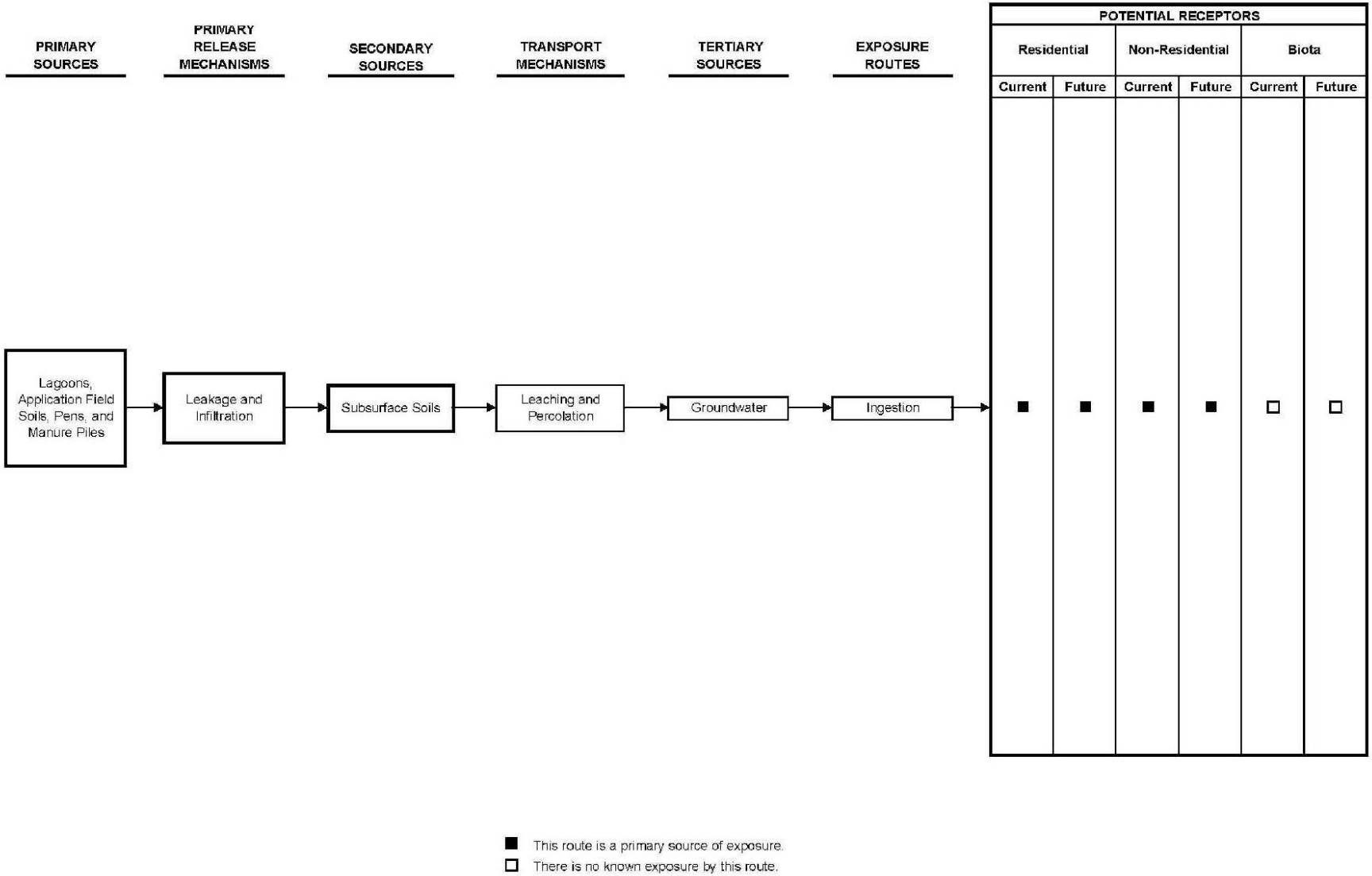

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Figure 4
Conceptual Site Model Flow Chart
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

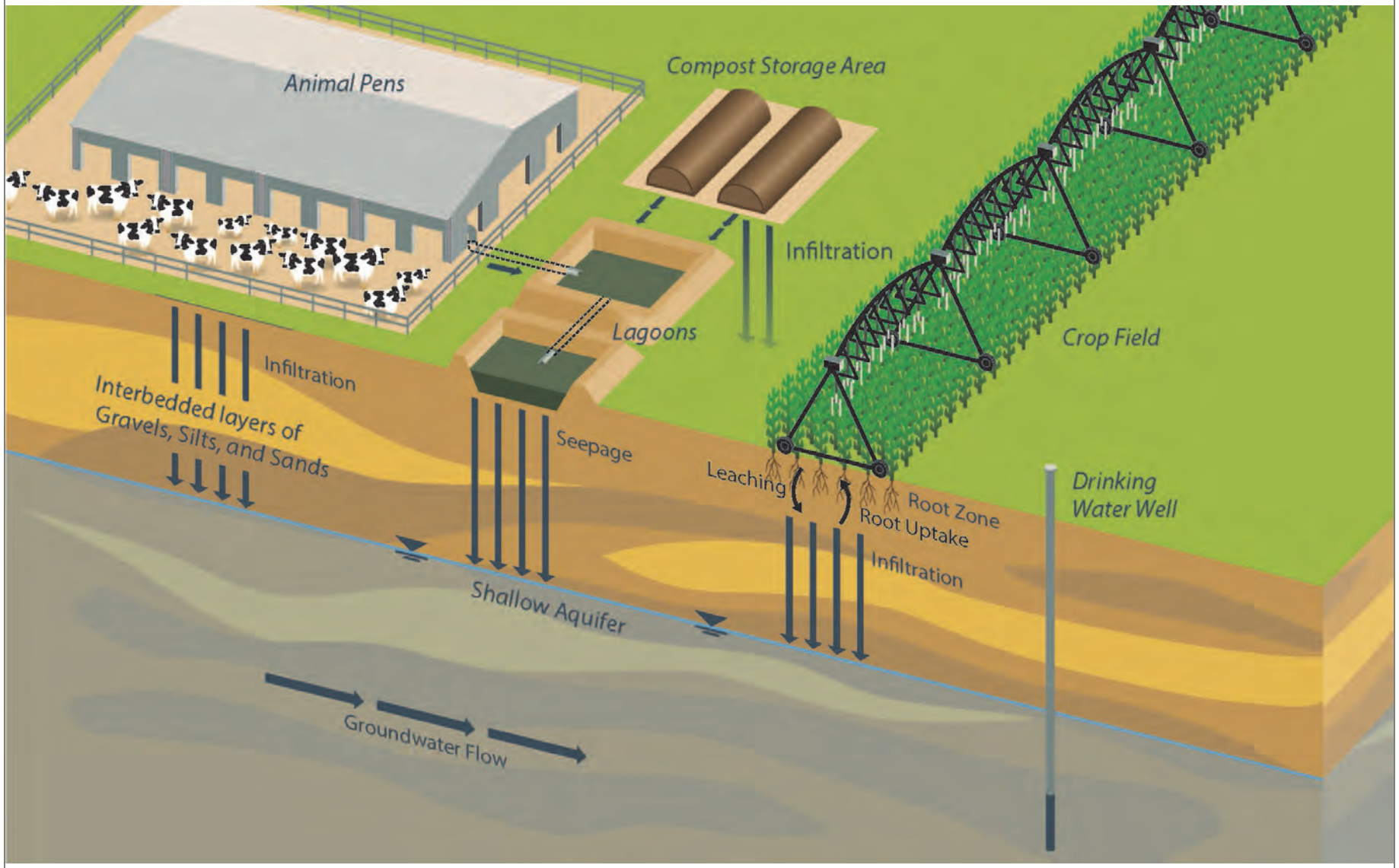

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Figure 5
Conceptual Site Model
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

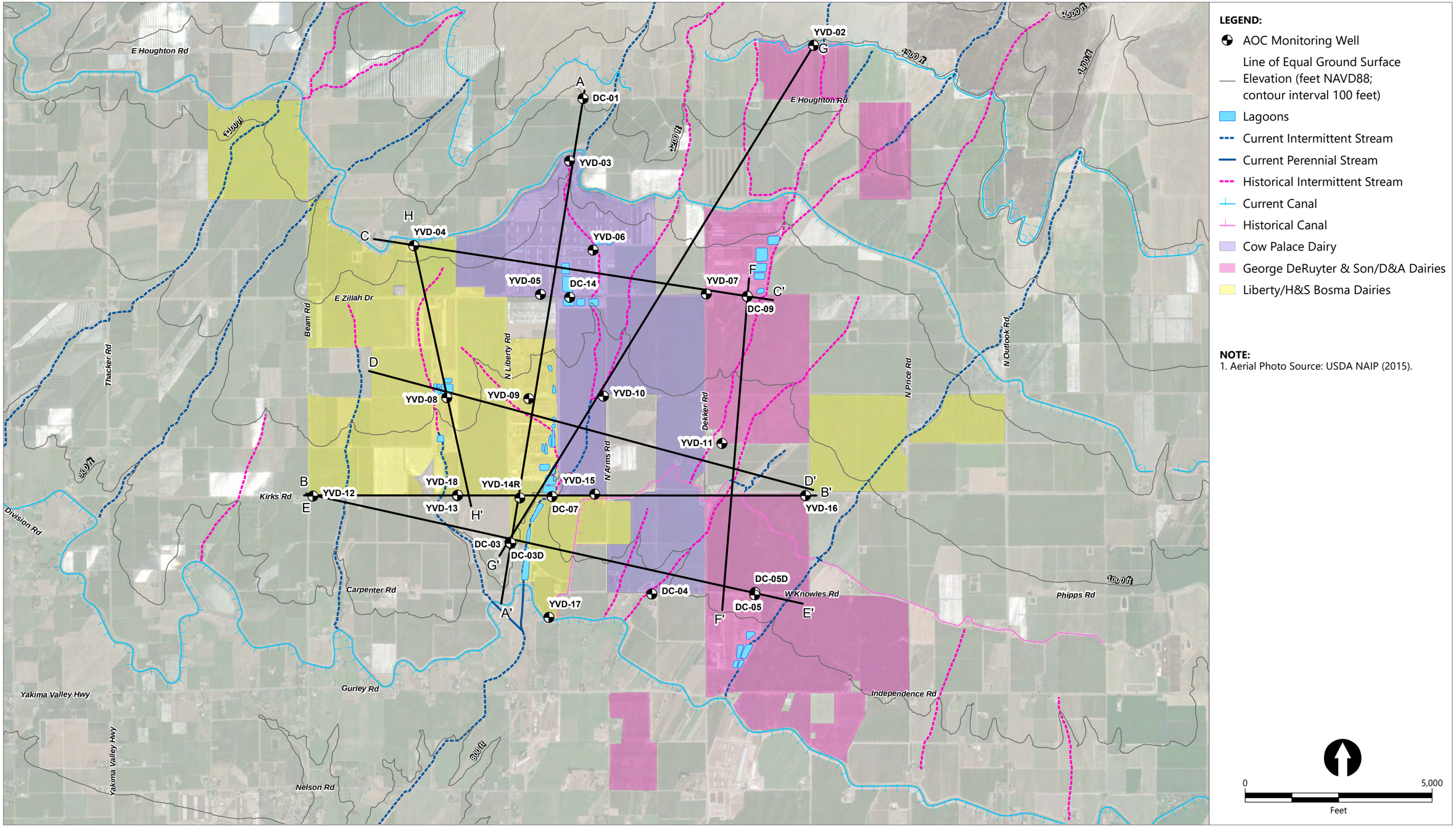

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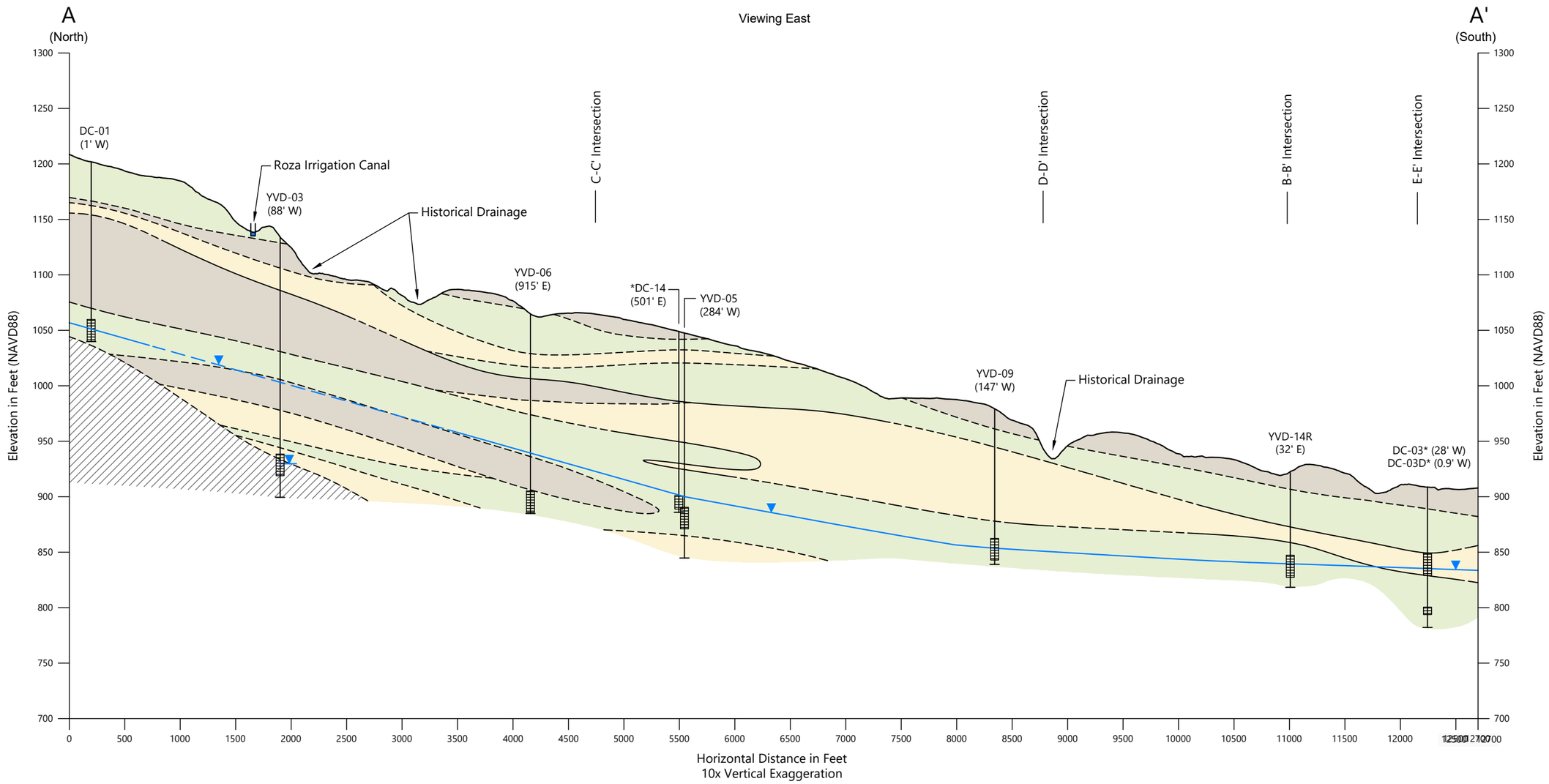
Figure 6
Cross Section Location Map
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

NOTE:
* = Vertical hydraulic gradient between DC-03 and DC-03D <0.1 foot

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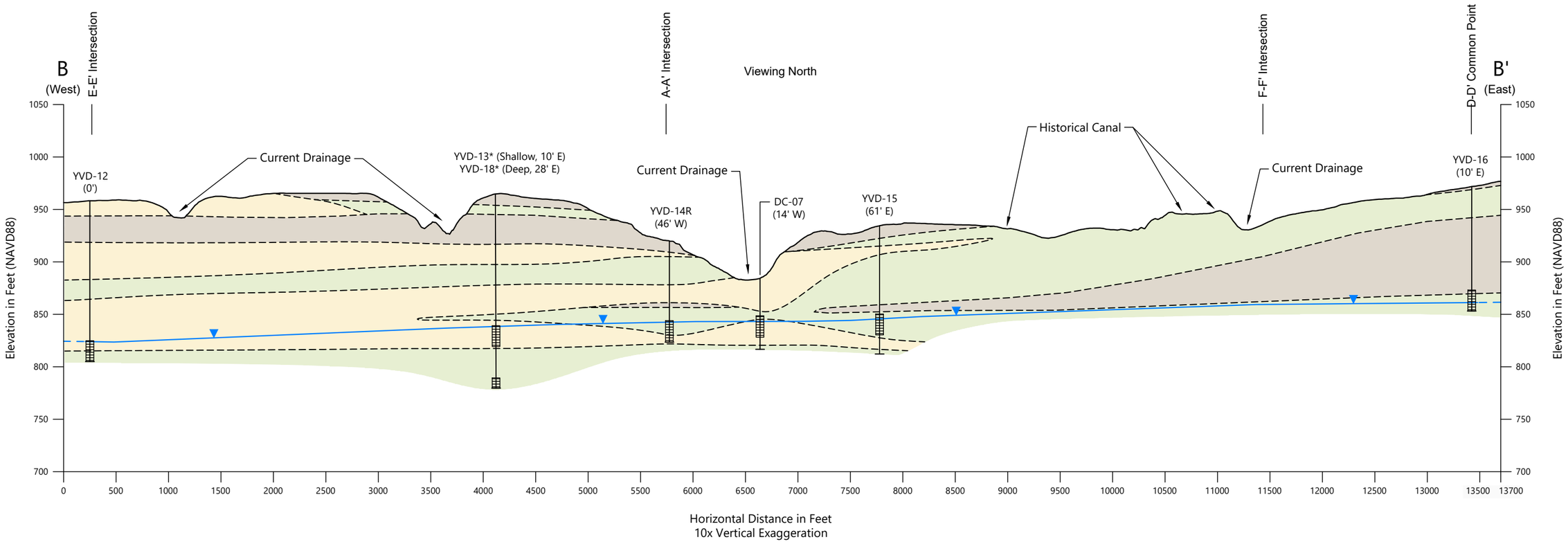
Figure 7
Geologic Cross Section A-A'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

NOTE:
* = Vertical hydraulic gradient between YVD-13 and YVD-18 <0.1 foot

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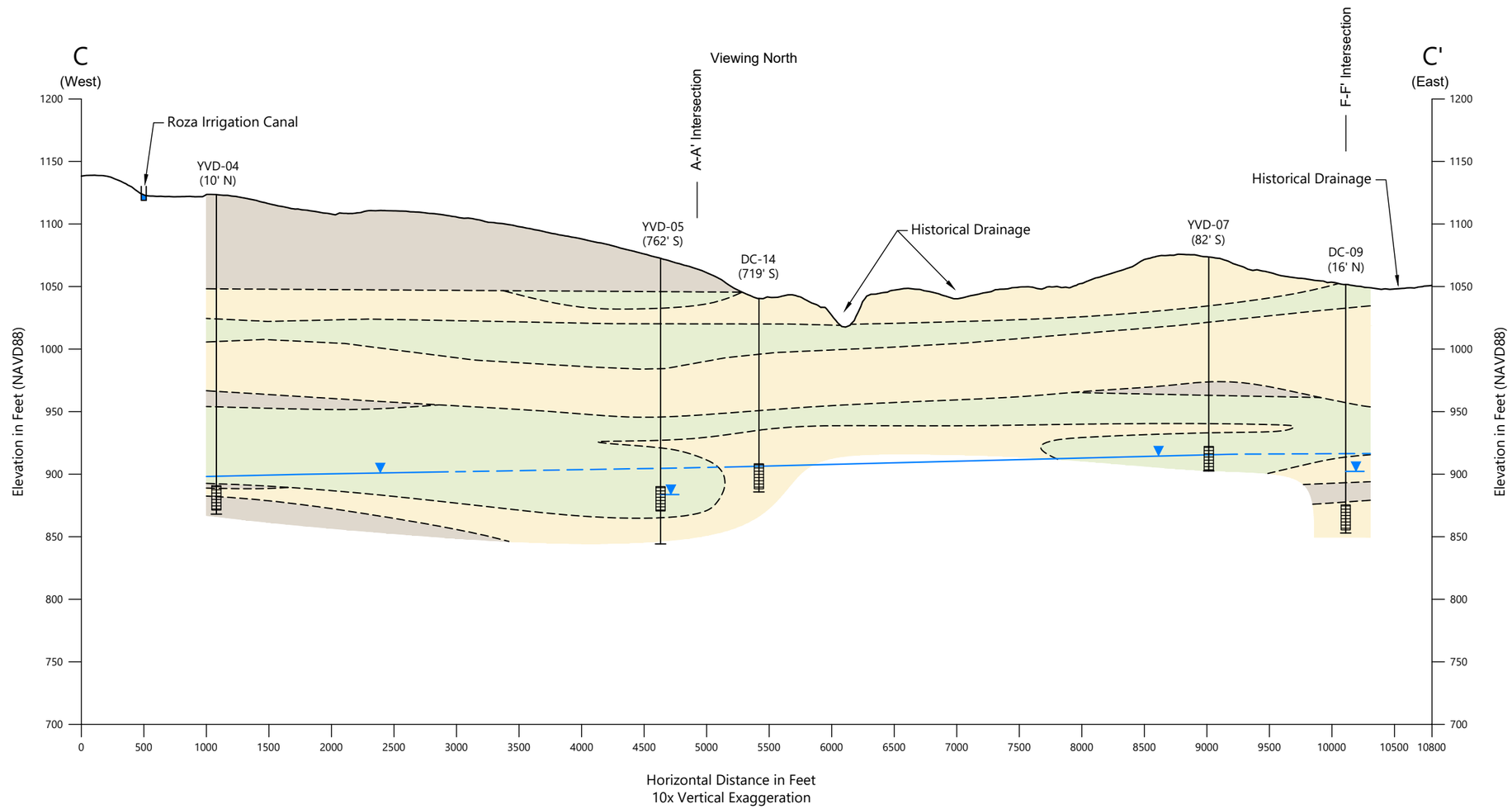
Figure 8
Geologic Cross Section B-B'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

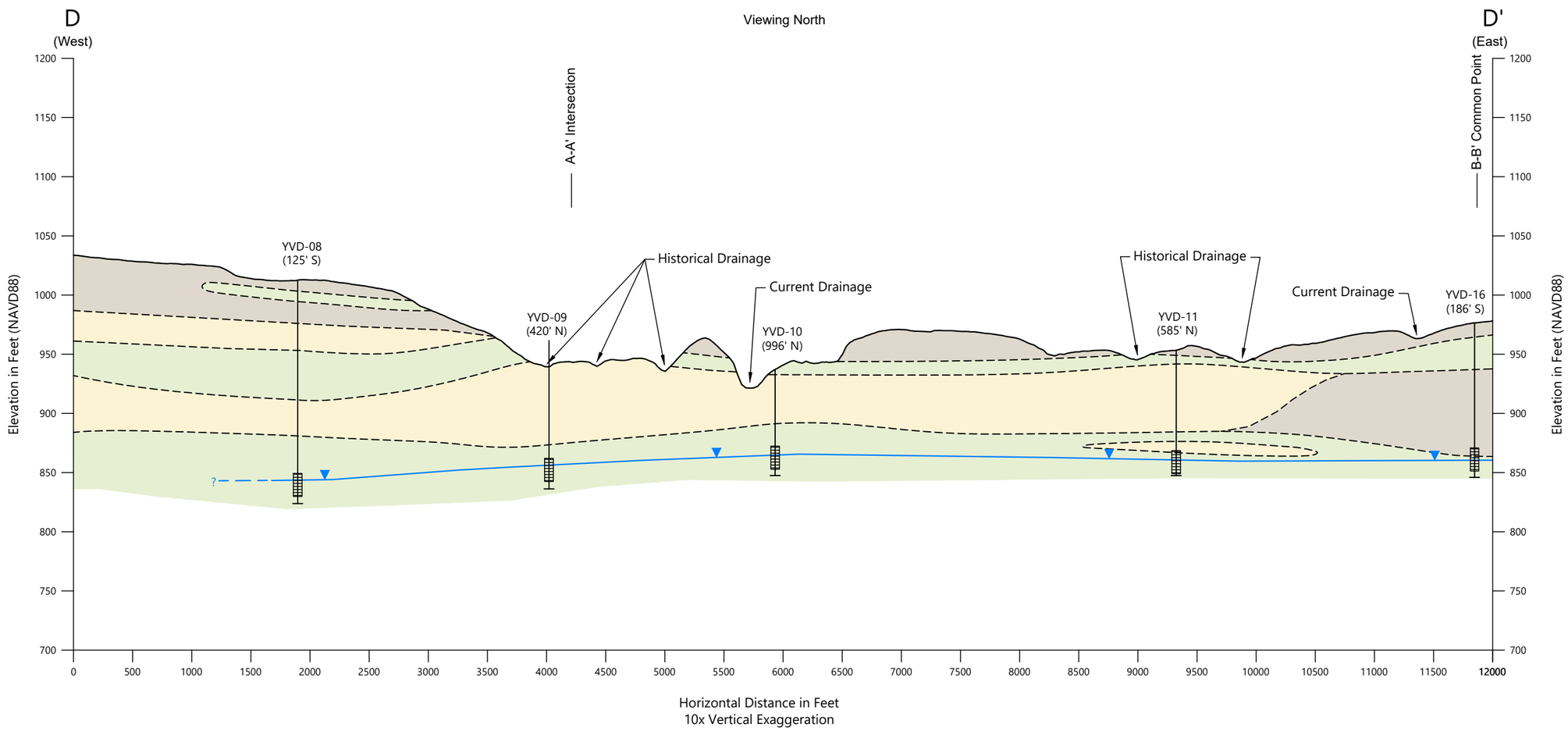
VERTICAL DATUM: NAVD88

Publish Date: 2017/07/18 12:39 PM | User: hmerrick
Filepath: K:\Projects\0996-Perkins Coie\Yakima Dairies Project\0096-RP-007 (Sections).dwg XSEC CC

ANCHOR QEA

Figure 9
Geologic Cross Section C-C'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

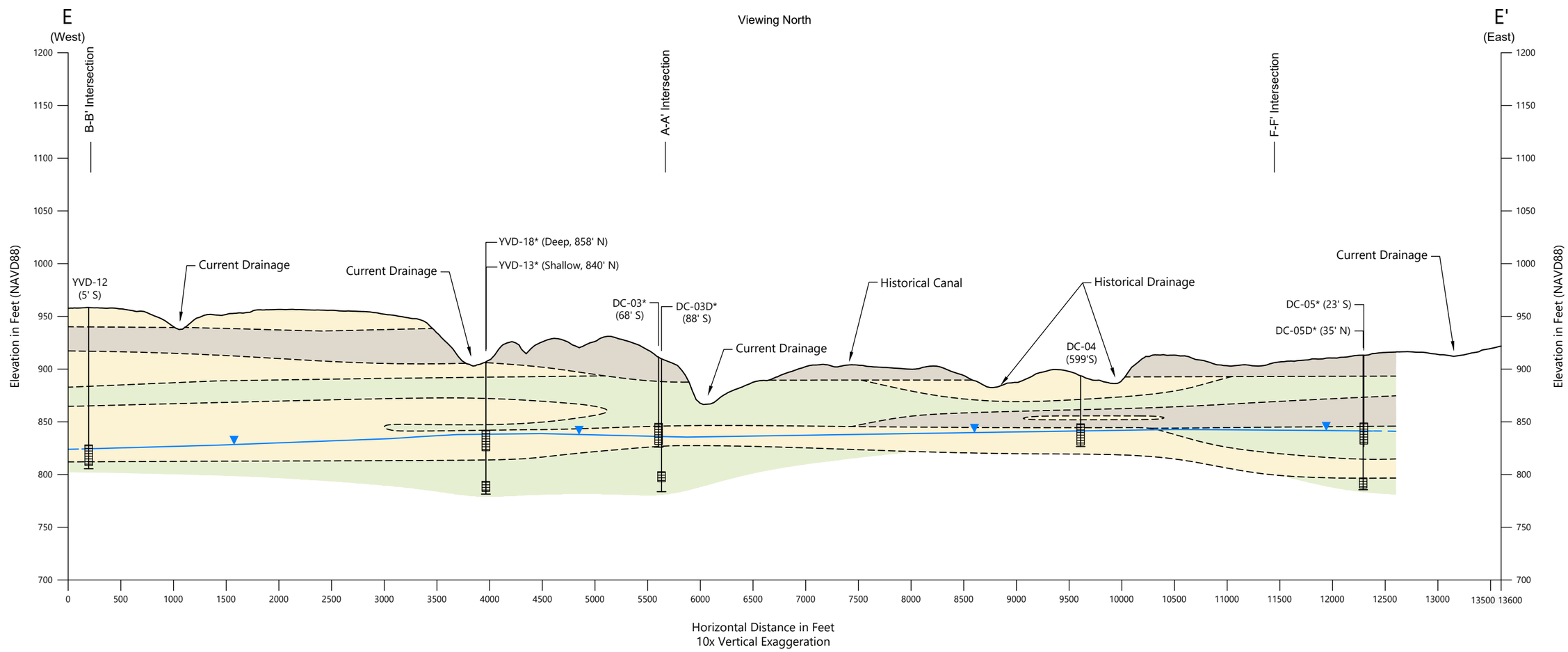
VERTICAL DATUM: NAVD88

Publish Date: 2017/07/18 12:39 PM | User: hmerrick
Filepath: K:\Projects\0996-Perkins Coie\Yakima Dairies Project\0096-RP-007 (Sections).dwg XSEC DD

ANCHOR QEA

Figure 10
Geologic Cross Section D-D'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

NOTE:
* = Vertical hydraulic gradient between deep and shallow wells pairs <0.1 foot

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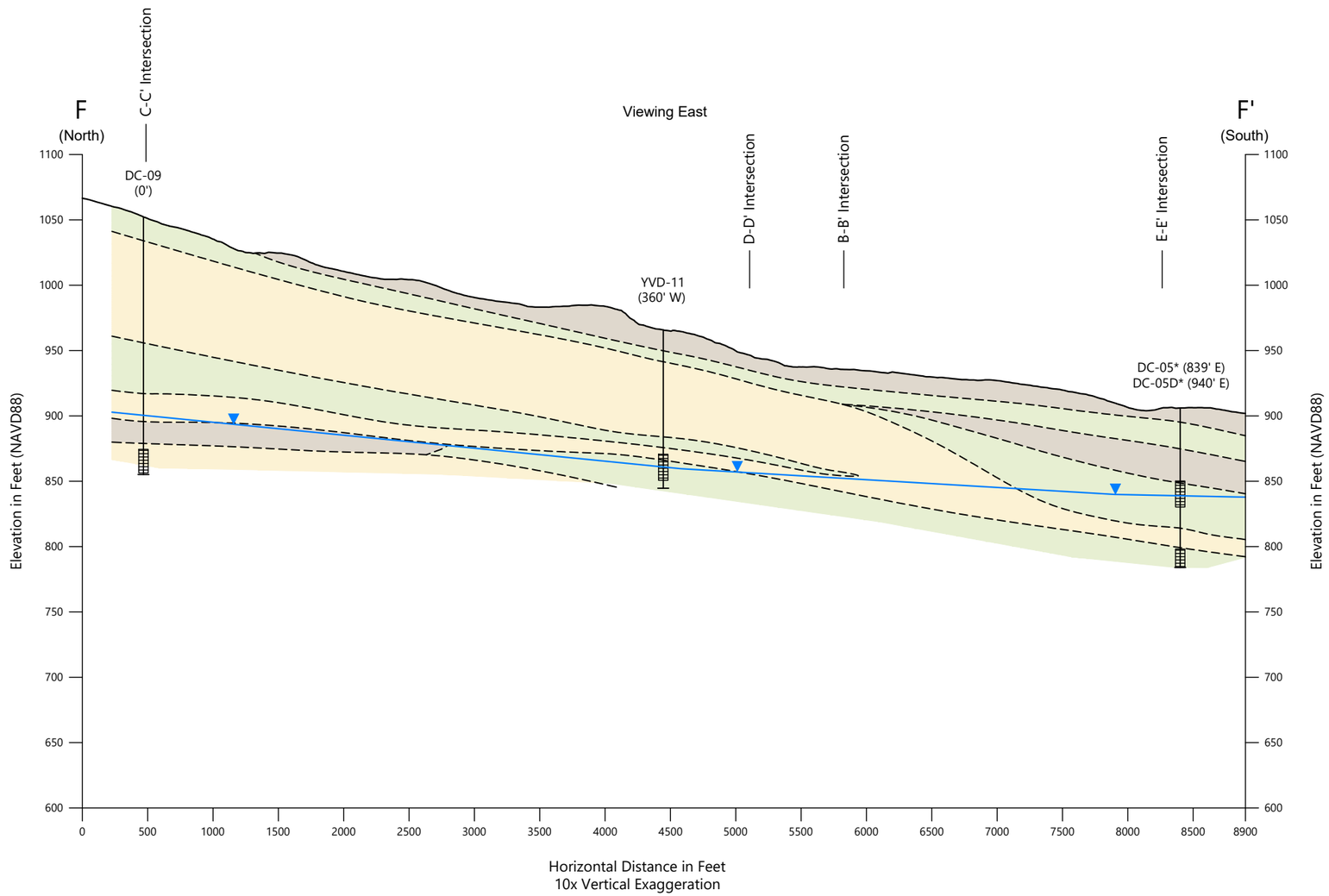
Filepath: K:\Projects\0996-Perkins Coie\Yakima Dairies Project\0096-RP-007 (Sections).dwg XSEC EE

ANCHOR QEA

Figure 11
Geologic Cross Section E-E'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

NOTE:
* = Vertical hydraulic gradient between DC-05 and DC-05D <0.1 foot

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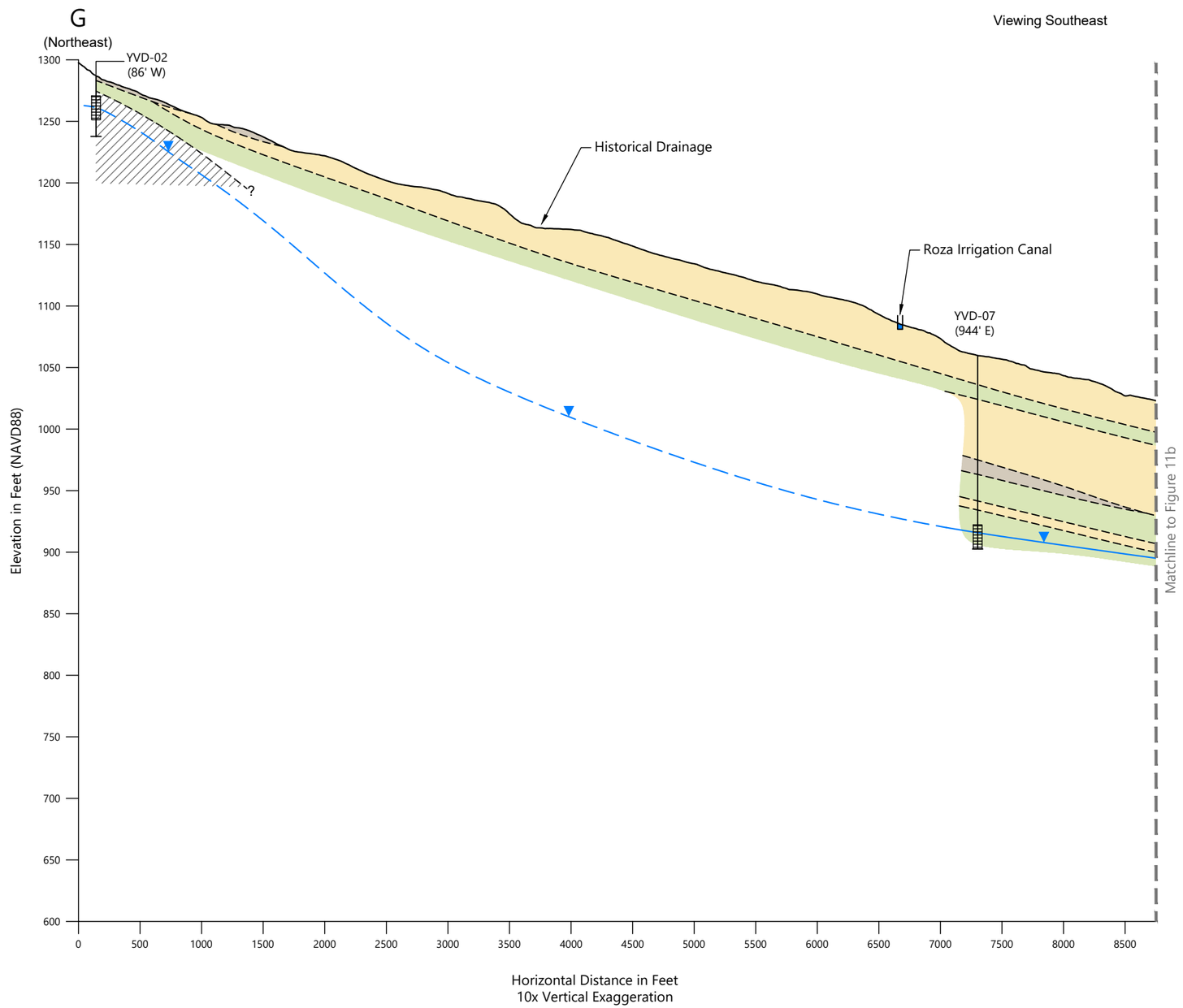
ANCHOR QEA

Figure 12
Geologic Cross Section F-F'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

NOTE:
* = Vertical hydraulic gradient between DC-03 and DC-03D <0.1 foot

Publish Date: 2017/07/18 12:41 PM | User: hmerrick
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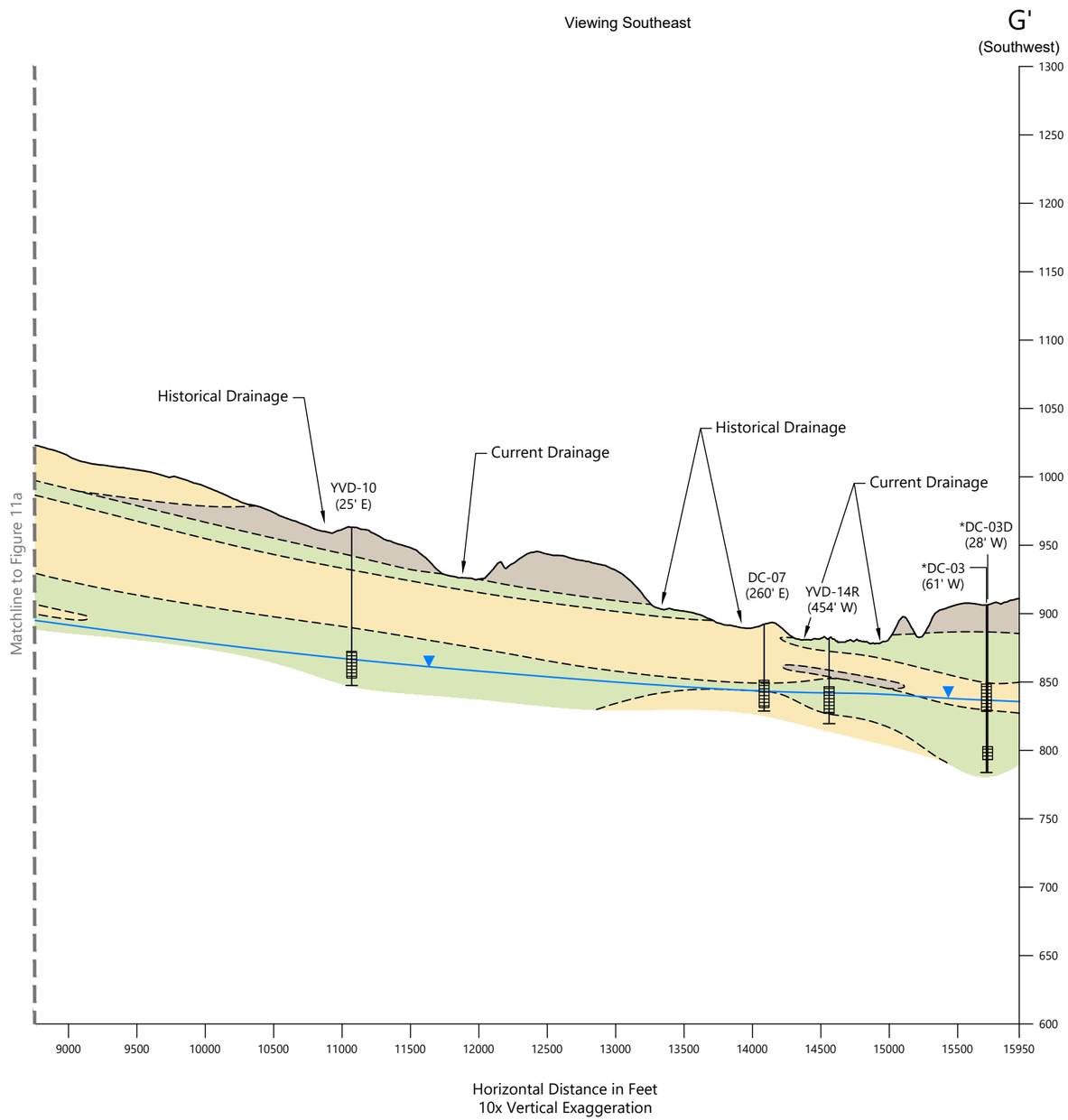
ANCHOR QEA

Figure 13A
Cross Section G-G'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

NOTE:
* = Vertical hydraulic gradient between DC-03 and DC-03D <0.1 foot

Publish Date: 2017/07/18 12:41 PM | User: hmerrick
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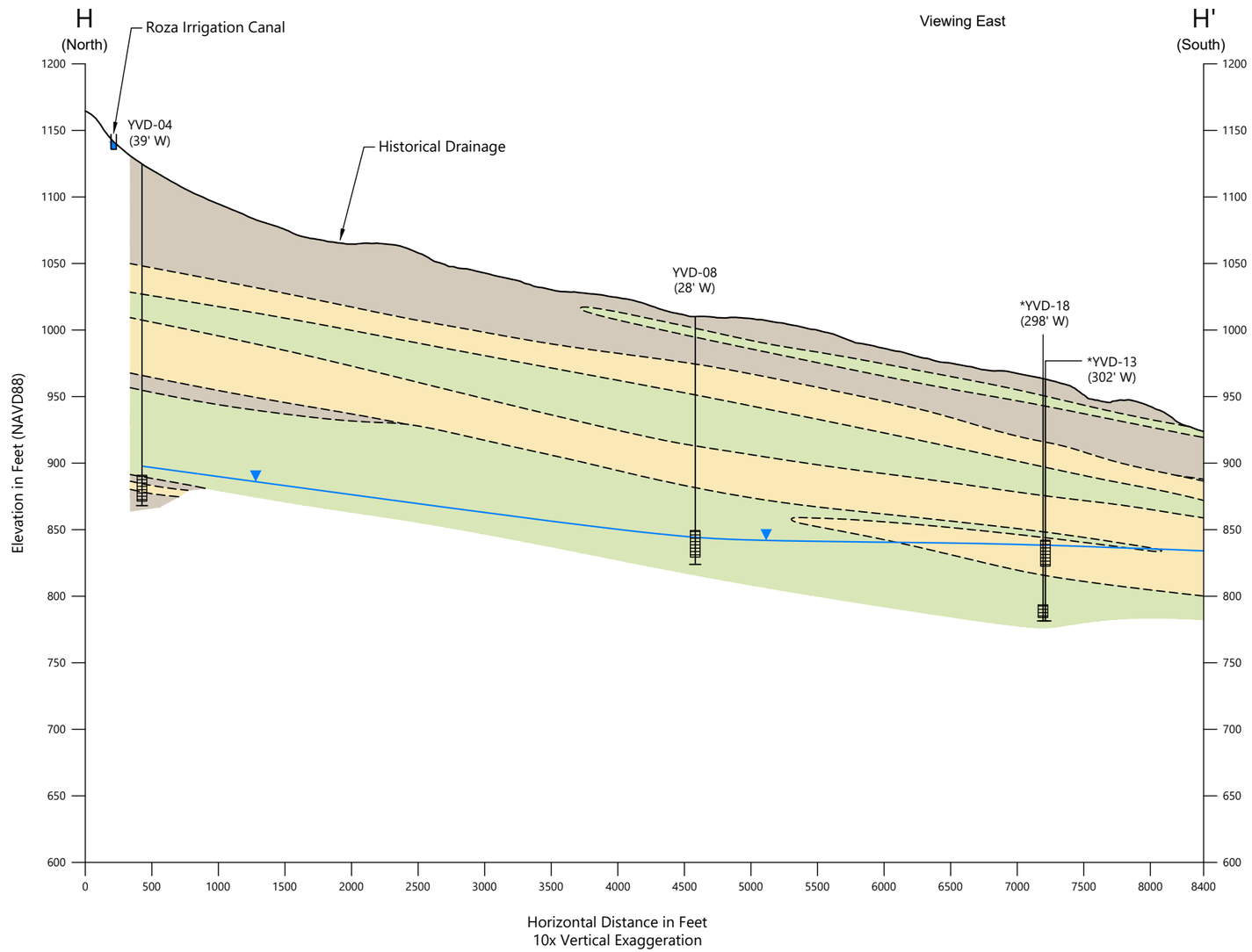
ANCHOR QEA

Figure 13B
Cross Section G-G'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Gravel, gravelly Sand, and sandy Gravel
- Sand and silty Sand
- Silt, sandy Silt, Clay, and sandy Clay
- Basalt Bedrock, weathered at upper contact
- Groundwater Surface Elevation, March 5, 2017 (Dashed where inferred)
- Lithologic Contact (Dashed where inferred)
- Existing Ground Surface
- YVD-06 Well Identification
- Well Location
- Screen

Horizontal Scale in Feet
0 1000 2000
0 100 200
Vertical Scale in Feet
Vertical Exaggeration x 10

HORIZONTAL DATUM: Washington State Plane NAD83 South, US Feet.

VERTICAL DATUM: NAVD88

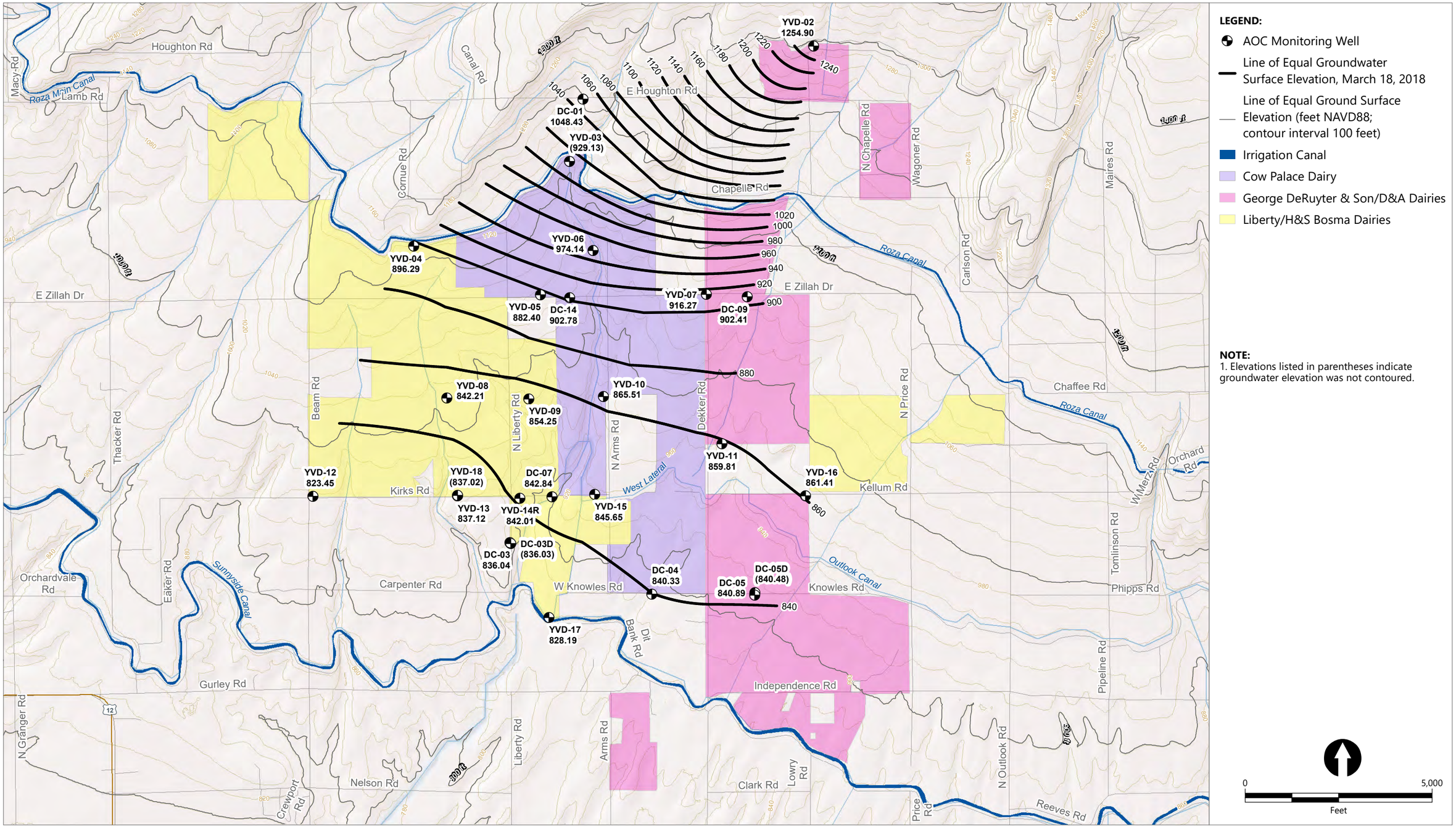
NOTE:
* = Vertical hydraulic gradient between deep and shallow wells pairs <0.32 feet

Publish Date: 2017/07/18 12:41 PM | User: hmerrick
Filepath: K:\Projects\0996-Perkins Coie\Yakima Dairies Project\0096-RP-008 (Sections).dwg XSEC HH

ANCHOR QEA

Figure 14
Cross Section H-H'

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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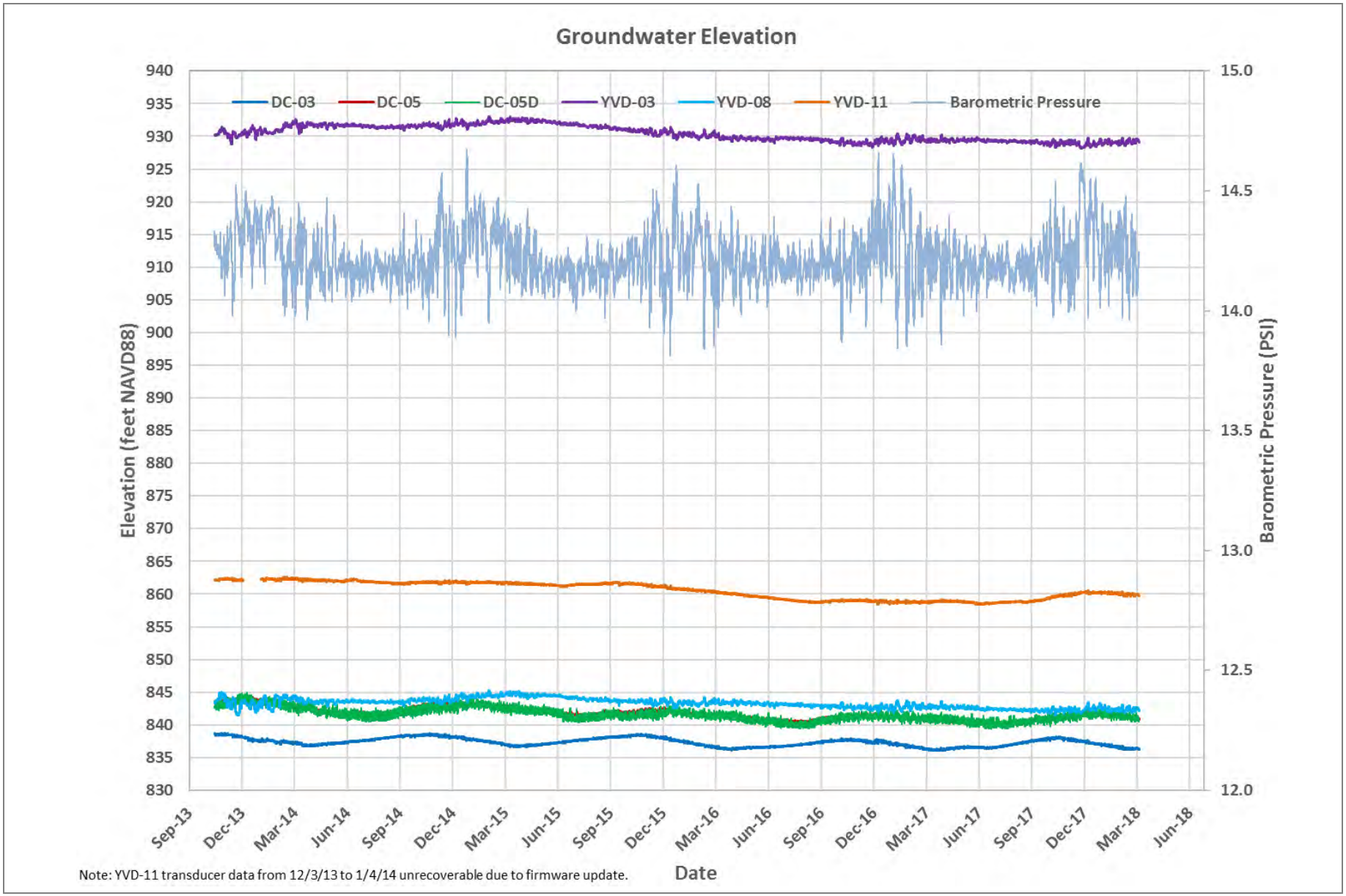
ANCHOR QEA

Figure 15
Surficial Aquifer Groundwater Elevation Contour Map First Quarter 2018
Groundwater Monitoring Data Report First Quarter 2018
Yakima Valley Dairies



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ANCHOR QEA

Figure 16A
Groundwater Hydrographs – All Transducers
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

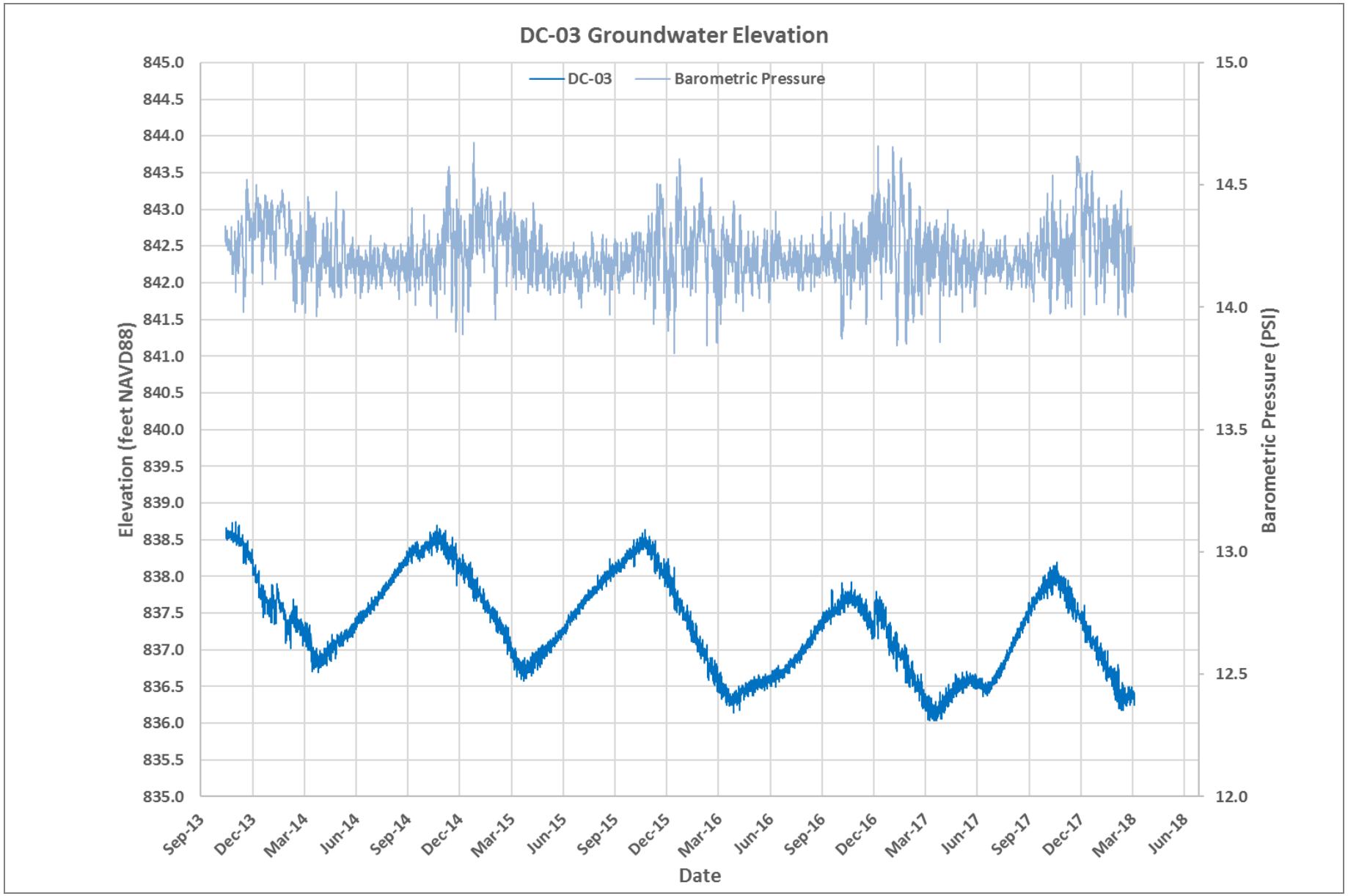

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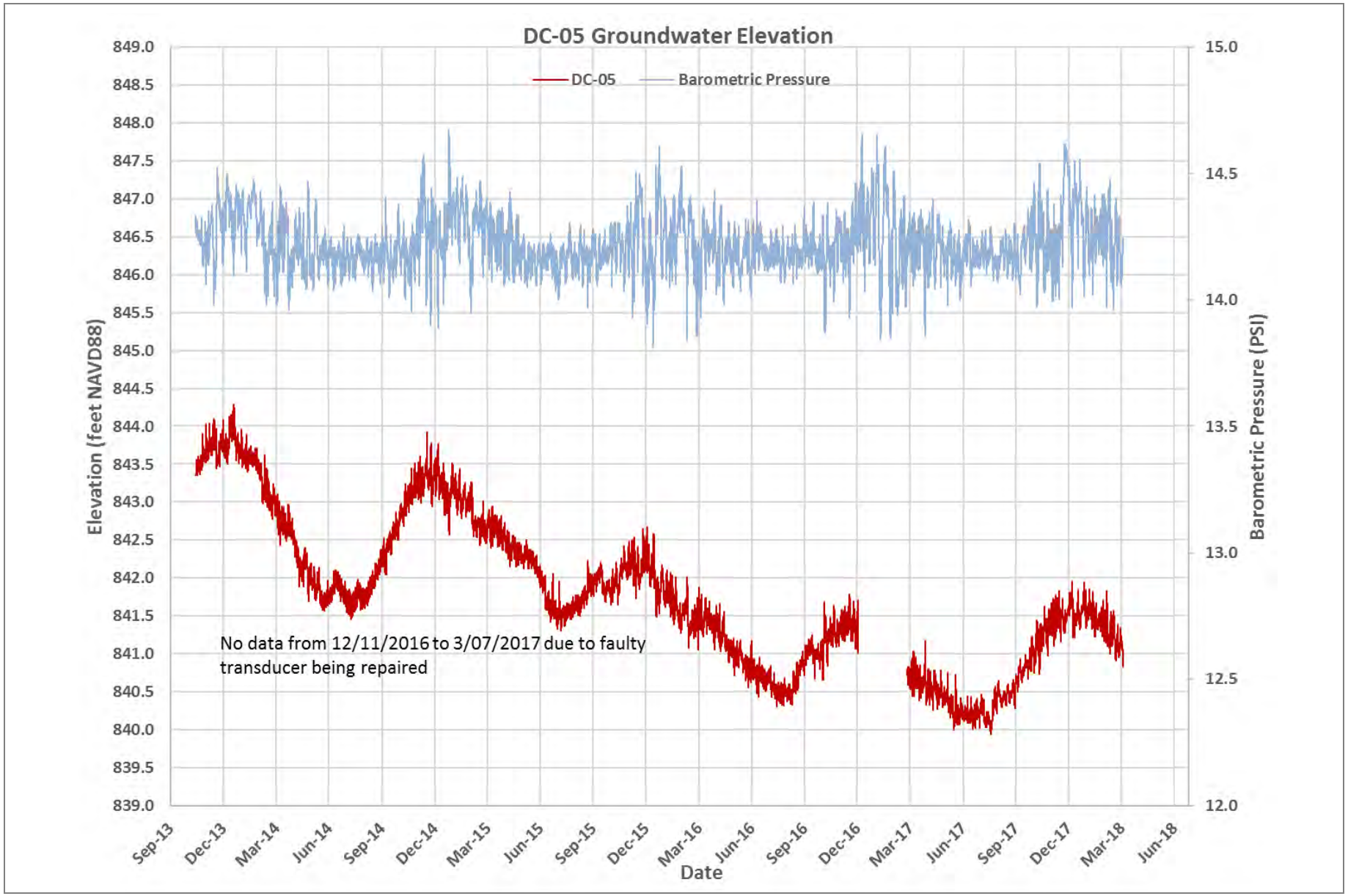
Figure 16B
Groundwater Hydrographs – DC-03
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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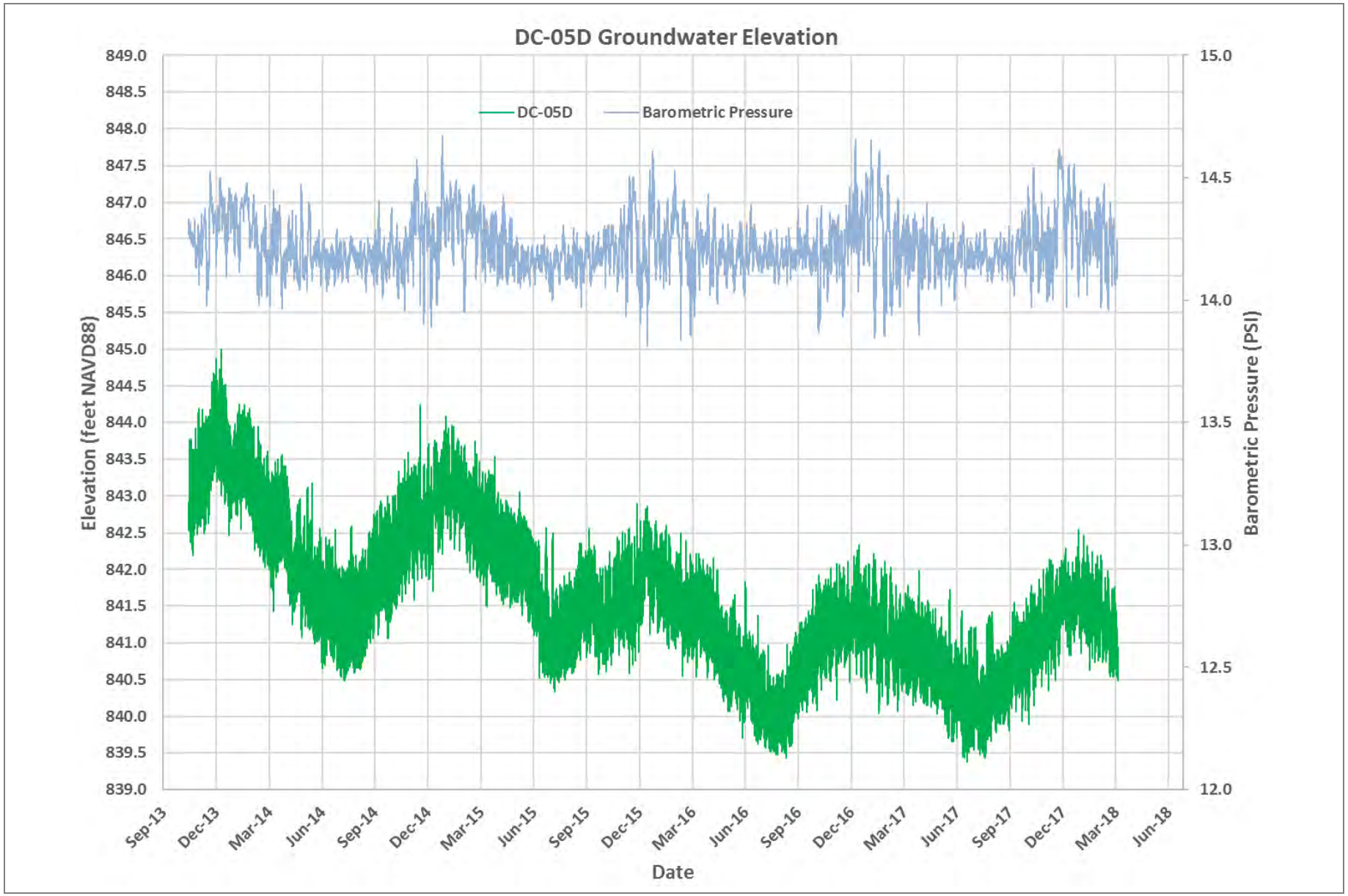
ANCHOR QEA

Figure 16C
Groundwater Hydrographs – DC-05
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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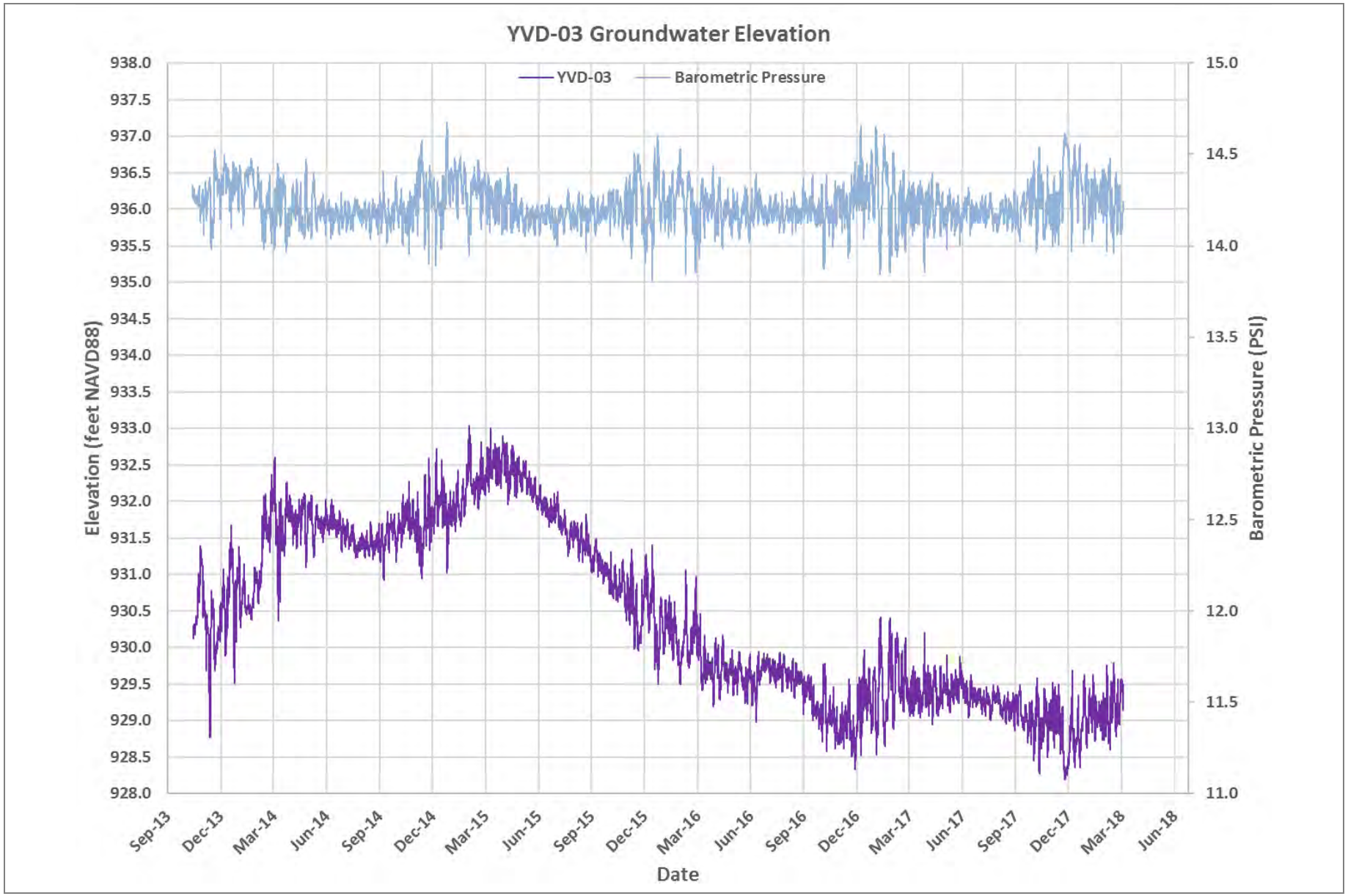
ANCHOR QEA

Figure 16D
Groundwater Hydrographs – DC-05D
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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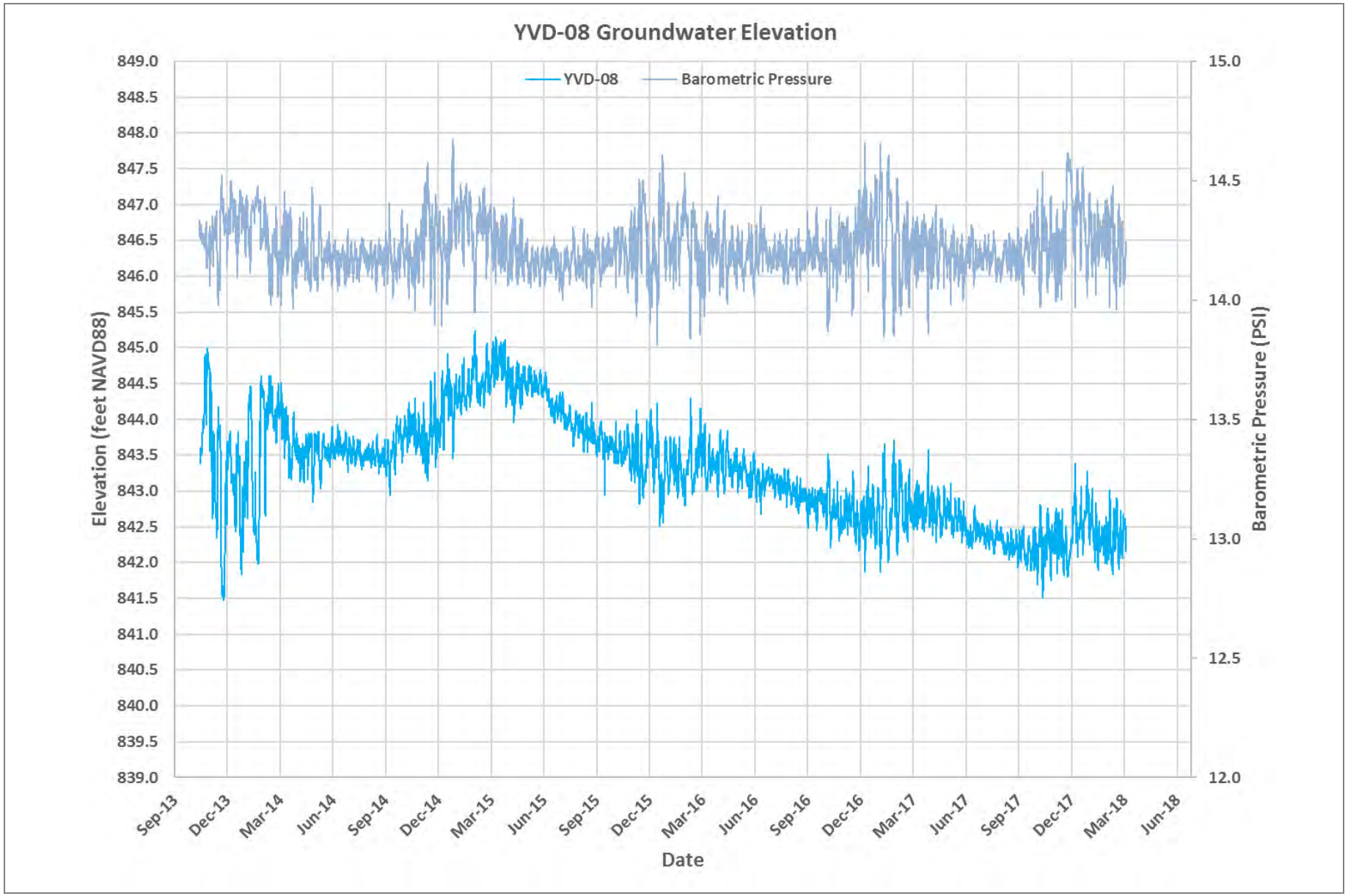
ANCHOR QEA

Figure 16E
Groundwater Hydrographs – YVD-03
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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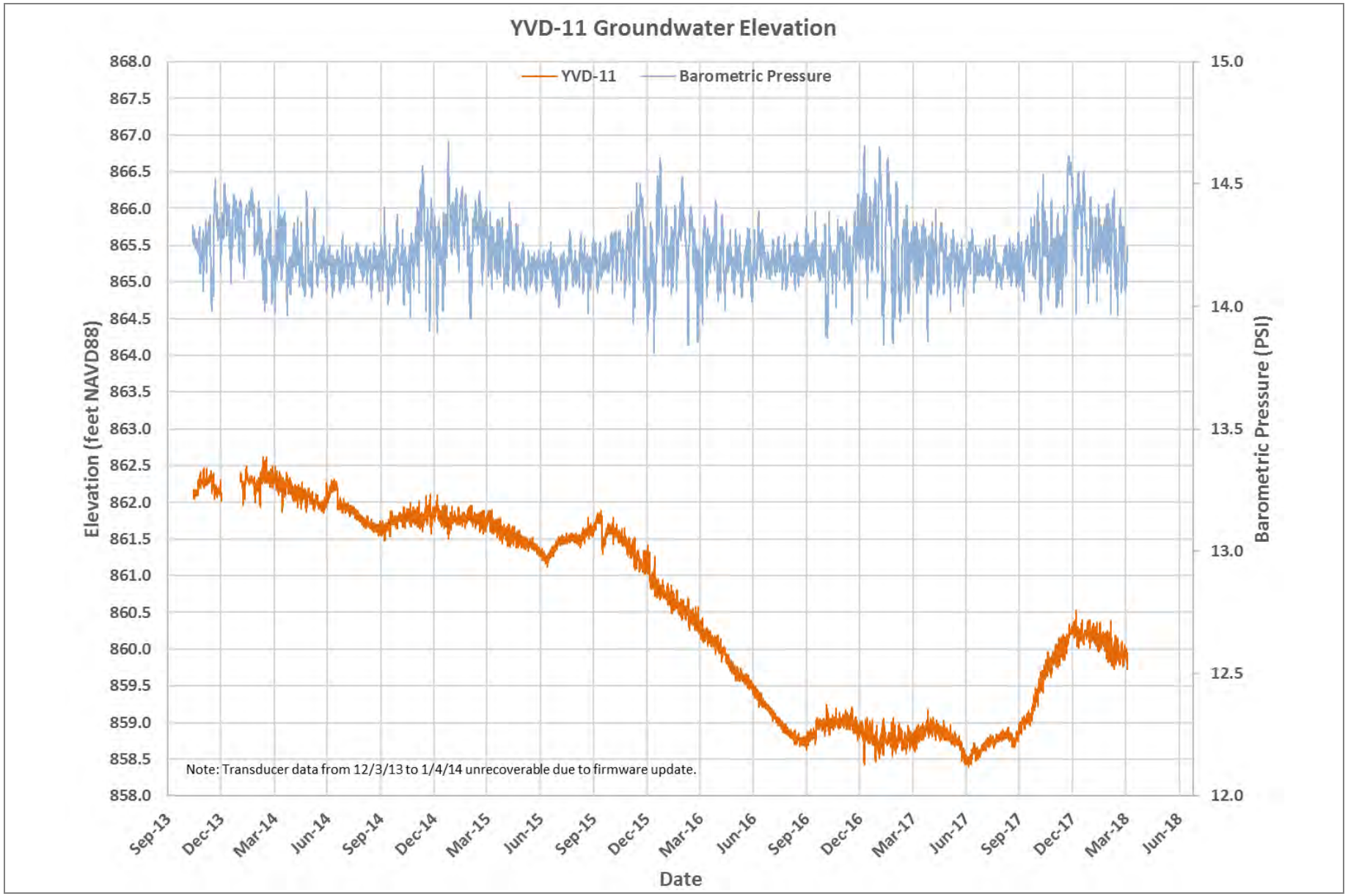
ANCHOR QEA

Figure 16F
Groundwater Hydrographs – YVD-08
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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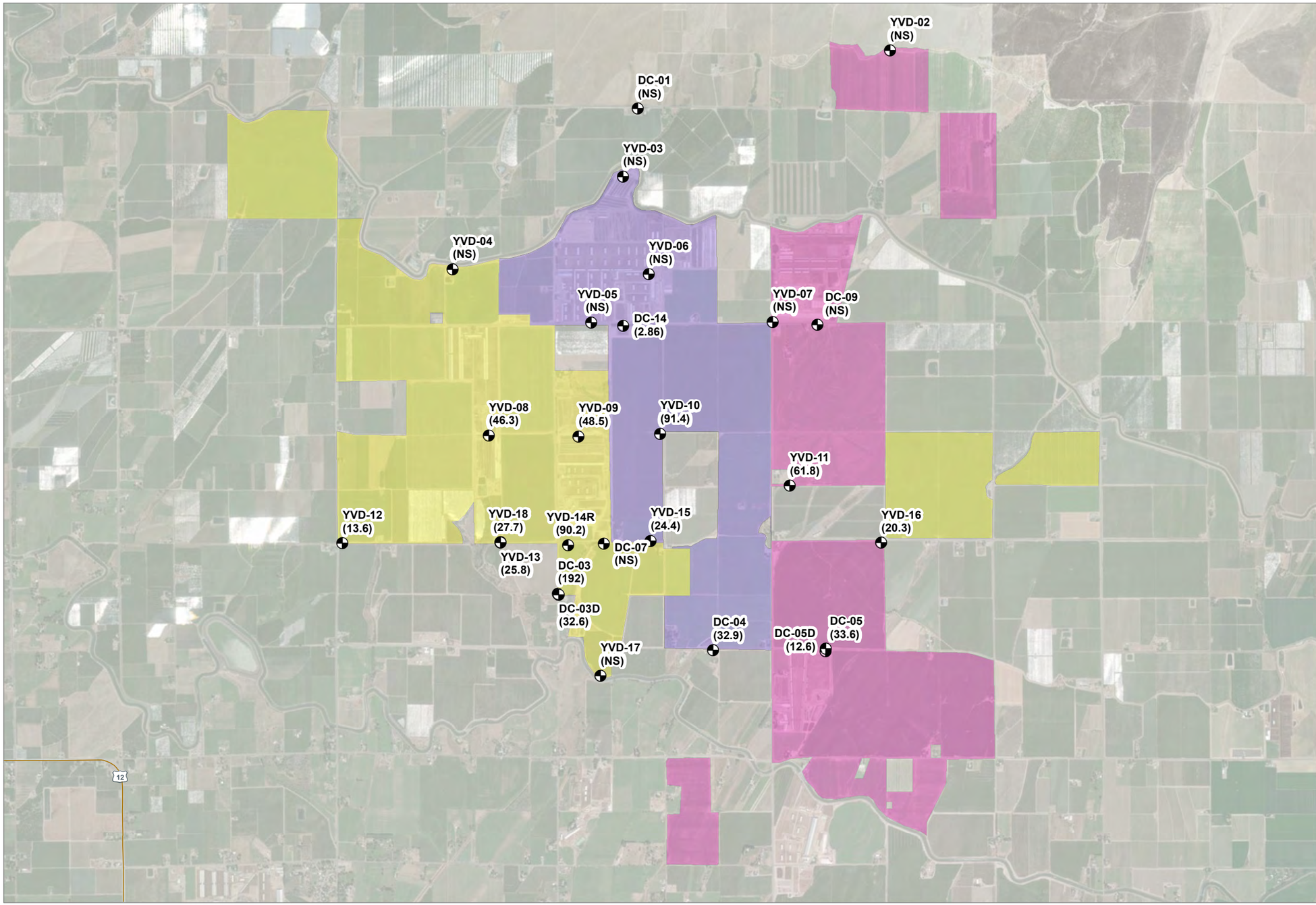
ANCHOR QEA

Figure 16G
Groundwater Hydrographs – YVD-11
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Monitoring Well
- Cow Palace Dairy
- George DeRuyter & Son/D&A Dairies
- Liberty/H&S Bosma Dairies

NOTES:

1. All concentrations are in milligrams per liter (mg/L).
2. Analytical results are for samples collected March 18 - 19, 2018.
3. NS = not sampled.
4. Aerial Photo Source: USDA NAIP (2015).

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Feet

Publish Date: 2018/04/23, 3:20 PM | User: ckiblinger
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ANCHOR QEA

Figure 17A
Nitrate Concentrations in Groundwater First Quarter 2018
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

LEGEND:

Monitoring Well

NOTES:

1. All concentrations are in milligrams per liter (mg/L).
2. First quarter 2013 samples collected by USEPA.
3. Well YVD-14R replaced damaged well YVD-14 prior to fourth quarter 2015.
4. Qualifiers and notations:
NS = not sampled.
U = the compound was analyzed for but not detected. The associated value is the compound reporting limit or the compound is considered non-detect at the listed value due to associated blank contamination.
UJ = the compound was not detected above the reported sample reporting limit; however, the reported limit is approximate and may or may not represent the actual limit of quantitation.
R = the sample results are rejected as unusable. The compound may or may not be present in the sample.
J = the compound was positively identified; however, the associated numerical value is an estimated concentration.
J- = the result is an estimated quantity, but the result may be biased low.
J+ = the result is an estimated quantity, but the result may be biased high.
5. Aerial Photo Source: USDA NAIP (2015).

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Feet

Publish Date: 2018/04/23, 3:00 PM | User: ckiblinger
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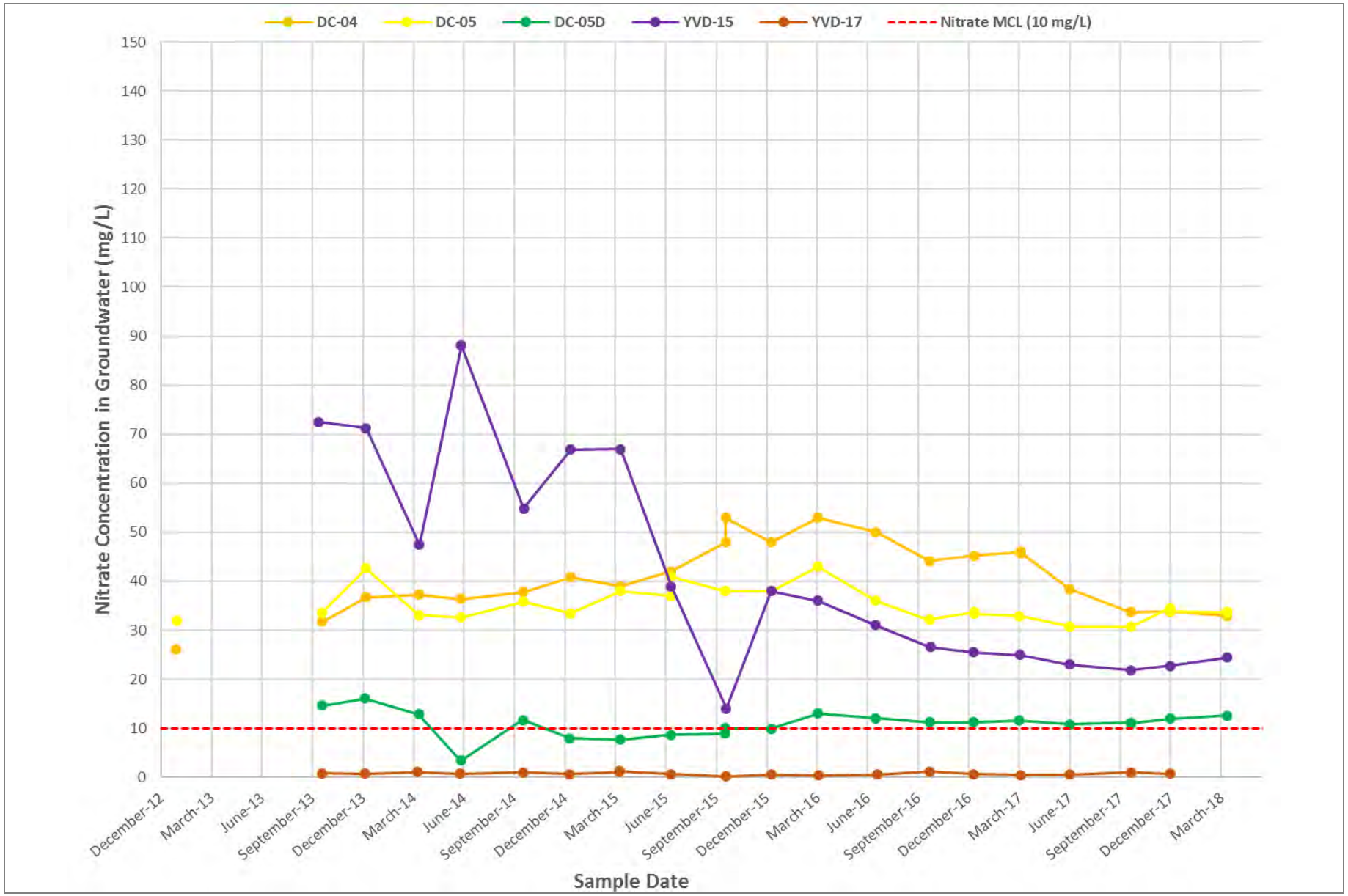
ANCHOR QEA

Figure 17B
Historical Nitrate Concentrations in Groundwater
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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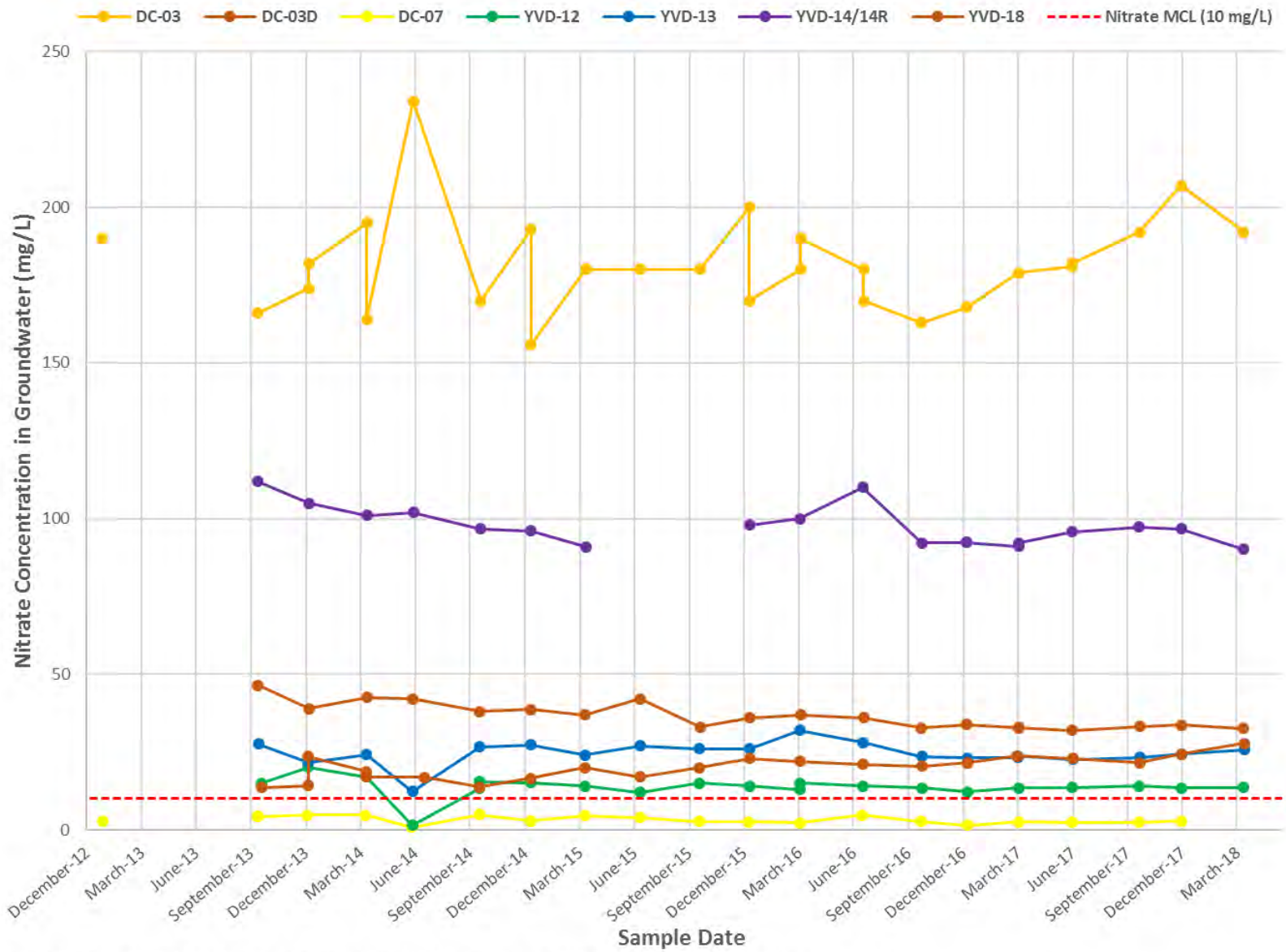
ANCHOR QEA

Figure 18
Nitrate Concentrations – East Downgradient Wells
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



Note: In December 2015, YVD-14R was installed approximately 20 feet to the west of YVD-14, which was decommissioned.

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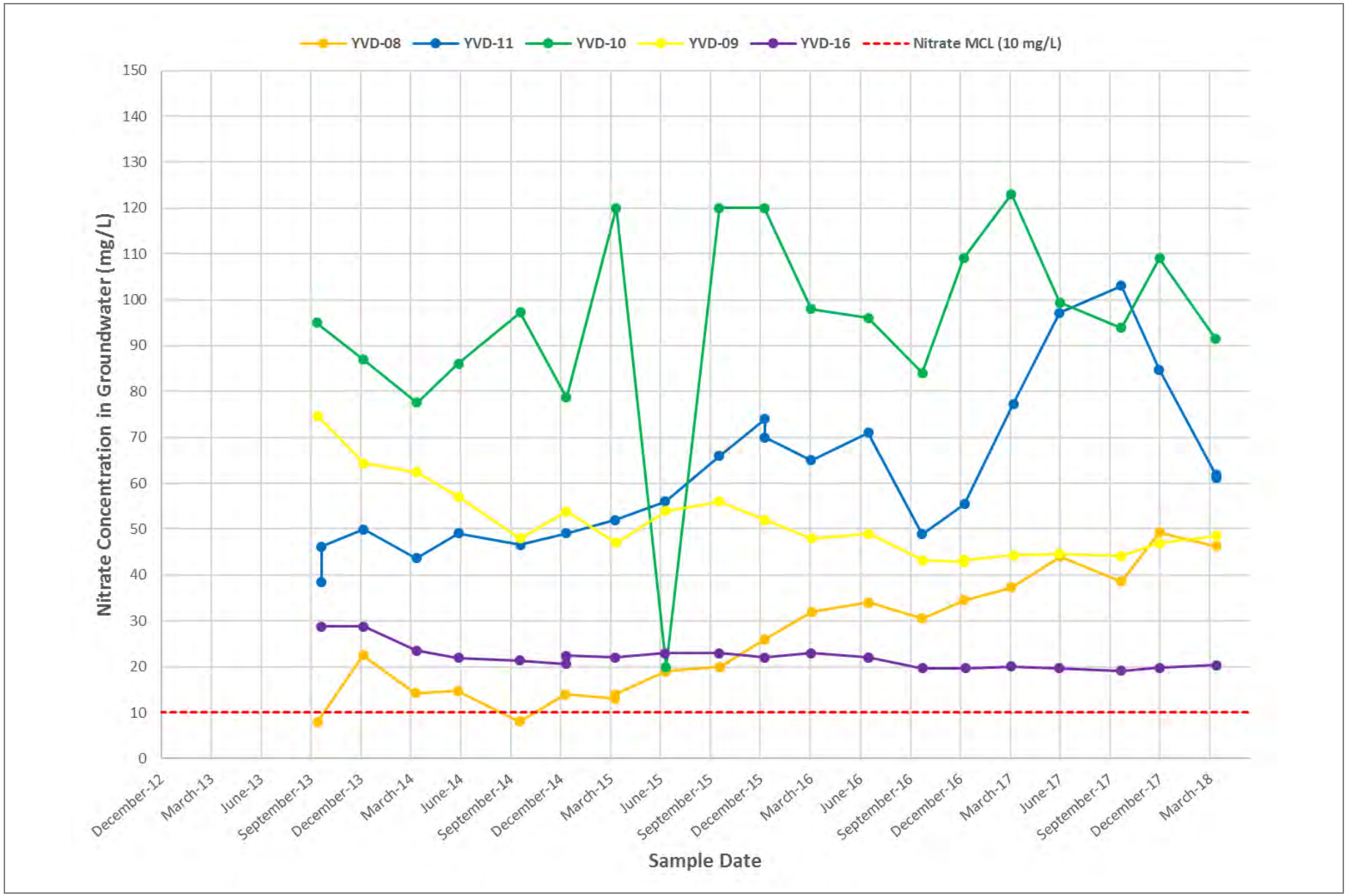
Figure 19

Nitrate Concentrations – West Downgradient Wells

Groundwater Monitoring Data Report – First Quarter 2018

Yakima Valley Dairies



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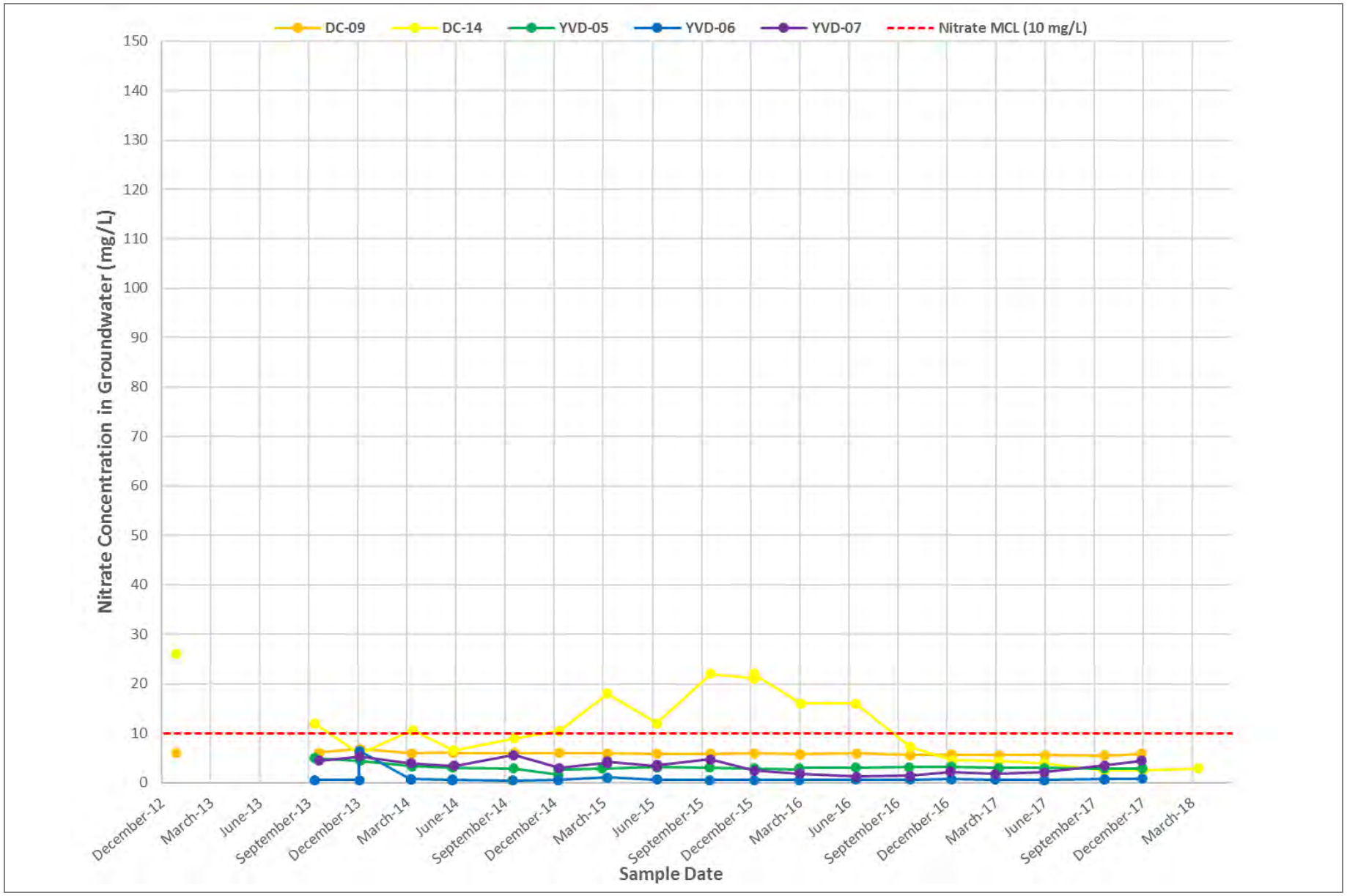
ANCHOR QEA

Figure 20
Nitrate Concentrations – Central Wells
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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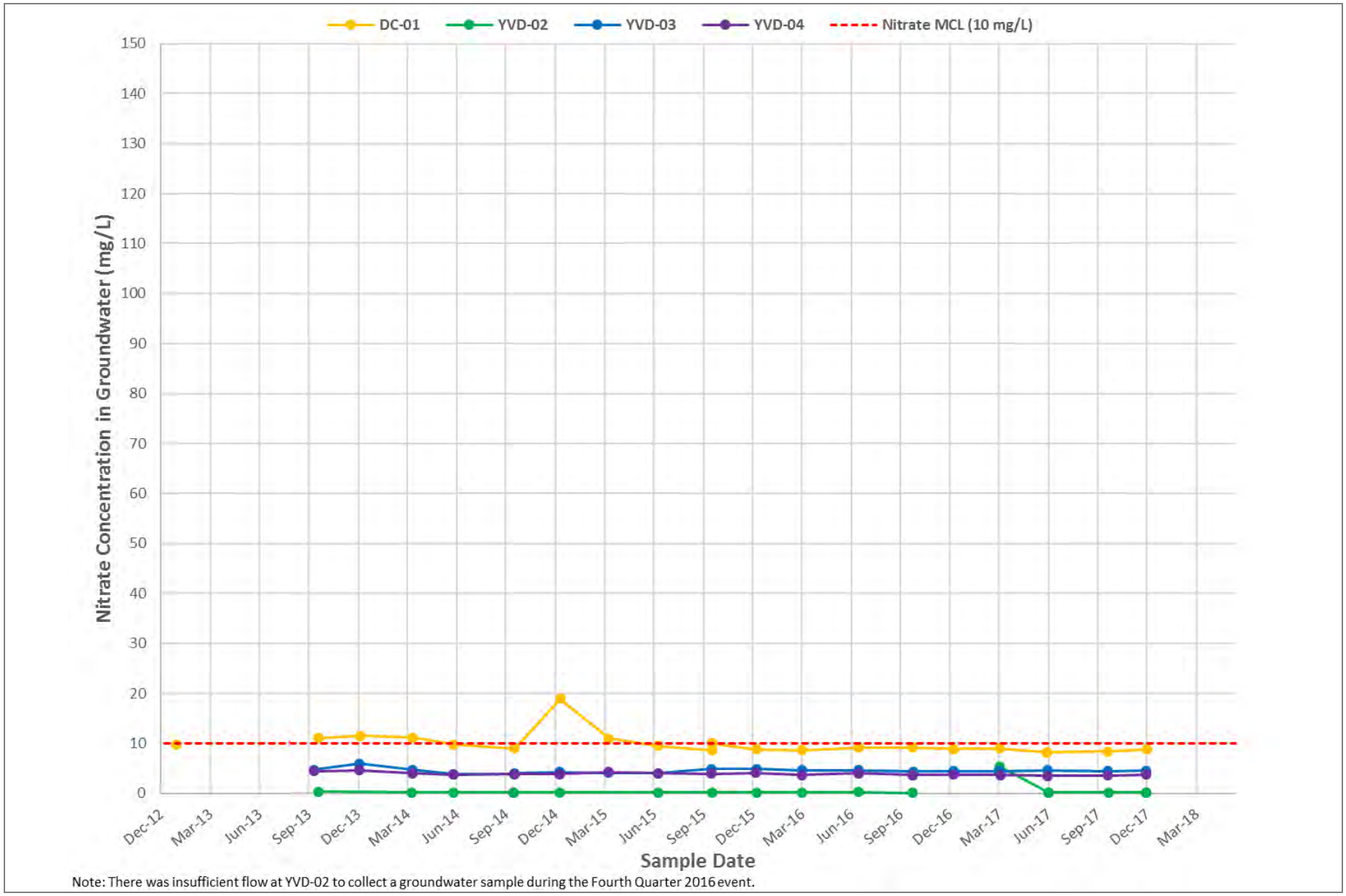
ANCHOR QEA

Figure 21
Nitrate Concentrations – Northern Wells
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



Note: There was insufficient flow at YVD-02 to collect a groundwater sample during the Fourth Quarter 2016 event.

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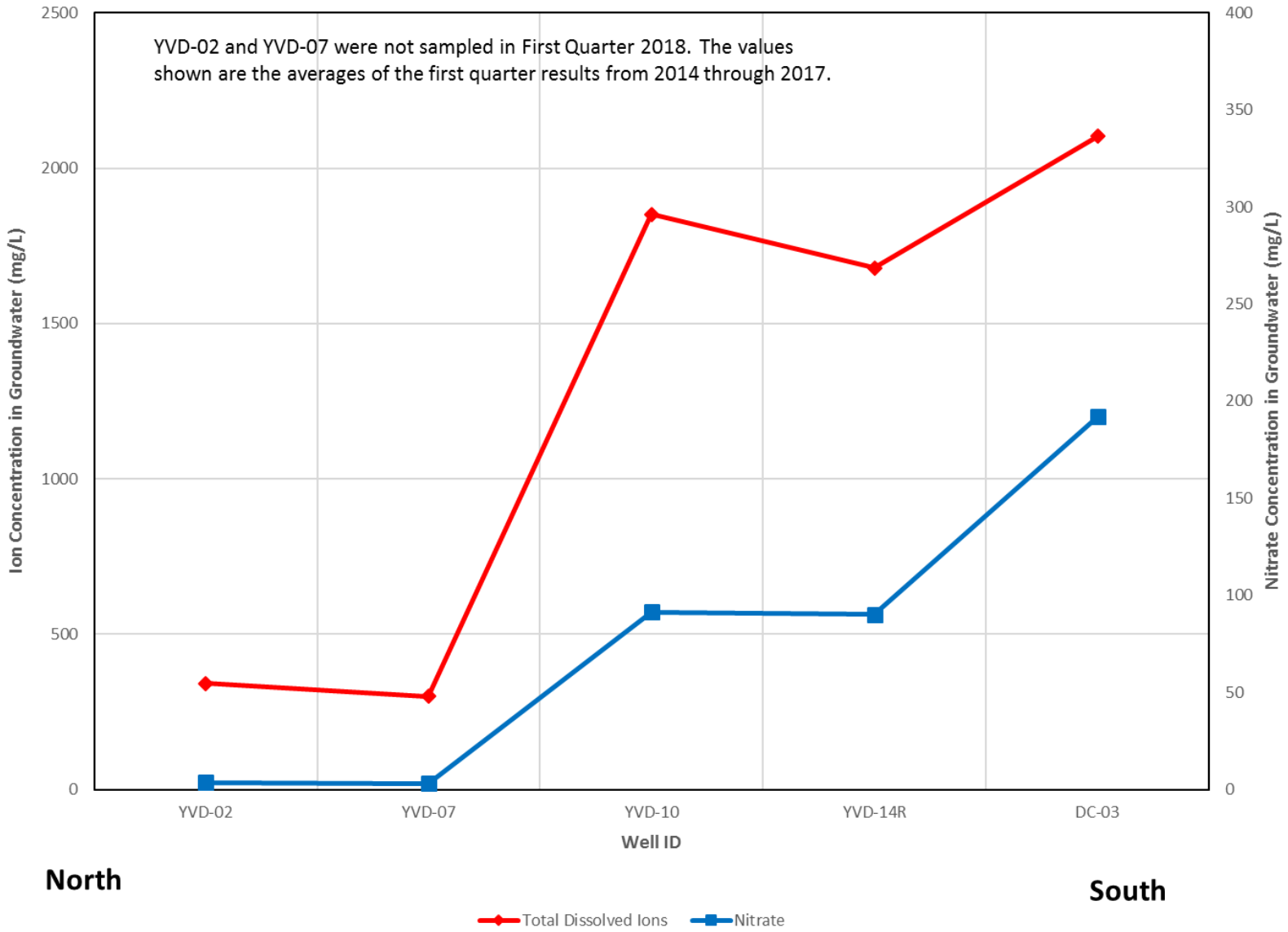
ANCHOR QEA

Figure 22
Nitrate Concentrations – Upgradient Wells
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



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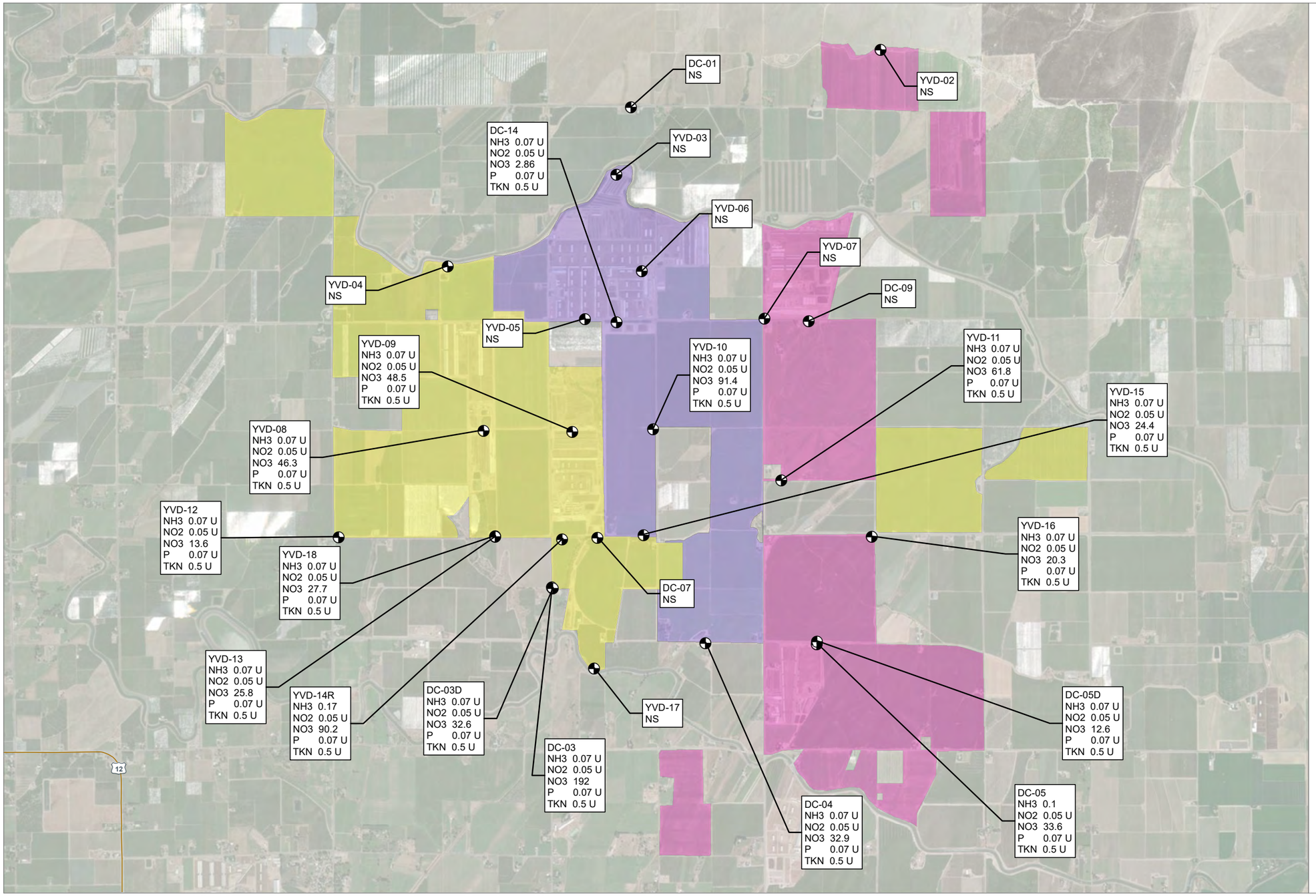
ANCHOR QEA

Figure 23

Nitrate and Total Dissolved Ion Concentration along Cross Section G-G' Transect

Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Monitoring Well
- Cow Palace Dairy
- George DeRuyter & Son/D&A Dairies
- Liberty/H&S Bosma Dairies

NOTES:

1. All concentrations are in milligrams per liter (mg/L).
2. Analytical results are for samples collected March 18 - 19, 2018.
3. Qualifiers and notations:
NS = not sampled.
U = the compound was analyzed for but not detected. The associated value is the compound reporting limit or the compound is considered non-detect at the listed value due to associated blank contamination.
4. NH3 = Ammonia as nitrogen
NO2 = Nitrite as nitrogen
NO3 = Nitrate as nitrogen
P = Phosphorus
TKN = Nitrogen (Total Kjeldahl) as nitrogen
5. Aerial Photo Source: USDA NAIP (2015).

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Publish Date: 2018/04/23, 4:12 PM | User: ckiblinger
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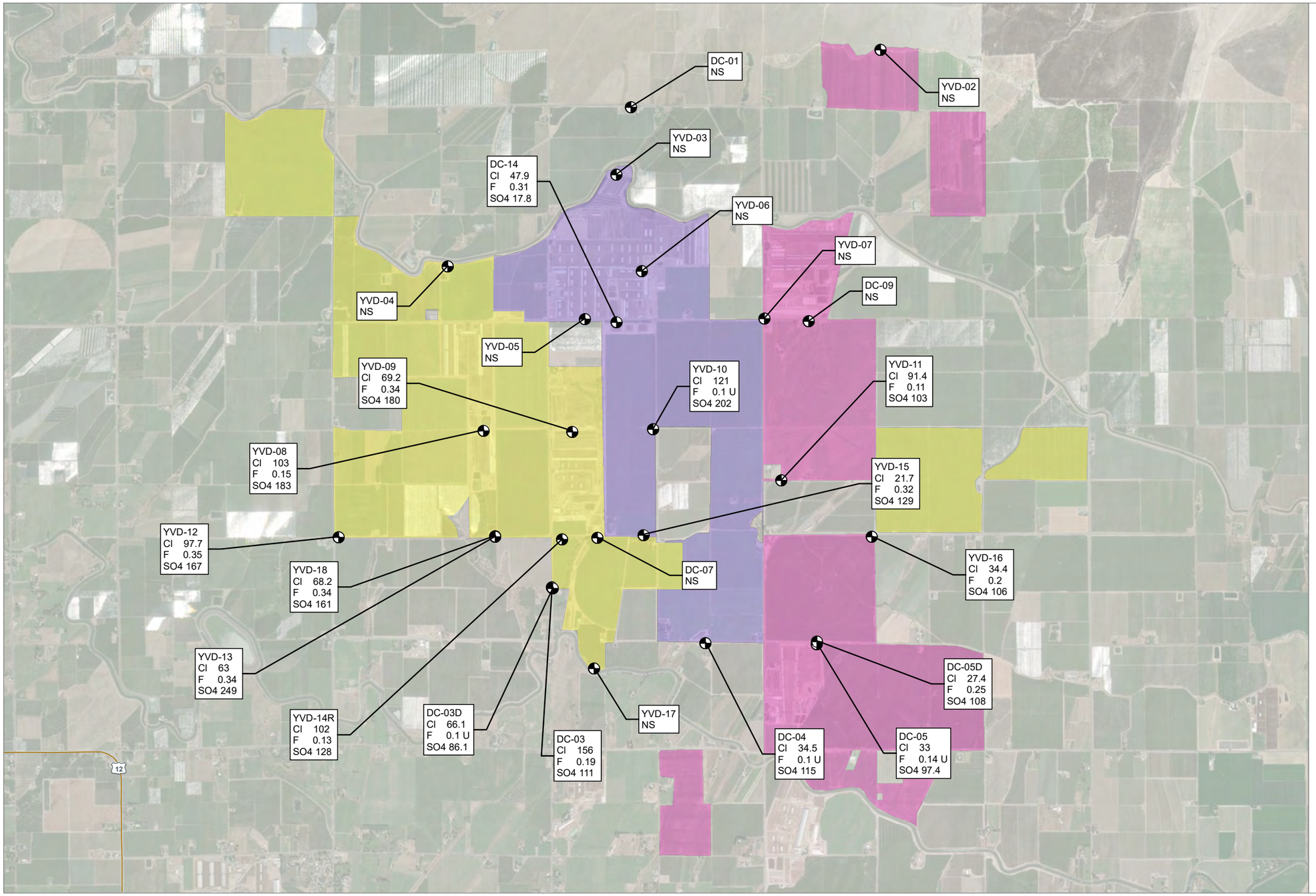
ANCHOR QEA

Figure 24
Nutrient Concentrations in Groundwater First Quarter 2018
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies



LEGEND:

- Monitoring Well
- Cow Palace Dairy
- George DeRuyter & Son/D&A Dairies
- Liberty/H&S Bosma Dairies

NOTES:

1. All concentrations are in milligrams per liter (mg/L).
2. Analytical results are for samples collected March 18 - 19, 2018.
3. NS = not sampled.
4. Cl = Chloride
F = Fluoride
SO4 = Sulfate
5. Aerial Photo Source: USDA NAIP (2015).

0 2,000
Feet

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Figure 25
Anion Concentrations in Groundwater First Quarter 2018
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

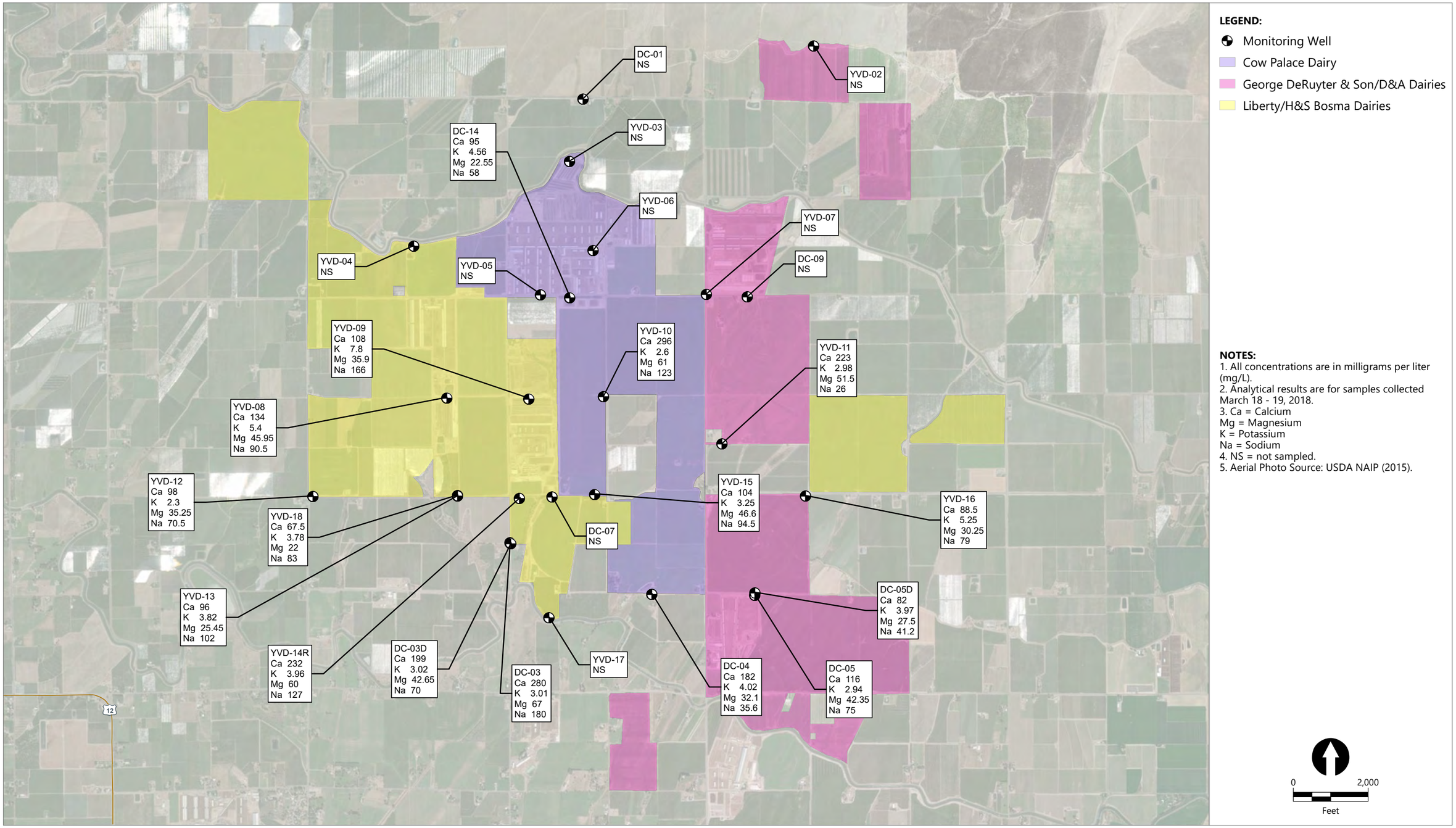

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Figure 26
Metals Concentrations in Groundwater First Quarter 2018
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

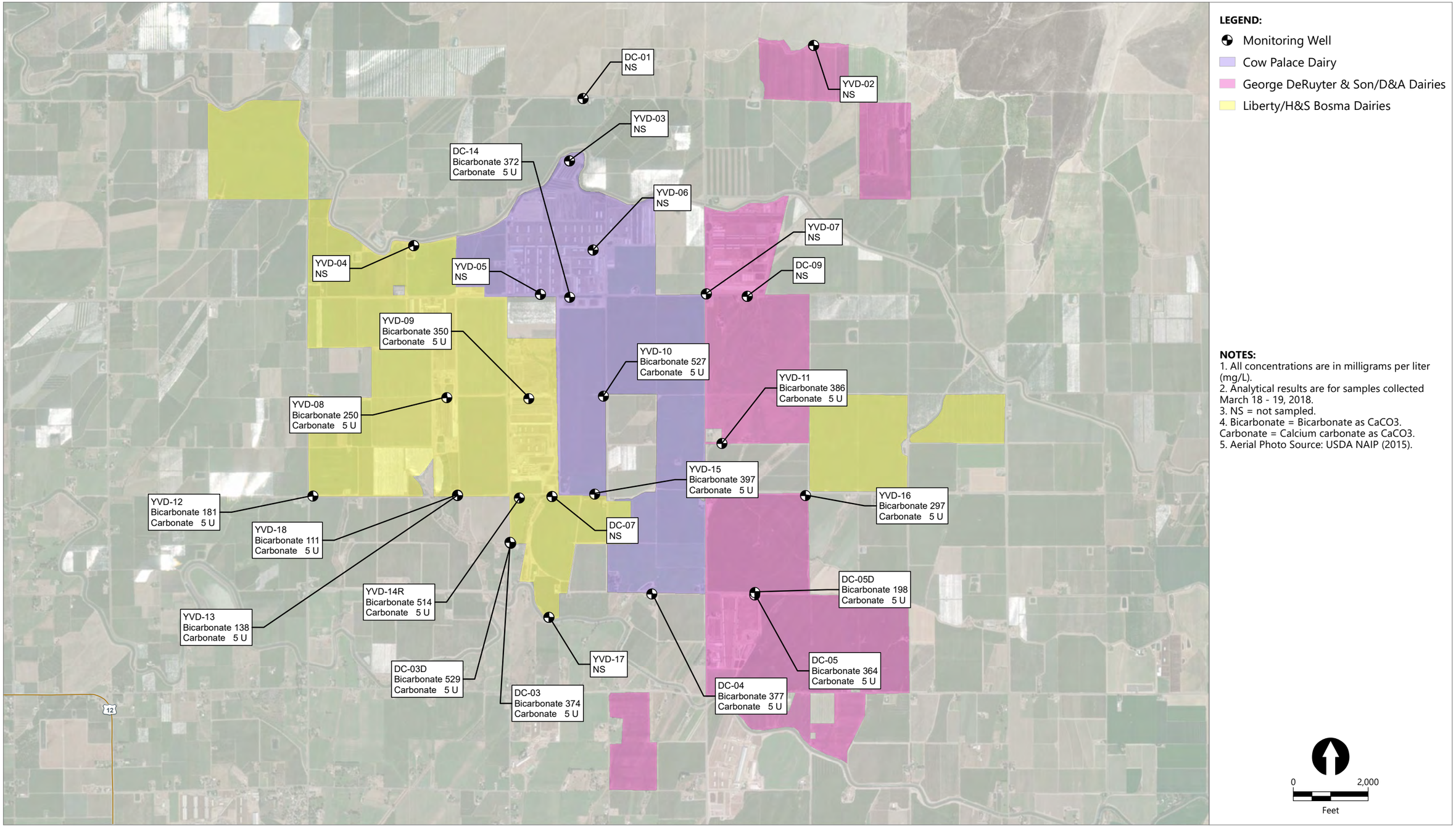

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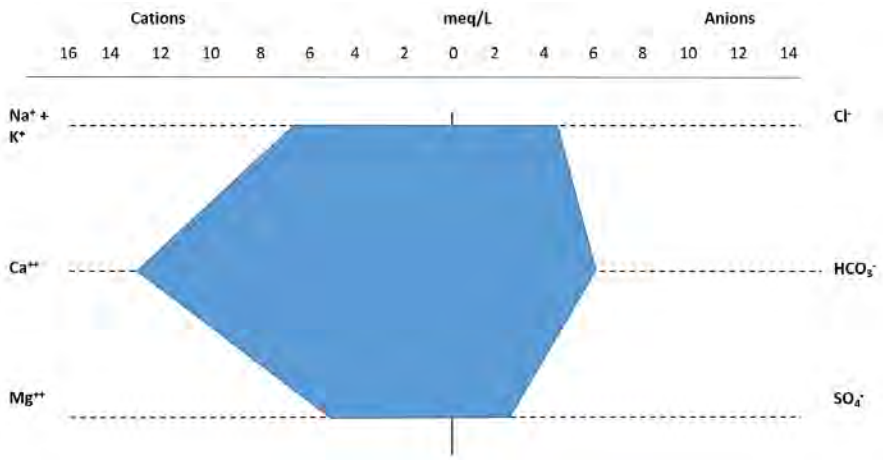
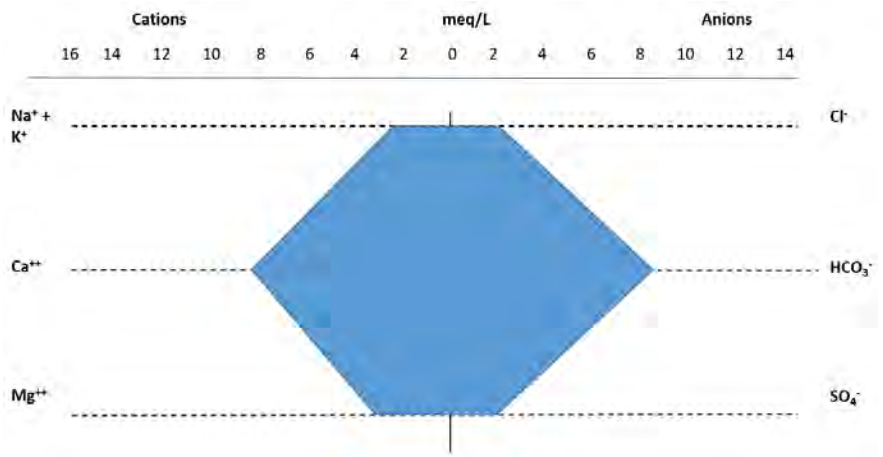
Figure 27
Alkalinity Concentrations in Groundwater First Quarter 2018
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

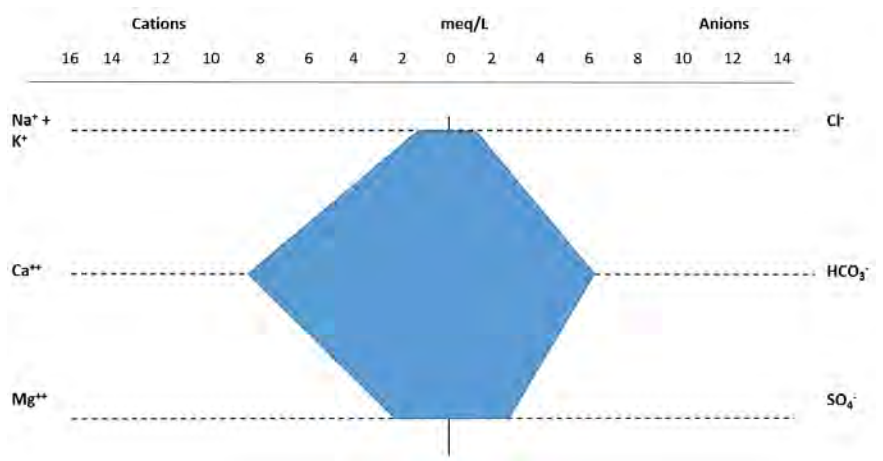
DC-03



DC-03D



DC-04



NOTE: meq/l: milliequivalents per liter

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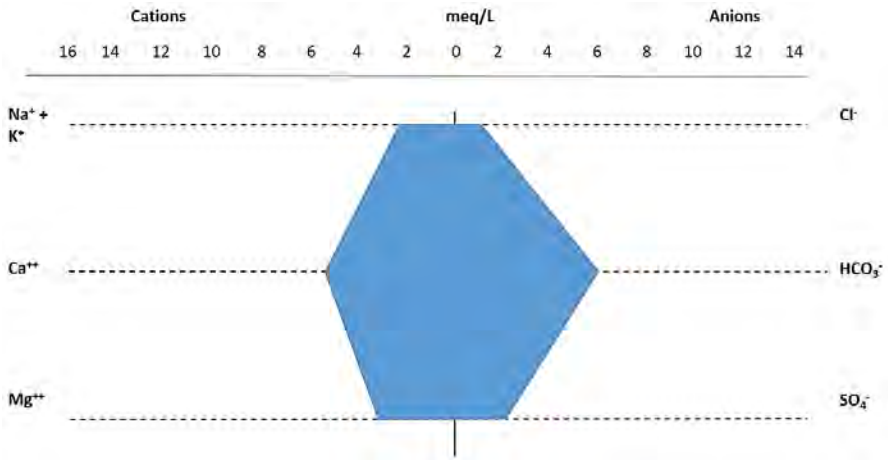
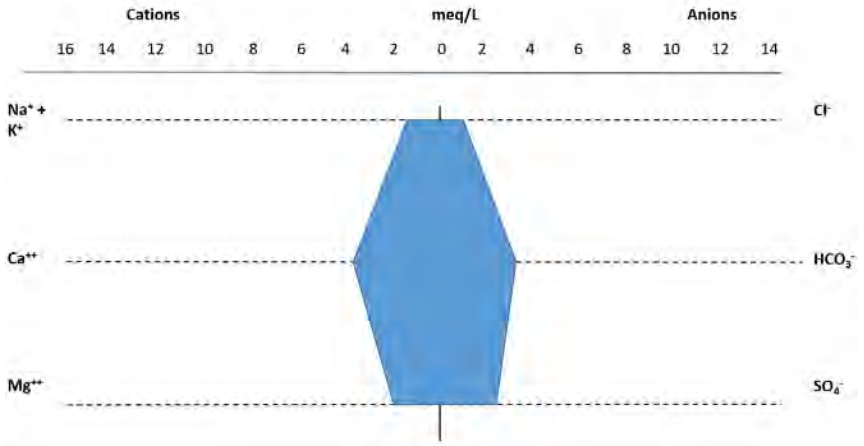
Figure 28A
Stiff Diagrams – DC-03, DC-03D, DC-04
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

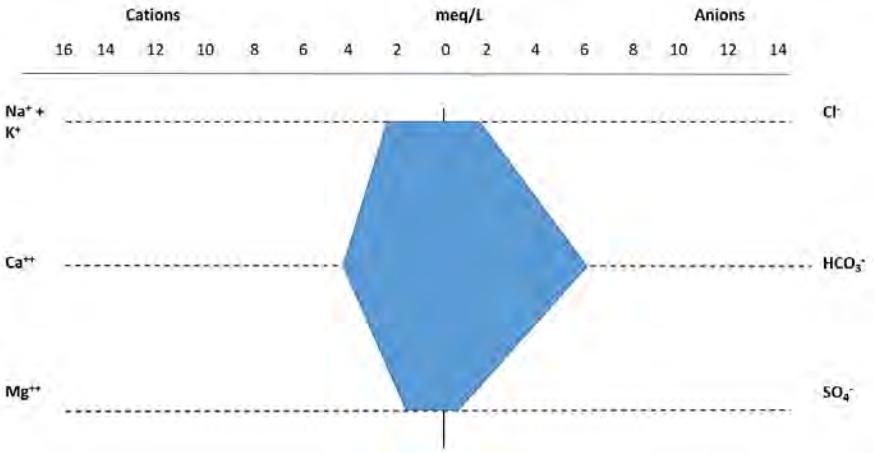
DC-05



DC-05D



DC-14



NOTE: meq/l: milliequivalents per liter

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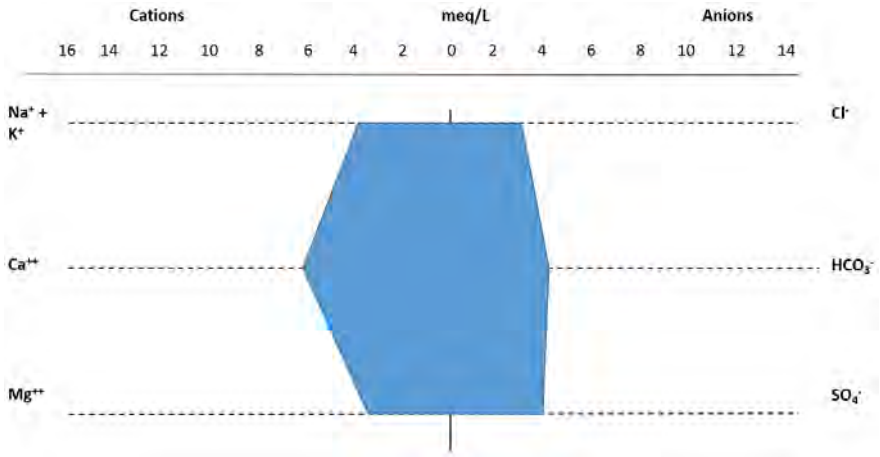
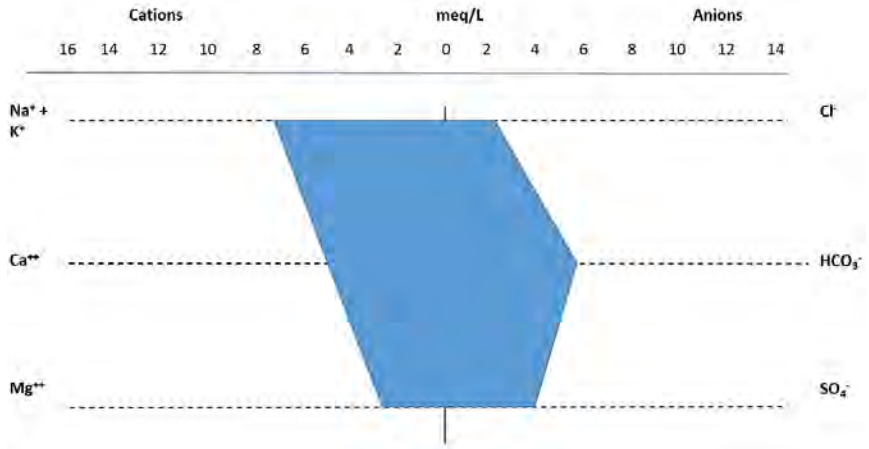
Figure 28B
Stiff Diagrams – DC-05, DC-05D, DC-14
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

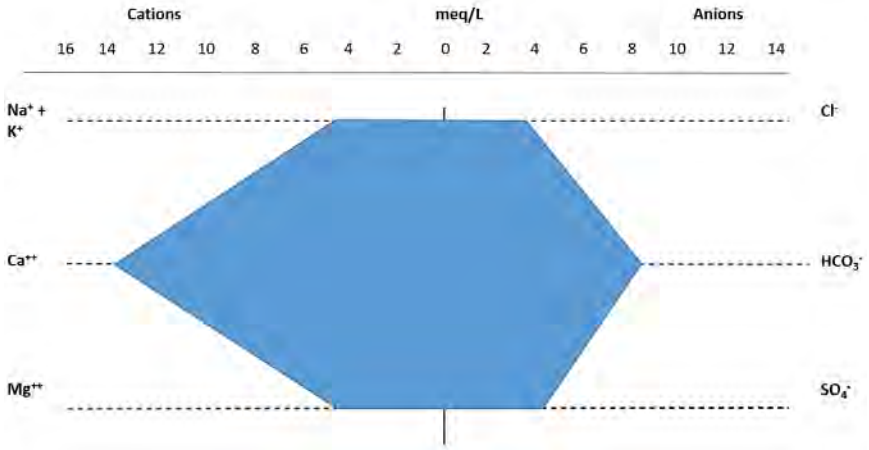
YVD-08



YVD-09



YVD-10



NOTE: meq/l: milliequivalents per liter

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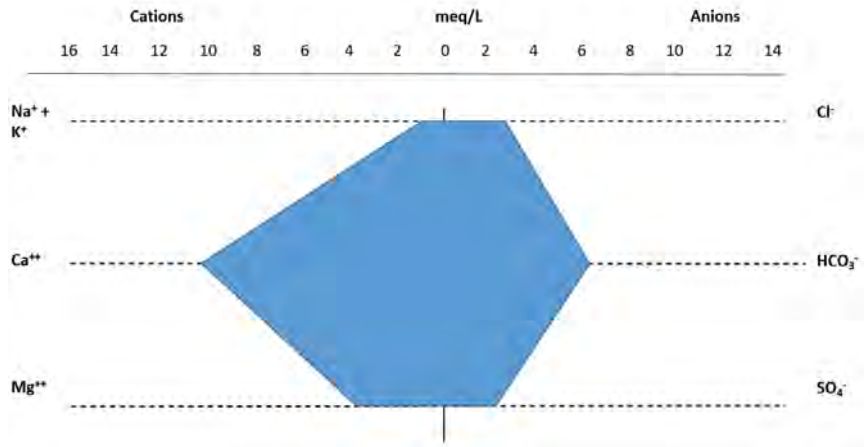
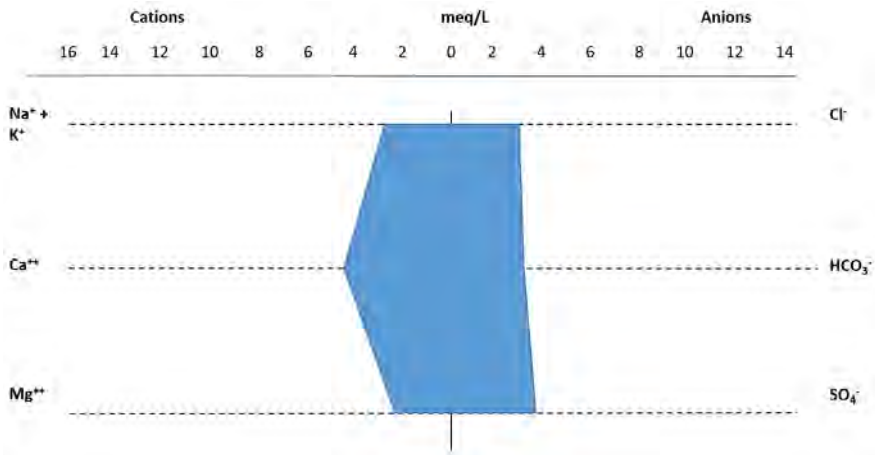
Figure 28C
Stiff Diagrams – YVD-08, YVD-09, YVD-10
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

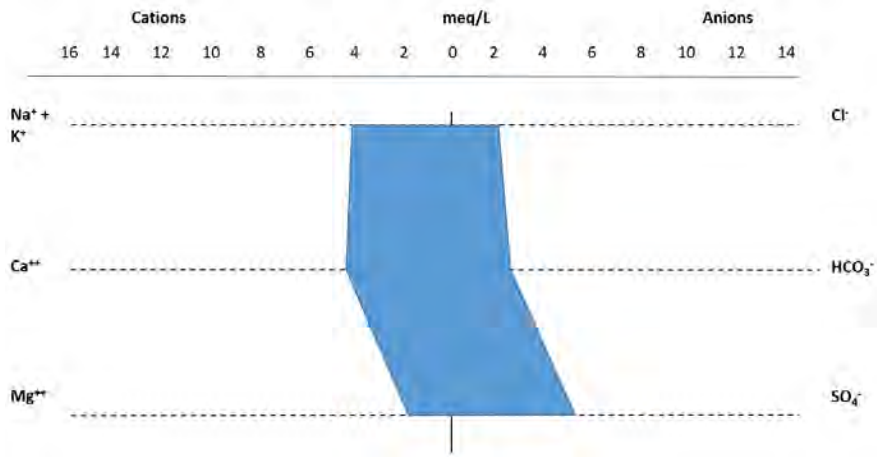
YVD-11



YVD-12



YVD-13



NOTE: meq/l: milliequivalents per liter

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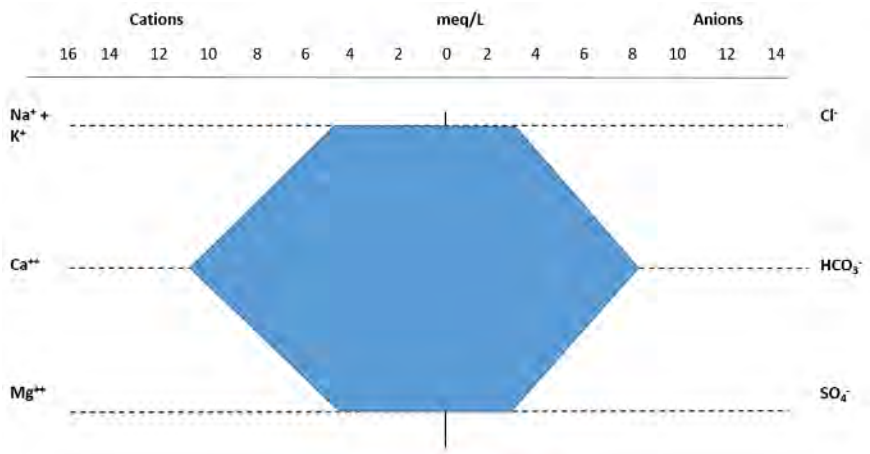
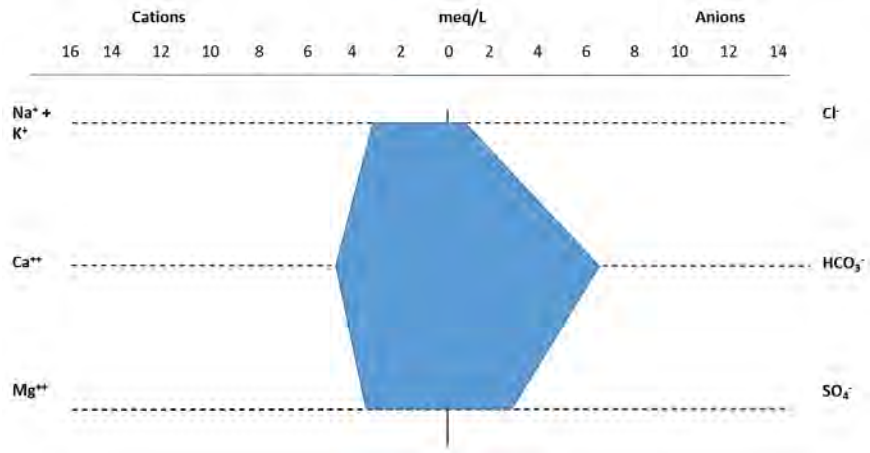
Figure 28D
Stiff Diagrams – YVD-11, YVD-12, YVD-13
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

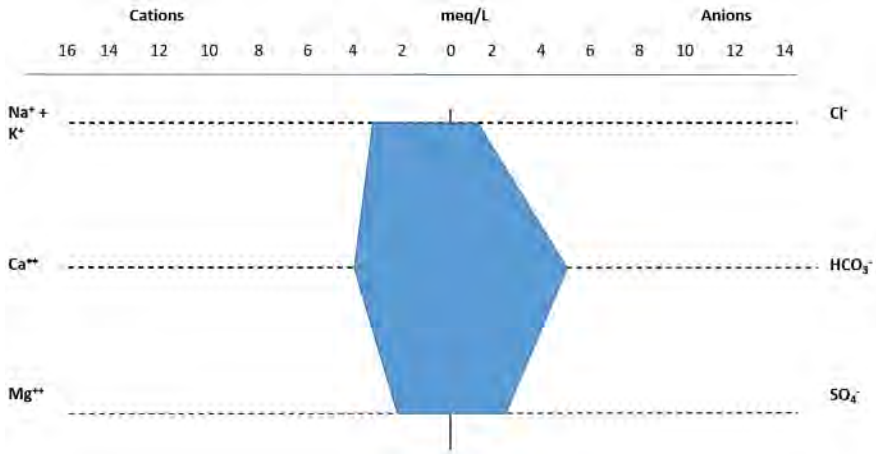
YVD-14R



YVD-15



YVD-16



NOTE: meq/l: milliequivalents per liter

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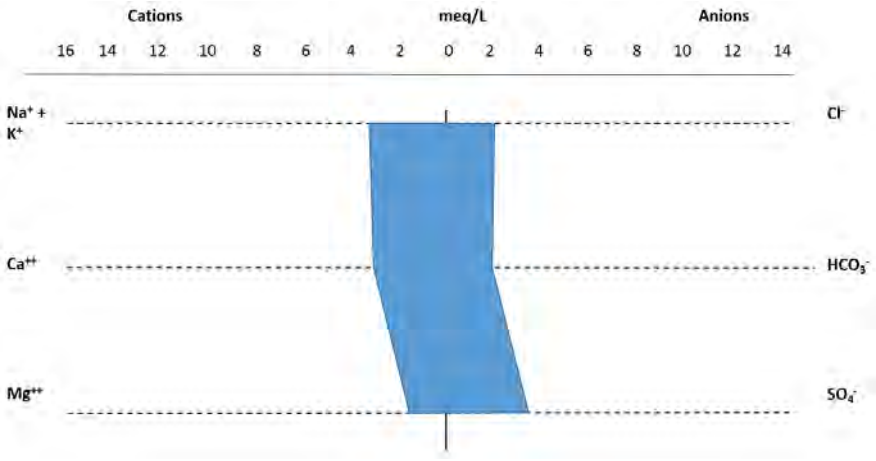
Figure 28E
Stiff Diagrams – YVD-14R, YVD-15, YVD-16
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

YVD-18



NOTE: meq/l: milliequivalents per liter

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Figure 28F
Stiff Diagram – YVD-18
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

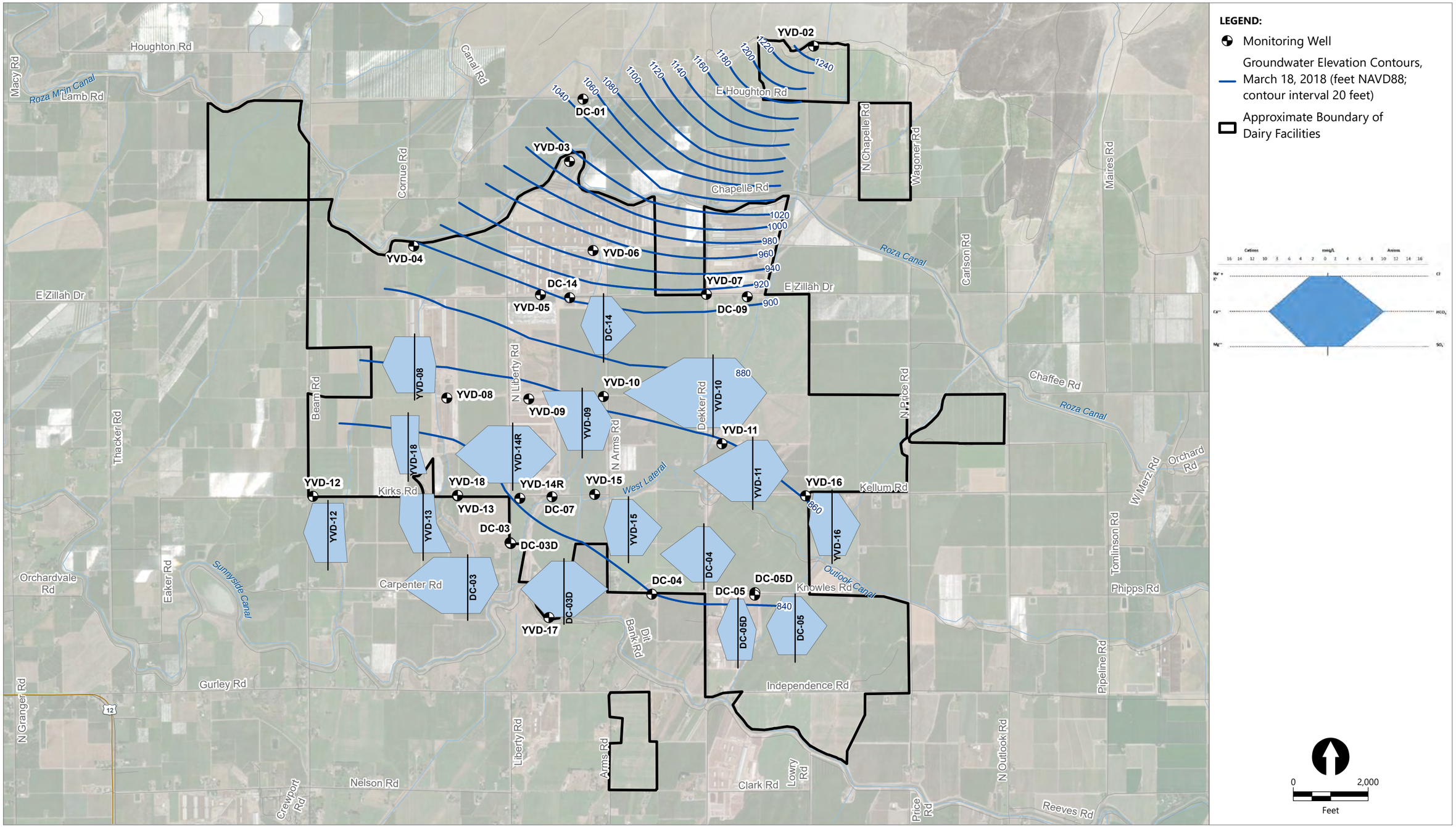

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Figure 29
Stiff Diagrams and Groundwater Elevation Contour Map
Groundwater Monitoring Data Report – First Quarter 2018
Yakima Valley Dairies

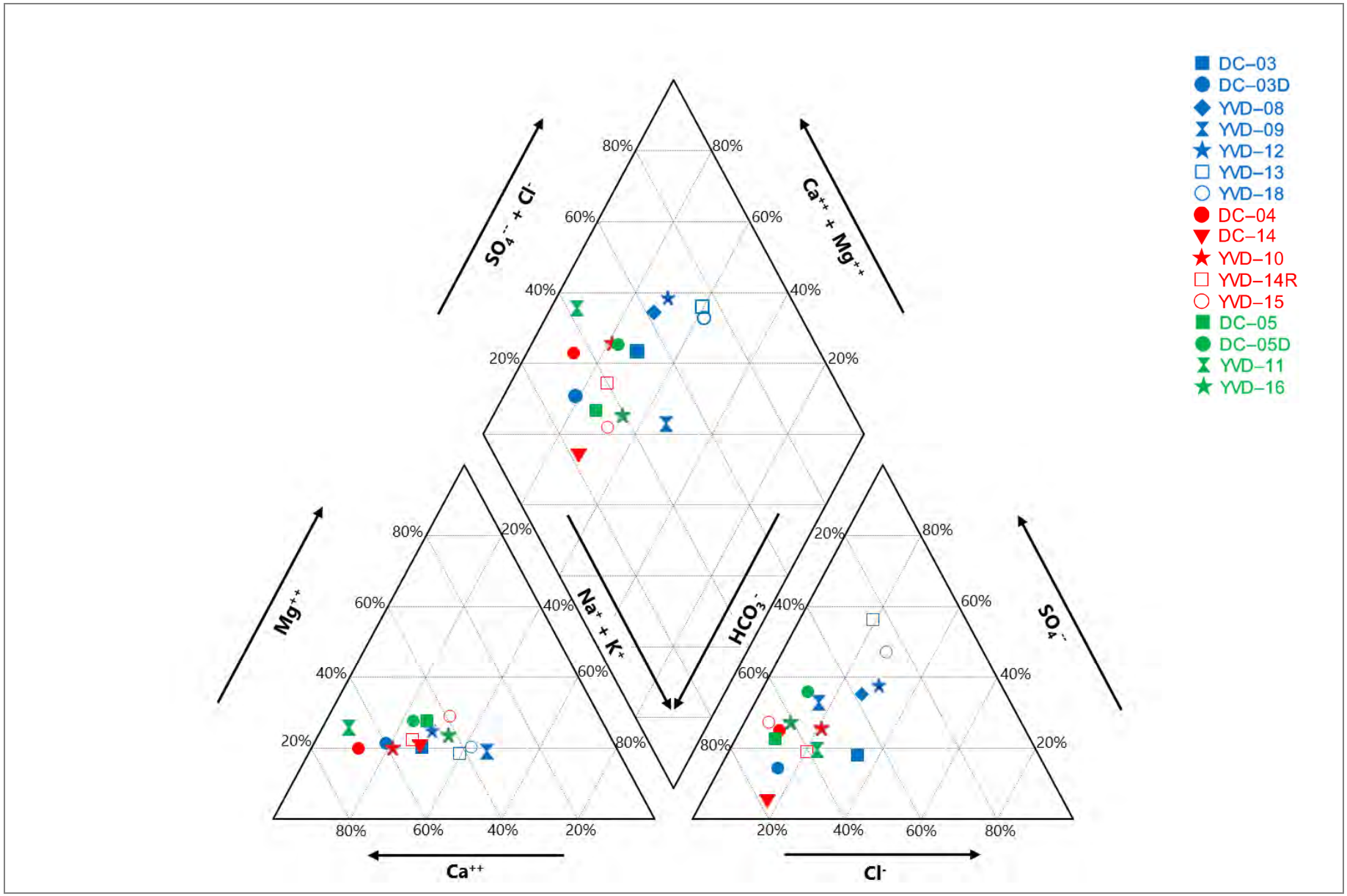

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Figure 30

Piper Diagram – All Wells

Groundwater Monitoring Data Report – First Quarter 2018

Yakima Valley Dairies

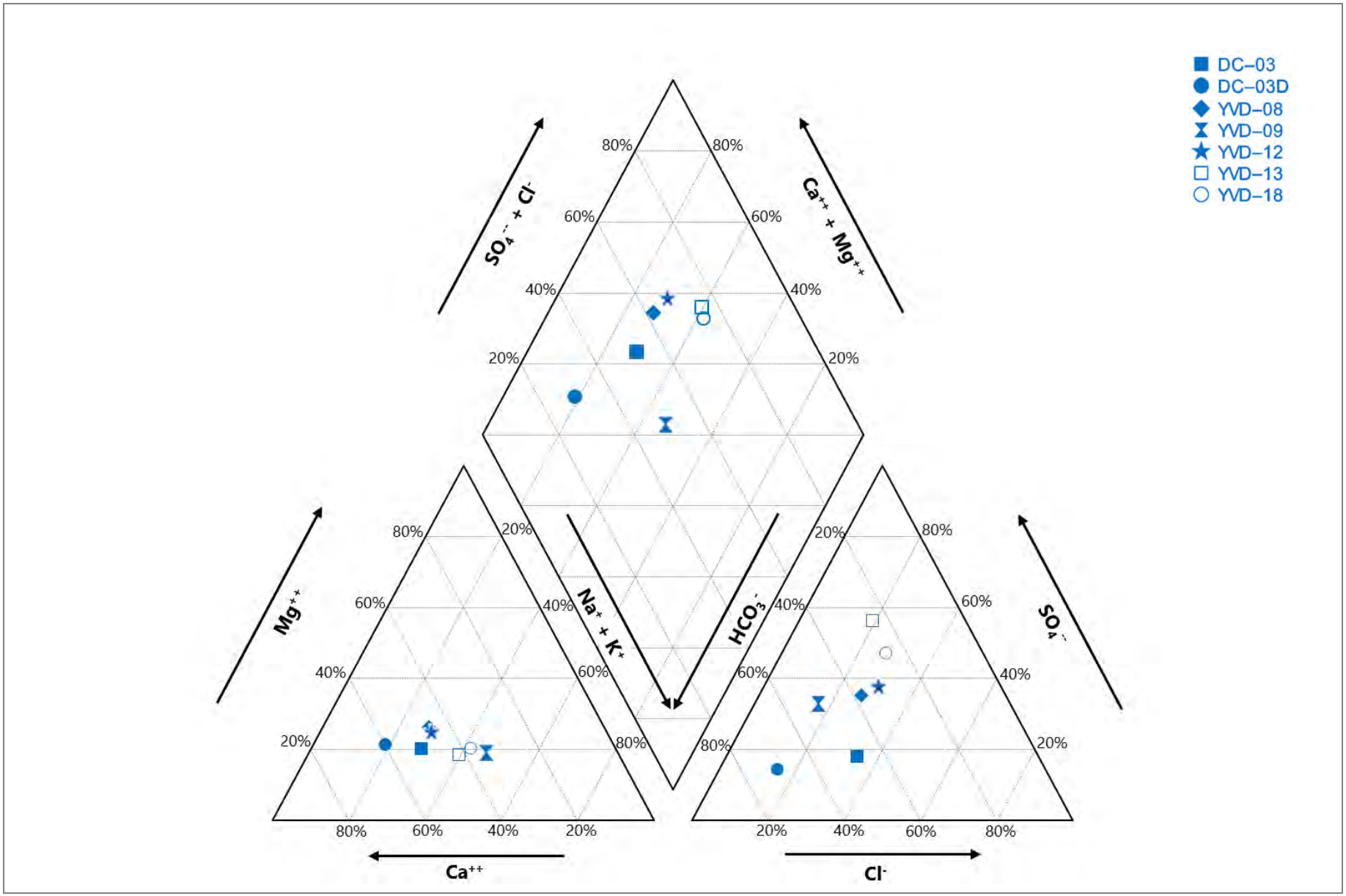

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Figure 31

Piper Diagram – Group 1 Wells

Groundwater Monitoring Data Report – First Quarter 2018

Yakima Valley Dairies

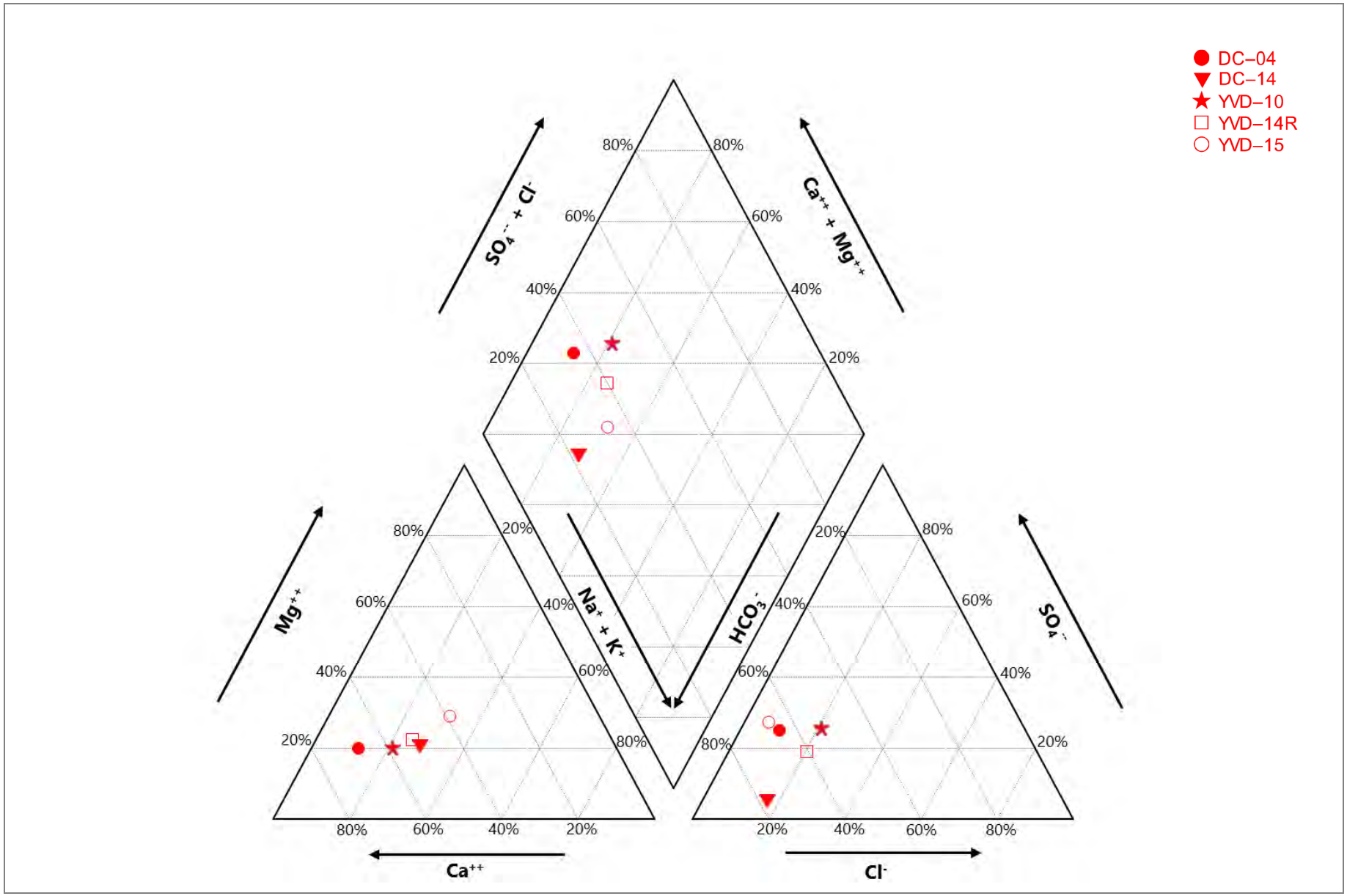

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Figure 32

Piper Diagram – Group 2 Wells

Groundwater Monitoring Data Report – First Quarter 2018

Yakima Valley Dairies

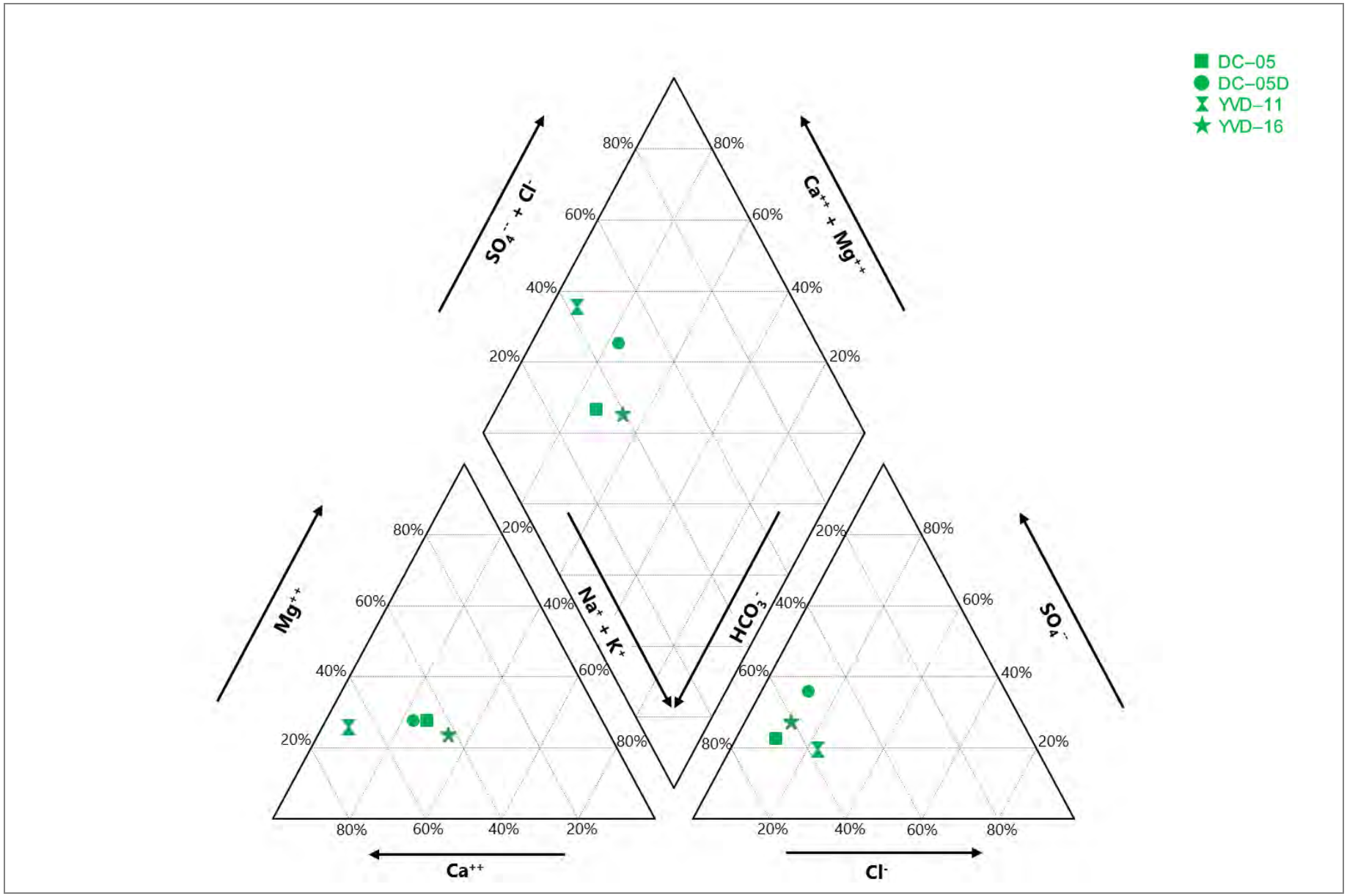

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Figure 33

Piper Diagram – Group 3 Wells

Groundwater Monitoring Data Report – First Quarter 2018

Yakima Valley Dairies