Environmental Functional Area

Water Resources and Environmental Planning Group

LLNL-AR-411431-22-3

LLNL Experimental Test Site, Site 300 Compliance Monitoring Report for Waste Discharge Requirements (WDR) Order No. R5-2008-0148

Second Semester/Annual Report 2021

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Certification

I certify that the work presented in this report was performed under my supervision. To the best of my knowledge, the data contained herein are true and accurate, and the work was performed in accordance with professional standards.

February 25, 2022

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List of Abbreviations and Acronyms

3CMP	Compliance Monitoring Program Site 300 ground water samples
3EMG	Environmental Support & Programmatic Outreach (ESPO) Group Site 300 ground water samples
3GIV	Ground water samples collected at Site 300 for site investigations
3VES	Sampling method requiring three casing volumes purged using an electric submersible pump
BCLABS-BAK	BC Laboratories, Inc. in Bakersfield, CA
BOD	Biochemical oxygen demand
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMP	Compliance Monitoring Program (conducted under CERCLA)
CMR	Compliance Monitoring Report (prepared under CERCLA)
CoC	Chain-of-custody form
CVRWQCB	Central Valley Regional Water Quality Control Board
DO	Dissolved oxygen
DSWP	Sewage percolation pond influent sampling location
DTW	Depth to (ground) water
EC	Electrical conductivity, or specific conductance (SC)
EFA	Environmental Functional Area
ESWP	Sampling location within sewage evaporation pond
HE	High explosives
GF	Grundfos pump
Ft	Feet
gal	Gallons
gpm	Gallons per minute (measurement of discharge or flow rate)
GWE	Ground water elevation (above mean sea level)
HSU	Hydrostratigraphic unit
ID	Identification number
ISWP	Sewage evaporation pond influent sampling location
LAMP	Local Agency Management Program
LLNL	Lawrence Livermore National Laboratory

List of Abbreviations and Acronyms cont.

MCL	Maximum Contaminant Level (for drinking water)
mL	Milliliters
MPN	Most probable number
MRP	Monitoring and Reporting Program
mV	Millivolts (measure of oxidation-reduction potential)
NA	Not applicable
ND	None detected, or not detected
NLSS	Nitrate Loading and Soil Suitability Study
NO_3	Nitrate
NR	Analysis not required by permit at this sampling location
NTC	Notice to Comply
pH	Measure of the acidity or alkalinity of a solution
OG	Off-gassing measured by scale of 1-5, 5 being highest amount of off-gassing
OU	Operable Unit under CERCLA
OWTS	Onsite Wastewater Treatment System
Q	Discharge or flow rate, or number of well volumes purged (according to context)
QA	Quality Assurance
Qal	Quaternary Age alluvial deposits
QC	Quality control
Qt	Quaternary Age terrace deposits
RWD	Reports of Waste Discharge
RHWM	Radioactive and Hazardous Waste Management
SC	Specific conductance, or electrical conductivity (same as EC)
SCP	Salt Control Program
SHO	Short analytical holding time (such as samples for coliform bacteria analyses)
SJC	San Joaquin County
SJCEHD	San Joaquin County Environmental Health Department
WDR	Waste Discharge Requirements (Permit)

Executive Summary

Under authority of the State of California and as required by the Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board (CVRWQCB) issued Order No. R5-2008-0148 for the Experimental Test Site (Site 300), to Lawrence Livermore National Laboratory (LLNL). Monitoring and Reporting Program (MRP) Number R5-2008-0148 was adopted in September 2008, and revised effective December 1, 2009. The revised MRP terms and conditions have been implemented in this report. Under the terms of this MRP, LLNL submits semi-annual and annual monitoring reports detailing its Site 300 discharges of domestic and wastewater effluent to the sewage evaporation pond and percolation pond in the Site 300 General Services Area, cooling tower blowdown to percolation pits and septic systems, mechanical equipment discharges to percolation pits located throughout Site 300, and low-threat discharges to ground.

This report contains all the elements required by Waste Discharge Requirement (WDR) Order R5-2008-0148 for the second semester of 2021 and updates the status of equipment and facilities since the adoption of R5-2008-0148. Proper operating conditions were met for all permitted monitoring networks. Compliance certification accompanies this report, as required by the permit.

1. Introduction

Site 300, operated by Lawrence Livermore National Security, LLC, is located in the Altamont Hills approximately 10.5 kilometers (6.5 miles) southwest of downtown Tracy, California. Required monitoring for specific Lawrence Livermore National Laboratory (LLNL) Site 300 water monitoring networks is defined in the Monitoring and Reporting Program (MRP) Order Number R5-2008-0148, which was adopted in September 2008, and revised effective December 1, 2009. The revised MRP has been implemented in this report. Applicable reporting requirements can be found in the Standard Provisions and Reporting Requirements specified in the Waste Discharge Requirements (WDR) Order R5-2008-0148 (CVRWQCB, 2008) permit and in the MRP R5-2008-0148.

This report provides a summary of water quality in designated monitoring network samples collected during the second semester of 2021 under the revised MRP R5-2008-0148 (CVRWQCB, 2008). The report details the monitoring results of the four compliance networks and low-threat discharges and presents analytical data, field summary sheets, and inspection logs associated with discharges at the networks.

Compliance monitoring networks discussed in the report include:

- Sewage evaporation and percolation ponds wastewater and ground water monitoring (**Sections 2.1 through 2.5**)
- Cooling tower blowdown discharge monitoring and percolation pit inspections (**Sections 3.1 through 3.4**)
- Mechanical equipment effluent discharge monitoring and percolation pit inspections (**Sections 4.1 through 4.4**)
- Septic systems and construction updates (**Sections 5.1 through 5.3**)
- Low-threat discharges (**Sections 6.1 through 6.2**)

BC Laboratories, Inc. and Alpha Labs provided off-site analytical support for the monitoring networks.

This report summarizes the activities associated with these monitoring networks including: tabular summaries or data plots for all data for at least the last five years; a ground water elevation contour map with well locations; identification of any data gaps or deficiencies; and a discussion of any changes to the monitoring program.

Figure 1 shows the locations of the wastewater systems permitted under WDR R5-2008-0148, including mechanical equipment percolation pits and the sewage oxidation and percolation ponds (sewage ponds) located in the General Services Area. None of the permitted mechanical equipment or cooling tower percolation pits overflowed during this monitoring period. However, standing water was observed at the Building 801 cooling tower percolation pit from October to December. An investigation into the cause is underway with the maintenance shop. Also, about 3-inches of standing water was observed in the mechanical equipment percolation pit at Building 827C in December; this was most likely due to the recent rainfall. In addition, there were no detected

chemical impacts to ground water beneath and adjacent to the sewage ponds. Discharges from cooling towers and mechanical equipment were consistent with historical information provided in the previous Reports of Waste Discharge (RWD).

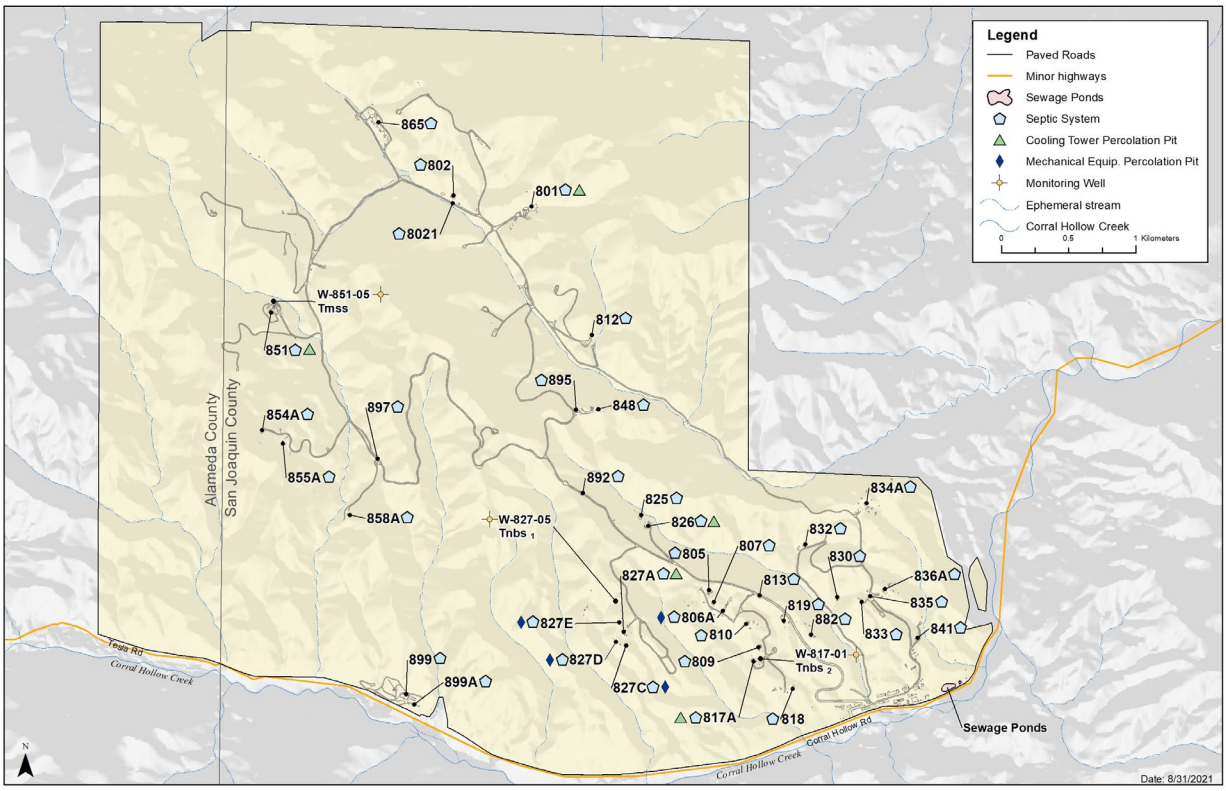

Figure 1. Locations of Site 300 facilities with septic systems and percolation pits.

2. Sewage Evaporation and Percolation Ponds

2.1. Effluent and Pond Compliance Monitoring Program

MRP R5-2008-0148 requires semi-annual and annual sampling and chemical analysis of wastewater flowing into the sewage evaporation pond (sewage pond). Grab samples are collected from a location west of the sewage pond (see sampling location ISWP in **Appendix A, Figure A-1** showing the Site 300 sewage evaporation and percolation ponds and ground water and wastewater compliance monitoring locations). Location ISWP is a port providing access to a section of pipe through which all liquid waste streams flow prior to entering the sewage pond. The samples are analyzed for specific conductance (SC, or electrical conductivity), pH, and biochemical oxygen demand (BOD).

MRP R5-2008-0148 also requires sampling and analysis of wastewater within the sewage pond and wastewater discharging into the sewage percolation pond. Semi-annual wastewater samples are collected by grab sampling from a dock at the eastern end of the sewage pond (sampling location ESWP) and analyzed for SC, pH, metals, dissolved oxygen (DO), BOD, and total and fecal coliform. Any discharge from the sewage pond to the sewage percolation pond (sampling location DSWP) is grab-sampled and analyzed for the same constituents. Permit WDR R5-2008-0148 requires LLNL to operate the sewage pond with adequate freeboard to minimize the frequency of discharges to the sewage percolation pond.

Leak detection and compliance monitoring at the sewage evaporation and percolation ponds are accomplished by monitoring the shallow ground water beneath and adjacent to the ponds. Ground water monitoring includes semi-annual sampling during the first and second semesters when ground water elevations are at their highest and lowest, respectively, and analysis of the collected samples for SC, pH, total and fecal coliform, chloride, nitrate, sulfate, total dissolved solids, sodium, and metals. Ground water elevations are routinely recorded, and potentiometric surface contour maps are created (**Appendix A, Figure A-2**). A map showing the locations of the monitoring wells and ponds (**Appendix A, Figure A-1**) and tables of monitoring well specifications and ground water elevations for the second semester of 2021 for each well are provided in **Appendix A, Tables A-1 and A-2**.

In addition to normal operation of the sewage evaporation pond, there are discharges to it associated with the beneficial use of discharged water. These discharges occur prior to potable water delivery to Site 300 from the San Francisco Public Utility District Hetch-Hetchy water system. During these operations, Hetch-Hetchy water is flushed periodically to maintain sanitary conditions in the potable water line. When a discharge to the sewage evaporation pond is scheduled, the chlorinated water in the Hetch-Hetchy line is analyzed for chlorine. When the water reaches a chlorine residual value at or below 1.0 mg/L, the water is ready to flush. When flushing, a 4-inch hose is used from the discharge of the Hetch-Hetchy line at the LLNL valve box to the sewage pond. Before the water is flushed, the residual chlorine concentration generally decreases to between 0.2 and 1.0 mg/L. The pH is checked and logged at the source. pH measurements from the San Francisco Public Utilities Commission (SFPUC) Water Quality Division transmission system weekly process sheet are also recorded.

During the second semester of 2021, there were no Hetch-Hetchy water line flushes. The table below provides the discharge date, volume of water discharged, chlorine residual concentration, and pH of the discharged water, if any.

Table 1. Summary of water system pipeline flushing and pressure testing discharges at Site 300 during 2021.

Discharge Period	Volume Discharged (gallons)	Chlorine Residual (mg/L)	pH (units)	Comment
First Semester	-	-	-	No Flushes
Second Semester	-	-	-	No Flushes

As noted on the inspection field sheets, ground water samples were not collected during the second semester of 2021 from wells W-25N-22 due to an inoperable pump and at wells W-7PS and W-26R-11 due to dry conditions.

The influent sewage pond flow meter project is ongoing with the concrete pad, flume, and flow meter installation concluded at the southwest corner of the pond. Work is being conducted on connecting the flow meter to the SCADA communication system.

2.2. Sewage Pond Wastewater Sampling and Analysis

Less than 12 hours before sewage pond wastewater sampling and field measurements, the DO, SC, and pH meters are calibrated. The DO, SC, pH, and temperature of each sample are measured and written on the field tracking forms (field logs) when the grab samples from ISWP, ESWP, and DSWP are collected. For each analytical laboratory to which samples are submitted, chain-of-custody (CoC) forms are filled out appropriately and signed by the sampler. The CoC numbers are also written on the field logs. Appropriate EPA-approved analytical methods (U.S. Environmental Protection Agency, 2005) or Standard Methods (Clesceri et al., 1998) are used.

The samples required under MRP R5-2008-0148 for locations ISWP and ESWP were collected on April 27, 2021. These samples, and all samples with results presented in this report, were collected, analyzed, and the data entered into the LLNL Environmental Functional Area (EFA) database according to a complete set of protocols documented in the LLNL EFA Environmental Monitoring Plan (Brunckhorst, 2019).

2.3. Sewage Pond Wastewater Monitoring Results

Analytical results for second semester 2021 samples are summarized here as required under MRP R5-2008-0148. Monitoring data are tabulated in **Appendix A**. Coliform, anion, BOD, DO, and specific conductance data summaries are presented in **Table A-3**. A metals data summary for the ESWP location is presented in **Table A-4. Table A-5** provides a duplicate (QA) sampling data summary for the sewage pond's wastewater monitoring network. All results and observations were in compliance with the Permit's discharge specifications as shown in **Appendix D**. There was adequate freeboard in the sewage pond to prevent any over-topping or erosion of the pond embankment. Field tracking forms documenting operational conditions at Site 300 are provided in

Appendix A, which also contains the field logs, including field measurements and CoCs. The original laboratory analytical result sheets are stored at LLNL and are available upon request.

- As listed in **Table A-3**, samples from the two monitoring points, 3-ESWP-OW and 3-ISWP-OW, yielded pH values of 9.8 and 8.7 respectively on October 19. The SC of the effluent sample, 3-ESWP-OW, at 8,600 µmhos/cm, was substantially higher than that measured for the influent sample, 3-ISWP-OW, at 1,000 µmhos/cm, which may be attributed to evaporation. The effluent SC values are typical of previous year measurements from the sewage pond. There is no reporting limit for SC. The BOD values measured in the effluent and influent samples were 230 mg/L, for both. The fecal and total coliform reporting limit is 2 most probable number (MPN)/100mL. A procedural error at the analytical laboratory invalidated the data from the original effluent wastewater sample collected on October 19. Therefore, a separate effluent sample was collected on November 4, yielding a total coliform concentration of 49,000 MPN/100mL.
- **Table A-4** contains 2021 data for metals in the sewage pond effluent at monitoring location (3-ESWP-OW). Of the metals, cadmium, hexavalent chromium, molybdenum, selenium, and silver concentrations were below their reporting limits in the second semester samples. Concentrations of many of the other metals were higher than they were in samples from the first semester. LLNL will continue to evaluate trends of metal concentrations.
- **Table A-5** lists the 2021 QA data for the wastewater monitoring network. During the second semester, a duplicate pH measurement from 3-ISWP-OW was the only quality assurance measurement. The routine and duplicate pH measurements were similar at 8.7 and 8.8, respectively.

2.4. Ground Water Sampling and Analysis

Semi-annual sampling of ground water from monitoring wells at the sewage evaporation and percolation ponds was performed during the second semester of 2021. The ground water samples were collected and analyzed, and the results entered into the EFA database according to established protocols (Goodrich and Lorega, 2016). The monitoring wells were purged and sampled during the September 7 to November 3 time period using prescribed methods assigned to each monitoring well. Information regarding the conditions during sampling, as well as field measurements taken at the time of sampling, is contained in the ground water sampling data sheets in **Appendix A**. The samples were transferred to an offsite analytical laboratory for analysis of the physical and chemical parameters and analytes listed in **Section 2.1**. Following the initial sampling events, a pre-calculated dose of chlorine was added to each well and the well was briefly pumped to circulate the chlorine throughout the water column. On the following day, wells were tested for residual chlorine and samples were collected for analysis of total and fecal coliform bacteria at an offsite analytical laboratory.

2.5. Ground Water Monitoring Results

Ground water data are presented in **Appendix A**. Sodium and anion data are tabulated in **Table A-6**. Fecal and total coliform data are listed in **Table A-7**. **Table A-8** provides a summary of physical chemical data and **Table A-9** lists metals data. QA data summaries for the monitoring well network are presented in **Table A-10**. **Appendix A, Figure A-2** is the second semester 2021

ground water elevation contour map for the shallowest water-bearing zone (Qt-Tnsc$_1$ and Qal-Tnbs$_1$ hydrostratigraphic units [HSUs]) in the sewage evaporation and percolation ponds area. Nitrate concentrations in sewer pond ground water network monitoring wells are depicted on **Appendix A, Figure A-3**.

- The sewer pond ground water monitoring results in **Table A-6** indicate that nitrate concentrations at most wells this year were generally similar between measurements; all were below the 45 mg/L maximum contaminant level (MCL) for nitrate in drinking water.
- As shown in **Table A-7**, fecal coliform was not detected above the reporting limit of 1.8 MPN/100mL in any of the second semester ground water samples. However, samples from wells W-7ES (11 MPN/100mL from September 15 and 6.8 MPN/100mL from November 3), W-35A-04 (350 MPN/100mL from September 15), and W-7DS (3.6 MPN/100mL from October 27) contained total coliform concentrations of more than 2 MPN/100mL. The May 25 sample from W-26R-11 and the May 18 sample from W-7DS both contained 2 MPN/100mL of total coliform. None of the other samples collected from the sewer pond wells contained total coliform in excess of the 1.8 MPN/100mL reporting limit.
- As shown in **Table A-8**, phosphorus concentrations in all second semester ground water samples were below the reporting limit of 1 mg/L. The individual well physical chemistry data ranges for the other constituents were similar to those reported last year.
- In **Table A-9**, aluminum, cadmium, chromium, hexavalent chromium, iron, lead, mercury, molybdenum, silver, and vanadium were not detected above their reporting limits in second semester samples. The other metals concentrations were generally consistent with last semester's data.
- As shown in **Table A-10**, the duplicate sample results taken from September 14 to November 3 for pH, specific conductance, fecal coliform, and nitrate were either identical or very similar to the routine sample results for wells W-7ES and W-7DS. For the September 15 total coliform sample results for well W-7ES, the routine and duplicate sample results were 11 MPN/100mL and 2.0 MPN/100mL respectively; not as similar as the other sample results for other constituents.

2.6 Sewage Evaporation Pond and Percolation Pit Monthly Inspections

Observations of freeboard, color, odor, and levee condition at the sewage pond and percolation pond are made and recorded at least monthly. **Appendix A** contains several second semester 2021 data sets and other material including; field tracking forms, sewage and percolation pond inspection and monitoring reports, ground water sampling data forms, historical data plots for the sewage evaporation pond and percolation pond network, and ground water monitoring field observation forms for the sewage pond.

The July through December inspection and monitoring reports indicate that there was no standing water in the percolation pond. The sewage pond water was brown-green in color during the second semester with no dead algae, weeds, or mosquitoes observed. The freeboard depth ranged from 15-inches to 24-inches, well in excess of the 12-inch minimum freeboard depth, a LLNL operating best management practice.

3. Cooling Tower Network

3.1. Cooling Tower Compliance Monitoring Program

Monitoring requirements for cooling tower blowdown water are specified in MRP R5-2008-0148. LLNL implemented the cooling tower blowdown monitoring program in the fourth quarter of 2008. Applicable reporting requirements are found in the Standard Provisions and Reporting Requirements of WDR R5-2008-0148 and the MRP.

Cooling towers located at Site 300 discharge either into percolation pits or into septic systems. Currently, there are five operating cooling towers. The cooling tower locations are identified on **Appendix B, Figure B-1**. The cooling towers located at Buildings 801, 817, 826, 827A, and 851 all discharge to percolation pits and were operational this period. In October 2017, the cooling towers discharge lines at Building 827A were replumbed and are now separate. Previously, they merged and were sampled at a single port.

MRP R5-2008-0148 requires semi-annual sampling of the cooling tower blowdown. Grab samples are collected from the water circulating in each cooling tower, either at a valve or a drainpipe. The grab samples are collected directly into the containers specified by the laboratory. Samples are analyzed for metals, pH, sodium, SC, sulfate, total alkalinity, total dissolved solids, total hardness, and total phosphorus.

3.2. Cooling Tower Blowdown Effluent Sampling and Analysis

Second semester 2021 routine cooling tower blowdown samples were collected on October 11, 2021. Less than 12 hours before cooling tower blowdown sampling, the SC and pH meters are calibrated. SC and pH data measured in the field are written on field tracking forms. CoC forms are filled out appropriately and signed by the sampler for each analytical laboratory to which the samples are transferred; CoC numbers are also written on the field logs. Analytical methods used are appropriate EPA-approved Methods (U.S. Environmental Protection Agency, 2005) or Standard Methods (Clesceri et al., 1998).

3.3. Cooling Tower Blowdown Monitoring Results

All cooling tower sample results are listed in **Appendix B** along with the QA/QC results, field tracking forms, inspection checklists, and CoCs. **Table B-1** lists sodium and anions data. **Table B-2** lists metals results, and **Table B-3** provides required physical characteristics data. QA/QC data from duplicate sampling are provided in **Table B-4**.

The following section includes highlights and a summary of comparisons of semester 2021 analytical results for each constituent in cooling tower blowdown samples to Designated Level Methodology-derived concentrations calculated using the water quality goals (where they exist) shown in Attachment 16 of the permit (WDR Order No. R5-2008-0148) and maximum historical values observed at the time of the permit. For reference, **Appendix D** of this document contains Attachment 16 of the WDR permit.

- **Table B-1** lists results for sodium and anions (chloride, nitrate, sulfate, fluoride, and bromide). The maximum second semester sodium concentrations in a cooling tower wastewater sample collected at Buildings 801, 817A, 826, 827A and 851 was 820 mg/L

(Building 851, October 11); this concentration was higher than the 750 mg/L maximum sodium concentration detected last semester, also at Building 851.

- The second semester 2021 metals concentrations in cooling tower wastewater are displayed in **Table B-2** and summarized below.
    - Cadmium, lead, manganese, silver, and vanadium concentrations were not in excess of reporting limits in any 2021 cooling tower blowdown samples.
    - Copper concentrations in samples collected during the second semester of 2021 ranged from 21 µg/L to 100 µg/L, below the maximum historical effluent concentration in Appendix D (2,400 µg/L).
    - The fourth quarter magnesium concentrations in blowdown samples ranged from less than 500 µg/L at Buildings 801, 817, 827A, and 851 to 580 µg/L at Building 826.
    - At Building 827A, both cooling towers at Building 827A, 3-827ACT01-TW and 3-827ACT02-TW, had unusually high concentrations of selenium at 120 µg/L and 180 µg/L, respectively, during the second semester of 2021; in contrast, the first semester 2021 sample result for 3-827ACT02-TW, was less than the 4 µg/L reporting limit.
    - Compared to the high zinc concentration (3,300 µg/L) in the second semester 2020 sample from the 827A cooling tower, 3-827ACT02-TW, during this second semester of 2021, zinc concentration was down to 160 µg/L, comparable to the previous years. The second semester zinc concentrations at the Building 801, 817, 826, and 851 cooling towers (150 µg/L, 130 µg/L, 75 µg/L, and 520 µg/L, respectively) were higher than the corresponding first semester 2021 zinc concentrations of 75 µg/L, 72 µg/L, 92 µg/L, and 280 µg/L, respectively. Monitoring of metals concentrations and identification of trends will continue.

The concentrations of all metals in the second semester 2021 cooling tower effluent samples are well below concentrations calculated using the Designated Level Methodology in **Appendix D** (WDR Order Attachment 16) for impact to ground water. LLNL will continue to evaluate metals concentrations in future samples of cooling tower effluent.

- **Table B-3** lists the physical characteristics (SC, total alkalinity, TDS, total hardness, and phosphorus) of the cooling tower blowdown discharges. The cooling tower effluent from Buildings 801, 817, and 851 had a decrease in total hardness from the first semester of 2021 (220 mg/L, 92 mg/L, and 250mg/L respectively) to the second semester of 2021 (130 m/L, 70 mg/L, and 160 mg/L respectively).
- As shown in **Table B-4**, a QA sample was collected from the cooling tower at Building 827A on October 11. The routine and duplicate sample results for the various constituents were identical or similar, with the exception of potassium, for which the routine and the duplicate samples contained 65,000 µg/L and 73,000 µg/L, respectively and calcium, for which the routine and duplicate samples contained 86,000 µg/L and 96,000 µg/L, respectively.

3.4. Cooling Tower Percolation Pit Monthly Inspections

LLNL implements monthly visual inspections of the cooling tower percolation pits located at Buildings 801, 817A, 826, 827A, and 851 (**Figure B-1**), which collect effluent from the cooling towers as specified in MRP R5-2008-0148. If standing water is present, the MRP requires the inspection frequency to be increased to weekly until standing water is no longer visible. Visual inspections are conducted to verify the percolation pits are working properly and do not have the potential to overflow. Copies of the inspection forms are provided in **Appendix B**.

From October through December, standing water was observed in the Building 801 cooling tower percolation pit. The design drawings will be reviewed, once located, to aid in determining the cause for the standing water. Last semester, the inspection hatch was replaced for easier access during the monthly inspections. A raised lip was welded around the inspection port to prevent water from flowing into the port during the rainy season.

4. Mechanical Equipment Effluent Monitoring

4.1. Mechanical Equipment Discharge Monitoring Program

Monitoring requirements for mechanical equipment discharge of effluent to percolation pits are specified in the MRP R5-2008-0148. LLNL monitors the mechanical equipment systems located at Buildings 806A, 827A, 827C, 827D, and 827E. In **Appendix C, Figure C-1** provides the locations of those systems. Since mid-2016, Building 827D has been undergoing construction and the existing boiler ovens have been replaced with electric ovens. With ongoing construction and electric ovens that do not employ boilers, there have been no discharges to the percolation pit at Building 827D. Two vacuum pumps and a DI water system periodically discharge to the Building 827D percolation pit. The vacuum pumps remove moisture from the air prior to it entering the mixer. Monthly inspections are performed. However, no sampling and analysis of water was performed due to the limited discharge activity.

At Building 827E, the construction of a new slurry coating operation was completed at the end of June and as of December 15, the plant was operational. The wastewater generated from the water batching will be disposed of in a waste disposal tank managed by LLNL's Radioactive and Hazardous Waste Management (RHWM) Division. Likewise, the mixed waste stream of solvent and water will be discharged to a waste retention tank managed by RHWM.

4.2. Mechanical Equipment Effluent Sampling and Analysis

The results for the mechanical equipment room effluent monitoring are reported in data tables in **Appendix C**. Monitoring is performed using automated composite sampling from the Christy box during operations. During this monitoring period, samples were collected during October 13-14.

For the sampling and analysis of mechanical equipment effluent, for each analytical laboratory, CoC forms are filled out appropriately and signed by the sampler. CoC numbers are also written on the field logs, provided in **Appendix C**. Appropriate EPA-approved analytical methods (U.S. Environmental Protection Agency, 2005) or standard methods (Clesceri et al., 1998) are used.

4.3. Mechanical Equipment Effluent Monitoring Results

There are mechanical equipment percolation pits located at Buildings 806A, 827A, 827C, 827D, and 827E (**Figure C-1**). Sample analytical results for the monitoring network for these pits are presented in tables in **Appendix C. Table C-1** lists sodium and anion data, **Table C-2** lists metals results and **Table C-3** provides required physical characteristics data. Data from duplicate sampling is provided in the data tables. Constituent concentrations in 2021 effluent samples were protective of underlying ground water, as they were below the Designated Level Methodology-derived concentrations shown in **Appendix D** for the relevant analytes.

- **Table C-1** lists the nitrate concentrations in all the mechanical equipment discharges; Buildings 806A, 827C, and 827E yielded nitrate concentrations below the 0.5 mg/L reporting limit. The 2021 chloride concentrations were less than 100 mg/L in all the mechanical equipment discharges except for B827A, where chloride concentrations ranged from 380 – 410 mg/L. Additionally, the sodium concentrations were significantly higher at B827A, ranging from 660 – 760 mg/L. These high chloride and sodium concentrations

at B827A may be attributed to discharges from the water softener, vacuum pump, or boilers. Sulfate and fluoride concentrations were also higher at B827A. LLNL will continue to assess trends in constituent concentrations and investigate potential causes of elevated anions and sodium at B827A.

- Metals data are tabulated in **Table C-2**. Many metals (cadmium, magnesium, silver, and vanadium) were not detected above their reporting limits. At Building 827A, the second semester 2021 concentration of zinc (170 µg/L) was higher than the first semester 2021 zinc concentration (59 µg/L). Additionally, in October 2021, calcium (91,000 µg/L) and potassium (60,000 µg/L) concentrations were elevated at B827A. LLNL will continue to assess concentration trends and investigate potential causes of elevated metals at B827A.
- The second semester physical chemistry data from the mechanical equipment discharge effluent monitoring in **Table C-3** were similar to last semester's concentrations.
    - Building 827A had higher measurements of SC, alkalinity, dissolved solids, and hardness compared to the other mechanical equipment discharges from the other buildings. Compared to last semester's physical chemistry data, the concentrations were higher; an investigation into the building's operations will be conducted to better determine the source of the high analyte concentrations in the discharge water.
    - For quality assurance, both routine and duplicate samples were collected from the mechanical equipment discharge from B827E. The concentrations in the routine sample from Building 827E were nearly identical to the concentrations in the duplicate sample.

4.4. Mechanical Equipment Percolation Pit Monthly Inspections

MRP R5-2008-0148 requires monthly inspections of the five mechanical equipment percolation pits located at Buildings 806A, 827A, 827C, 827D, and 827E. **Appendix C** contains the mechanical equipment percolation pit inspection checklists. If standing water is visible during an inspection, the inspection frequency for that percolation pit is increased to weekly until no standing water is visible.

During the second semester, standing water was observed in the mechanical equipment percolation pit at Building 827C. There was about 3-inches of standing water observed in December, most likely due to the recent rainfall.

5. Septic Systems

5.1. Septic System Monitoring Program

Ground water monitoring requirements for septic system at four areas at Site 300 were specified in MRP R5-2008-0148 (CVRWQCB, 2008). Based on the MRP, a total of 33 facilities at Site 300 (**Figure 2**) have septic systems with varying capacities and designs.

In the Revised Monitoring and Reporting Plan (CVRWQCB, 2009), the monitoring requirements for the four septic systems specified in CVRWQCB, 2008 were removed and the MRP was to be revised to include ground water monitoring for septic systems that are determined to threaten beneficial uses of ground water.

5.2. Septic System Permitting

With the San Joaquin County Environmental Health Department (SJCEHD) obtaining their Local Agency Management Program (LAMP) approval in April 2017 (CVRWQCB, 2017), the jurisdiction for managing onsite wastewater treatment systems (OWTS) came under their purview for systems that received only domestic wastewater from residential or commercial buildings with an average daily flow of less than 10,000 gallons per day. Otherwise, the CVRWQCB regulates larger wastewater treatment systems.

In order to obtain a septic system permit for Site 300 from the SJCEHD, a number of requirements must be satisfied from various regulatory departments:

1. San Joaquin County (SJC) Building Department
   - Send the building inspector the finalized site drawings of the proposed building for building review
2. SJC Planning Department
   - No land use permitting is required for Site 300 if a SJC building permit is not issued
3. SJCEHD
   - Perform a percolation test with instructions from the department website
   - Complete a soil suitability study (SSS)
   - Complete a nitrate loading study (NLS)

6. Low-Threat Discharges to Ground

6.1. Low-Threat Discharges

At Site 300, a variety of activities may result in low volume and low-threat discharges. Consistent with the Storm Water Pollution Prevention Program, the discharger has implemented Best Management Practices (BMPs) to prevent these discharges from reaching surface water drainage courses before percolating into the subsurface. As shown in **Appendix E**, Attachment 4 in the WDR-R5-2008-0148 Order lists the low threat discharges, which are primarily composed of potable water, low conductivity water, condensate, and uncontaminated contained rainwater.

The Buildings 832, 834, and 836 facilities upgrade project to expand environmental testing capabilities and add office space began construction in early February. The buildings will have new air-handling units installed that require new soak pits. The previous air-handling unit at B832A was removed and a new heat pump air handling unit will be installed with a new soak pit for the condensate drain. Building 832C will have a new split unit heat pump condensate drain installed that will route into the B832A soak pit. Lastly, Building 836B will have a new outdoor heat pump air-handling unit installed in which the condensate drain will be plumbed to a new soak pit. The soak pit will have the same design as previous soak pits, a standard N16 Christy box. Construction is expected to finish in September 2022.

7. Regulatory Activities

On Friday, September 10, 2021, out of an abundance of caution due to the COVID-19 pandemic, Ms. Aimee Phiri (CVRWQCB Water Resources Control Engineer) requested current photographs of monitoring locations in lieu of an in-person inspection. During the semester, Ms. Phiri transitioned to a new role at the California Department of Water Resources and Mr. Durin Linderholm replaced her as the CVRWQCB regulator. The CVRWQCB WDR Order R5-2005-0148 virtual Fall 2021 inspection included environmental visits to Buildings 801, 826, and 827, as well as the sewage evaporation and percolation ponds. At the conclusion of the inspection, the photographs were compiled into one document for Mr. Linderholm's review. After reviewing, Mr. Linderholm requested continued monitoring for the presence of standing water in the percolation pit for Building 801. No violations were observed, and no additional follow-up was required at the time.

The annual payment request for the WDR-0148 permit was received by LLNL on December 14, 2021, and the payment (Invoice Number WD-0177885, Facility ID 5B390810001) was sent to the State Water Resource Control Board via US Certified Mail on December 29, 2021.

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CVRWQCB (1991), *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, Central Valley Regional Water Quality Control Board, March 1, 1991.

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CVRWQCB (2017), *Resolution R5-2017-0049, Approving the Local Agency Management Program For San Joaquin County Environmental Health Department*, April 2017.

Goodrich, R., and G. Lorega (2016), *LLNL Livermore Site and Site 300 Environmental Restoration Project Standard Operating Procedures (SOPs)*, Lawrence Livermore National Laboratory, Livermore, Calif. (LLNL-MA-109115 Rev. 15).

U.S. Environmental Protection Agency (2005), *Title 40 Code of Federal Regulations, Part 136*.

Appendix A

Sewage Evaporation and Percolation Pond Network

- Sewer Pond Figures
- Sewer Pond Tables (well specifications)
- Field Tracking Forms/Chain of Custody Forms
- Sewer Pond Inspection Reports
- Ground water Sampling Data Forms
- Sewer Pond Wastewater Annual Plots
- Sewer Pond Ground Water Annual Plots

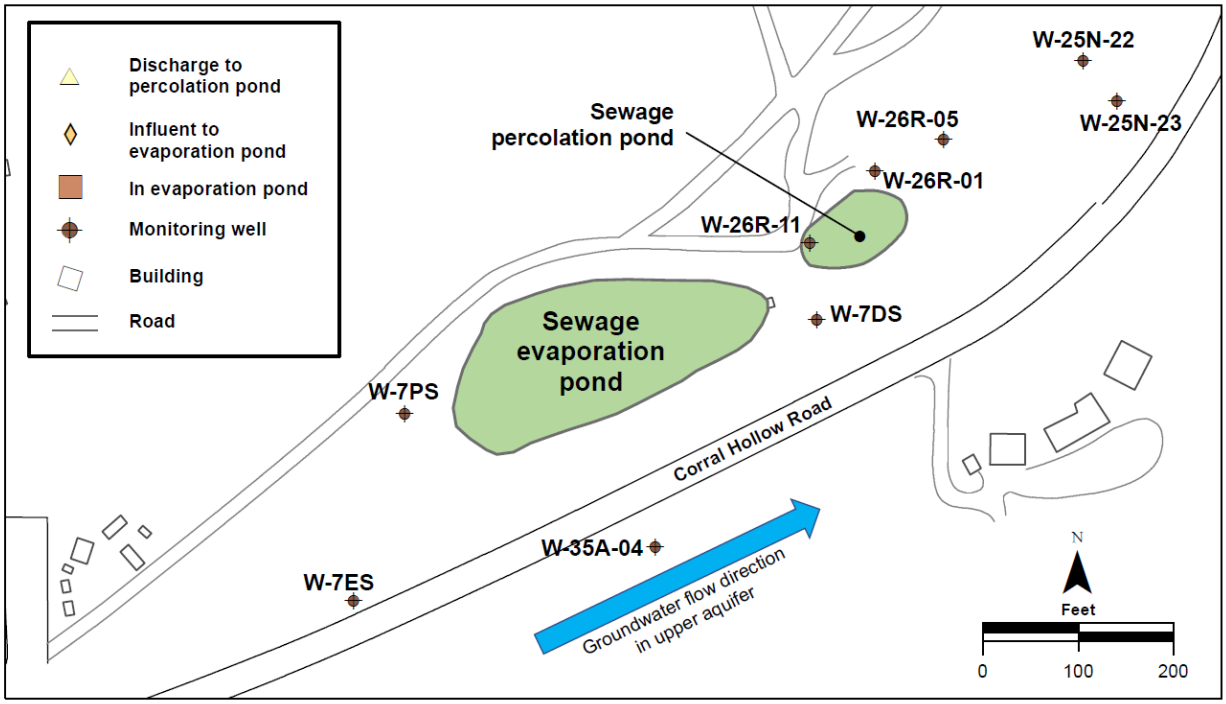

Figure A-1. Sewer pond wastewater and ground water monitoring network.

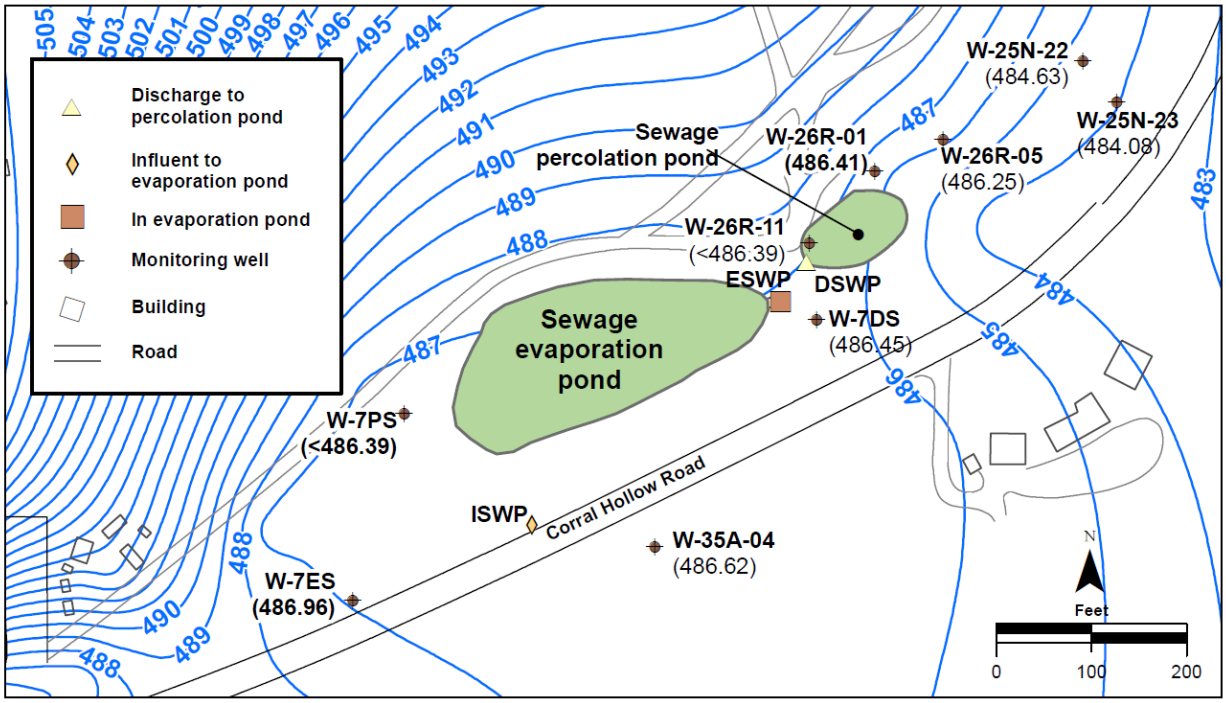

Figure A-2. Site 300 sewer pond wastewater and effluent monitoring network with ground water elevation (ft-above mean sea level).

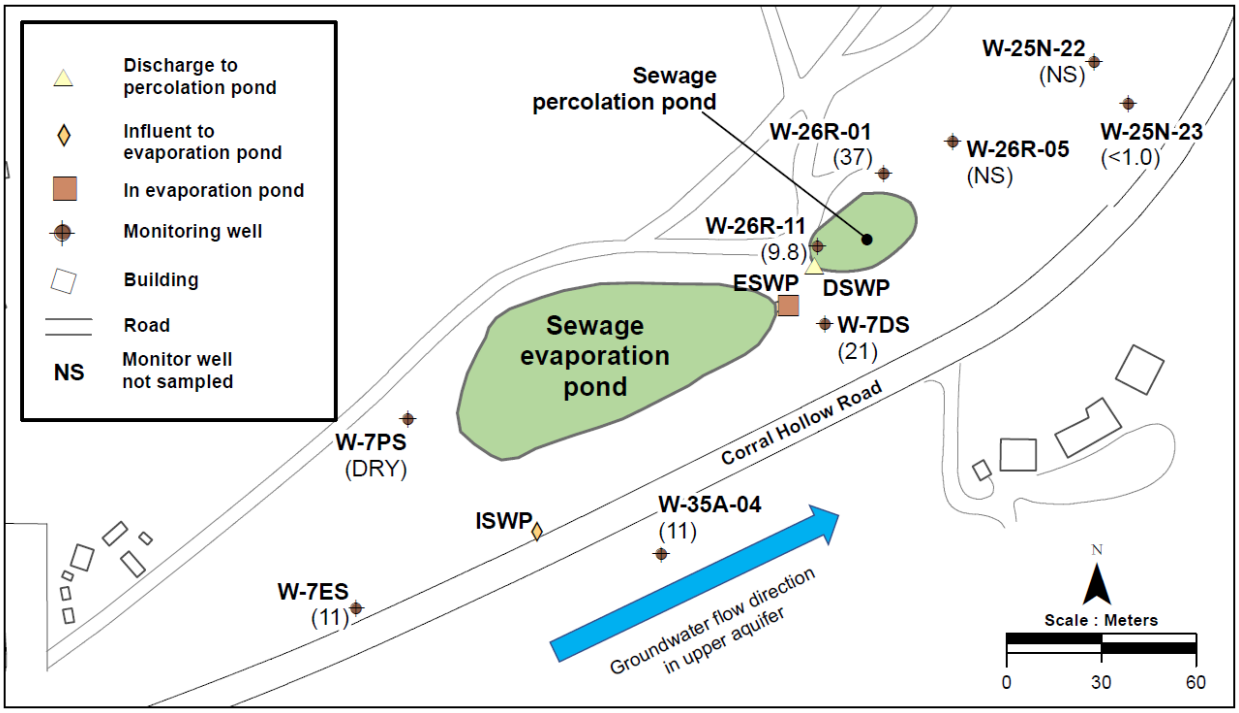

Figure A-3. Site 300 sewer pond wastewater and effluent monitoring network with nitrate (NO_3) concentration (in mg/L).

Note: NS not sampled. Well W-25N-22 pump was inoperable during second semester, well W-7PS was dry, and there was insufficient water to collect samples at well W-26R-05.

Table A-1. Summary of Site 300 sewer pond well specifications.

Well	HSU	Easting	Northing	Ground surface elevation	Measuring point elevation	Screen top elevation	Screen bottom elevation	Bentonite top elevation	Filter pack top elevation	Well bottom elevation
W-7ES	Qal-Tnbs$_1$	1,711,719	414,586	506.41	509.71	491.41	481.41	496.41	495.41	479.61
W-7PS	Qal-Tnbs$_1$	1,711,773	414,782	506.10	508.78	489.60	486.60	494.10	492.10	486.60
W-35A-04	Qal-Tnbs$_1$	1,712,036	414,642	504.07	503.98	485.07	475.07	494.87	486.27	475.07
W-26R-01	Qal-Tnbs$_1$	1,712,267	415,036	506.74	509.71	486.94	481.94	494.24	490.74	476.94
W-26R-11	Qal-Tnbs$_1$	1,712,198	414,961	504.93	507.21	489.13	479.13	493.13	491.13	477.93
W-26R-05	Qal-Tnbs$_1$	1,712,339	415,070	511.31	513.11	491.11	486.11	500.81	498.81	485.81
W-25N-20*	Qal-Tnbs$_1$	1,712,371	414,923	502.11	504.94	490.11	475.11	494.61	492.61	474.11
W-7DS	Qal-Tnbs$_1$	1,712,206	414,880	503.30	506.60	487.80	477.80	491.80	489.80	476.30
W-25N-22	Qal-Tnbs$_1$	1,712,486	415,152	510.25	513.06	492.25	482.25	497.25	495.25	481.75
W-25N-23	Qal-Tnbs$_1$	1,712,521	415,109	507.58	510.39	488.58	473.58	495.08	493.08	472.28

Notes:

All measurements are made in feet; elevations are in feet above mean sea level.

HSU = Hydrostratigraphic unit.

Qal-Tnbs$_1$ = Miocene Neroly Formation Lower Blue Sandstone.

*Well W-25N-20 Abandoned

Table A-2. Site 300 sewer pond ground water monitoring network 2021 ground water elevation summary.

Well	Date sampled	Pre-sampling	Ground water depth (ft.)	Ground water elevation (ft. above MSL)
W-7ES	3-Feb		19.5	490.2
W-7ES	10-May		21	488.7
W-7ES	18-May	PS	21.2	488.5
W-7ES	19-May	PS	21.2	488.5
W-7ES	11-Aug		21.8	487.9
W-7ES	14-Sep	PS	22.0	487.7
W-7ES	15-Sep	PS	22.0	487.7
W-7ES	21-Oct		22.8	487.0
W-7ES	2-Nov	PS	22.4	487.3
W-7ES	3-Nov	PS	22.5	487.2
W-7PS	3-Feb		>22.4 [DRY]	<486.4 [DRY]
W-7PS	10-May		>22.4 [DRY]	<486.4 [DRY]
W-7PS	11-Aug		>22.4 [DRY]	<486.4 [DRY]
W-7PS	21-Oct		>22.4 [DRY]	<486.4 [DRY]
W-35A-04	26-Jan		16.9	487.1
W-35A-04	27-Apr		16	488.1
W-35A-04	28-Jun	PS	16.9	487.2
W-35A-04	29-Jun	PS	16.9	487.2
W-35A-04	12-Aug		16.8	487.3
W-35A-04	14-Sep	PS	16.9	487.2
W-35A-04	15-Sep	PS	16.9	487.2
W-35A-04	26-Oct		17.4	486.6
W-35A-04	2-Nov	PS	17.0	487.1
W-35A-04	3-Nov	PS	17.0	487.1
W-25N-23	3-Feb		23.4	486.7
W-25N-23	9-Mar	PS	23.5	486.6
W-25N-23	10-Mar	PS	23.5	486.6
W-25N-23	10-May		24.7	485.4
W-25N-23	11-Aug		25.3	484.8
W-25N-23	8-Sep	PS	25.4	484.7
W-25N-23	9-Sep	PS	25.4	484.7
W-25N-23	21-Oct		26.0	484.1
W-25N-22	3-Feb		26.6	486.2
W-25N-22	10-May		27	485.8
W-25N-22	11-Aug		27.5	485.2
W-25N-22	21-Oct		28.1	484.6
W-26R-01	3-Feb		21.3	488.4
W-26R-01	9-Mar	PS	21.2	488.5
W-26R-01	10-Mar	PS	21.2	488.5
W-26R-01	10-May		22.7	487
W-26R-01	12-May	PS	22.6	487.1
W-26R-01	13-May	PS	22.6	487.1
W-26R-01	24-May	PS	22.6	487.1

Table A-2. Site 300 sewer pond ground water monitoring network 2021 ground water elevation summary.

Well	Date sampled	Pre-sampling	Ground water depth (ft.)	Ground water elevation (ft. above MSL)
W-26R-01	25-May	PS	22.6	487.1
W-26R-01	11-Aug		23.3	486.4
W-26R-01	7-Sep	PS	23.4	486.3
W-26R-01	8-Sep	PS	23.4	486.3
W-26R-01	13-Sep	PS	23.4	486.3
W-26R-01	21-Oct		26.1	486.6
W-26R-01	25-Oct	PS	24.2	485.5
W-26R-01	26-Oct	PS	24.4	485.3
W-26R-05	3-Feb		25.3	487.8
W-26R-05	8-Mar	PS	25.1	488
W-26R-05	10-May		25.5	487.6
W-26R-05	17-May	PS	25.4	487.7
W-26R-05	19-May	PS	25.4	487.7
W-26R-05	11-Aug		26.1	487.0
W-26R-05	13-Sep		>26.2 [DRY]	<486.9 [DRY]
W-26R-05	21-Oct		26.9	486.2
W-26R-11	3-Feb		19.4	488.5
W-26R-11	9-Mar	PS	20.2	487.7
W-26R-11	10-Mar	PS	20.2	487.7
W-26R-11	10-May		20.9	487
W-26R-11	12-May	PS	20.9	487
W-26R-11	13-May	PS	20.9	487.1
W-26R-11	24-May	PS	20.9	487.1
W-26R-11	25-May	PS	20.9	487.1
W-26R-11	11-Aug		21.5	486.4
W-26R-11	7-Sep	PS	21.9	486.0
W-26R-11	8-Sep	PS	21.9	486.0
W-26R-11	13-Sep	PS	21.9	486.0
W-26R-11	21-Oct		>21.5 [DRY]	<486.4 [DRY]
W-7DS	3-Feb		17.9	488.4
W-7DS	10-May		19.2	487.1
W-7DS	17-May	PS	18	488.3
W-7DS	18-May	PS	18	488.3
W-7DS	11-Aug		19.9	486.4
W-7DS	8-Sep	PS	20.0	486.3
W-7DS	9-Sep	PS	70.0	436.3
W-7DS	21-Oxt		20.8	485.5
W-7DS	26-Oct	PS	19.5	486.8
W-7DS	27-Oct	PS	19.5	486.8

Note:
Well W-25N-22 pump was inoperable during second semester and wells W-7PS, W-26R-11, and W-26R-05 were dry.

Table A-3. Site 300 sewer pond wastewater monitoring network 2021 coliform, anion, and physical characteristic data summary.

Discharge Location	Date	pH	Specific Conductance (µmhos/cm)	Biochemical Oxygen Demand (mg/L)	Dissolved Oxygen (mg/L)	Fecal Coliform (MPN/100mL)	Total Coliform (MPN/100mL)	Sodium (mg/L)
3-ESWP-OW	Apr 27	9.8	7100	77	21	350	3500	1700
3-ESWP-OW	Oct 19	9.8	8600	230	0.32	-	-	2300
3-ESWP-OW	Nov 4	-	-	-	-	13000	49000	-
3-ISWP-OW	Apr 27	8.7	1300	260	-	-	-	-
3-ISWP-OW	Oct 19	8.7	1000	230	-	-	-	-

Note:
– Analysis not required.

Table A-4. Site 300 sewer pond wastewater monitoring network 2021 metals data summary.

Analyte (µg/L)	Date	3-ESWP-OW
Aluminum	Apr 27	1000
	Oct 19	44000
Arsenic	Apr 27	<10
	Oct 19	25
Barium	Apr 27	<120
	Oct 19	510
Boron	Apr 27	6800
	Oct 19	7800
Cadmium	Apr 27	<250
	Oct 19	<500
Calcium	Apr 27	10000
	Oct 19	150000
Chromium	Apr 27	15
	Oct 19	440
Hexavalent Chromium	Apr 27	<1
	Oct 19	<1
Copper	Apr 27	24
	Oct 19	690
Iron	Apr 27	1500
	Oct 19	73000
Lead	Apr 27	<25
	Oct 19	88
Magnesium	Apr 27	2500
	Oct 19	64000
Manganese	Apr 27	<150
	Oct 19	3800
Mercury	Apr 27	<0.2
	Oct 19	0.38
Molybdenum	Apr 27	<120
	Oct 19	<120
Nickel	Apr 27	11
	Oct 19	160
Potassium	Apr 27	71000
	Oct 19	150000
Selenium	Apr 27	<10
	Oct 19	<20
Silver	Apr 27	<50
	Oct 19	<100
Vanadium	Apr 27	<100
	Oct 19	250
Zinc	Apr 27	140
	Oct 19	3700

Table A-5. Site 300 sewer pond wastewater monitoring network 2021 QA data.

Discharge Location	Date	Type	pH	Specific Conductance (µmhos/cm)	Biochemical Oxygen Demand (mg/L)	Dissolved Oxygen (mg/L)	Fecal Coliform (MPN/100mL)	Total Coliform (MPN/100mL)	Sodium (mg/L)
3-ESWP-OW	Apr 27	Routine	9.8	7100	77	21	350	3500	1700
	Apr 27	Duplicate	-	-	-	-	-	-	1900
3-ISWP-OW	Oct 19	Routine	8.7	1000	230	-	-	-	-
	Oct 19	Duplicate	8.8	-	-	-	-	-	-

Note:
– Analysis not required.

Table A-6. Site 300 sewer pond ground water monitoring network 2021 anions data summary.

Well	Date	Sodium (mg/L)	Chloride (mg/L)	Nitrate (as NO_3) (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)
W-7ES	Mar 11	140	150	11	290	0.34
W-7ES	May 18	-	-	11	-	-
W-7ES	Sep 14	150	160	9.8	310	0.30
W-7ES	Nov 2	-	-	10	-	-
W-35A-04	Jun 28	-	-	12	-	-
W-35A-04	Sep 14	160	160	10	320	0.38
W-35A-04	Nov 2	-	-	11	-	-
W-25N-23	Mar 9	140	92	1.2	400	0.38
W-25N-23	Sep 8	140	86	<1	380	0.34
W-26R-01	Mar 9	200	160	38	240	0.29
W-26R-01	May 12	-	-	39	-	-
W-26R-01	Sep 7	200	150	37	230	0.32
W-26R-01	Oct 25	-	-	35	-	-
W-26R-05	Mar 8	130	91	0.62	200	0.36
W-26R-05	May 17	-	-	1.3	-	-
W-26R-11	Mar 9	160	130	11	210	0.37
W-26R-11	May 12	-	-	11	-	-
W-26R-11	Sep 7	160	130	9.8	210	0.40
W-7DS	Mar 11	140	140	11	280	0.37
W-7DS	May 17	-	-	10	-	-
W-7DS	Sep 8	160	150	8.2	300	0.33
W-7DS	Oct 26	-	-	21	-	-

Note:
– Analysis not required.
Well W-25N-22 pump was inoperable during second semester, well W-7PS was dry, and there was insufficient water to collect samples at well W-26R-05.

Table A-7. Site 300 sewer pond ground water monitoring network 2021 coliform data summary.

Well	Date	Fecal Coliform (MPN/100mL)	Total Coliform (MPN/100mL)
W-7ES	Mar 15	<1.8	<1.8
W-7ES	May 19	<1.8	<1.8
W-7ES	Sep 15	<1.8	11
W-7ES	Nov 3	<1.8	6.8
W-35A-04	Jun 29	<1.8	2.0
W-35A-04	Sep 15	<1.8	350
W-35A-04	Nov 3	<1.8	<1.8
W-25N-23	Mar 10	<1.8	<1.8
W-25N-23	Sep 9	<1.8	<1.8
W-26R-01	Mar 10	<1.8	<1.8
W-26R-01	May 25	<1.8	<1.8
W-26R-01	Sep 13	<1.8	<1.8
W-26R-01	Oct 26	<1.8	1.8
W-26R-05	Mar 11	<1.8	2.0
W-26R-05	May 19	<1.8	<1.8
W-26R-11	Mar 10	<1.8	<1.8
W-26R-11	May 25	<1.8	2.0
W-26R-11	Sep 13	<1.8	<1.8
W-7DS	Mar 15	<1.8	<1.8
W-7DS	May 18	<1.8	2.0
W-7DS	Sep 9	<1.8	<1.8
W-7DS	Oct 27	<1.8	3.6

Note:
Well W-25N-22 pump was inoperable during second semester, well W-7PS was dry, and there was insufficient water to collect samples at well W-26R-05.

Table A-8. Site 300 sewer pond ground water monitoring network 2021 physical chemistry data.

Well	Date	pH	Specific Conductance (µmhos/cm)	Total Alkalinity (as $CaCO_3$) (mg/L)	Total dissolved solids (TDS) (mg/L)	Total Hardness (as $CaCO_3$) (mg/L)	Total Phosphorus (as PO_4) (mg/L)
W-7ES	Mar 11	8.0	1480	280	940	420	<1
W-7ES	May 18	8.1	1500	-	-	-	-
W-7ES	Sep 14	8.0	1520	270	1000	420	<1
W-7ES	Nov 2	7.9	1500	-	-	-	-
W-35A-04	Jun 28	7.9	1600	-	-	-	-
W-35A-04	Nov 2	7.9	1570	-	-	-	-
W-25N-23	Mar 9	7.9	1390	230	960	410	<1
W-25N-23	Sep 8	7.7	1400	220	1000	420	<1
W-26R-01	Mar 9	8.1	1420	240	880	250	<1
W-26R-01	May 12	8.2	1430	-	-	-	-
W-26R-01	Sep 7	8.0	1370	240	980	250	<1
W-26R-01	Oct 25	8.1	1420	-	-	-	-
W-26R-05	Mar 8	8.0	1000	220	690	200	<1
W-26R-05	May 17	8.3	1110	-	-	-	-
W-26R-11	Mar 9	8.1	1210	240	740	250	<1
W-26R-11	May 12	8.2	1270	-	-	-	-
W-26R-11	Sep 7	8.0	1210	240	840	260	<1
W-7DS	Mar 11	8.0	1430	270	920	400	<1
W-7DS	May 17	8.2	1530	-	-	-	-
W-7DS	Sep 8	7.8	1510	260	1000	430	<1
W-7DS	Oct 26	7.7	1590	-	-	-	-

Note:
– Analysis not required.
Well W-25N-22 pump was inoperable during second semester, well W-7PS was dry, and there was insufficient water to collect samples at well W-26R-05.

Table A–9. Site 300 sewer pond ground water monitoring network 2021 metals data summary.

Analyte (µg/L)	Month	W-7ES	W-35A-04	W-25N-23	W-26R-01	W-26R-05	W-26R-11	W-7DS
Aluminum	Mar	<50	-	<50	<50	<50	<50	<50
	Sep	<50	<50	<50	<50	-	<50	<50
Arsenic	Mar	<2	-	9.1	9.1	6.9	4.0	2.1
	Sep	3.5	5.6	2.1	9.5	-	4.8	3.6
	Nov	-	2.8	-	-	-	-	-
Barium	Mar	44	-	28	32	24	37	45
	Sep	50	46	26	31	-	38	48
	Nov	-	41	-	-	-	-	-
Boron	Mar	2300	-	950	1500	850	1700	2200
	Sep	2400	2500	940	1400	-	1700	2500
Cadmium	Mar	<50	-	<50	<50	<50	<50	<50
	Sep	<50	<50	<50	<50	-	<50	<50
	Nov	-	<0.5	-	-	-	-	-
Calcium	Mar	97000	-	100000	64000	51000	60000	92000
	Sep	100000	91000	100000	66000	-	62000	100000
Chromium	Mar	<1	-	<1	<1	<1	<1	<1
	Sep	<1	<1	<1	<1	-	<1	1.2
	Nov	-	1.0	-	-	-	-	-
Hexavalent Chromium	Mar	<1	-	<1	<1	<1	<1	<1
	Sep	<1	<1	<1	<1	-	<1	<1
Copper	Mar	1.6	-	2.0	2.6	1.2	1.3	1.7
	Sep	1.4	1.4	2.3	2.7	-	1.5	1.9
	Nov	-	<10	-	-	-	-	-
Iron	Mar	<100	-	<100	<100	<100	<100	<100
	Sep	<100	<100	<100	<100	-	<100	<100
Lead	Mar	<5	-	<5	<5	<5	<5	<5
	Sep	<5	<5	<5	<5	-	<5	<5
	Nov	-	<2	-	-	-	-	-
Magnesium	Mar	42000	-	38000	22000	18000	26000	40000
	Sep	43000	40000	39000	22000	-	25000	43000
Manganese	Mar	<30	-	<30	<30	<30	<30	<30
	Sep	39	<30	<30	<30	-	<30	<30
Mercury	Mar	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
	Sep	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
	Nov	-	<0.2	-	-	-	-	-

Table A–9. Site 300 sewer pond ground water monitoring network 2021 metals data summary continued.

Analyte (µg/L)	Month	W-7ES	W-35A-04	W-25N-23	W-26R-01	W-26R-05	W-26R-11	W-7DS
Molybdenum	Mar	<25	-	<25	<25	<25	<25	<25
	Sep	<25	<25	<25	<25	-	<25	<25
	Nov	-	<25	-	-	-	-	-
Nickel	Mar	2.0	-	2.6	<2	<2	<2	2.2
	Sep	4.9	9.9	5.2	<2	-	2.3	2.2
	Nov	-	26	-	-	-	-	-
Potassium	Mar	4800	-	10000	10000	8600	4800	5000
	Sep	5000	5200	11000	10000	-	5000	5300
	Nov	-	5300	-	-	-	-	-
Selenium	Mar	7.6	-	<2	9.1	<2	8.6	8.0
	Sep	12	8.1	<2	12	-	13	9.1
	Nov	-	4.5	-	-	-	-	-
Silver	Mar	<10	-	<10	<10	<10	<10	<10
	Sep	<10	<10	<10	<10	-	<10	<10
	Nov	-	<0.5	-	-	-	-	-
Vanadium	Mar	<20	-	<20	<20	<20	<20	<20
	Sep	<20	<20	<20	<20	-	<20	<20
	Nov	-	<10	-	-	-	-	-
Zinc	Mar	<20	-	<20	<20	<20	<20	<20
	Sep	<20	<20	22	24	-	<20	<20
	Nov	-	<20	-	-	-	-	-

Note:
Well W-25N-22 pump was inoperable during second semester, wells W-7PS and W-26R-11 were dry, and there was insufficient water to collect samples at well W-26R-05.

Table A-10. Site 300 sewer pond ground water monitoring network second semester 2021 QA data.

Constituent	Units	W-7ES	W-7ES	W-7ES	W-7ES	W-7ES	W-7ES	W-7ES	W-7ES	W-7DS	W-7DS	W-7DS	W-7DS
		Sep 14	Sep 14	Sep 15	Sep 15	Nov 2	Nov 2	Nov 3	Nov 3	Oct 26	Oct 26	Oct 27	Oct 27
		Routine	Duplicate	Routine	Duplicate	Routine	Duplicate	Routine	Duplicate	Routine	Duplicate	Routine	Duplicate
pH	Units	8.0	8.0	-	-	7.9	7.9	-	-	7.7	7.6	-	-
Specific Conductance	µmhos/cm	1520	1500	-	-	1500	1490	-	-	1590	1590	-	-
Fecal Coliform	MPN/100mL	-	-	<1.8	<1.8	-	-	<1.8	<1.8	-	-	<1.8	<1.8
Total Coliform	MPN/100mL	-	-	11	2.0	-	-	6.8	4.5	-	-	3.6	1.8
Nitrate (as NO_3)	mg/L	9.8	9.7	-	-	10	11	-	-	21	8.8	-	-

FIELD TRACKING FORM

EAST END OF SITE 300 SEWAGE POND

Lab	Alpha	BC
CoC #	87729	87727
Ship It #	278375	278372

DATE: 10/19/21 **TIME:** 0945

Special Instructions: **Semi-Annual Sampling in 2nd and 4th Quarters (April & Oct)**
Samples should be taken after 1 p.m.
Print collection time on sample bottles.
DO/conductivity/pH hold time 24 hr.

pH meter calibrated 10/19/21
Conductivity meter calibrated 10/19/21
DO meter calibrated 10/19/21

Location	Field Measurements					Comments	Initials	Samples for Lab Analysis
	pH	COND	Depth	DO (PPM)	Temp (°C)			Analytical Codes:
3-ESWP-01-OW (East end of Sewage Pond)	9.92	8.22mS		2.25	11.7		TG	**Alpha LAB** **E360.1** *DO (1x300mL PET Poly with glass stopper)* **E120.1A & E150.1A** *Conductivity/pH (2x250-mL poly)* **SM9221HDIL** *Total, Fecal Coliform - High Dilution (1x125mL sterilized poly) 6hr hold* **SM5210B-A** *BOD (1x1 Liter poly)* **BC Labs** **S3METALS** *(1X500mL Poly)*
3-WSWP-01-OW *duplicate of* 3-ESWP-01-OW								

2Q2021 Duplicate **S3METALS**
4Q2021 Duplicate **See ISWP Field Tracking Form**

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Revised 11/14/13

FIELD TRACKING FORM

INFLUENT TO SITE 300 SEWAGE POND

Lab	Alpha Lab
CoC #	87729
Ship It #	278375

DATE: 10/19/21 **TIME:** 0915

Special Instructions: **Semi-Annual Sampling in 2nd and 4th Quarters (April & Oct)**
Samples should be taken after 1 p.m. during higher flow.
Print collection time on sample bottles.
BOD Hold Time 48hr. Conductivity/pH Hold Time 24hr.

pH meter calibrated	10/19/21
Conductivity meter calibrated	10/19/21
DO meter calibrated	10/19/21

Location	Field Measurements				Comments	Initials	Samples for Lab Analysis
	pH	COND	DO (PPM)	Temp (°C)			
3-ISWP-01-OW (Influent to Sewage Pond)	8.90	975 µS	4.68	18.8		TG	**Analytical Codes:** **E120.1A & E150.1A** *(Conductivity/pH)* *(2 X 250-mL poly)* **SM5210B-A** (BOD) *(1 X 1 Liter poly)*
3-WSWP-01-OW *duplicate of* 3-ISWP-01-OW						TG	

2Q2021 Duplicate **See ESWP Field Tracking Form**
4Q2021 Duplicate **E150.1A**

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Revised 09/21/2020

Chain of Custody

BAL TEMP = 3.8°C

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551

Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

Access/COC #: 87729
Document Control #: 87729
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / grace12
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov
DMT Additional Copies:

Analytical Lab : ALPHAANAL
TAT: 20d
Analytical Lab Log #:
Project/Network: WDRPOND
ShipIt Release #:
Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-ISWP-01-OW	10/19/2021 09:15	SW	P	0	WDR	E120.1A	ALL	
3-ISWP-01-OW	10/19/2021 09:15	SW	P	1	WDR	E150.1A	ALL	
3-ISWP-01-OW	10/19/2021 09:15	SW	PO	1	WDR	SM5210B-A	ALL	
3-WSWP-01-OW	10/19/2021 09:15	SW	P	1	WDR	E150.1A	ALL	
3-ESWP-01-OW	10/19/2021 09:45	SW	P	0	WDR	E120.1A	ALL	
3-ESWP-01-OW	10/19/2021 09:45	SW	P	1	WDR	E150.1A	ALL	
3-ESWP-01-OW	10/19/2021 09:45	SW	G	1	WDR	E360.1	ALL	
3-ESWP-01-OW	10/19/2021 09:45	SW	PO	1	WDR	SM5210B-A	ALL	
3-ESWP-01-OW	10/19/2021 09:45	SW	P	1	WDR	SM9221HDIL	ALL	

Relinquished Signature	Company	Date	Time	Received Signature	Company	Date	Time
1	LLNL/EFA	10/19/21	1140	2	ALPHA	10/19/21	1109
2				3			
3				4			
4				5			

Chain of Custody

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551

Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

Access/COC #: 87727
Document Control #: 87727
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / grace12
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov
DMT Additional Copies:

Analytical Lab : BCLABS-BAK
TAT: 20d
Analytical Lab Log #:
Project/Network: WDRPOND
ShipIt Release #: 278372
Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-ESWP-01-OW	10/19/2021 09:45	SW	P	0	WDR	S3METALS	ALL	
3-ESWP-01-OW	10/19/2021 09:45	SW	P	1	WDR	S3METALS	TOTAL	

Relinquished Signature	Company	Date	Time	Received Signature	Company	Date	Time
1	LLNL/EFA	10/14/21	1130	2 Hang Bogan	BC Lab	10/19-21	1630
2				3			
3				4			
4				5			

FIELD TRACKING FORM

EAST END OF SITE 300 SEWAGE POND

Lab	Alpha	BC
CoC #	87925	
Ship It #		

DATE: 11/4/21 **TIME:** 1405

Special Instructions: **Semi-Annual Sampling in 2nd and 4th Quarters (April & Oct)**
Samples should be taken after 1 p.m.
Print collection time on sample bottles.
DO/conductivity/pH hold time 24 hr.

pH meter calibrated N/A
Conductivity meter calibrated N/A
DO meter calibrated N/A

Location	Field Measurements: pH	COND	Depth	DO (PPM)	Temp (°C)	Comments	Initials	Samples for Lab Analysis: Analytical Codes:
3-ESWP-01-OW (East end of Sewage Pond)						Resample 9221 due to Lab Error	KLS	Alpha LAB E360.1 *DO (1x300mL PET Poly with glass stopper)* E120.1A & E150.1A *Conductivity/pH (2x250-mL poly)* SM9221HDIL *Total, Fecal Coliform - High Dilution (1x125mL sterilized poly) 6hr hold* Resample due to Lab error SM5210B-A *BOD (1x1 Liter poly)* BC Labs S3METALS *(1X500mL Poly)*
3-WSWP-01-OW *duplicate of* 3-ESWP-01-OW								

2Q2021 Duplicate **S3METALS**
4Q2021 Duplicate **See ISWP Field Tracking Form**

☑ Copy to Analysts, Ada Chan.

Revised 11/14/13

Chain of Custody

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
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Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

Access/COC #: 87925
Document Control #: 87925
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / brunckhorst2
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov
DMT Additional Copies: Resample for Coliform

Analytical Lab : ALPHAANAL
TAT: 20d
Analytical Lab Log #:
Project/Network: WDRPOND
ShipIt Release #:
Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-ESWP-01-OW	11/04/2021 14:05	SW	P	1	WDR	SM9221HDIL	ALL	

	Relinquished Signature	Company	Date	Time		Received Signature	Company	Date	Time
1		LLNL/EFA	11/4/2021	1455	2		ALPHA	11/4/21	1455
2					3				
3					4				
4					5				

LLNL Site 300 Sewer/Waste water Evaporation Pond July 2021

Treatment POND 1 2xper week											Observations									
Day	OP-Ini	Fbd. Inch	Pond East				Pond West				Color			Air Temp	Wind	Odor Yes/No	Mosquitoes Yes/No	Solids Yes/No	Scum Yes/No	Dead Algae Yes/No	Weeds Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
1-Jul	JW	22"	14:30	19.54	9.38	81.4	14:45	13.91	9.4	81.2		X		89	7 NE	N	N	Y	Y	N	N
6-Jul	JW	23"	13:20	10.58	9.2	81.5	13:35	9.6	9.22	77.8		X		89	5 NW	Y	N	Y	Y	N	N
8-Jul	JW	24"	9:15	5.84	9.14	70.5	9:30	6.51	9.24	72.3		X		77	9 NE	Y	N	Y	Y	N	N
13-Jul	JG		15:00	11.2	8.41	87	15:20	10.3	9.21	84.7		X		87	14 NW	Y	N	Y	Y	N	N
20-Jul	JW	22.5"	10:40	15.13	9.38	76.3	10:50	14.66	9.32	77.4		X		89	3 NE	Y	N	Y	Y	N	N
22-Jul	JW	22"	13:20	20.33	9.24	81.7	13:45	14.38	9.35	79.1		X		93	11 NE	N	N	N	Y	N	N
28-Jul	BH	20.5	18:00	23.7	9.59	85	18:05	18.47	9.49	83.8		X		95	5 NW	N	N	N	Y	N	N
30-Jul	JW	21	14:00	11.69	9.37	85.2	14:15	14.88	9.46	82.7		X				N	N	N	Y	N	N

		Flow	Aerators			
Day	Op Ini.	Meter Total	1 On/Off	2 On/Off	3 On/Off	4 On/Off
1-Jul	JW	2053507	X	X	X	X
6-Jul	JW	2059025	X			X
8-Jul	JW	2060708	X			X
13-Aug	JG	2064427	X			X
20-Jul	JW	2065750	X			X
22-Jul	JW	2069620	X			X
28-Jul	BH	2070131	X			X
30-Jul	JW	2070269	X			X
		Total gallons = 16,762				

Overflow Basin		
Water Level	Overall Condition Poor/Fair	Notes
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	

LLNL Site 300 Sewer/Waste water Evaporation Pond August 2021

Treatment POND 1 2xper week											Observations											
Day	OP-Ini	Fbd. Inch	Pond East				Pond West				Color			Air Temp	Wind	Odor Yes/No	Mosquitoes Yes/No	Solids Yes/No	Scum Yes/No	Dead Algae Yes/No	Weeds Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
3-Aug	JW	21.5	13:30	13.2	9.41	79.5	13:45	20.02	9.62	80.6		X		93	10 NE	N	N	N	Y	N	N
5-Aug	JW	22	9:10	17.57	9.61	70.2	9:20	12.47	9.6	70.5		X		73	5 NW	N	N	Y	Y	N	N
10-Aug	JW	22.5	9:30	15.27	9.64	72.6	9:45	15.72	9.69	76.3		X		81	12 NE	N	N	Y	Y	N	N
12-Aug	JW	22.5	8:50	11.83	9.49	75.5	9:00	10.73	9.51	75.1		X		95	6 NW	N	N	Y	Y	N	N
17-Aug	JW	22.5	9:40	8.42	9.58	74.8	9:50	8.46	9.6	74.4		X		81	3 NW	N	N	N	Y	N	N
19-Aug	JW	21.5	9:55	17.62	9.54	70.6	10:00	15.57	9.59	69.8		X		81	6 NW	N	N	N	Y	N	N
24-Aug	JW	22	11:00	11.11	9.54	72.8	11:10	22.36	9.73	73.9		X		73	7 NE	N	N	Y	Y	N	N
26-Aug	JW	22.5	13:15	19.57	9.63	77.2	13:25	19.32	9.71	78.3		X		90	10 N	N	N	Y	Y	N	N
31-Aug	JW	23	14:00	20.73	9.49	83.9	14:10	18.84	9.62	78.3		X		93	5 NW	Y	N	Y	Y	N	N

		Flow	Aerators			
Day	Op Ini.	Meter Total	1 On/Off	2 On/Off	3 On/Off	4 On/Off
3-Aug	JW	2082506		X	X	
5-Aug	JW	2089820		X	X	
10-Aug	JW	2092219	X			X
12-Aug	JW	2100015	X			X
17-Aug	JW	2100015	X			X
19-Aug	JW	2100052	X			X
24-Aug	JW	2100542		X	X	
26-Aug	JW	2104746		X	X	
31-Aug	JW	2113350		X	X	
		Total gallons= 30,844				

Overflow Basin		
Water Level	Overall Condition Poor/Fair	Notes
0"	Poor	
0"		
0"		
0"		
0"		
0"		
0"		
0"		

LLNL Site 300 Sewer/Waste water Evaporation Pond September 2021

Treatment POND 1 2xper week											Observations											
Day	OP-Ini	Fbd. Inch	Pond East				Pond West				Color			Air Temp	Wind	Odor Yes/No	Mosquitoes Yes/No	Solids Yes/No	Scum Yes/No	Dead Algae Yes/No	Weeds Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
7-Sep	JW	20.5	15:00	28.65	9.64	81	15:15	18.84	9.62	78.3		X		97	11 NW	N	N	N	Y	N	N
9-Sep	JW	21	14:10	15.49	9.53	80	14:20	18.38	9.68	81.3		X				N	N	N	Y	N	N
14-Sep	JW	21.5	10:45	15.74	9.62	74.7	11:00	17.96	9.74	74.2		X		87	6 NW	N	N	N	Y	N	N
16-Sep	JW	21.5	9:30	15.88	9.75	69	9:45	18.16	9.73	69.4		X		65	8 NW	N	N	N	Y	N	N
21-Sep	JW	22	13:40	18.45	9.66	73.4	13:50	17.88	9.69	72.9		X		87	3 NE	N	N	Y	N	N	N
23-Sep	JW	22	15:00	18.24	9.7	80.7	15:10	15.35	9.6	77.1		X		93	7 N	N	N	Y	Y	N	N
28-Sep	JW	22	15:00	11.84	9.71	73.6	15:15	18.21	9.73	70.8		X		76	12 NW	N	N	Y	Y	N	N
30-Sep	JW	22.5	9:30	16.04	9.81	63.8	9:45	13.04	9.76	64.5		X		75	9 N	N	N	Y	Y	N	N

		Flow	Aerators			
Day	Op Ini.	Meter Total	1 On/Off	2 On/Off	3 On/Off	4 On/Off
7-Sep	JW	2125336	ON			ON
9-Sep	JW	2126820	ON			ON
14-Sep	JW	2131451		ON	ON	
16-Sep	JW	2135590		ON	ON	
21-Sep	JW	2150059	ON			ON
23-Sep	JW	2150506	ON			ON
28-Sep	JW	2159598	ON			ON
30-Sep	JW	2170874	ON			ON
		Total gallons = 45,538				

Overflow Basin		
Water Level	Overall Condition Poor/Fair	Notes
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	

LLNL Site 300 Sewer/Waste water Evaporation Pond October 2021

Treatment POND 1 2xper week											Observations											
Day	OP-Ini	Fbd. Inch	Pond East				Pond West				Color			Air Temp	Wind	Odor Yes/No	Mosquitoes Yes/No	Solids Yes/No	Scum Yes/No	Dead Algae Yes/No	Weeds Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
5-Oct	JW	22.5	14:15	10.75	9.63	74.2	14:25	22.42	9.83	73.7		X		83	8 NE	N	N	Y	Y	N	N
7-Oct	JW	23	9:30	12.86	9.82	60.2	9:40	13.16	9.7	61.6		X		61	7 NW	N	N	Y	Y	N	N
13-Oct	JW	24	8:30	13.4	9.85	45.2	8:45	14.81	9.79	53.3		X		41	1 NW	N	N	Y	N	N	N
14-Oct	JW	24	9:00	18.61	9.83	54.3	9:15	14.59	9.98	55.7		X		47	6 NW	N	N	Y	N	N	N
19-Oct	JW	24	13:40	27.3	9.9	63.5	13:50	20.91	9.87	60.8		X		69	8 E	Y	N	Y	N	N	N
21-Oct	JW	24	10:30	14.2	9.51	61.1	10:45	14.01	9.84	60.1		X		68	2 NE	N	N	Y	N	N	N
26-Oct	JW	21.5	10:00	21.51	9.8	60	10:15	12.7	9.72	59.4		X		56	2 E	N	N	N	N	N	N
29-Oct	JW	21.5	9:00	12.36	9.83	60.3	9:00	10.4	9.53	61.2		X		57	0 NE	N	N	N	N	N	N

		Flow	Aerators			
Day	Op Ini.	Meter Total	1 On/Off	2 On/Off	3 On/Off	4 On/Off
5-Oct	JW	2162205		ON	ON	
7-Oct	JW	2162781		ON	ON	
13-Oct	JW	2164909		ON	ON	
14-Oct	JW		ON			ON
19-Oct	JW	2168485	ON			ON
21-Oct	JW		ON			ON
26-Oct	JW	2170160	ON			ON
29-Oct	JW	2171102	ON	ON	ON	ON
		Toatl Gallons = 8,897				

Overflow Basin		
Water Level	Overall Condition Poor/Fair	Notes
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	

LLNL Site 300 Sewer/Waste water Evaporation Pond November 2021

Treatment POND 1 2xper week											Observations											
Day	OP-Ini	Fbd. Inch	Pond East				Pond West				Color			Air Temp	Wind	Odor Yes/No	Mosquitoes Yes/No	Solids Yes/No	Scum Yes/No	Dead Algae Yes/No	Weeds Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
2-Nov	JW	21"	11:20	18.61	9.74	62.3	11:40	16.26	9.58	62.1		X		66	0 NE	N	N	N	N	N	N
4-Nov	JW	21"	8:30	13.6	9.67	60.7	8:45	12.2	9.51	60.7		X		61	17 NW	N	N	N	Y	N	N
11-Nov	JW	20.5"	14:40	15.6	9.61	61.3	14:45	17.36	9.57	62.5		X		68	5 NE	N	N	N	Y	N	N
17-Nov	JW	20.5	13:15	17.22	9.7	56.5	13:00	25.27	9.7	58.2		X				N	N	N	Y	N	N
22-Nov	JW	20.5	12:00	12:30	9.6	54.3	12:15	17.06	9.81	53.7		X		59	3 NE	N	N	N	Y	N	N

		Flow	Aerators			
Day	Op Ini.	Meter Total	1 On/Off	2 On/Off	3 On/Off	4 On/Off
2-Nov	JW	2190843	ON	ON	ON	ON
4-Nov	JW	2191318	ON	ON	ON	ON
11-Nov	JW		ON	ON	ON	ON
22-Nov	JW	2196324	ON	ON	ON	ON
		Total gallons = 5,481				

Overflow Basin		
Water Level	Overall Condition Poor/Fair	Notes
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	

LLNL Site 300 Sewer/Waste water Evaporation Pond December 2021

Treatment POND 1 2xper week											Observations											
Day	OP-Ini	Fbd. Inch	Pond East				Pond West				Color			Air Temp	Wind	Odor Yes/No	Mosquitoes Yes/No	Solids Yes/No	Scum Yes/No	Dead Algae Yes/No	Weeds Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
2-Dec	JW	20"	9:00	17.91	9.79	50.2	9:15	12.33	9.61	49.8		X		48	0	N	N	N	N	N	N
8-Dec	JW	19.5"	10:00	17.58	9.73	49.3	10:15	16.82	9.72	49.7		X		50	2 NE	N	N	N	N	N	N
10-Dec	JW	19.5"	14:00	21.42	9.74	53.4	14:10	25.89	9.72	52.2		X		53	8 NW	N	N	N	N	N	N
14-Dec	JW	18"	9:15	19.83	9.68	48.9	9:30	14.49	9.59	48.6		X		44	4 NW	N	N	N	N	N	N
16-Dec	JW	17.5"	10:05	15.87	9.69	47.8	10:10	15.56	9.67	47.7		X		44	2 NE	N	N	N	N	N	N
21-Dec	JW	17.5"	14:20	18.39	9.59	46.3	14:40	15.71	9.42	46		X		44	4 E	N	N	N	Y	N	N
26-Dec	JW	15.5	9:00	13.94	9.59	46.6	9:10	14.29	9.59	46.9		X		45	0 SW	N	N	N	N	N	N
30-Dec	JW	15	10:45	19.01	9.54	47.4	11:00	15.37	9.55	46.9		X		51	6 E	N	N	N	N	N	N

		Flow	Aerators			
Day	Op Ini.	Meter Total	1 On/Off	2 On/Off	3 On/Off	4 On/Off
2-Dec	JW	59100	ON	ON	ON	ON
8-Dec	JW	93300	ON	ON	ON	ON
10-Dec	JW	101500	ON	ON	ON	ON
14-Dec	JW	114100	ON	ON	ON	ON
16-Dec	JW	123800	ON	ON	ON	ON
21-Dec	JW	140800	ON	ON	ON	ON
26-Dec	JW	154400	ON	ON	ON	ON
30-Dec	JW	164800	ON	ON	ON	ON
		Total Gallons = 105,700				

Overflow Basin		
Water Level	Overall Condition Poor/Fair	Notes
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	
0"	Poor	

All Ground Water Sampling Data

Target Sample Date: **08-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-7DS** AREA INFO: **S300/GSA/EGSA**

DATE: **08-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43113**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **ND**

SCREENED INTERVAL (ft-bmp): **18.80 - 28.80** PUMP INTAKE DEPTH: **24.99**

CASING DEPTH(installed/sounded)(ft-bmp): **27.00 / 30.51 on 22-SEP-20** CASING VOL (Gal/Time): **8.39** 8.7 x 3 =

DEPTH TO WATER(ft-bmp): **19.85 on 11-AUG-21** 20.02 VOLUME FACTOR: **0.826** 26.1

WATER IN CASING (ft): **10.15** 10.49 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1102 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 1139 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1111		8.7	1	7.79	24.9	1498	81	1	20.89
1120		17.4	2	7.83	24.80	1510	93	1	21.02
1129		26.1	3	7.80	24.8	1440	100	1	21.14
1131				7.85	24.8	1472	105		
1133				7.86	24.8	1480	96		

METER	SERIAL #	CALIBRATED		
pH :	604317	YES/NO	SAMPLER/EMPLOYER:	**silva90**
SC :		YES/NO	PROJECT:	**3MRP**
mV :		YES/NO	SAMPLE PRESERVATION/AMT OF REAGENT:	NA
H2O:		YES/NO	PURGE VOL:	**25.16**
			EXCESS H2O DEST:	**S300-DRUM**

QC SAMPLE ID: — QC LAB(S): — QC SAMPLE TIME: —

SAMPLE ID (VERIFY): W-7DS | 3VES TIME COLLECTED: 1139

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7DS	S3ANIONS	1	250 ml P	
BB	W-7DS	S3METALS	1	500ml P	
BB	W-7DS	S3METALS:FILTER	0	O	
BB	W-7DS	S3WETCHEM	2	500ml P	-
~~AA~~	~~W-7DS~~	~~SM9221~~	1	~~250 ml P~~	

Added 02 of CL

All Ground Water Sampling Data

Target Sample Date: **09-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-7DS** AREA INFO: **S300/GSA/EGSA**

DATE: **09-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43113**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **ND**

SCREENED INTERVAL (ft-bmp): **18.80 - 28.80** PUMP INTAKE DEPTH: **24.99**

CASING DEPTH(installed/sounded)(ft-bmp): **27.00 / 30.51 on 22-SEP-20** CASING VOL (Gal/Time): **8.39** 8.7x3=

DEPTH TO WATER(ft-bmp): **19.85 on 11-AUG-21** 20.00 VOLUME FACTOR: **0.826** 26.1 Gal

WATER IN CASING (ft): **10.15** 10.51 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1306 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1315		8.6	1	7.91	24.7	1522	384	1	20.97
1324		17.2	2	7.85	24.7	1536	302	1	21.18
1333		26.1	3	7.82	24.7	1518	274	1	21.33
1335				7.80	24.8	1490	188		
1337				7.81	24.8	1497	190		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **25.16**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): W-7DS / 3VES TIME COLLECTED: 1340

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
~~BB~~	W-7DS	~~S3ANIONS~~	1	~~250 ml~~ P	
~~BB~~	W-7DS	S3METALS	1	500ml P	
BB	~~W-7DS~~	S3METALS:FILTER	0	0	
BB	~~W-7DS~~	~~S3WETCHEM~~	2	~~500ml~~ P	
AA	W-7DS	SM9221	1	250 ml P	

Evacuated all CL from well

RECEIVED
SEP 14 2021
ERD - DATA MGMT

All Ground Water Sampling Data

Target Sample Date: 26-OCT-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-7DS AREA INFO: S300/GSA/EGSA

DATE: 26-Oct-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43134

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 18.80 - 28.80 PUMP INTAKE DEPTH: 24.99

CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 30.51 on 22-SEP-20 CASING VOL (Gal/Time): -33.05 9IK3.0=

DEPTH TO WATER(ft-bmp): 70.00 on 09-SEP-21 ? 19.47 VOLUME FACTOR: 0.826 27.3 Gal

WATER IN CASING (ft): -40.00 11.04 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 0915 INITIAL FLOW RATE (Q=GPM): 1.5

TIME PUMP OFF: 0940 MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0921		9.1	1	7.87	25.4	1715	112	1	21.02
0927		18.2	2	7.89	25.4	1699	101	1	21.54
0933		27.3	3	7.91	25.4	1702	110	1	21.69
0935				7.85	25.5	1688	105		
0937				7.83	25.5	1691	104		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3CMP 3EMG

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: -99.14

EXCESS H2O DEST:S300-DRUM

QC SAMPLE ID:W-26R-42Y QC LAB(S): ALPHAANAL, BCLABS-BAK QC SAMPLE TIME: 1022

SAMPLE ID (VERIFY): W-7DS / 3VES TIME COLLECTED: 0940

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7DS	E300.0:NO3	1	250 ml P	
BB	W-26R-42Y	E300.0:NO3	1	250 ml P	
BB	W-7DS	E624MOD	3	40 mL V	
BB	W-26R-42Y	E624MOD	3	40 mL V	
BB	W-7DS	SM2510B	1	250 ml P	
BB	W-26R-42Y	SM2510B	1	250 ml P	
BB	W-7DS	SM4500PH	1	250 ml P	
BB	W-26R-42Y	SM4500PH	1	250 ml P	
~~AA~~	~~W-26R-42Y~~	~~SM9221~~	1	~~250 ml P~~	
~~AA~~	~~W-7DS~~	~~SM9221~~	1	~~250 ml P~~	

Added on OFC

RECEIVED
OCT 29 2021
ERD-DATA MGMT

All Ground Water Sampling Data

Target Sample Date: 27-OCT-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-7DS AREA INFO: S300/GSA/EGSA

DATE: 27-Oct-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43134

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 18.80 - 28.80 PUMP INTAKE DEPTH: 24.99

CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 30.51 on 22-SEP-20 CASING VOL (Gal/Time): -33.05

DEPTH TO WATER(ft-bmp): 70.00 on 09-SEP-21 1950 VOLUME FACTOR: 0.826

WATER IN CASING (ft): -40.00 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1214 INITIAL FLOW RATE (Q=GPM): 1.5

TIME PUMP OFF: 1240 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1220		9.1	1	8.01	24.9	1723	447	1	21.07
1226		18.2	2	7.89	24.9	1718	380	1	21.61
1232		27.3	3	7.90	25.0	1701	312	1	21.74
1234				7.90	25.0	1720	222		
1236				7.88	25.0	1715	159		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3EMG 3CMP

SAMPLE PRESERVATION/AMT of REAGENT: N/A

PURGE VOL: -99.14

EXCESS H2O DEST: S300-DRUM

QC SAMPLE ID: W-26R-42Y QC LAB(S): BCLABS-BAK, ALPHAANAL QC SAMPLE TIME: 1300

SAMPLE ID (VERIFY): W-7DS / 3VES TIME COLLECTED: 1240

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	~~W-26R-42Y~~	~~E300.0+NO3~~	1	~~250 ml P~~	
BB	~~W-7DS~~	~~E300.0+NO3~~	1	~~250 ml P~~	
BB	~~W-7DS~~	~~E624MOD~~	3	~~40 mL V~~	
BB	~~W-26R-42Y~~	E624MOD	3	~~40 mL V~~	
BB	~~W-26R-42Y~~	SM2510B	1	~~250 ml P~~	
BB	~~W-7DS~~	~~SM2510B~~	1	~~250 ml P~~	
BB	~~W-7DS~~	SM4500PH	1	~~250 ml P~~	
BB	~~W-26R-42Y~~	SM4500PH	1	~~250 ml~~ P	
AA	W-26R-42Y	SM9221	1	250 ml P	
AA	W-7DS	SM9221	1	250 ml P	

RECEIVED
OCT 29 2021
ERD-DATA MGMT

Evacuated all GL from well

All Ground Water Sampling Data

Target Sample Date: **14-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-7ES** AREA INFO: **S300/GSA/CGSA**

DATE: **14-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43116**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT: **NO3-11**

SCREENED INTERVAL (ft-bmp): **18.30 - 28.30** PUMP INTAKE DEPTH: **26.30**

CASING DEPTH(installed/sounded)(ft-bmp): **26.80 / 30.10 on 21-JAN-87** CASING VOL (Gal/Time): **6.58** 6.6 x 3 = 19.8 Gal

DEPTH TO WATER(ft-bmp): **21.84 on 11-AUG-21** 22.01 VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **7.96** 8.09 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1039 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: MEASURED BY: (FLOW METER) / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1046		6.6	1	8.31	24.2	1499	110	1	23.09
1053		13.2	2	8.20	24.1	1520	107	1	23.19
1100		19.8	3	8.19	24.1	1397	112	1	23.43
1102				8.14	24.1	1450	121		
1104				8.17	24.1	1468	118		

METER SERIAL # CALIBRATED

pH : (ax1347) YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **19.73**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: **W-75Y EGSAFB** QC LAB(S): **ALPHAANAL, BCLABS-BAK** QC SAMPLE TIME: 1310

SAMPLE ID (VERIFY): W-7ES / 3VES TIME COLLECTED: 1109

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	EGSAFB	S3ANIONS	1	250 ml P	
BB	W-75Y	S3ANIONS	1	250 ml P	
BB	W-7ES	S3ANIONS	1	250 ml P	
BB	W-75Y	S3METALS	1	500ml P	
BB	EGSAFB	S3METALS	1	500ml P	
BB	W-7ES	S3METALS	1	500ml P	
BB	W-7ES	S3METALS:FILTER	0	O	
BB	W-75Y	S3METALS:FILTER	0	O	
BB	EGSAFB	S3METALS:FILTER	0	O	
BB	EGSAFB	S3WETCHEM	2	500ml P	
BB	W-75Y	S3WETCHEM	2	500ml P	
BB	W-7ES	S3WETCHEM	2	500ml P	
~~AA~~	~~EGSAFB~~	~~SM9221~~	~~1~~	~~250 ml P~~	
~~AA~~	~~W-75Y~~	~~SM9221~~	~~1~~	~~250 ml P~~	
AA	W-7ES	SM9221	1	250 ml P	

RECEIVED
SEP 16 2021
ERD-DATA MGMT

Added on 8/CL bottle

Revision: 08/05/2020

All Ground Water Sampling Data

Target Sample Date: **15-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-7ES** AREA INFO: **S300/GSA/CGSA**

DATE: **15-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43116**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT: **NO3-11**

SCREENED INTERVAL (ft-bmp): **18.30 - 28.30** PUMP INTAKE DEPTH: **26.30**

CASING DEPTH(installed/sounded)(ft-bmp): **26.80 / 30.10 on 21-JAN-87** CASING VOL (Gal/Time): **6.58**

DEPTH TO WATER(ft-bmp): **21.84 on 11-AUG-21** 22.60 VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **7.96** 8.00 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1217 INITIAL FLOW RATE (Q=GPM): 1.0Q

TIME PUMP OFF: 1247 MEASURED BY: (FLOW METER) / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1224		6.6	1	8.27	23.9	1515	344	1	23.11
1231		13.2	2	8.19	23.9	1477	302	1	23.20
1238		19.8	3	8.19	23.9	1484	267	1	23.49
1240				8.21	23.8	1501	199		
1242				8.20	23.9	1489	171		

METER SERIAL # CALIBRATED

pH : 664347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **19.73**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: **W-75Y EGSAFB** QC LAB(S): **BCLABS-BAK, ALPHAANAL** QC SAMPLE TIME: 1310

SAMPLE ID (VERIFY): W-7ES / 3VES TIME COLLECTED: 1247

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	~~EGSAFB~~	~~S3ANIONS~~	1	~~250 ml P~~	
BB	~~W-75Y~~	S3ANIONS	1	250 ml P	
BB	~~W-7ES~~	S3ANIONS	1	~~250 ml~~ P	
BB	~~W-75Y~~	~~S3METALS~~	1	~~500ml~~ P	
BB	~~EGSAFB~~	~~S3METALS~~	1	~~500ml~~ P	
BB	~~W-7ES~~	~~S3METALS~~	1	~~500ml~~ P	
BB	~~W-7ES~~	S3METALS:FILTER	0	O	
BB	~~W-75Y~~	~~S3METALS:FILTER~~	0	O	
BB	EGSAFB	S3METALS:FILTER	0	O	
BB	~~EGSAFB~~	~~S3WETCHEM~~	2	~~500ml~~ P	
BB	~~W-75Y~~	S3WETCHEM	2	~~500ml~~ P	
BB	~~W-7ES~~	~~S3WETCHEM~~	2	~~500ml~~ P	
AA	EGSAFB	SM9221	1	250 ml P	
AA	W-75Y	SM9221	1	250 ml P	
AA	W-7ES	SM9221	1	250 ml P	

Evacuated all cc from well

RECEIVED
SEP 16 2021
ERD-DATA MGMT

All Ground Water Sampling Data

Target Sample Date: 02-NOV-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-7ES AREA INFO: S300/GSA/CGSA

DATE: 02-Nov-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43137

PURGE METHOD/SAMPLE METHOD: GP / 3VES CONTAMINANT PRESENT: NO3-11

SCREENED INTERVAL (ft-bmp): 18.30 - 28.30 PUMP INTAKE DEPTH: 26.30

CASING DEPTH(installed/sounded)(ft-bmp): 26.80 / 30.10 on 21-JAN-87 CASING VOL (Gal/Time): 6.44 6.3 x 3 =

DEPTH TO WATER(ft-bmp): 22.00 on 15-SEP-21 22.44 VOLUME FACTOR: 0.826 18.9

WATER IN CASING (ft): 7.80 7.66 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 0944 INITIAL FLOW RATE (Q=GPM): 1.0

TIME PUMP OFF: 1012 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0951		6.3	1	7.81	23.5	1498	59	1	22.72
0957		12.6	2	7.77	23.4	1487	110	1	22.95
1004		18.9	3	7.75	23.4	1479	97	1	22.79
1006				7.78	23.4	1477	89		
1008				7.80	23.4	1473	93		

METER	SERIAL #	CALIBRATED
pH :	604347	YES/NO
SC :		YES/NO
mV :		YES/NO
H2O:		YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3CMP 3EMG

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: 19.33

EXCESS H2O DEST: S300-DRUM

QC SAMPLE ID: W-76Y QC LAB(S): ALPHAANAL, BCLABS-BAK QC SAMPLE TIME: 1340

SAMPLE ID (VERIFY): W-7ES | 3ES TIME COLLECTED: 1012

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-76Y	E300.0:NO3	1	250 ml P	
BB	W-7ES	E300.0:NO3	1	250 ml P	
BB	W-7ES	E624MOD	3	40 mL V	
BB	W-76Y	E624MOD	3	40 mL V	
BB	W-76Y	SM2510B	1	250 ml P	
BB	W-7ES	SM2510B	1	250 ml P	
BB	W-7ES	SM4500PH	1	250 ml P	
BB	W-76Y	SM4500PH	1	250 ml P	
~~AA~~	~~W-76Y~~	~~SM9221~~	1	~~250 ml P~~	
~~AA~~	~~W-7ES~~	~~SM9221~~	1	250 ml P	

All Ground Water Sampling Data

Target Sample Date: 03-NOV-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-7ES AREA INFO: S300/GSA/CGSA

DATE: 03-Nov-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43137

PURGE METHOD/SAMPLE METHOD: GP / 3VES CONTAMINANT PRESENT: NO3-11

SCREENED INTERVAL (ft-bmp): 18.30 - 28.30 PUMP INTAKE DEPTH: 26.30

CASING DEPTH(installed/sounded)(ft-bmp): 26.80 / 30.10 on 21-JAN-87 CASING VOL (Gal/Time): 6.44 6.3 x 3 = 18.9

DEPTH TO WATER(ft-bmp): 22.00 on 15-SEP-21 22.46 VOLUME FACTOR: 0.826

WATER IN CASING (ft): 7.80 7.64 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1044 INITIAL FLOW RATE (Q=GPM): 1.0 G

TIME PUMP OFF: ~~1100~~ 1110 MEASURED BY: FLOW METER / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1050		6.3	1	7.90	23.2	1502	312	1	23.01
1056		12.6	2	7.80	23.3	1487	289	1	23.12
1102		18.9	3	7.83	23.3	1479	199	1	23.32
1104				7.84	23.3	1433	155		
1106		23.0		7.82	23.3	1467	141		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3CMP 3EMG

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: 19.33

EXCESS H2O DEST: S300-DRUM

QC SAMPLE ID: W-76Y QC LAB(S): ALPHAANAL, BCLABS-BAK QC SAMPLE TIME: 1209

SAMPLE ID (VERIFY): W-7ES / 3VES TIME COLLECTED: 1110

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
~~BB~~	~~W-76Y~~	~~E300.0+NO3~~	1	~~250 ml P~~	
~~BB~~	~~W-7ES~~	~~E300.0+NO3~~	1	~~250 ml P~~	
~~BB~~	~~W-7ES~~	~~E624MOD~~	3	~~40 mL V~~	
~~BB~~	~~W-76Y~~	~~E624MOD~~	3	~~40 mL V~~	
~~BB~~	~~W-76Y~~	~~SM2510B~~	1	~~250 ml P~~	
~~BB~~	~~W-7ES~~	~~SM2510B~~	1	~~250 ml P~~	
~~BB~~	~~W-7ES~~	~~SM4500PH~~	1	~~250 ml P~~	
~~BB~~	~~W-76Y~~	~~SM4500PH~~	1	~~250 ml P~~	
AA	W-76Y	SM9221	1	250 ml P	
AA	W-7ES	SM9221	1	250 ml P	

Evacuated all GL from well

RECEIVED
NOV 09 2021
ERD - DATA MGMT

All Ground Water Sampling Data

Target Sample Date: **13-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-7PS** AREA INFO: **S300/GSA/CGSA**

DATE: **13-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43115**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT: **TCE-3/NO3-17**

SCREENED INTERVAL (ft-bmp): **19.48 - 22.48** INTAKE DEPTH: **0.00**

CASING DEPTH(installed/sounded)(ft-bmp): **19.50 / 22.48 on 12-APR-94** CASING VOL (Gal/Time): **0.00**

DEPTH TO WATER(ft-bmp): **>22.18 on 11-AUG-21** VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **0.00** CASING DIAMETER/TCASING HT(in): **4.5 / 2.68**

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED

pH : YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: **0.00**

EXCESS H2O DEST:**S300-DRUM**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7PS	S3ANIONS	1	250 ml P	
BB	W-7PS	S3METALS	1	500ml P	
BB	W-7PS	S3METALS:FILTER	0	0	
BB	W-7PS	S3WETCHEM	2	500ml P	
AA	W-7PS	SM9221	1	250 ml P	

Dry, No Measurable H_2O

No Samples

RECEIVED
SEP 16 2021
ERD-DATA MGMT

NOTE:
Purge rate/time: N/A since est_sus_flow = 0
Purge Volume: 23.7900009 gal.
Revision: 08/05/2020

All Ground Water Sampling Data

Target Sample Date: 26-OCT-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-7PS AREA INFO: S300/GSA/CGSA

DATE: 26-Oct-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43134

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: TCE-3/NO3-17

SCREENED INTERVAL (ft-bmp): 19.48 - 22.48 INTAKE DEPTH: 0.00

CASING DEPTH(installed/sounded)(ft-bmp): 19.50 / 22.48 on 12-APR-94 CASING VOL (Gal/Time): 0.00

DEPTH TO WATER(ft-bmp): >22.18 on 11-AUG-21 VOLUME FACTOR: 0.826

WATER IN CASING (ft): 0.00 CASING DIAMETER/TCASING HT(in): 4.5 / 2.68

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER	SERIAL #	CALIBRATED
pH :		YES/NO
SC :		YES/NO
mV :		YES/NO
H2O:		YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3EMG 3CMP

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: 0.00

EXCESS H2O DEST: S300-DRUM

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7PS	E300.0:NO3	1	250 ml P	
BB	W-7PS	E624MOD	3	40 mL V	
BB	W-7PS	SM2510B	1	250 ml P	
BB	W-7PS	SM4500PH	1	250 ml P	
AA	W-7PS	SM9221	1	250 ml P	

Dry, No Samples

RECEIVED
OCT 29 2021
ERD-DATA MGMT

NOTE:
Purge rate/time: N/A since est_sus_flow = 0
Purge Volume: 23.7900009 gal.
Revision: 08/05/2020

All Ground Water Sampling Data

Target Sample Date: **08-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-25N-22** AREA INFO: **S300/GSA/EGSA**

DATE: **08-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43113**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **TCE-1.2**

SCREENED INTERVAL (ft-bmp): **20.80 - 30.80** PUMP INTAKE DEPTH: **31.05**

CASING DEPTH(installed/sounded)(ft-bmp): **28.50 / 32.50 on 09-JAN-12** CASING VOL (Gal/Time): **2.88**

DEPTH TO WATER(ft-bmp): **27.51 on 11-AUG-21** VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **3.49** CASING DIAMETER/TCASING HT(in): **4.5 / 2.50**

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED

pH : 60847 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: N

PURGE VOL: **8.65**

EXCESS H2O DEST:**S300-DRUM**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-25N-22	S3ANIONS	1	250 ml P	
BB	W-25N-22	S3METALS	1	500ml P	
BB	W-25N-22	S3METALS:FILTER	0	O	
BB	W-25N-22	S3WETCHEM	2	500ml P	
AA	W-25N-22	SM9221	1	250 ml P	

Pump inoperable

No Samples

All Ground Water Sampling Data

Target Sample Date: **08-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-25N-23** AREA INFO: **S300/GSA/EGSA**

DATE: **08-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43113**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: ***TCE-6.0**

SCREENED INTERVAL (ft-bmp): **21.80 - 36.80** PUMP INTAKE DEPTH: **36.14**

CASING DEPTH(installed/sounded)(ft-bmp): **35.30 / 37.17 on 25-APR-18** CASING VOL (Gal/Time): **10.33** 9.7 x 3 =

DEPTH TO WATER(ft-bmp): **25.30 on 11-AUG-21** 25.42 VOLUME FACTOR: **0.826** 29.10

WATER IN CASING (ft): **12.50** 11.75 CASING DIAMETER/TCASING HT(in): **4.5 / 2.50**

TIME PUMP ON: 1001 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 1041 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1011		9.7	1	7.79	24.3	1410	-110	1	27.13
1021		19.4	2	7.80	24.5	1420	-64	1	27.98
1031		29.10	3	7.83	24.5	1409	-59	1	32.30
1033				7.79	24.4	1422	40		
1035				7.77	24.4	1418	18		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **30.98**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: - QC LAB(S): - QC SAMPLE TIME: -

SAMPLE ID (VERIFY): W-25N-23/3VES TIME COLLECTED: 1041

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-25N-23	S3ANIONS	1	250 ml P	
BB	W-25N-23	S3METALS	1	500ml P	
BB	W-25N-23	S3METALS:FILTER	0	O	
BB	W-25N-23	S3WETCHEM	2	500ml P	
~~AA~~	~~W-25N-23~~	~~SM9221~~	~~1~~	~~250 ml P~~	

Added 02 osc

RECEIVED
SEP 14 2021
ERD - DATA MGMT

All Ground Water Sampling Data

Target Sample Date: **09-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-25N-23** AREA INFO: **S300/GSA/EGSA**

DATE: **09-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43113**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: ***TCE-6.0**

SCREENED INTERVAL (ft-bmp): **21.80 - 36.80** PUMP INTAKE DEPTH: **36.14**

CASING DEPTH(installed/sounded)(ft-bmp): **35.30 / 37.17 on 25-APR-18** CASING VOL (Gal/Time): **10.33** 9.7x3 =

DEPTH TO WATER(ft-bmp): **25.30 on 11-AUG-21** 25.42 VOLUME FACTOR: **0.826** 29.1

WATER IN CASING (ft): **12.50** 11.75 CASING DIAMETER/TCASING HT(in): **4.5 / 2.50**

TIME PUMP ON: 1257 INITIAL FLOW RATE (Q=GPM): 1.00

TIME PUMP OFF: 1336 MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1307		9.7	1	7.49	24.1	1399	229	1	27.70
1317		19.1	2	7.63	24.1	1409	180	1	28.01
1327		29.10	3	7.70	24.2	1411	118	1	32.67
1329				7.73	24.3	1417	97		
1331				7.70	24.2	1410	108		

METER SERIAL # CALIBRATED

pH : Cal'd YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: N/A

PURGE VOL: **30.98**

EXCESS H2O DEST:**S300-DRUM**

QC SAMPLE ID: — QC LAB(S): — QC SAMPLE TIME: —

SAMPLE ID (VERIFY): W-25N-23 / 3VES TIME COLLECTED: 1336

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
~~BB~~	~~W-25N-23~~	~~S3ANIONS~~	1	~~250 ml~~ P	
~~BB~~	W-25N-23	~~S3METALS~~	1	~~500ml~~ P	
~~BB~~	W-25N-23	~~S3METALS:FILTER~~	0	O	
~~BB~~	W-25N-23	S3WETCHEM	2	~~500ml~~ P	
AA	W-25N-23	SM9221	1	250 ml P	

Evacuated all CC

RECEIVED
SEP 14 2021
ERD - DATA MGMT

All Ground Water Sampling Data

Target Sample Date: **07-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-01** AREA INFO: **S300/GSA/EGSA**

DATE: **07-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43112**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT: ***TCE-15/NO3-40**

SCREENED INTERVAL (ft-bmp): **22.72 - 27.72** PUMP INTAKE DEPTH: **29.00**

CASING DEPTH(installed/sounded)(ft-bmp): **29.80 / 30.00 on 16-NOV-88** CASING VOL (Gal/Time): **7.58** 5.5x3=

DEPTH TO WATER(ft-bmp): **23.30 on 11-AUG-21** 23.39 VOLUME FACTOR: **0.826** 16.5 Gal

WATER IN CASING (ft): **9.17** 6.61 CASING DIAMETER/TCASING HT(in): **4.5 / 2.67**

TIME PUMP ON: 1102 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 1129 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1106		5.5	1	7.49	19.2	1187	231	1	24.37
1113		11	2	7.52	19.2	1144	189	1	24.52
1119		16.5	3	7.53	19.3	1102	154	1	25.10
1121				7.50	19.2	1121	97		
1123				7.51	19.2	1118	99		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **22.73**

EXCESS H2O DEST: **TF-834**

QC SAMPLE ID: **CGSAFB** QC LAB(S): **BCLABS-BAK, ALPHAANAL** QC SAMPLE TIME: 1129

SAMPLE ID (VERIFY): W-26R-01 | 3VES TIME COLLECTED: 1129

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	CGSAFB	S3ANIONS	1	250 ml P	
BB	W-26R-01	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3METALS	1	500ml P	
BB	W-26R-01	S3METALS	1	500ml P	
BB	CGSAFB	S3METALS:FILTER	0	O	
BB	W-26R-01	S3METALS:FILTER	0	O	
BB	CGSAFB	S3WETCHEM	2	500ml P	
BB	W-26R-01	S3WETCHEM	2	500ml P	
~~AA~~	~~CGSAFB~~	~~SM9221~~	1	~~250 ml~~ P	
~~AA~~	~~W-26R-01~~	SM9221	1	~~250 ml P~~	

Added on of CC

RECEIVED
SEP 14 2021
ERD - DATA MGMT

All Ground Water Sampling Data

Target Sample Date: **08-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-01** AREA INFO: **S300/GSA/EGSA**

DATE: **08-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43112**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT: ***TCE-15/NO3-40**

SCREENED INTERVAL (ft-bmp): **22.72 - 27.72** PUMP INTAKE DEPTH: **29.00**

CASING DEPTH(installed/sounded)(ft-bmp): **29.80 / 30.00 on 16-NOV-88** CASING VOL (Gal/Time): **7.58** 5.5 x 3 =

DEPTH TO WATER(ft-bmp): **23.30 on 11-AUG-21** 23.40 VOLUME FACTOR: **0.826** 16.5 Gal

WATER IN CASING (ft): **9.17** 6.60 CASING DIAMETER/TCASING HT(in): **4.5 / 2.67**

TIME PUMP ON: 1245 INITIAL FLOW RATE (Q=GPM): 1.0

TIME PUMP OFF: 1311 MEASURED BY: FLOW METER / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1251		5.5	1	7.50	19.3	1149	337	1	24.39
1257		11	2	7.44	19.2	1131	220	1	24.55
1303		16.5	3	7.49	19.3	1124	182	1	25.13
1305				7.51	19.3	1129	139		
1307				7.54	19.3	1130	136		

METER SERIAL # CALIBRATED

pH : Cond17 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: ~~NP~~

PURGE VOL: **22.73**

EXCESS H2O DEST: **TF-834**

QC SAMPLE ID: **CGSAFB** QC LAB(S): **BCLABS-BAK, ALPHAANAL** QC SAMPLE TIME: 1311

SAMPLE ID (VERIFY): W-26R-01 / 3VES TIME COLLECTED: 1311

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
~~BB~~	~~CGSAFB~~	~~S3ANIONS~~	1	~~250 ml~~ P	
~~BB~~	~~W-26R-01~~	~~S3ANIONS~~	1	~~250 ml~~ P	
~~BB~~	CGSAFB	~~S3METALS~~	1	~~500ml~~ P	
~~BB~~	W-26R-01	~~S3METALS~~	1	~~500ml~~ P	
~~BB~~	CGSAFB	~~S3METALS:FILTER~~	0	~~0~~	
~~BB~~	~~W-26R-01~~	~~S3METALS:FILTER~~	0	~~0~~	
~~BB~~	CGSAFB	~~S3WETCHEM~~	2	~~500ml~~ P	
~~BB~~	~~W-26R-01~~	~~S3WETCHEM~~	2	~~500ml~~ P	
AA	CGSAFB	SM9221	1	250 ml P	
AA	W-26R-01	SM9221	1	250 ml P	

RECEIVED
SEP 14 2021
ERD - DATA MGMT

Removed all CL from well

Add time missed by lab

All Ground Water Sampling Data

Target Sample Date: **13-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-01** AREA INFO: **S300/GSA/EGSA**

DATE: **14-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43115**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT:

SCREENED INTERVAL (ft-bmp): **22.72 - 27.72** PUMP INTAKE DEPTH: **29.00**

CASING DEPTH(installed/sounded)(ft-bmp): **29.80 / 30.00 on 16-NOV-88** CASING VOL (Gal/Time): **7.58** 5.5 Gal

DEPTH TO WATER(ft-bmp): **23.30 on 11-AUG-21** 23.42 VOLUME FACTOR: **0.826** 16.5 Gal

WATER IN CASING (ft): **9.17** 6.58 CASING DIAMETER/TCASING HT(in): **4.5 / 2.67**

TIME PUMP ON: 1404 INITIAL FLOW RATE (Q=GPM): 1.06

TIME PUMP OFF: 1430 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1410		5.5	1	7.47	19.3	1166	206	1	24.42
1416		11	2	7.51	19.3	1159	221	1	24.59
1422		16.5	3	7.53	19.2	1155	218	1	25.20
1424				7.50	19.2	1151			
1426				7.51	19.2	1147			

METER SERIAL # CALIBRATED

pH : 601347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: **22.73**

EXCESS H2O DEST: **TF-834**

QC SAMPLE ID: — QC LAB(S): — QC SAMPLE TIME: —

SAMPLE ID (VERIFY): W-26R-01 | 3VES TIME COLLECTED: 1430

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
AA	W-26R-01	SM9221	1	250 ml P	

Also CGSAFB

Evacuated all GC from well

RECEIVED
SEP 16 2021
ERD-DATA MGMT

All Ground Water Sampling Data

Target Sample Date: **13-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-01** AREA INFO: **S300/GSA/EGSA**

DATE: **14-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43115**

PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT:

SCREENED INTERVAL (ft-bmp): **22.72 - 27.72** PUMP INTAKE DEPTH: **29.00**

CASING DEPTH(installed/sounded)(ft-bmp): **29.80 / 30.00 on 16-NOV-88** CASING VOL (Gal/Time): **7.58**

DEPTH TO WATER(ft-bmp): **23.30 on 11-AUG-21** VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **9.17** CASING DIAMETER/TCASING HT(in): **4.5 / 2.67**

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED

pH : YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: **22.73**

EXCESS H2O DEST:**TF-834**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
AA	CGSAFB	SM9221	1	250 ml P	

All Ground Water Sampling Data

Target Sample Date: 25-OCT-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-26R-01 AREA INFO: S300/GSA/EGSA

DATE: 25-Oct-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43133

PURGE METHOD/SAMPLE METHOD: GP / 3VES CONTAMINANT PRESENT: *TCE-15/NO3-40

SCREENED INTERVAL (ft-bmp): 22.72 - 27.72 PUMP INTAKE DEPTH: 29.00

CASING DEPTH(installed/sounded)(ft-bmp): 29.80 / 30.00 on 16-NOV-88 CASING VOL (Gal/Time): 7.48 4.83=

DEPTH TO WATER(ft-bmp): 23.42 on 13-SEP-21 24.22 VOLUME FACTOR: 0.826 14.4 Gal

WATER IN CASING (ft): 9.05 5.78 CASING DIAMETER/TCASING HT(in): 4.5 / 2.67

TIME PUMP ON: 0912 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 0944 MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0917		4.8	1	8.63	24.1	1478	139	1	25.89
0922		9.6	2	8.59	24.2	1483	144	1	26.32
0927		14.4	3	8.55	24.2	1479	138	1	26.58
0929				8.51	24.3	1473	135		
0931				8.50	24.2	1477	129		

METER SERIAL # CALIBRATED

pH : 601347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3EMG

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: 22.43

EXCESS H2O DEST: TF-834

QC SAMPLE ID: — QC LAB(S): — QC SAMPLE TIME: —

SAMPLE ID (VERIFY): W-26R-01 / 3VES TIME COLLECTED: ~~0944~~ 0934

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-01	E300.0:NO3	1	250 ml P	
BB	W-26R-01	SM2510B	1	250 ml P	
BB	W-26R-01	SM4500PH	1	250 ml P	
~~AA~~	~~W-26R-01~~	~~SM9221~~	~~1~~	~~250 ml P~~	

Added 02 of CL to well

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All Ground Water Sampling Data

Target Sample Date: 26-OCT-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-26R-01 AREA INFO: S300/GSA/EGSA

DATE: 26-Oct-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43134

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: *TCE-15/NO3-40

SCREENED INTERVAL (ft-bmp): 22.72 - 27.72 PUMP INTAKE DEPTH: 29.00

CASING DEPTH(installed/sounded)(ft-bmp): 29.80 / 30.00 on 16-NOV-88 CASING VOL (Gal/Time): 7.48

DEPTH TO WATER(ft-bmp): 23.42 on 13-SEP-21 24.39 VOLUME FACTOR: 0.826 4.6x3=13.5

WATER IN CASING (ft): 9.05 5.61 CASING DIAMETER/TCASING HT(in): 4.5 / 2.67

TIME PUMP ON: 1218 INITIAL FLOW RATE (Q=GPM): 1.02

TIME PUMP OFF: MEASURED BY: FLOW METER / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1223		4.6	1	8.59	23.9	1722	621	1	26.00
1227		9.2	2	8.61	23.9	1590	580	1	26.40
1232		14.0	3	8.57	24.0	1569	492	1	26.60
1234				8.54	24.0	1547	480		
1236				8.55	24.1	1562	377		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3EMG

SAMPLE PRESERVATION/AMT of REAGENT: HNO3

PURGE VOL: 22.43

EXCESS H2O DEST: TF-834

QC SAMPLE ID: — QC LAB(S): — QC SAMPLE TIME: —

SAMPLE ID (VERIFY): W-26R-01/3045 TIME COLLECTED: 1240

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	~~W-26R-01~~	~~E300.0:NO3~~	~~1~~	~~250 ml P~~	
BB	~~W-26R-01~~	~~SM2510B~~	~~1~~	~~250 ml P~~	
BB	~~W-26R-01~~	~~SM4500PH~~	~~1~~	~~250 ml P~~	
AA	W-26R-01	SM9221	1	250 ml P	

Remove all CC from well

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All Ground Water Sampling Data

Target Sample Date: 13-SEP-2021 Month: Norm Qtr: 3 Norm Year: 2021

WELL ID: W-26R-05 AREA INFO: S300/GSA/EGSA

DATE: 13-Sep-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43115

PURGE METHOD/SAMPLE METHOD: PB / 90BA CONTAMINANT PRESENT: TCE-3.3/NO3-53

SCREENED INTERVAL (ft-bmp): 22.05 - 27.05 INTAKE DEPTH: 0.00

CASING DEPTH(installed/sounded)(ft-bmp): 25.50 / 26.68 on 10-FEB-91 CASING VOL (Gal/Time): 0.74

DEPTH TO WATER(ft-bmp): 26.10 on 11-AUG-21 26.18 VOLUME FACTOR: 0.826 .41 Cal

WATER IN CASING (ft): 0.90 1.50 CASING DIAMETER/TCASING HT(in): 4.5 / 1.50

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ (GRAD CYL) / BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
14:38		.40	90%					1	
PER COLLECT HISTORY									

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3MRP

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: 0.67

EXCESS H2O DEST:S300-DRUM

QC SAMPLE ID:W-26R-42Y QC LAB(S): BCLABS-BAK, ALPHAANAL QC SAMPLE TIME:

SAMPLE ID (VERIFY): W-26R-05/90BA TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-42Y	S3ANIONS	1	250 ml P	
BB	W-26R-05	S3ANIONS	1	250 ml P	
BB	W-26R-42Y	S3METALS	1	500ml P	
BB	W-26R-05	S3METALS	1	500ml P	
BB	W-26R-42Y	S3METALS:FILTER	0	O	
BB	W-26R-05	S3METALS:FILTER	0	O	
BB	W-26R-42Y	S3WETCHEM	2	500ml P	
BB	W-26R-05	S3WETCHEM	2	500ml P	
~~AA~~	~~W-26R-42Y~~	~~SM9221~~	1	~~250 ml P~~	
~~AA~~	~~W-26R-05~~	~~SM9221~~	1	~~250 ml P~~	

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Added 02 of CL

Insuff H2O to Collect Samples

NOTE:
Purge rate/time: N/A since est_sus_flow = 0
Purge Volume: 10 gal.
Revision: 08/05/2020

All Ground Water Sampling Data

Target Sample Date: **25-OCT-2021** Month: Norm Qtr: **4** Norm Year: **2021**

WELL ID: **W-26R-05** AREA INFO: **S300/GSA/EGSA**

DATE: **25-Oct-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43133**

PURGE METHOD/SAMPLE METHOD: **PB / 90BA** CONTAMINANT PRESENT: **TCE-3.3/NO3-53**

SCREENED INTERVAL (ft-bmp): **22.05 - 27.05** INTAKE DEPTH: **0.00**

CASING DEPTH(installed/sounded)(ft-bmp): **25.50 / 26.68 on 10-FEB-91** CASING VOL (Gal/Time): **0.68**

DEPTH TO WATER(ft-bmp): **26.18 on 13-SEP-21** 2649 VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **0.82** CASING DIAMETER/TCASING HT(in): **4.5 / 1.50**

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER	SERIAL #	CALIBRATED
pH :	604347	YES/NO
SC :		YES/NO
mV :		YES/NO
H2O:		YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3EMG**

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: **0.61**

EXCESS H2O DEST:**S300-DRUM**

QC SAMPLE ID:**EGSAFB** QC LAB(S): **ALPHAANAL, BCLABS-BAK** QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-05	E300.0:NO3	1	250 ml P	
BB	EGSAFB	E300.0:NO3	1	250 ml P	
BB	W-26R-05	SM2510B	1	250 ml P	
BB	EGSAFB	SM2510B	1	250 ml P	
BB	W-26R-05	SM4500PH	1	250 ml P	
BB	EGSAFB	SM4500PH	1	250 ml P	
AA	W-26R-05	SM9221	1	250 ml P	
AA	EGSAFB	SM9221	1	250 ml P	

Runoff H2O to collect Samples

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NOTE:
Purge rate/time: N/A since est_sus_flow = 0
Purge Volume: 10 gal.
Revision: 08/05/2020

All Ground Water Sampling Data

Target Sample Date: **07-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-11** AREA INFO: **S300/GSA/EGSA**

DATE: **07-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43112**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **TCE-1.6/NO3-14**

SCREENED INTERVAL (ft-bmp): **19.10 - 29.10** PUMP INTAKE DEPTH: **23.70**

CASING DEPTH(installed/sounded)(ft-bmp): **27.00 / 30.76 on 15-SEP-20** CASING VOL (Gal/Time): **6.99** 7.4x3=22.2

DEPTH TO WATER(ft-bmp): **21.54 on 11-AUG-21** 21.59 VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **8.46** 8.87 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1147 INITIAL FLOW RATE (Q=GPM): 1.0 a

TIME PUMP OFF: 1218 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1154		7.4	1	7.71	19.1	1200	136	1	23.12
1202		14.8	2	7.70	19.1	1177	112	1	23.67
1210		22.2	3	7.68	19.1	1179	105	1	24.02
1212				7.69	19.1	1164	109		
1214				7.70	19.1	1109	111		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **20.97**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): W-26R TIME COLLECTED: 1218

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-11	S3ANIONS	1	250 ml P	
BB	W-26R-11	S3METALS	1	500ml P	
BB	W-26R-11	S3METALS:FILTER	0	O	
BB	W-26R-11	S3WETCHEM	2	500ml P	
~~AA~~	~~W-26R-11~~	~~SM9221~~	~~1~~	~~250 ml P~~	

Added 02 of CL to well

All Ground Water Sampling Data

Target Sample Date: **08-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-11** AREA INFO: **S300/GSA/EGSA**

DATE: **08-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43112**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **TCE-1.6/NO3-14**

SCREENED INTERVAL (ft-bmp): **19.10 - 29.10** PUMP INTAKE DEPTH: **23.70**

CASING DEPTH(installed/sounded)(ft-bmp): **27.00 / 30.76 on 15-SEP-20** CASING VOL (Gal/Time): **6.99** 7.4x3=

DEPTH TO WATER(ft-bmp): **21.54 on 11-AUG-21** 21.90 VOLUME FACTOR: **0.826** 22.2 Gal

WATER IN CASING (ft): **8.46** 8.86 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1319 INITIAL FLOW RATE (Q=GPM): 1.0Q

TIME PUMP OFF: 1350 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1327		7.4	1	7.64	19.2	1180	399	1	23.15
1335		14.8	2	7.69	19.2	1177	322	1	23.77
1342		22.2	3	7.72	19.1	1164	218	1	24.38
1344				7.68	19.2	1170	222		
1346				7.67	19.2	1174	194		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: N/A

PURGE VOL: **20.97**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): W-26R-11 3VES TIME COLLECTED: 1350

LAB	LAB_LOC_NAME
~~BB~~	~~W-26R-11~~
~~BB~~	~~W-26R-11~~
~~BB~~	~~W-26R-11~~
~~BB~~	~~W-26R-11~~
AA	W-26R-11

REQUESTED ANALYSIS	#	TYPE
~~S3ANIONS~~	1	~~250 ml P~~
~~S3METALS~~	1	~~500ml P~~
~~S3METALS.FILTER~~	0	~~0~~
~~S3WETCHEM~~	2	~~500ml P~~
SM9221	1	250 ml P

SAMPLER_REMARKS

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Removed all CL from well

*Hold time missed from Lab

Revision: 08/05/2020

All Ground Water Sampling Data

Target Sample Date: **13-SEP-2021** Month: Norm Qtr: **3** Norm Year: **2021**

WELL ID: **W-26R-11** AREA INFO: **S300/GSA/EGSA**

DATE: **14-Sep-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43115**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT:

SCREENED INTERVAL (ft-bmp): **19.10 - 29.10** PUMP INTAKE DEPTH: **23.70**

CASING DEPTH(installed/sounded)(ft-bmp): **27.00 / 30.76 on 15-SEP-20** CASING VOL (Gal/Time): **6.99**

DEPTH TO WATER(ft-bmp): **21.54 on 11-AUG-21** 21.90 VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **8.46** 8.86 CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: 1259 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 1330 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1307		7.4	1	7.61	19.1	1172	218	1	23.18
1315		14.8	2	7.62	19.1	1168	223	1	23.79
1323		22.2	3	7.70	19.2	1164	197	1	24.45
1325				7.68	19.1	1170	184		
1329				7.67	19.1	1172	180		

METER SERIAL # CALIBRATED

pH : 604347 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3MRP**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **20.97**

EXCESS H2O DEST: **S300-DRUM**

QC SAMPLE ID: — QC LAB(S): — QC SAMPLE TIME: —

SAMPLE ID (VERIFY): GW-26R-11 | 3VES TIME COLLECTED: 1330

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
AA	W-26R-11	SM9221	1	250 ml P	

Evacuated all C/ from the well

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All Ground Water Sampling Data

Target Sample Date: **25-OCT-2021** Month: Norm Qtr: **4** Norm Year: **2021**

WELL ID: **W-26R-11** AREA INFO: **S300/GSA/EGSA**

DATE: **25-Oct-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43133**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **TCE-1.6/NO3-14**

SCREENED INTERVAL (ft-bmp): **19.10 - 29.10** PUMP INTAKE DEPTH: **23.70**

CASING DEPTH(installed/sounded)(ft-bmp): **27.00 / 30.76 on 15-SEP-20** CASING VOL (Gal/Time): **6.69**

DEPTH TO WATER(ft-bmp): **21.90 on 13-SEP-21** VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **8.10** CASING DIAMETER/TCASING HT(in): **4.5 / 3.00**

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER	SERIAL #	CALIBRATED
pH :		YES/NO
SC :		YES/NO
mV :		YES/NO
H2O:		YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3EMG 3GIV**

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: **20.08**

EXCESS H2O DEST:**S300-DRUM**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-11	E300.0:NO3	1	250 ml P	
BB	W-26R-11	E624MOD	3	40 mL V	
BB	W-26R-11	SM2510B	1	250 ml P	
BB	W-26R-11	SM4500PH	1	250 ml P	
AA	W-26R-11	SM9221	1	250 ml P	

Dry, No Sample's

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All Ground Water Sampling Data

Target Sample Date: 02-NOV-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA

DATE: 02-Nov-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43137

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 25.81

CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.71 on 28-APR-21 CASING VOL (Gal/Time): 9.98 9.7 x 3.0

DEPTH TO WATER(ft-bmp): 16.92 on 15-SEP-21 17.01 VOLUME FACTOR: 0.826 29.1

WATER IN CASING (ft): 12.08 11.7 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00

TIME PUMP ON: 1144 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 1228 MEASURED BY: FLOW METER / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1154		9.7	1	7.97	23.1	1570	63	1	17.49
1204		19.4	2	7.93	23.0	1544	57	1	17.89
1214		29.1	3	7.90	23.0	1537	60	1	18.27
1216				7.88	23.0	1540	63		
1218				7.89	23.0	1533	61 60		

METER SERIAL # CALIBRATED

pH : G03947 YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3EMG 3CMP

SAMPLE PRESERVATION/AMT of REAGENT: N/S

PURGE VOL: 29.94

EXCESS H2O DEST: None

QC SAMPLE ID: CGSAFB QC LAB(S): BCLABS-BAK, GEL QC SAMPLE TIME: 1228

SAMPLE ID (VERIFY): W-35A-04/3VES TIME COLLECTED: 1228

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
GE	CGSAFB	AS:FILTER	0	O	
GE	W-35A-04	AS:FILTER	0	O	
GE	W-35A-04	AS:UISO	2	1L P	
GE	CGSAFB	AS:UISO	2	1L P	
BB	CGSAFB	E200.7:FILTER	0	O	
BB	W-35A-04	E200.7:FILTER	0	O	
BB	CGSAFB	E200.7:K	1	500 mL P	
BB	W-35A-04	E200.7:K	1	500 mL P	
BB	W-35A-04	E300.0:NO3	1	250 ml P	
BB	CGSAFB	E300.0:NO3	1	250 ml P	
BB	CGSAFB	E300.0:PERC	1	250 ml P	
BB	W-35A-04	E300.0:PERC	1	250 ml P	
BB	CGSAFB	E524.2MOD	6	40 mL V	
BB	W-35A-04	E524.2MOD	6	40 mL V	
BB	W-35A-04	E624MOD	3	40 mL V	
BB	CGSAFB	E624MOD	3	40 mL V	
BB	W-35A-04	E8330:R+H	3	1L A	
BB	CGSAFB	E8330:R+H	2	1L A	
GE	CGSAFB	E900	1	1L P	
GE	W-35A-04	E900	1	1L P	
GE	CGSAFB	E900:FILTER	0	O	
GE	W-35A-04	E900:FILTER	0	O	
GE	CGSAFB	E906	1	250 ml P	

All Ground Water Sampling Data

Target Sample Date: **02-NOV-2021** Month: Norm Qtr: **4** Norm Year: **2021**

WELL ID: **W-35A-04** AREA INFO: **S300/GSA/CGSA**

DATE: **02-Nov-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA43137**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **ND**

SCREENED INTERVAL (ft-bmp): **19.30 - 29.30** PUMP INTAKE DEPTH: **25.81**

CASING DEPTH(installed/sounded)(ft-bmp): **29.00 / 28.71 on 28-APR-21** CASING VOL (Gal/Time): **9.98**

DEPTH TO WATER(ft-bmp): **16.92 on 15-SEP-21** VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **12.08** CASING DIAMETER/TCASING HT(in): **4.5 / 0.00**

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED

pH : YES/NO

SC : YES/NO

mV : YES/NO

H2O: YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3EMG**

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: **29.94**

EXCESS H2O DEST:**None**

QC SAMPLE ID:**CGSAFB** QC LAB(S): **BCLABS-BAK, ALPHAANAL** QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
GE	W-35A-04	E906	1	250 ml P	
BB	CGSAFB	SM2510B	1	250 ml P	
BB	W-35A-04	SM2510B	1	250 ml P	
BB	CGSAFB	SM4500PH	1	250 ml P	
BB	W-35A-04	SM4500PH	1	250 ml P	
~~AA~~	~~CGSAFB~~	~~SM9221~~	1	~~250 ml~~ P	
~~AA~~	~~W-35A-04~~	~~SM9221~~	1	~~250 ml P~~	
BB	CGSAFB	WGMGMET3	1	1L P	
BB	W-35A-04	WGMGMET3	1	1L P	
BB	W-35A-04	WGMGMET3:FILTER	0	O	
BB	CGSAFB	WGMGMET3:FILTER	0	O	

Added on offc

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All Ground Water Sampling Data

Target Sample Date: **03-NOV-2021** Month: Norm Qtr: **4** Norm Year: **2021**

WELL ID: **W-35A-04** AREA INFO: **S300/GSA/CGSA**

DATE: **03-Nov-2021** LOG BOOK (DOCUMENT CONTROL) #: **AA431378**

PURGE METHOD/SAMPLE METHOD: **Grundfos / 3VES** CONTAMINANT PRESENT: **ND**

SCREENED INTERVAL (ft-bmp): **19.30 - 29.30** PUMP INTAKE DEPTH: **25.81**

CASING DEPTH(installed/sounded)(ft-bmp): **29.00 / 28.71 on 28-APR-21** CASING VOL (Gal/Time): **9.98**

DEPTH TO WATER(ft-bmp): **16.92 on 15-SEP-21** 17.00 VOLUME FACTOR: **0.826**

WATER IN CASING (ft): **12.08** 11.7 CASING DIAMETER/TCASING HT(in): **4.5 / 0.00**

TIME PUMP ON: 1345 INITIAL FLOW RATE (Q=GPM): 1.0 Q

TIME PUMP OFF: 1412 MEASURED BY: FLOW METER / GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1345		9.7	1	7.90	23.0	1544	422	1	17.51
1355		19.4	2	7.88	23.1	1566	361	1	18.20
1405		29.1	3	7.77	23.1	1539	250	1	18.44
1407				7.82	23.0	1531	189		
1409		33.1		7.81	23.0	1540	172		

METER	SERIAL #	CALIBRATED
pH :	604347	YES/NO
SC :		YES/NO
mV :		YES/NO
H2O:		YES/NO

SAMPLER/EMPLOYER: **silva90**

PROJECT: **3CMP 3EMG**

SAMPLE PRESERVATION/AMT of REAGENT: NA

PURGE VOL: **29.9**

EXCESS H2O DEST: **None**

QC SAMPLE ID: **CGSAFB** QC LAB(S): **BCLABS-BAK, GEL** QC SAMPLE TIME: 1412

SAMPLE ID (VERIFY): W-35A-04 | 3048 TIME COLLECTED: 1412

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
GE	CGSAFB	AS:FILTER	0	O	
GE	W-35A-04	AS:FILTER	0	O	
GE	W-35A-04	AS:UISO	2	1L P	
GE	CGSAFB	AS:UISO	2	1L P	
BB	CGSAFB	E200.7:FILTER	0	O	
BB	W-35A-04	E200.7:FILTER	0	O	
BB	CGSAFB	E200.7:K	1	500 mL P	
BB	W-35A-04	E200.7:K	1	500 mL P	
BB	W-35A-04	E300.0:NO3	1	250 ml P	
BB	CGSAFB	E300.0:NO3	1	250 ml P	
BB	CGSAFB	E300.0:PERC	1	250 ml P	
BB	W-35A-04	E300.0:PERC	1	250 ml P	
BB	CGSAFB	E524.2MOD	6	40 mL V	
BB	W-35A-04	E524.2MOD	6	40 mL V	
BB	W-35A-04	E624MOD	3	40 mL V	
BB	CGSAFB	E624MOD	3	40 mL V	
BB	W-35A-04	E8330:R+H	3	1L A	
BB	CGSAFB	E8330:R+H	2	1L A	
GE	CGSAFB	E900	1	1L P	
GE	W-35A-04	E900	1	1L P	
GE	CGSAFB	E900:FILTER	0	O	
GE	W-35A-04	E900:FILTER	0	O	
GE	CGSAFB	E906	1	250 ml P	

Sampled Day Prior

All Ground Water Sampling Data

Target Sample Date: 03-NOV-2021 Month: Norm Qtr: 4 Norm Year: 2021

WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA

DATE: 03-Nov-2021 LOG BOOK (DOCUMENT CONTROL) #: AA43137

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 25.81

CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.71 on 28-APR-21 CASING VOL (Gal/Time): 9.98

DEPTH TO WATER(ft-bmp): 16.92 on 15-SEP-21 VOLUME FACTOR: 0.826

WATER IN CASING (ft): 12.08 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY:FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER	SERIAL #	CALIBRATED
pH :		YES/NO
SC :		YES/NO
mV :		YES/NO
H2O:		YES/NO

SAMPLER/EMPLOYER: silva90

PROJECT: 3EMG

SAMPLE PRESERVATION/AMT of REAGENT:

PURGE VOL: 29.94

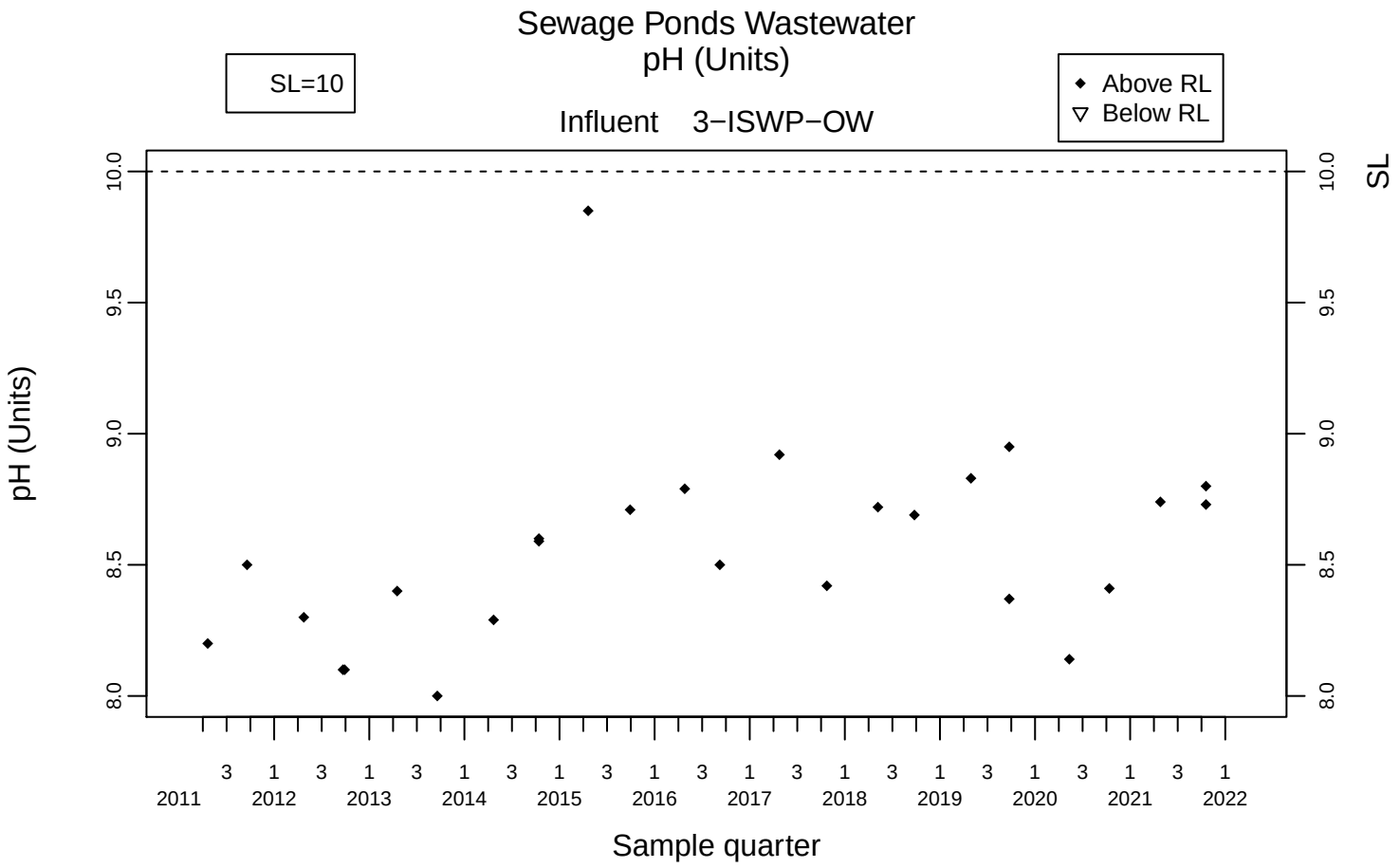
EXCESS H2O DEST:None

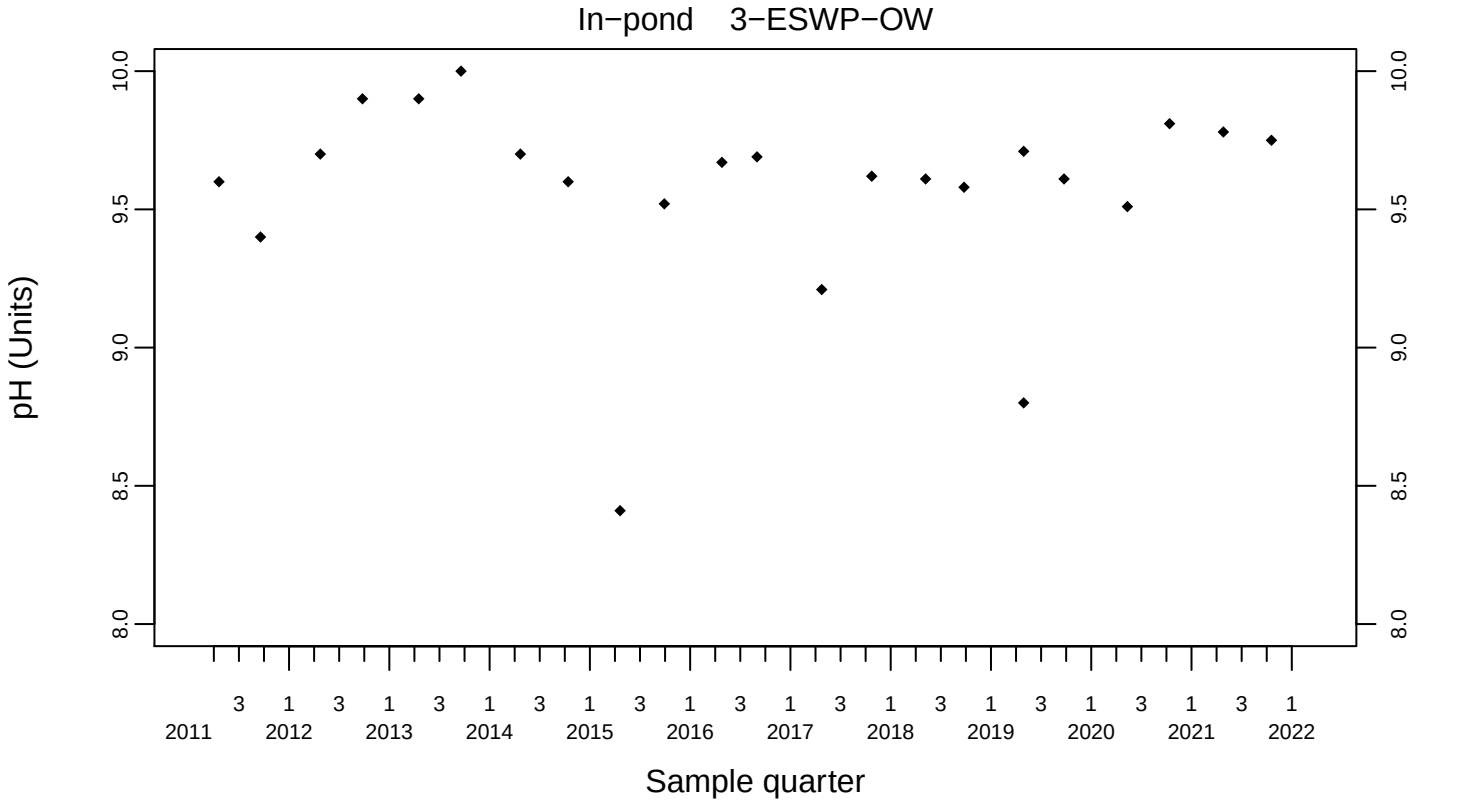
QC SAMPLE ID:CGSAFB QC LAB(S): ALPHAANAL, BCLABS-BAK QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

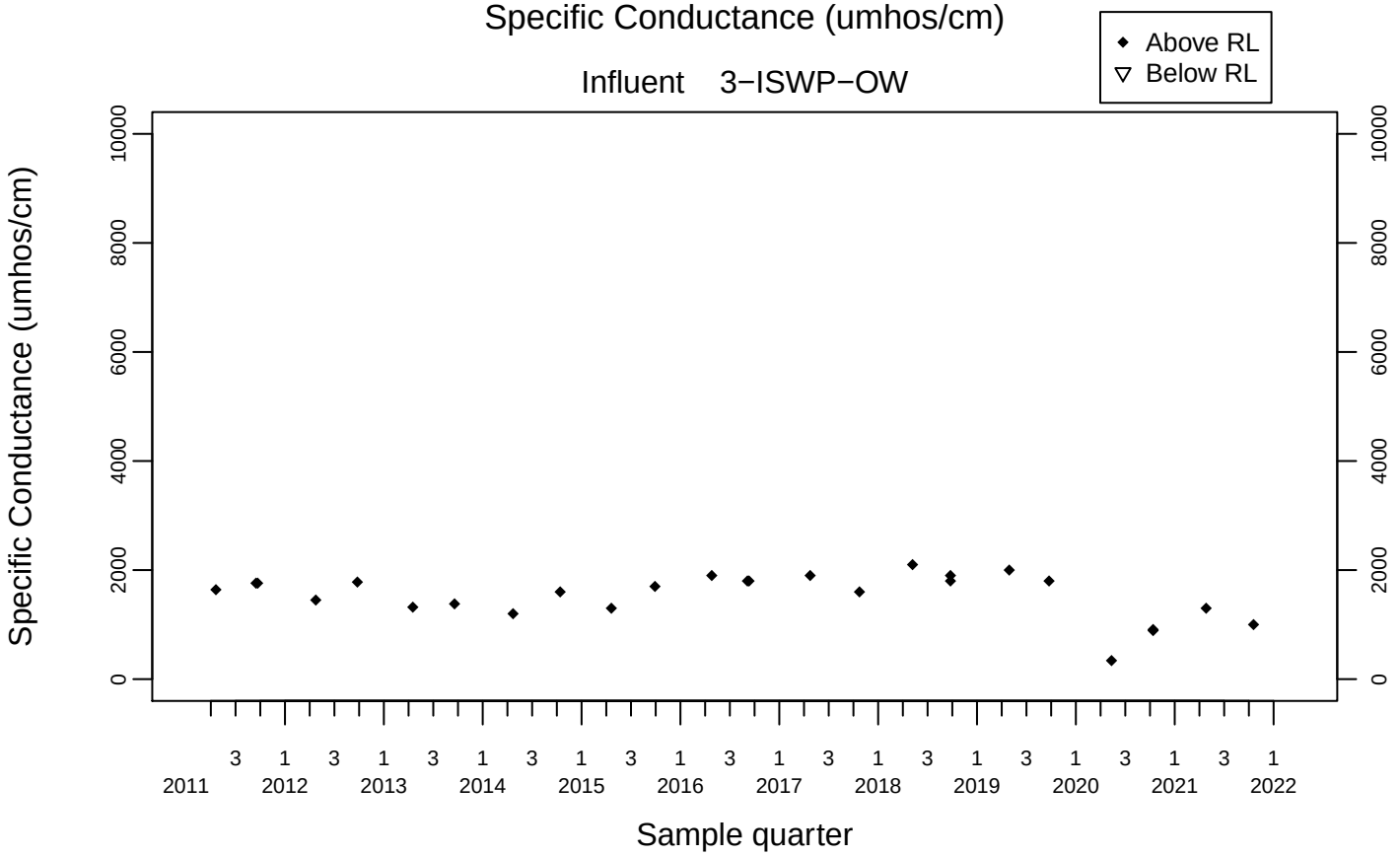
LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
~~CE~~	~~W-35A-04~~	~~E906~~	1	~~250 ml~~ P	
~~BB~~	~~CGSAFB~~	~~SM2510B~~	1	~~250 ml~~ P	
~~BB~~	~~W-35A-04~~	~~SM2510B~~	1	~~250 ml~~ P	
~~BB~~	~~CGSAFB~~	~~SM4500PE~~	1	~~250 ml~~ P	
~~BB~~	~~W-35A-04~~	~~SM4500PH~~	1	~~250 ml P~~	
AA	CGSAFB	SM9221	1	250 ml P	
AA	W-35A-04	SM9221	1	250 ml P	
~~BB~~	~~CGSAFB~~	~~WGMGMET3~~	1	~~1L P~~	
~~BB~~	~~W-35A-04~~	~~WGMGMET3~~	1	1L P	
~~BB~~	~~W-35A-04~~	~~WGMGMET3:FILTER~~	0	~~0~~	
~~BB~~	~~CGSAFB~~	~~WGMGMET3:FILTER~~	0	~~0~~	

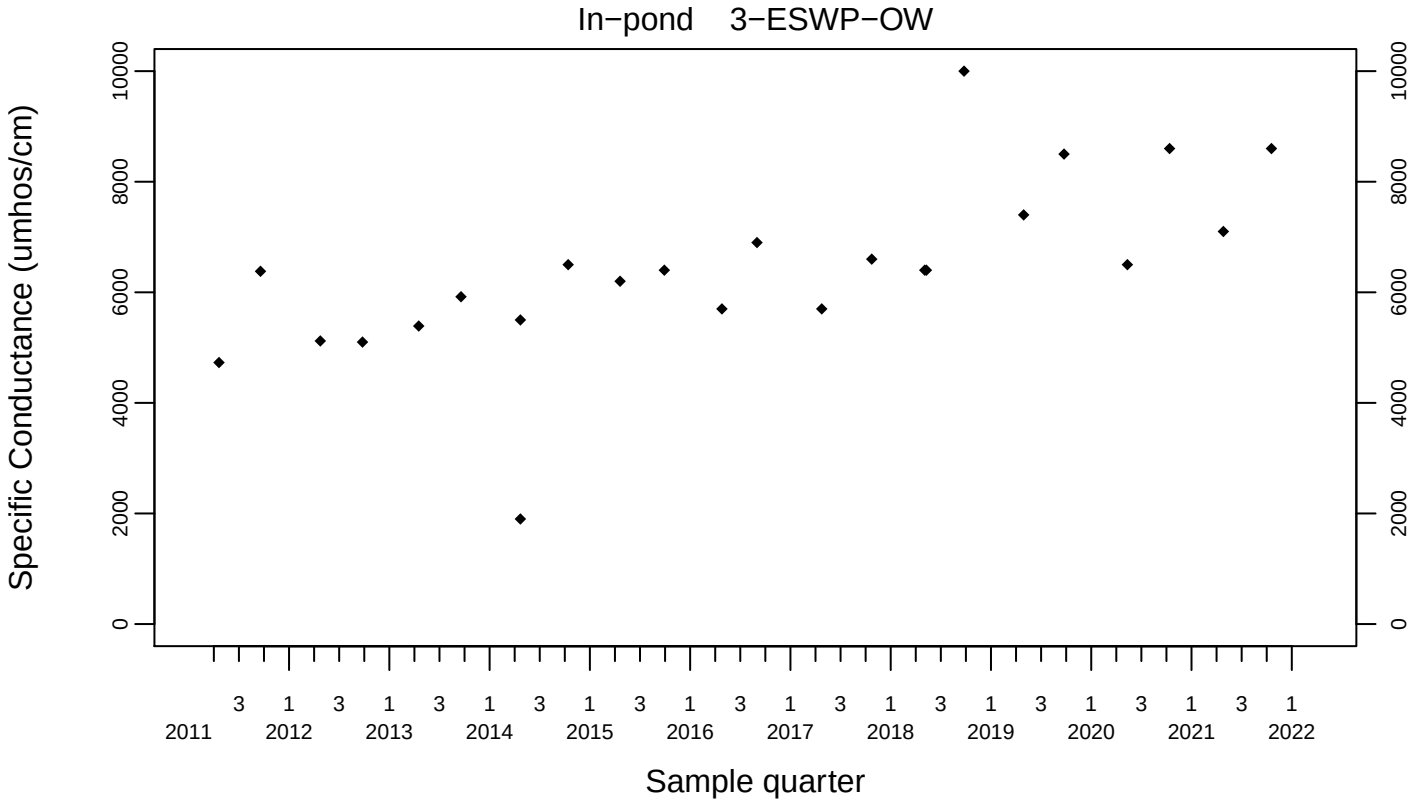
Evacuated all cl from well


Sewage Ponds Wastewater
pH (Units)
SL=10
Above RL
Below RL
Influent 3−ISWP−OW
pH (Units)
SL
10.0
9.5
9.0
8.5
8.0
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

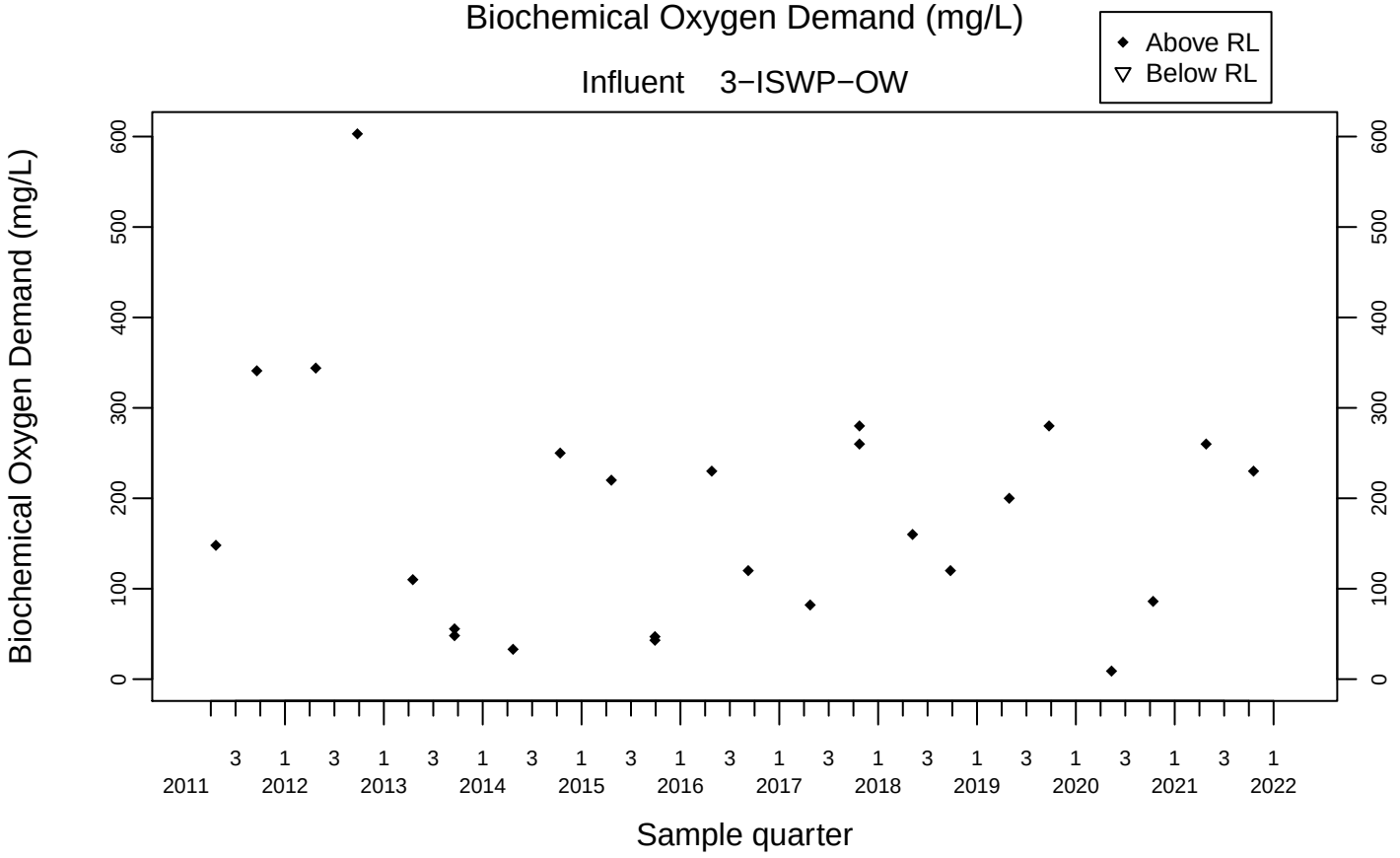

In−pond 3−ESWP−OW
pH (Units)
10.0
9.5
9.0
8.5
8.0
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

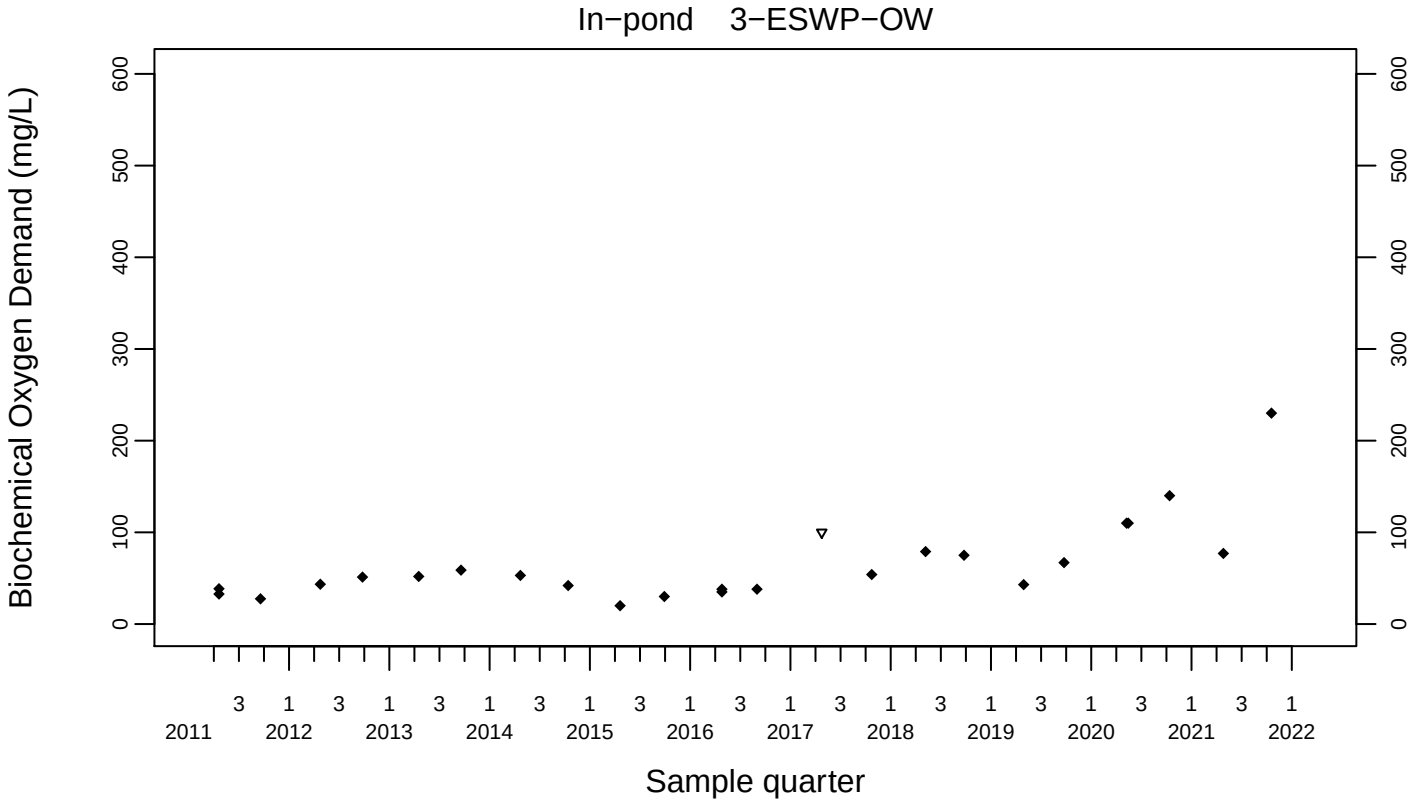
Sewage Ponds Wastewater
Specific Conductance (umhos/cm)

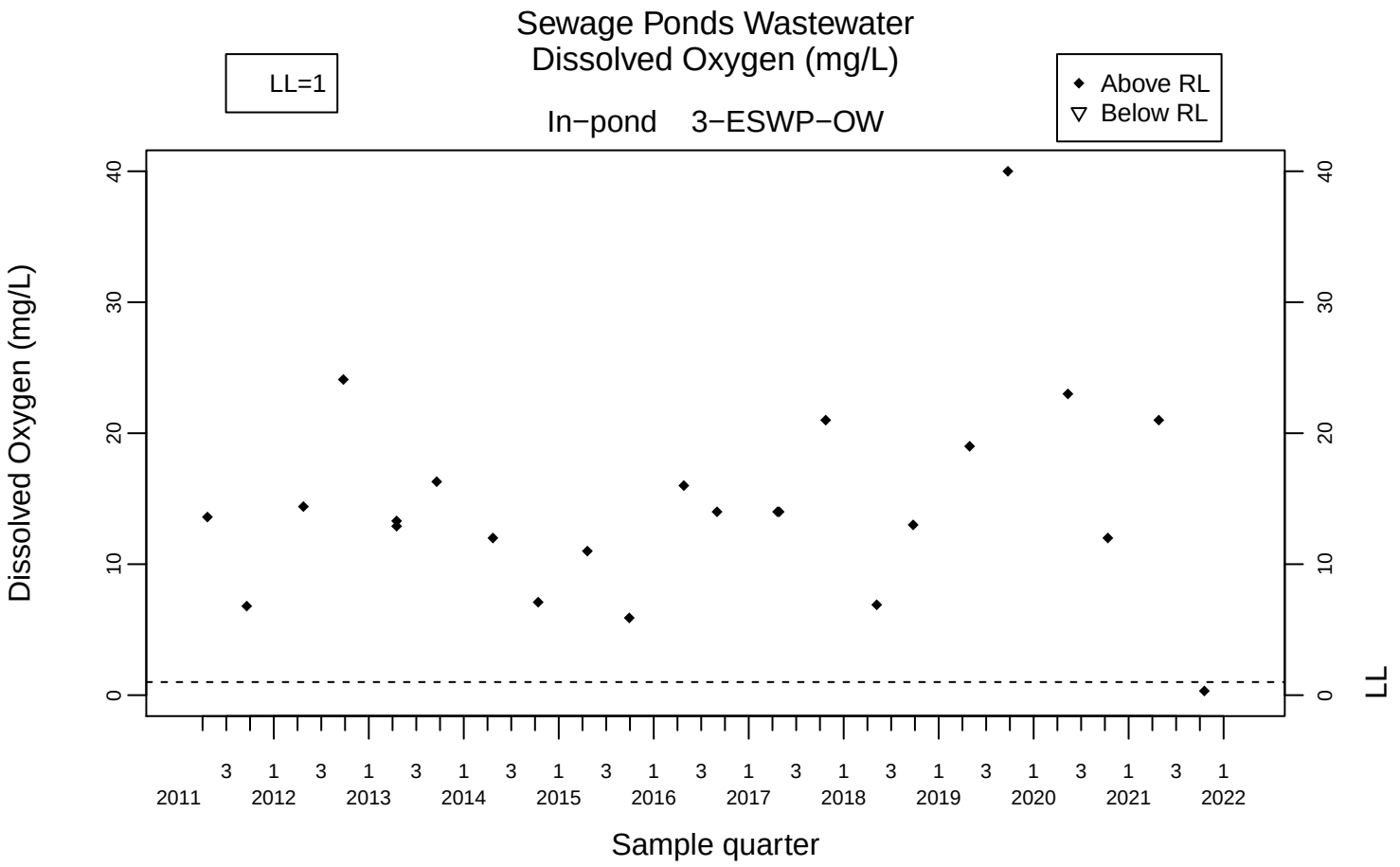




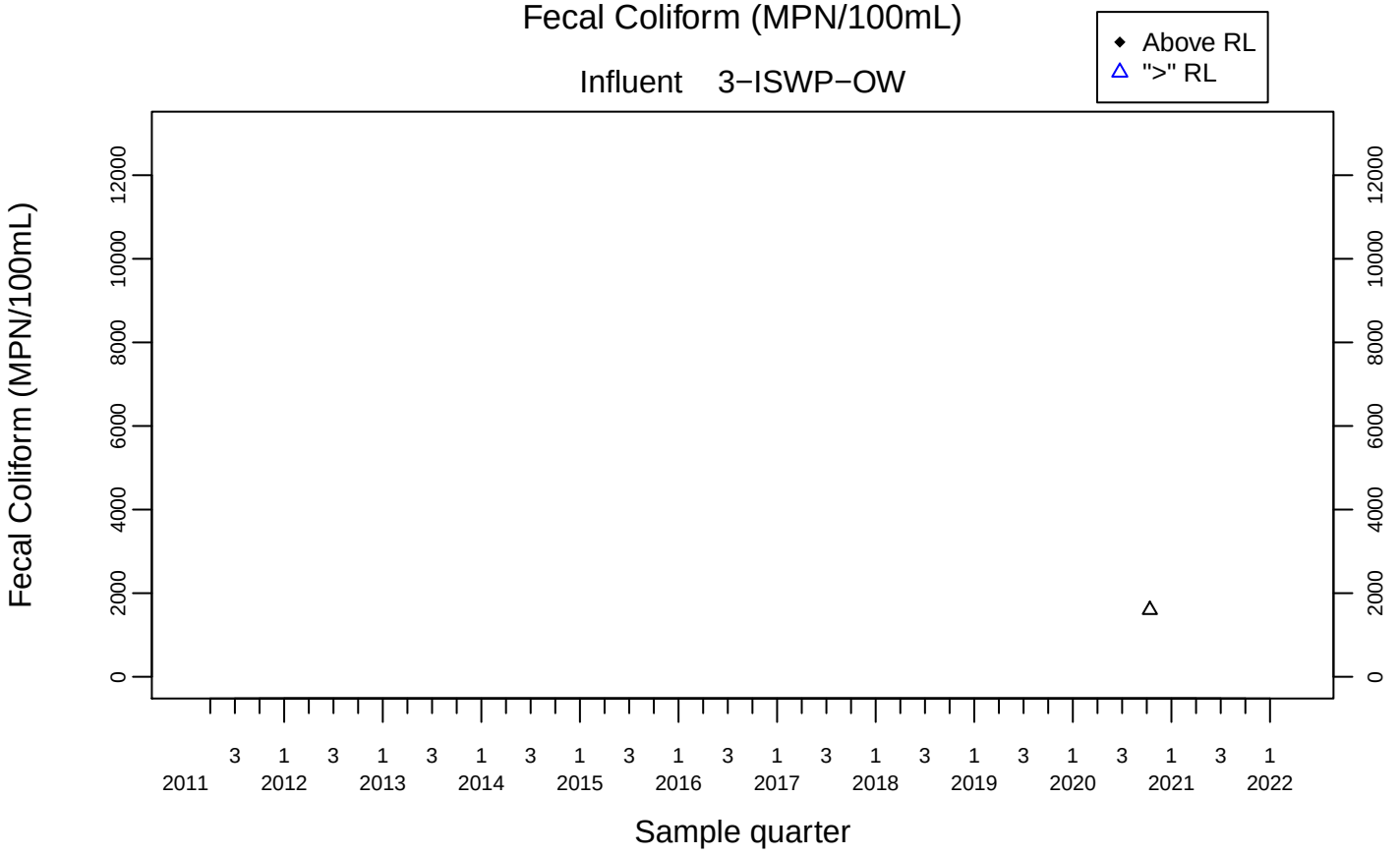
Sewage Ponds Wastewater
Biochemical Oxygen Demand (mg/L)

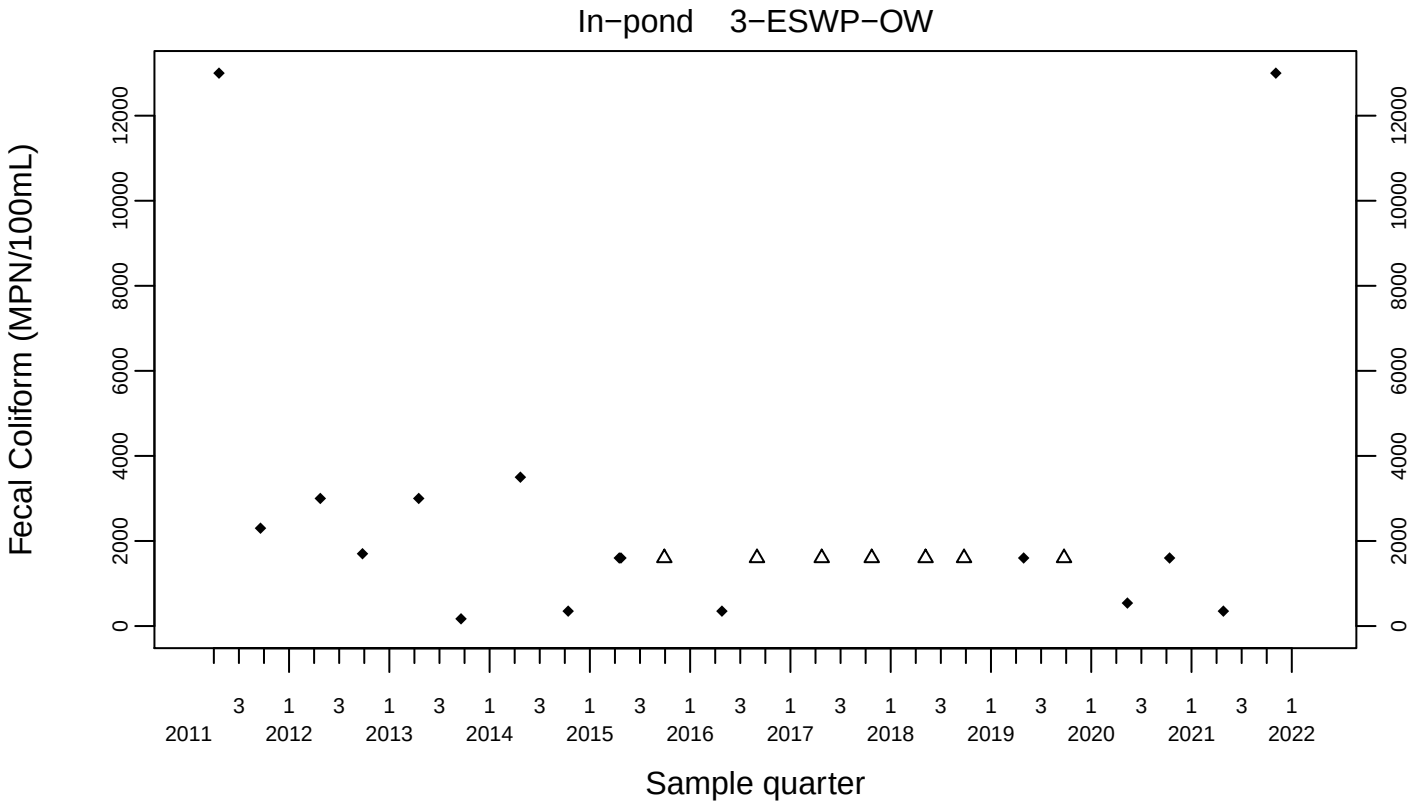




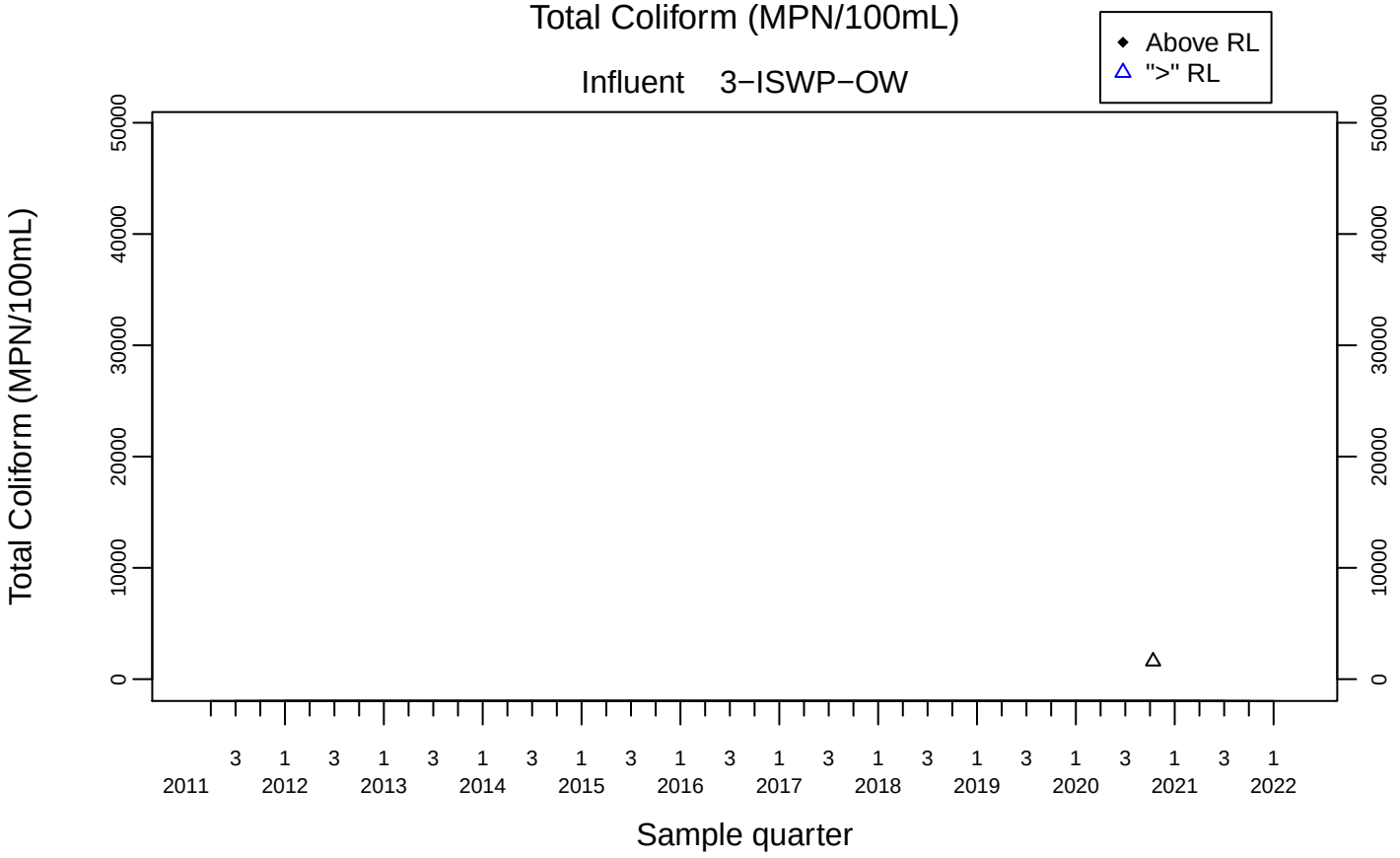

Sewage Ponds Wastewater
Dissolved Oxygen (mg/L)
In−pond 3−ESWP−OW
LL=1
Above RL
Below RL
Dissolved Oxygen (mg/L)
0
10
20
30
40
LL
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

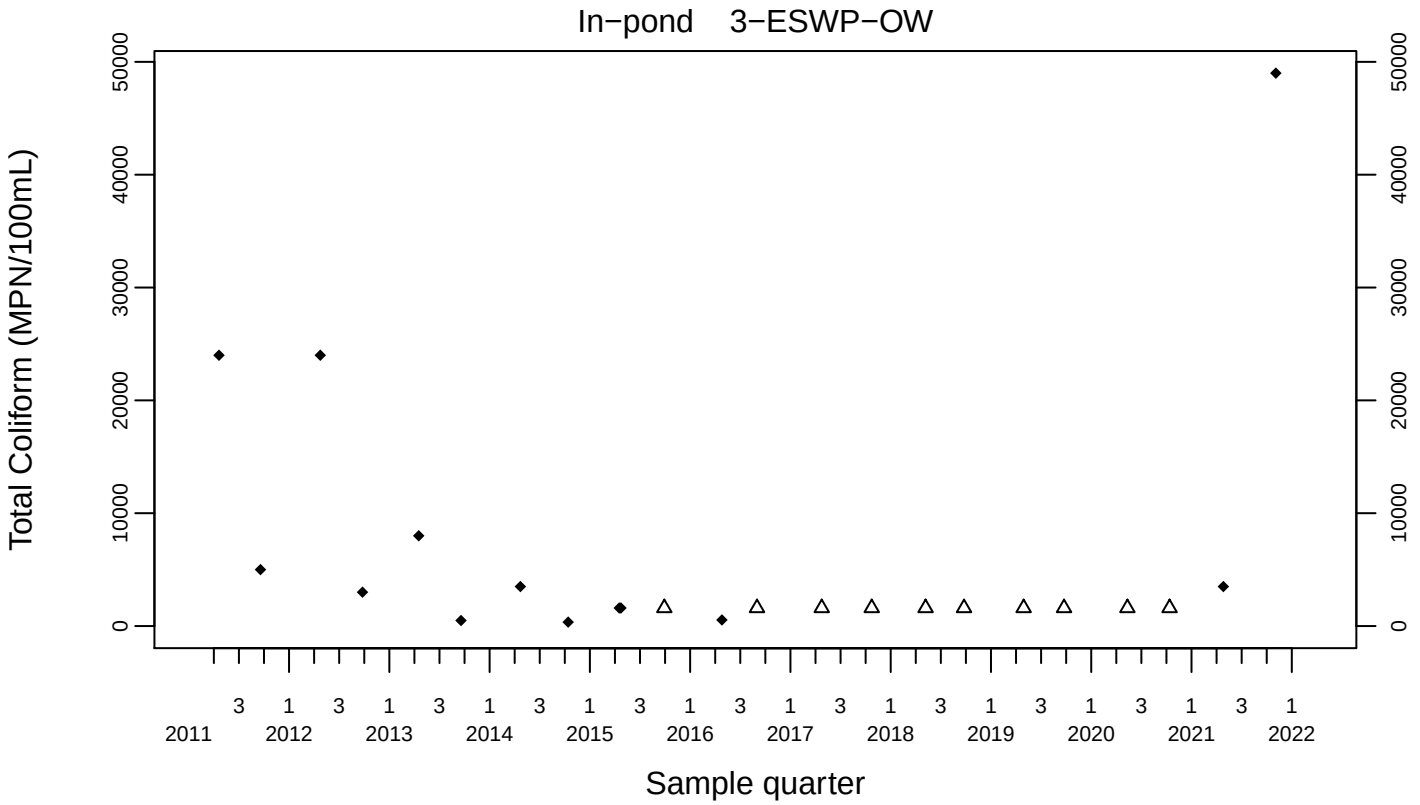
Sewage Ponds Wastewater
Fecal Coliform (MPN/100mL)

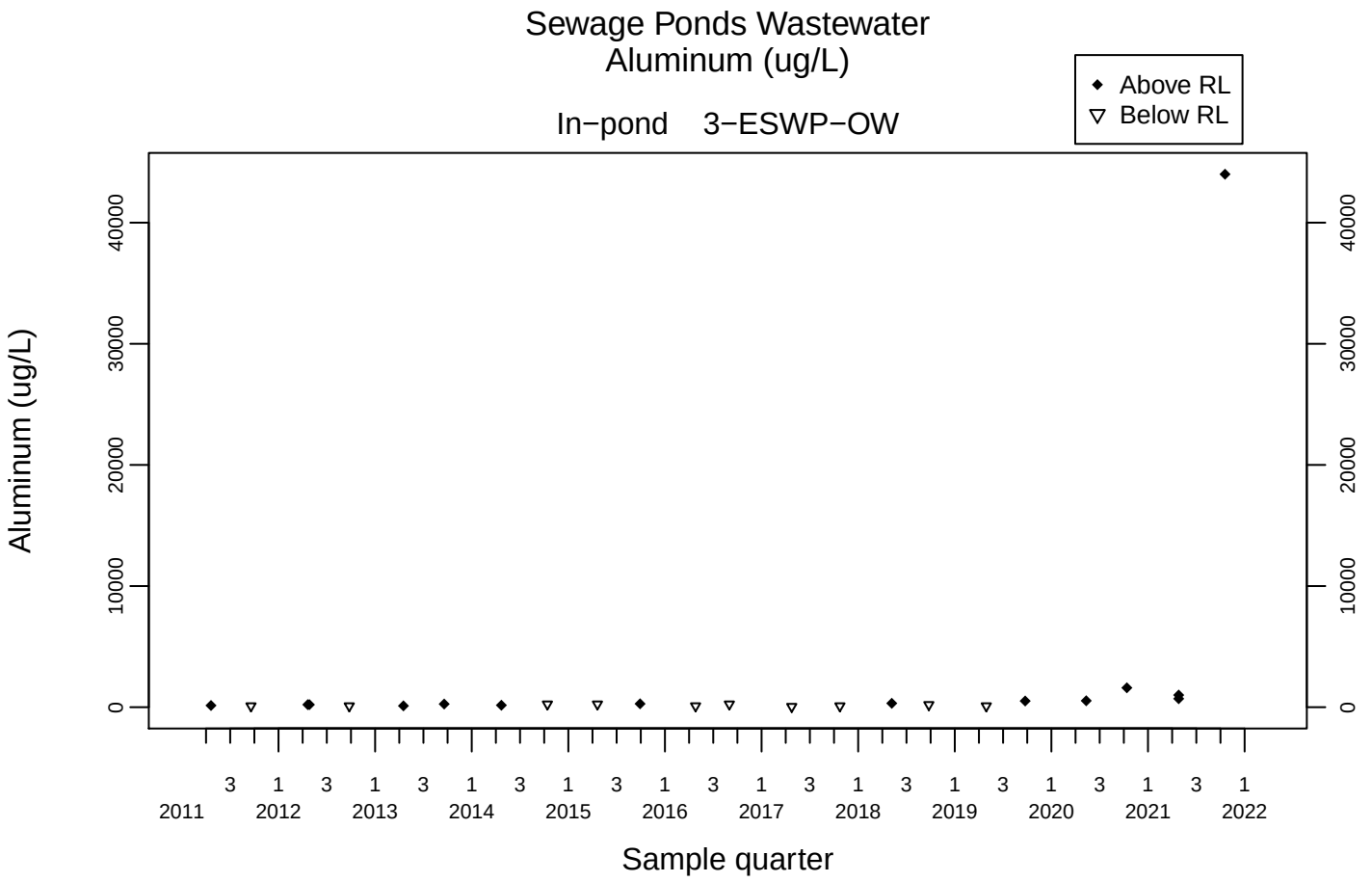


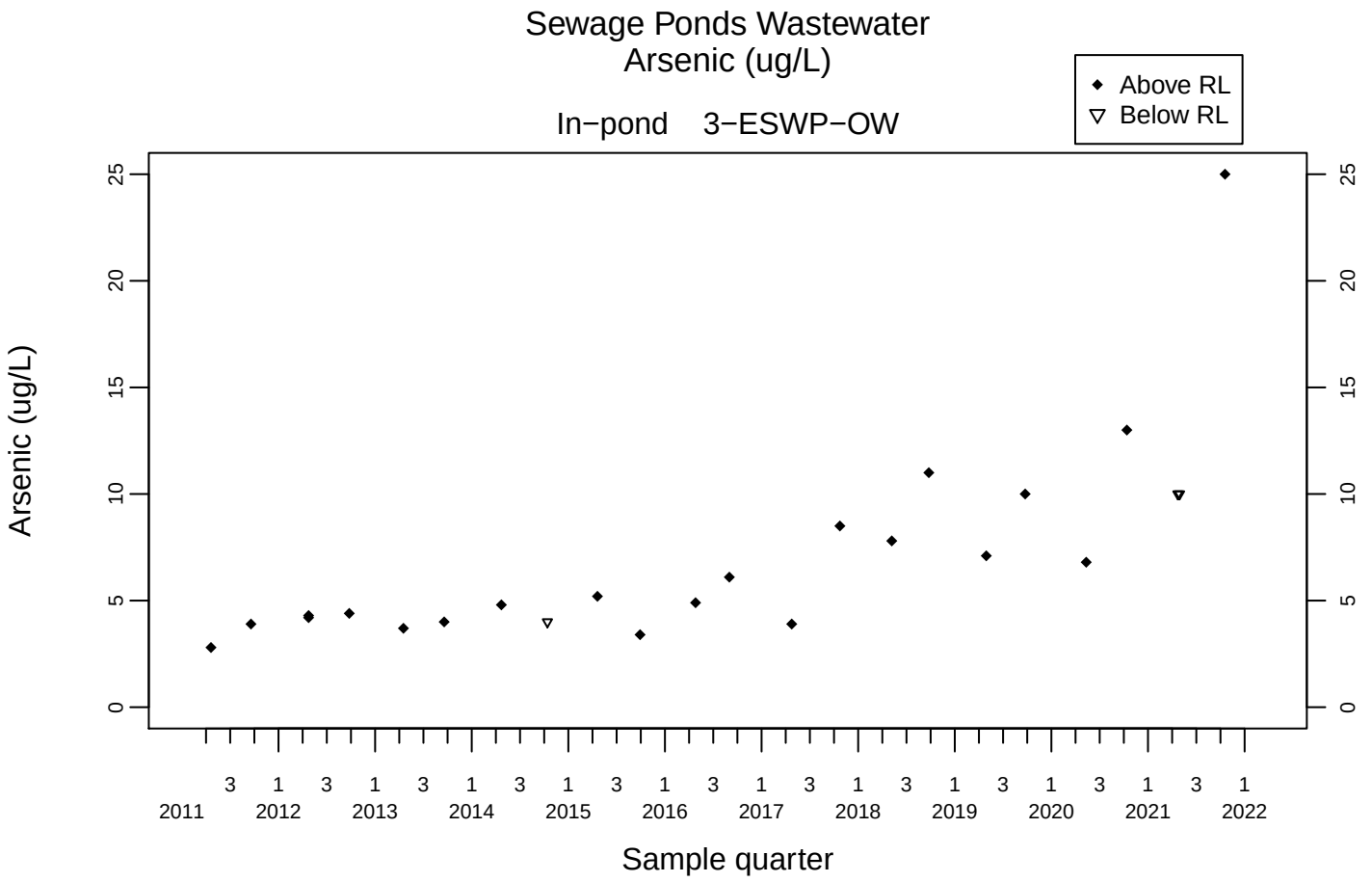


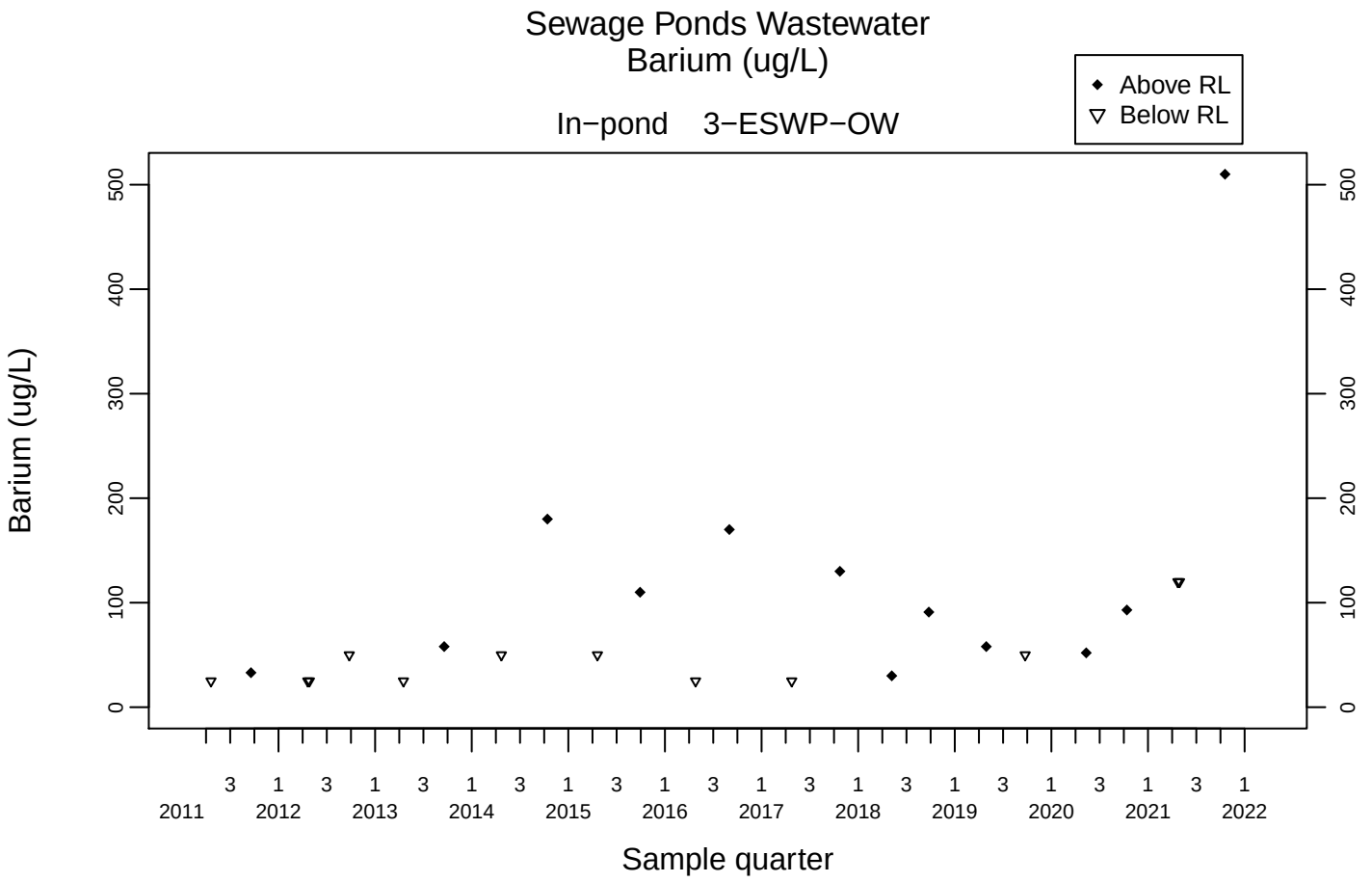
Sewage Ponds Wastewater
Total Coliform (MPN/100mL)

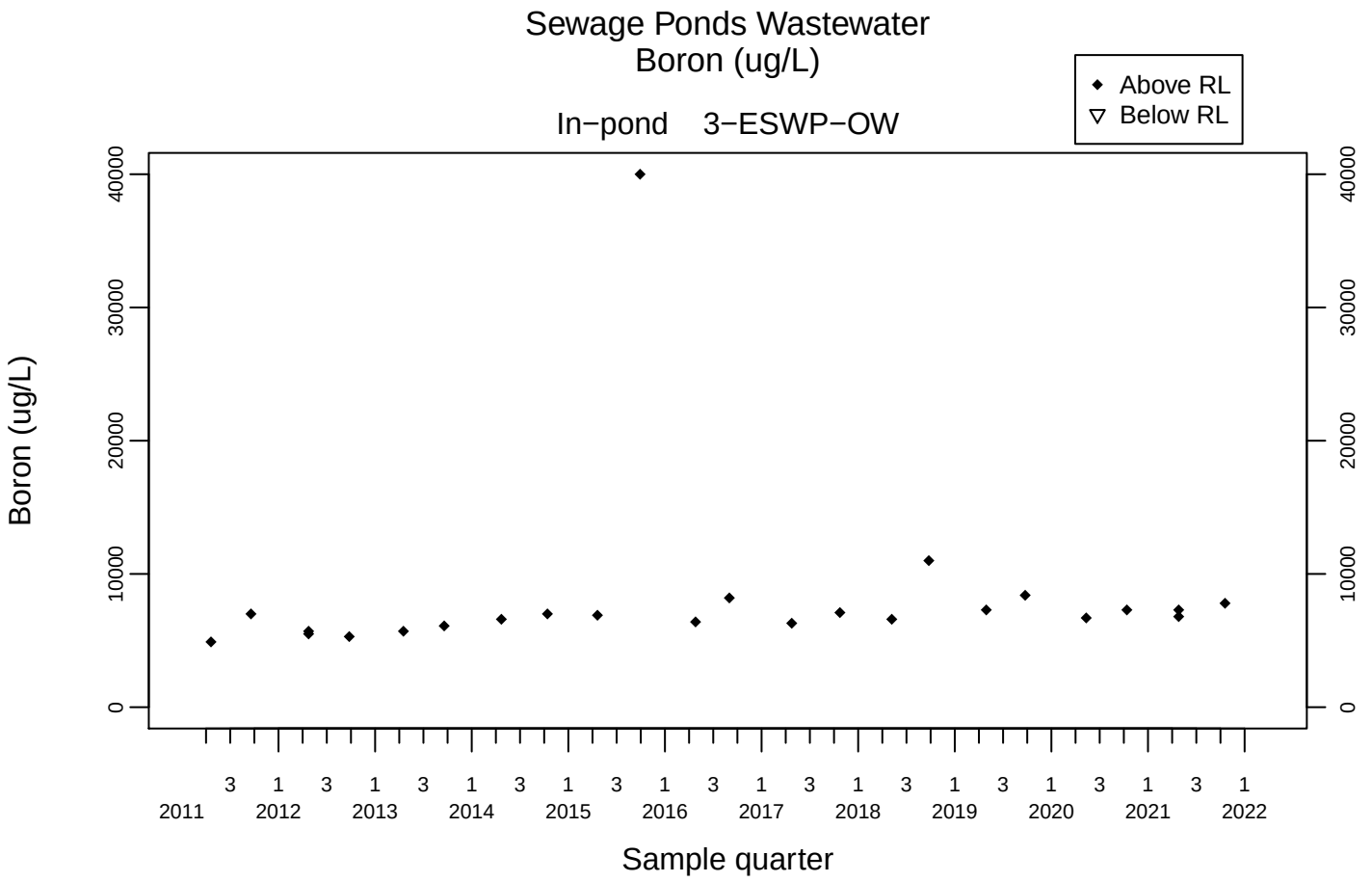


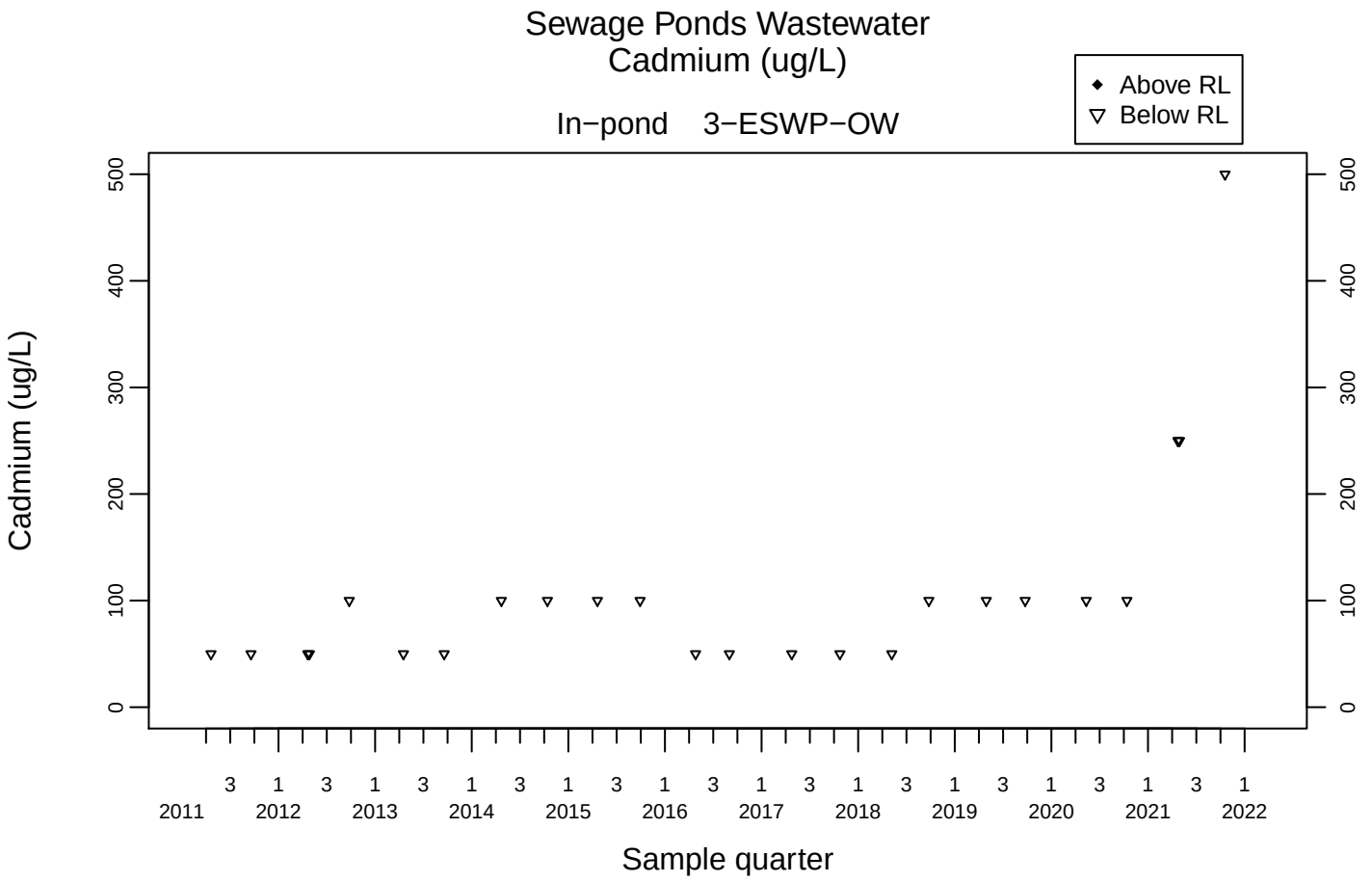


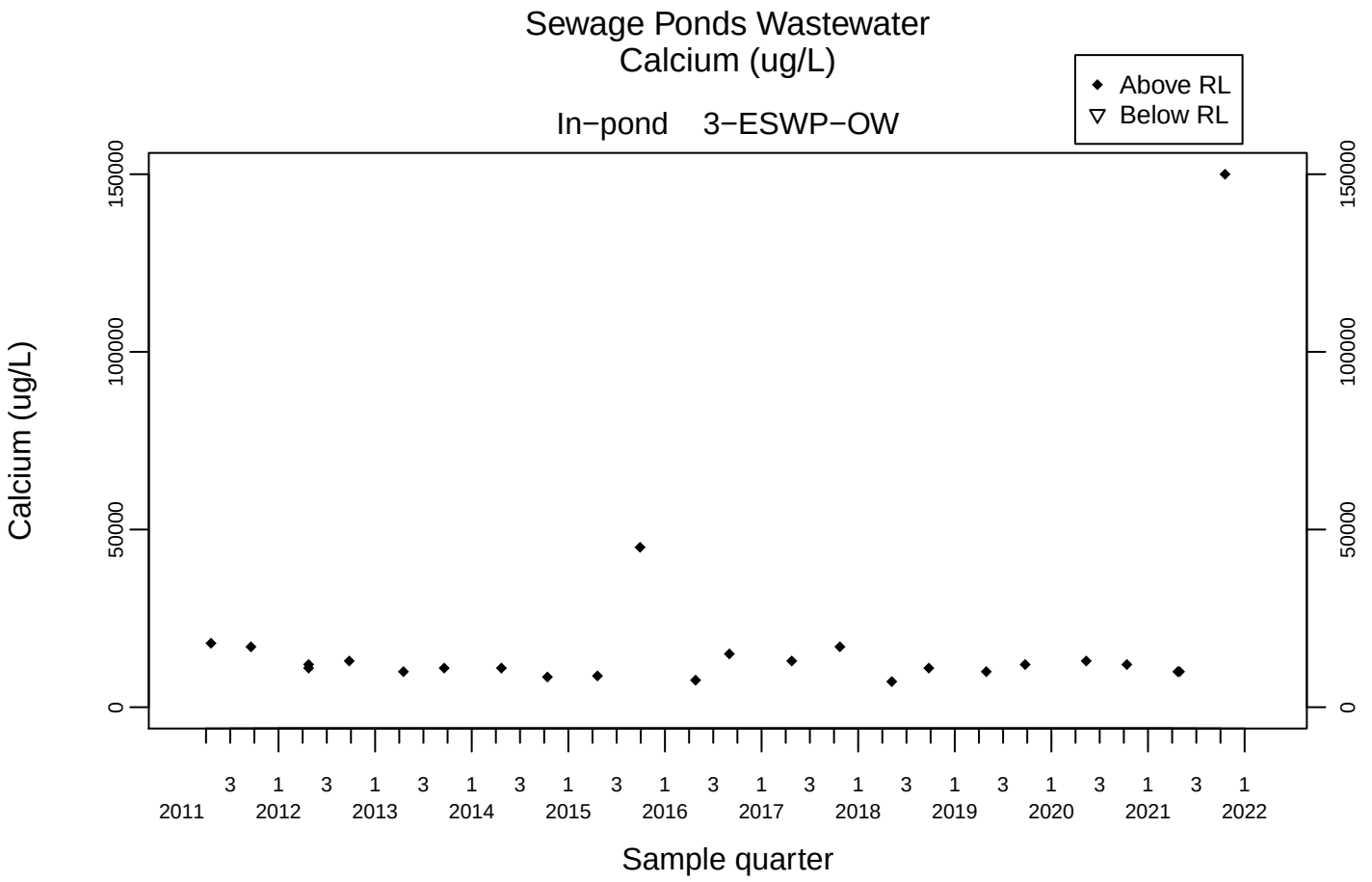

Sewage Ponds Wastewater
Aluminum (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Aluminum (ug/L)
0
10000
20000
30000
40000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

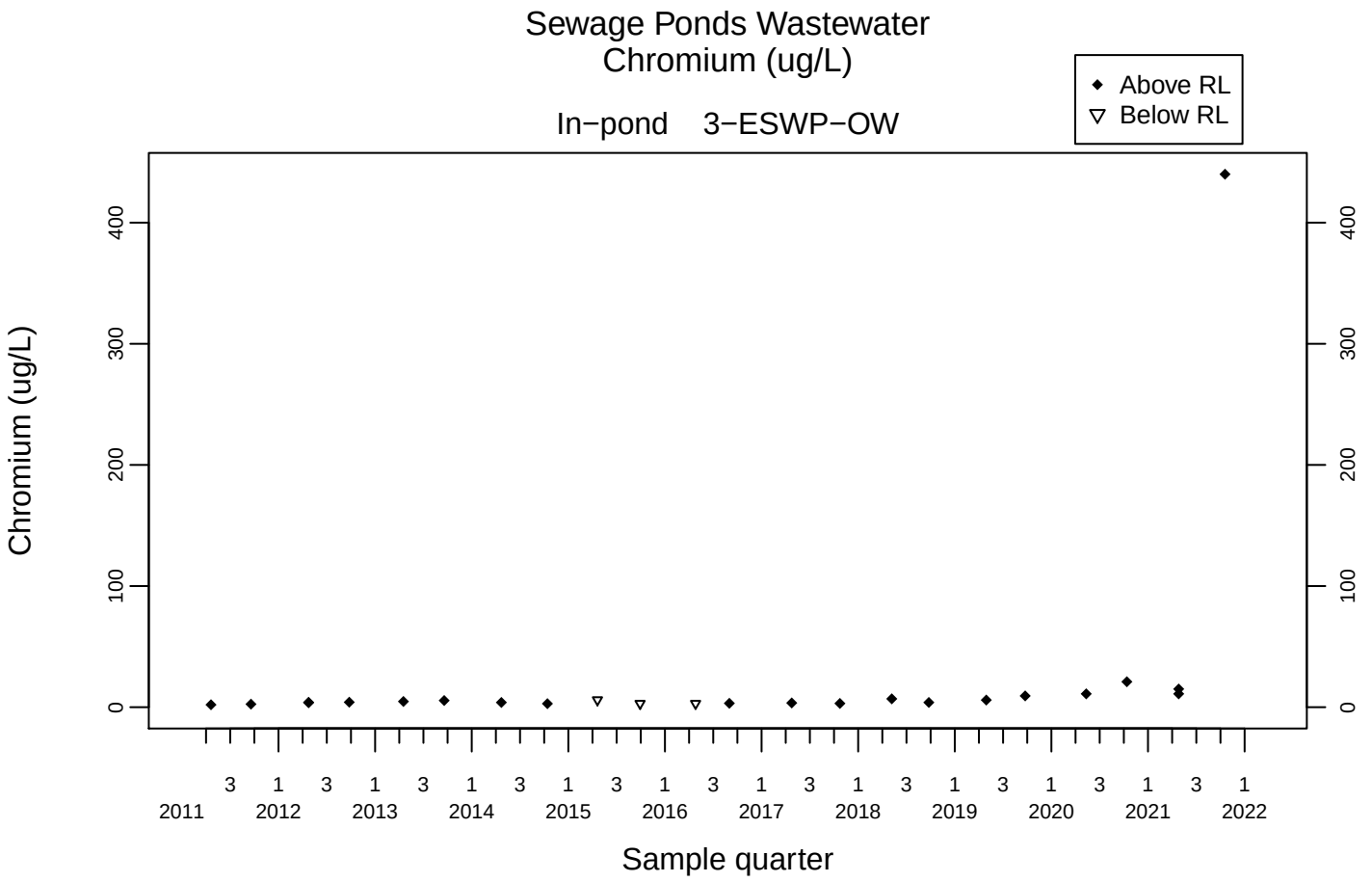

Sewage Ponds Wastewater
Arsenic (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Arsenic (ug/L)
0
5
10
15
20
25
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

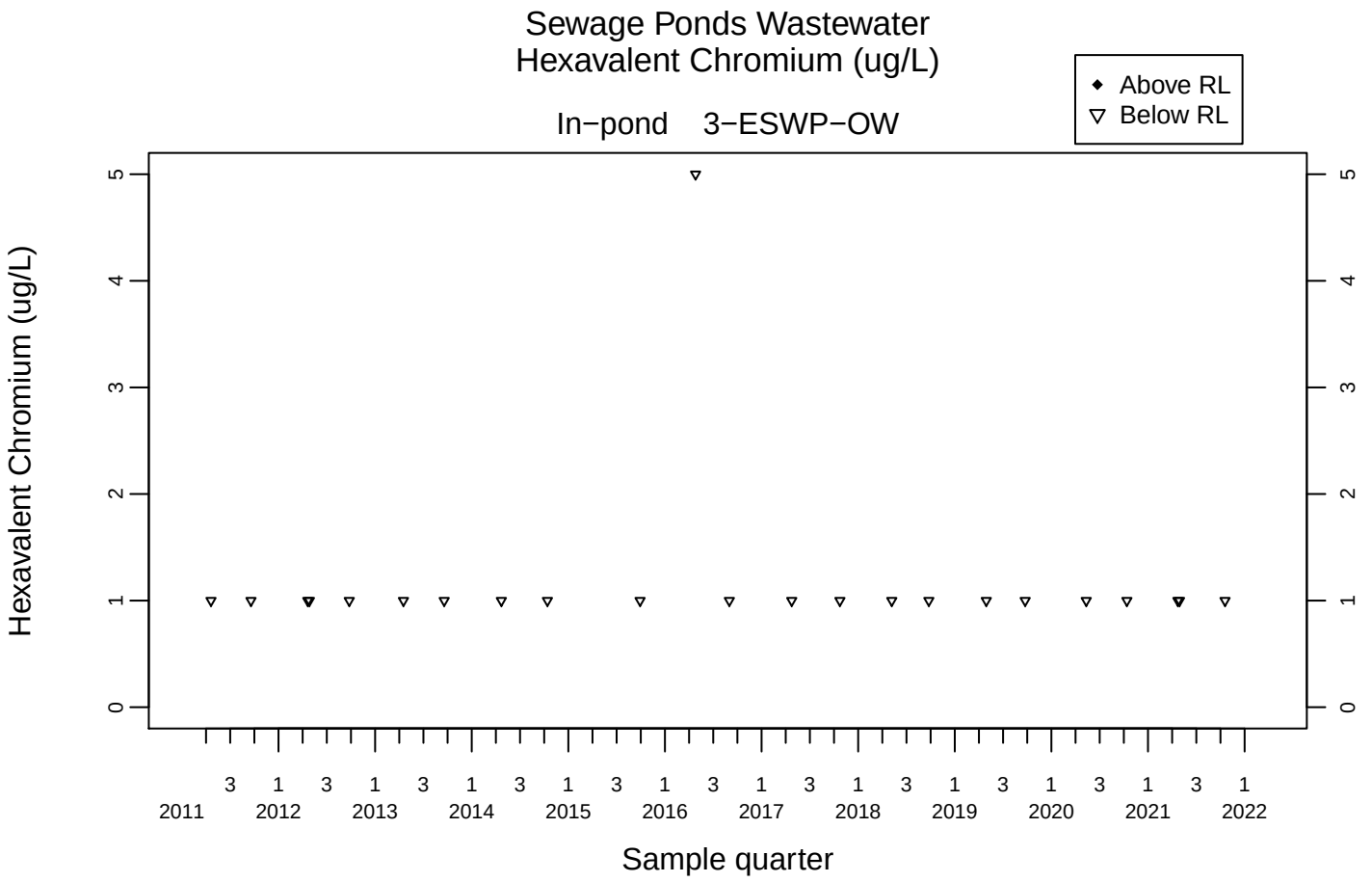

Sewage Ponds Wastewater
Barium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Barium (ug/L)
0
100
200
300
400
500
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

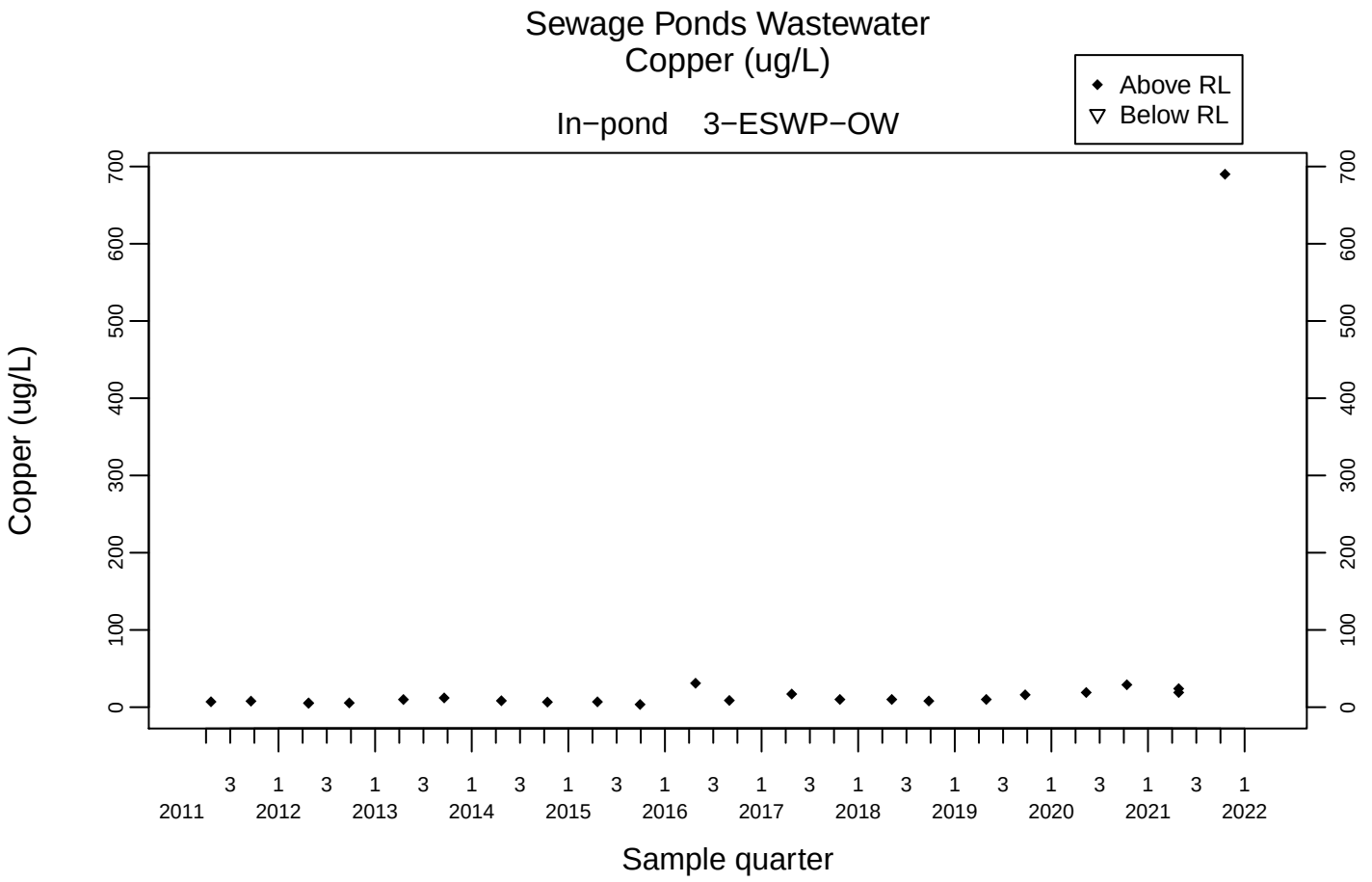

Sewage Ponds Wastewater
Boron (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Boron (ug/L)
0
10000
20000
30000
40000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

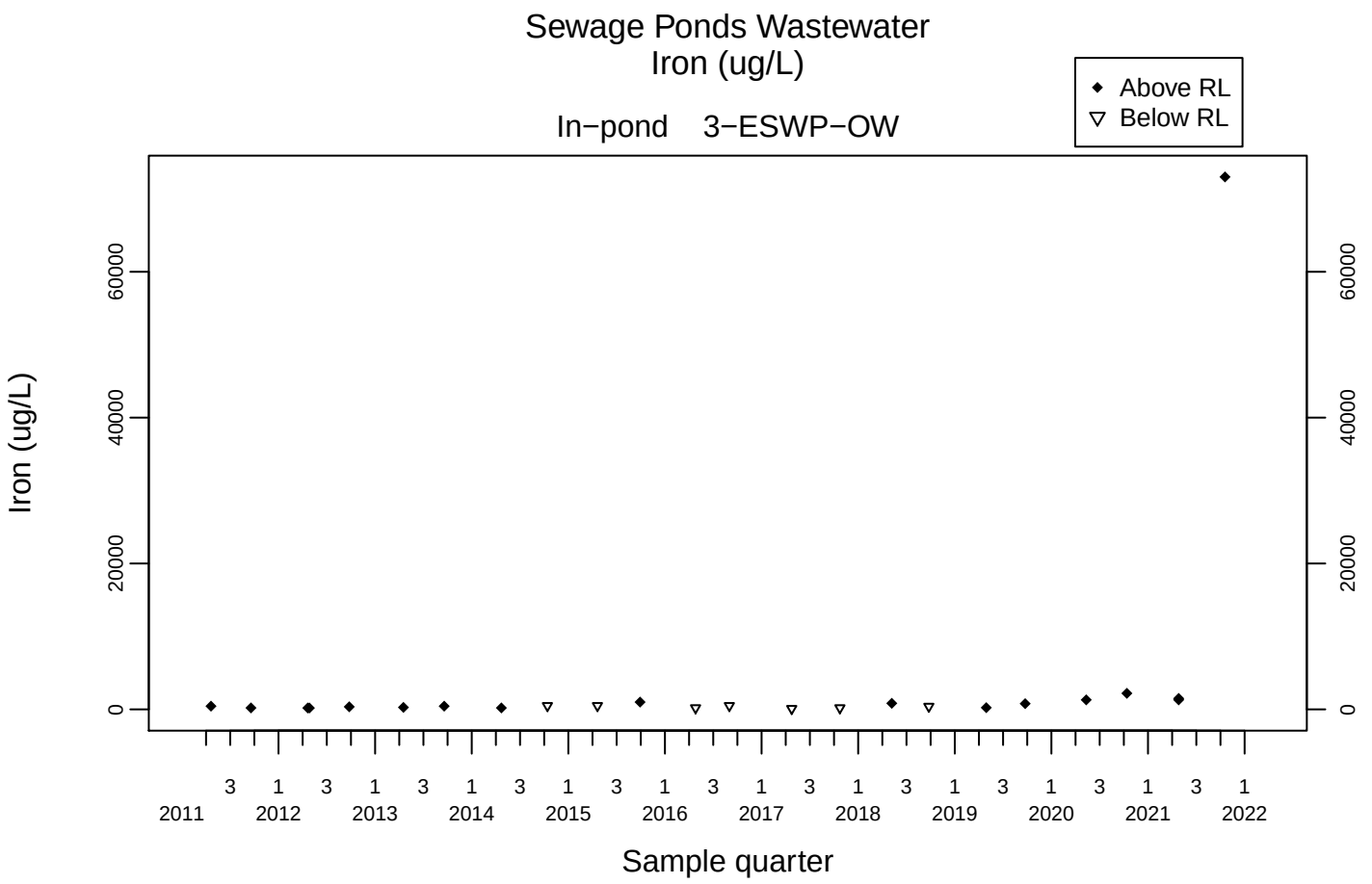

Sewage Ponds Wastewater
Cadmium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Cadmium (ug/L)
0
100
200
300
400
500
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

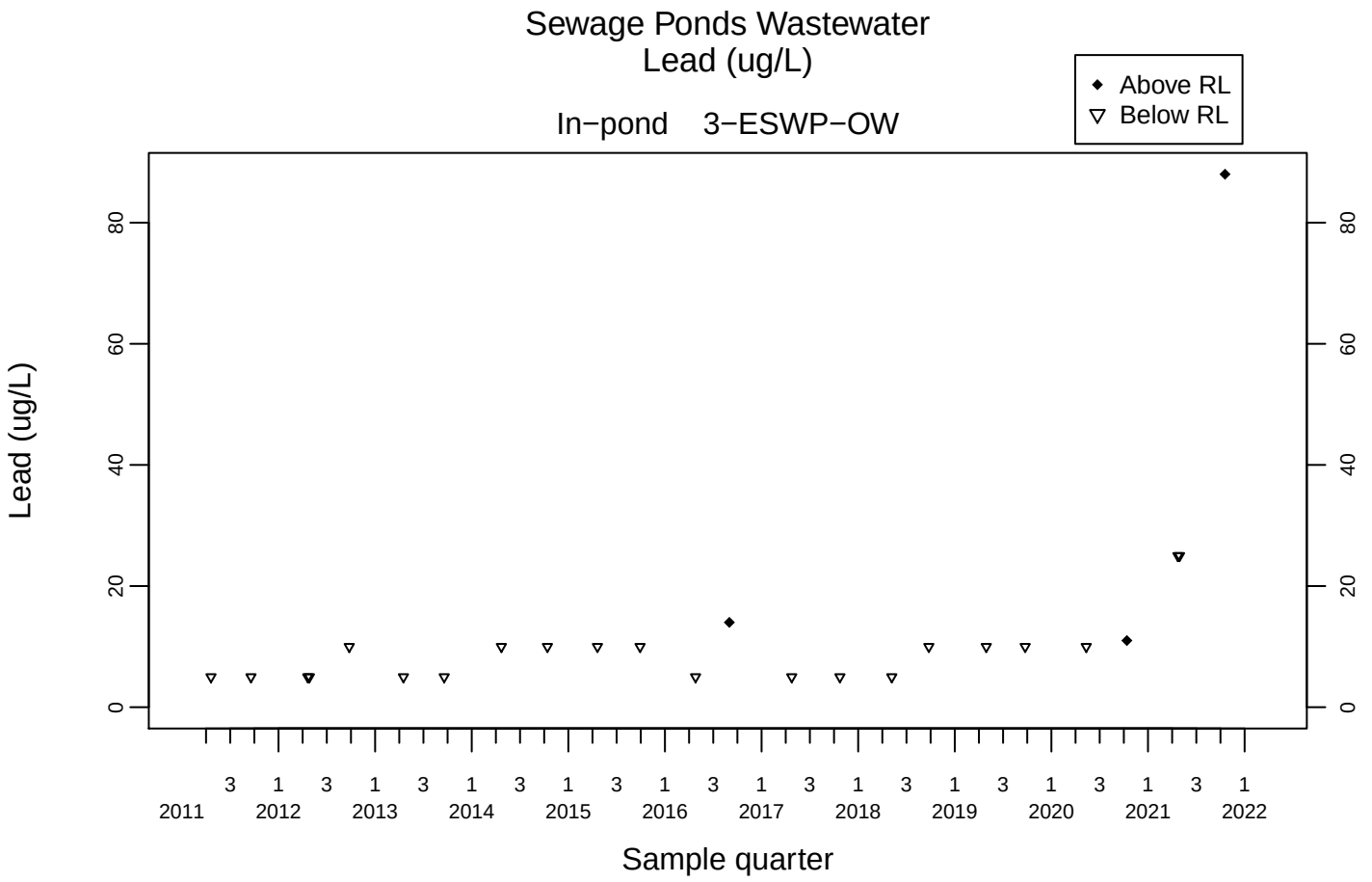

Sewage Ponds Wastewater
Calcium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Calcium (ug/L)
0
50000
100000
150000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

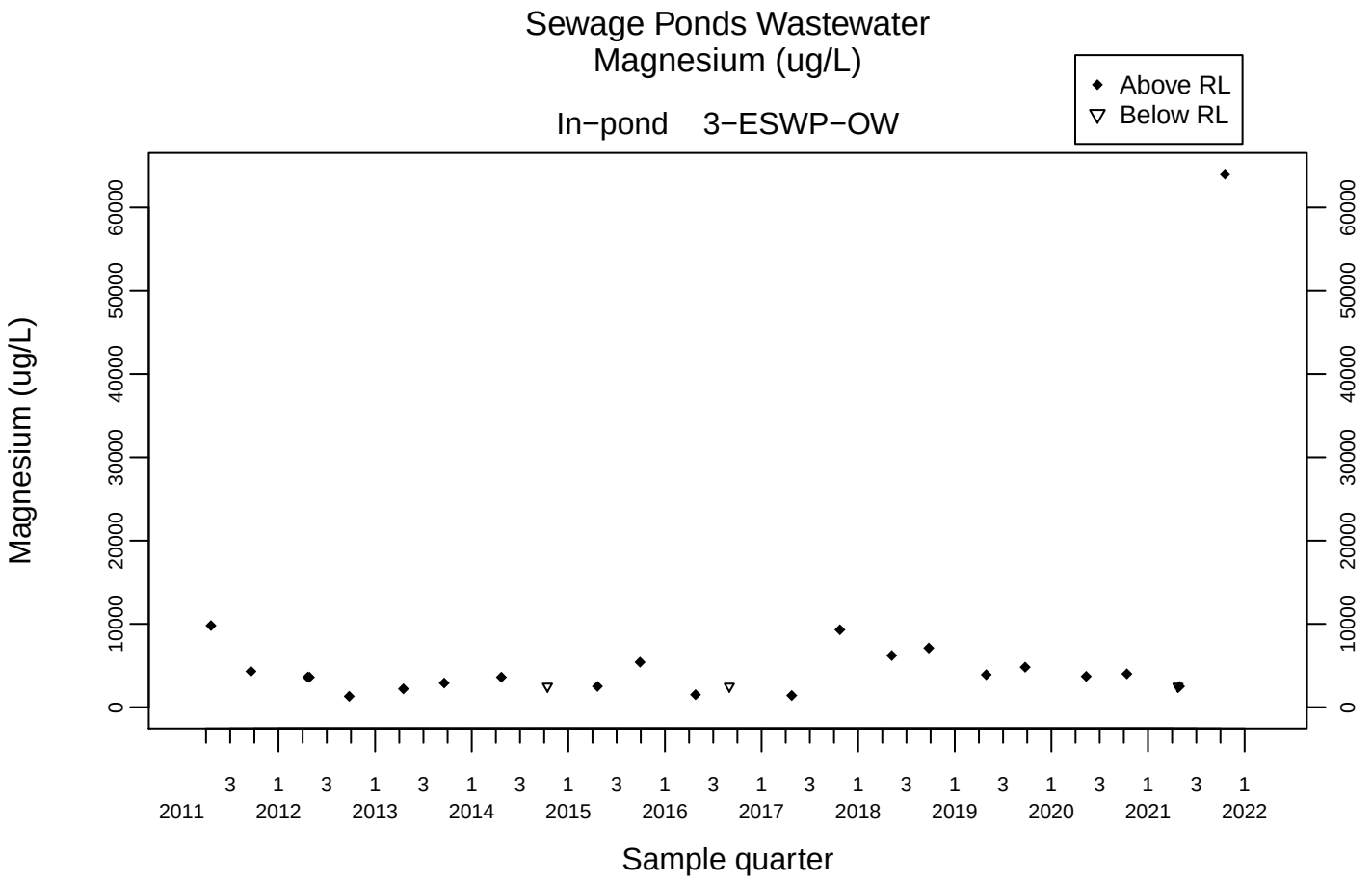

Sewage Ponds Wastewater
Chromium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Chromium (ug/L)
0
100
200
300
400
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

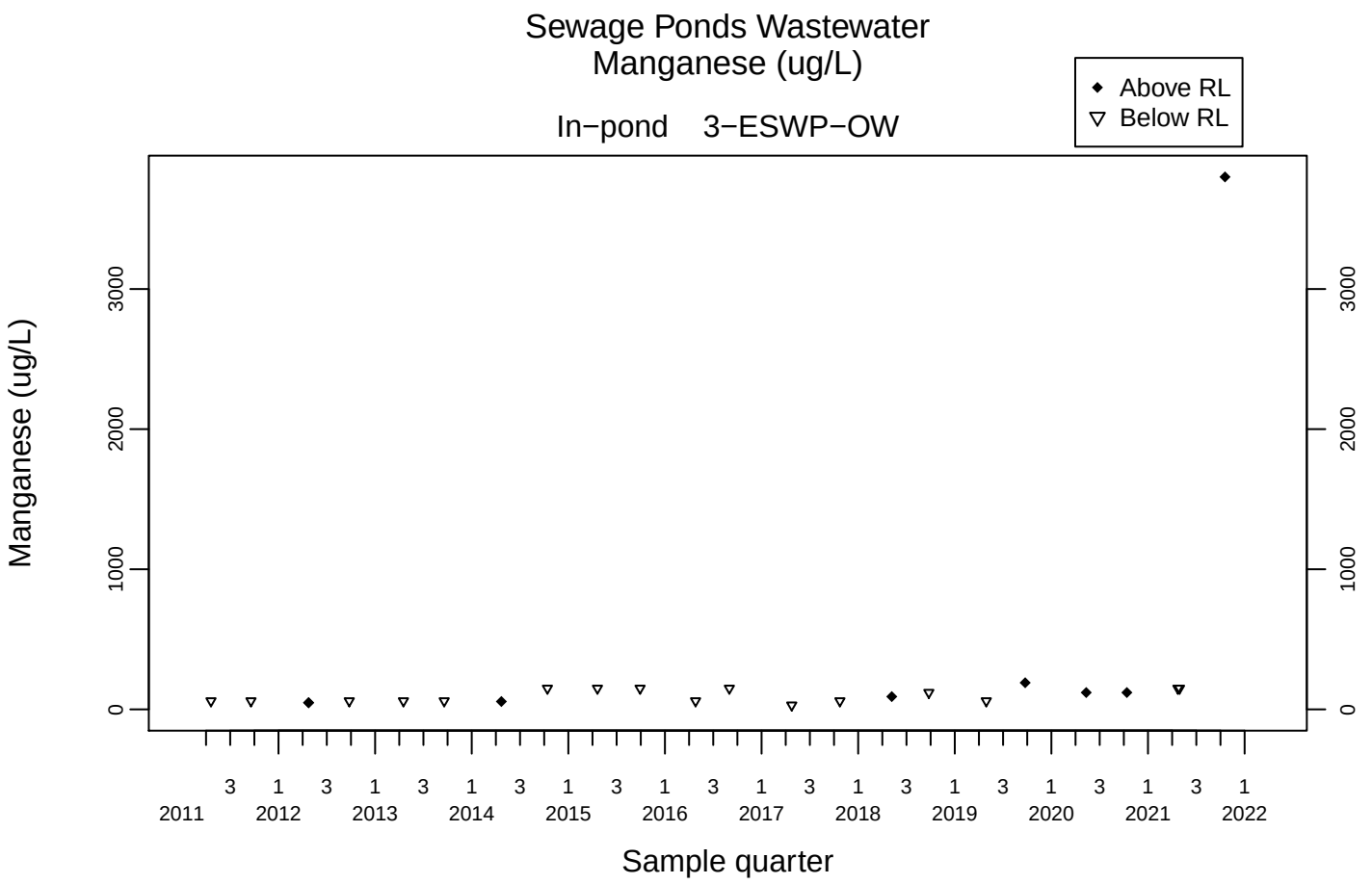

Sewage Ponds Wastewater
Hexavalent Chromium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Hexavalent Chromium (ug/L)
0
1
2
3
4
5
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

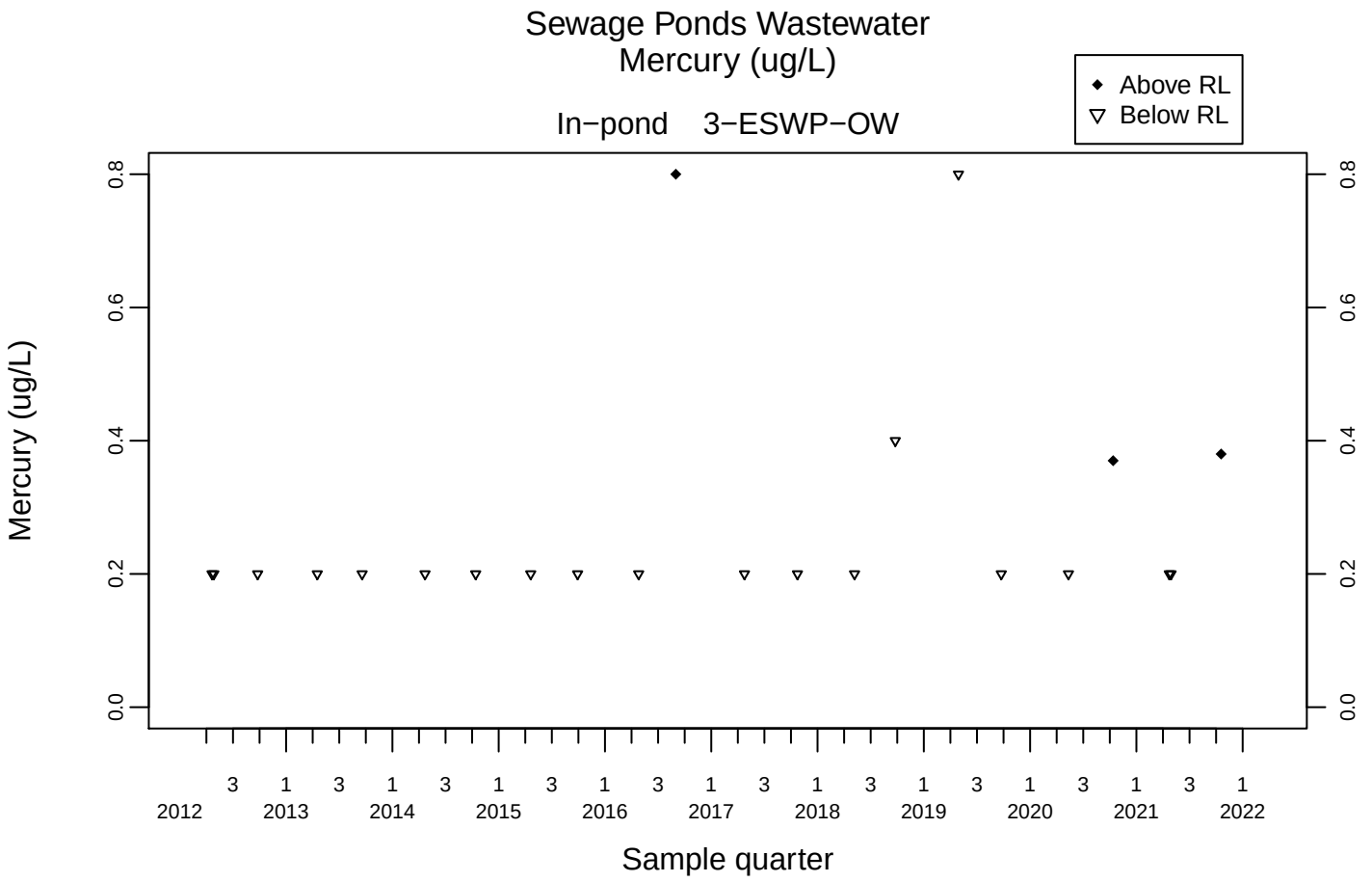

Sewage Ponds Wastewater
Copper (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Copper (ug/L)
0
100
200
300
400
500
600
700
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

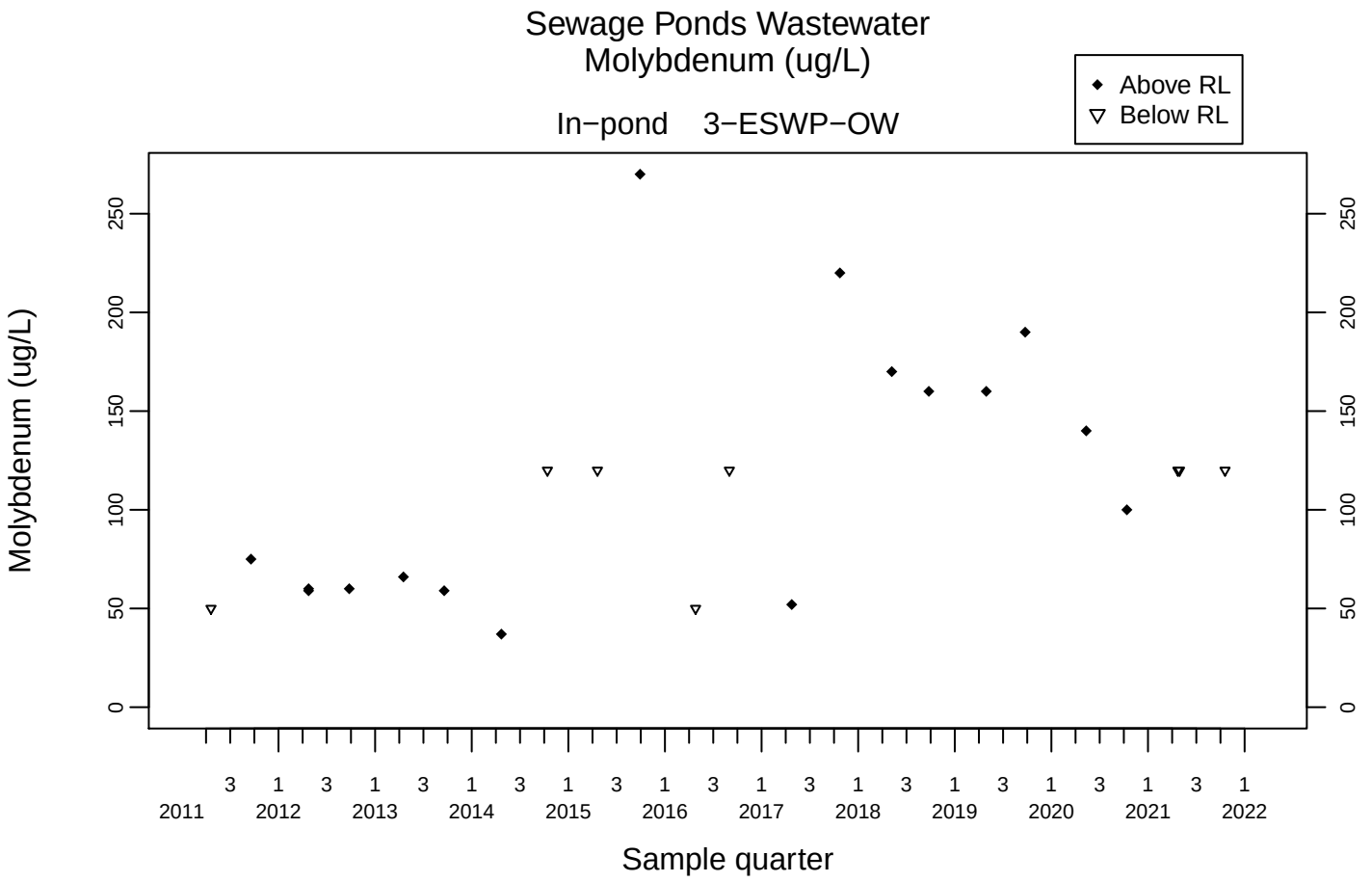

Sewage Ponds Wastewater
Iron (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Iron (ug/L)
0
20000
40000
60000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

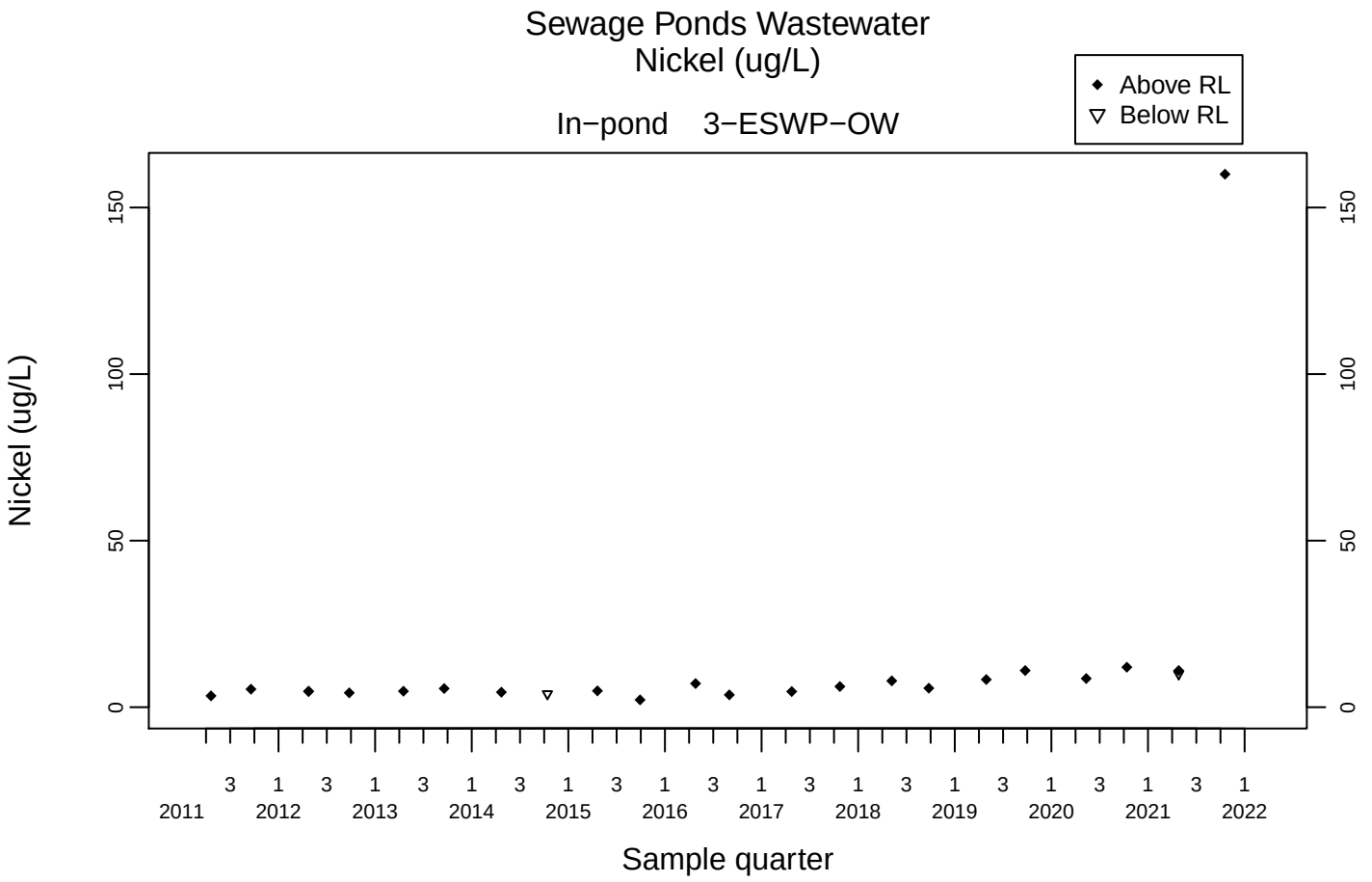

Sewage Ponds Wastewater
Lead (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Lead (ug/L)
0
20
40
60
80
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

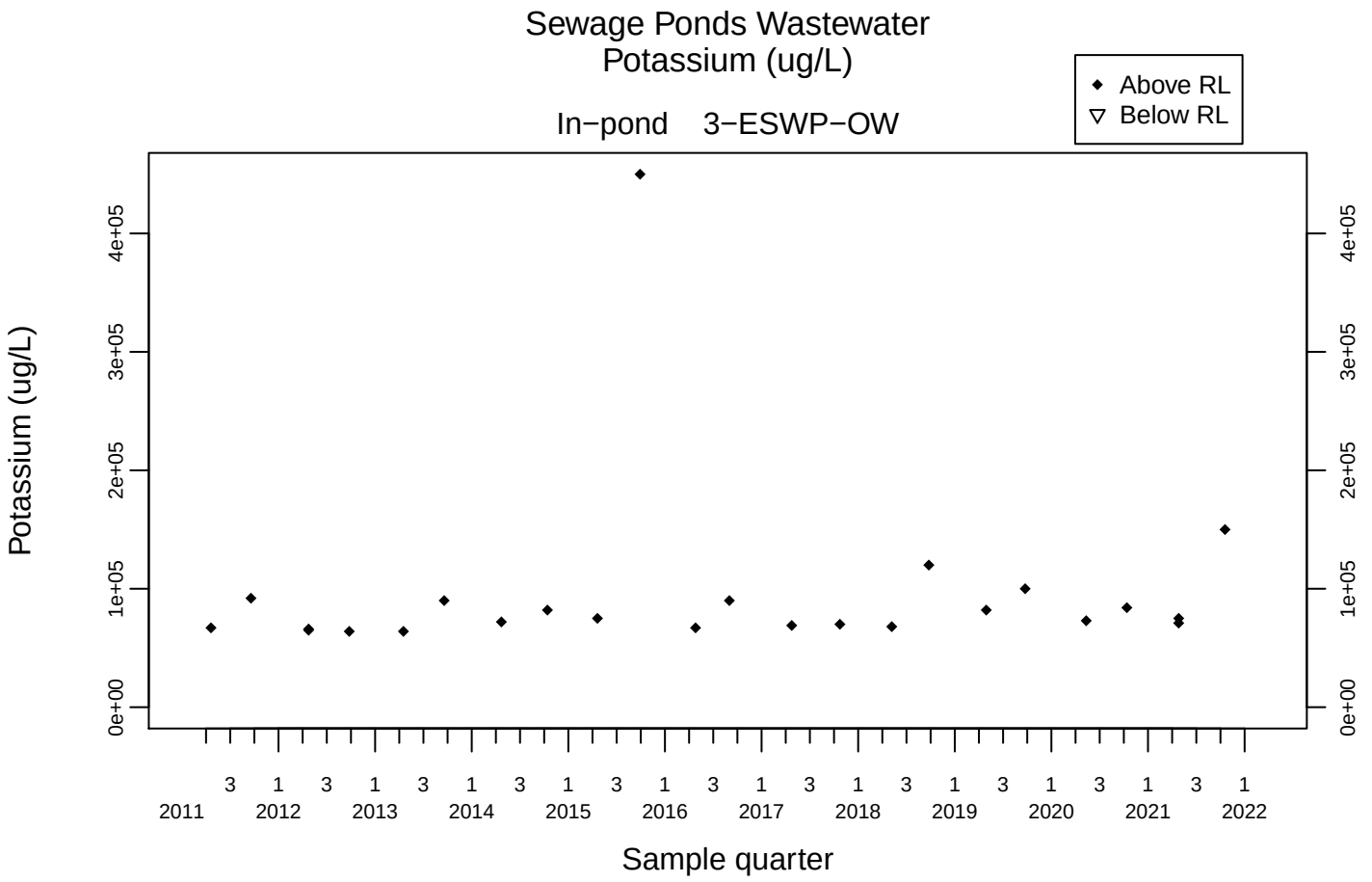

Sewage Ponds Wastewater
Magnesium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Magnesium (ug/L)
0
10000
20000
30000
40000
50000
60000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

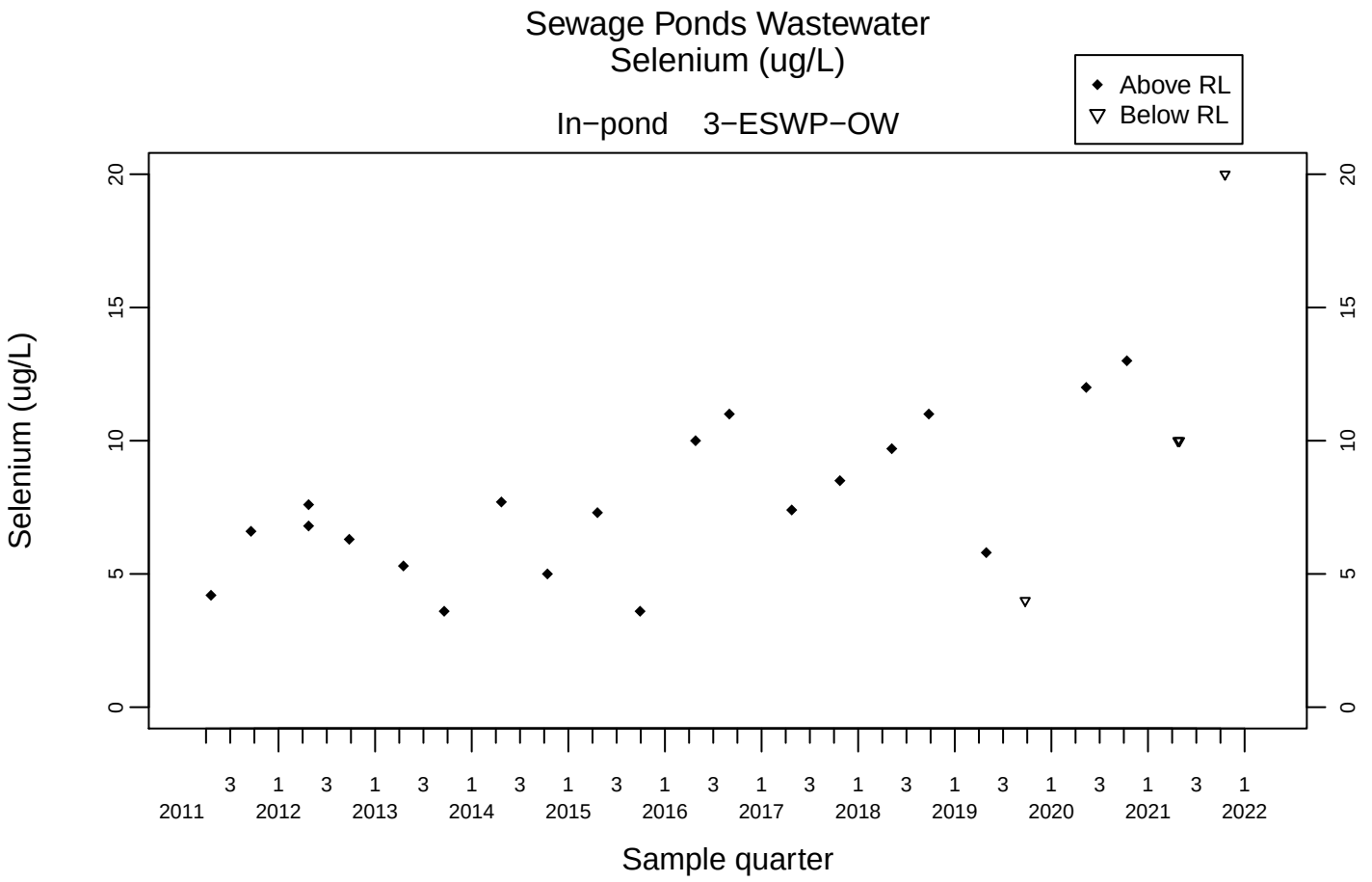

Sewage Ponds Wastewater
Manganese (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Manganese (ug/L)
0
1000
2000
3000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

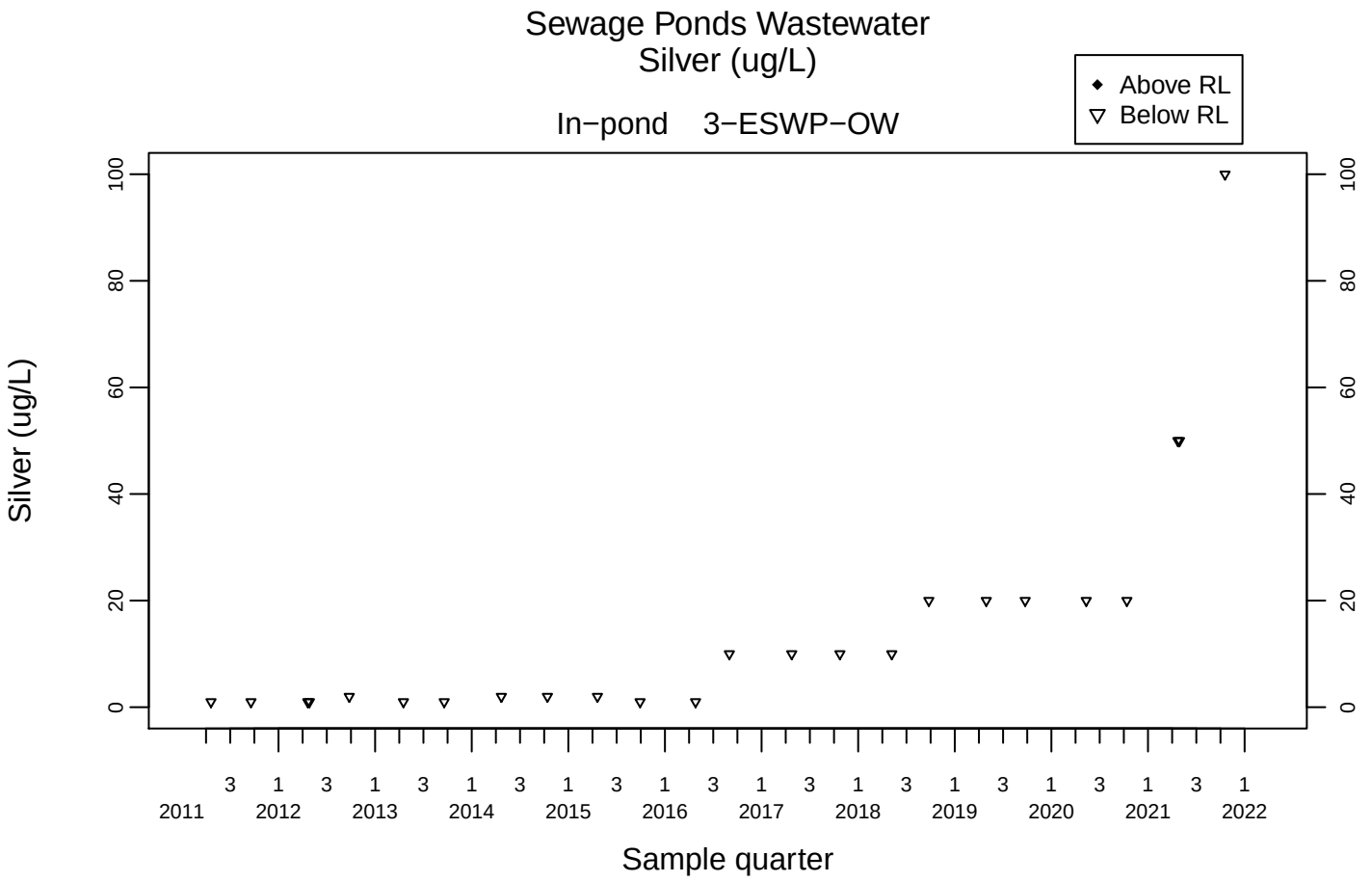

Sewage Ponds Wastewater
Mercury (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Mercury (ug/L)
0.0
0.2
0.4
0.6
0.8
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

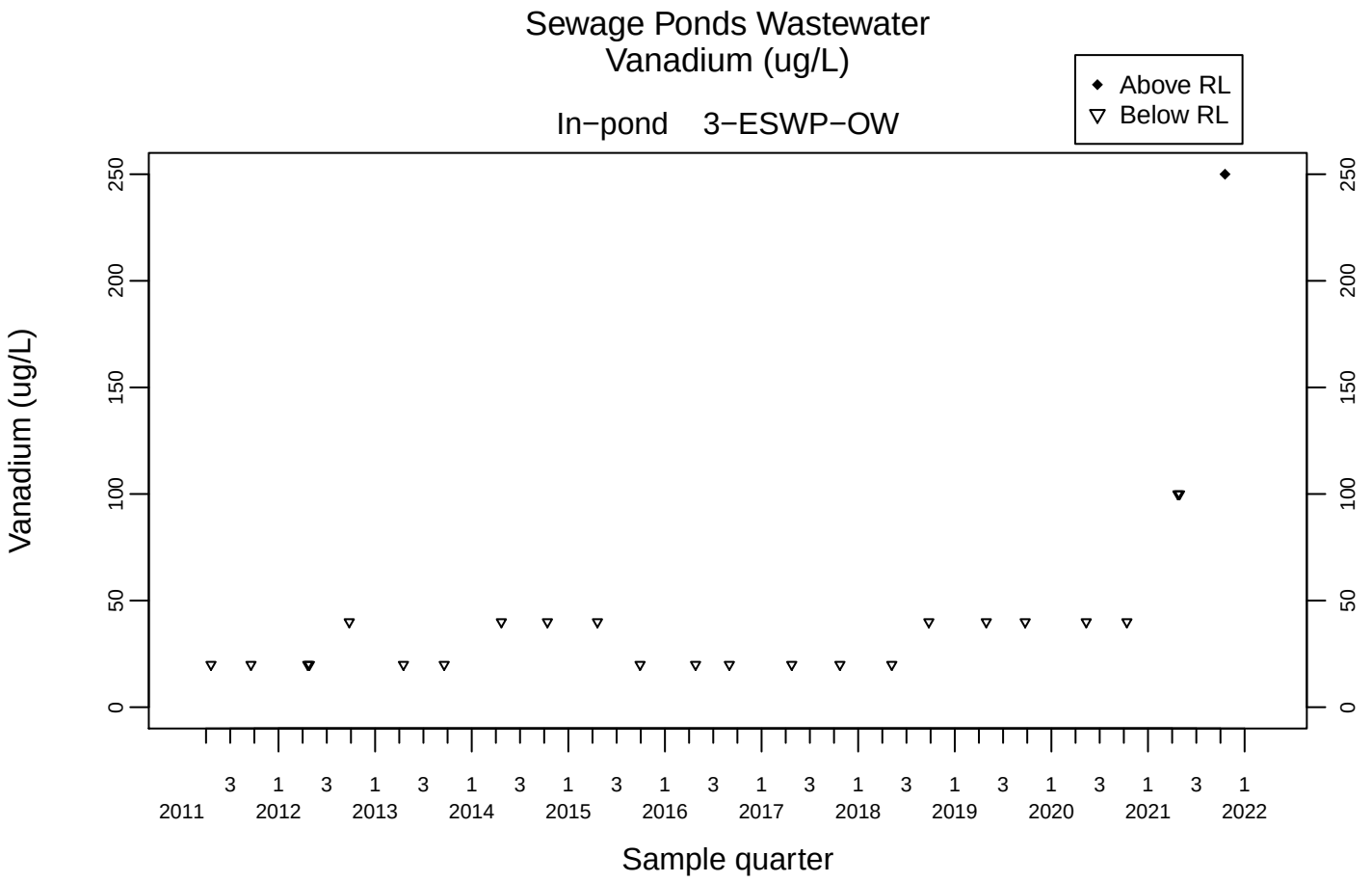

Sewage Ponds Wastewater
Molybdenum (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Molybdenum (ug/L)
0
50
100
150
200
250
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

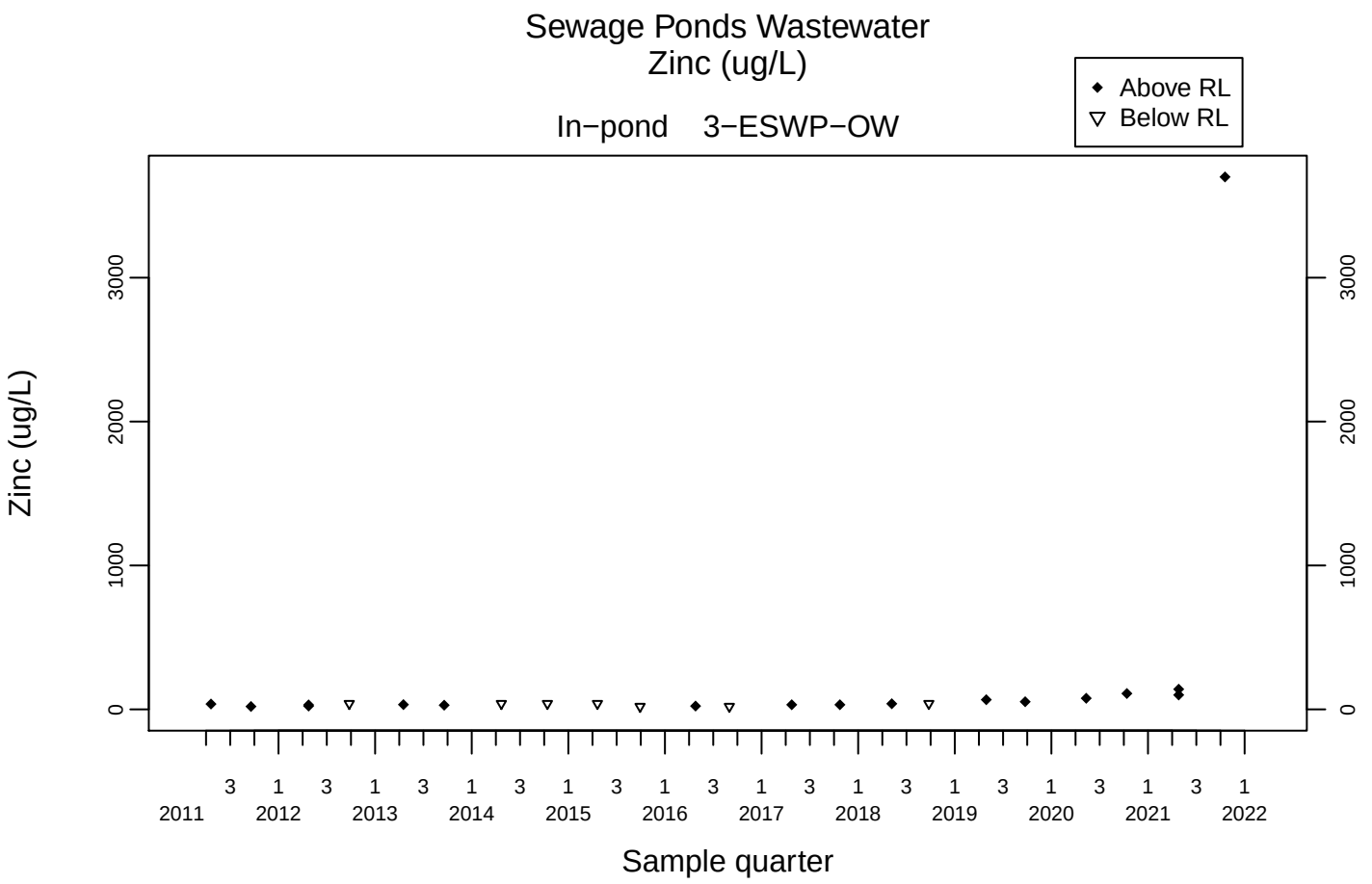

Sewage Ponds Wastewater
Nickel (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Nickel (ug/L)
0
50
100
150
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

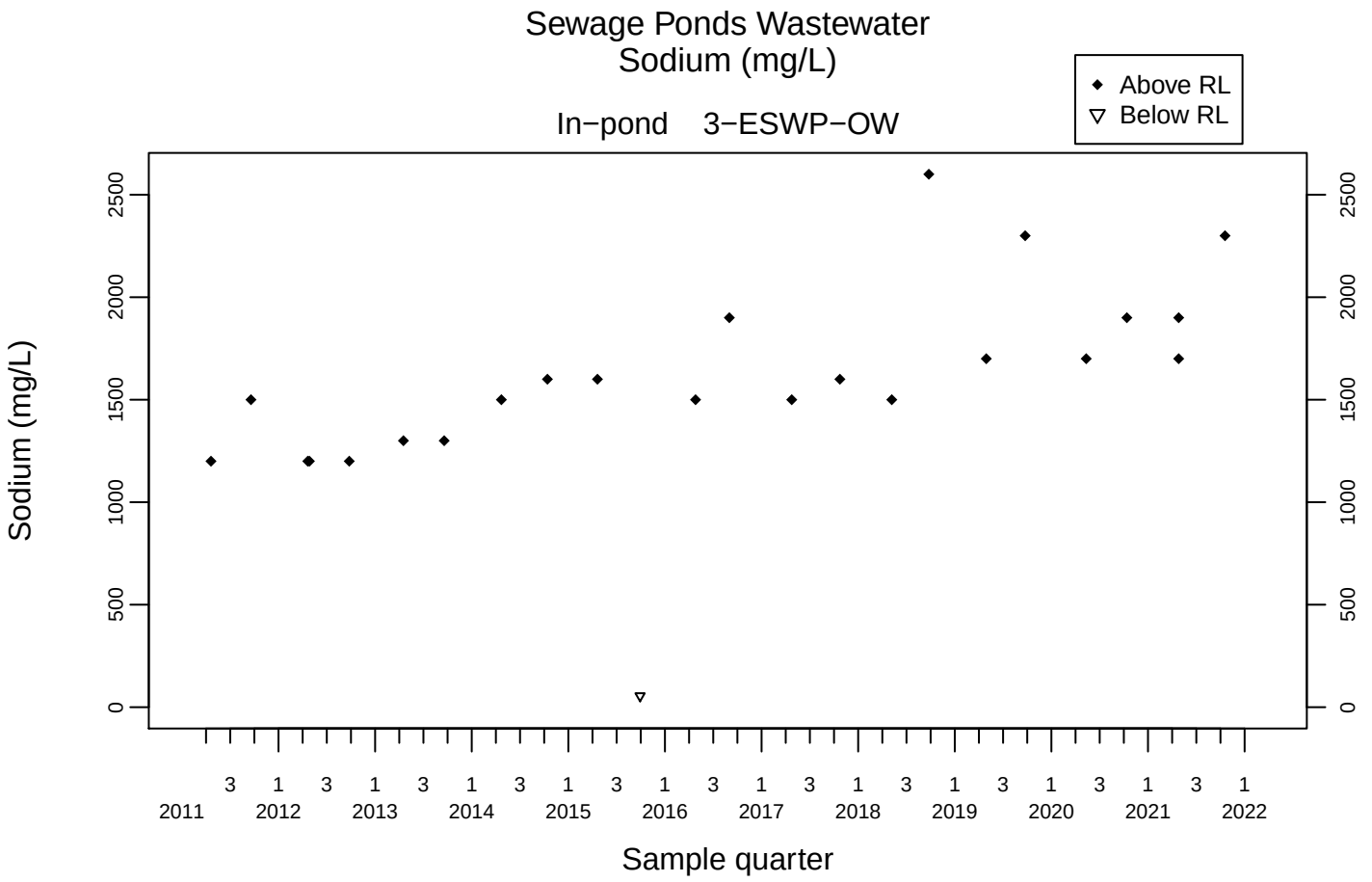

Sewage Ponds Wastewater
Potassium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Potassium (ug/L)
0e+00
1e+05
2e+05
3e+05
4e+05
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Wastewater
Selenium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Selenium (ug/L)
0
5
10
15
20
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

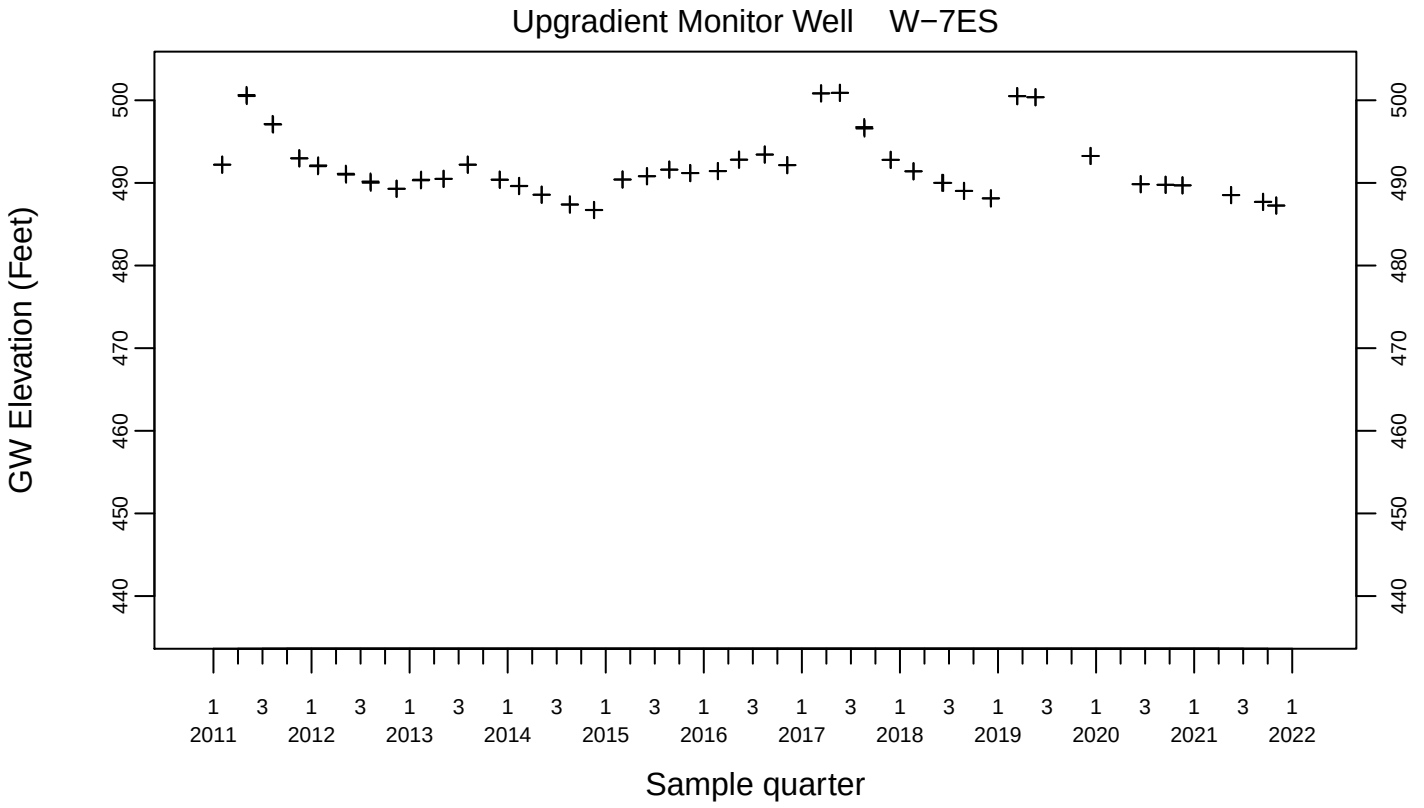

Sewage Ponds Wastewater
Silver (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Silver (ug/L)
0
20
40
60
80
100
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

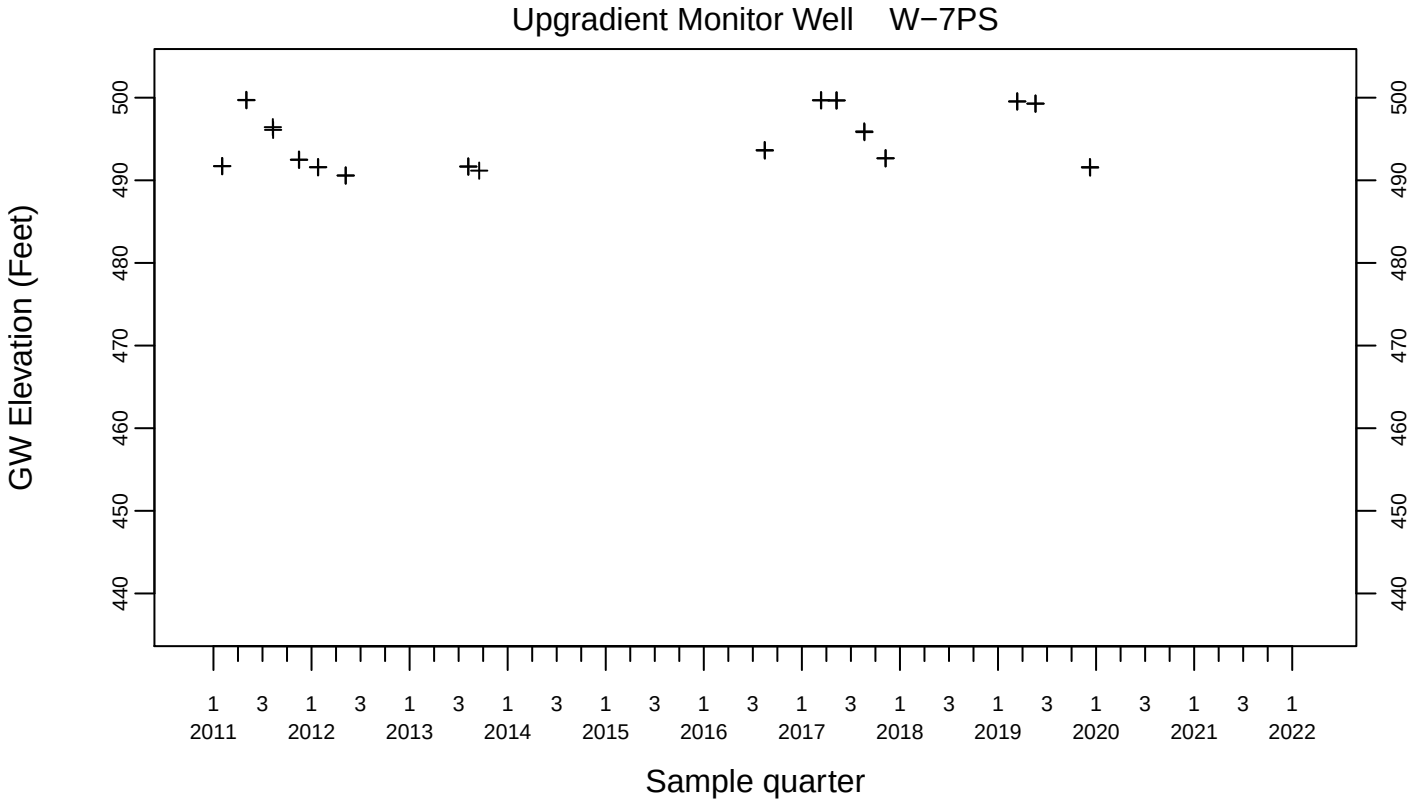

Sewage Ponds Wastewater
Vanadium (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Vanadium (ug/L)
0
50
100
150
200
250
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Wastewater
Zinc (ug/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Zinc (ug/L)
0
1000
2000
3000
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

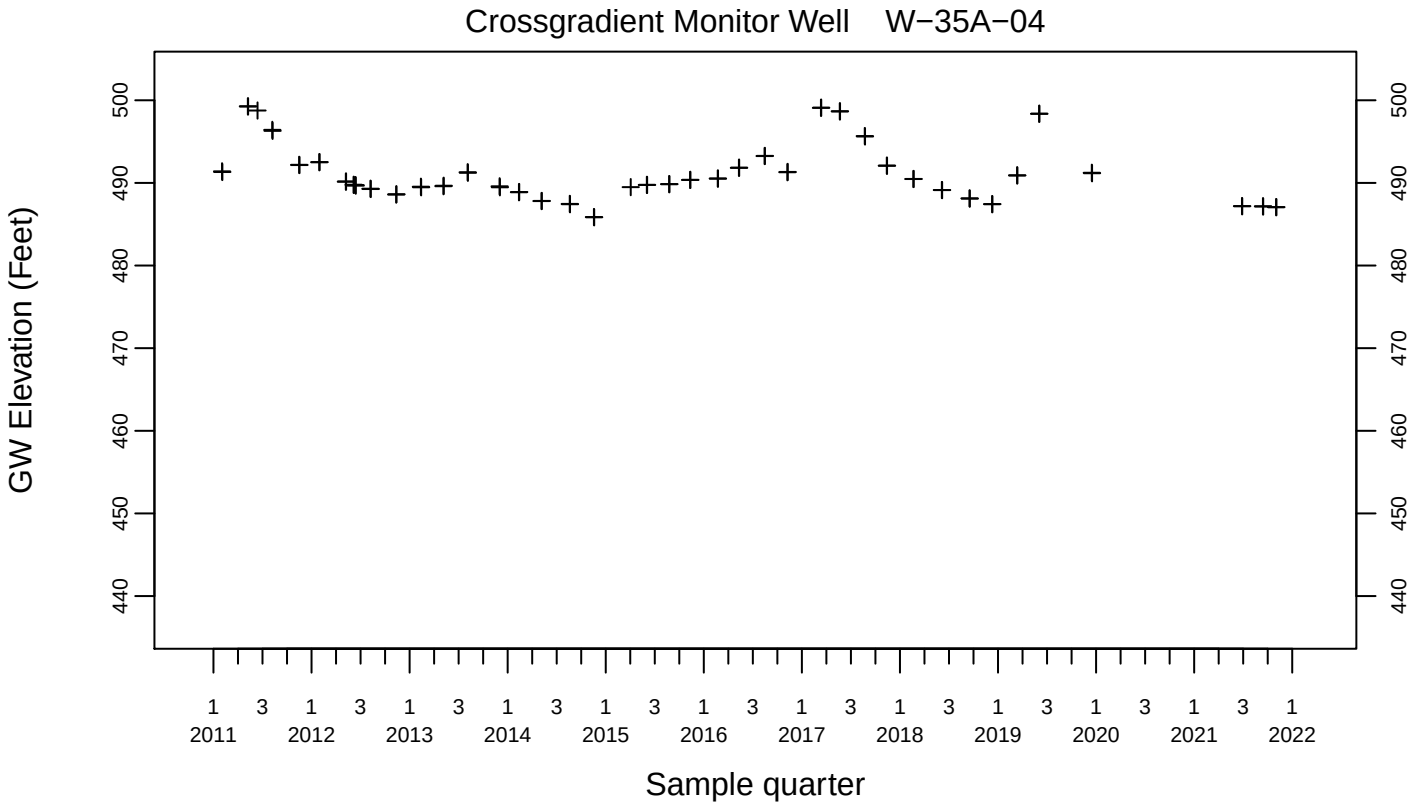

Sewage Ponds Wastewater
Sodium (mg/L)
In−pond 3−ESWP−OW
Above RL
Below RL
Sodium (mg/L)
0
500
1000
1500
2000
2500
3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

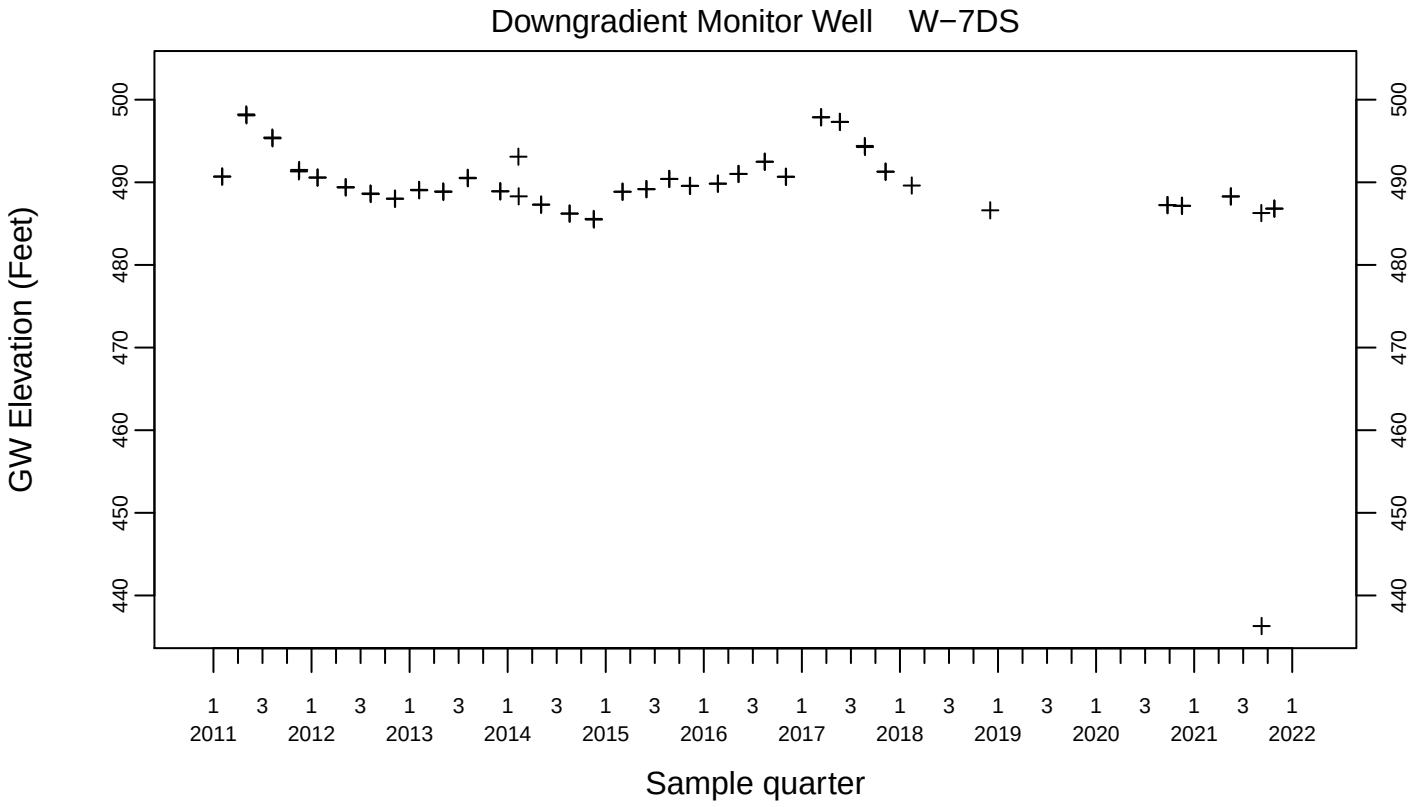
Sewage Ponds Ground Water
GW Elevation (Feet)



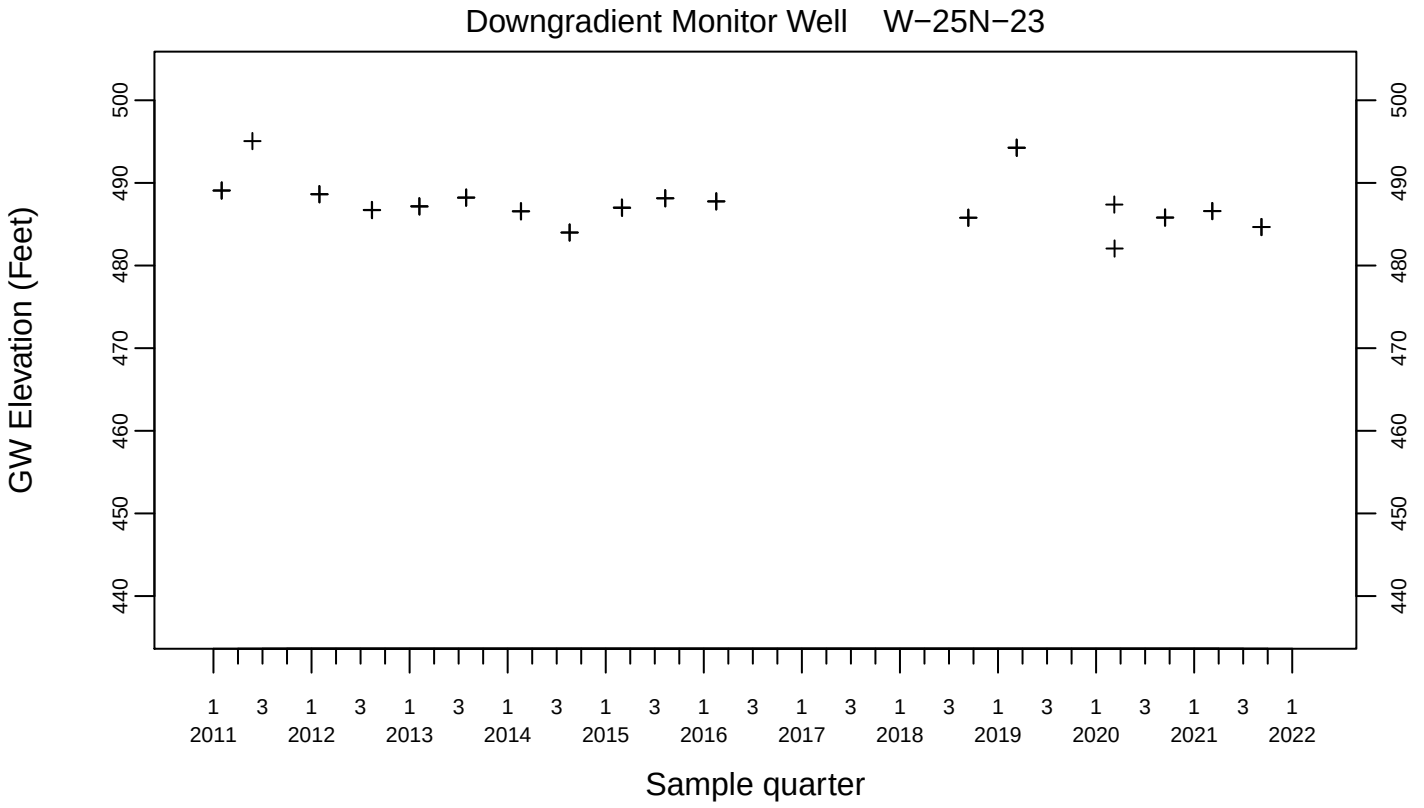


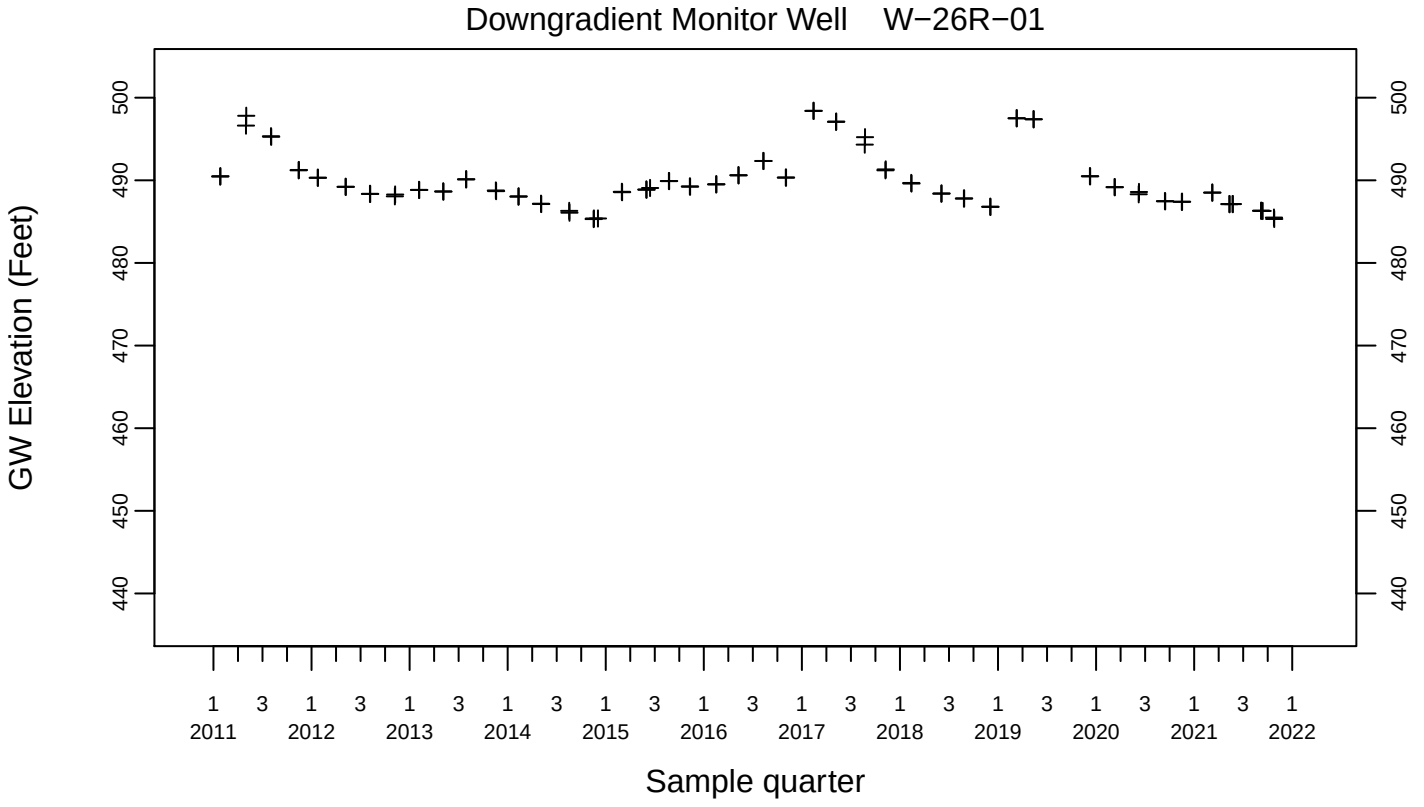
Sewage Ponds Ground Water
GW Elevation (Feet)



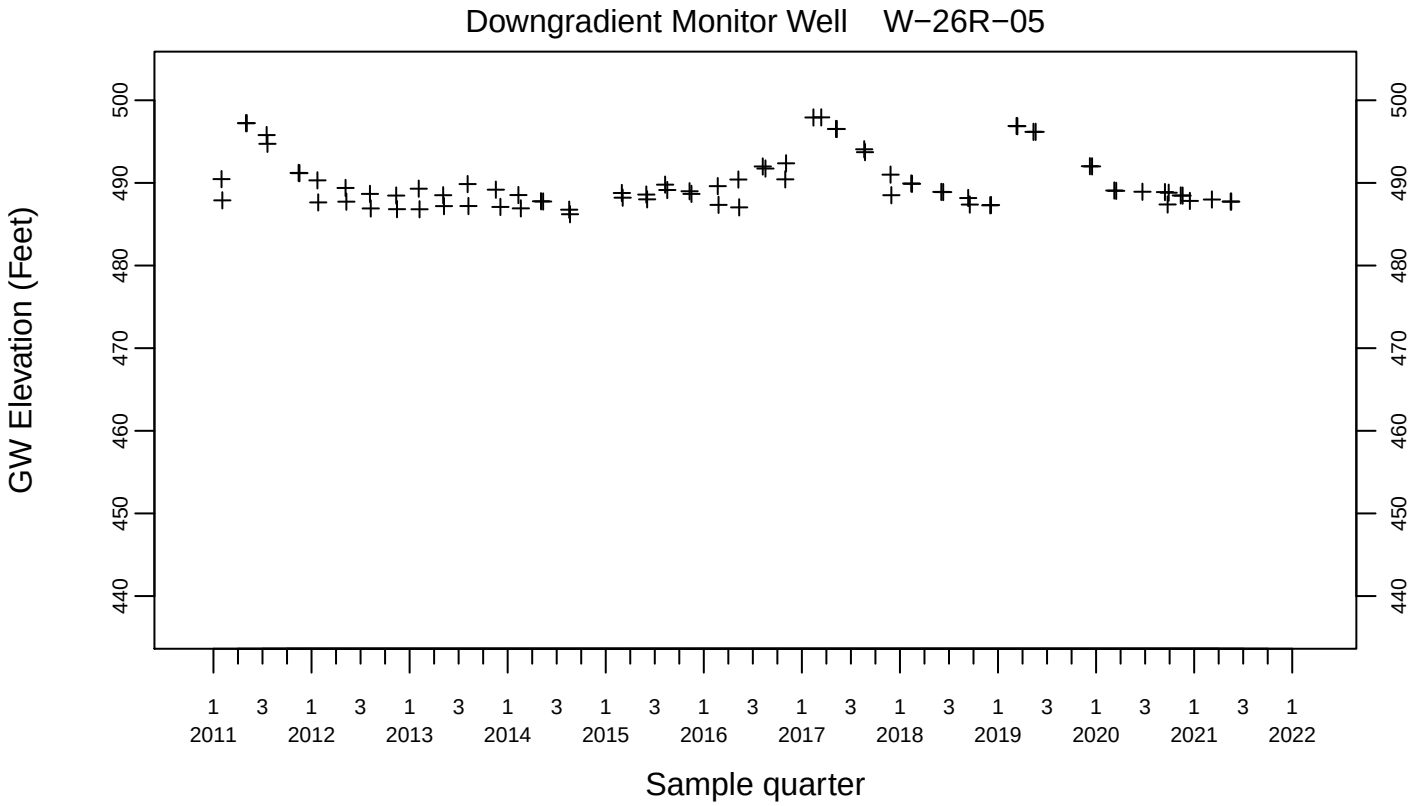


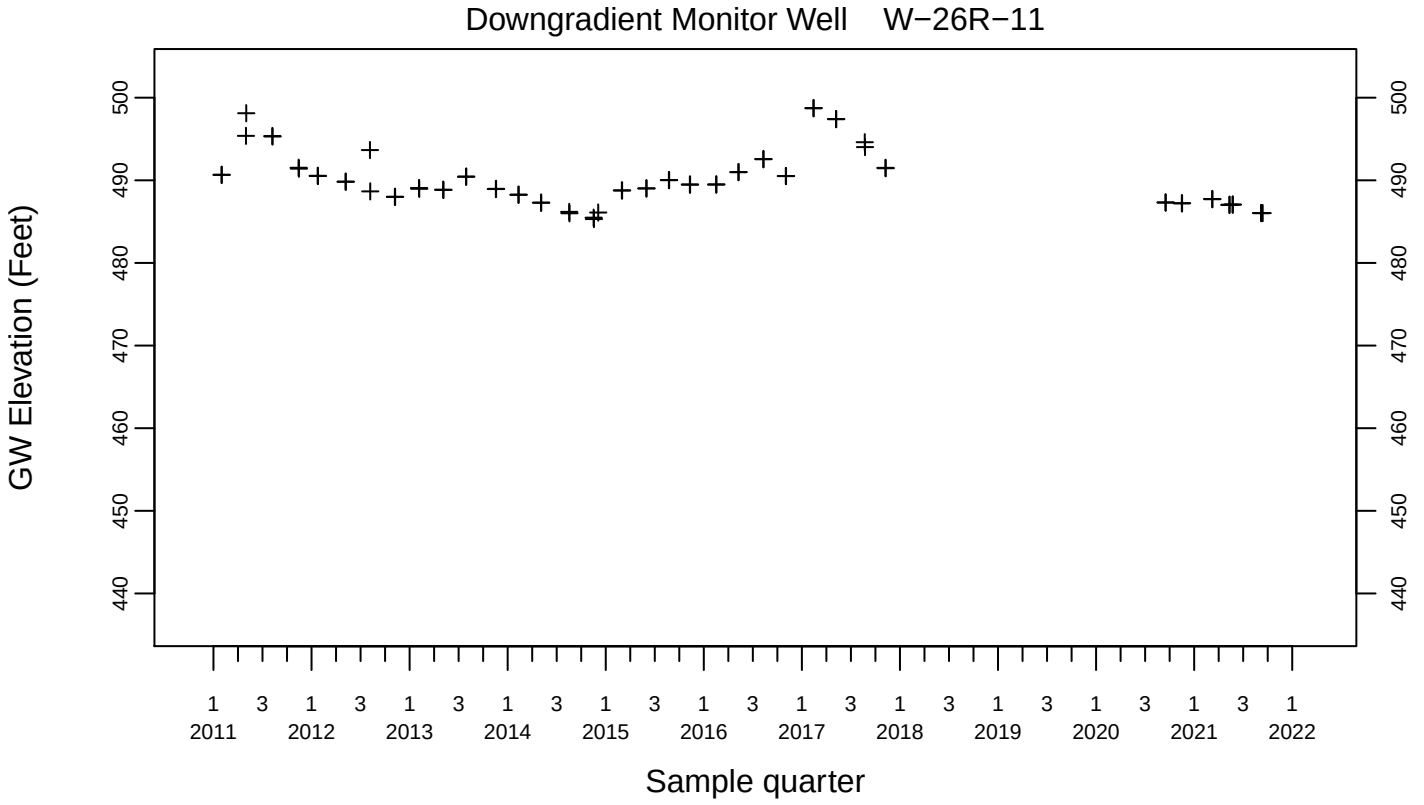
Sewage Ponds Ground Water
GW Elevation (Feet)



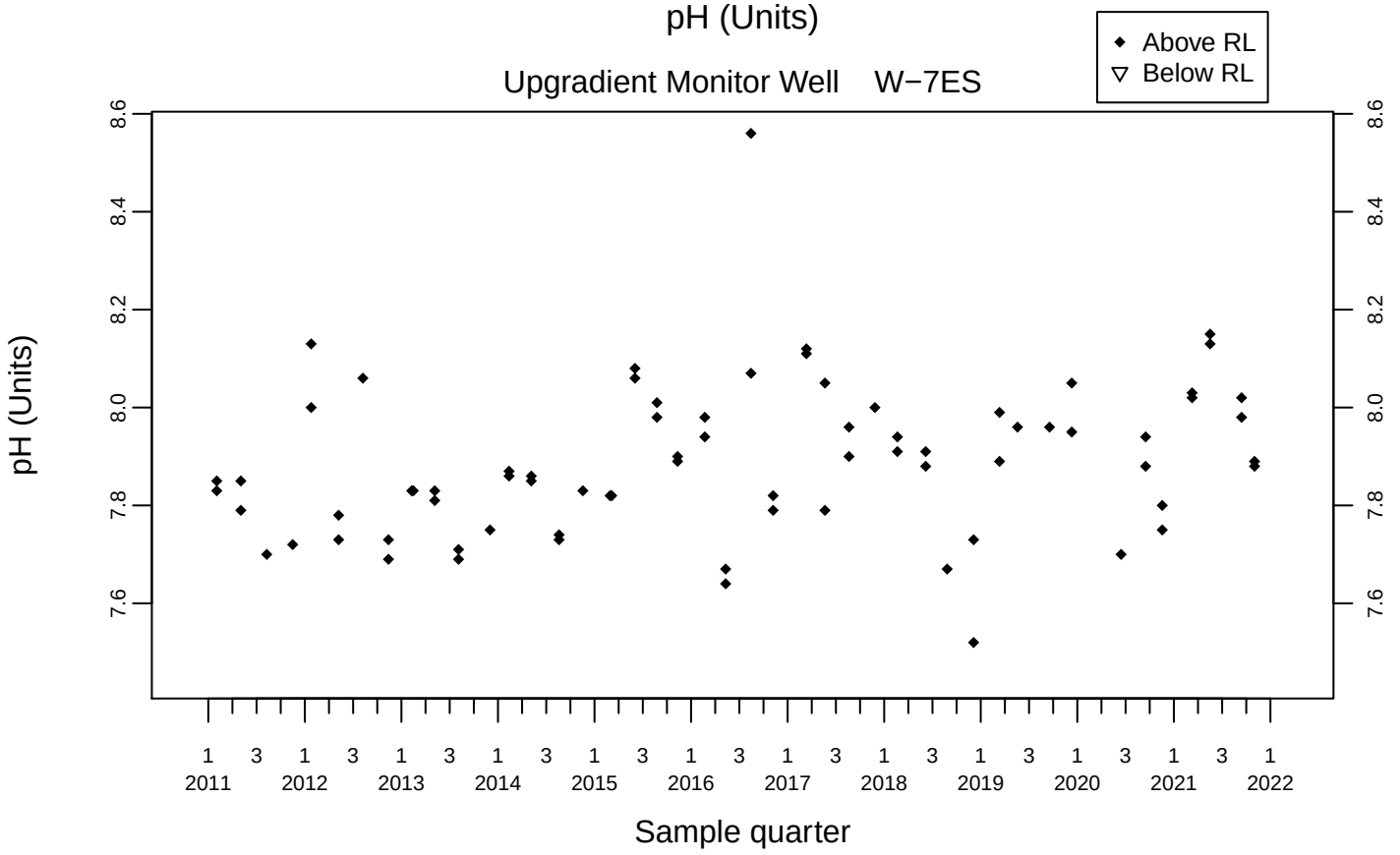


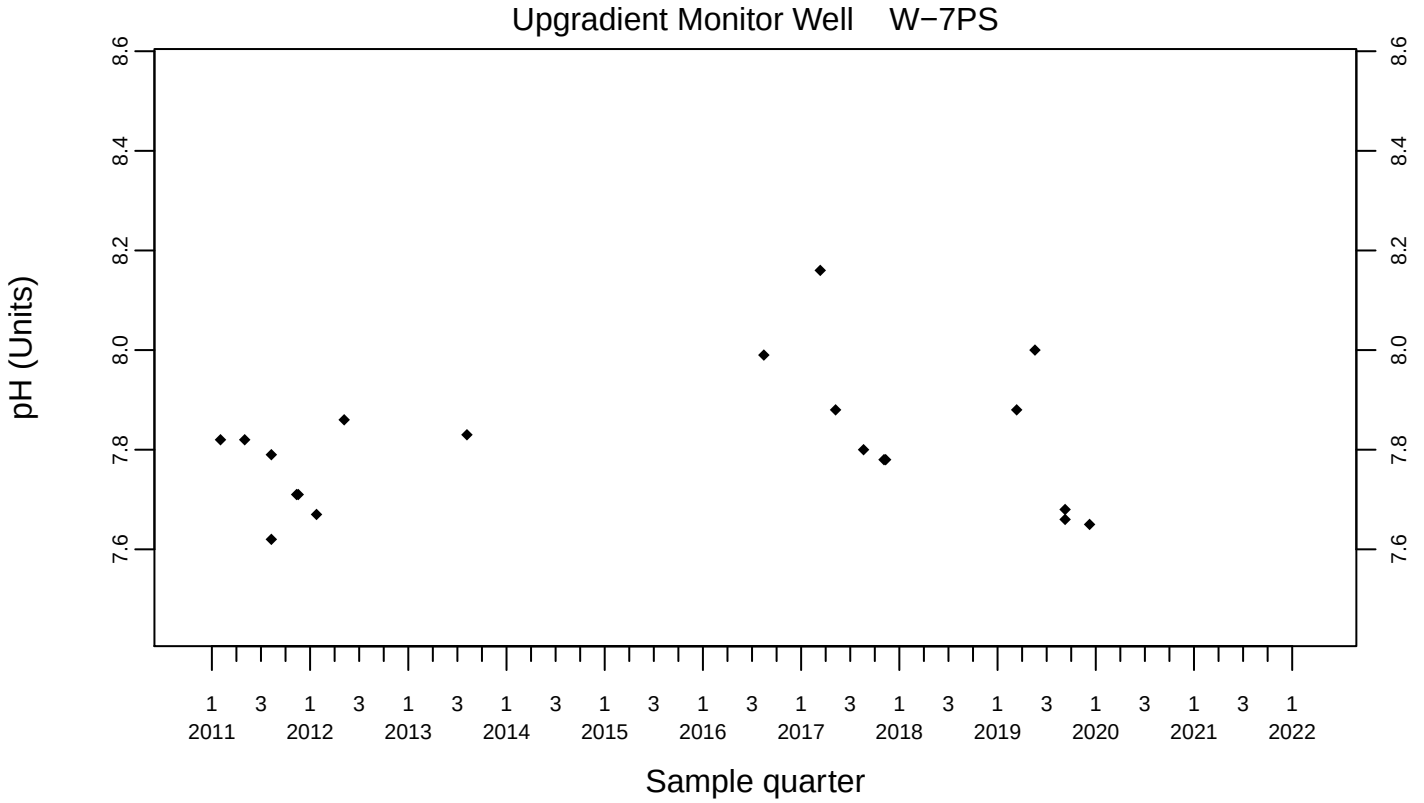
Sewage Ponds Ground Water
GW Elevation (Feet)



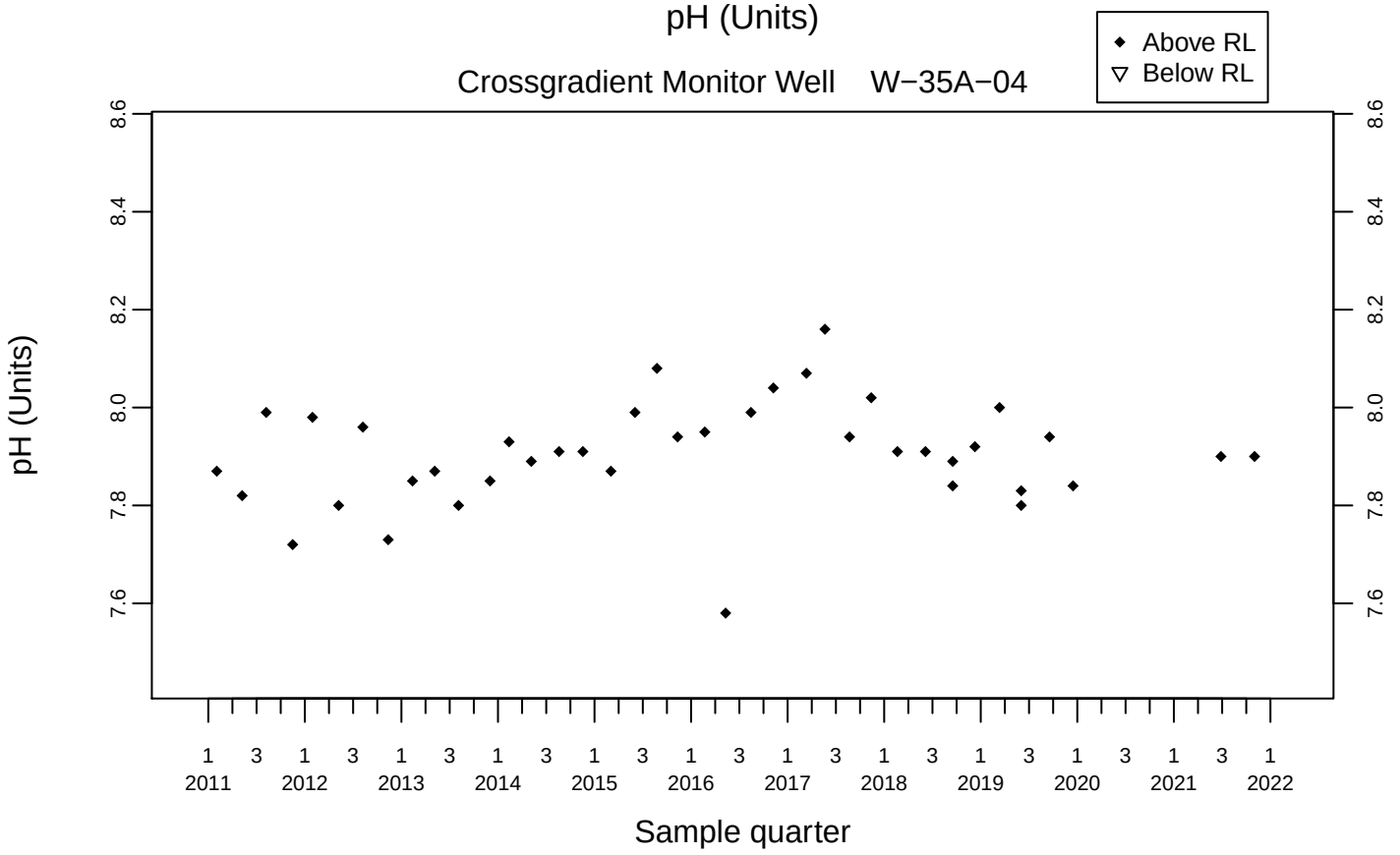


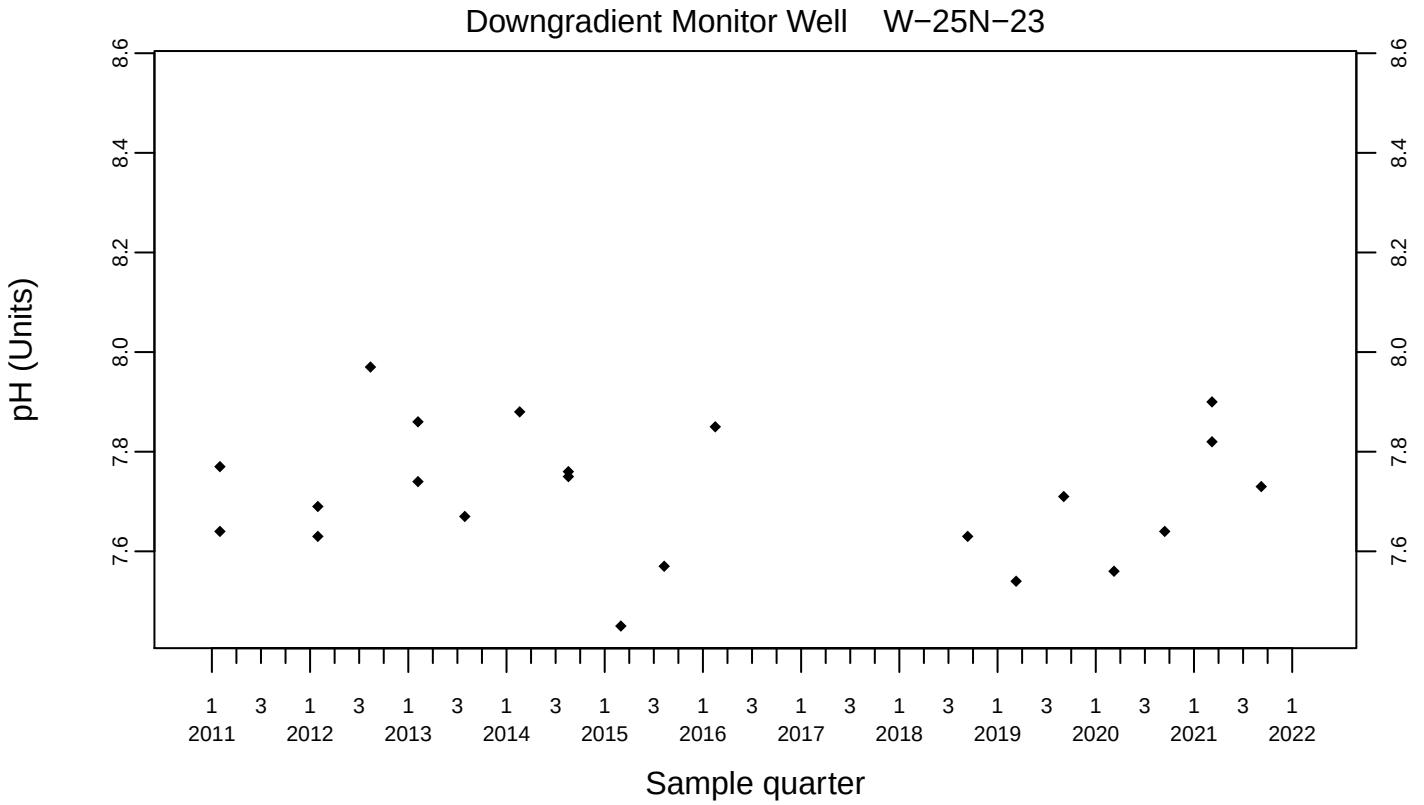
Sewage Ponds Ground Water
pH (Units)



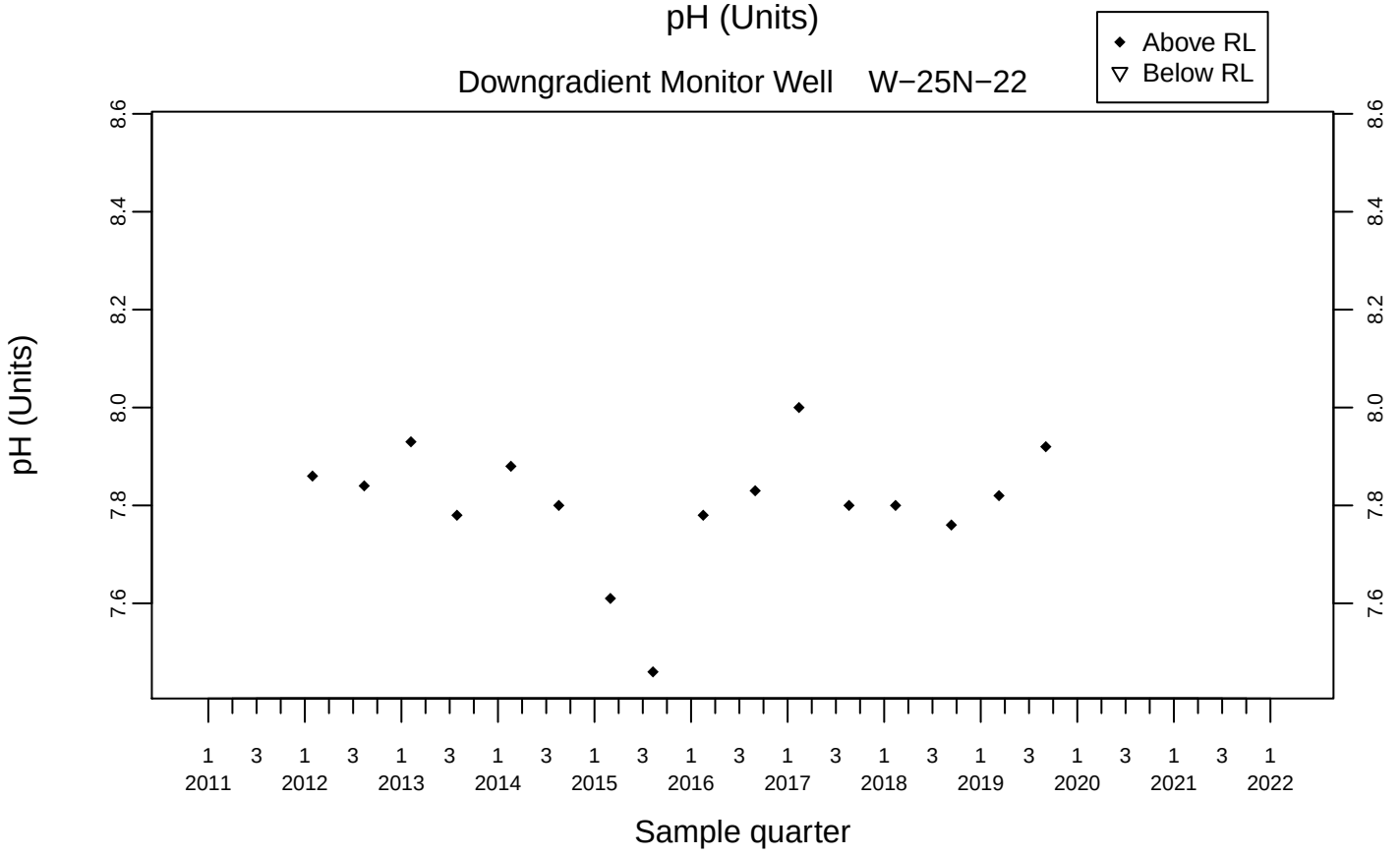


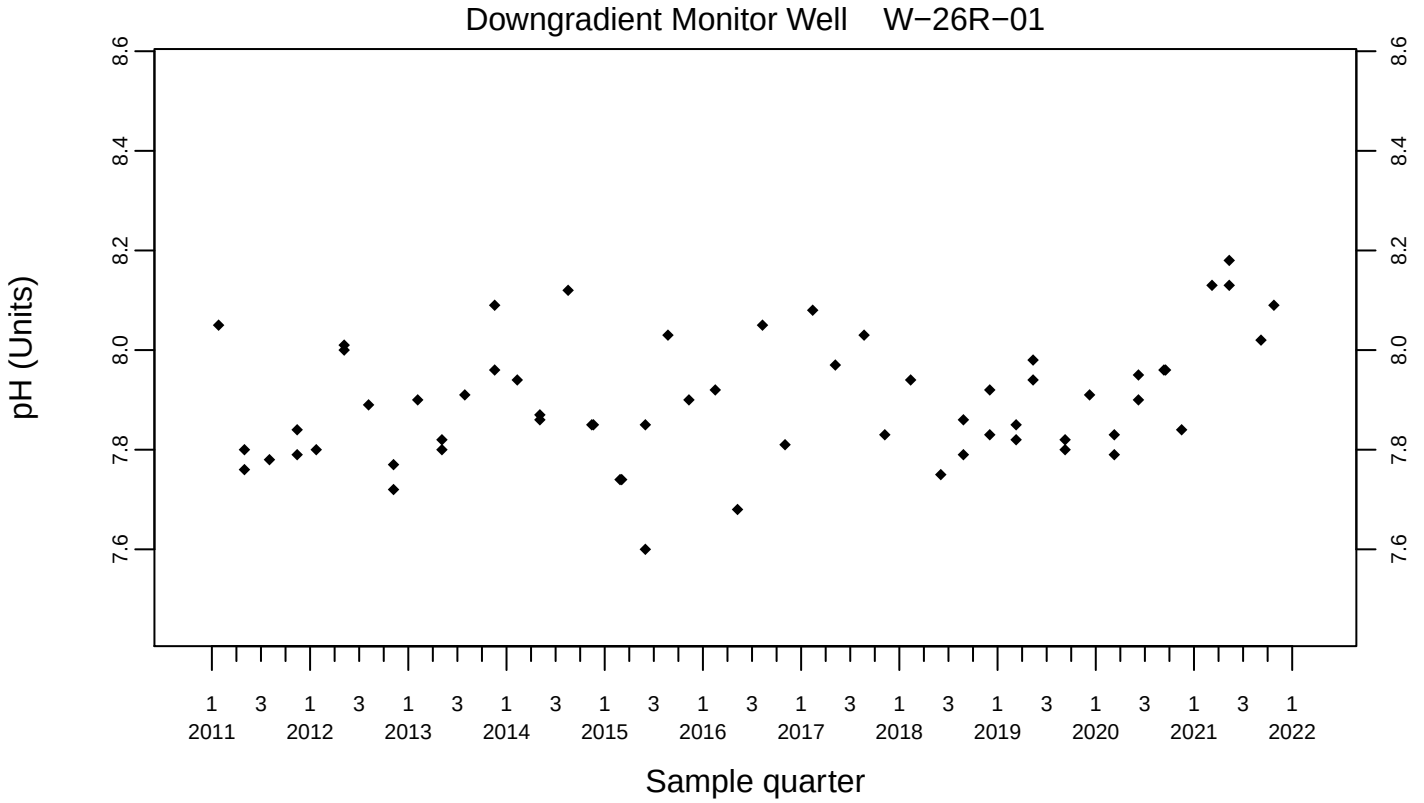
Sewage Ponds Ground Water
pH (Units)



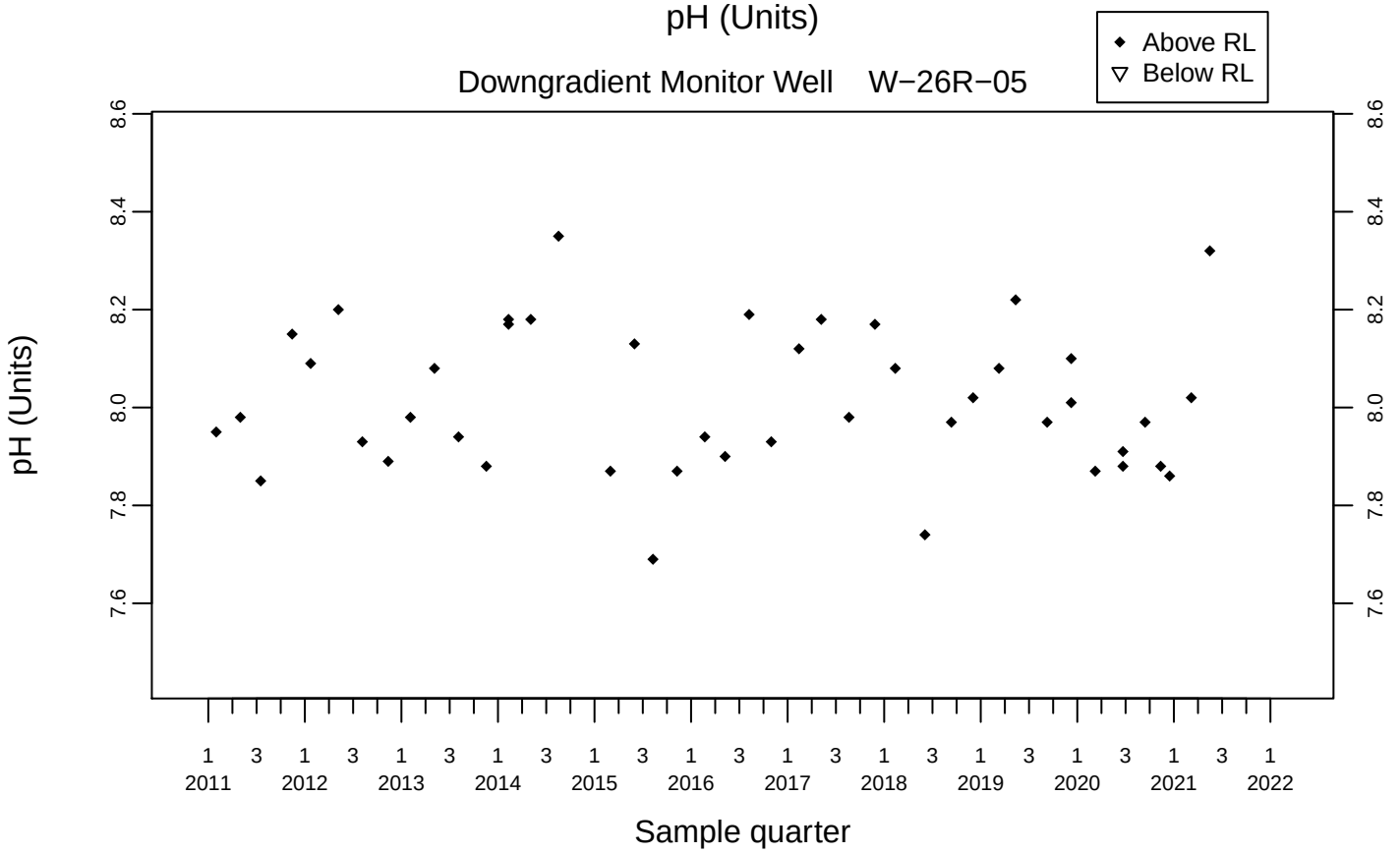


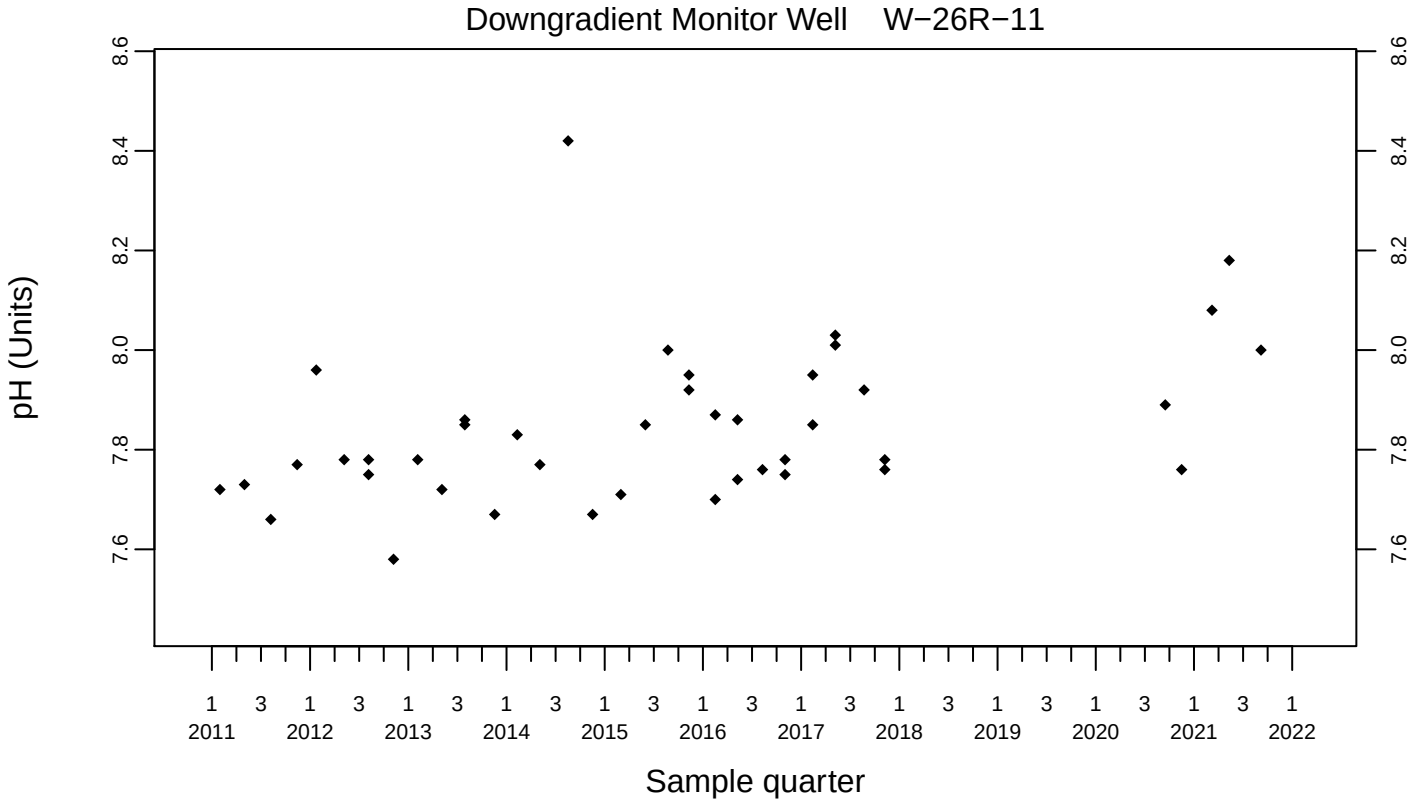
Sewage Ponds Ground Water
pH (Units)

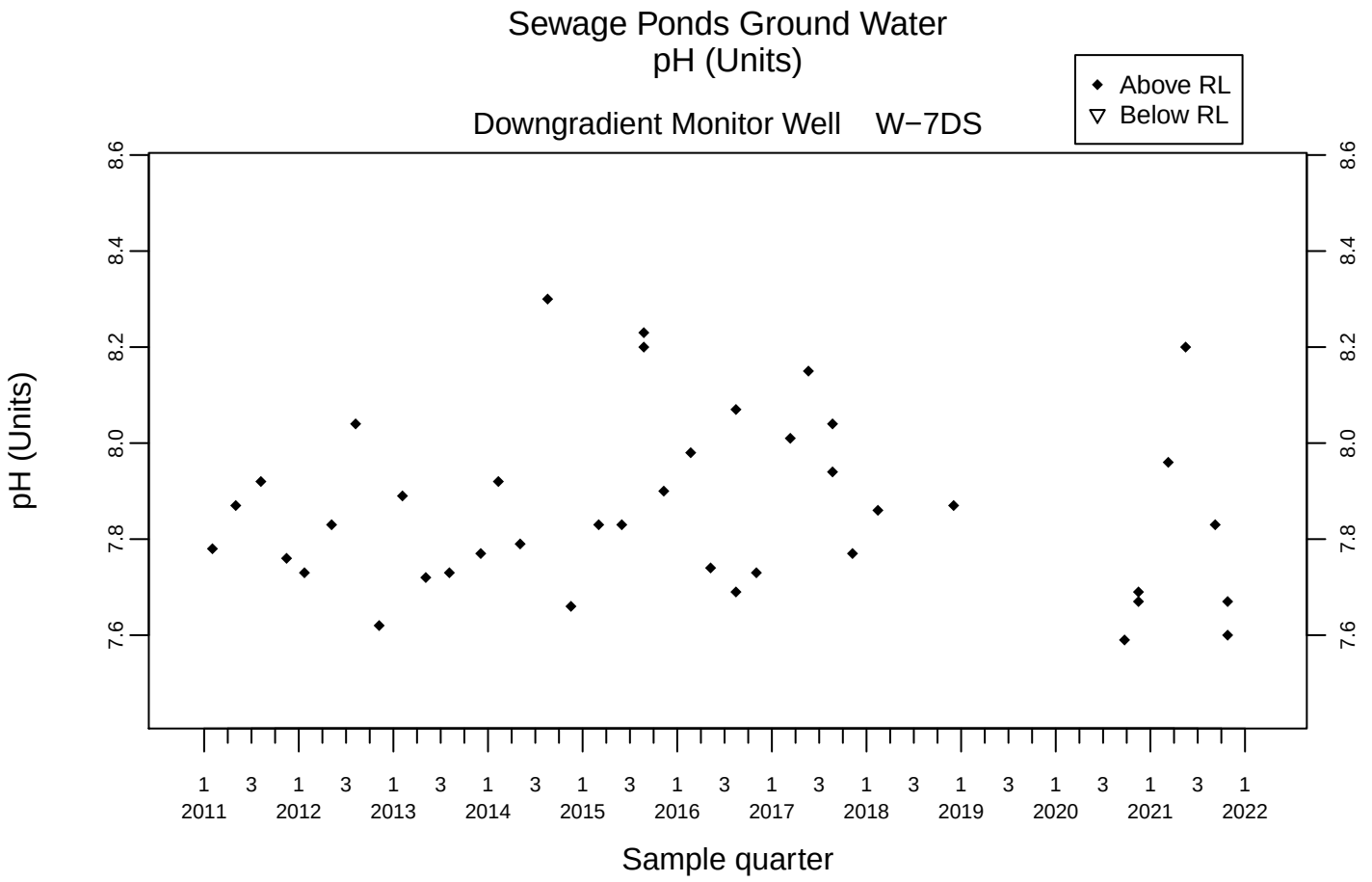




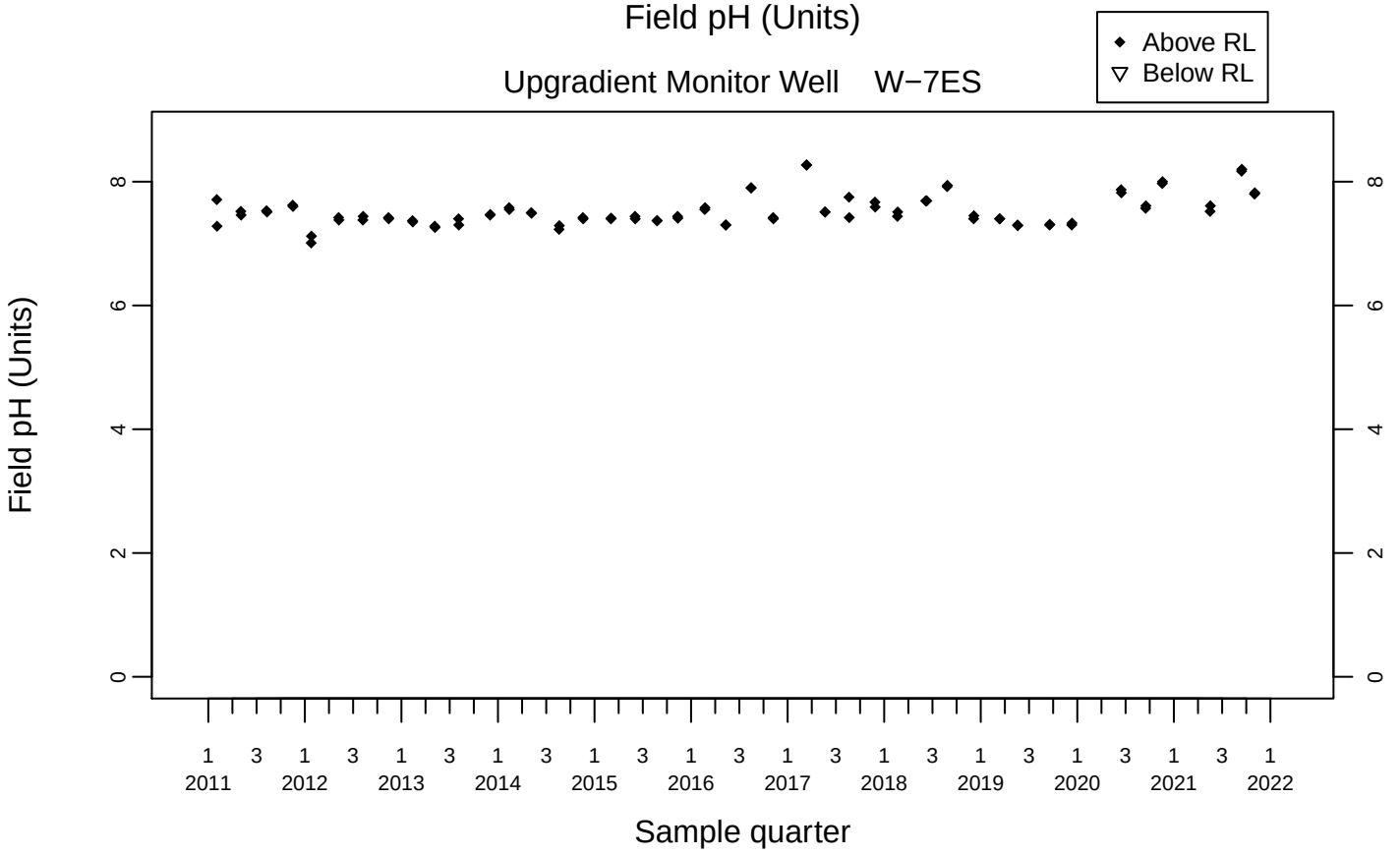
Sewage Ponds Ground Water
pH (Units)

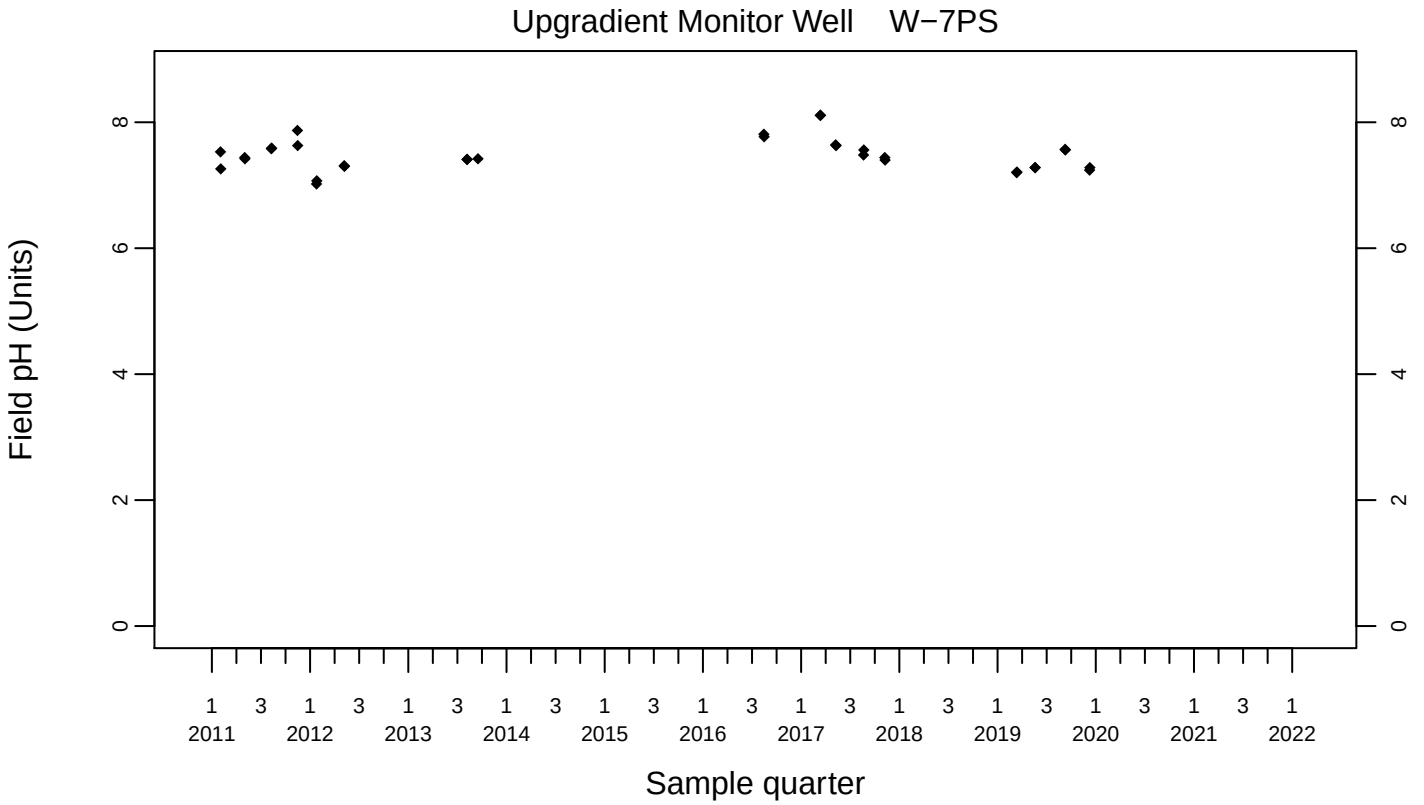




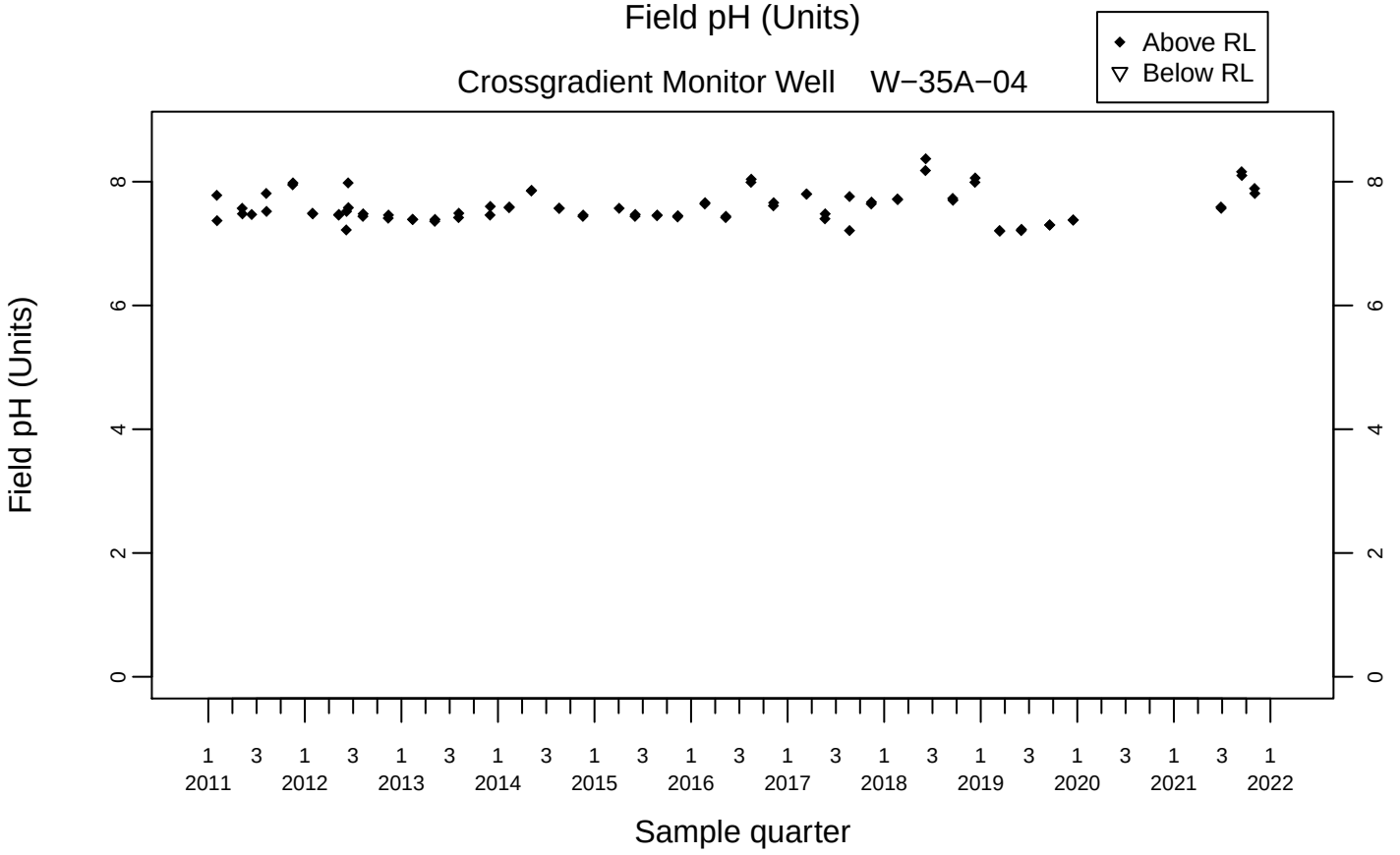

Sewage Ponds Ground Water
pH (Units)
Downgradient Monitor Well W−7DS
Above RL
Below RL
pH (Units)
8.6
8.4
8.2
8.0
7.8
7.6
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

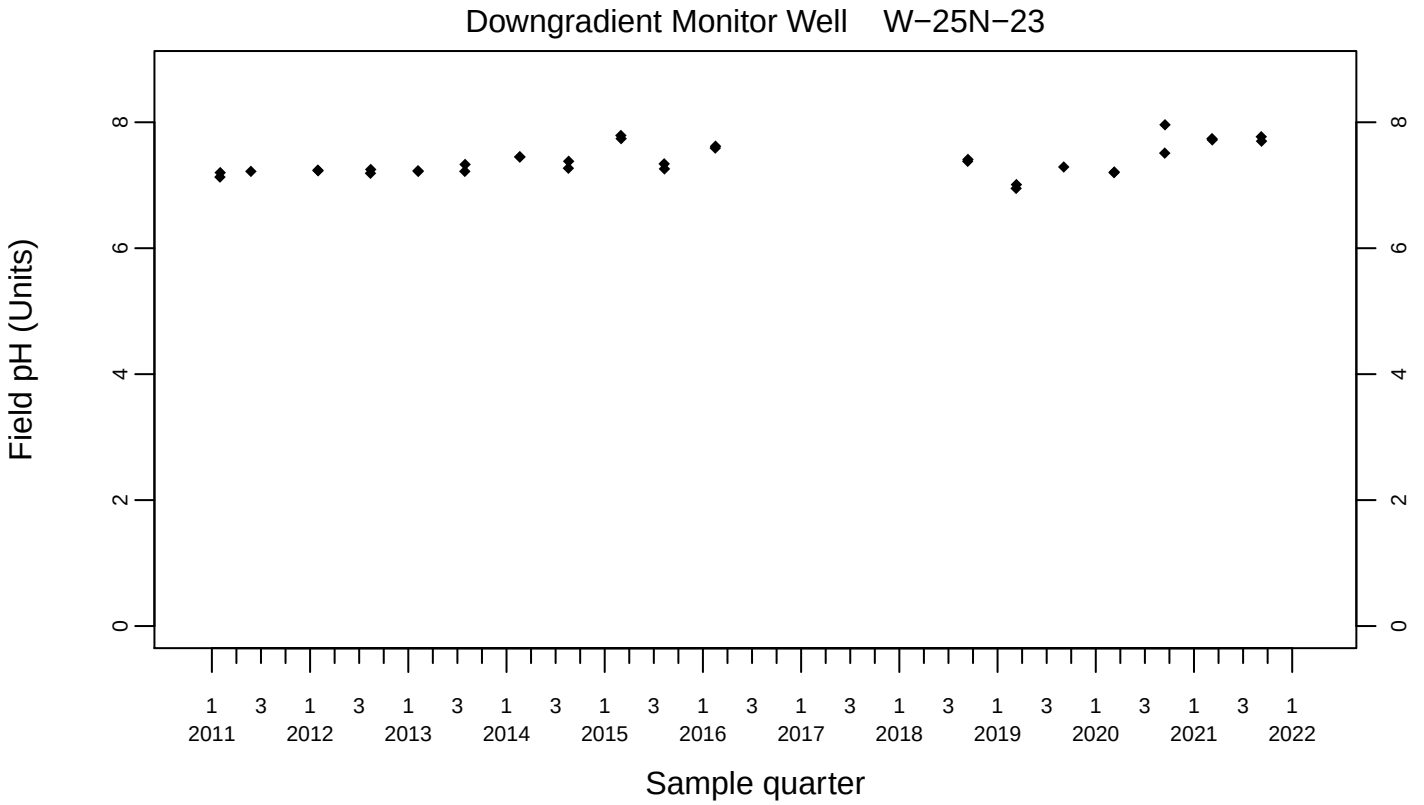
Sewage Ponds Ground Water
Field pH (Units)



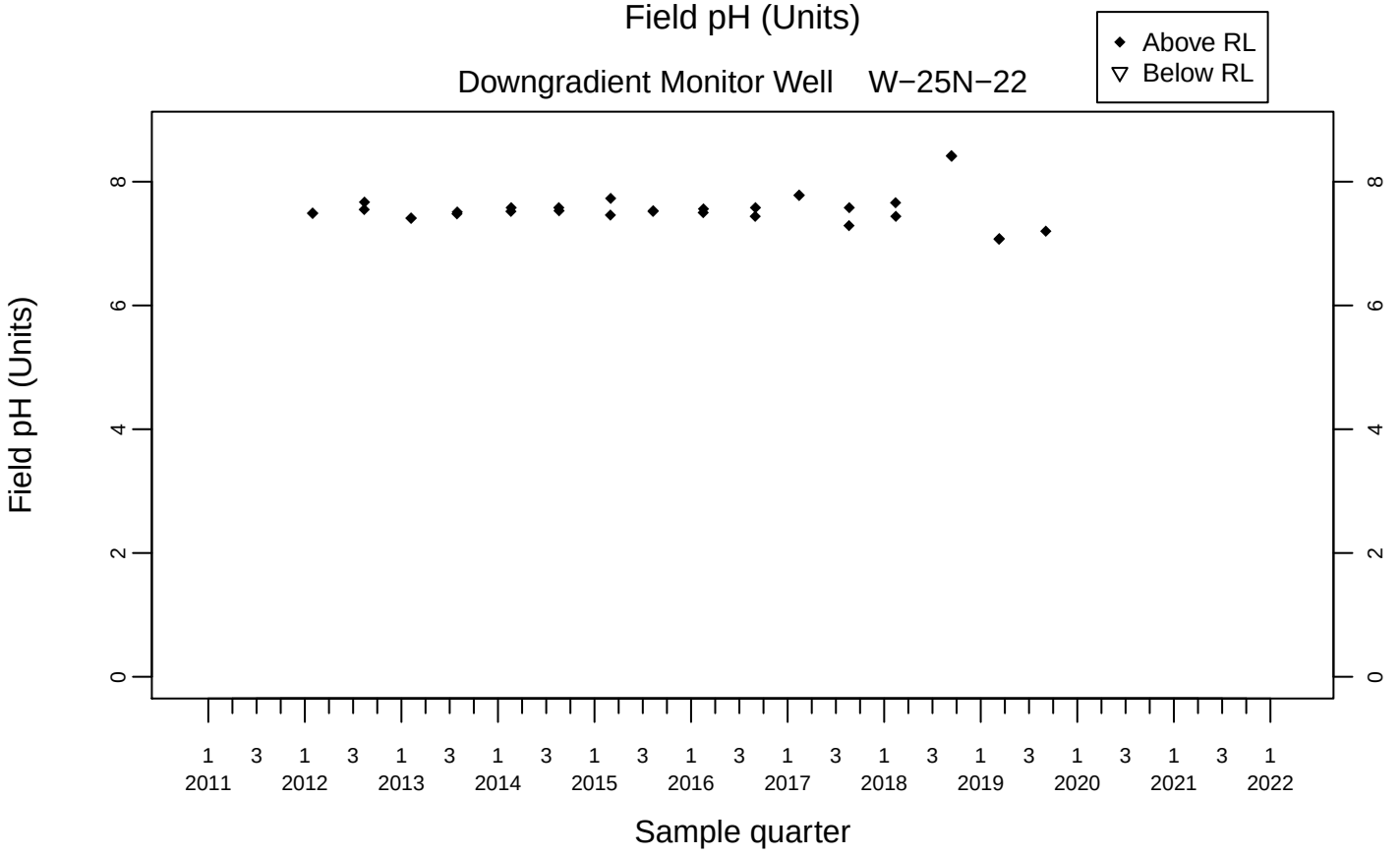


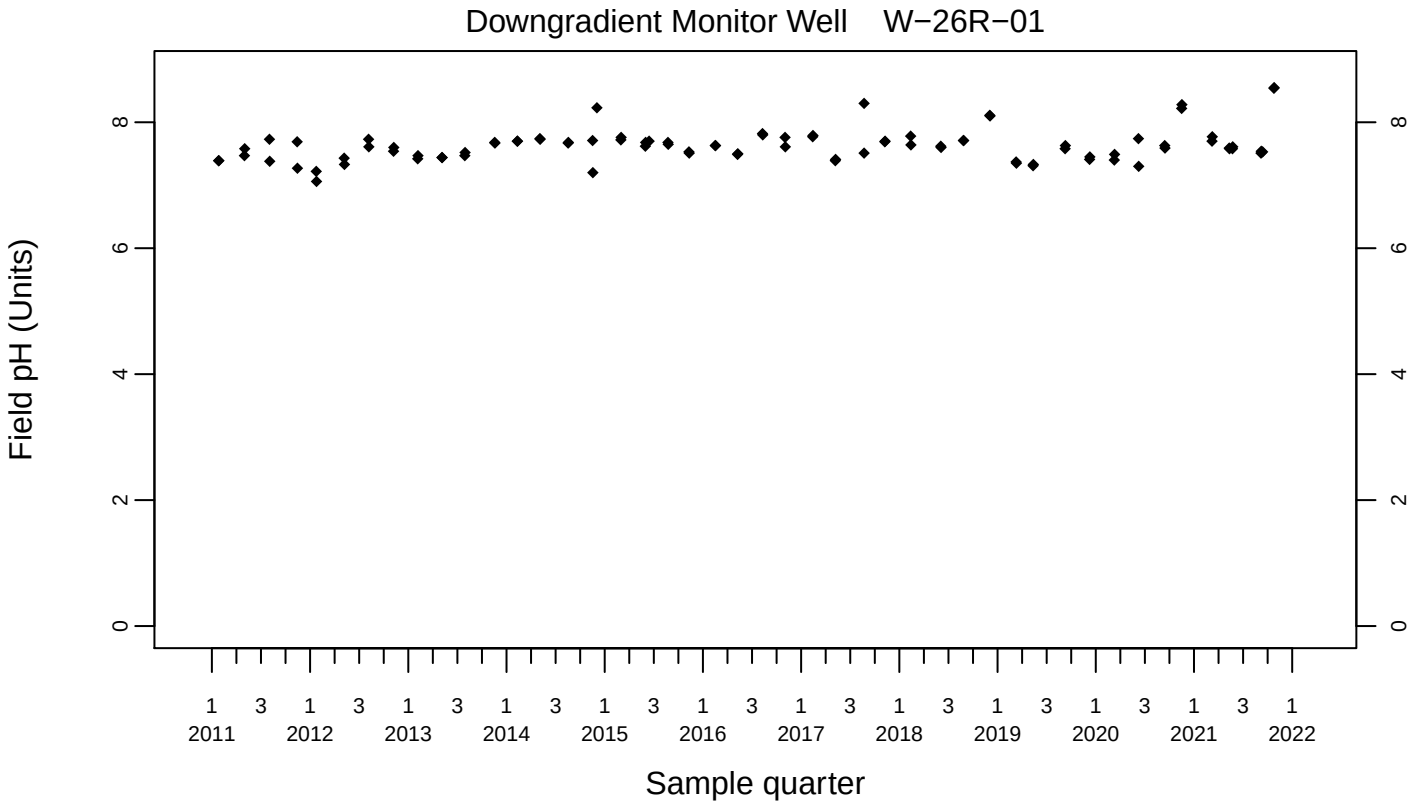
Sewage Ponds Ground Water
Field pH (Units)



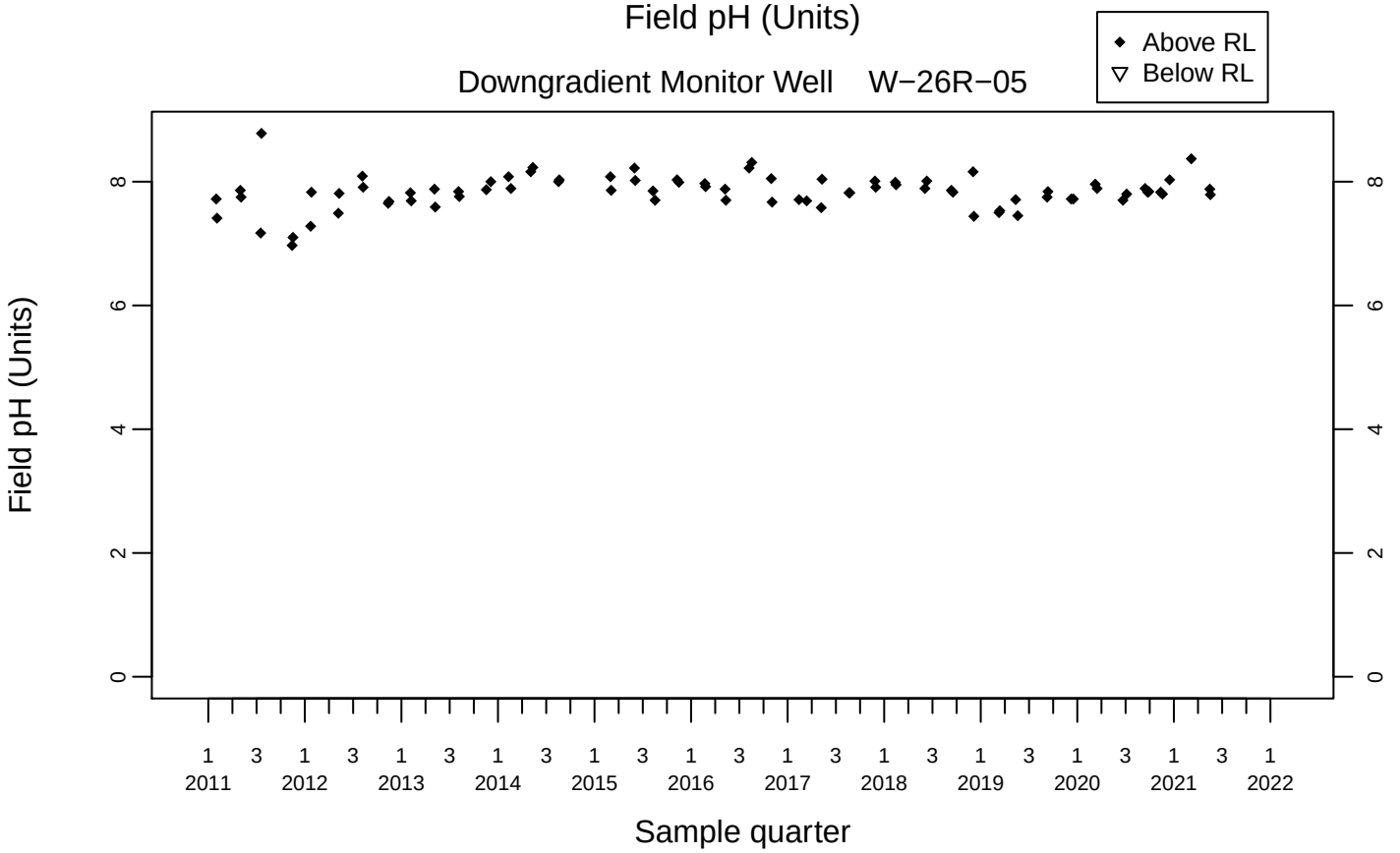


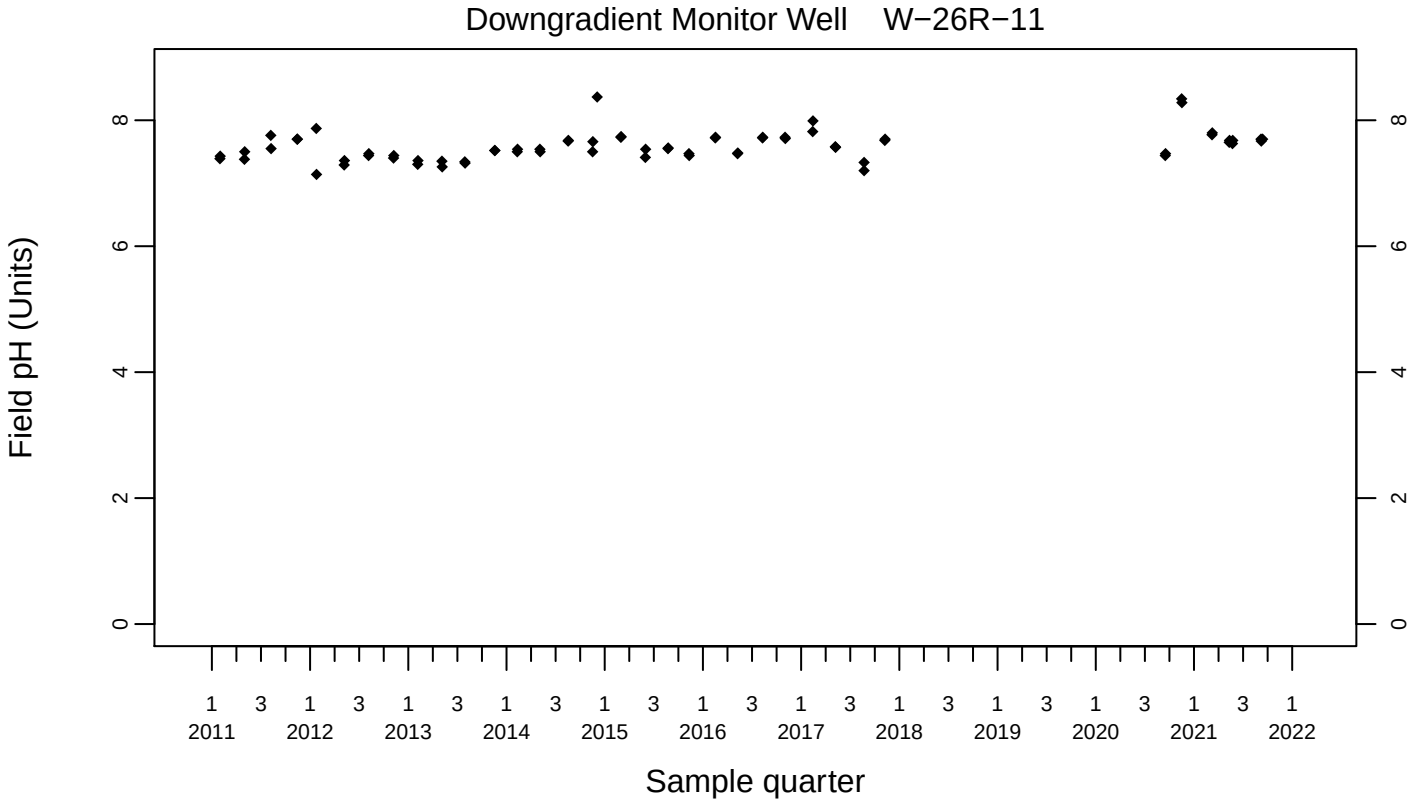
Sewage Ponds Ground Water
Field pH (Units)

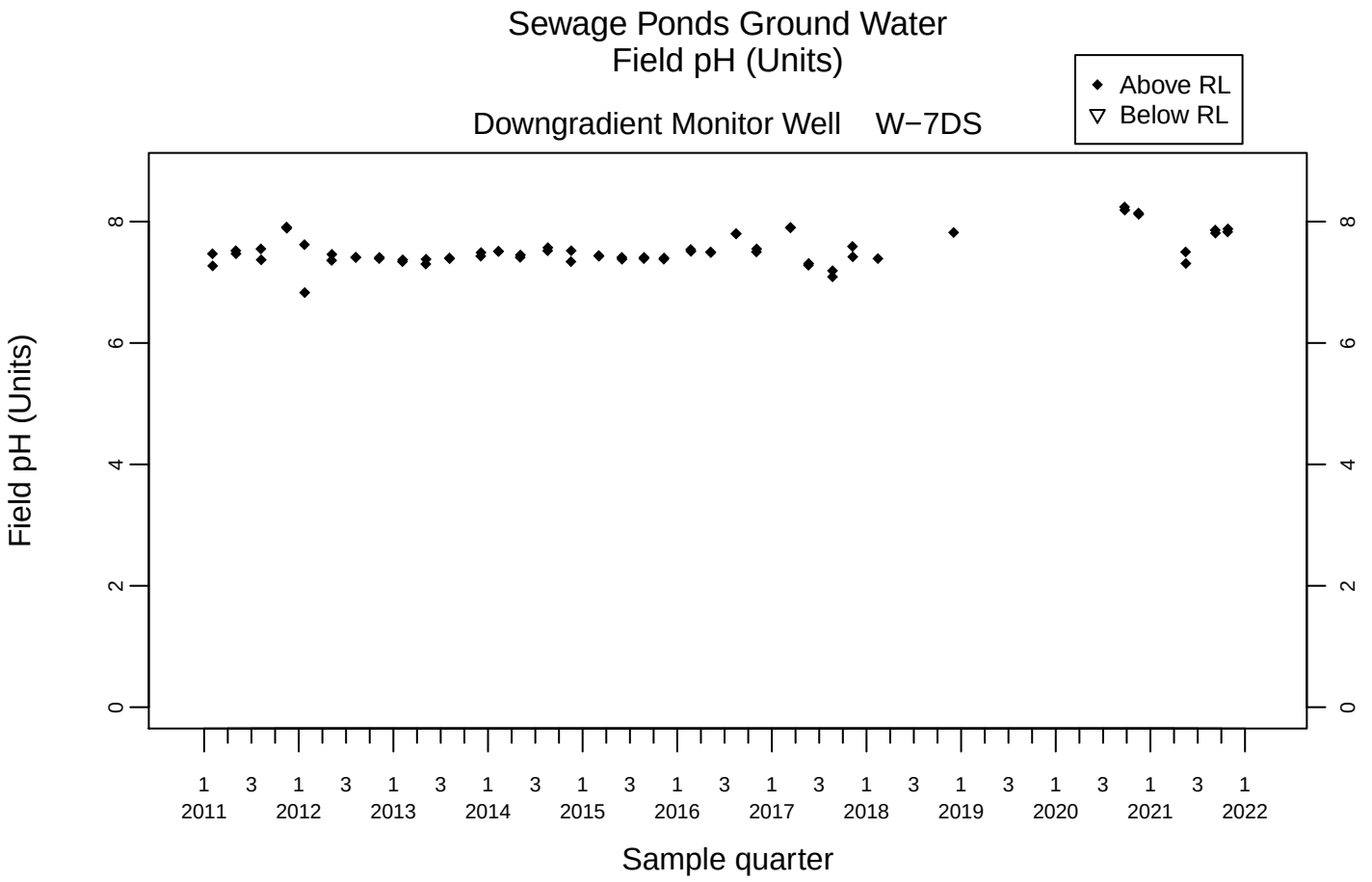


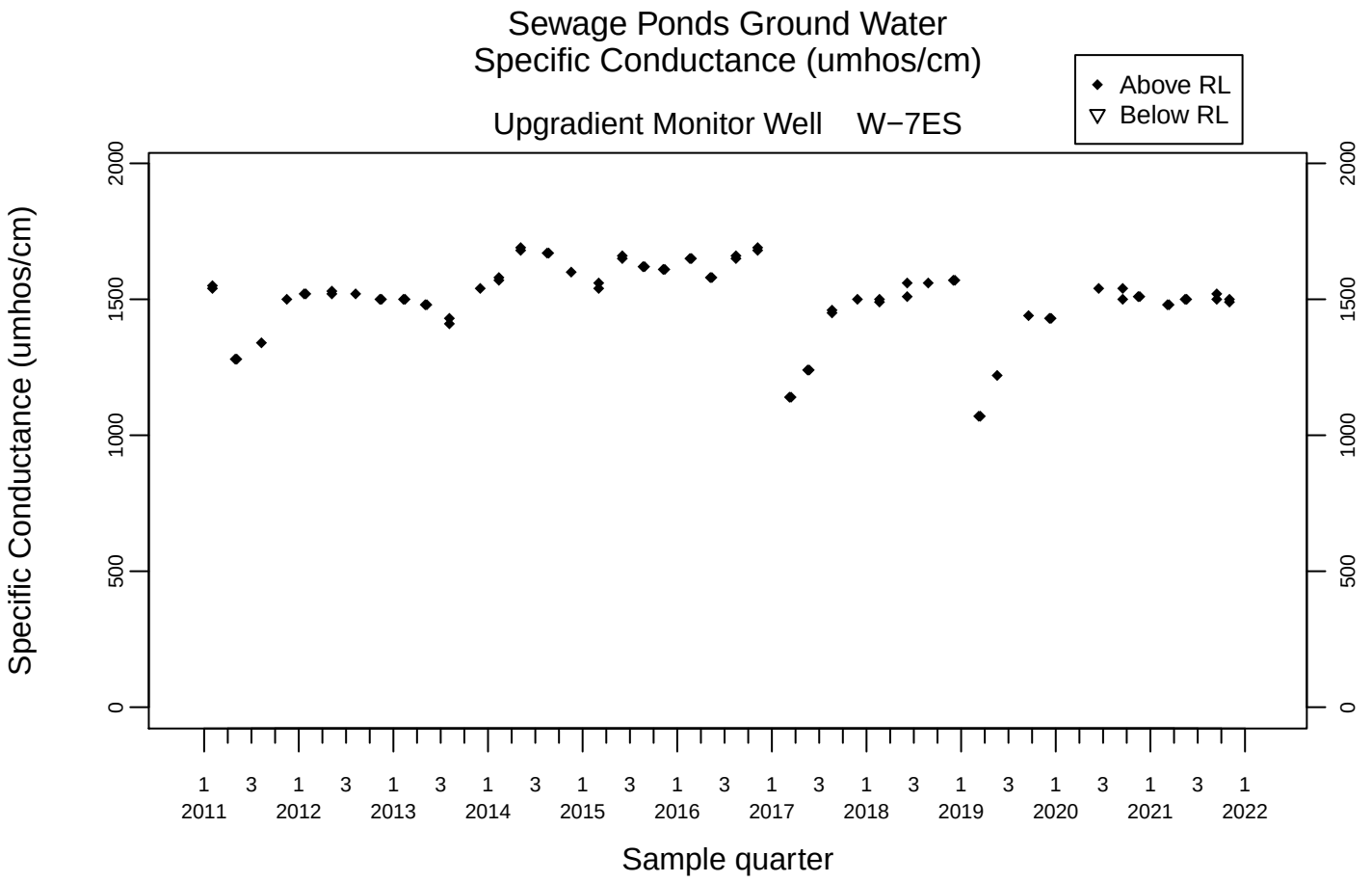


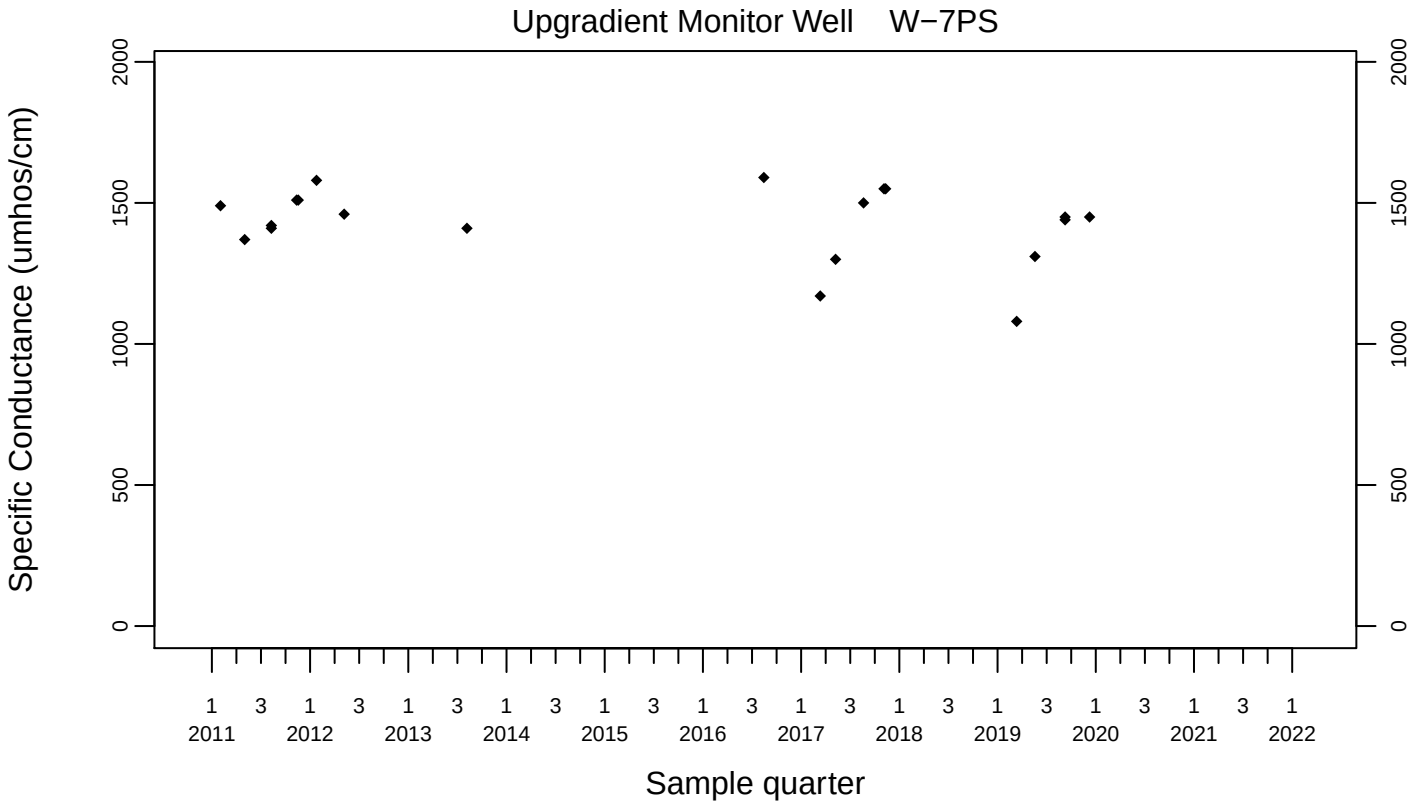
Sewage Ponds Ground Water
Field pH (Units)

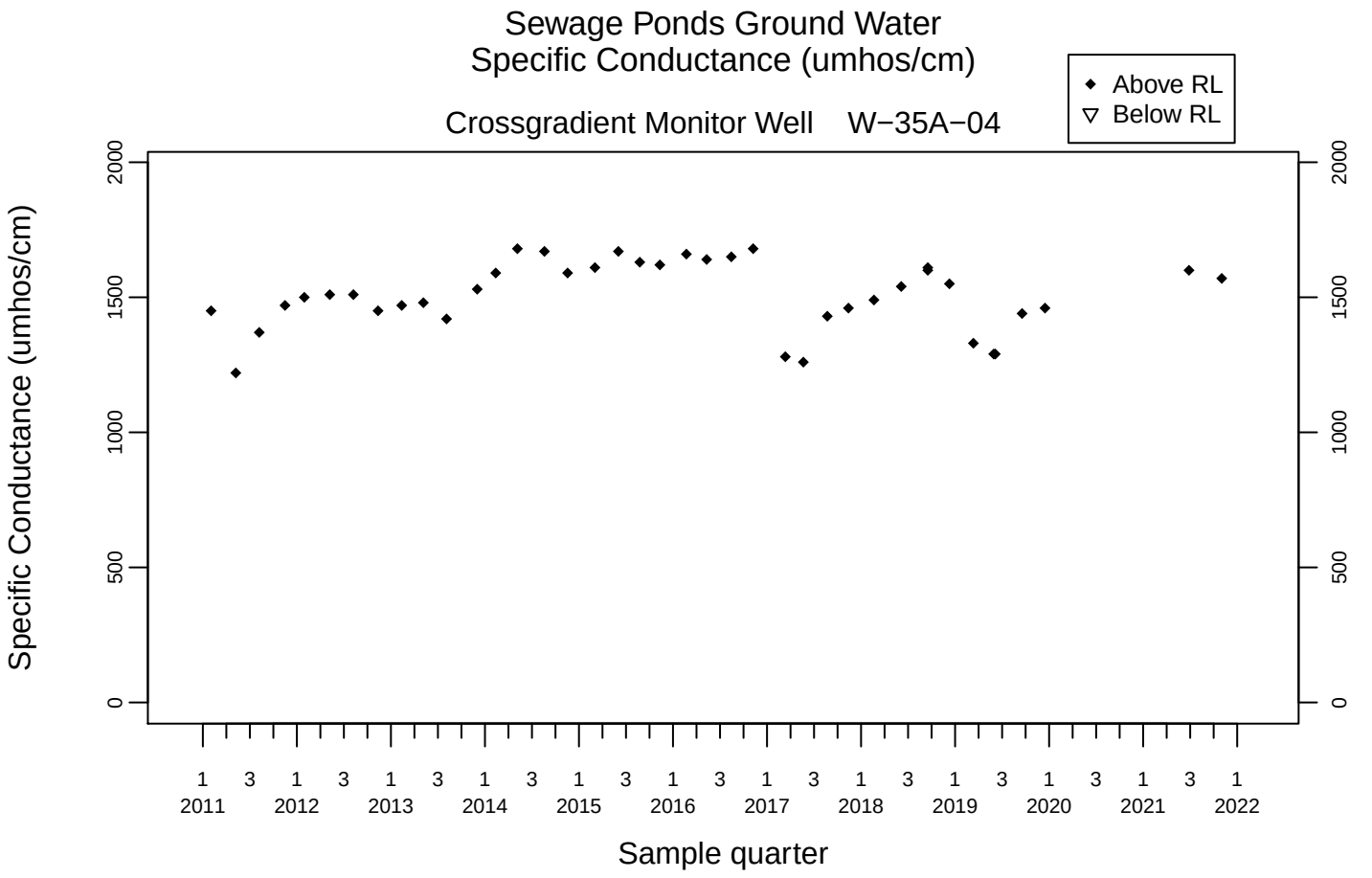


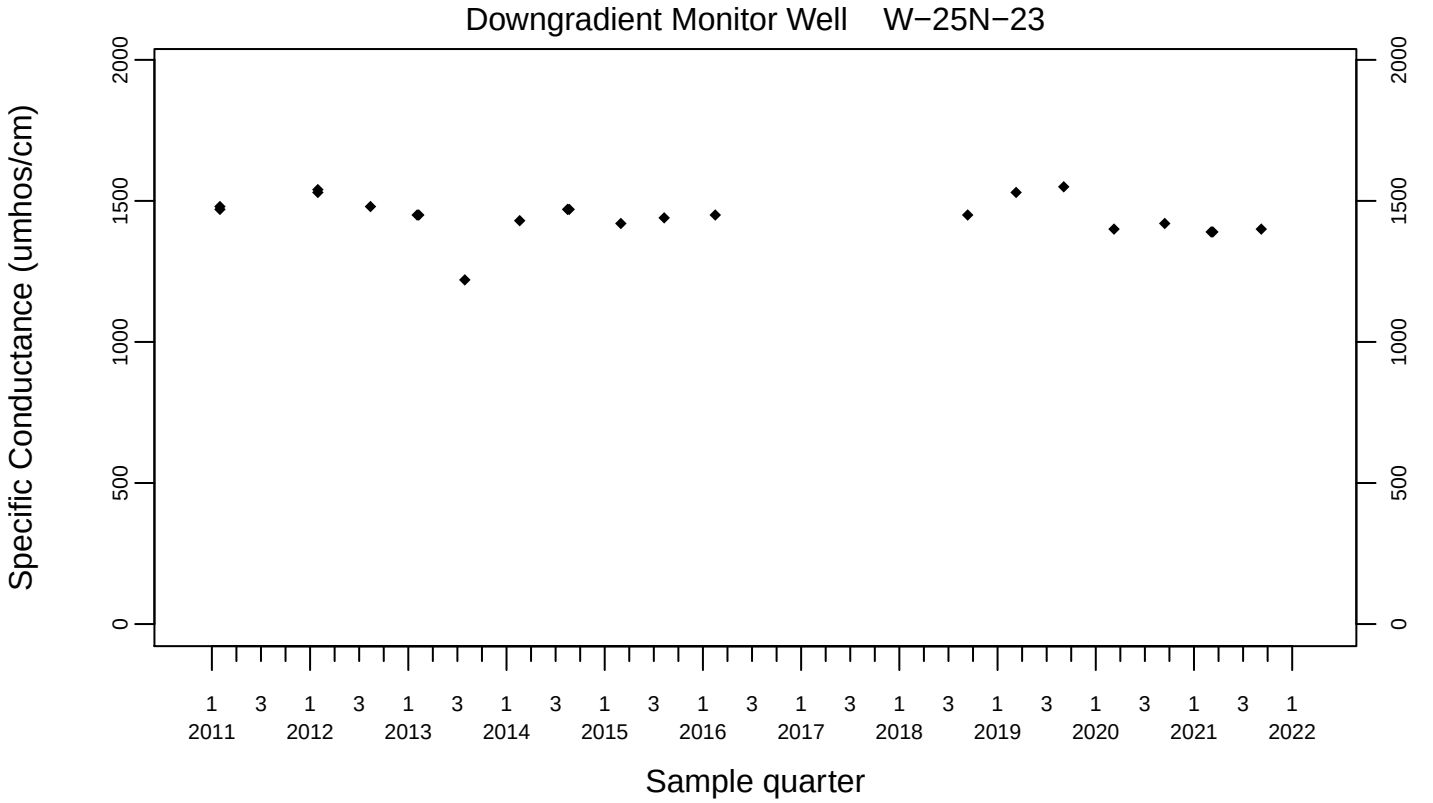



Sewage Ponds Ground Water
Field pH (Units)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Field pH (Units)
0
2
4
6
8
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

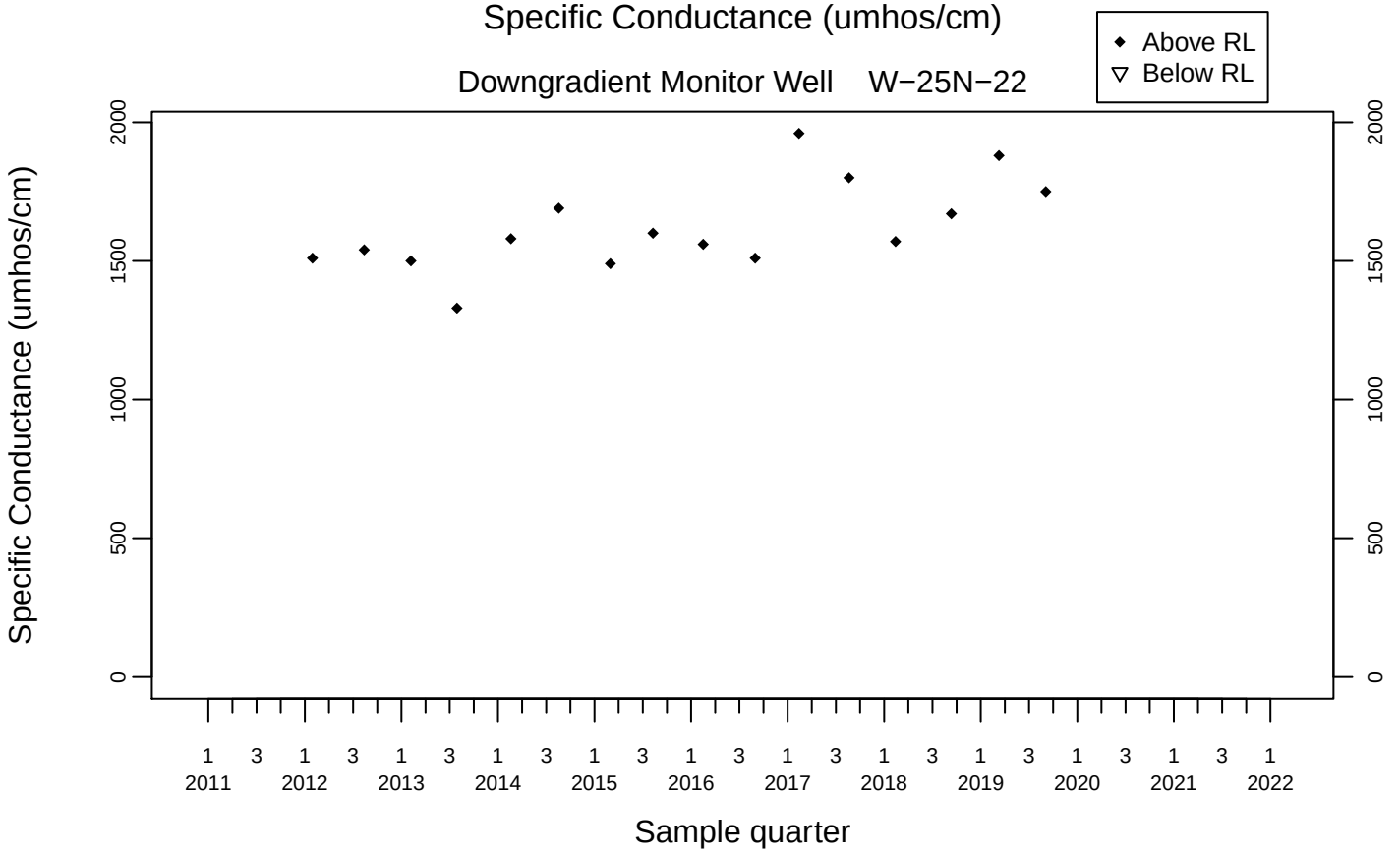

Sewage Ponds Ground Water
Specific Conductance (umhos/cm)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

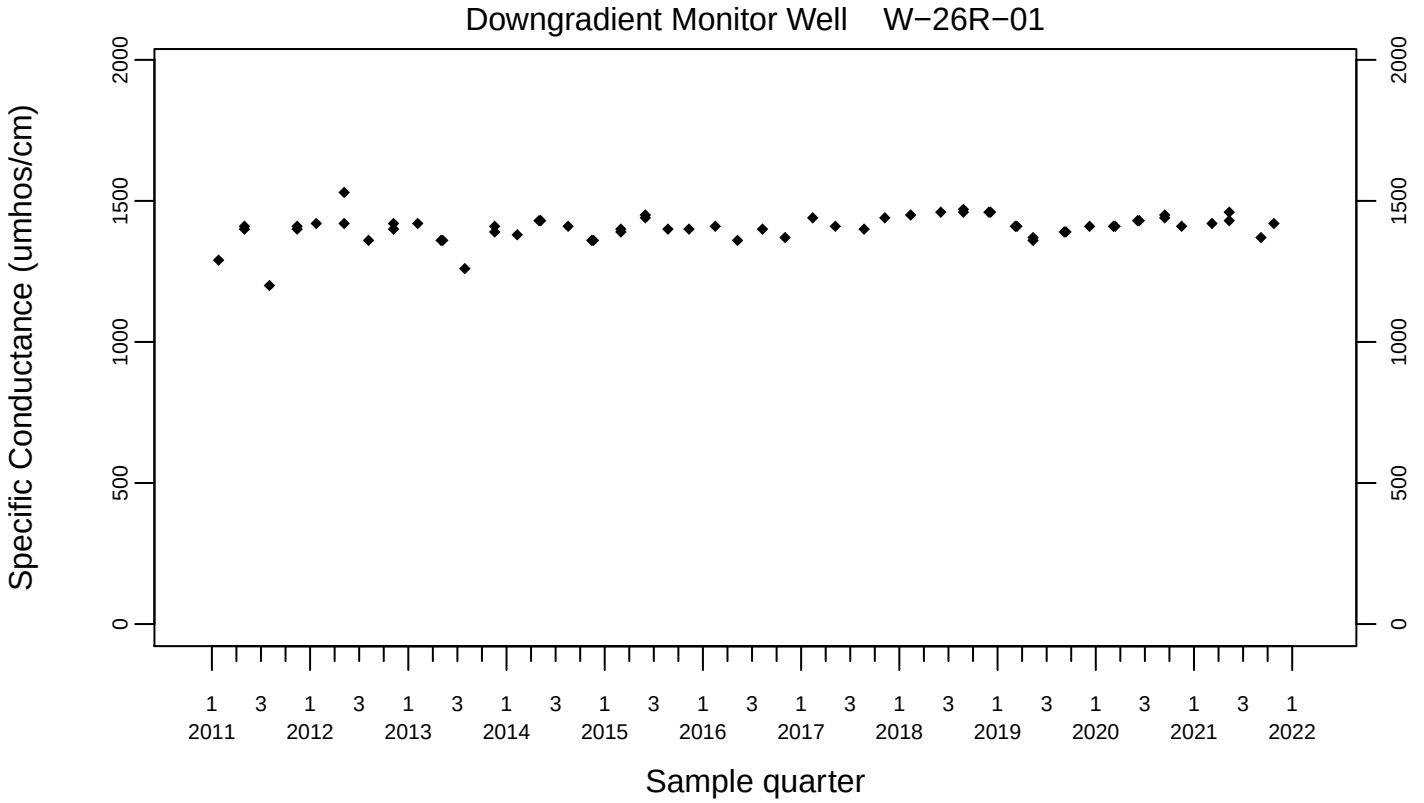

Upgradient Monitor Well W−7PS
Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Specific Conductance (umhos/cm)
Above RL
Below RL
Crossgradient Monitor Well W−35A−04
Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

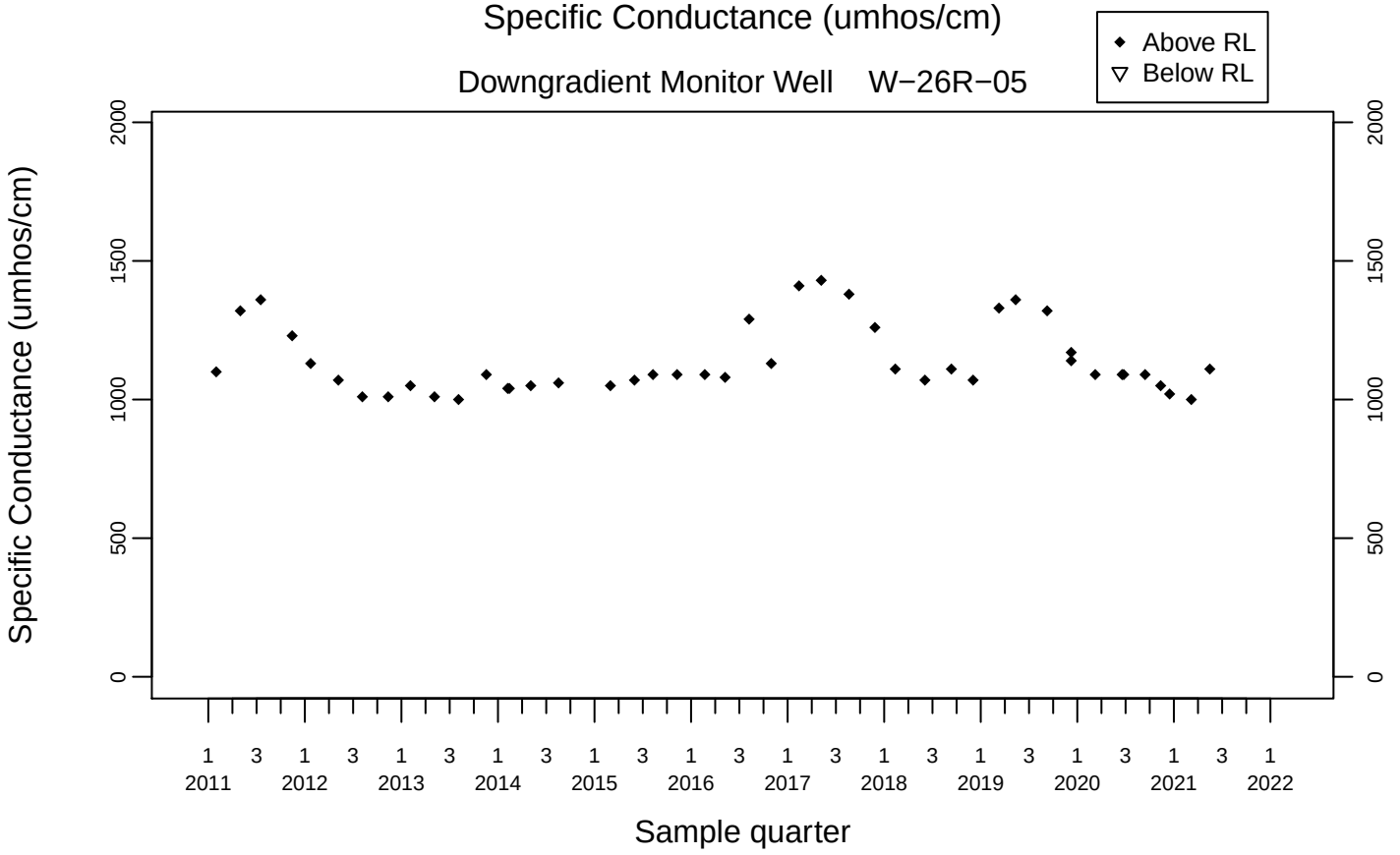

Downgradient Monitor Well W−25N−23
Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

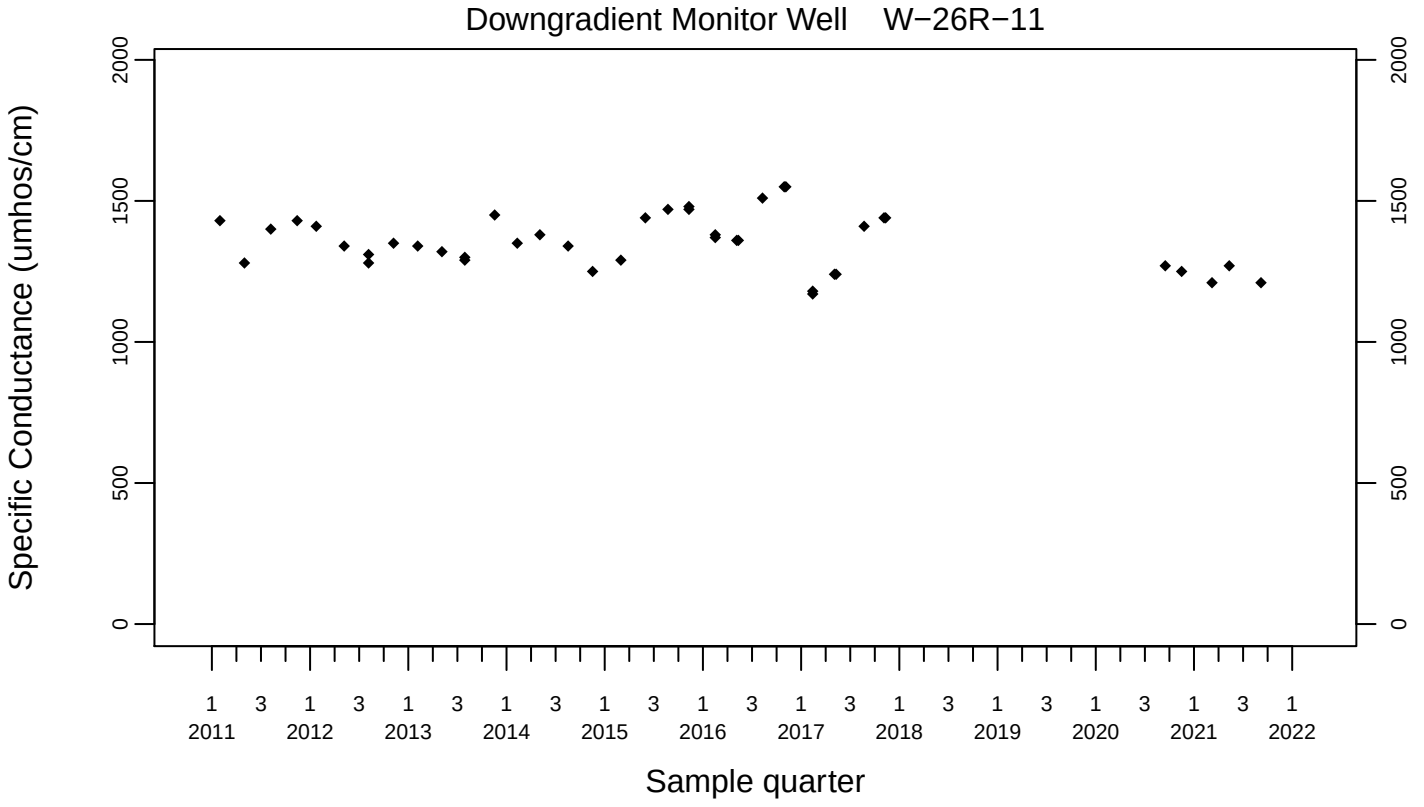
Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

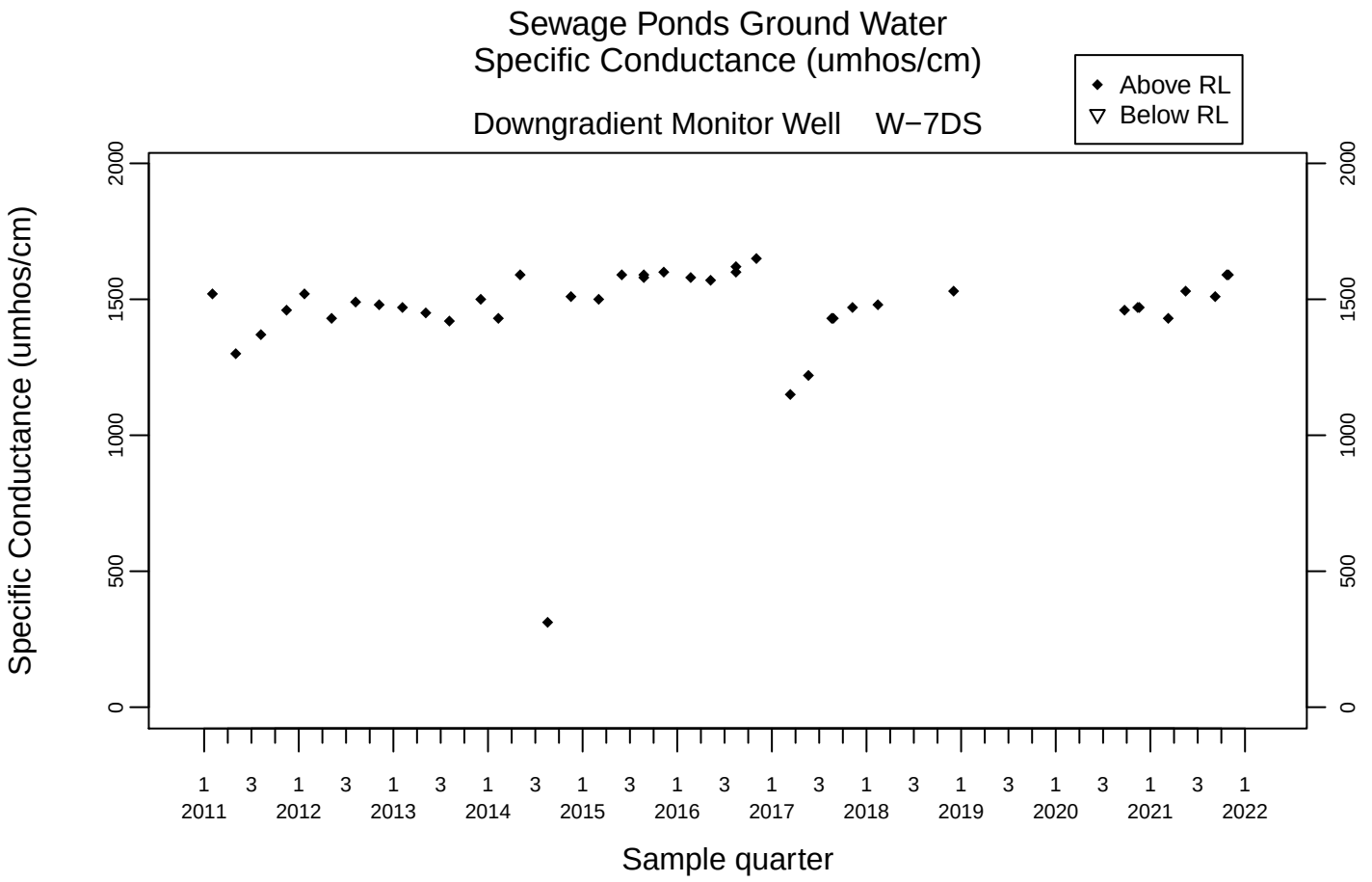




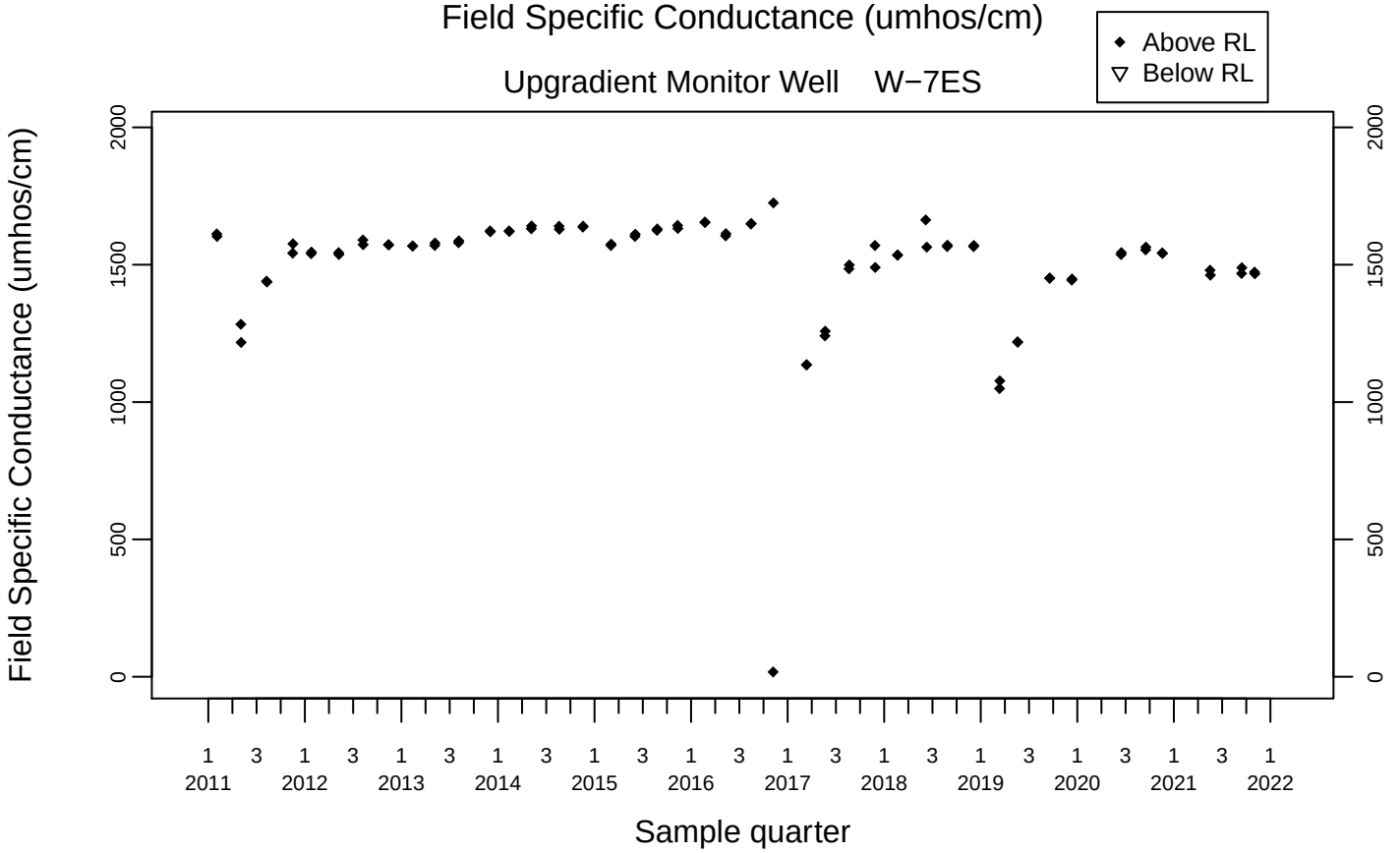
Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

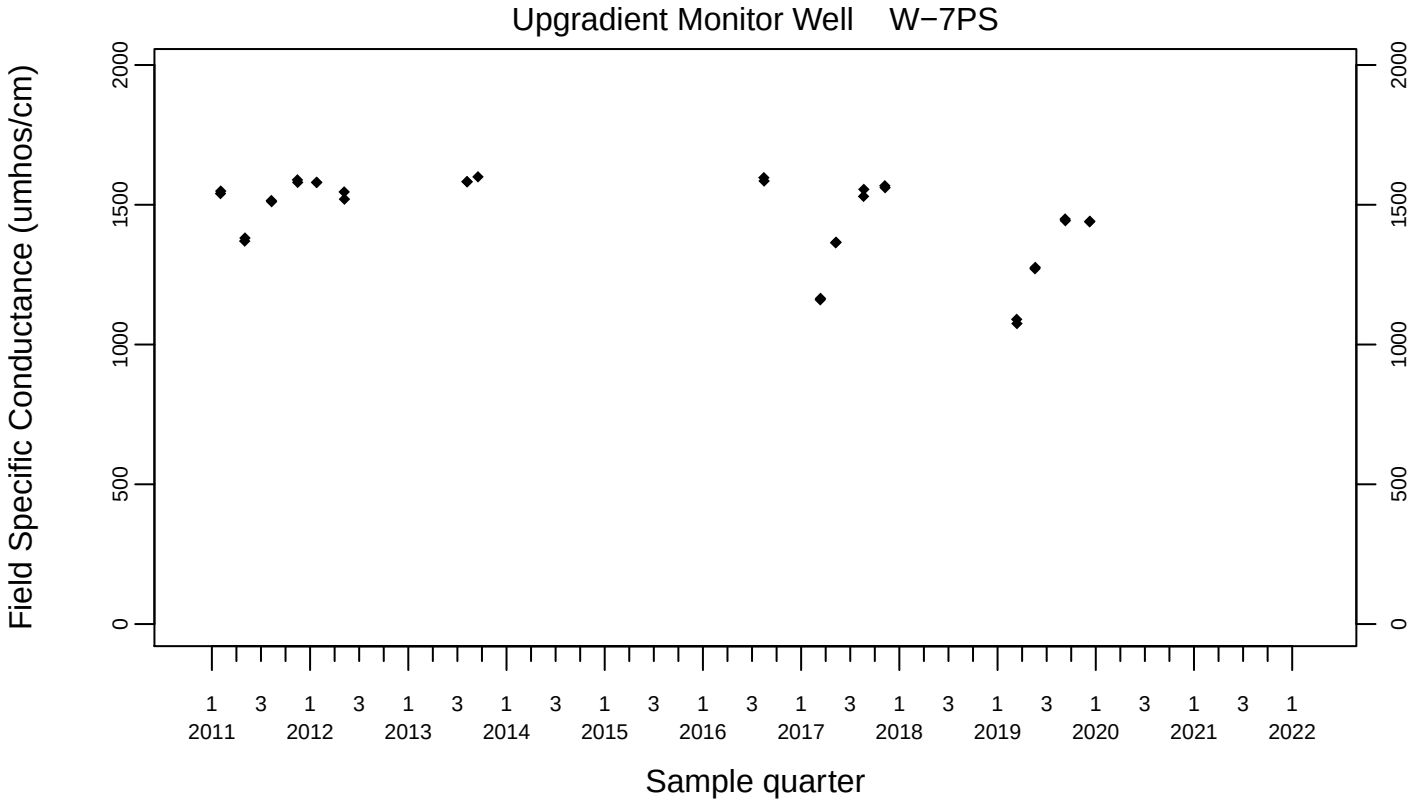


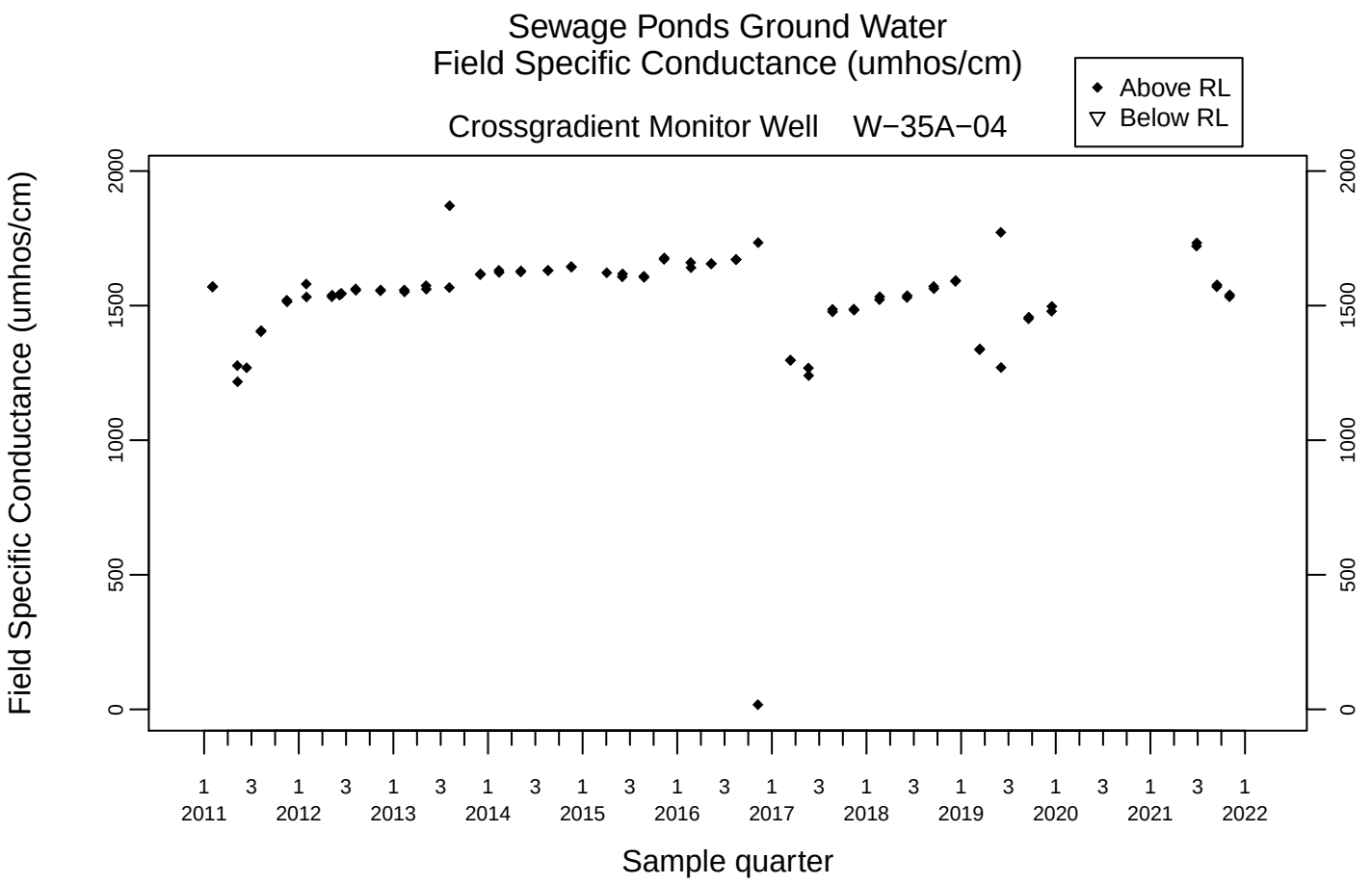


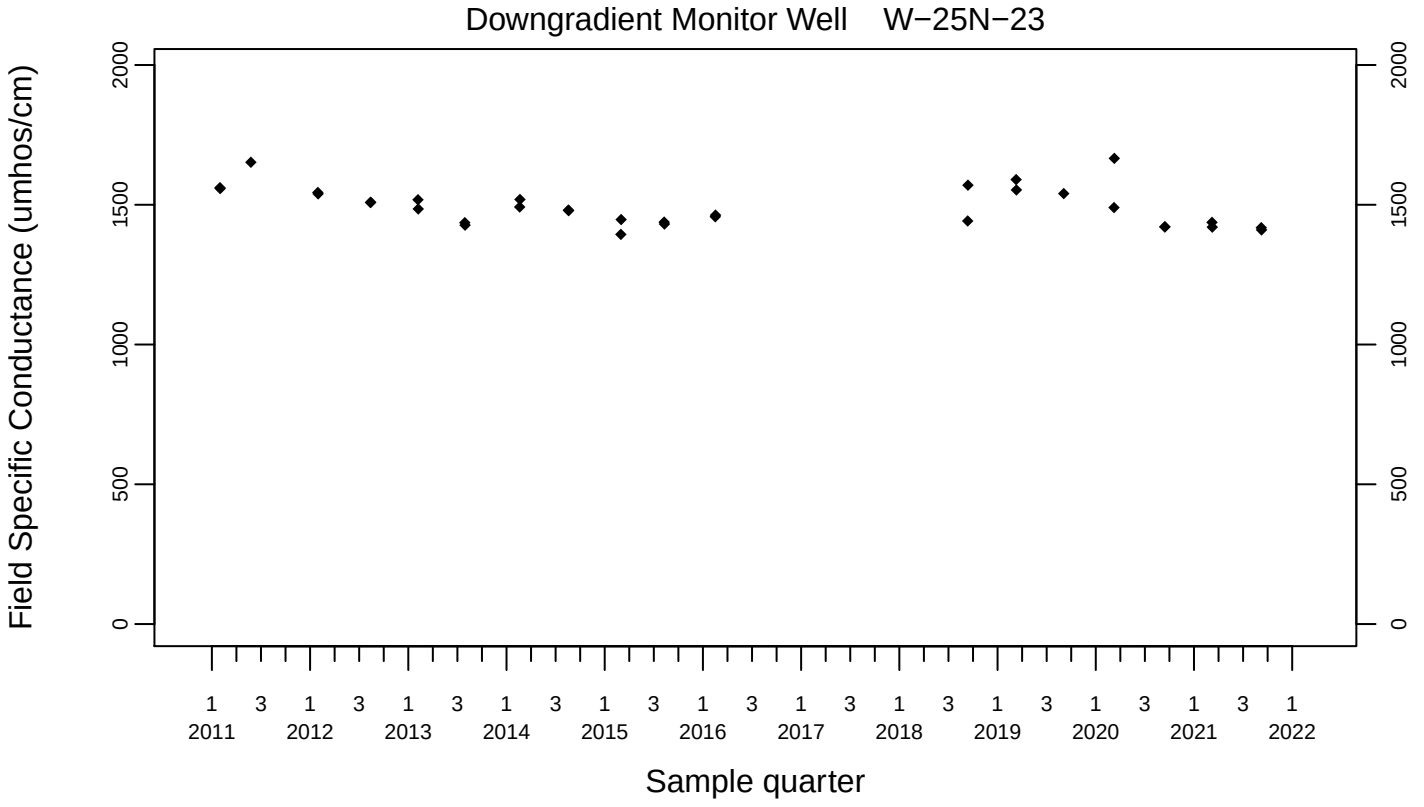

Sewage Ponds Ground Water
Specific Conductance (umhos/cm)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

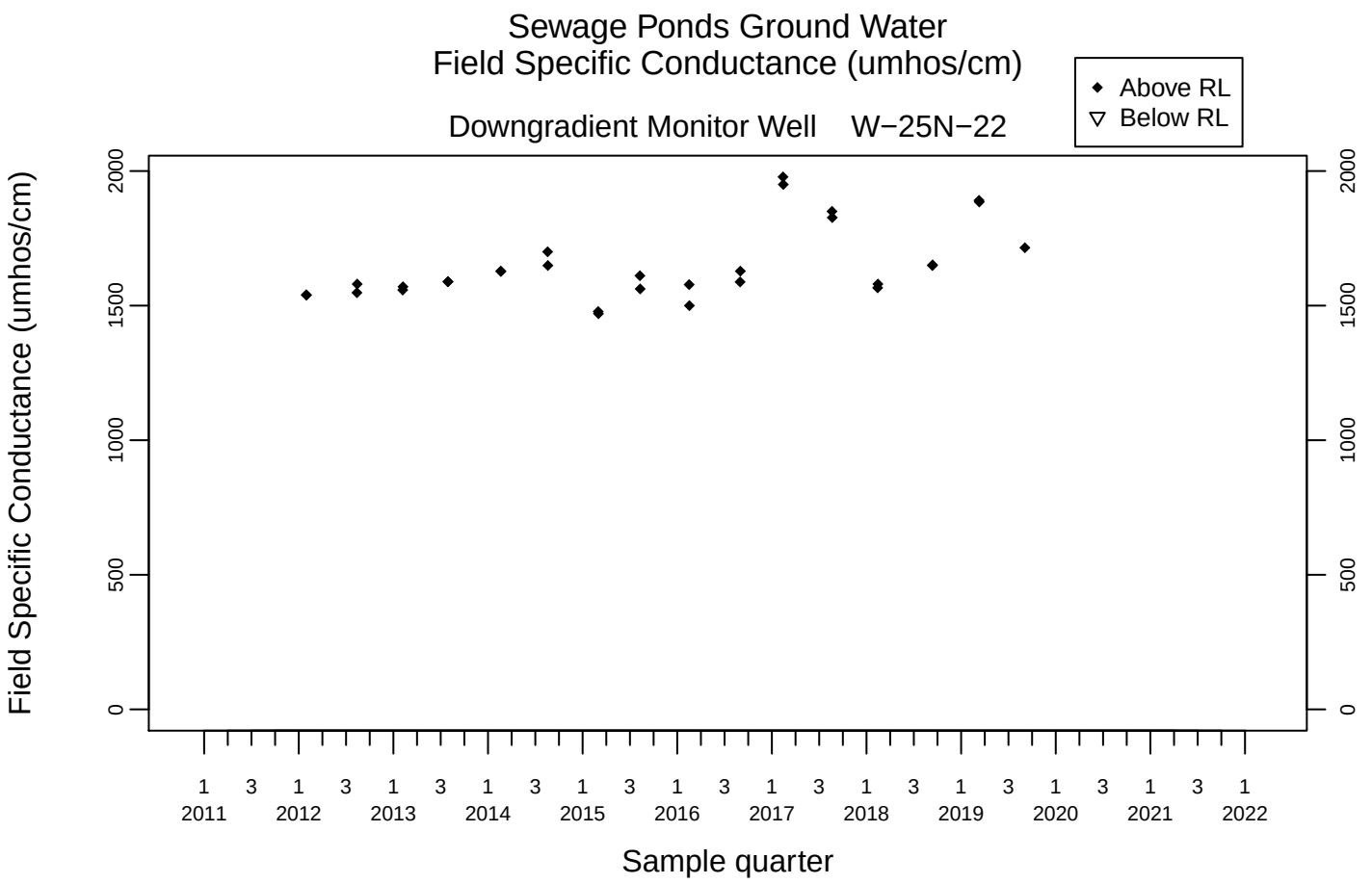
Sewage Ponds Ground Water
Field Specific Conductance (umhos/cm)

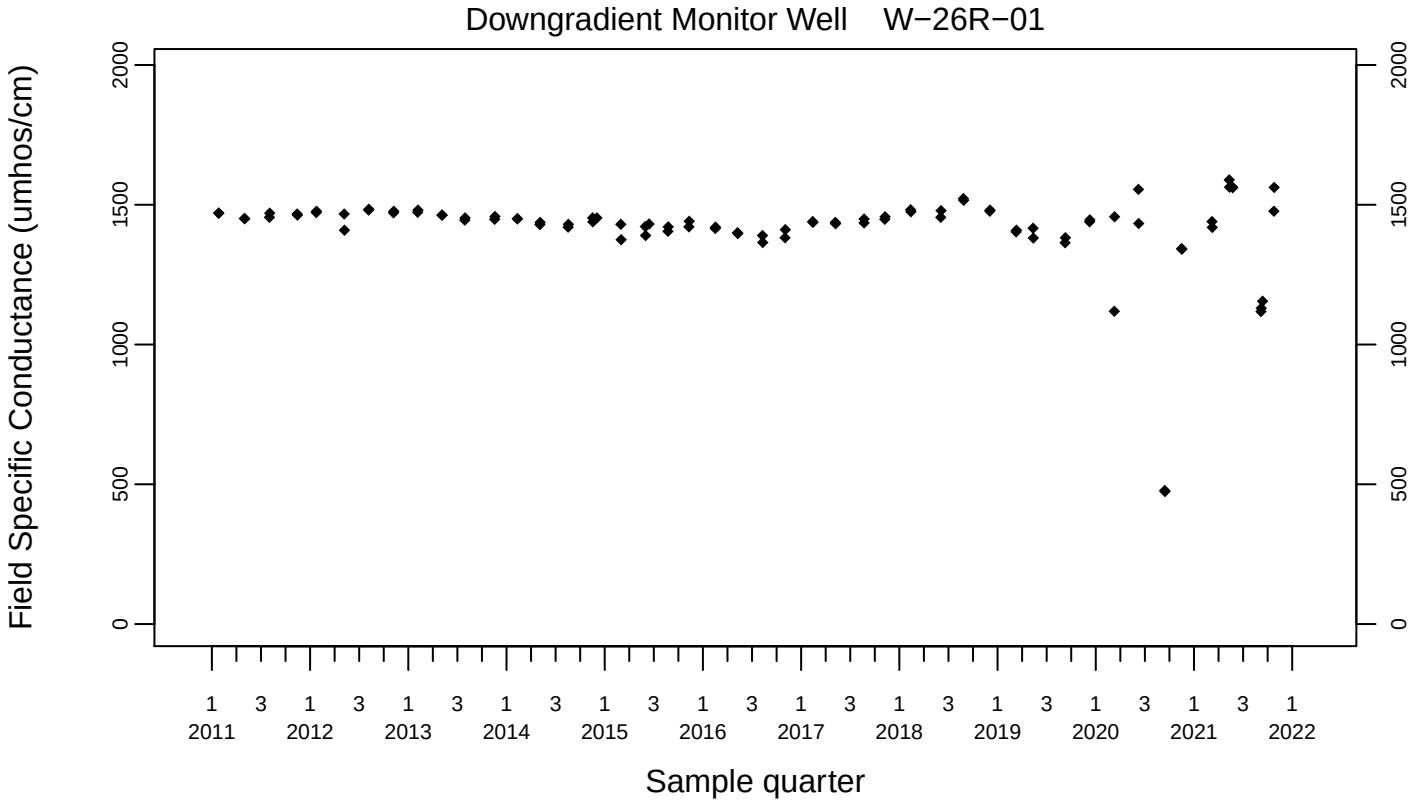





Sewage Ponds Ground Water
Field Specific Conductance (umhos/cm)
Above RL
Below RL
Crossgradient Monitor Well W−35A−04
Field Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

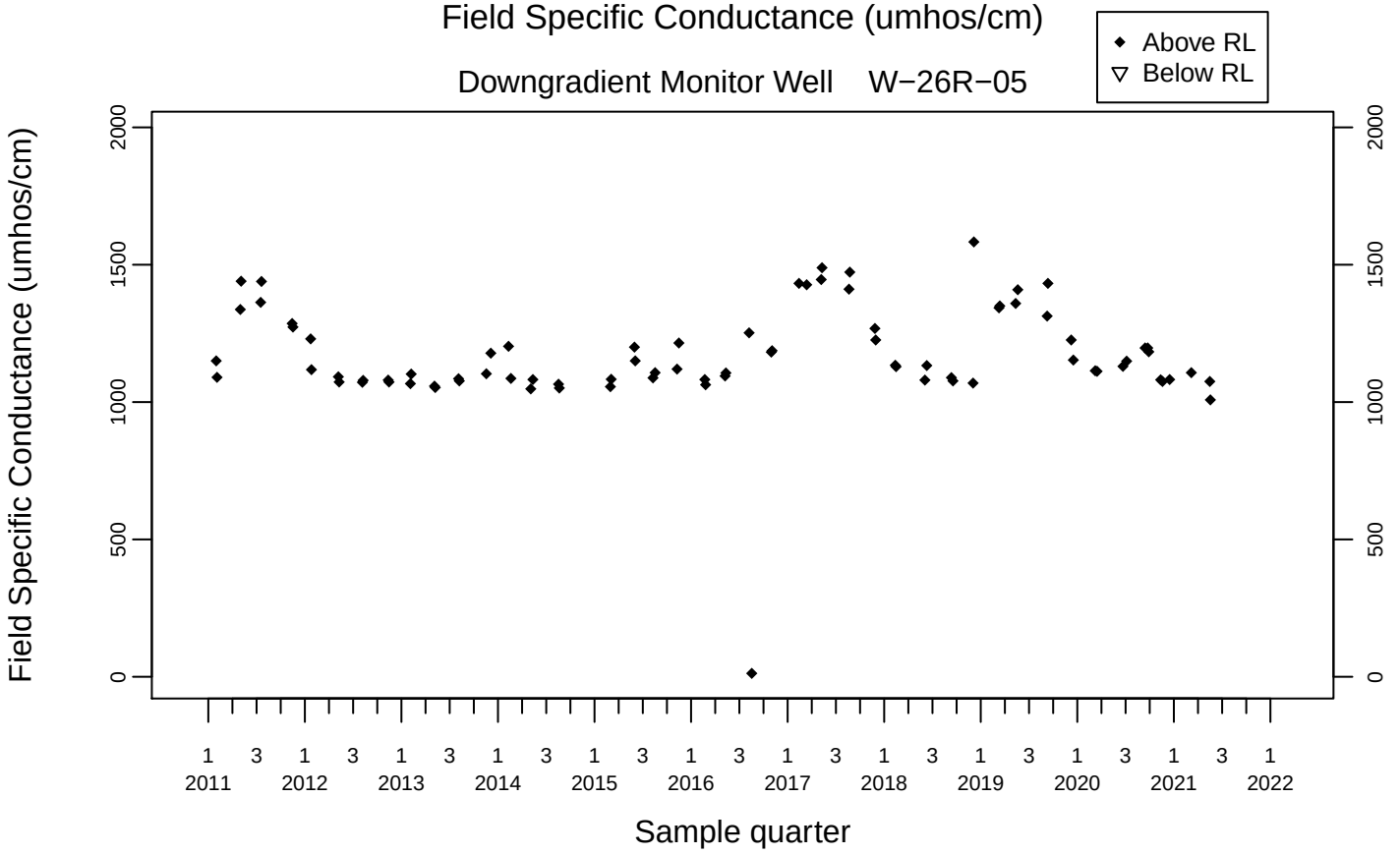

Downgradient Monitor Well W−25N−23
Field Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter


Sewage Ponds Ground Water
Field Specific Conductance (umhos/cm)
Above RL
Below RL
Downgradient Monitor Well W−25N−22
Field Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

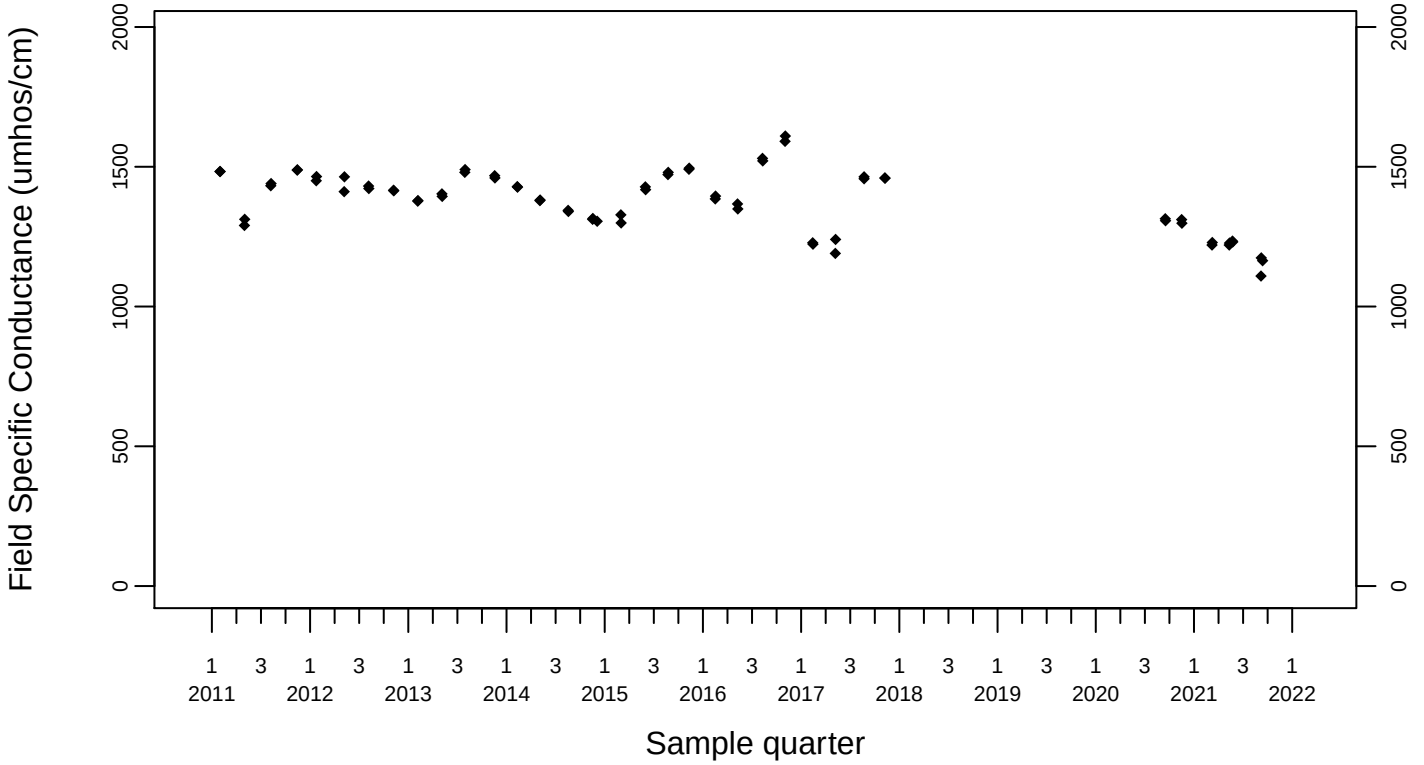

Downgradient Monitor Well W−26R−01
Field Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

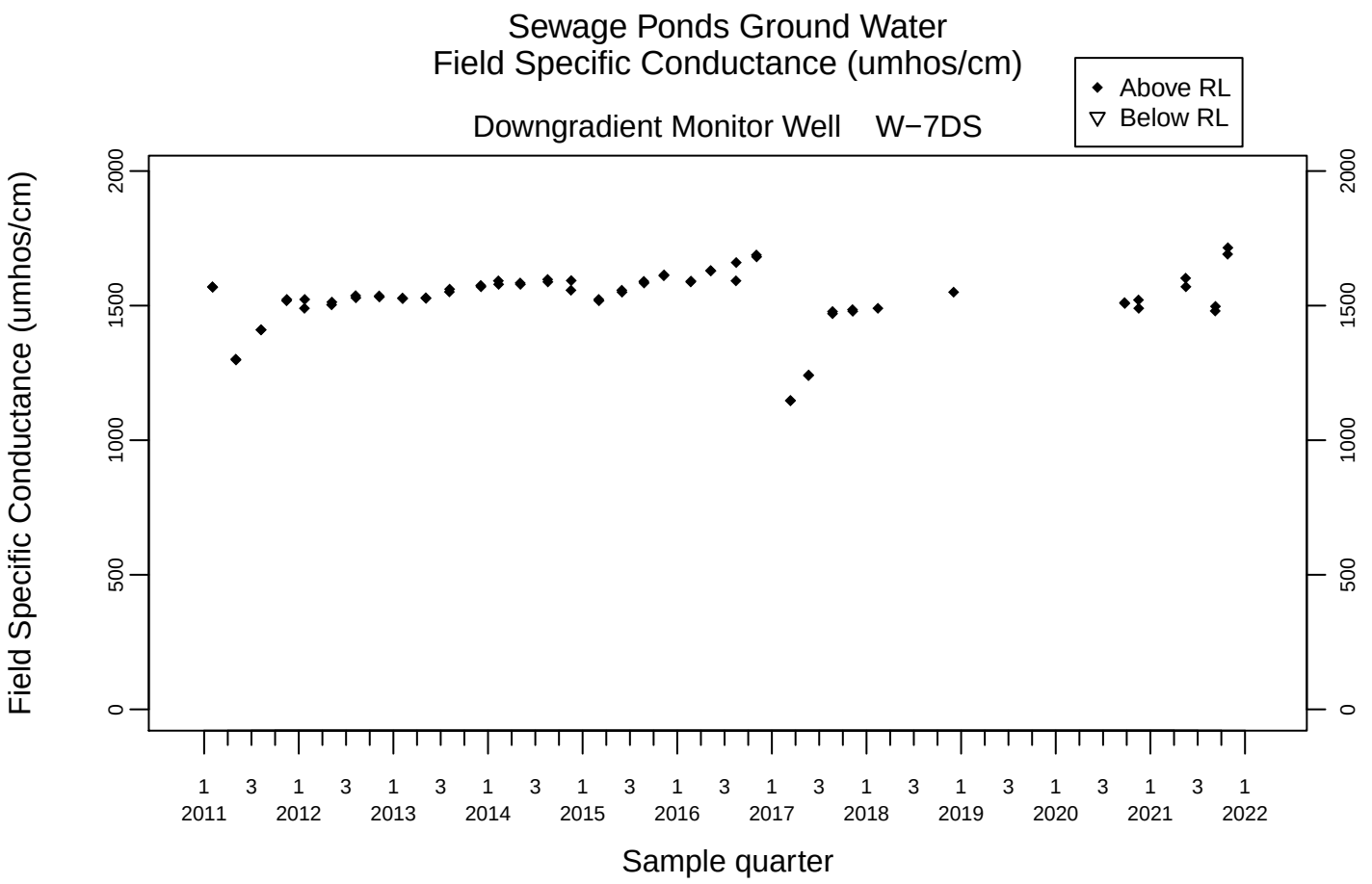
Sewage Ponds Ground Water
Field Specific Conductance (umhos/cm)

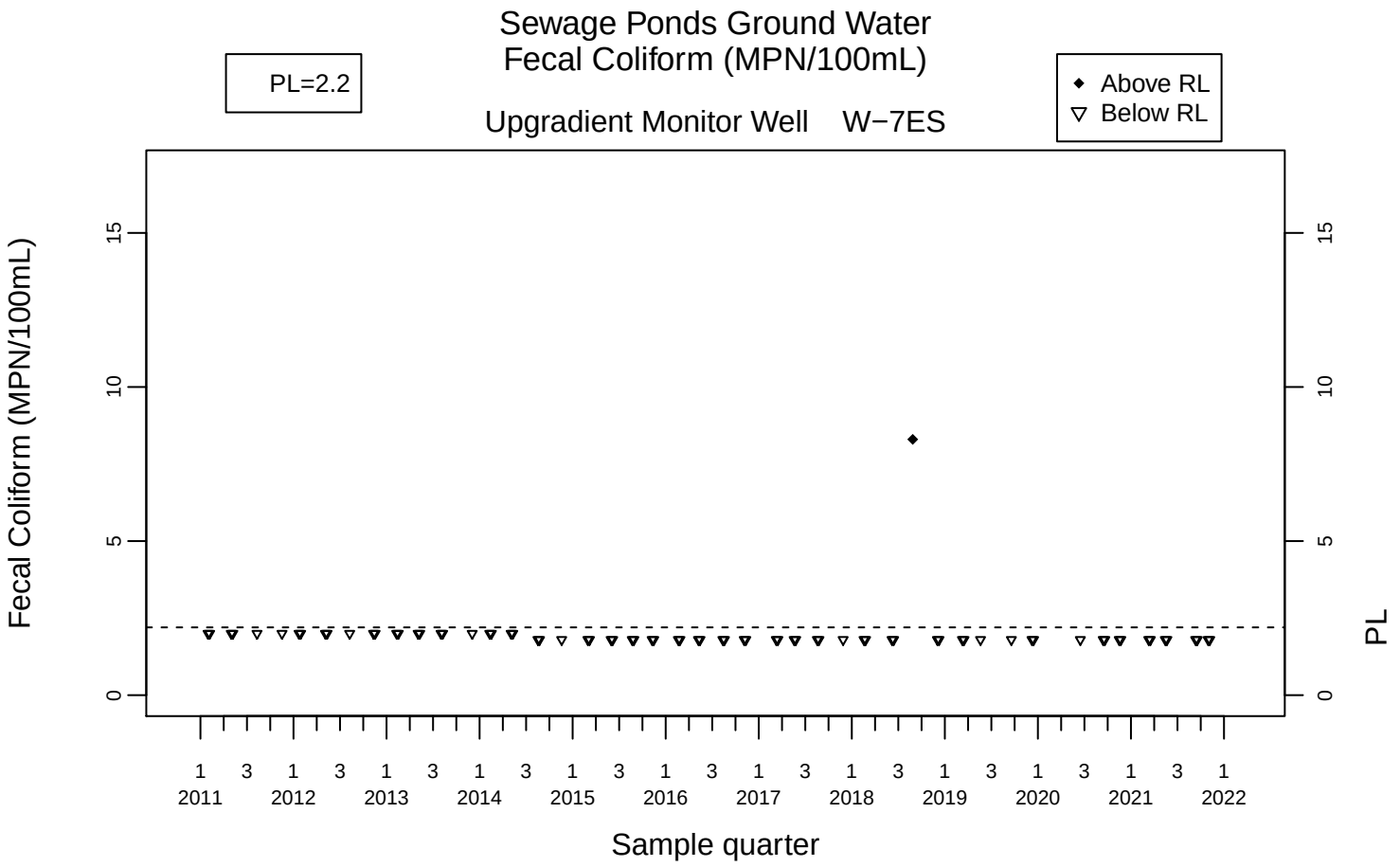
Downgradient Monitor Well W−26R−05

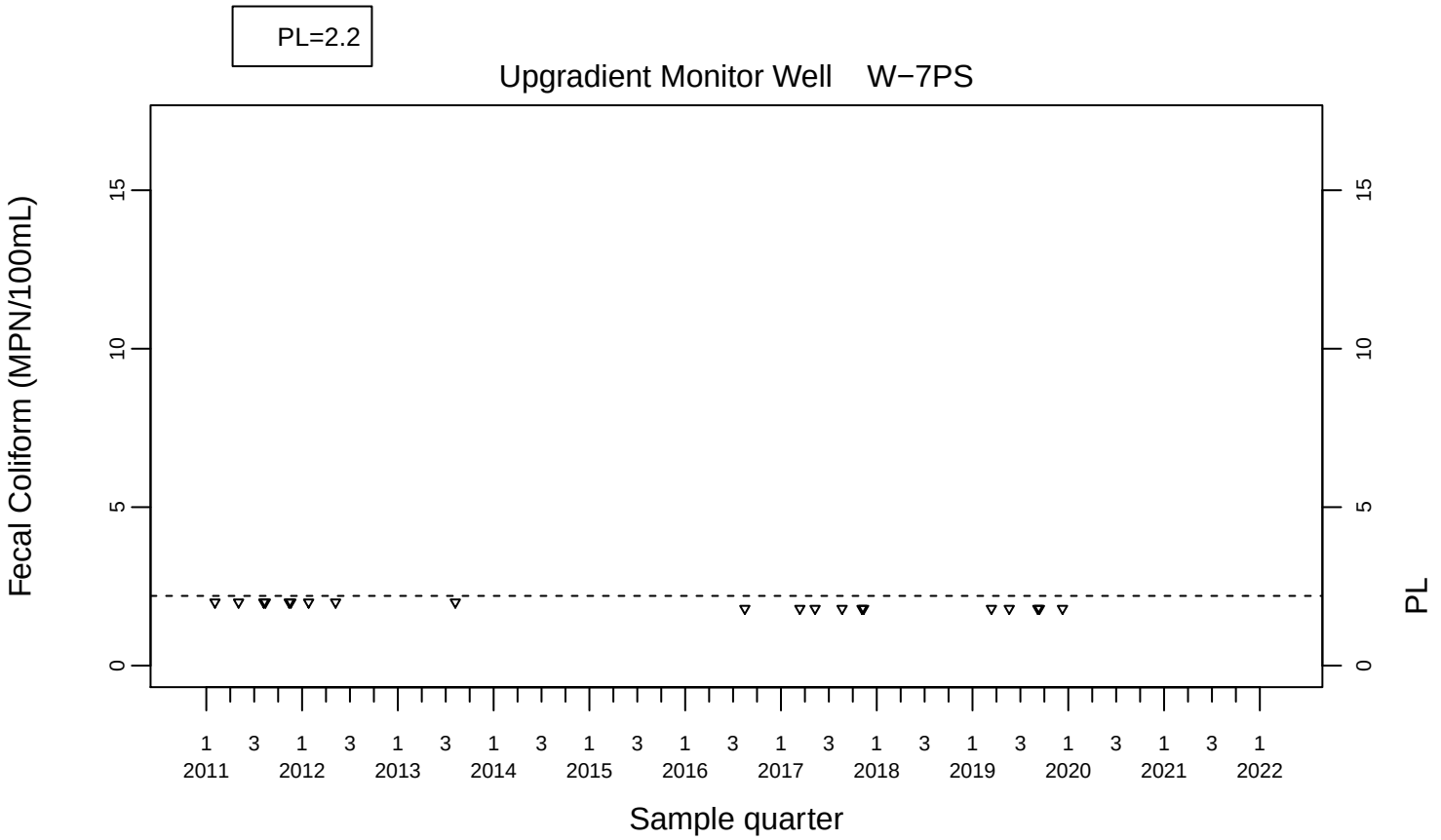


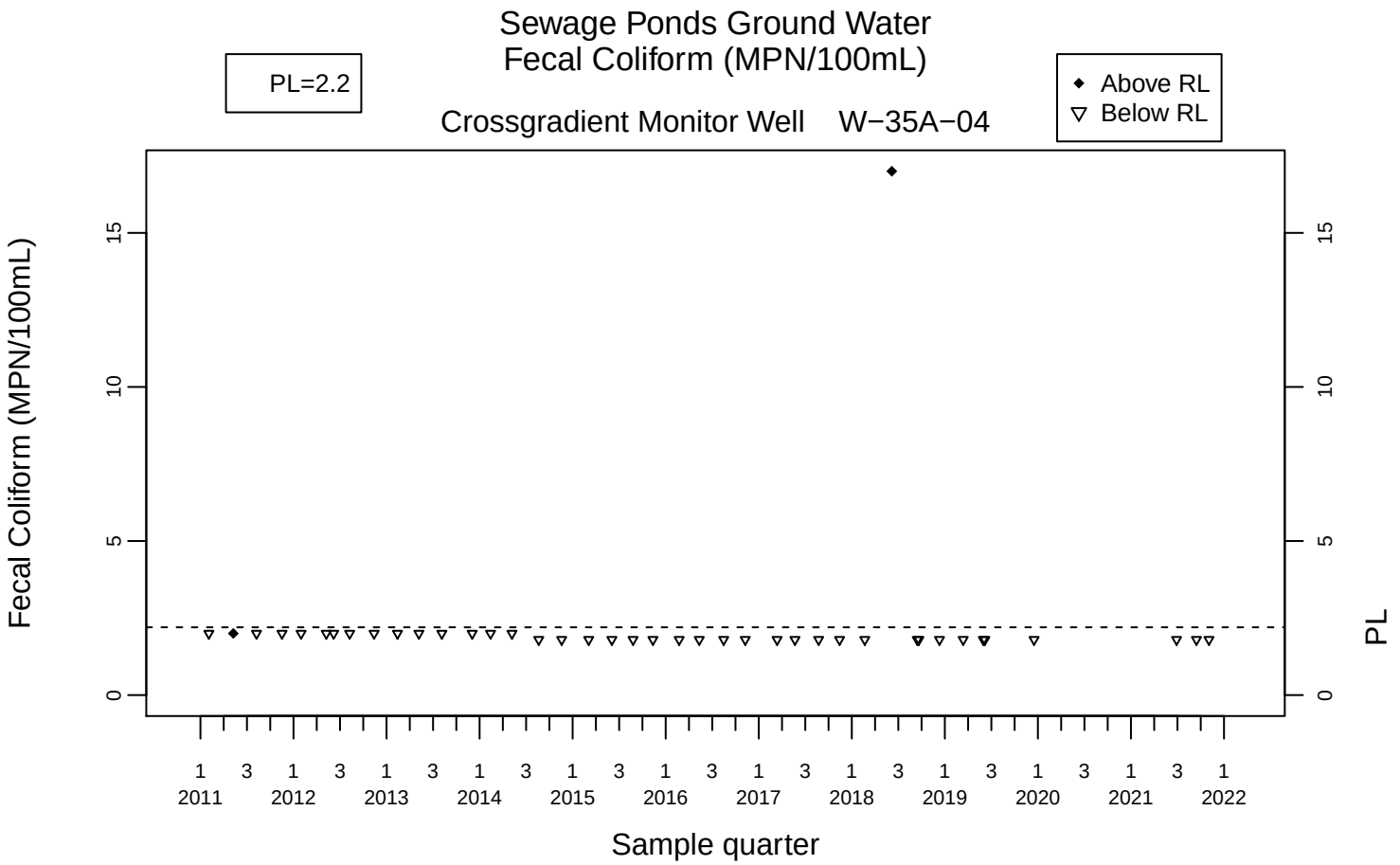
Downgradient Monitor Well W−26R−11

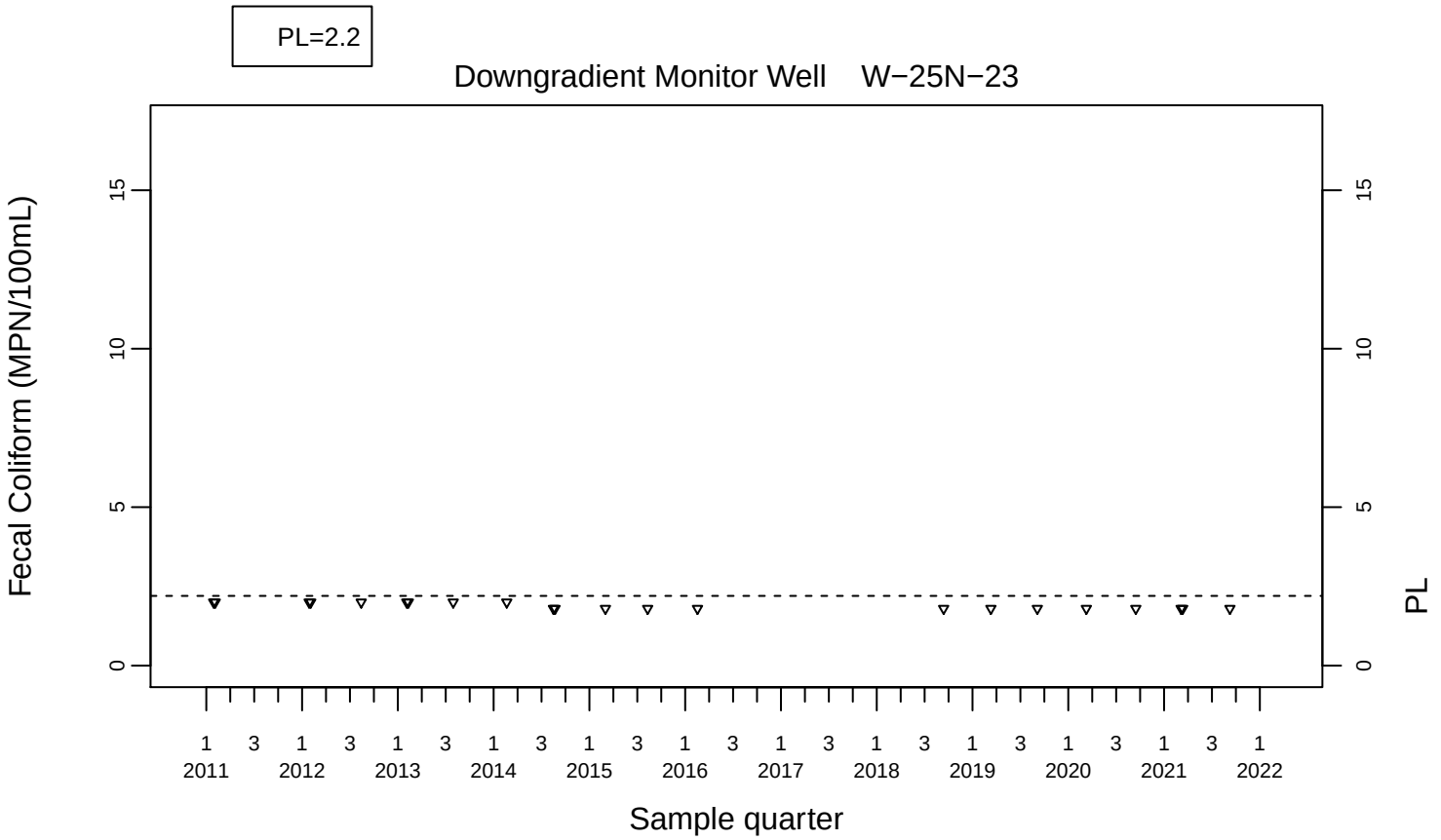


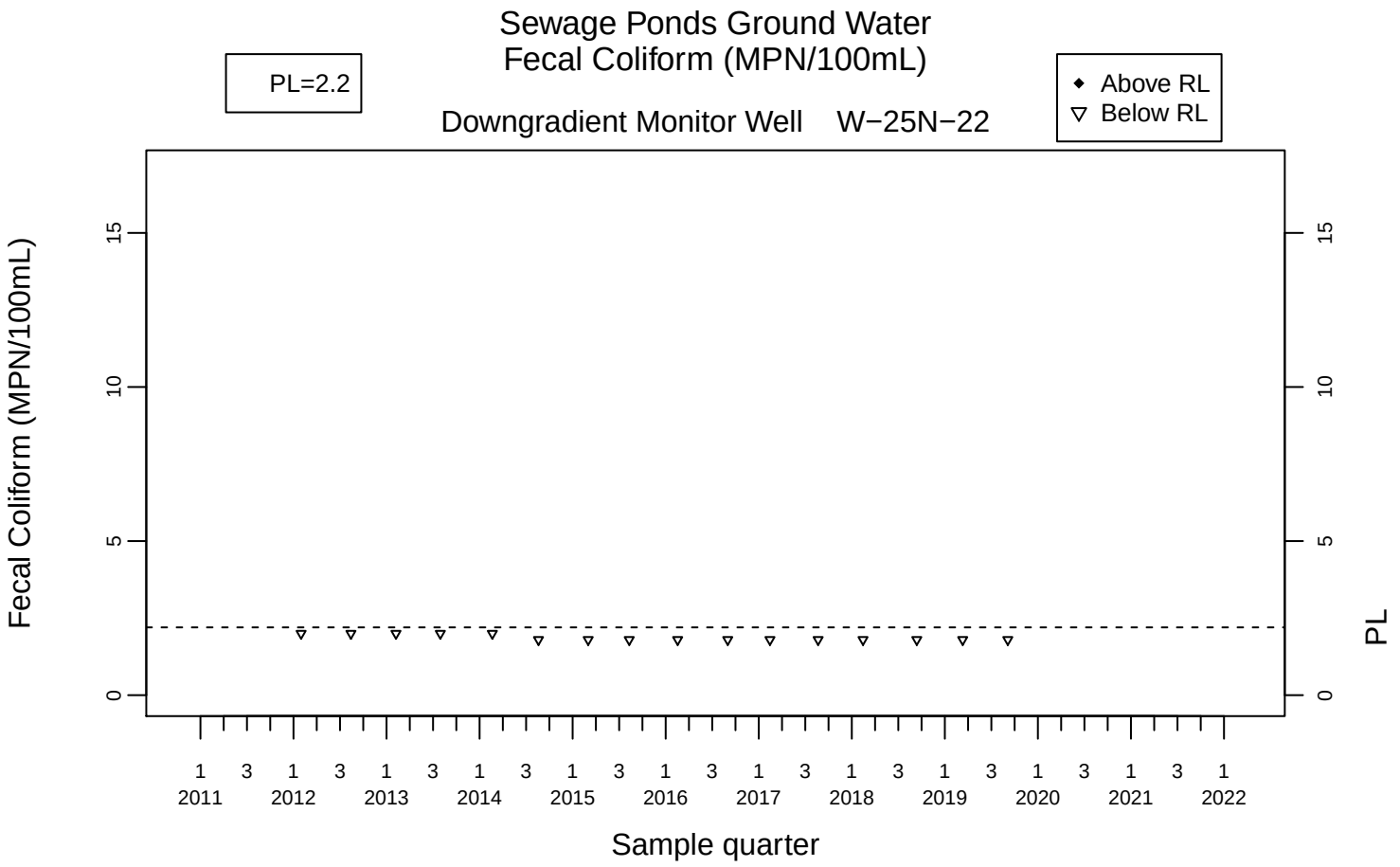

Sewage Ponds Ground Water
Field Specific Conductance (umhos/cm)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Field Specific Conductance (umhos/cm)
0
500
1000
1500
2000
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

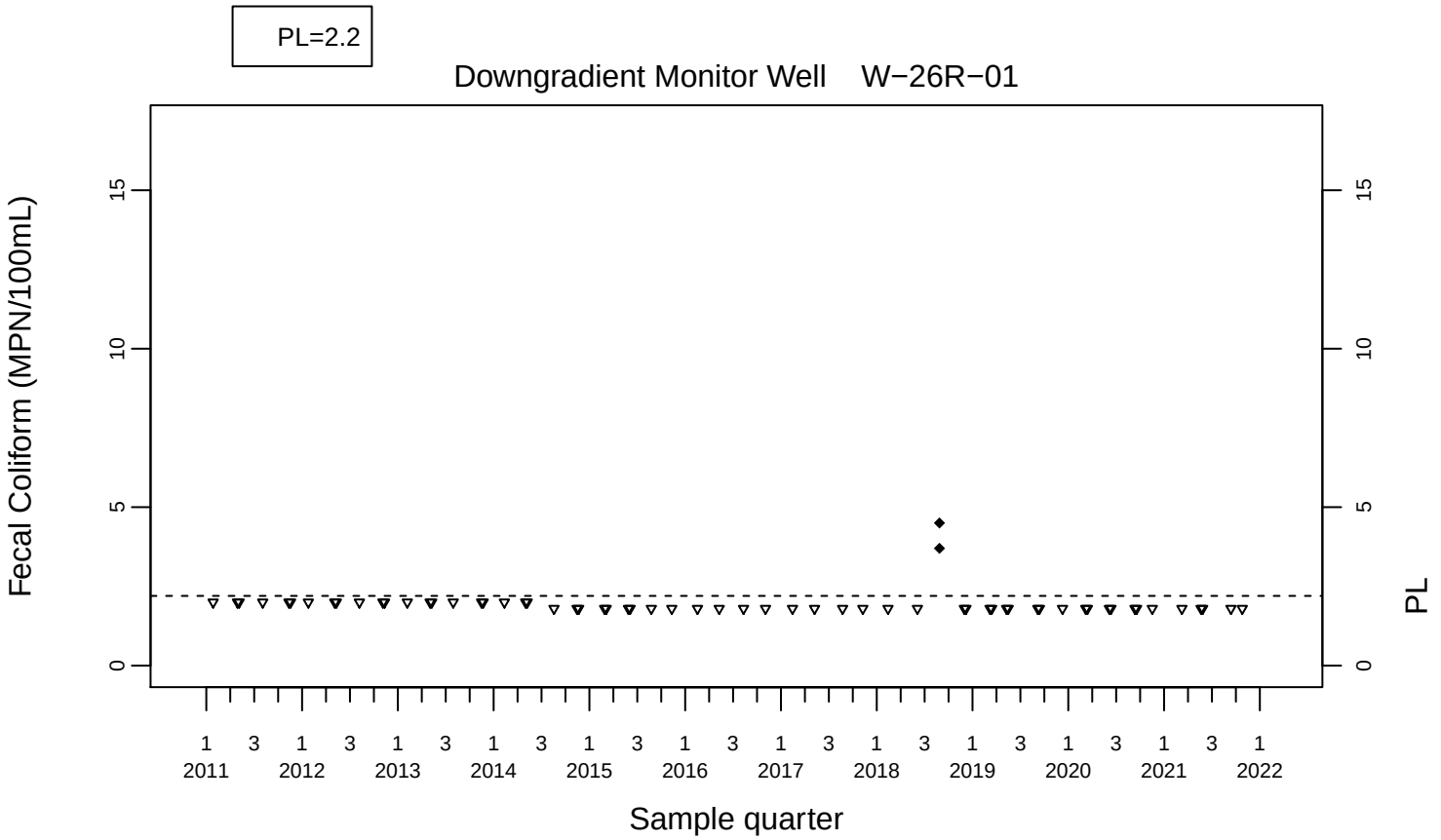

Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)
PL=2.2
Above RL
Below RL
Upgradient Monitor Well W−7ES
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

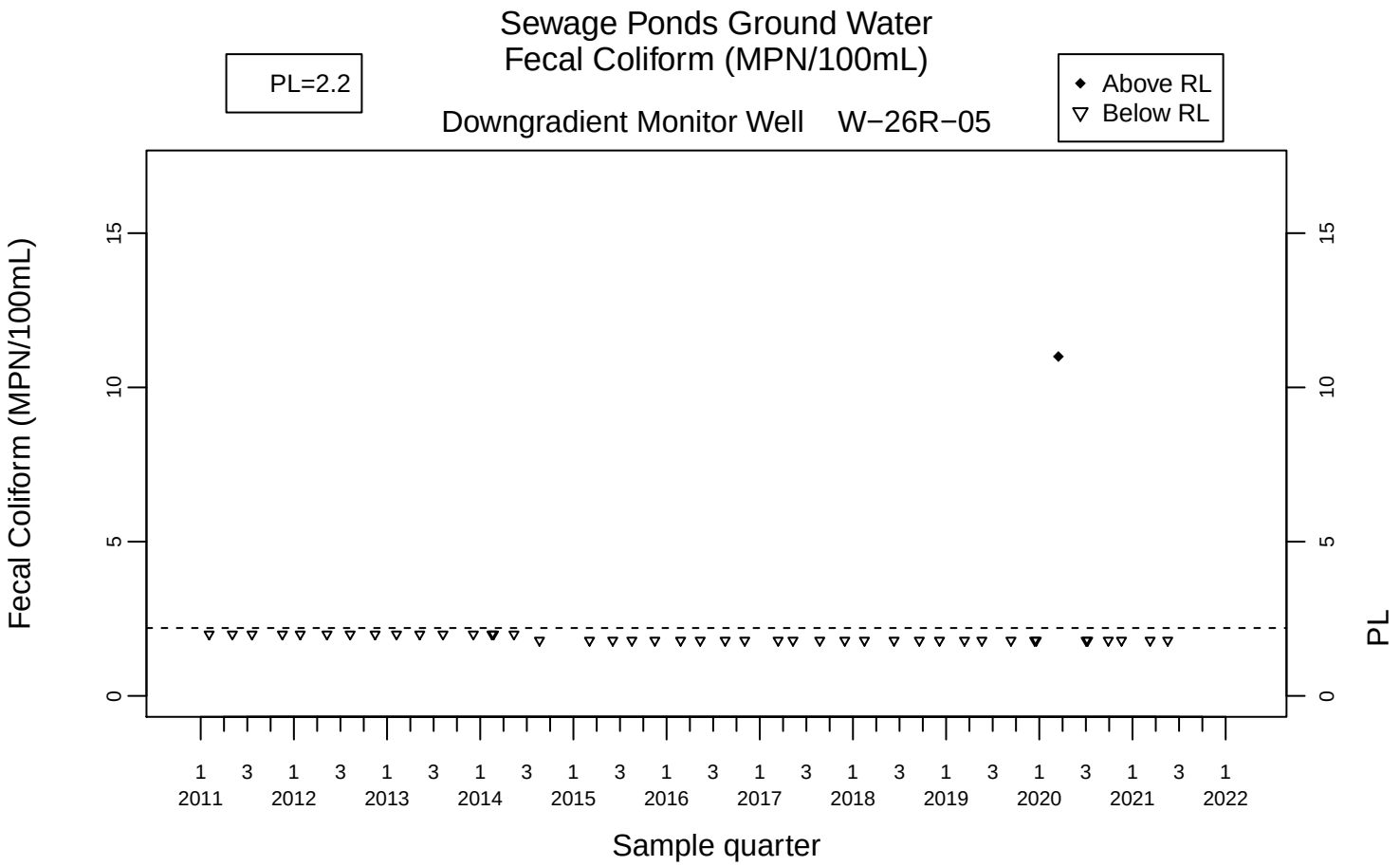

PL=2.2
Upgradient Monitor Well W−7PS
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

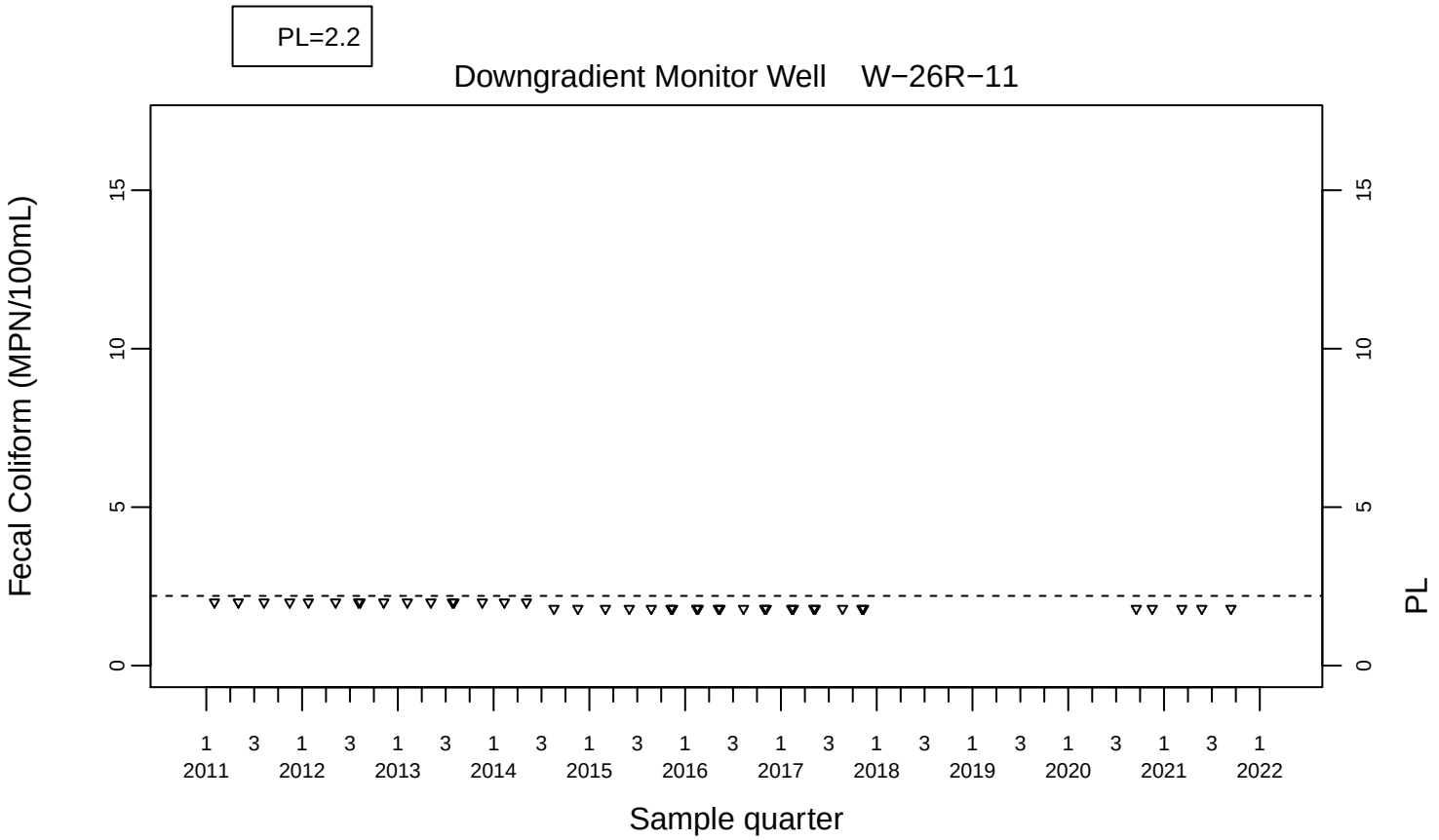

Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)
PL=2.2
Above RL
Below RL
Crossgradient Monitor Well W−35A−04
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

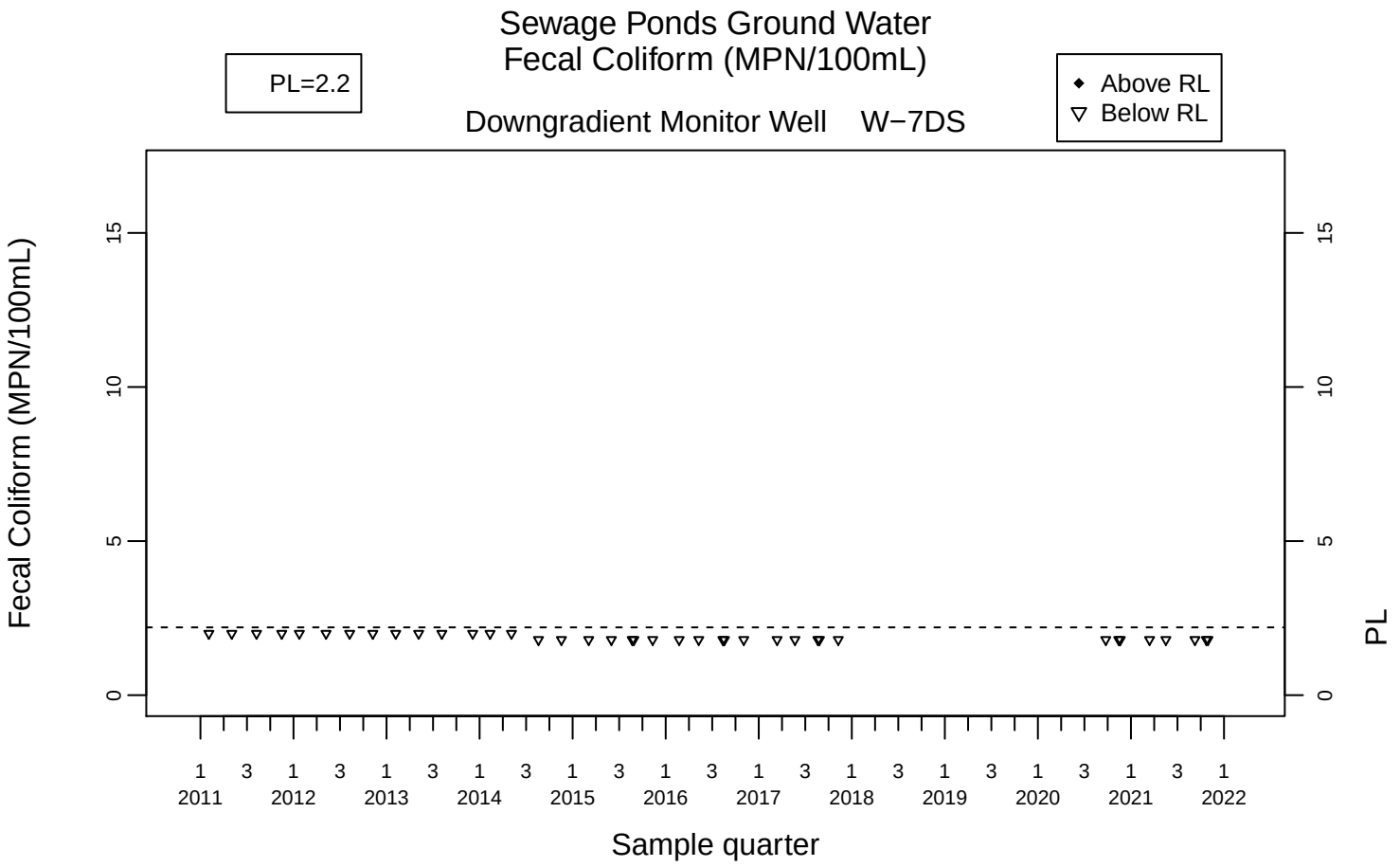

PL=2.2
Downgradient Monitor Well W−25N−23
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)
PL=2.2
Above RL
Below RL
Downgradient Monitor Well W−25N−22
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

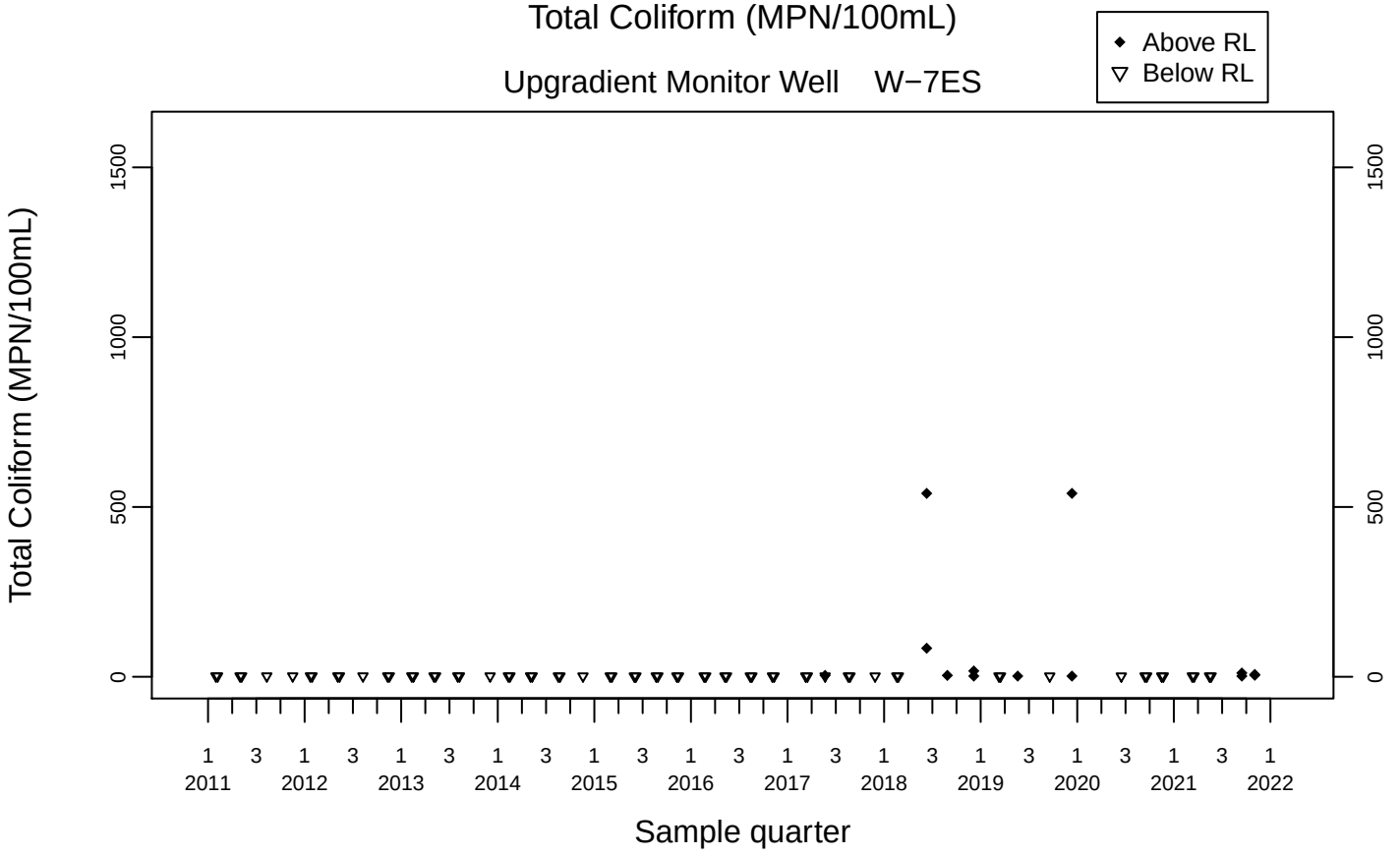

PL=2.2
Downgradient Monitor Well W−26R−01
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

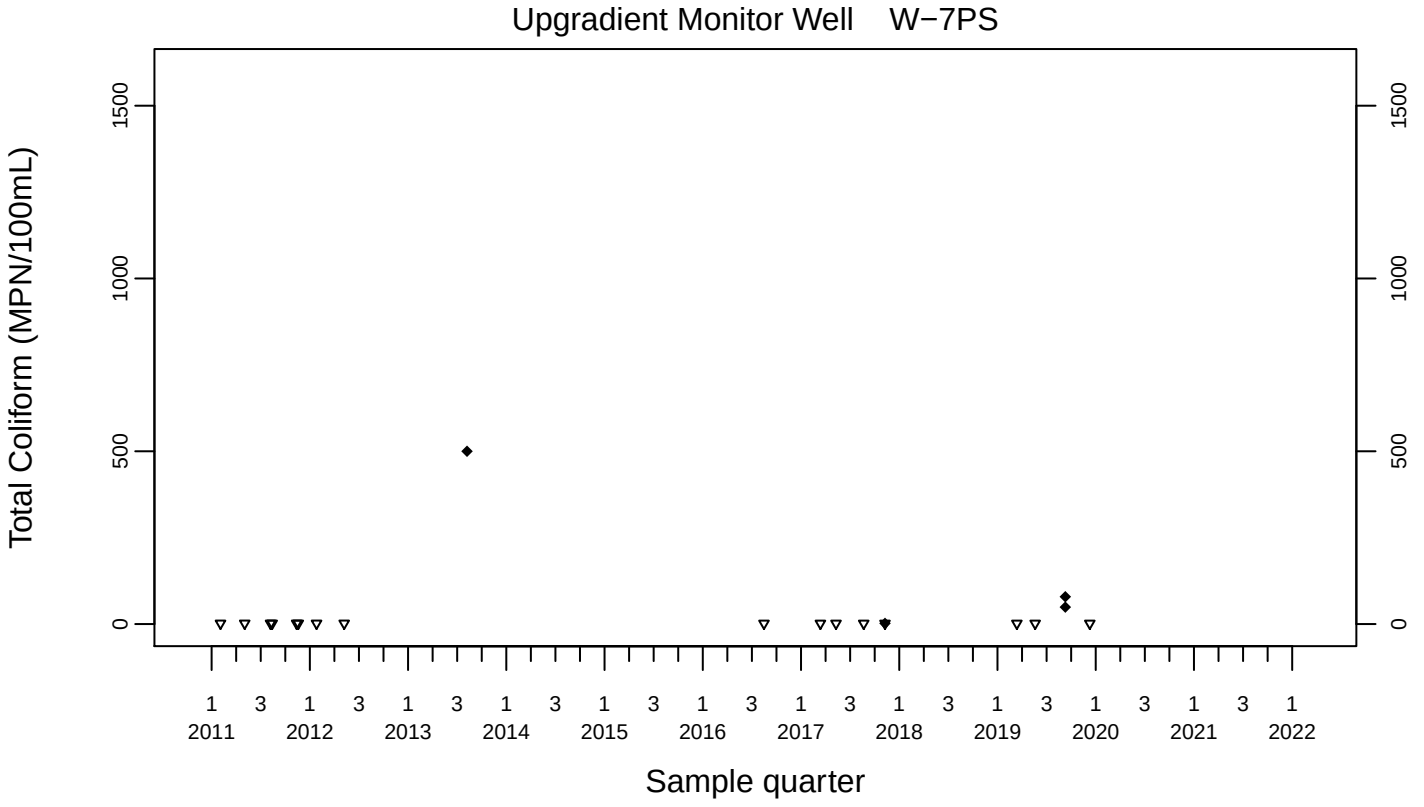

Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)
PL=2.2
Above RL
Below RL
Downgradient Monitor Well W−26R−05
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


PL=2.2
Downgradient Monitor Well W−26R−11
Fecal Coliform (MPN/100mL)
PL
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

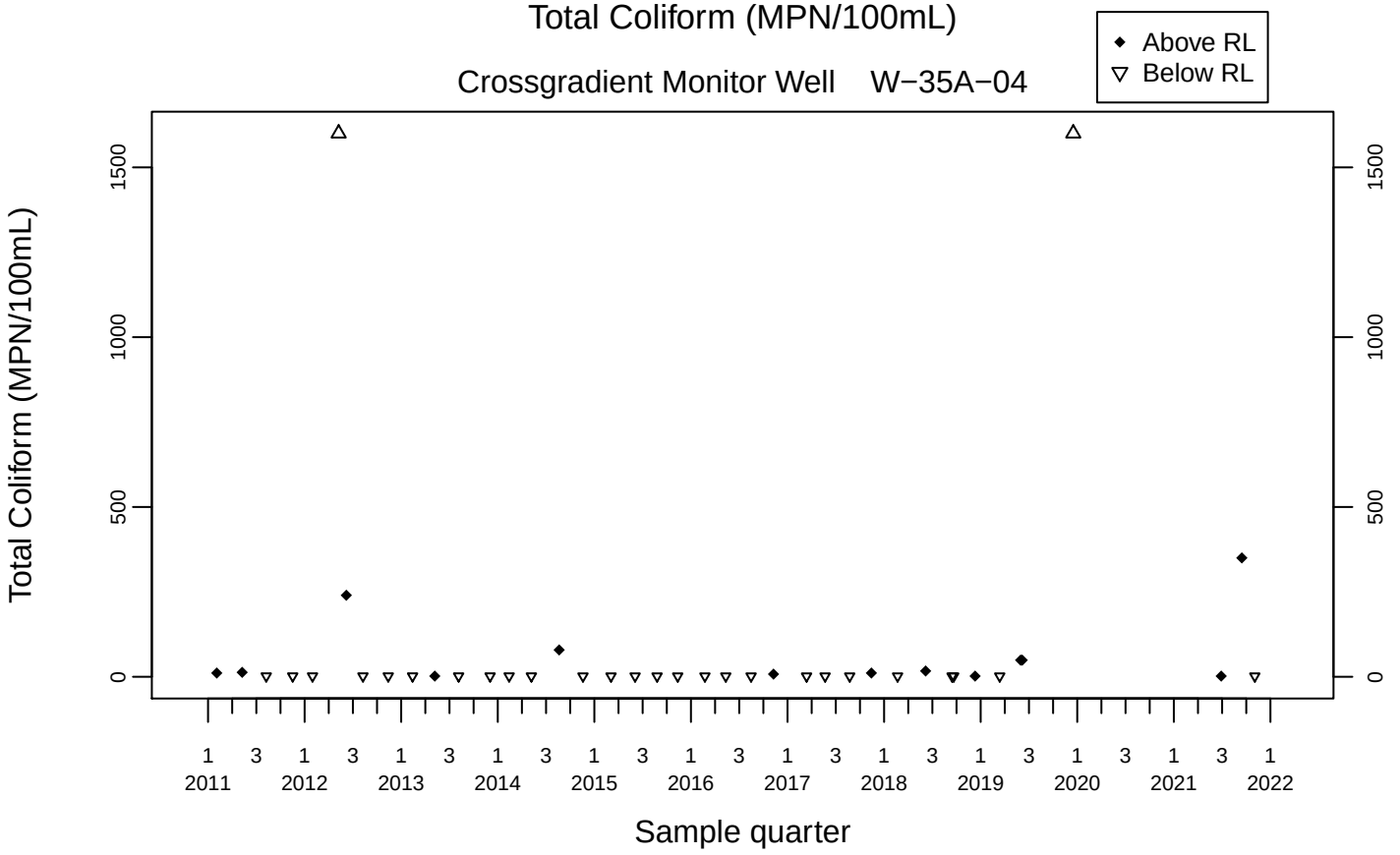

Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)
PL=2.2
Above RL
Below RL
Downgradient Monitor Well W−7DS
Fecal Coliform (MPN/100mL)
0
5
10
15
PL
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

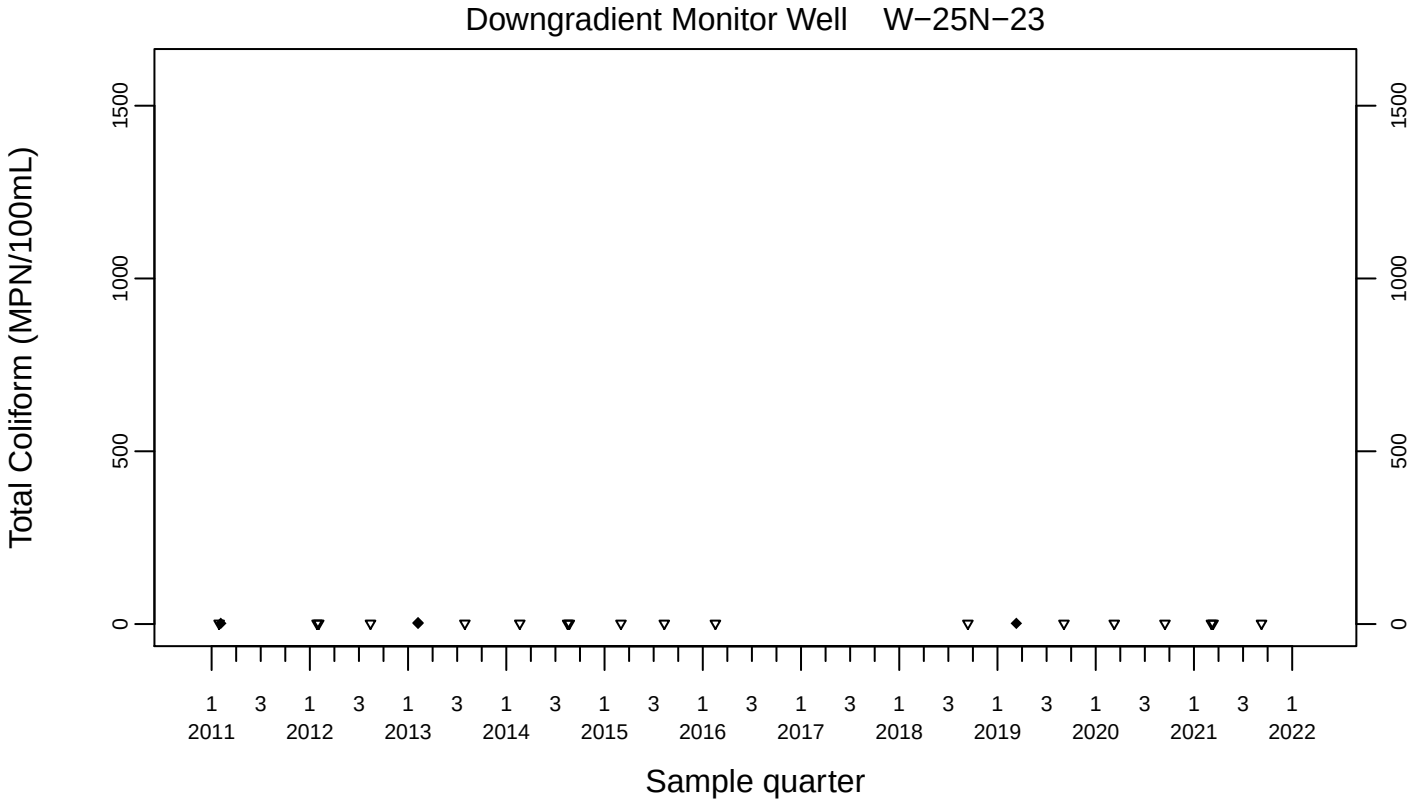
Sewage Ponds Ground Water
Total Coliform (MPN/100mL)



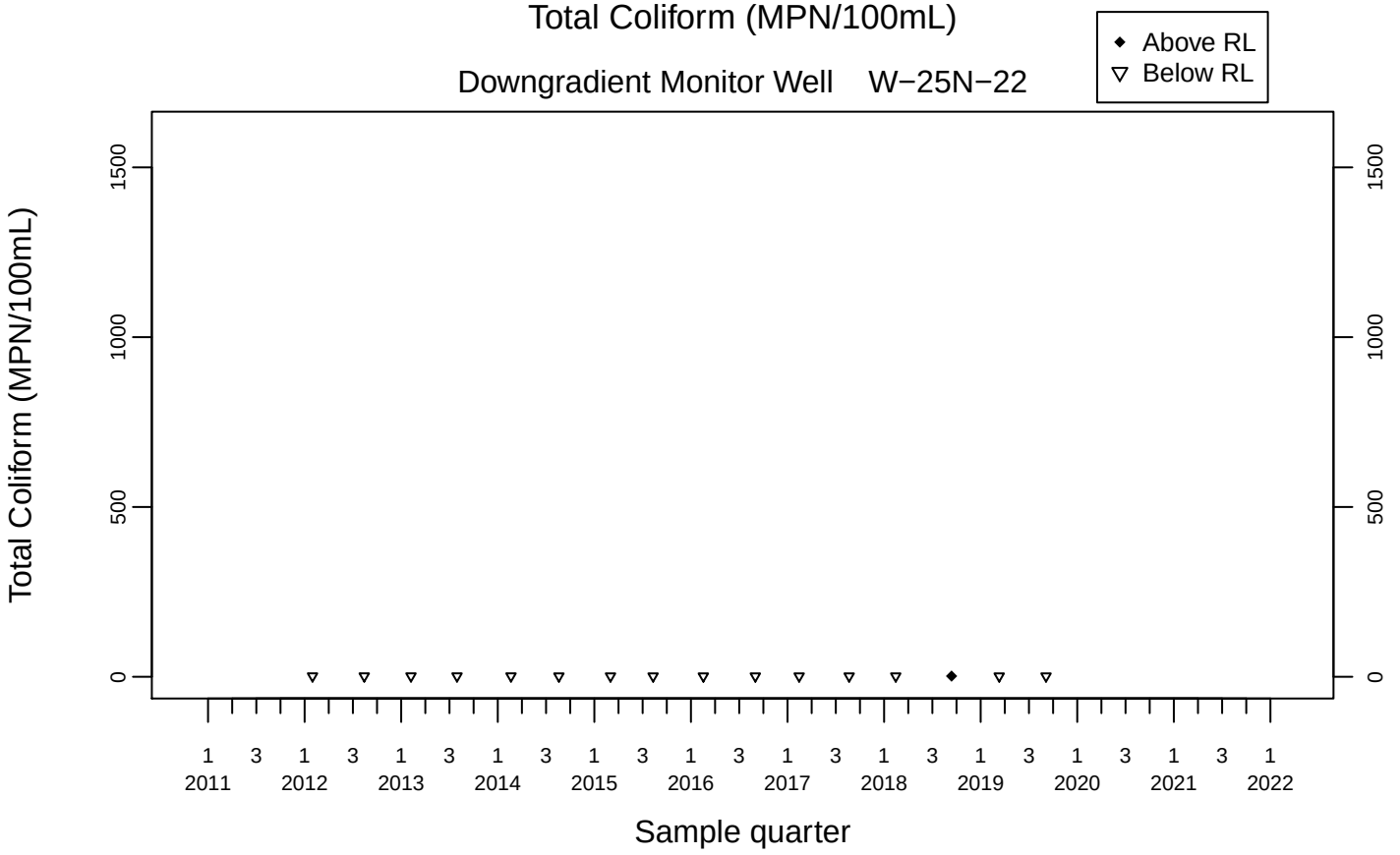


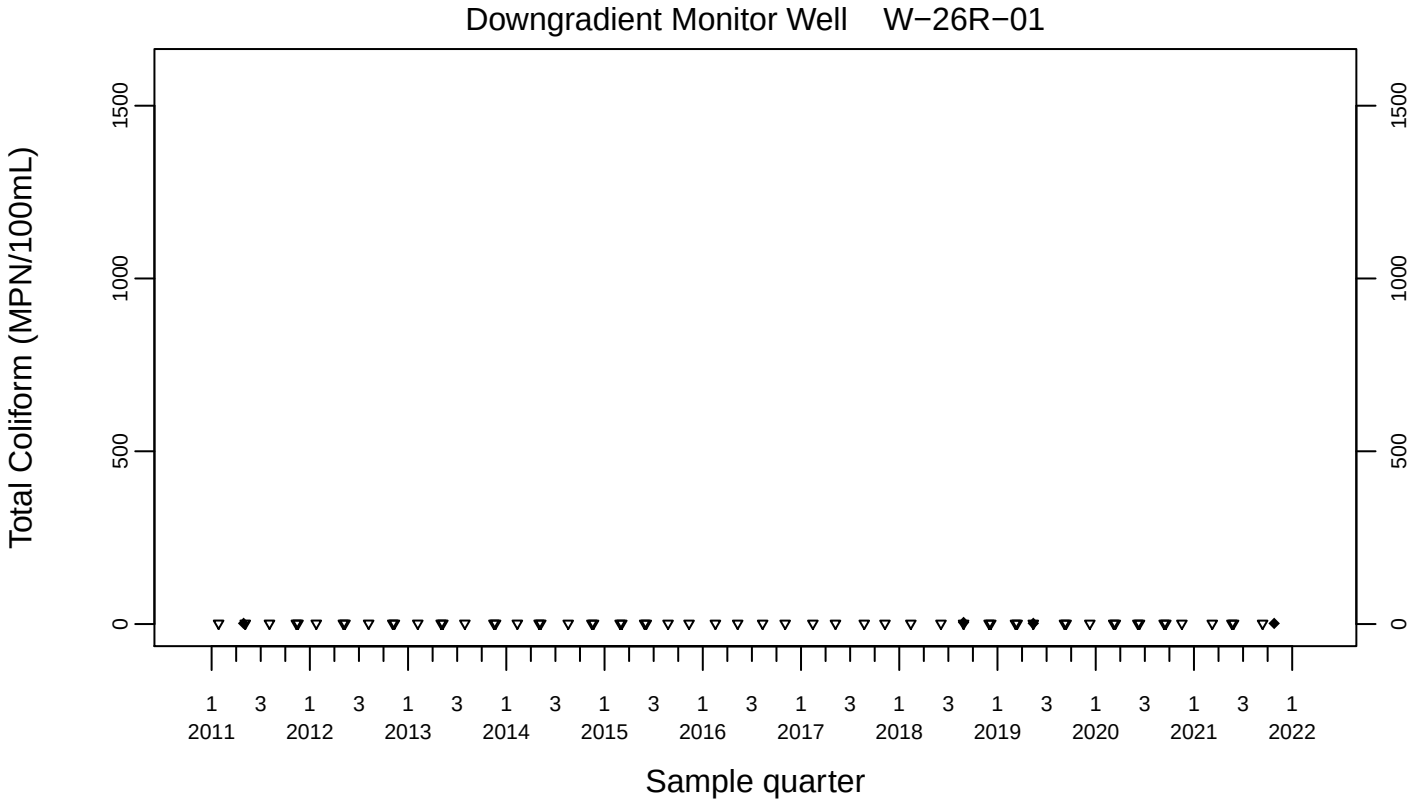
Sewage Ponds Ground Water
Total Coliform (MPN/100mL)



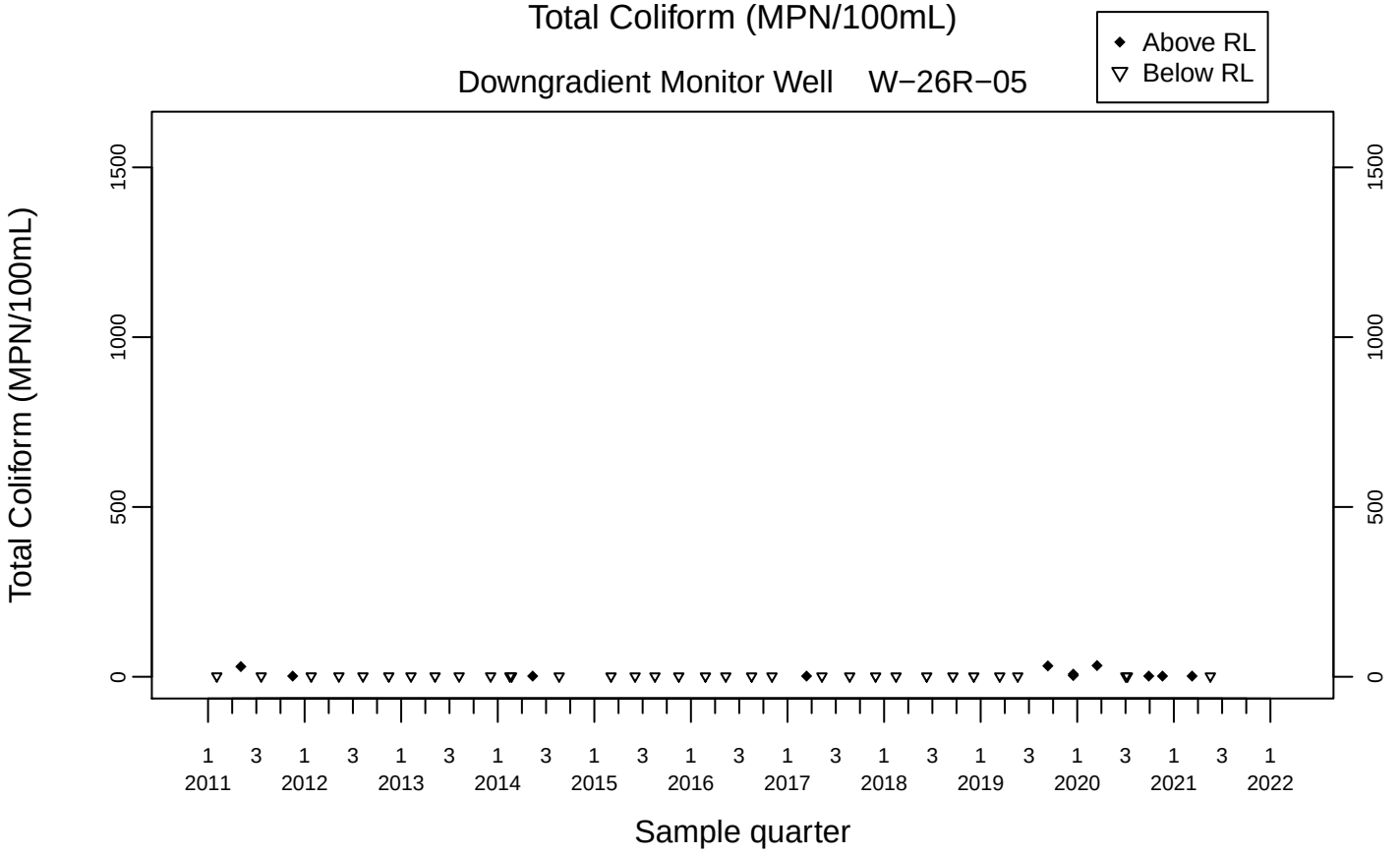


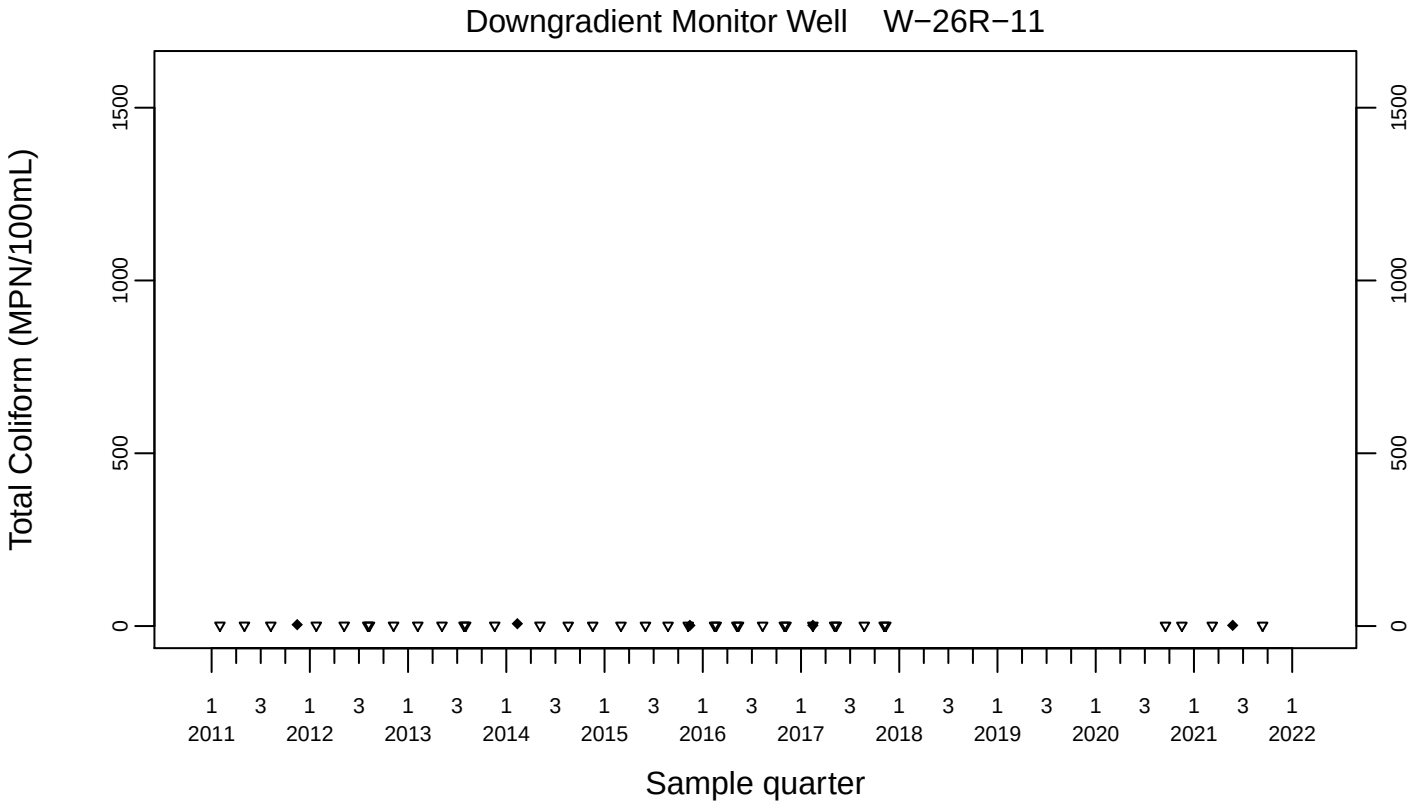
Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

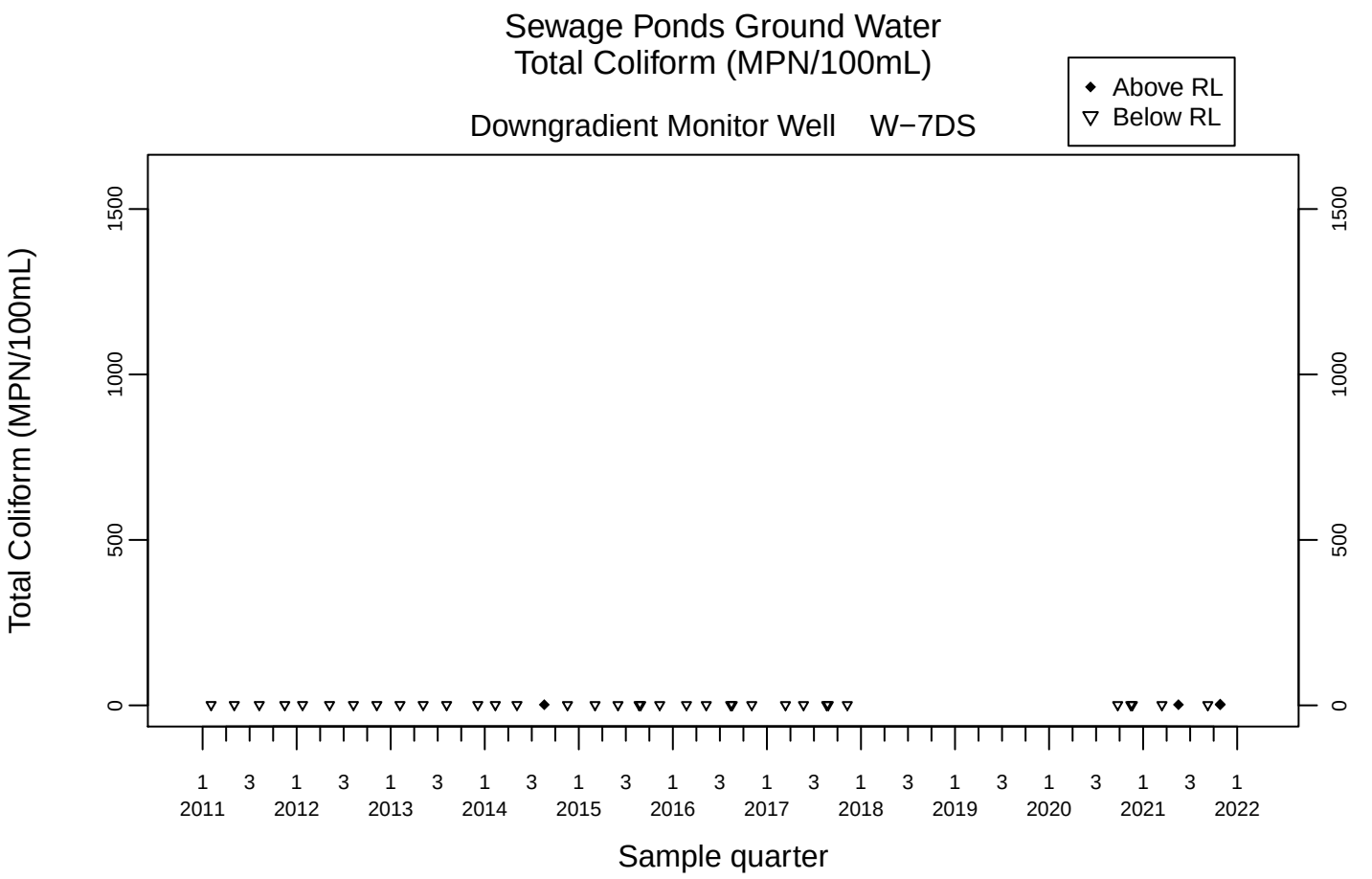




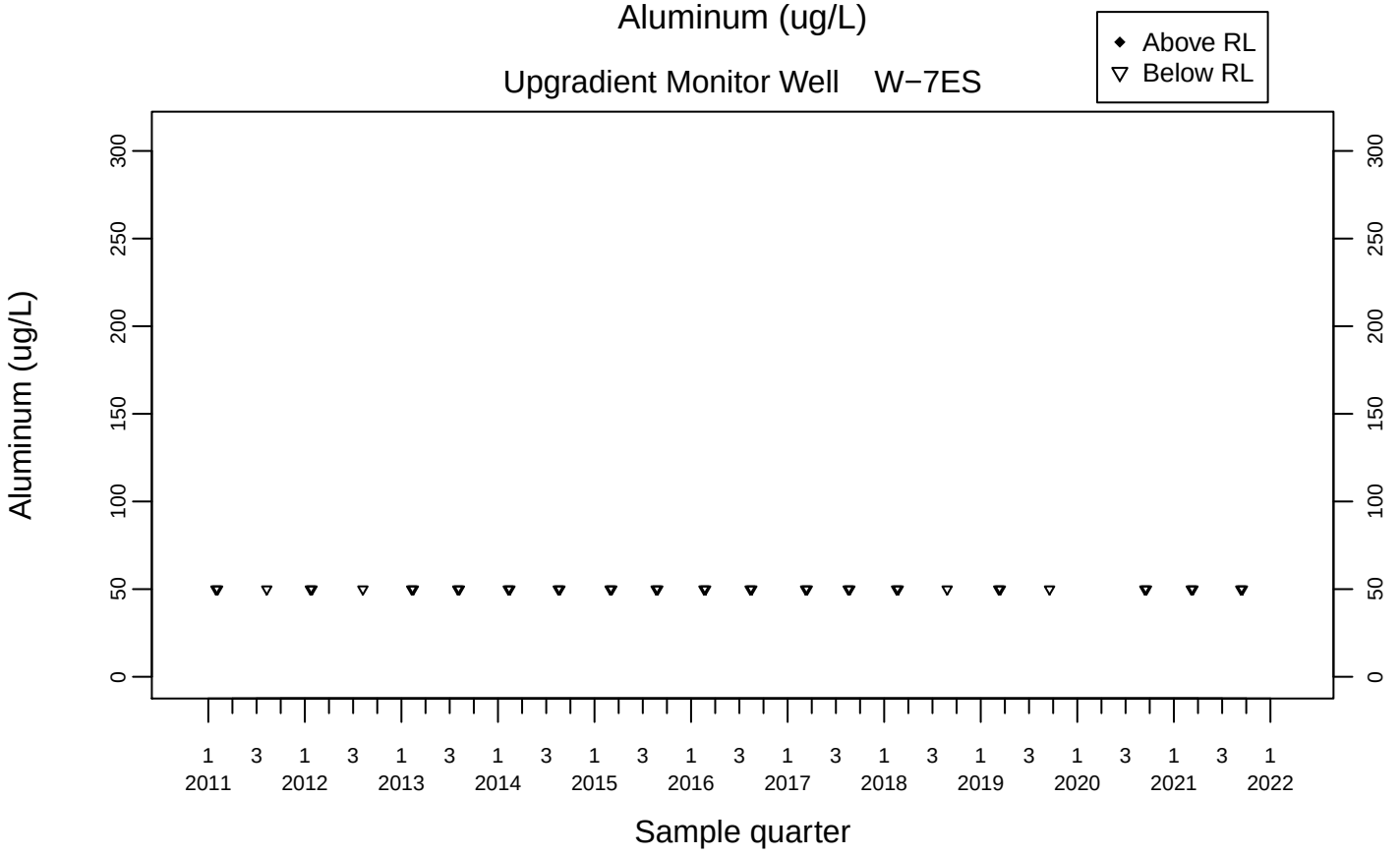
Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

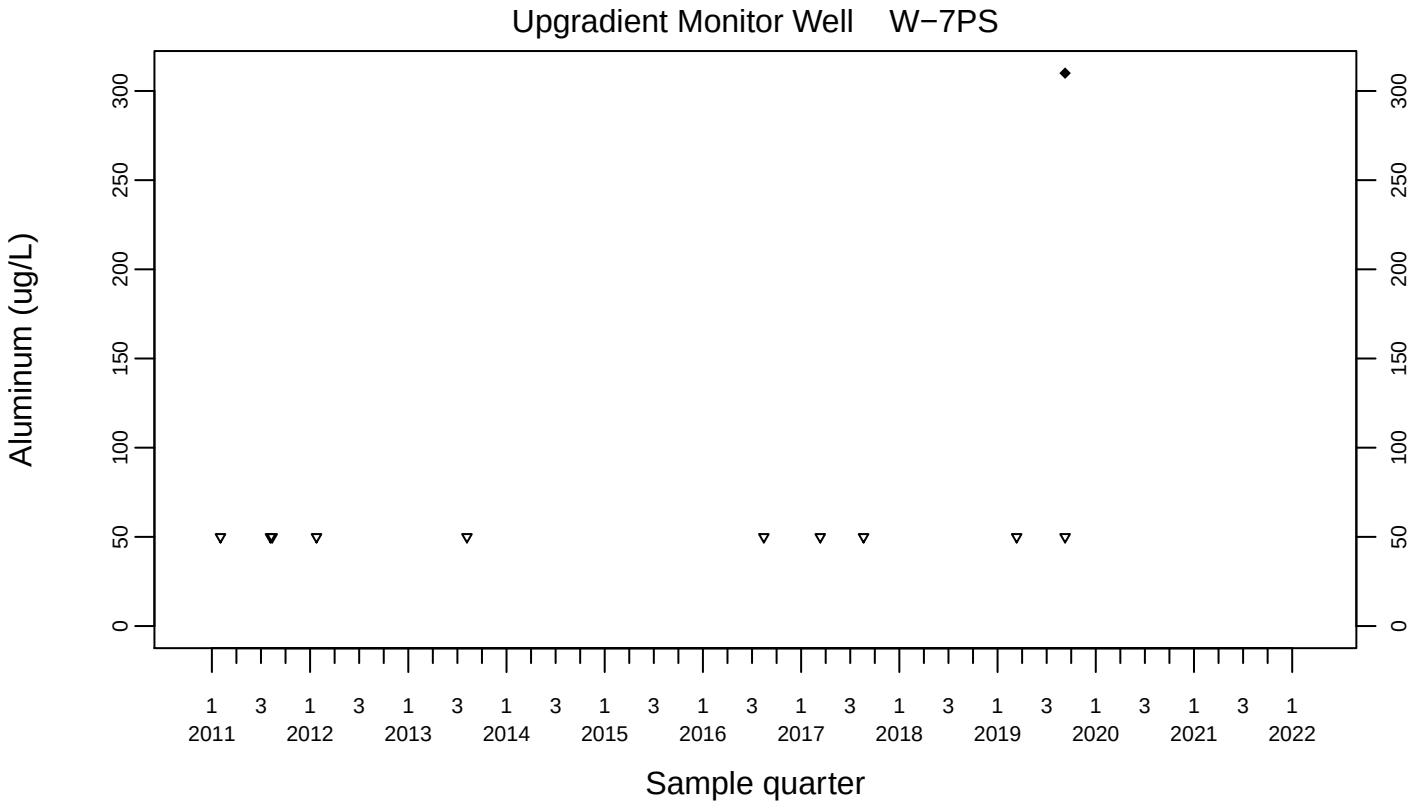




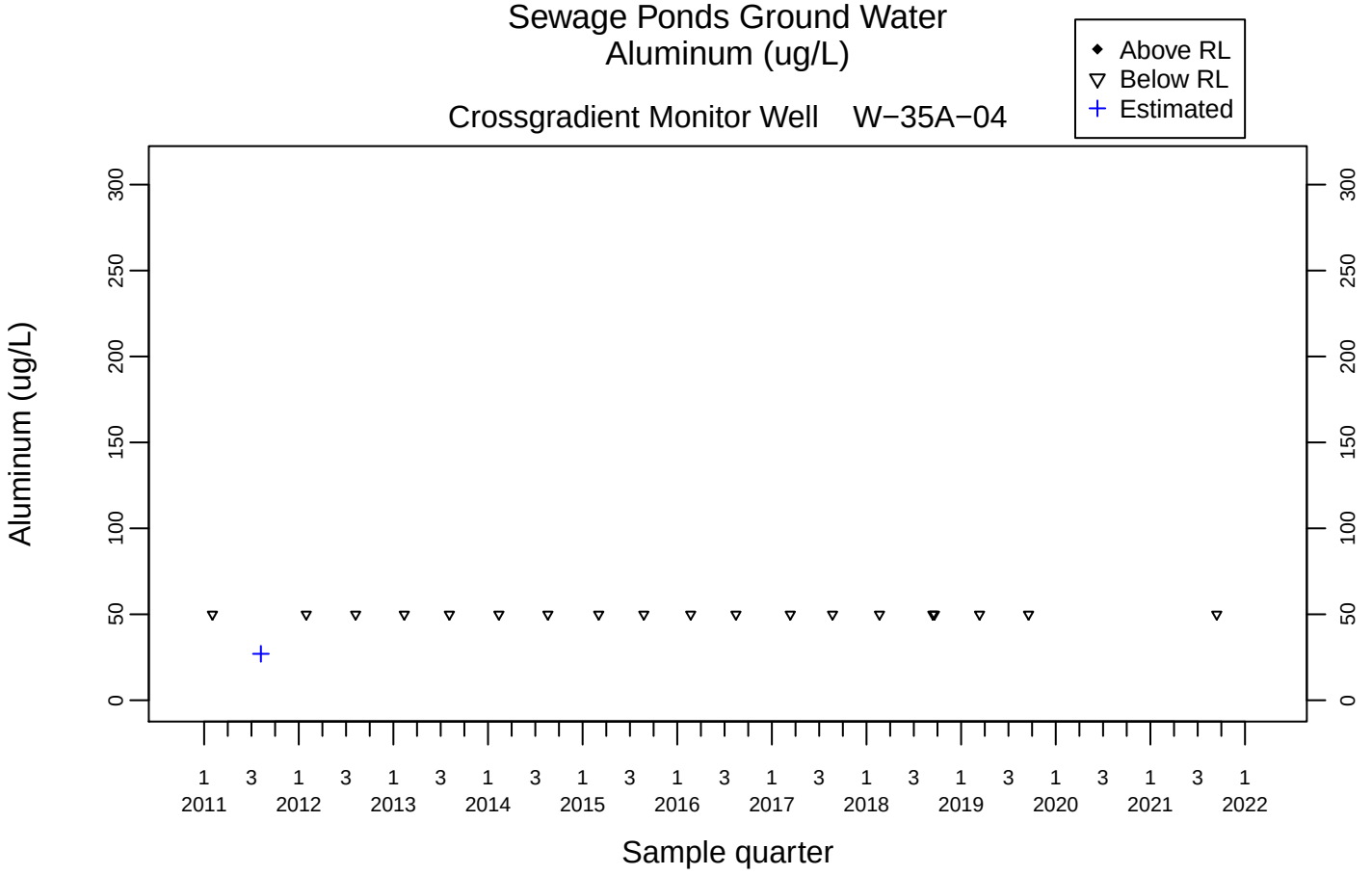

Sewage Ponds Ground Water
Total Coliform (MPN/100mL)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Total Coliform (MPN/100mL)
0
500
1000
1500
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

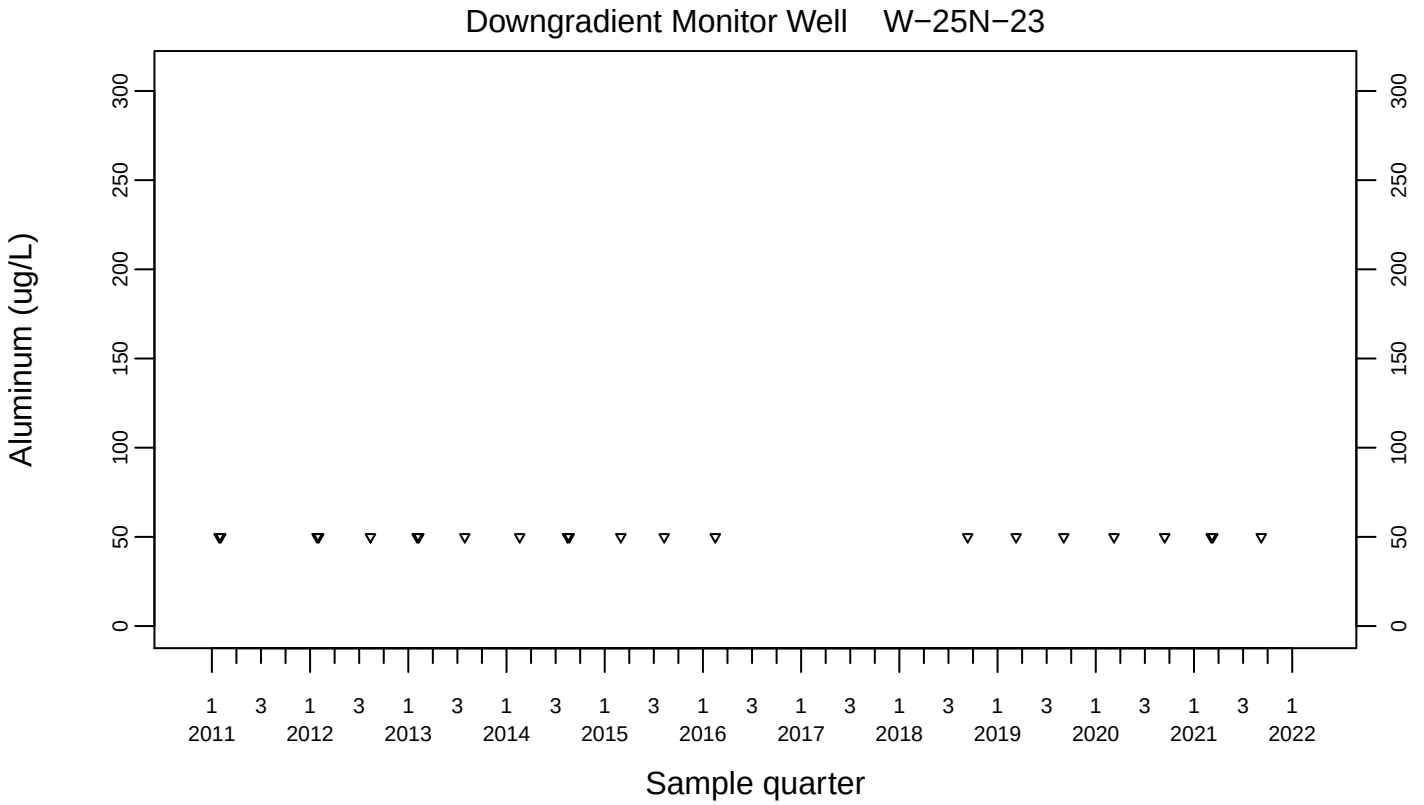
Sewage Ponds Ground Water
Aluminum (ug/L)





Sewage Ponds Ground Water
Aluminum (ug/L)

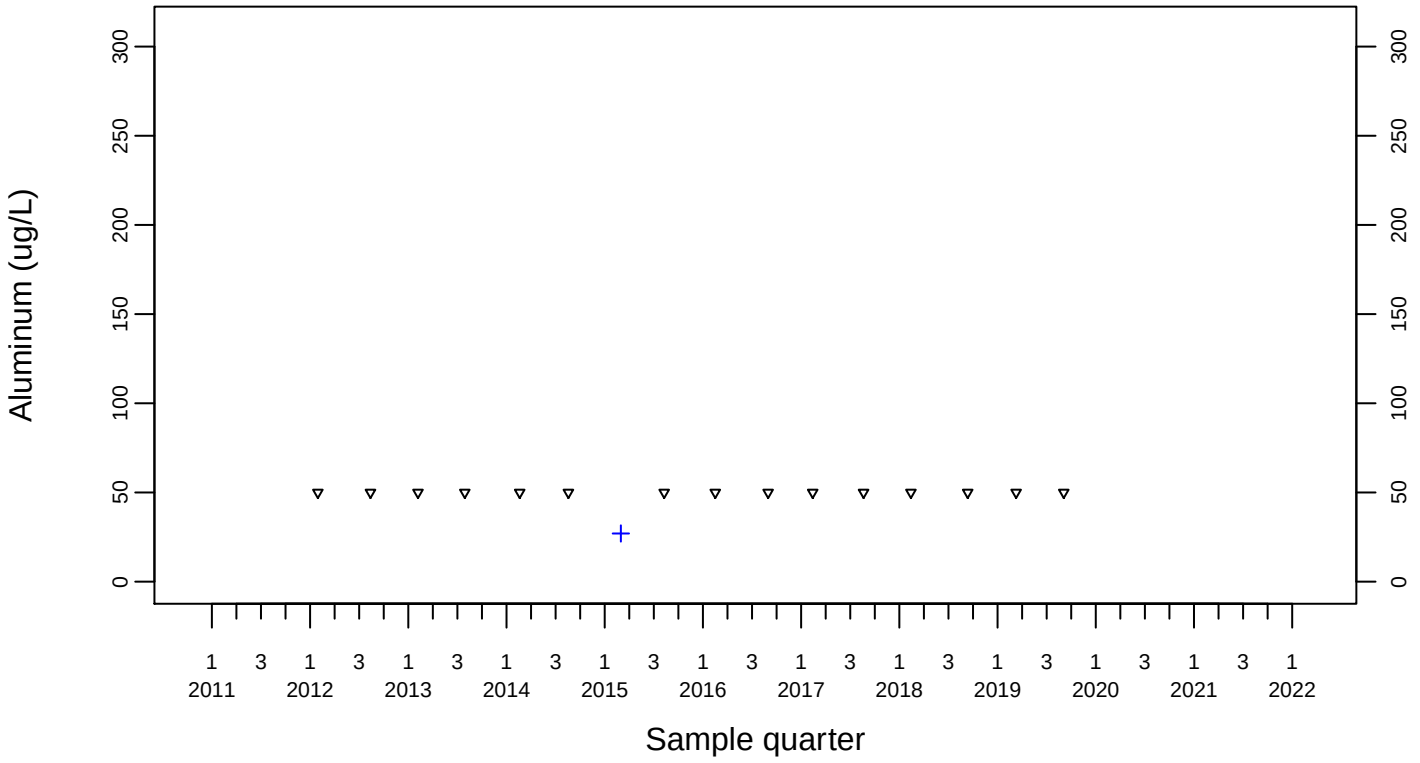




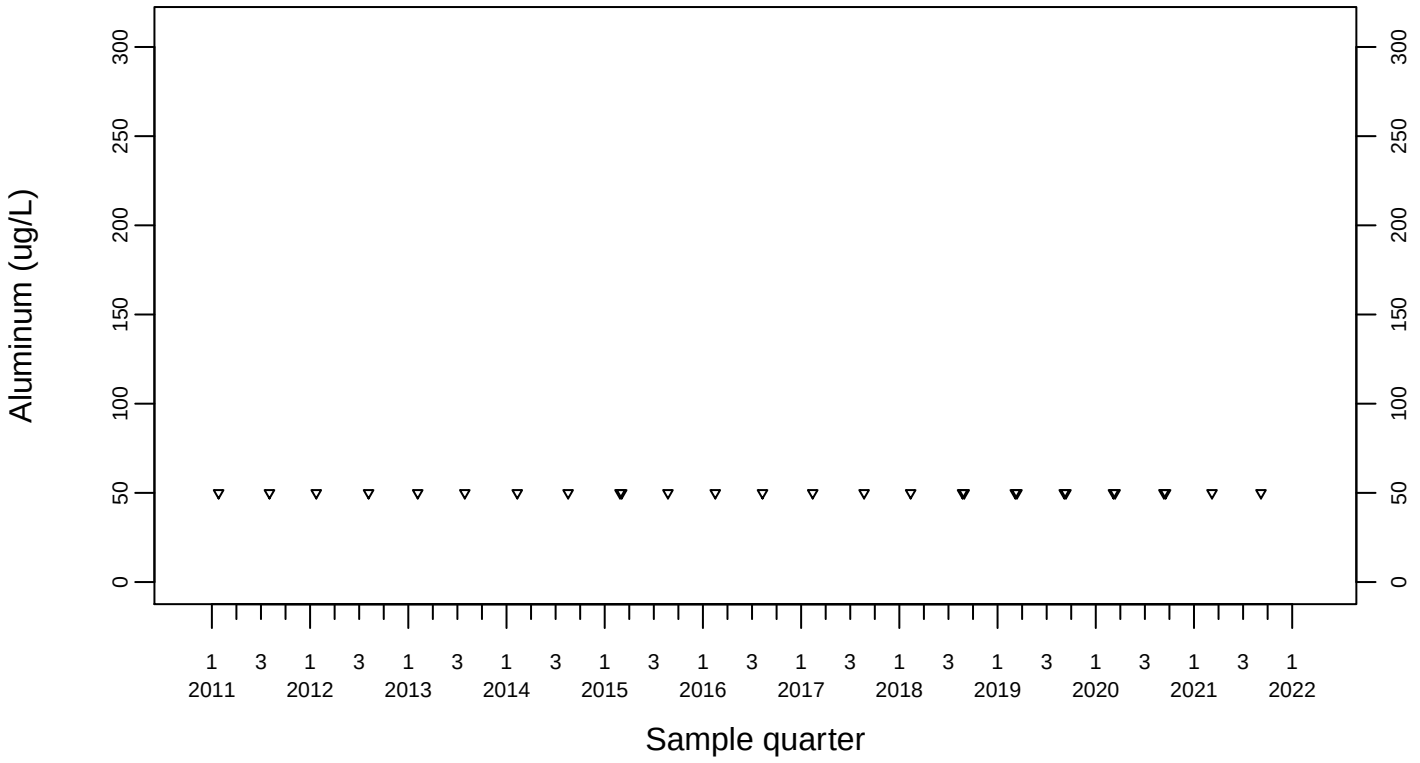
Sewage Ponds Ground Water
Aluminum (ug/L)

Above RL
Below RL
Estimated

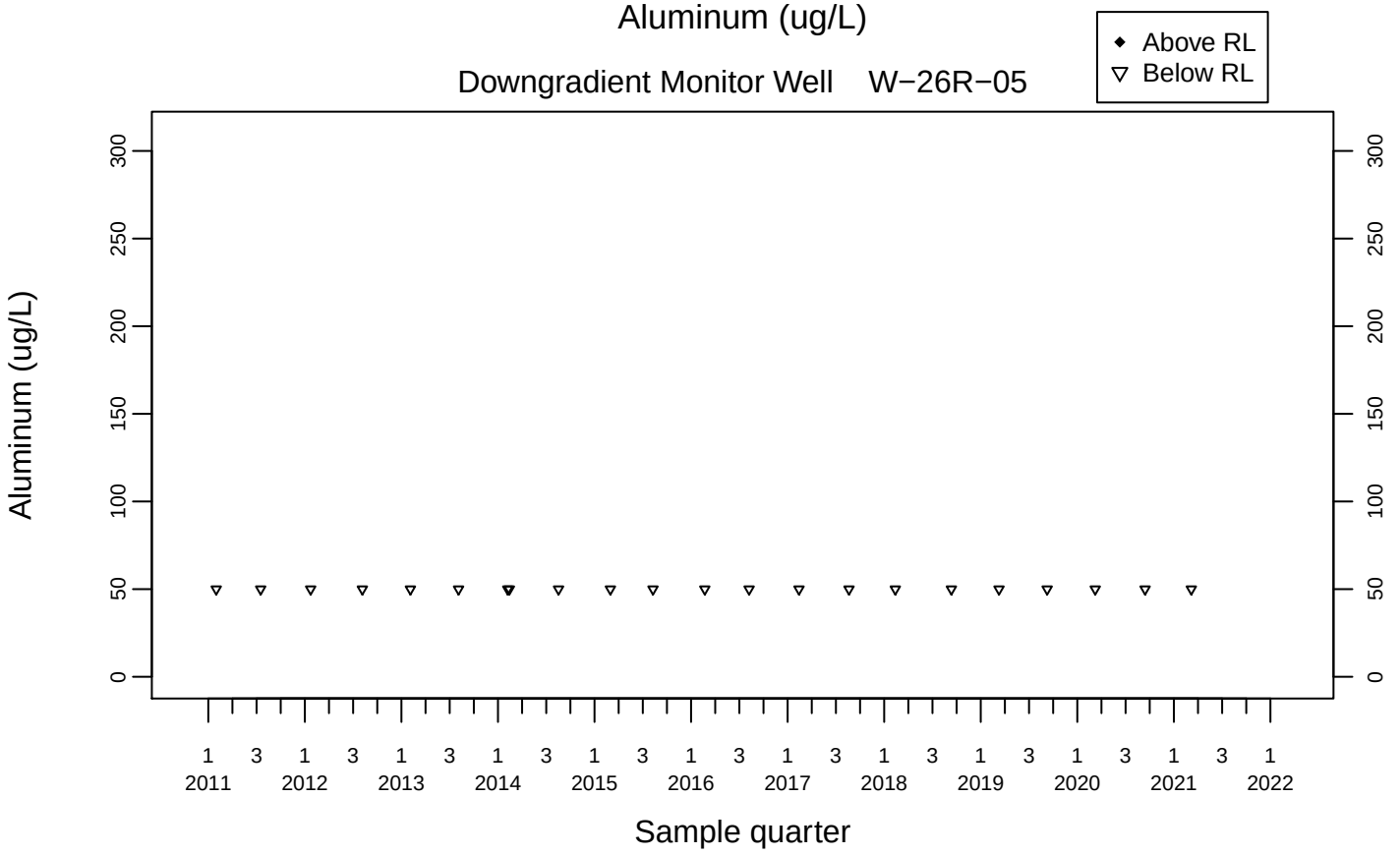
Downgradient Monitor Well W−25N−22

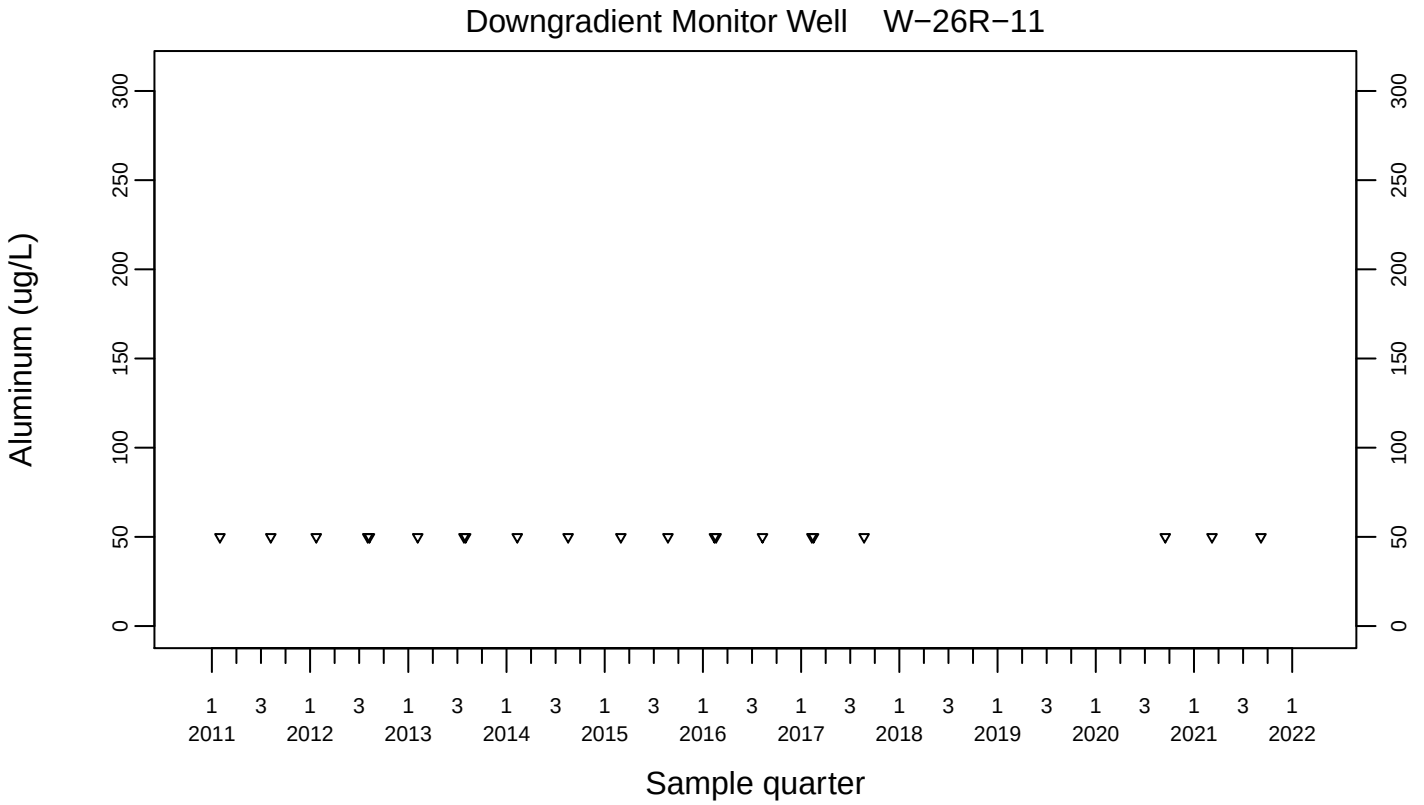


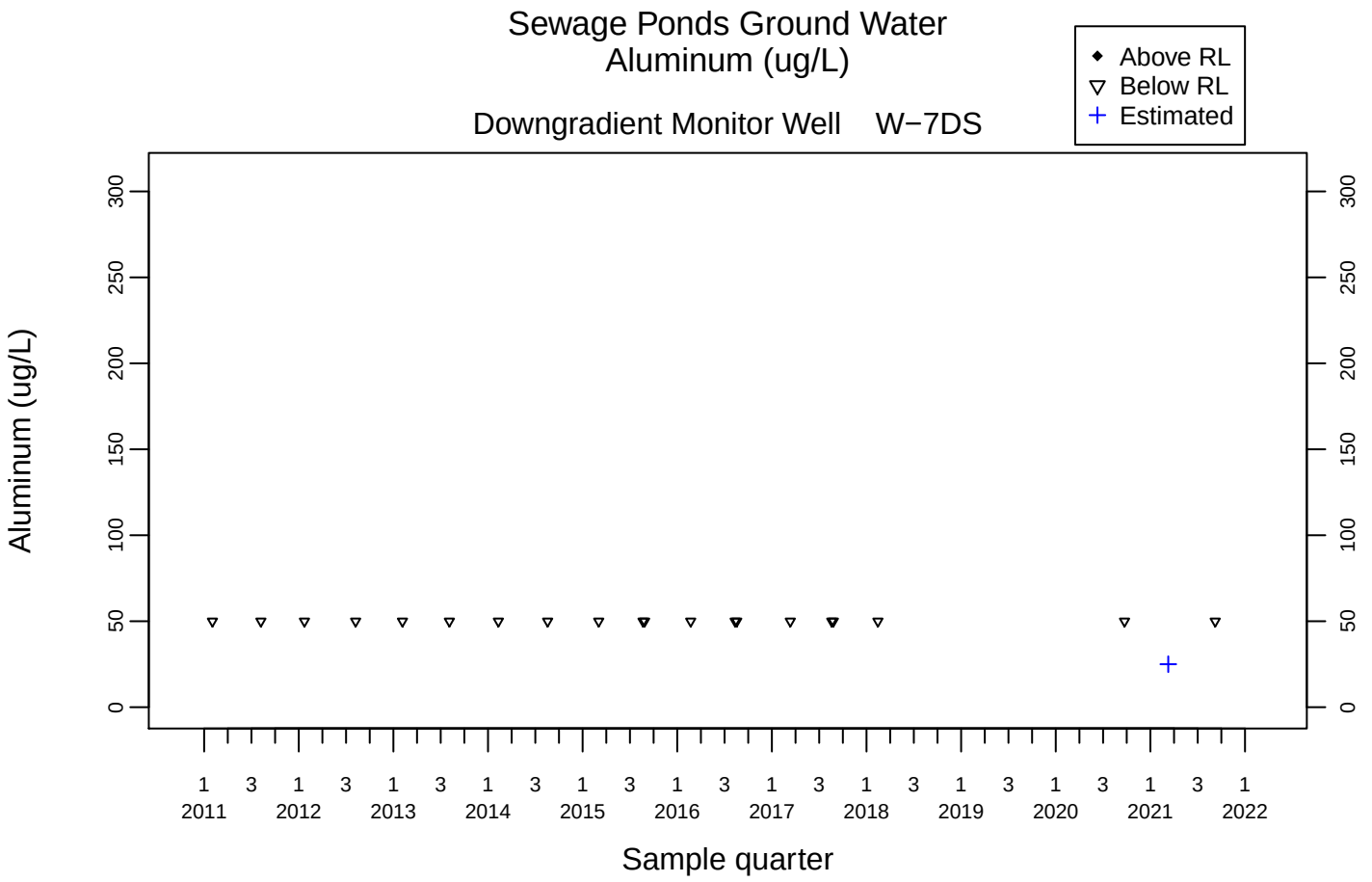
Downgradient Monitor Well W−26R−01

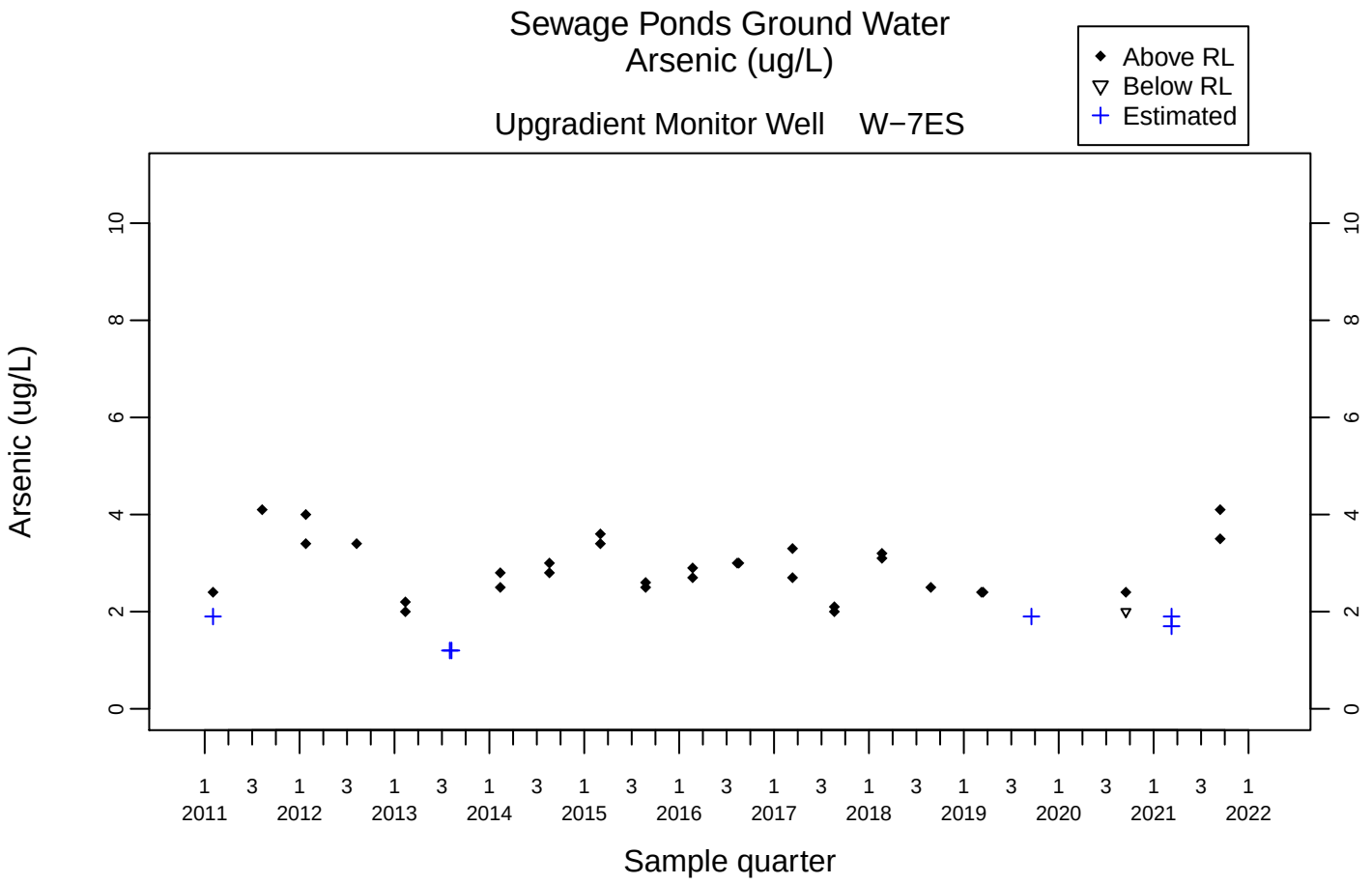


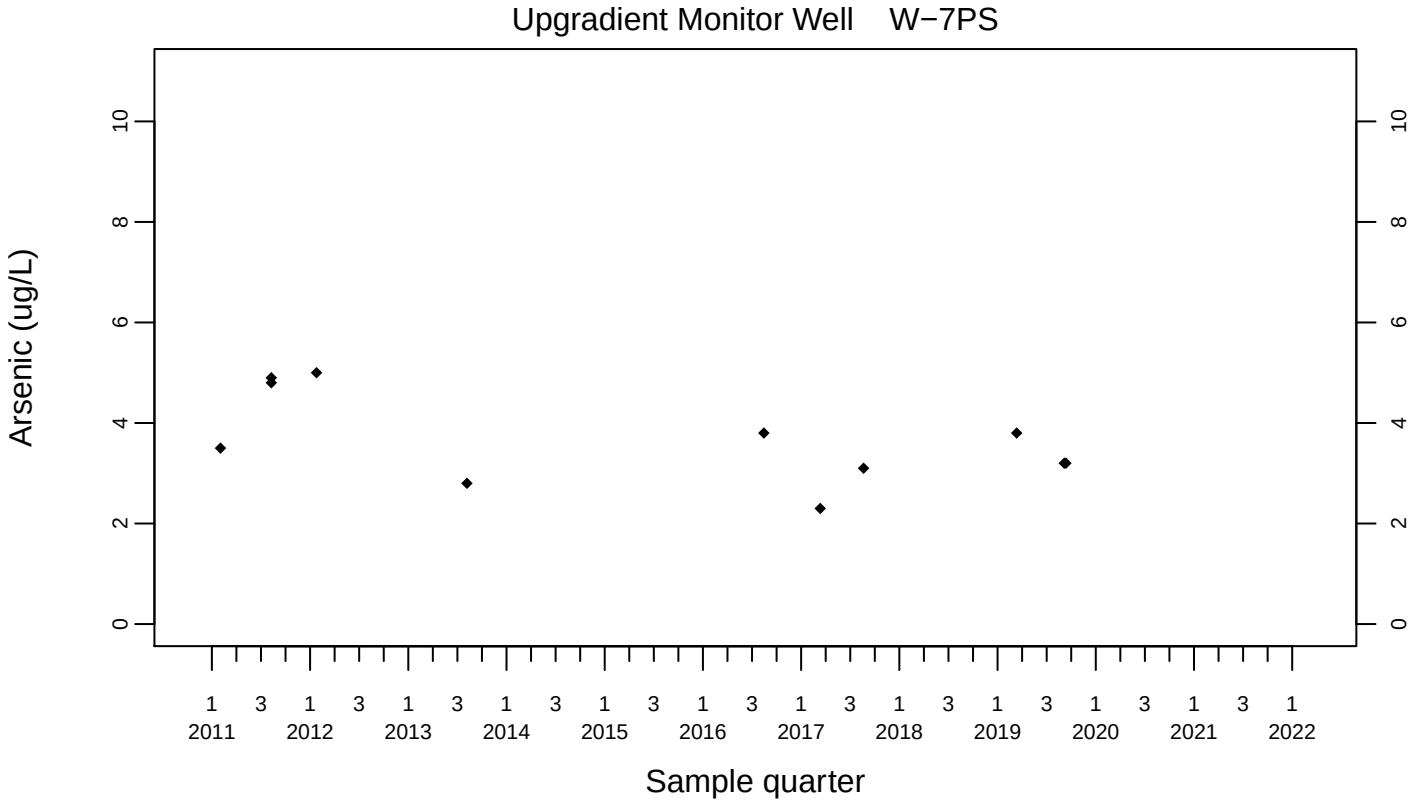
Sewage Ponds Ground Water
Aluminum (ug/L)



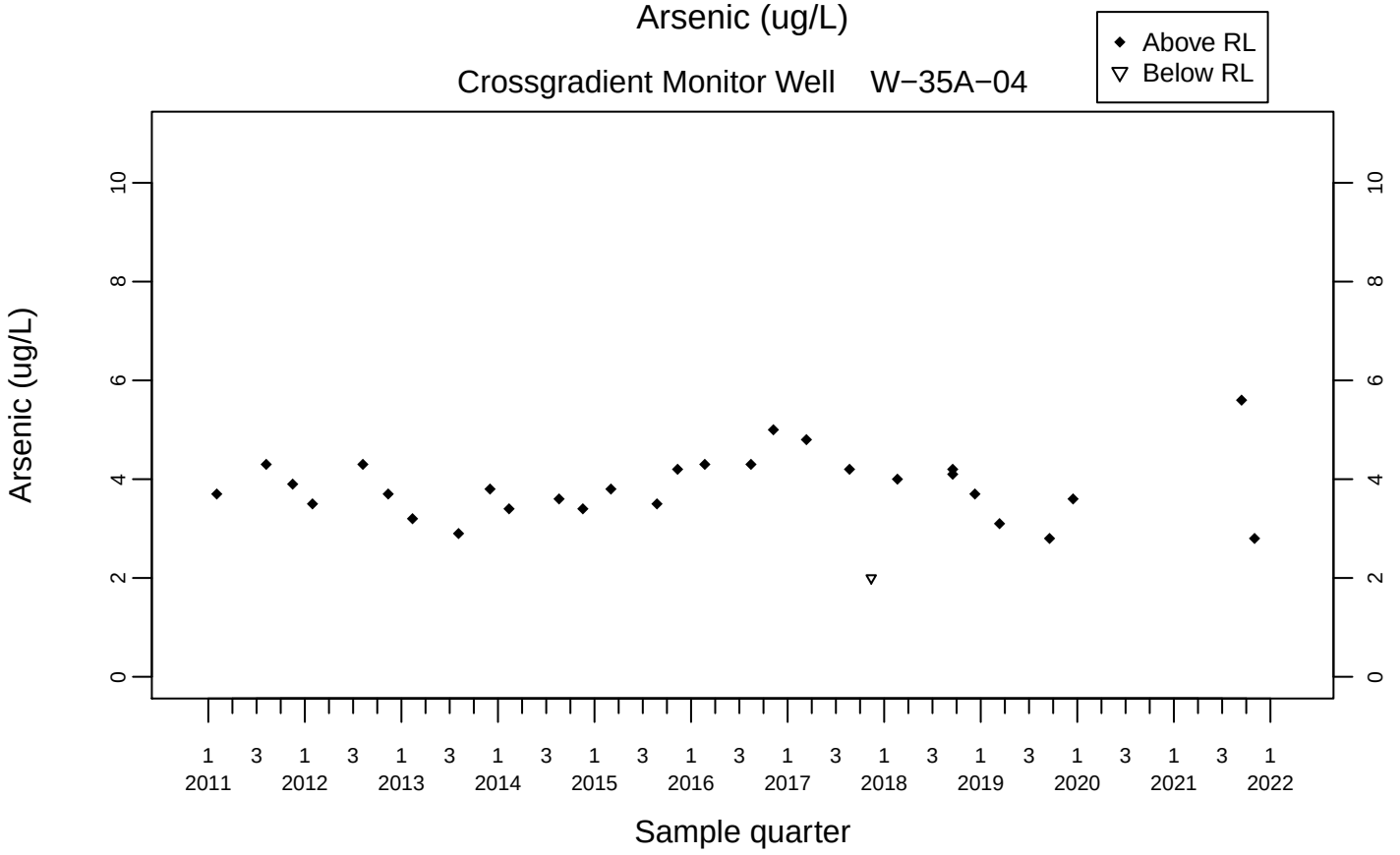


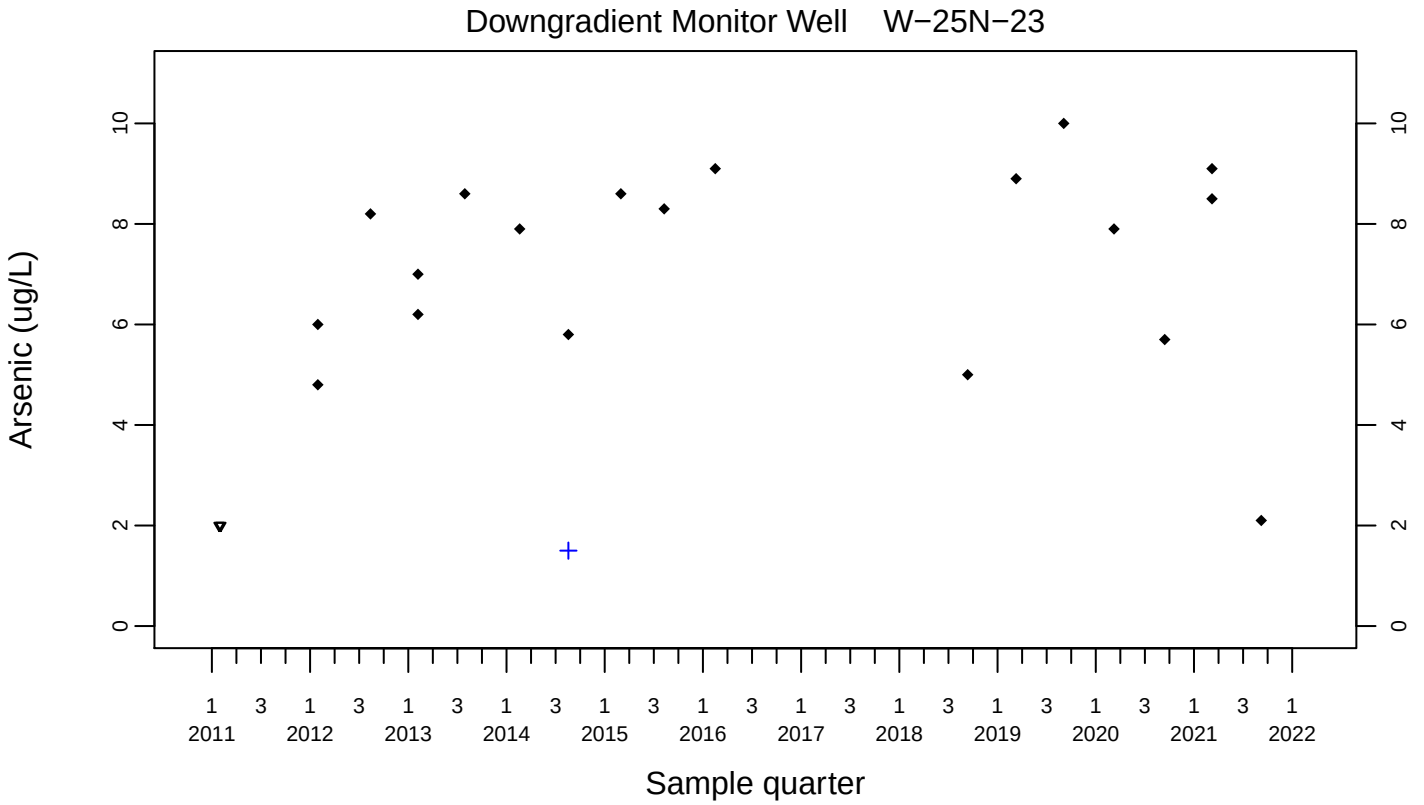

Sewage Ponds Ground Water
Aluminum (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Aluminum (ug/L)
0
50
100
150
200
250
300
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Arsenic (ug/L)
Above RL
Below RL
Estimated
Upgradient Monitor Well W−7ES
Arsenic (ug/L)
0
2
4
6
8
10
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

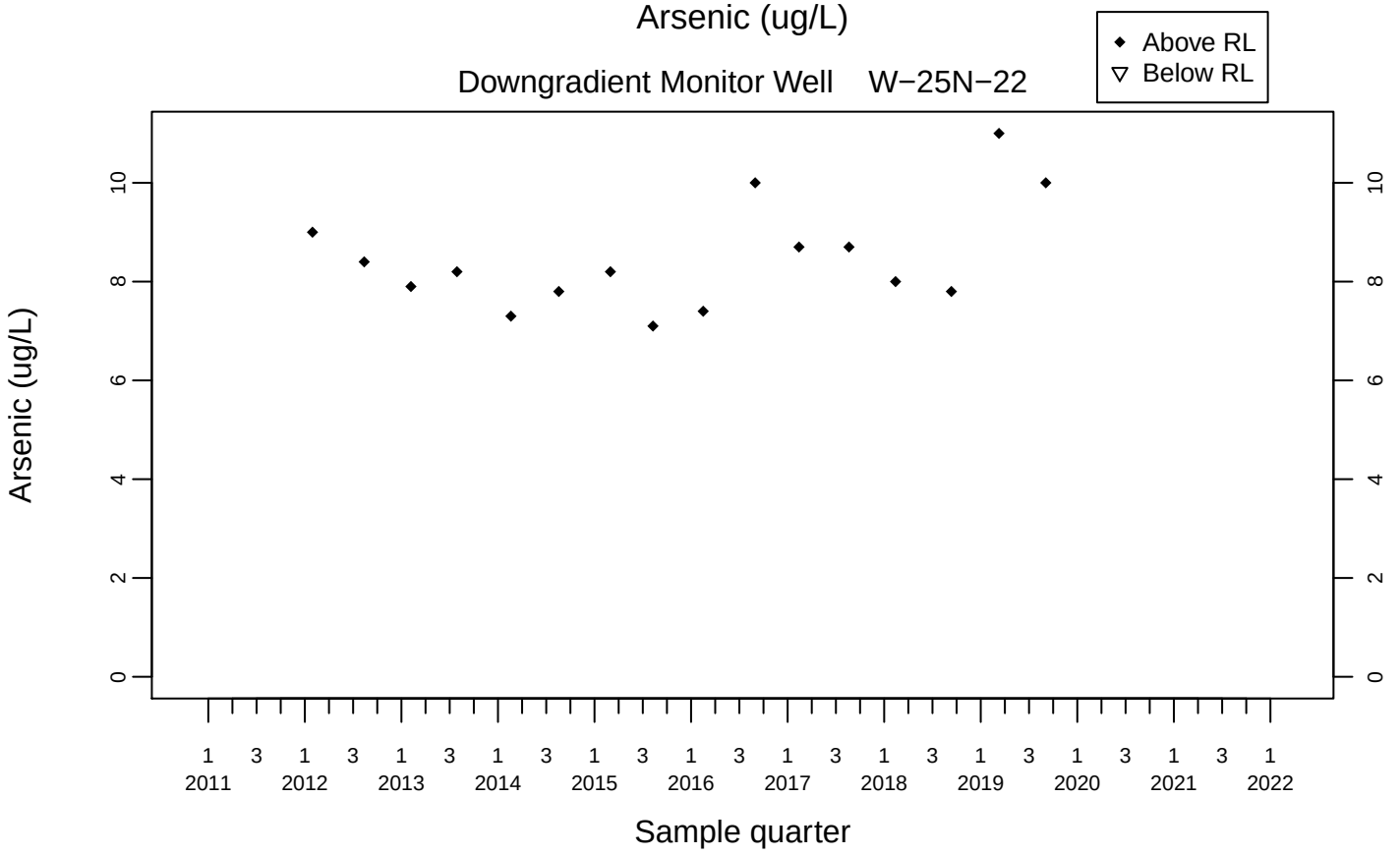

Upgradient Monitor Well W−7PS
Arsenic (ug/L)
0
2
4
6
8
10
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

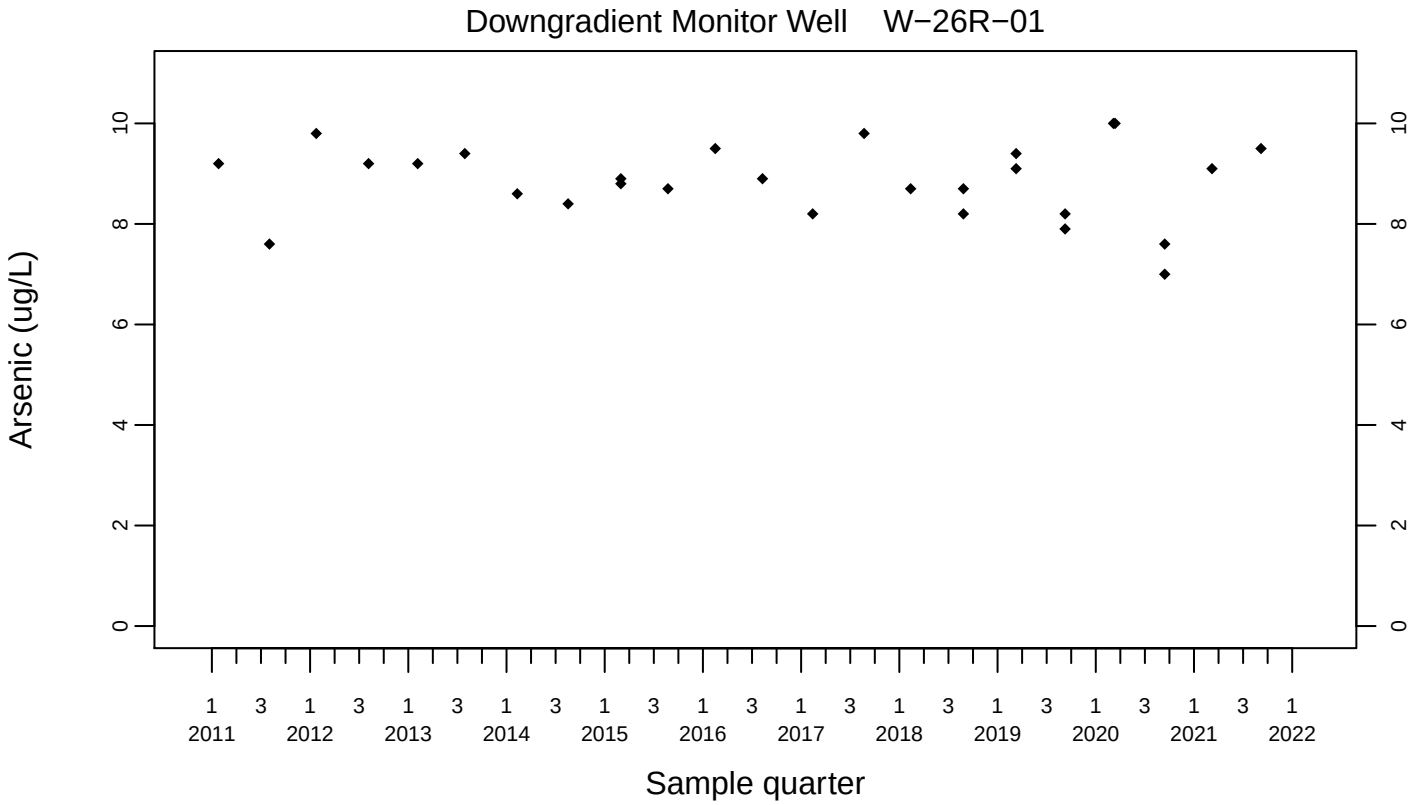
Sewage Ponds Ground Water
Arsenic (ug/L)



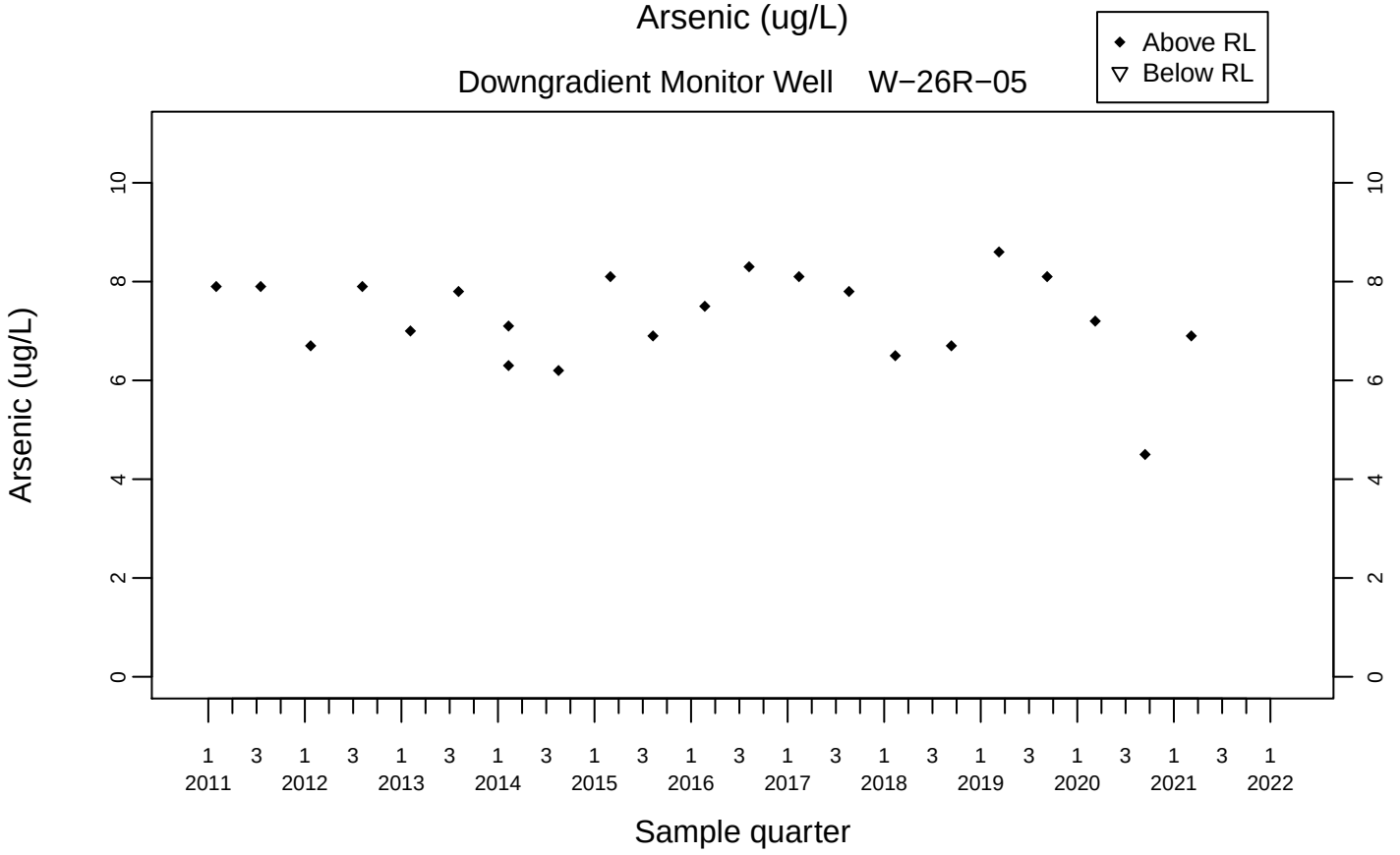


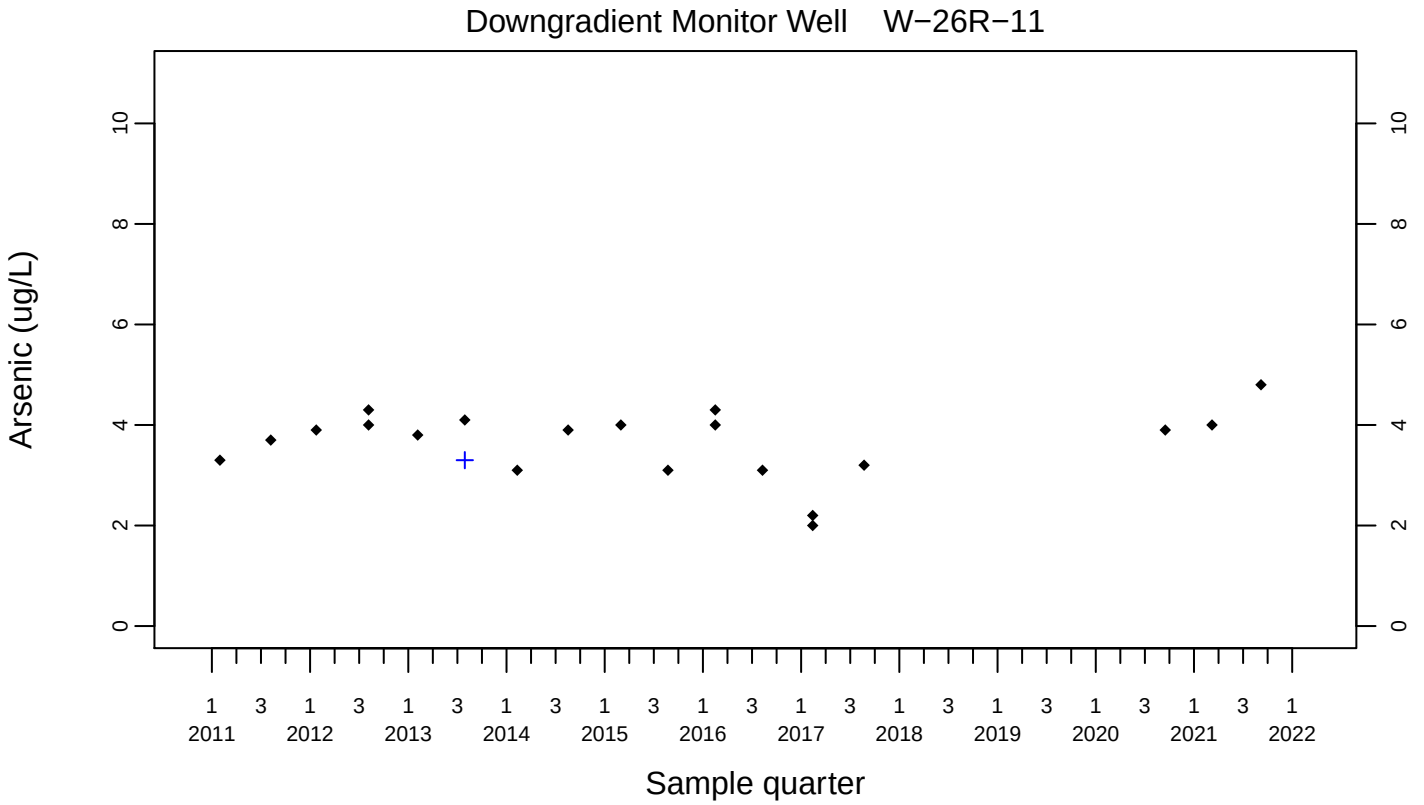
Sewage Ponds Ground Water
Arsenic (ug/L)

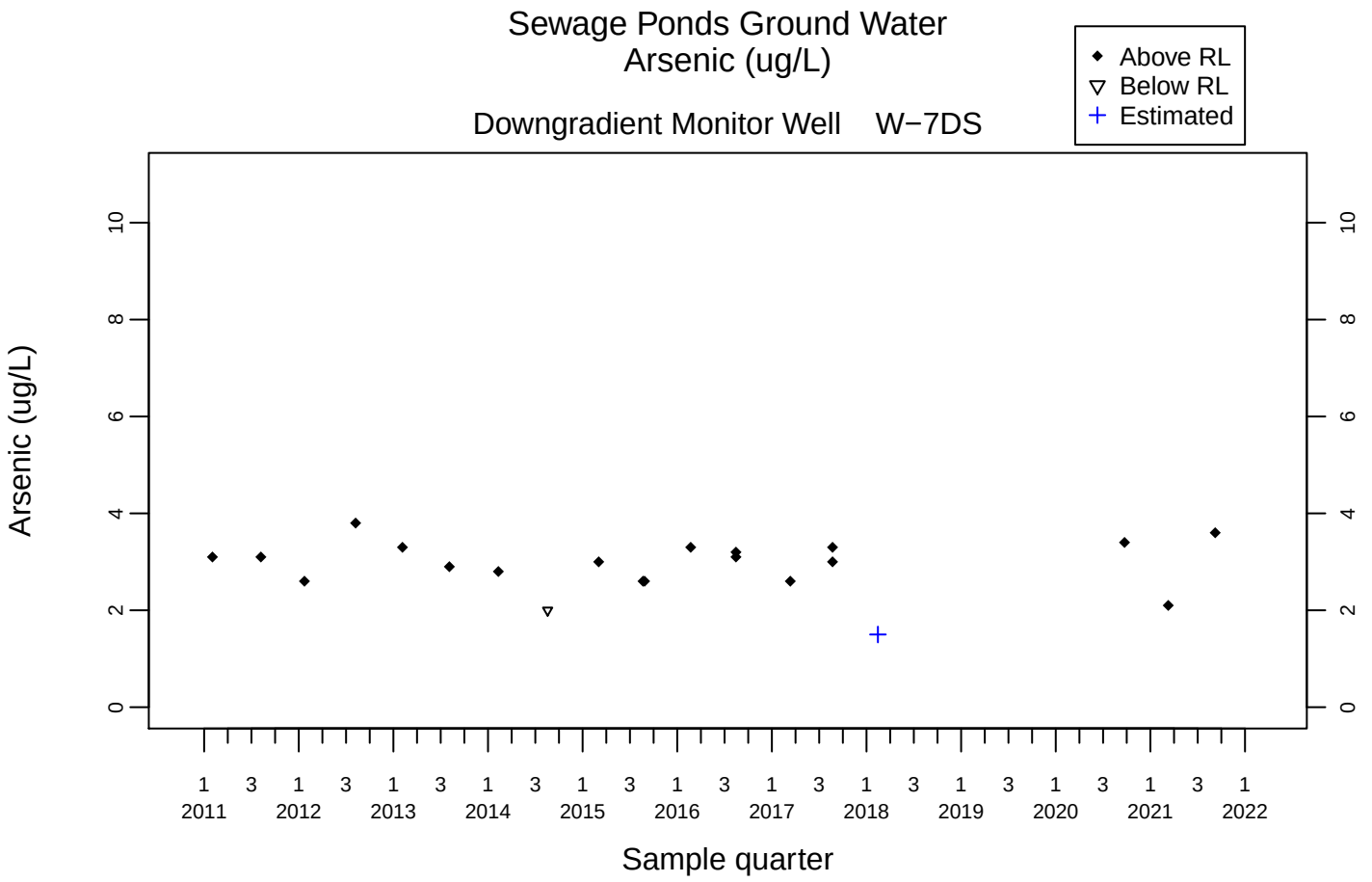




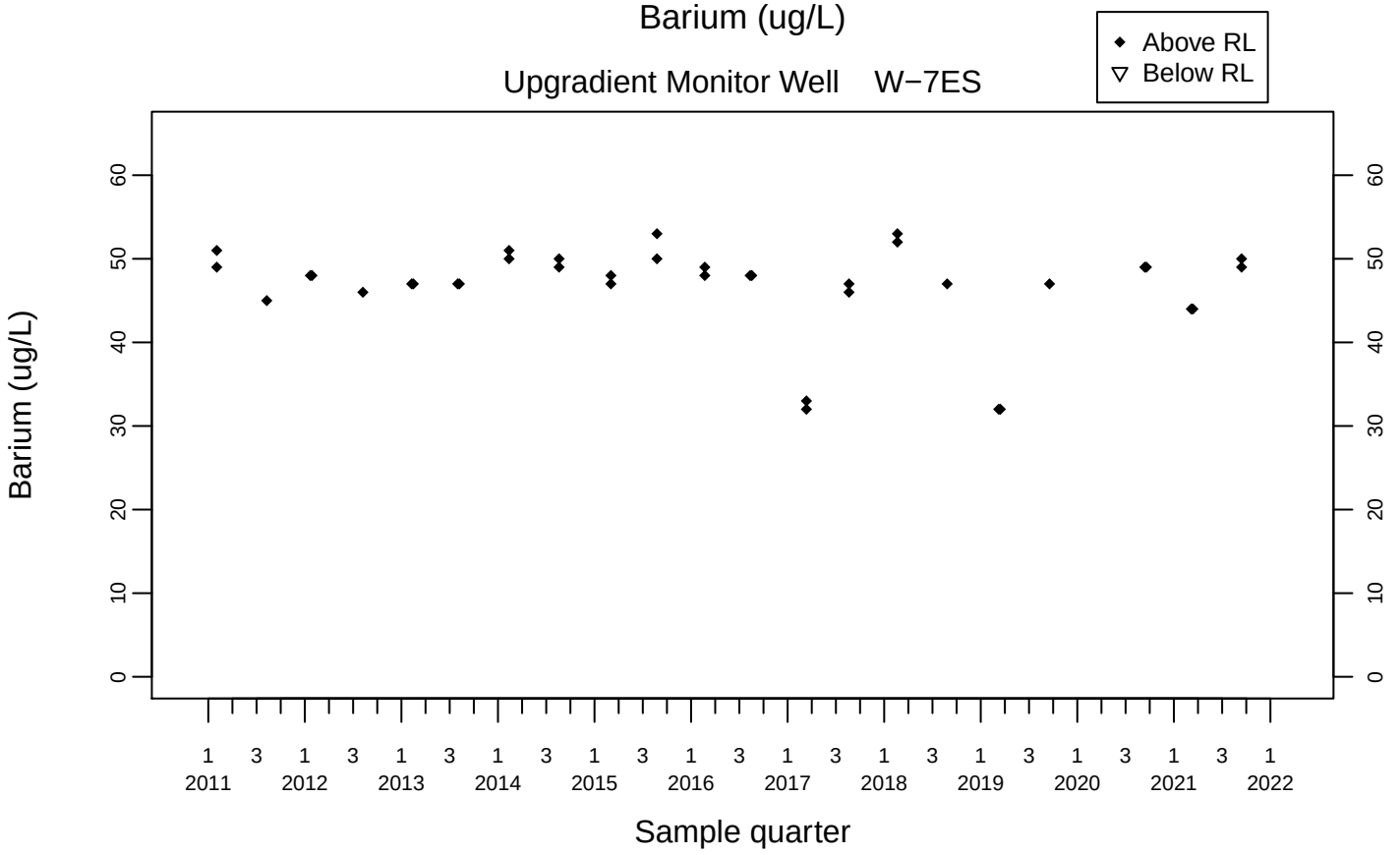
Sewage Ponds Ground Water
Arsenic (ug/L)

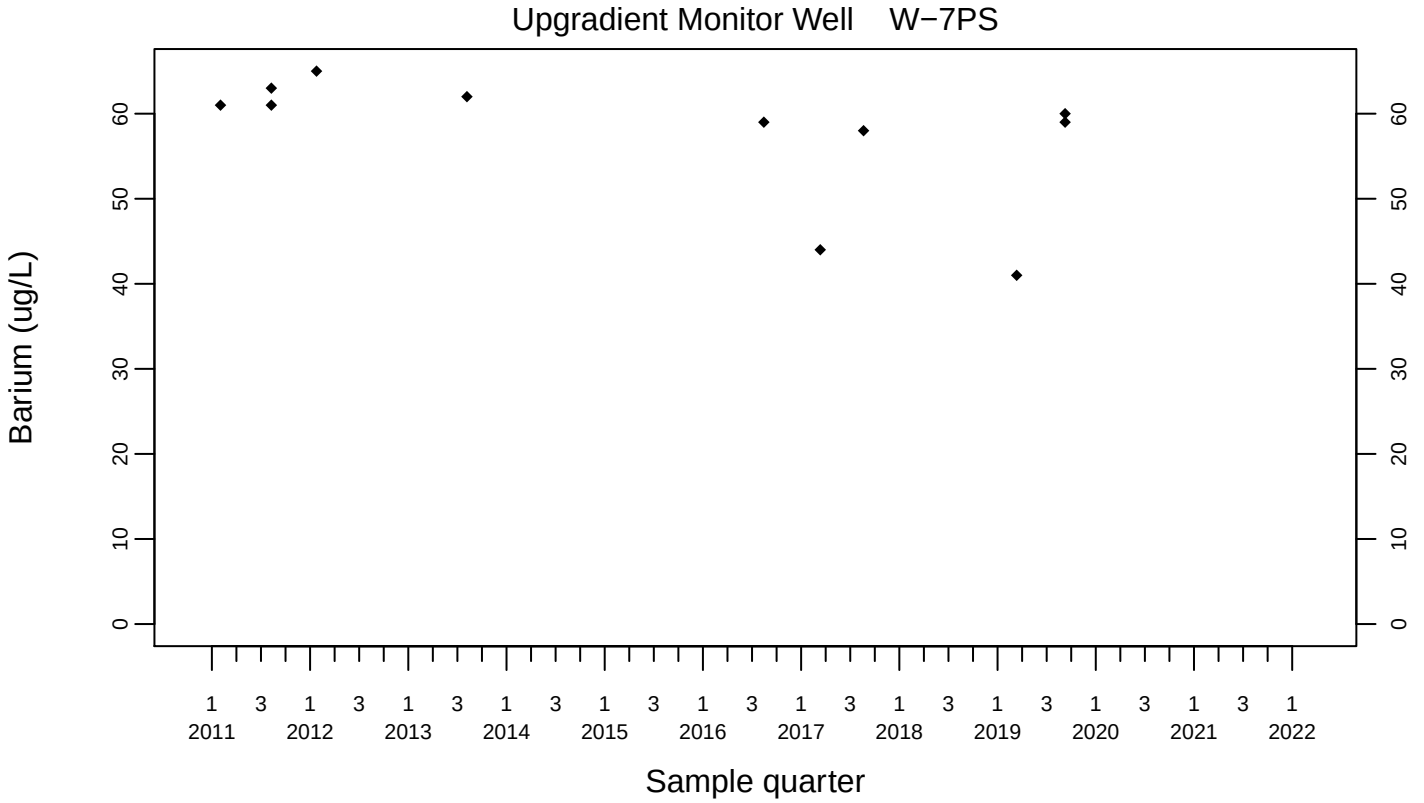




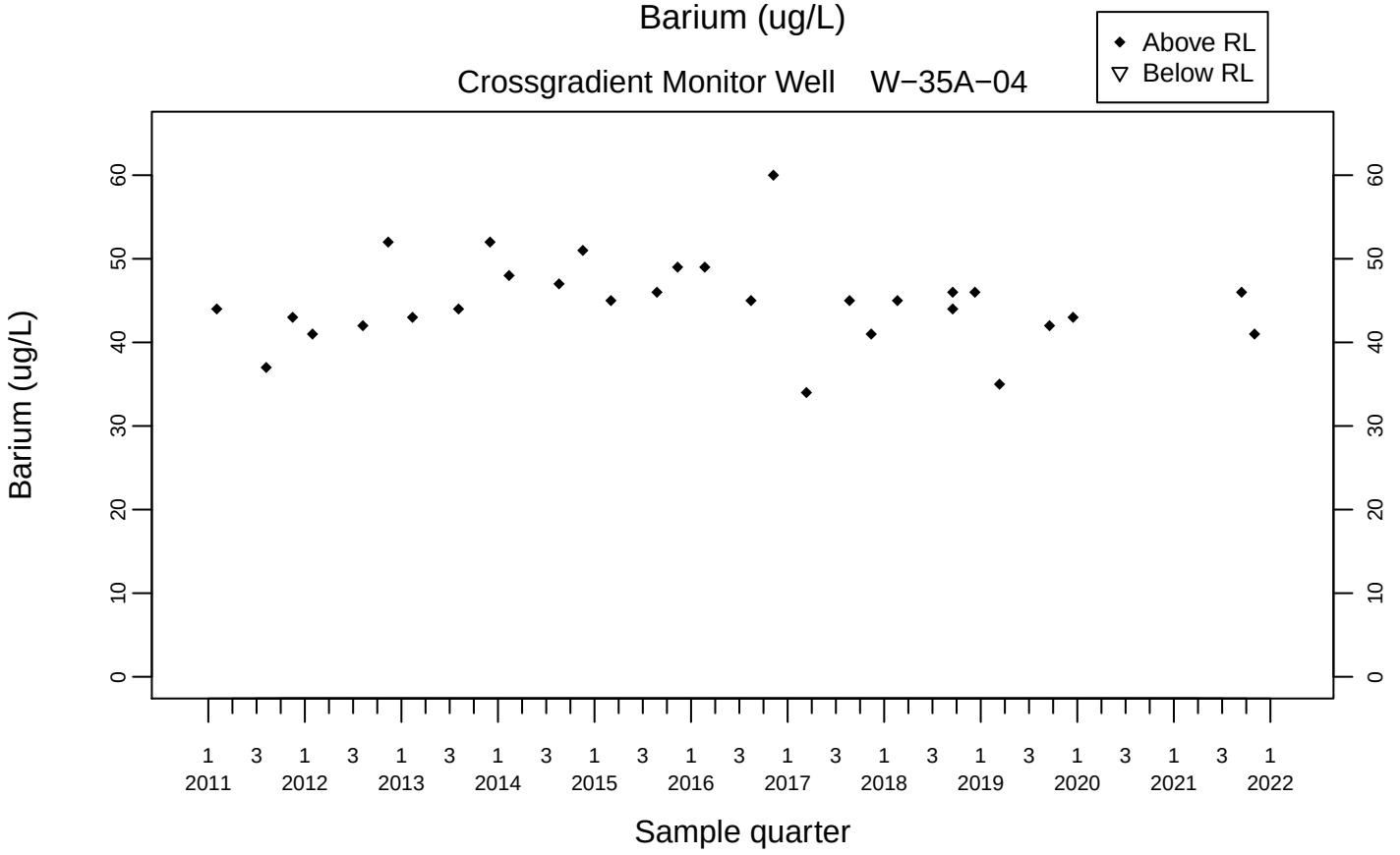

Sewage Ponds Ground Water
Arsenic (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Arsenic (ug/L)
0
2
4
6
8
10
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

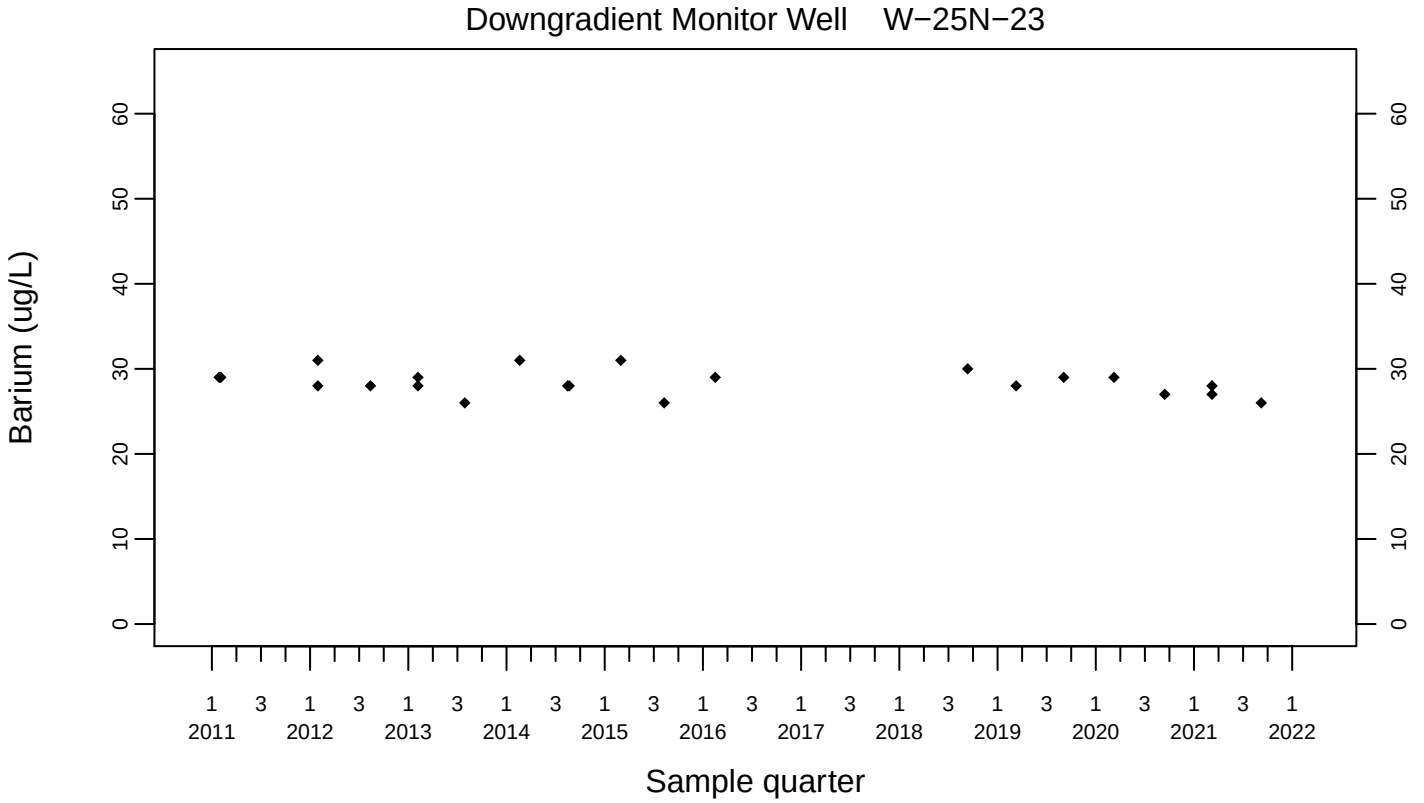
Sewage Ponds Ground Water
Barium (ug/L)



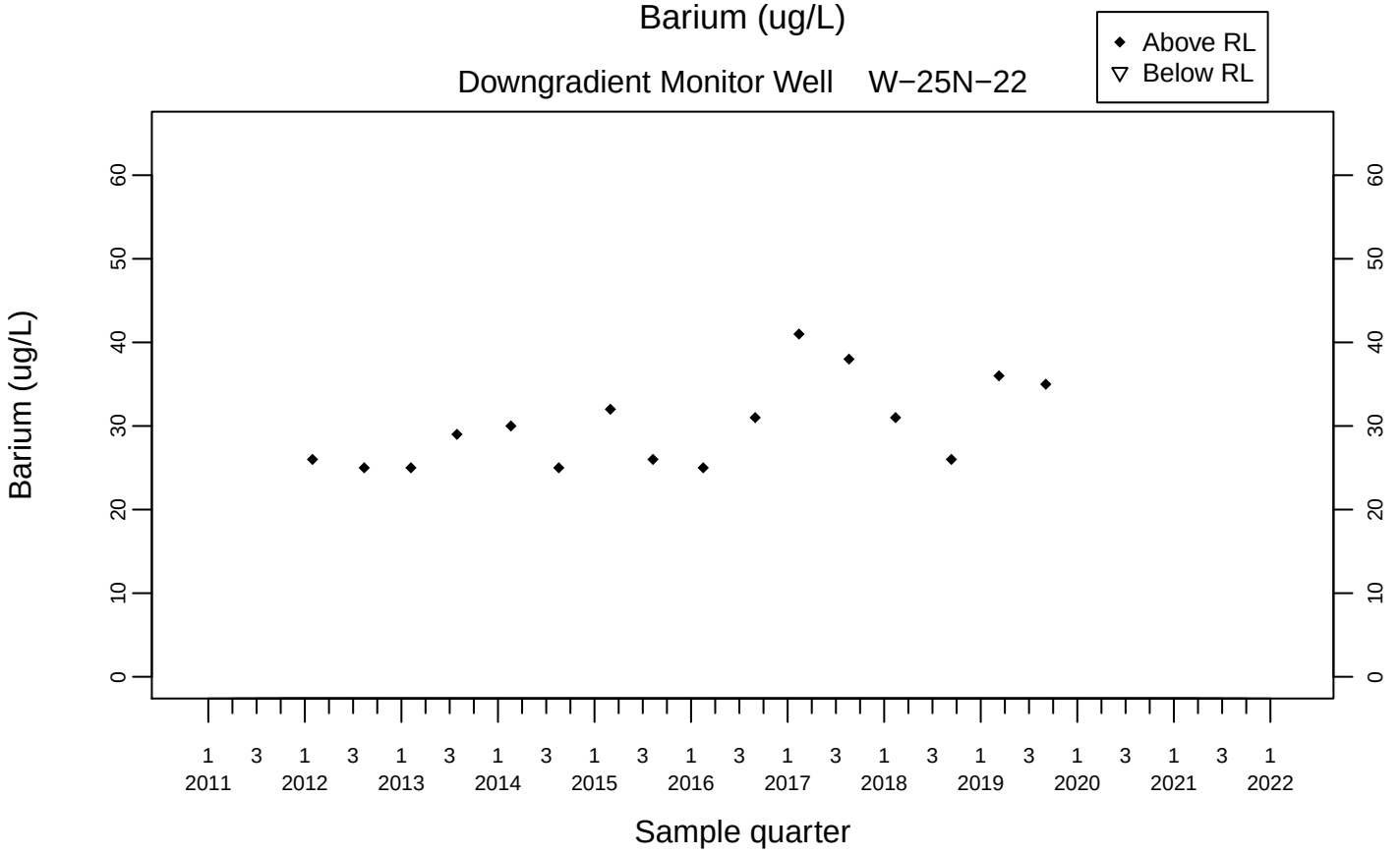


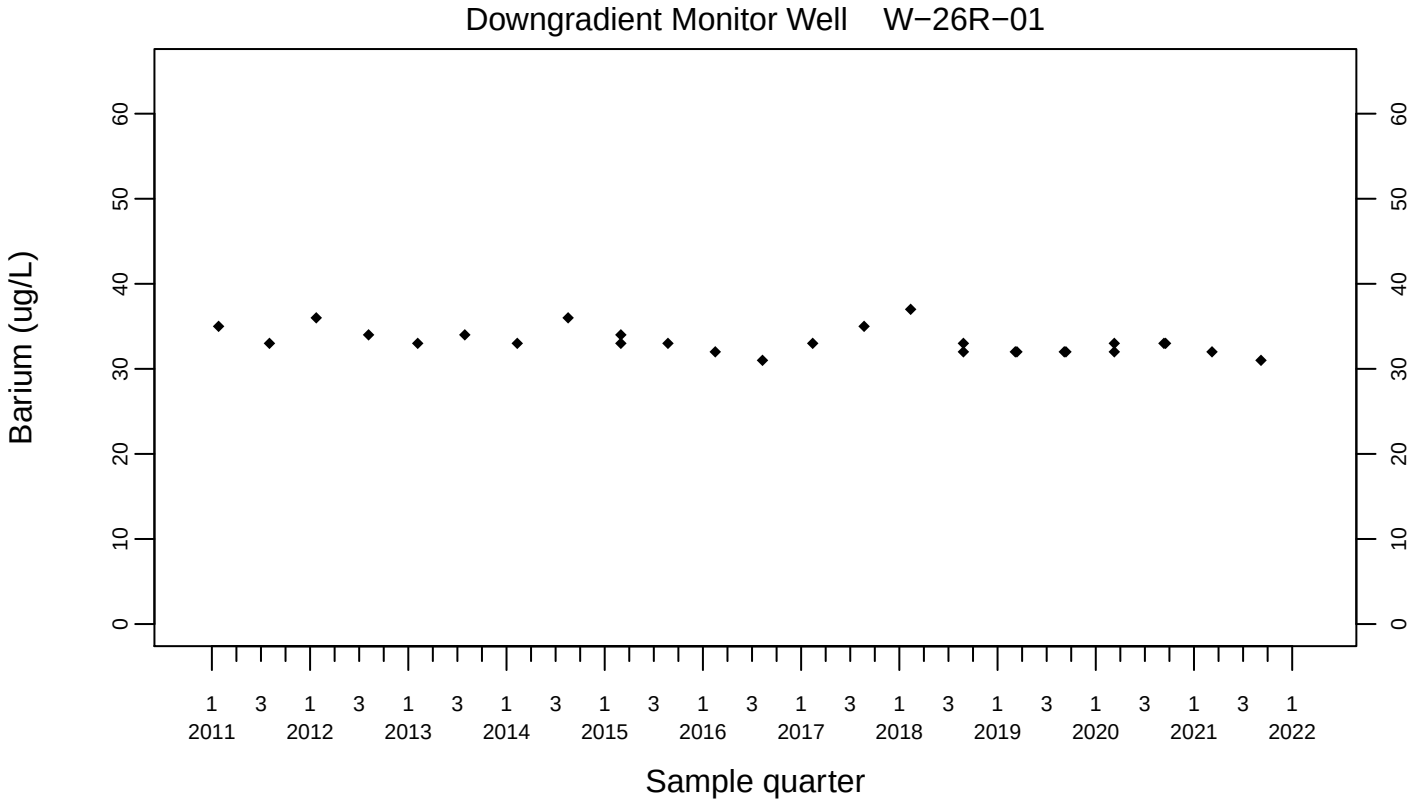
Sewage Ponds Ground Water
Barium (ug/L)



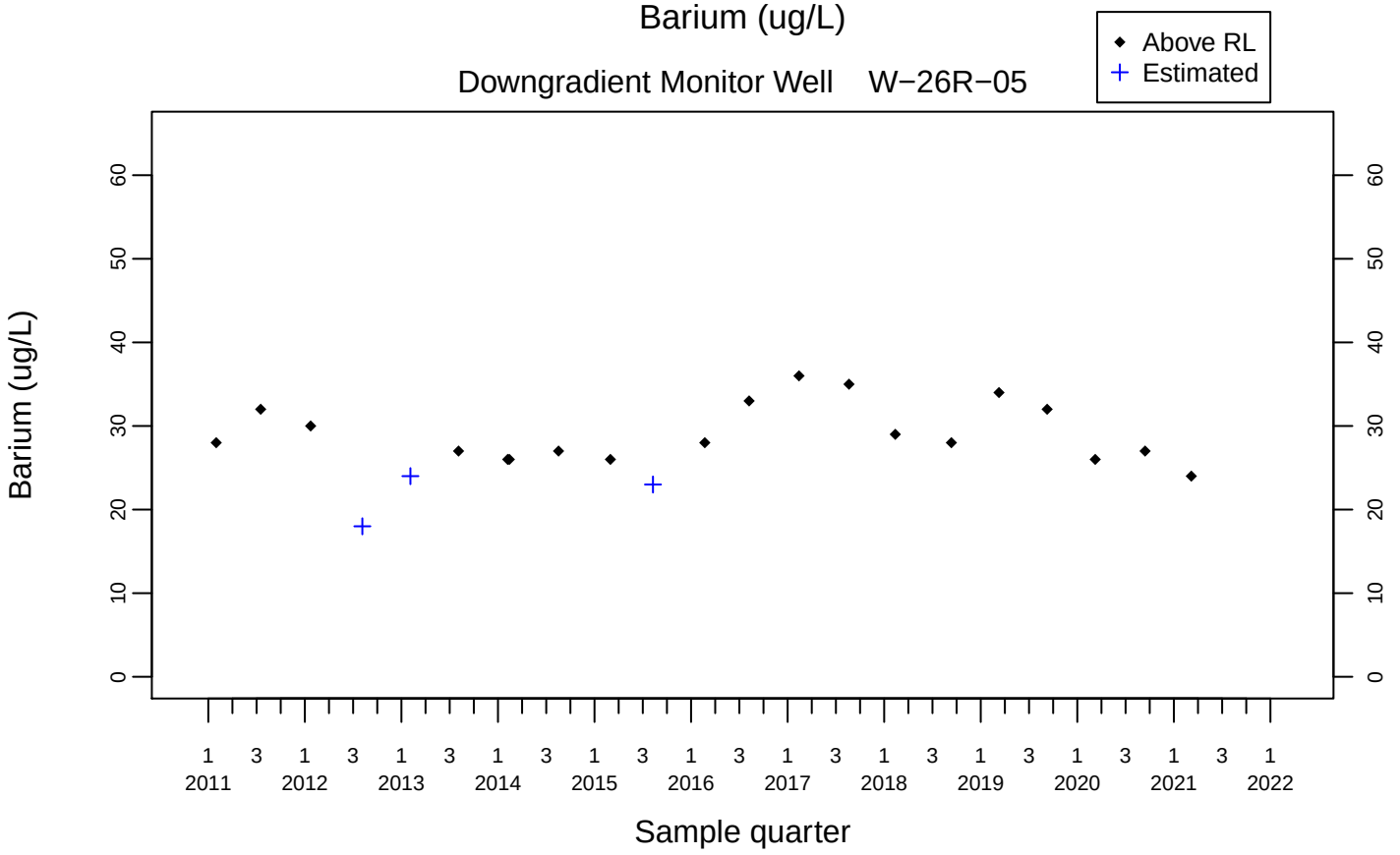


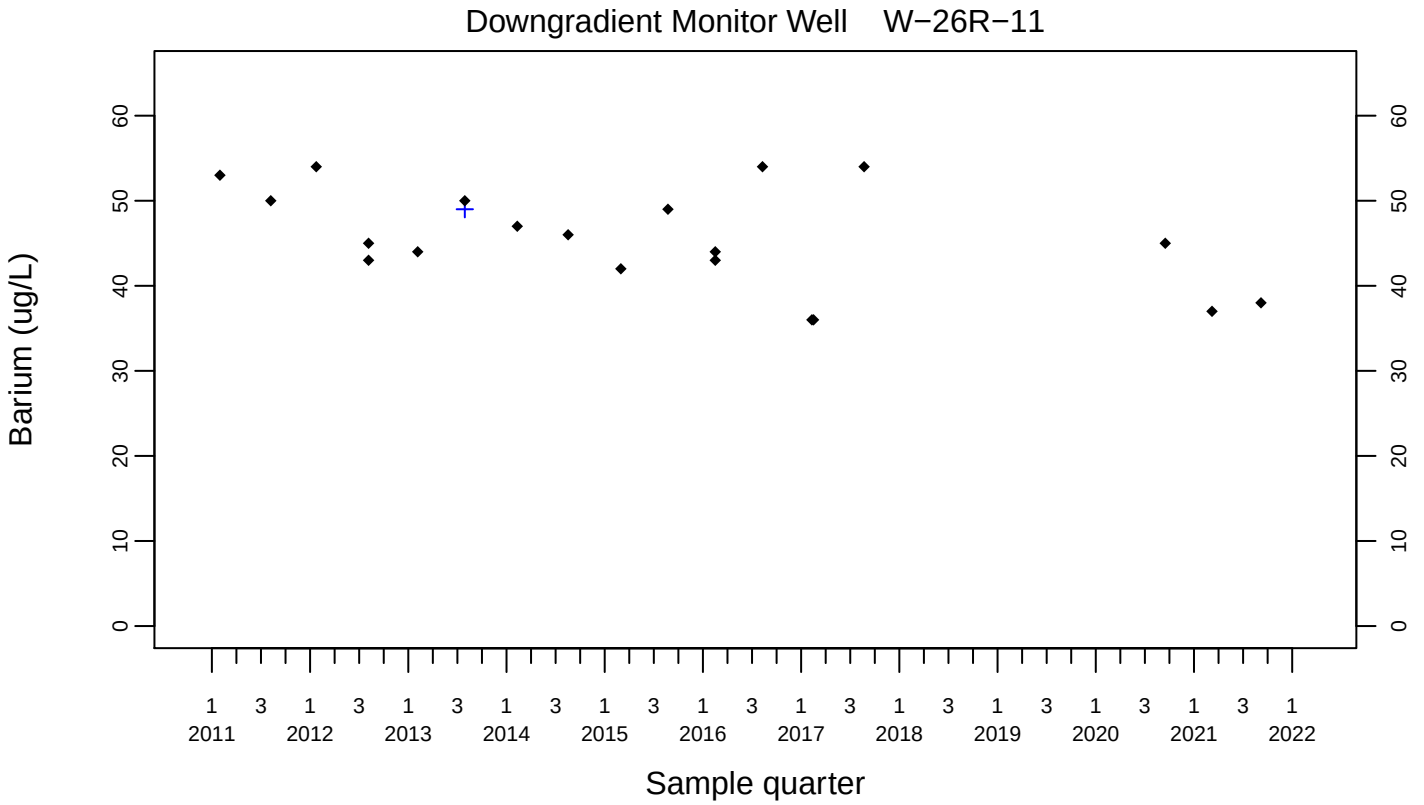
Sewage Ponds Ground Water
Barium (ug/L)

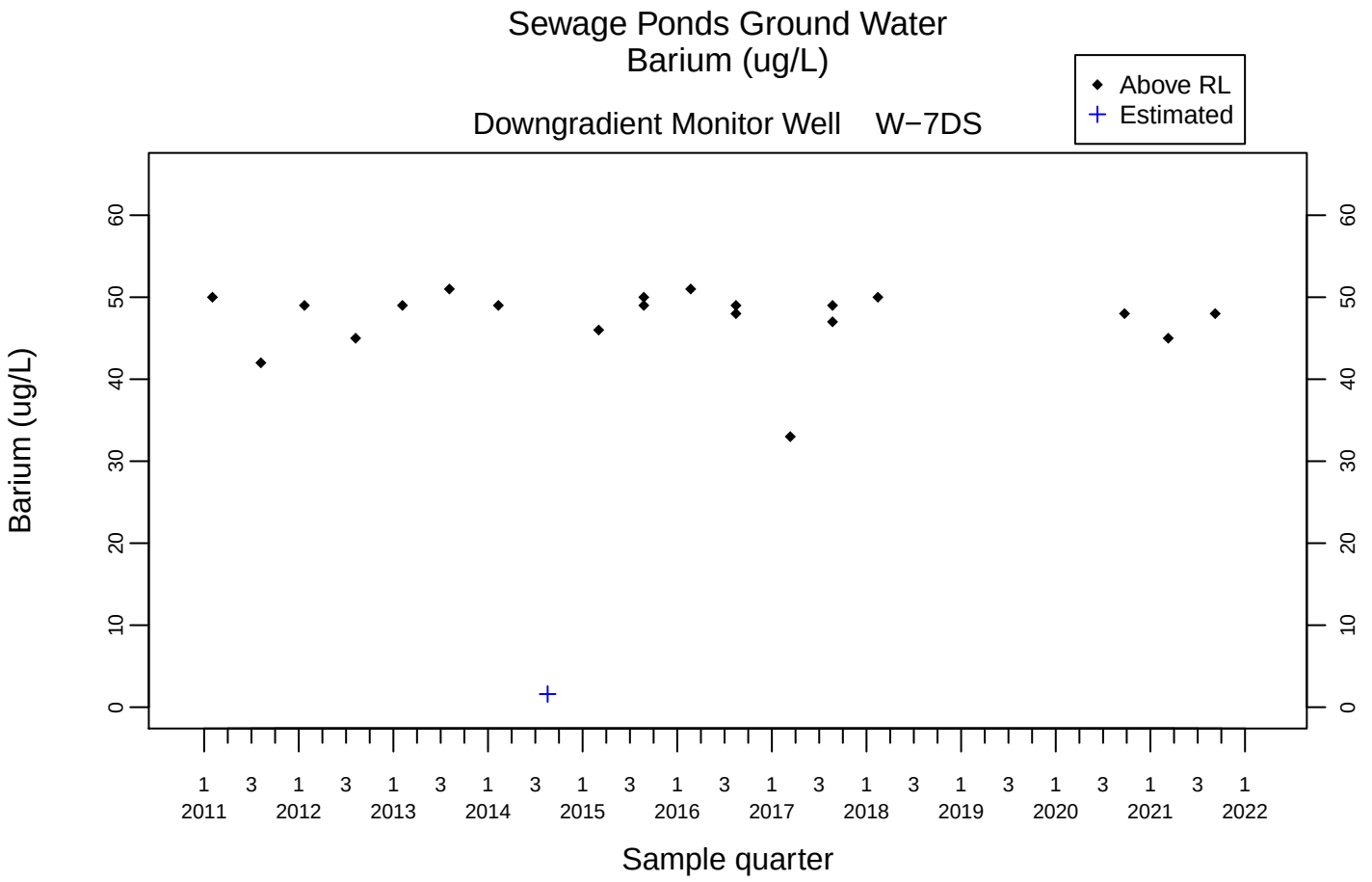


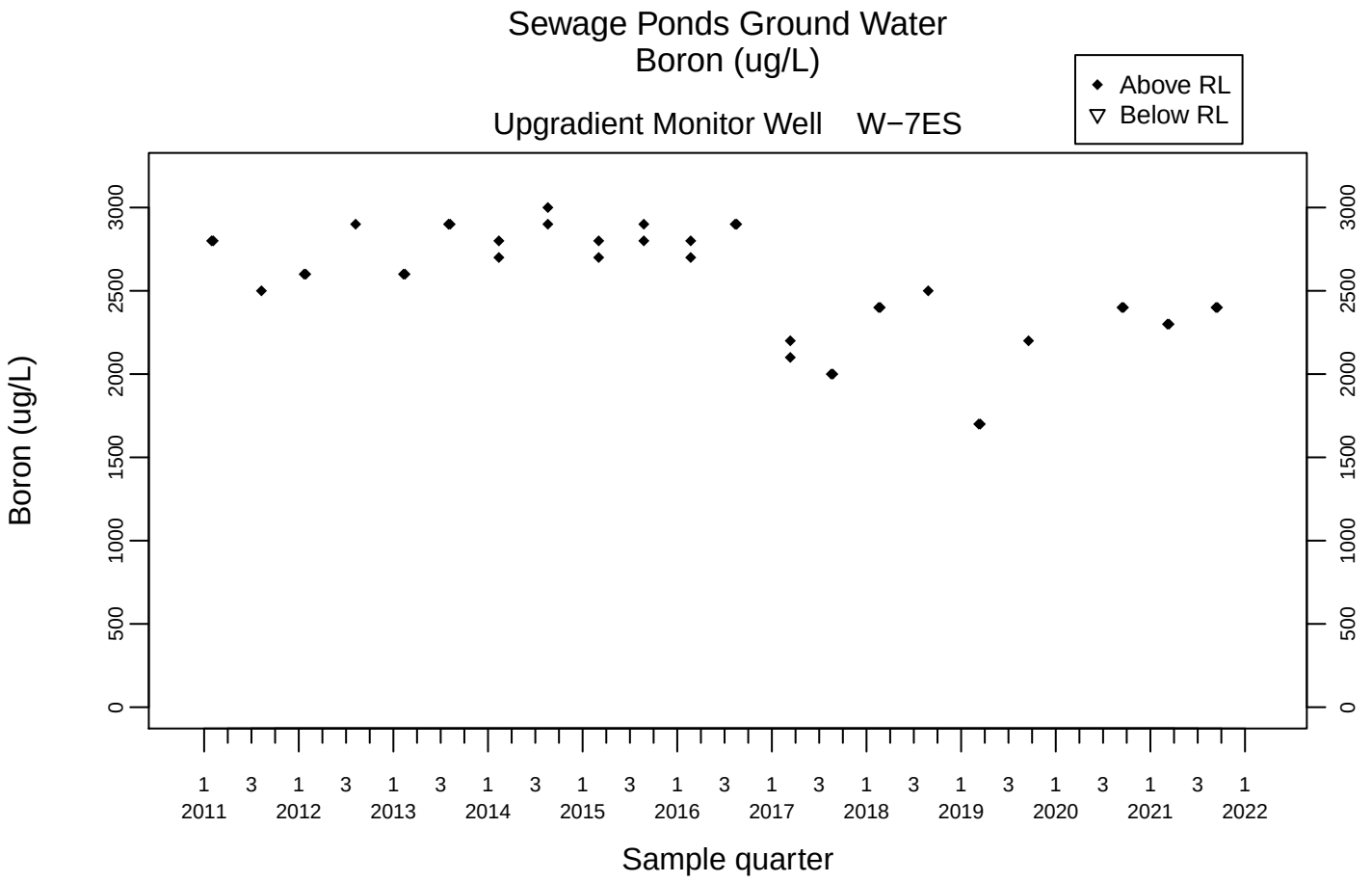


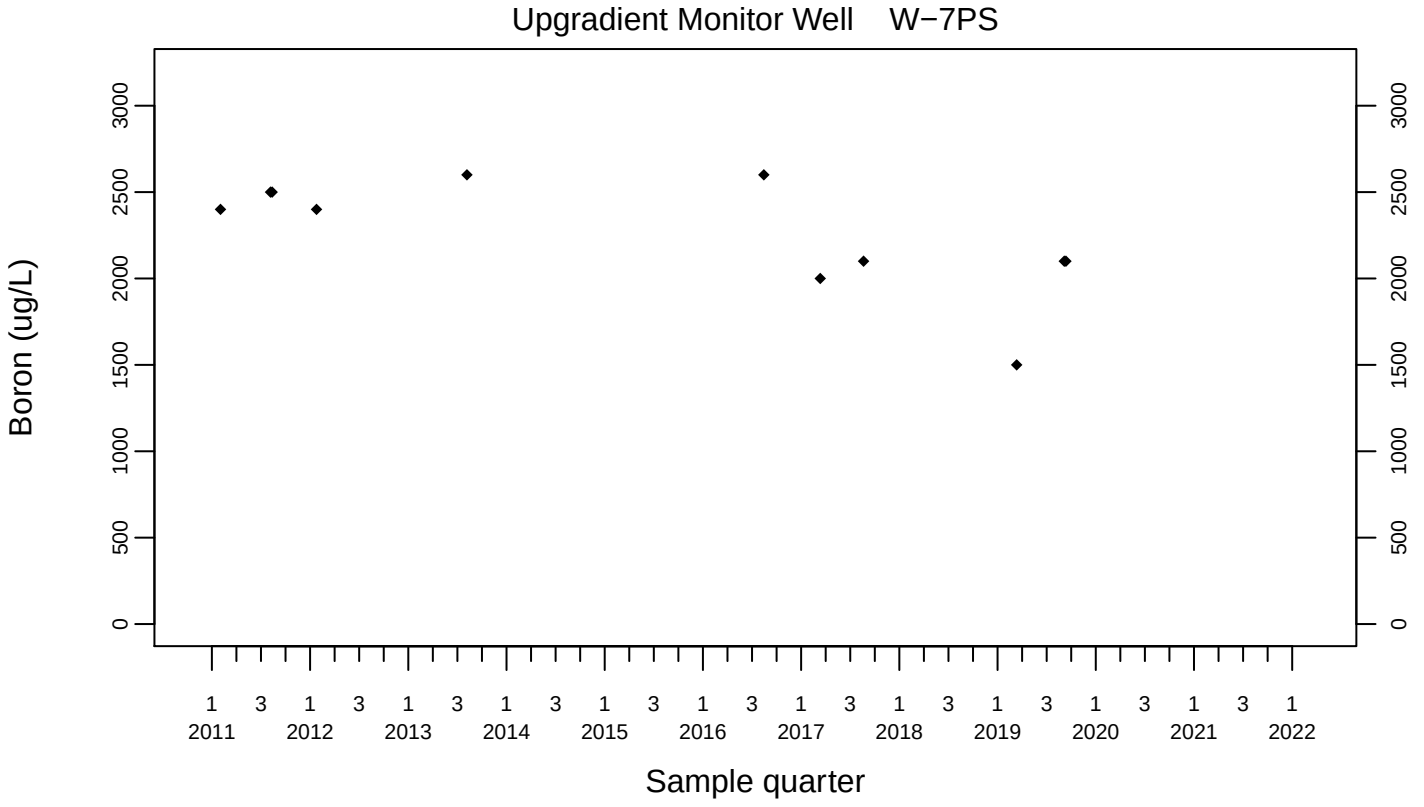
Sewage Ponds Ground Water
Barium (ug/L)



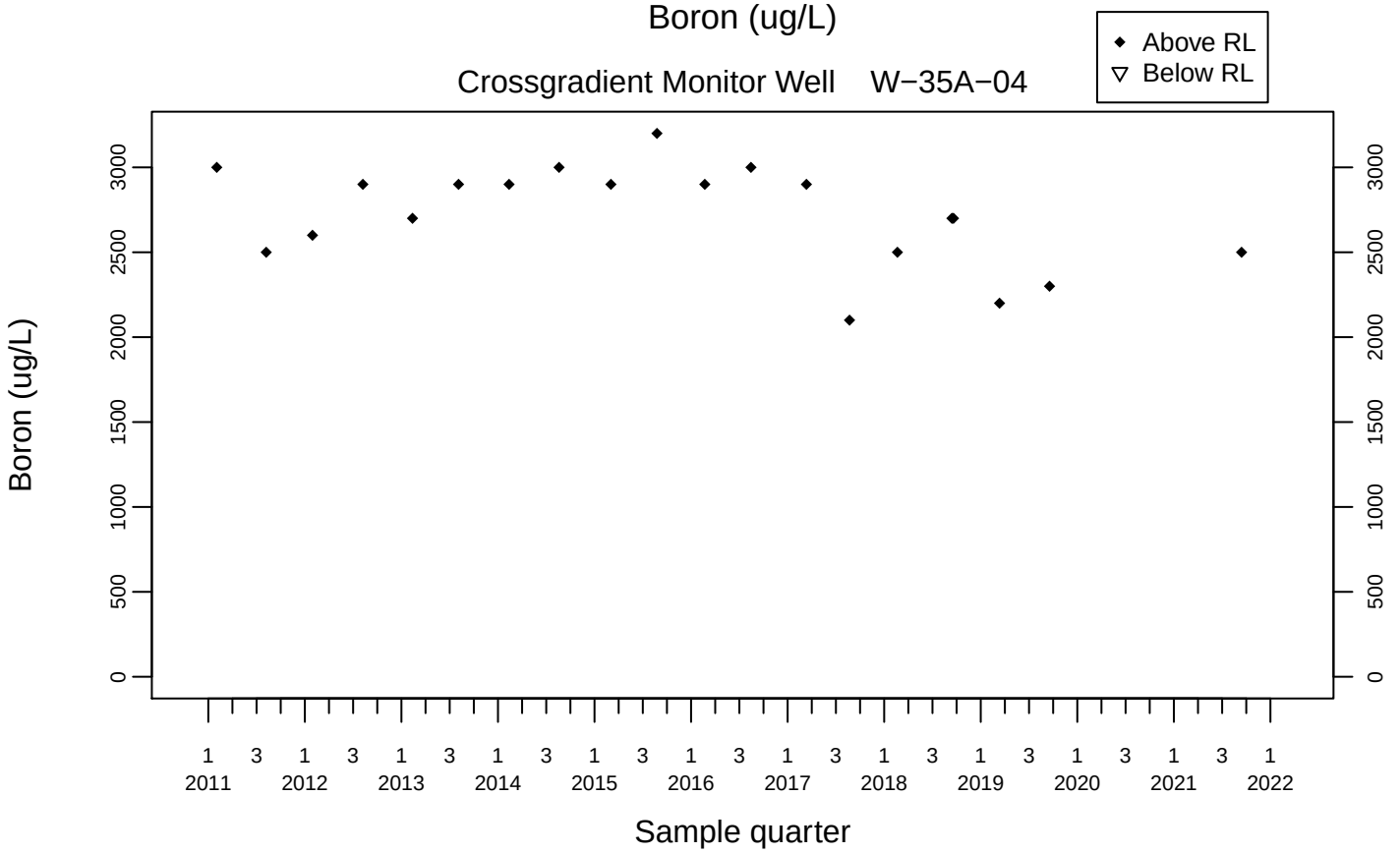


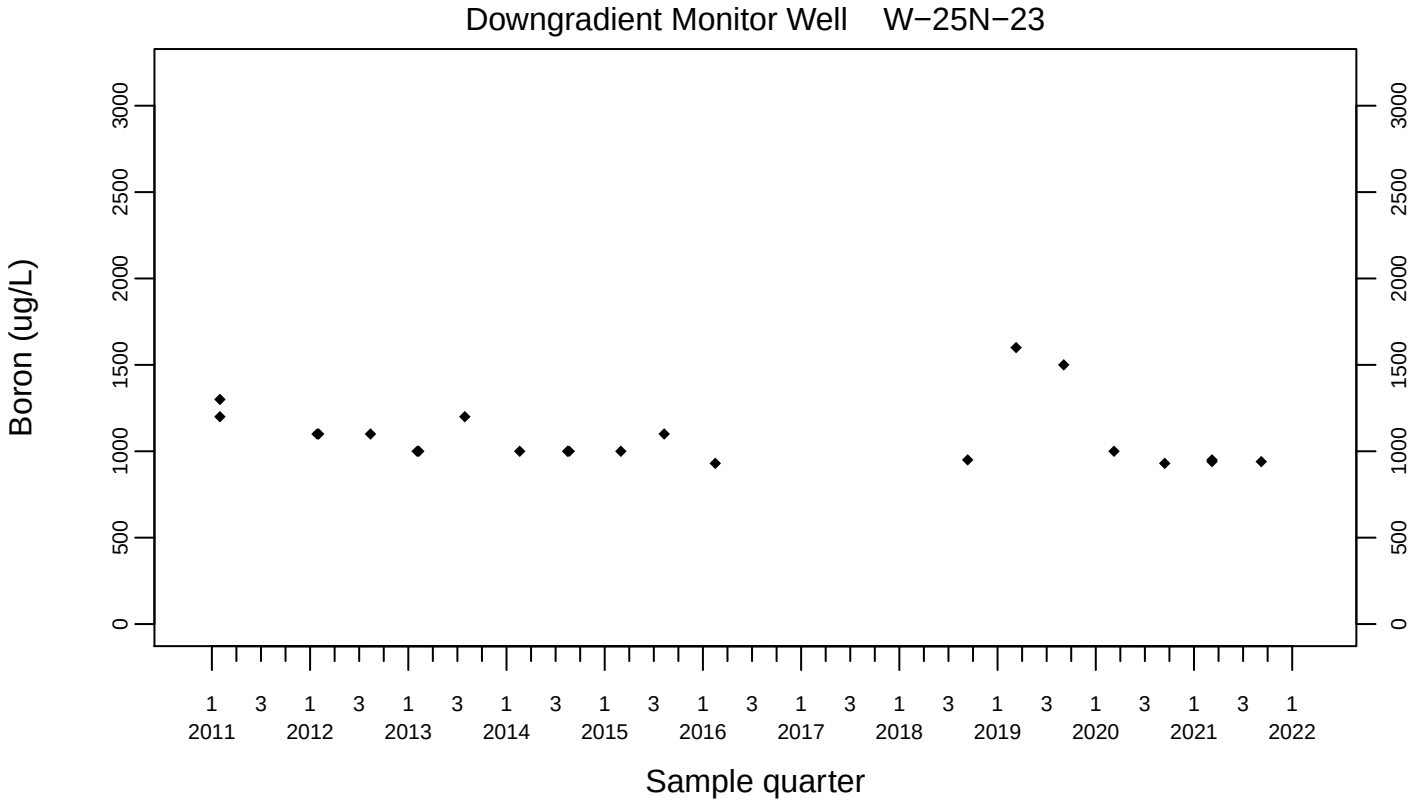

Sewage Ponds Ground Water
Barium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Estimated
Barium (ug/L)
0
10
20
30
40
50
60
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter


Sewage Ponds Ground Water
Boron (ug/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Boron (ug/L)
0
500
1000
1500
2000
2500
3000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

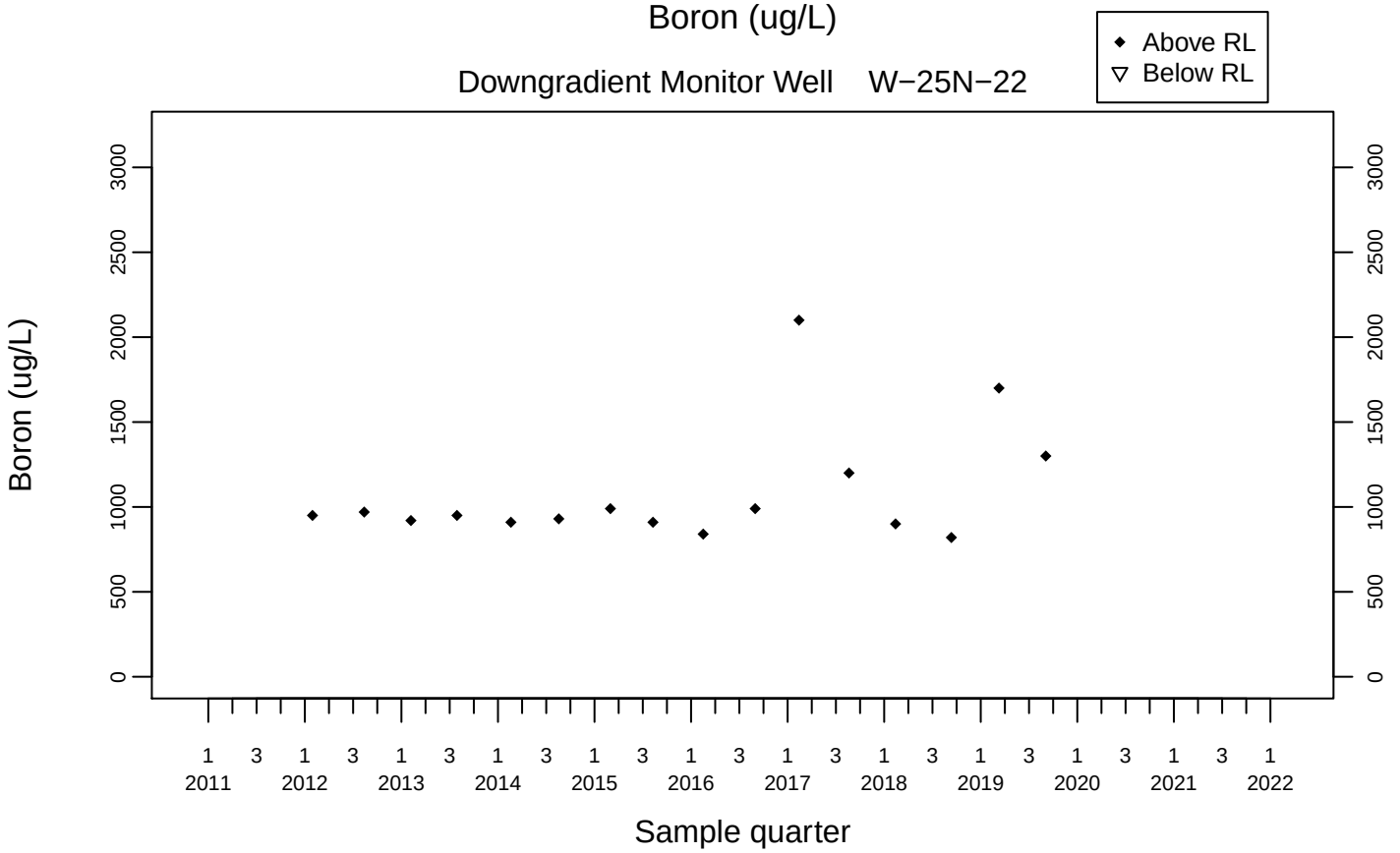

Upgradient Monitor Well W−7PS
Boron (ug/L)
0
500
1000
1500
2000
2500
3000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

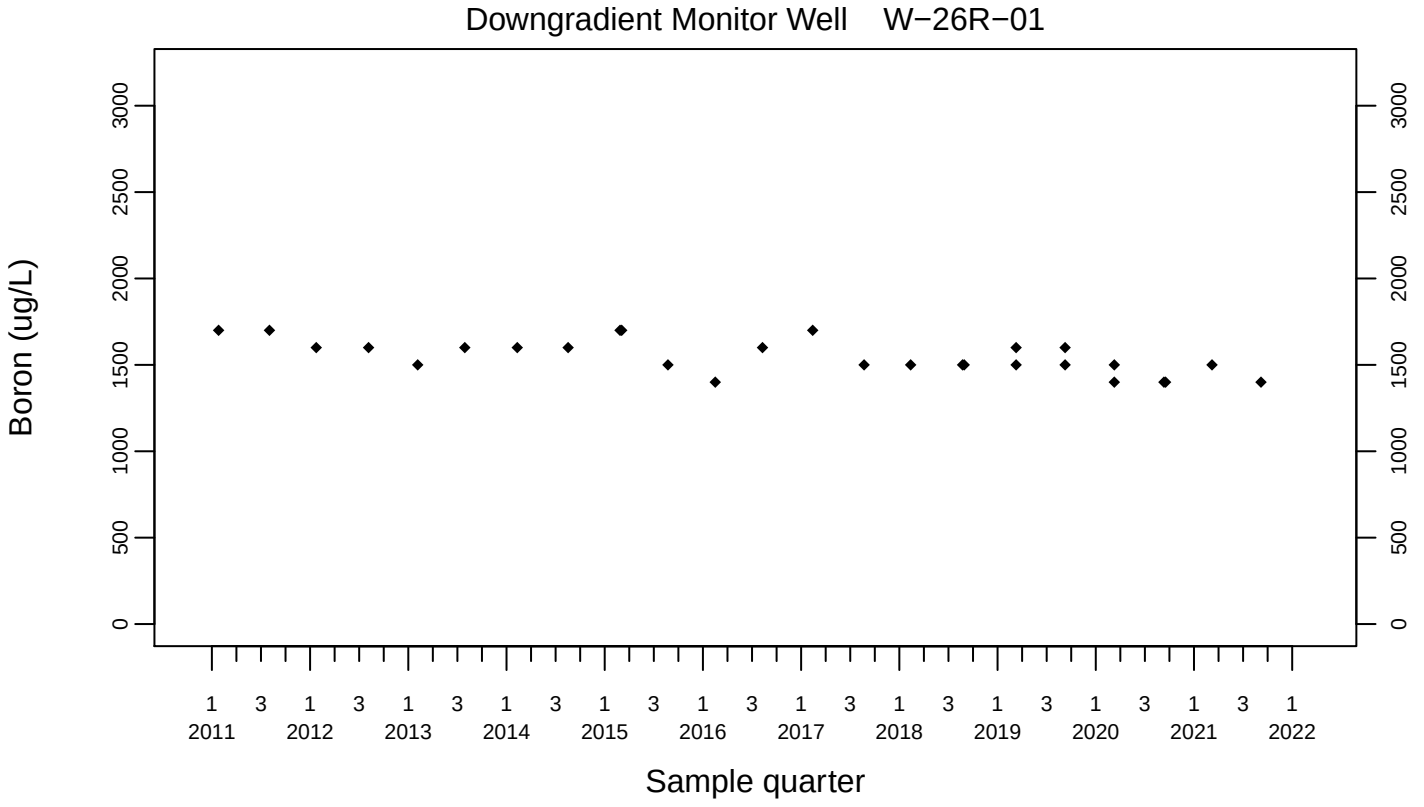
Sewage Ponds Ground Water
Boron (ug/L)



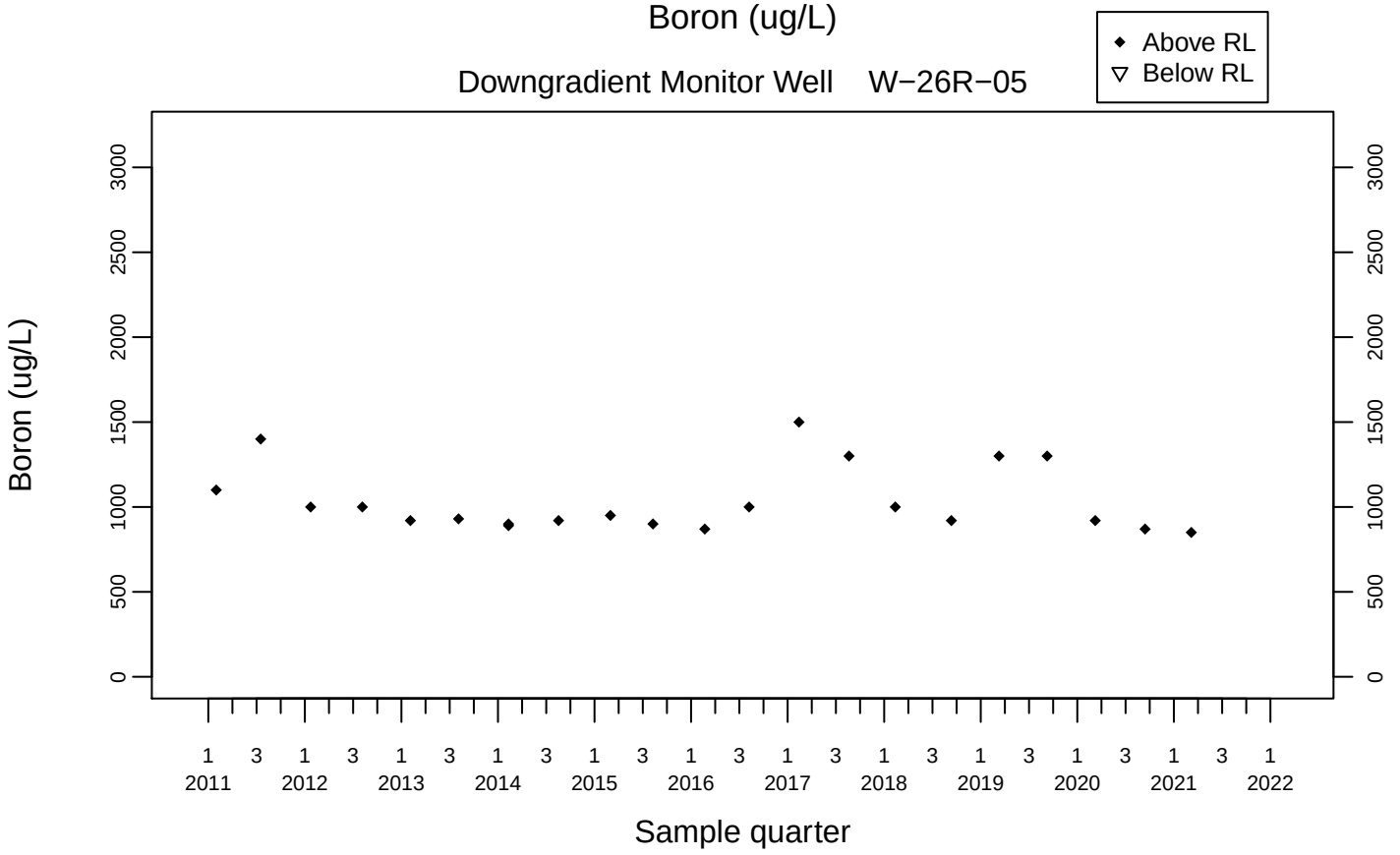


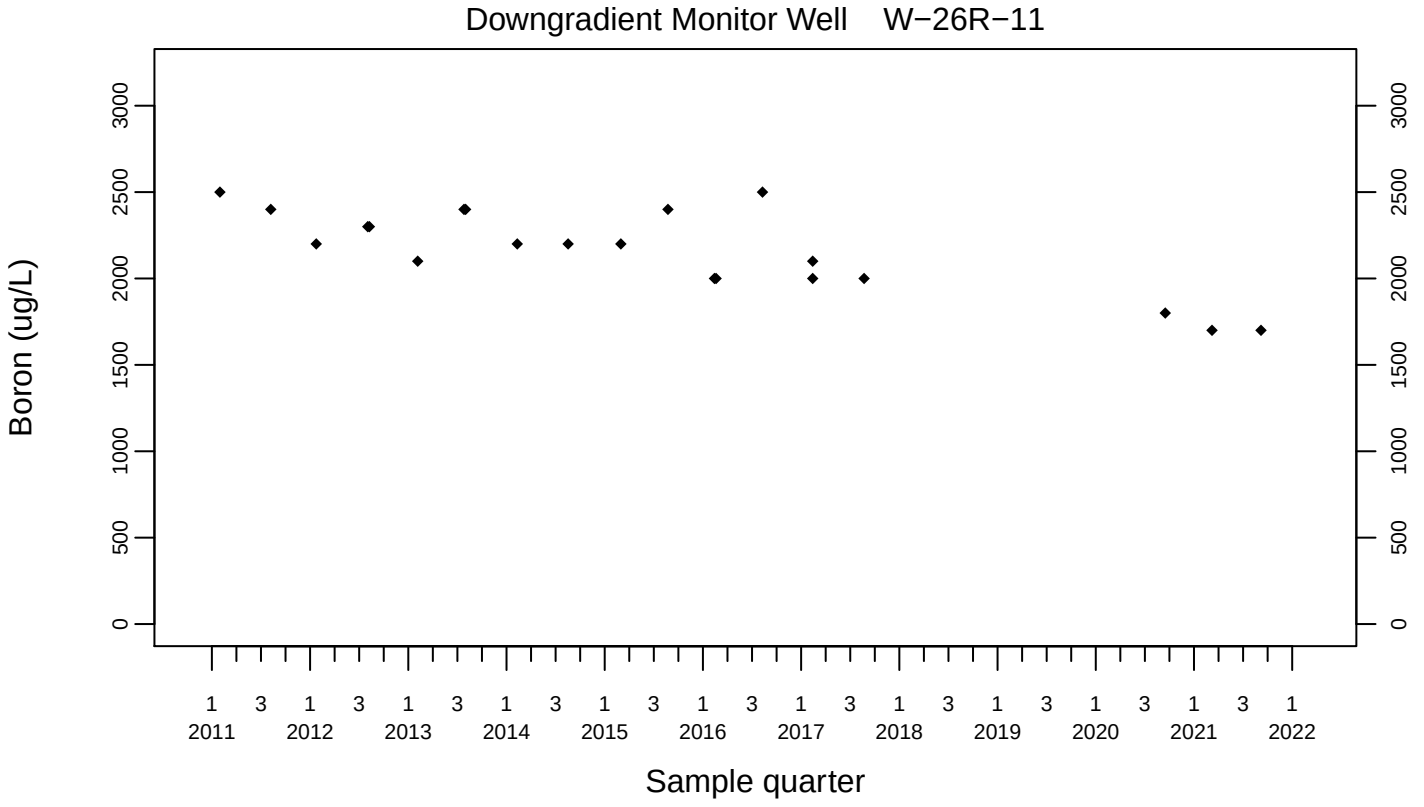
Sewage Ponds Ground Water
Boron (ug/L)

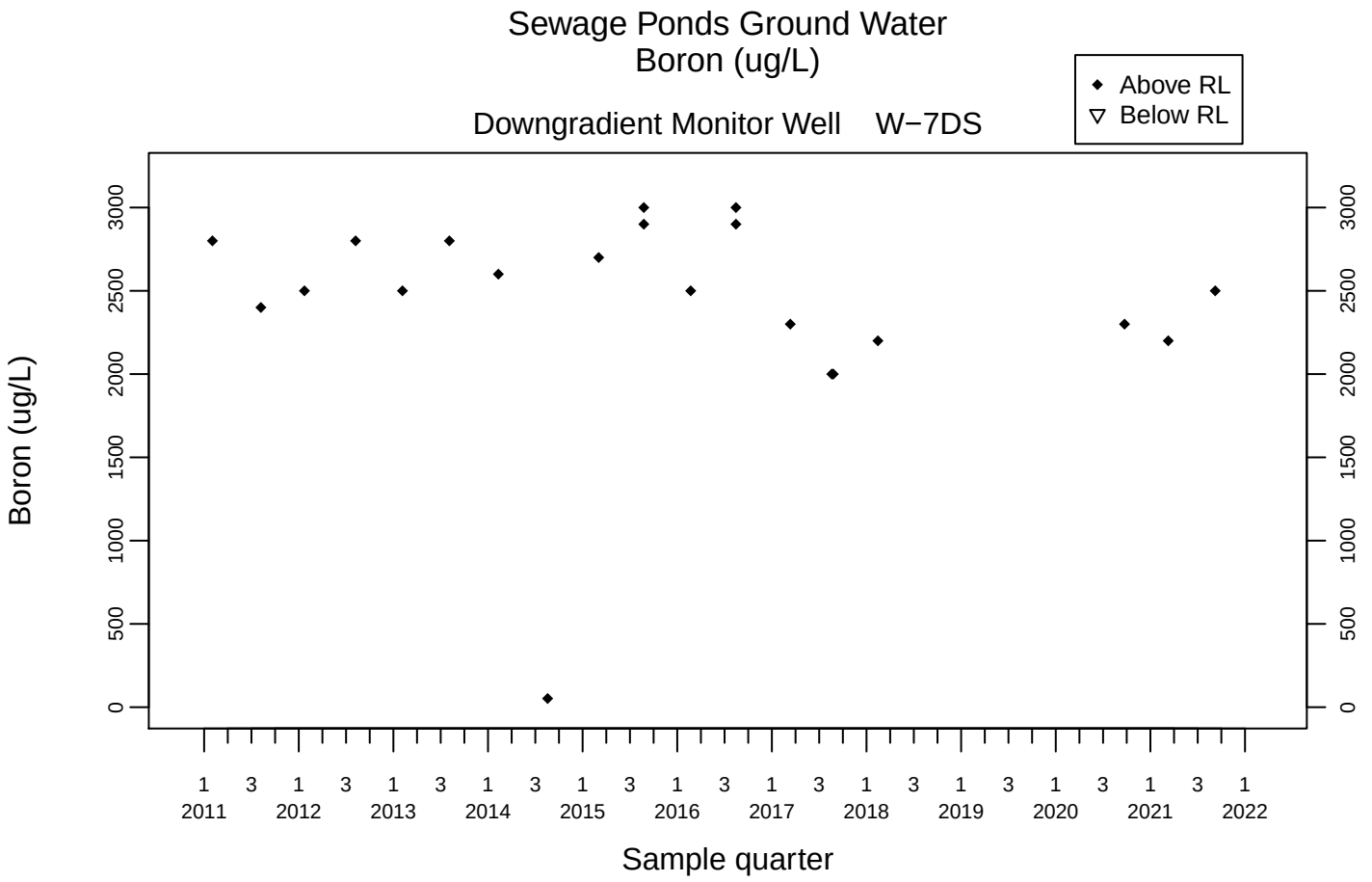




Sewage Ponds Ground Water
Boron (ug/L)

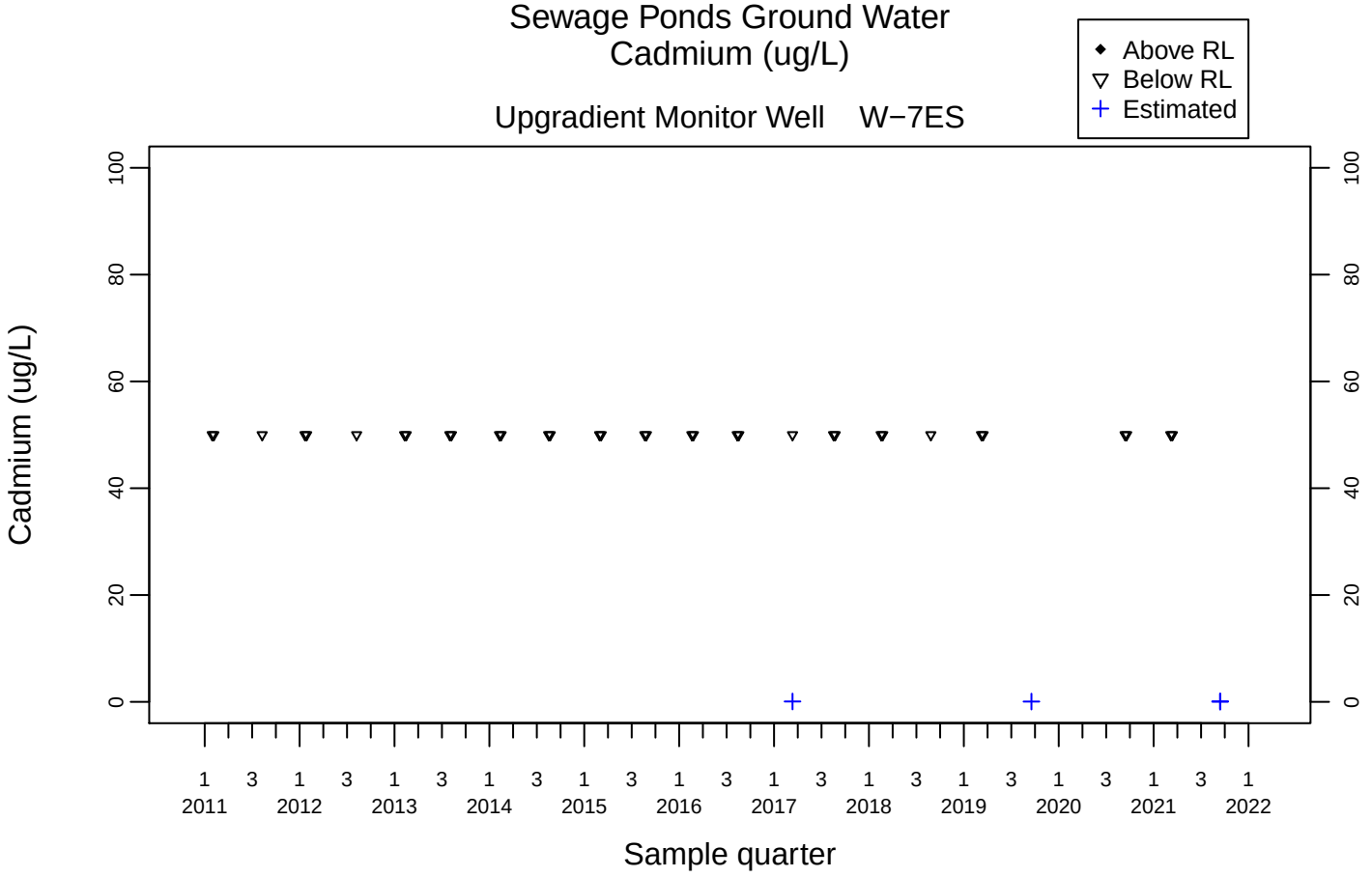




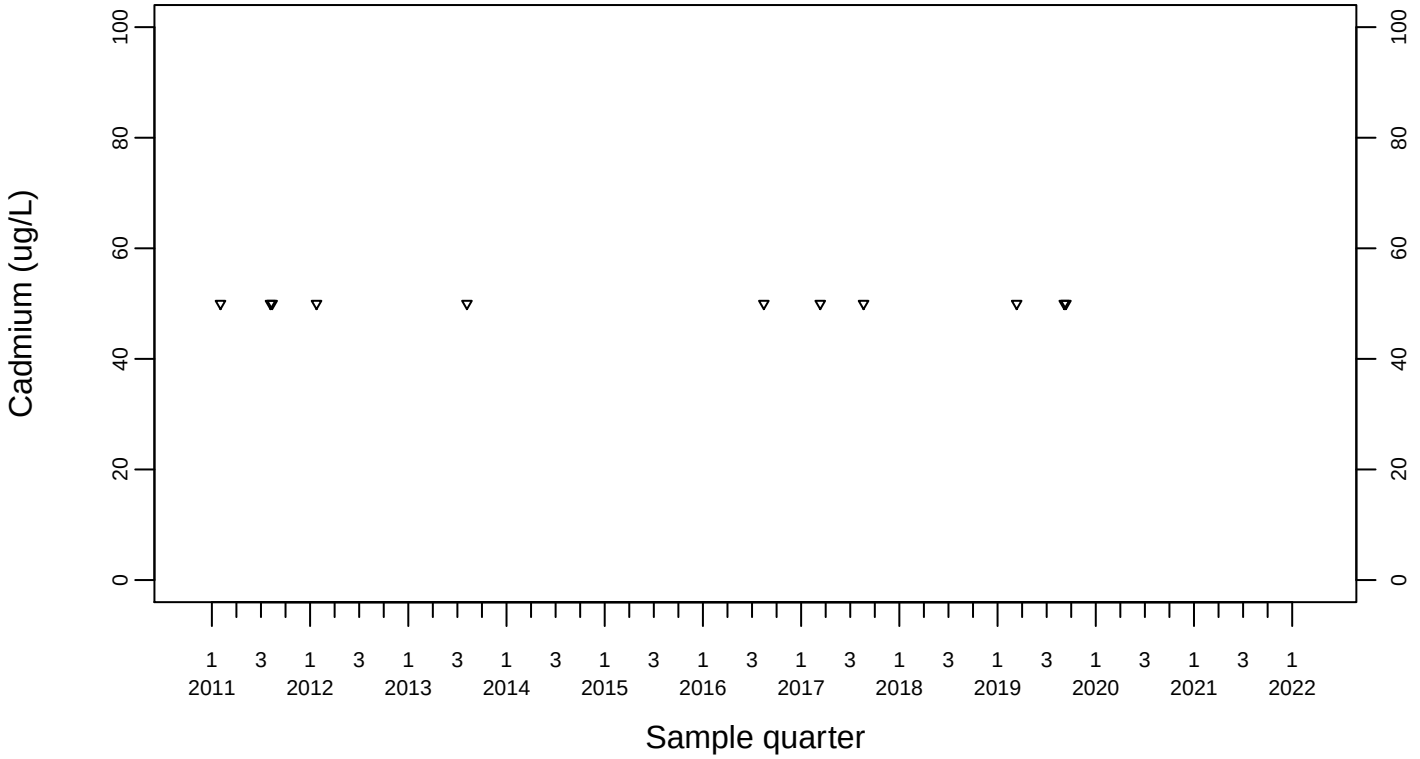

Sewage Ponds Ground Water
Boron (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Boron (ug/L)
0
500
1000
1500
2000
2500
3000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
Cadmium (ug/L)

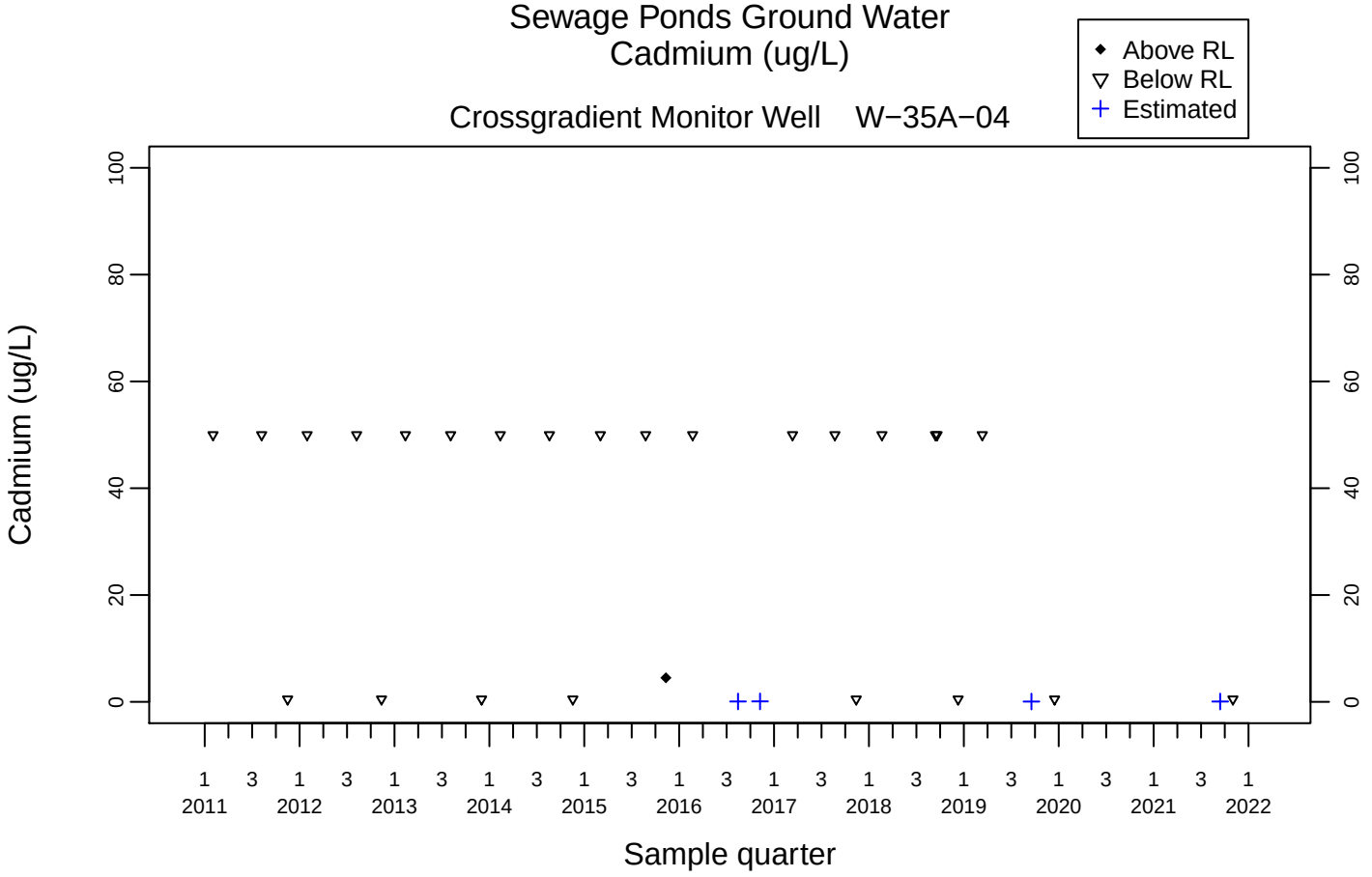
Upgradient Monitor Well W−7ES

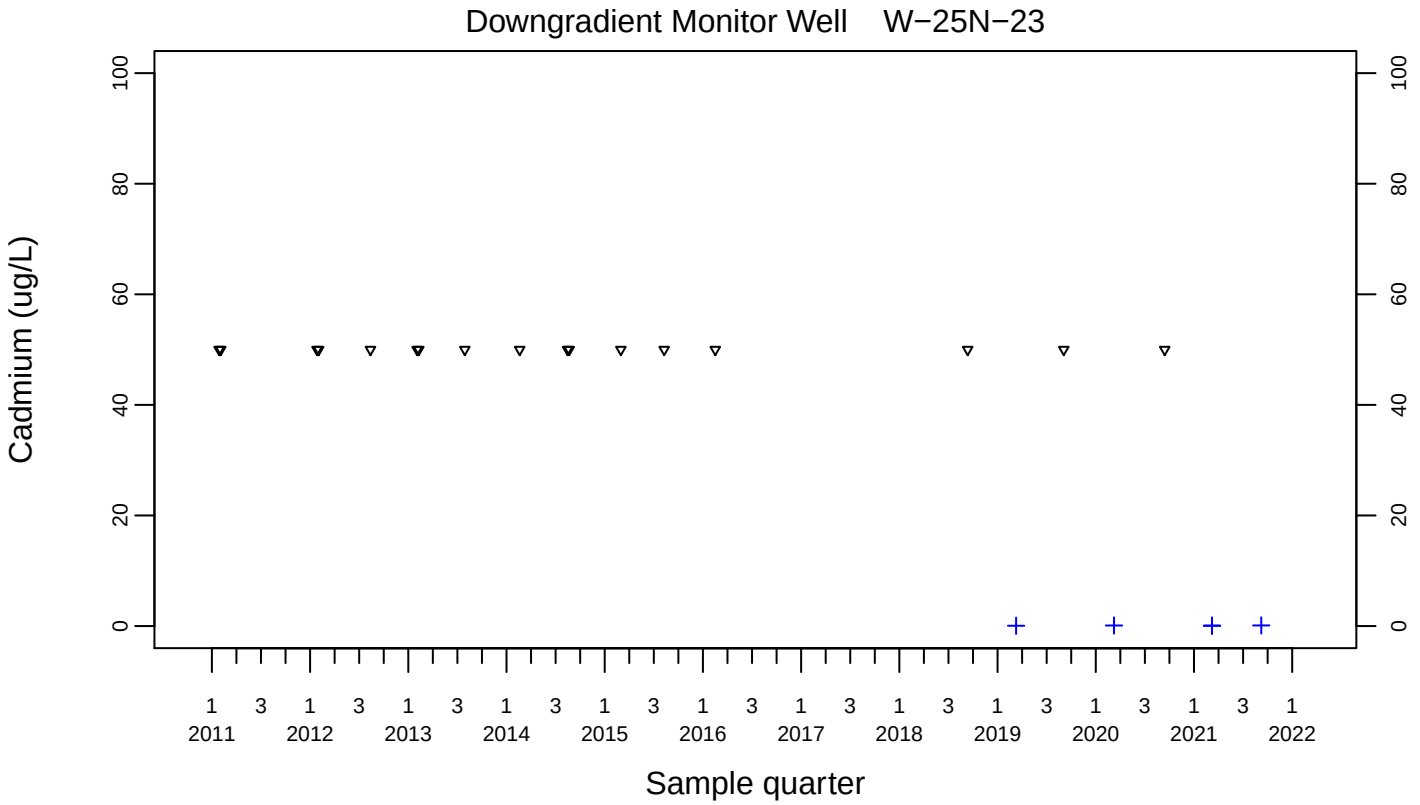


Upgradient Monitor Well W−7PS

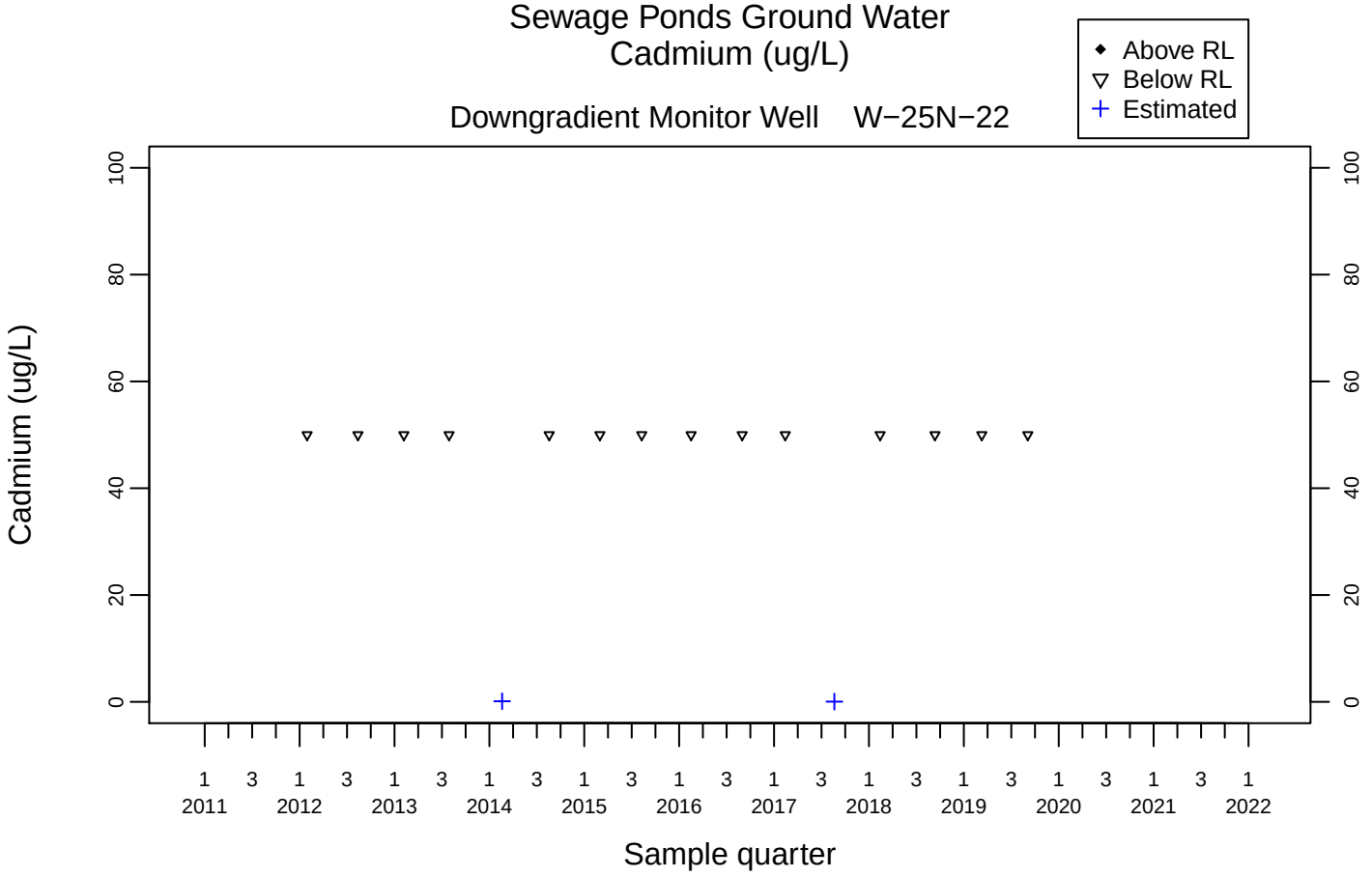


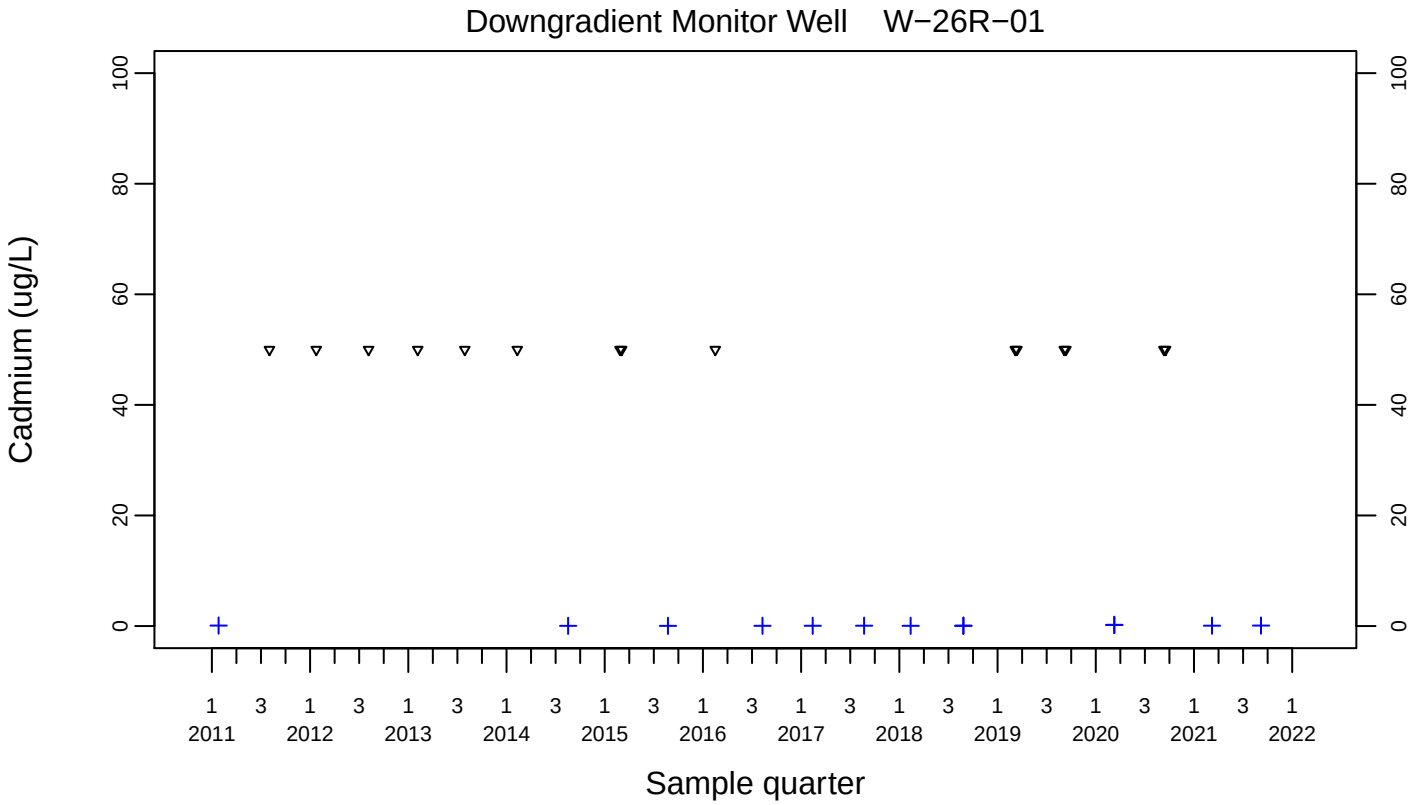
Sewage Ponds Ground Water
Cadmium (ug/L)



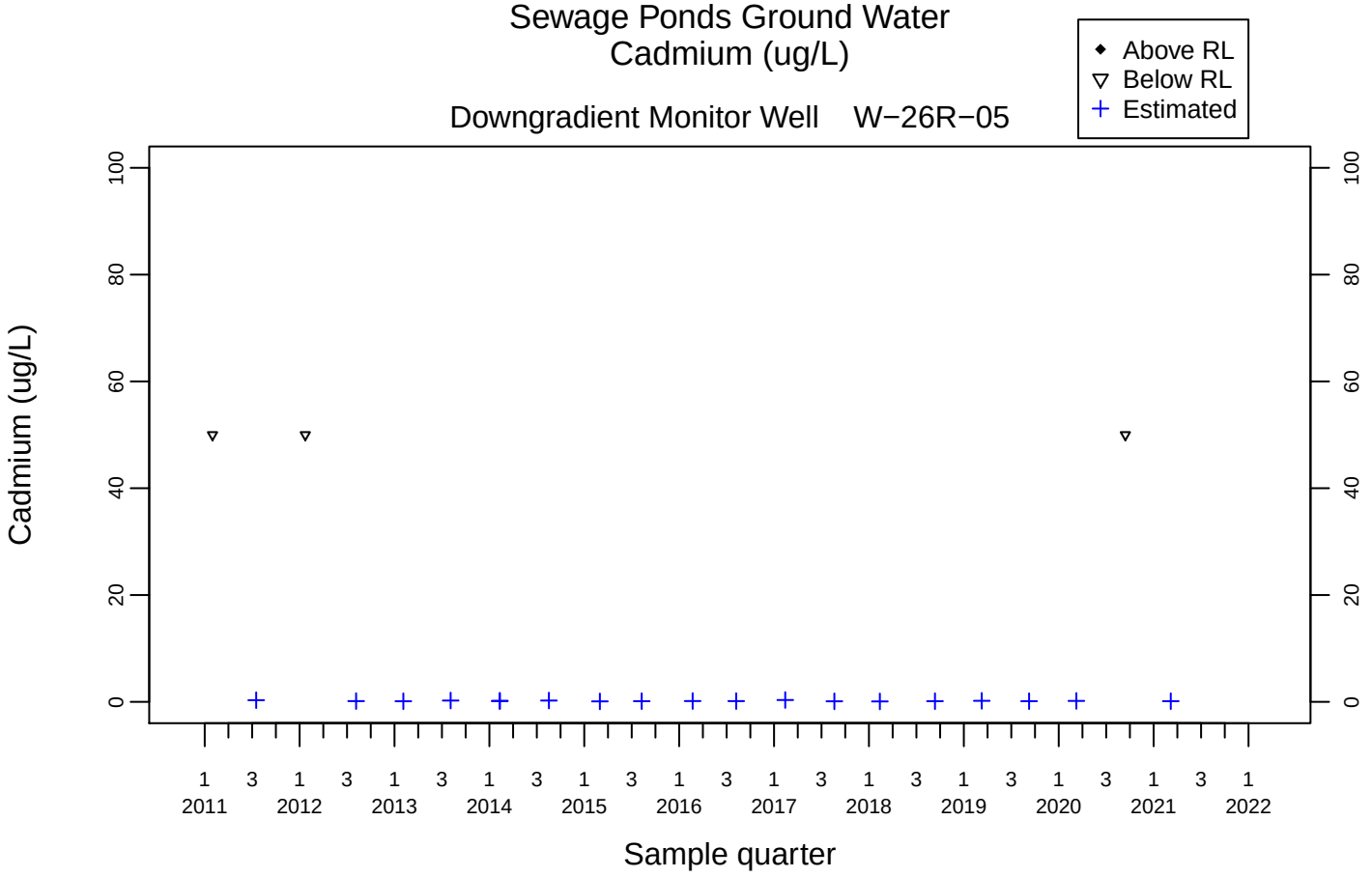


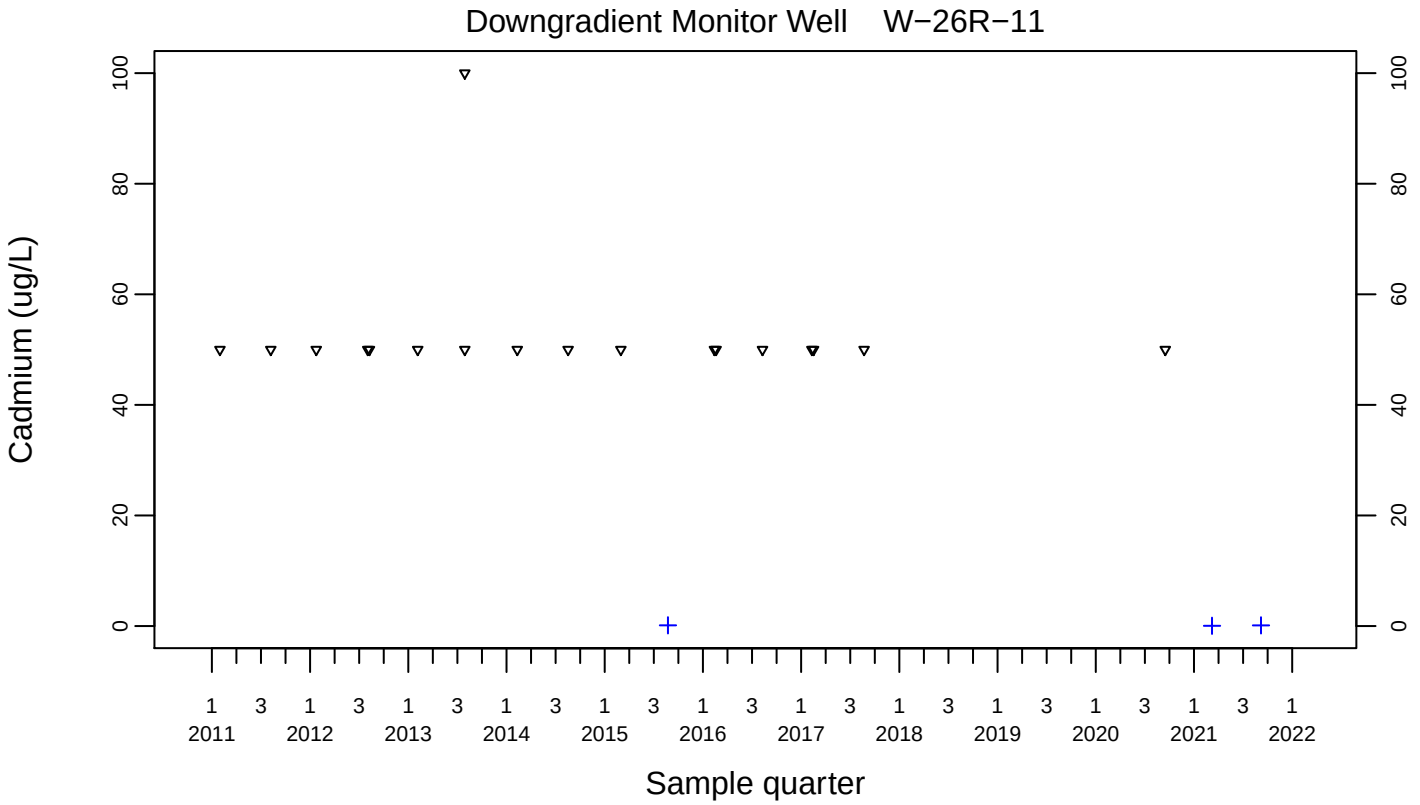
Sewage Ponds Ground Water
Cadmium (ug/L)

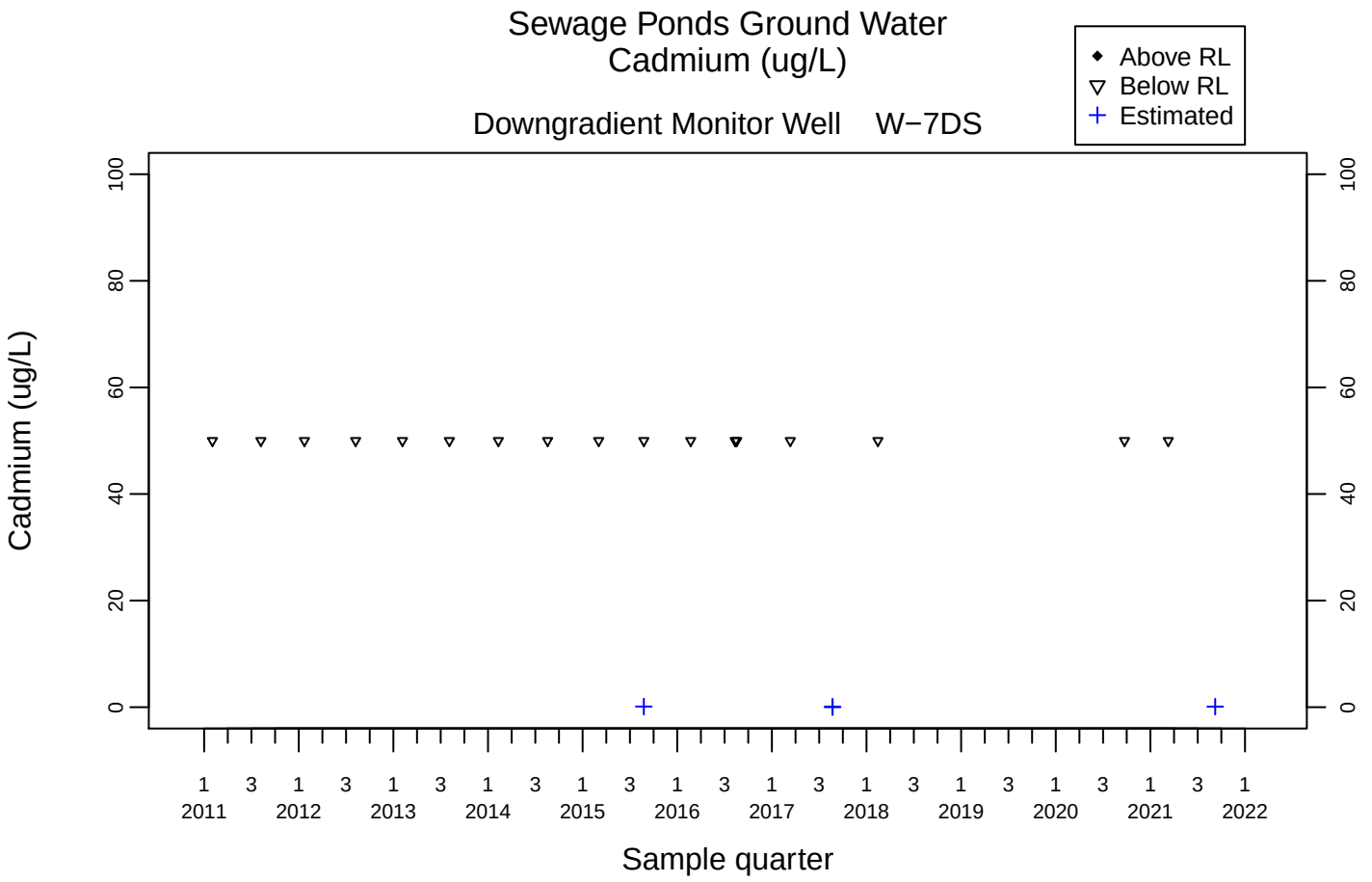




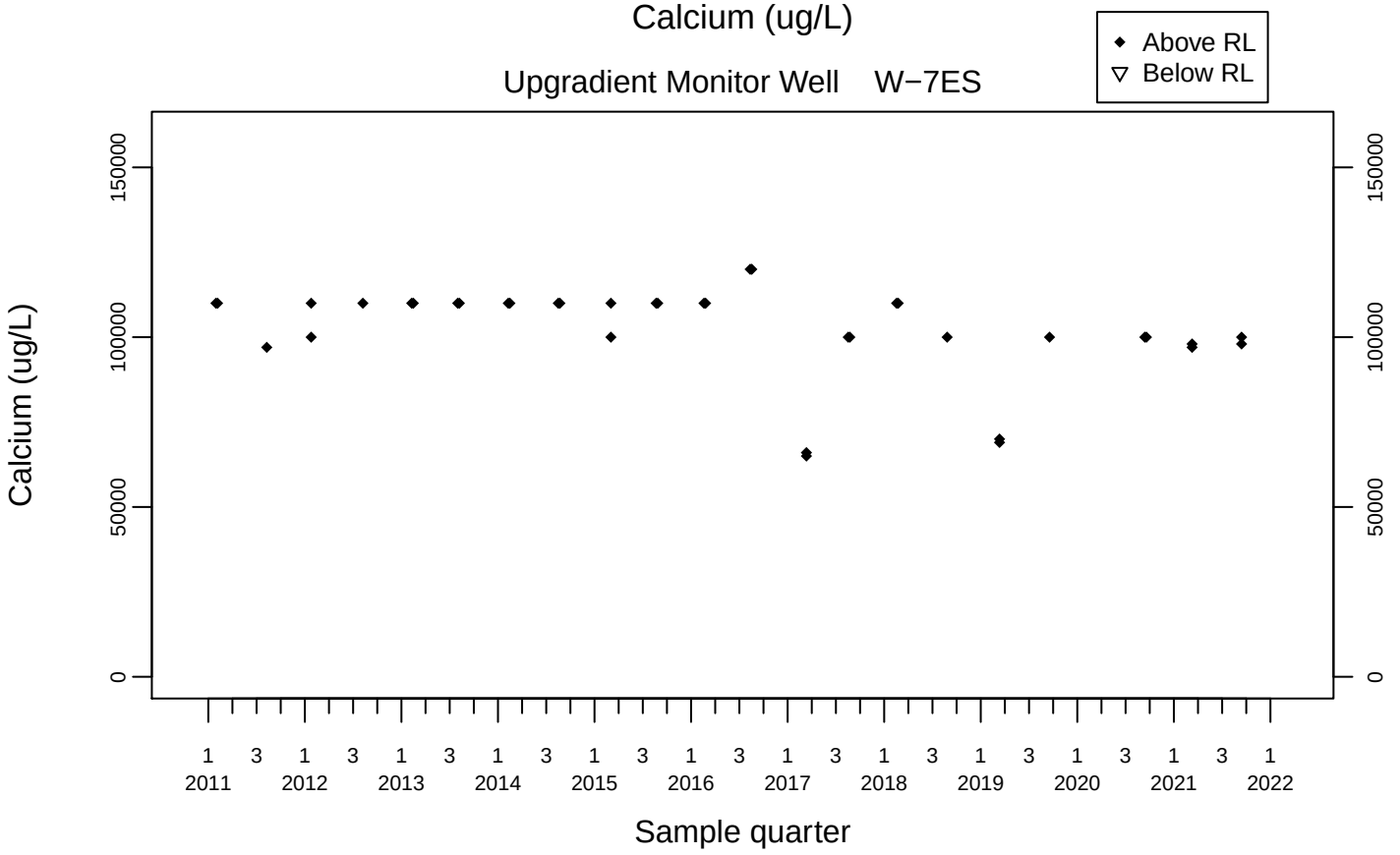
Sewage Ponds Ground Water
Cadmium (ug/L)

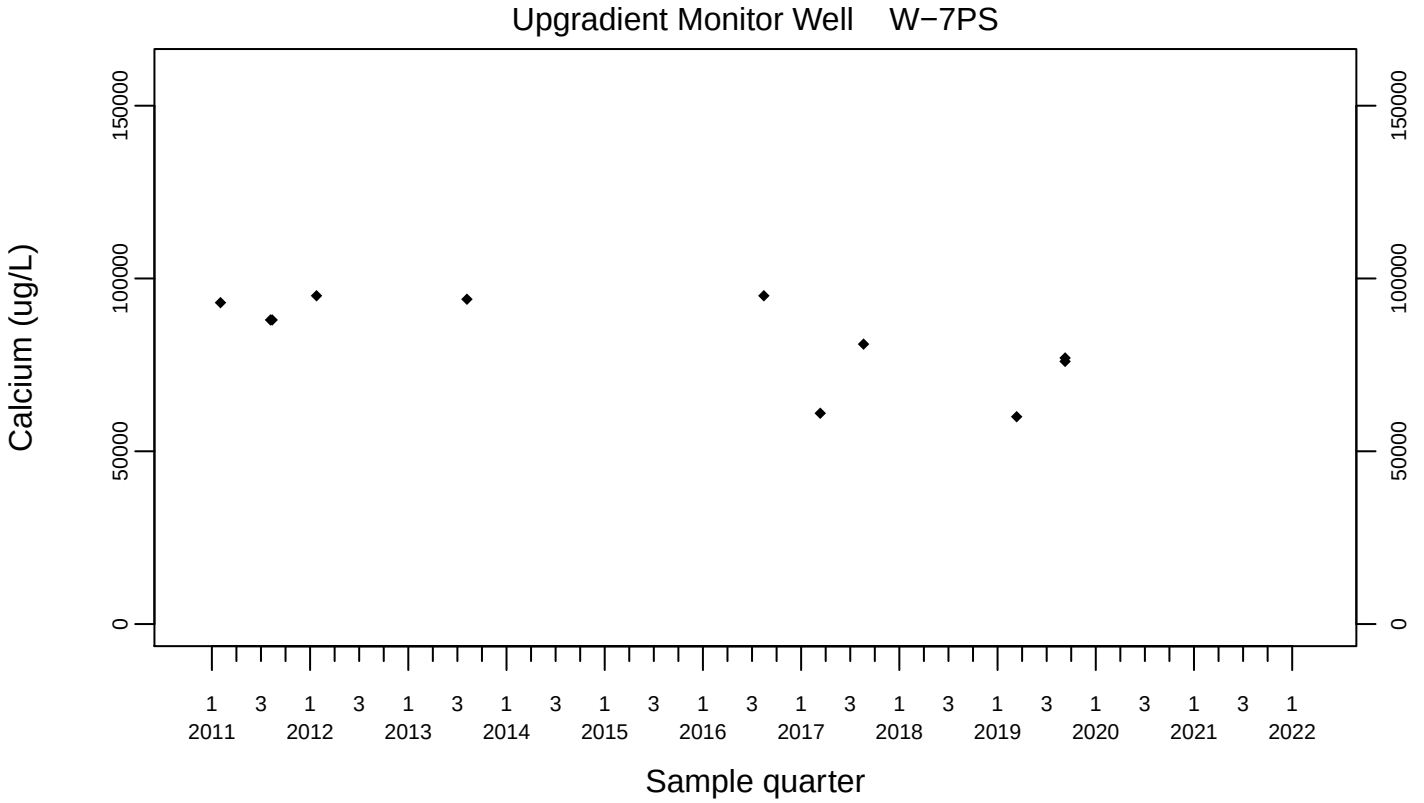




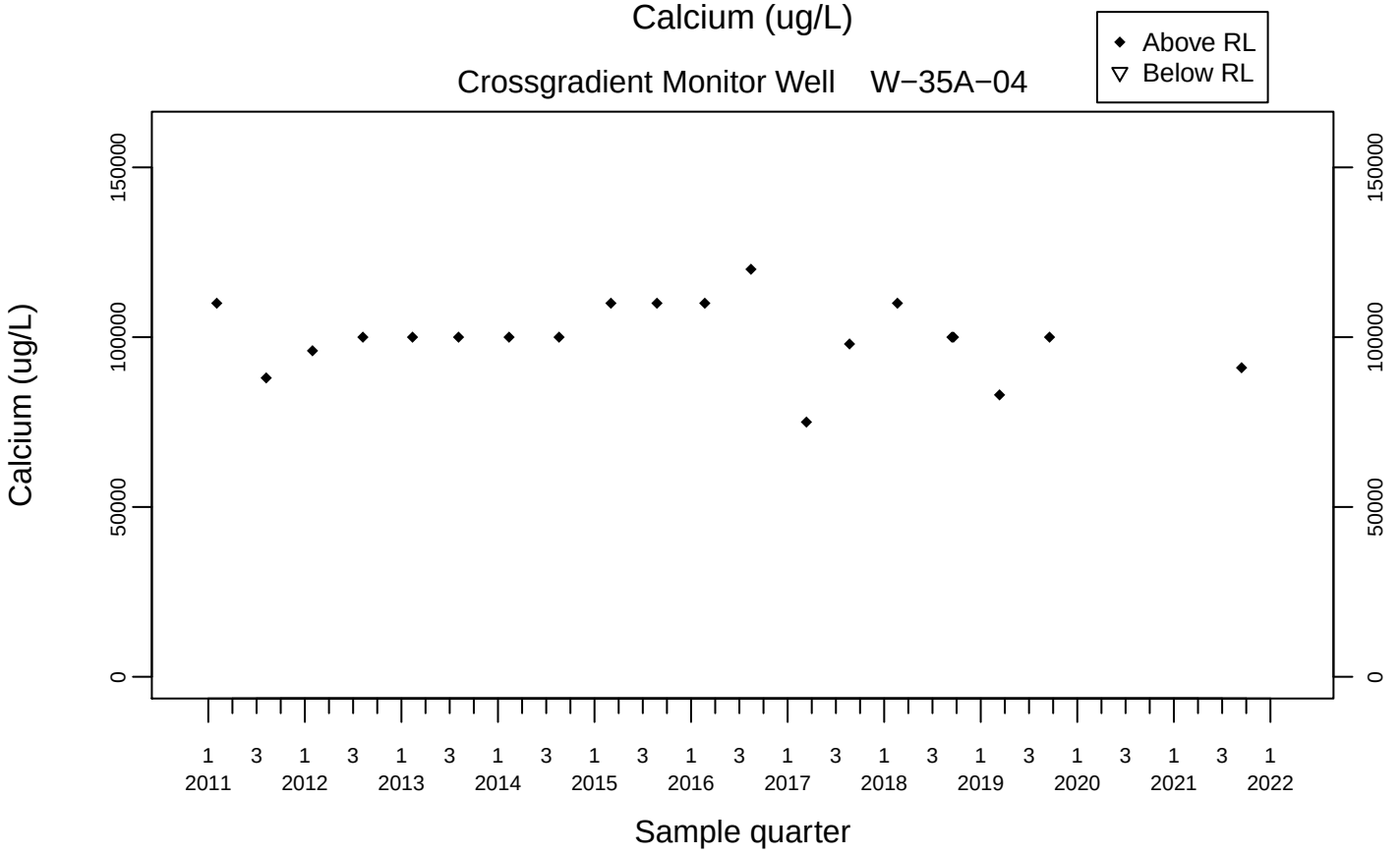

Sewage Ponds Ground Water
Cadmium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Cadmium (ug/L)
0
20
40
60
80
100
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

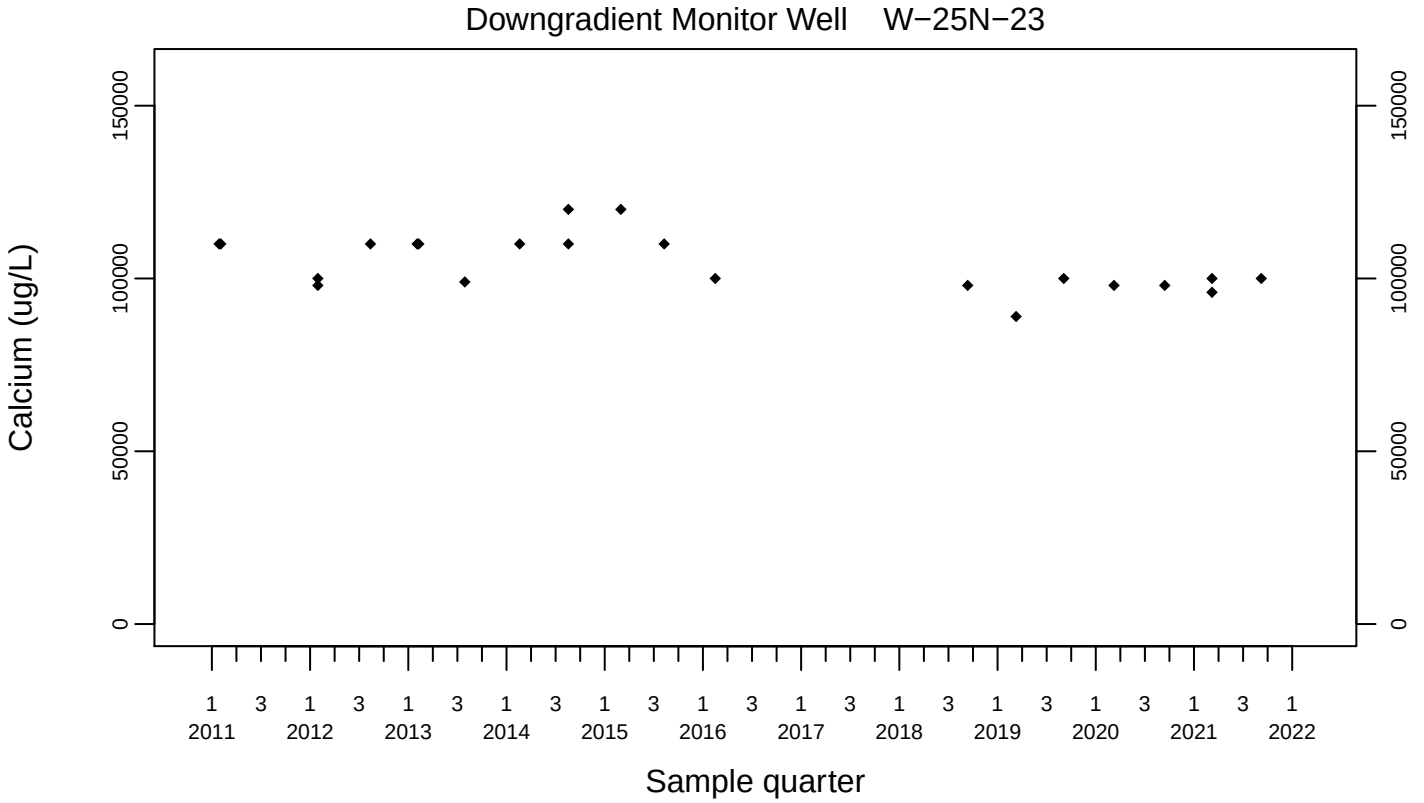
Sewage Ponds Ground Water
Calcium (ug/L)



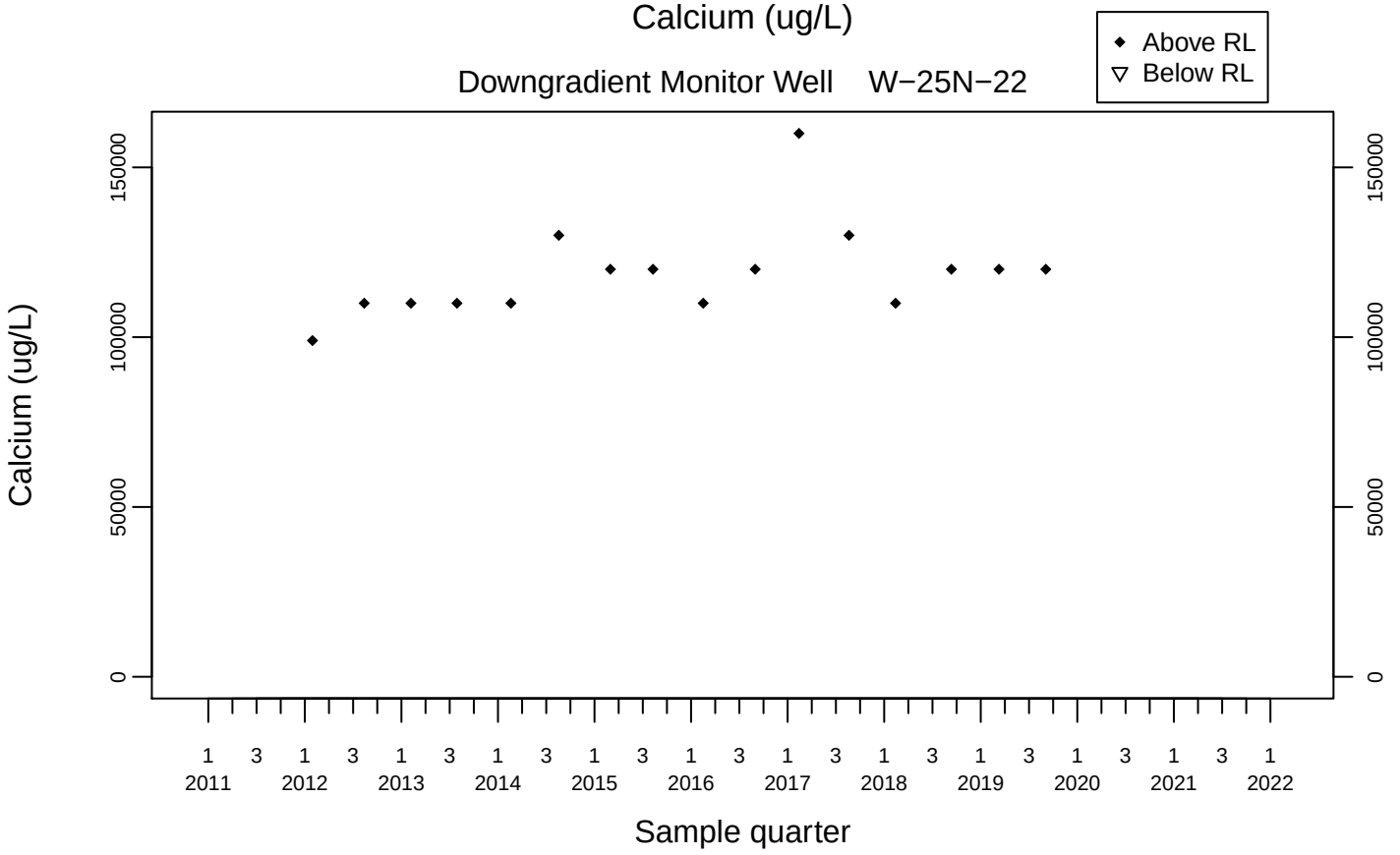


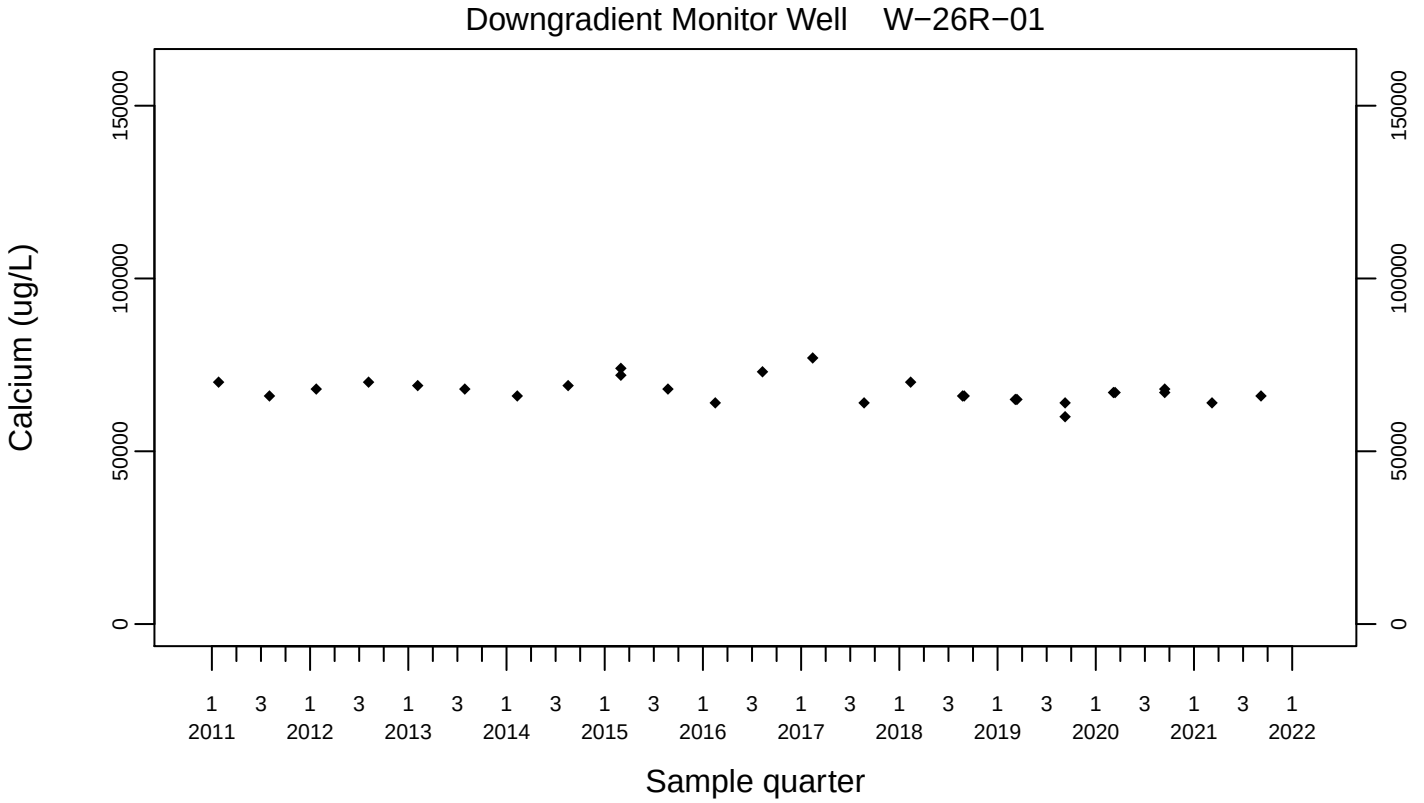
Sewage Ponds Ground Water
Calcium (ug/L)



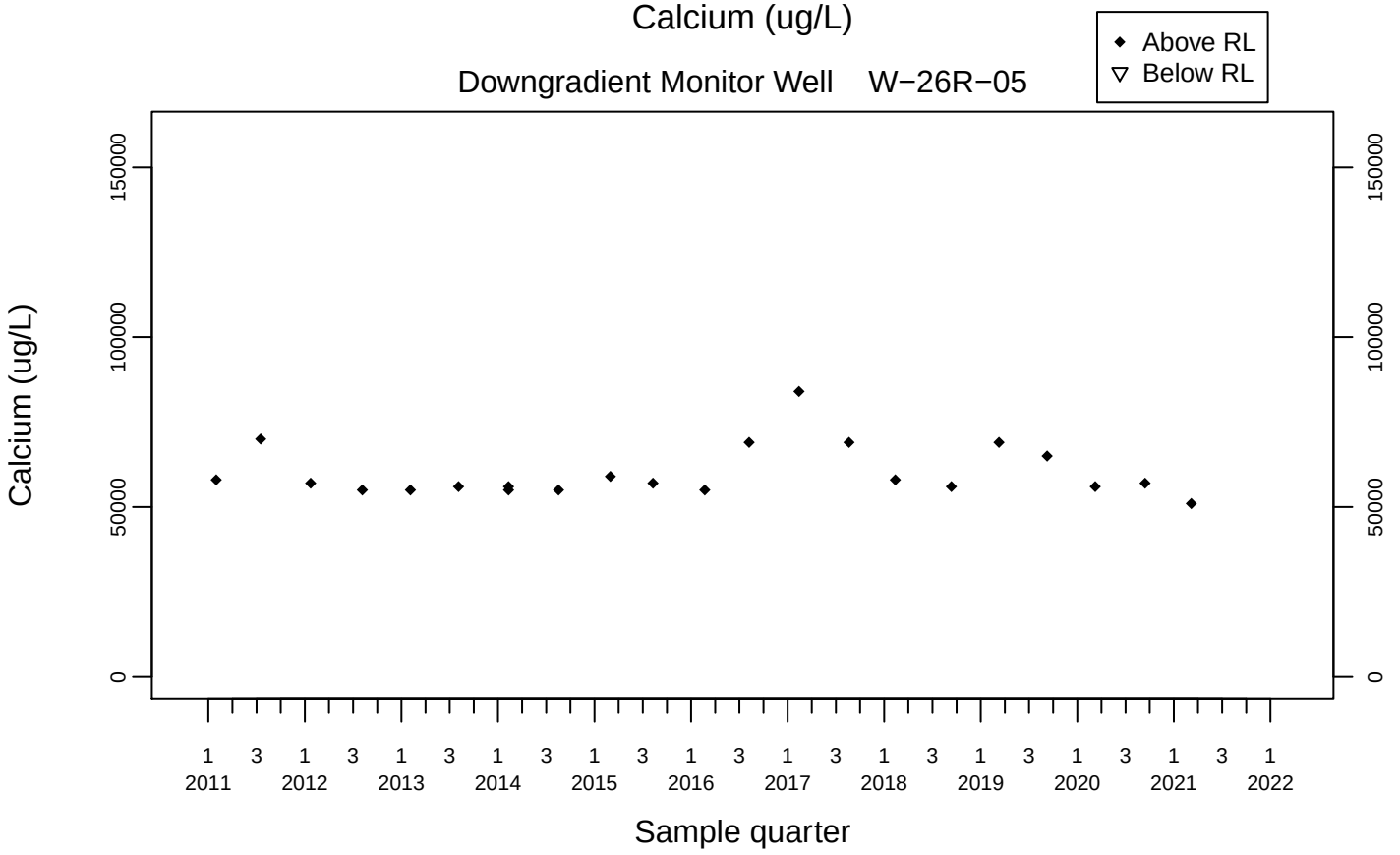


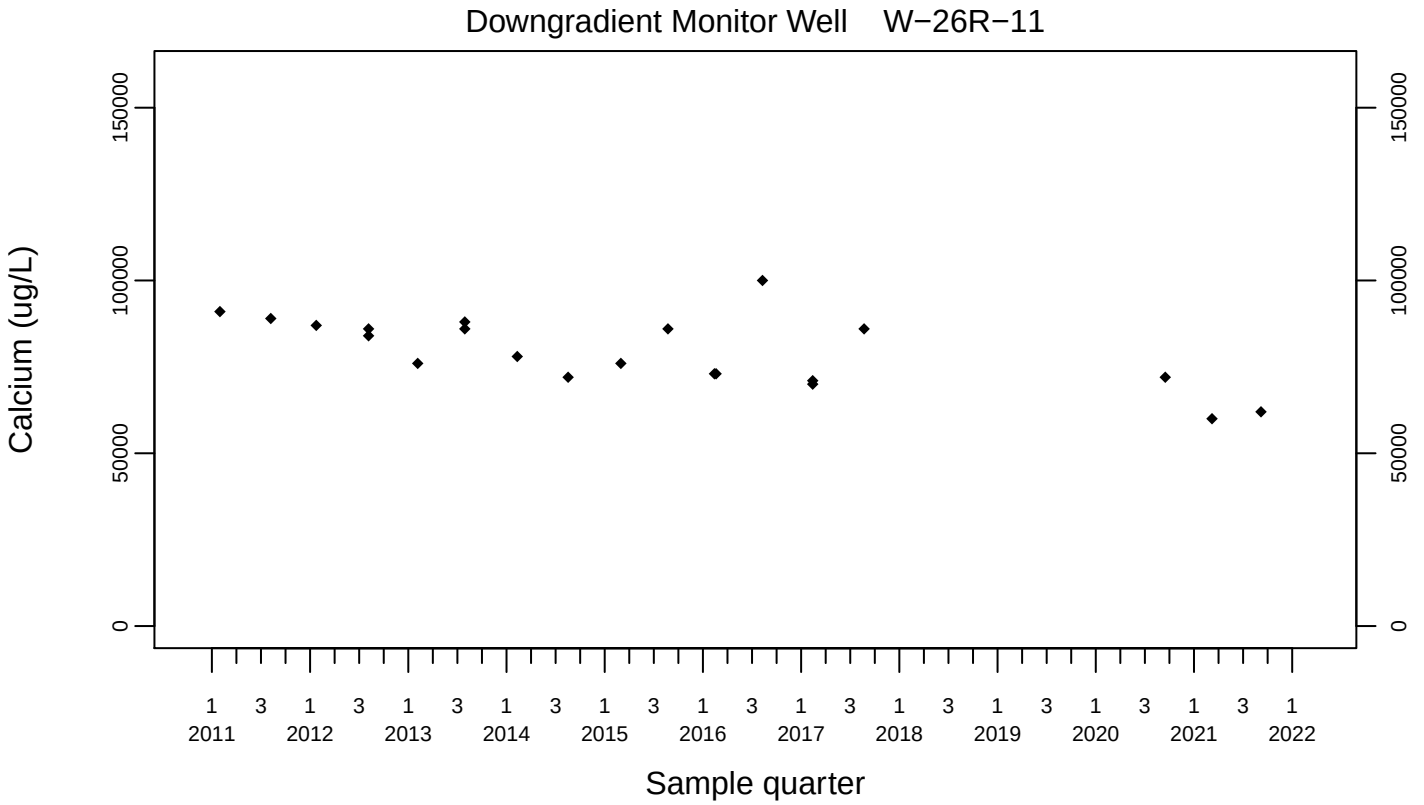
Sewage Ponds Ground Water
Calcium (ug/L)

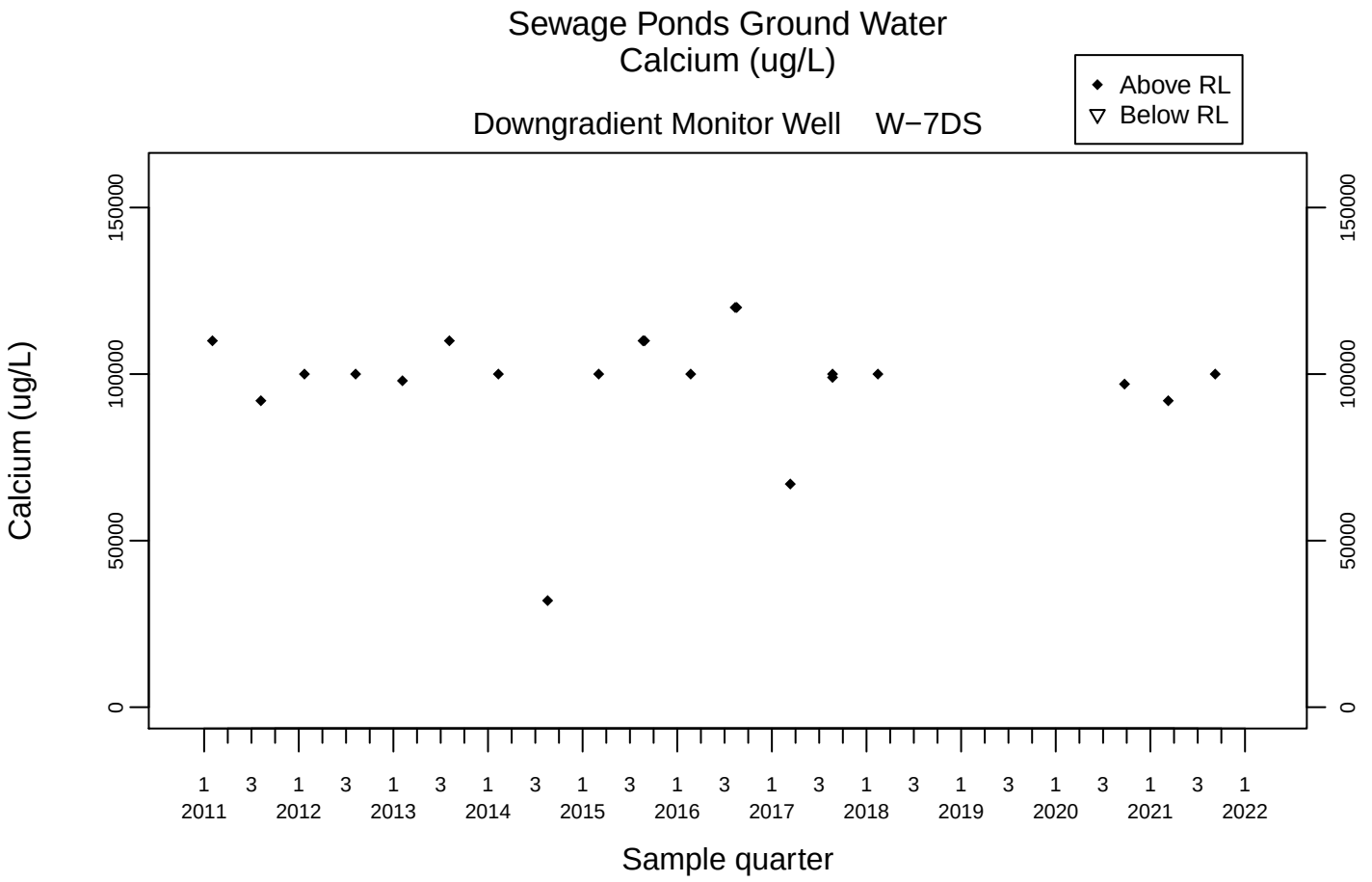


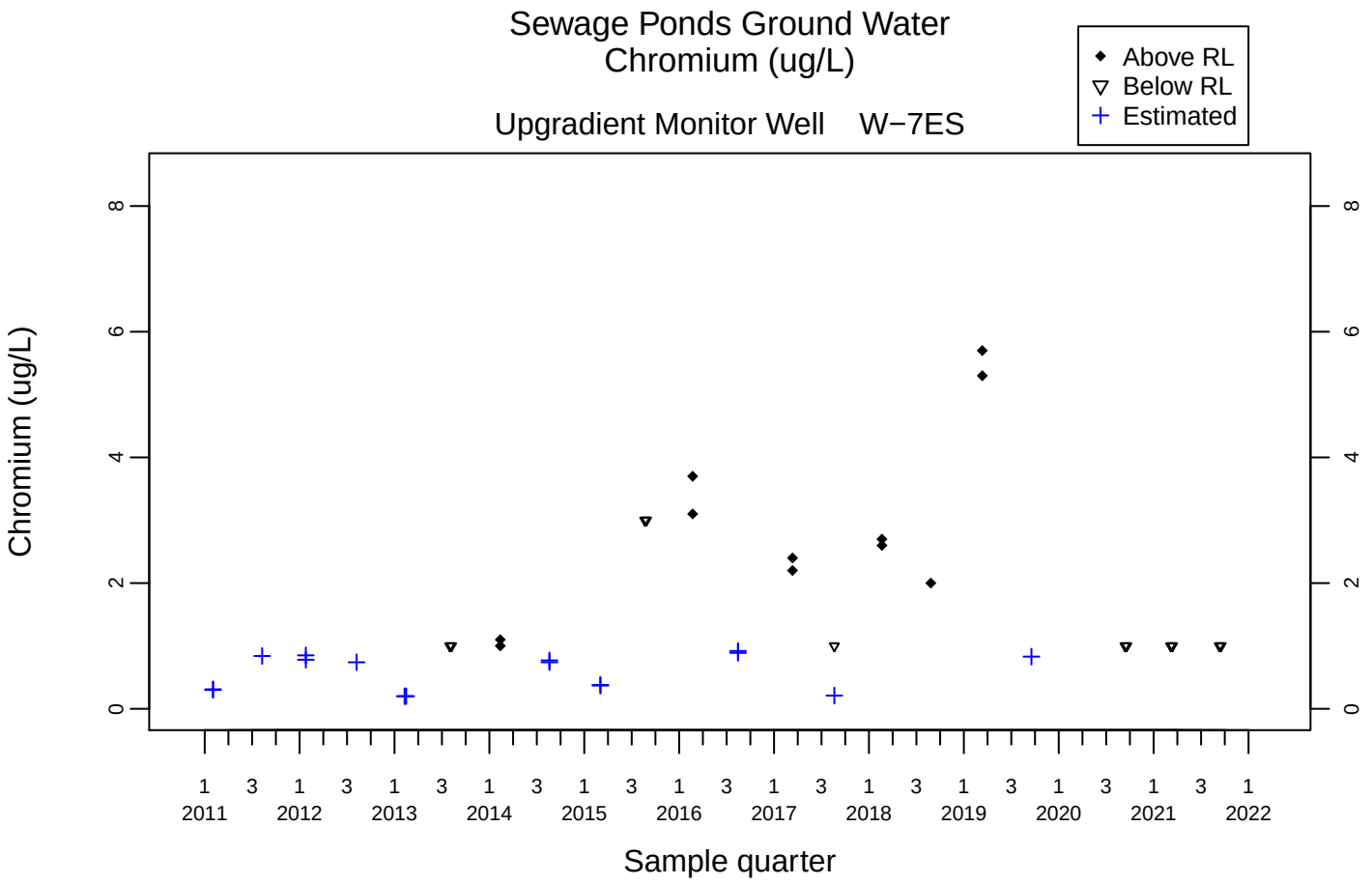


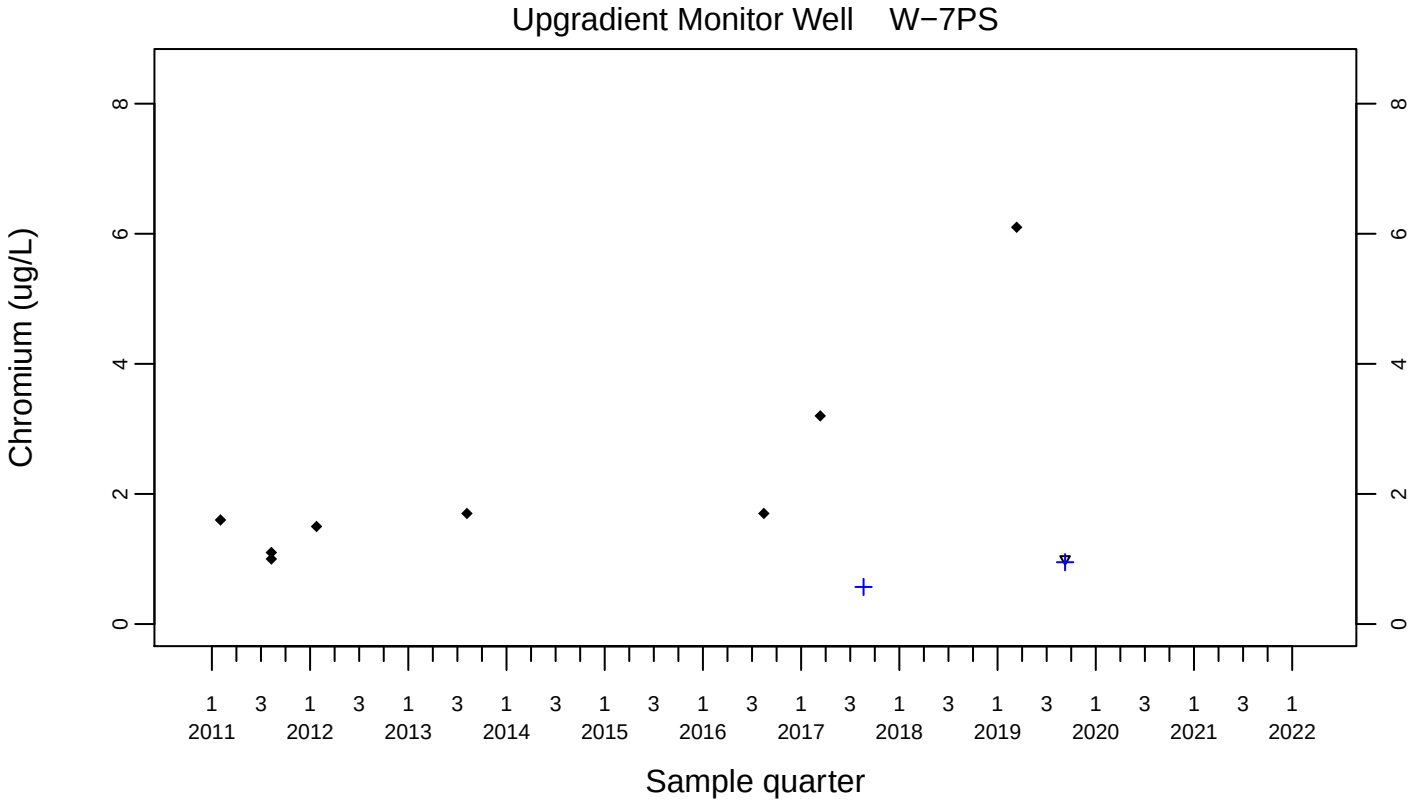
Sewage Ponds Ground Water
Calcium (ug/L)



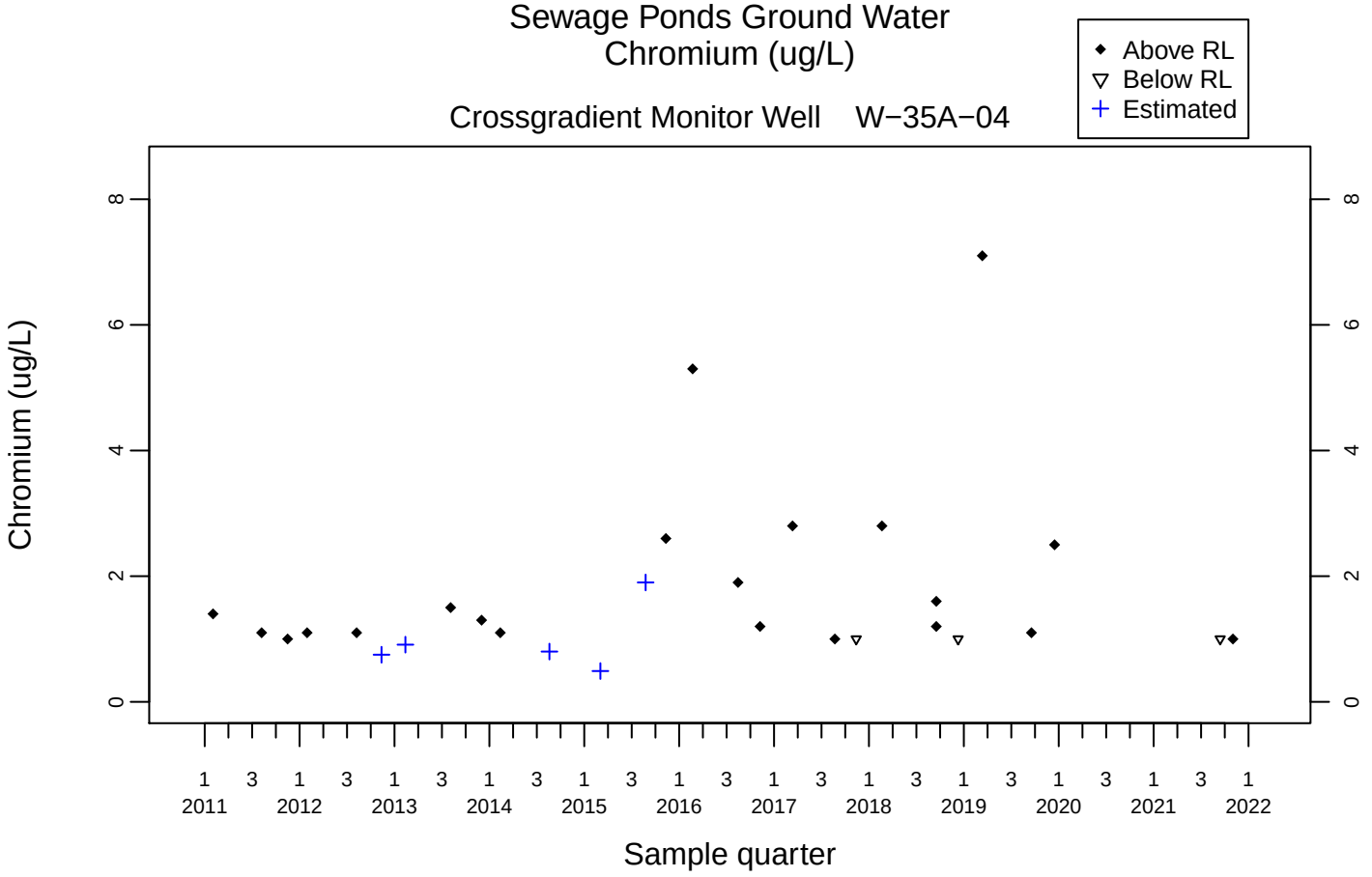


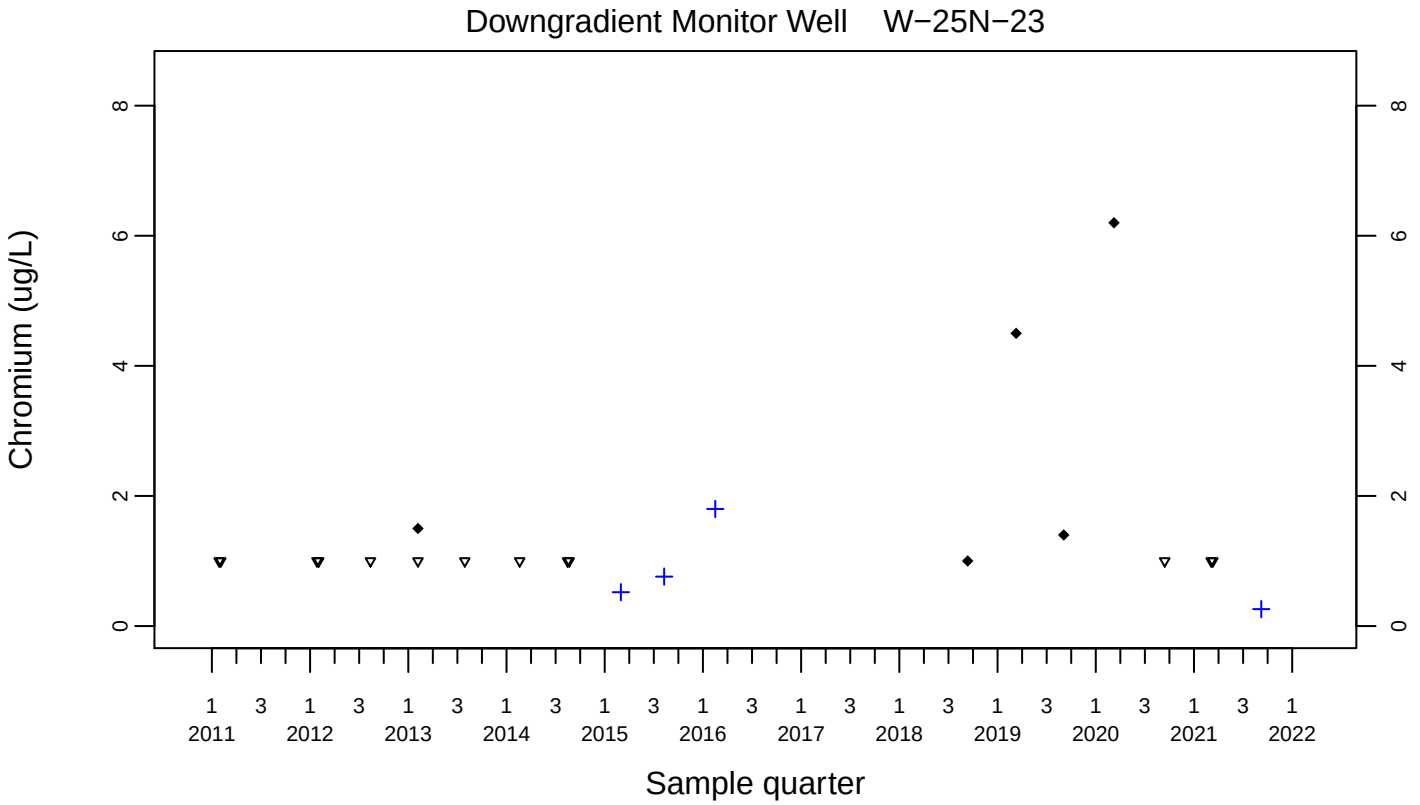

Sewage Ponds Ground Water
Calcium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Calcium (ug/L)
0
50000
100000
150000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Chromium (ug/L)
Above RL
Below RL
Estimated
Upgradient Monitor Well W−7ES
Chromium (ug/L)
0
2
4
6
8
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

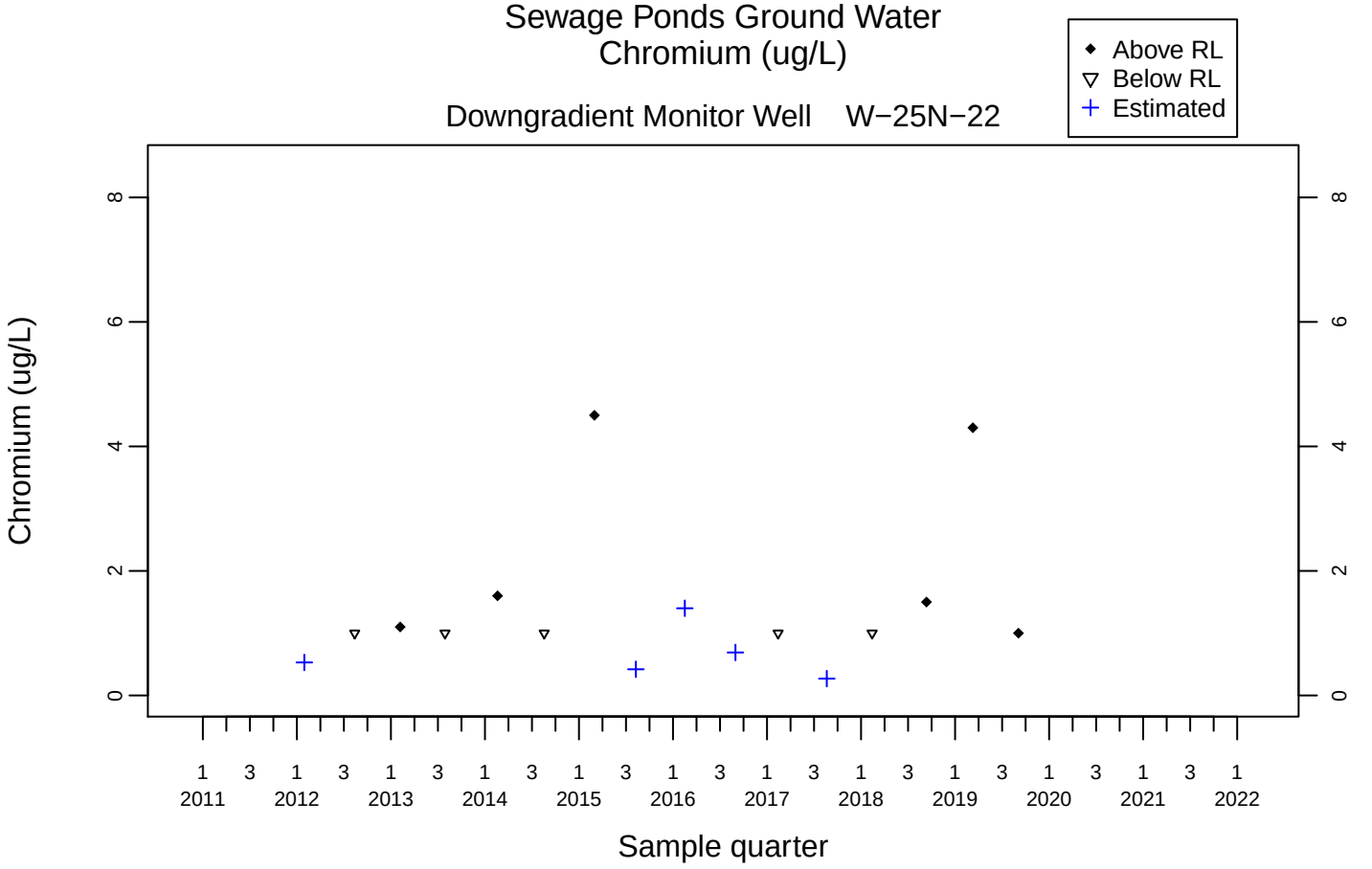

Upgradient Monitor Well W−7PS
Chromium (ug/L)
0
2
4
6
8
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

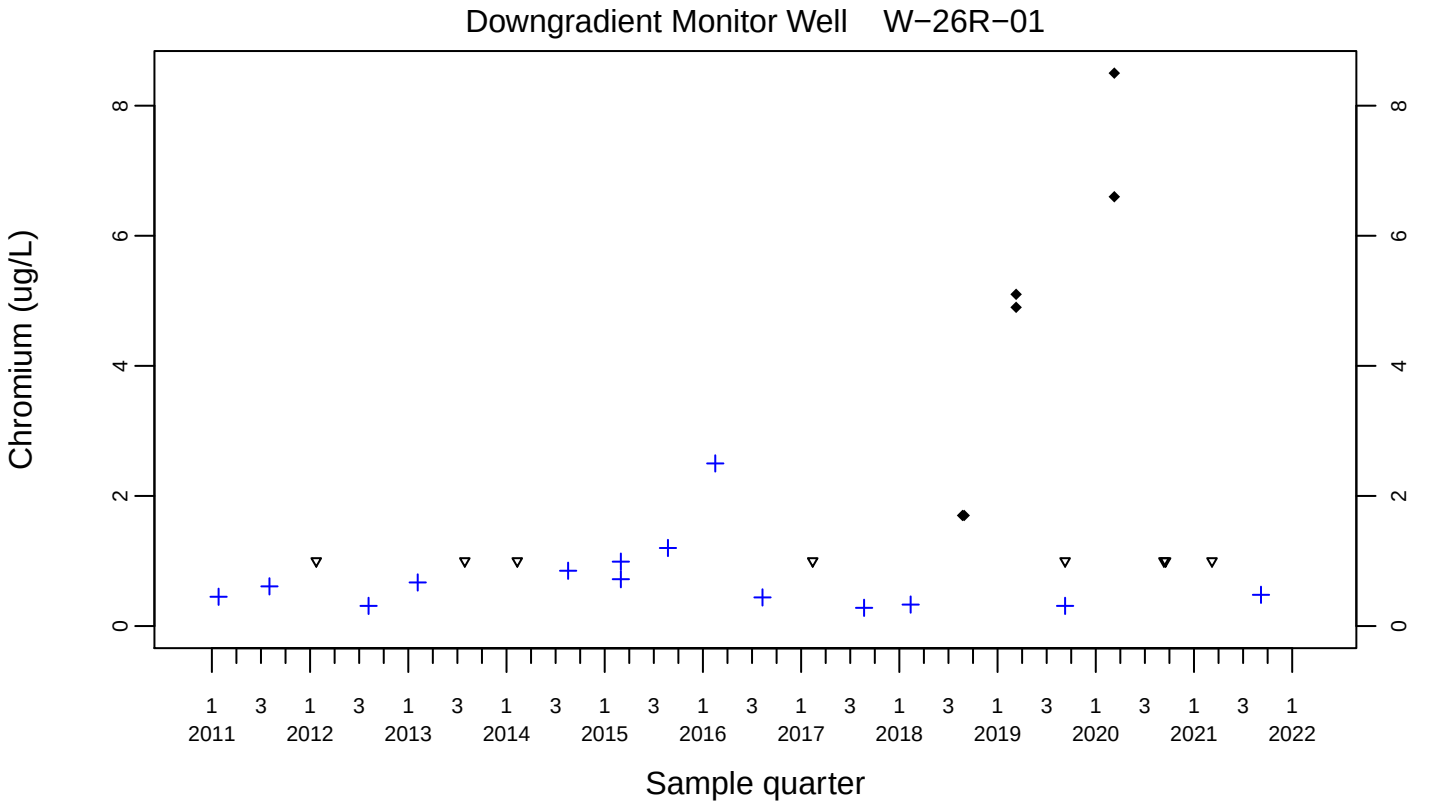
Sewage Ponds Ground Water Chromium (ug/L)



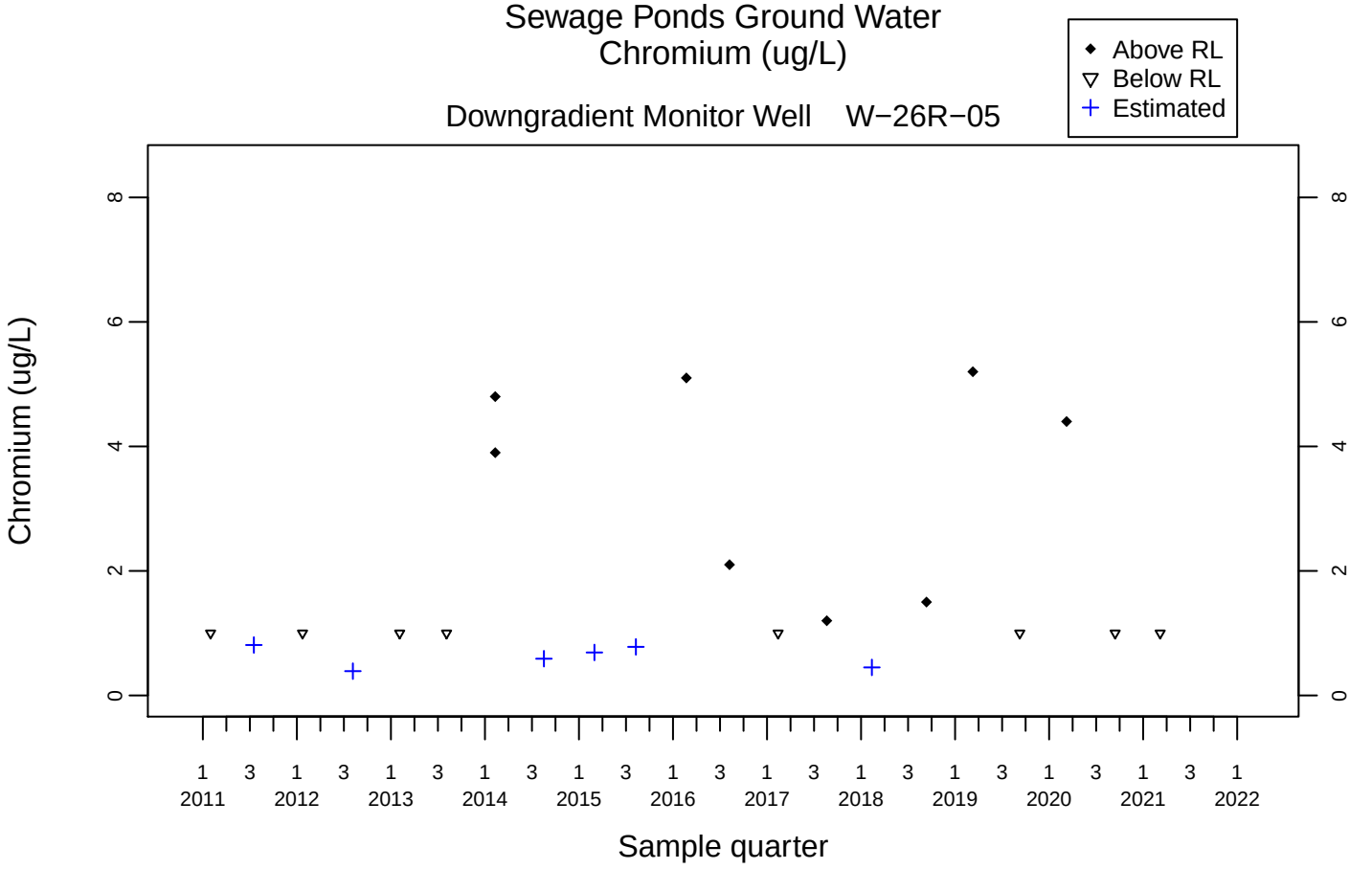


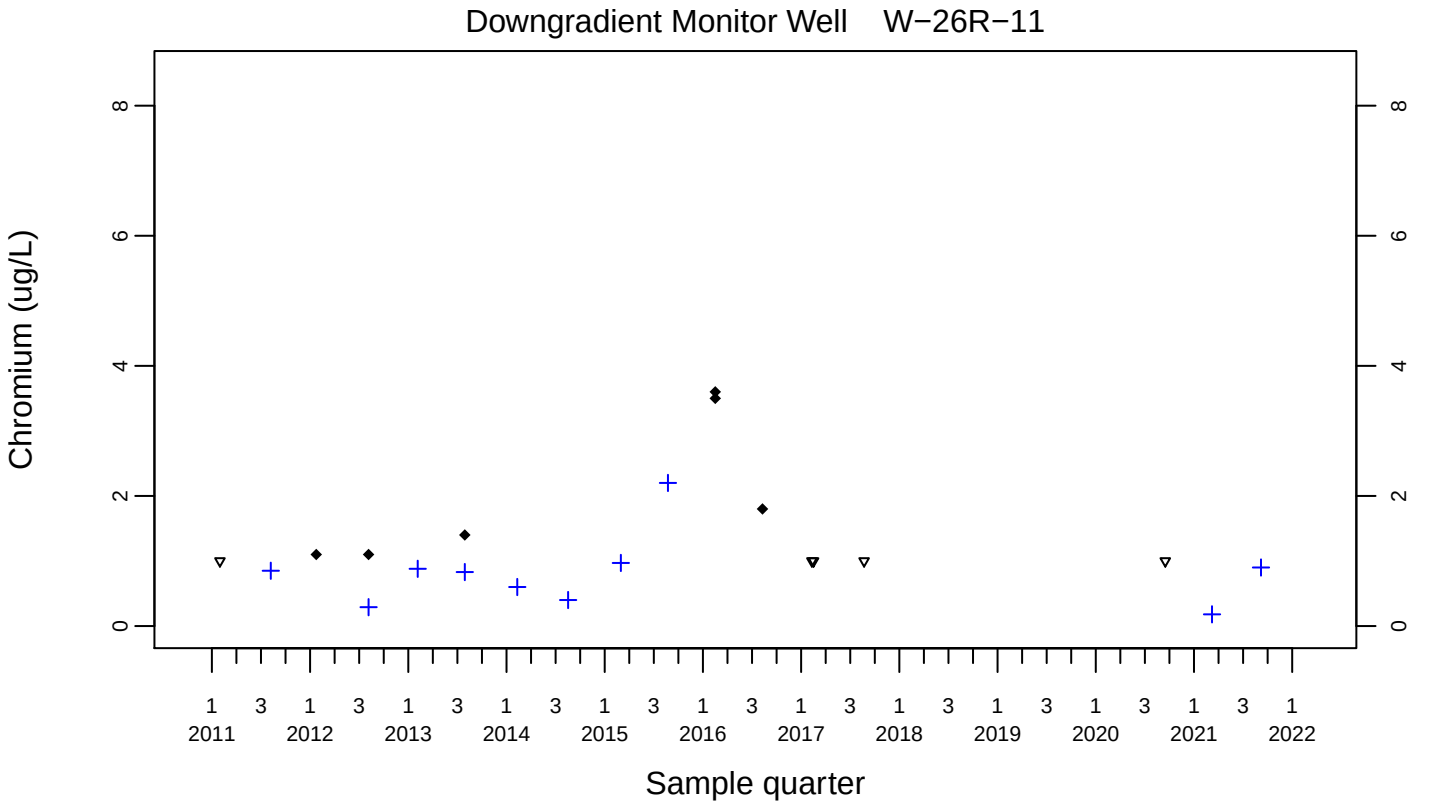
Sewage Ponds Ground Water
Chromium (ug/L)

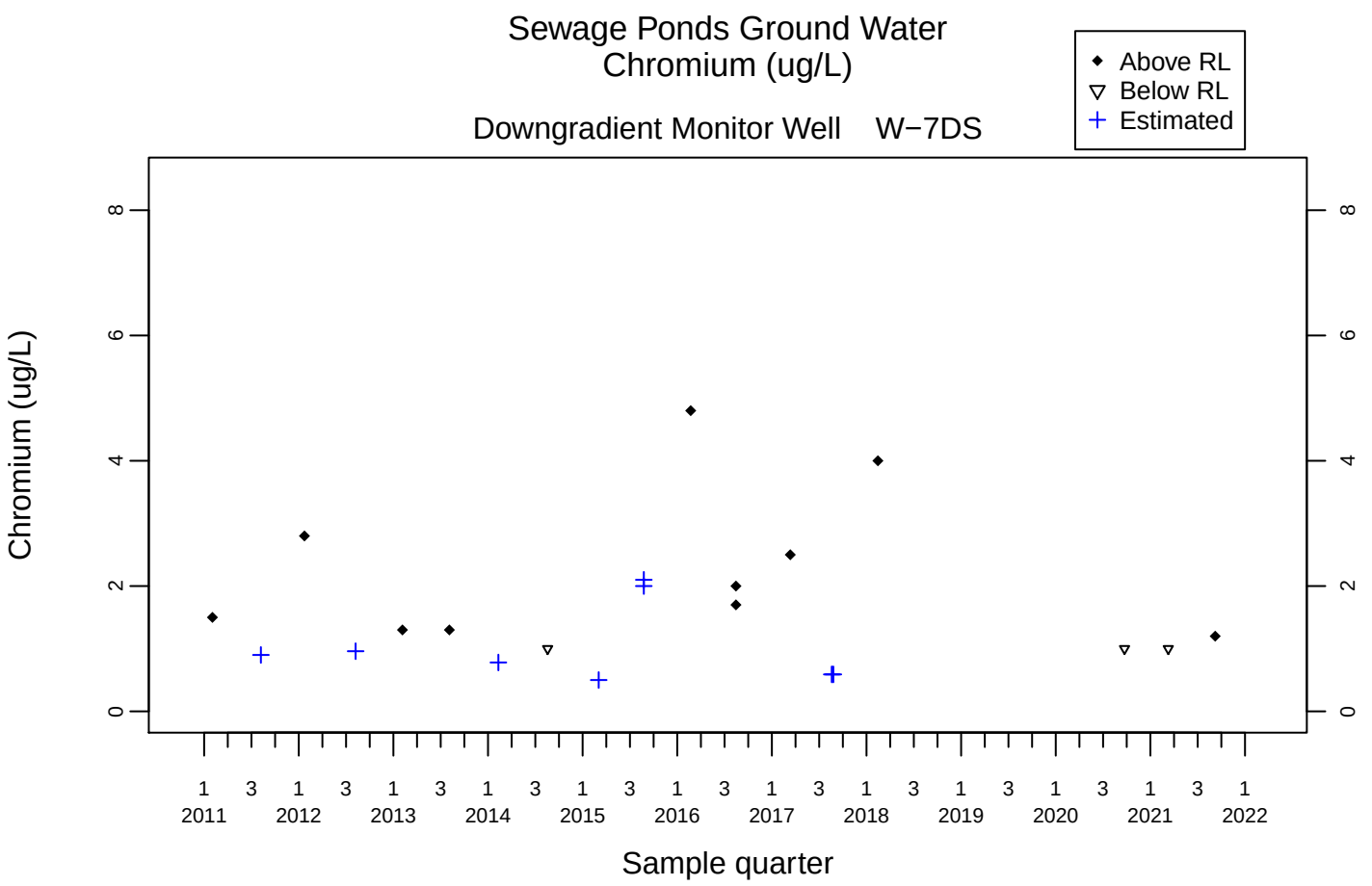




Sewage Ponds Ground Water
Chromium (ug/L)

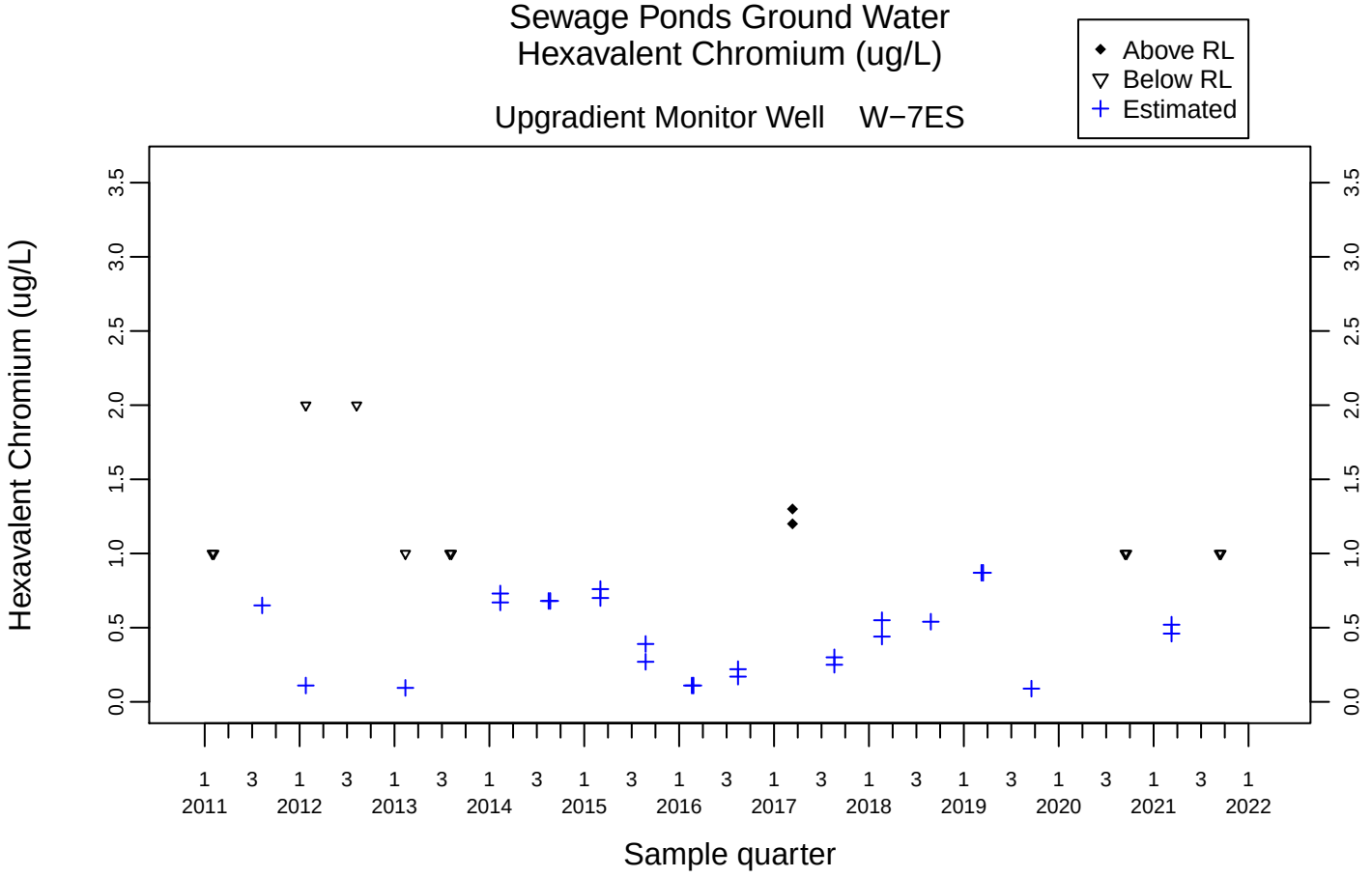




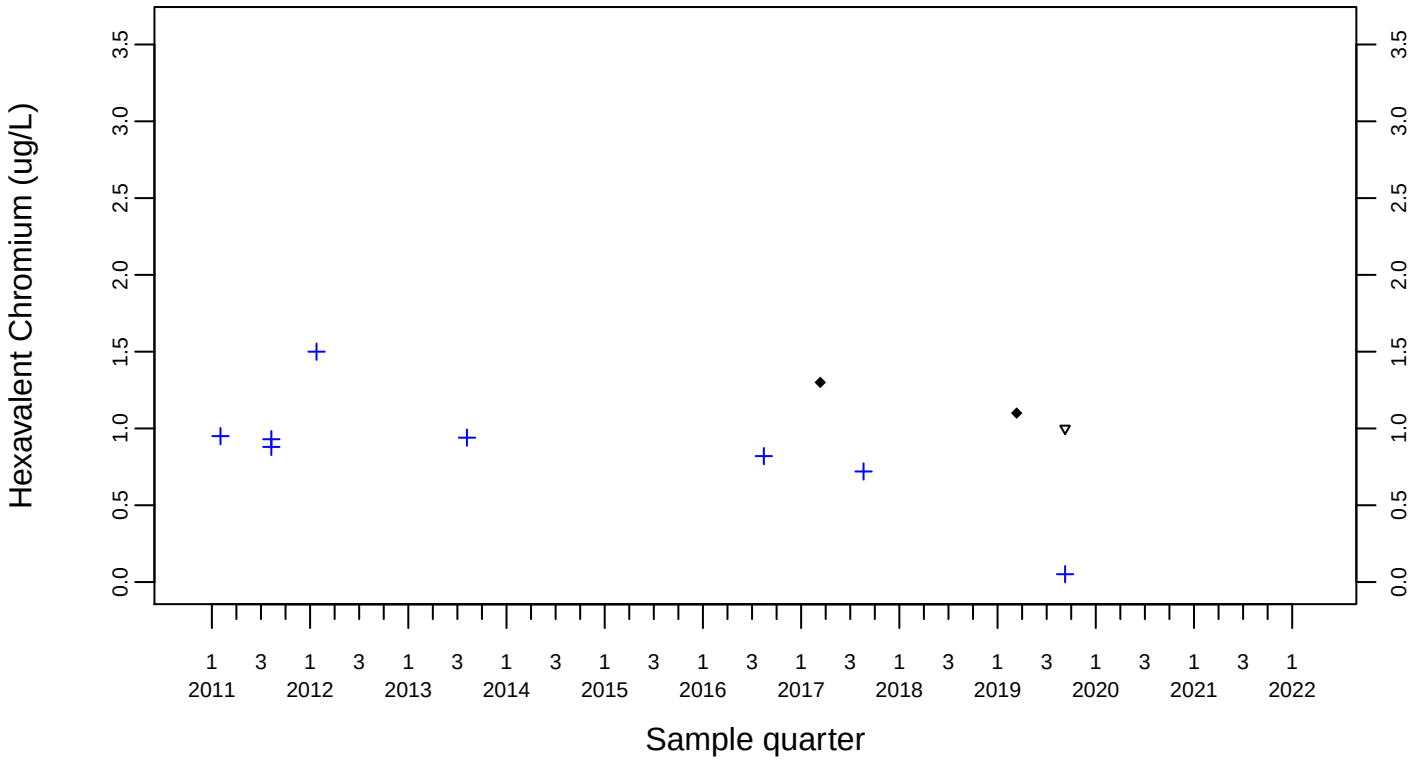

Sewage Ponds Ground Water
Chromium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Chromium (ug/L)
0
2
4
6
8
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

Sewage Ponds Ground Water
Hexavalent Chromium (ug/L)

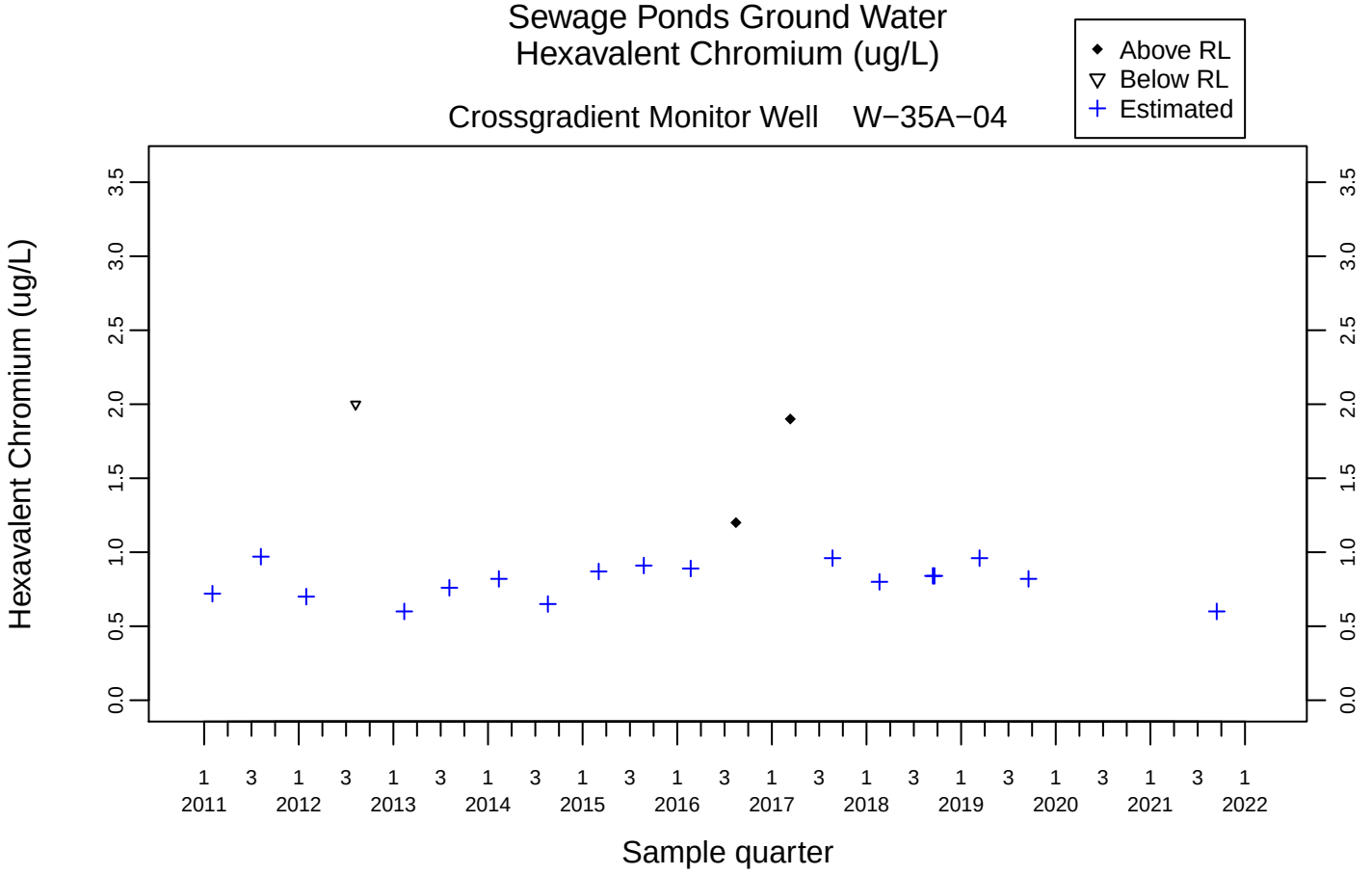
Upgradient Monitor Well W−7ES

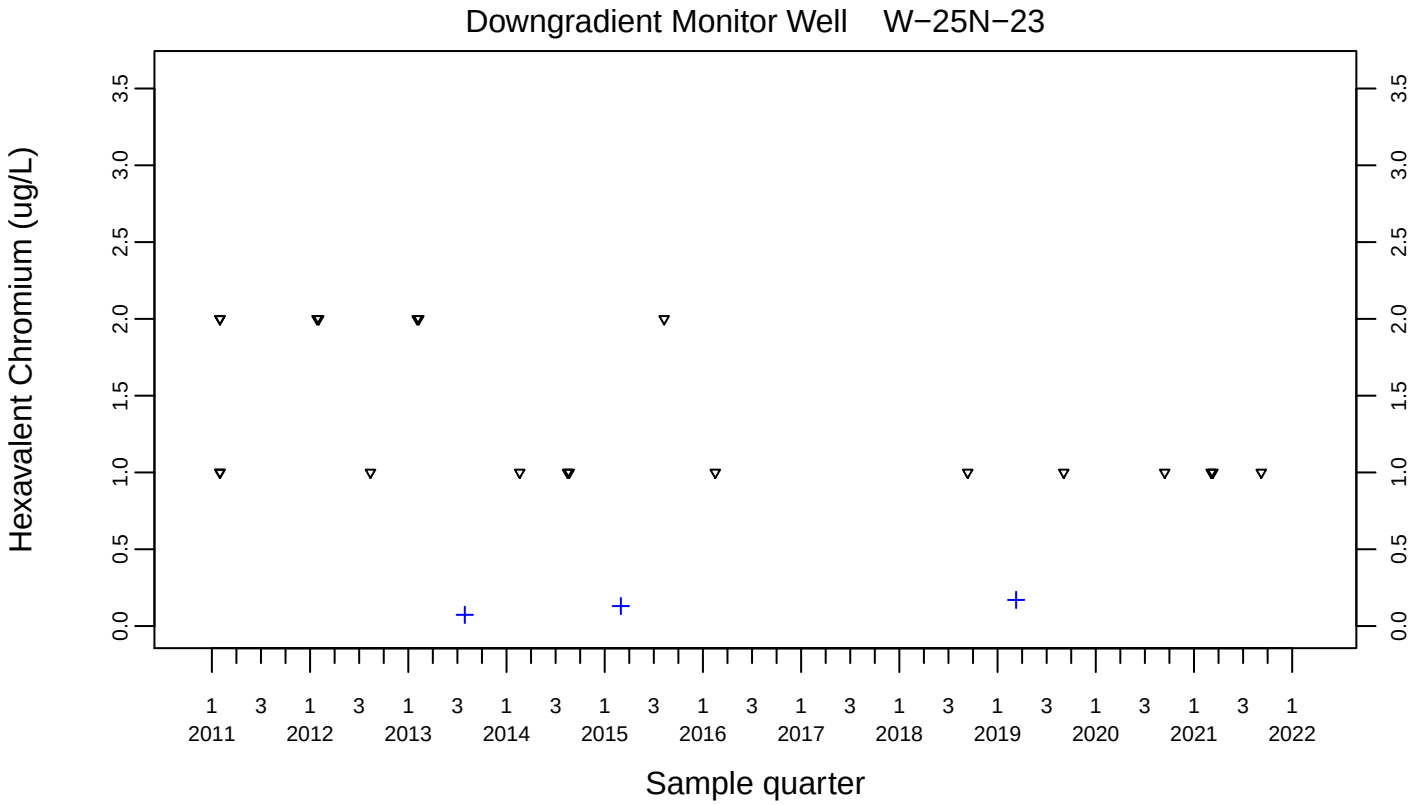


Upgradient Monitor Well W−7PS

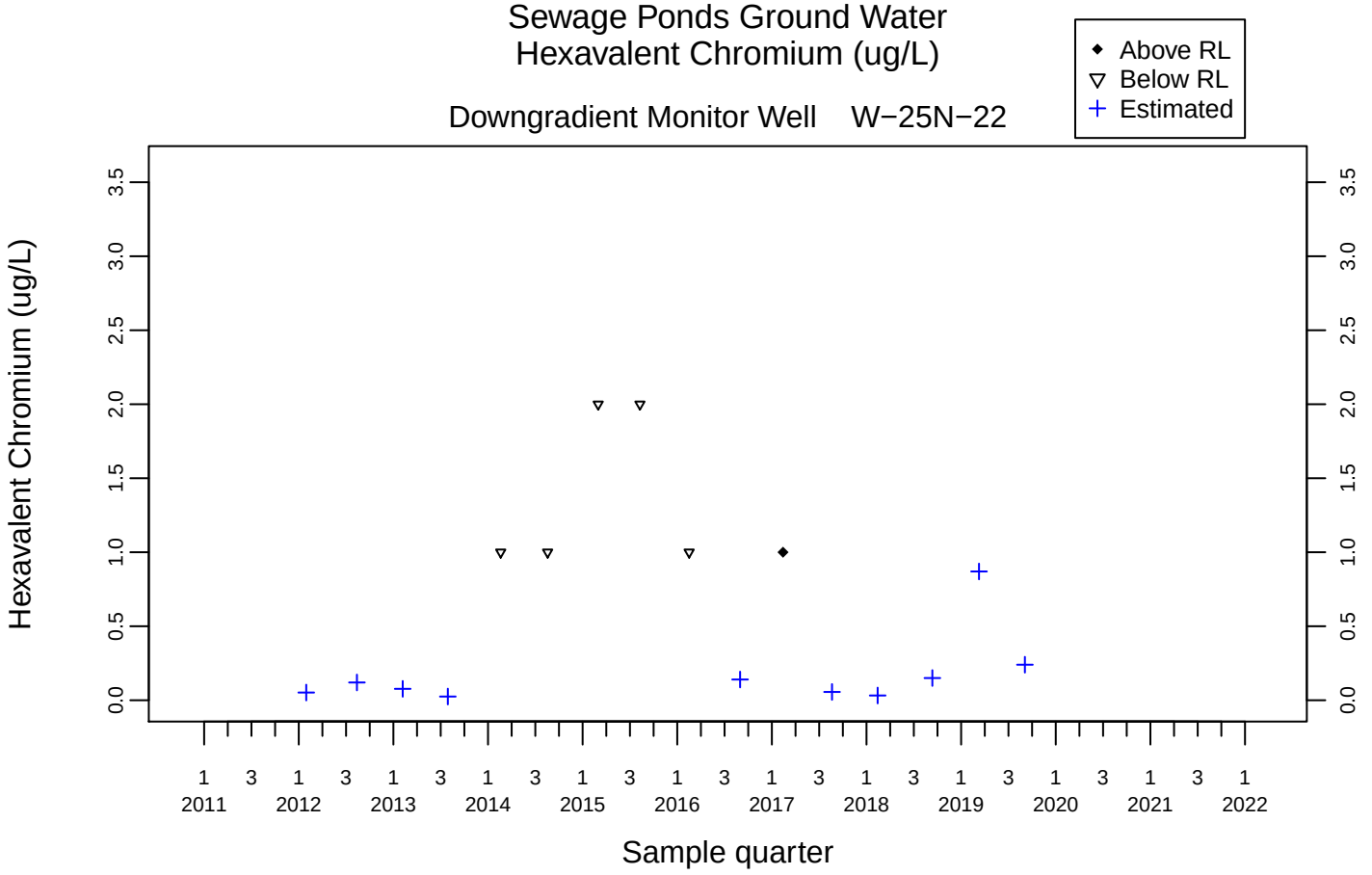


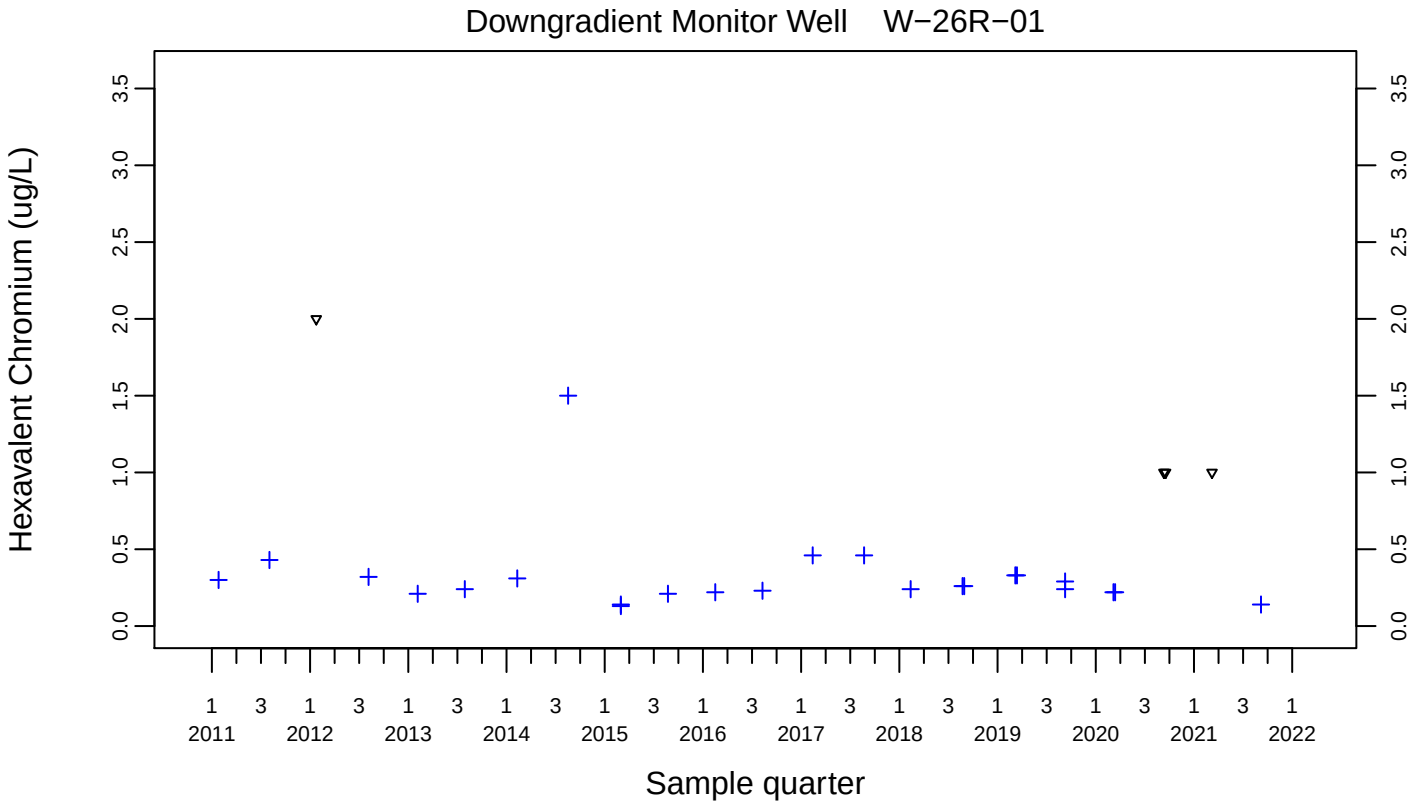
Sewage Ponds Ground Water
Hexavalent Chromium (ug/L)



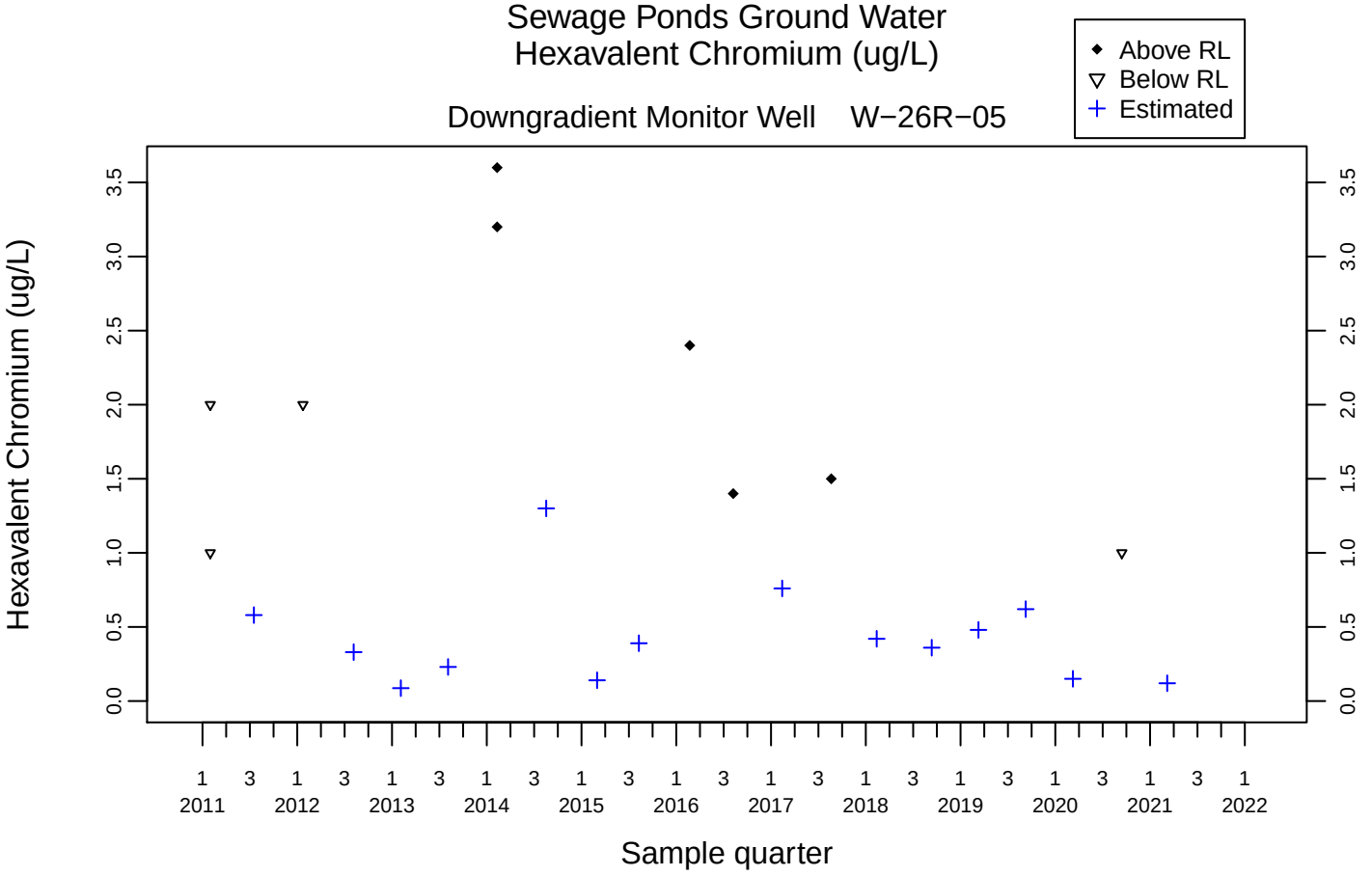


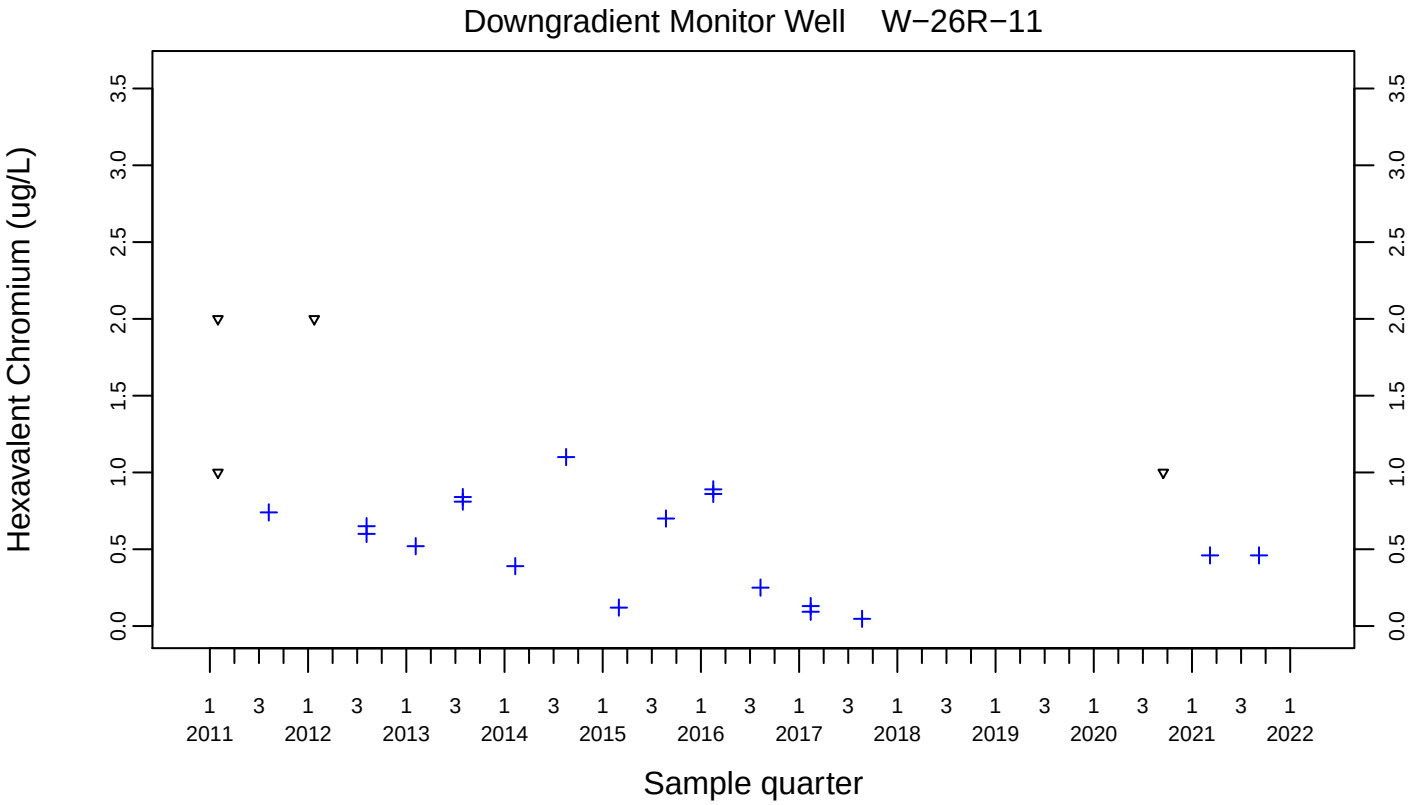
Sewage Ponds Ground Water
Hexavalent Chromium (ug/L)

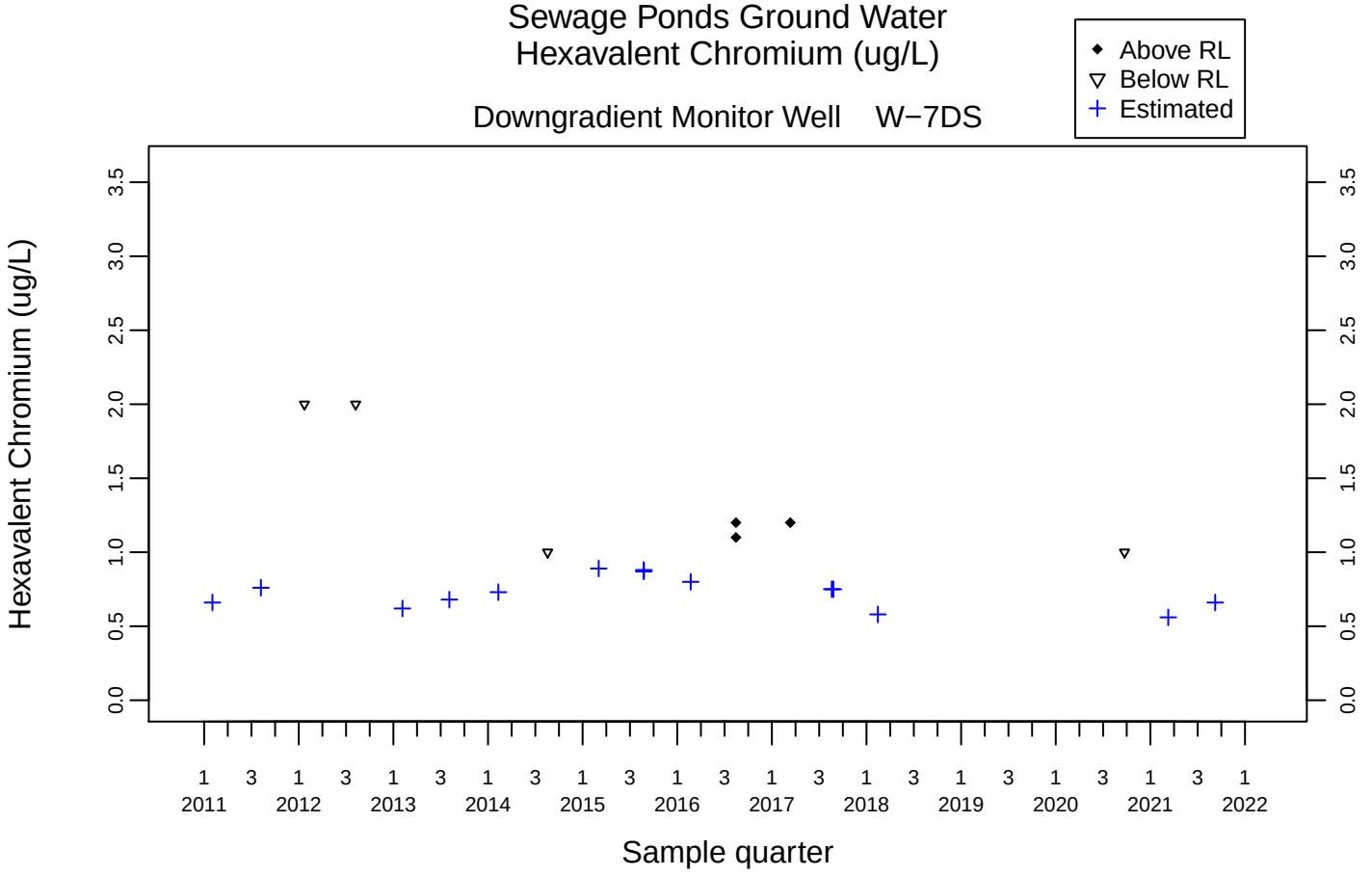




Sewage Ponds Ground Water
Hexavalent Chromium (ug/L)

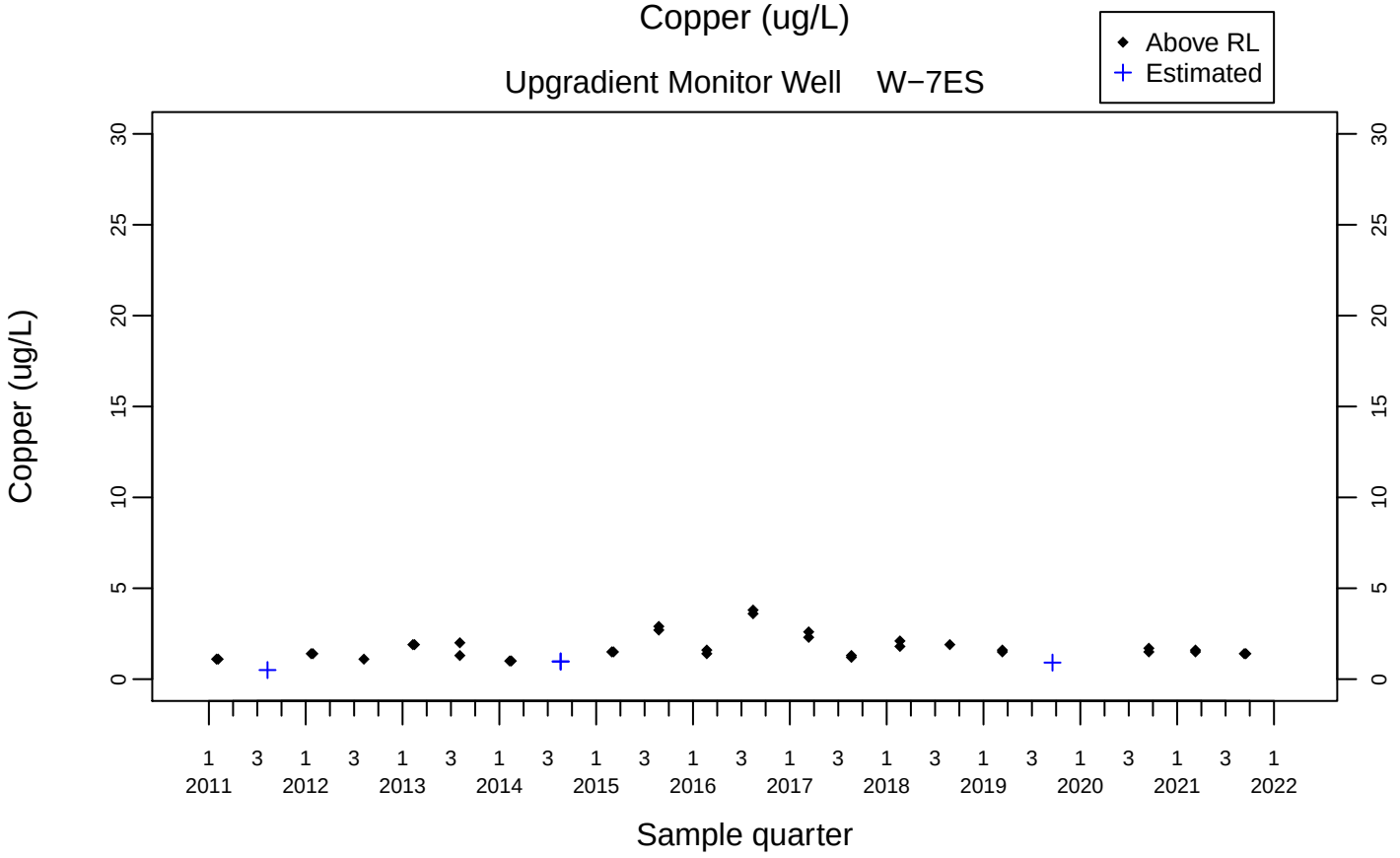




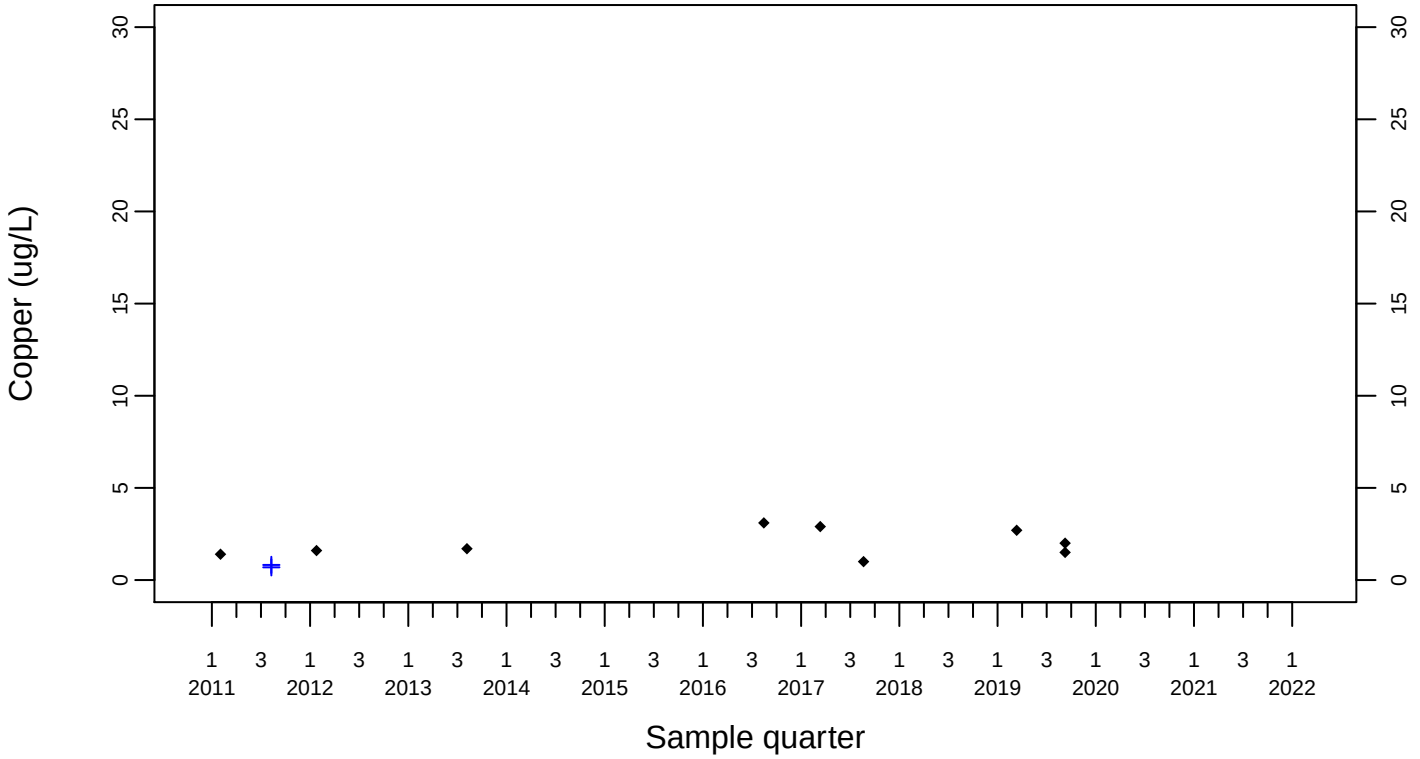

Sewage Ponds Ground Water
Hexavalent Chromium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Hexavalent Chromium (ug/L)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
Copper (ug/L)

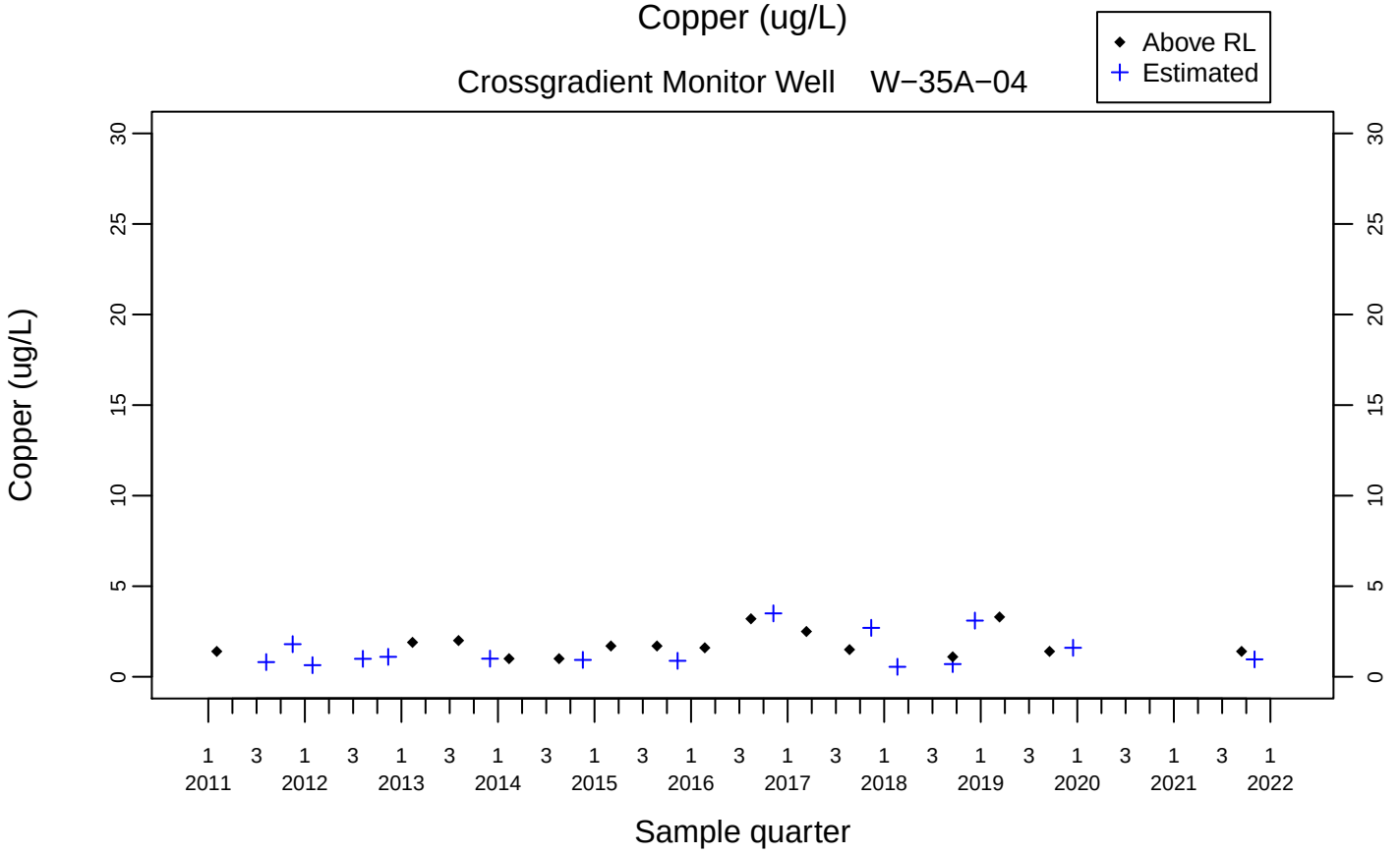
Upgradient Monitor Well W−7ES

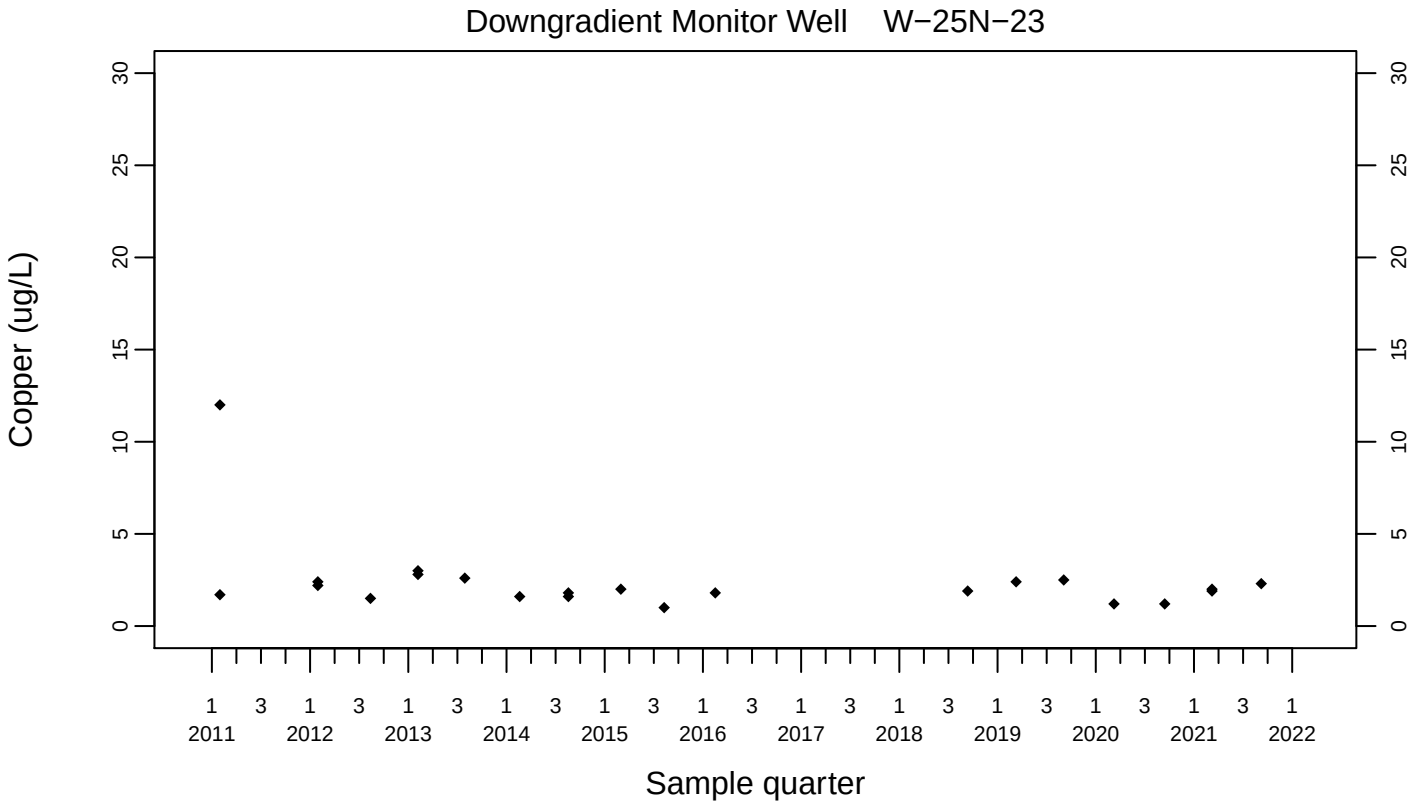


Upgradient Monitor Well W−7PS

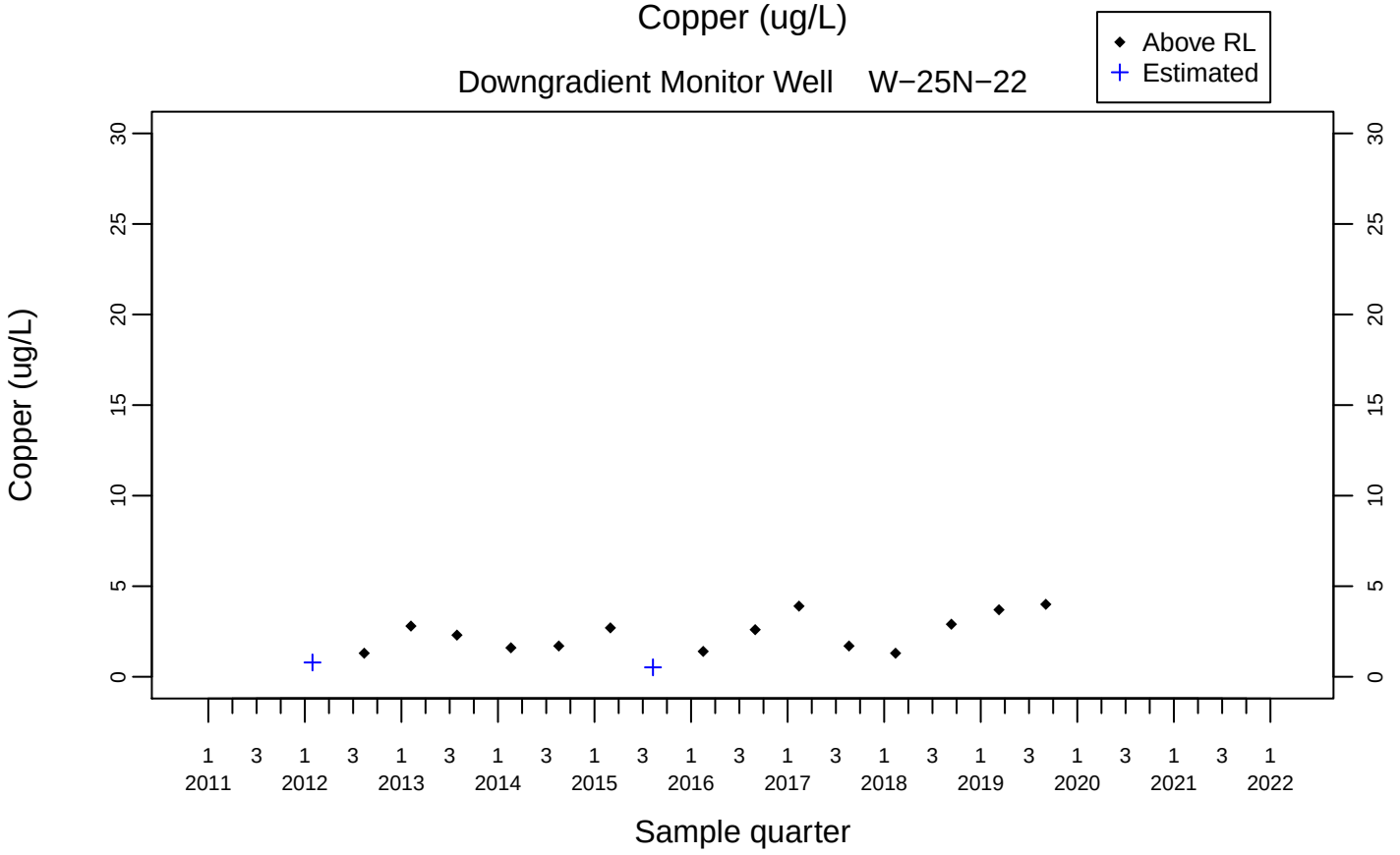


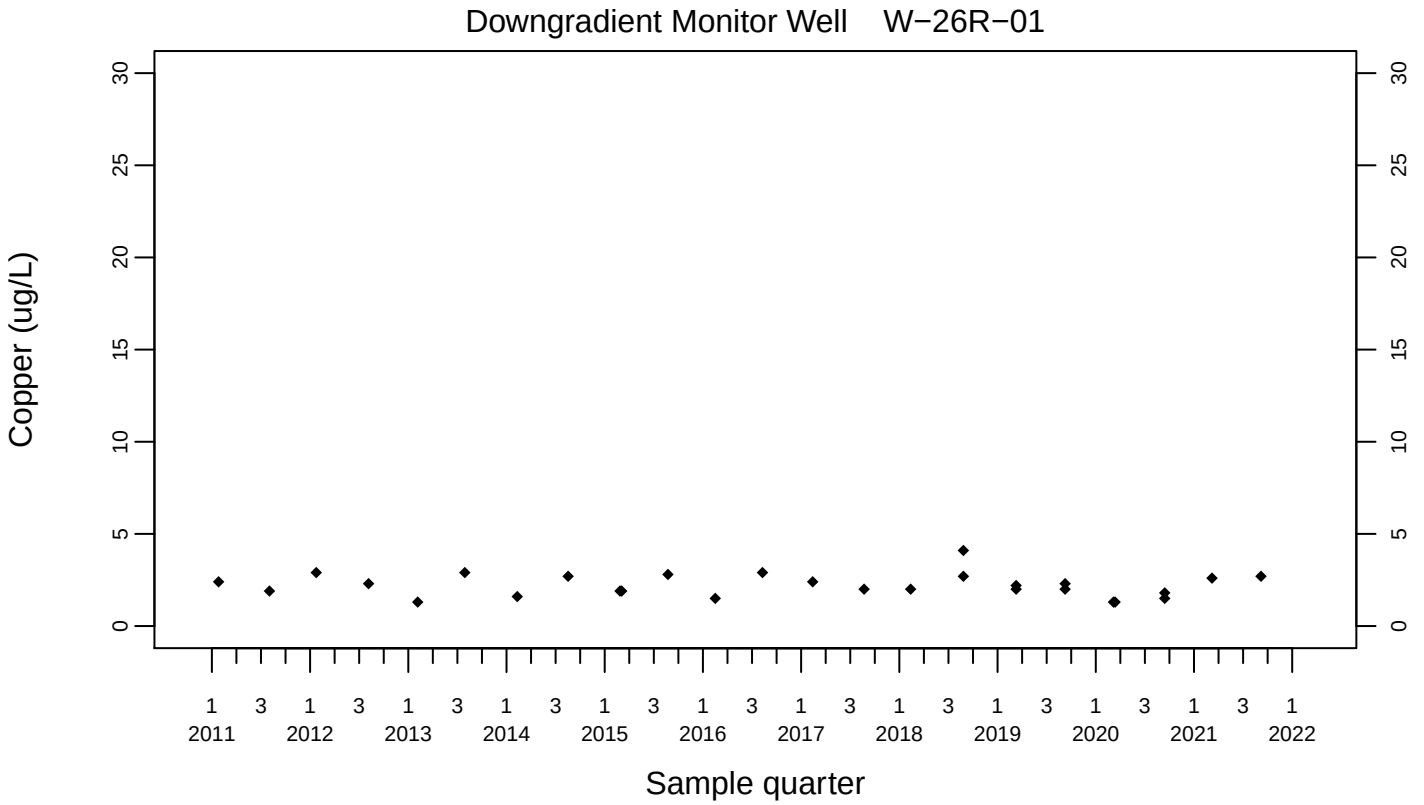
Sewage Ponds Ground Water
Copper (ug/L)





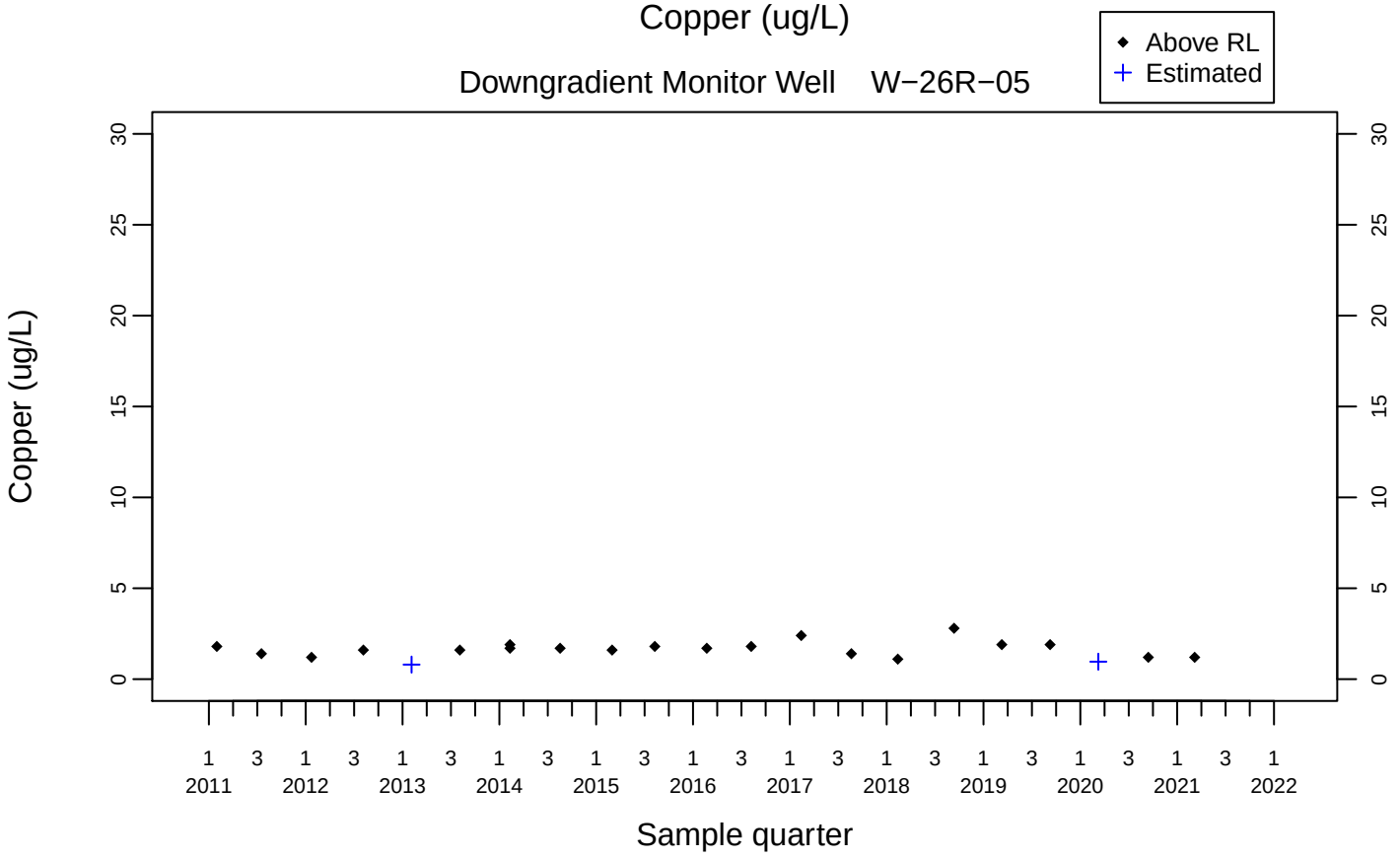
Sewage Ponds Ground Water
Copper (ug/L)



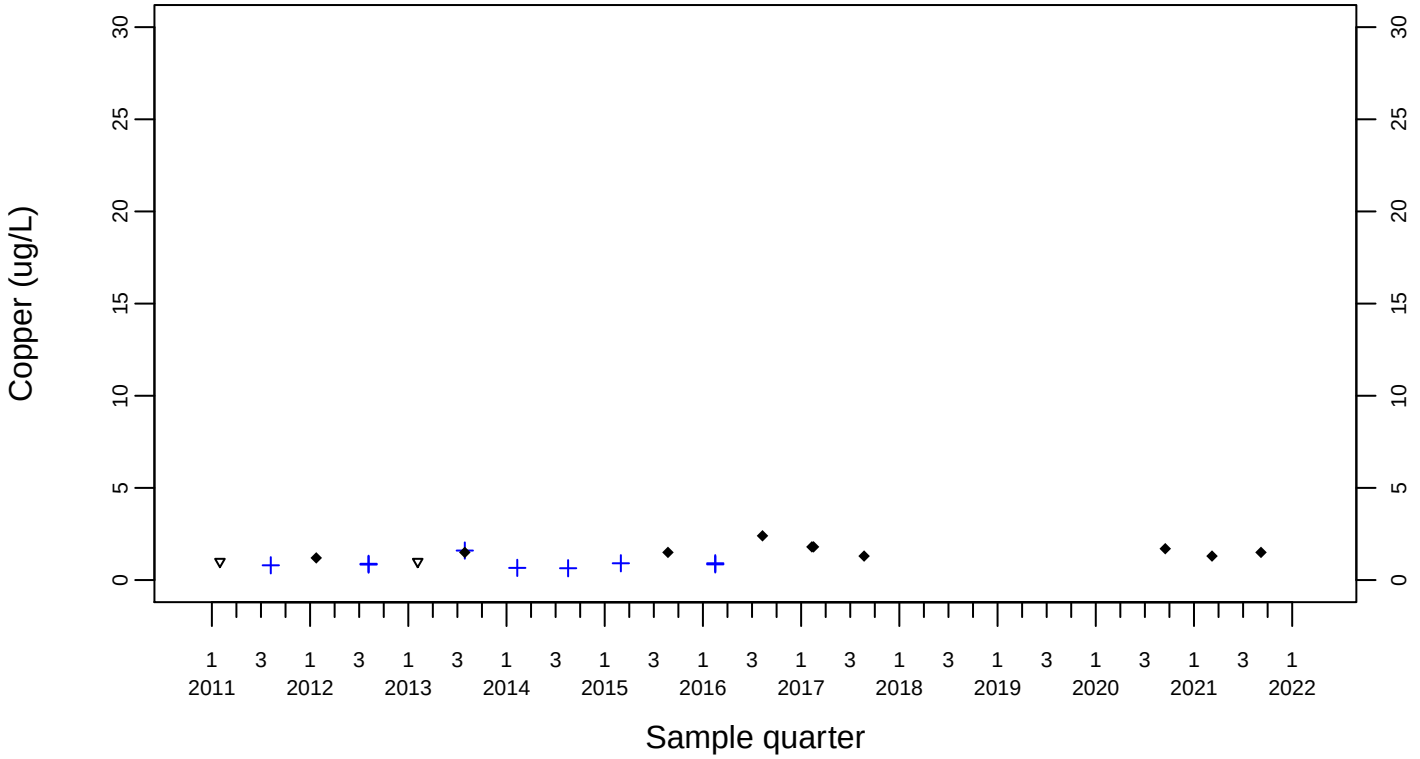


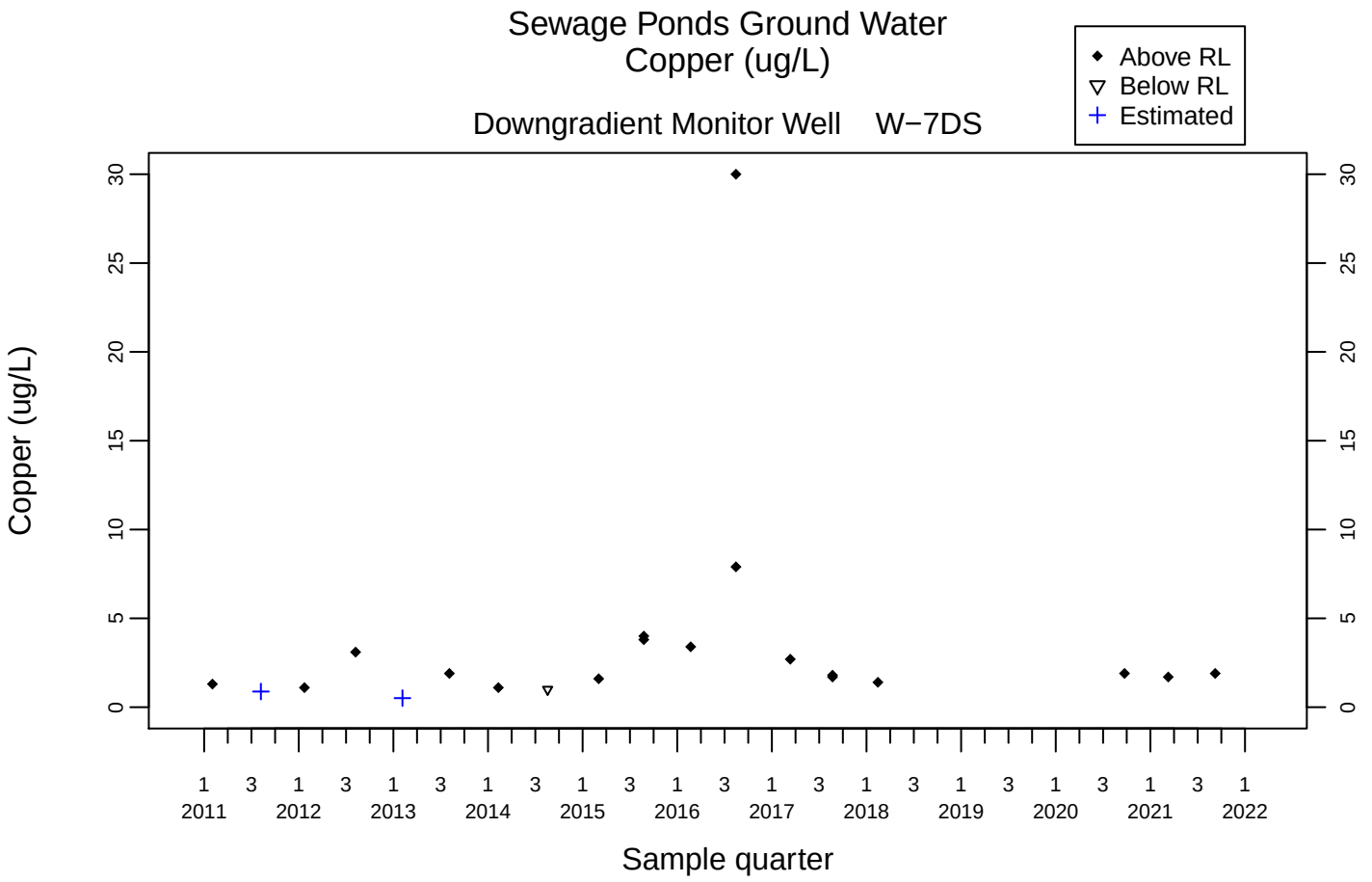
Sewage Ponds Ground Water
Copper (ug/L)

Downgradient Monitor Well W−26R−05



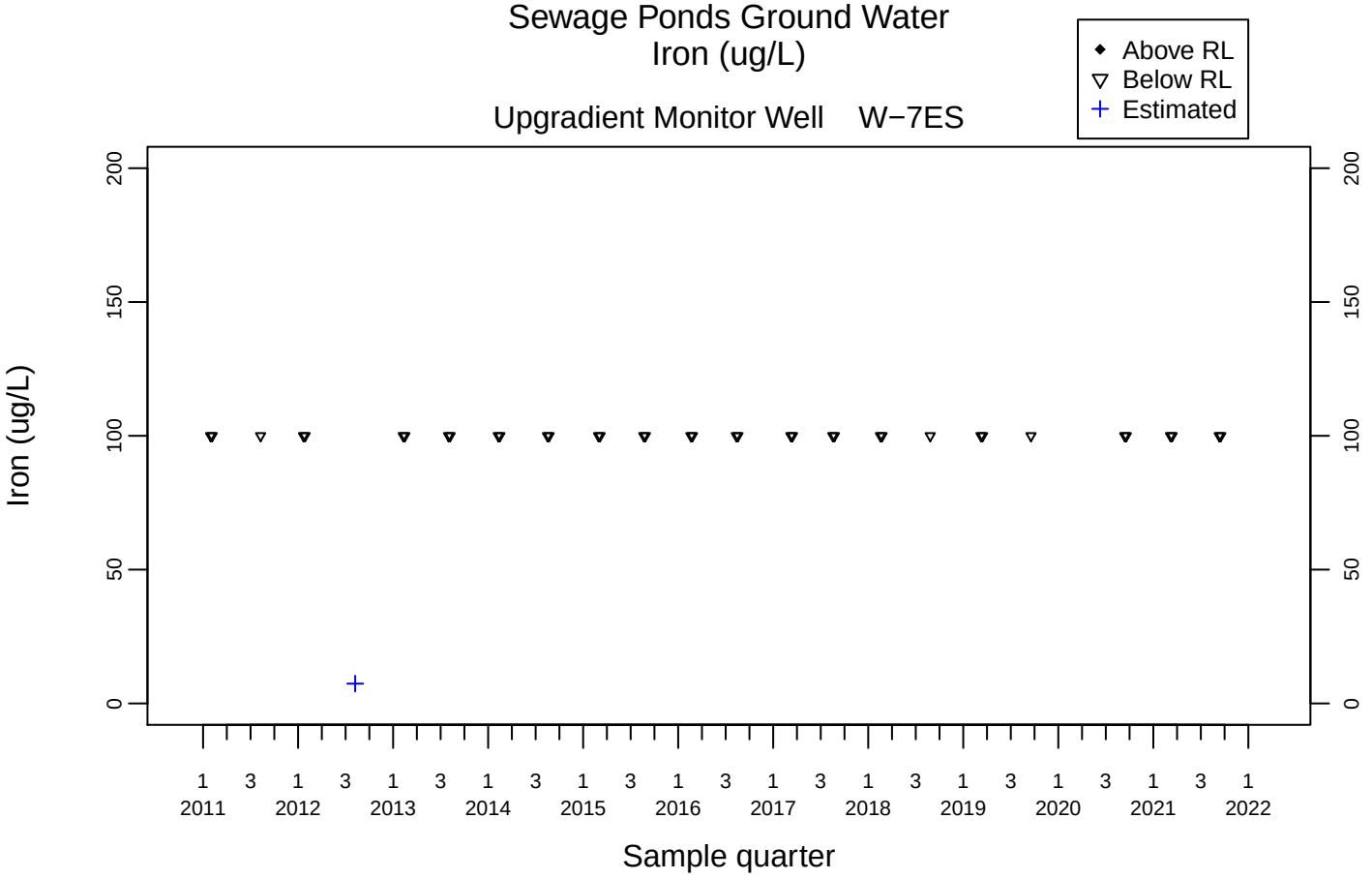
Downgradient Monitor Well W−26R−11



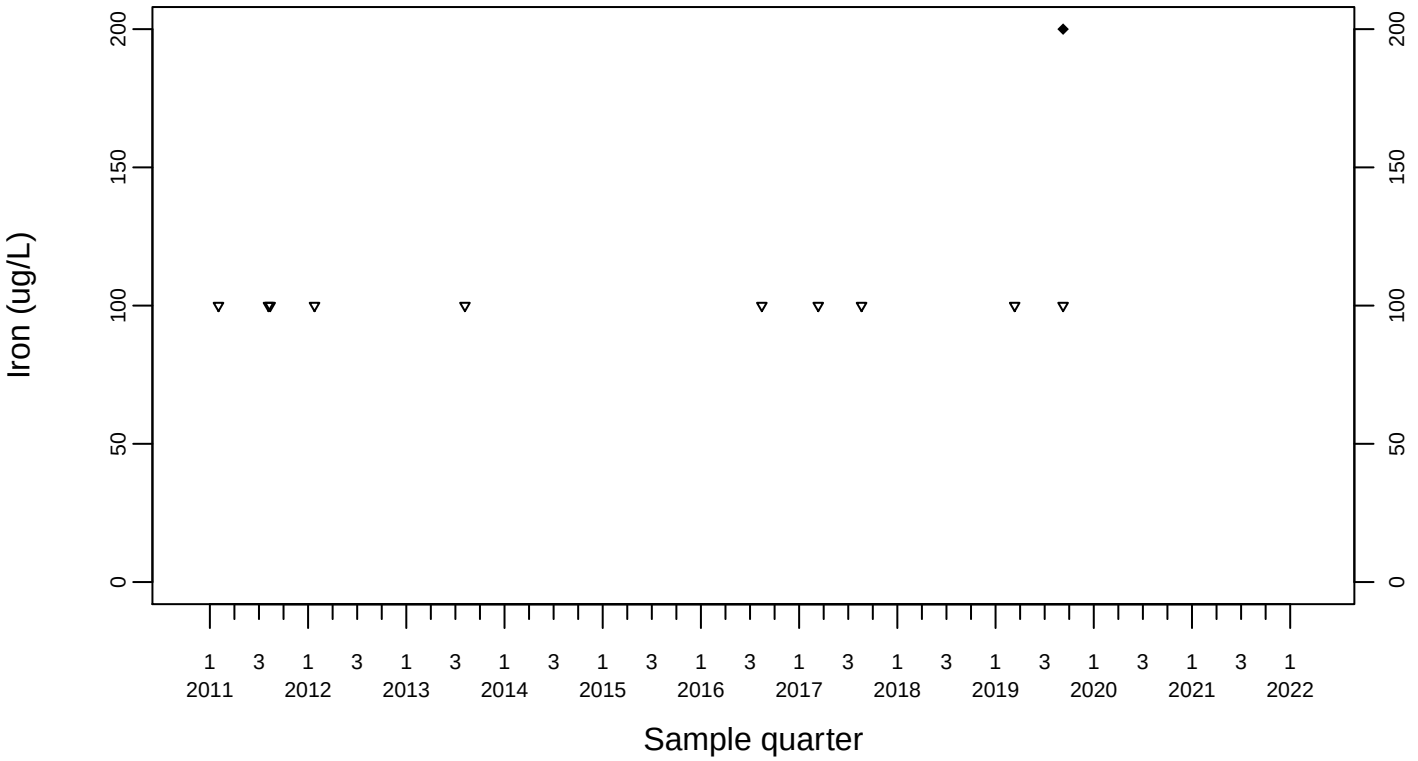

Sewage Ponds Ground Water
Copper (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Copper (ug/L)
0
5
10
15
20
25
30
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
Iron (ug/L)

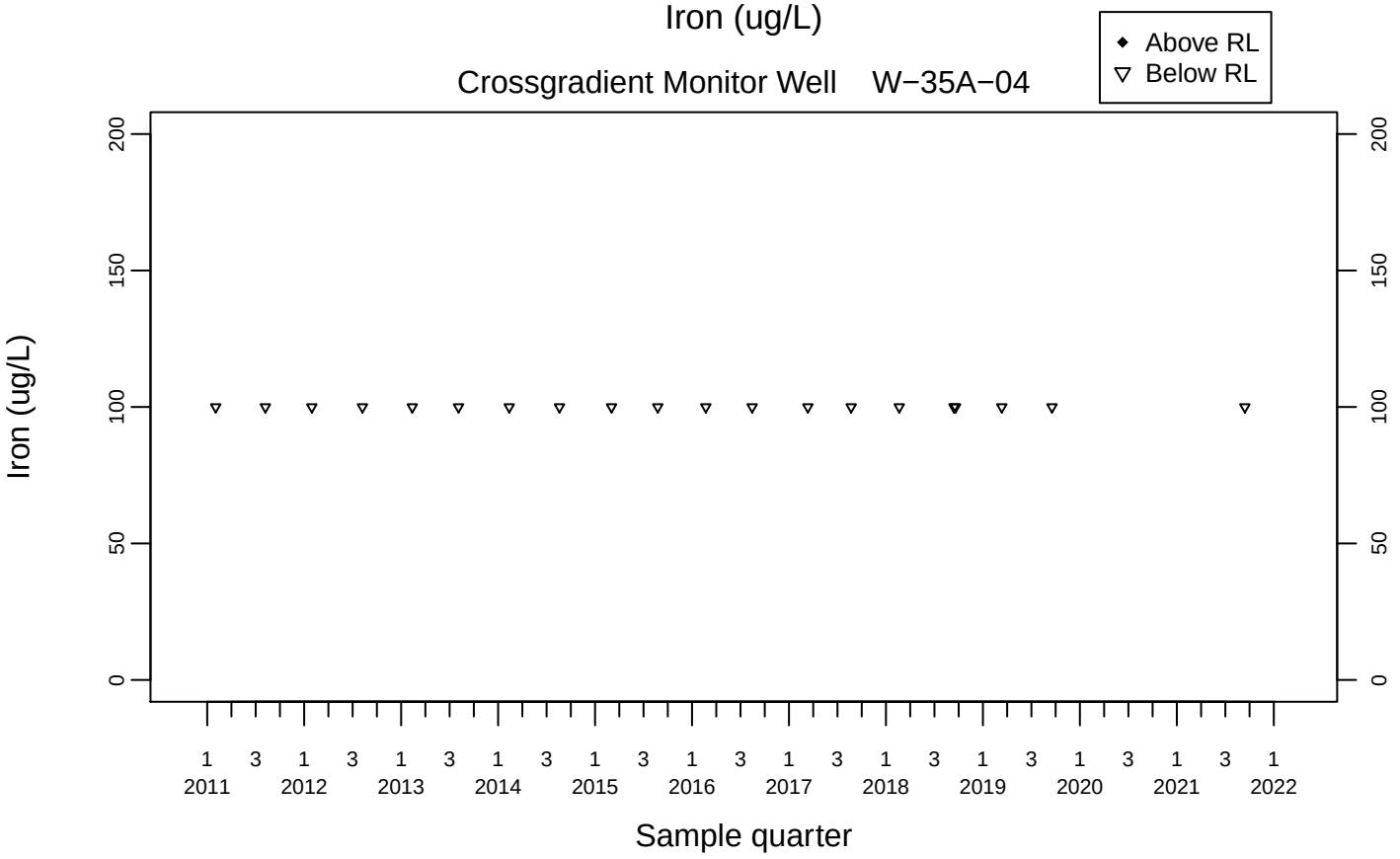
Upgradient Monitor Well W−7ES

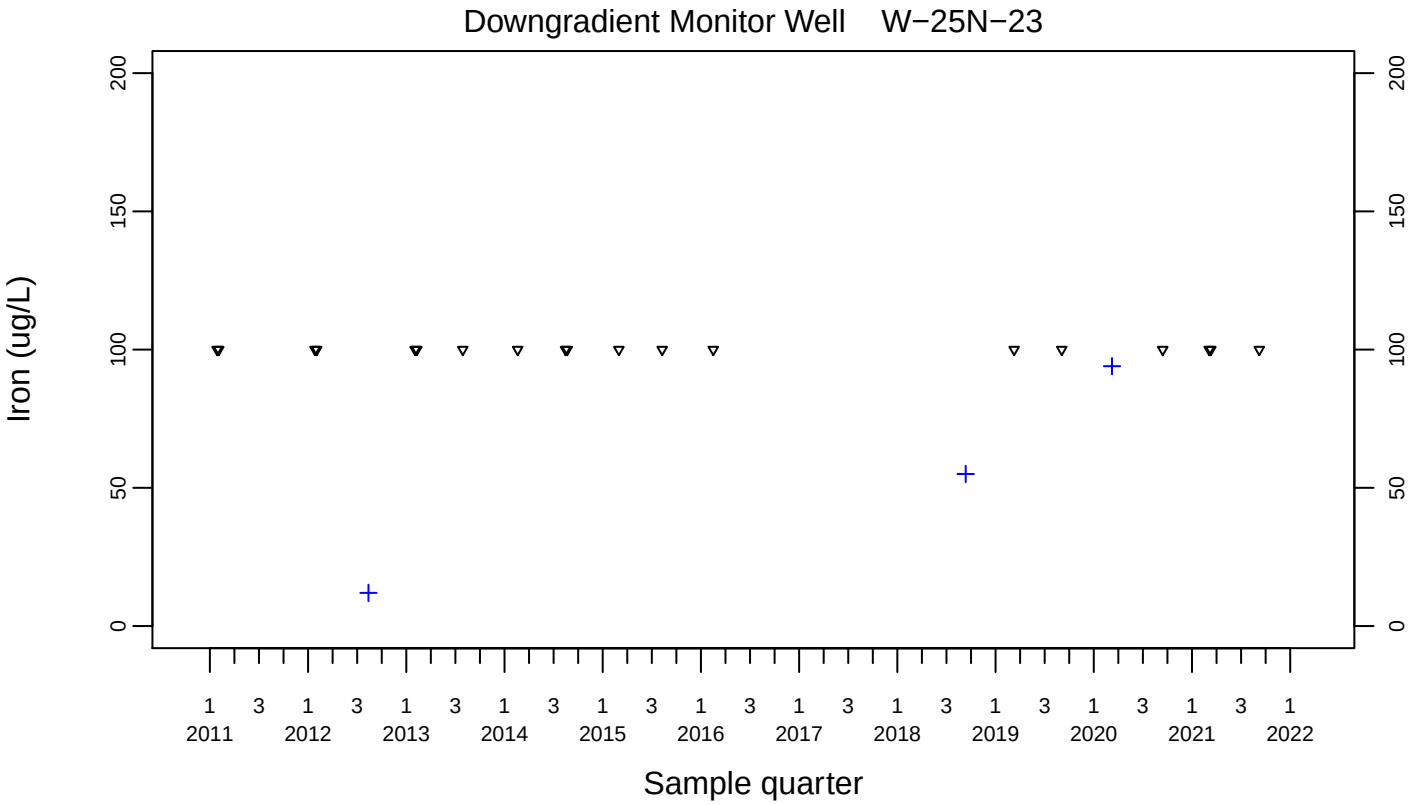


Upgradient Monitor Well W−7PS

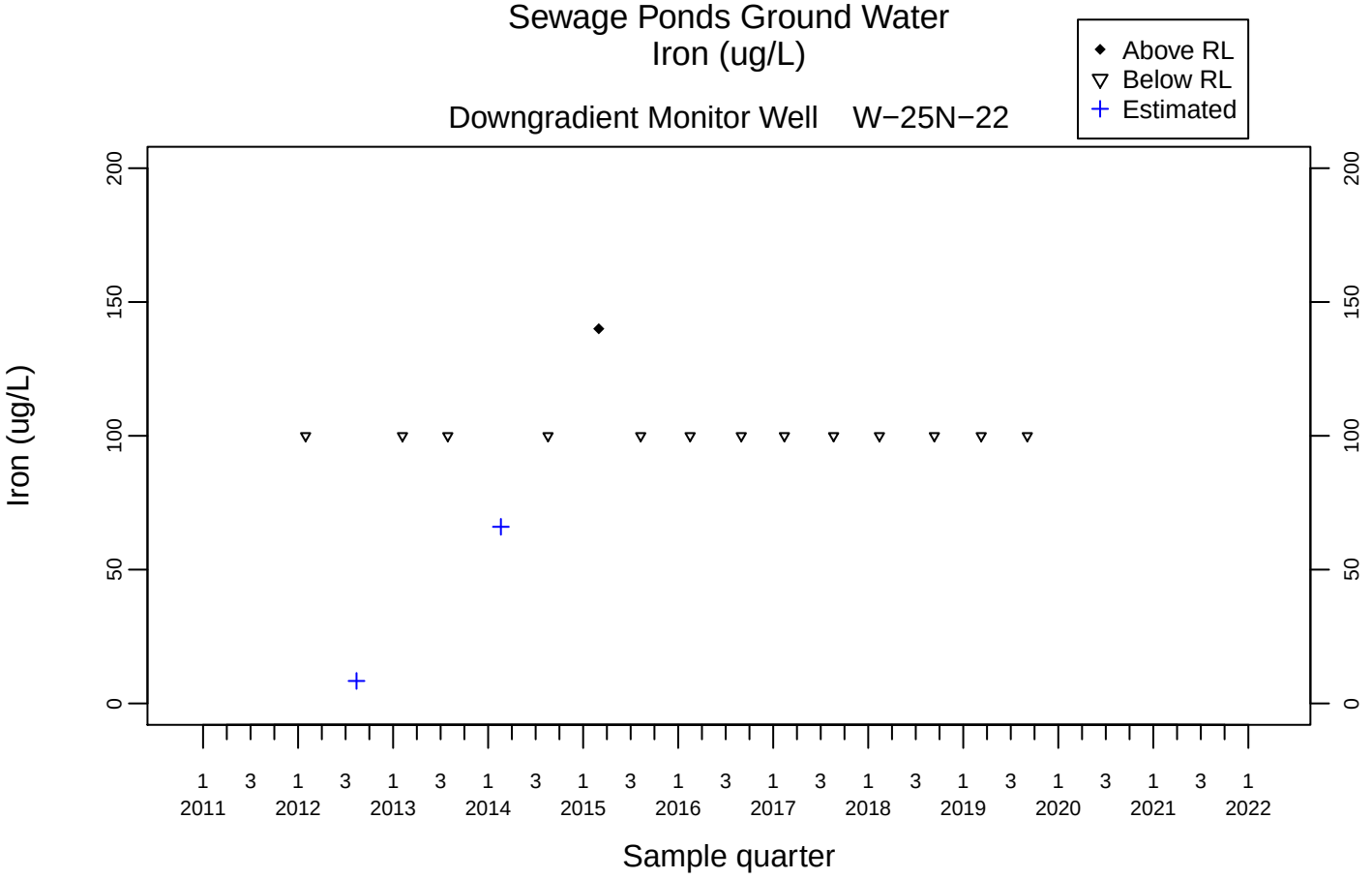


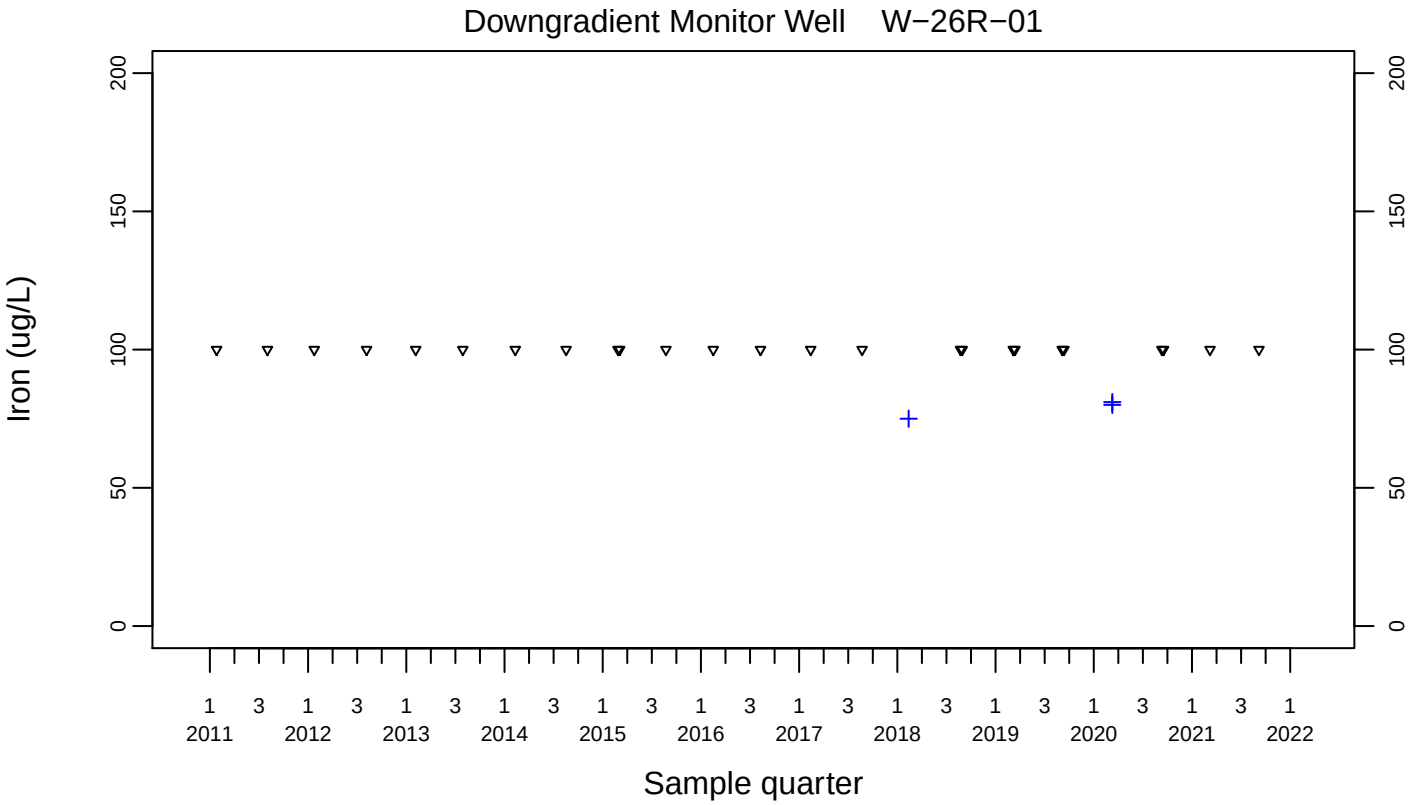
Sewage Ponds Ground Water
Iron (ug/L)



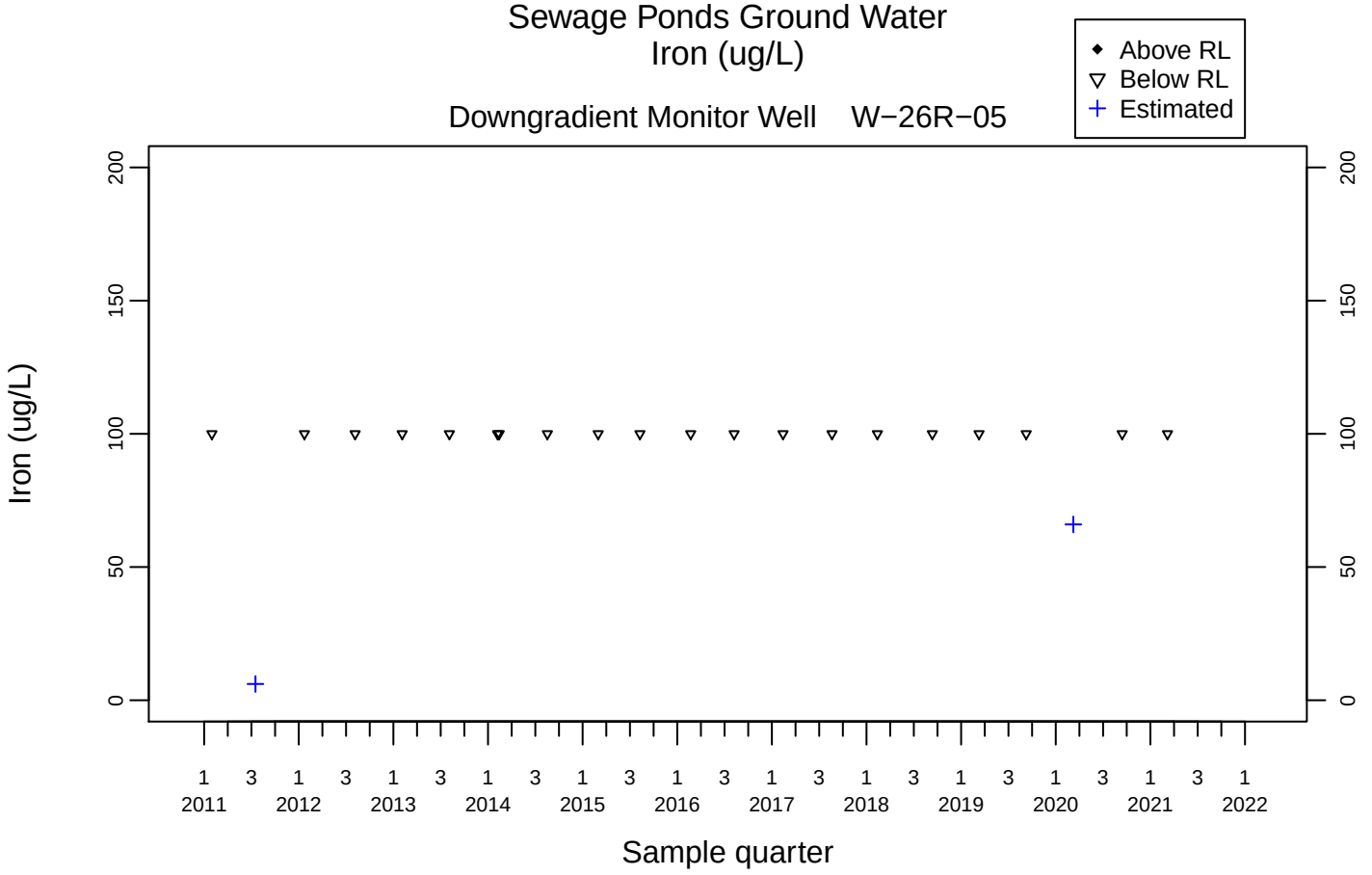


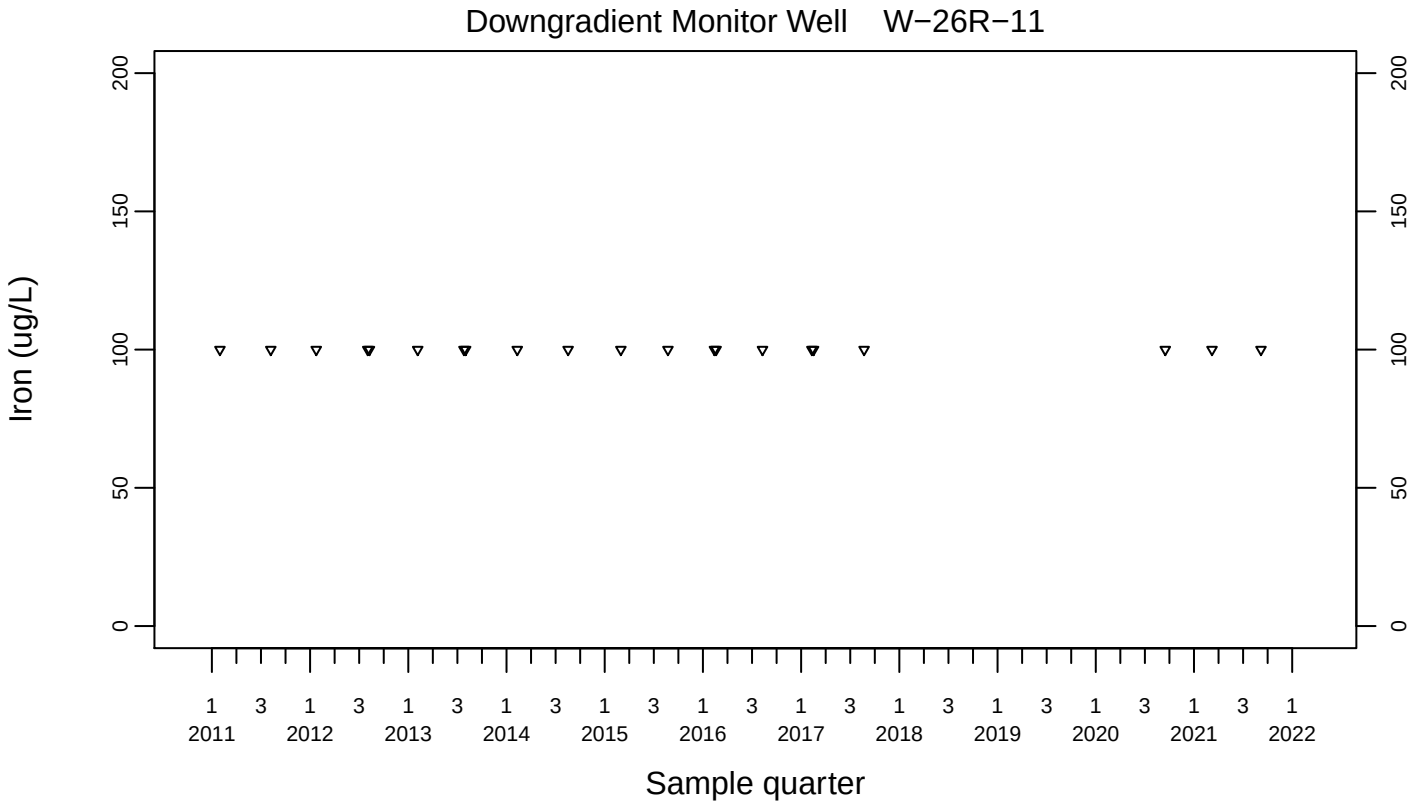
Sewage Ponds Ground Water
Iron (ug/L)

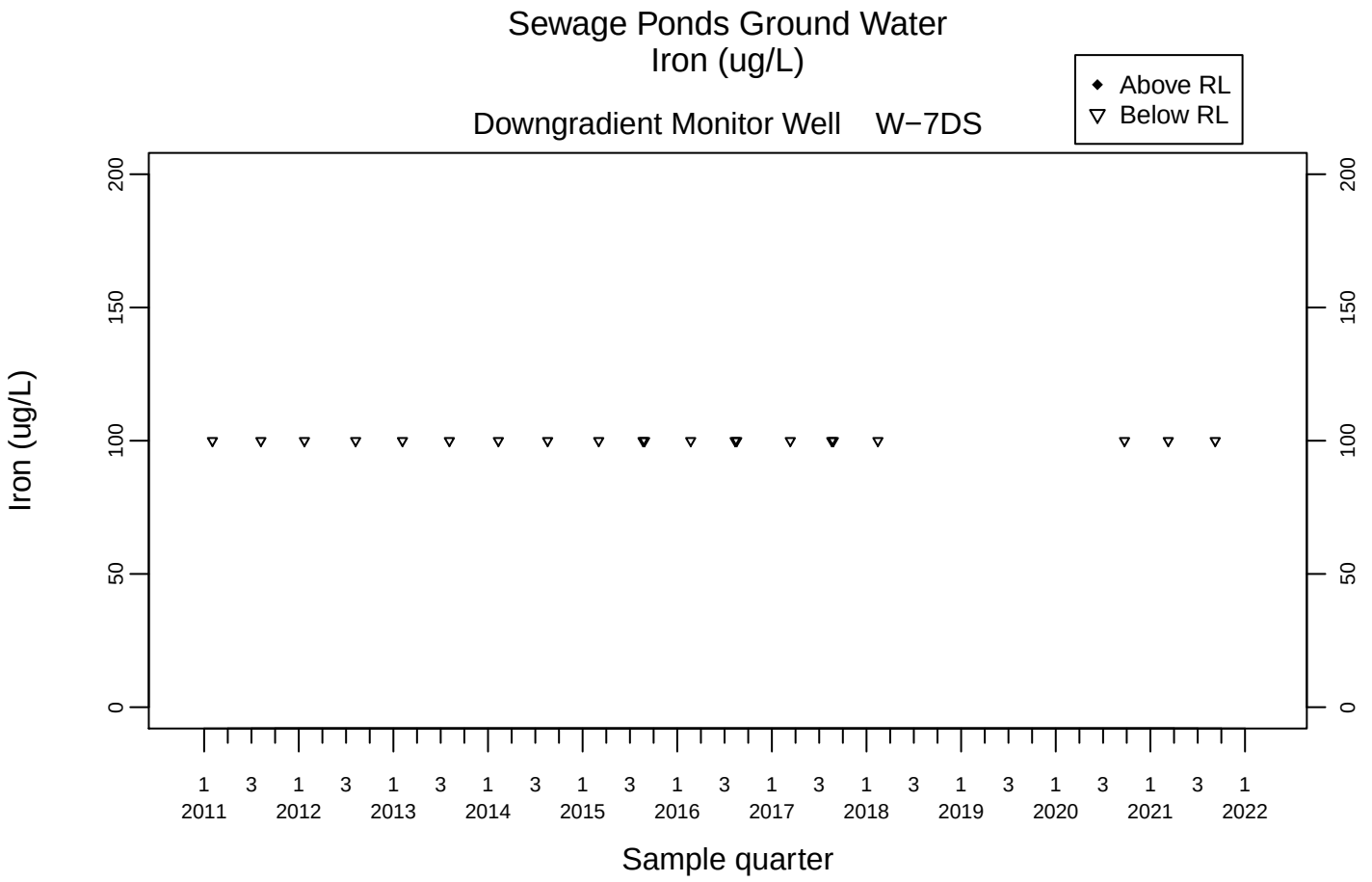




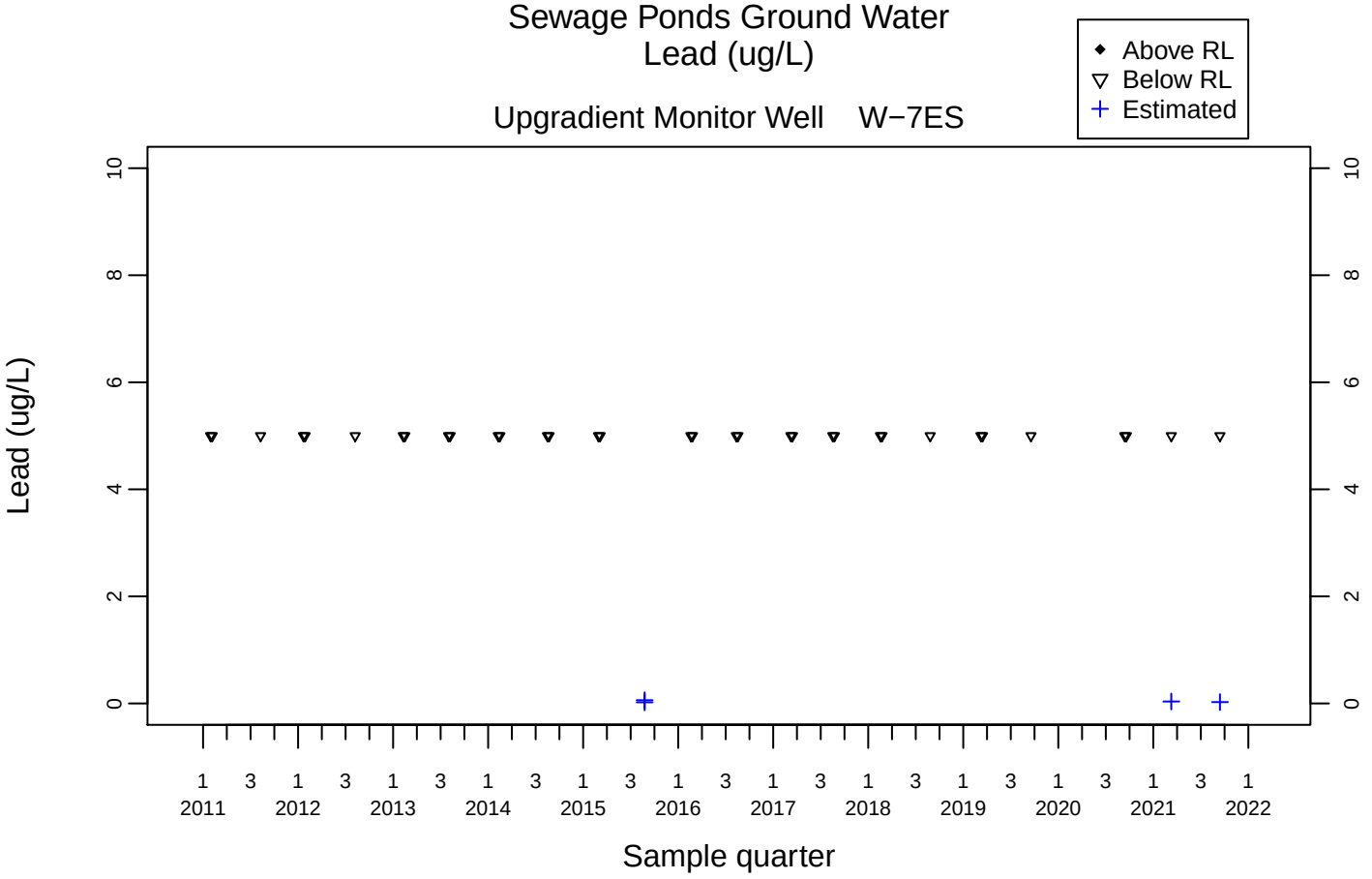
Sewage Ponds Ground Water
Iron (ug/L)

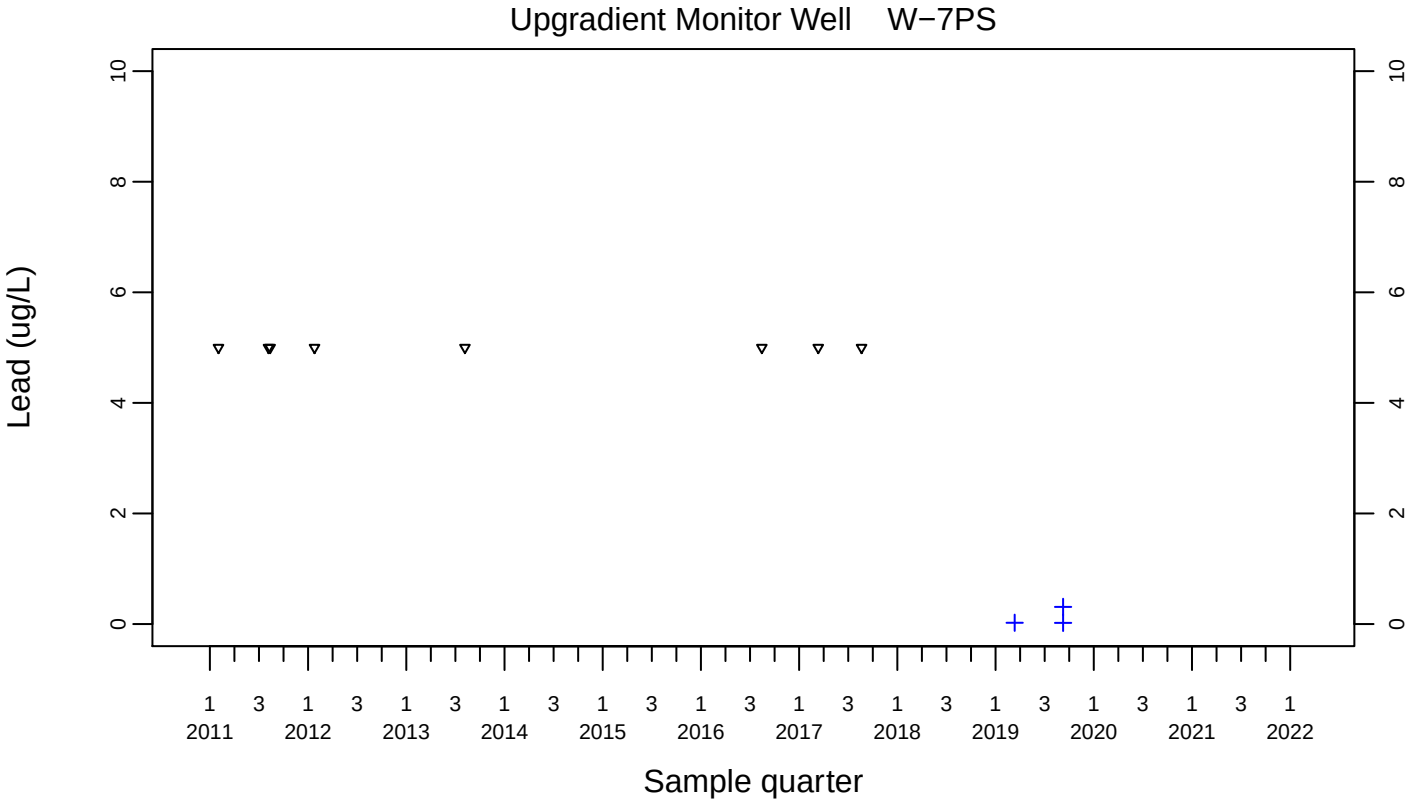




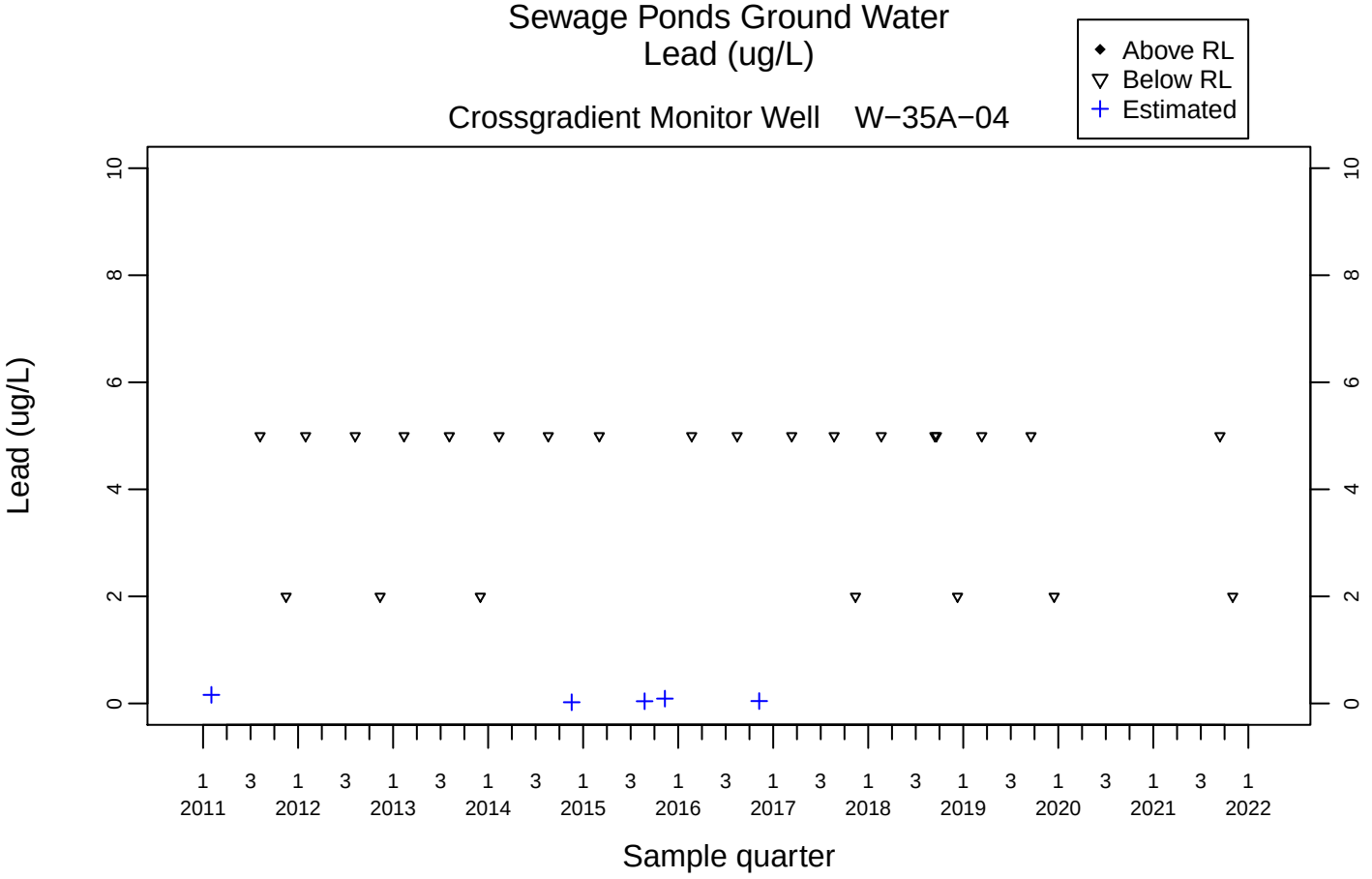

Sewage Ponds Ground Water
Iron (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Iron (ug/L)
0
50
100
150
200
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

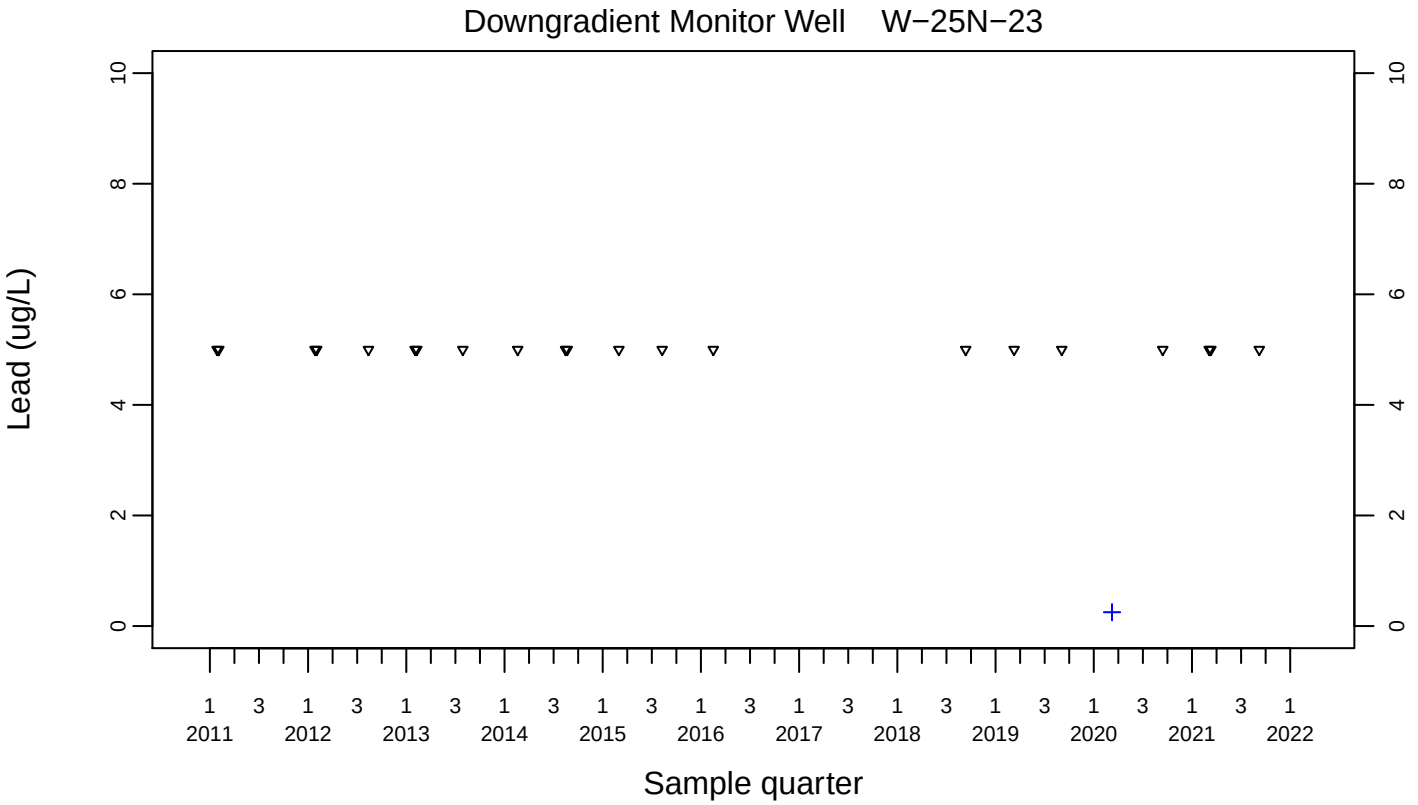
Sewage Ponds Ground Water
Lead (ug/L)



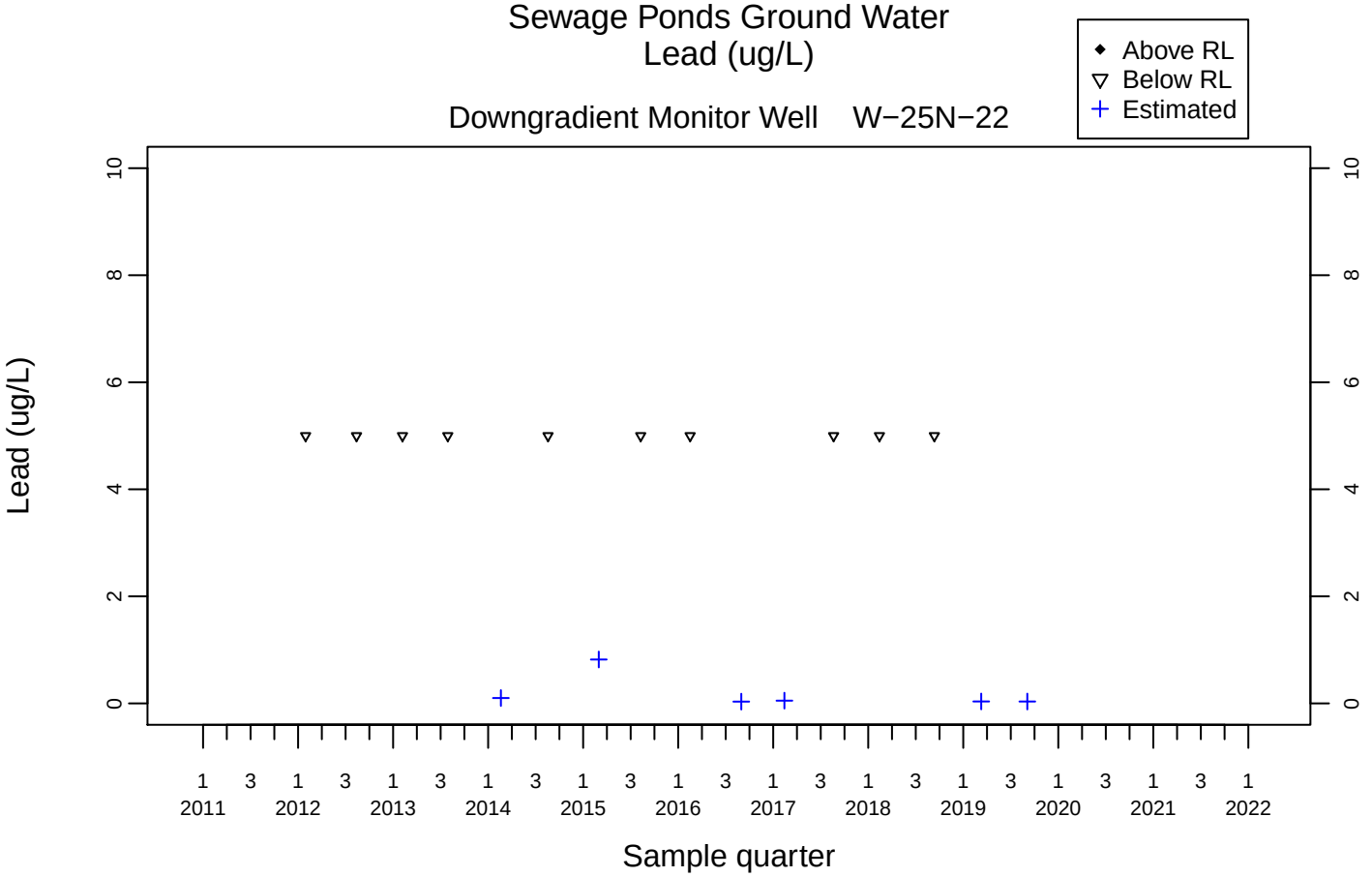


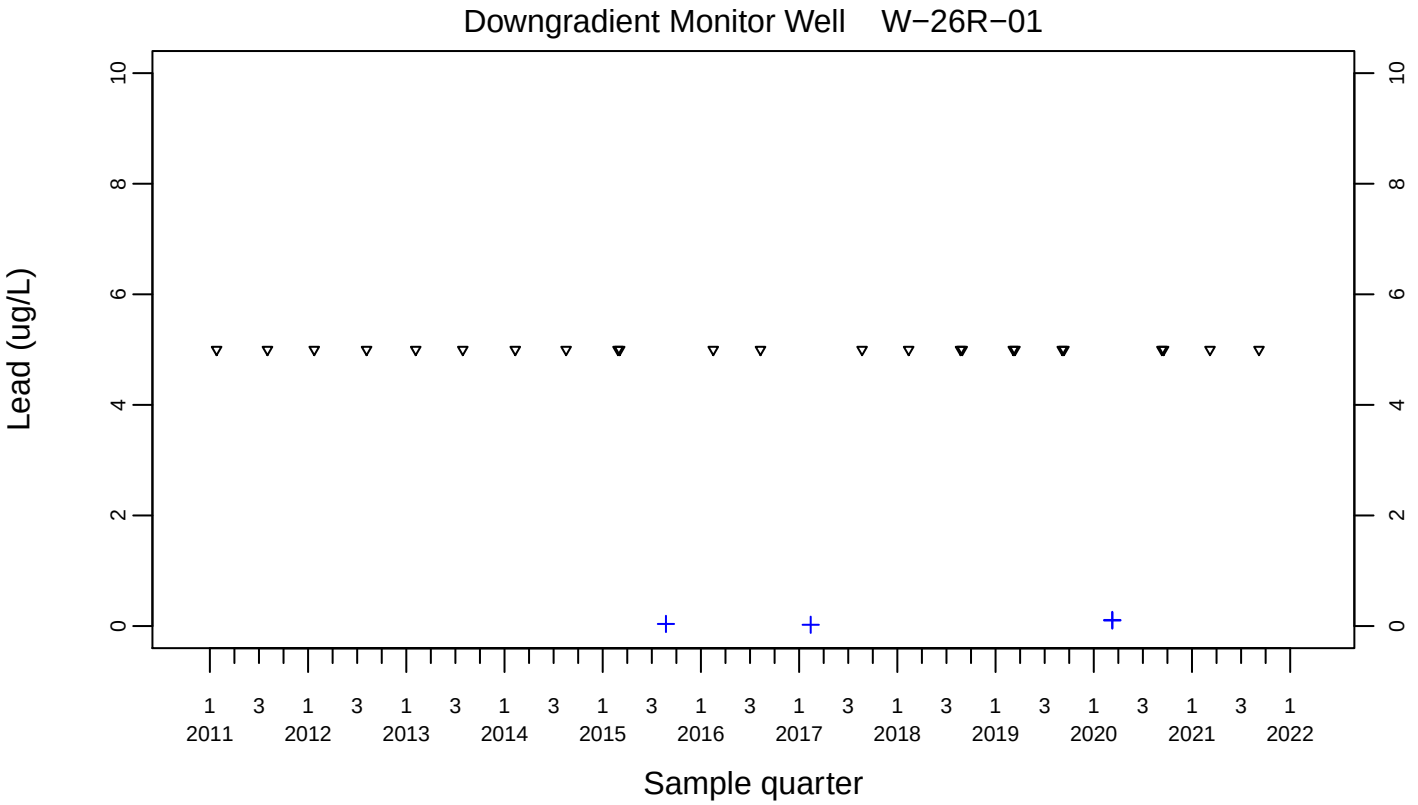
Sewage Ponds Ground Water
Lead (ug/L)



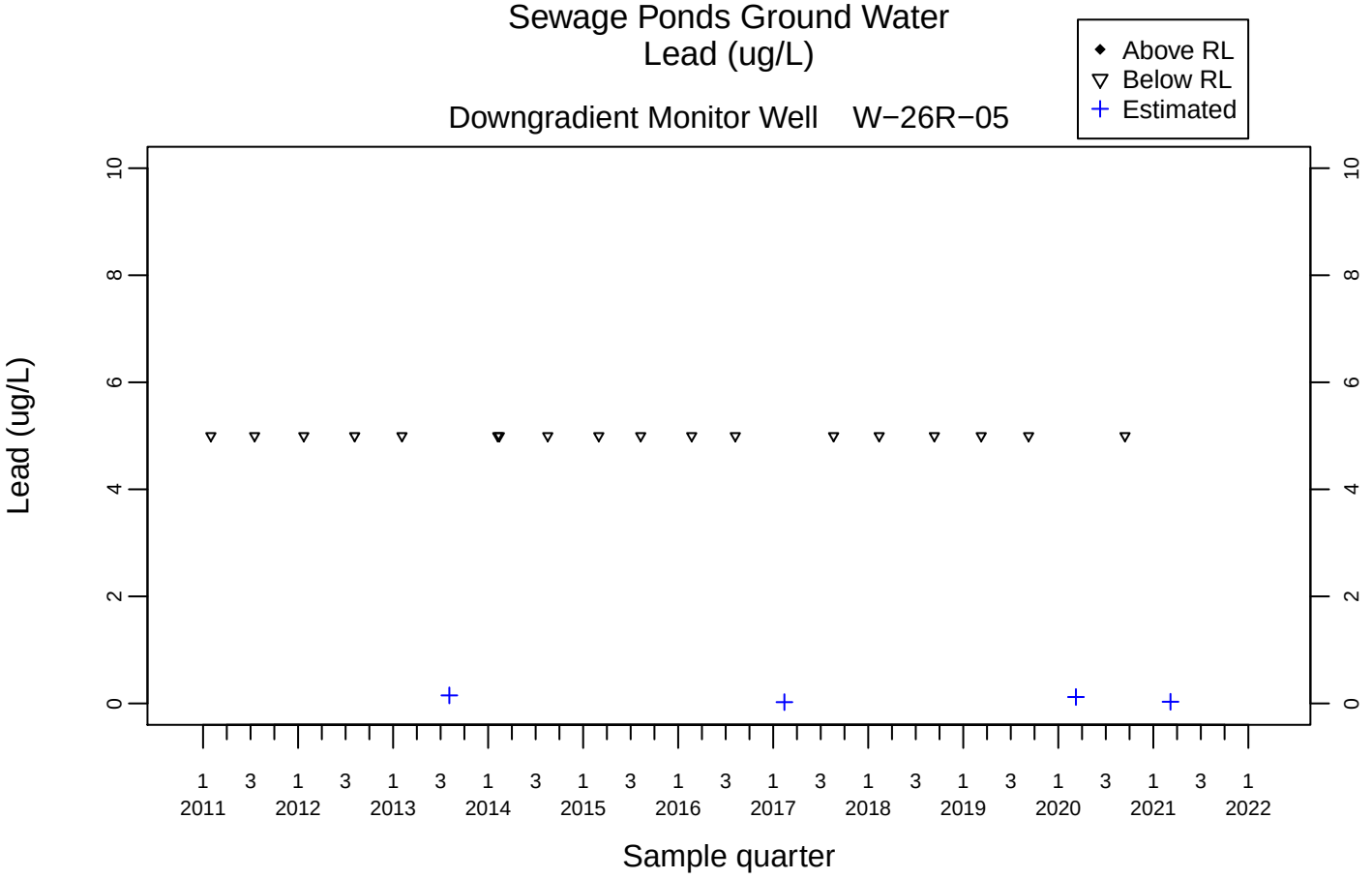


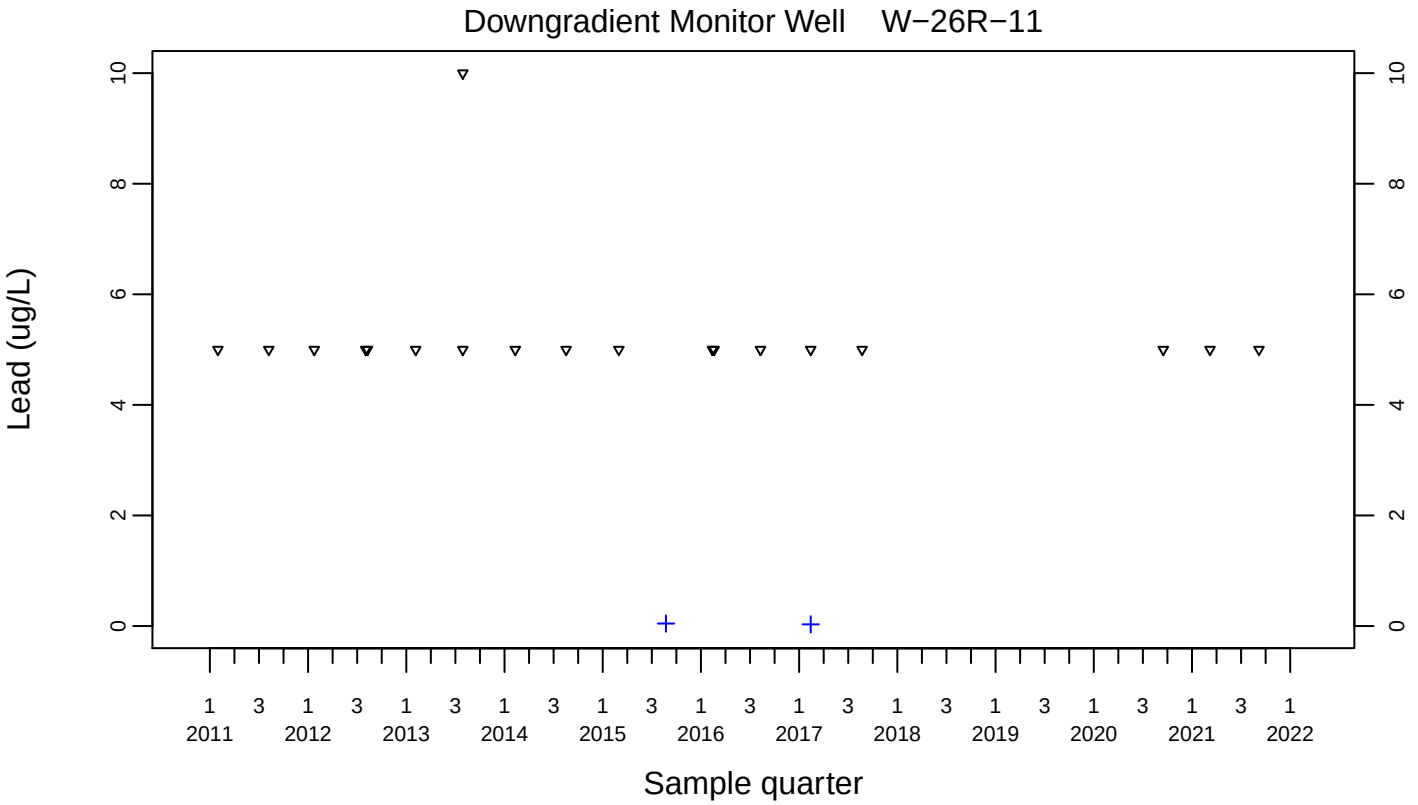
Sewage Ponds Ground Water
Lead (ug/L)

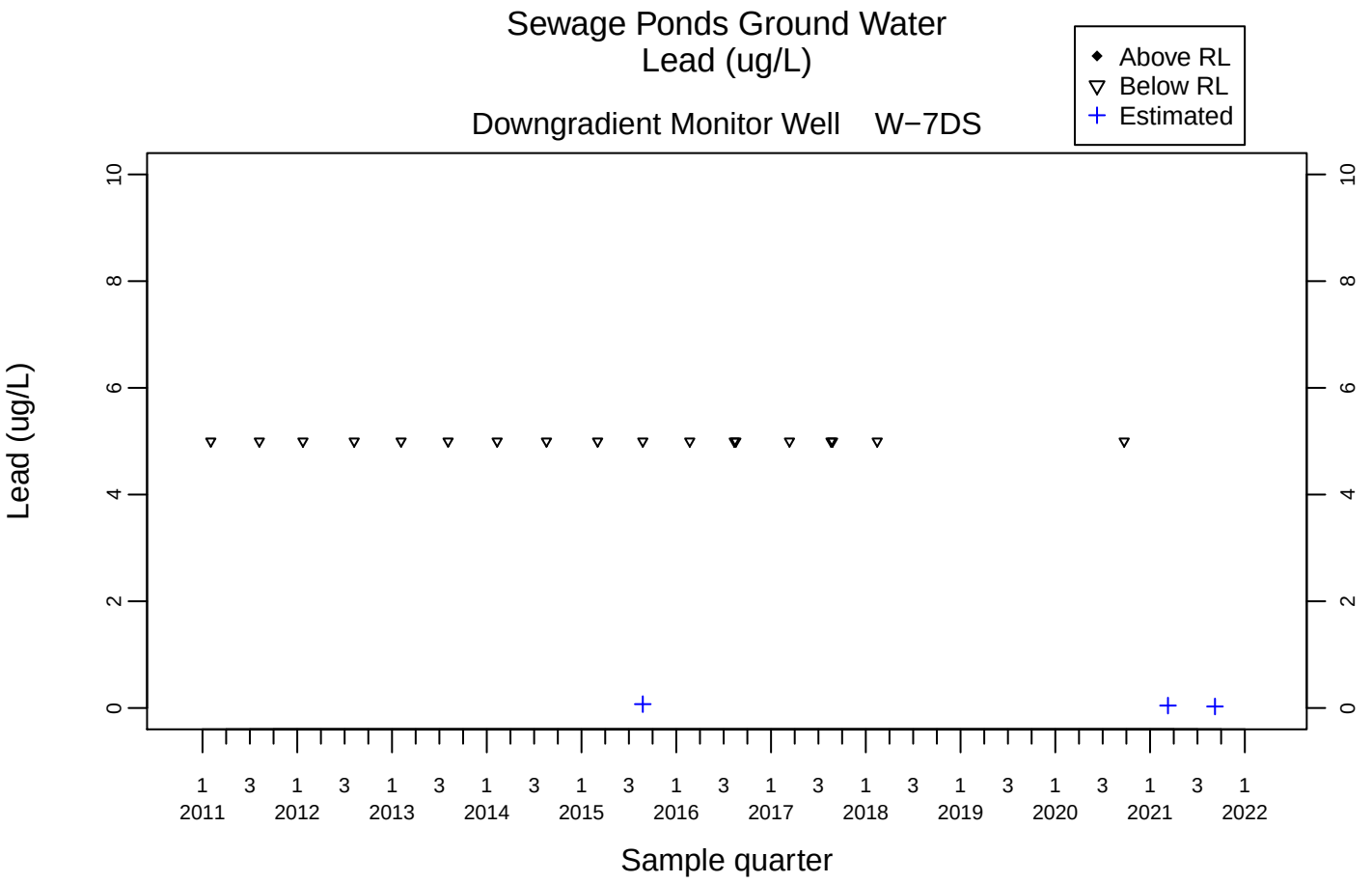




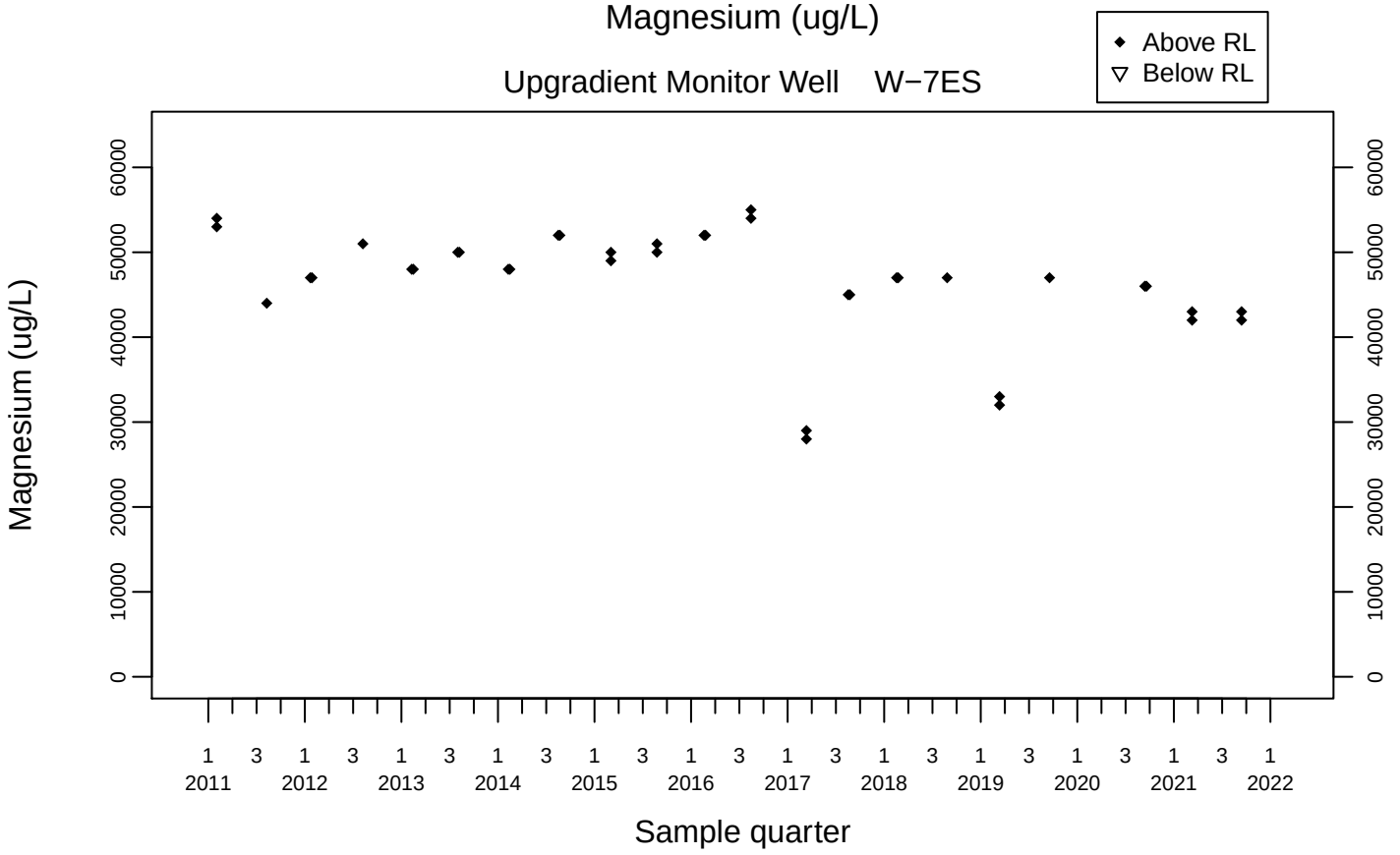
Sewage Ponds Ground Water
Lead (ug/L)

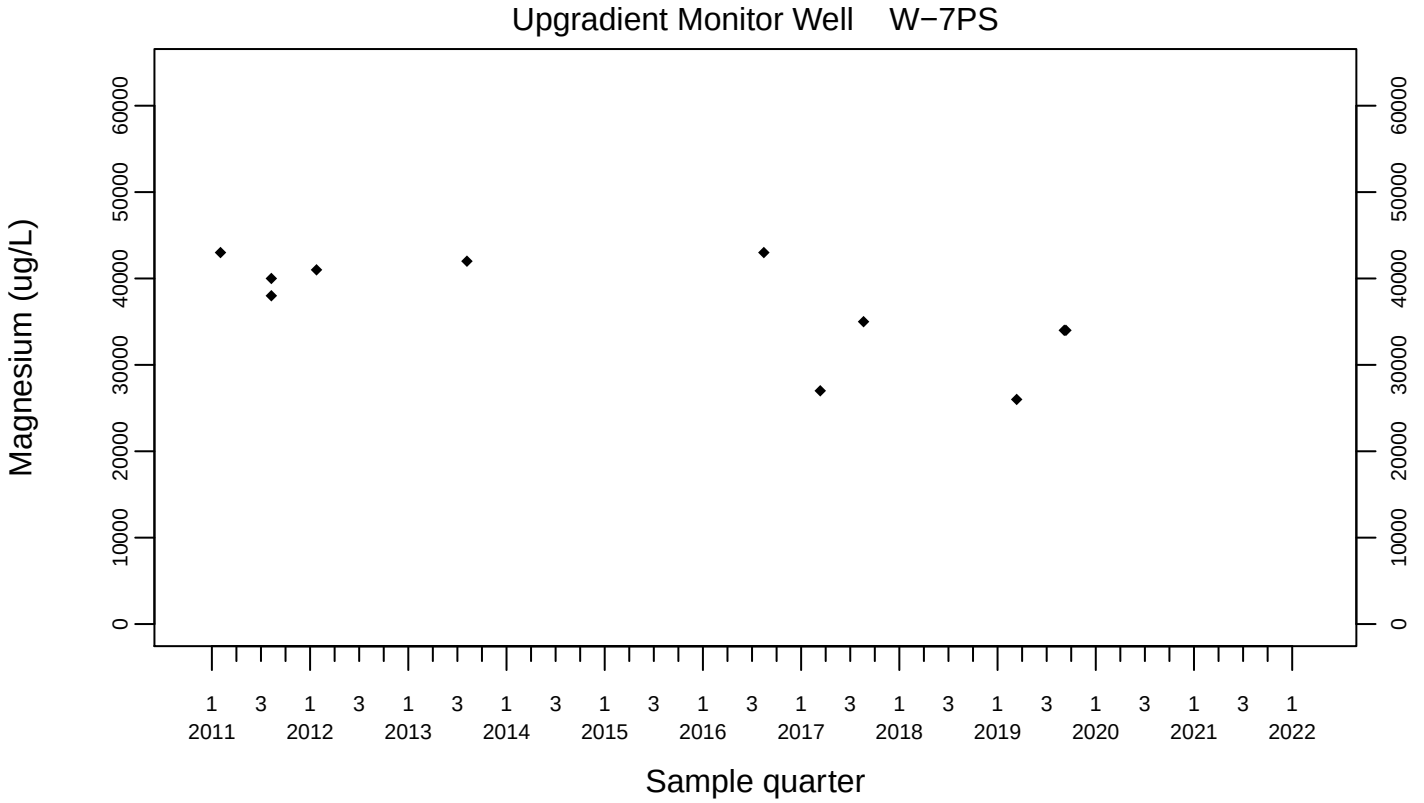




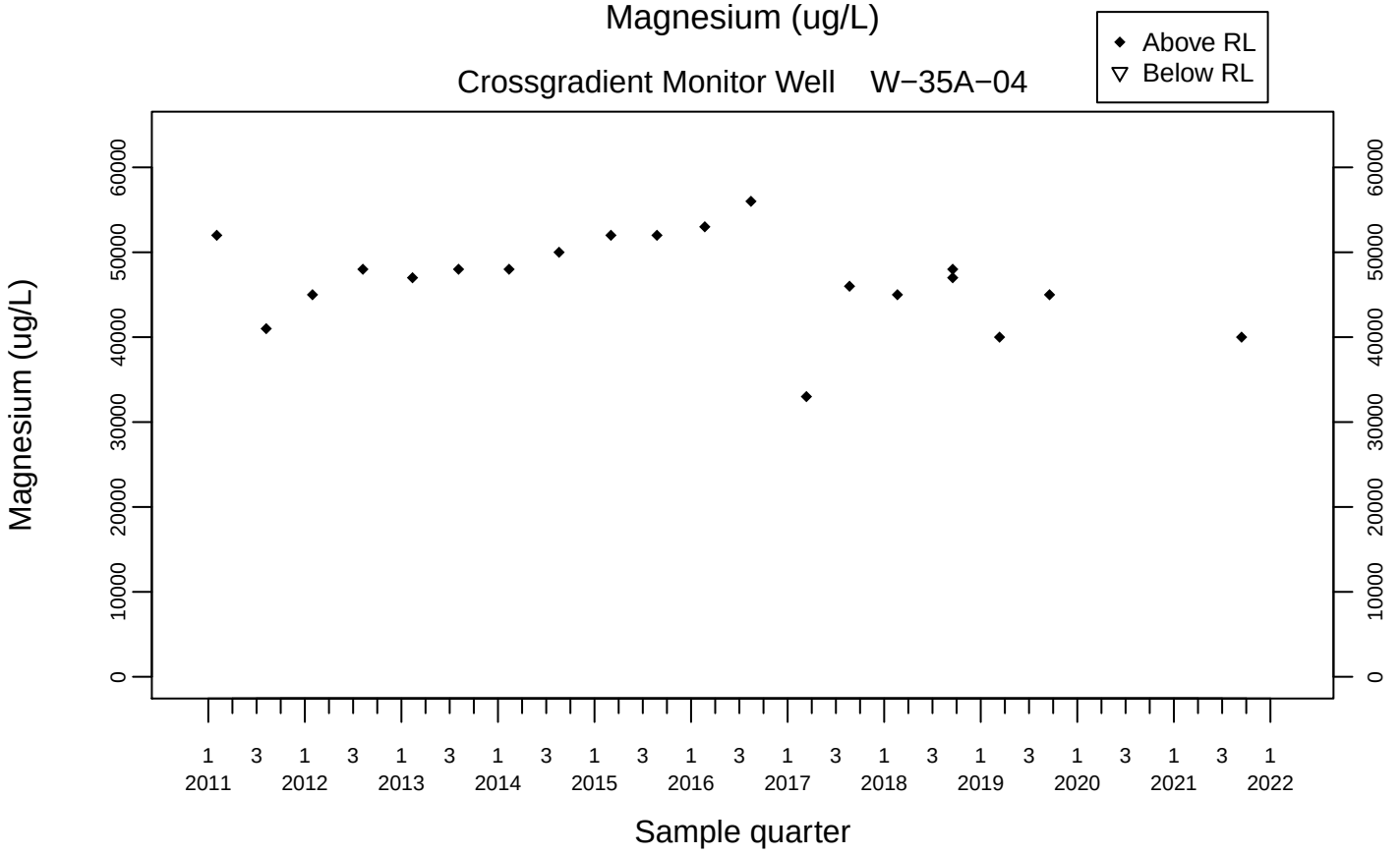

Sewage Ponds Ground Water
Lead (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Lead (ug/L)
0
2
4
6
8
10
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

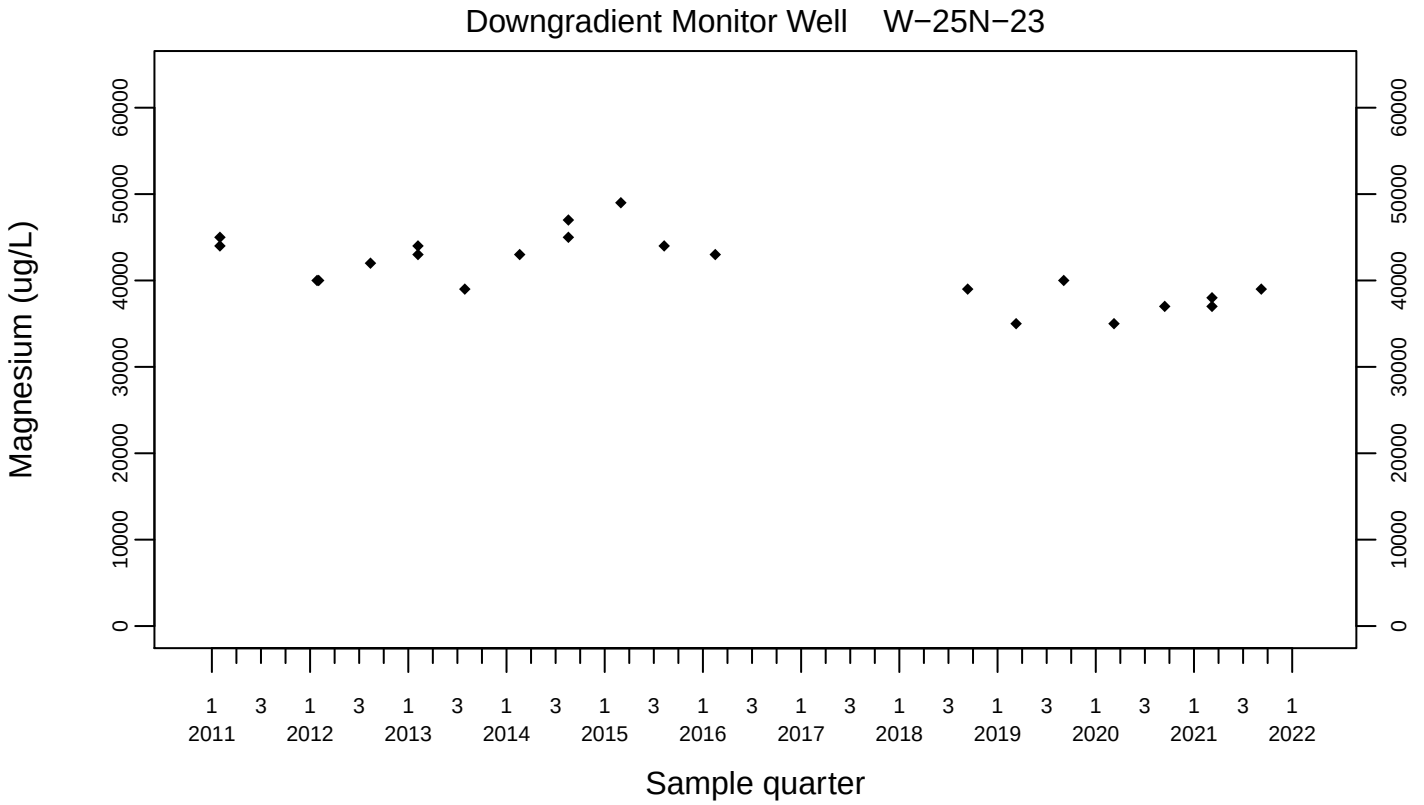
Sewage Ponds Ground Water
Magnesium (ug/L)



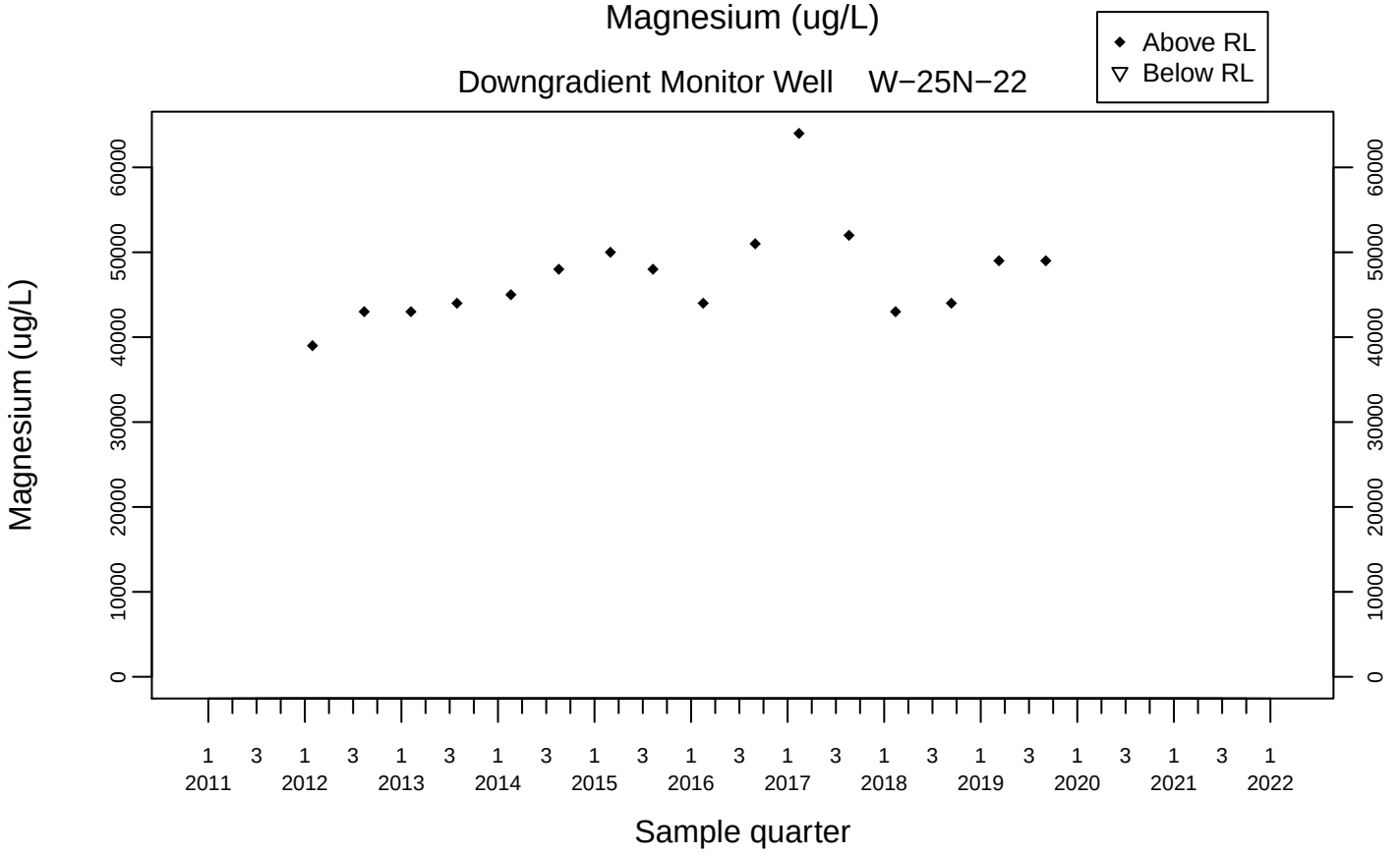


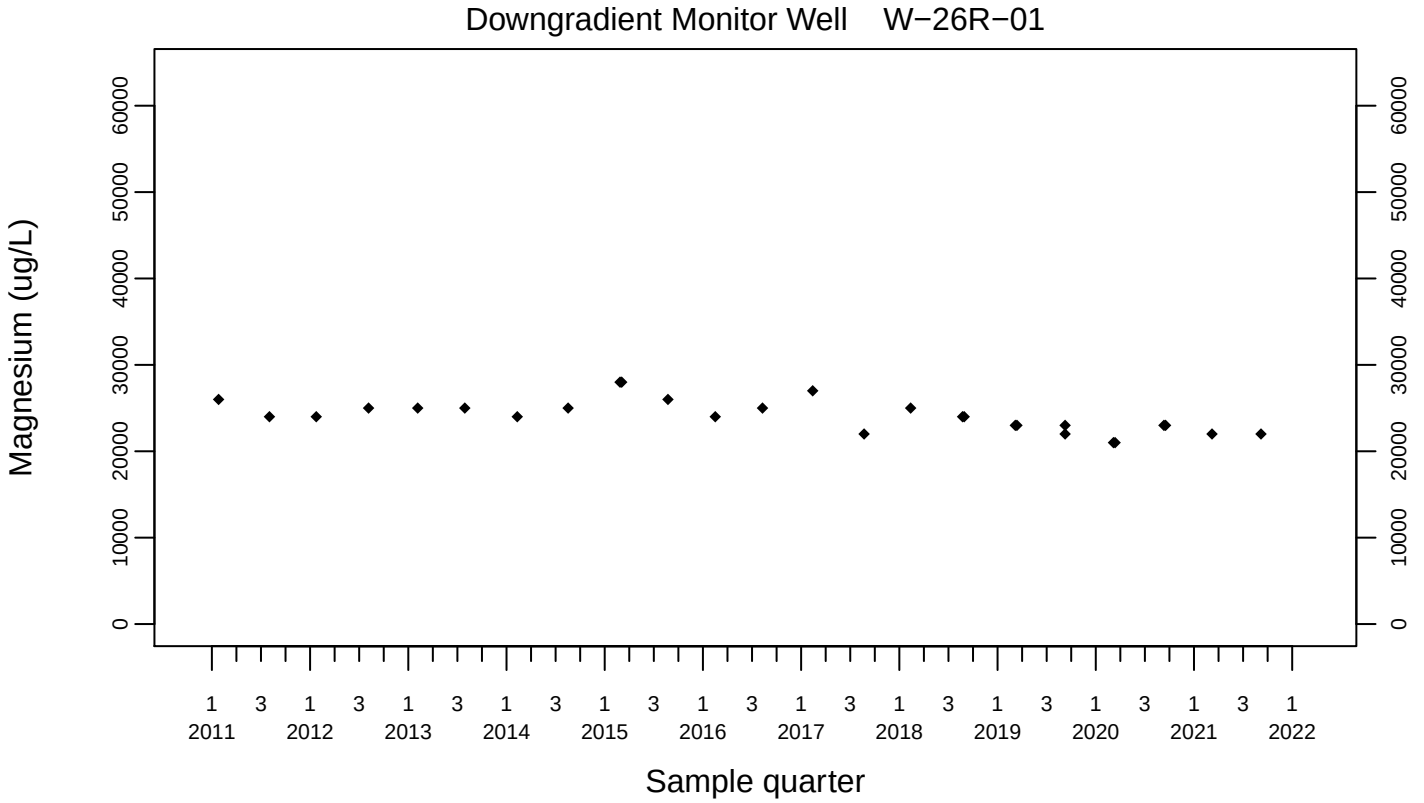
Sewage Ponds Ground Water
Magnesium (ug/L)



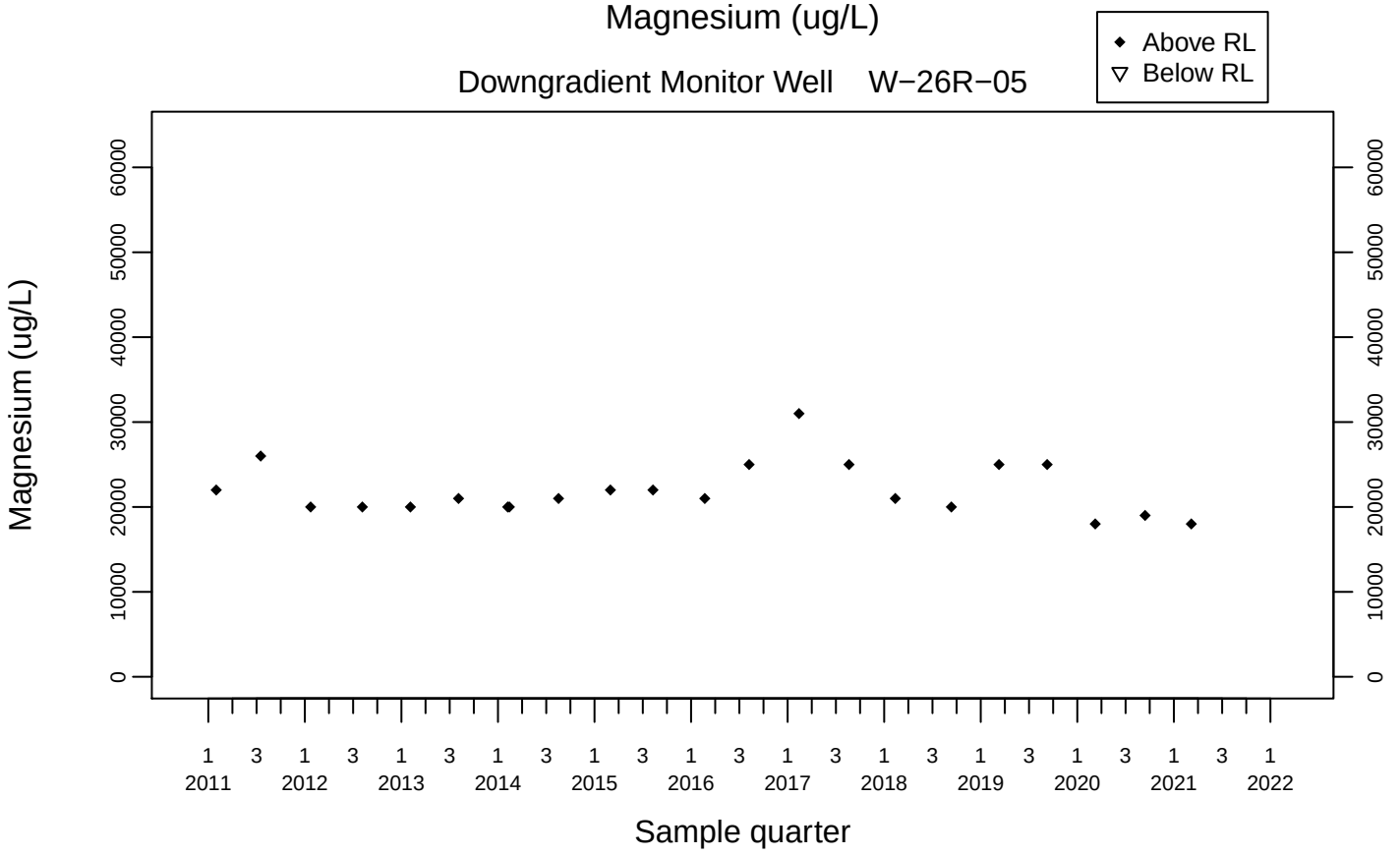


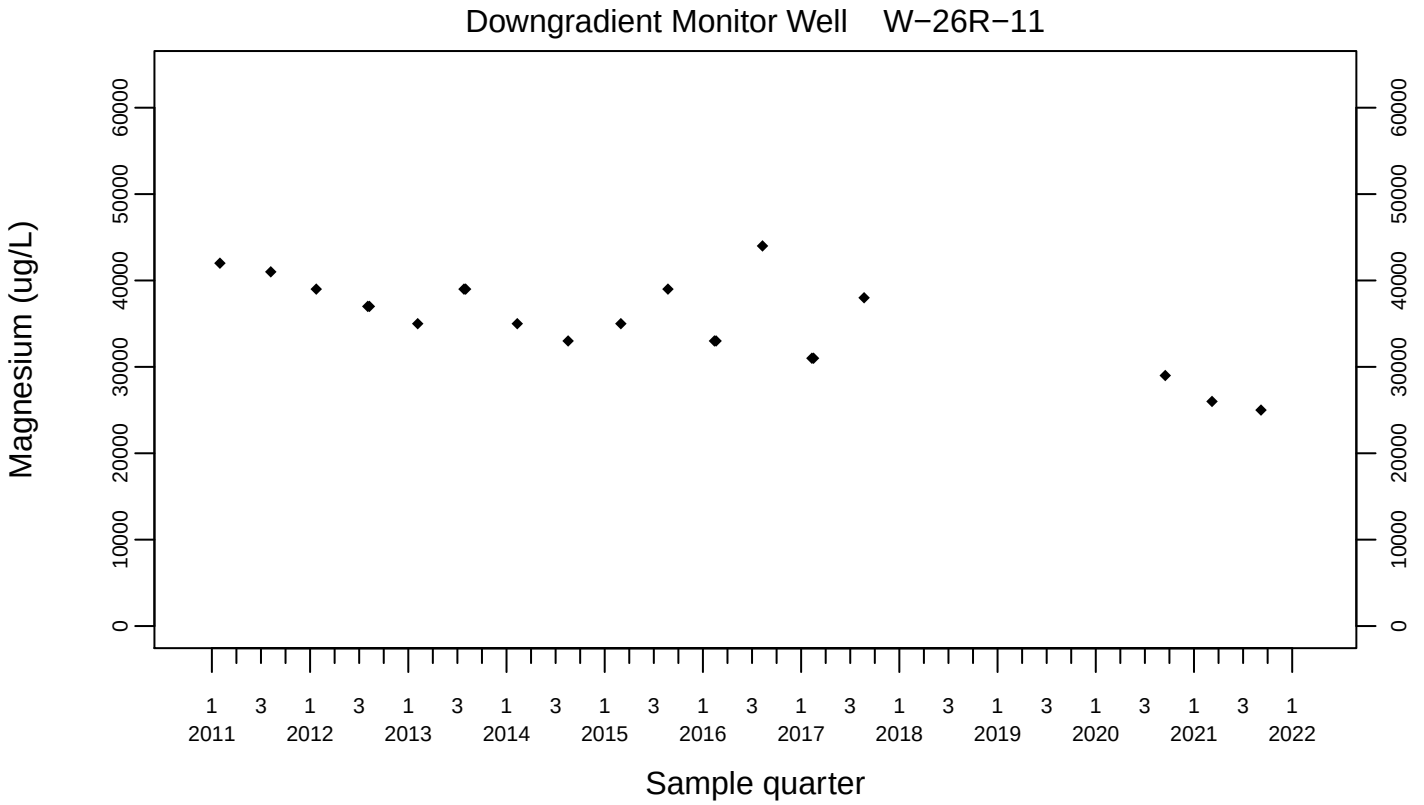
Sewage Ponds Ground Water
Magnesium (ug/L)

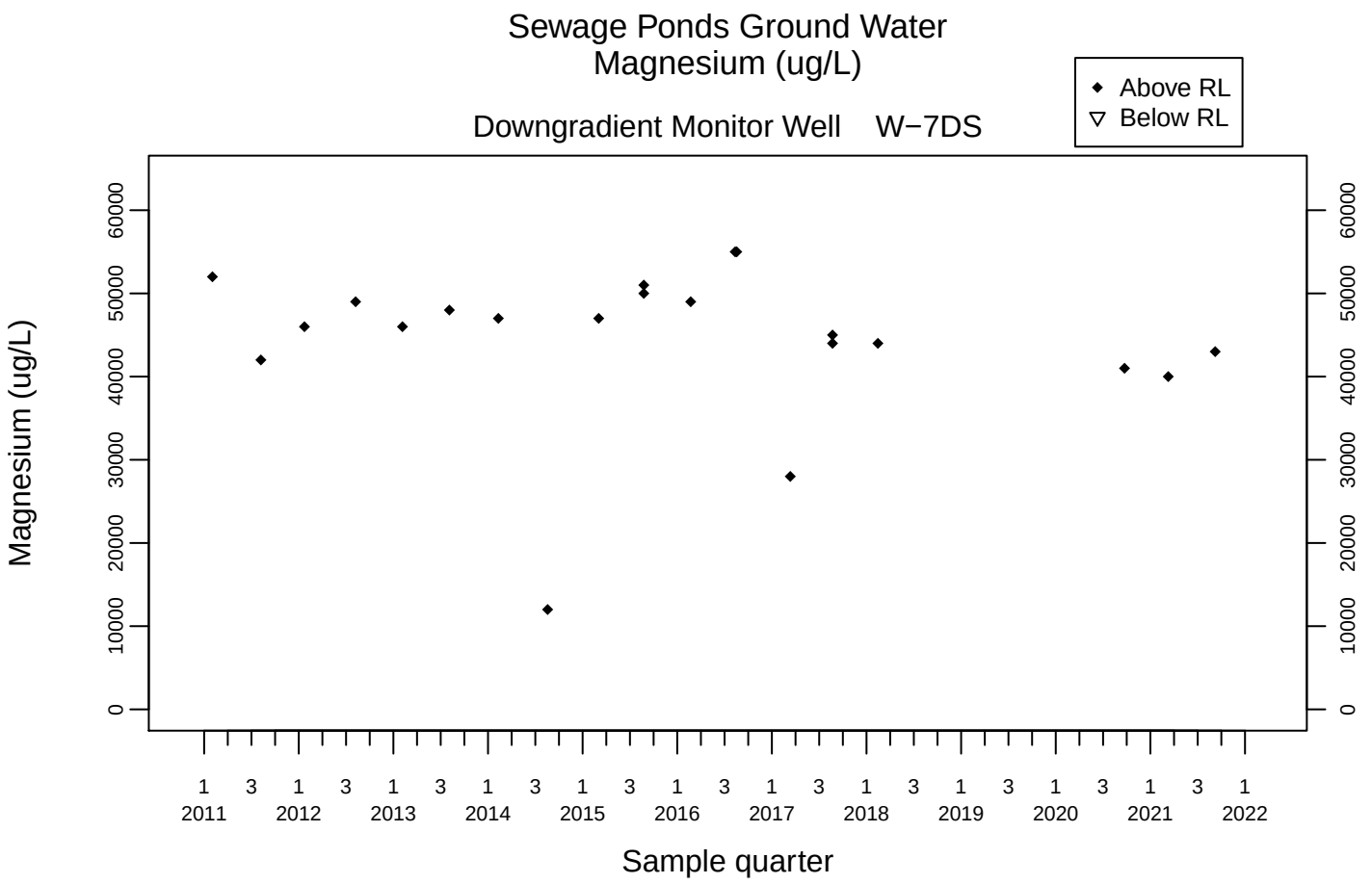




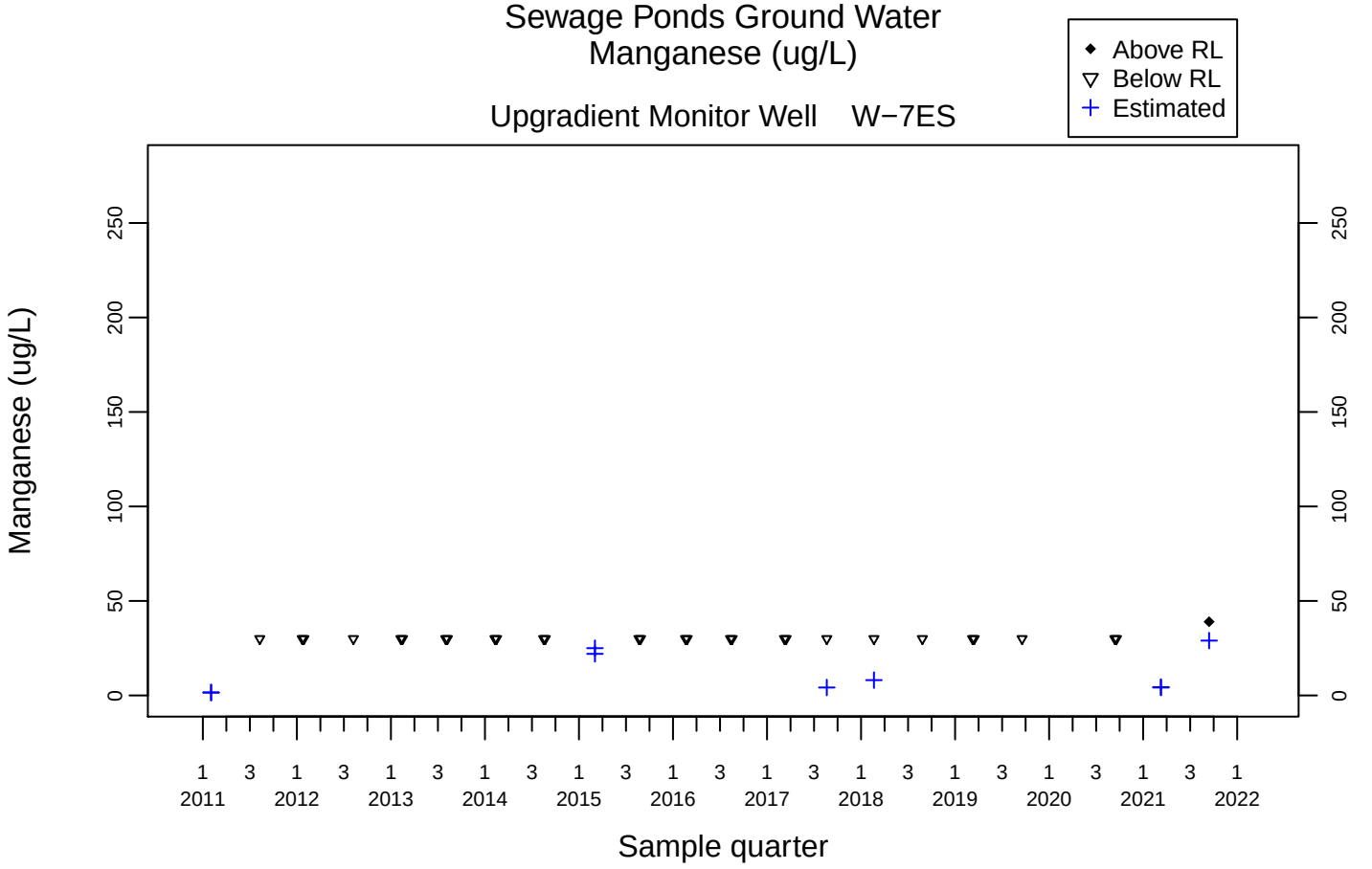
Sewage Ponds Ground Water
Magnesium (ug/L)

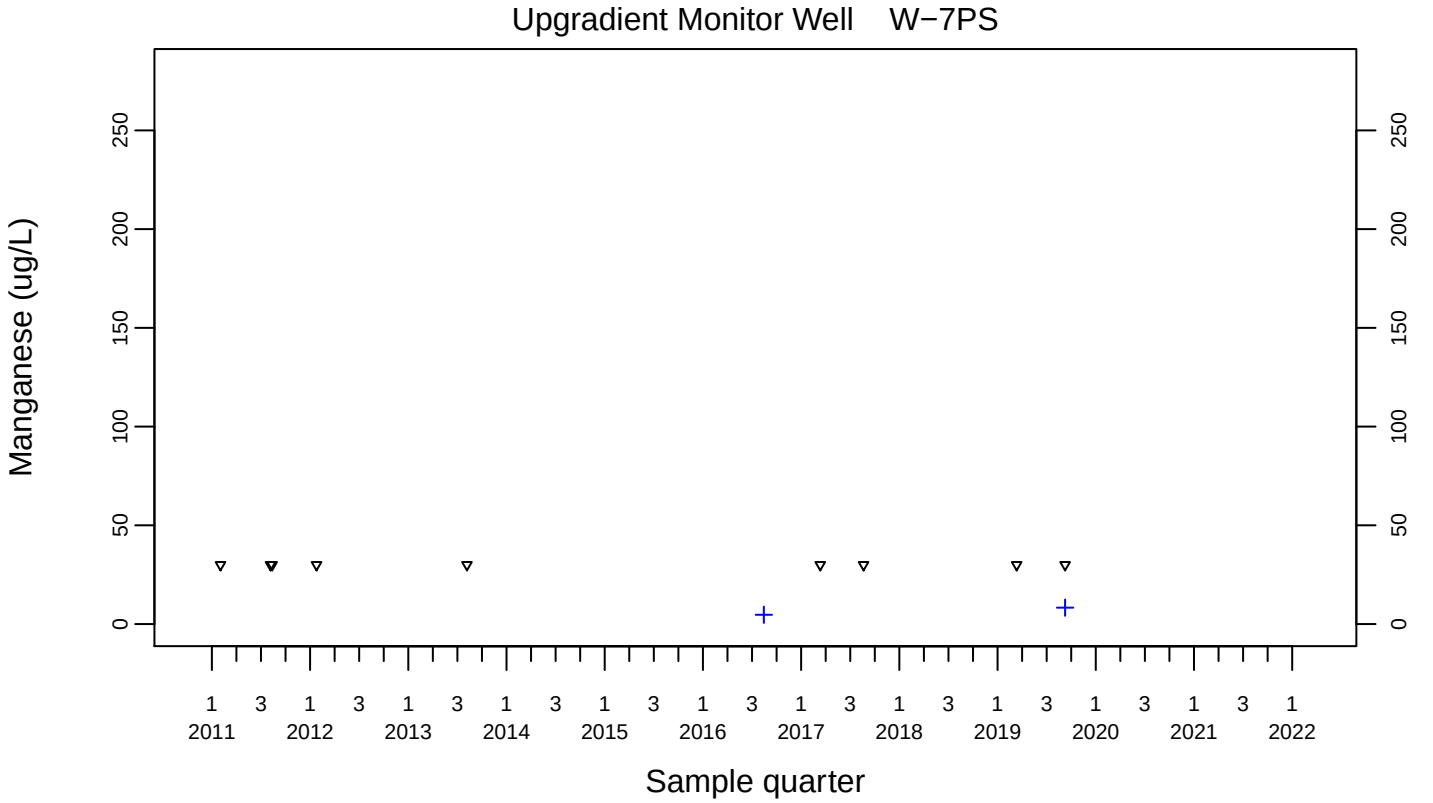




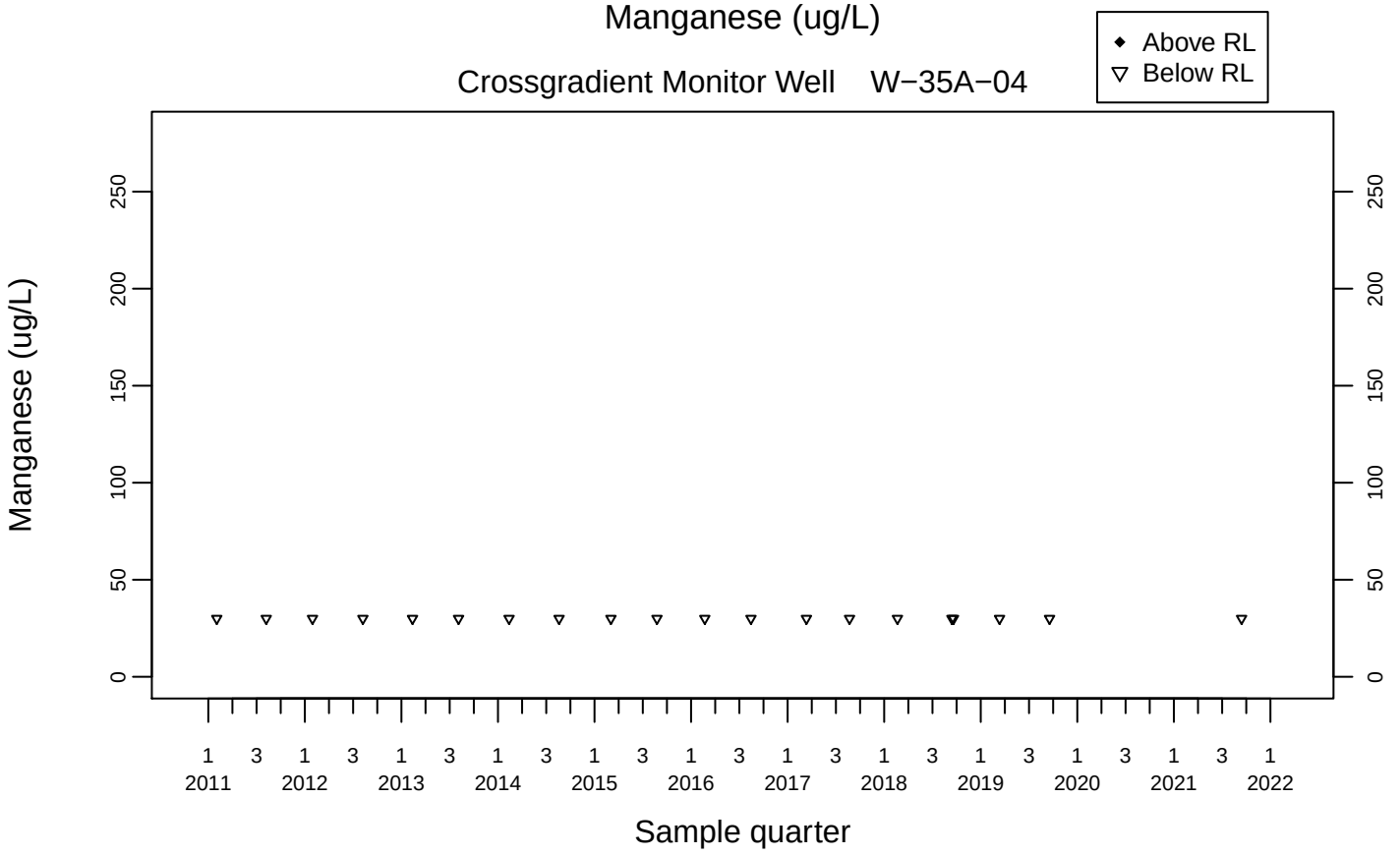

Sewage Ponds Ground Water
Magnesium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Magnesium (ug/L)
0
10000
20000
30000
40000
50000
60000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

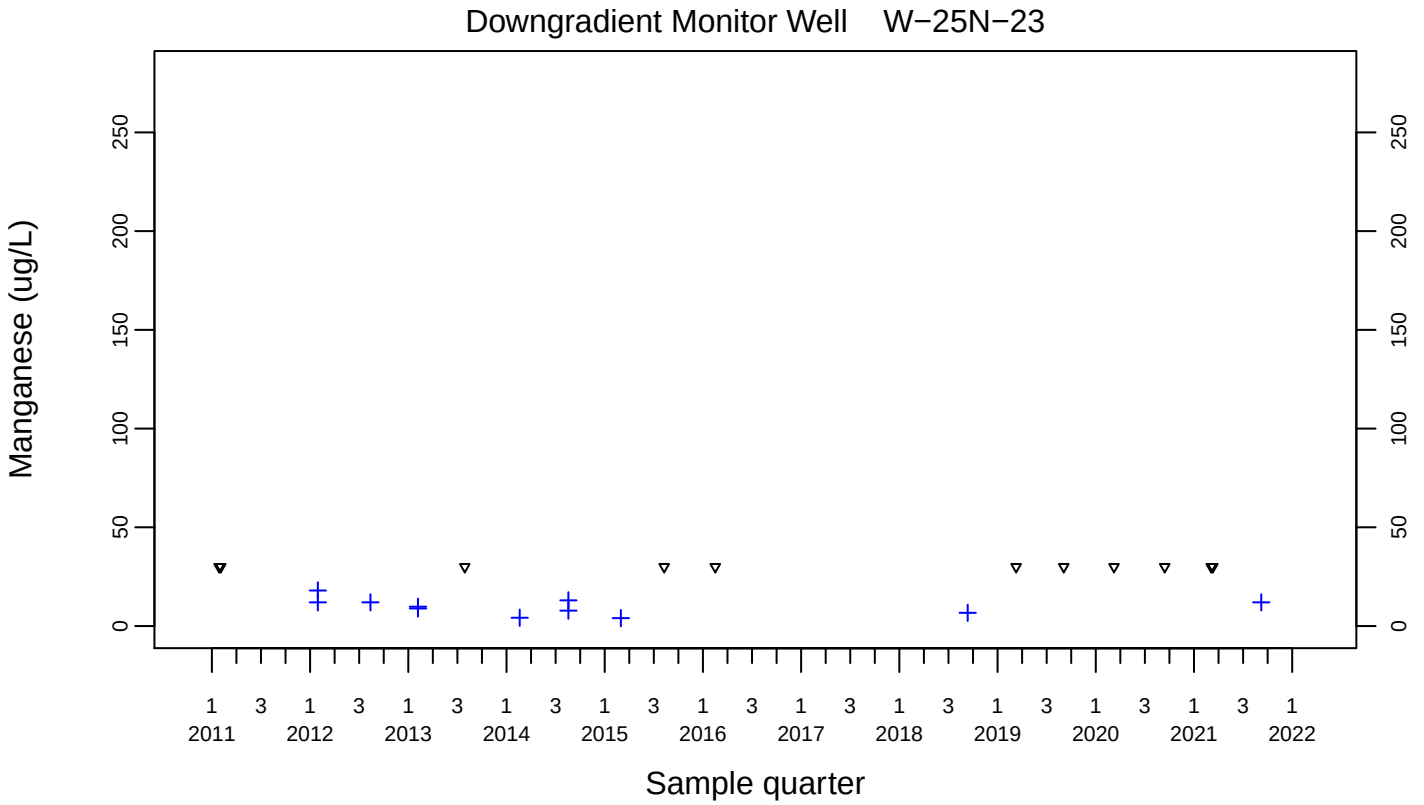
Sewage Ponds Ground Water
Manganese (ug/L)



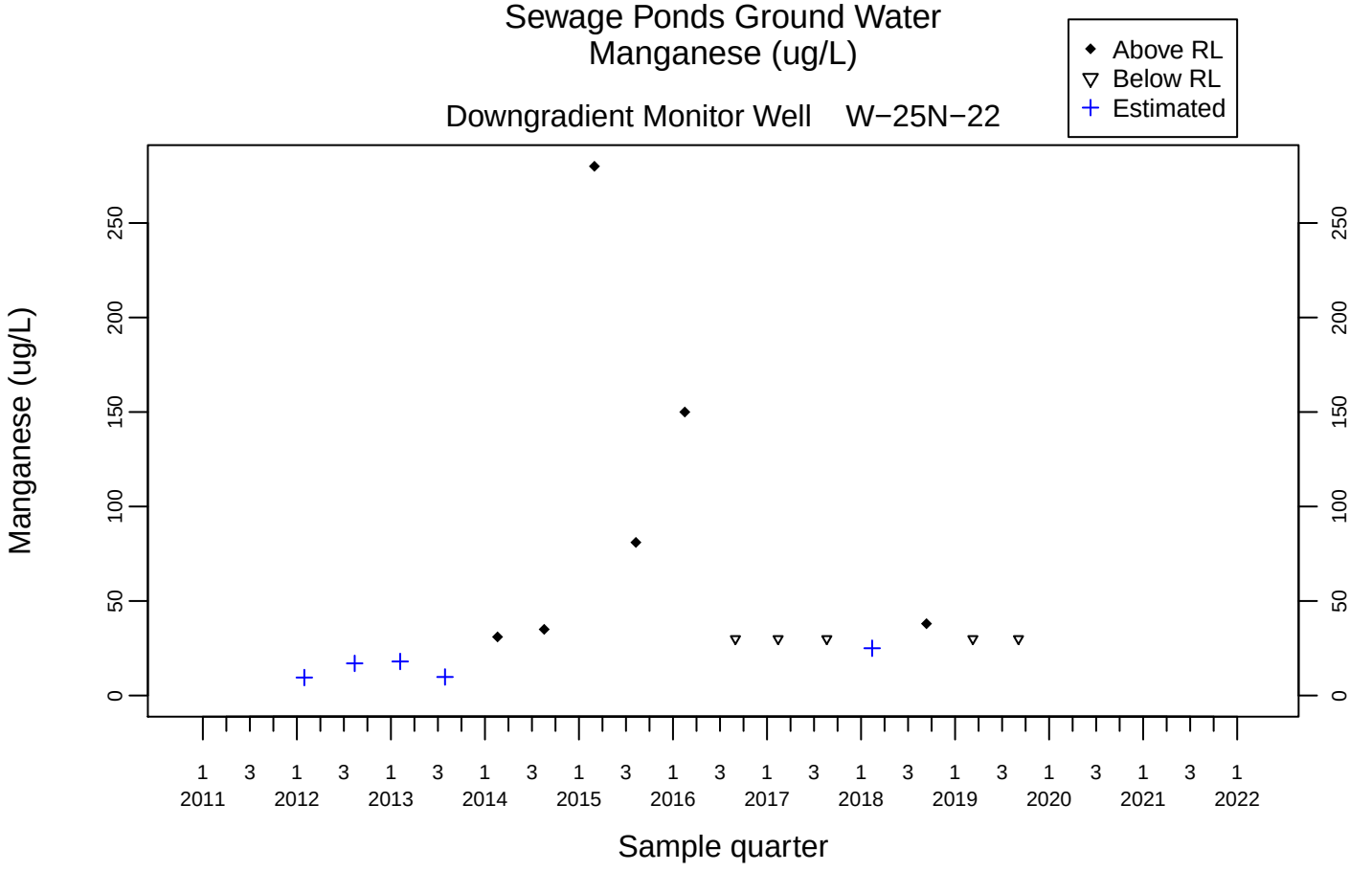


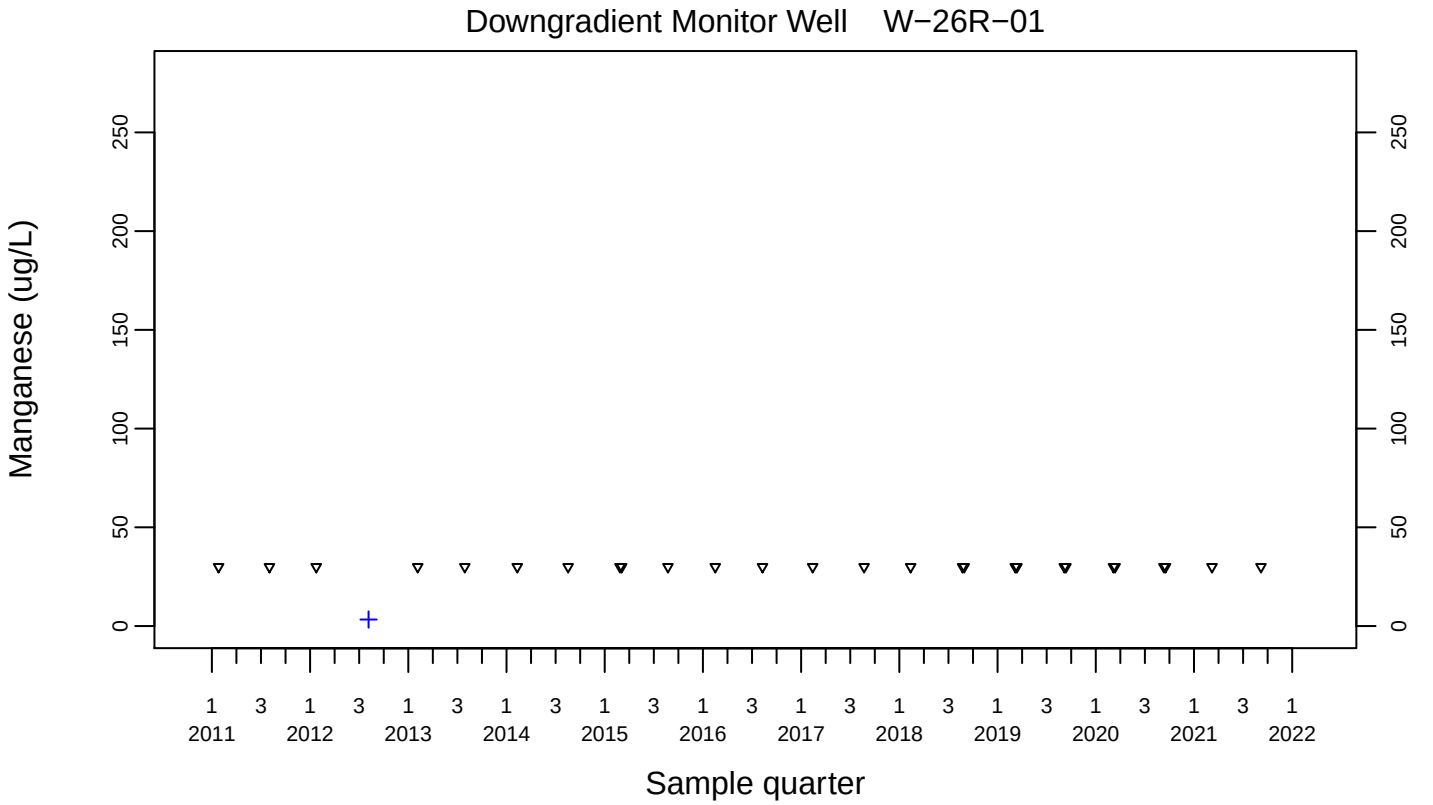
Sewage Ponds Ground Water
Manganese (ug/L)



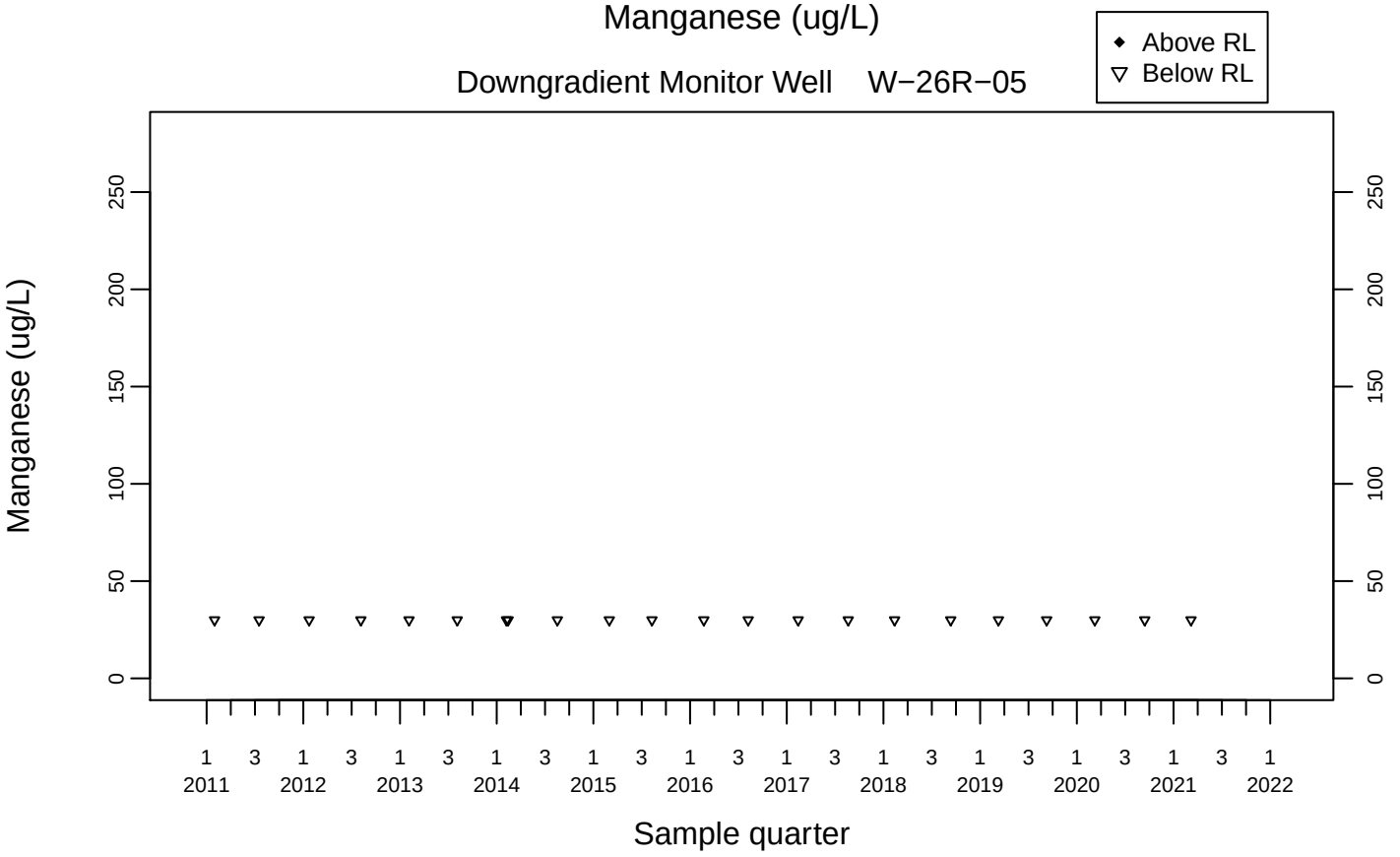


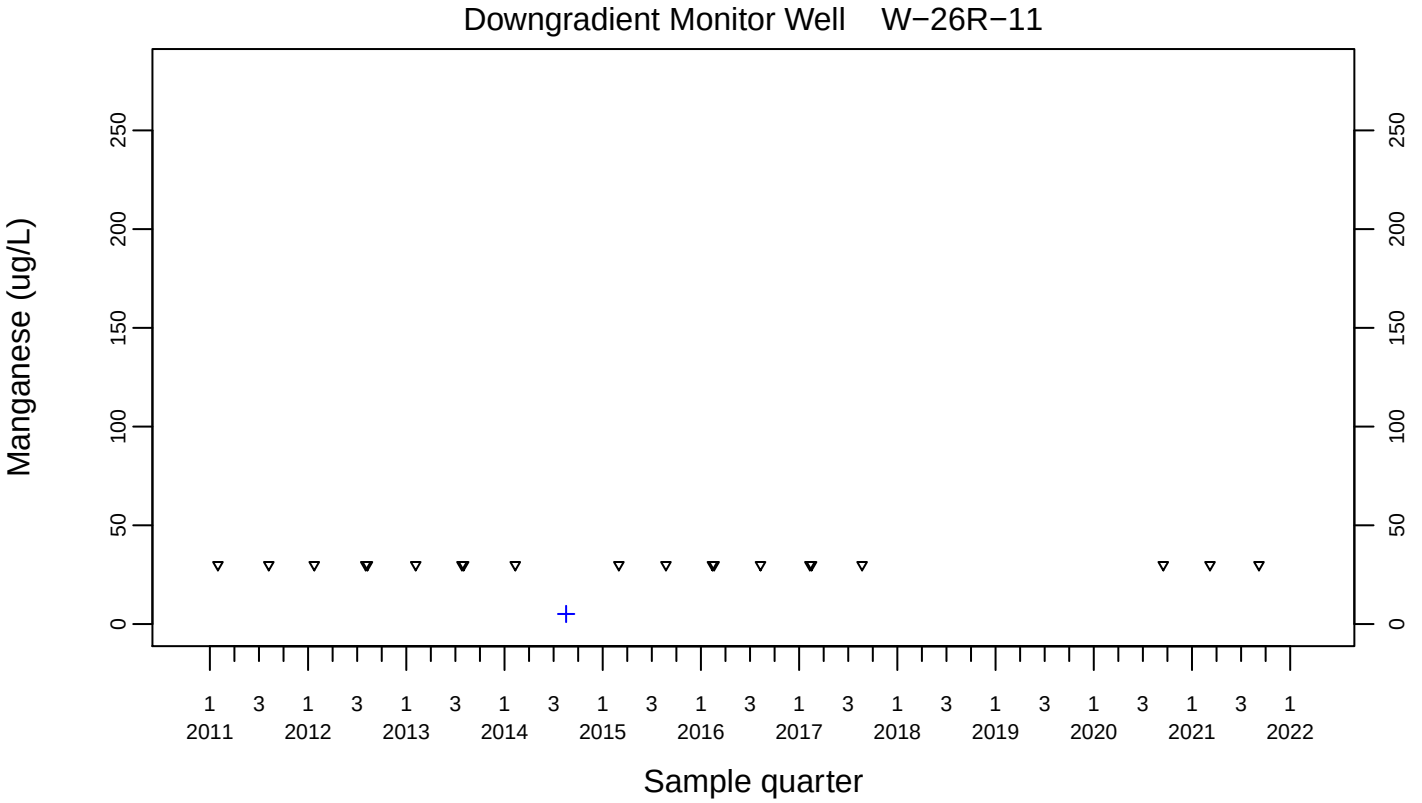
Sewage Ponds Ground Water
Manganese (ug/L)

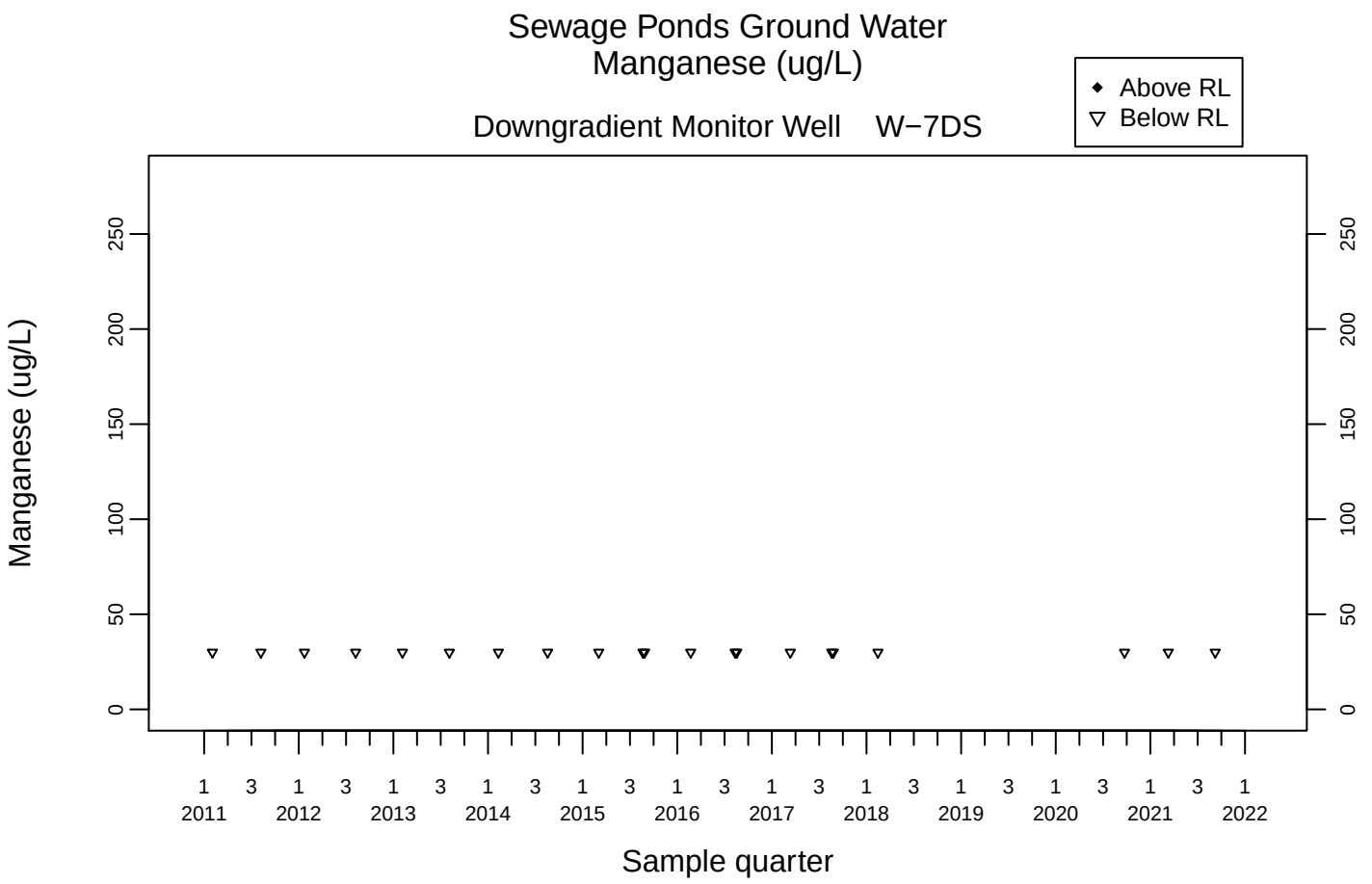


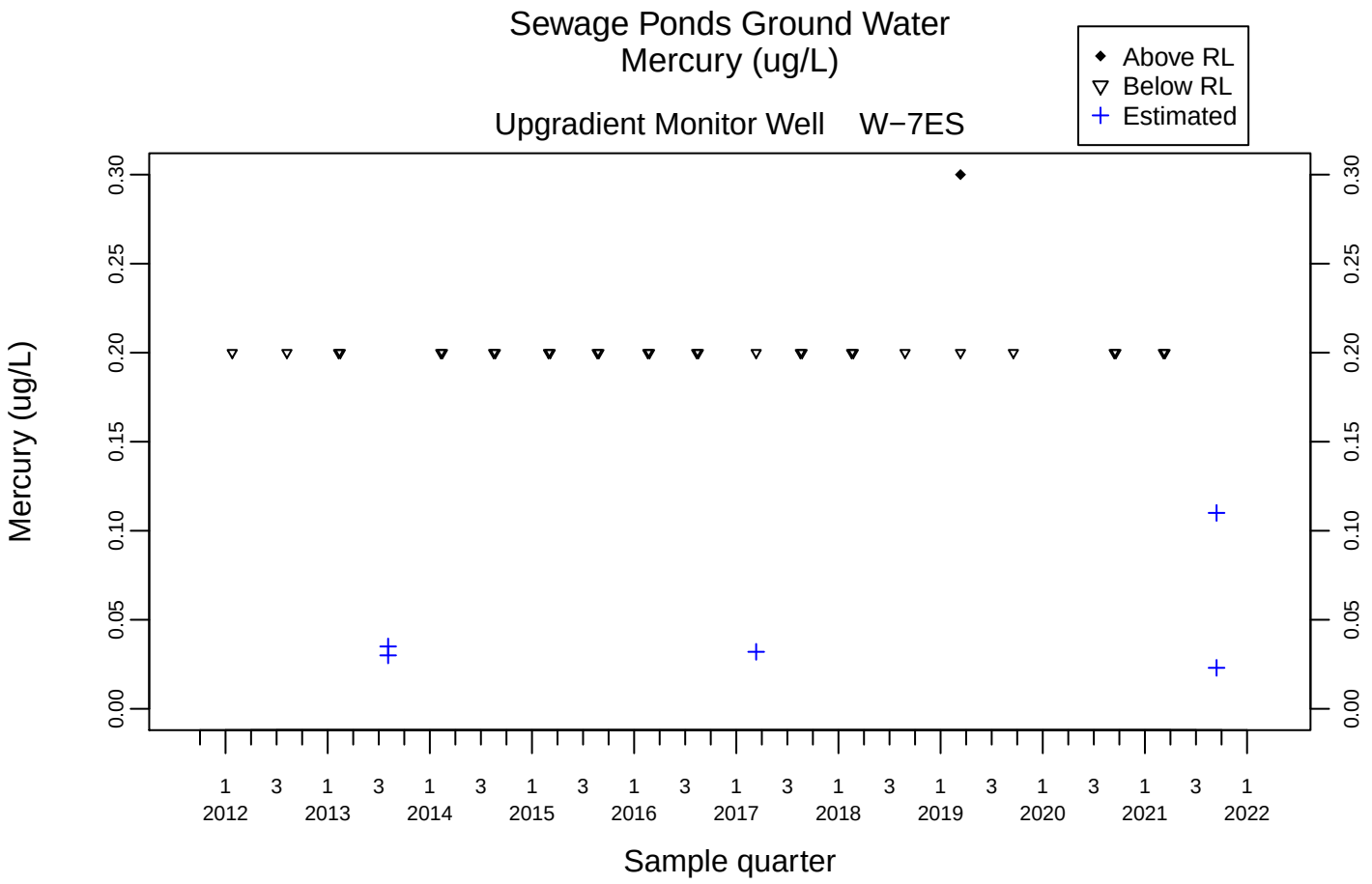


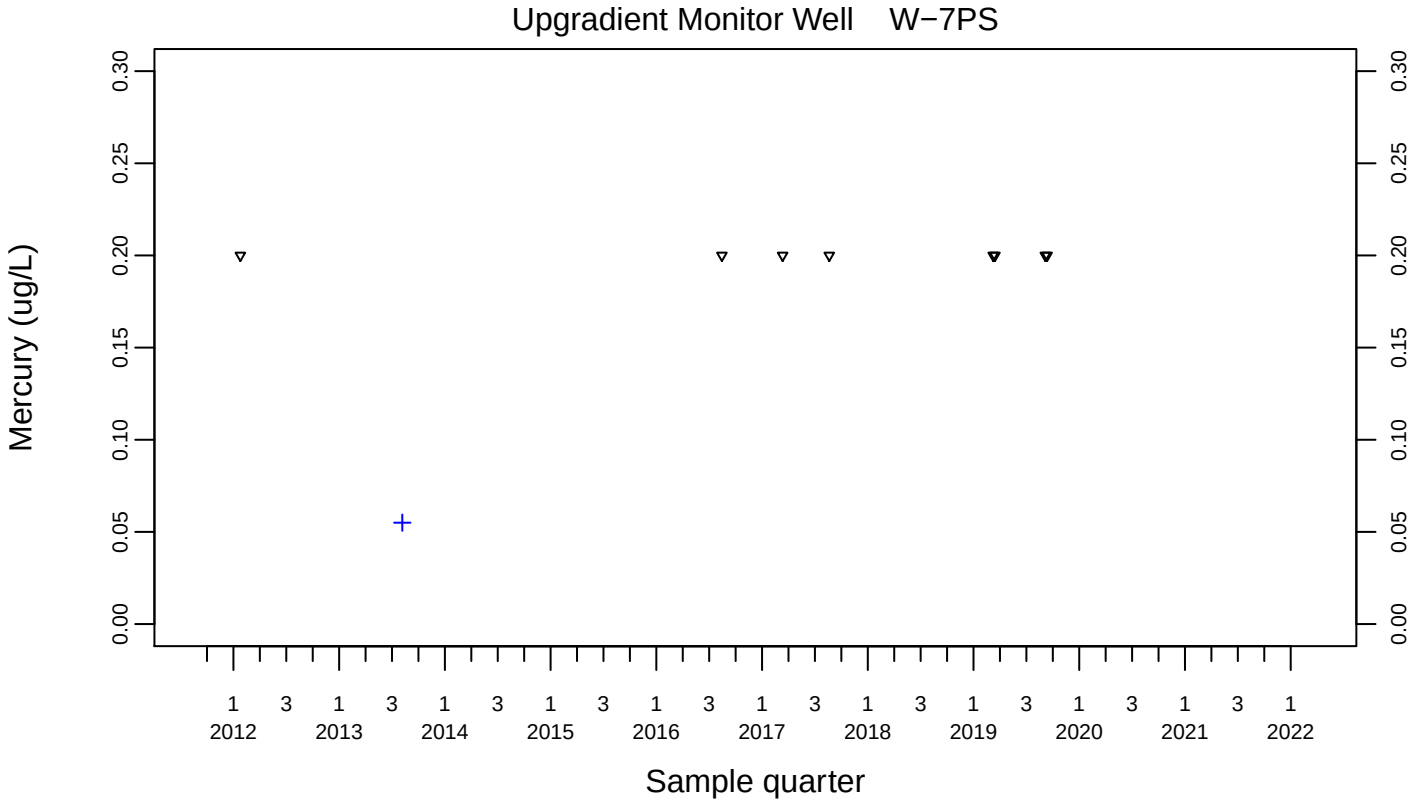
Sewage Ponds Ground Water
Manganese (ug/L)



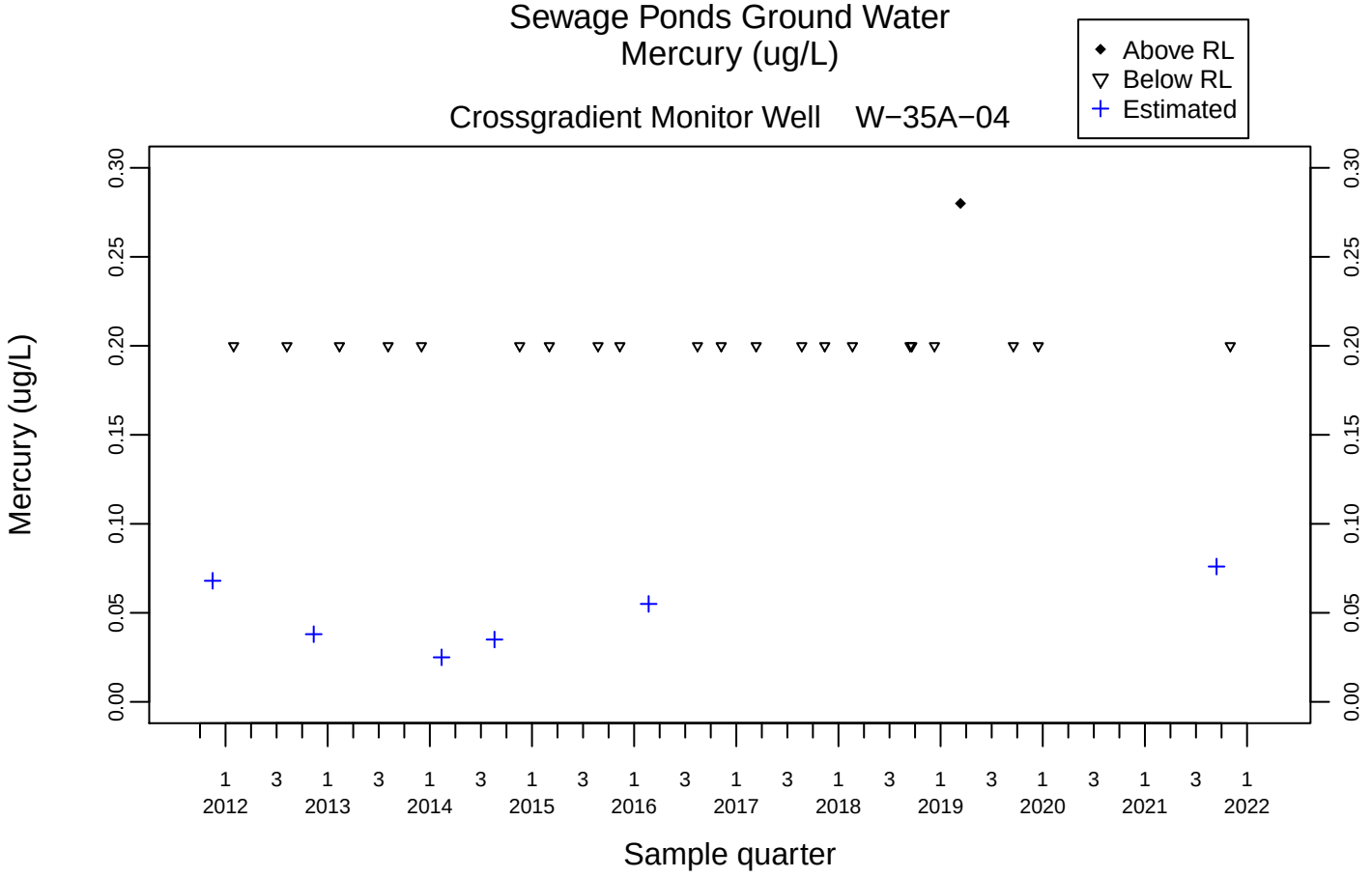


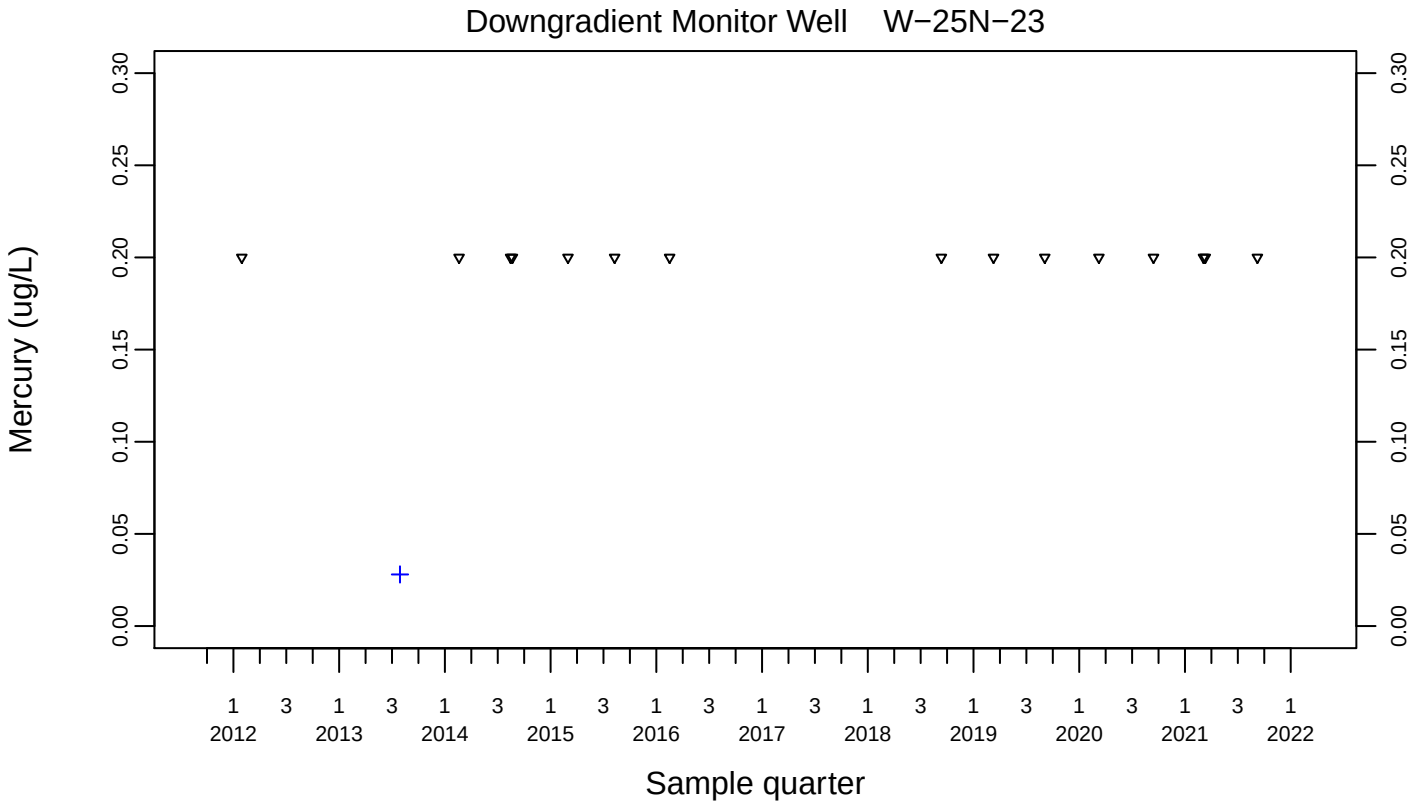

Sewage Ponds Ground Water
Manganese (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Manganese (ug/L)
0
50
100
150
200
250
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Mercury (ug/L)
Above RL
Below RL
Estimated
Upgradient Monitor Well W−7ES
Mercury (ug/L)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

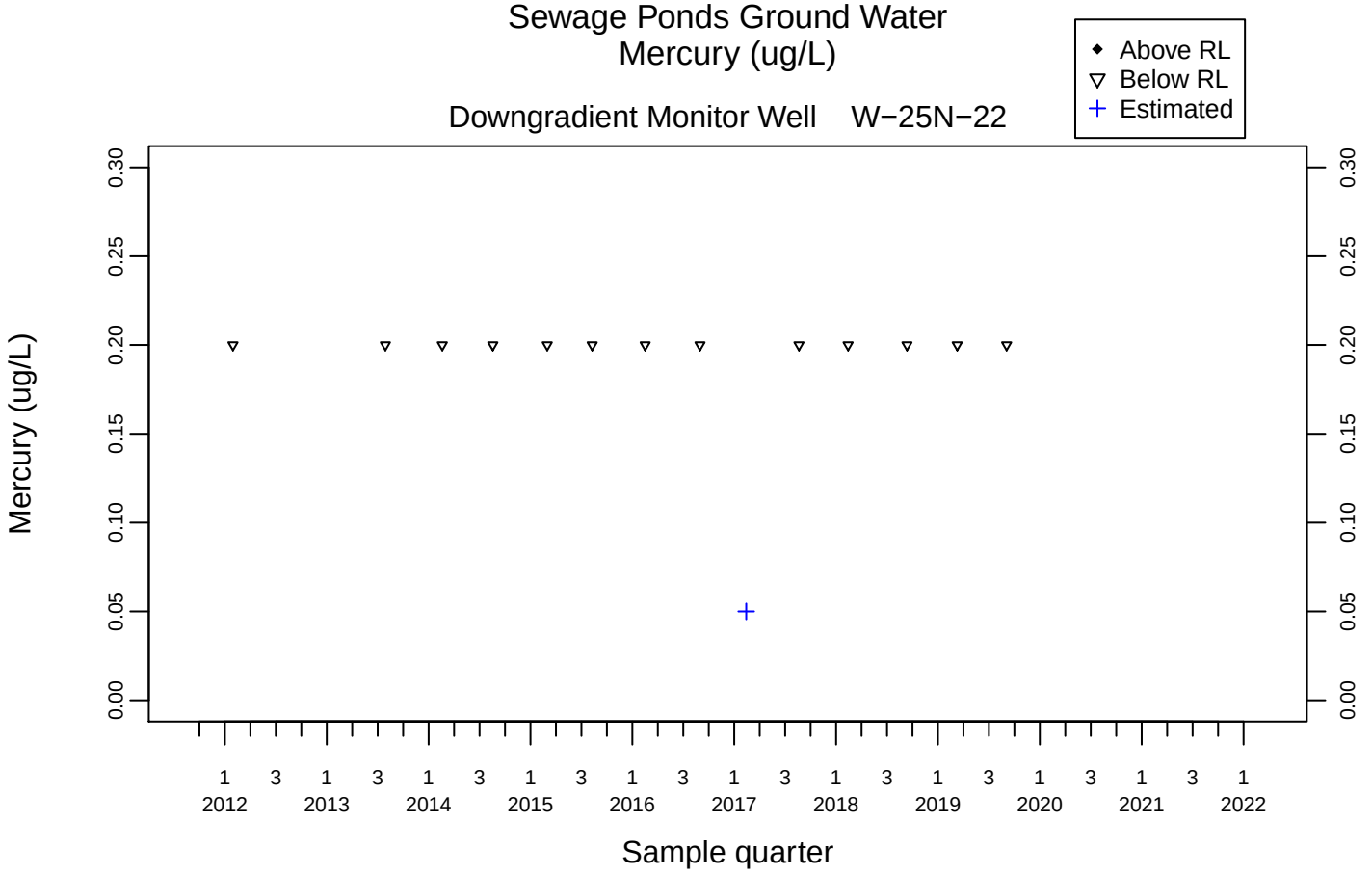

Upgradient Monitor Well W−7PS
Mercury (ug/L)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

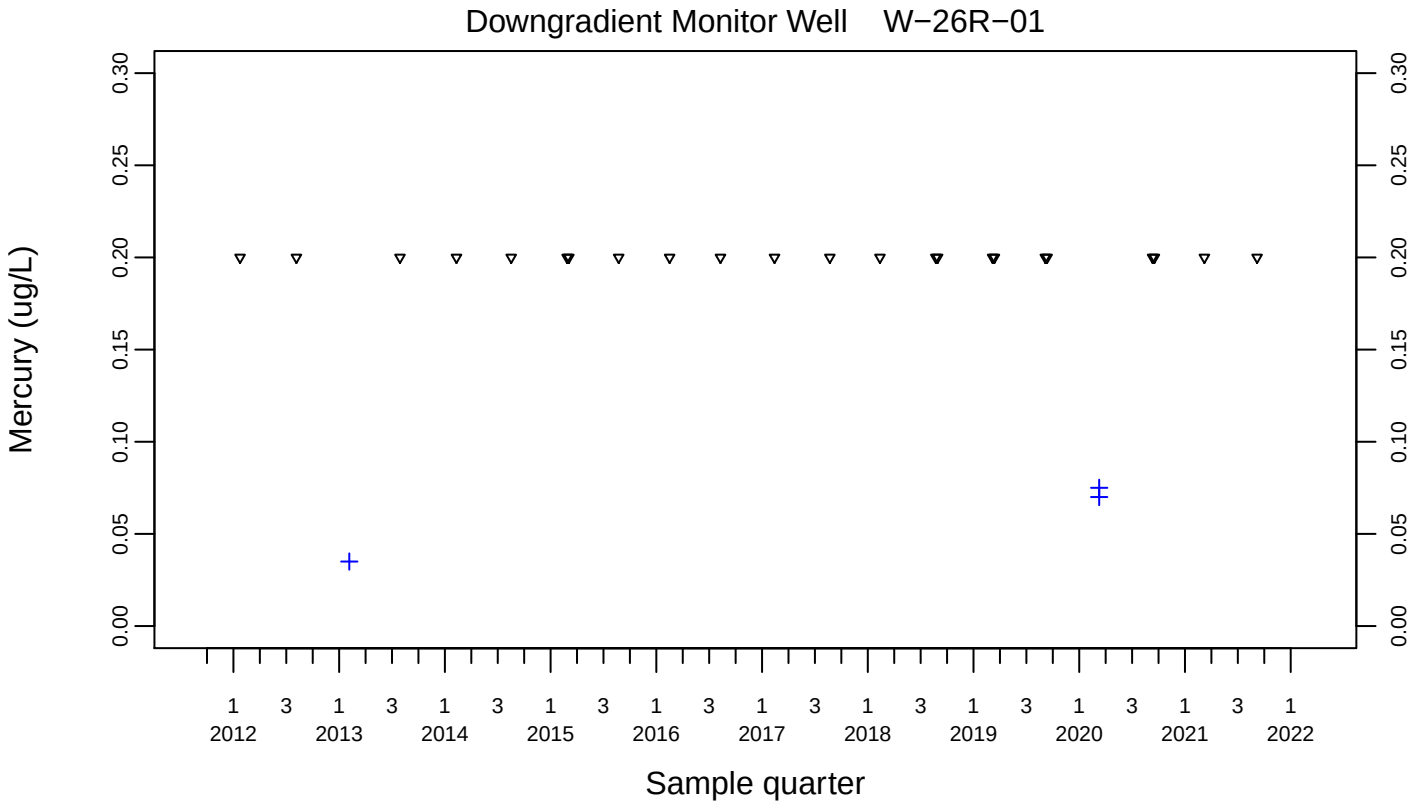
Sewage Ponds Ground Water Mercury (ug/L)



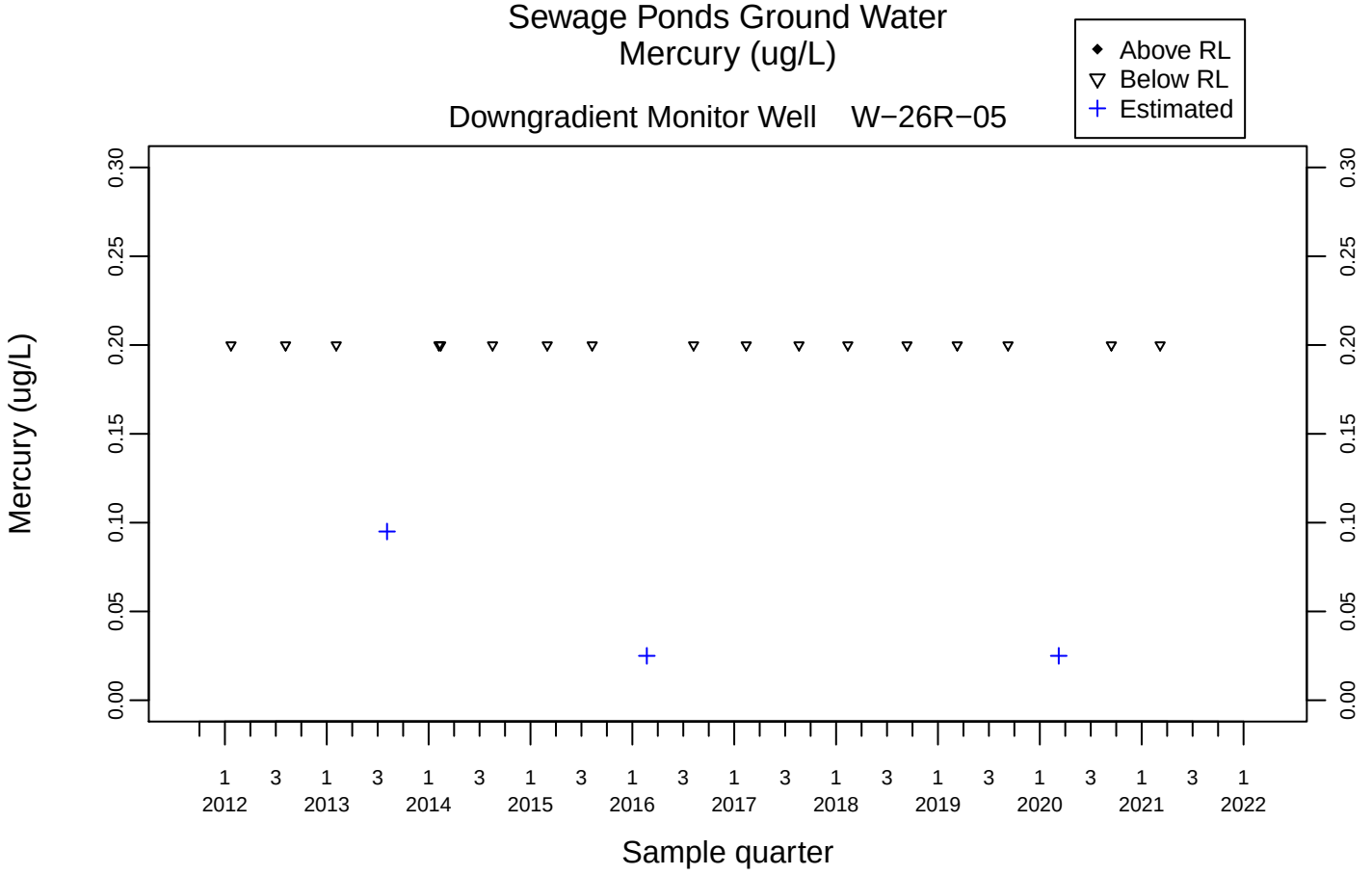


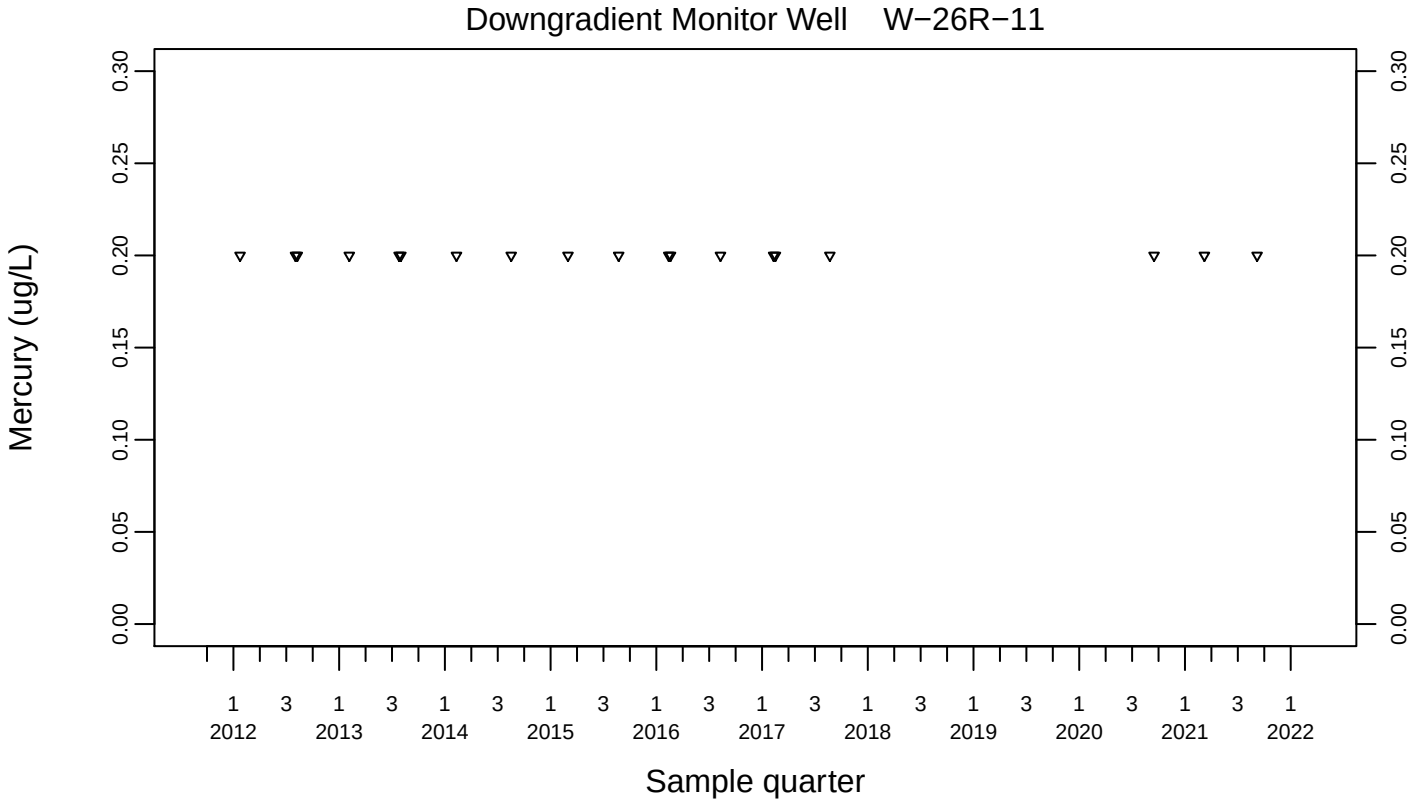
Sewage Ponds Ground Water
Mercury (ug/L)

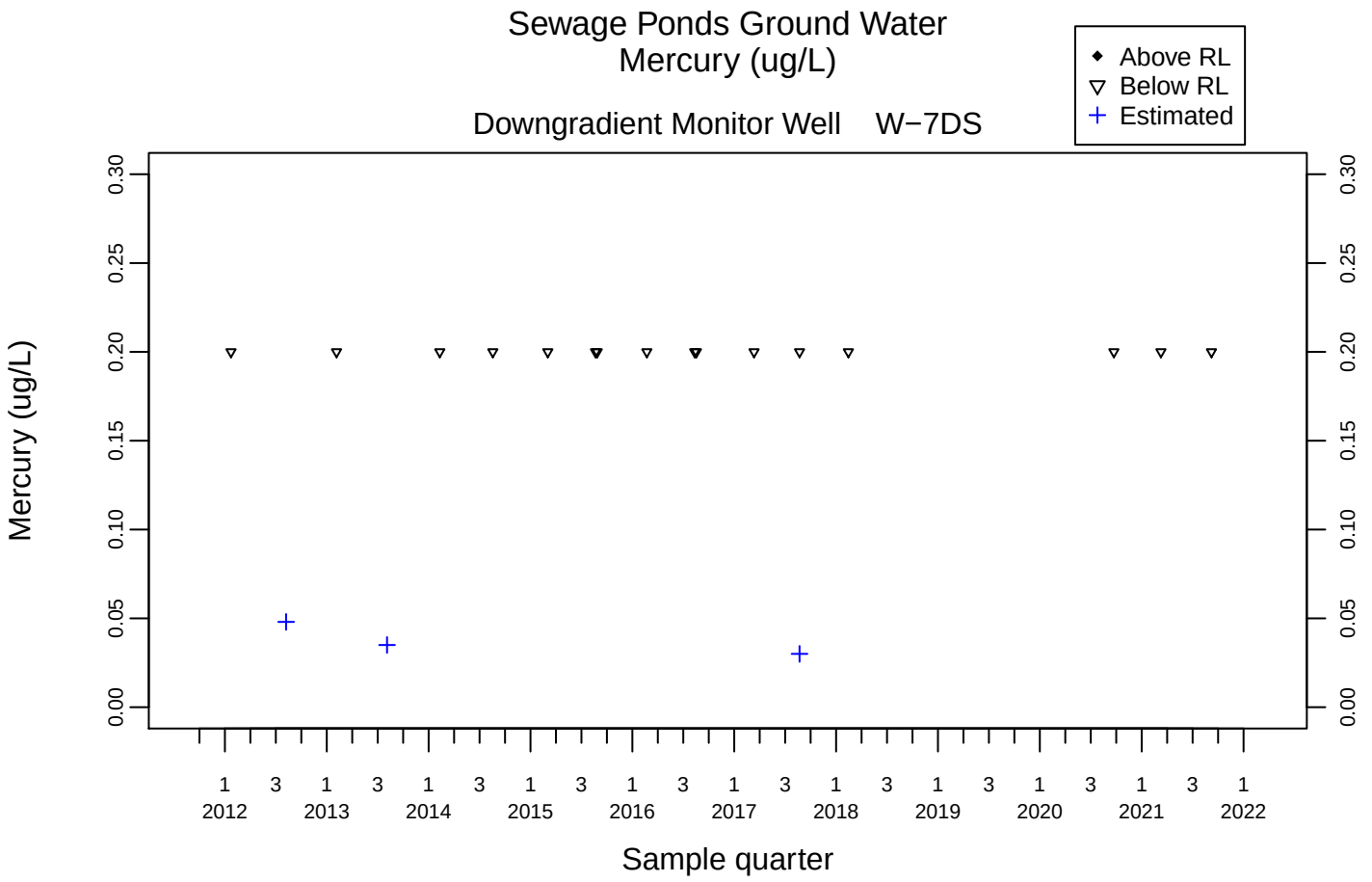




Sewage Ponds Ground Water
Mercury (ug/L)

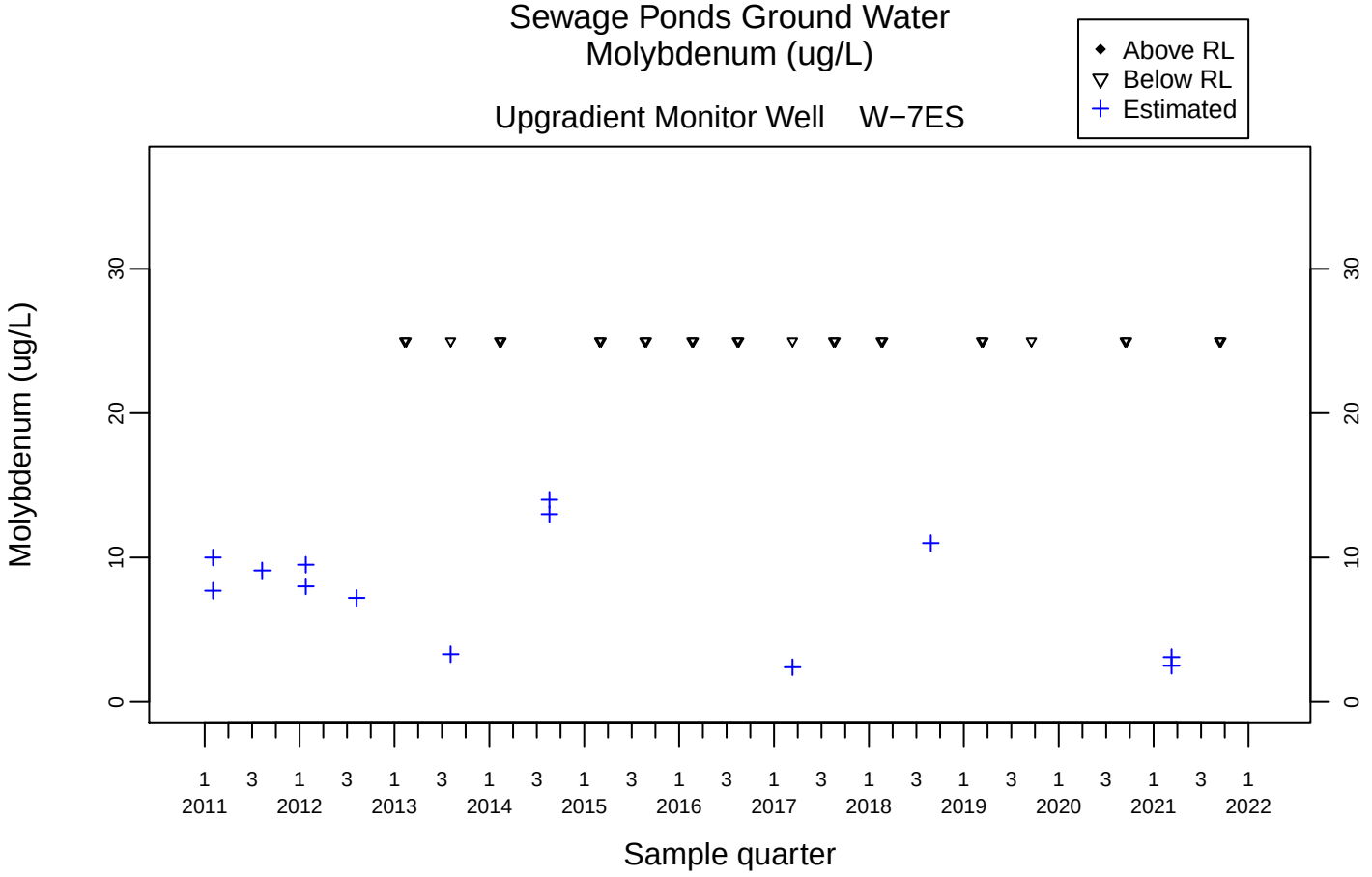




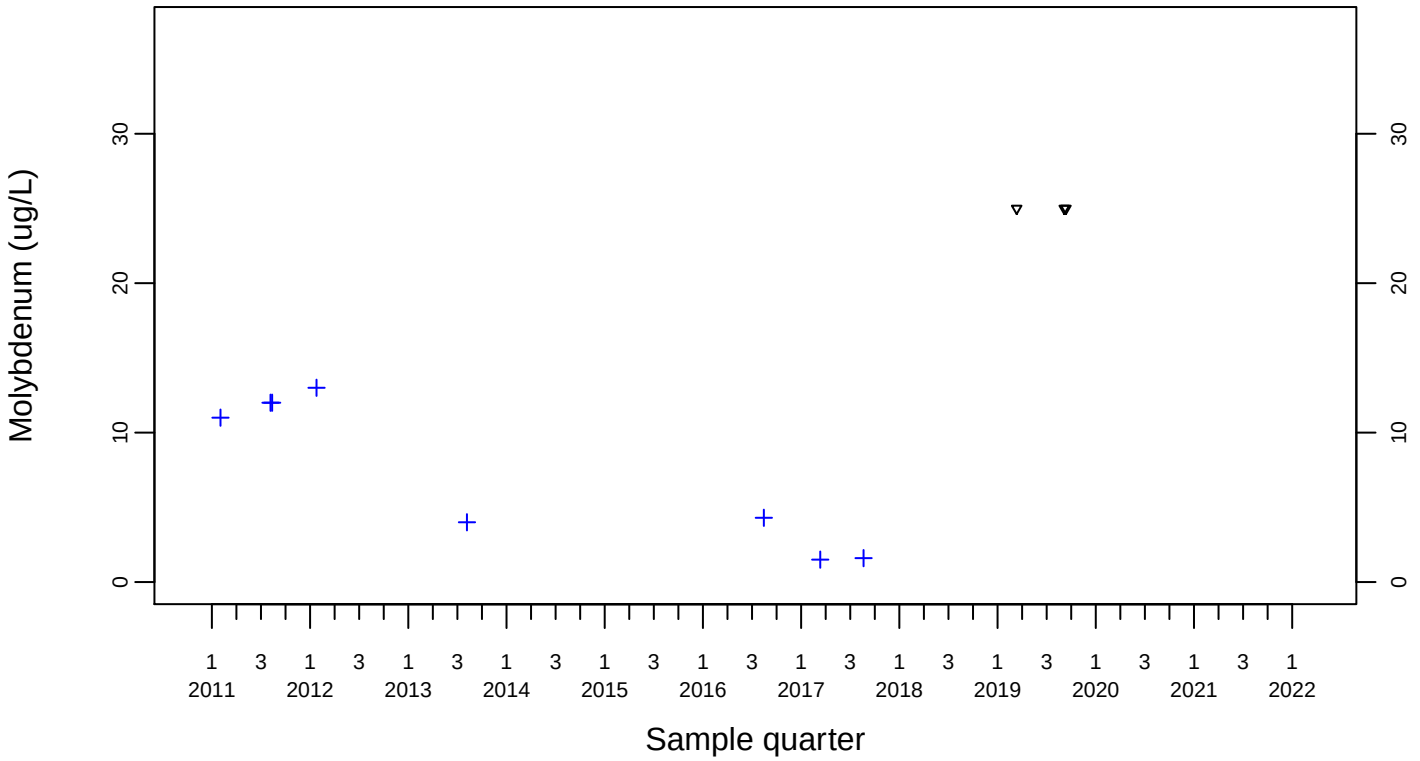

Sewage Ponds Ground Water
Mercury (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Mercury (ug/L)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
Molybdenum (ug/L)

Upgradient Monitor Well W−7ES

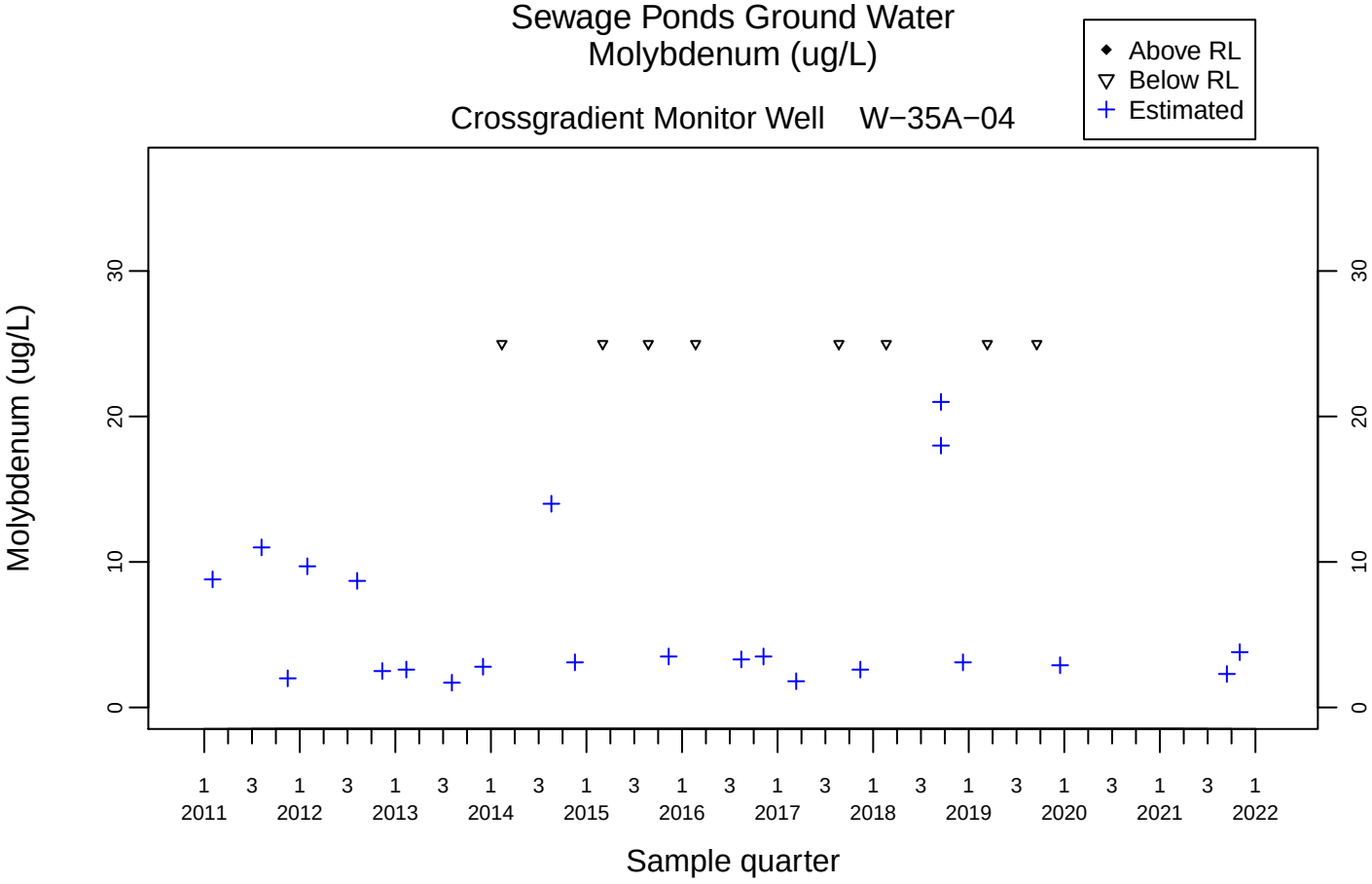


Upgradient Monitor Well W−7PS

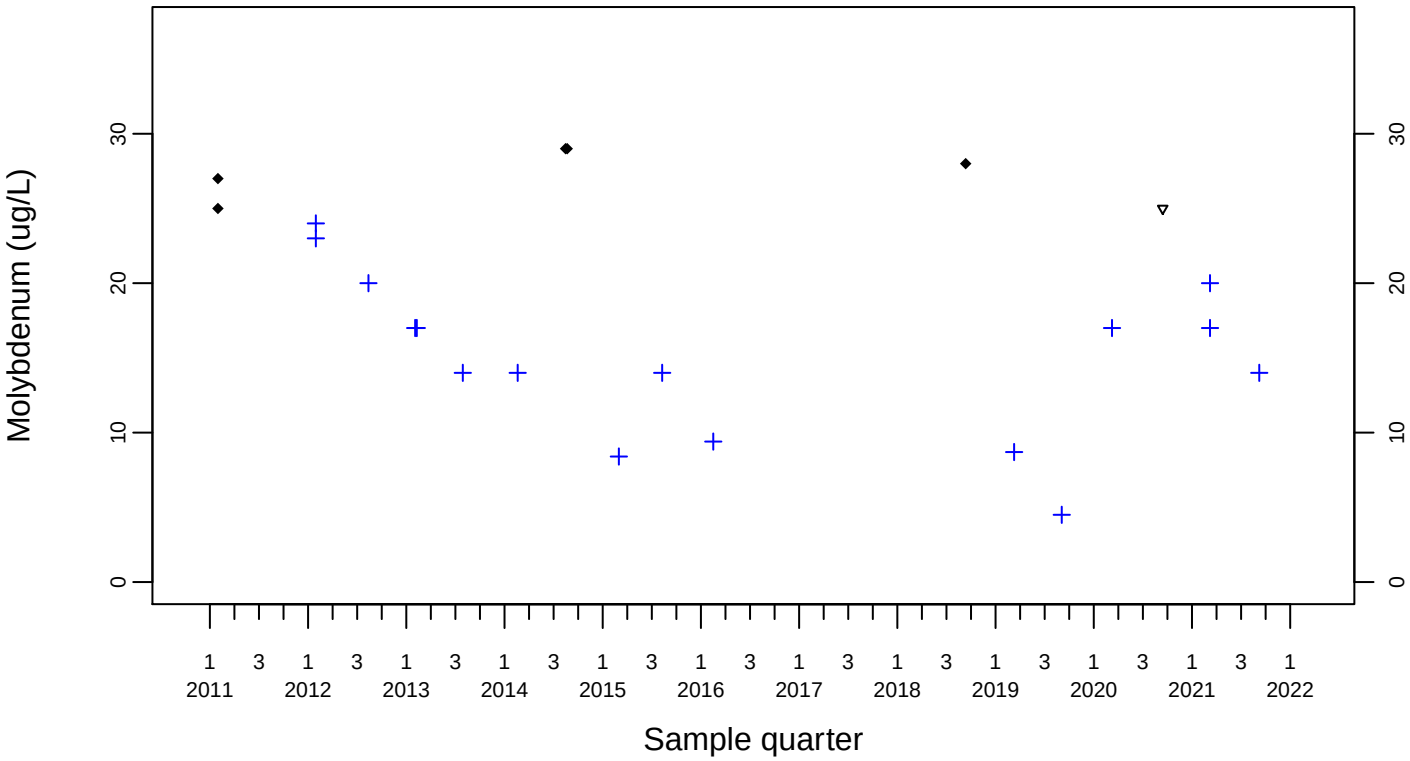


Sewage Ponds Ground Water
Molybdenum (ug/L)

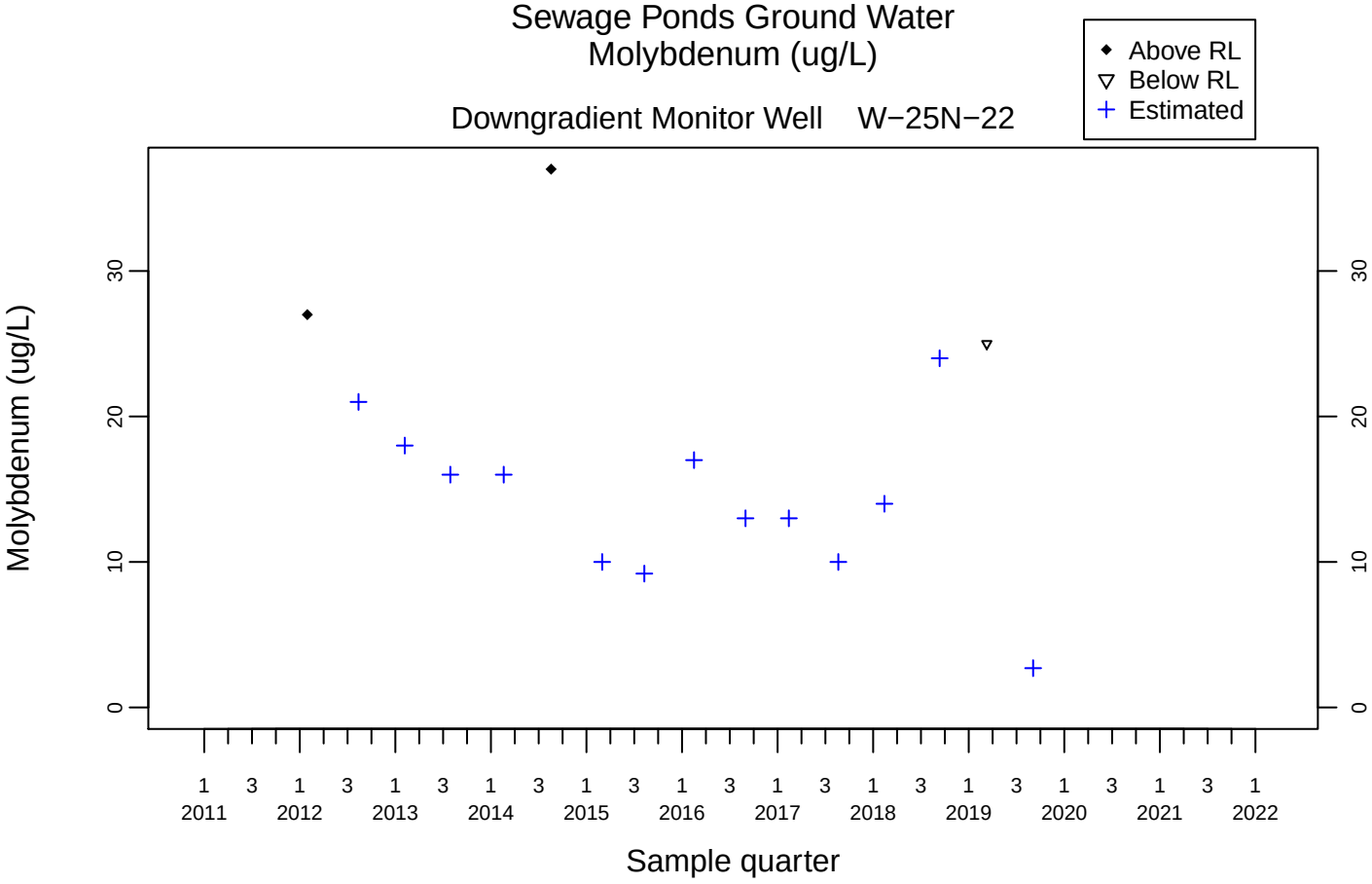
Crossgradient Monitor Well W−35A−04

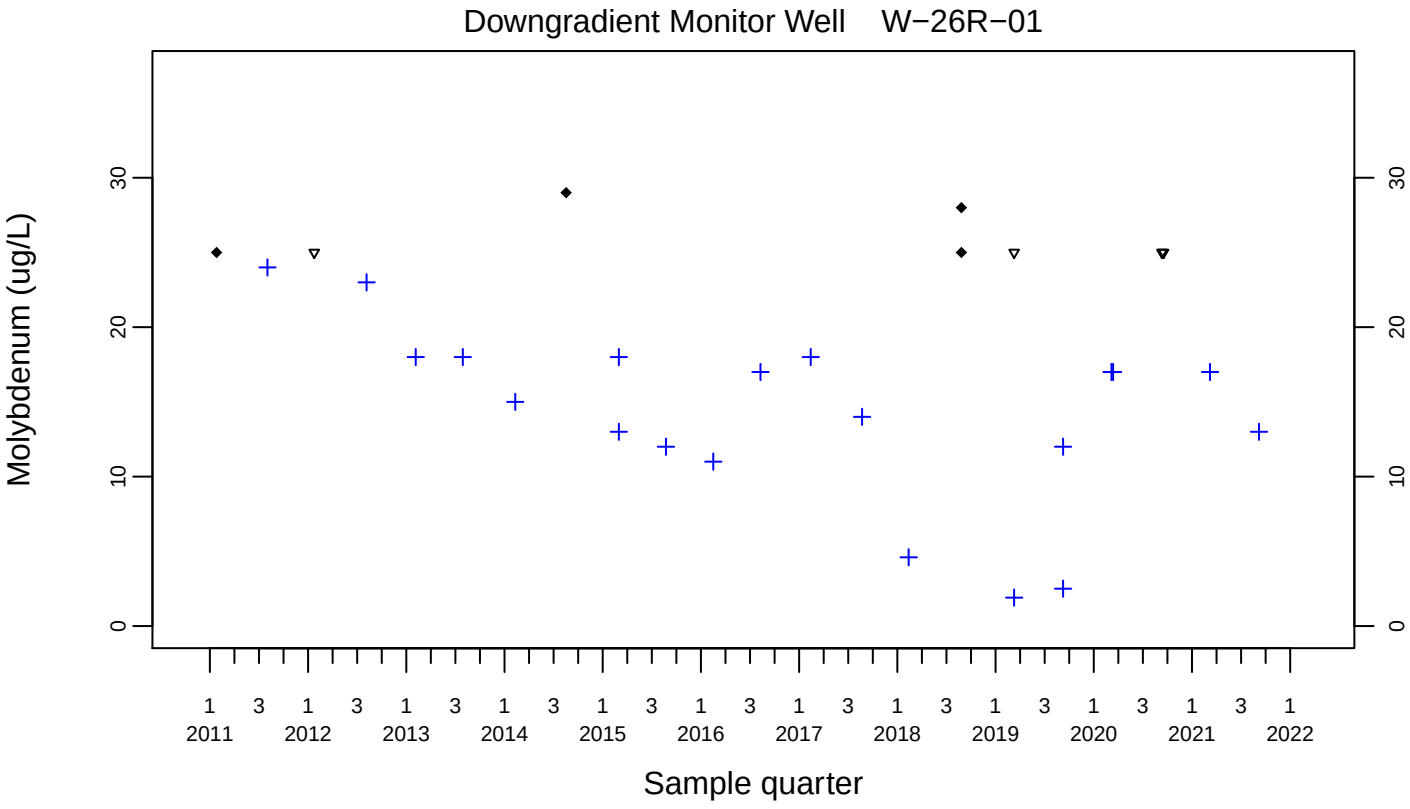


Downgradient Monitor Well W−25N−23

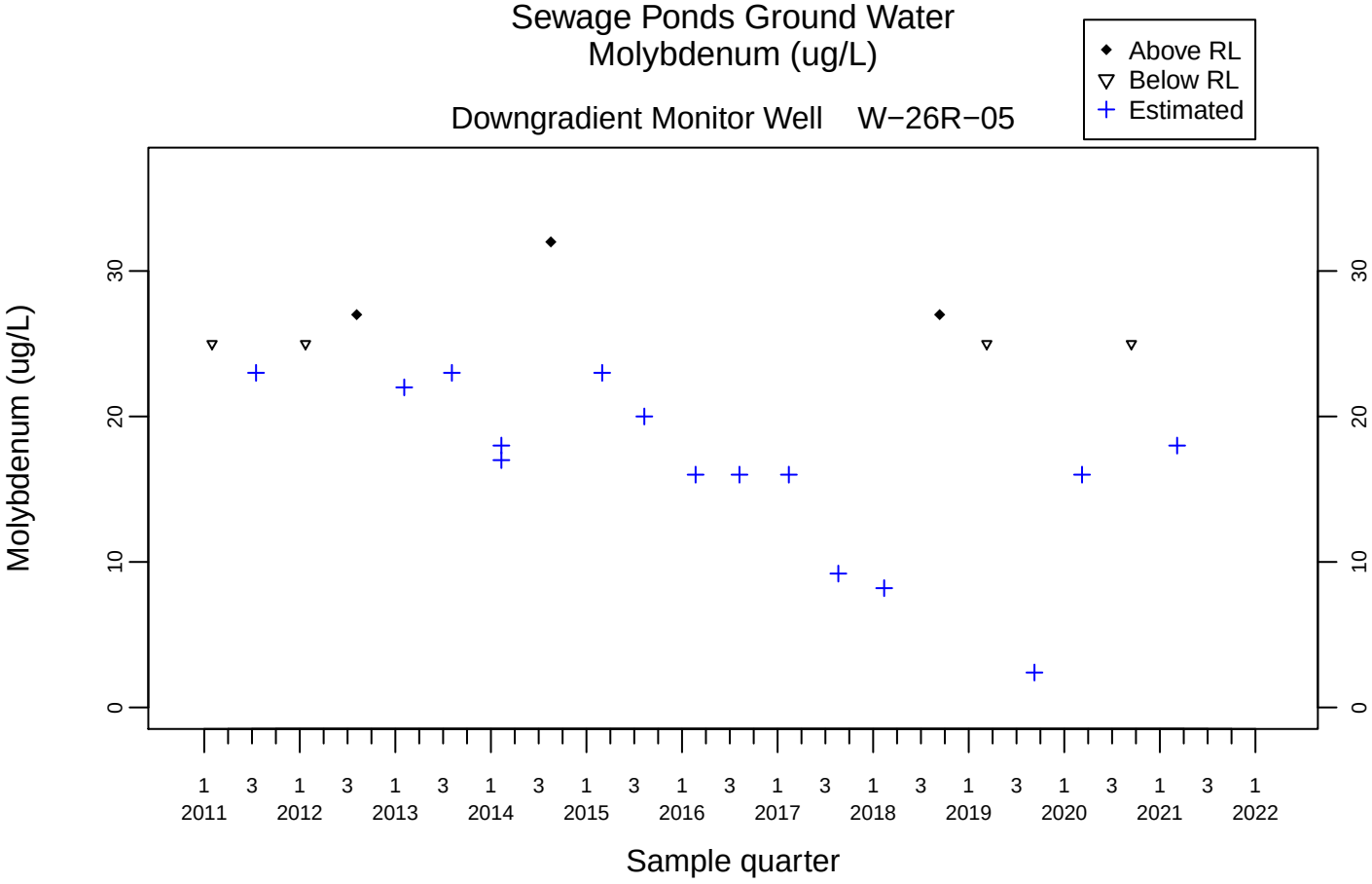


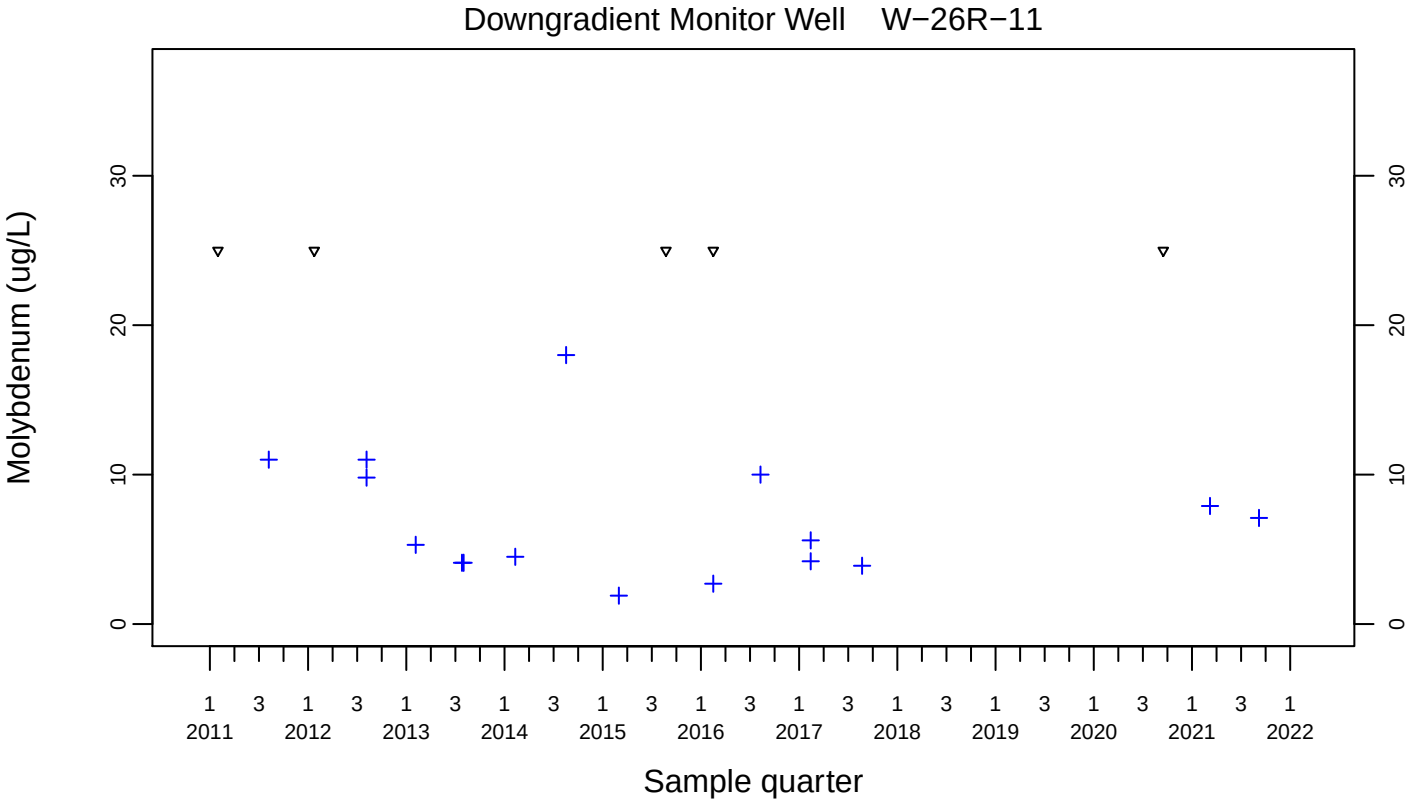
Sewage Ponds Ground Water
Molybdenum (ug/L)

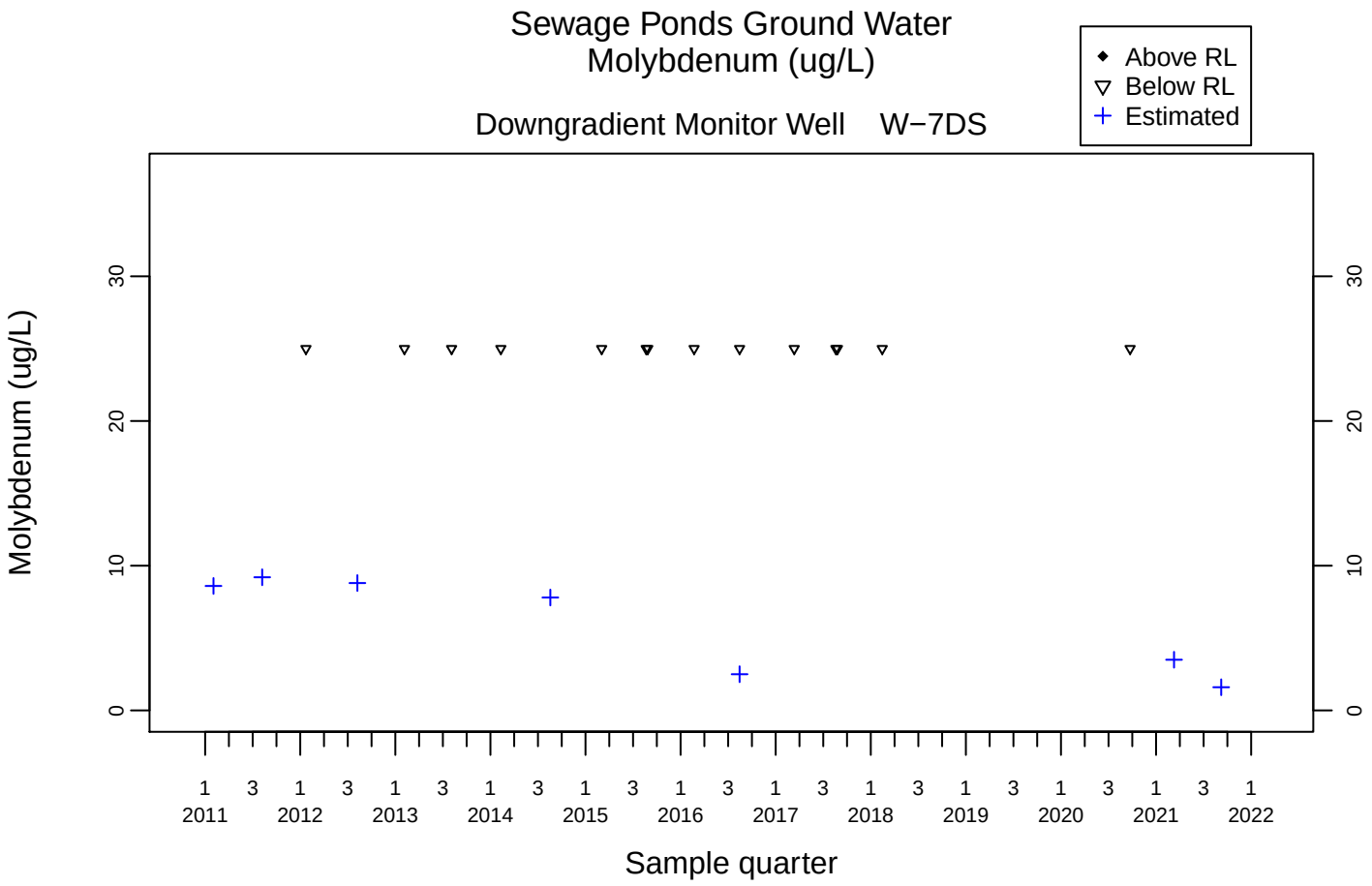




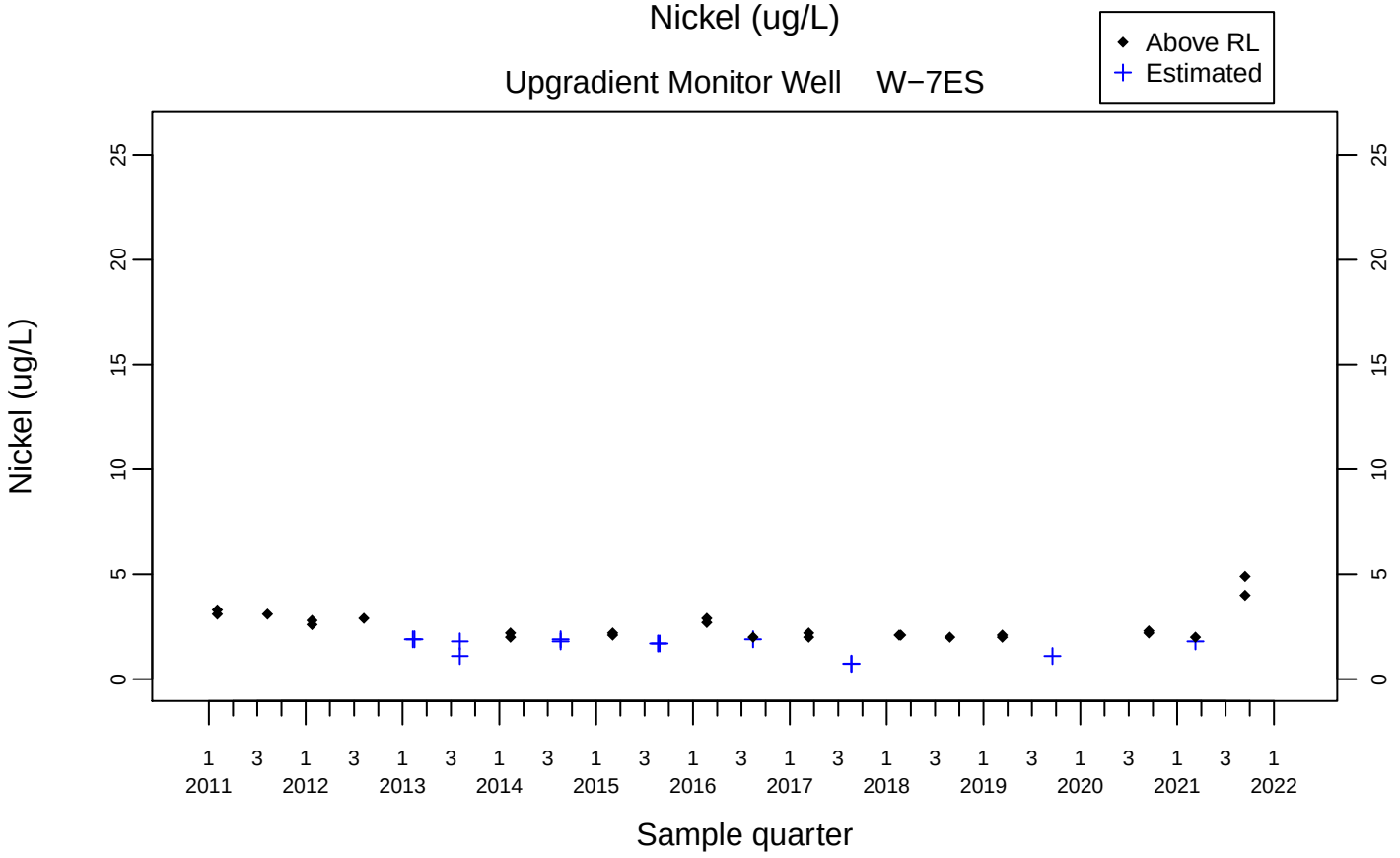
Sewage Ponds Ground Water
Molybdenum (ug/L)

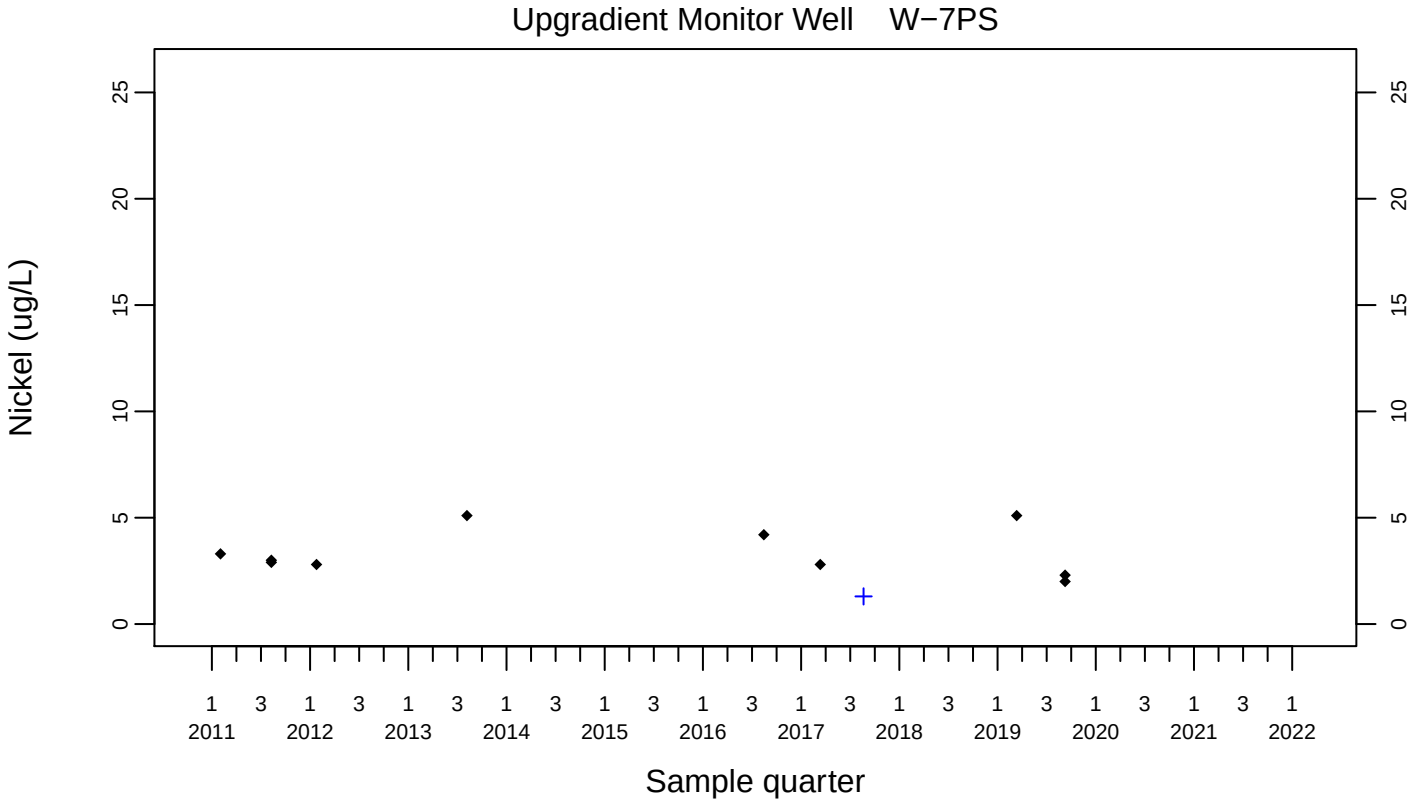




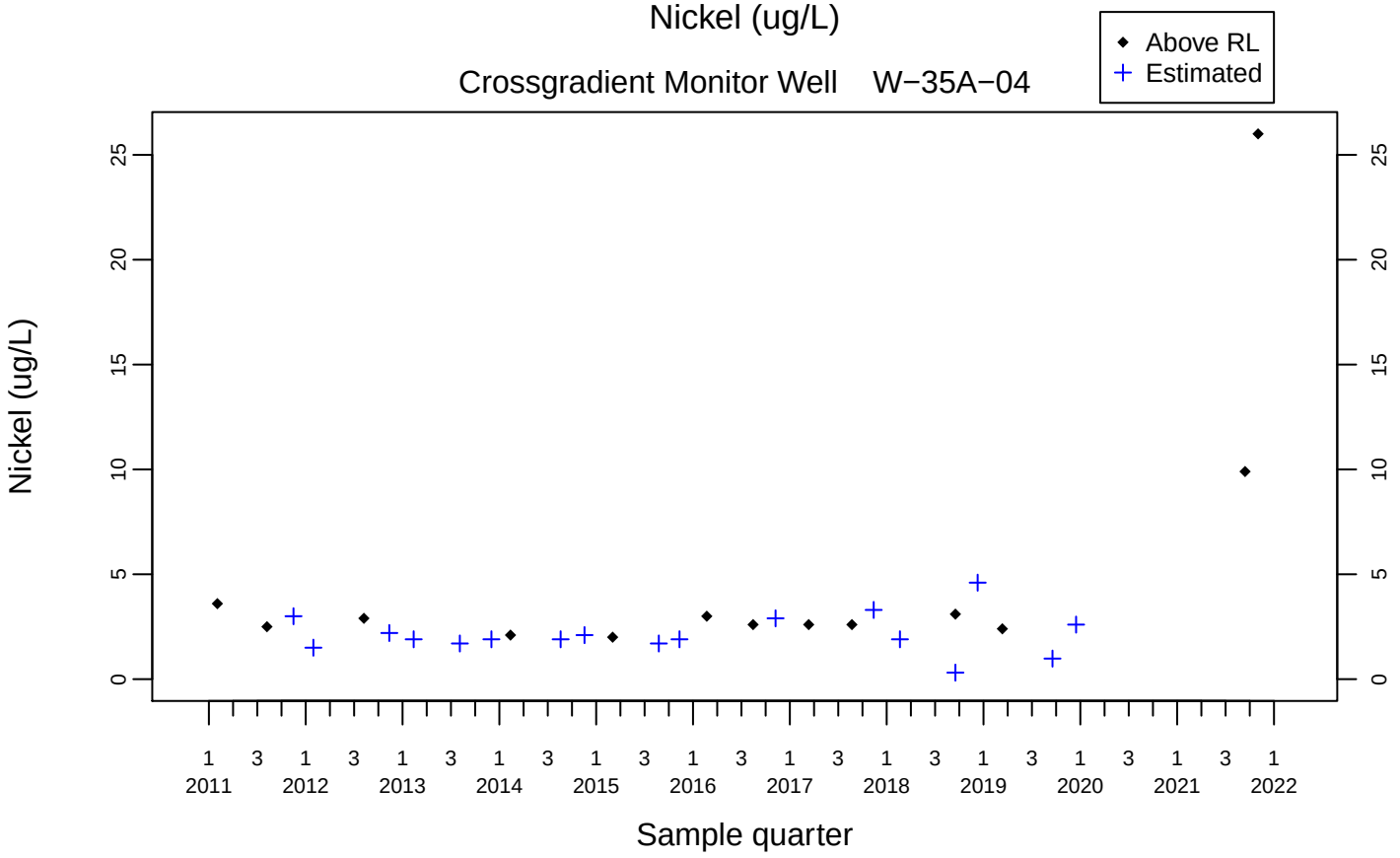

Sewage Ponds Ground Water
Molybdenum (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Molybdenum (ug/L)
0
10
20
30
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

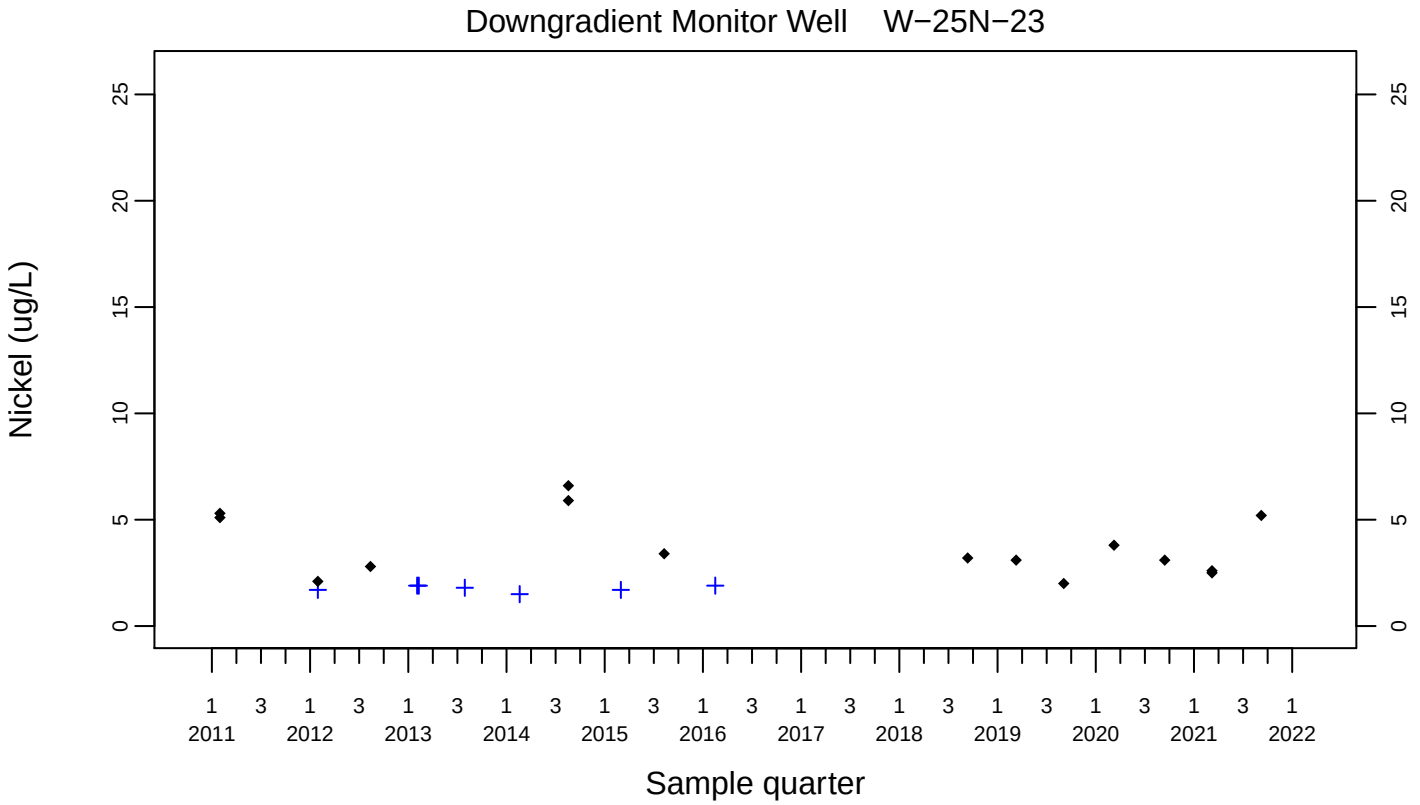
Sewage Ponds Ground Water
Nickel (ug/L)



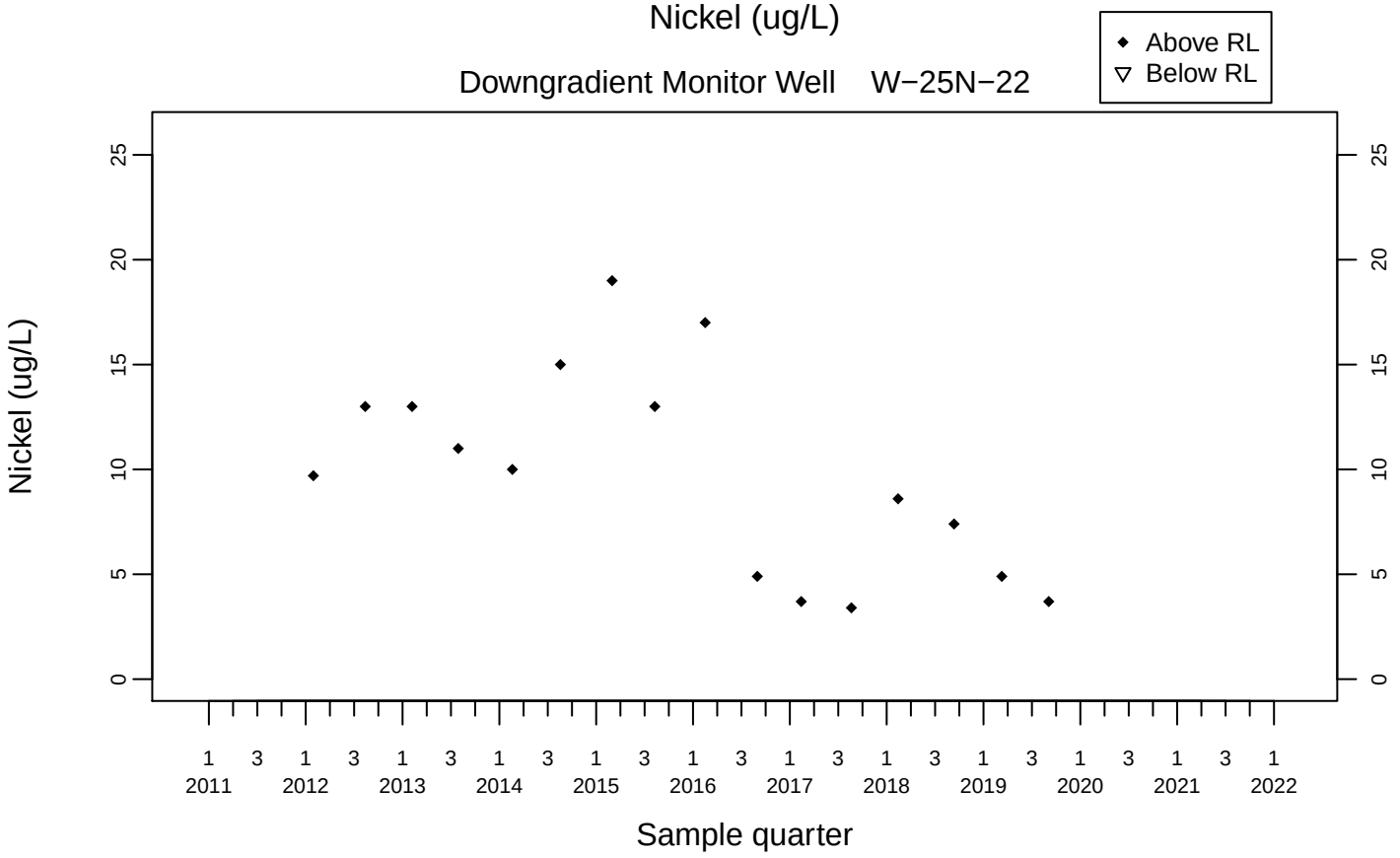


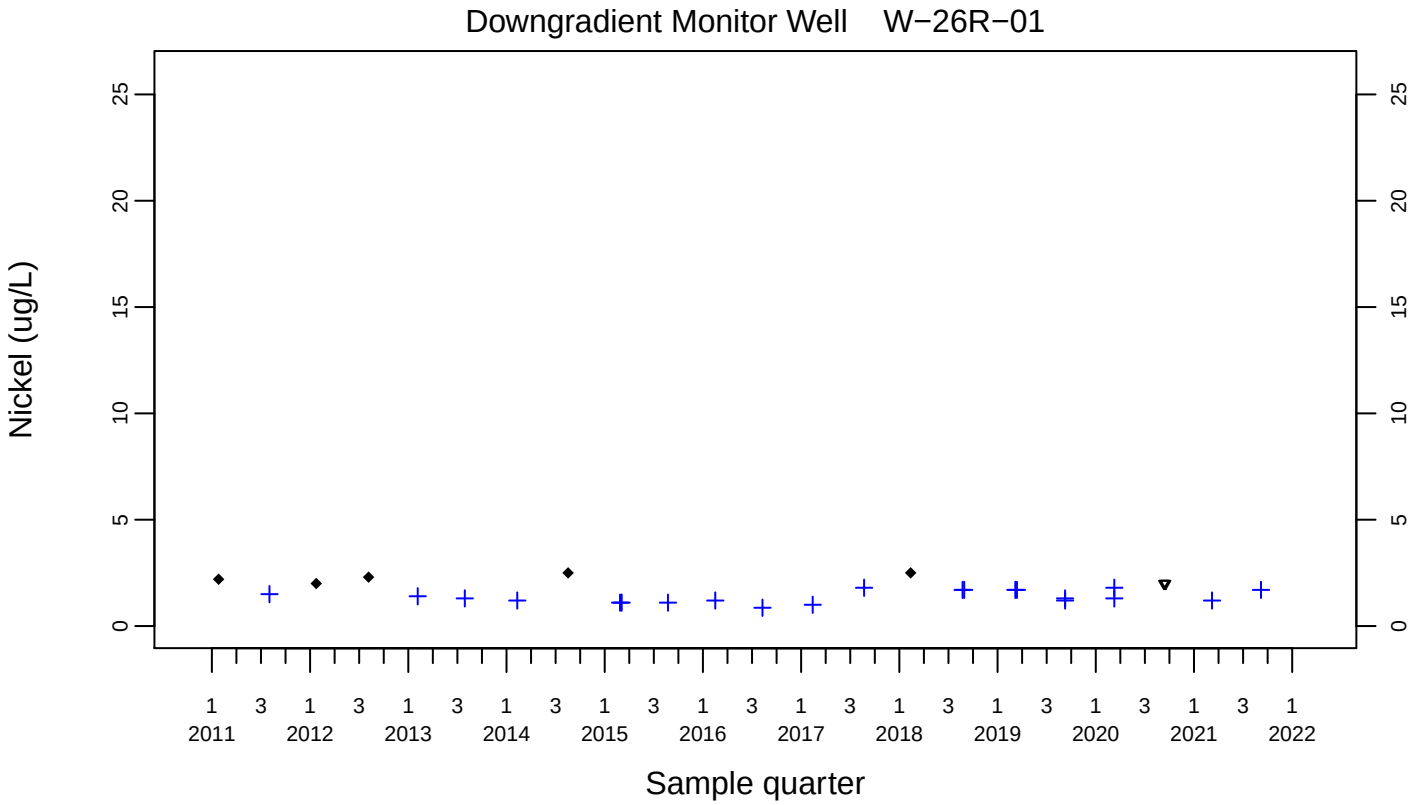
Sewage Ponds Ground Water
Nickel (ug/L)



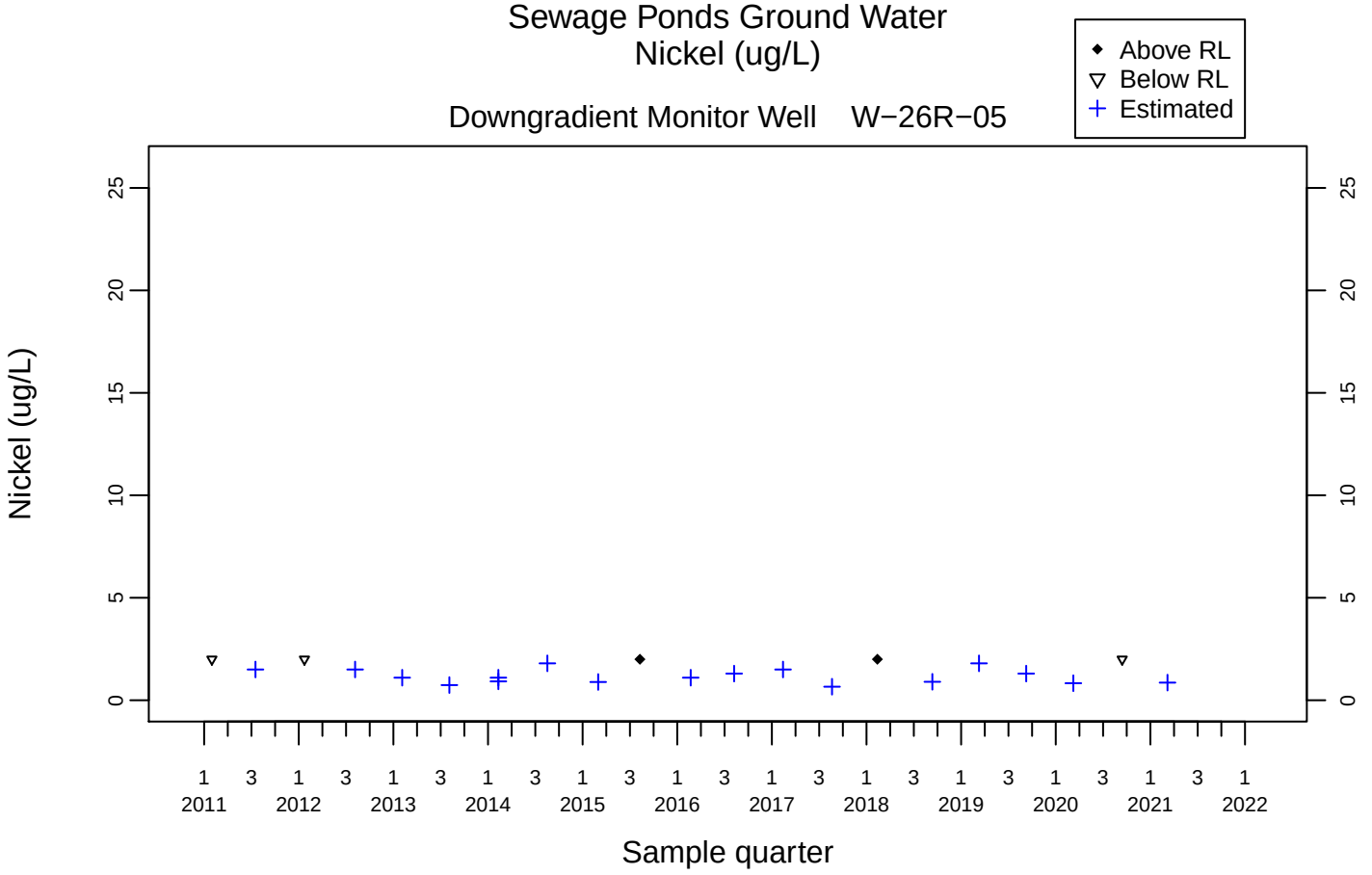


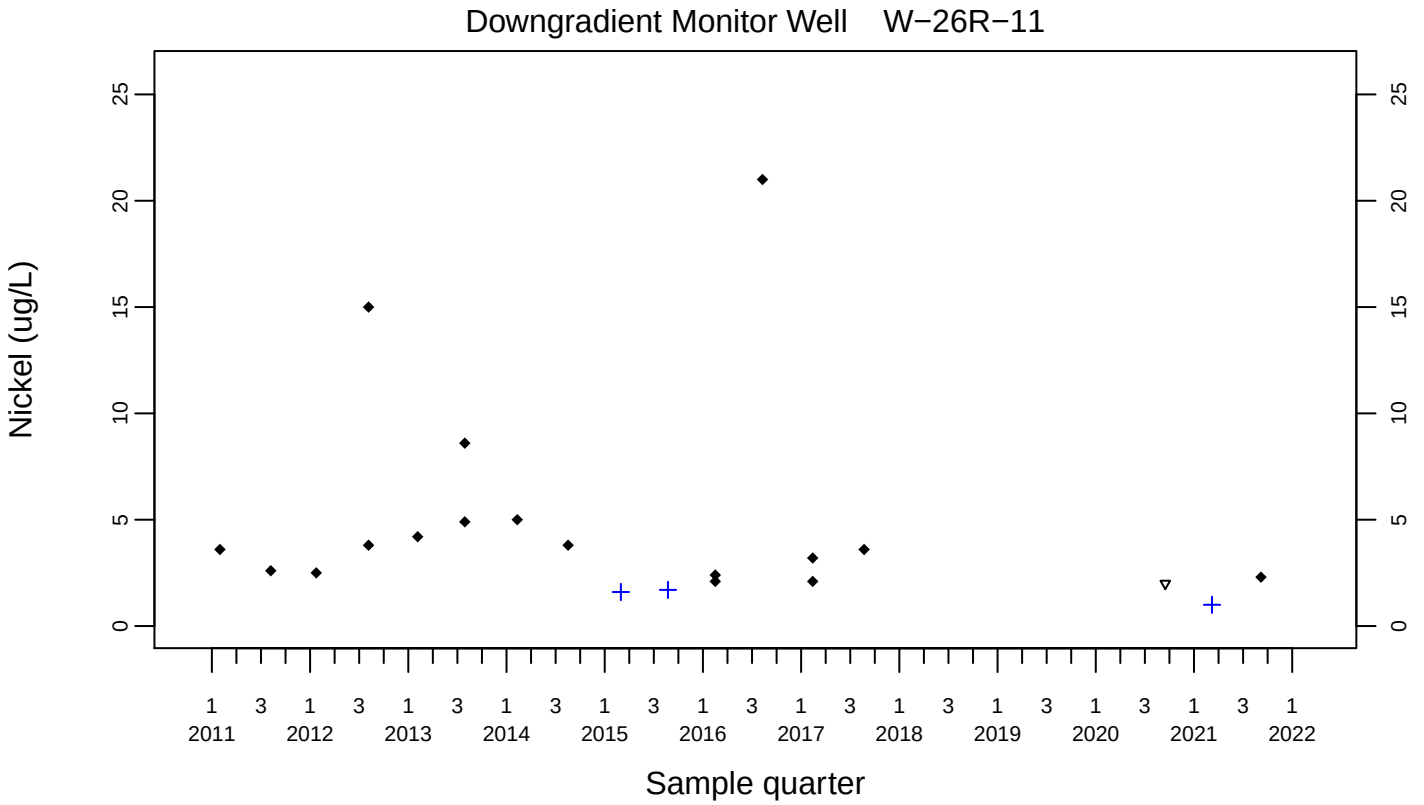
Sewage Ponds Ground Water
Nickel (ug/L)

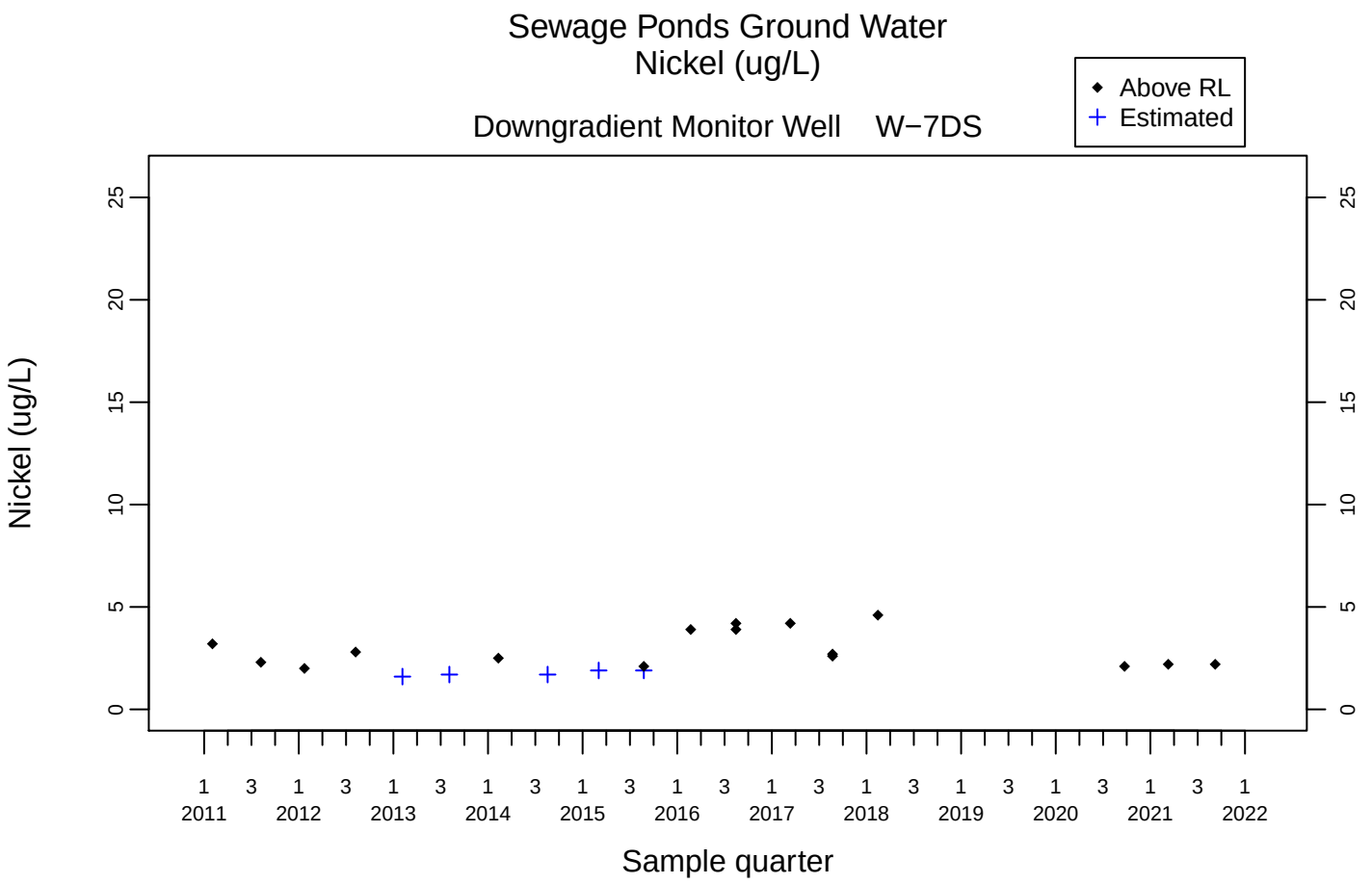


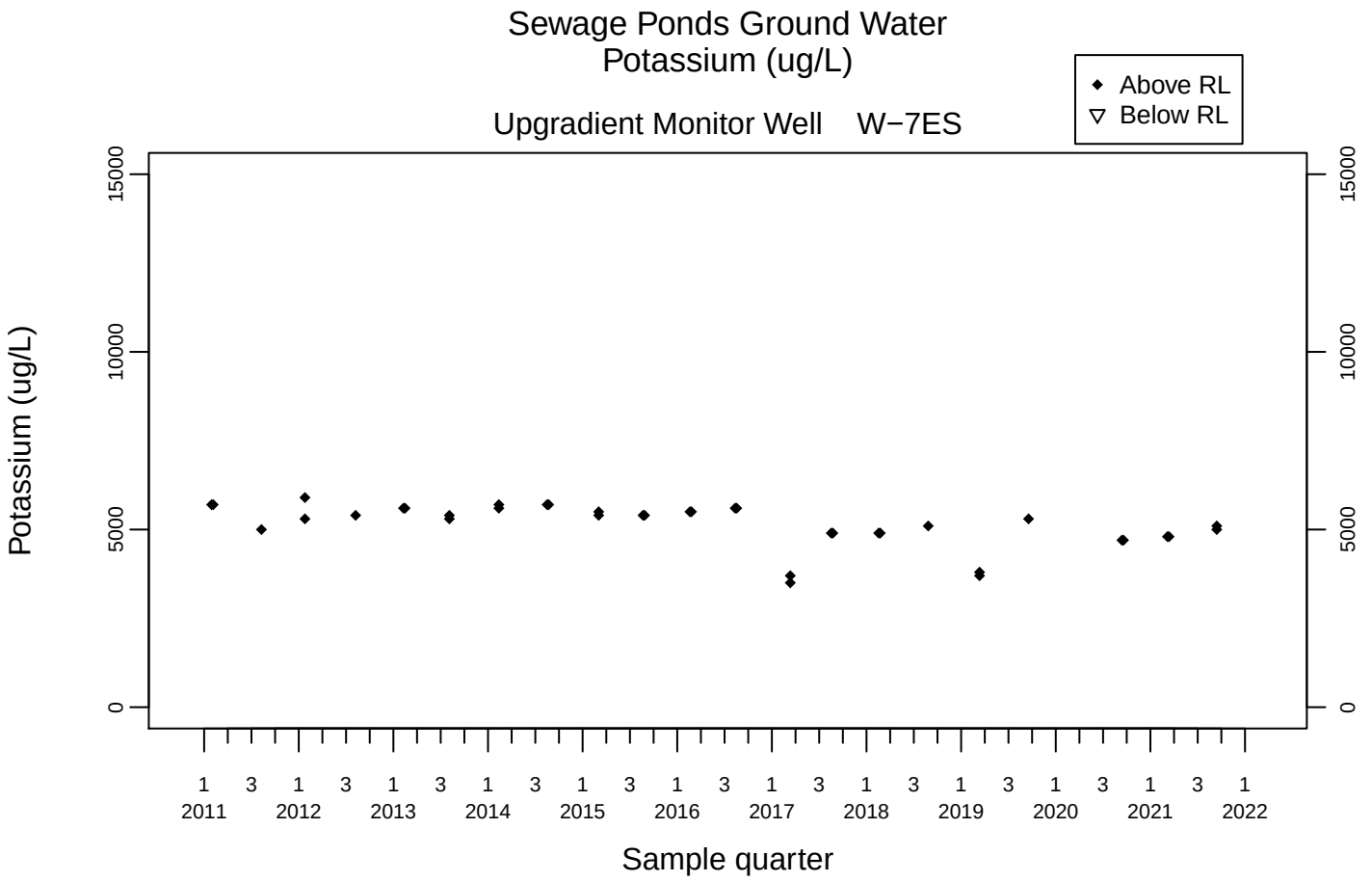


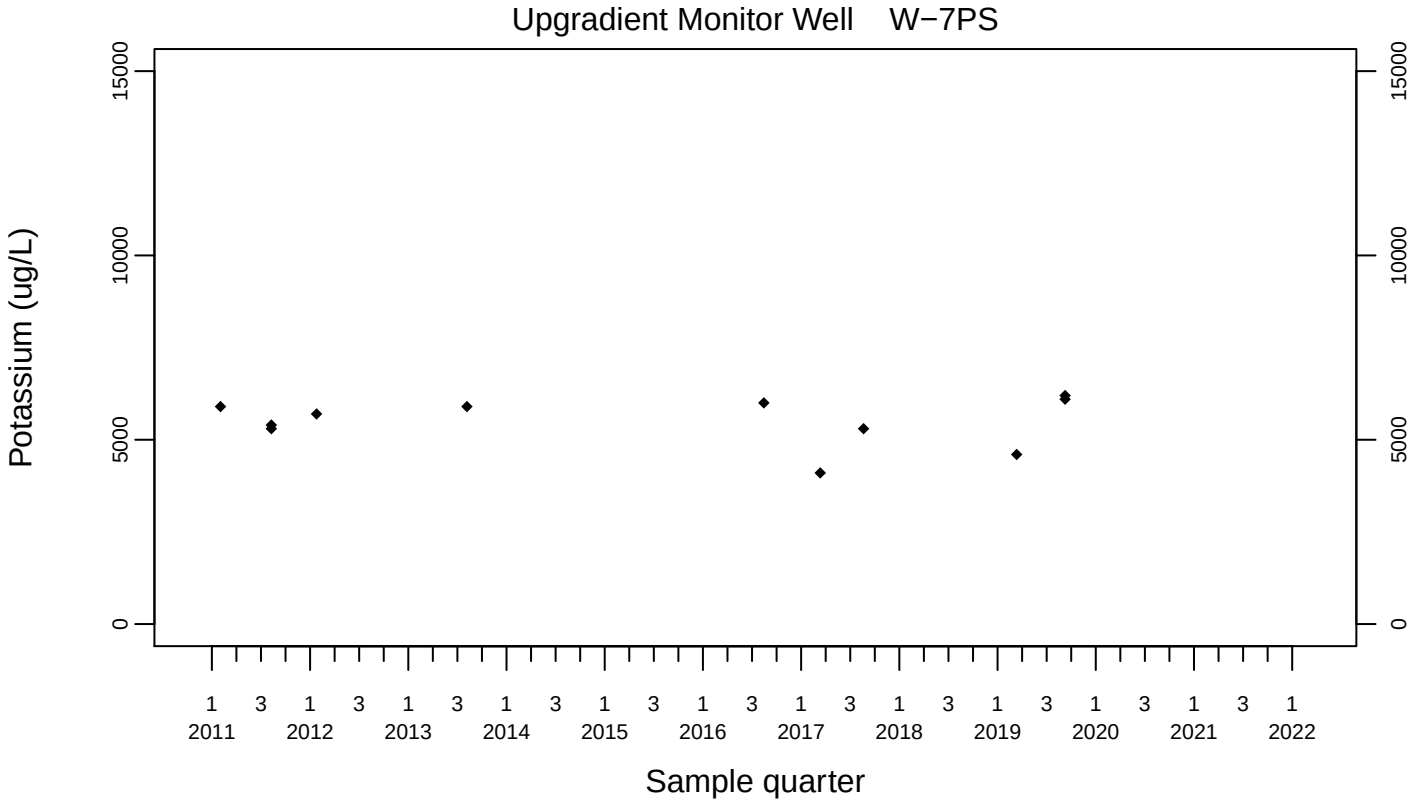
Sewage Ponds Ground Water
Nickel (ug/L)



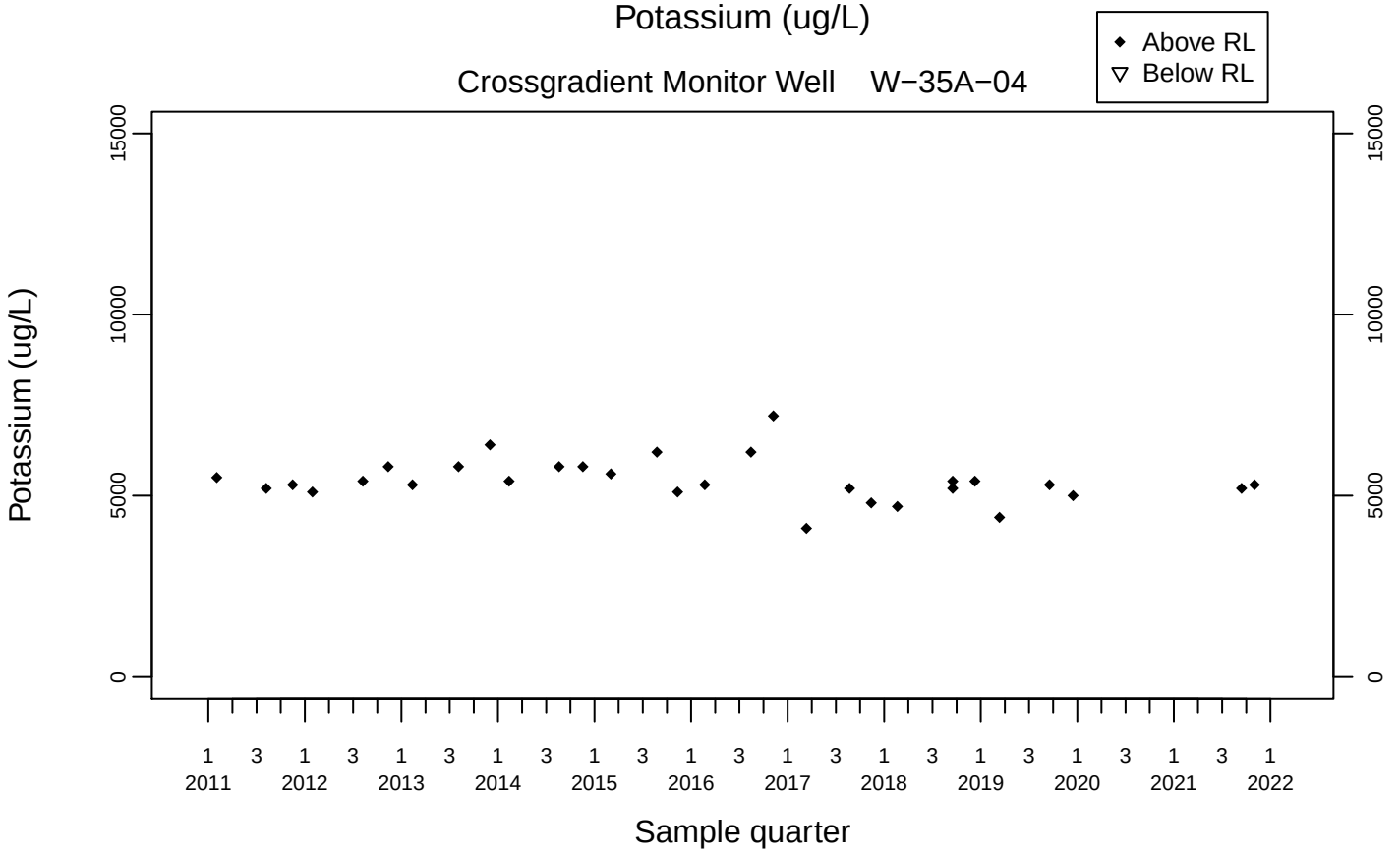


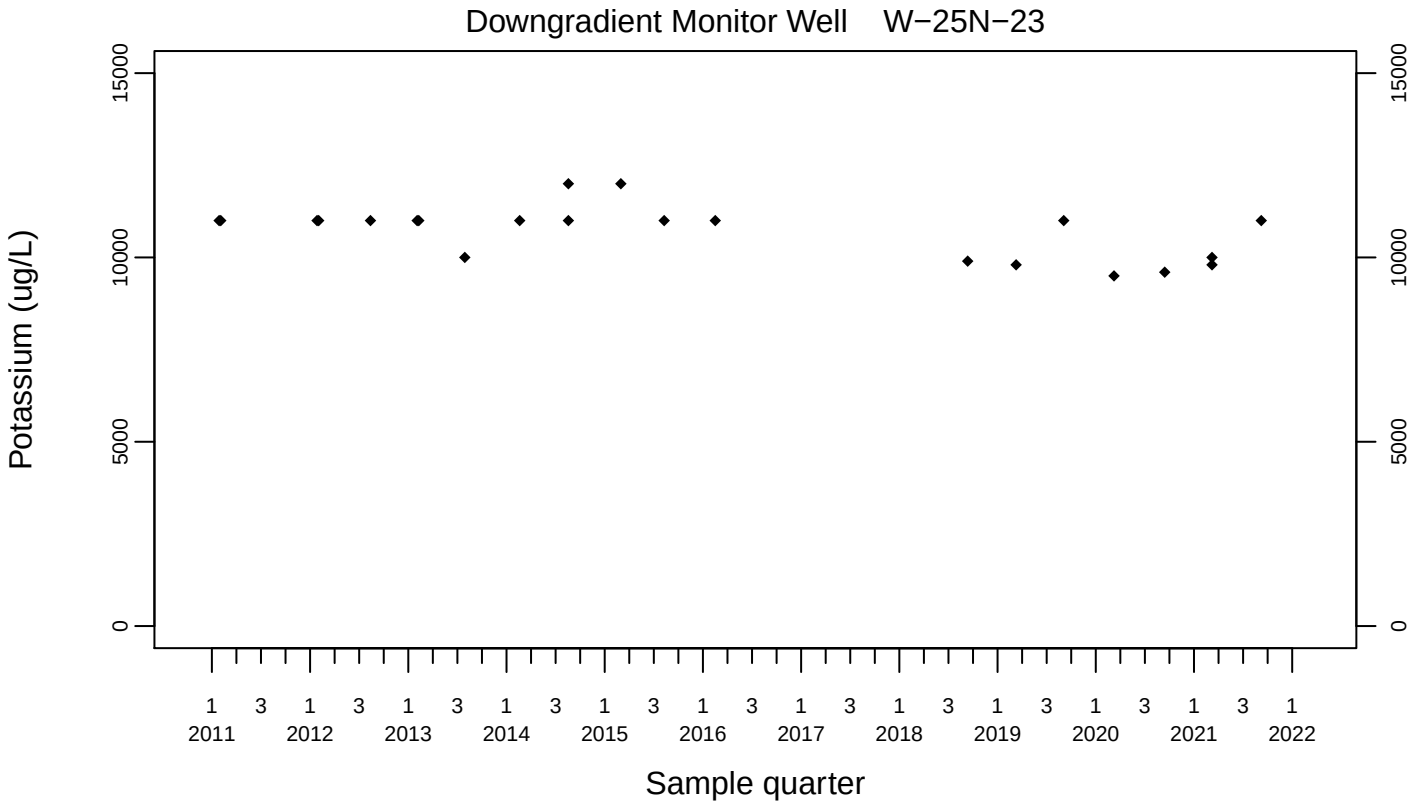

Sewage Ponds Ground Water
Nickel (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Estimated
Nickel (ug/L)
0
5
10
15
20
25
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

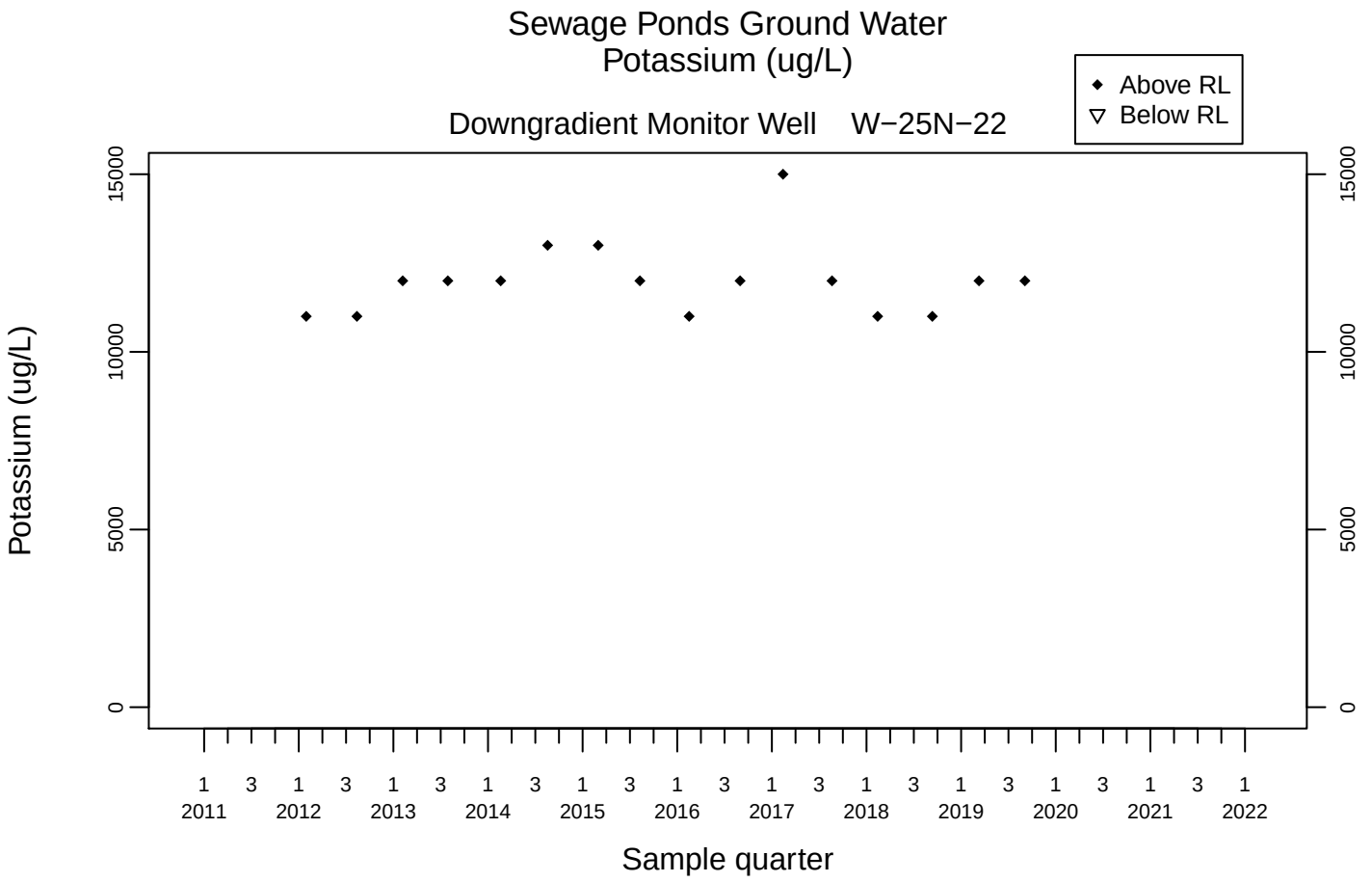

Sewage Ponds Ground Water
Potassium (ug/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Potassium (ug/L)
0
5000
10000
15000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

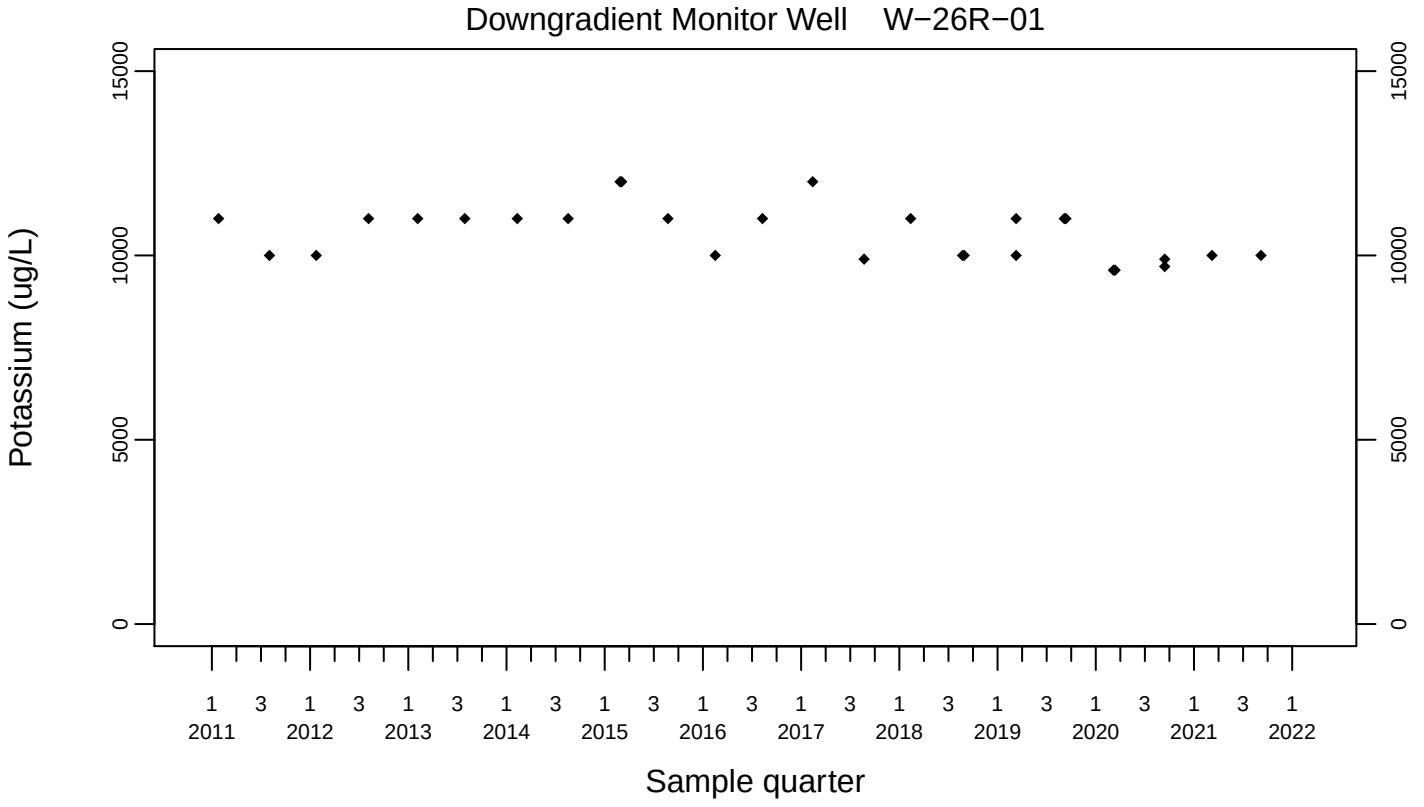

Upgradient Monitor Well W−7PS
Potassium (ug/L)
0
5000
10000
15000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
Potassium (ug/L)



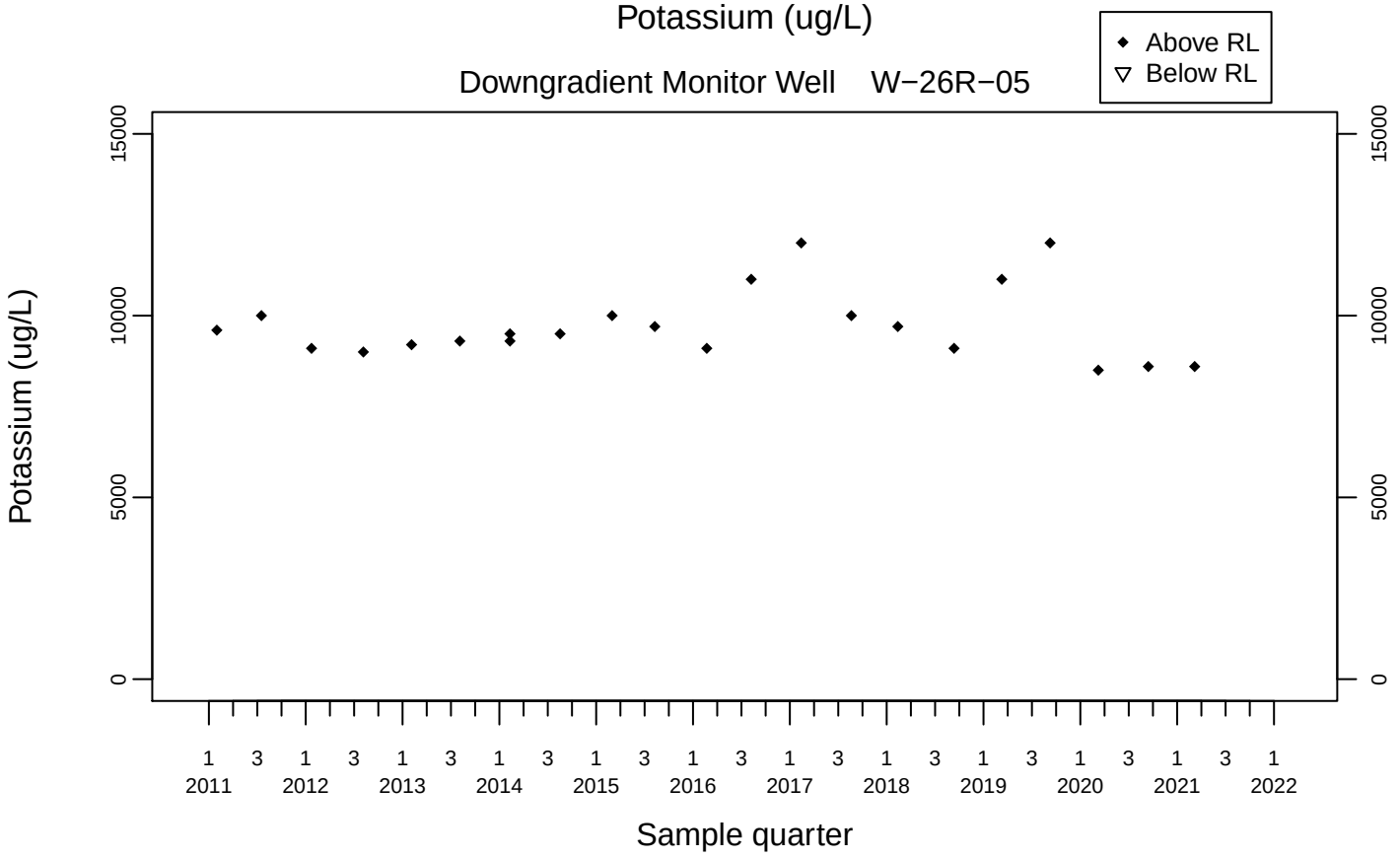



Sewage Ponds Ground Water
Potassium (ug/L)
Above RL
Below RL
Downgradient Monitor Well W−25N−22
Potassium (ug/L)
0
5000
10000
15000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

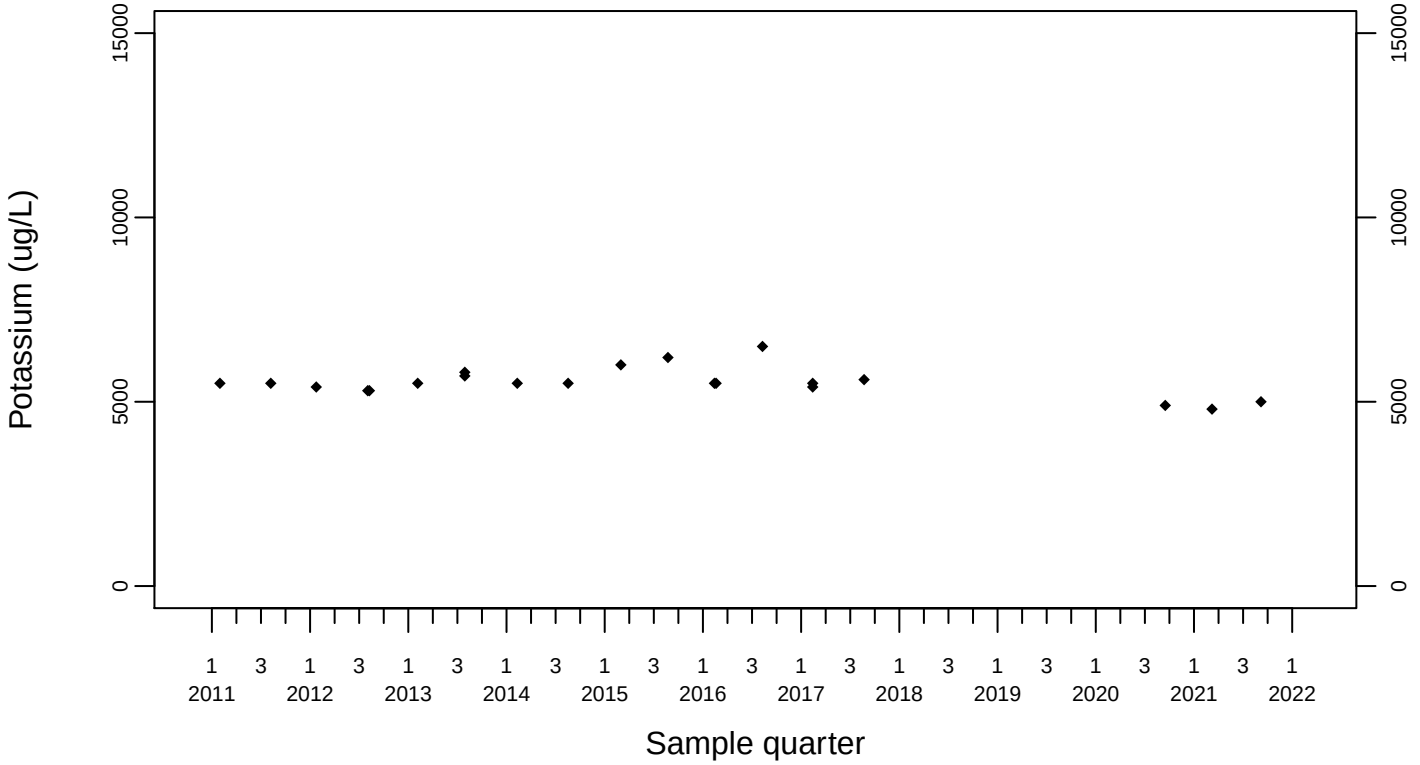

Downgradient Monitor Well W−26R−01
Potassium (ug/L)
0
5000
10000
15000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

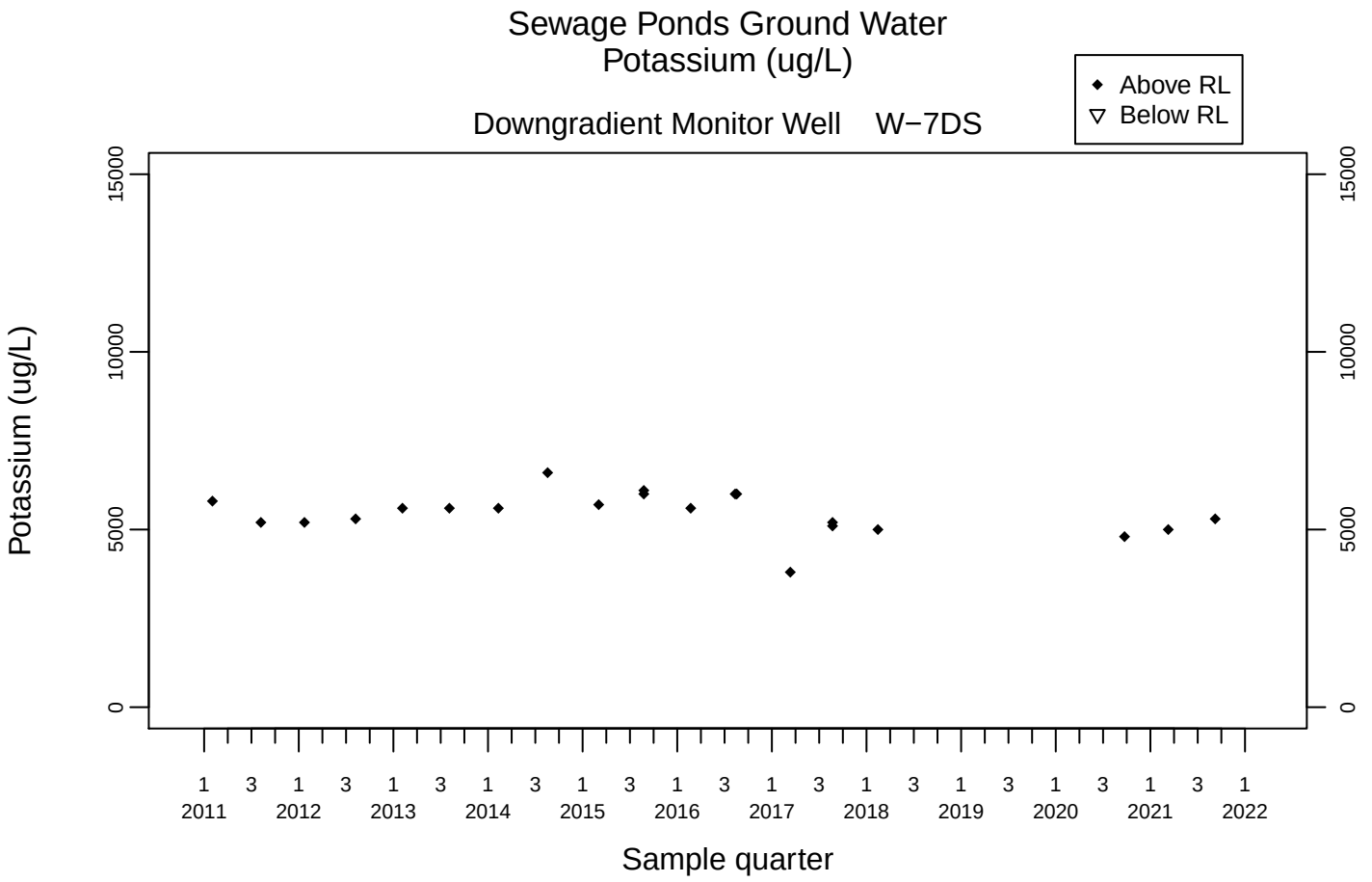
Sewage Ponds Ground Water
Potassium (ug/L)

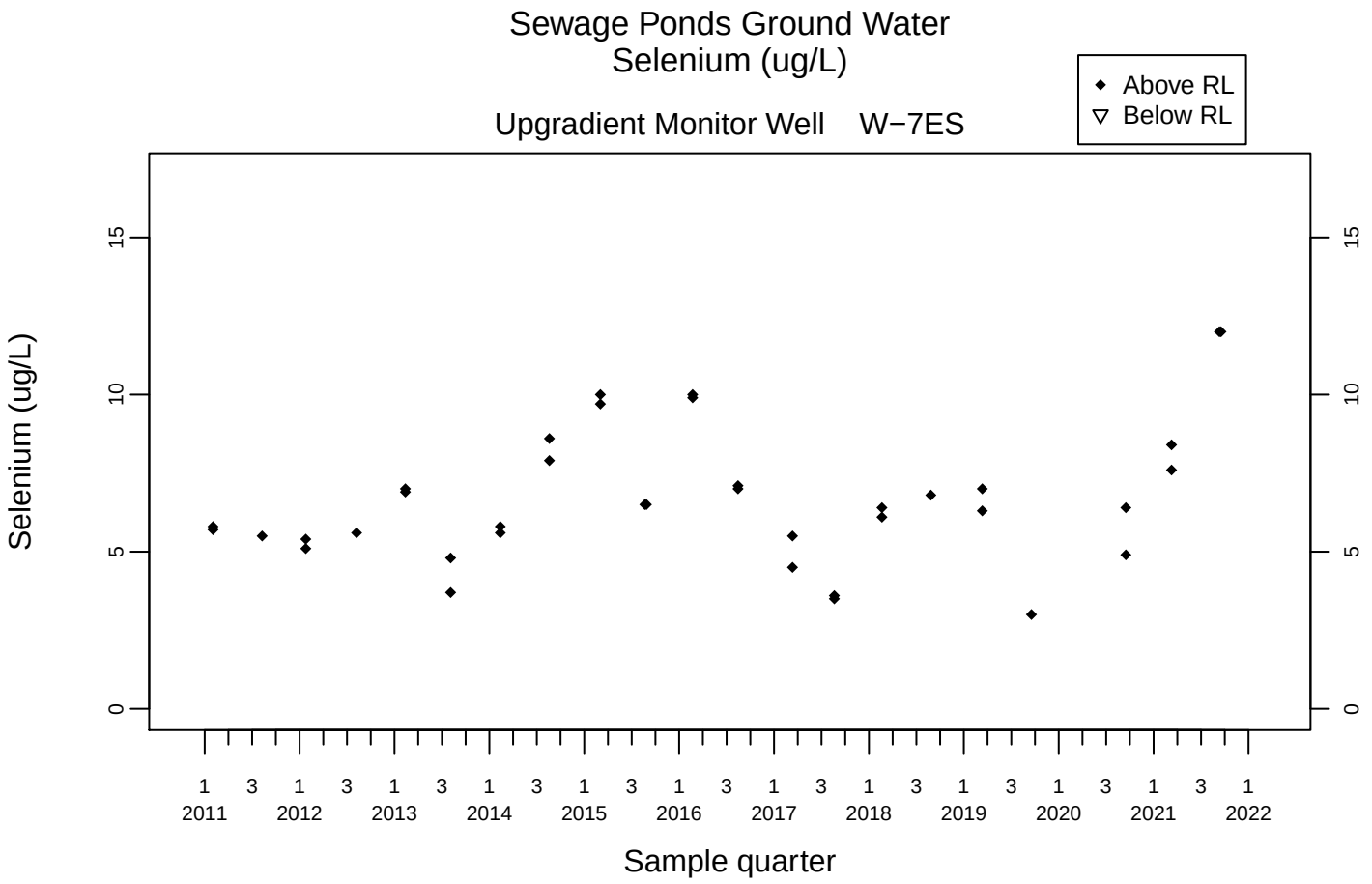
Downgradient Monitor Well W−26R−05

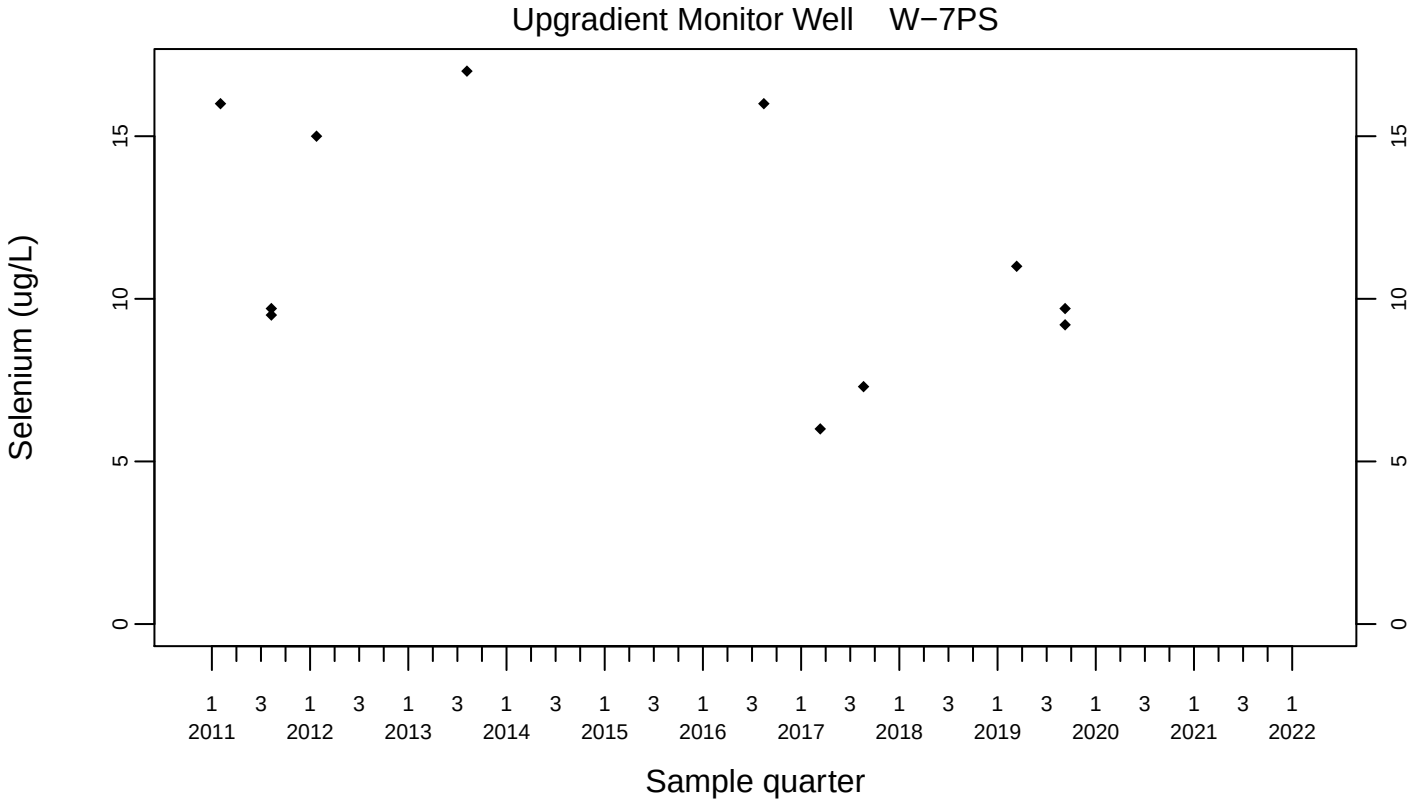


Downgradient Monitor Well W−26R−11

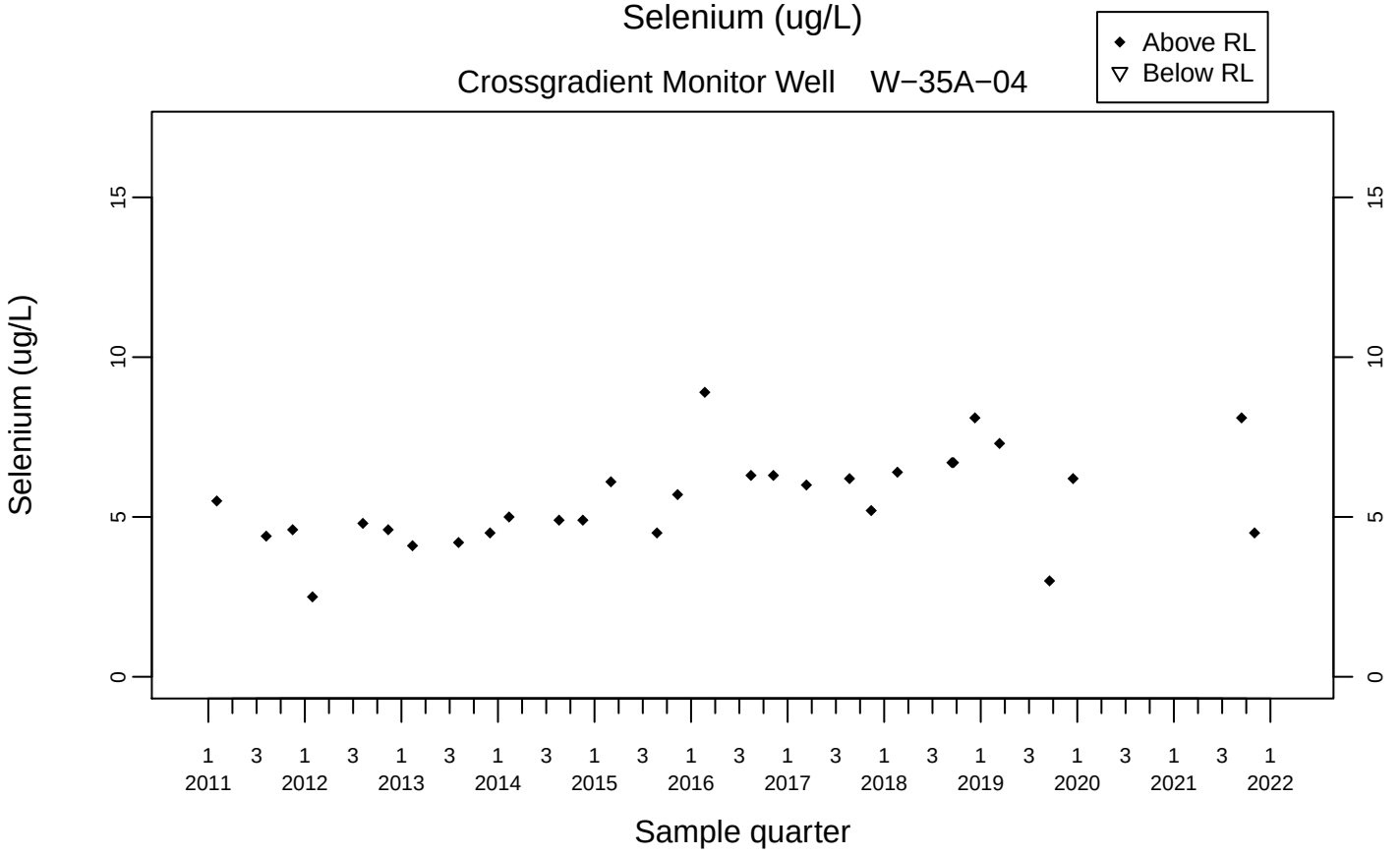


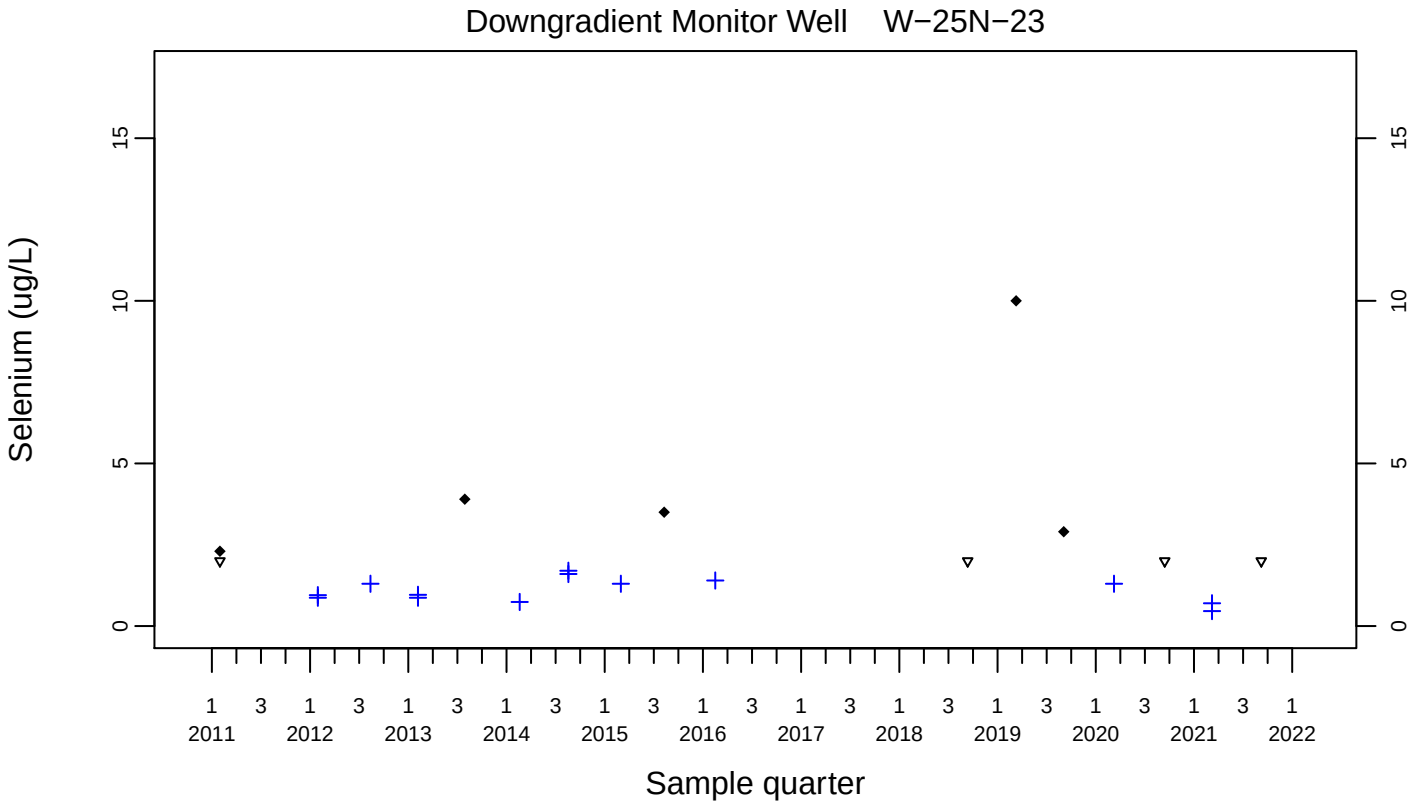

Sewage Ponds Ground Water
Potassium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Potassium (ug/L)
0
5000
10000
15000
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Selenium (ug/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Selenium (ug/L)
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

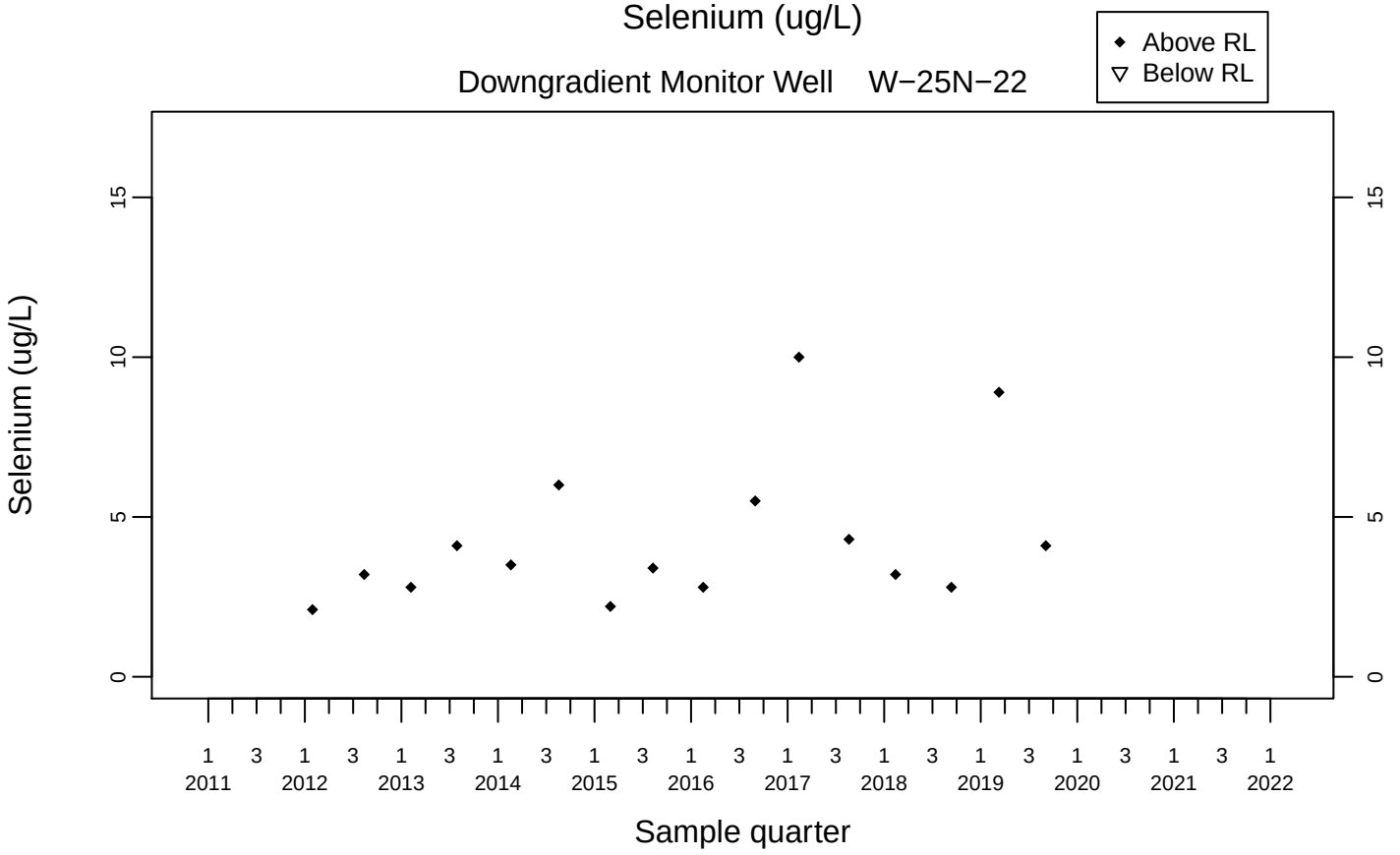

Upgradient Monitor Well W−7PS
Selenium (ug/L)
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

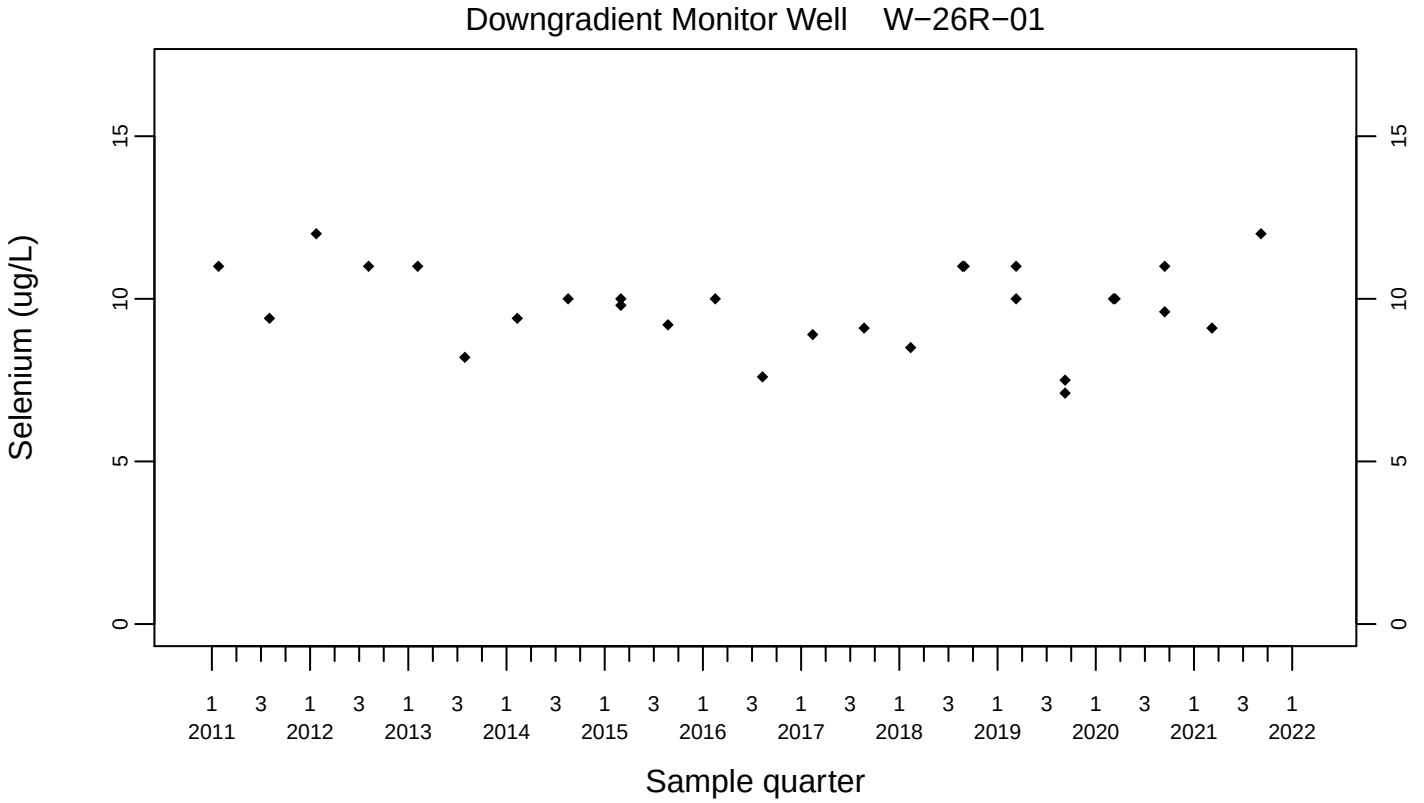
Sewage Ponds Ground Water
Selenium (ug/L)



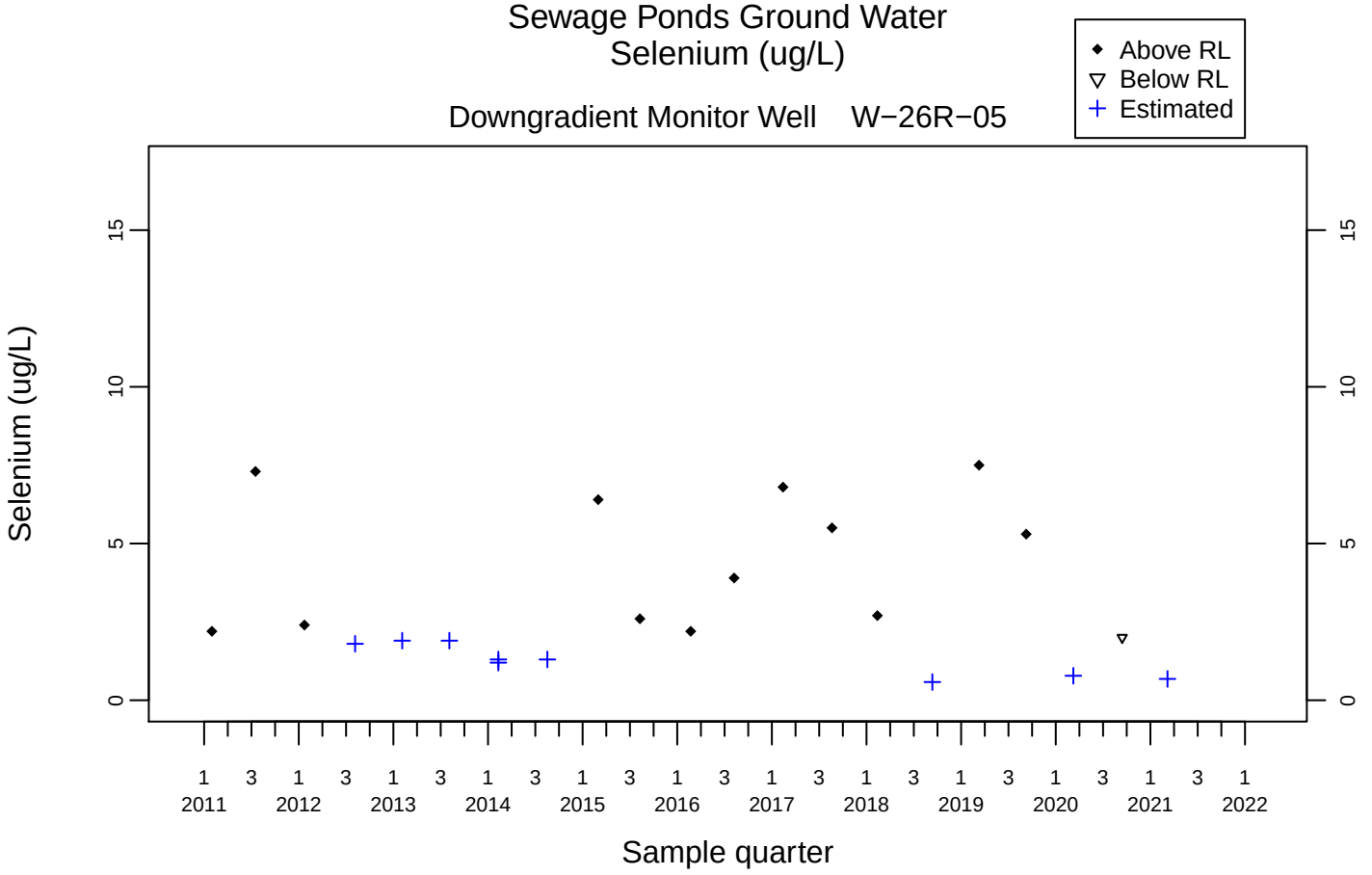


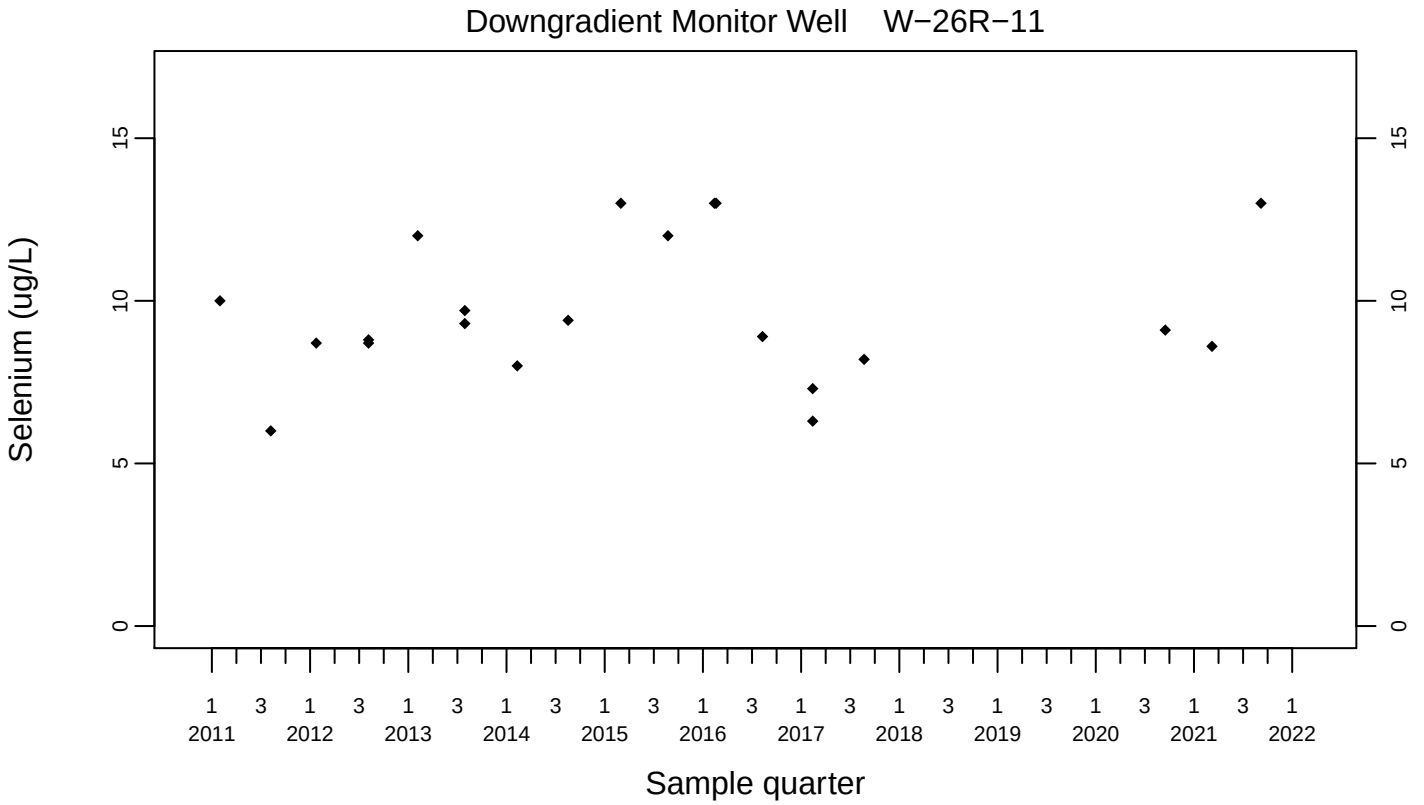
Sewage Ponds Ground Water
Selenium (ug/L)

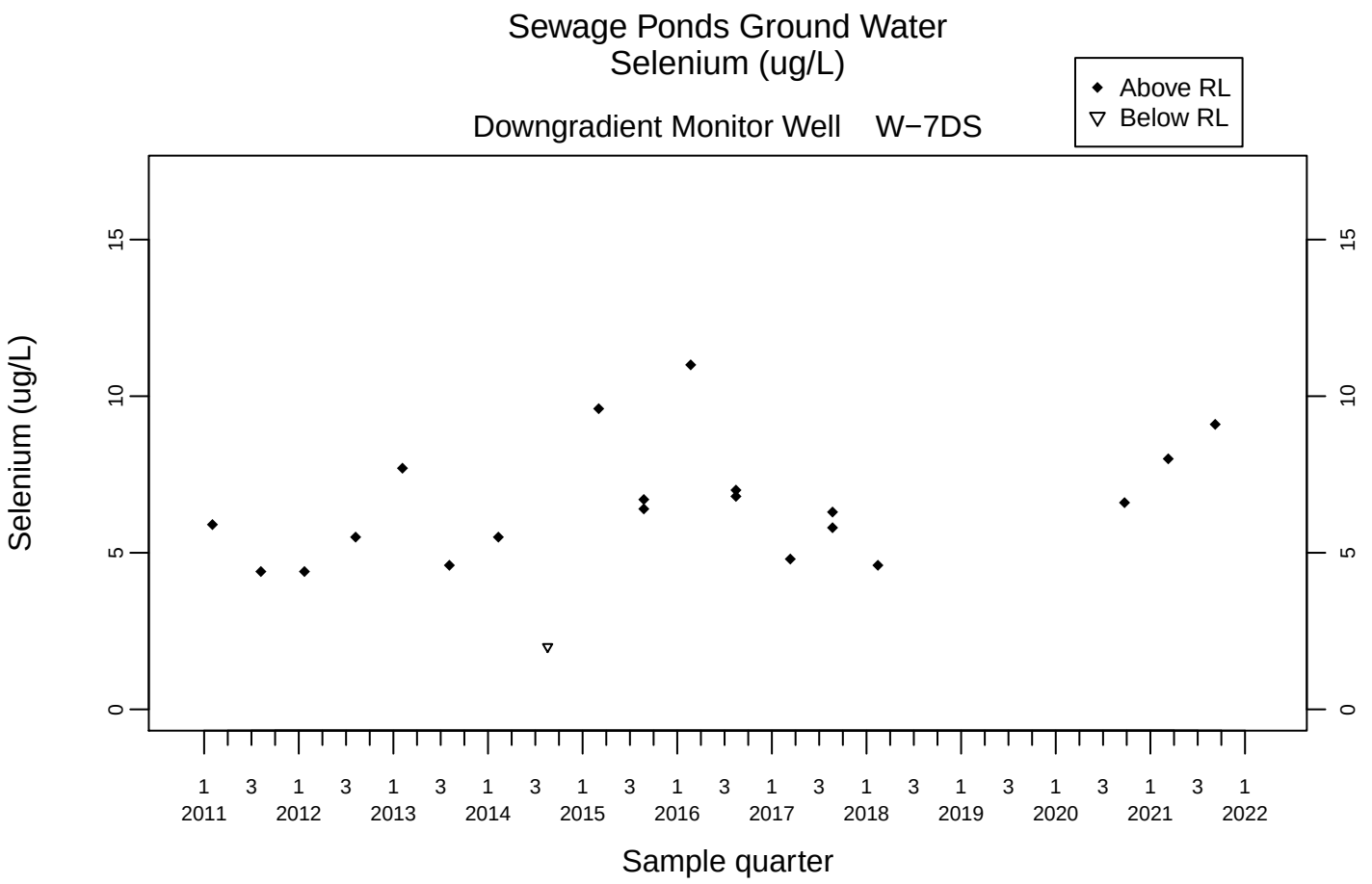




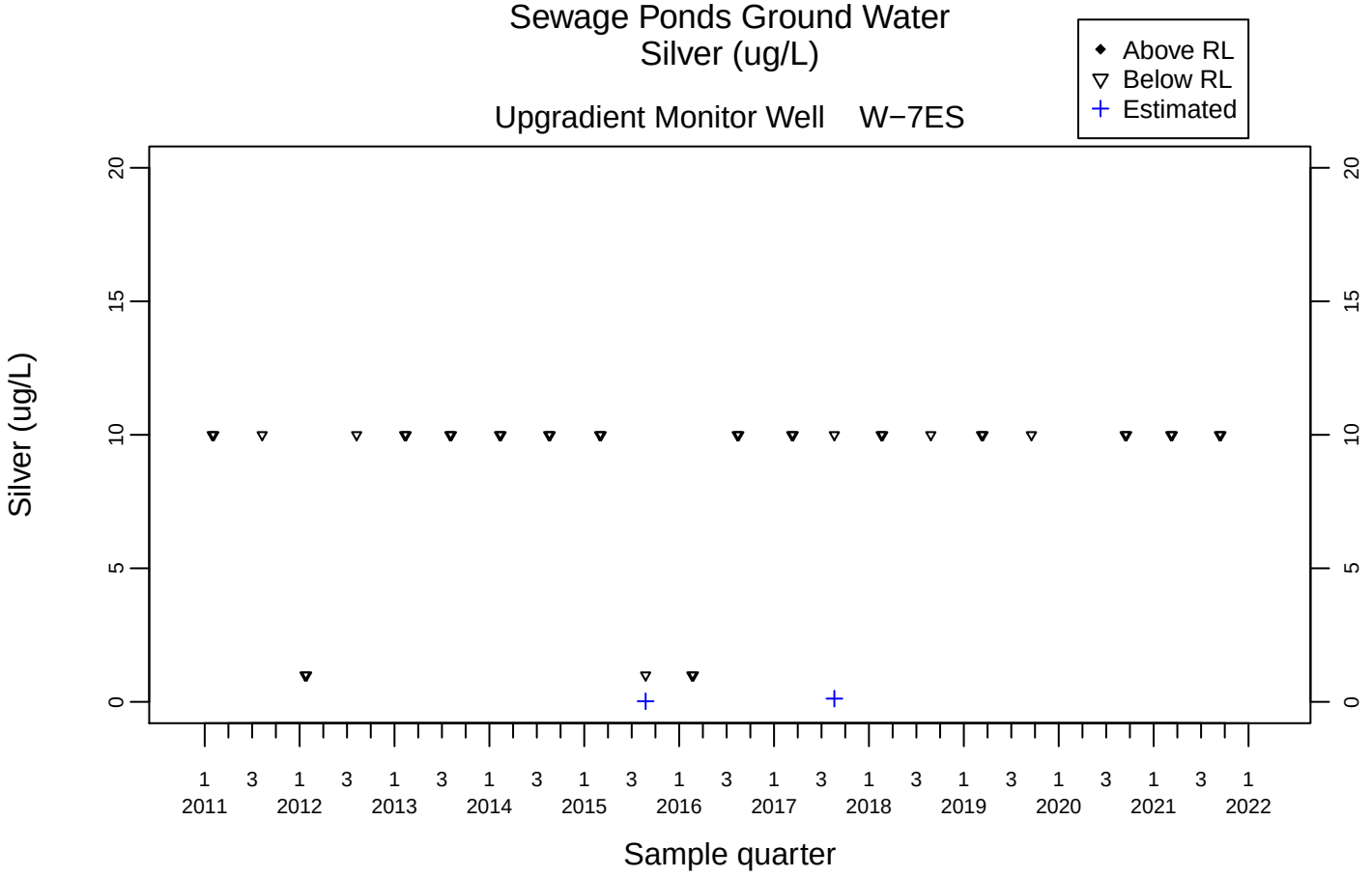
Sewage Ponds Ground Water
Selenium (ug/L)

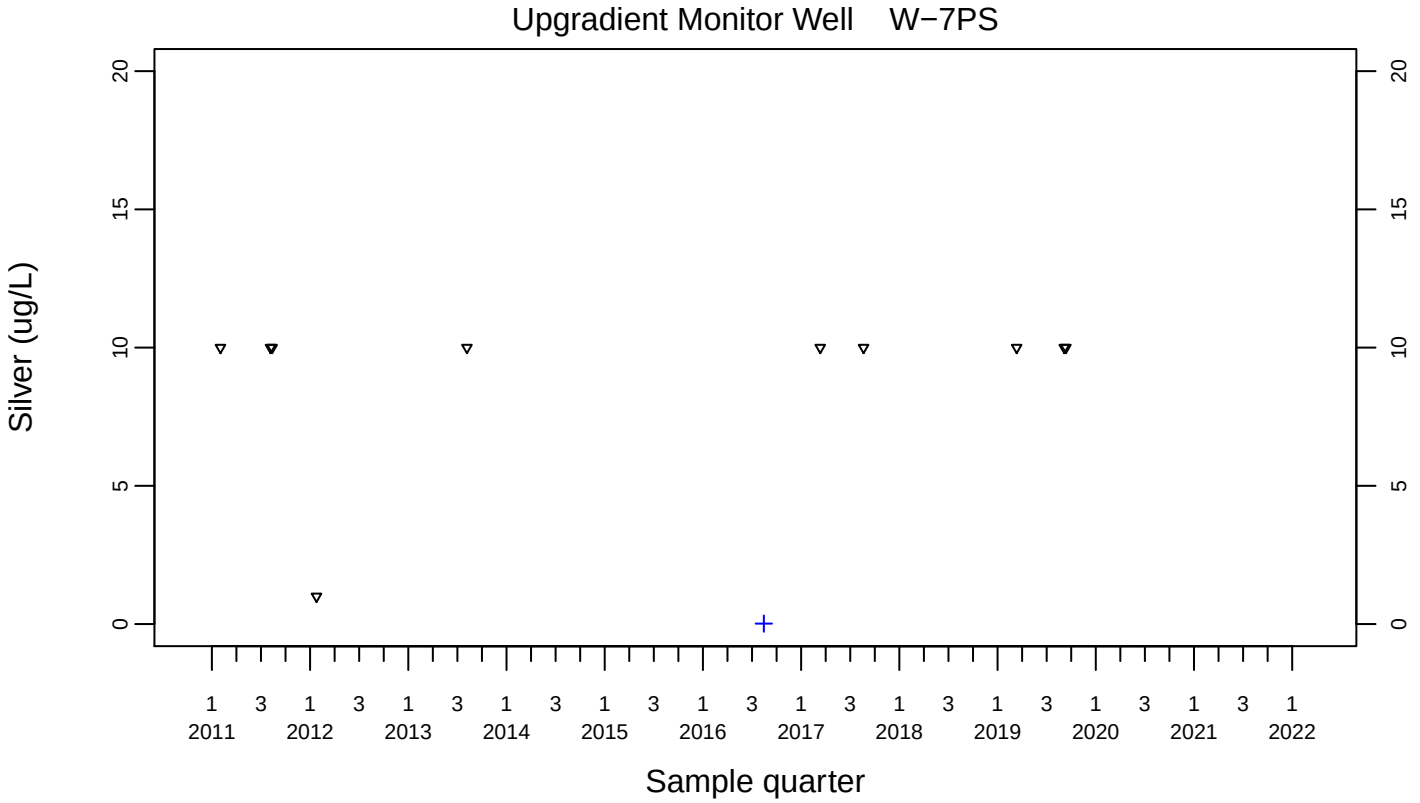





Sewage Ponds Ground Water
Selenium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Selenium (ug/L)
0
5
10
15
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

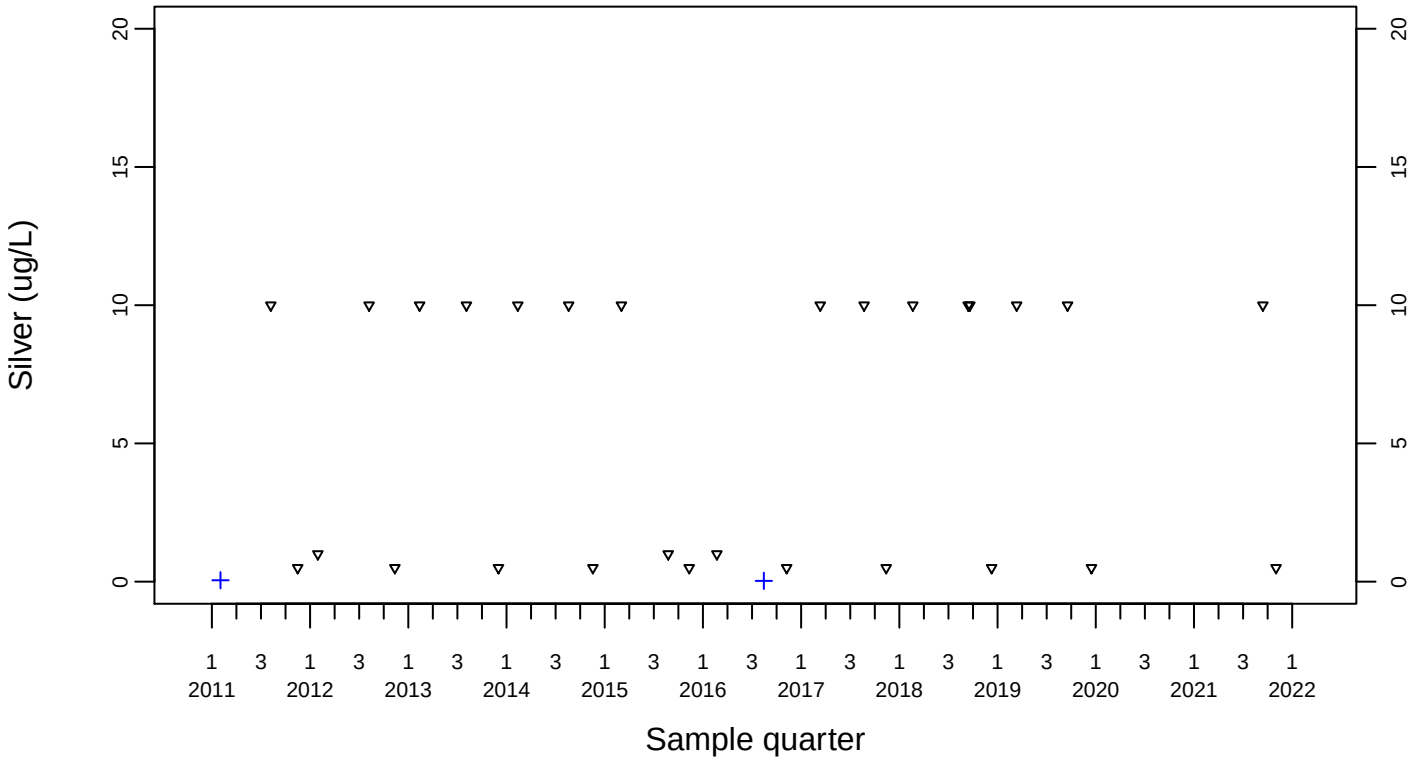
Sewage Ponds Ground Water
Silver (ug/L)



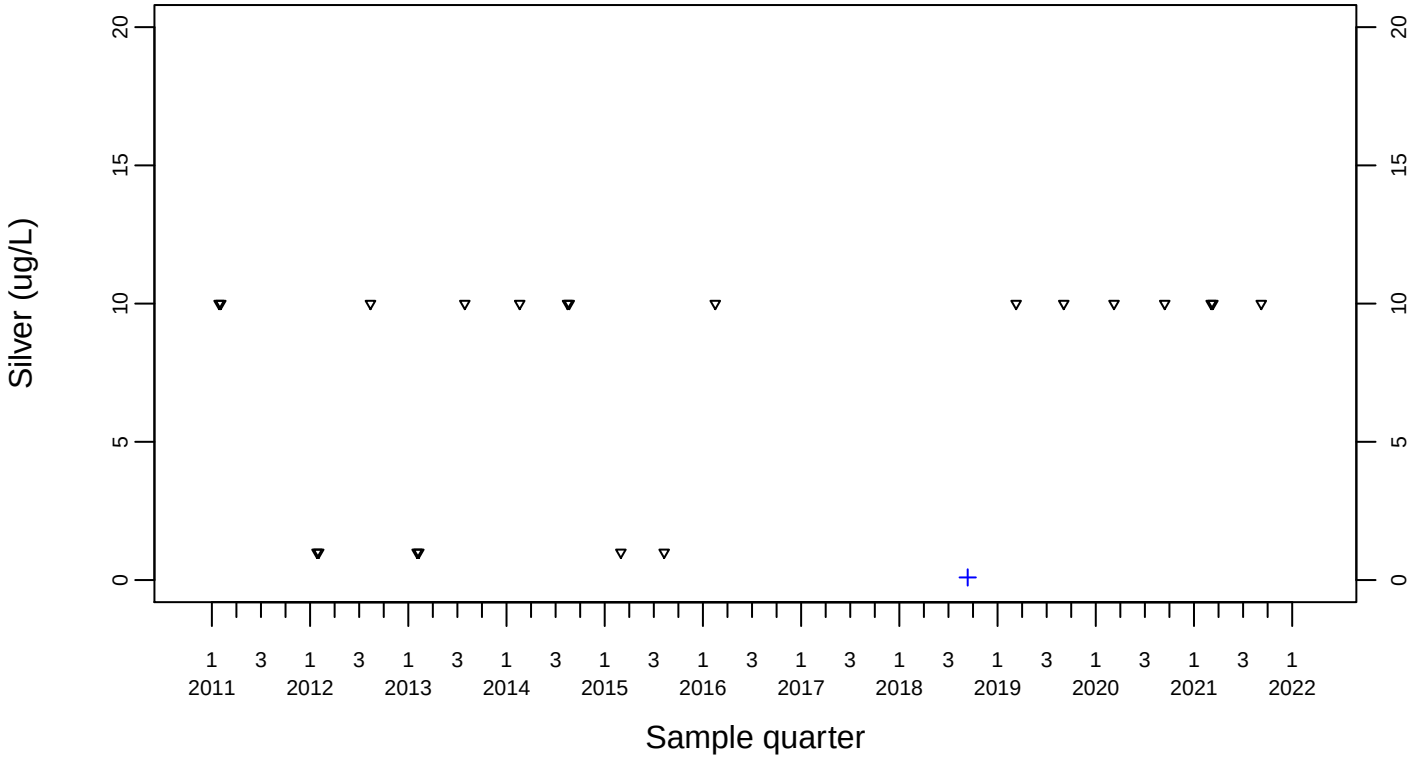


Sewage Ponds Ground Water
Silver (ug/L)

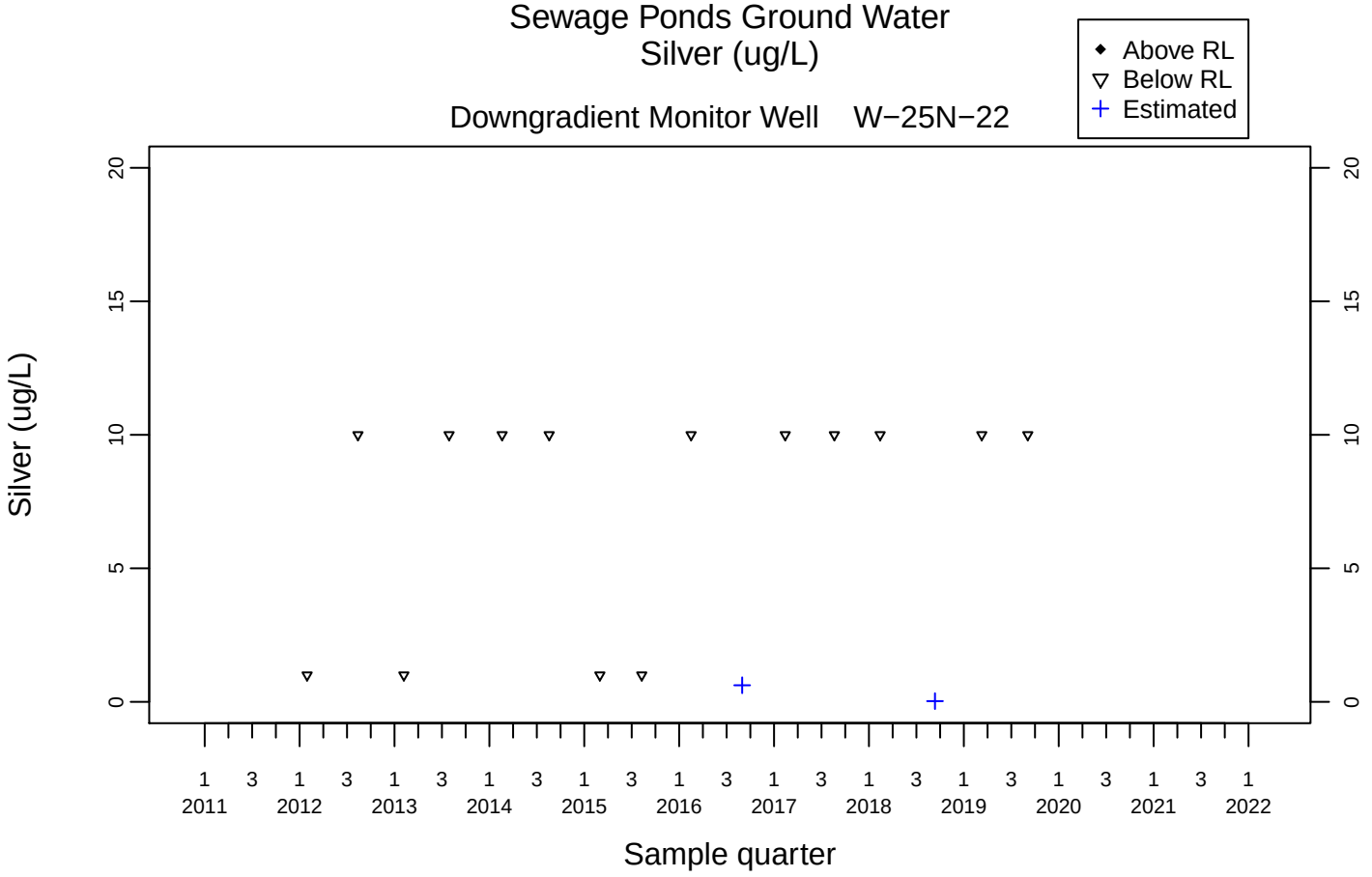
Crossgradient Monitor Well W−35A−04

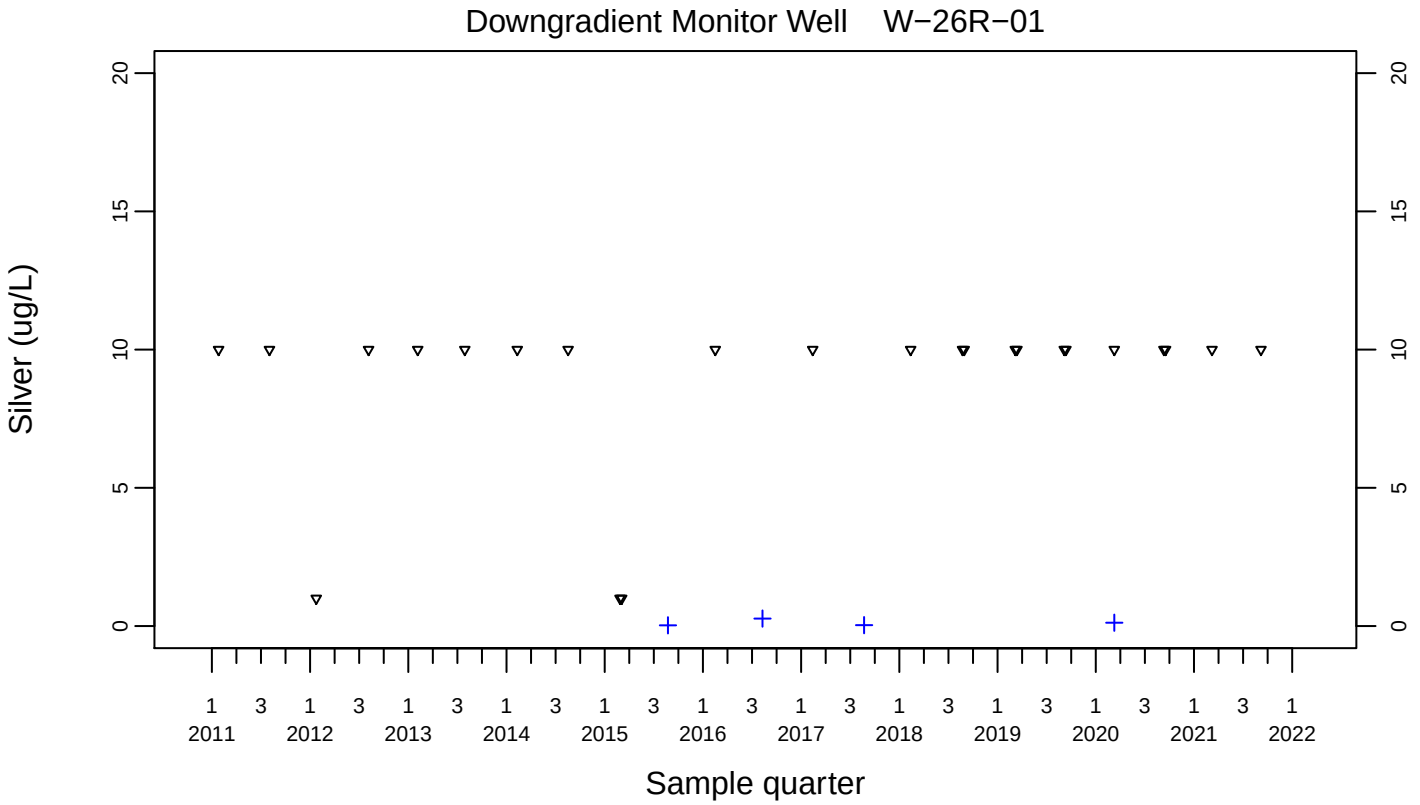


Downgradient Monitor Well W−25N−23

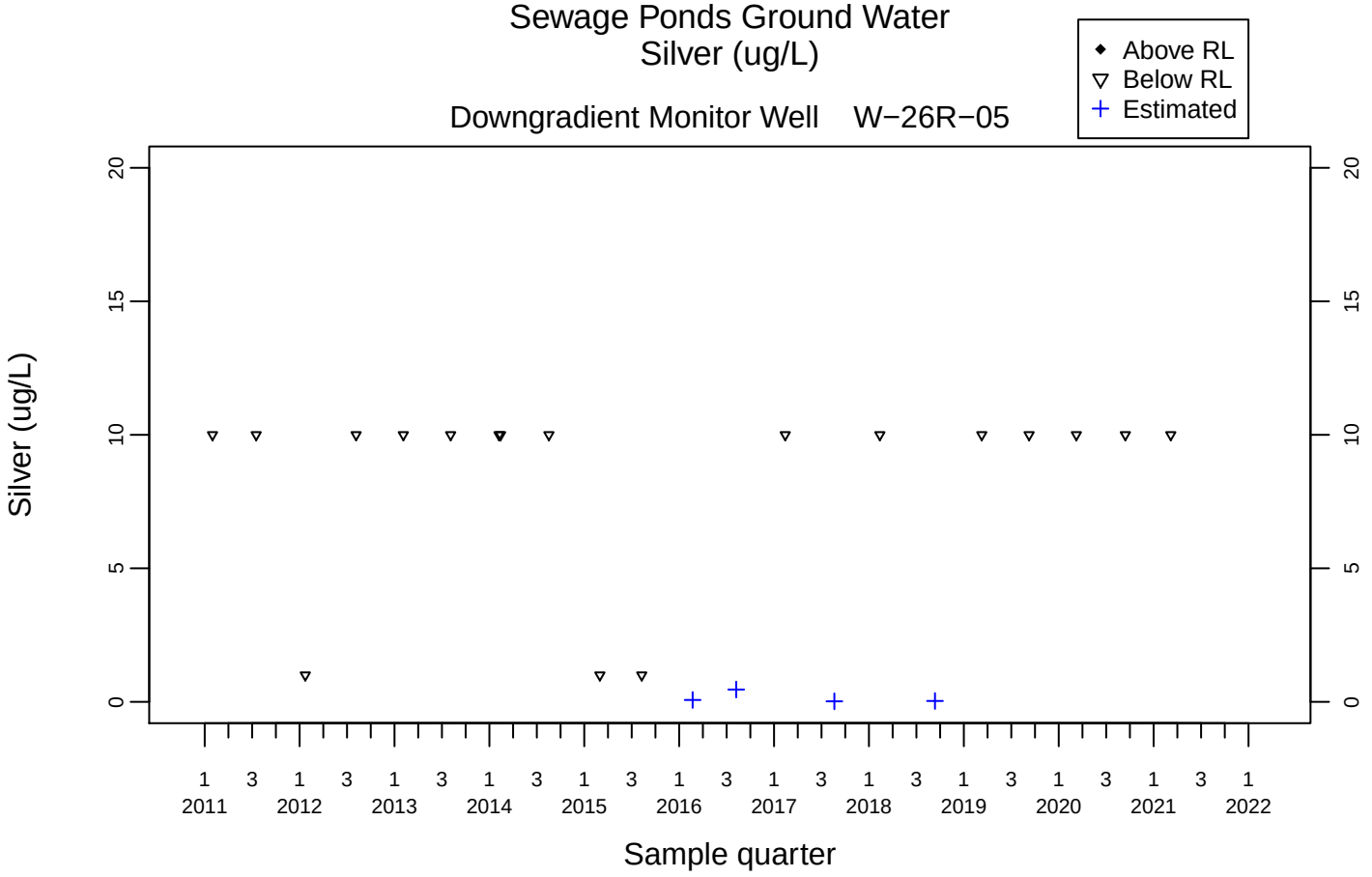


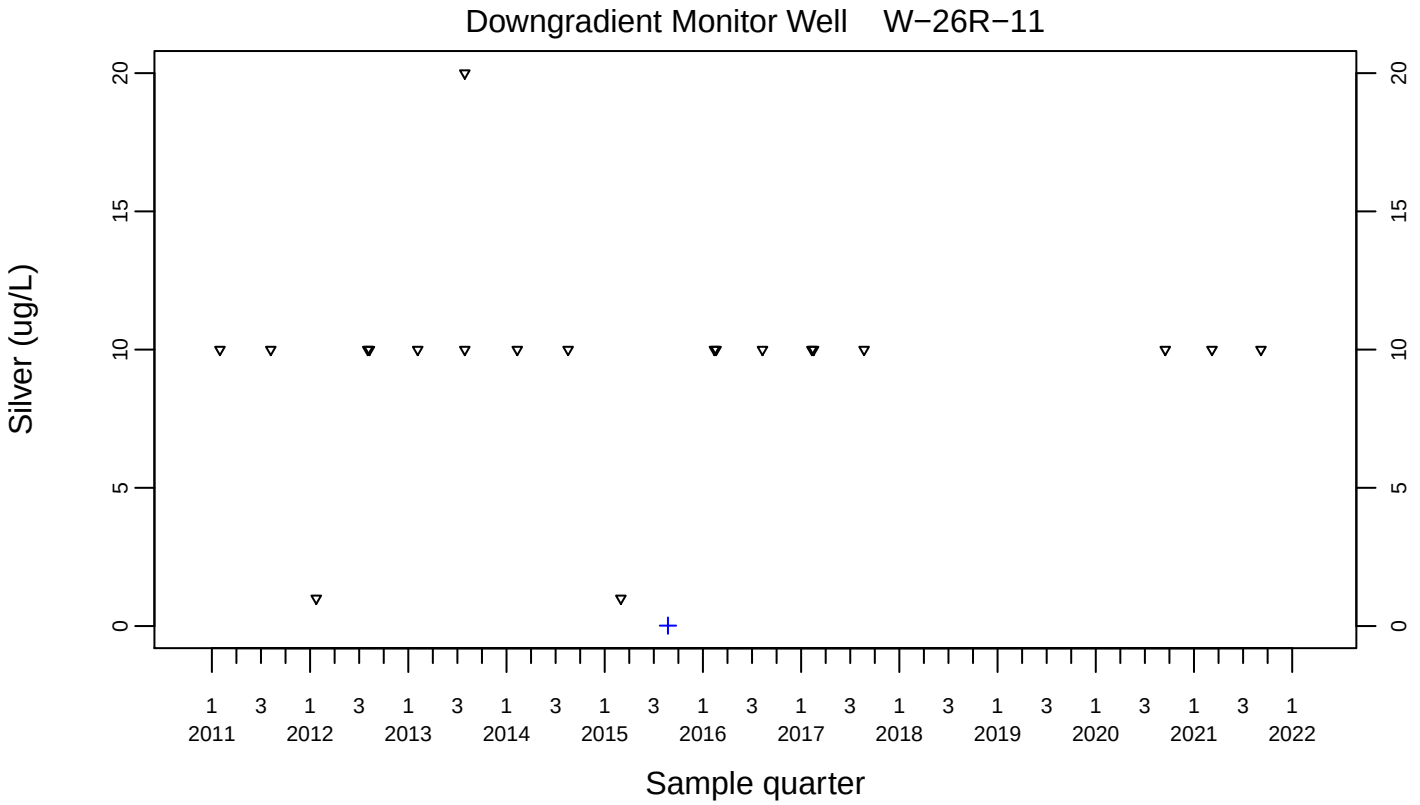
Sewage Ponds Ground Water
Silver (ug/L)

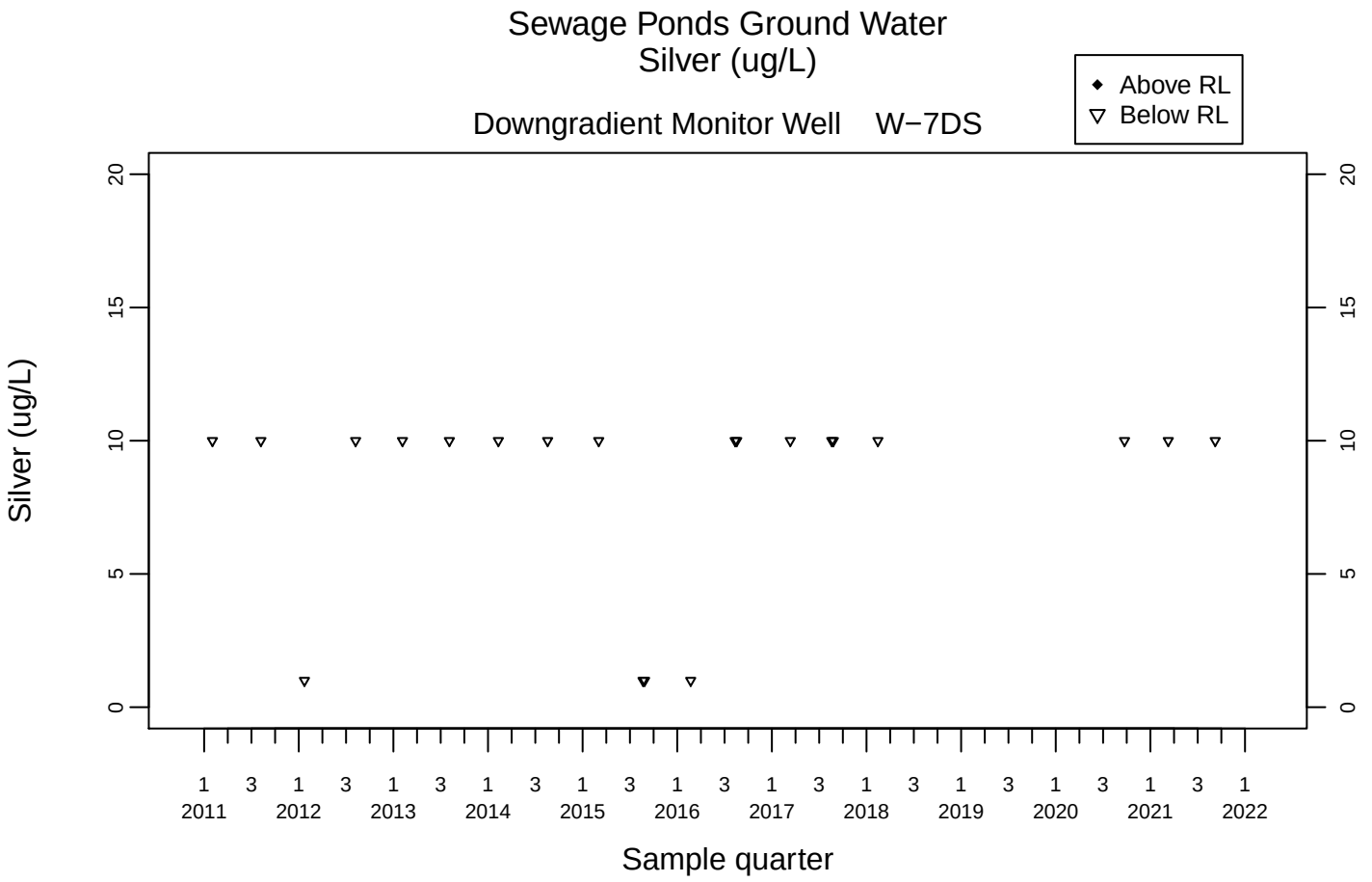


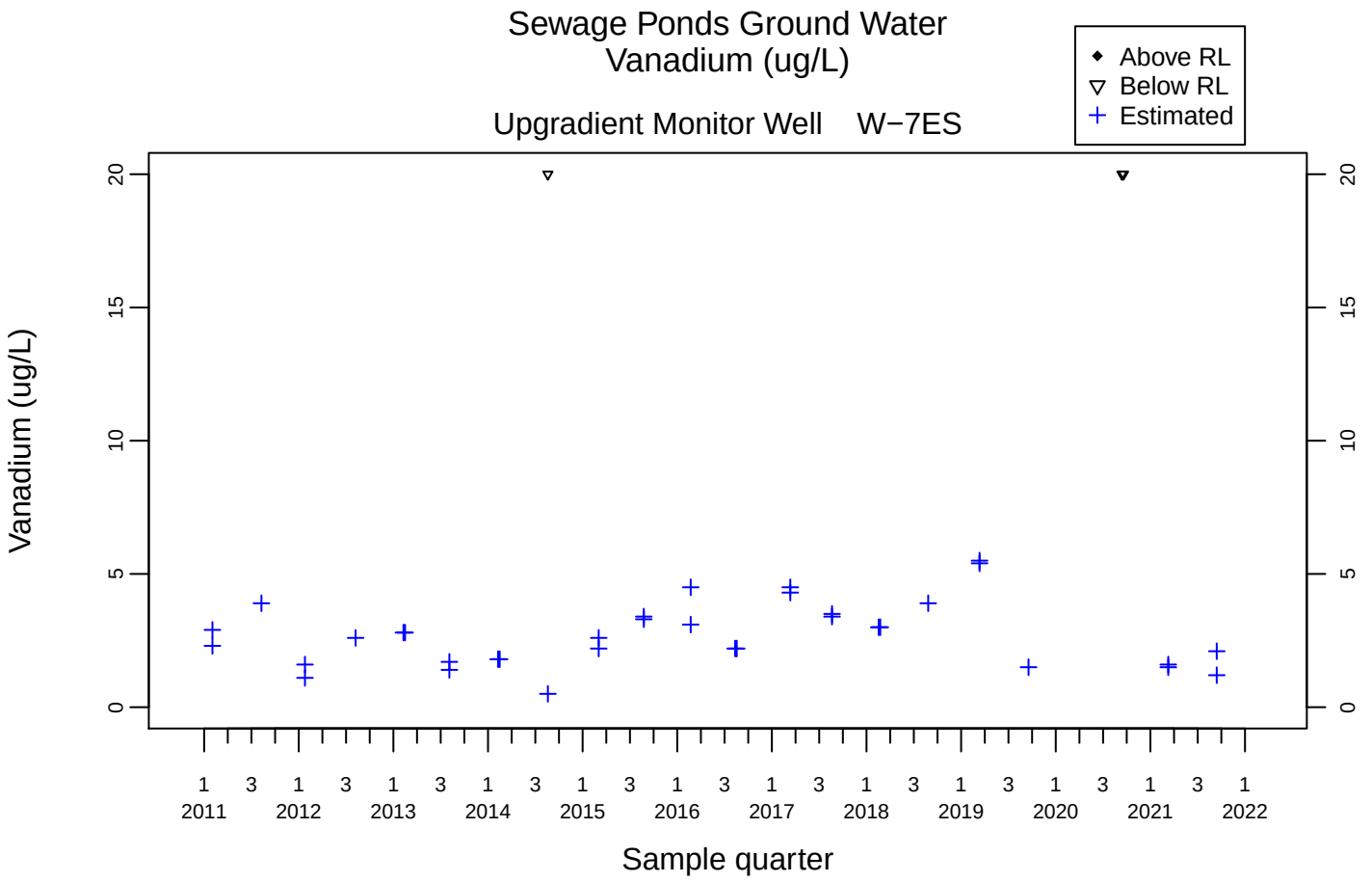


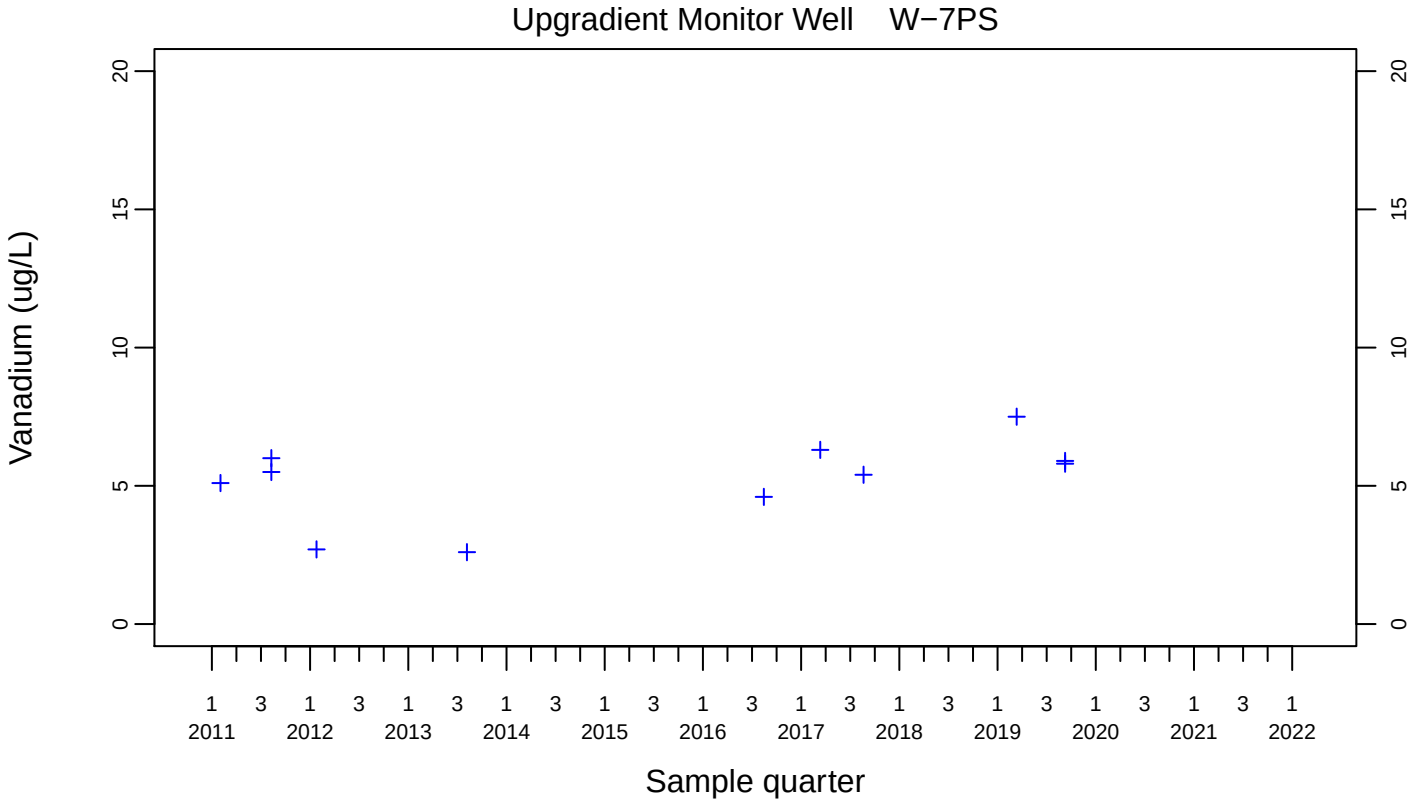
Sewage Ponds Ground Water
Silver (ug/L)

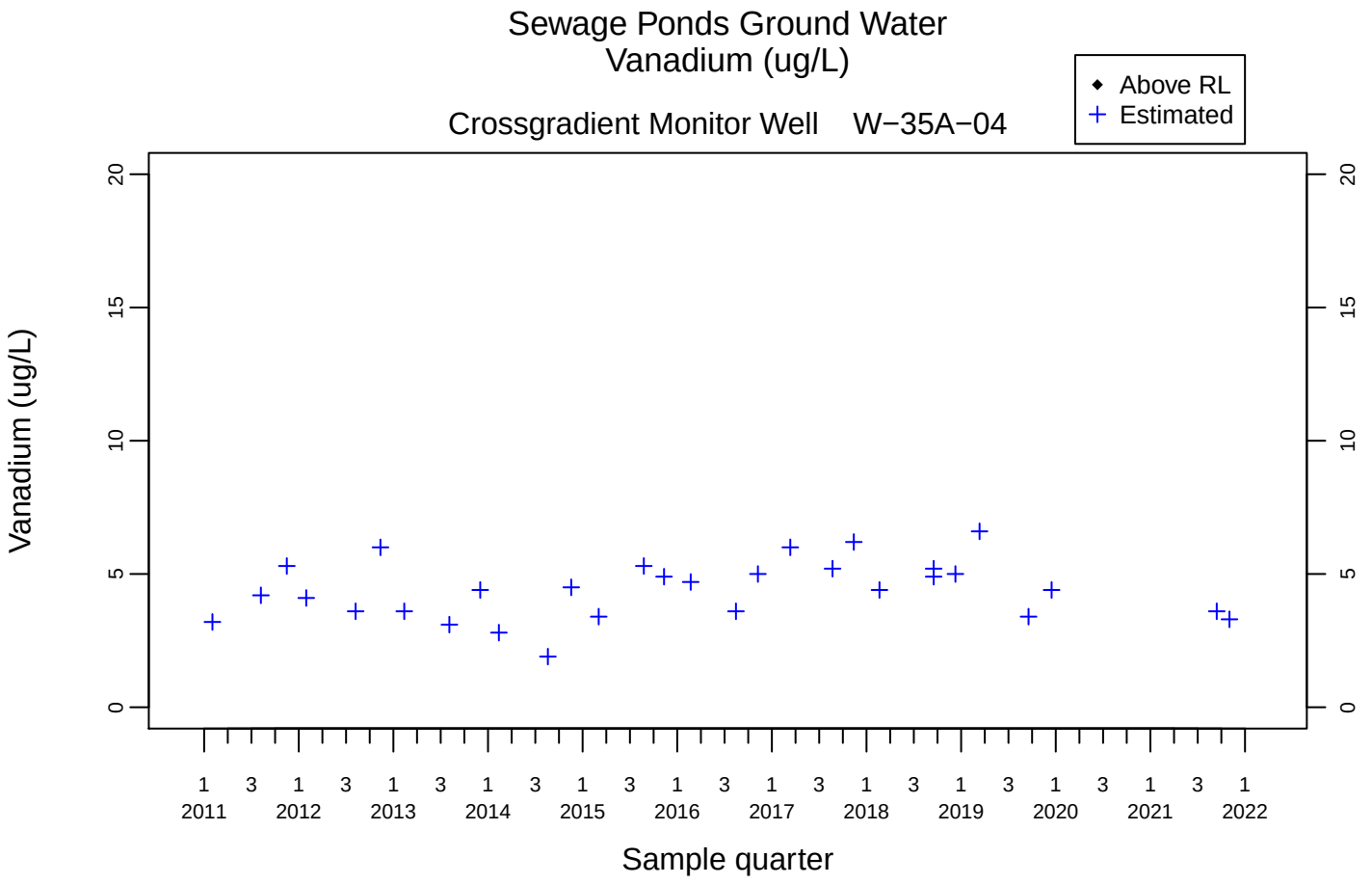


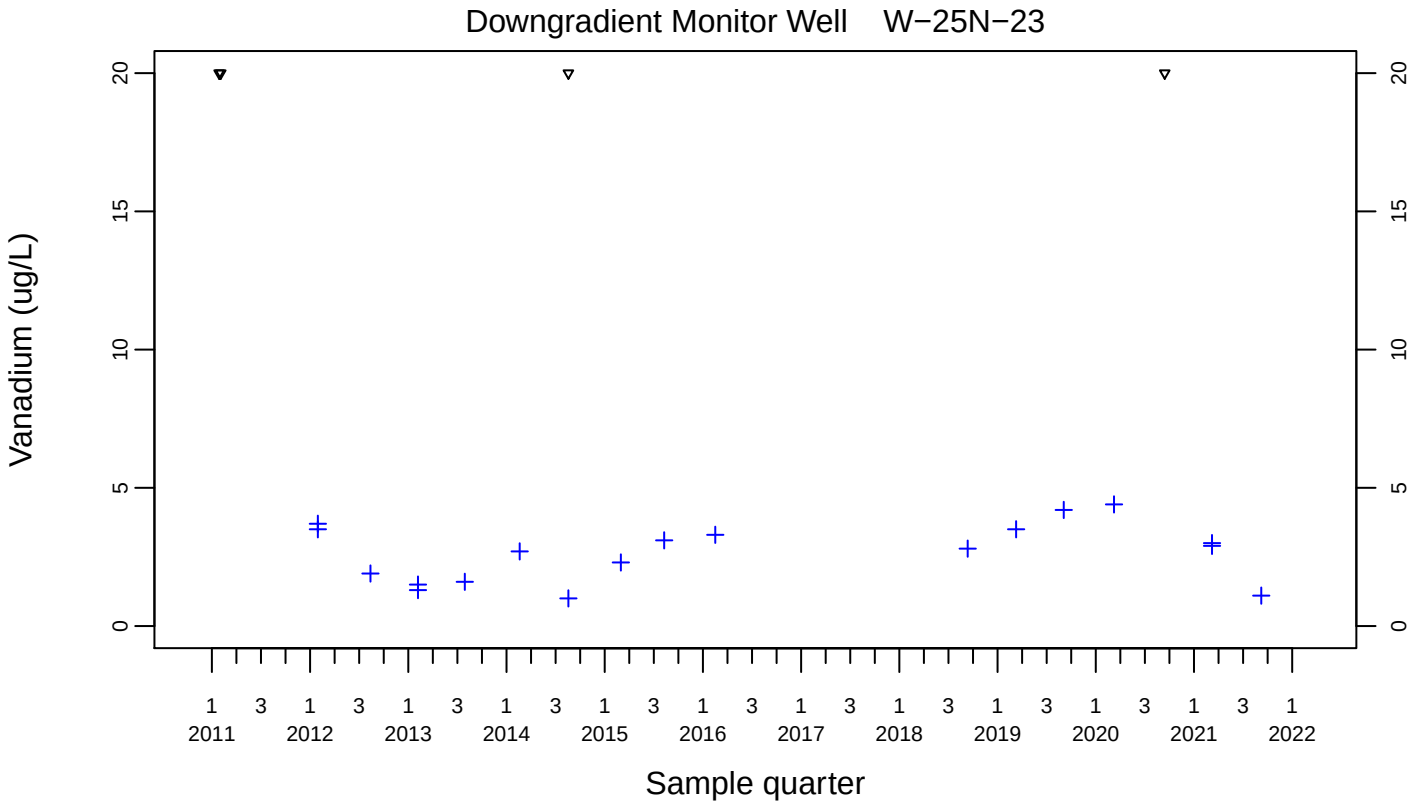



Sewage Ponds Ground Water
Silver (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Silver (ug/L)
0
5
10
15
20
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

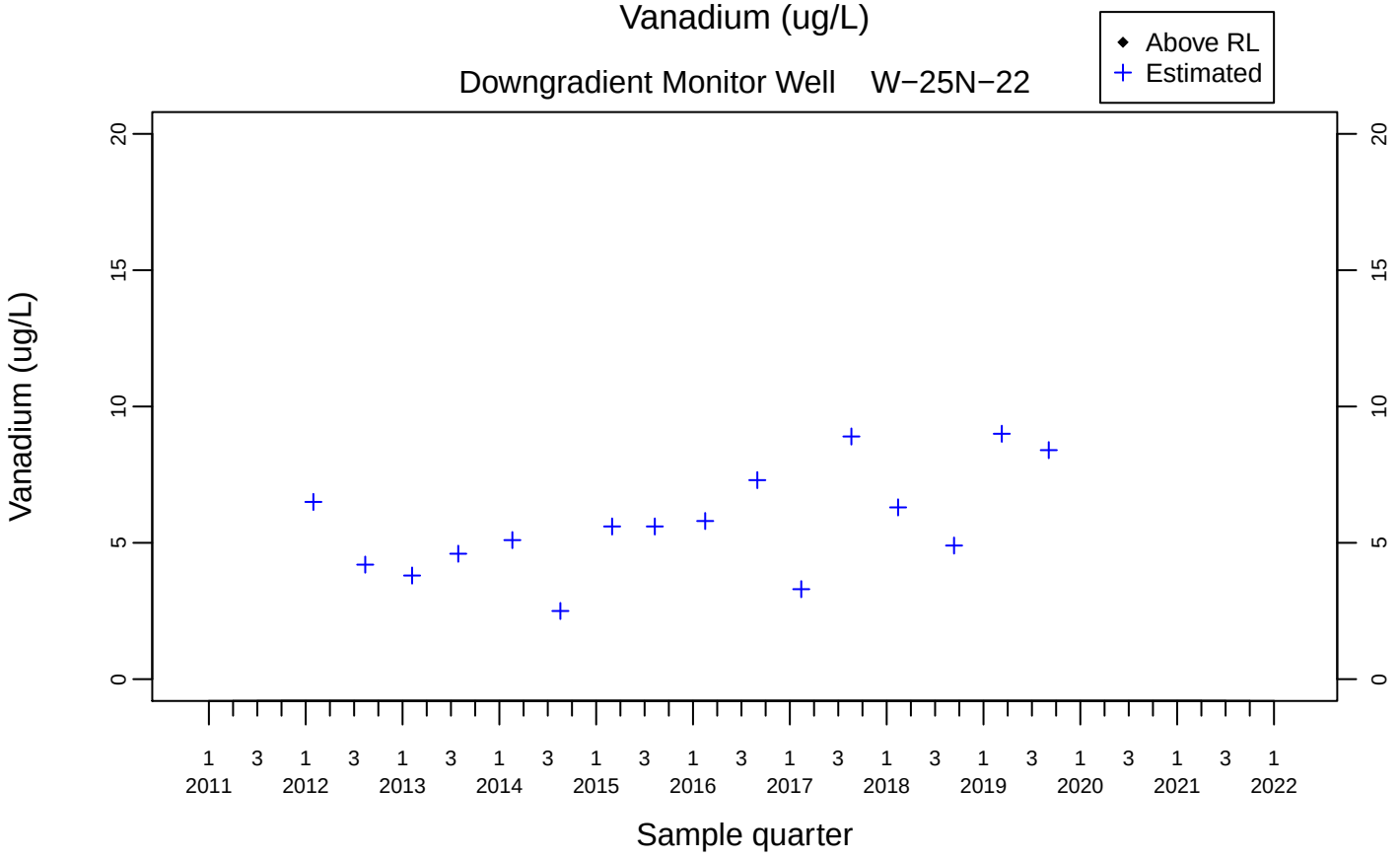

Sewage Ponds Ground Water
Vanadium (ug/L)
Above RL
Below RL
Estimated
Upgradient Monitor Well W−7ES
Vanadium (ug/L)
0
5
10
15
20
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

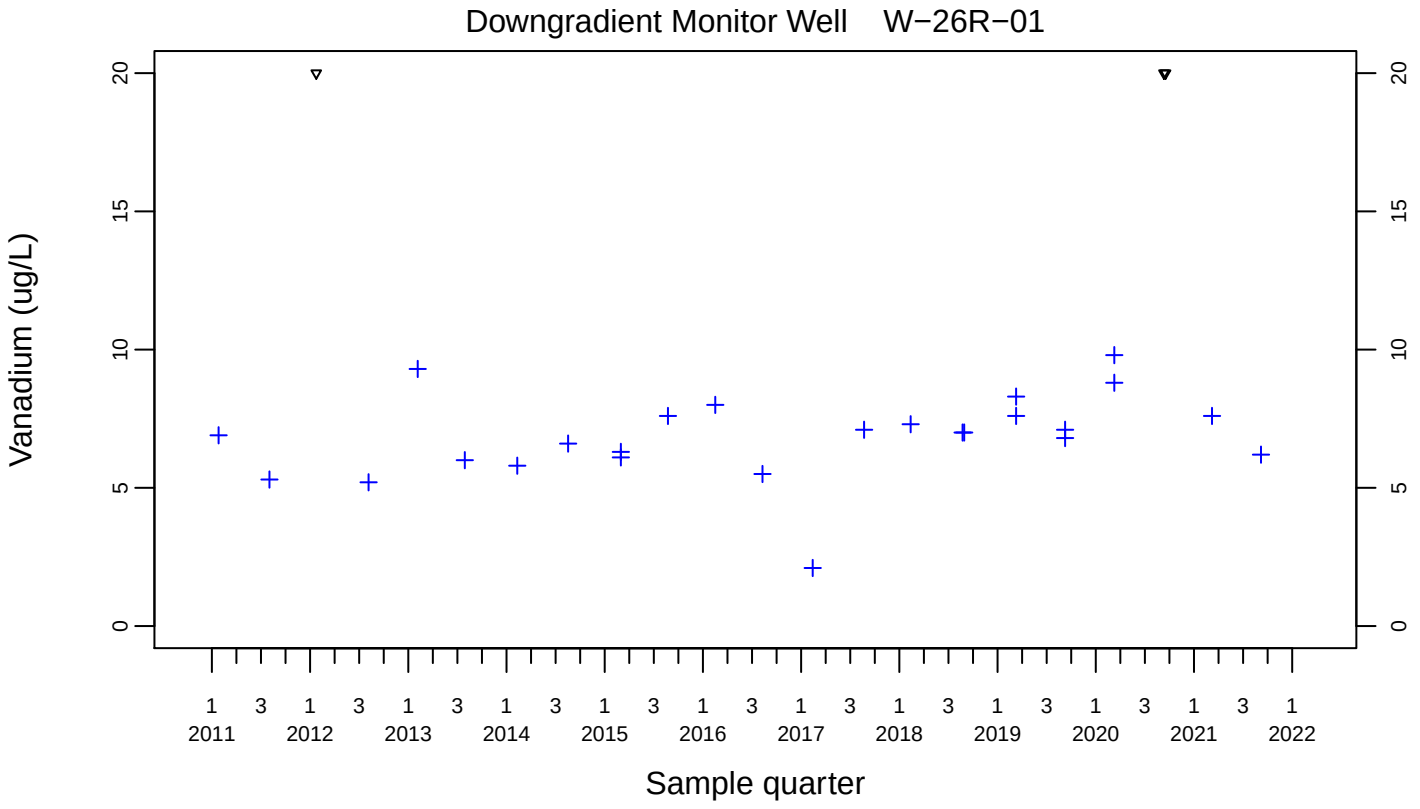

Upgradient Monitor Well W−7PS
Vanadium (ug/L)
0
5
10
15
20
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Vanadium (ug/L)
Above RL
Estimated
Crossgradient Monitor Well W−35A−04
Vanadium (ug/L)
0
5
10
15
20
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

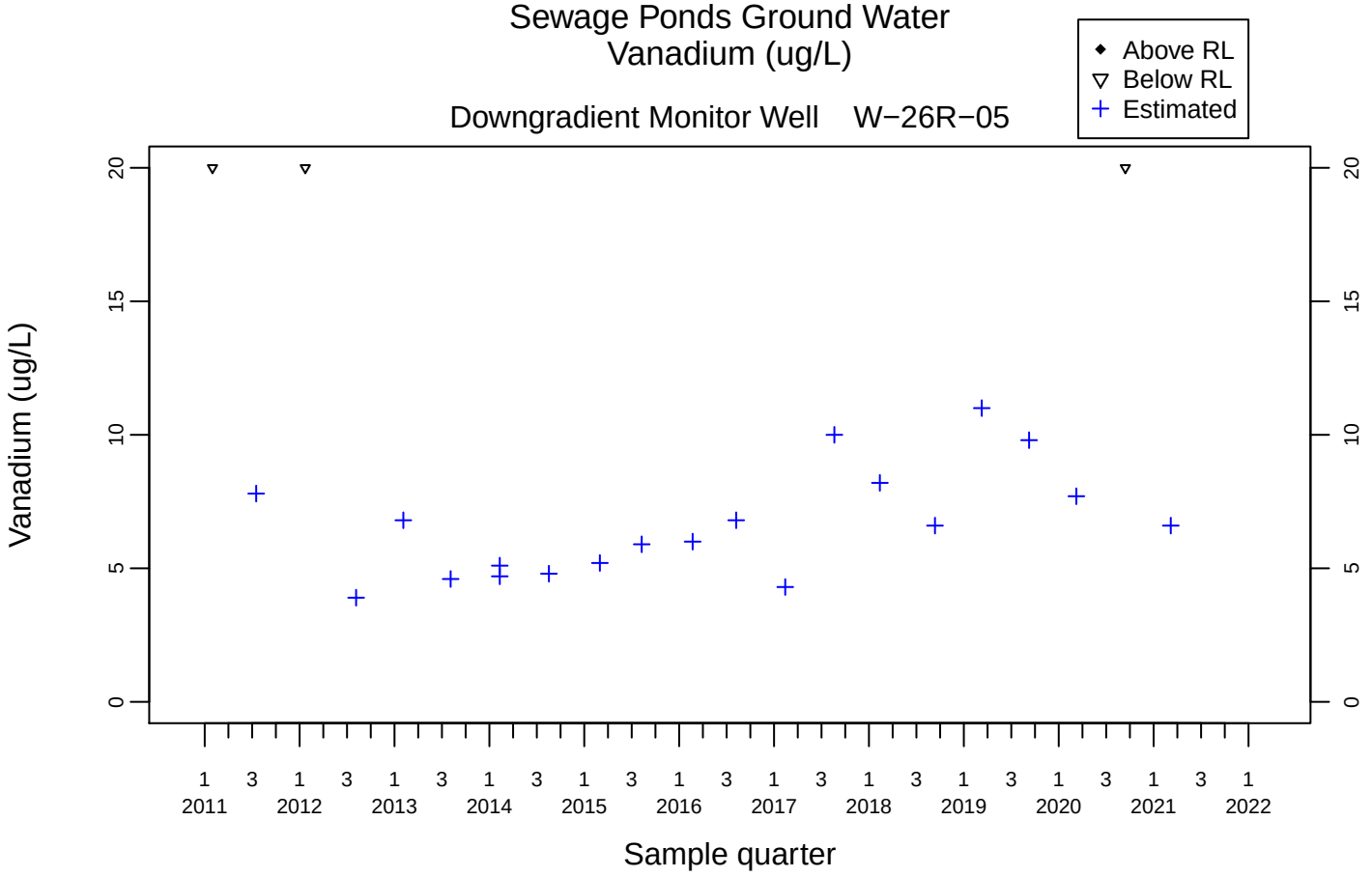

Downgradient Monitor Well W−25N−23
Vanadium (ug/L)
0
5
10
15
20
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

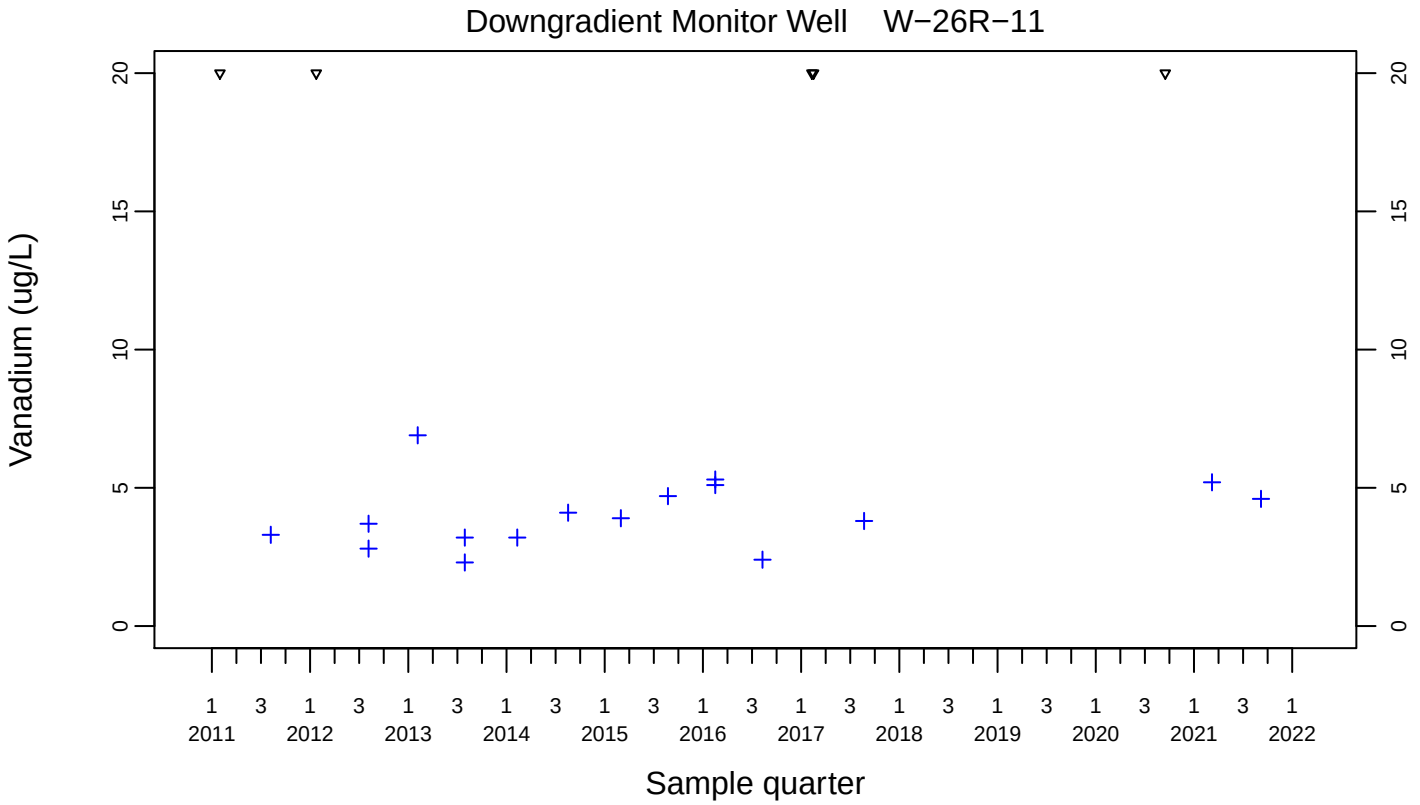
Sewage Ponds Ground Water
Vanadium (ug/L)

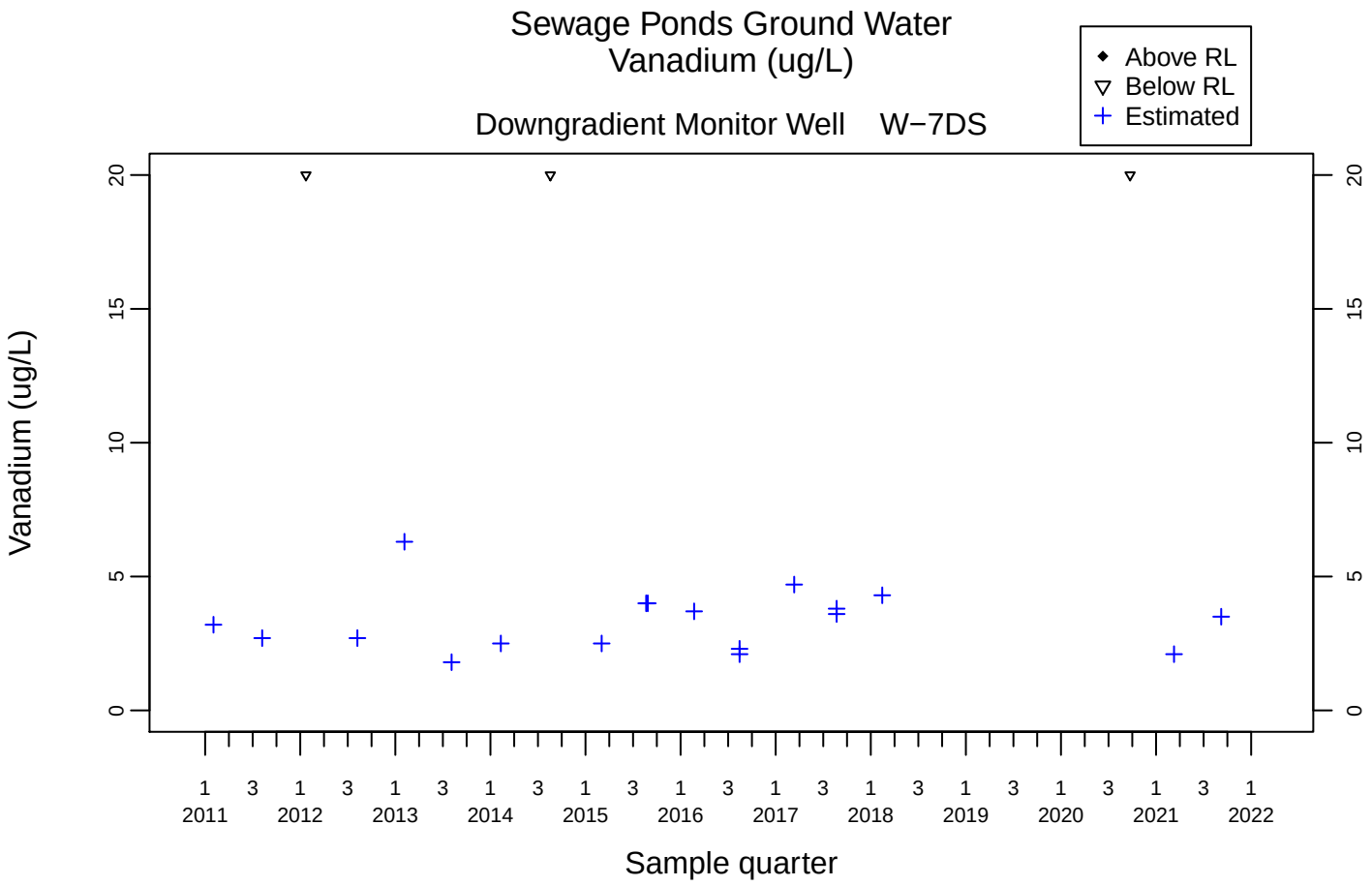




Sewage Ponds Ground Water
Vanadium (ug/L)

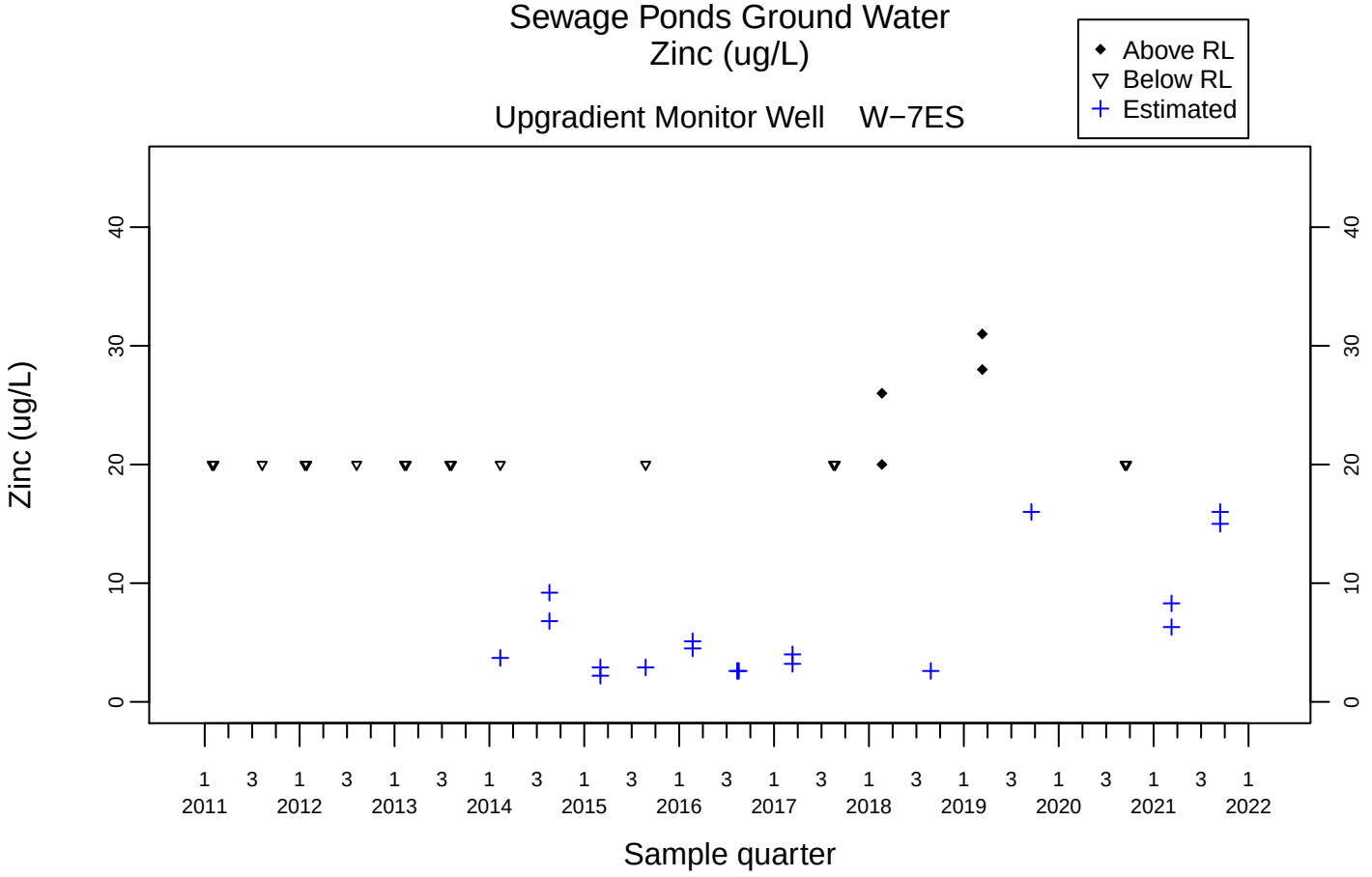




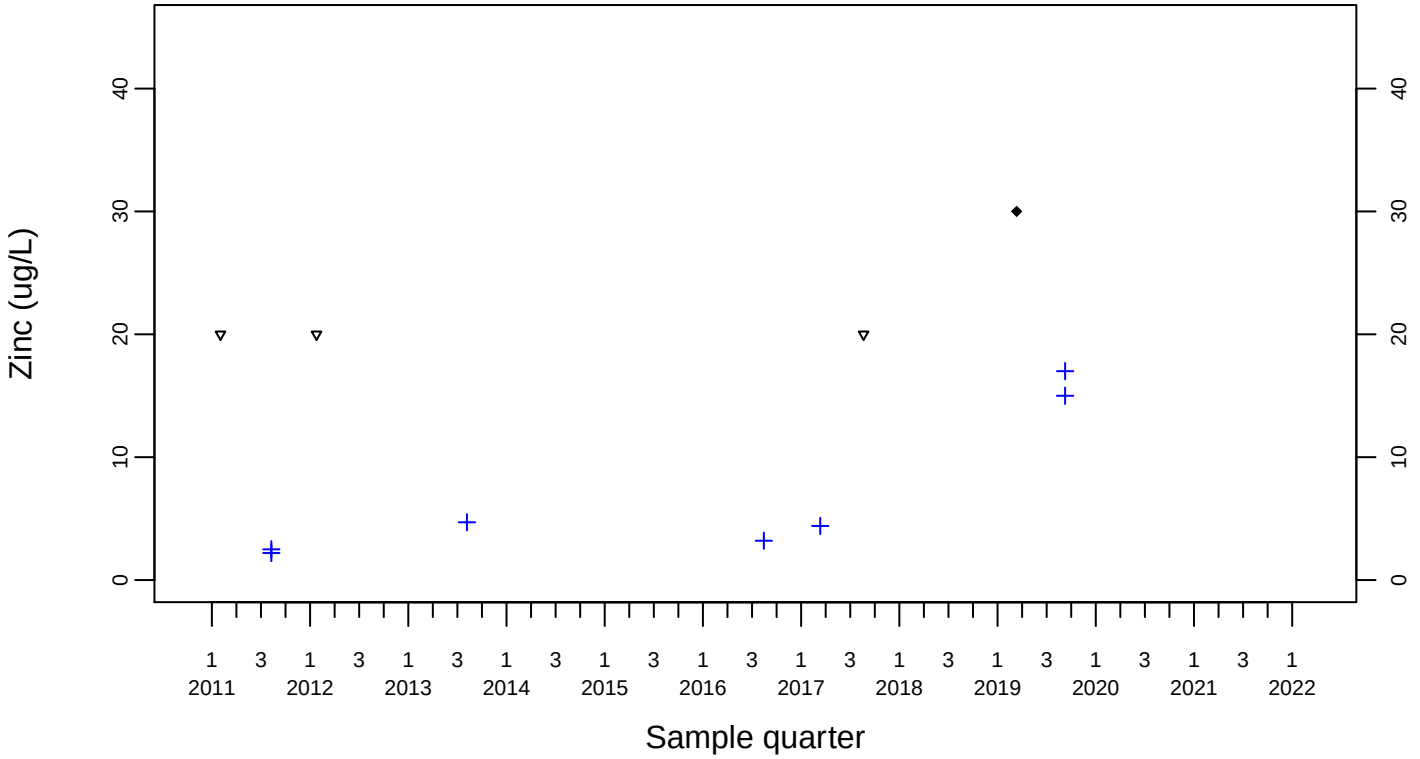

Sewage Ponds Ground Water
Vanadium (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Vanadium (ug/L)
0
5
10
15
20
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
Zinc (ug/L)

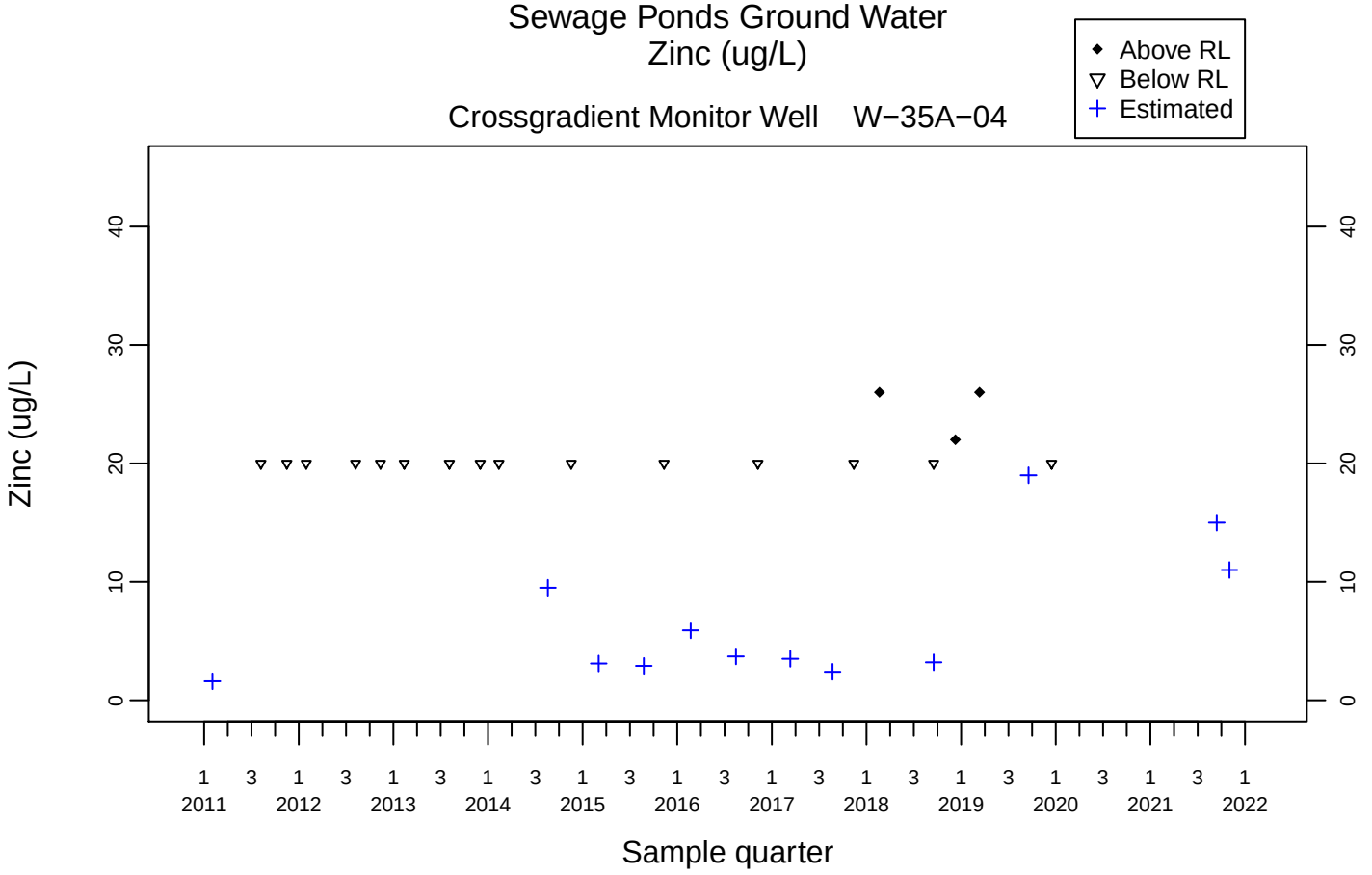
Upgradient Monitor Well W−7ES

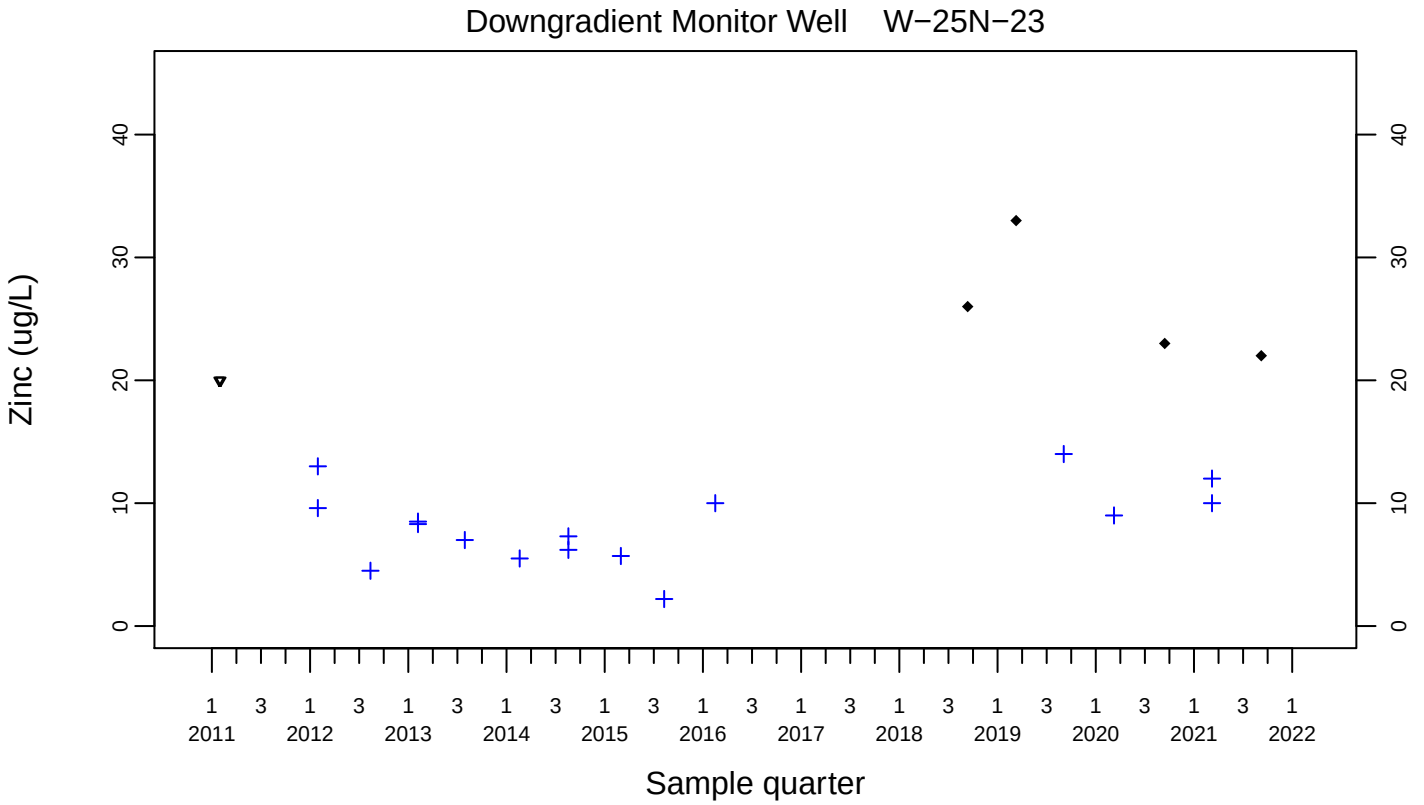


Upgradient Monitor Well W−7PS

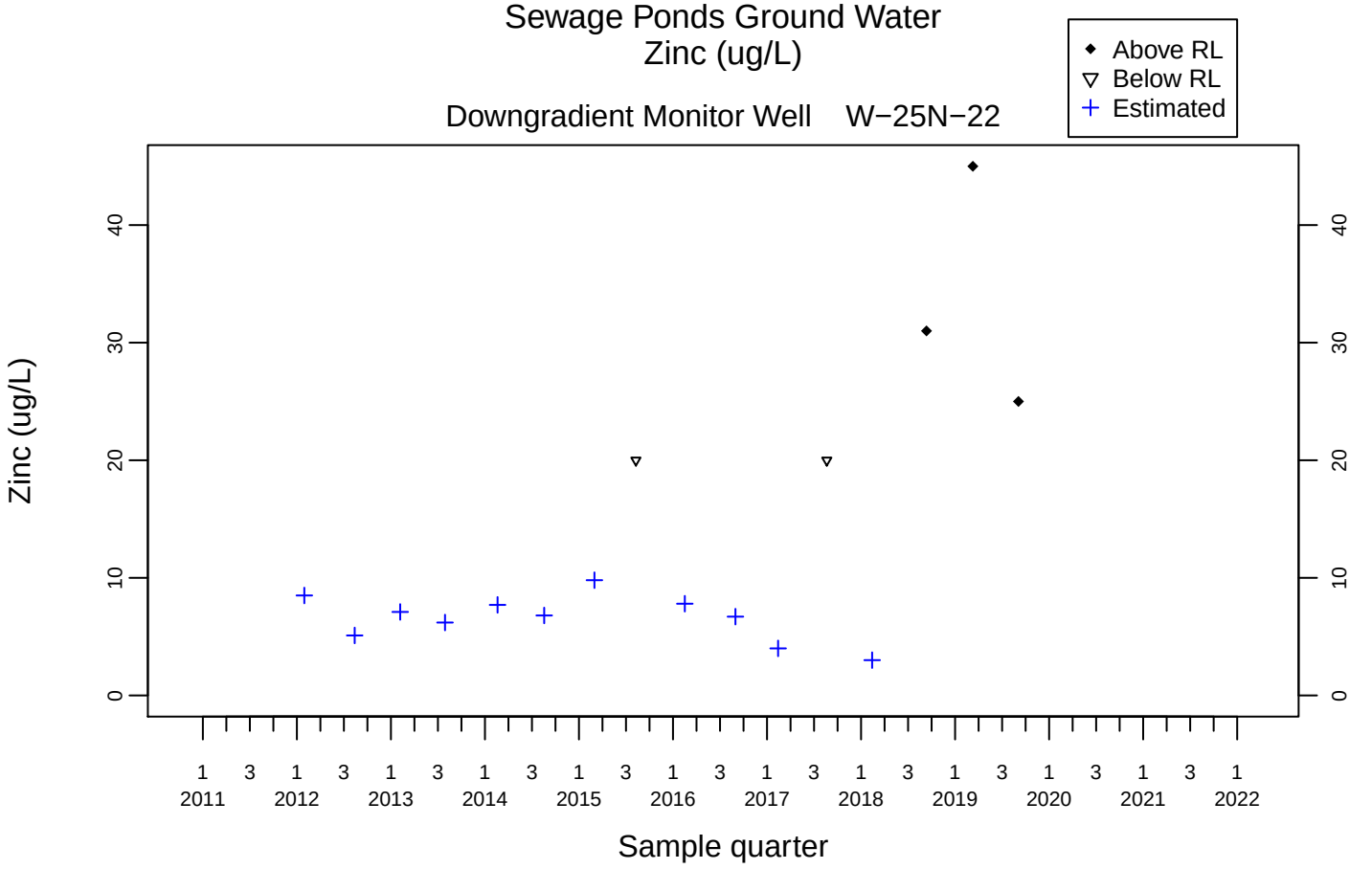


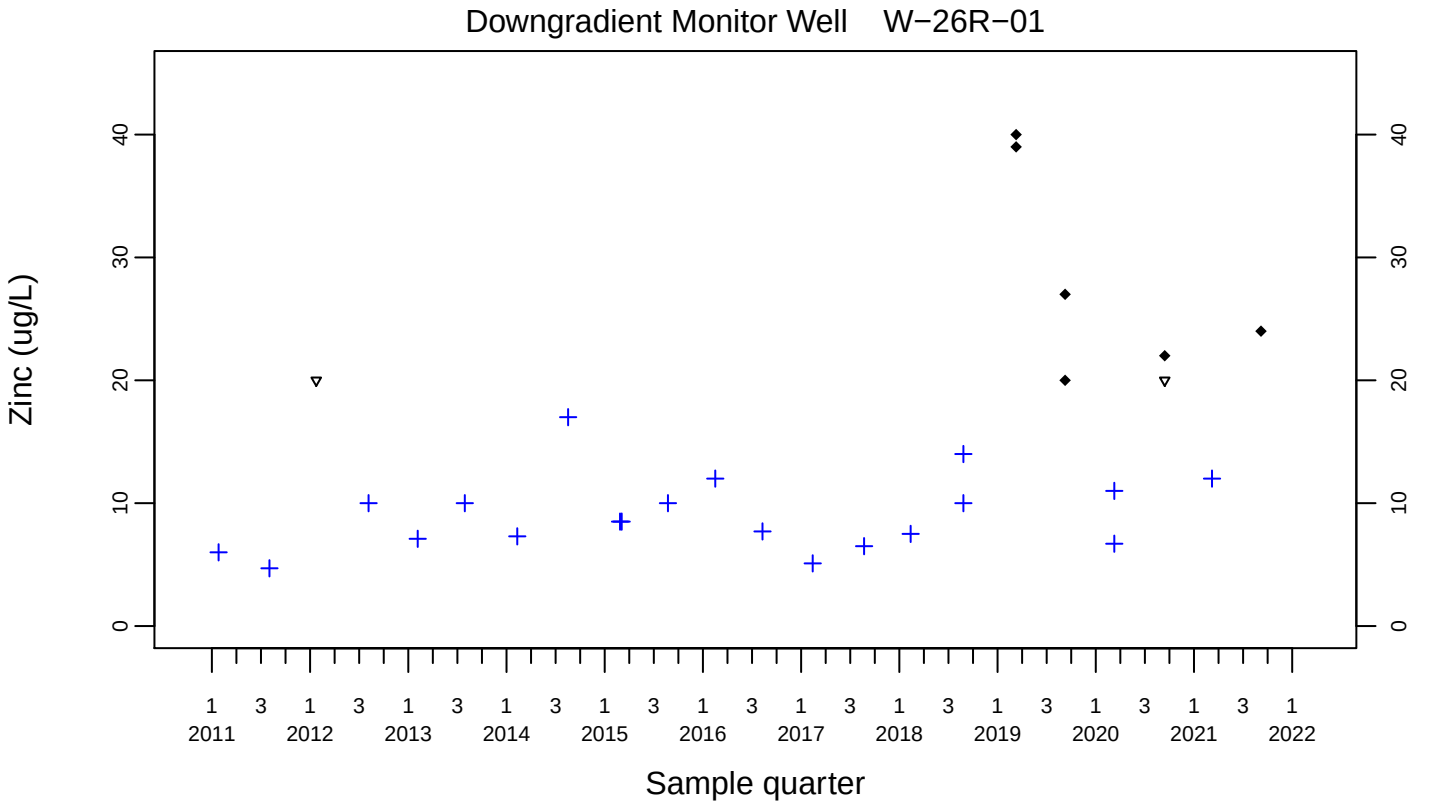
Sewage Ponds Ground Water
Zinc (ug/L)



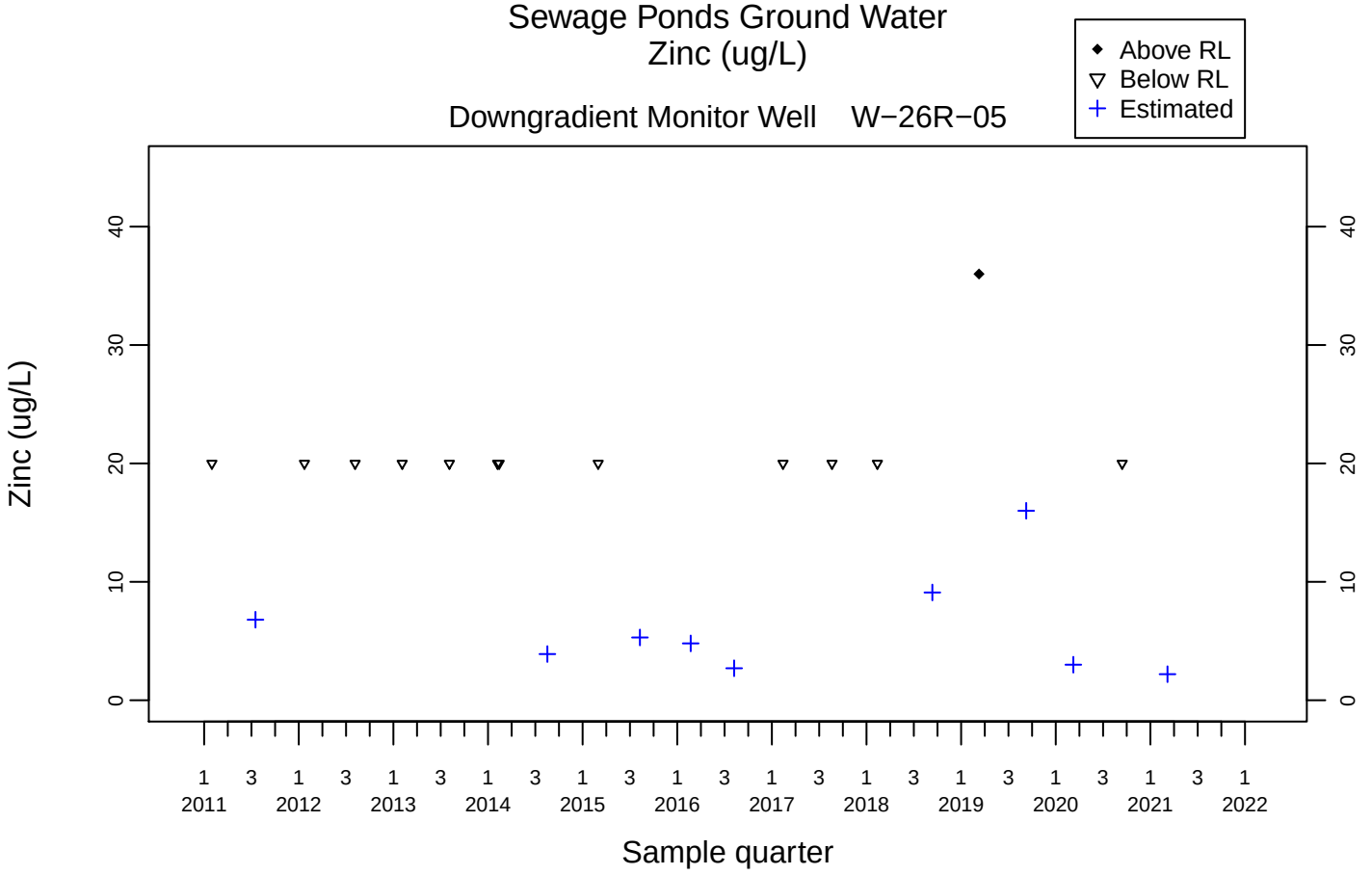


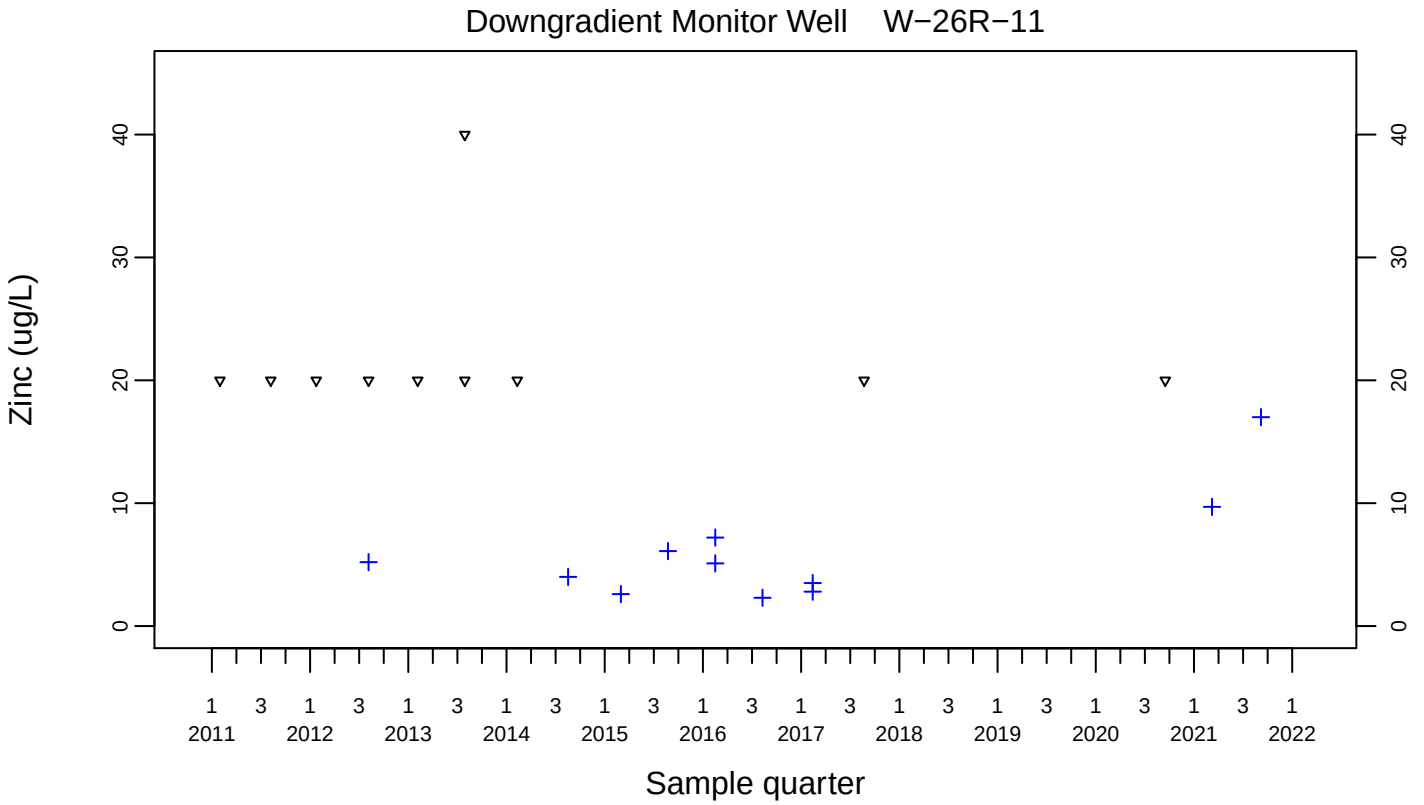
Sewage Ponds Ground Water
Zinc (ug/L)

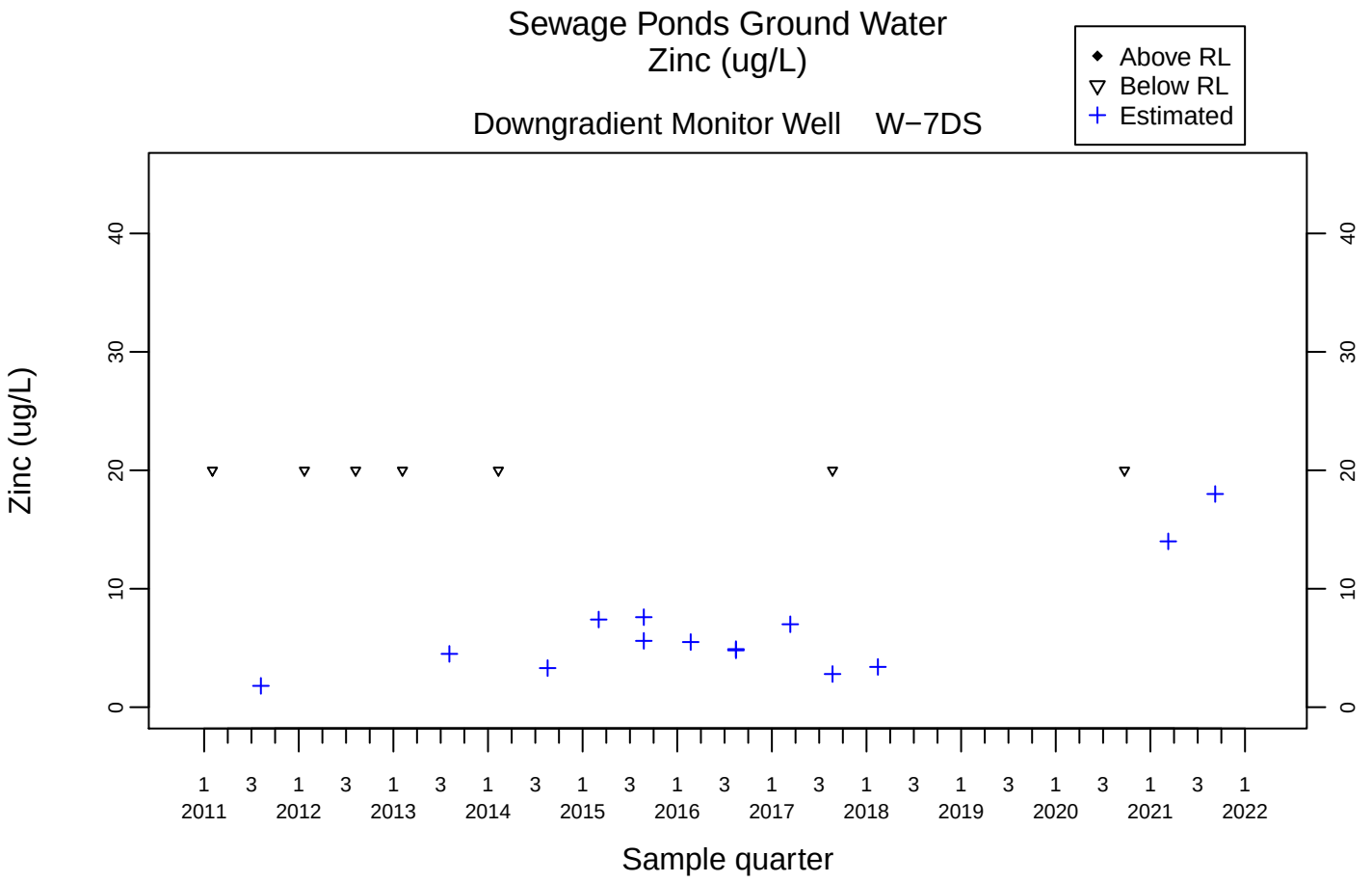




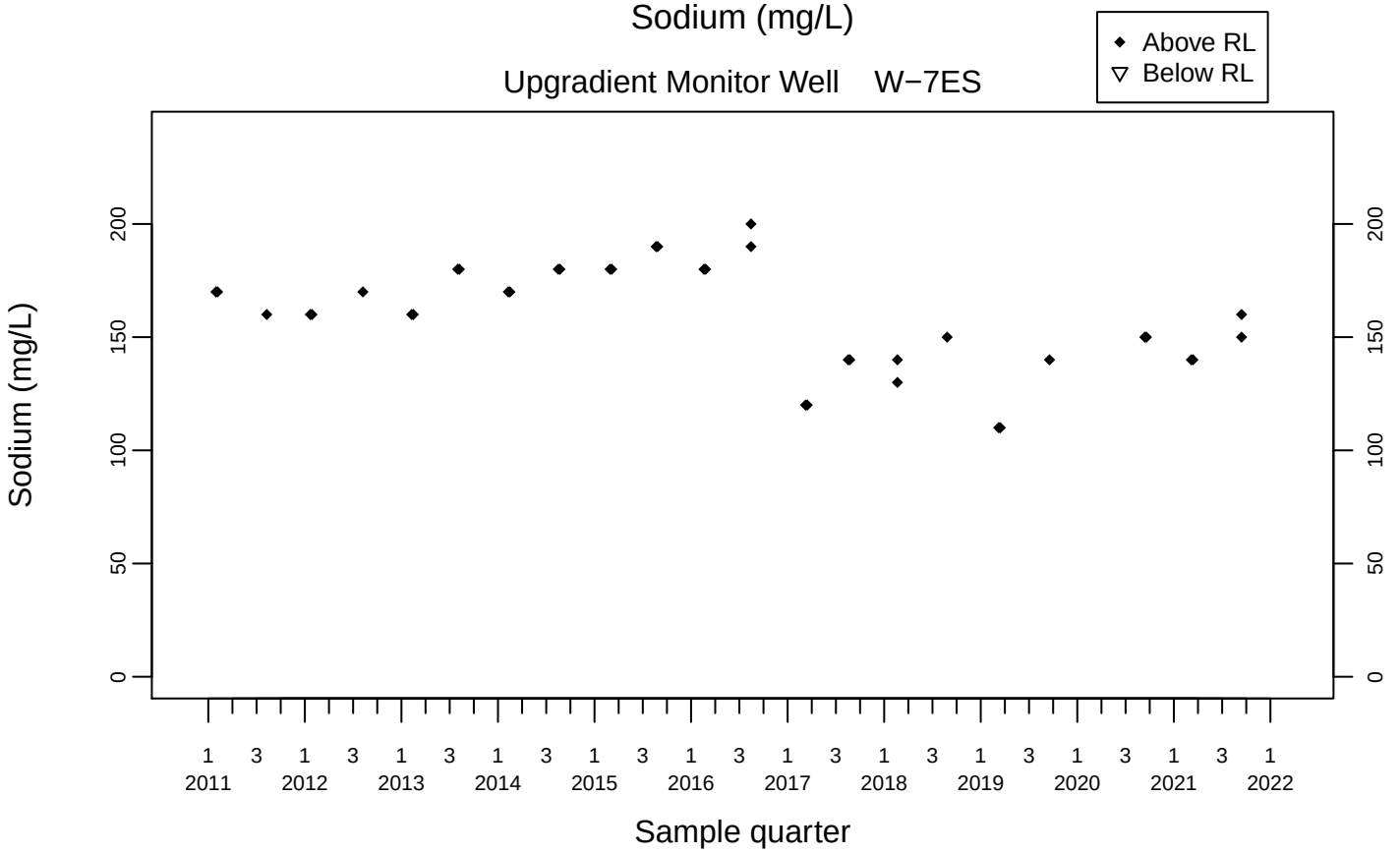
Sewage Ponds Ground Water
Zinc (ug/L)

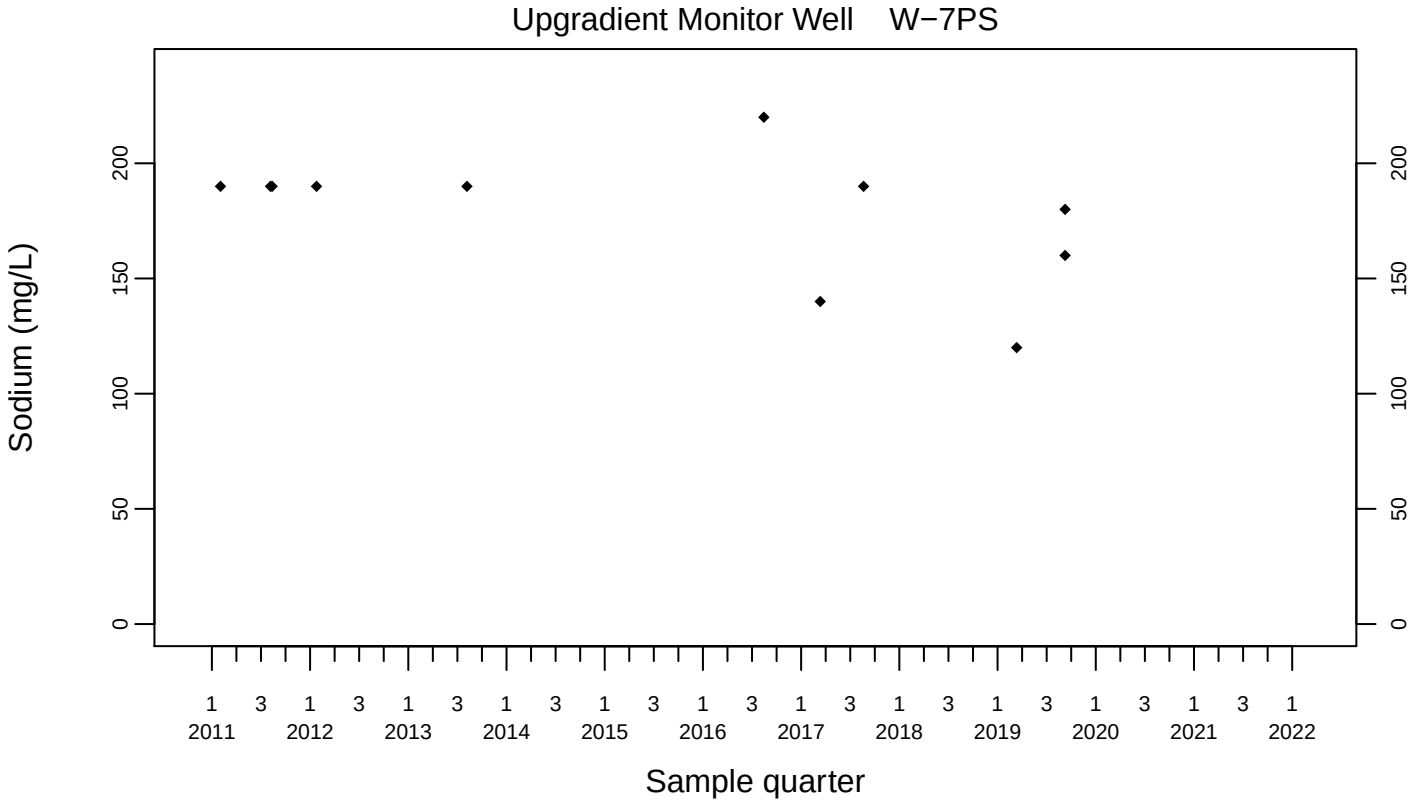




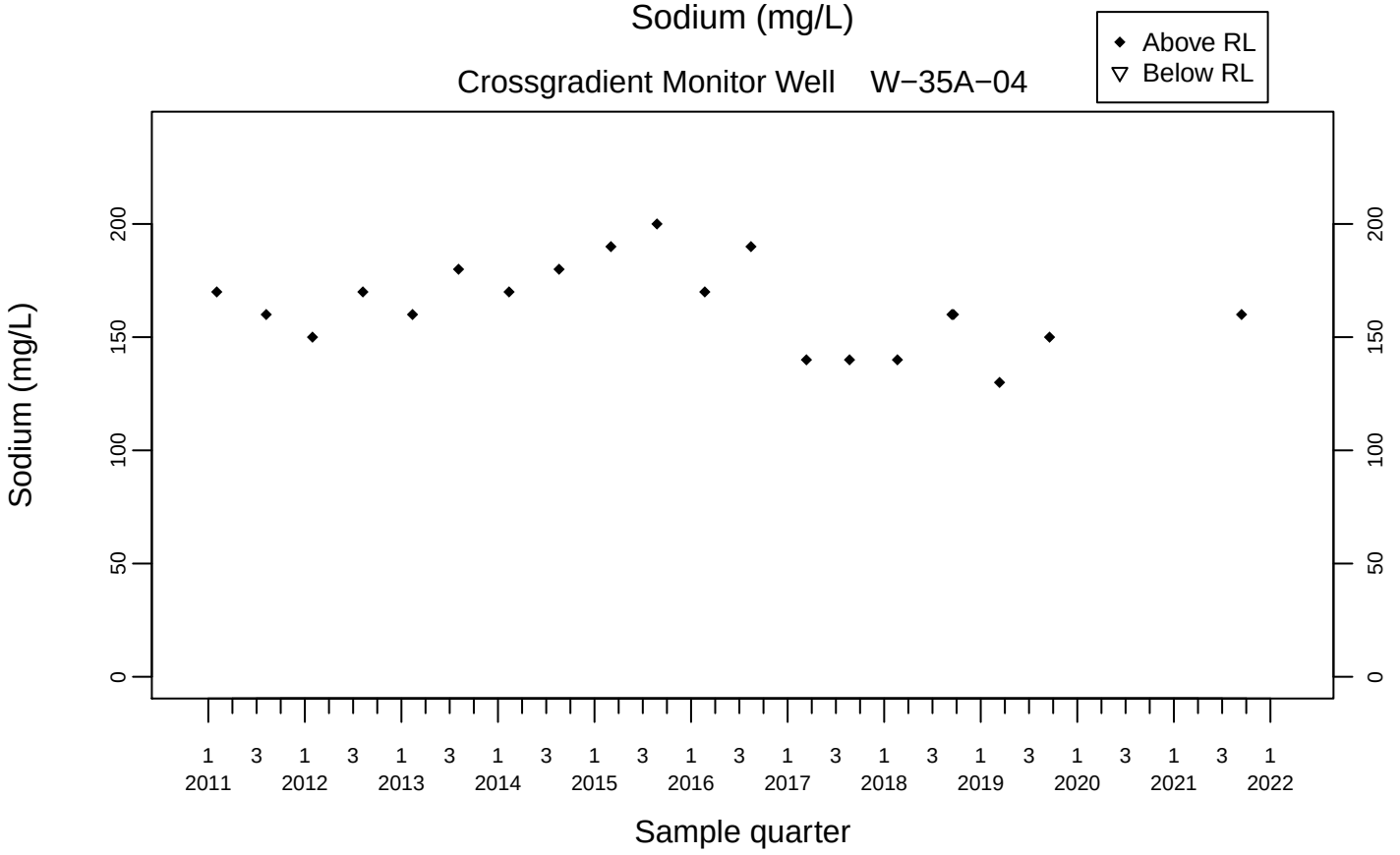

Sewage Ponds Ground Water
Zinc (ug/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Estimated
Zinc (ug/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

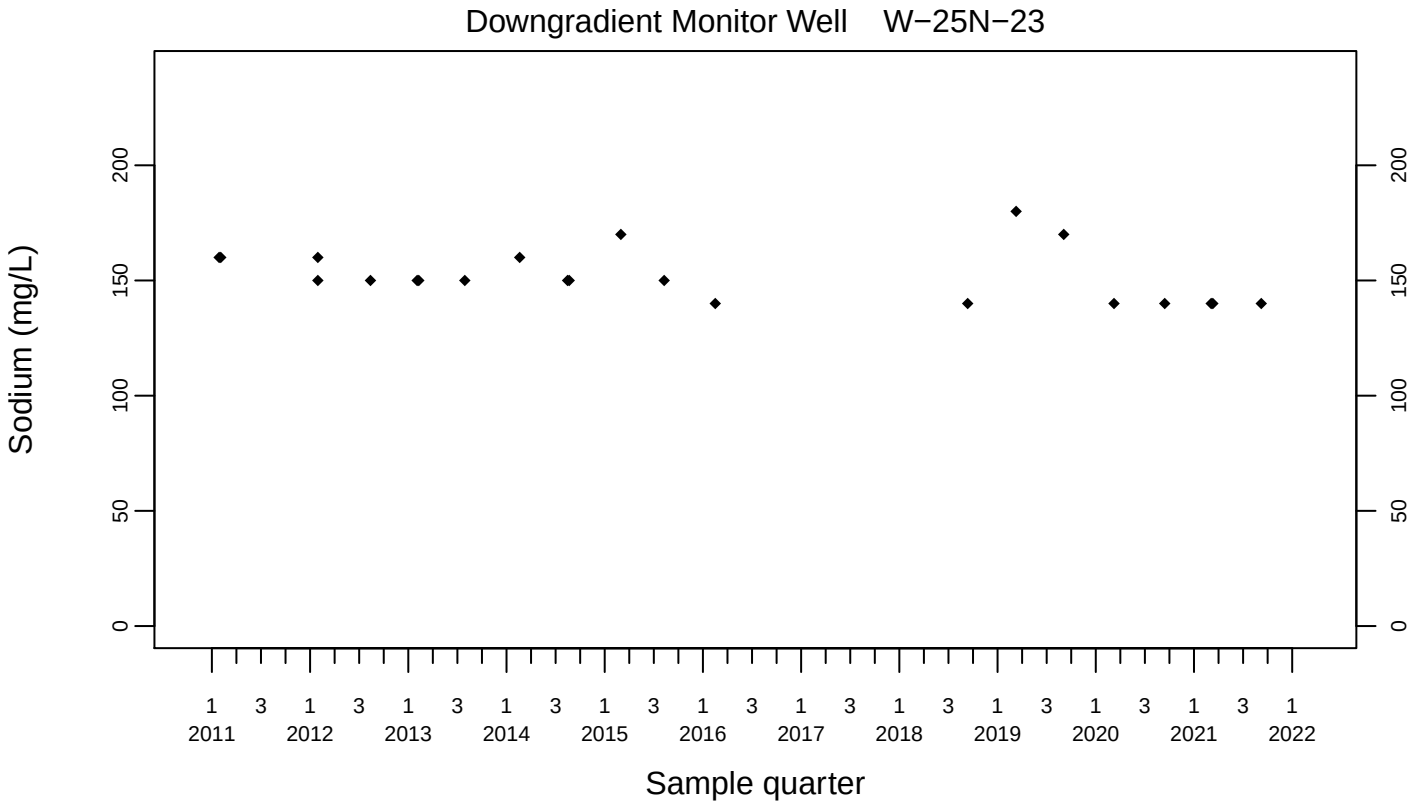
Sewage Ponds Ground Water
Sodium (mg/L)



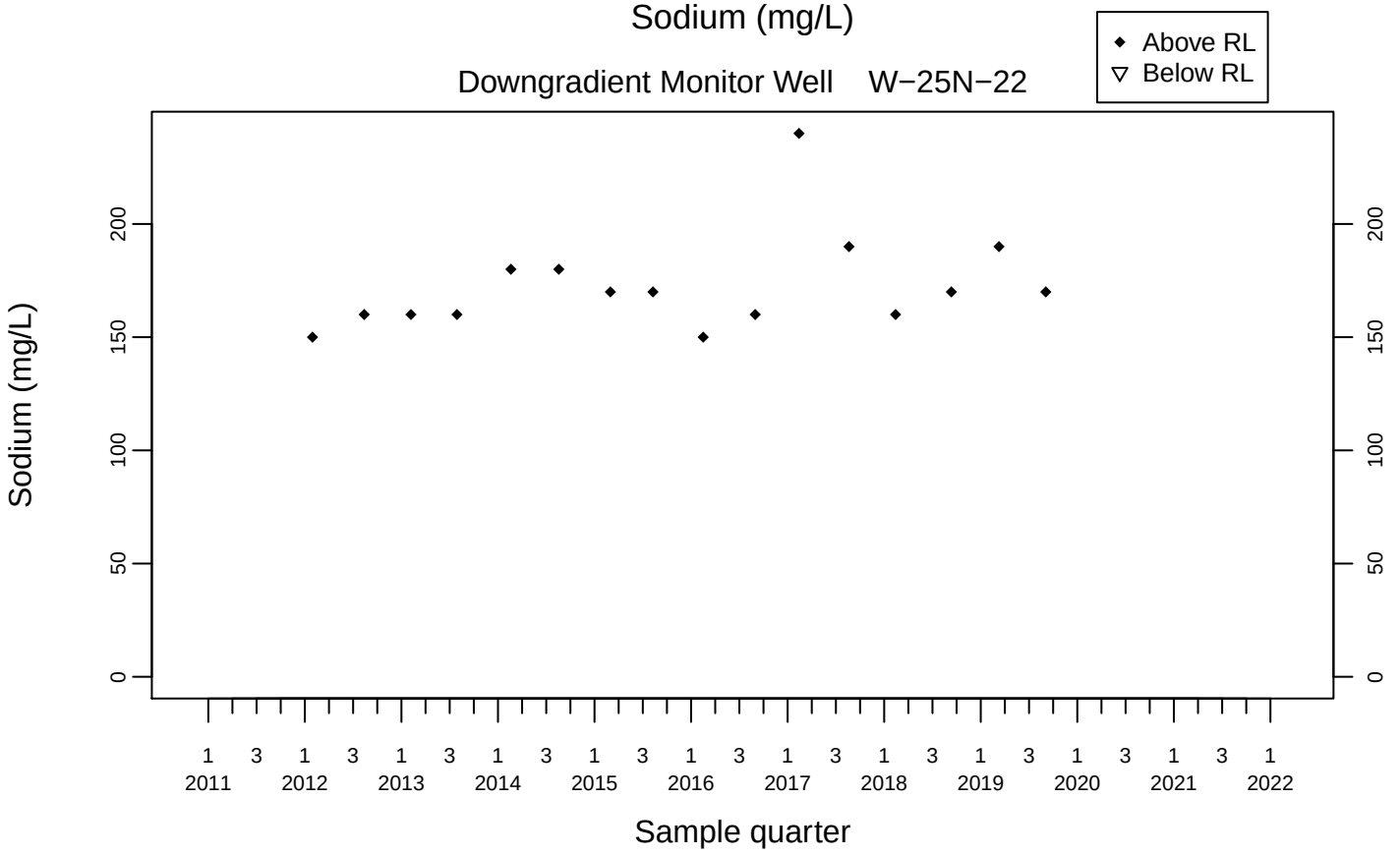


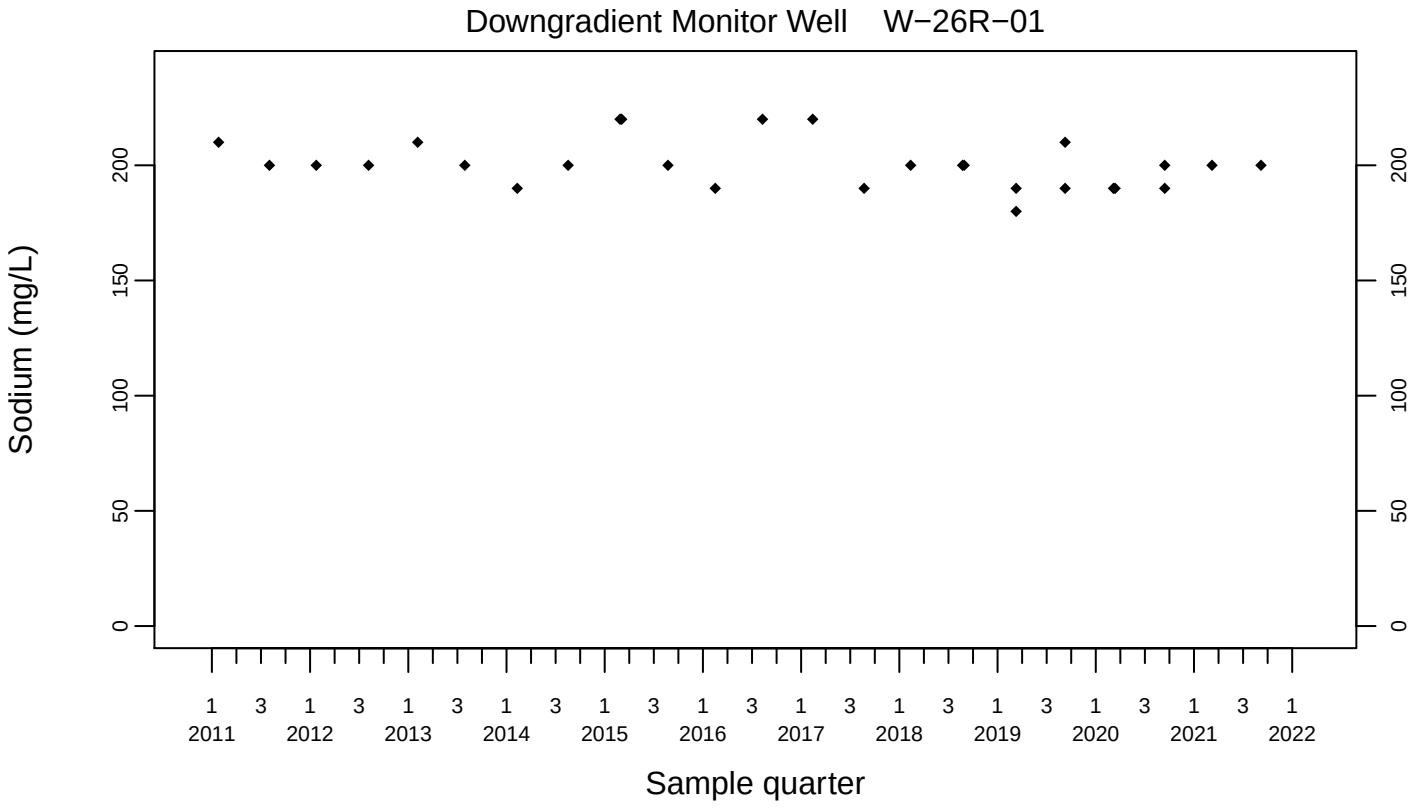
Sewage Ponds Ground Water
Sodium (mg/L)



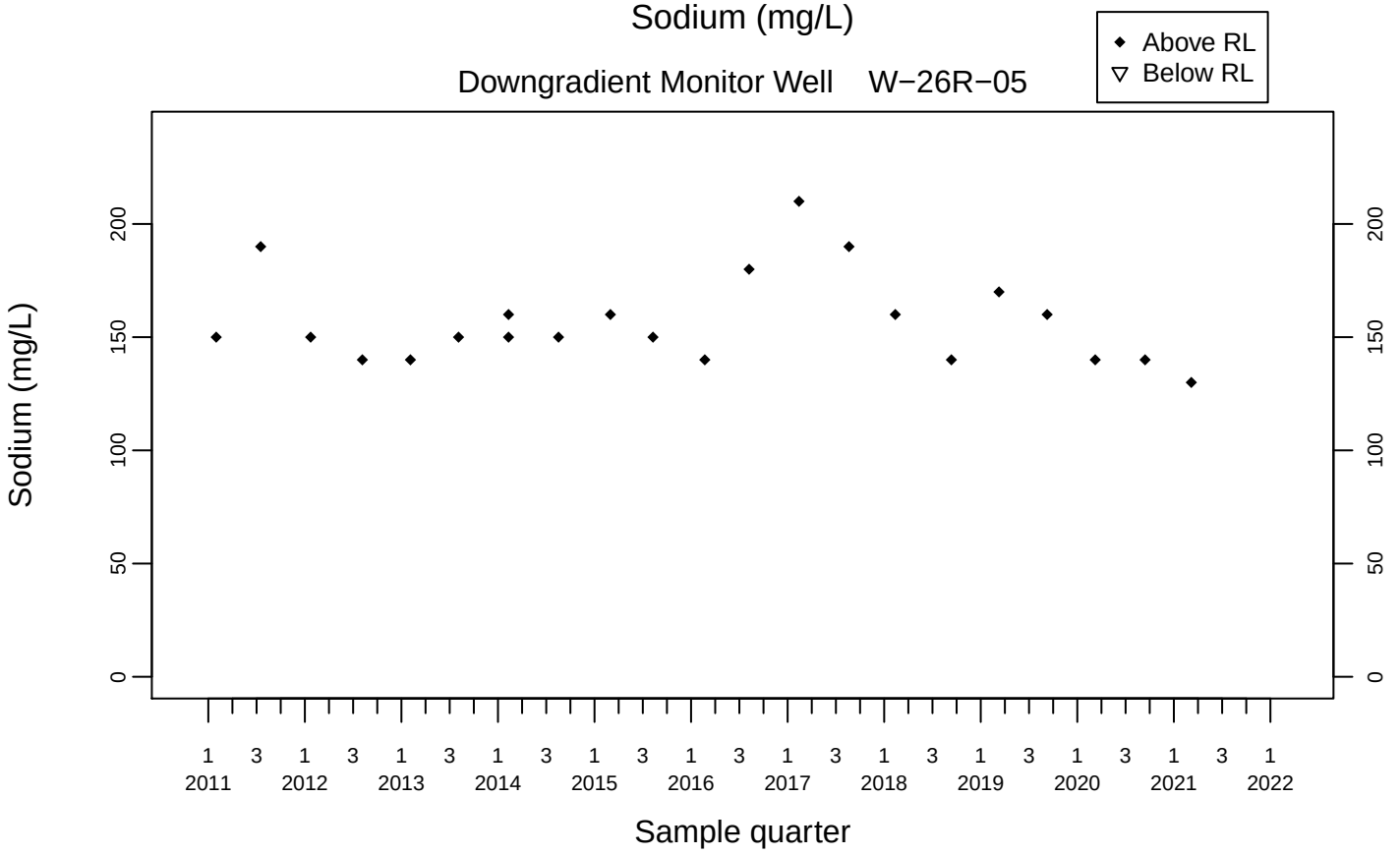


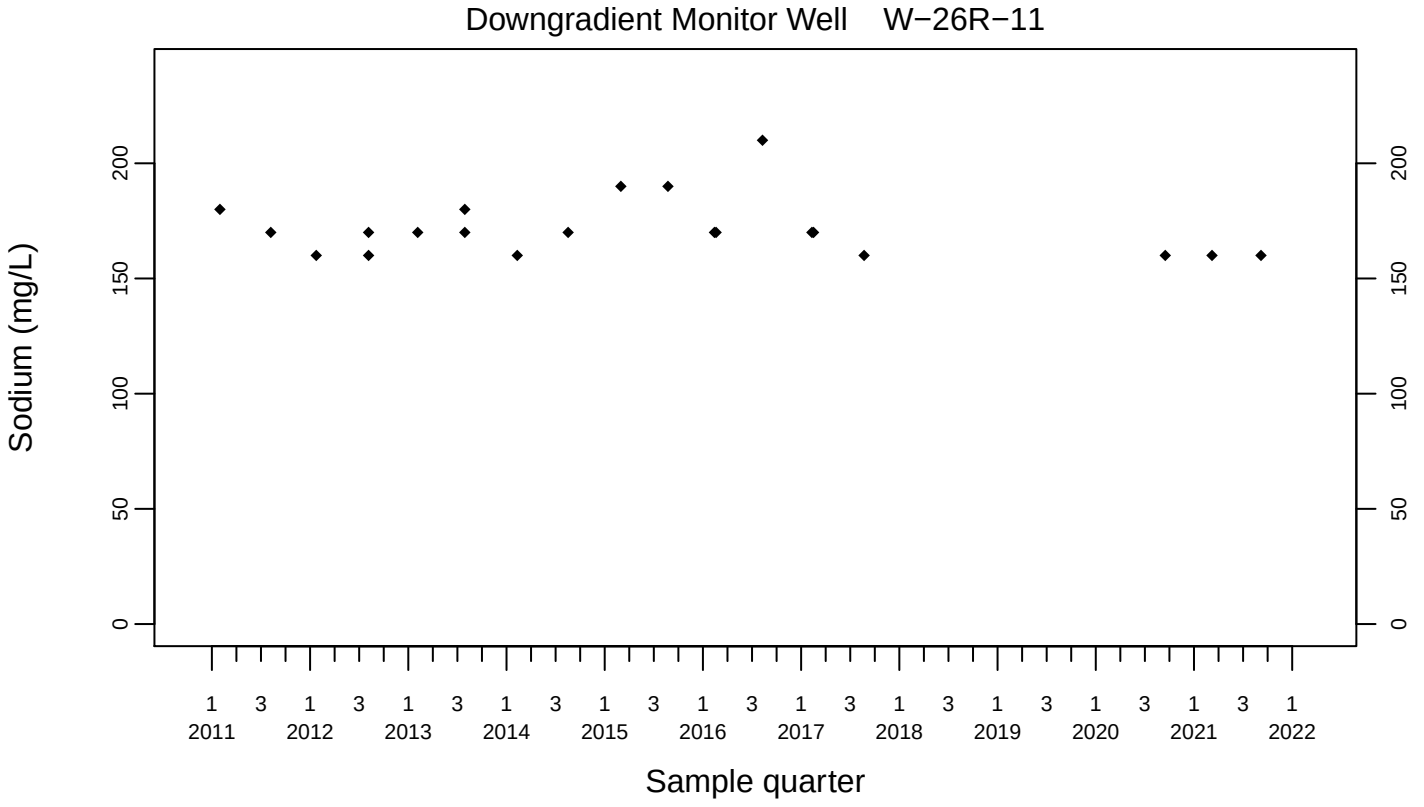
Sewage Ponds Ground Water
Sodium (mg/L)

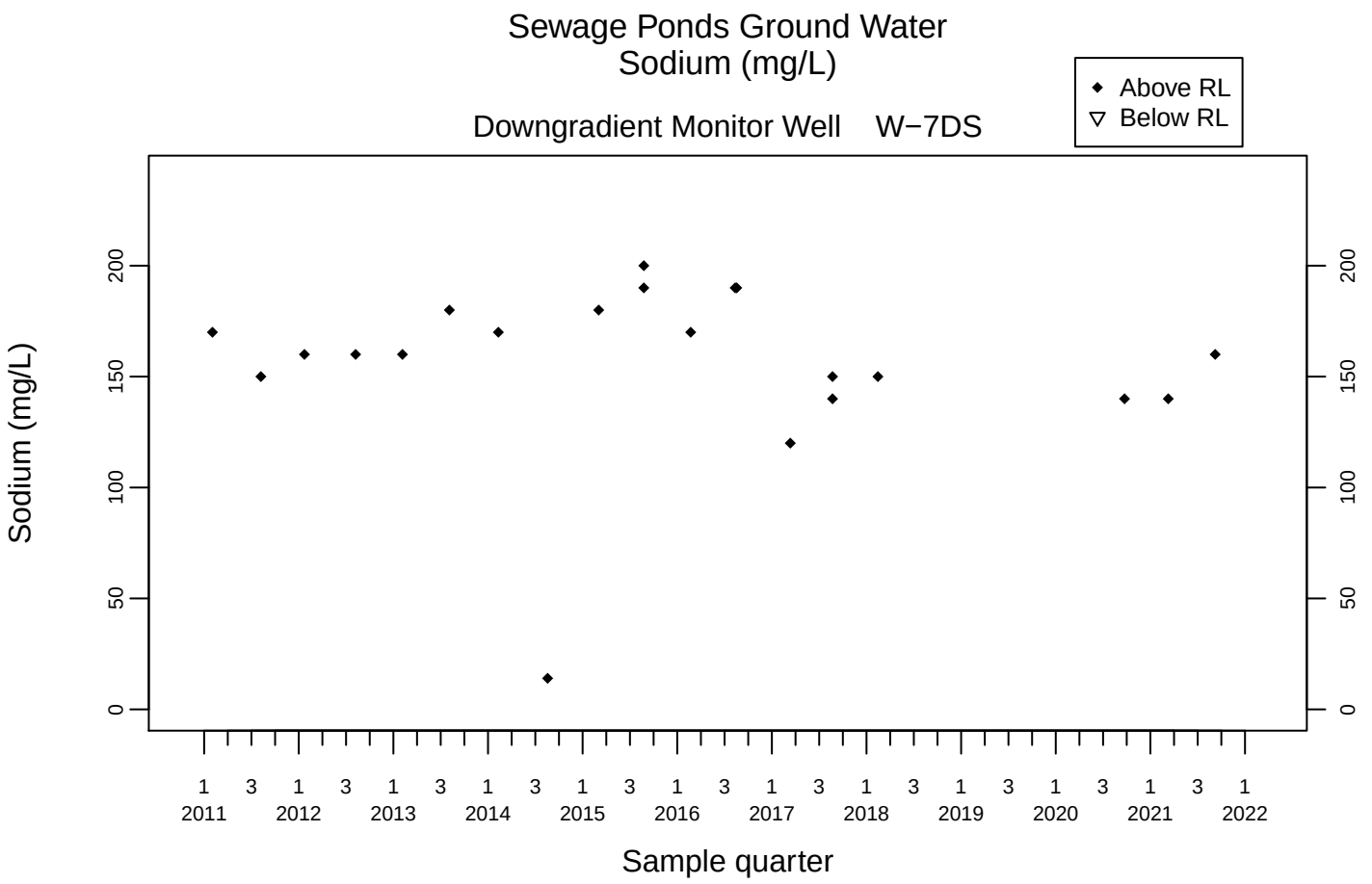


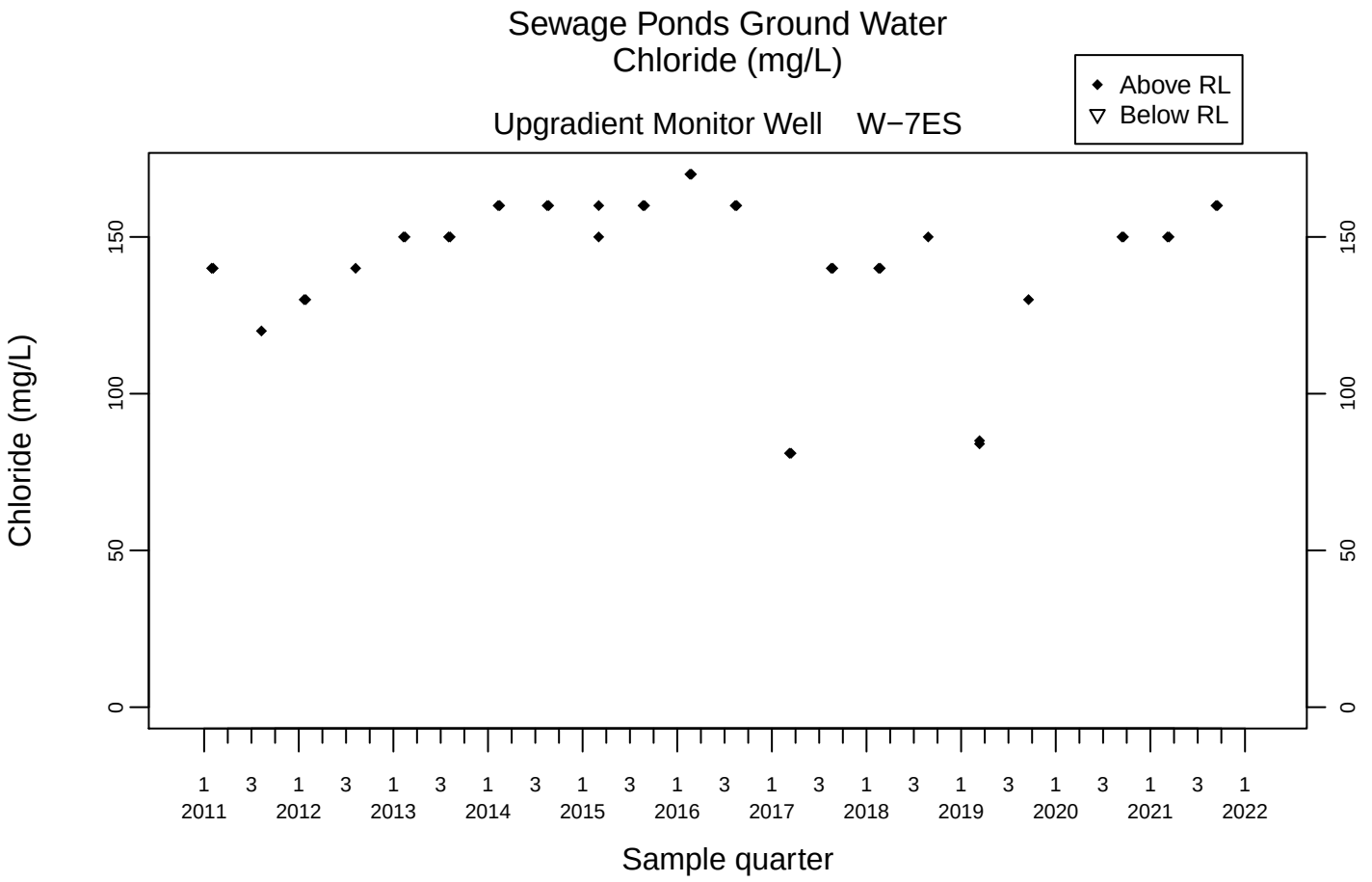


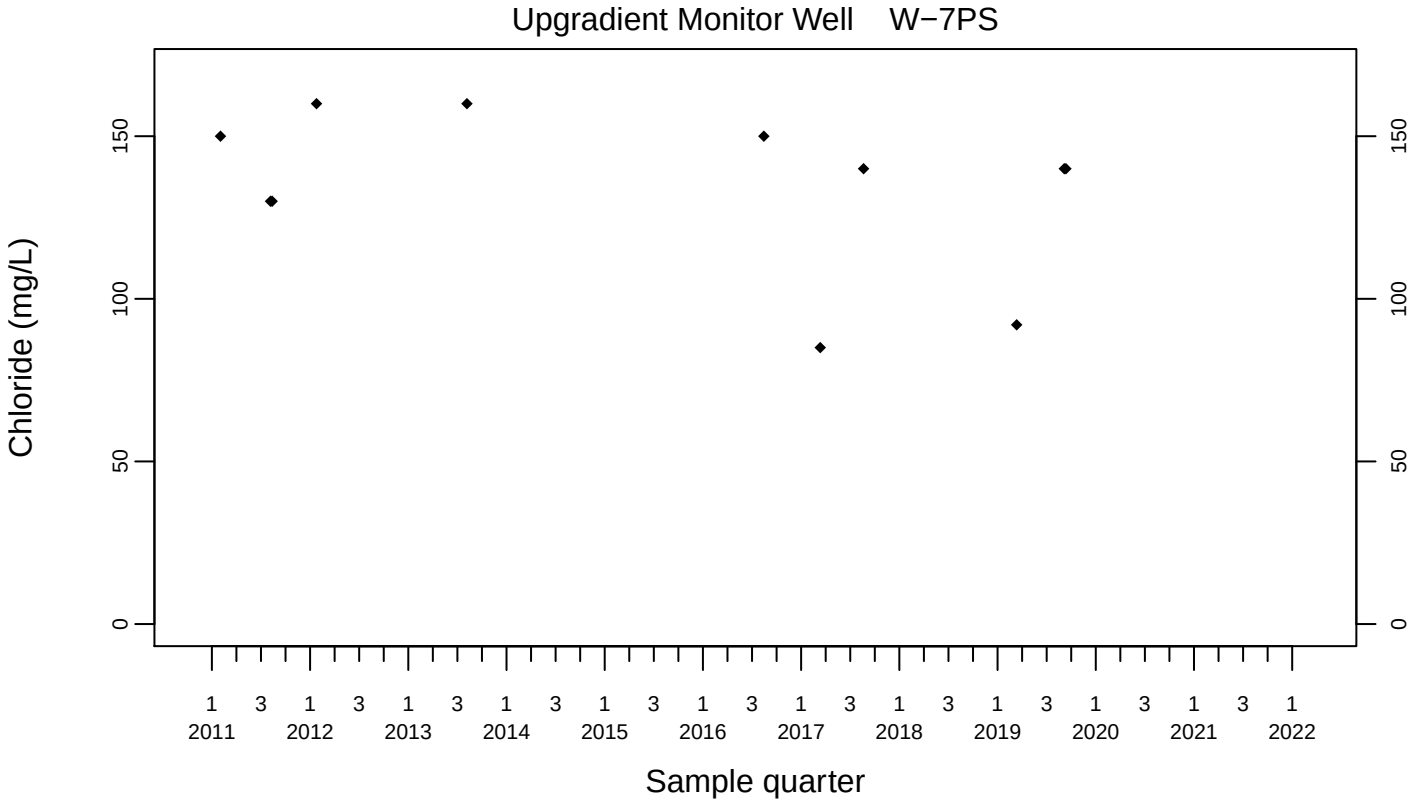
Sewage Ponds Ground Water
Sodium (mg/L)



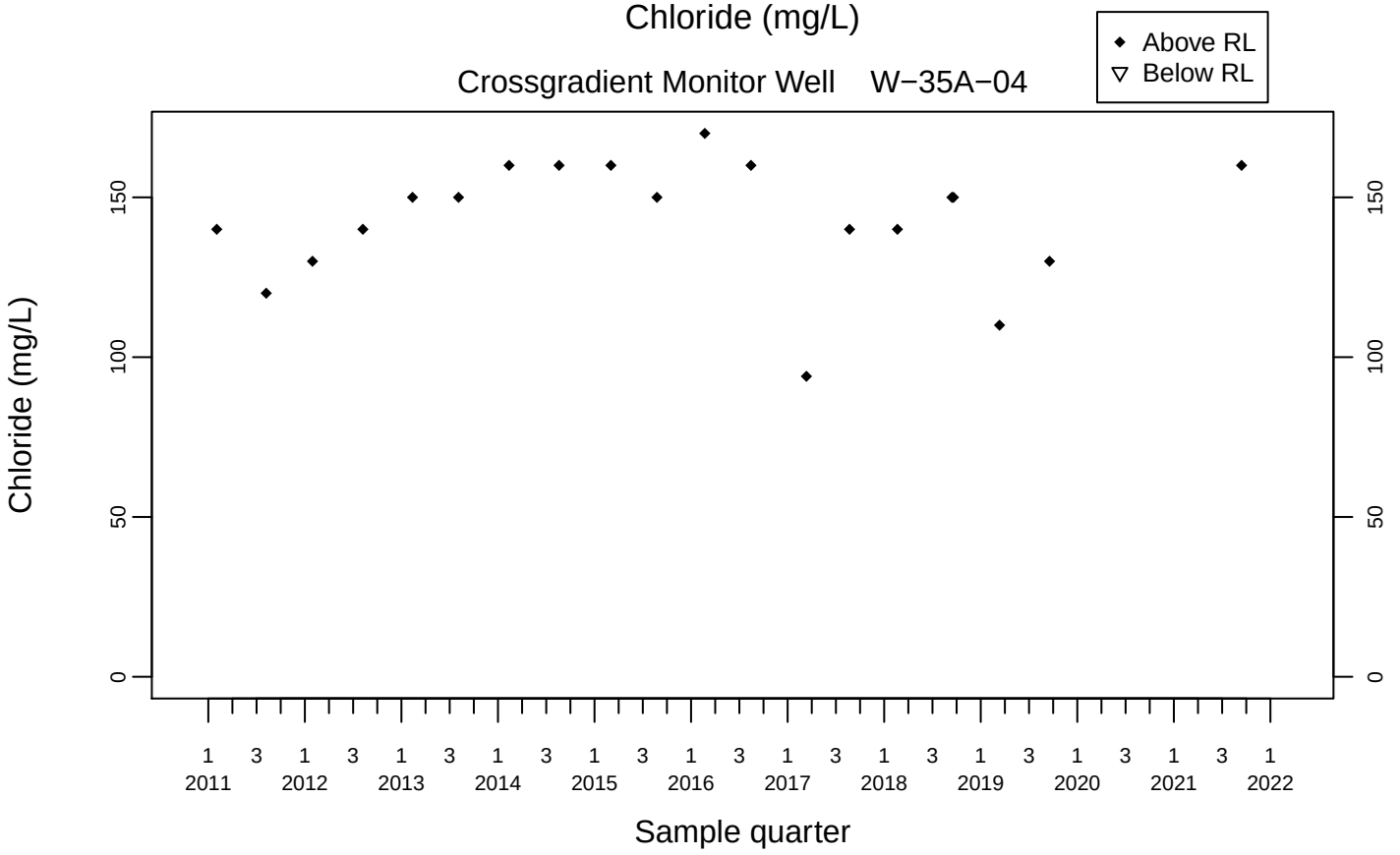


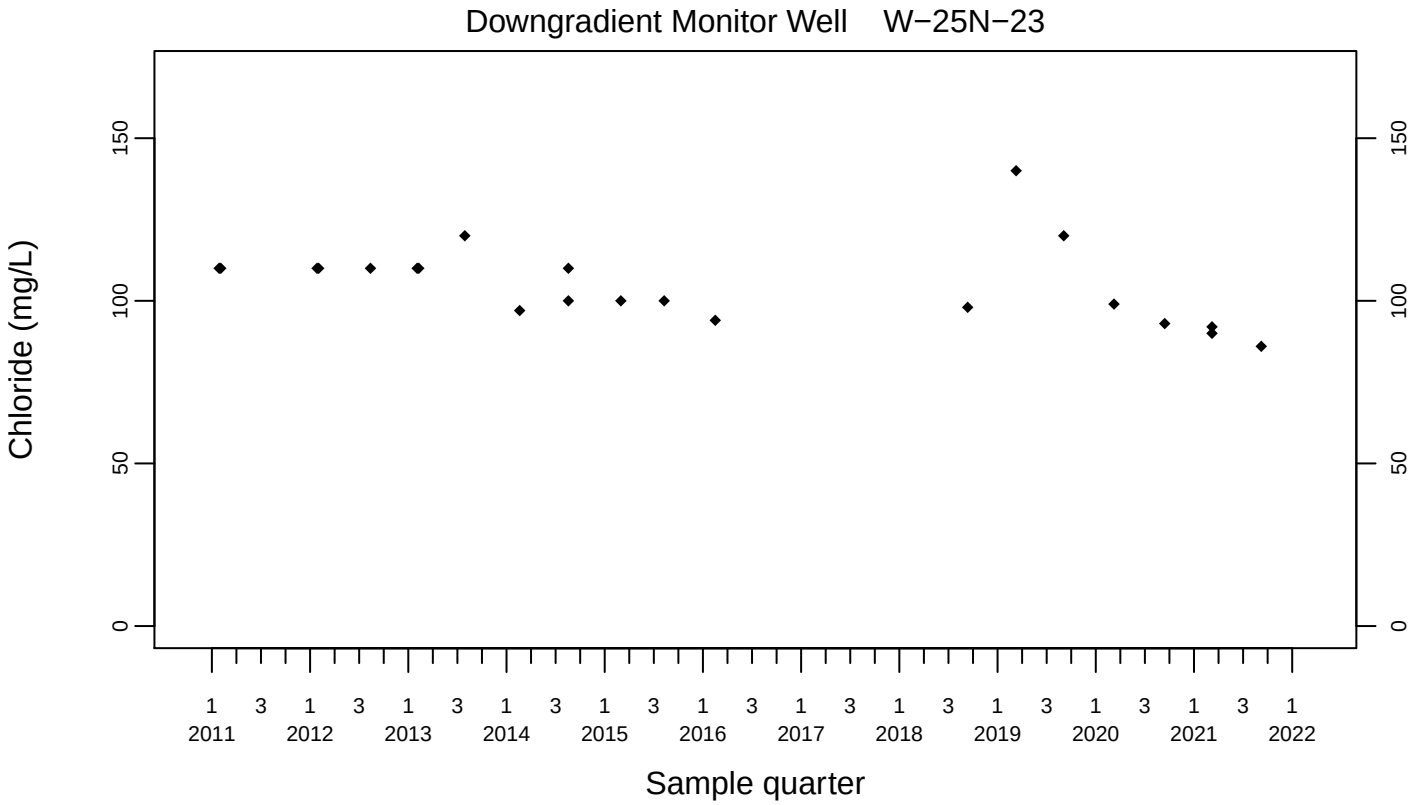

Sewage Ponds Ground Water
Sodium (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Sodium (mg/L)
0
50
100
150
200
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter


Sewage Ponds Ground Water
Chloride (mg/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Chloride (mg/L)
0
50
100
150
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

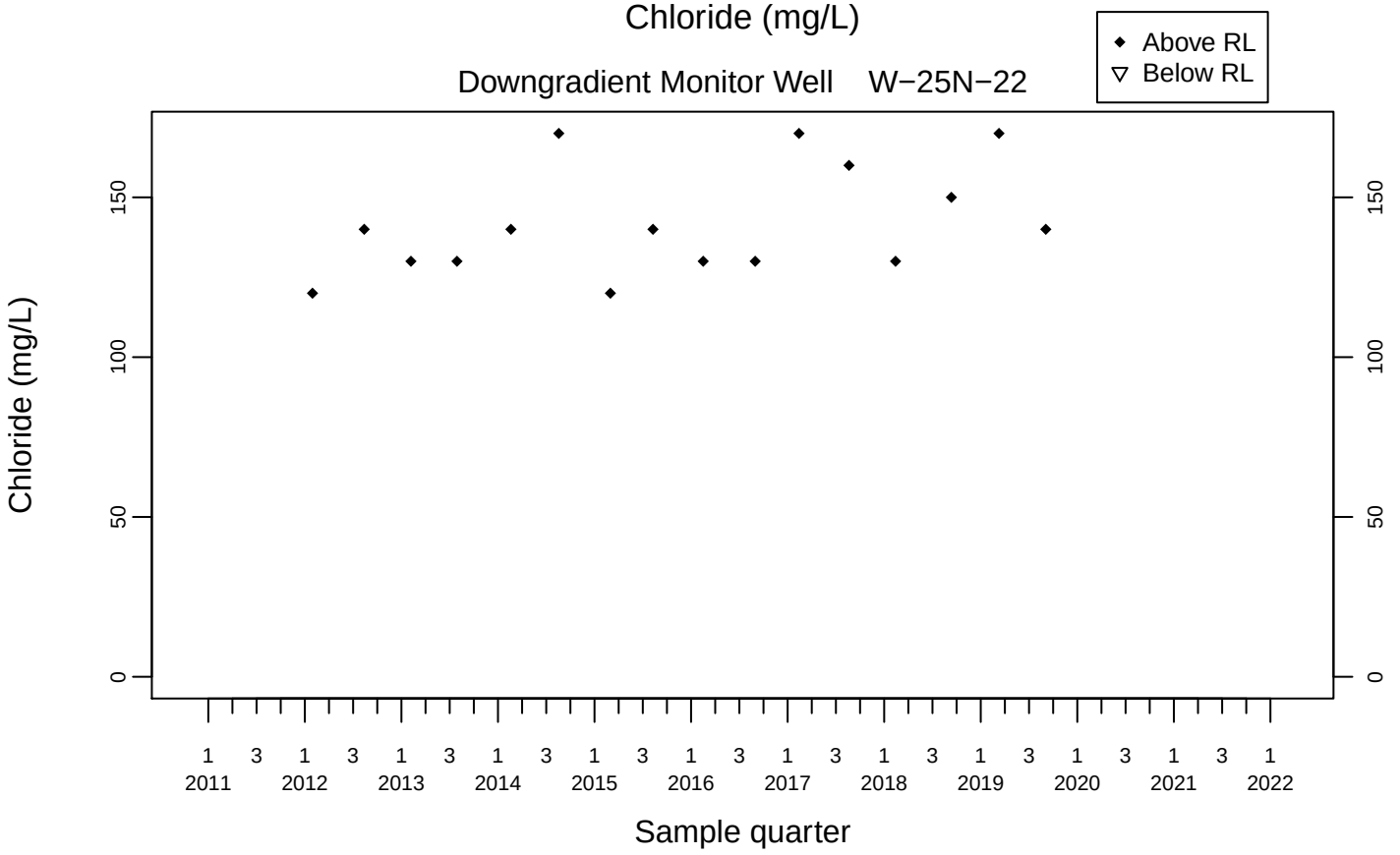

Upgradient Monitor Well W−7PS
Chloride (mg/L)
0
50
100
150
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

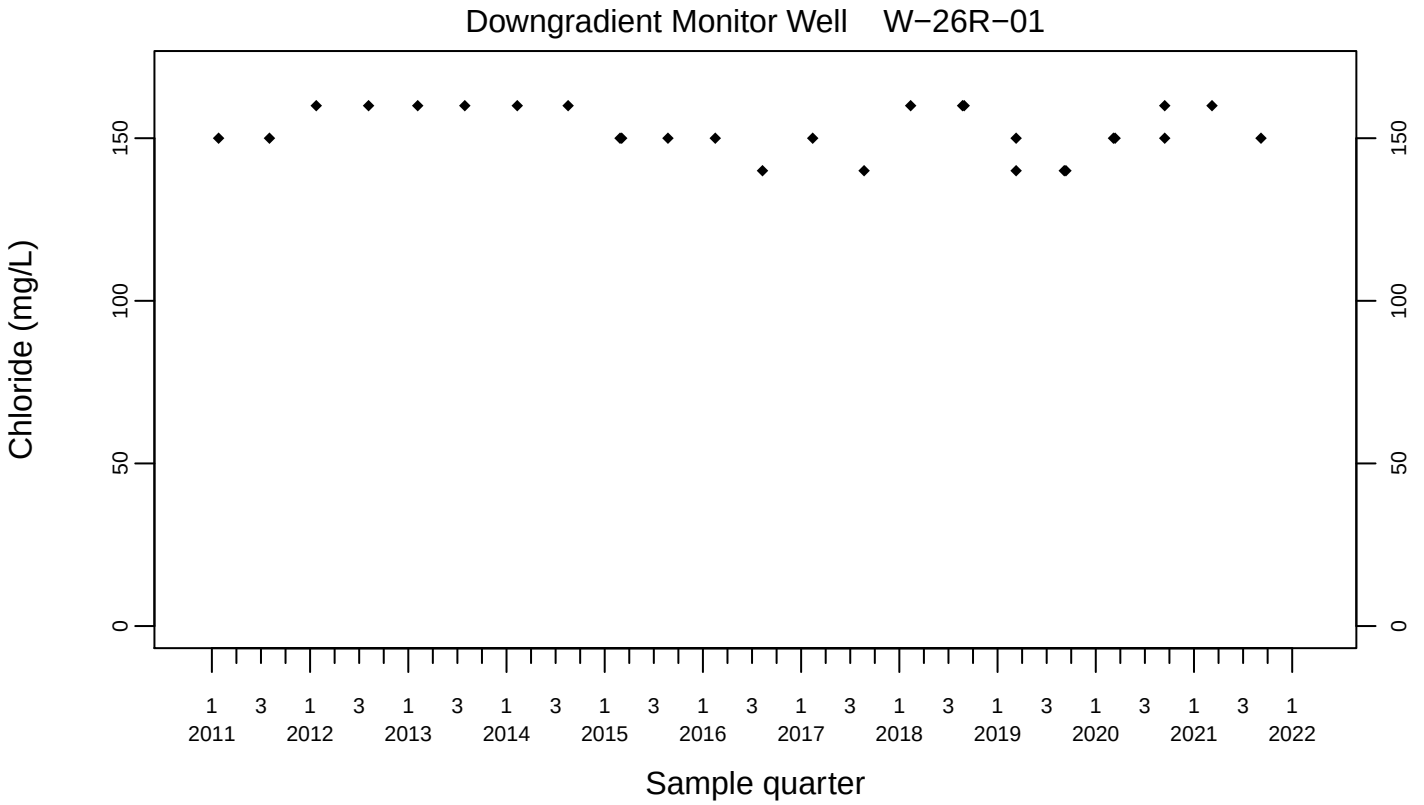
Sewage Ponds Ground Water
Chloride (mg/L)



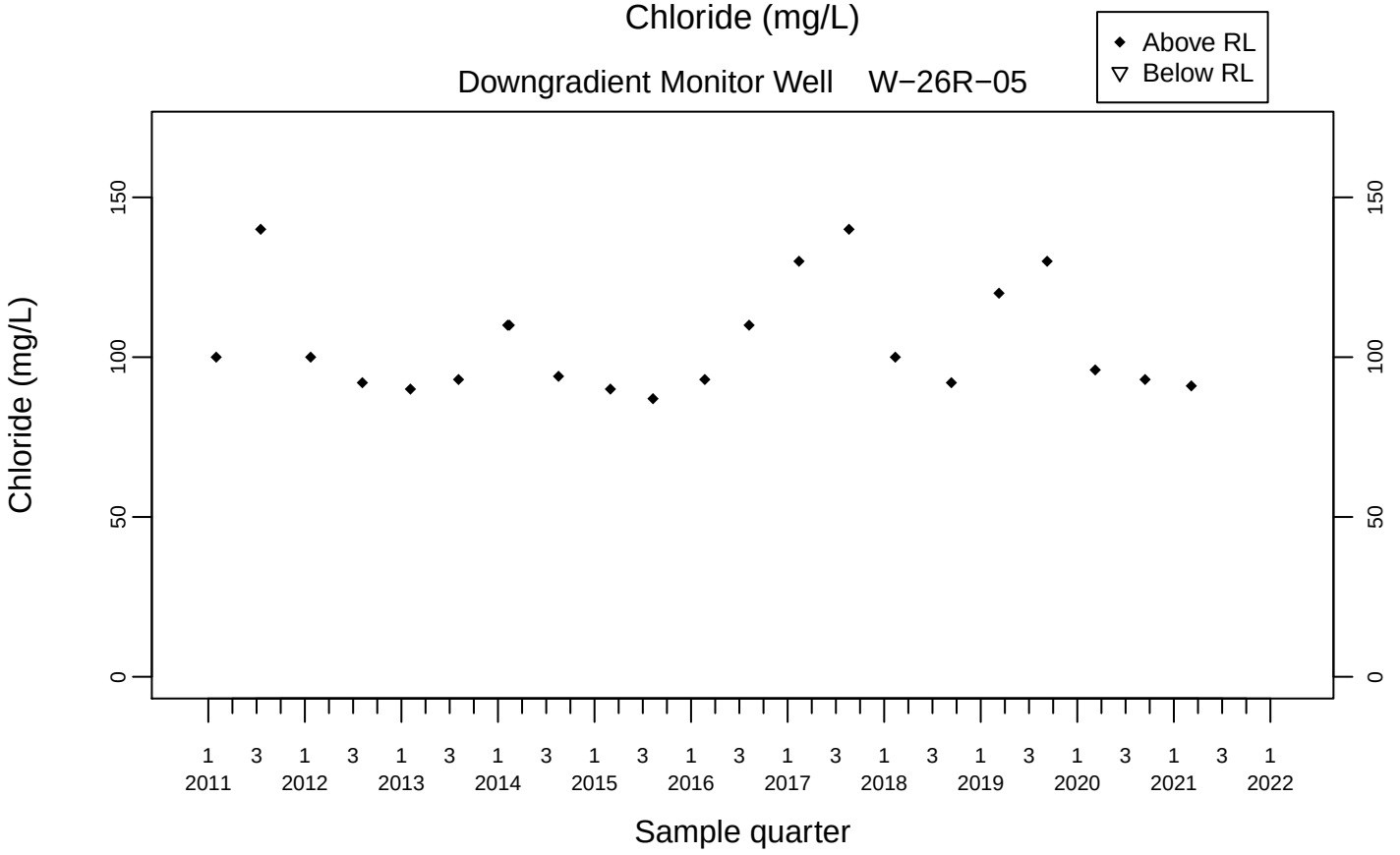


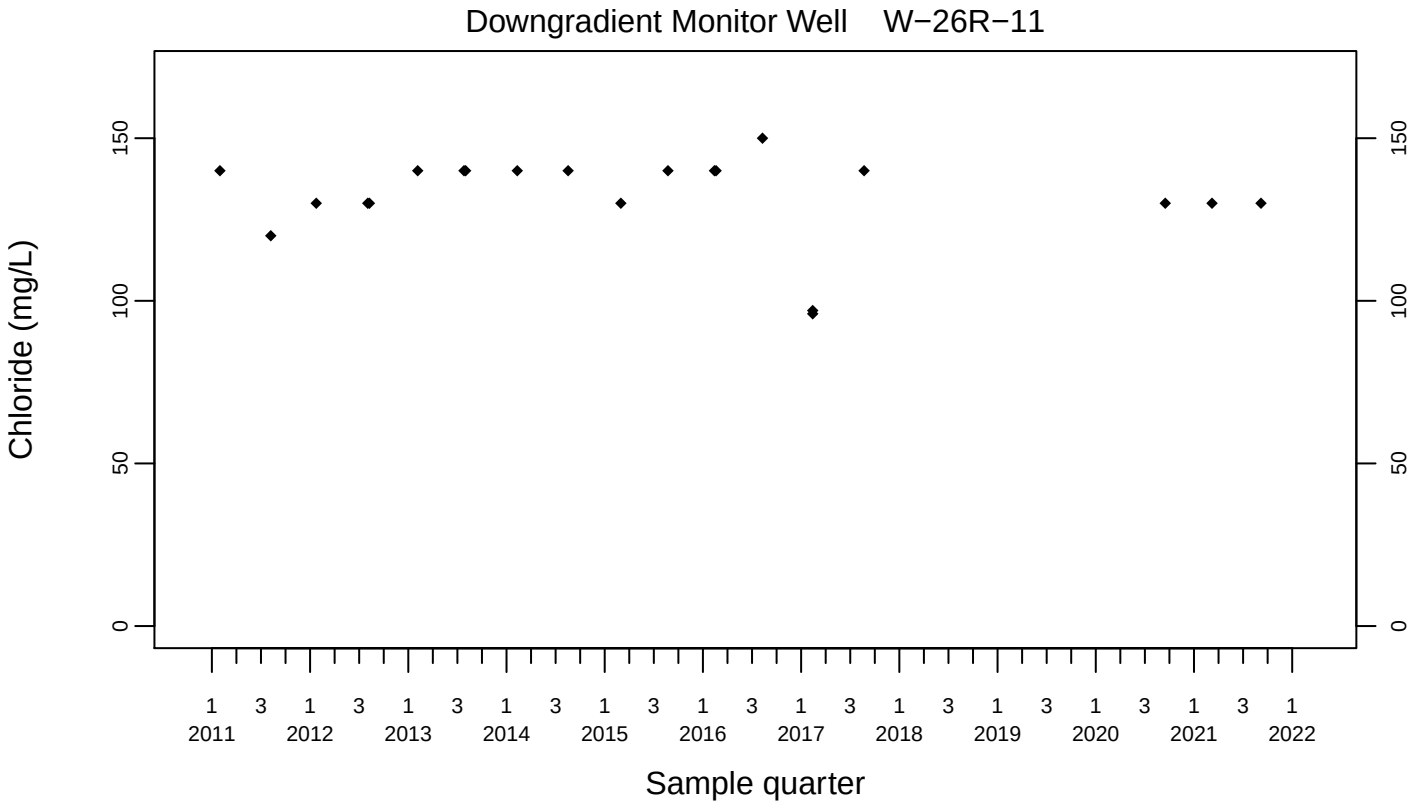
Sewage Ponds Ground Water
Chloride (mg/L)

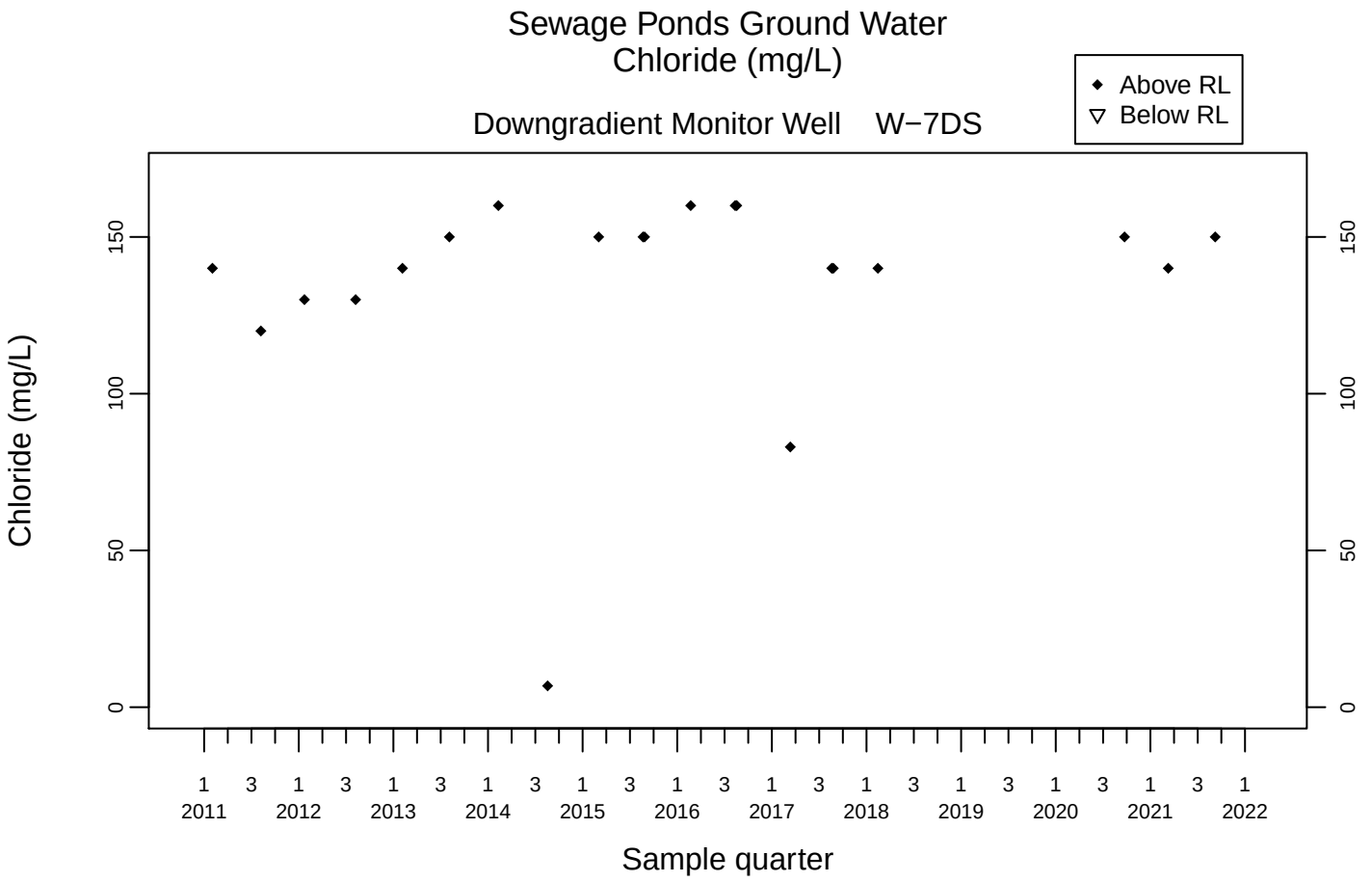


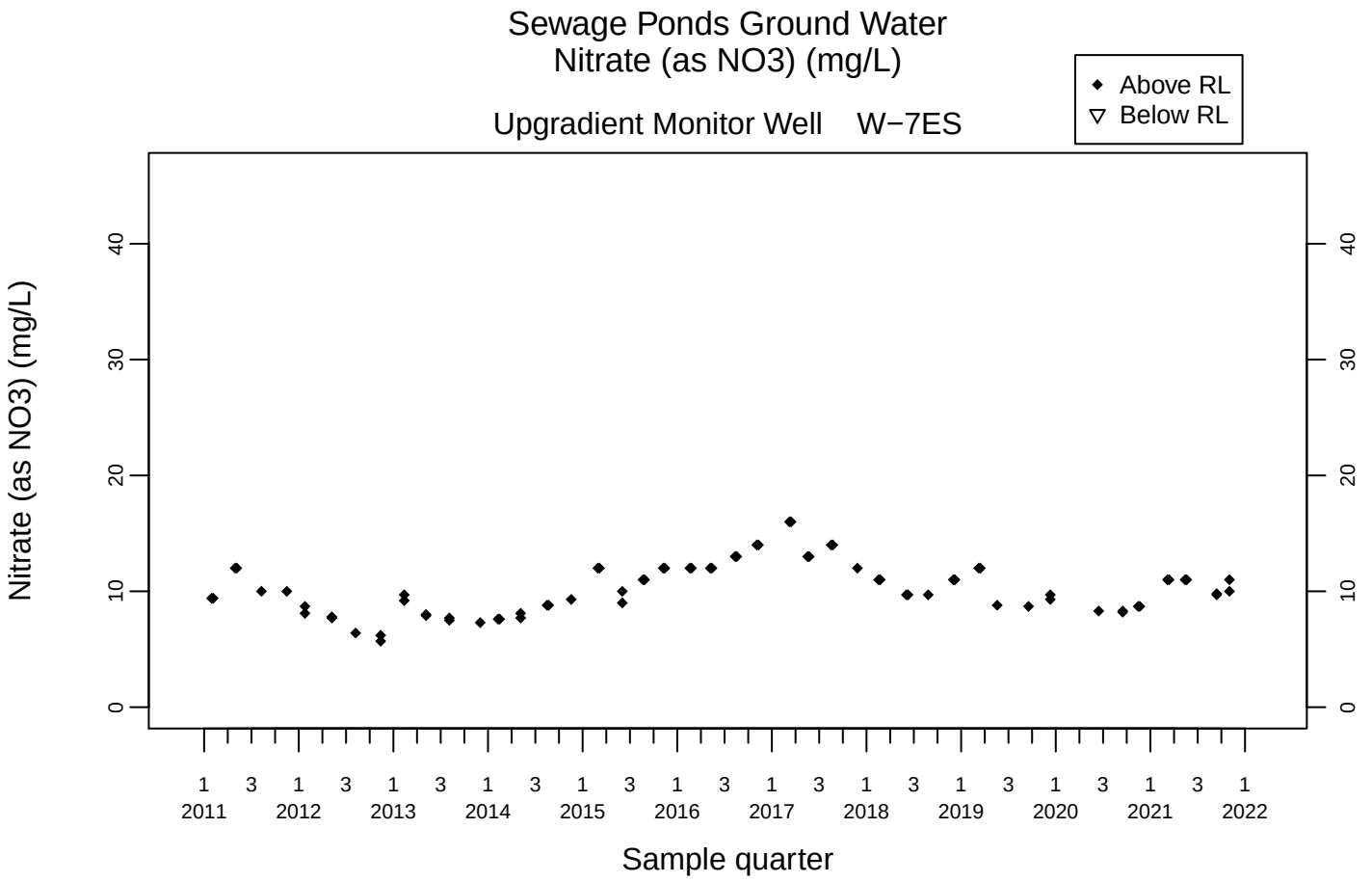


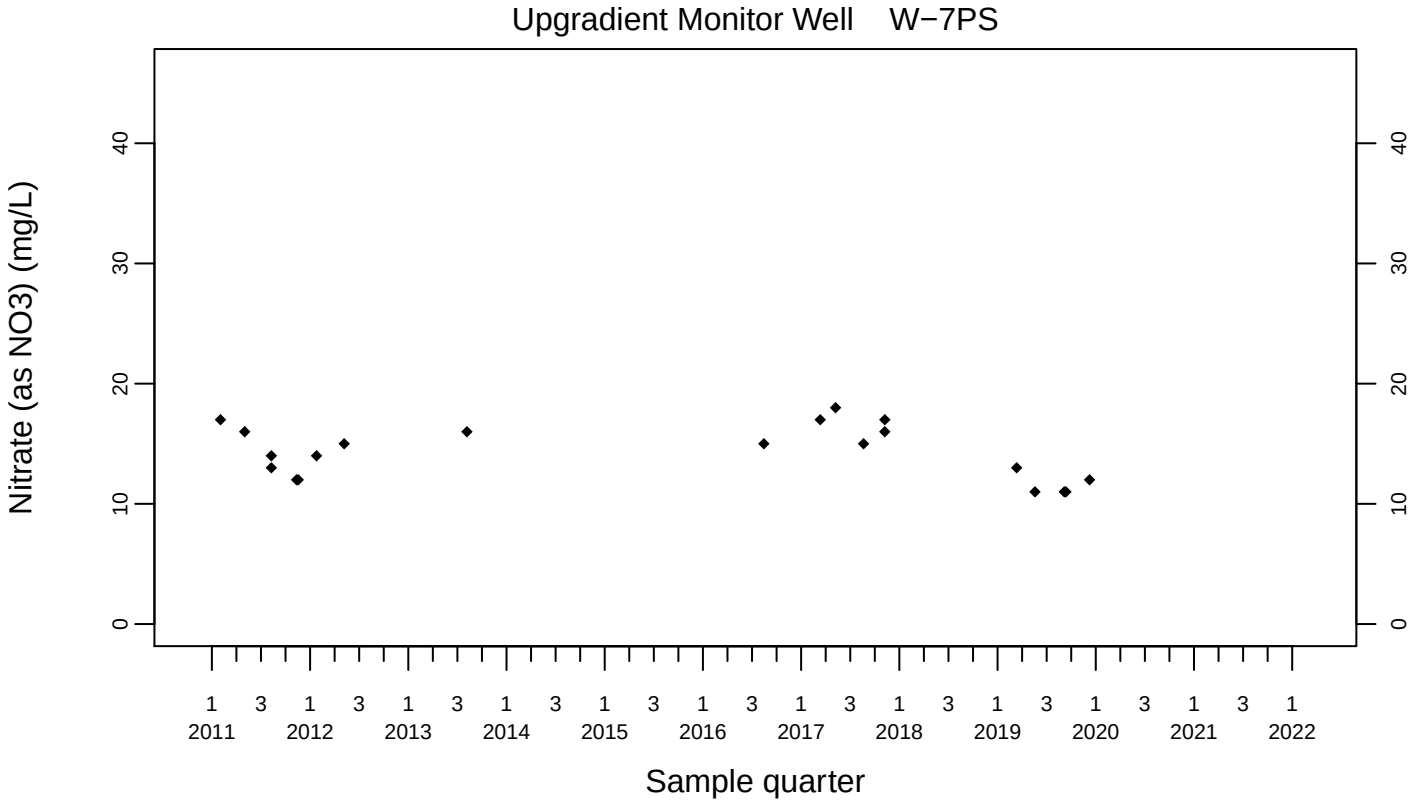
Sewage Ponds Ground Water
Chloride (mg/L)



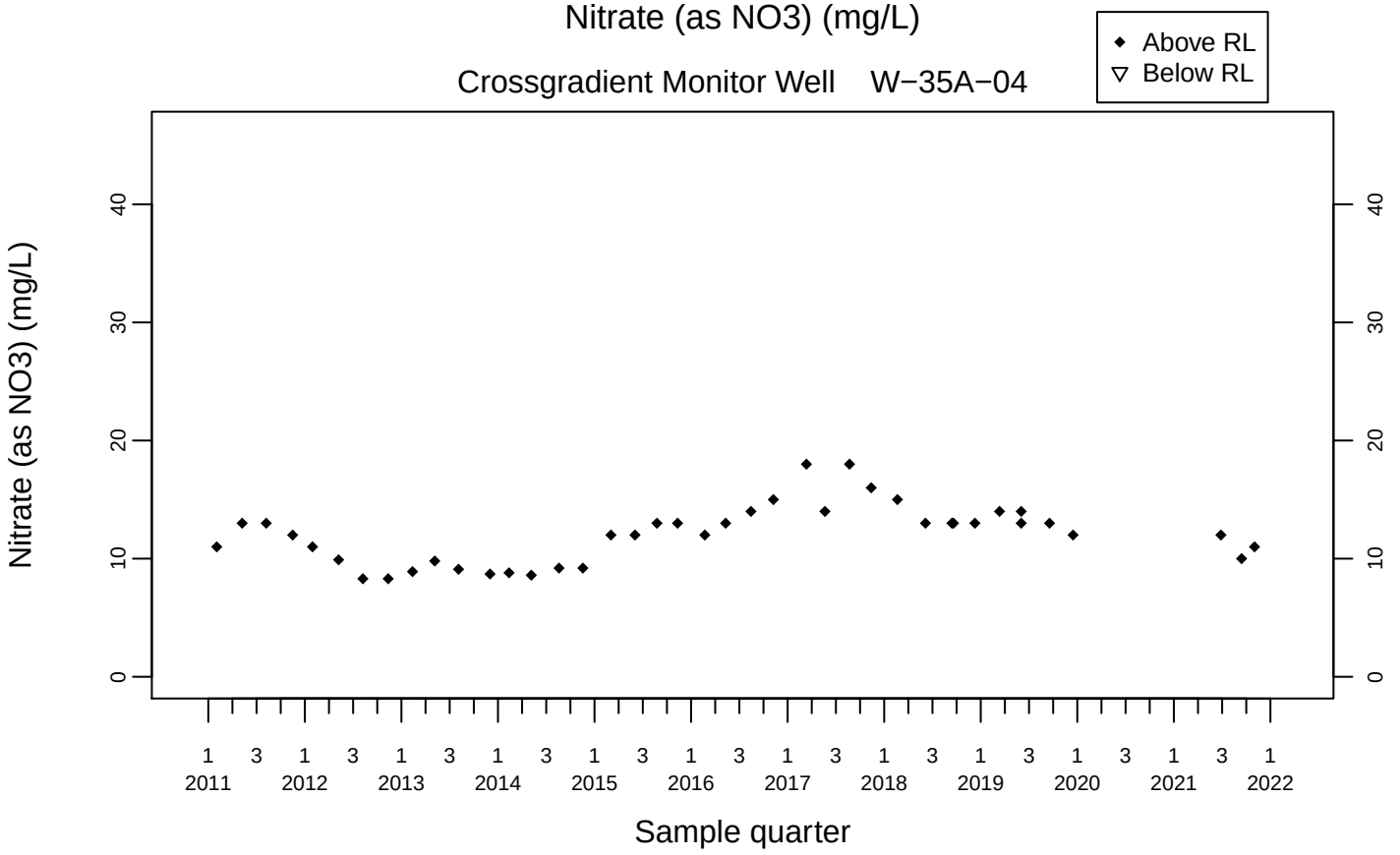


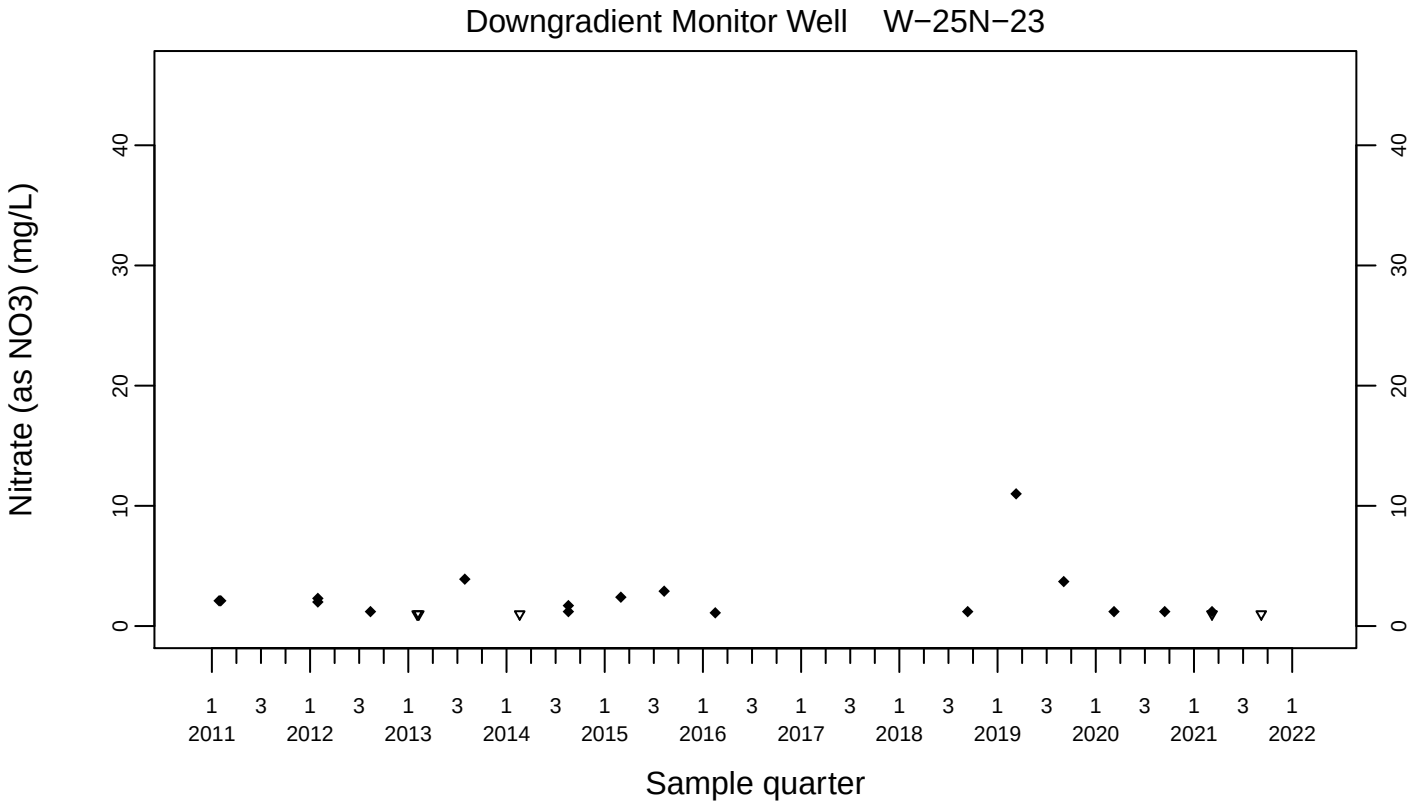

Sewage Ponds Ground Water
Chloride (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Chloride (mg/L)
0
50
100
150
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Nitrate (as NO3) (mg/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Nitrate (as NO3) (mg/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

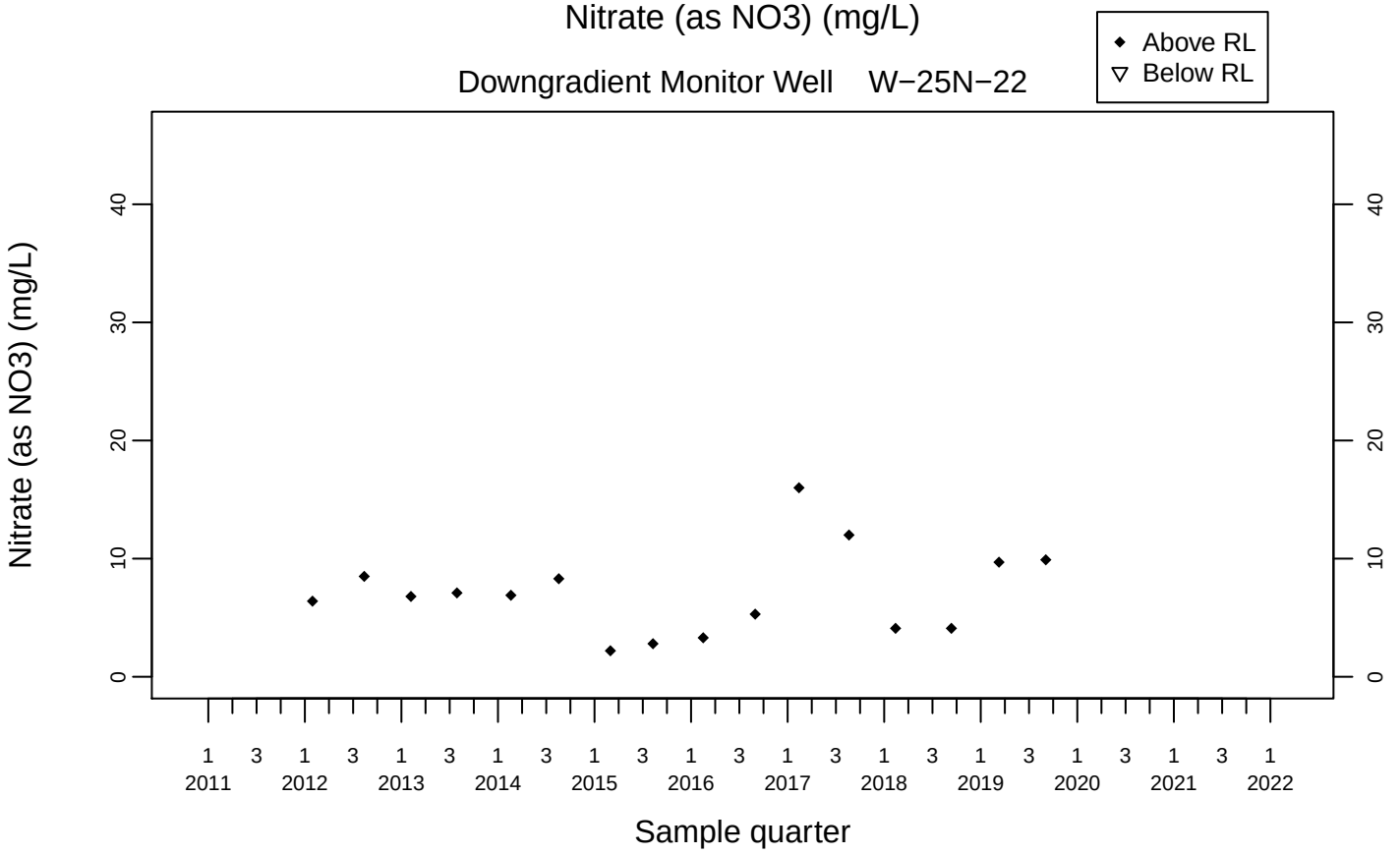

Upgradient Monitor Well W−7PS
Nitrate (as NO3) (mg/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

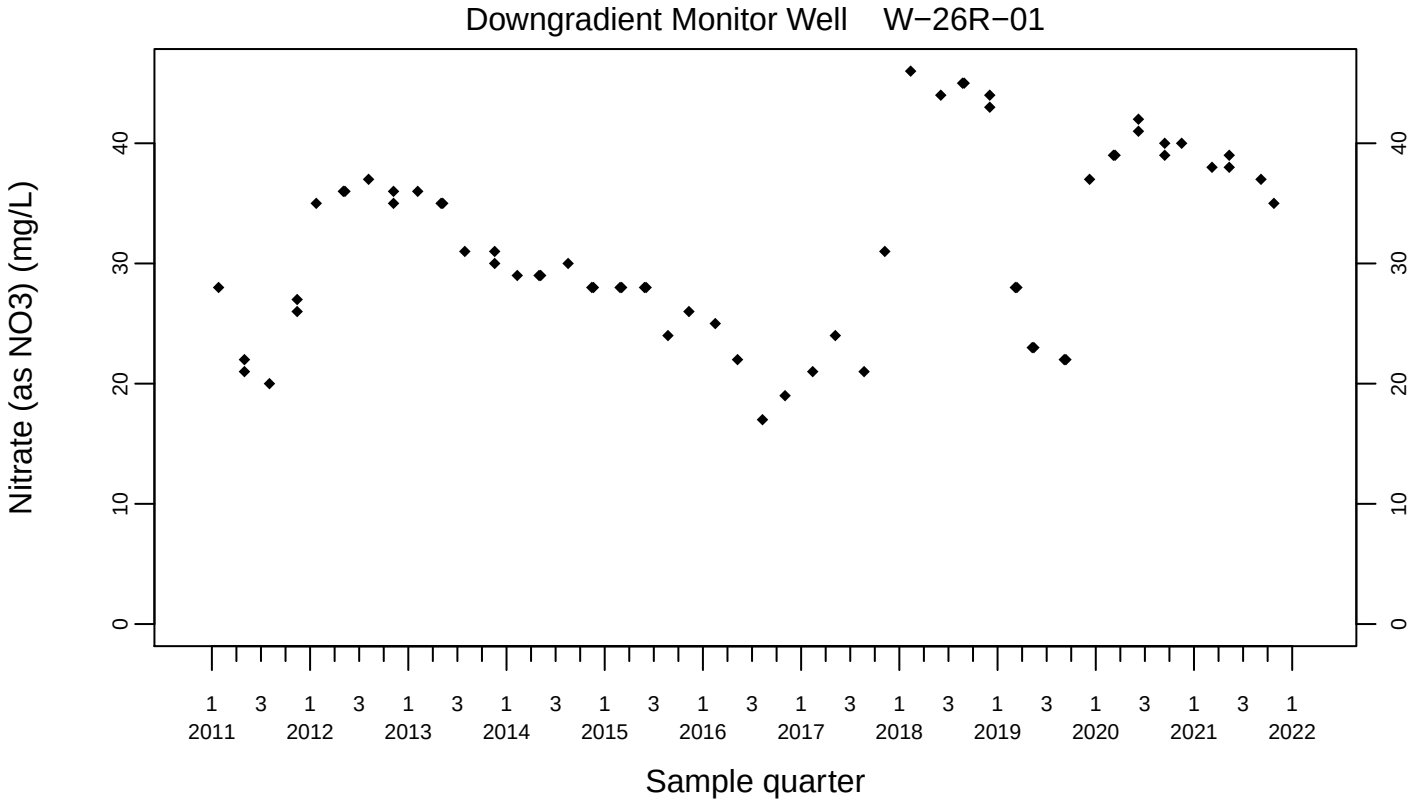
Sewage Ponds Ground Water
Nitrate (as NO3) (mg/L)



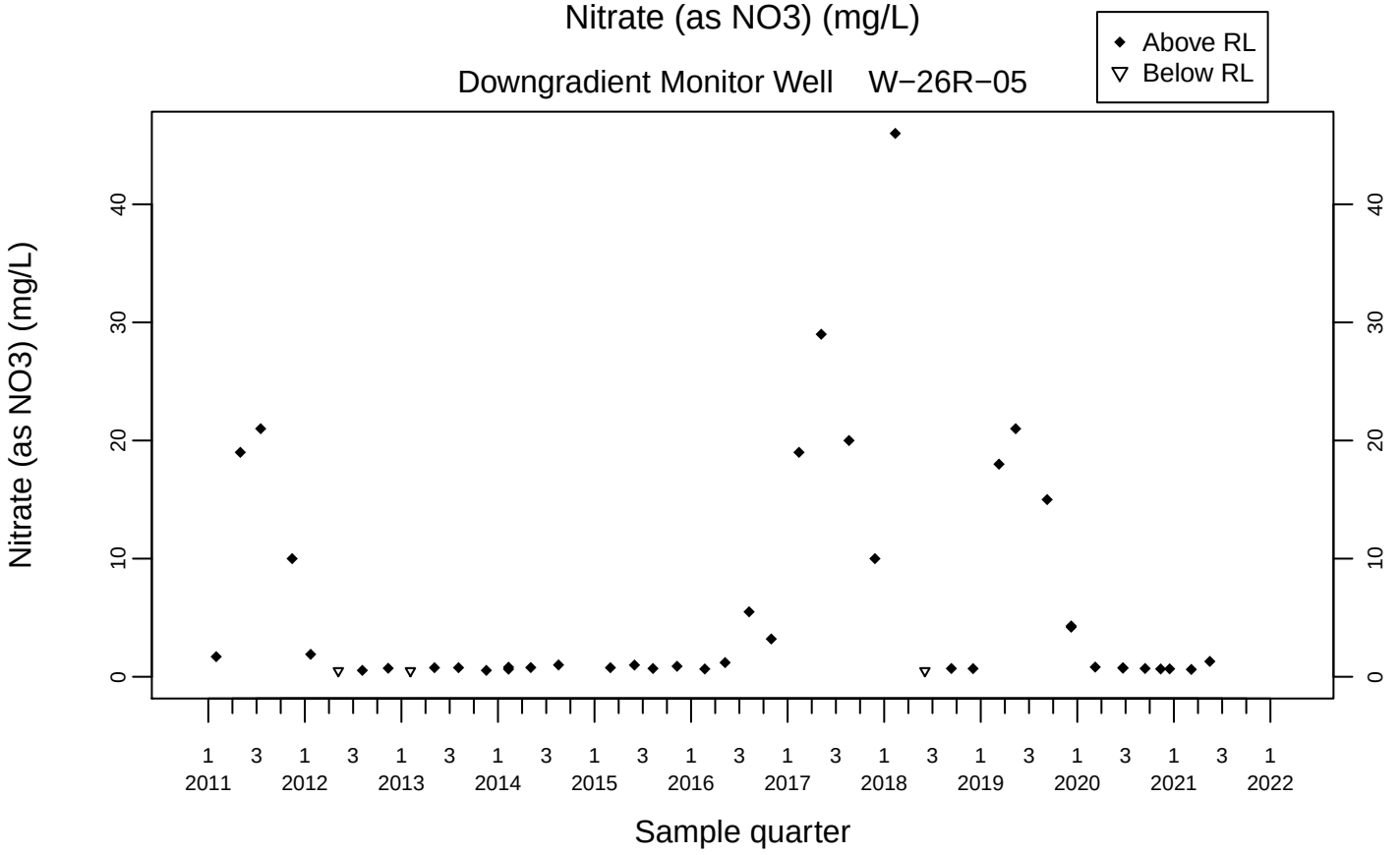


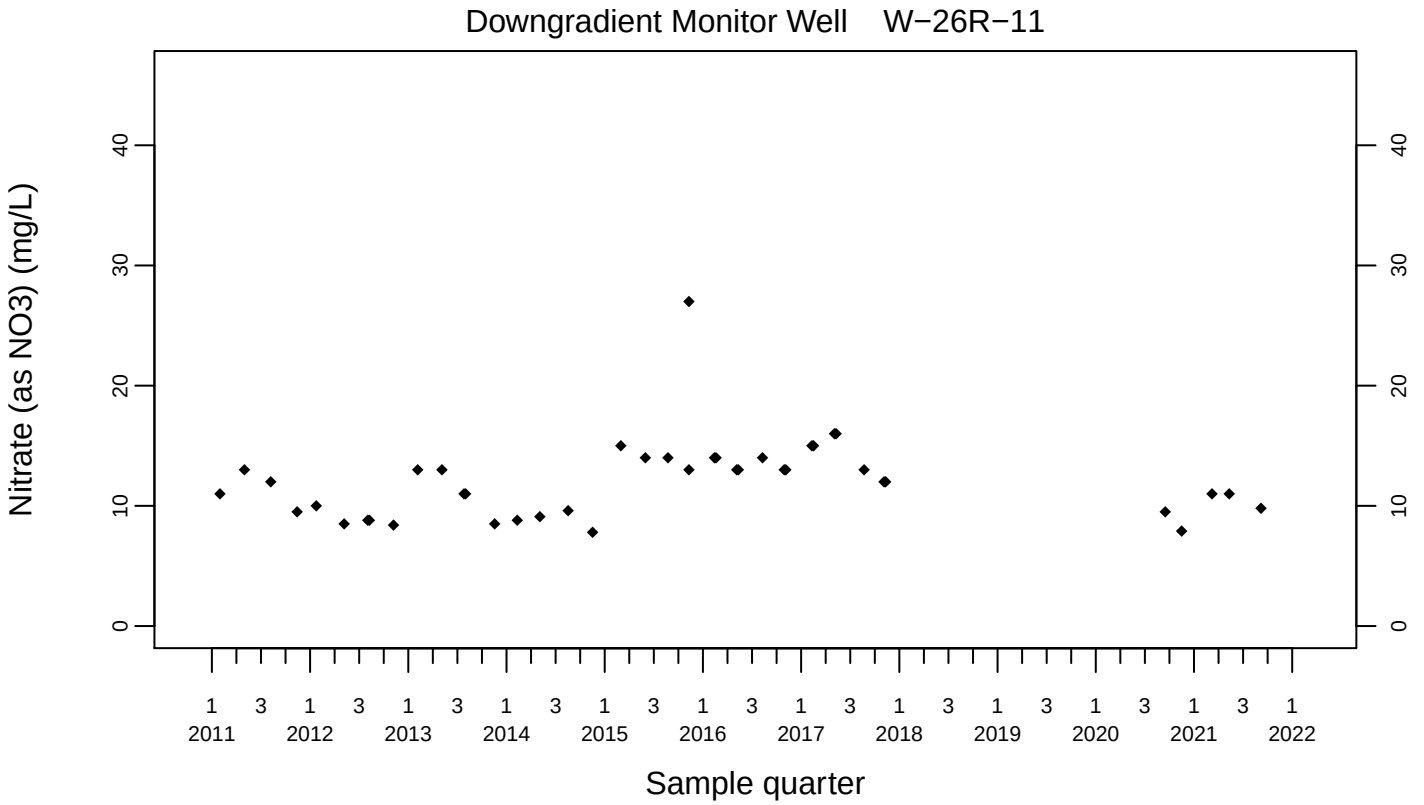
Sewage Ponds Ground Water
Nitrate (as NO3) (mg/L)

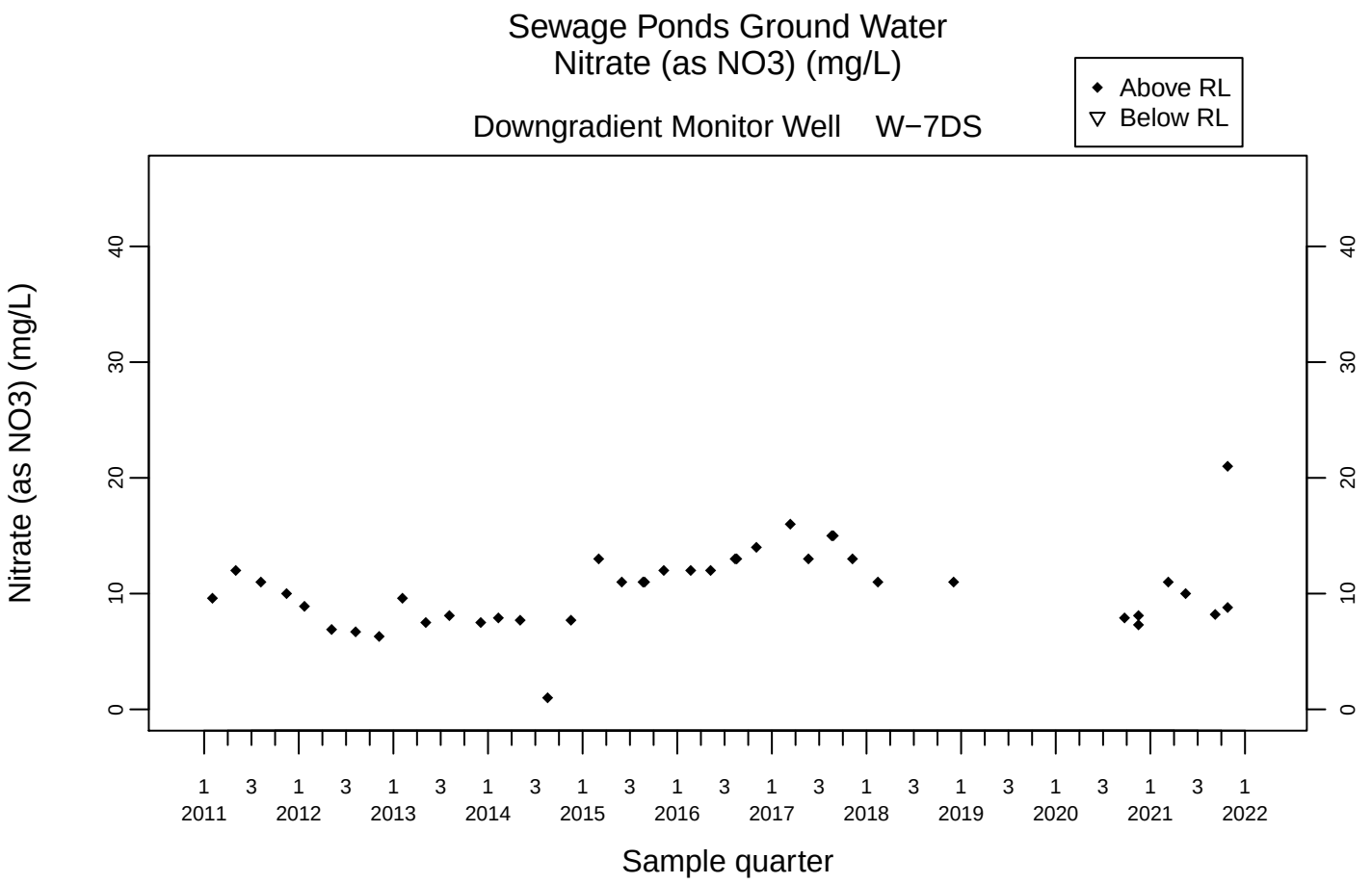




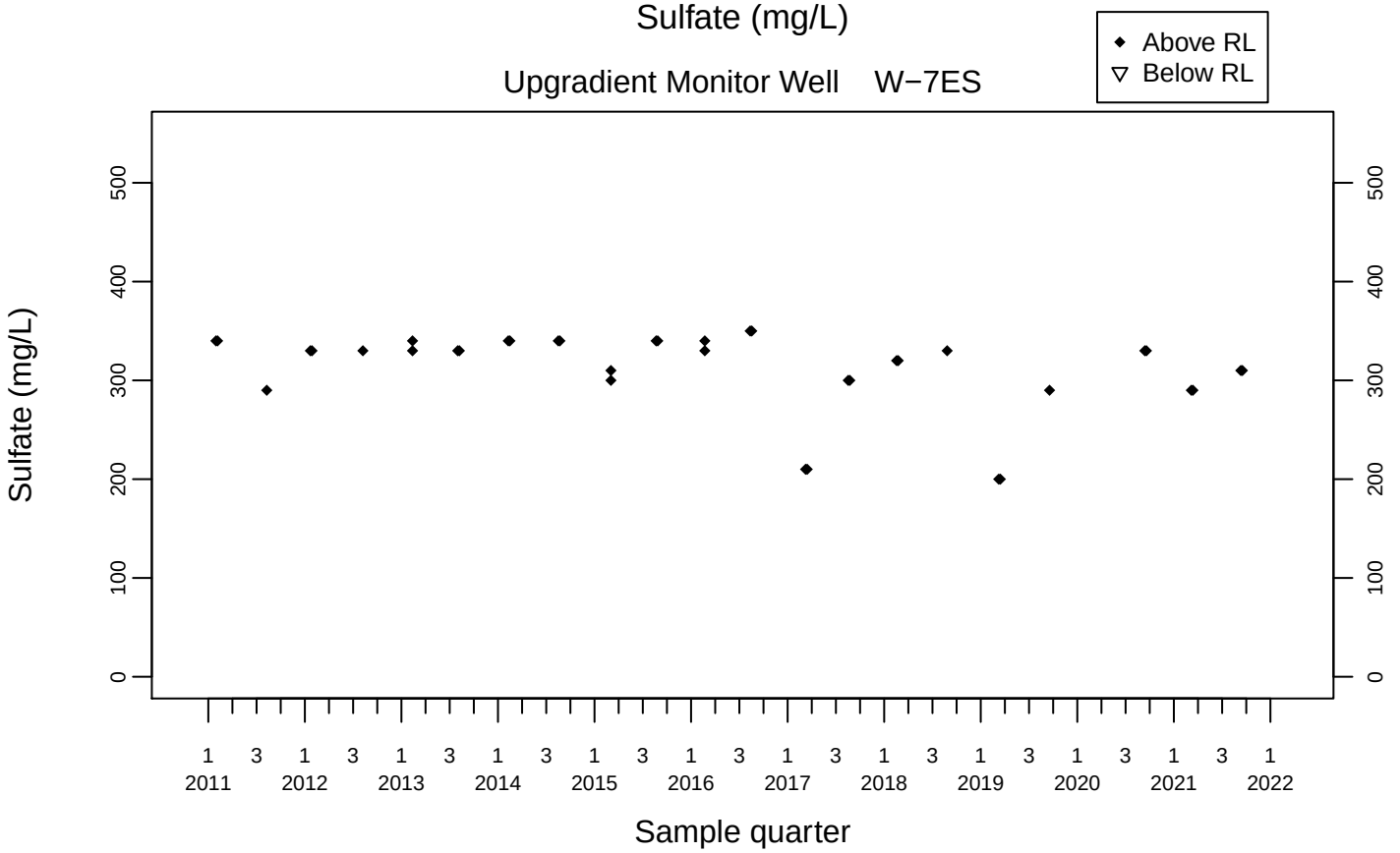
Sewage Ponds Ground Water
Nitrate (as NO3) (mg/L)

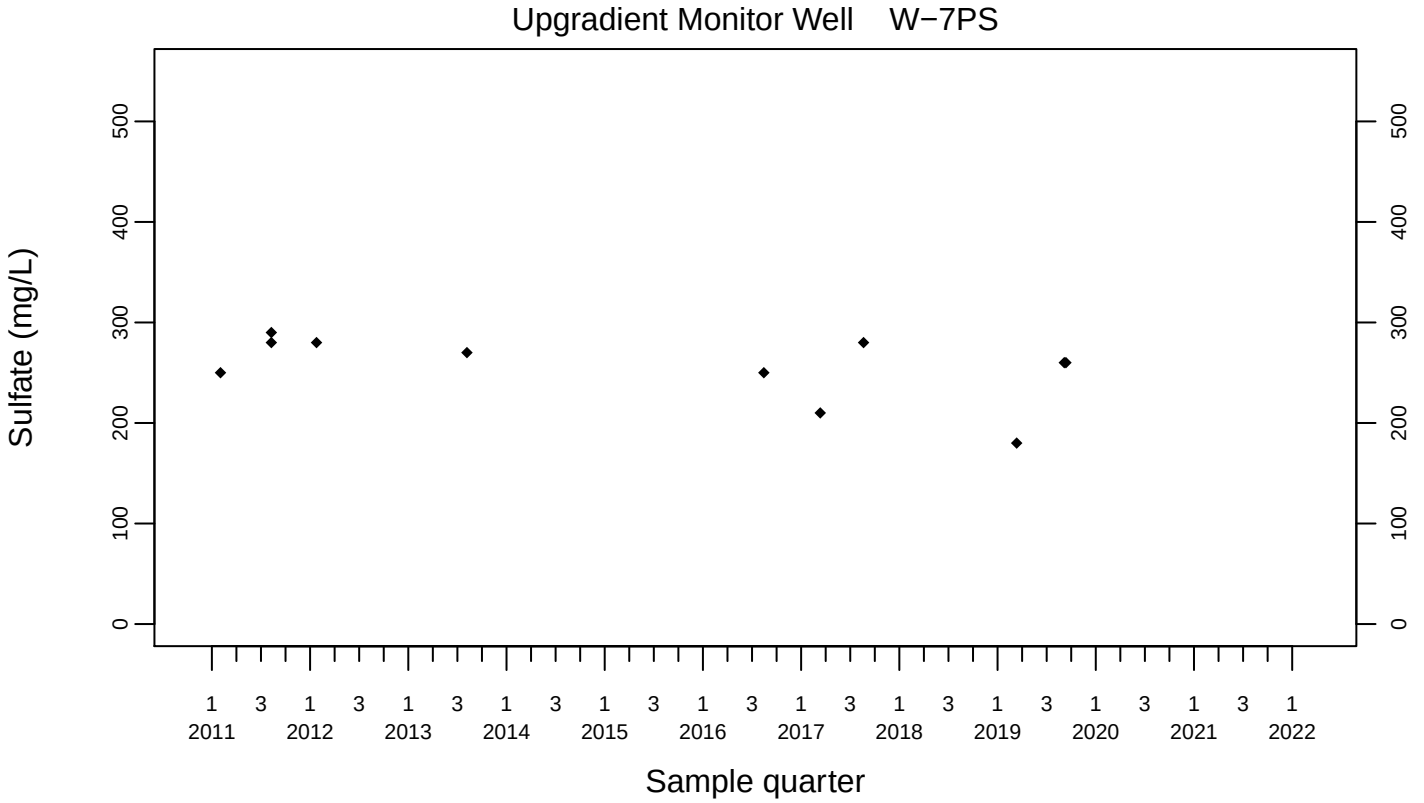




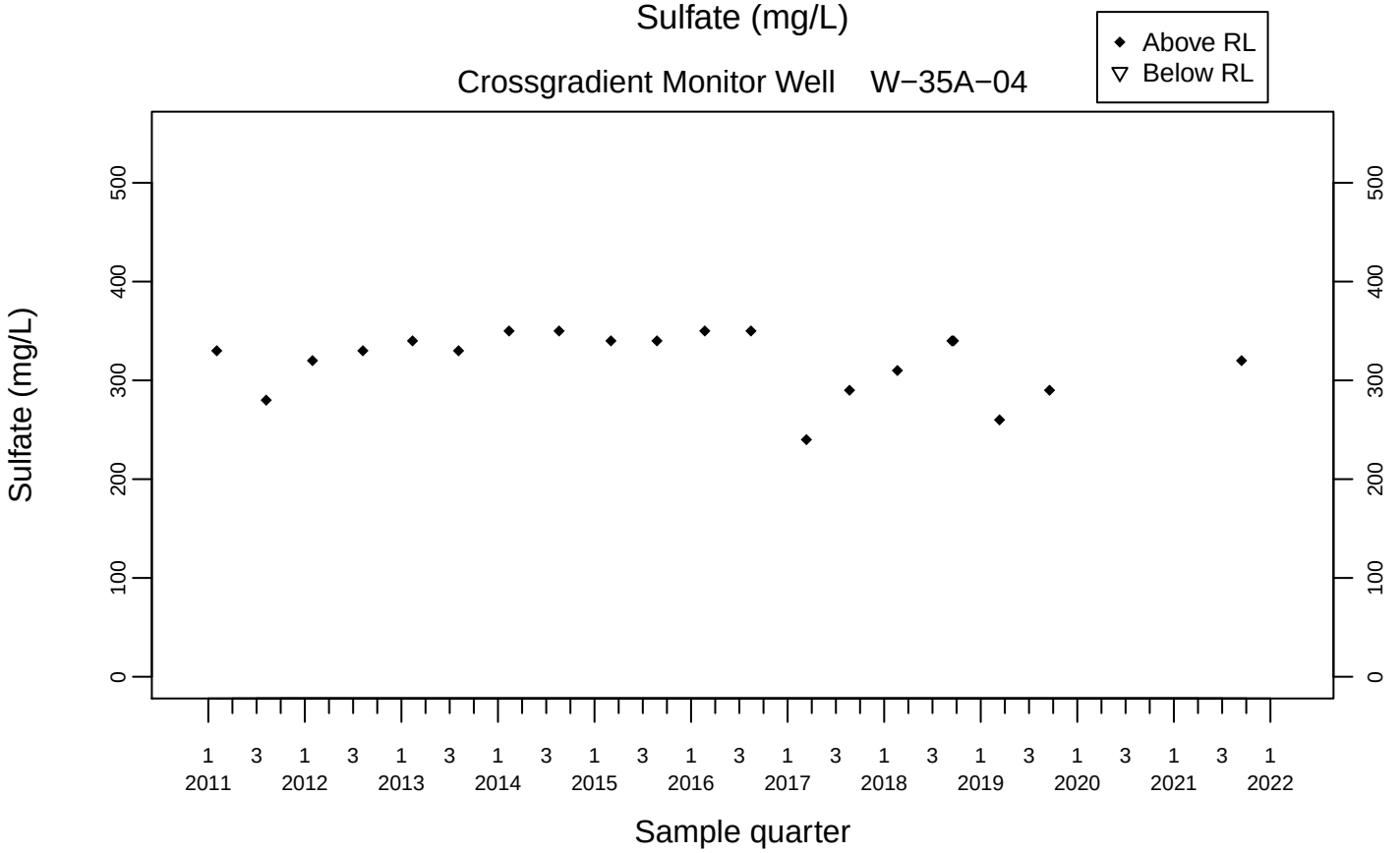

Sewage Ponds Ground Water
Nitrate (as NO3) (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Nitrate (as NO3) (mg/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

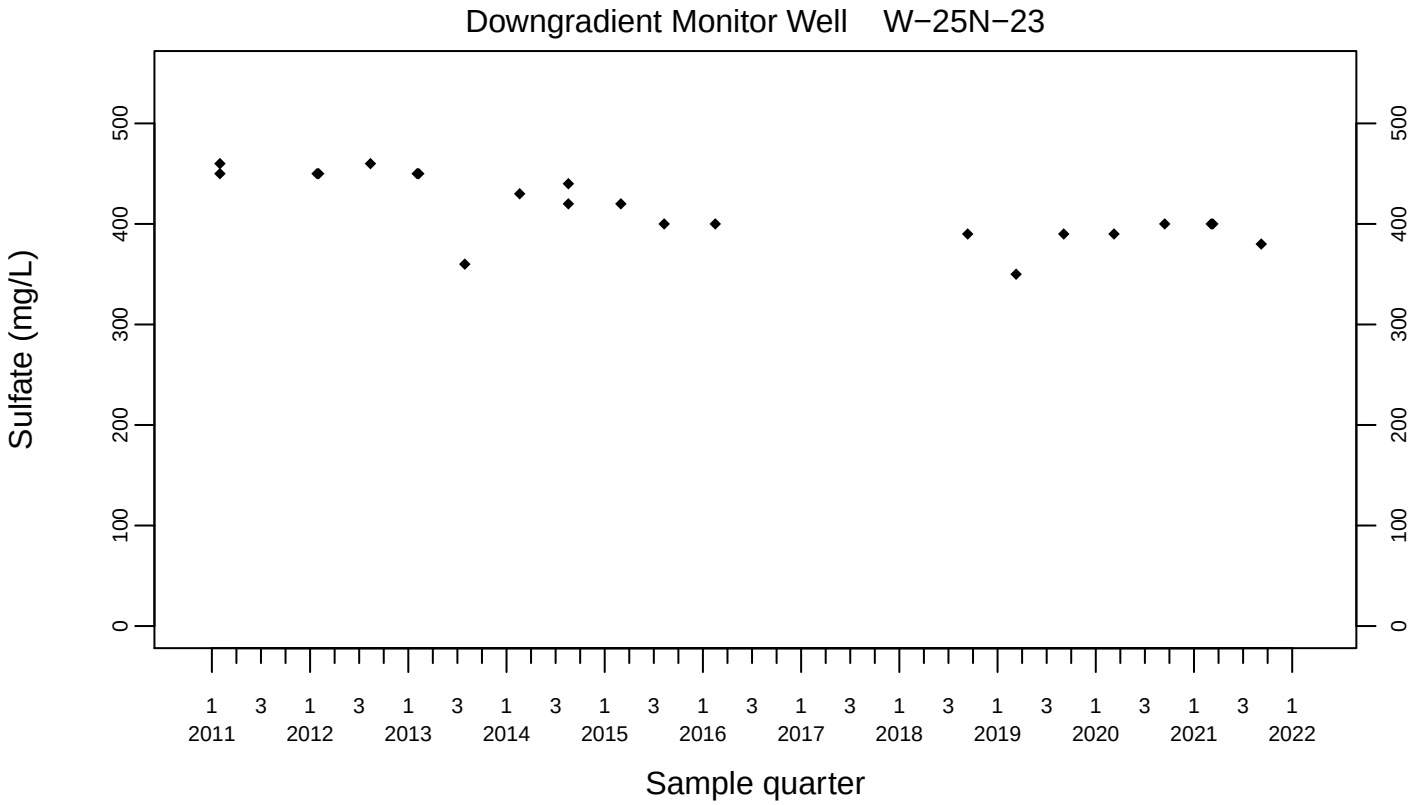
Sewage Ponds Ground Water
Sulfate (mg/L)



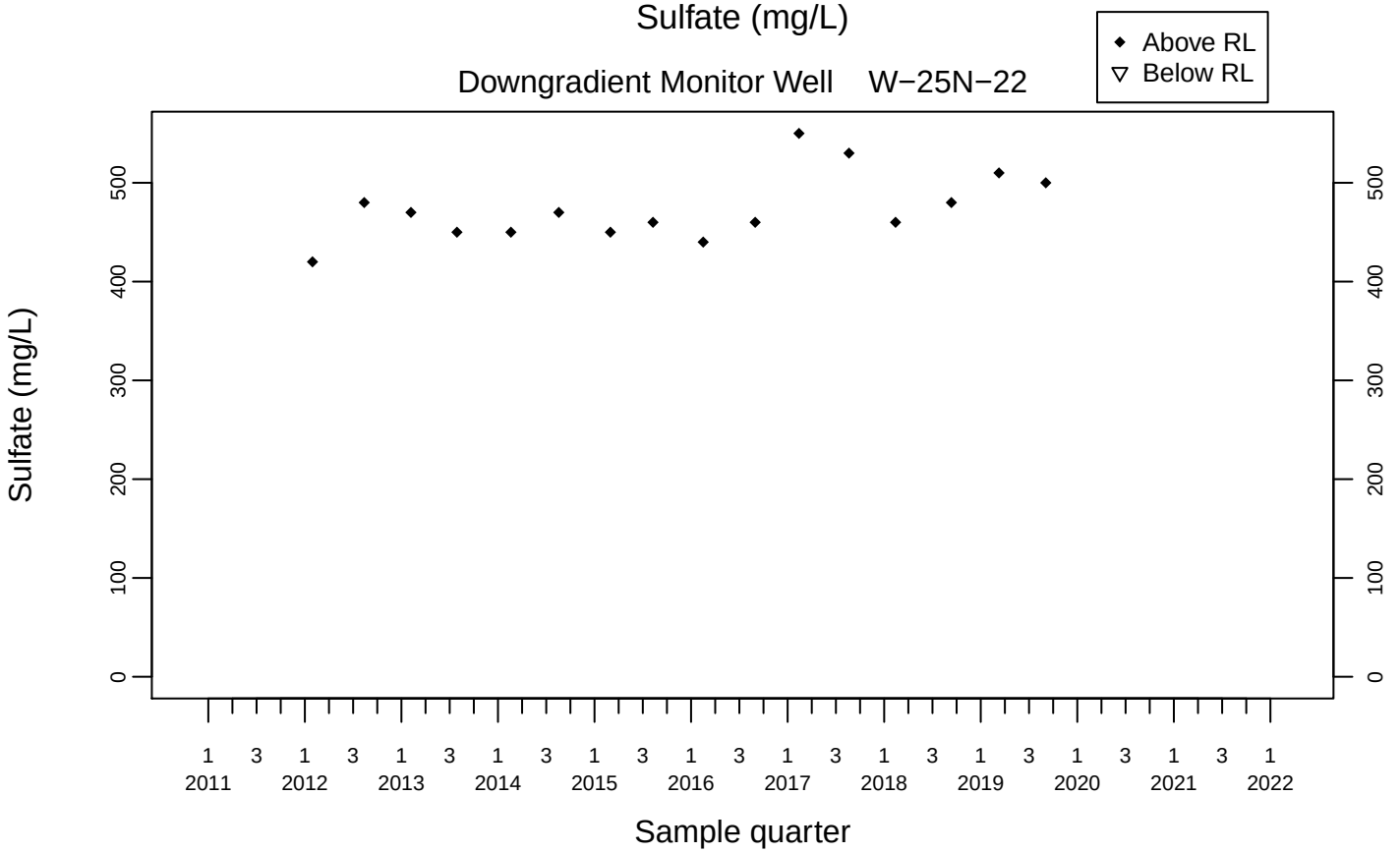


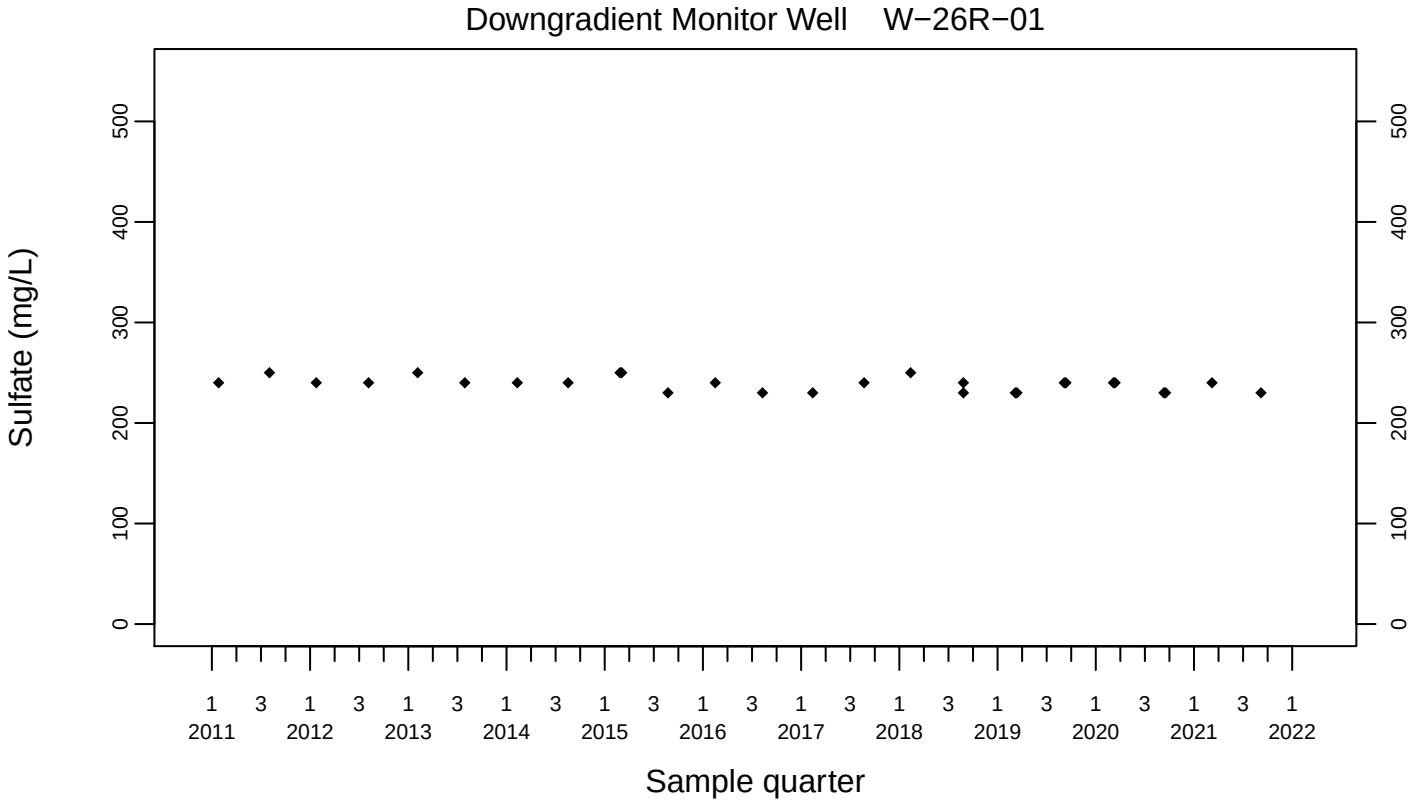
Sewage Ponds Ground Water
Sulfate (mg/L)



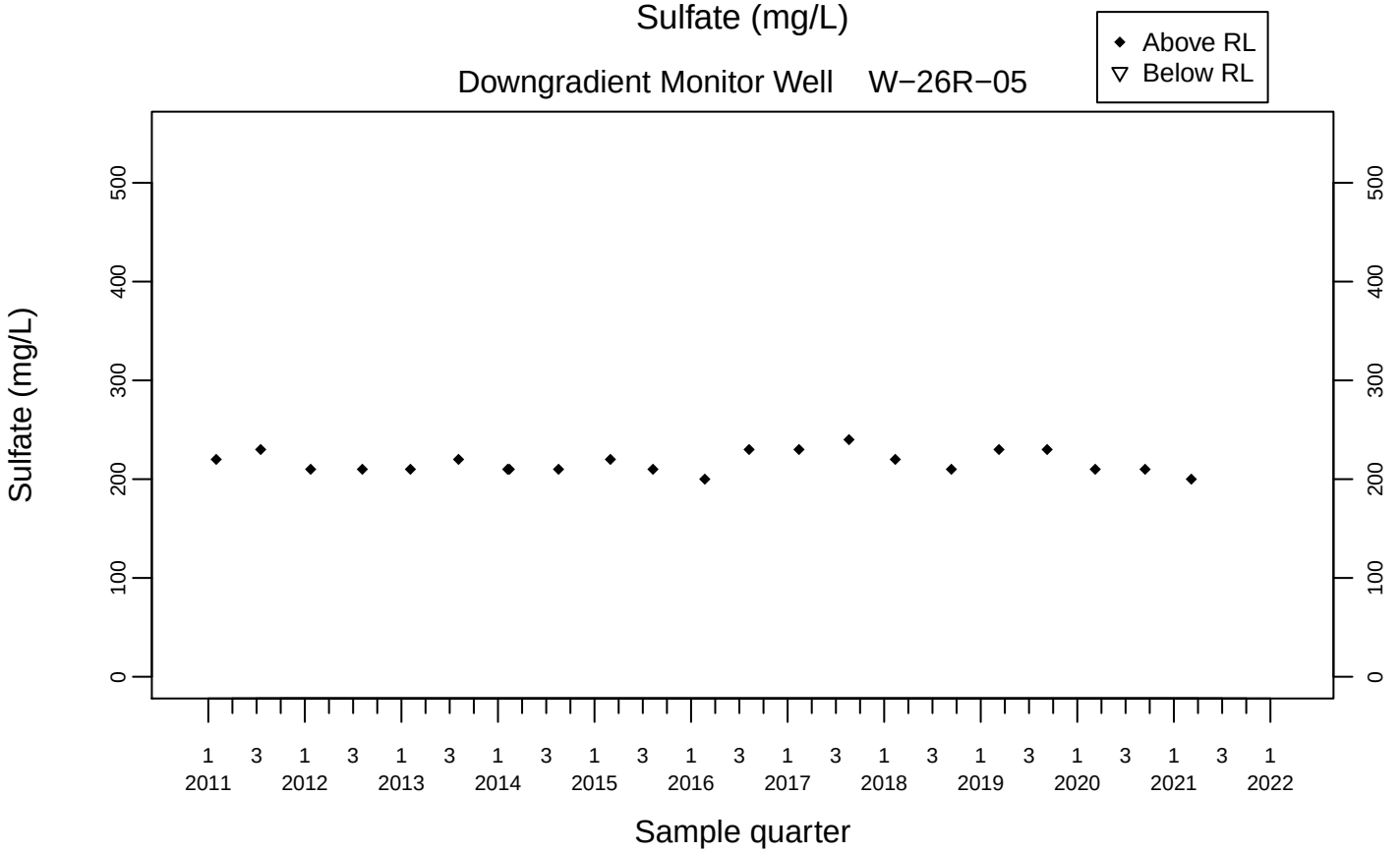


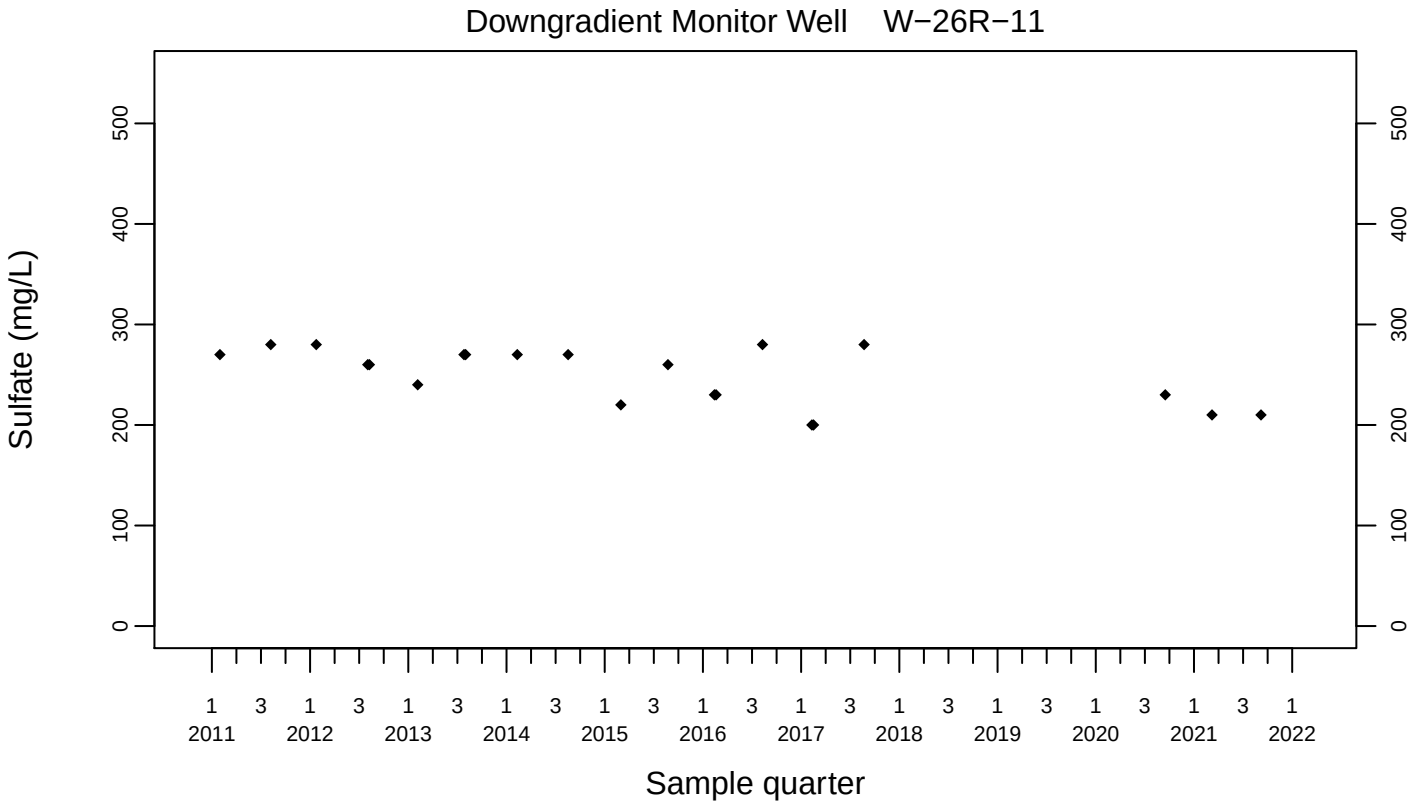
Sewage Ponds Ground Water
Sulfate (mg/L)

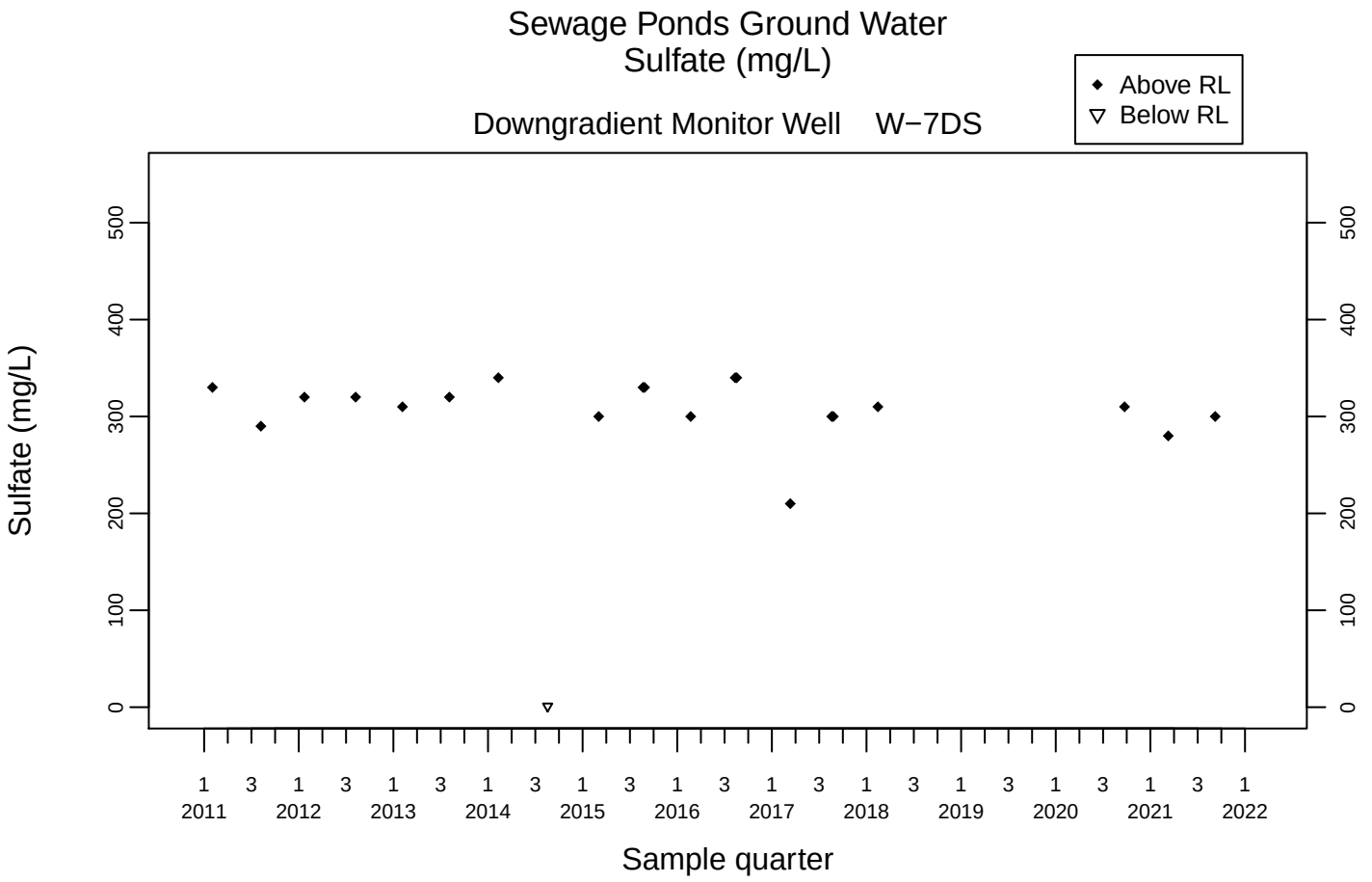




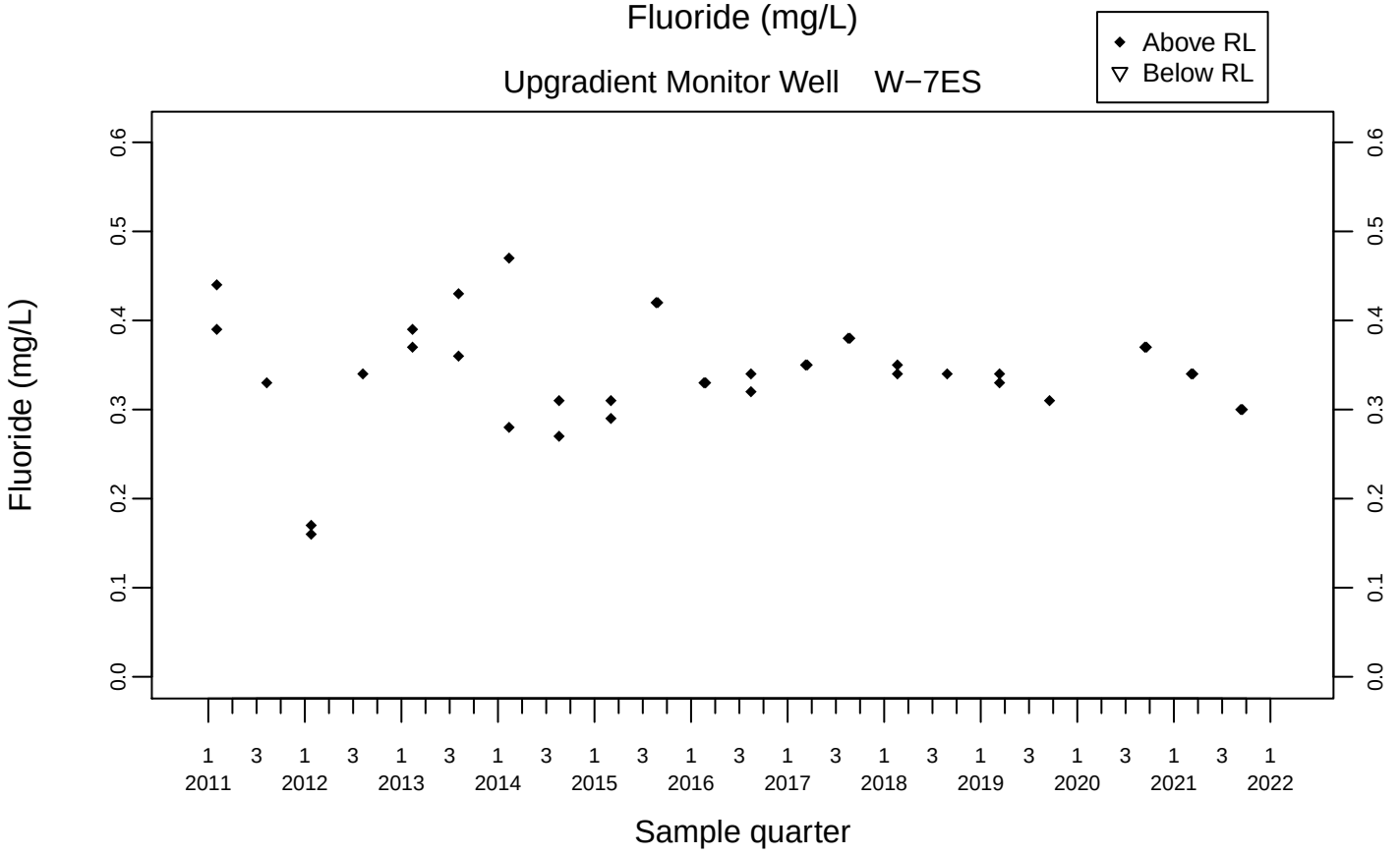
Sewage Ponds Ground Water
Sulfate (mg/L)

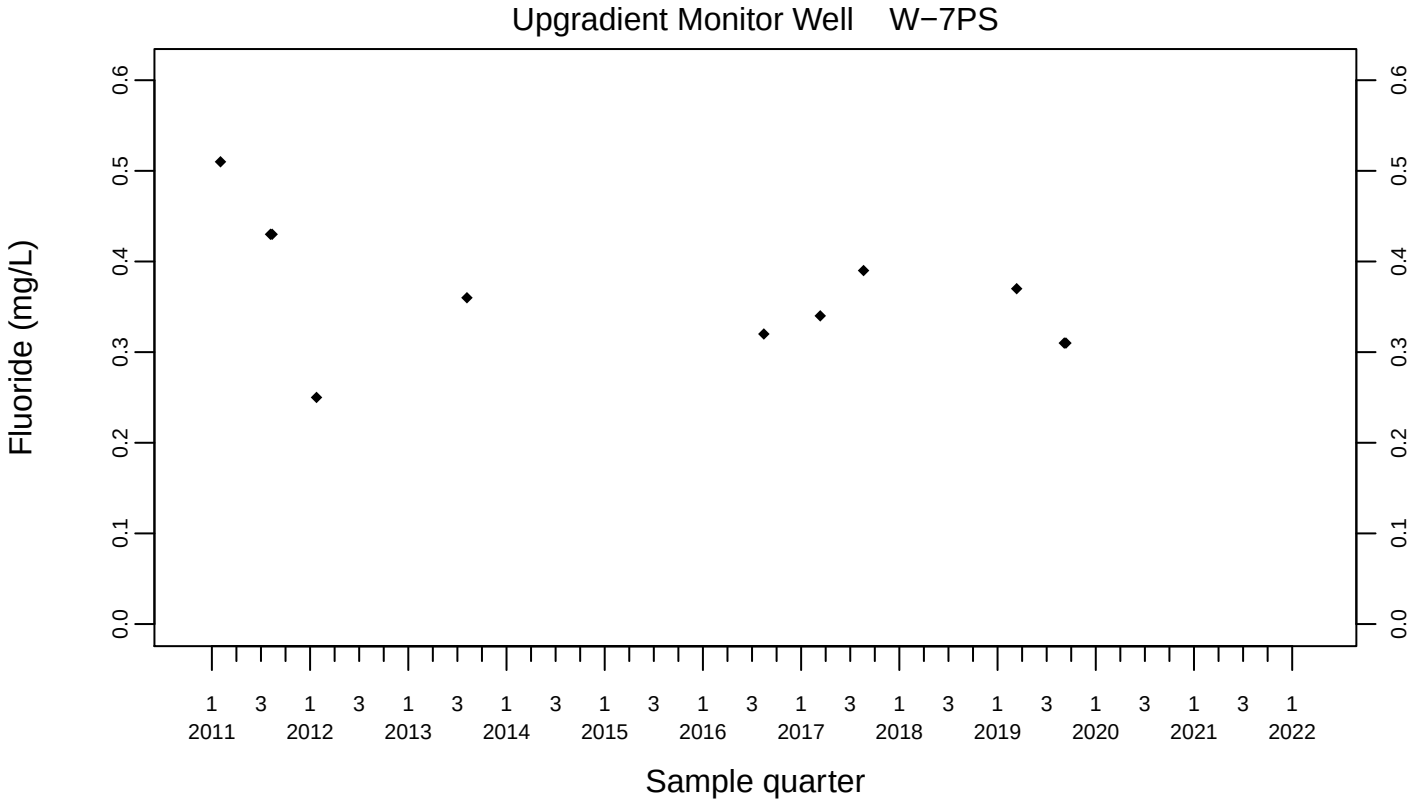




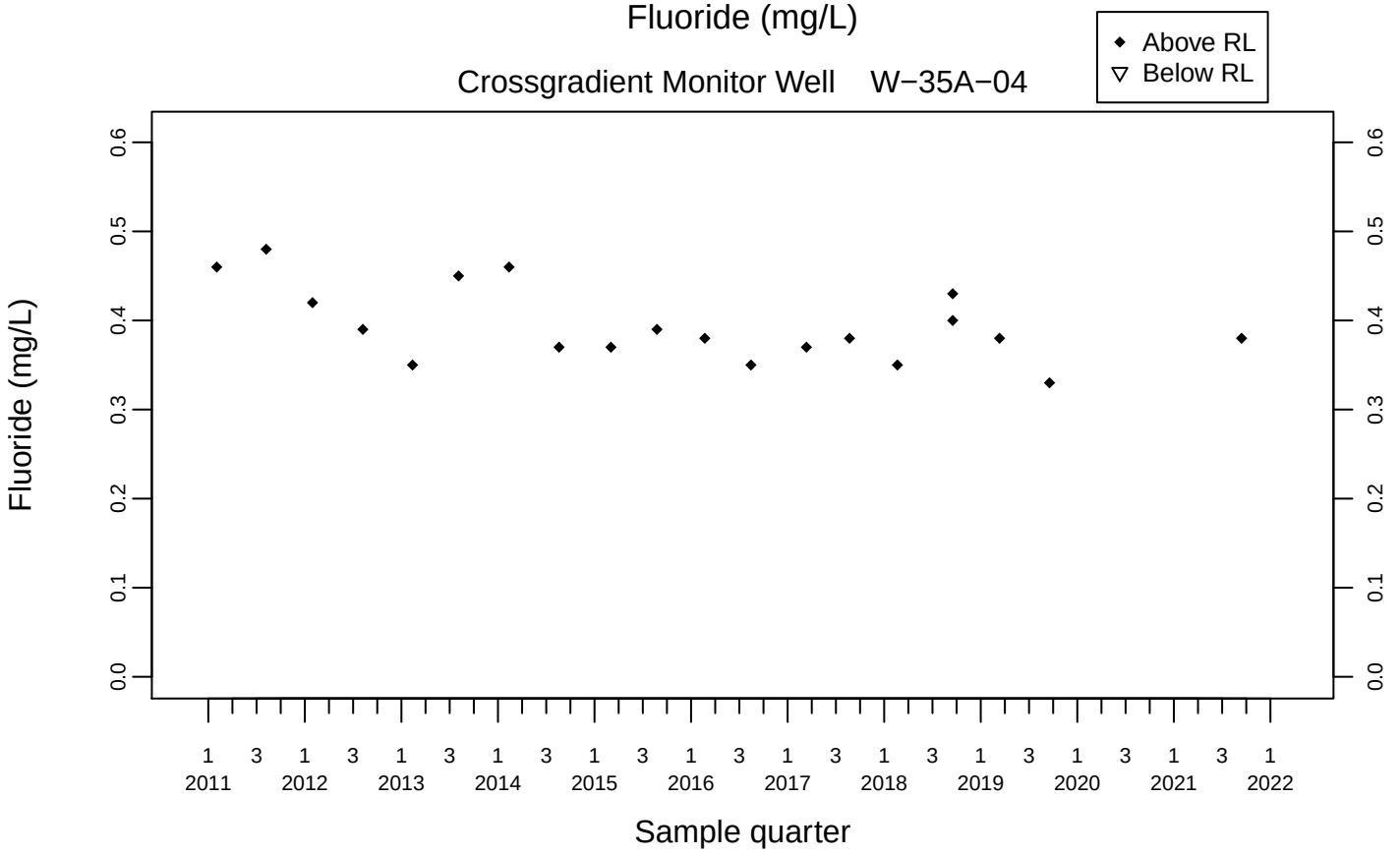

Sewage Ponds Ground Water
Sulfate (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Sulfate (mg/L)
0
100
200
300
400
500
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter

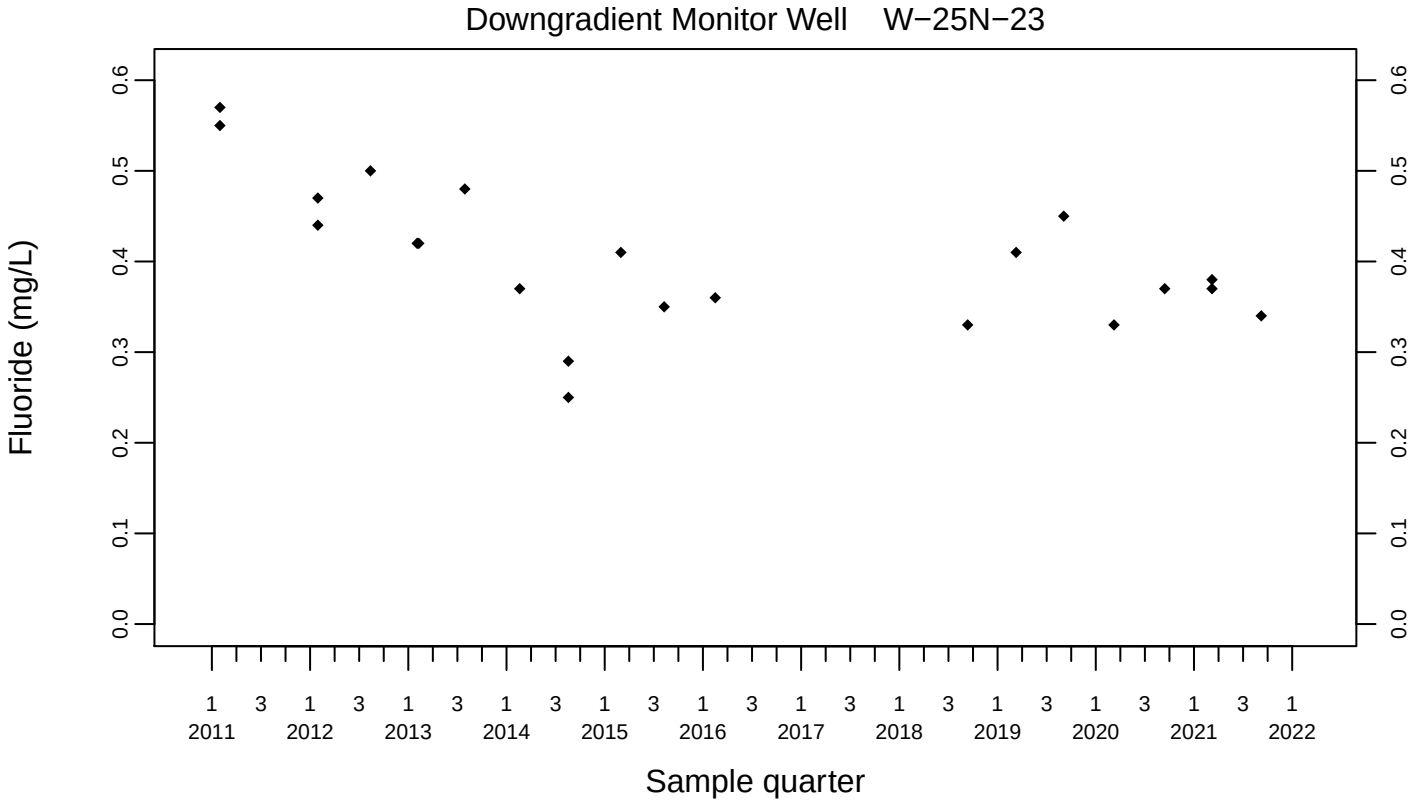
Sewage Ponds Ground Water
Fluoride (mg/L)



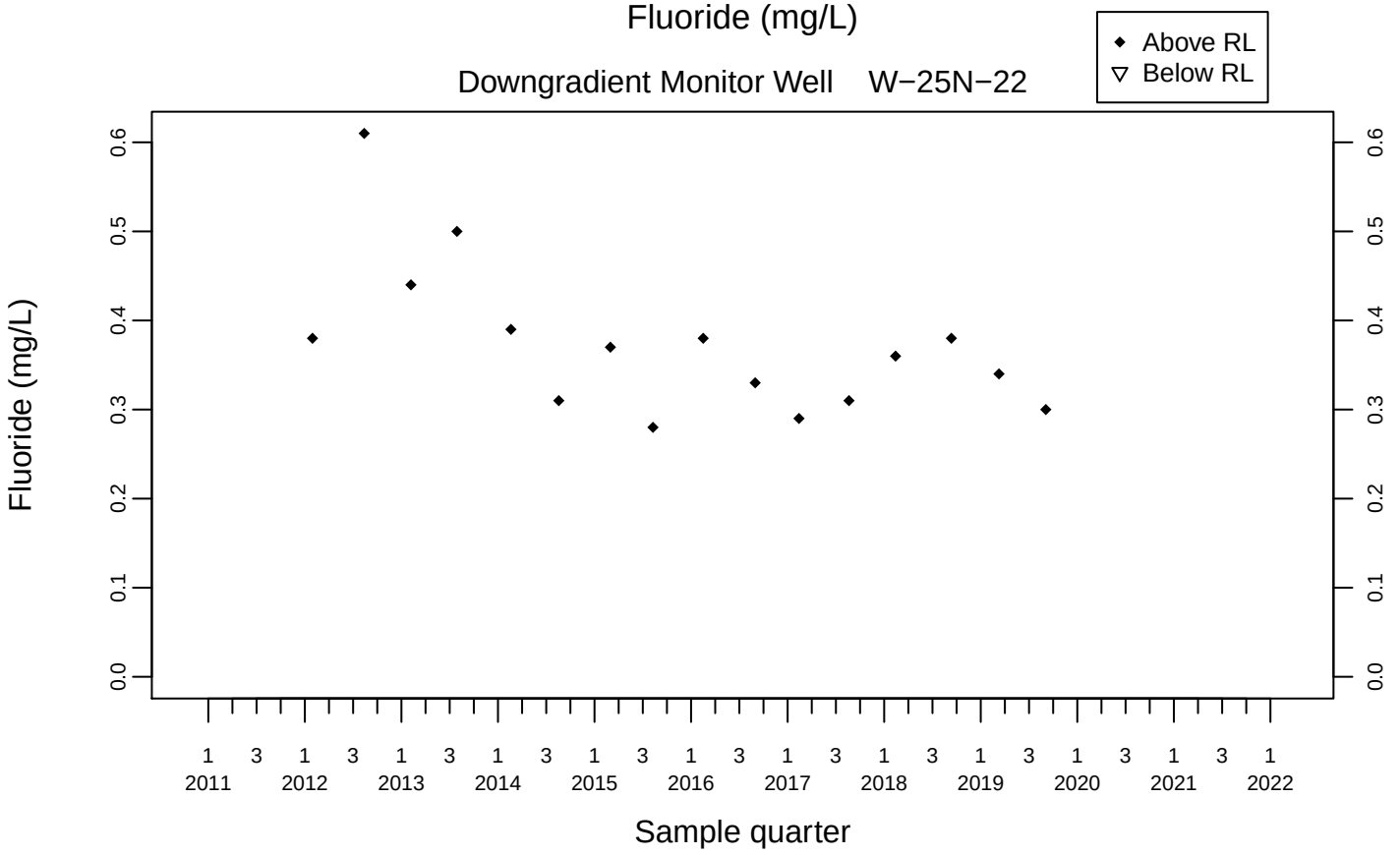


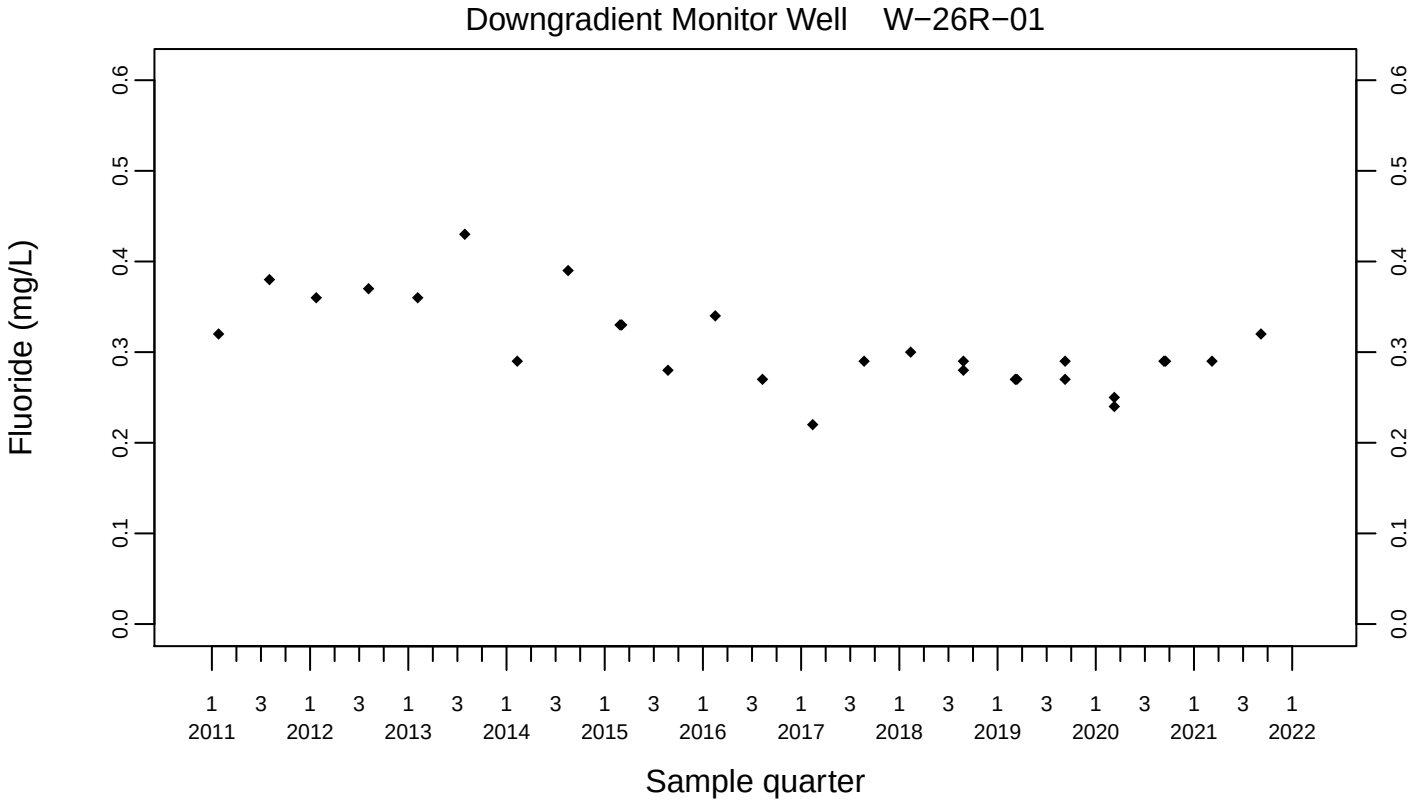
Sewage Ponds Ground Water
Fluoride (mg/L)



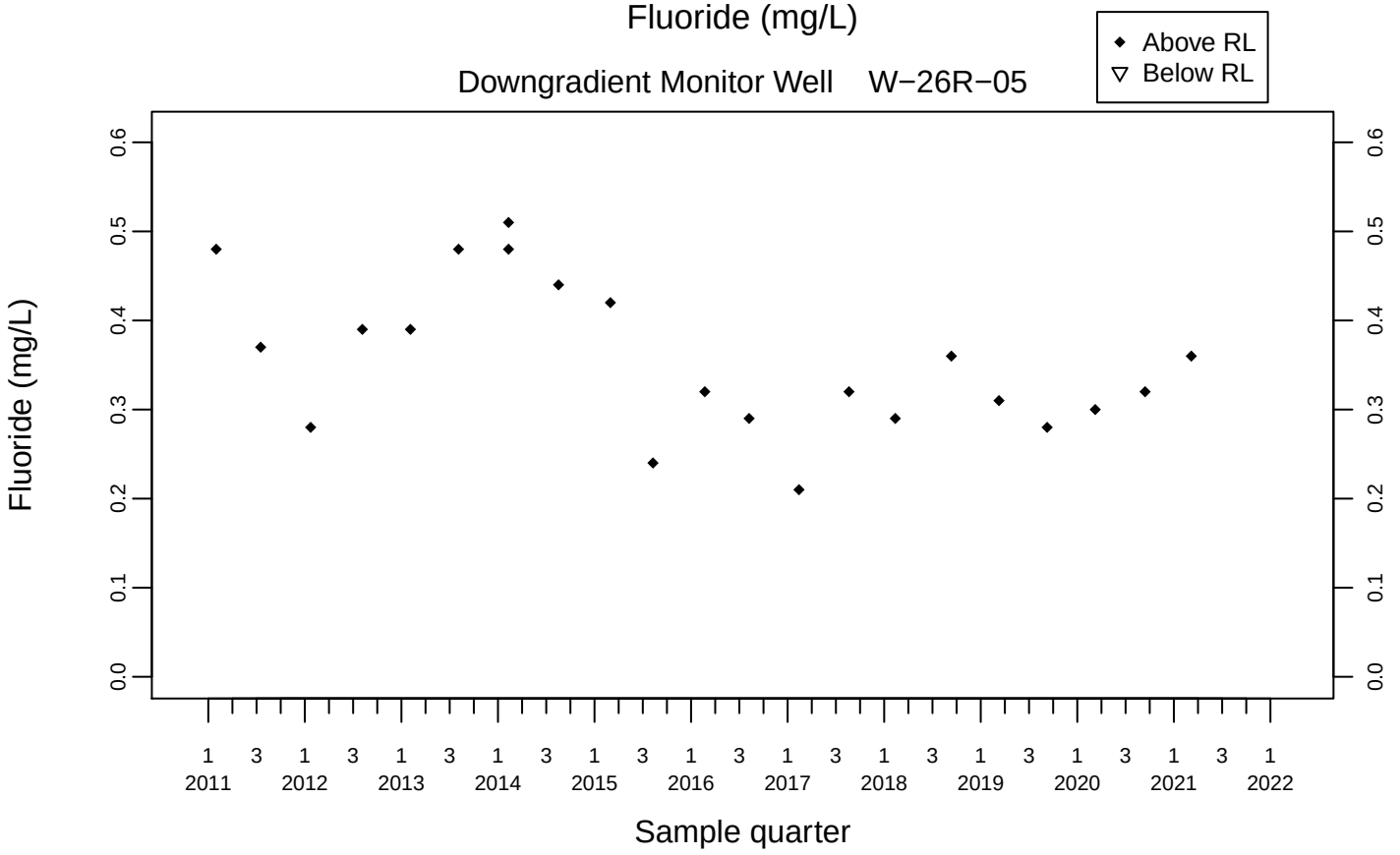


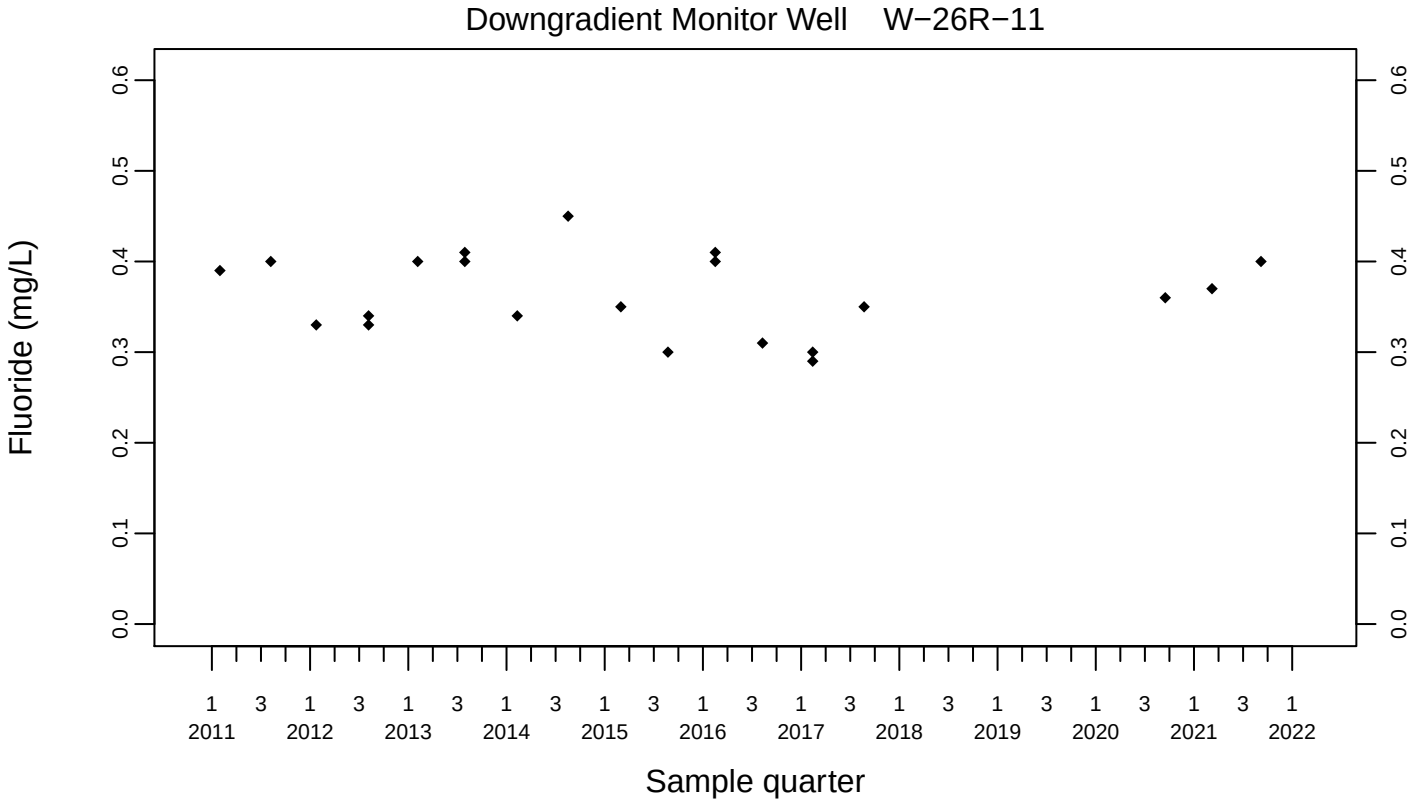
Sewage Ponds Ground Water
Fluoride (mg/L)

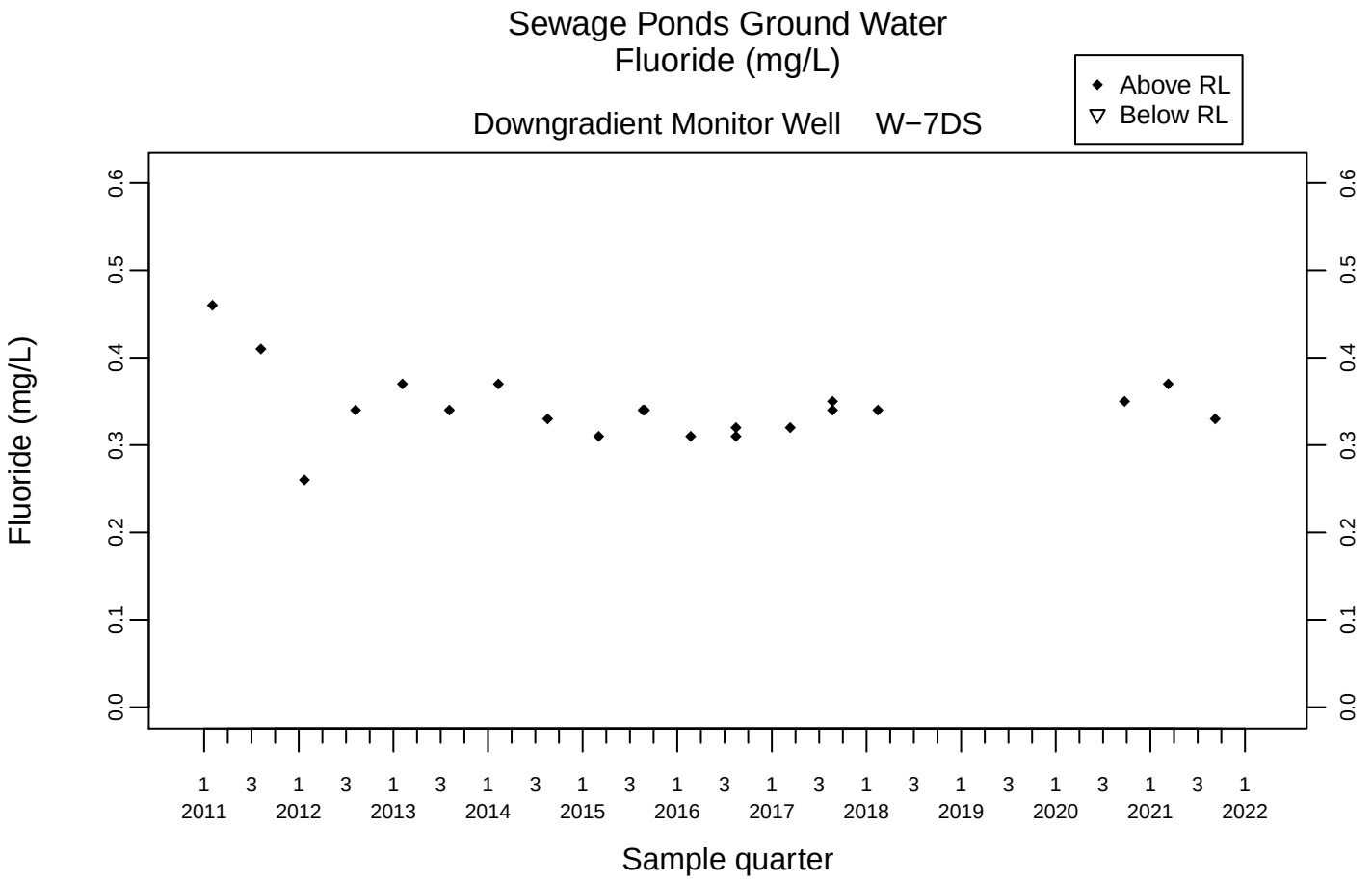


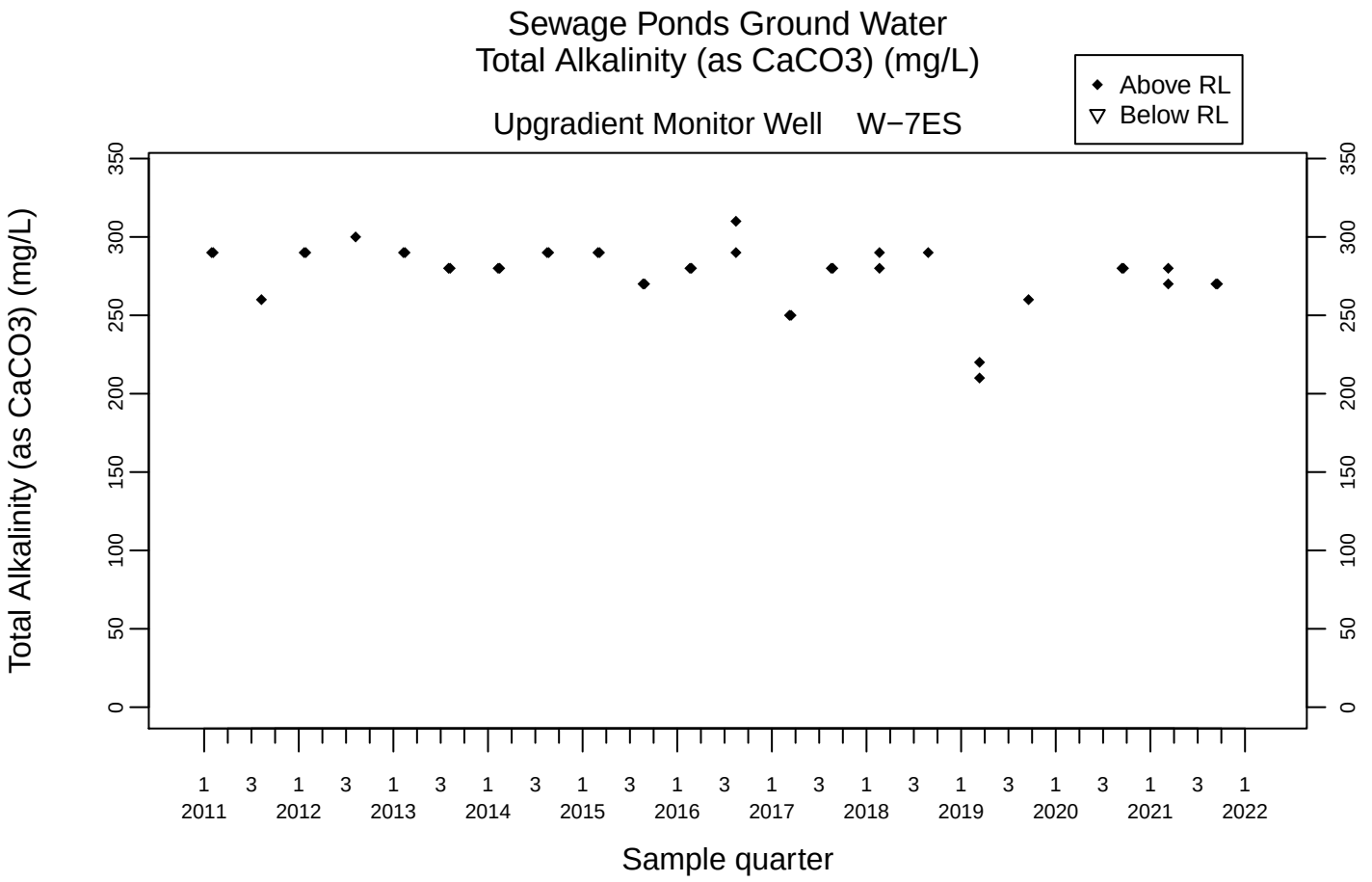


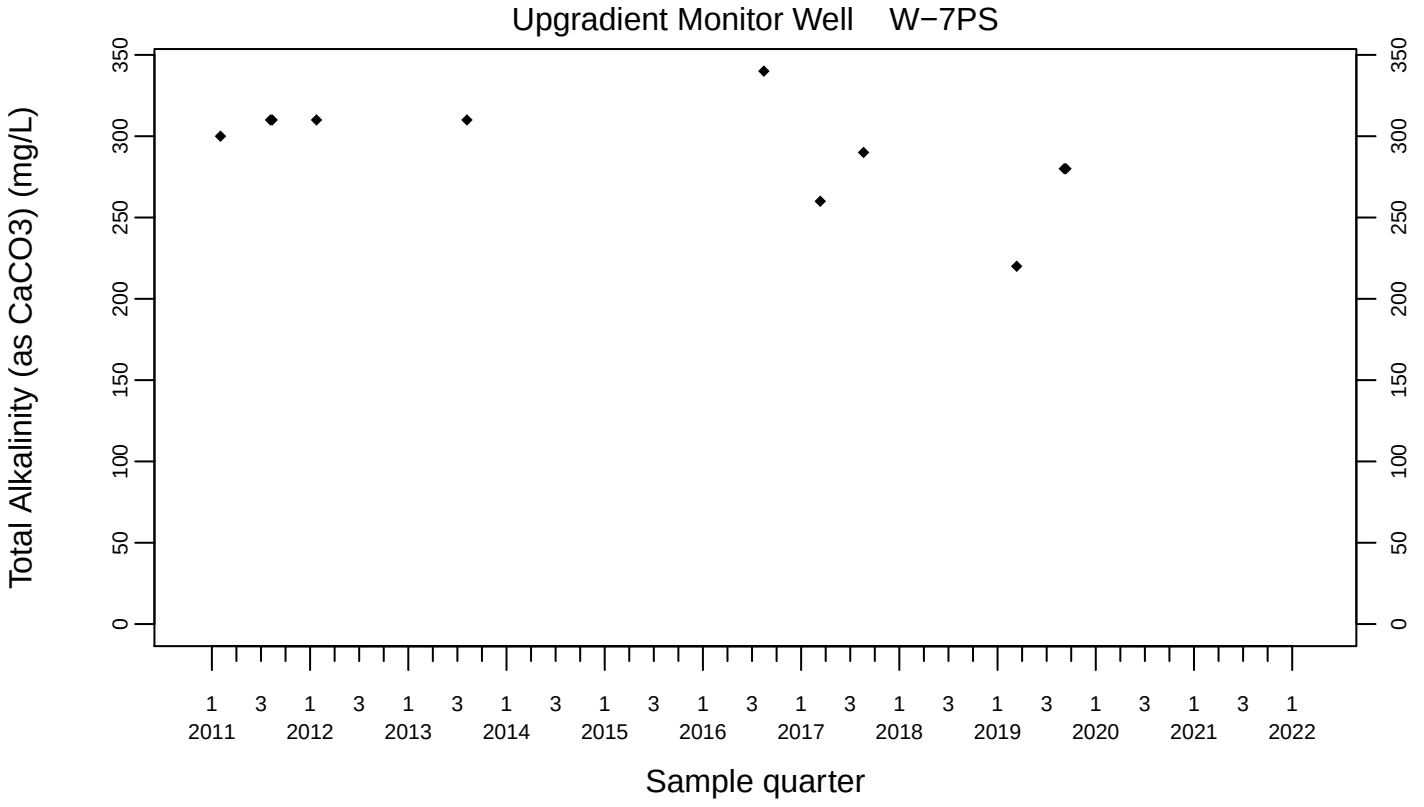
Sewage Ponds Ground Water
Fluoride (mg/L)

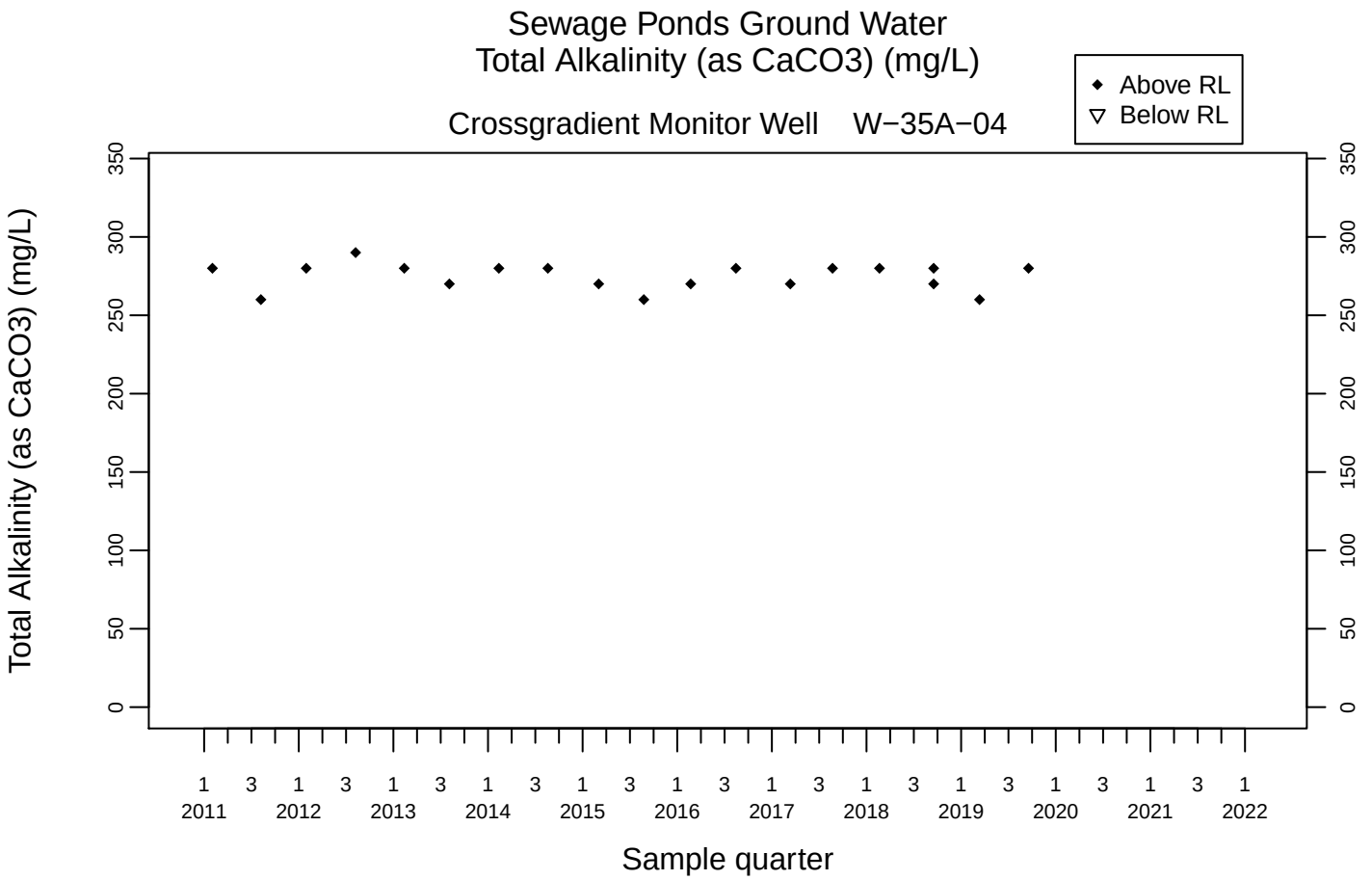


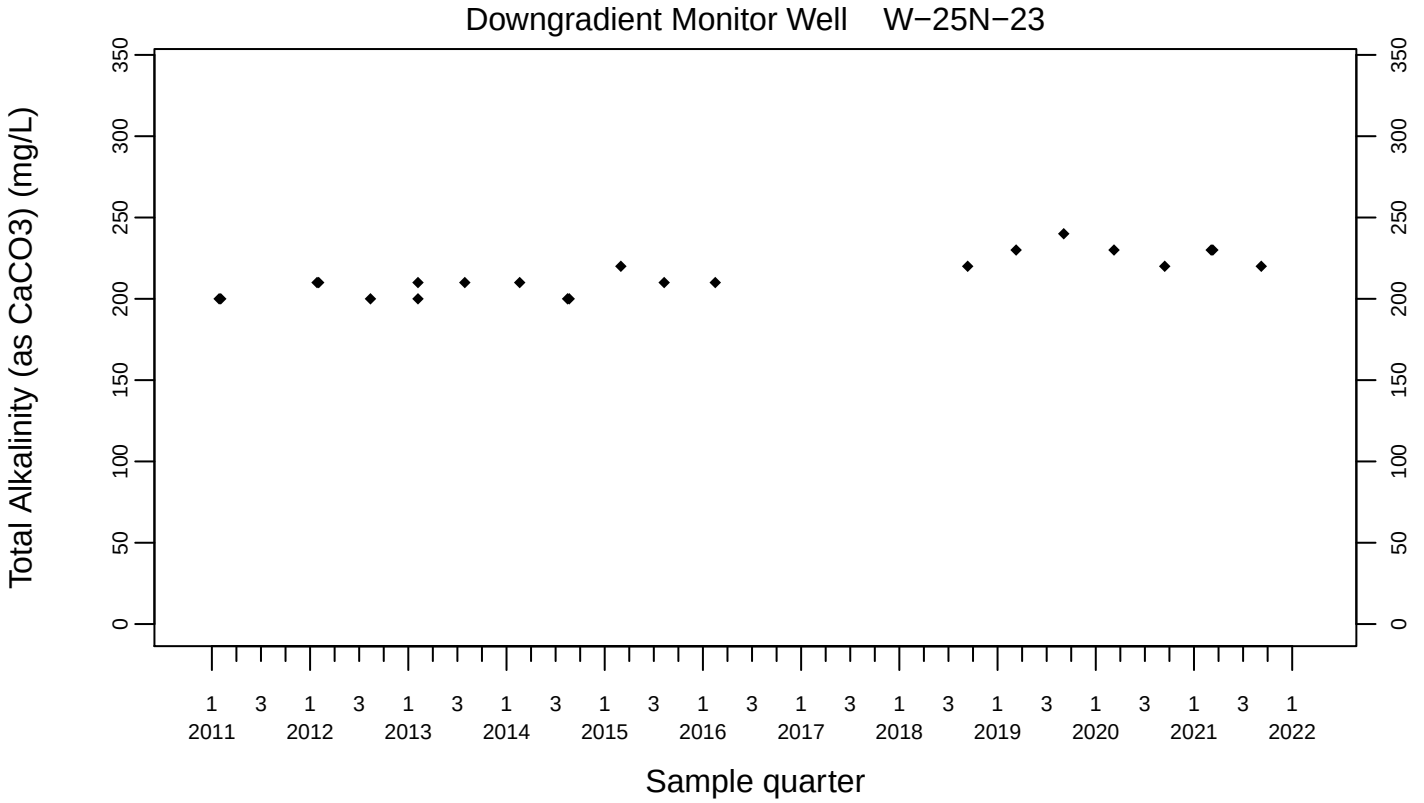


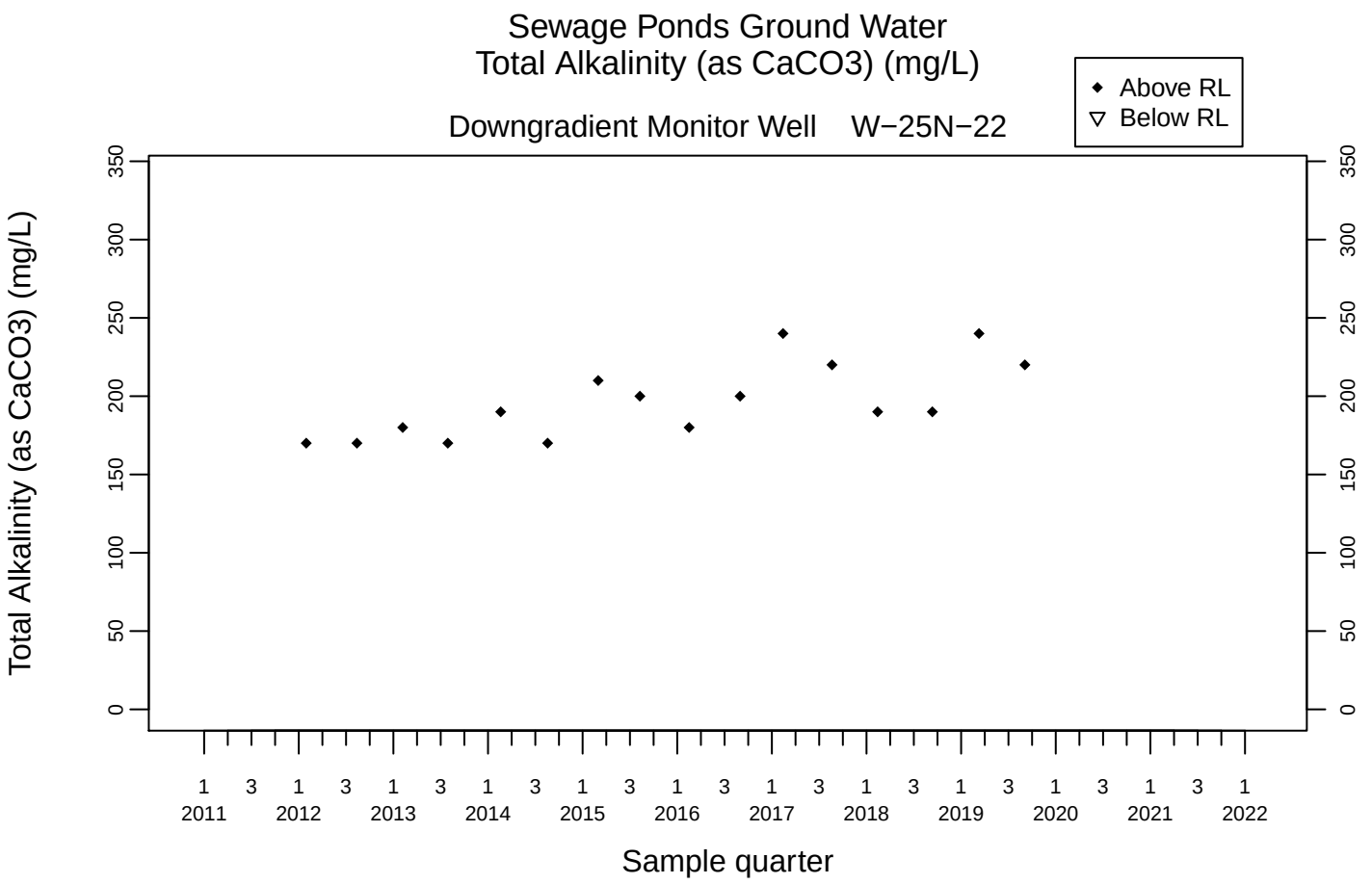

Sewage Ponds Ground Water
Fluoride (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Fluoride (mg/L)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

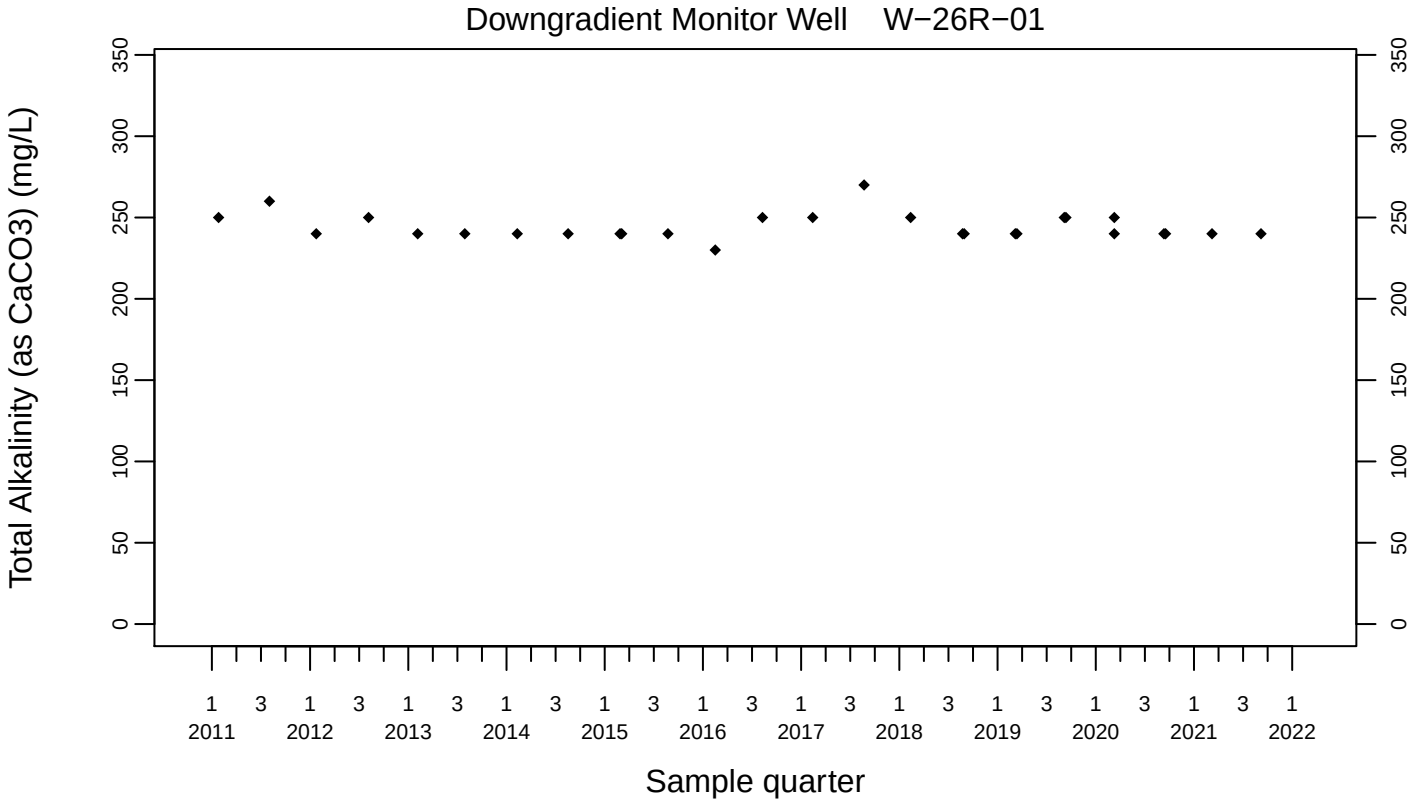

Sewage Ponds Ground Water
Total Alkalinity (as CaCO3) (mg/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

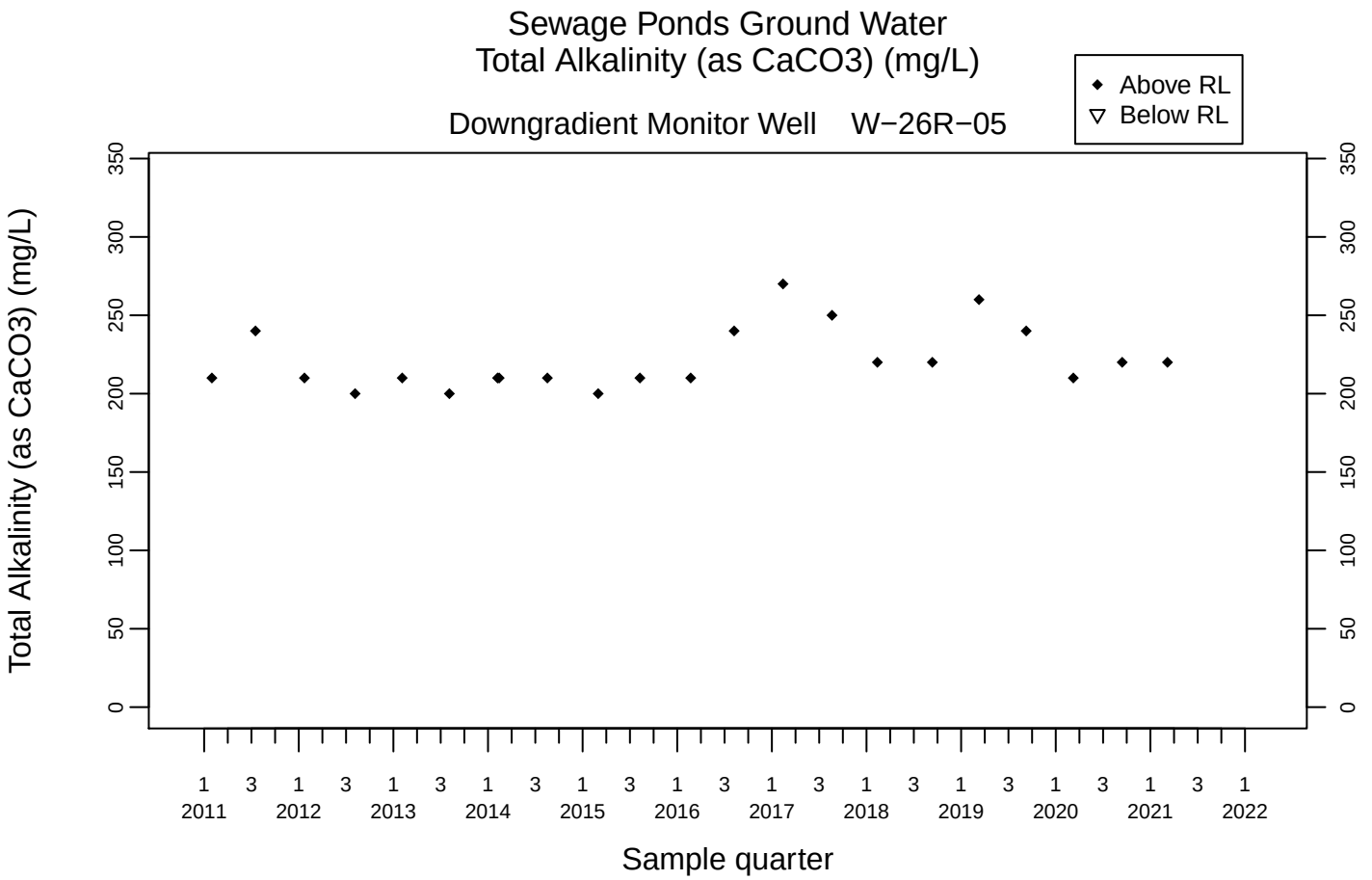

Upgradient Monitor Well W−7PS
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

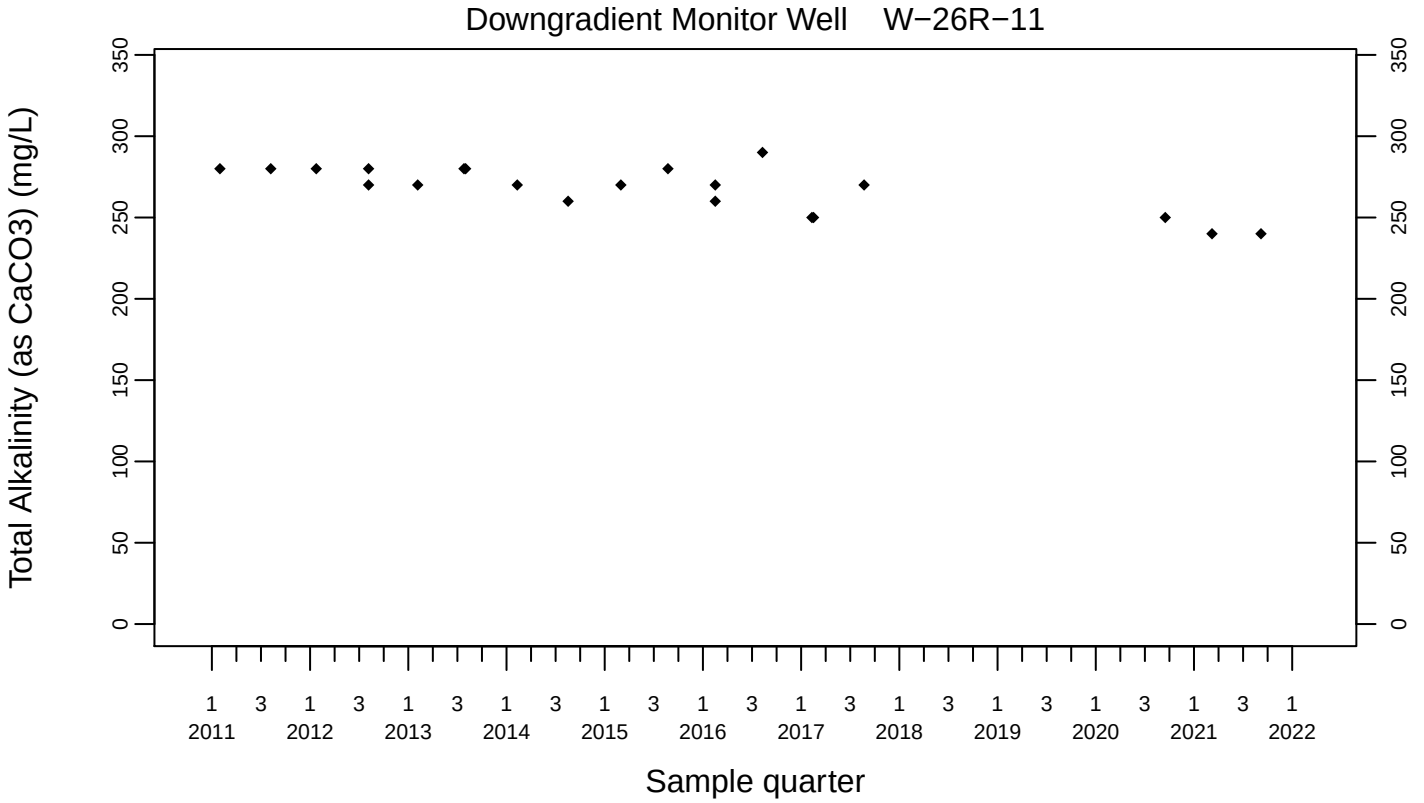

Sewage Ponds Ground Water
Total Alkalinity (as CaCO3) (mg/L)
Above RL
Below RL
Crossgradient Monitor Well W−35A−04
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

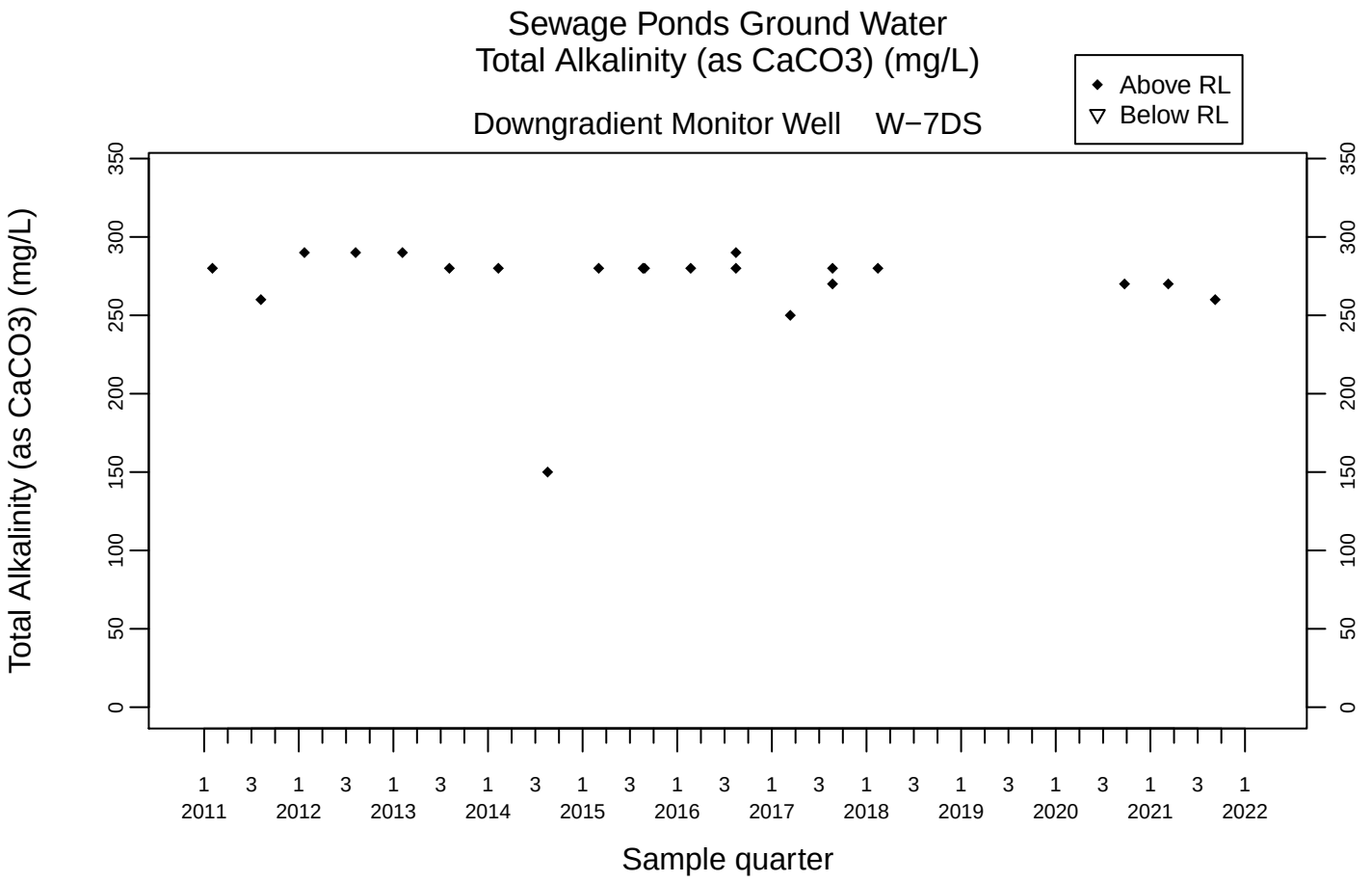

Downgradient Monitor Well W−25N−23
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

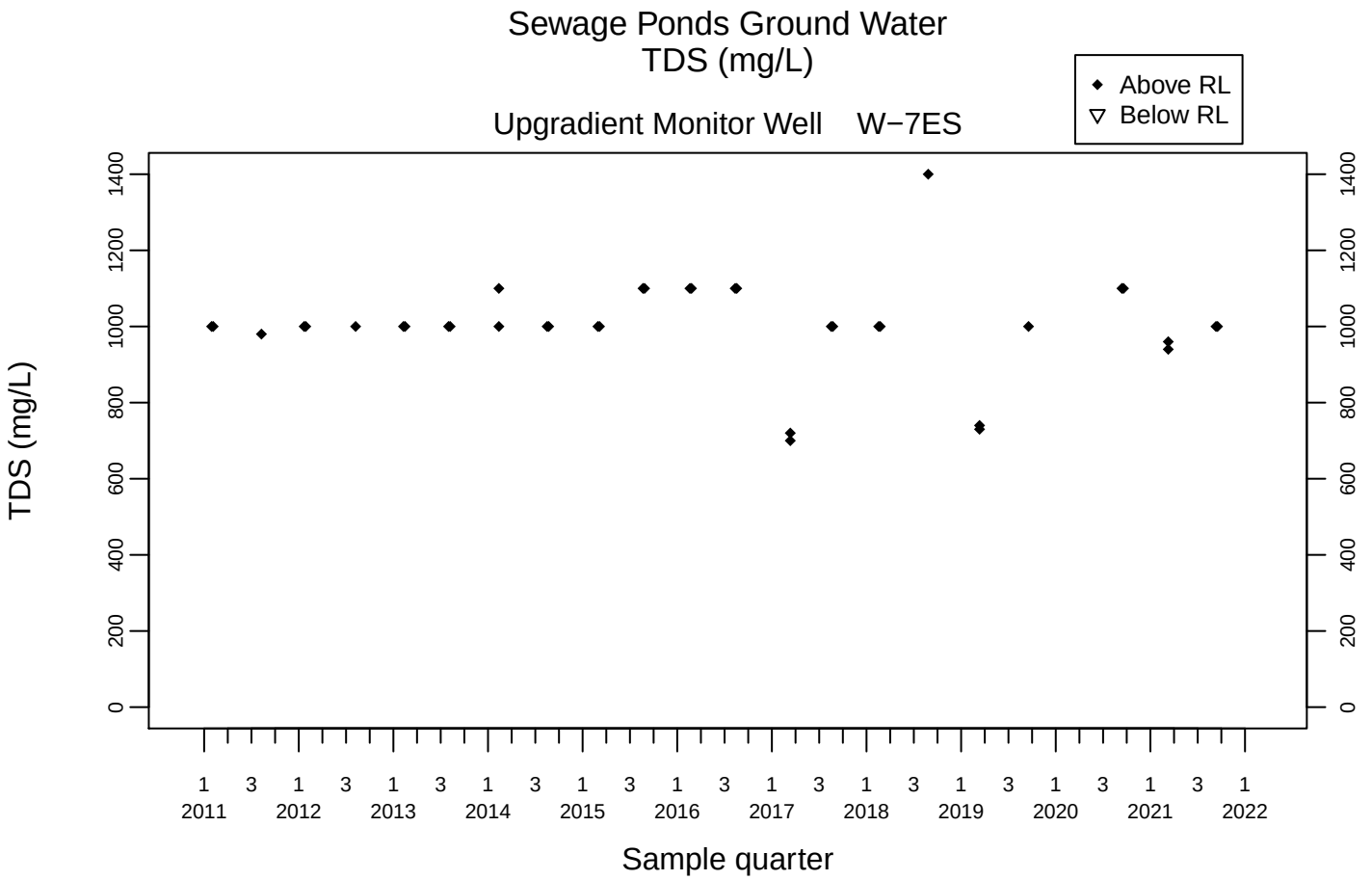

Sewage Ponds Ground Water
Total Alkalinity (as CaCO3) (mg/L)
Above RL
Below RL
Downgradient Monitor Well W−25N−22
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

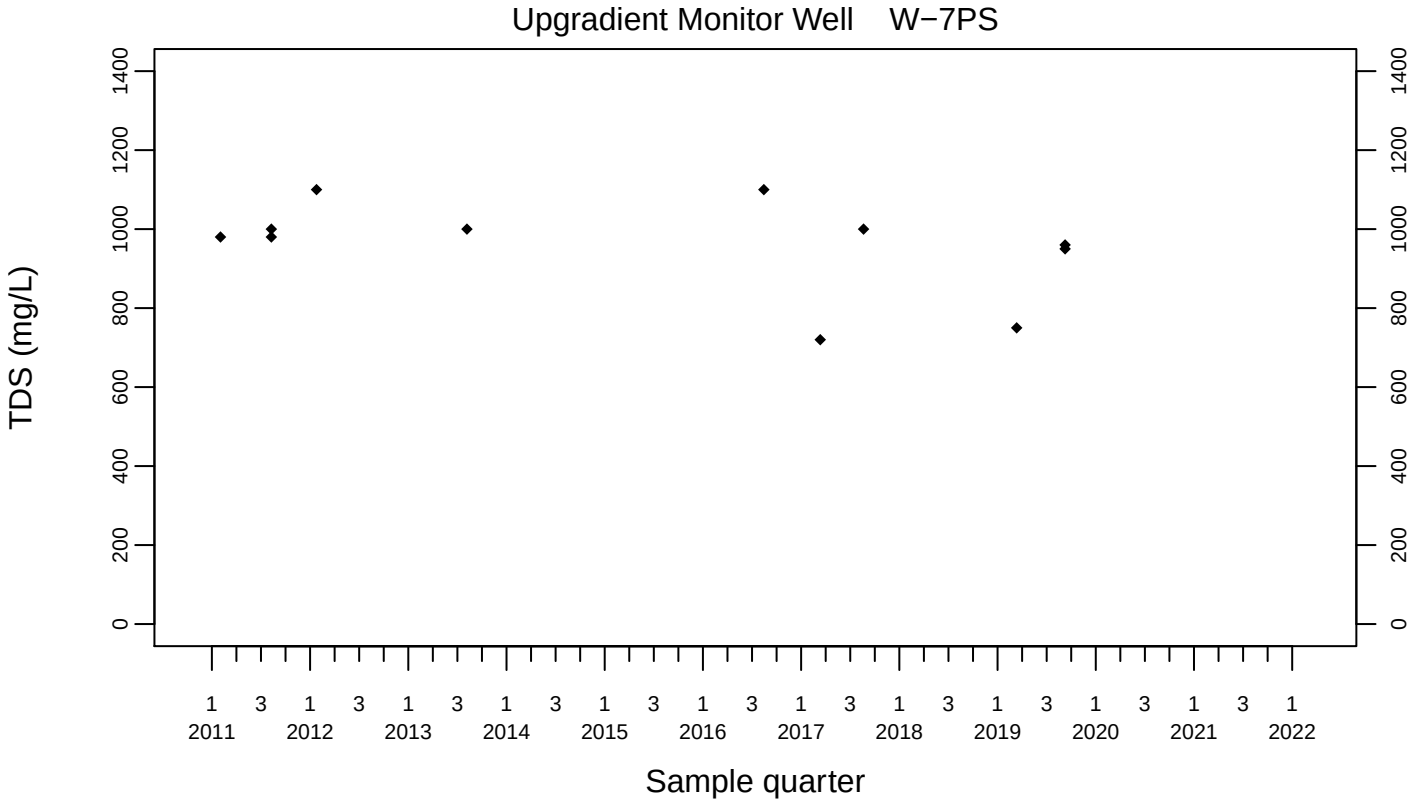

Downgradient Monitor Well W−26R−01
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Total Alkalinity (as CaCO3) (mg/L)
Above RL
Below RL
Downgradient Monitor Well W−26R−05
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

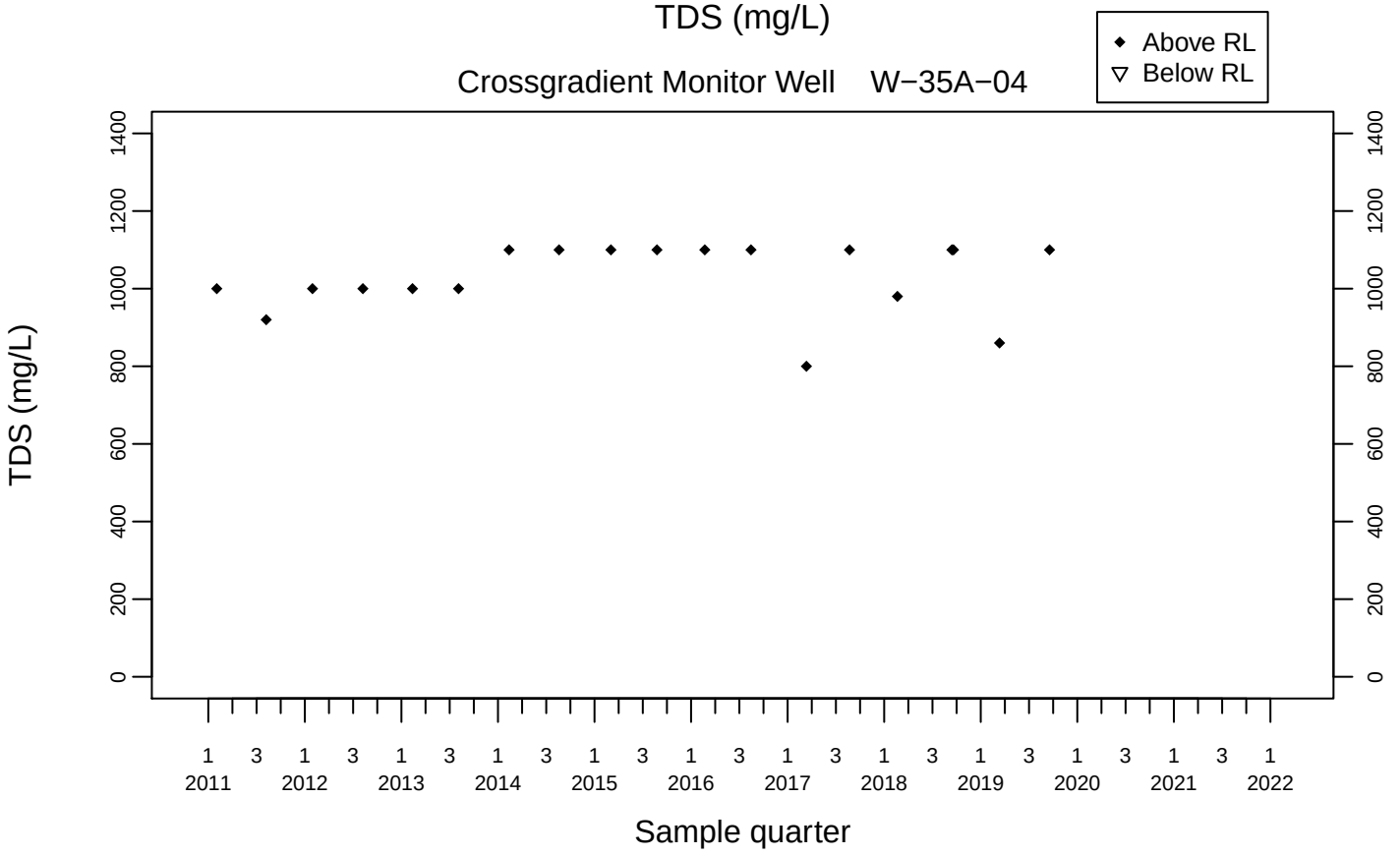

Downgradient Monitor Well W−26R−11
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

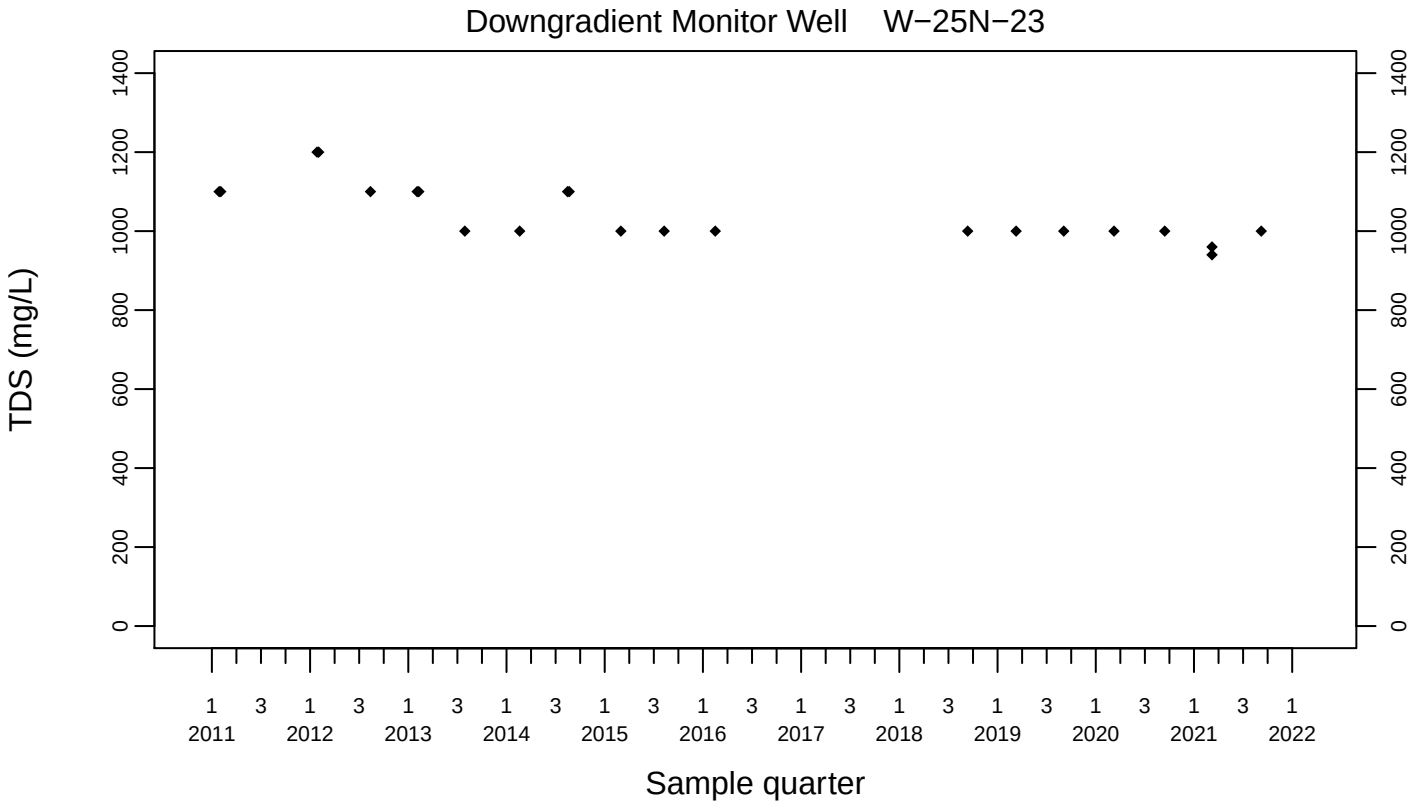

Sewage Ponds Ground Water
Total Alkalinity (as CaCO3) (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Total Alkalinity (as CaCO3) (mg/L)
0
50
100
150
200
250
300
350
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

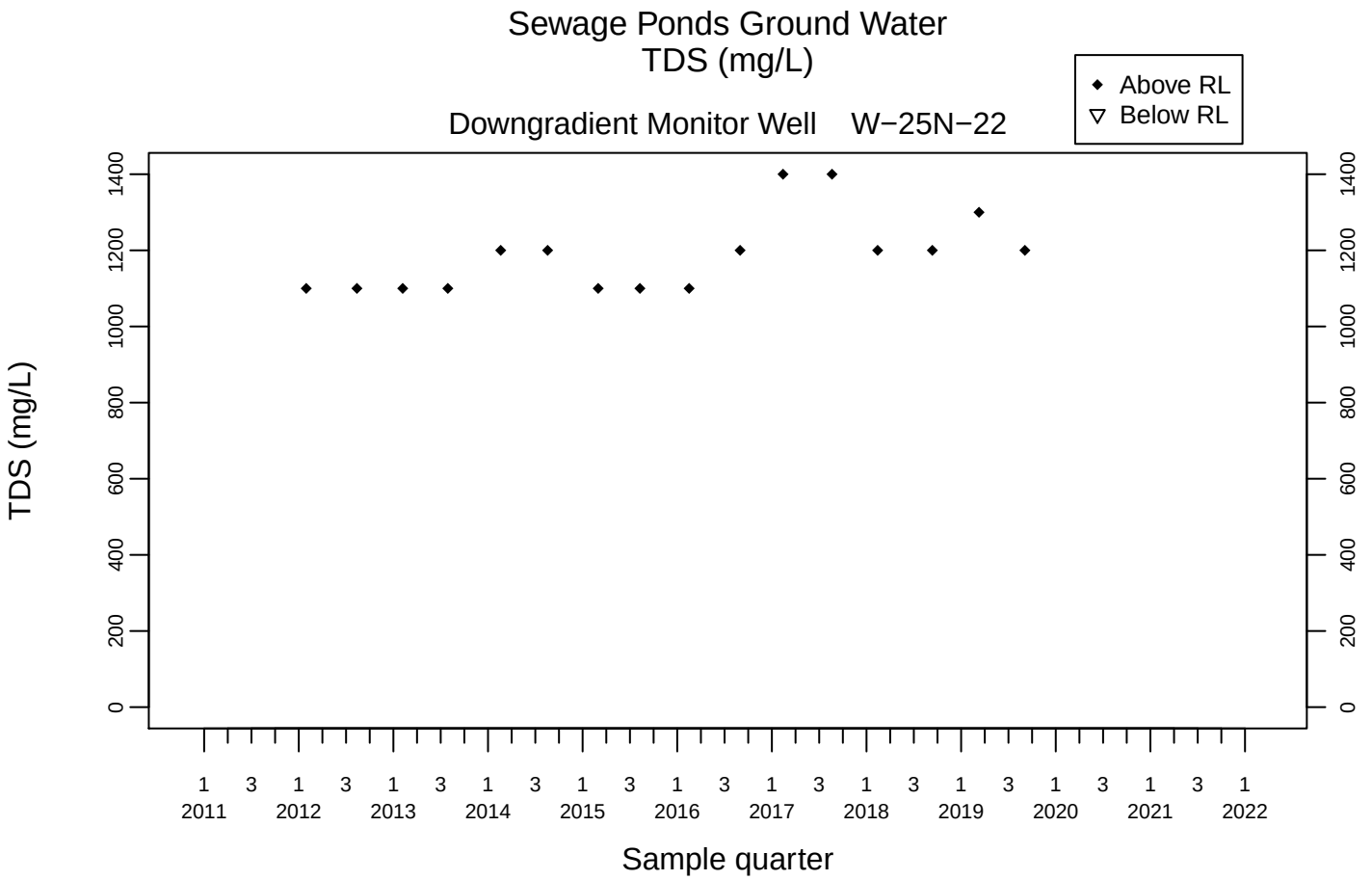

Sewage Ponds Ground Water
TDS (mg/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
TDS (mg/L)
0
200
400
600
800
1000
1200
1400
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

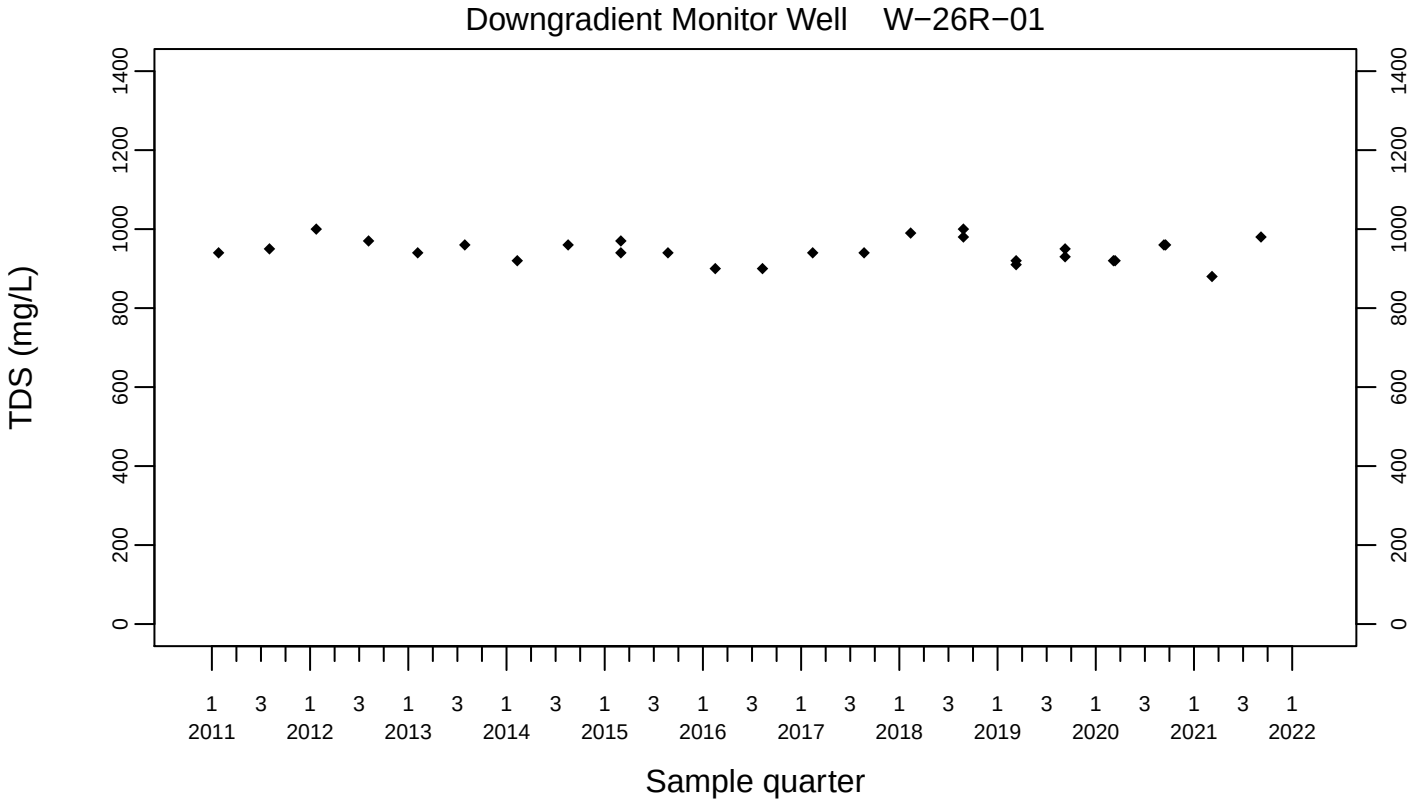

Upgradient Monitor Well W−7PS
TDS (mg/L)
0
200
400
600
800
1000
1200
1400
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Sewage Ponds Ground Water
TDS (mg/L)

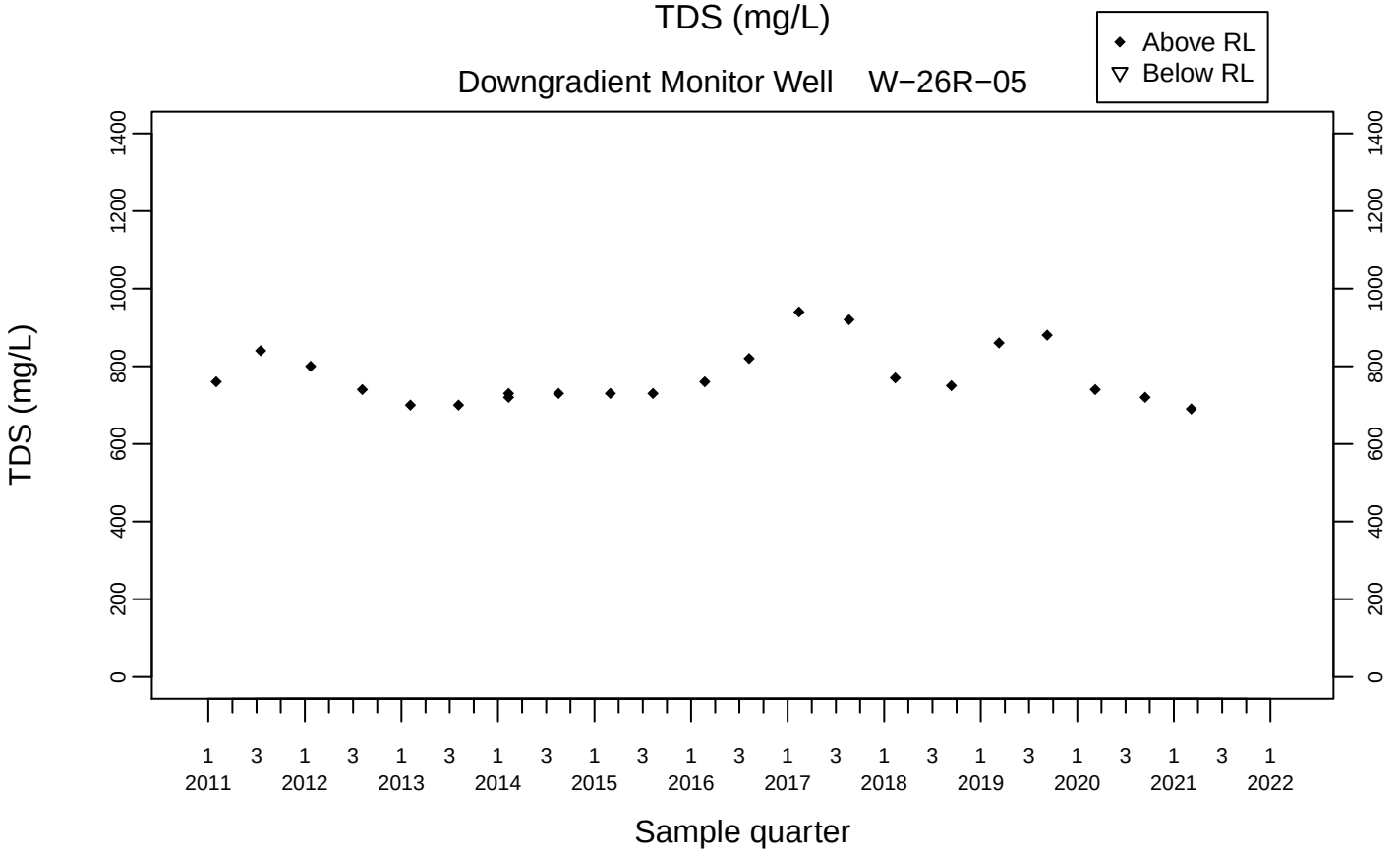


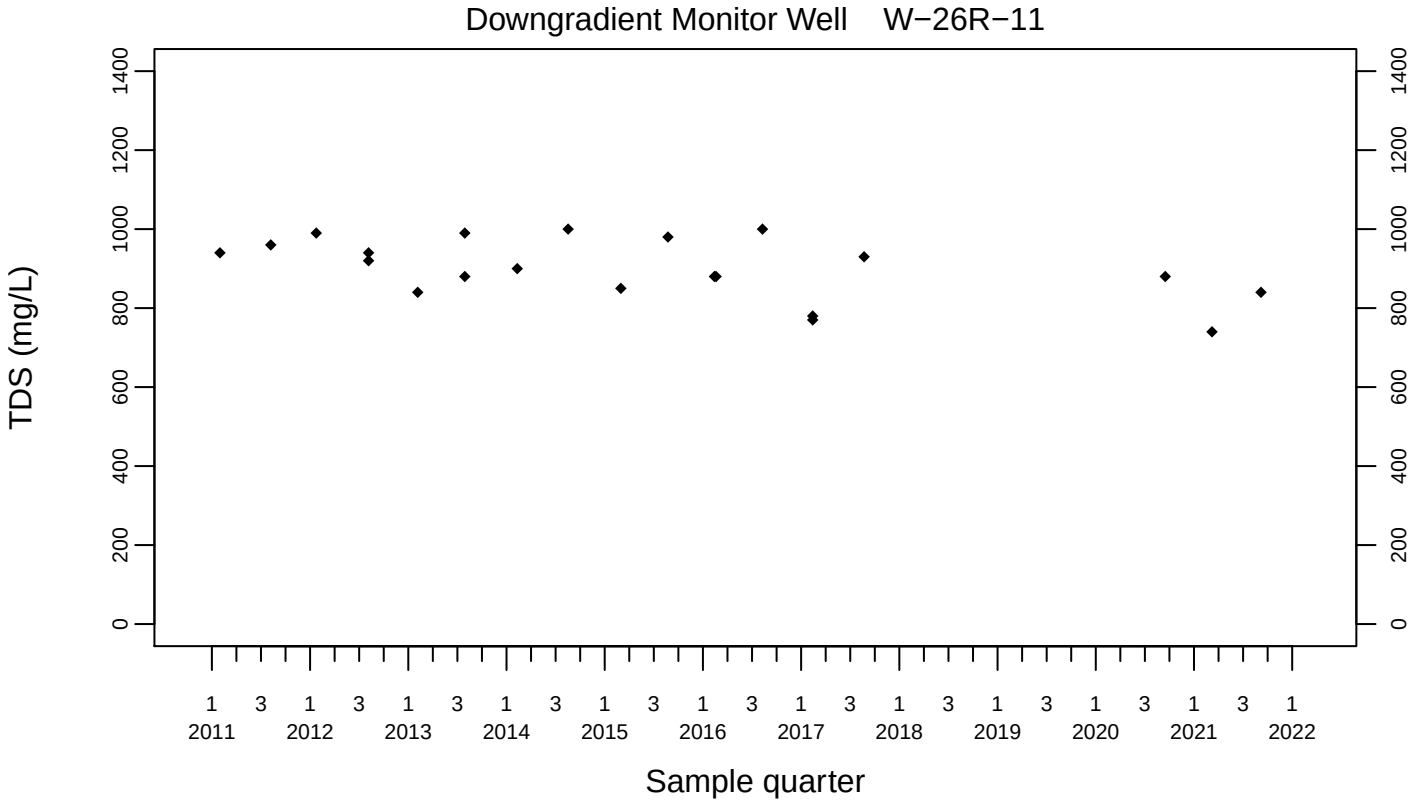


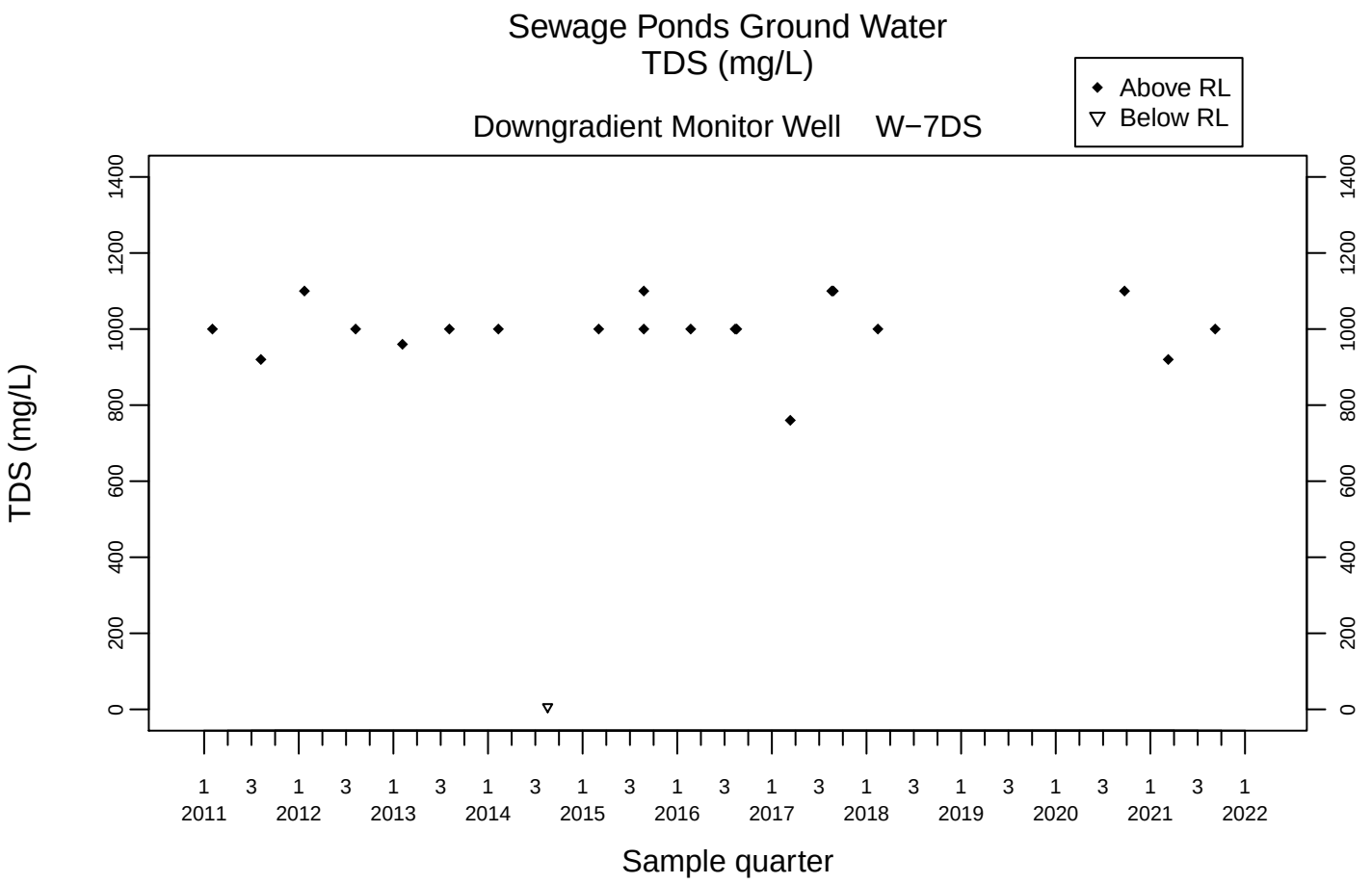

Sewage Ponds Ground Water
TDS (mg/L)
Above RL
Below RL
Downgradient Monitor Well W−25N−22
TDS (mg/L)
0
200
400
600
800
1000
1200
1400
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

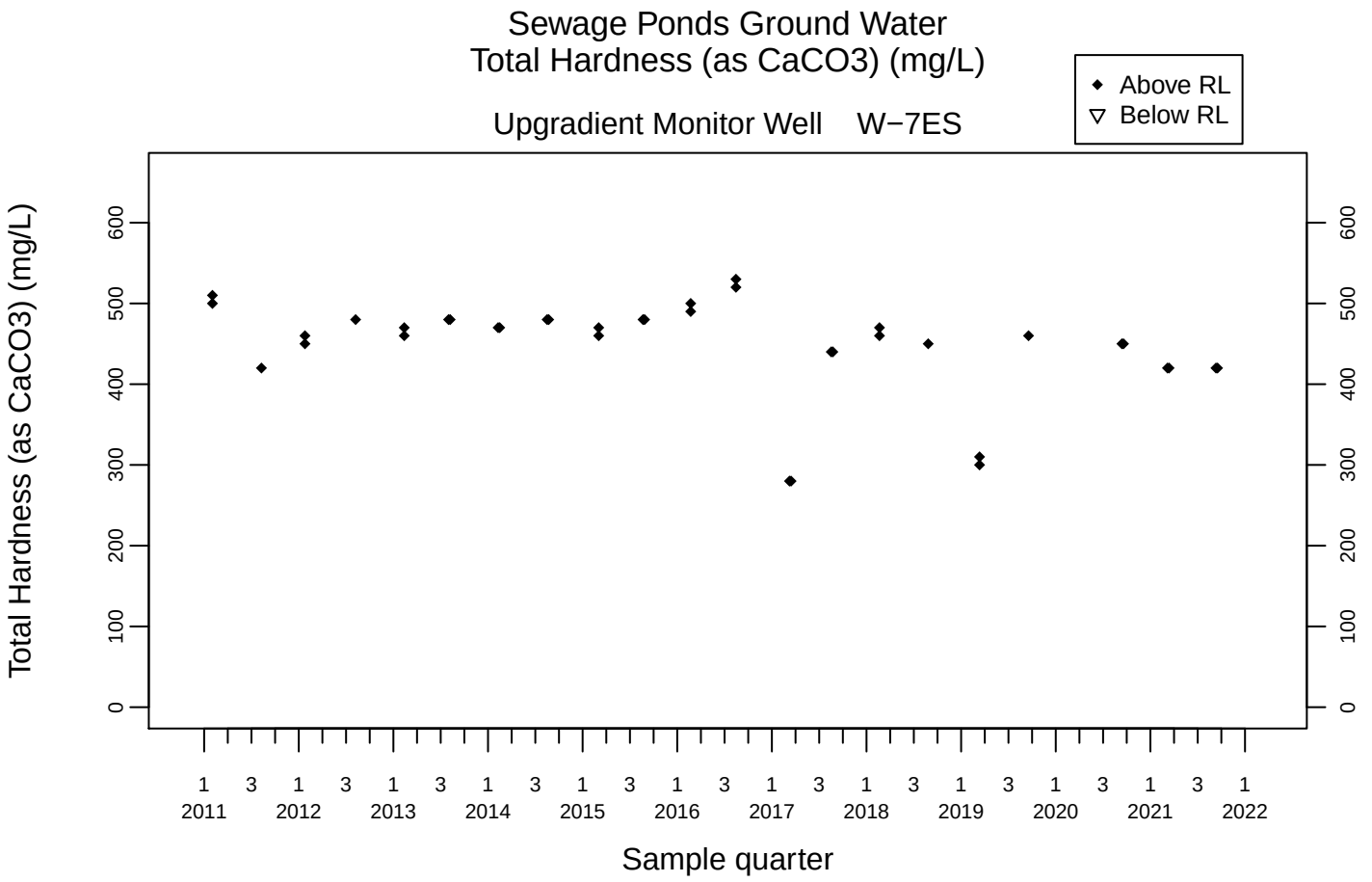

Downgradient Monitor Well W−26R−01
TDS (mg/L)
0
200
400
600
800
1000
1200
1400
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

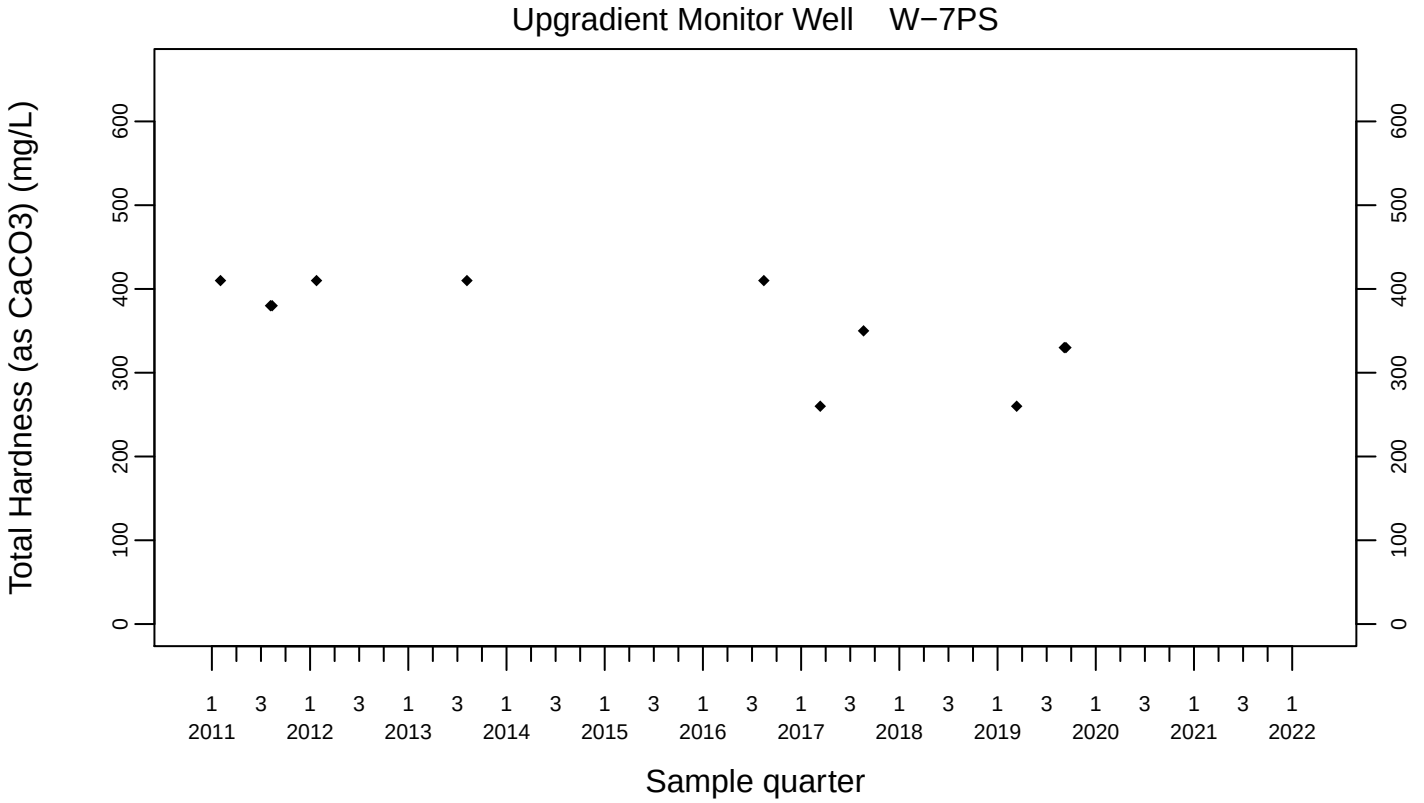
Sewage Ponds Ground Water
TDS (mg/L)



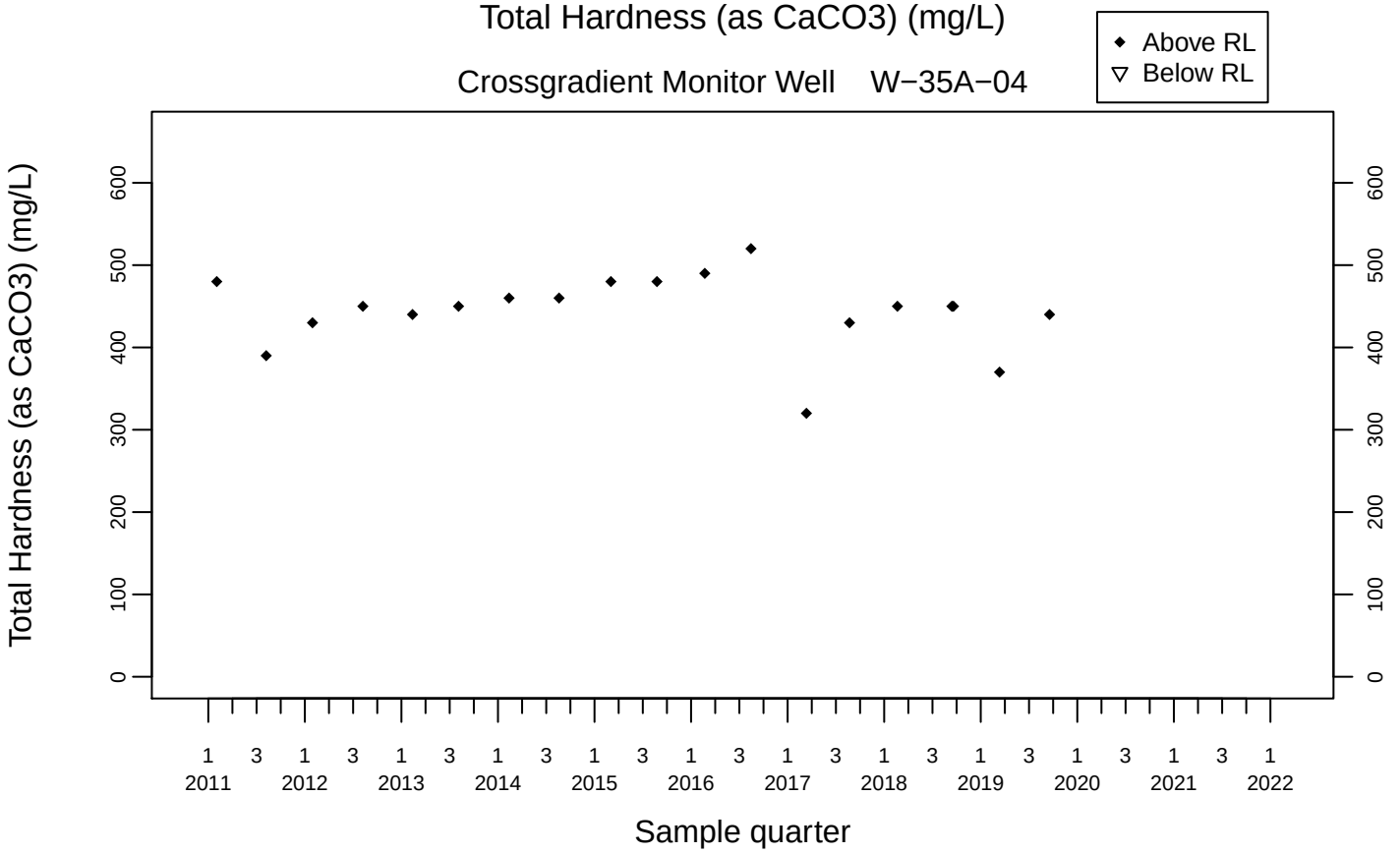


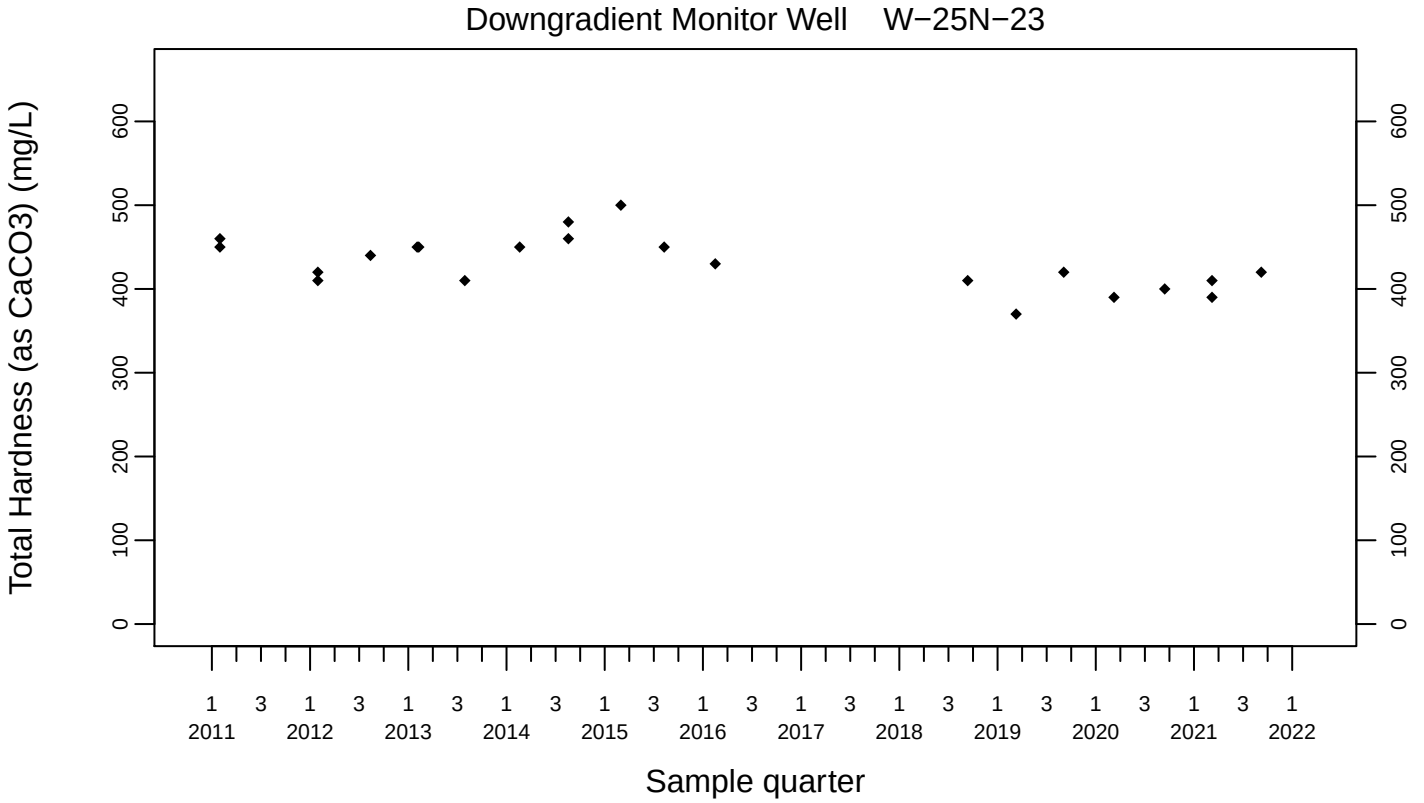

Sewage Ponds Ground Water
TDS (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
TDS (mg/L)
0
200
400
600
800
1000
1200
1400
1 2011
3
1 2012
3
1 2013
3
1 2014
3
1 2015
3
1 2016
3
1 2017
3
1 2018
3
1 2019
3
1 2020
3
1 2021
3
1 2022
Sample quarter


Sewage Ponds Ground Water
Total Hardness (as CaCO3) (mg/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Total Hardness (as CaCO3) (mg/L)
0
100
200
300
400
500
600
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

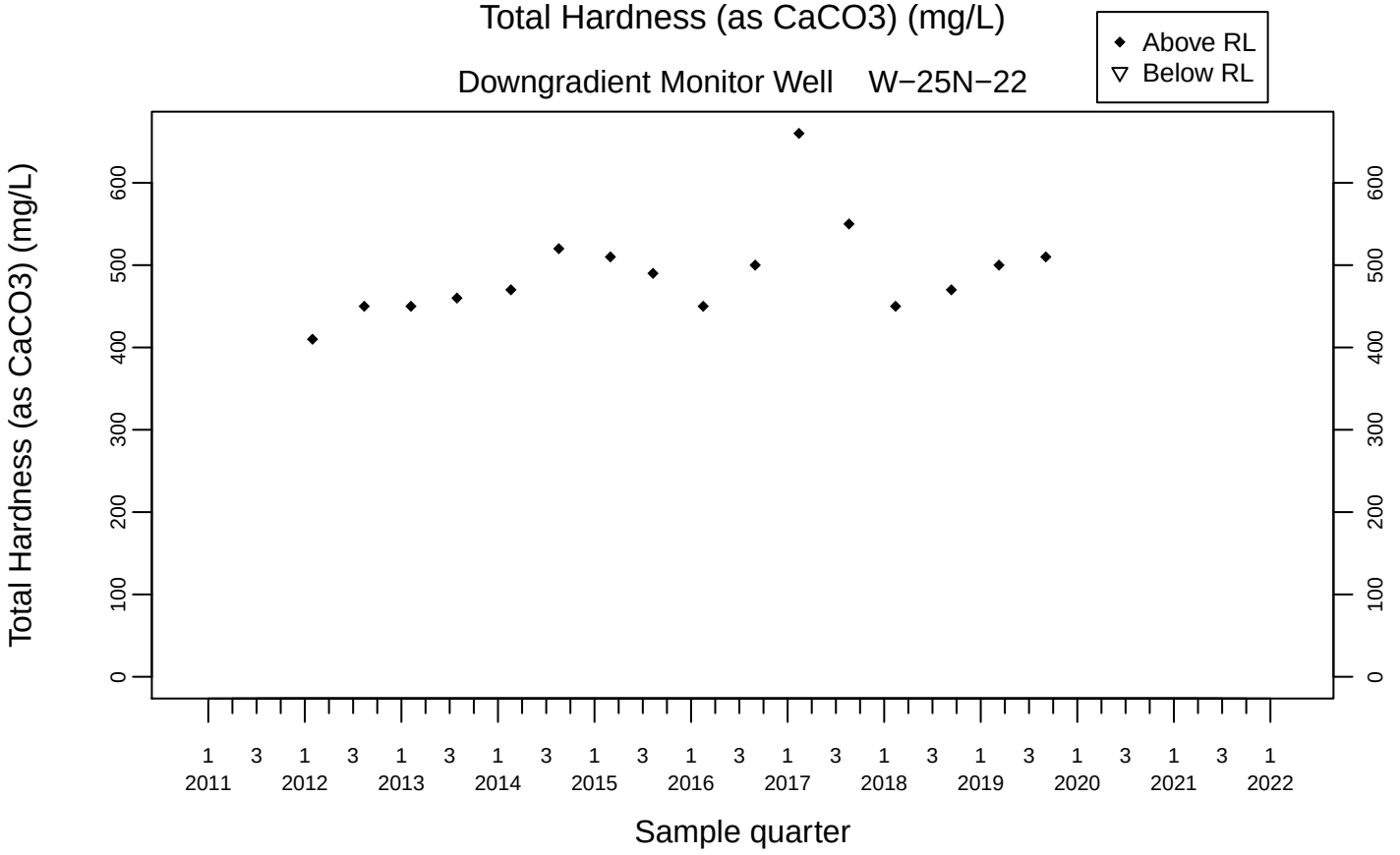

Upgradient Monitor Well W−7PS
Total Hardness (as CaCO3) (mg/L)
0
100
200
300
400
500
600
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

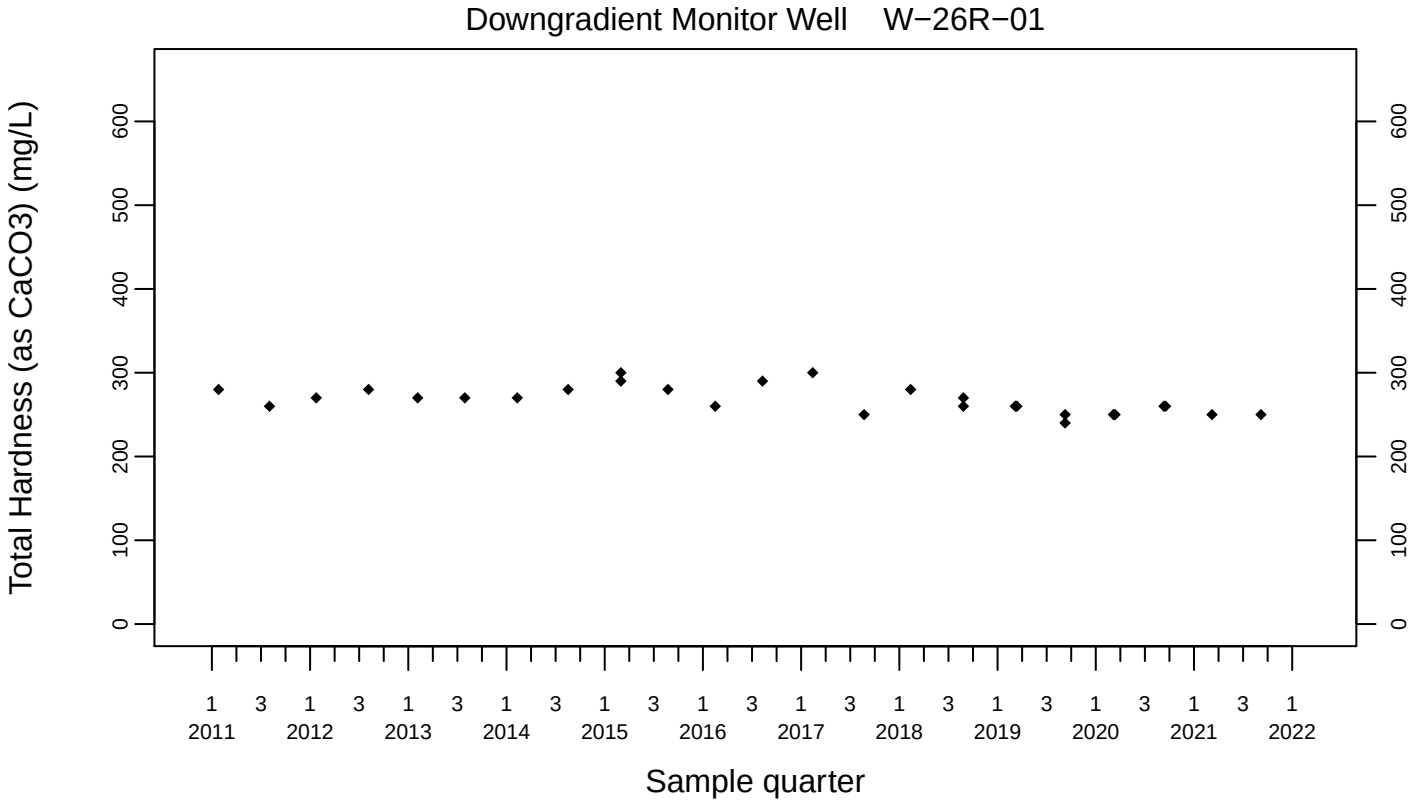
Sewage Ponds Ground Water
Total Hardness (as CaCO3) (mg/L)



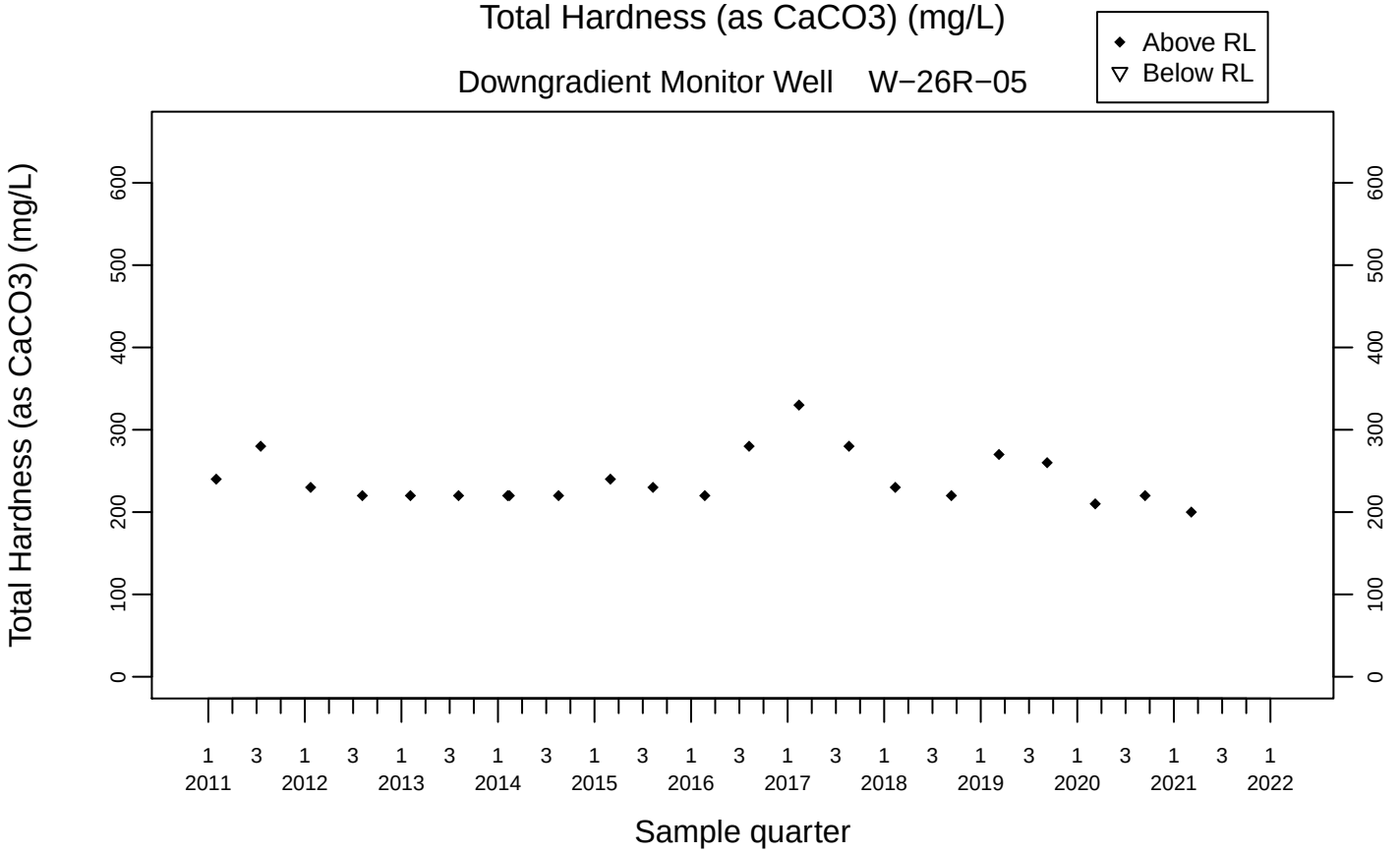


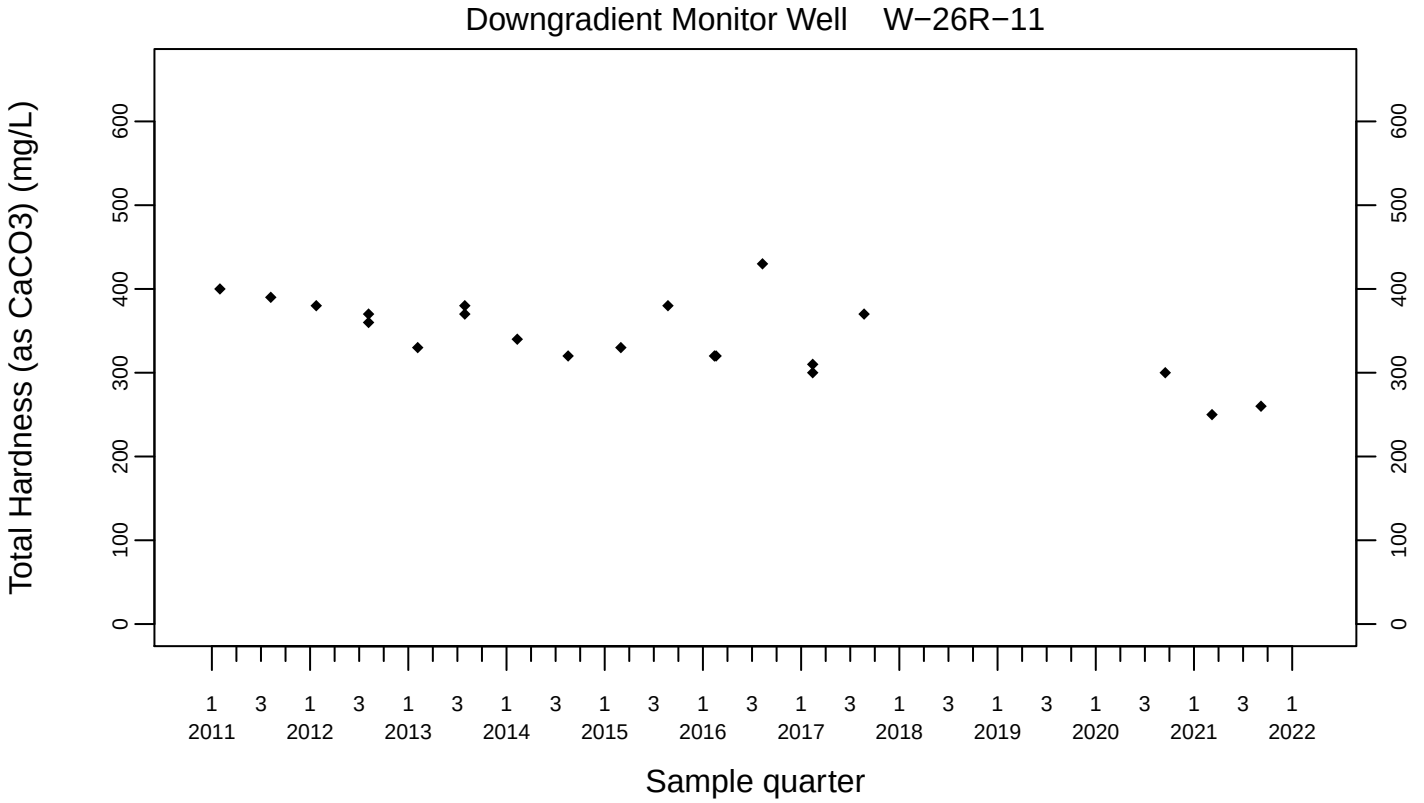
Sewage Ponds Ground Water
Total Hardness (as CaCO3) (mg/L)

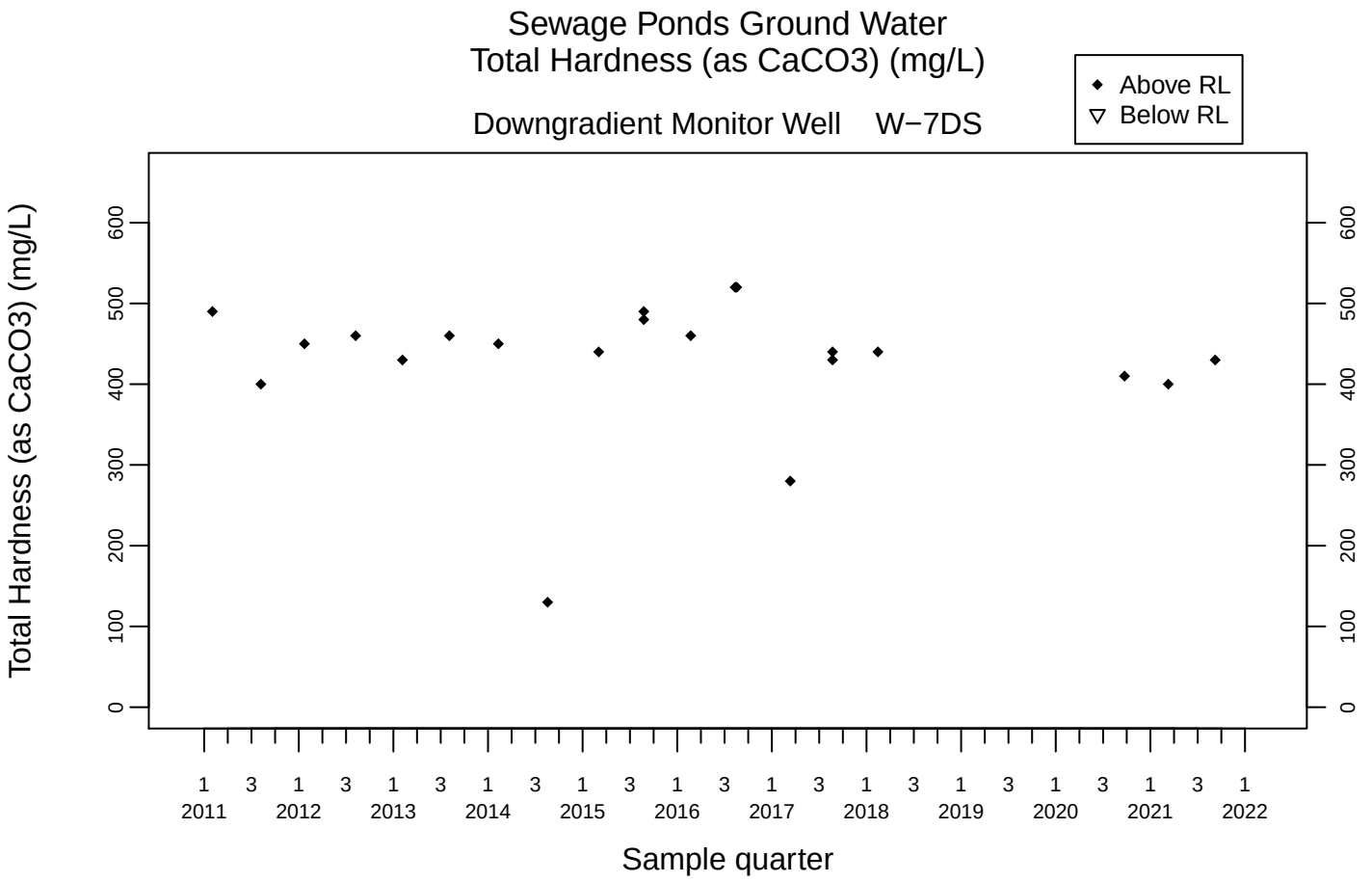


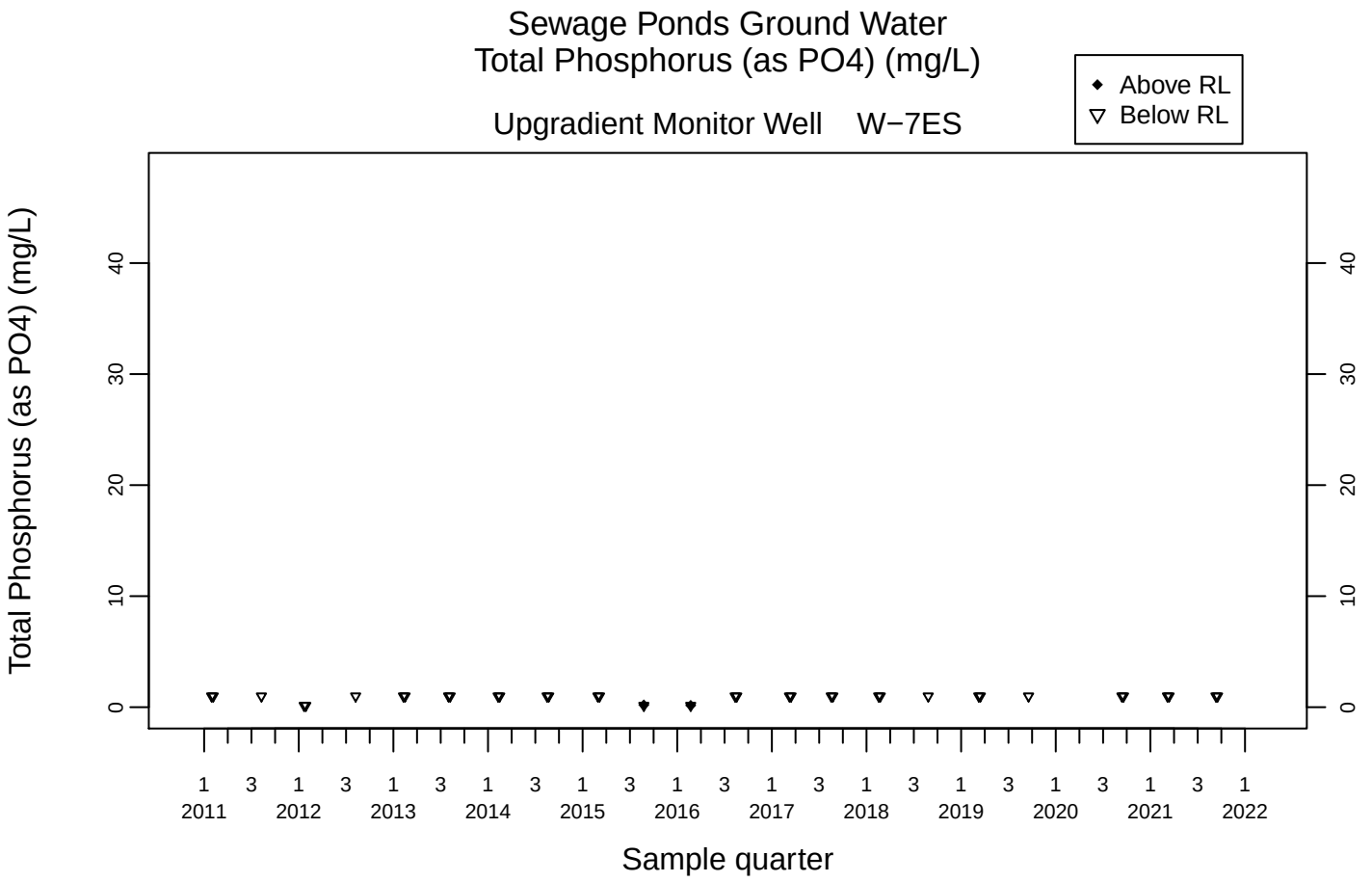


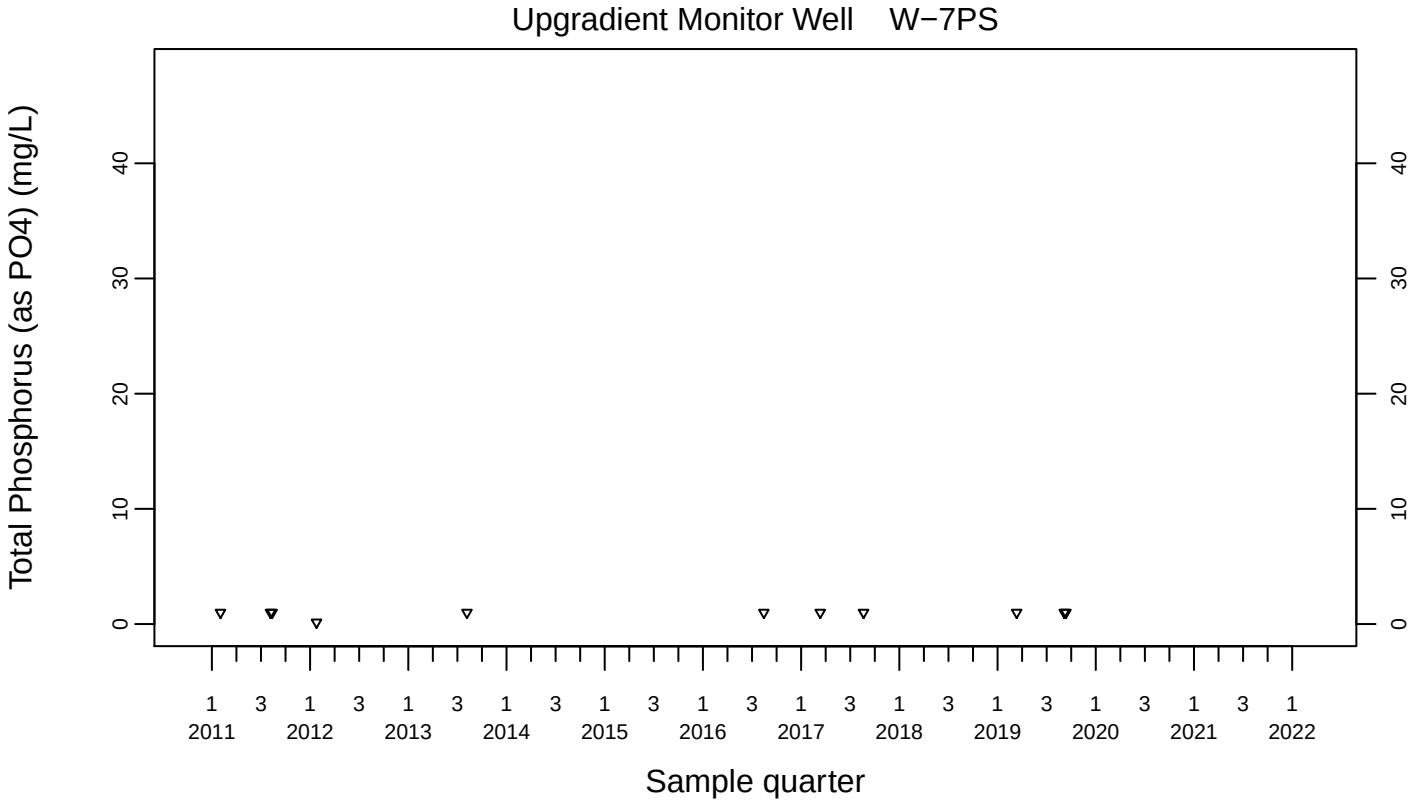
Sewage Ponds Ground Water
Total Hardness (as CaCO3) (mg/L)



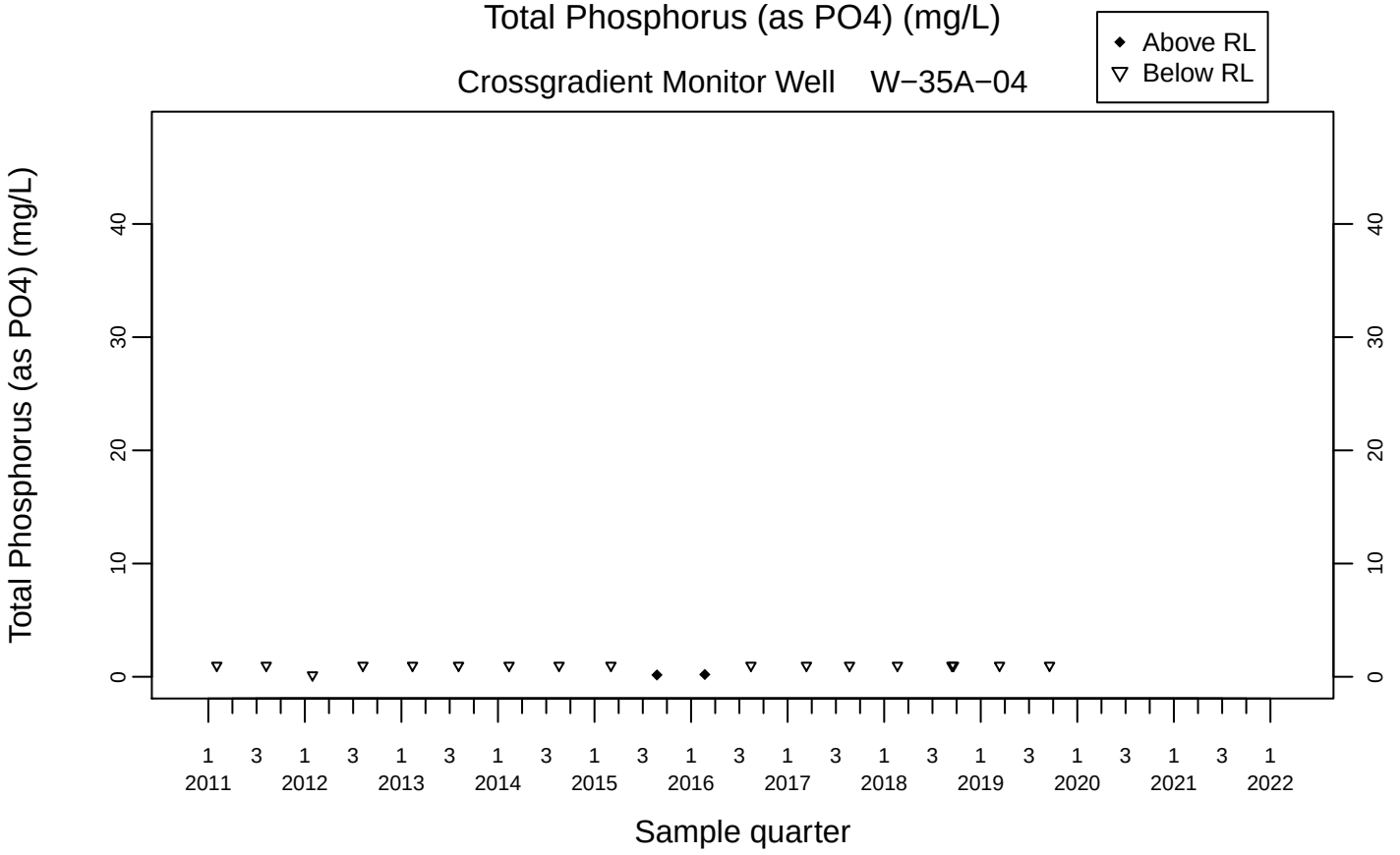


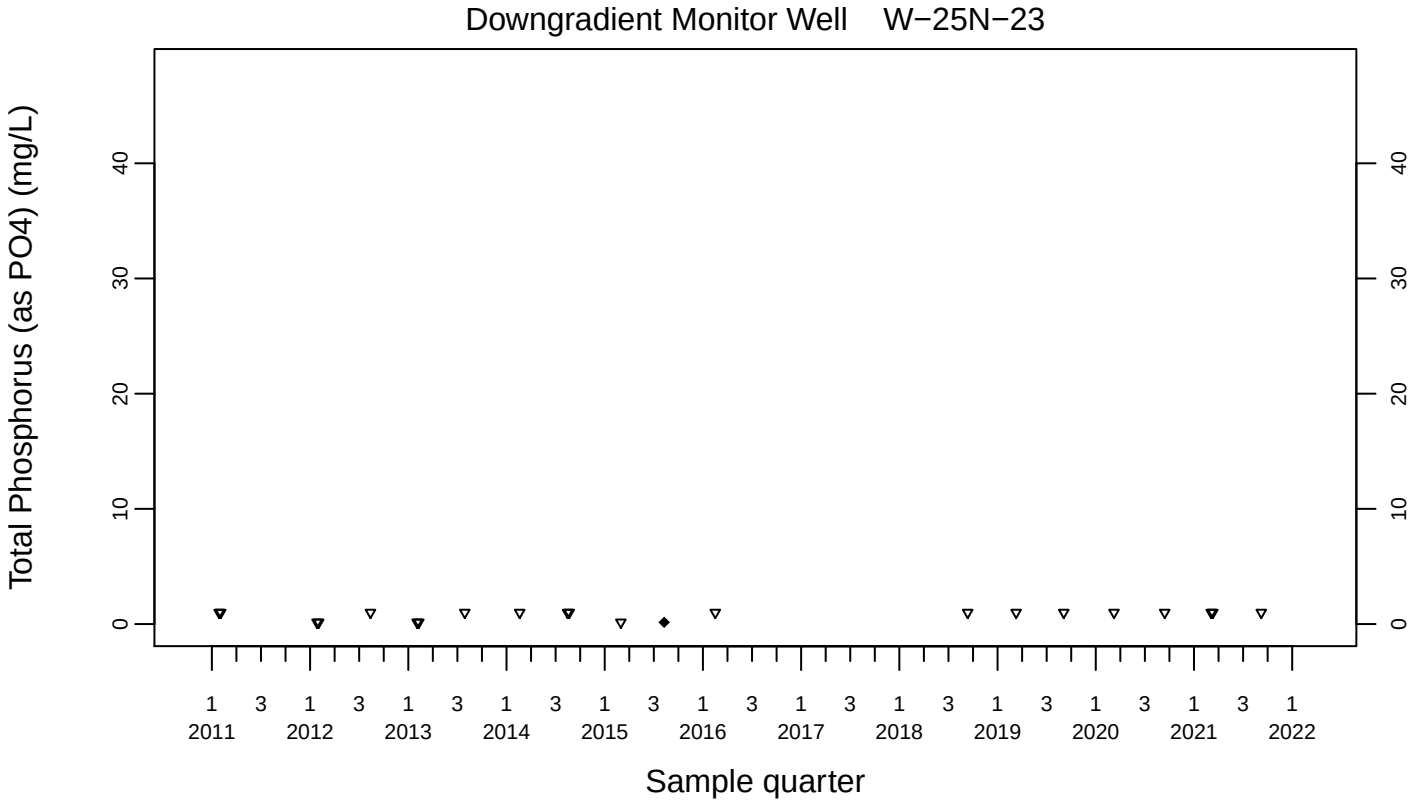

Sewage Ponds Ground Water
Total Hardness (as CaCO3) (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Total Hardness (as CaCO3) (mg/L)
0
100
200
300
400
500
600
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter


Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)
Above RL
Below RL
Upgradient Monitor Well W−7ES
Total Phosphorus (as PO4) (mg/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

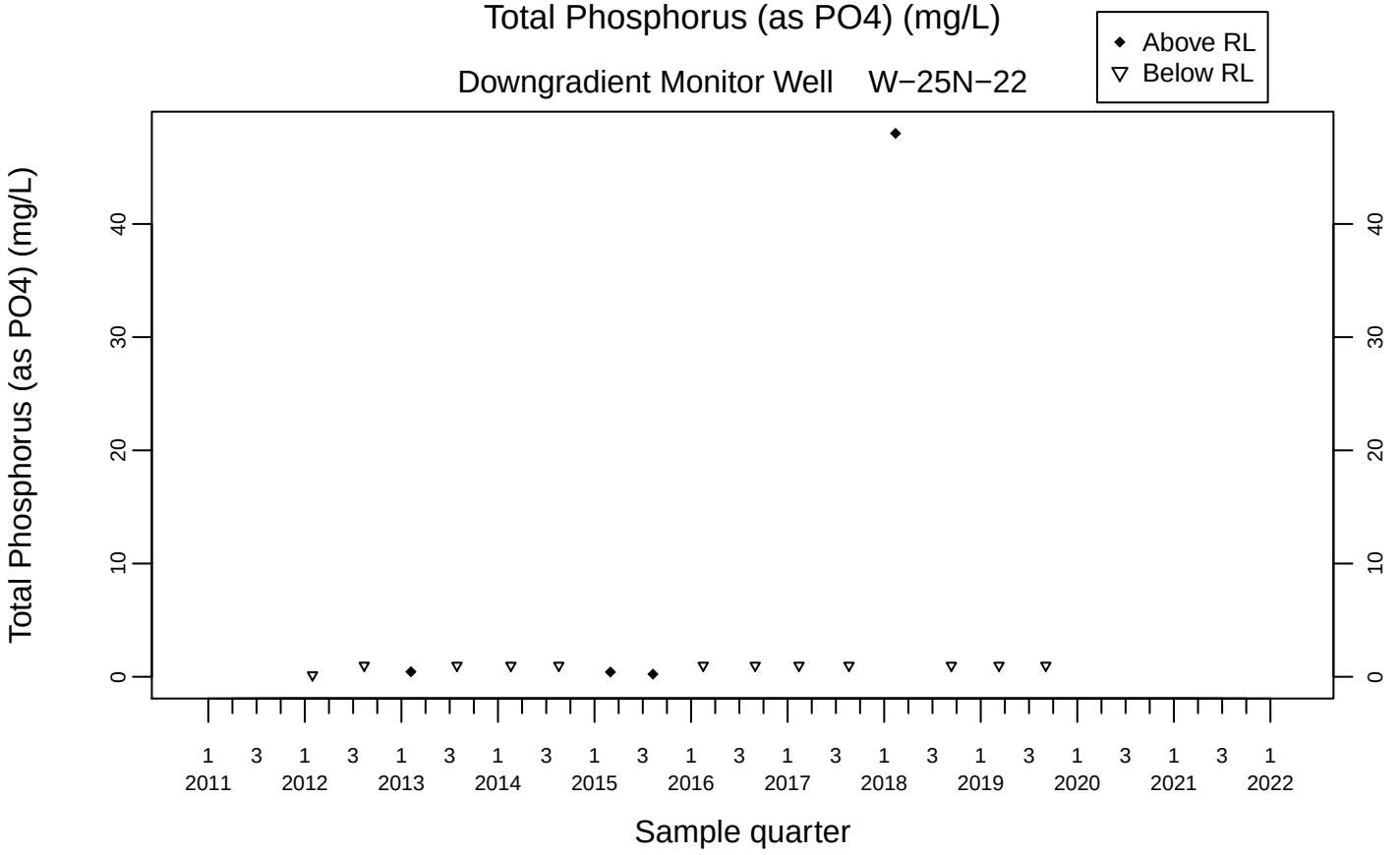

Upgradient Monitor Well W−7PS
Total Phosphorus (as PO4) (mg/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

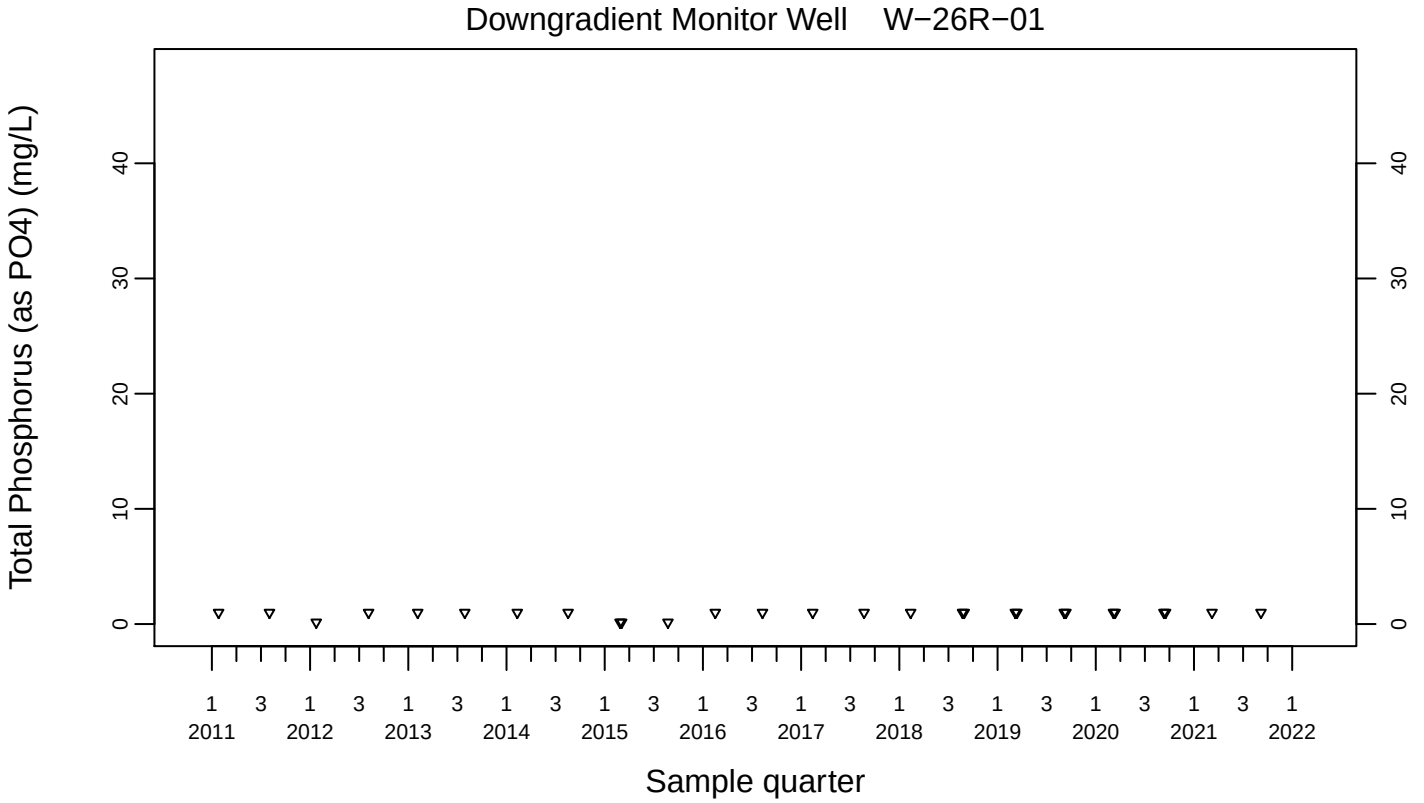
Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)



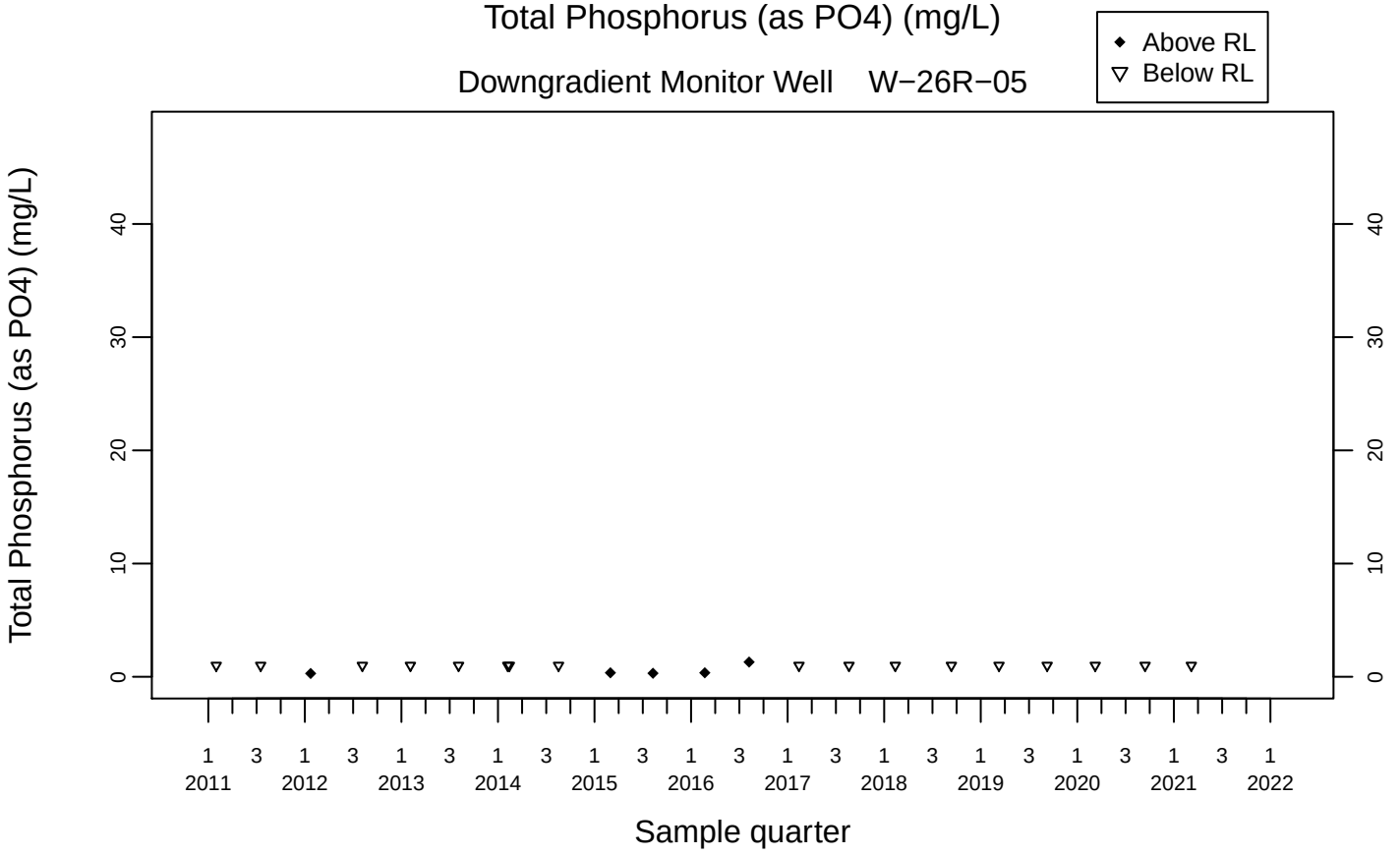


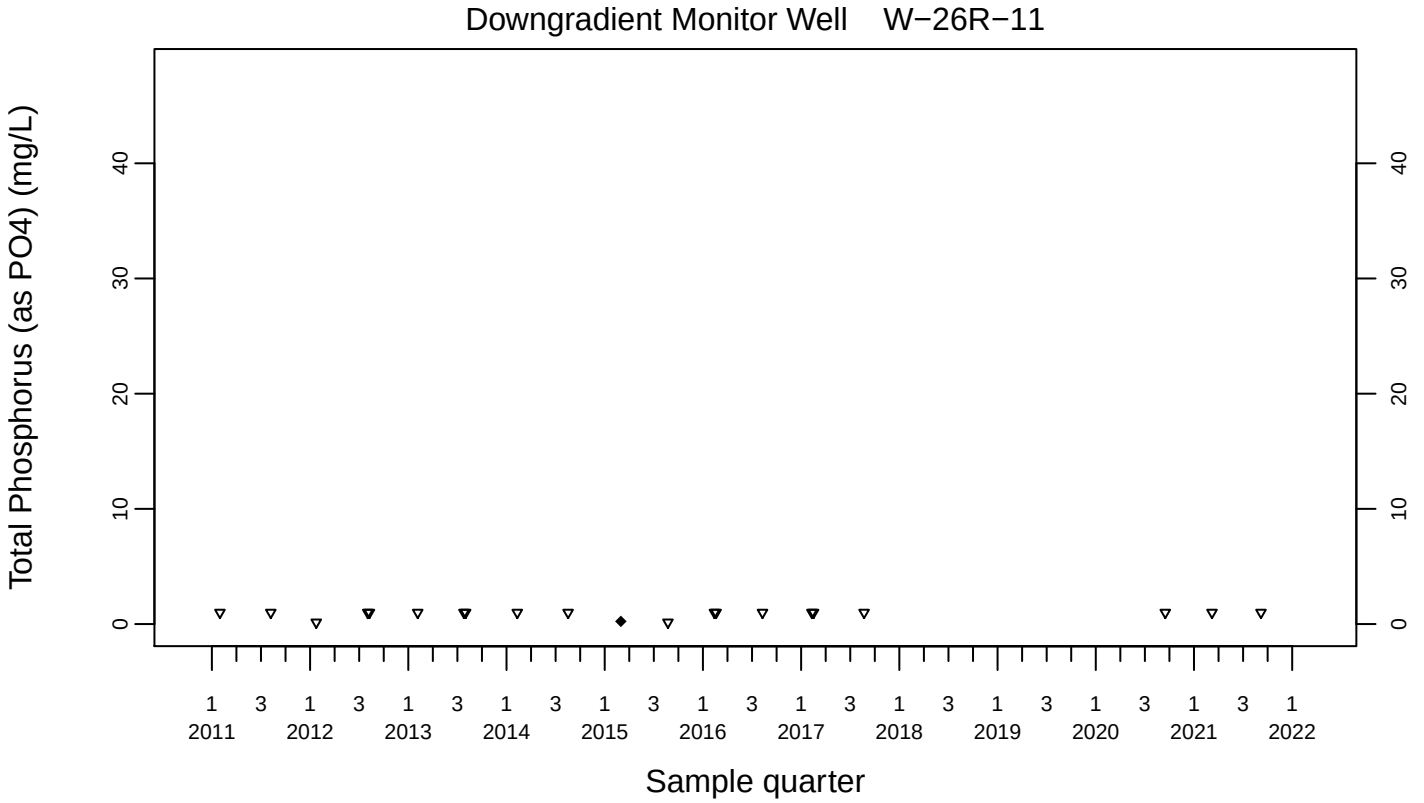
Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)

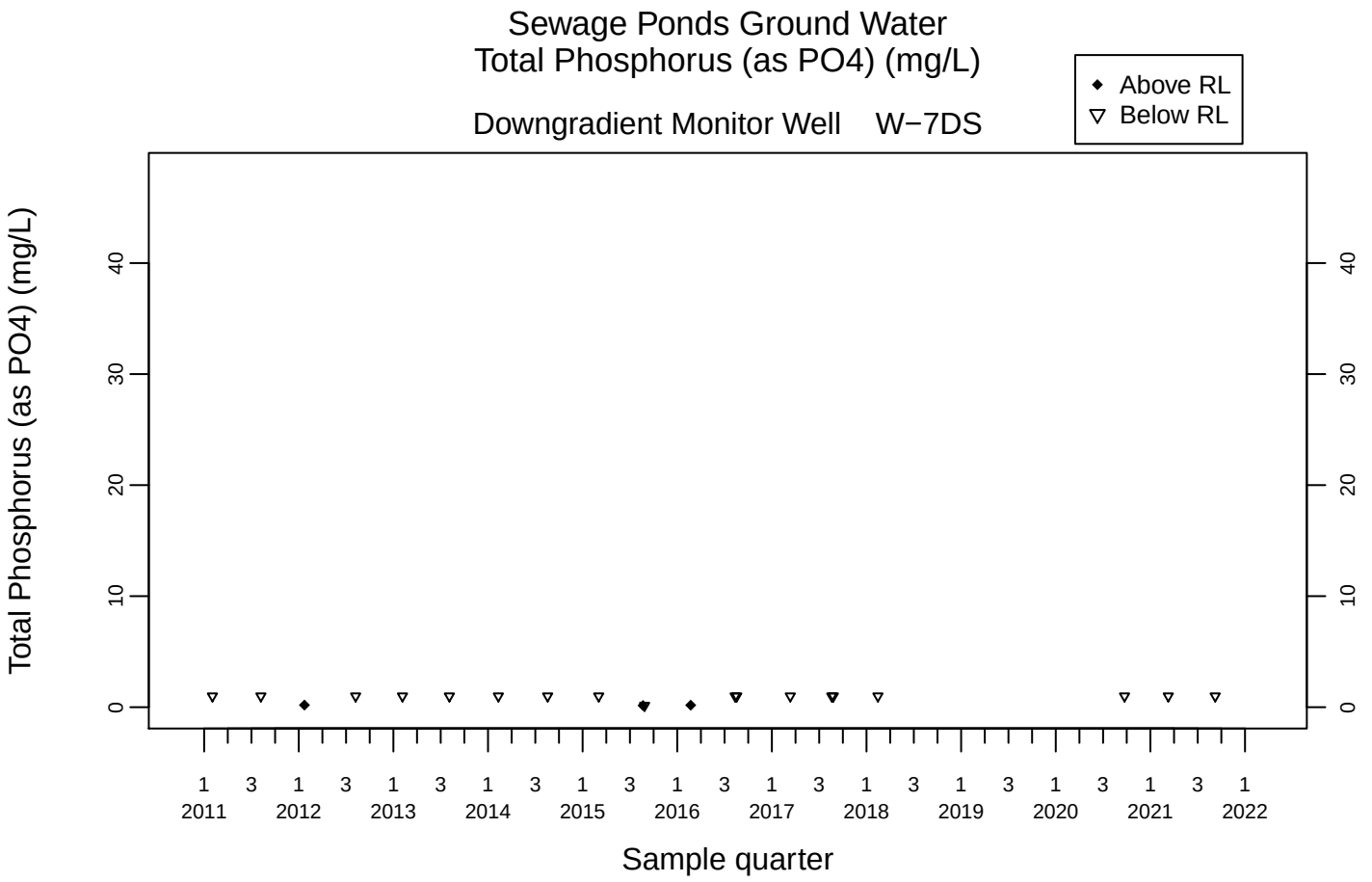




Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)






Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)
Downgradient Monitor Well W−7DS
Above RL
Below RL
Total Phosphorus (as PO4) (mg/L)
0
10
20
30
40
1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
Sample quarter

Appendix B

Cooling Tower Network
Buildings 801, 817A, 826, 827A, and 851

- Cooling Tower Blowdown Effluent Monitoring Network Data Tables
- Cooling Tower Sampling Chain of Custody forms
- Cooling Tower Percolation Pit Inspection Forms

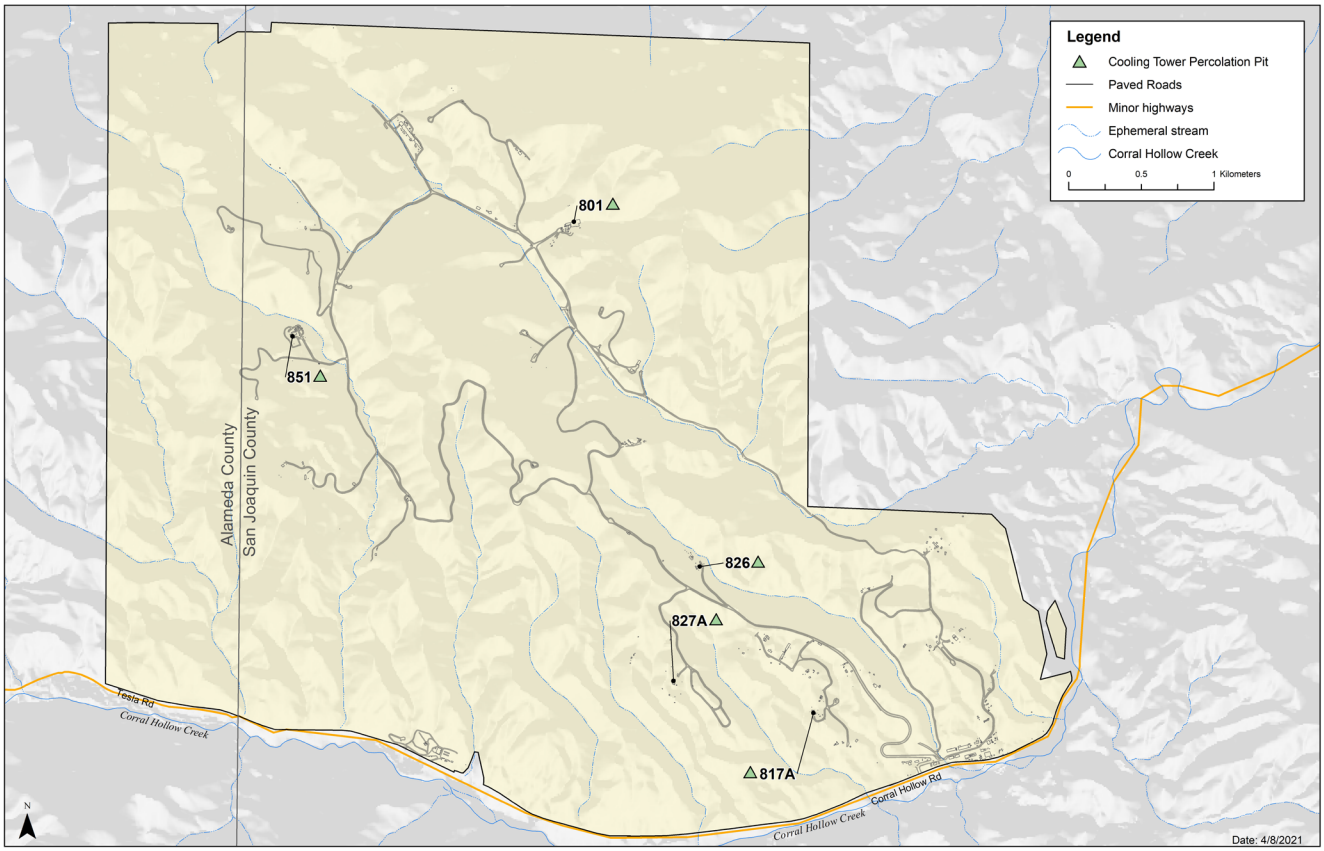


Figure B-1. Location of Site 300 cooling towers.

Table B-1. Site 300 cooling tower wastewater monitoring network 2021 sodium and anions data summary.

Discharge Location	Date	Sodium (mg/L)	Chloride (mg/L)	Nitrate (as NO3) (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Bromide (mg/L)
3-801ACT01-TW	Apr 28	730	400	5.2	390	3.7	86
3-801ACT01-TW	Oct 11	720	340	7.6	320	5.1	90
3-817ACT01-TW	Apr 28	640	350	<2.5	350	4.6	59
3-817ACT01-TW	Oct 11	630	480	5.9	130	7.7	83
3-826FCT01-TW	Apr 28	450	190	1.0	230	2.0	18
3-826FCT01-TW	Oct 11	720	630	7.6	89	13	77
3-827ACT01-TW	Apr 28	570	240	<2.5	200	2.5	150
3-827ACT01-TW	Oct 11	700	400	6.9	80	7.4	130
3-827ACT02-TW	Apr 28	690	340	<2.5	360	4.5	<1
3-827ACT02-TW	Oct 11	580	490	7.0	72	12	37
3-851BFCT03-TW	Apr 28	750	420	2.7	510	3.0	20
3-851BFCT03-TW	Oct 11	820	500	5.0	370	5.6	13

Table B–2. Site 300 cooling tower wastewater monitoring network 2021 metals analysis data summary.

Analyte (µg/L)	Quarter	3-801ACT01-TW	3-817ACT01-TW	3-826FCT01-TW	3-827ACT01-TW	3-827ACT02-TW	3-851BFCT03-TW
Aluminum	Q2	<50	<50	<50	68	54	<50
	Q4	61	<50	<50	120	69	86
Arsenic	Q2	35	33	16	10	<4	12
	Q4	20	23	32	34	51	14
Barium	Q2	55	<50	39	<25	<50	<50
	Q4	34	36	90	49	87	33
Boron	Q2	2200	1800	1300	1500	2300	2300
	Q4	2400	1600	2000	1600	1800	2900
Cadmium	Q2	<100	<100	<50	<50	<100	<100
	Q4	<50	<50	<50	<50	<50	<50
Calcium	Q2	86000	36000	37000	33000	53000	99000
	Q4	51000	27000	56000	86000	86000	63000
Chromium	Q2	6.8	2.9	1.6	4.2	4.2	7.2
	Q4	6.1	6.0	9.3	9.8	11	9.8
Hexavalent Chromium	Q2	8.4	3.7	2.8	15	6.3	11
	Q4	8.3	6.7	14	13	13	14
Copper	Q2	54	67	42	43	22	37
	Q4	43	100	50	21	43	70
Iron	Q2	590	240	510	340	690	900
	Q4	430	280	460	450	430	840
Lead	Q2	<10	<10	<5	<5	<10	<10
	Q4	<5	<5	<5	<5	<5	<5
Magnesium	Q2	<500	750	<500	<500	<500	<500
	Q4	<500	<500	580	<500	<500	<500
Manganese	Q2	<30	<30	<30	<30	<30	<30
	Q4	<30	<30	<30	<30	<30	<30
Mercury	Q2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Q4	0.22	<0.2	<0.2	0.23	<0.2	0.28
Molybdenum	Q2	42	34	<25	<25	35	47
	Q4	32	<25	<25	<25	<25	33
Nickel	Q2	<4	<4	<2	<2	<4	<4
	Q4	2.2	<2	2.3	2.7	4.1	2.4
Potassium	Q2	49000	29000	23000	25000	21000	51000
	Q4	36000	40000	53000	55000	65000	46000
Selenium	Q2	110	95	51	29	<4	39
	Q4	65	78	110	120	180	39
Silver	Q2	<20	<20	<10	<10	<20	<20
	Q4	<10	<10	<10	<10	<10	<10

Table B–2. Site 300 cooling tower wastewater monitoring network 2021 metals analysis data summary continued.

Analyte (µg/L)	Quarter	3-801ACT01-TW	3-817ACT01-TW	3-826FCT01-TW	3-827ACT01-TW	3-827ACT02-TW	3-851BFCT03-TW
Vanadium	Q2	<40	<40	<20	<20	<40	<40
	Q4	<20	<20	<20	<20	<20	<20
Zinc	Q2	75	72	92	46	110	280
	Q4	150	130	75	160	160	520

Table B-3. Site 300 cooling tower wastewater monitoring network 2021 physical characteristics data summary.

Discharge Location	Date	pH (Units)	Specific Conductance (µmhos/cm)	Total Alkalinity (as $CaCO_3$) (mg/L)	TDS (mg/L)	Total Hardness (as $CaCO_3$) (mg/L)	Total phosphorus (as PO_4) (mg/L)
3-801ACT01-TW	Apr 28	9.1	3560	800	2700	220	7.7
3-801ACT01-TW	Oct 11	9.1	3430	760	2400	130	19
3-817ACT01-TW	Apr 28	9.0	3030	590	2400	92	15
3-817ACT01-TW	Oct 11	9.0	3230	530	2100	70	17
3-826FCT01-TW	Apr 28	9.0	2030	530	1600	94	16
3-826FCT01-TW	Oct 11	9.1	3830	710	2600	140	29
3-827ACT01-TW	Apr 28	9.0	2430	510	1800	83	<1
3-827ACT01-TW	Oct 11	9.2	3310	710	2600	220	33
3-827ACT02-TW	Apr 28	9.1	2980	710	2200	130	17
3-827ACT02-TW	Oct 11	9.0	3060	720	2300	220	95
3-851BFCT03-TW	Apr 28	9.1	3640	820	2800	250	<1
3-851BFCT03-TW	Oct 11	9.3	3870	950	2800	160	15

Table B-4. Site 300 cooling tower wastewater monitoring network 2021 QA data summary.

Constituent	Units	3-826FCT01-TW	3-826FCT01-TW	3-827ACT02-TW	3-827ACT02-TW
		Apr 28	Apr 28	Oct 11	Oct 11
		Routine	Duplicate	Routine	Duplicate
pH	Units	9.0	9.0	9.0	9.0
Specific Conductance	µmhos/cm	2030	2050	3060	3060
Aluminum	µg/L	<50	<50	69	82
Arsenic	µg/L	16	9.8	51	47
Barium	µg/L	39	40	87	80
Boron	µg/L	1300	1400	1800	2100
Cadmium	µg/L	<50	<50	<50	<50
Calcium	µg/L	37000	38000	86000	96000
Chromium	µg/L	1.6	1.6	11	10
Hexavalent Chromium	µg/L	2.8	2.9	13	12
Copper	µg/L	42	38	43	39
Iron	µg/L	510	520	430	470
Lead	µg/L	<5	<5	<5	<5
Magnesium	µg/L	<500	<500	<500	<500
Manganese	µg/L	<30	<30	<30	30
Mercury	µg/L	<0.2	<0.2	<0.2	<0.2
Molybdenum	µg/L	<25	<25	<25	<25
Nickel	µg/L	<2	<2	4.1	3.6
Potassium	µg/L	23000	24000	65000	73000
Selenium	µg/L	51	30	180	160
Silver	µg/L	<10	<10	<10	<10
Vanadium	µg/L	<20	<20	<20	<20
Zinc	µg/L	92	91	160	140
Sodium	mg/L	450	460	580	640
Chloride	mg/L	190	190	490	510
Nitrate (as NO_3)	mg/L	1.0	1.1	7.0	7.0
Sulfate	mg/L	230	230	72	69
Fluoride	mg/L	2.0	1.9	12	12
Bromide	mg/L	18	18	37	36
Total Alkalinity (as $CaCO_3$)	mg/L	530	530	720	720
Total dissolved solids (TDS)	mg/L	1600	1500	2300	2400
Total Hardness (as $CaCO_3$)	mg/L	94	98	220	240
Total Phosphorus (as PO_4)	mg/L	16	8.1	95	93

FIELD TRACKING FORM

Semi-Annual SITE 300 Cooling Towers

Special Instructions:
Should be sampled in early April and October.
See back of form for additional access information

LAB	CoC#	Ship It #
BC Labs	87655	

pH meter calibrated on: 10/11/21

Specific Conductance meter calibrated on: 10/11/21

Sample Date: 10/11/21

Location Indentifier	Location DUP taken - year/quarter	Sample Time	Initials	Field Measurments		BC Labs				Comments
				pH	Specific Conductance	S3METALS 500mL Poly	S3ANIONS 500mL Poly	S3WETCHEM 1000mL Poly	E300.0/BR 250ml Poly	
3-801ACT01-TW	2019/2nd	1040	TG	9.19	3.07mS	2	1	2	1	
3-817ACT01-TW	2019/4th	0910	TG	8.67	2.83mS	2	1	2	1	
3-825ACT01-TW	2015/2nd		TG							
3-826FCT01-TW	2021/2nd	0925	TG	9.17	3.51mS	2	1	2	1	
3-827ACT01-TW	2020/4TH	0940	TG	9.27	3.10mS	2	1	2	1	
3-827ACT02-TW	2021/4TH	0950	TG	9.08	1717µS	2	1	2	1	
3-851BFCT03-TW	2020/2nd	1020	TG	9.11	3.53mS	2	1	2	1	
Duplicate of 3-827ACT02-TW										
3-B9900-01-TW	0950		TG	9.08	1717µS	2	1	2	1	

☑ Copy to Analyst, Ada Chan.

Rev. 9-27-17

Chain of Custody

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551

Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

Access/COC #: 87655
Document Control #: 87655
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / grace12
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov
DMT Additional Copies:

Analytical Lab : BCLABS-BAK
TAT: 20d
Analytical Lab Log #:
Project/Network: COOLTOWER
ShipIt Release #: 278119
Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-801ACT01-01-TW	10/11/2021 10:40	TW	P	1	COOLTOWER	E300.0	BR	
3-801ACT01-01-TW	10/11/2021 10:40	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-801ACT01-01-TW	10/11/2021 10:40	TW	P	0	COOLTOWER	S3METALS	ALL	
3-801ACT01-01-TW	10/11/2021 10:40	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-801ACT01-01-TW	10/11/2021 10:40	TW	P	2	COOLTOWER	S3WETCHEM	ALL	
3-817ACT01-01-TW	10/11/2021 09:10	TW	P	1	COOLTOWER	E300.0	BR	
3-817ACT01-01-TW	10/11/2021 09:10	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-817ACT01-01-TW	10/01/2021 09:10	TW	P	0	COOLTOWER	S3METALS	ALL	
3-817ACT01-01-TW	10/11/2021 09:10	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-817ACT01-01-TW	10/11/2021 09:10	TW	P	2	COOLTOWER	S3WETCHEM	ALL	
3-826FCT01-01-TW	10/11/2021 09:25	TW	P	1	COOLTOWER	E300.0	BR	
3-826FCT01-01-TW	10/11/2021 09:25	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-826FCT01-01-TW	10/11/2021 09:25	TW	P	0	COOLTOWER	S3METALS	ALL	
3-826FCT01-01-TW	10/11/2021 09:25	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-826FCT01-01-TW	10/11/2021 09:25	TW	P	2	COOLTOWER	S3WETCHEM	ALL	
3-827ACT01-01-TW	10/11/2021 09:40	TW	P	1	COOLTOWER	E300.0	BR	
3-827ACT01-01-TW	10/11/2021 09:40	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-827ACT01-01-TW	10/11/2021 09:40	TW	P	0	COOLTOWER	S3METALS	ALL	
3-827ACT01-01-TW	10/11/2021 09:40	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-827ACT01-01-TW	10/11/2021 09:40	TW	P	2	COOLTOWER	S3WETCHEM	ALL	
3-827ACT02-01-TW	10/11/2021 09:50	TW	P	1	COOLTOWER	E300.0	BR	
3-827ACT02-01-TW	10/11/2021 09:50	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-827ACT02-01-TW	10/11/2021 09:50	TW	P	0	COOLTOWER	S3METALS	ALL	
3-827ACT02-01-TW	10/11/2021 09:50	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-827ACT02-01-TW	10/11/2021 09:50	TW	P	2	COOLTOWER	S3WETCHEM	ALL	
3-B9900-01-TW	10/11/2021 09:50	TW	P	1	COOLTOWER	E300.0	BR	
3-B9900-01-TW	10/11/2021 09:50	TW	P	1	COOLTOWER	S3ANIONS	ALL	

	Relinquished Signature	Company	Date	Time		Received Signature	Company	Date	Time
1		LLNL/EFA	10/11/21	1255	2	Doug Bogan	BC Lab	10-11-21	1630
2					3				
					4				
					5				

Chain of Custody

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551

Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
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DMT Additional Copies:

Analytical Lab : BCLABS-BAK
TAT: 20d
Analytical Lab Log #:
Project/Network: COOLTOWER
ShipIt Release #: 278119
Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-B9900-01-TW	10/11/2021 09:50	TW	P	0	COOLTOWER	S3METALS	ALL	
3-B9900-01-TW	10/11/2021 09:50	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-B9900-01-TW	10/11/2021 09:50	TW	P	2	COOLTOWER	S3WETCHEM	ALL	
3-851BFCT03-01-TW	10/11/2021 10:20	TW	P	1	COOLTOWER	E300.0	BR	
3-851BFCT03-01-TW	10/11/2021 10:20	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-851BFCT03-01-TW	10/11/2021 10:20	TW	P	0	COOLTOWER	S3METALS	ALL	
3-851BFCT03-01-TW	10/11/2021 10:20	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-851BFCT03-01-TW	10/11/2021 10:20	TW	P	2	COOLTOWER	S3WETCHEM	ALL	

	Relinquished Signature	Company	Date	Time		Received Signature	Company	Date	Time
1		LLNL/EFA	10/11/21	1255	2	Mary Bogan	BC Labs	10-11-21	1630
2					3				
3					4				
4					5				

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/20/21 Inspector K. Kalo Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/No	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 8-9-21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-20-21 Inspector K. Kale Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 8-9-21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-20-21 Inspector K. Kale Building Number 826

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/~~No~~	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/~~No~~	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/~~No~~	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/~~No~~	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 8-9-21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/20/21 Inspector K. Kolo Building Number 827a

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/~~No~~	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/~~No~~	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/~~No~~	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/~~No~~	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 8-9-21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/2021 Inspector K. Kale Building Number 851

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/~~No~~	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/~~No~~	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/~~No~~	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/~~No~~	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 8-9-21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-24-21 Inspector K. Kale Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/No	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kale Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kale Building Number 826

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kale Building Number 827a

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kalo Building Number 851

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-24-21 Inspector K. Kale Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/No	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kale Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

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Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kale Building Number 826

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

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Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kale Building Number 827a

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

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Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-16-21 Inspector K. Kalo Building Number 851

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/14/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-26-21 Inspector K. Kale Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 10/1/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-26-21 Inspector K. Kale Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/~~No~~	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/~~No~~	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/~~No~~	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/~~No~~	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 10/1/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-26-21 Inspector K Kale Building Number 826

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 10/1/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-26-21 Inspector K. Kale Building Number 827a

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
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Supervisor's Signature [signature] Date 10/1/21

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For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-26-21 Inspector K. Kale Building Number 851

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

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Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
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4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 10/1/21

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10-17-21 Inspector K. Kale Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

Check Items	Response	Description and Comments:
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Supervisor's Signature [signature] Date 12/26/21

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Date 10-17-21 Inspector K. Kale Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

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Date 10-17-21 Inspector K. Rake Building Number 826

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Date 10-17-21 Inspector K. Kale Building Number 827

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Supervisor's Signature [signature] Date 12/16/21

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Date 10-17-21 Inspector K. Kale Building Number 851

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Date 11-8-21 Inspector K. Rale Building Number 801

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Date 11-8-21 Inspector K. Kale Building Number 817

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Date 11-8-21 Inspector K. Kale Building Number 826

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Date 11-8-21 Inspector K. Kale Building Number 827

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Date 11-8-21 Inspector K. Kale Building Number 851

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Date 12-21-21 Inspector Knle Building Number 826

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Date 12-21-21 Inspector Kale Building Number 827a

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Appendix C

Mechanical Equipment Network Buildings 827A, 827C, 827D, 827E, and 806A

– Mechanical Equipment Effluent Monitoring Network Data Tables

– Mechanical Equipment Sampling Chain of Custody forms

– Mechanical Equipment Percolation Pit Inspection Forms

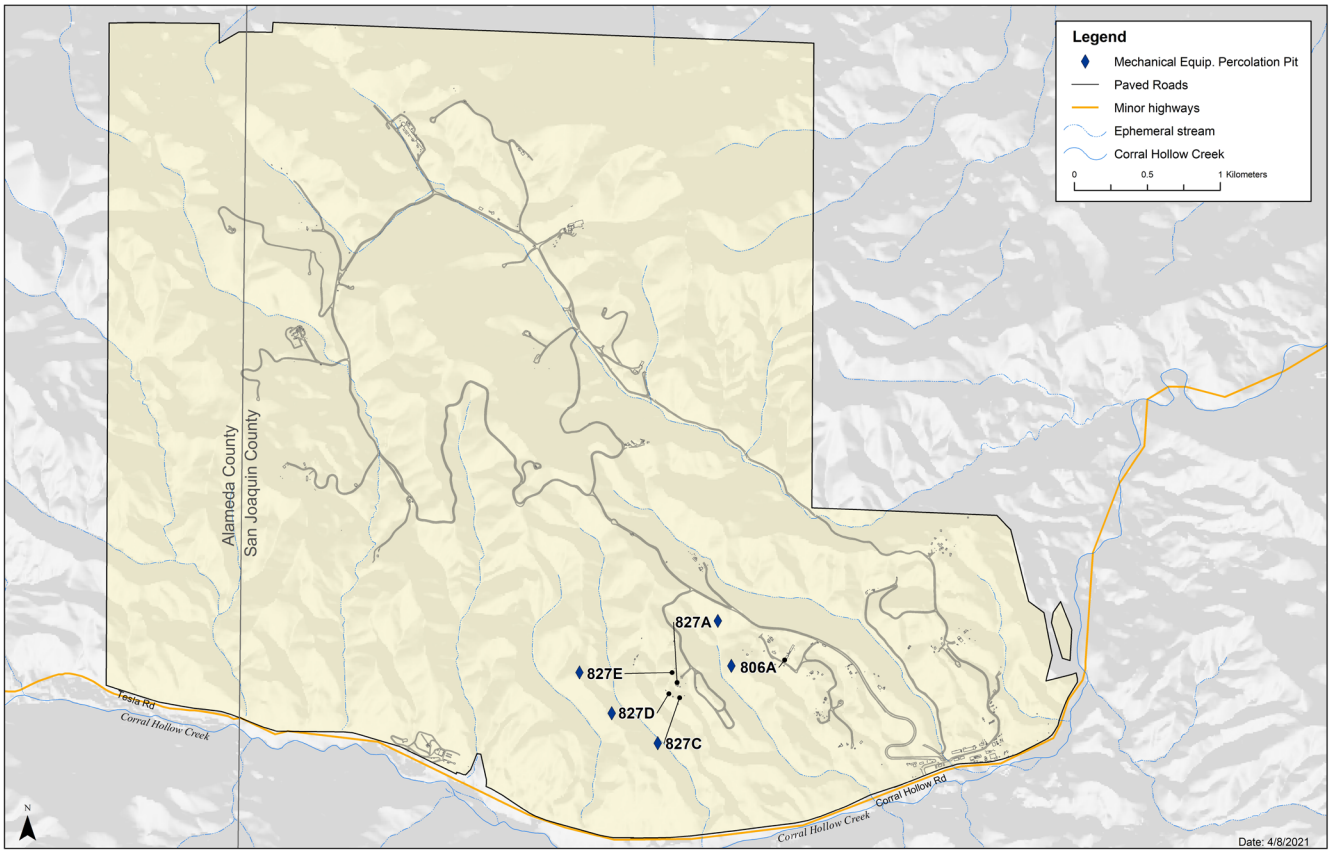

Figure C-1. Location of mechanical equipment wastewater percolation pits.

Table C-1. Site 300 mechanical equipment discharge effluent monitoring 2021 anions data summary.

Discharge Location	Date	Sodium (mg/L)	Chloride (mg/L)	Nitrate (as NO_3) (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)
3-B806A-OW	May 11	130	71	<0.5	110	0.28
3-B806A-OW	Oct 1	14	11	<0.5	3.7	0.62
3-B827A-OW	May 11	660	390	1.9	540	2.1
3-B827A-OW	May 11 DUP	700	380	1.8	530	2.1
3-B827A-OW	Oct 1	760	410	8.7	110	9.4
3-B827C-OW	May 12	61	31	<0.5	33	0.41
3-B827C-OW	Oct 1	37	27	<0.5	8.3	0.62
3-B827E-OW	May 12	72	36	<0.5	42	0.62
3-B827E-OW	Oct 1	28	18	<0.5	4.0	0.48
3-B827E-OW	Oct 1 DUP	28	17	<0.5	4.0	0.45

Table C–2. Site 300 mechanical equipment discharge effluent monitoring 2021 metals data summary.

Analyte	Date	3-B806A-OW	3-B827A-OW	3-B827A-OW DUP	3-B827C-OW	3-B827E-OW	3-B827E-OW DUP
Aluminum (µg/L)	May 11	<50	<50	<50	-	-	-
	May 12	-	-	-	370	54	-
	Oct 1	<50	150	-	<50	<50	<50
Arsenic (µg/L)	May 11	<2	2.7	2.8	-	-	-
	May 12	-	-	-	<2	<10	-
	Oct 1	<2	29	-	<2	<2	<2
Barium (µg/L)	May 11	<25	29	29	-	-	-
	May 12	-	-	-	<25	<120	-
	Oct 1	<25	56	-	<25	<25	<25
Boron (µg/L)	May 11	510	2300	2400	-	-	-
	May 12	-	-	-	220	280	-
	Oct 1	56	1700	-	150	93	91
Cadmium (µg/L)	May 11	<50	<50	<50	-	-	-
	May 12	-	-	-	<50	<250	-
	Oct 1	<50	<50	-	<50	<50	<50
Calcium (µg/L)	May 11	16000	68000	72000	-	-	-
	May 12	-	-	-	9400	8200	-
	Oct 1	4900	91000	-	5800	7400	7400
Chromium (µg/L)	May 11	<1	3.4	3.2	-	-	-
	May 12	-	-	-	1.7	<5	-
	Oct 1	3.1	9.8	-	<1	<1	<1
Chromium (VI) (µg/L)	May 11	<1	5.0	5.0	-	-	-
	May 12	-	-	-	<1	<1	-
	Oct 1	<1	22	-	<1	<1	<1

Table C–2. Site 300 mechanical equipment discharge effluent monitoring 2021 metals data summary continued.

Analyte	Date	3-B806A-OW	3-B827A-OW	3-B827A-OW DUP	3-B827C-OW	3-B827E-OW	3-B827E-OW DUP
Copper (µg/L)	May 11	20	18	18	-	-	-
	May 12	-	-	-	390	150	-
	Oct 1	12	24	-	48	6.7	7.3
Iron (µg/L)	May 11	<100	290	300	-	-	-
	May 12	-	-	-	3500	330	-
	Oct 1	<100	620	-	720	130	150
Lead (µg/L)	May 11	<5	<5	<5	-	-	-
	May 12	-	-	-	30	<25	-
	Oct 1	<5	<5	-	<5	<5	<5
Magnesium (µg/L)	May 11	<500	<500	<500	-	-	-
	May 12	-	-	-	<500	<500	-
	Oct 1	<500	<500	-	<500	<500	<500
Manganese (µg/L)	May 11	<30	<30	<30	-	-	-
	May 12	-	-	-	42	<30	-
	Oct 1	<30	<30	-	67	<30	<30
Mercury (µg/L)	May 11	<0.2	<0.2	<0.2	-	-	-
	May 12	-	-	-	<0.2	<0.2	-
	Oct 1	<0.2	0.25	-	<0.2	<0.2	<0.2
Molybdenum (µg/L)	May 11	<25	49	56	-	-	-
	May 12	-	-	-	<25	<25	-
	Oct 1	<25	<25	-	<25	<25	<25
Nickel (µg/L)	May 11	<2	<2	<2	-	-	-
	May 12	-	-	-	3.0	<10	-
	Oct 1	<2	2.8	-	<2	<2	<2

Table C–2. Site 300 mechanical equipment discharge effluent monitoring 2021 metals data summary continued.

Analyte	Date	3-B806A-OW	3-B827A-OW	3-B827A-OW DUP	3-B827C-OW	3-B827E-OW	3-B827E-OW DUP
Potassium (µg/L)	May 11	4100	21000	23000	-	-	-
	May 12	-	-	-	2200	3400	-
	Oct 1	<1000	60000	-	2000	2000	2000
Selenium (µg/L)	May 11	<2	3.3	3.2	-	-	-
	May 12	-	-	-	<2	<10	-
	Oct 1	<2	100	-	<2	<2	<2
Silver (µg/L)	May 11	<10	<10	<10	-	-	-
	May 12	-	-	-	<10	<50	-
	Oct 1	<10	<10	-	<10	<10	<10
Vanadium (µg/L)	May 11	<20	<20	<20	-	-	-
	May 12	-	-	-	<20	<20	-
	Oct 1	<20	<20	-	<20	<20	<20
Zinc (µg/L)	May 11	24	59	59	-	-	-
	May 12	-	-	-	120	240	-
	Oct 1	49	170	-	29	27	29

Note:
– = Sampling not required, sampling was performed for that analyte on a different date.

Table C-3. Site 300 mechanical equipment discharge effluent monitoring 2021 physical data.

Discharge Location	Date	pH	Specific Conductance (µmhos/cm)	Total Alkalinity (as $CaCO_3$) (mg/L)	Total dissolved solids (TDS) (mg/L)	Total Hardness (as $CaCO_3$) (mg/L)	Total Phosphorus (as PO_4) (mg/L)
3-B806A-OW	May 11	8.6	752	150	490	40	<1
3-B806A-OW	Oct 1	7.4	99.4	22.0	62.0	13	33
3-B827A-OW	May 11	9.0	3340	620	2300	170	<1
3-B827A-OW	May 11 DUP	9.0	3300	610	2200	180	<1
3-B827A-OW	Oct 1	9.1	3570	730	2800	230	25
3-B827C-OW	May 12	9.0	356	81.0	250	24	<1
3-B827C-OW	Oct 1	7.8	208	45.0	140	15	<1
3-B827E-OW	May 12	8.4	403	86.0	270	21	<1
3-B827E-OW	Oct 1	7.7	176	44.0	130	19	<1
3-B827E-OW	Oct 1 DUP	7.7	176	44.0	130	19	<1

FIELD TRACKING FORM

Semi-Annual Site 300 Mechanical Equipment Room/Percolation Pit Discharge

Special Instructions:	Should be sampled in early April and October.
See back of form for additional access information	
** For 3-B827A-OW Contact FPOC; Off-road travel	
Location name change info:	3-B827A-OW previously 3-CT-PERC-OW 3-B806A-OW previously 3-806B-OW

LAB	CoC#	Ship It #
BC Labs	87654	278028

pH meter calibrated on: 10/13/21

Specific Conductance meter calibrated on: 10/13/21

Sample Date: 10/13/21

			Field Meas		BC Labs				Comments
Location Indentifier	Sample Time	Initials	pH	Specific Conductance	S3METALS 500mL Poly	S3ANIONS 1 x 500ml Poly	S3WETCHEM 1000mL Poly		
3-B827A-OW**									827E - started at 0725 AM 81, 130 mL samples collected over 7 hours, 1 samp every 5 minutes, approx 8L collected 827C - started at 0735 AM, 82, 130 mL samples collected over 7 hours, 1 samp every 5 minutes, approx 7 L collected.
3-B827C-OW	1420	JS/KB	8.49	187 uS	✓	✓	✓		
3-B827D-OW									
3-B827E-OW	1408	JS/KB	8.57	192.5 µS	✓	✓	✓		
3-B806A-OW									
Duplicate of 3-B827A-OW 2nd Qtr									
Duplicate of 3-B827E-OW 4th Qtr									
3-B9900-OW	1410	JS	8.57	192.5 µS	✓	✓	✓		

☑ Copy to Analyst, Ada Chan.

Revised 2/2/17

FIELD TRACKING FORM

Semi-Annual Site 300 Mechanical Equipment Room/Percolation Pit Discharge

Special Instructions:	Should be sampled in early April and October.
See back of form for additional access information	
** For 3-B827A-OW Contact FPOC; Off-road travel	
Location name change info:	3-B827A-OW previously 3-CT-PERC-OW
	3-B806A-OW previously 3-806B-OW

LAB	CoC#	Ship It #
BC Labs	87653	278027

pH meter calibrated on: 10/14/21

Specific Conductance meter calibrated on: 10/14/21

Sample Date: 10/14/21

			Field Meas		BC Labs				Comments
Location Indentifier	Sample Time	Initials	pH	Specific Conductance	S3METALS 500mL Poly	S3ANIONS 1 x 500ml Poly	S3WETCHEM 1000mL Poly		
3-B827A-OW**	1405	JJ, KB	8.77	3.42mS	✓	✓	✓		806A - started at 0725 AM 78, 130 mL samples collected over 7 hours, 1 samp every 5 minutes, approx 8L collected 827A - started at 0740 AM 78, 130 mL samples collected over 7 hours, 1 samp every 5 minutes, approx 6L collected
3-B827C-OW									
3-B827D-OW									
3-B827E-OW									
3-B806A-OW	1356	JJ, KB	8.61	178.5µS	✓	✓	✓		
Duplicate of 3-827EOW 2nd Qtr									
Duplicate of 3-B806A-OW 4th Qtr									
3-B9900-OW									

☑ Copy to Analyst, Ada Chan.

Revised 2/2/17

Chain of Custody

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551

Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

Access/COC #: 87654
Document Control #: 87654
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / jursca1
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov
DMT Additional Copies:

Analytical Lab : BCLABS-BAK
TAT: 20d
Analytical Lab Log #:
Project/Network: MECHEQUIPMNTRMS
ShipIt Release #: 278028
Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-B827C-01-OW	10/13/21 1420	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B827C-01-OW	10/13/21 1420	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B827C-01-OW	10/13/21 1420	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B827C-01-OW	10/13/21 1420	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	
3-B827E-01-OW	10/13/21 1408	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B827E-01-OW	10/13/21 1408	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B827E-01-OW	10/13/21 1408	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B827E-01-OW	10/13/21 1408	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	
3-B9900-01-OW	10/13/21 1410	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B9900-01-OW	10/13/21 1410	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B9900-01-OW	10/13/21 1410	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B9900-01-OW	10/13/21 1410	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	

Relinquished Signature	Company	Date	Time	Received Signature	Company	Date	Time
1	LLNL/EFA	10/13/21	1530	2 Mary Bogan	BCLAB	10-13-21	1630
2				3			
3				4			
4				5			

Chain of Custody

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Add'l Email:

Additional Instructions:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-B806A-01-OW	10/14/21 1350	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B806A-01-OW	10/14/21 1350	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B806A-01-OW	10/14/21 1350	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B806A-01-OW	10/14/21 1350	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	
3-B827A-01-OW	10/14/21 1405	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B827A-01-OW	10/14/21 1405	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B827A-01-OW	10/14/21 1405	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B827A-01-OW	10/14/21 1405	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	

Relinquished Signature	Company	Date	Time	Received Signature	Company	Date	Time
1	LLNL/EFA	10/14/21	1455	2 Doug Bogan	BC LABS	10.14.21	1630
2				3			
3				4			
4				5			

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/14/21 Inspector JASON WITTIG Building Number 827A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 7/18/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/14/21 Inspector JASON WITTIG Building Number 827 C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

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Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
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If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
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If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 7/18/21

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/14/21 Inspector JASON WITTIG Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 7/18/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/14/21 Inspector JASON WITTIG Building Number 827 E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 7/18/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

July

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/12/2021 Inspector MARK KRAUSS Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 7/13/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8/18/21 Inspector JASON WITTIG Building Number 827 A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/14/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8/18/21 Inspector J. WITTIG Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/14/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8/18/21 Inspector J. Wittig Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/14/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8/18/21 Inspector J. WITTICH Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/14/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Aug

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-2-21 Inspector TODD WEST Building Number 806

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 8/5/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9/14/21 Inspector JASON WITTIG Building Number 827 A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/15/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9/14/21 Inspector J. Witten Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/15/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9/14/21 Inspector JASON WITTIG Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/15/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9/14/21 Inspector JASON WITTIG Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 9/15/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Sept

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9/01/21 Inspector TODD WEST Building Number 806

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 9/1/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Oct

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10/6/21 Inspector TODD WEST Building Number 806B

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 10.5.21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

NOV 2021

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11/01/21 Inspector TODD WEST Building Number 806

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 11/8/21

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11/17/21 Inspector JASON WITTIG Building Number 827 A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 11/17/21

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11/17/21 Inspector JASON WITTIG Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 11/17/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11/17/21 Inspector JASON WITTIG Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 11/17/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11/17/21 Inspector JASON WITTIG Building Number 827 E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature _____ Date 11/17/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Dec.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/01/21 Inspector TODD WEST Building Number 806

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 12/6/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/14/21 Inspector Raudel Hernandez Building Number 827A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 12/14/21

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/14/21 Inspector Raydel Hernandez Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	(Yes)/No	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		~3 inches
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		Assuming standing water is normal after rain, based on history - will monitor weekly

Supervisor's Signature [signature] Date 12/14/21

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/14/21 Inspector Raudel Hernandez Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 12/14/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/14/21 Inspector Raudel Hernandez Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/(No)	
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/(No)	
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/(No)	
If yes is indicated in 3, note depth and increase inspection frequency as needed until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/(No)	
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [signature] Date 12/14/21

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency as needed until no standing water is observed.

Appendix D

– California Regional Water Quality Control Board Central Valley Region Monitoring and Reporting - LLNL

LAWRENCE LIVERMORE NATIONAL LABORATORY SITE 300
SAN JOAQUIN AND ALAMEDA COUNTIES

ATTACHMENT 16

Evaluation of cooling tower and mechanical equipment discharges threat to groundwater quality using the designated level methodology (DLM); comparison of maximum value detected in samples with the DLM values for disposal units (percolation pits or septic systems) using attenuation factor of 100 for systems more than 30 feet above ground water.

Parameter	Units	Maximum value detected in effluent	Designated level methodology value	Corresponding water quality goal[a]	Source of water quality goal[a]
Aluminum	mg/L	0.25	100	1	CA primary MCL[b]
Bicarbonate alkalinity (as $CaCO_3$)	mg/L	220	None	None	None
Boron	mg/L	2.2	140	1.4	IRIS[c]
Calcium	mg/L	22	None	None	None
Carbonate alkalinity (as $CaCO_3$)	mg/L	800	None	None	None
Chloride	mg/L	210	Not applicable	250	CA secondary MCL
Chromium (total)	mg/L	0.0072	5	0.05	CA primary MCL
Chromium (hexavalent)	mg/L	0.0067	2.1	0.021	IRIS
Copper	mg/L	2.4	130	1.3	CA primary MCL
Fluoride	mg/L	1.1	200	2	CA primary MCL
Hydroxide alkalinity (as $CaCO_3$)	mg/L	120	None	None	None
Iron	mg/L	2.3	30	0.3	CA secondary MCL
Lead	mg/L	0.0077	1.5	0.015	CA primary MCL
Magnesium	mg/L	1.4	None	None	None
Manganese	mg/L	0.2	5	0.05	CA secondary MCL
Molybdenum	mg/L	0.045	3.5	0.035	IRIS

continued

ATTACHMENT 16 - CONTINUED

Evaluation of cooling tower and mechanical equipment discharges on ground water quality using the designated level methodology (DLM); comparison of maximum value detected in samples with the DLM values for disposal units (percolation pits or septic systems) using attenuation factor of 100 for systems more than 30 feet above ground water.

Parameter	Units	Maximum value detected in effluent	Designated level methodology value	Corresponding water quality goal[a]	Source of water quality goal[a]
Nickel	mg/L	0.019	10	0.1	CA primary MCL
Nitrate (as N)	mg/L	0.4	Not applicable	10	CA primary MCL
Nitrate (as NO_3)	mg/L	1.8	Not applicable	45	CA primary MCL
Nitrate plus Nitrite (as N)	mg/L	0.17	Not applicable	10	CA primary MCL
Ortho-phosphate	mg/L	180	None	None	None
Potassium	mg/L	280	None	None	None
Selenium	mg/L	0.0036	5	0.05	CA primary MCL
Sodium	mg/L	740	Not applicable	30-60	Taste & odor
Specific conductance	µmhos/cm	4,340	Not applicable	900	CA secondary MCL
Sulfate	mg/L	885	Not applicable	250	CA secondary MCL
Total alkalinity (as $CaCO_3$)	mg/L	920	None	None	None
Total dissolved solids	mg/L	3,300	Not applicable	500	CA secondary MCL
Total hardness (as CaCO)	mg/L	58	None	None	None
Total phosphorus (as P)	mg/L	54	None	None	None
Total trihalomethanes	mg/L	0.011	Not applicable	0.08	CA primary MCL
Vanadium	mg/L	0.1	6.3	0.063	IRIS
Zinc	mg/L	0.34	500	5	CA secondary MCL

[a] From *A Compilation of Water Quality Goals* (Marshack August 2007).
[b] MCL – Maximum contaminant level.
[c] IRIS – USEPA Integrated Risk Information System reference dose for drinking water.

Appendix E

– WDR-R5-2008-0148 Attachment 4: Low Threat Discharges

ATTACHMENT 4

Description of Site 300 low threat discharges to ground along with required Best Management Practices

Type of discharge (estimated volume)	Best management practices
Water (varies, one time discharges from a few gallons up to 5,000 gallons)	Minor discharges primarily associated with maintenance and operations of potable, deionized water or low-conductivity water systems. Large volume discharges reaching surface waters are permitted by NPDES permit CAG9950001. Small discharge volumes of potable, deionized water or low-conductivity water may be allowed to evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. Minimize erosion during discharge.
Air conditioner and compressor condensate (at most continuous drip)	Condensate must evaporate or percolate into the ground. Direct discharge to storm drain or surface waters is prohibited. No treatment chemicals are added. Units that discharge elevated metals as a result of corrosion in the system have condensate captured and characterized for proper disposal.
Landscape irrigation (varies from 10 to 300 gallons)	Excess runoff must evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. Minimize use of water to prevent excess runoff. Follow BMPs for pesticide and fertilizer application.
Pavement, building and window washing and equipment rinsing (varies from 10 to 300 gallons)	Excess water must evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. Use no soaps, detergents, or other cleaning chemicals. Use dry-cleaning methods for pavement cleaning when possible. Use water only when deemed necessary. Care is taken to ensure that water-washed areas have had no spills of toxic or hazardous materials, or that the spills were properly cleaned prior to any washing activity. Minimize water use.
Culvert flushing (varies from 100 to 5000 gallons)	Culverts are visually inspected annually and cleaned when needed. Cleaning involves removing accumulated sediments either with a backhoe or hand digging. Residual sediments may be flushed from the culvert with potable water. Removed sediments are used to reinforce channel banks or removed from the drainage channel for disposal or reuse elsewhere at Site 300.

Continued

ATTACHMENT 4 - CONTINUED

Description of Site 300 low threat discharges to ground along with required Best Management Practices

Type of discharge	Best management practices
Rainwater collected in secondary containment (varies based on size of berm and size of rain event, 60 gallons up to 5000 gallons)	Water collected in secondary containment berms must be evaluated prior to release to ensure the water is uncontaminated. Secondary containment maybe used for oil containing equipment, industrial wastewater retention systems, hazardous wastewater retention systems, hazardous waste accumulation areas (WAAs) and hazardous waste permitted facilities (TSDFs). These release evaluation protocols depend on the system containing the rainwater, and may include visual evaluation for sheens (at oil containing equipment), visual evaluation for contaminants (all systems), review of records to ensure no unexpected loss of liquid from the primary container, review of records to verify that any spills or releases have been cleaned up (all systems), sampling and analysis of the first rainwater of the season (industrial and hazardous wastewater retention systems, WAAs and TSDFs). Any water released to ground from berms must be released in a manner such that it evaporates or percolates into the ground to prevent discharge directly into storm drain or surface water.
Emergency eye wash and safety showers (30 gallons per unit tested)	Excess water from tests must evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. After use in an emergency, follow emergency response procedures to address any contamination that may need to be cleaned up.
Building fire sprinkler system tests (50 gallons per sprinkler system to several thousand gallons for deluge systems)	When no chemicals are added to the fire suppression system, water from tests may be allowed to evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. Measures are taken to ensure that no property damage, including erosion, results from the tests. When used in the event of an emergency, normal emergency response procedures are followed to address any contamination.
Fire hydrant testing (varies 750 to 1,500 gallons per hydrant)	When discharge will not reach surface waters, water may be discharged without dechlorination. If discharge may reach surface waters, follow requirements of WDR 5-00-175. Use erosion control measures during discharge to prevent soil erosion at the release site. Erosion prevention measures may include the use of a banana tube to direct flow away from erosion-prone areas and the use of hoses if necessary to direct the discharge to a suitable discharge location.

Continued

ATTACHMENT 4 - CONTINUED

Description of Site 300 low threat discharges to ground along with required Best Management Practices

Type of discharge	Best management practices
Wet hose drills and hose tests (hose tests, up to 3000 gallons annually; drills, vary depending on drill scenario)	Allow water from drills to evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. Implement erosion prevention measures.
Fire apparatus rinsing (up to 100 gallons per vehicle)	Rinse one to two times per week at the Fire House using a minimum amount of potable water and wipe down. Allow excess water to evaporate or percolate into the ground to prevent discharge directly into storm drain or surface water. No soaps, detergents, or chemical cleaners can be used. When a full cleaning is required, the equipment is taken to an approved wash facility.