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Savannah River Site

Effectiveness Monitoring Report for the Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) (U)

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LIST OF ACRONYMS AND ABBREVIATIONS

1,1,2-TCA	1,1,2-trichloroethane
1,1-DCE	1,1-dichloroethylene
bgs	below ground surface
c-1,2-DCE	cis-1,2-dichloroethylene
CCl_4	carbon tetrachloride
CMCOC	contaminant migration constituent of concern
CMP	chemicals, metals, and pesticides
COC	constituent of concern
CY	calendar year
DCM	dichloromethane (methylene chloride)
DEHP	bis-(2-ethylhexyl) phthalate
DNAPL	dense non-aqueous phase liquid
EMP	Effectiveness Monitoring Plan
EMR	Effectiveness Monitoring Report
ERH	electrical resistance heating
ft	feet
GA	Gordon aquifer
GCCZ	Green Clay Confining Zone
GWPS	groundwater protection standard
LAZ	lower aquifer zone
m	meters
µg/L	microgram per liter
MAZ	middle aquifer zone
MCL	maximum contaminant level
mg/kg	milligram per kilogram
MNA	monitored natural attenuation
OU	operable unit
PCE	tetrachloroethylene
PDB	passive diffusion bag
RA	remedial action
RCRA	Resource Conservation and Recovery Act
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RG	remedial goal
ROD	Record of Decision
RSL	Regional Screening Level
SCDHEC	South Carolina Department of Health and Environmental Control
SCSU	South Carolina State University
SRNS	Savannah River Nuclear Solutions LLC
SRS	Savannah River Site
SVE	soil vapor extraction
TCCZ	Tan Clay Confining Zone
TCLC	Tan Clay Lower Clay
TCE	trichloroethylene

LIST OF ACRONYMS AND ABBREVIATIONS (*continued, end*)

t-1,2-DCE	trans-1,2-dichloroethylene
TZ	transmissive zone
USEPA	U.S. Environmental Protection Agency
UTRA	Upper Three Runs aquifer
VC	vinyl chloride
VOC	volatile organic compound
WSRC	Westinghouse Savannah River Company LLC (before October 2005)
WSRC	Washington Savannah River Company LLC (October 2005- July 2008)

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1.0 INTRODUCTION

This Effectiveness Monitoring Report (EMR) addresses the effectiveness of the Monitored Natural Attenuation (MNA) groundwater remedy at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) for the period from March 2018 to March 2019. The monitoring requirements for the CMP Pits OU are identified in the Effectiveness Monitoring Plan (EMP) (WSRC 2006b).

1.1 Operable Unit Background

The CMP Pits OU is located in the central portion of the Savannah River Site (SRS) approximately one mile north of L Area (Figure 1). The subunits of the CMP Pits OU were evaluated in the *RCRA Facility Investigation/Remedial Investigation Addendum with Baseline Risk Assessment for the CMP Pits (U)* (WSRC 2003). The CMP Pits OU is comprised of the following subunits: Ballast Area soils; CMP Pits and associated vadose zone (Field A); vadose zone (Field B); groundwater; and surface water and sediment (Figure 2).

The actual CMP Pits consist of seven former, unlined pits placed in two rows that were designed to receive non-radioactive wastes (chemicals, metals, and pesticides) and operated from August 1971 until February 1979. Once the pits stopped receiving waste, all the open pits were covered with clay and graded. Contaminated soil and debris at the CMP Pits posed a contaminant migration and human health risk and were partially excavated in 1984. A second phase of excavation was performed at Pit 080-183G to remove a portion of significantly contaminated soil and was followed by backfilling of the pit area with clean soil and then capped. However, some contaminated soils were left in place. The previous waste in the pits and associated contaminated soils located in the CMP Pits vadose zone (Field A) were determined to be the source of groundwater contamination.

Electrical Resistance Heating (ERH) with Soil Vapor Extraction (SVE) was selected as the remedial action (RA) for the CMP Pits vadose zone in and around Field A. This remedy targeted the contaminated soil at Pit 080-183G that was left in place after the previous soil excavations which included dense non-aqueous phase liquid (DNAPL) that was present in the clay horizons beneath the pits (Figure 2). The contaminant migration constituents of concern (CMCOCs) that were identified in the Resource Conservation Recovery Act (RCRA) Facility

Investigation/Remedial Investigation (RFI/RI) Addendum (WSRC 2003) are tetrachloroethylene (PCE) and dichloromethane (DCM).

Groundwater contamination has occurred as a result of contaminants leaching from the source area soils. Following remediation of the CMP Pits vadose zone (Field A) source area, MNA was selected as the RA for the contaminated groundwater.

Surface soil contamination in the Ballast Area and vadose zone contamination in Field B have been successfully remediated via interim RAs. There is no problem warranting action for the surface water and sediment; however, surface water sampling is included as part of the MNA sampling.

1.2 Nature and Extent of Contamination

PCE and DCM (or methylene chloride) were identified as CMCOCs and as principal threat source material for mobility (i.e., transport from the source zone to the aquifer in less than 10 years) in the vadose zone beneath the CMP Pits. The volatile organic compound (VOC) contamination was highest in the northwest pit (Pit 080-183G) at depths between 20 and 60 feet (ft) (6.10 and 18.29 meters [m]) below ground surface (bgs). PCE was the most abundant contaminant at CMP Pits. No constituents of concern (COCs) were identified in the surface soils in the CMP Pits subunit.

In accordance with the Record of Decision (ROD) (WSRC 2004), an ERH/SVE remedy was selected to remove the DNAPL from the vadose zone. Based on the limited lateral and vertical extent of PCE contamination and the intent of the selected remedy defined in the ROD, the ERH treatment area included the extent of PCE contamination above the DNAPL threshold concentrations and comprised an area of approximately 0.05 acres (0.02 hectares) in Field A (Figure 2). Further details of the DNAPL remediation are available in the 2009 EMR (SRNS 2009).

The following VOCs and pesticides were identified as human health COCs in the groundwater for the future industrial worker and/or resident: alpha-benzene hexachloride, beta-benzene hexachloride, delta-benzene hexachloride, dieldrin, lindane, bis-(2-ethylhexyl) phthalate (DEHP), bromodichloromethane, carbon tetrachloride, chloroform, DCM, PCE, and trichloroethylene

(TCE). Following the EMP for the CMP Pits, both groundwater and surface water are sampled and analyzed for Target Compound List VOCs and/or lindane (WSRC 2006b). DEHP is a common laboratory artifact and is not believed to be present in the groundwater subunit. As of 2010, the constituent DEHP is no longer required to be sampled and/or reported. In 2013, 1,4-dioxane was added to the list of monitored constituents on an annual sampling basis.

Two VOC groundwater plumes exist at the CMP Pits, designated as the main plume and the northeast distal plume. These plumes are moving northward toward Pen Branch. Groundwater modeling indicated that the CMP Pits were the source for the main plume. Particle tracking toward and from the northeast plume suggested that its source was different from that of the main plume (WSRC 2002). A drainage ditch located approximately 361 ft (110 m) north of CMP Pits is a possible source area (Figure 2). It is possible that this ditch was used as a dumping location prior to the use of the actual CMP Pits. Additional characterization for the source of the distal plume using soil gas surveys was presented in the RFI/RI Addendum (WSRC 2003). Results indicated that if a source was previously present in the vadose zone, it has been depleted. It is also plausible, due to the dry zone areas within the transmissive zone (TZ) and to some degree the middle aquifer zone (MAZ), that one plume separated into two distinct plumes over time. Additionally, upwelling of the MAZ as it discharges to the stream most likely brings some contamination up into the TZ. A combination of the three explanations is probable.

As discussed below, the vertical extent of the VOC plume is within the Upper Three Runs aquifer (UTRA) and includes three distinct horizons: the TZ, the MAZ, and the lower aquifer zone (LAZ). The lateral extent of the initial VOC plume was estimated at 46 acres (18.6 hectares), extending from the pit area to Pen Branch.

1.3 Observed Hydrostratigraphy at the CMP Pits OU

In the vicinity of the CMP Pits OU, the aquifers of interest include the UTRA and the underlying Gordon aquifer (GA). Horizontal flow within the UTRA is divided into three discrete horizons that are separated by two semi-continuous confining zones which can be comprised of sandy clays in areas and therefore can be leaky. As noted above, the horizons are: 1) the TZ – a thin aquifer feature that lies above the top portion of the tan clay, the tan clay confining zone (TCCZ), 2) the

MAZ – a thin aquifer horizon between the TCCZ and the lower portion of the tan clay, the tan clay lower clay (TCLC), and 3) the LAZ - the most substantial portion of the UTRA in the area, which extends to the green clay confining zone (GCCZ) with a thickness up to 100 ft (30.48 m). The GCCZ separates the UTRA from the GA. The confining zones, the TCCZ and TCLC, are hummocky, vary in thickness, and can be almost non-existent or leaky in areas. In general, the TCCZ is thinner than the TCLC.

Using the data collected from lithology pushes done for the 2002 modeling effort and from well installation records, the confining unit surfaces of the TCCZ and TCLC were spatially mapped (Figure 3) and compared to the most current fourth quarter 2018 (4Q2018) water elevation surfaces. Areas where the TZ and MAZ are suspected to be dry were delineated and are shown on Figure 3, as well as on all TZ and MAZ figures, and can be seen in the cross sections (See Section 2.2.2). The top of the TCCZ forms a semi-circular ridge at and north of the CMP Pits (shown as white and light pink shaded elevations in Figure 3), which causes much of the TZ to be dry. This shape is mimicked in the top of the TCLC, but the subsequent dry zone is not as extensive. The dry zones at CMP Pits are not a recent occurrence. Review of water elevation data from the 1980's and 1990's from abandoned wells suggests similar dry zones have existed for decades.

Figure 4 shows the locations of the 72 monitoring wells and seven surface water stations associated with the CMP Pits OU. The map also shows corresponding cross-section lines which depict the local hydrostratigraphic lithology and major contaminant plumes at the CMP Pits OU. The stratigraphy, aquifers and plumes are all, in general, gently sloping towards Pen Branch. However, the confining units appear to slope towards the south in some areas at the main CMP Pits area (Figure 3 and cross-section B-B' [See Section 2.2.2]). Although the TCCZ and the TCLC are depicted as continuous units in the cross-sections, the aquifer behavior in this area shows various elevation heads and contaminant pathways that indicate the confining horizons are discontinuous and/or intermixed with sandy clays in areas. The TZ, TCCZ, MAZ, TCLC, and LAZ units are eventually incised by Pen Branch itself or the local topography. In the CMP Pits OU area of interest (extent of the maps), the TZ is incised by Pen Branch on the east side of the stream reach, the MAZ is incised in the central portion of the stream reach, and the LAZ is incised by Pen Branch

at the western portion of the stream. The horizontal extent of the TZ and MAZ are depicted on all TZ and MAZ maps.

1.4 Observed Hydrology at the CMP Pits OU

Regional groundwater flow for the UTRA, as depicted in Figure 5, is to the northwest towards Pen Branch from CMP Pits. The last observed potentiometric surfaces from the calendar year (CY) 4Q2018 are displayed for each of the aquifer zones in Figure 6 and Figure 7. These potentiometric surfaces do not show any unusual pattern of flow from previous measurements. Figure 8 depicts the monthly rainfall levels in nearby L Area for 2018, 2017, 2016, 2015, and the 20-year average. Rainfall during 2018 (total of 61.5 inches) measured more than the 2017 measurements and was significantly above the 20-year average (46.97 inches). The months of May, July, August, November, and December were especially wet months. January and February were dry months. With the exception of CMP 31C, which is screened in the MAZ, all wells showed minimal changes in water elevation in comparison to 2017 measurements. Hydrographs of each well are presented in Appendix A.

A small region of radial flow appears to be superimposed upon the northwestward flow beneath the hill on which the CMP Pits are located and is depicted by the groundwater flow direction arrows in Figure 6. This pattern is due to the locally high topography at CMP Pits (Figure 2) as well as the bowl-like structure of the Tan Clay, especially in the upper TCCZ (Figure 3). Based on water elevations in the MAZ not being fully saturated, it appears the TZ may consist of perched water tables in many locations. The bowl-like structure of the tan clay as depicted in Figure 3 further supports this conclusion as the lower elevation of the TCCZ in the eastern portion of the CMP Pits may locally funnel groundwater to the south and southeast following the slope of the TCCZ before eventually flowing to the north and northwest. Water may mound up in the bowl-like structure as water is pushed towards the northwest from the overall regional groundwater flow and as water flows downslope into the bowl-like structure. As shown in Figure 6 in the TZ, the wells located directly around CMP Pits (CMP 34D, CMP 13D, CMP 35D, CMP 10D, and CMP 11D) suggest that a component of flow has a south or southwest gradient. Some years display a more pronounced southerly flow gradient than others. Additionally, the dry zones may be slightly redirecting groundwater flow around the dry areas slightly to the east.

The flow pattern in the MAZ generally resembles that of the TZ. Flow directions in the LAZ and GA are less defined, as the horizontal gradients are less across the area, as discussed below. In the area around the CMP Pits and towards the west and north, the water elevations in the LAZ are generally very similar and vary by up to 2 feet (Figure 7). Measurements show that groundwater in the vicinity of Pen Branch flows toward Pen Branch on both the southern and northern side of the stream, further supporting that contaminants originating south of Pen Branch from CMP Pits are not flowing underneath Pen Branch towards the north. Water elevations in the LAZ on the north side of Pen Branch are higher than elevations on the south side of Pen Branch.

Estimated horizontal groundwater linear velocities have been calculated for the following groundwater flow paths:

- Figure 6 - TZ aquifer flow paths A – A', B – B', and C – C';
- Figure 6 - MAZ aquifer flow paths A – A' and B – B'; and
- Figure 7 – LZ aquifer flow paths A – A', B – B', and C – C'.

Estimated horizontal groundwater linear velocities were calculated for each of the above flow paths using the following equation:

$$Linear\ Velocity\ \left(\frac{ft}{day}\right) = \frac{Hydraulic\ Conductivity\ \left(\frac{ft}{day}\right)}{Porosity\ (unitless)}\ x\ \frac{dh\ (ft)}{dl\ (ft)}$$

The hydraulic conductivity constants (60, 50, and 20 ft/day for the TZ, MAZ, and LAZ, respectively) and porosity values (all 30%) used in the calculations are taken from the modeling efforts (WSRC 2002, SRNS 2017). The value *dh* is the difference in head; *dl* is the length of the groundwater flow paths shown on Figures 6 and 7. The ratio *dh/dl* is the horizontal gradient. The gradient, linear velocity per day and average linear velocity per year were each determined and are provided in Table 2 and described below.

Estimated velocities vary widely within the TZ between 0.89 ft/day on the western side of the CMP Pits and 2.58 ft/day on the eastern side. This variation could be caused by a combination of factors including the large dry zone area and the radial groundwater flow paths at the CMP Pits

knoll, as discussed above. The average for the TZ is 2.10 ft/day, or 766.37 ft/year. The MAZ is more uniform in its rates and averages 1.69 ft/day, or 616.92 ft/year. The LAZ's rate is much less than the TZ and MAZ near CMP Pits with a rate of 0.52 ft/day, or 190.27 ft/year. Flow is greater near Pen Branch, especially on the north side of Pen Branch, however, flow rates still are approximately half that of the TZ and MAZ.

There is a significant downward component to groundwater flow throughout the UTRA. Water level measurements collected from well clusters during 2018 show an average head drop of 11.3 ft (3.4 m) across the TCCZ and an average of 13.1 ft (4.0 m) across the TCLC. There is an average of a 14.9 ft (4.5 m) drop in head across the Green Clay from the LAZ to the GA. As groundwater approaches Pen Branch, the downward gradient may decrease or even flow upward near and underneath Pen Branch as water discharges into Pen Branch. Monitoring well cluster CMP064BU and CMP064B (both screened in the LAZ) shows a higher water elevation in the lower B screen than the upper BU screen (Figure 7). Other wells, CMP 8 and CMP 8B, located upgradient of the wetland area display a much lower than average downward gradient of approximately 3.9 ft (1.2 m) across the TCLC. The TCCZ and TCLC are not considered thick competent confining clays, but rather are hummocky, vary in thickness, and can be almost non-existent or leaky in areas allowing some degree of flow between aquifers. The steep topography south of Pen Branch incises the TCCZ and TCLC, the sediment around the stream has been reworked over time as the stream meanders, and trees and roots have penetrated the clay layers allowing more interchange between aquifers. Additionally, wells in the wetland area near Pen Branch display water table elevations approximately 1 – 3 ft (0.3 – 0.9 m) above the stream bottom, indicating that Pen Branch is a gaining stream.

2.0 REMEDIAL ACTIONS

This EMR documents the performance of the MNA remedy for the groundwater. Remedial activities for the vadose zone and Ballast Area Soils subunits were performed under an interim RA in 2001 and 2005, respectively (WSRC 1999 and WSRC 2006a). ERH combined with SVE was implemented from 2007 through 2009 to remove DNAPL from the vadose zone (Figure 2). This vadose zone RA mitigated the source term for the groundwater subunit which allows the MNA remedy.

2.1 CMP Pits Vadose Zone Remedial Action

The ERH/SVE RA performed for the CMP Pits vadose zone was implemented to mitigate the CMCOCs PCE and DCM. Details of system construction are provided in the Post-Construction Report (SRNS 2008). ERH/SVE operation began on March 17, 2008. Heating via ERH continued until November 2008. Two SVE systems provided the VOC removal at the CMP Pits well field. SVE well effluent vapor concentrations and soil temperature data were analyzed to determine when the source term/DNAPL had been depleted. Operating data from the ERH system was provided in the EMR submitted in June 2009 (SRNS 2009).

In accordance with the EMP, confirmation samples were collected from three core locations. All sample results were below the remedial goal (RG) for PCE (36 mg/kg) and DCM (0.2 mg/kg) (SRNS 2010) meeting the intent of the RA. All remedial equipment and SVE units have been removed and abandoned. Even though the RA was successful and confirmation samples were below RGs, there is a possibility that residual contamination trapped within clay horizons and/or pore space in the vadose zone, in or out of the ERH/SVE zone, could act as a secondary source for groundwater contamination.

2.2 Groundwater Monitored Natural Attenuation Remedy

2.2.1 Groundwater Aquifers

As described above, groundwater analysis has been performed around the CMP Pits in four distinct aquifer zones of the UTRA and the GA. These zones in descending order are 1) the TZ of the UTRA, 2) the MAZ of the UTRA, 3) the LAZ of the UTRA, and 4) the GA.

Groundwater within these aquifers is currently monitored by the 72 wells which have been sampled on a semi-annual or annual basis (Table 1, Figure 4). The TZ includes 13 monitoring wells, the MAZ includes 26 monitoring wells, the LAZ includes 29 monitoring wells (including one extra well, CMP 32B), and the GA includes four monitoring wells. Each of these wells are used for water level measurements and the majority of the wells are sampled for VOCs and/or lindane. Five surface water stations north of CMP Pits located in the Pen Branch stream are used to monitor any discharge of VOCs to the stream. Two additional surface water stations (CMP-

SW-20 and CMP-SW-21), which were added in 2017, are located within the tributary to Pen Branch (Figure 4). Table 1 indicates the monitoring network required sampling frequency and the constituents that are monitored.

Based on the evaluation of monitoring data, advection and dispersion are the main MNA processes occurring at CMP Pits. Based on sampling analysis, some degree of biodegradation is occurring in the wetland area near Pen Branch, although it is not seen upgradient in the CMP Pits area outside the immediate stream area. The original 2002 groundwater model only accounted for advection and dispersion and estimated the plumes would remain above maximum contaminant levels (MCLs) for 50 years (~2050) even if the vadose zone source was completely remediated (WSRC 2002). An updated model conducted in 2017 added sorption and continuing VOC sources in clays and estimated the plumes would remain above MCLs for approximately 100 years (~2117). The increase in time is mostly attributed to sorption.

2.2.2 Groundwater Sampling Results

Groundwater samples were collected from 64 monitoring wells at CMP Pits during the CY18 2Q and 4Q. This includes additional samples collected from one of the wells that are only used for water level measurements (CMP 15B) and a well that is not currently part of the monitoring network (CMP 32B). All groundwater results from 2018 are provided in Table 3. Plumes were drawn based on the maximum concentration from the 2018 results. Details on specific contaminants are described in the following subsections. Additional data results gathered from an independent source are discussed in Section 2.2.4.

2.2.2.1 PCE and TCE

PCE and TCE contamination has been identified in the TZ, MAZ, and LAZ above MCLs. The PCE plumes comprise approximately 44 acres (17.8 hectares) (Figures 9 and 10), and the TCE plumes comprise approximately 42 acres (17 hectares) (Figures 16 and 17). The majority of the horizontal plume movement occurs in the MAZ, which is consistent with modeling estimates. Vertical movement of the plumes are occurring as shown by an overall trend of decreasing concentrations in the MAZ, and an increasing trend in portions of the LAZ (Appendix B and Figures 14, 15, and 31). This is also consistent with modeling, as concentrations in the LAZ are

predicted to increase over time. Of the 62 monitoring wells sampled in 2018 for VOCs, 27 wells had PCE concentrations above the MCL of 5.0 µg/L and 24 wells had TCE concentrations above the MCL of 5.0 µg/L. Most of the monitoring wells (86%) show a declining or steady (including consistent non-detects) trend in PCE and TCE over the past nine years as shown in the time-series plots for all the wells in Appendix B, Figure 31, and summarized below.

The following is a summary of the PCE and TCE contaminant trends by aquifer:

Transmissive Zone:

The maximum concentrations of PCE and TCE found in the TZ were 1,150 µg/L for PCE (Figure 9) and 685 µg/L for TCE (Figure 16), both in monitoring well CMP 35D. There were five monitoring wells (out of 11 sampled) screened in the TZ that had PCE and/or TCE concentrations above the MCL in 2018. Upgradient wells CMP062D and CMP063D were non-detect for both PCE and TCE.

Wells CMP 10D and CMP 11D have shown consistently high PCE and TCE values; however as shown in Appendix B, the trends for these wells over the past nine years have generally declined. Concentrations in well CMP 10D and CMP 11D during 2018 were similar to concentrations during 2017. Contamination in these two wells is a result of contaminants being transported by localized radial groundwater flow at the CMP Pits knoll, as described in Section 1.4 and shown in Figure 6, or by contaminants following the slopes of the confining units. Due to the shape of the TCCZ surface and the subsequent dry area that is created in the TZ, contamination may have been funneled towards the south and southeast towards CMP 10D and CMP 11D. Well clusters CMP062 and CMP063 remain below MCLs showing that contamination has not spread to the south/southeast.

Well CMP 35D has generally displayed increasing concentrations over the last nine years; however, this is as wells CMP 10D and CMP 11D have generally shown decreases in their concentrations. The inversely related trends in wells CMP 10D and CMP 35D (Figure 30), for both VOCs and lindane, suggest it could be tied to hydrogeologic processes associated with the complex radial groundwater flow patterns due to the surface shape of the TCCZ and resulting dry zones in the TZ. The above average rainfall over the last few years has increased the water table

elevations and possibly provided a mechanism for flow towards the northwest in the CMP 10D and CMP 35D area. Above average rainfall may also provide more opportunity for dispersion and diffusion from CMP 10D as there is more water volume available in the TZ. Additionally, the increased water elevations may allow release of trapped secondary sourced contamination in clay horizons or pore space into the groundwater since well CMP 35D is located downgradient of the CMP Pits. Since CMP 35D is located directly outside of the capped area, the low permeability cap at CMP Pits may retard infiltration and the effect of water elevation increases may be more pronounced. Figure 30 indicates a possible correlation between water elevation and contaminant levels of PCE at CMP 35D.

The TZ plume geometry is shown in Figure 9 for PCE and in Figure 16 for TCE. The main plume at and around the CMP Pits has remained roughly the same in size with concentrations near the actual pits area continuing to decrease at well CMP 10D but increased at well CMP 35D as previously discussed. The high concentrations have remained relatively confined near well CMP 35D which may indicate that the mass of contaminants has mostly been remediated. PCE concentrations at well CMP 11D have generally decreased since 2010 whereas TCE concentrations at well CMP 11D have generally remained stable. Concentrations of PCE at CMP 13D slightly exceeded the MCL for the June 6, 2018 sample but dropped below the MCL for all other 2018 samples. Concentrations at well CMP 30D were non-detect for PCE, but TCE was detected below the MCL. Concentrations at CMP 36D continue to be below the MCL for both PCE and TCE. Concentrations at CMP 37D were below the MCL for both PCE and TCE, and concentrations of PCE and TCE at CMP 38D decreased. The distal plume initially was thought to originate from an alternative source from the CMP Pits, as particle track modeling indicates it could be from a potential previously contaminated drainage ditch north of the CMP Pits (WSRC 2002) (located on all planar figures). As previously mentioned, characterization results of this area indicated that if a source was previously present in the vadose zone, it has been depleted (WSRC 2003). Due to the dry zone areas within the TZ, it is plausible that bifurcation of the plume into two separate plumes occurred over time, or that some contaminant flow went around the dry zone to the east. Discharging of the MAZ and LAZ into the Pen Branch stream likely brings some contamination up into the TZ as the water discharges into Pen Branch. The clay horizons between the aquifers can be thin and/or leaky and the TCCZ and TCLC are at or near ground surface at the location of

the distal plume. The steep topography south of Pen Branch incises the TCCZ and other clay layers, the sediment around the stream has been reworked over time as the stream meanders, and trees and roots have penetrated the clay layers allowing more interchange between aquifers. All of these factors are probable explanations for the distal plume.

The distal plume has decreased in both size and core concentrations, with the area in and south of the actual pits area showing the largest reduction in concentrations. A comparison of changes in PCE plume concentrations over the last ten years (2018 values compared to 2008 values [Pre ERH/SVE]) can be seen in Figure 14 and Table 4. In the TZ, most plume concentrations have decreased or are steady. CMP 35D located directly north of CMP Pits has been increasing in PCE concentrations over the past six years but remains below historical high levels. Concentrations at wells CMP 10D and CMP 11D have both decreased by approximately 90% from their peak levels and show a large reduction in total mass for the TZ, indicating the source remediation was successful. Concentrations at CMP 35D will continue to be monitored. TCE trends are similar to PCE and are therefore not mapped.

Middle Aquifer Zone:

The maximum concentrations found in the MAZ in 2018 were 410 µg/L for PCE at well CMP 8, located approximately 250 ft. south of Pen Branch (Figure 9), and 147 µg/L for TCE at well CMP 52C, located immediately downgradient of the CMP Pits (Figure 16). The concentration of PCE detected at CMP 8 in the November 2018 sample (410 µg/L) is below the peak PCE concentration of 463 µg/L observed at this well in May 2011 and appears to coincide with increasing PCE concentrations observed at LAZ well CMP 8B. Concentrations of TCE detected at CMP 52C in 2018 were similar to monitoring results reported for this location since May 2014.

There are 13 monitoring wells (out of 22 sampled) screened in the MAZ that had PCE concentrations above the MCL in 2018, and 11 monitoring wells had TCE exceedances above the MCL. The majority of the MAZ wells display a steady or decreasing trend in concentrations (Figure 31). Well CMB 24I experienced a slight decrease in PCE in 2018 from the increased concentrations seen during 2017. Well CMP059C displays a slight increasing trend as this well is near other wells with similar or higher concentrations and is mostly likely due to plume spreading

or concentrations from the TZ. The June 2018 groundwater sample for CMP 41D, which is located near Pen Branch on the western edge of the PCE and TCE plume, slightly exceeded the MCL for TCE. Both PCE and TCE concentrations at CMP 41D declined during 2018 and were below their MCLs during the November 2018 monitoring event. The remaining MAZ wells show decreasing or no significant change in PCE concentrations. Similar trends were observed for TCE in these wells.

PCE and TCE concentrations rapidly decrease once the plume reaches the wetland area near Pen Branch where VOC degradation is occurring.

A comparison of changes in PCE plume concentrations over the last ten years (2018 values compared to 2008 values [Pre ERH/SVE]) can be seen in Figure 14 and Table 4. In the MAZ, core plume concentrations have decreased dramatically by approximately 80%. The plume footprint expanded horizontally with data points collected in 2016. Concentrations near Pen Branch in the wetland area at wells CMP 40D and CMP 39D have decreased and were below the MCL for the November 2018 sampling event, indicating that the main source zone has been sufficiently remediated and VOC degradation is attenuating the plume. TCE trends are similar to PCE and are therefore not mapped.

Lower Aquifer Zone:

There are nine monitoring wells (out of 26 sampled) screened in the LAZ that had PCE concentrations above the MCL in 2018. These nine wells were also corresponded to the locations in the LAZ having TCE concentrations above the MCL in 2018. The maximum concentrations of PCE and TCE found in the LAZ in 2018 were 389 µg/L for PCE and 258 µg/L for TCE at monitoring well CMP064BU. These levels of PCE and TCE are approximately the same as concentrations observed at CMP064BU in 2017. CMP064BU is located to the east of well CMP 8B and may indicate a preferential flow path for groundwater or contaminants due to the relatively high concentrations of VOCs (Figure 10). Concentrations of PCE and TCE at well CMP 32C, which peaked in 2017, declined in 2018. Concentrations of both PCE and TCE at CMP 10C also declined in 2018. Concentrations at six wells (CMP 8B, CMP 10B, CMP 13B, CMP 32C, CMP 52BU, and CMP058B) generally display increasing trends over the last 10 years (Appendix B and

Figure 29). The majority of these wells are located in the upper portion of the LAZ. Contamination in the LAZ is limited to the upper half portion of the aquifer as seen in the three cross sections, A – A', B – B', and C-C' (Figures 11, 12, and 13). PCE and TCE concentrations in mid-LAZ plume wells CMP 10B slightly increased during 2018. Increasing TCE concentrations observed at CMP 13B over the past four years appear to have stabilized at levels just above the MCL. Other wells vertically located mid-plume and deeper remain steady, below MCLs, or non-detect, including additional well CMP 32B (Figure 12).

Upgradient wells CMP062B and CMP063B were non-detect for PCE and TCE during 2018. Downgradient wells CMP060B and CMP061B remains non-detect, and well CMP 8B remains below MCLs. For the past seven years, CMP 8B has had low detections of PCE with concentrations in 2018 having a maximum of 2.77 µg/L. VOC results at wells CMP066B and CMP067B, located north of Pen Branch and vertically located mid-LAZ plume (Figure 10), were non-detect indicating that contaminants have not migrated underneath Pen Branch to the northwest (also see discussion in Section 1.4, *Observed Hydrology at the CMP Pits OU*).

Similar to the location of the northeast distal plume in the TZ and MAZ aquifers, VOC contaminants are present in the LAZ. Some upward vertical water elevation heads are present in the LAZ closer to Pen Branch (i.e., CMP064BU and CMP064B) which supports that the LAZ is discharging into Pen Branch (Figure 7). Contaminants are from upgradient clay layers and aquifers.

A comparison of changes in PCE plume concentrations over the last 10 years (2018 values compared to 2008 values [Pre ERH/SVE]) can be seen in Figure 15 and Table 4. LAZ plume concentrations have generally increased in the upper half of the aquifer. Increases in the LAZ are expected, as both the previous modeling effort and recent model update also predicted increases in the LAZ over time. The area southeast of CMP 10C is currently on a decreasing trend over the previous eight years, suggesting the majority of source contaminants have been remediated. Concentrations on the western edge of the plume (well CMP 33D) has also decreased. The downgradient wells (CMP060B, CMP061B, and CMP 8B) remain below MCLs. The majority of the plume is most likely reaching Pen Branch and the wetland area east and downgradient of CMP 8B, which also correlates to the TZ and MAZ contaminants near Pen Branch. This is also

supported by the additional data presented in Section 2.2.4. TCE trends are similar to PCE and are therefore not mapped.

Gordon Aquifer:

There are four monitoring wells screened within the GA and all were sampled during 2018. All results were below MCLs or non-detect for both PCE and TCE. Well CMP 12A detected PCE at 1.58 µg/L, which is within historical levels, as concentrations fluctuate between non-detect and values significantly less than MCLs. As stated above, the contamination remains in the UTRA and extends down to the upper portion of the LAZ. The GA screened wells are in place to confirm contamination has not migrated farther downward than expected as described in the EMP (WSRC 2006b). Two additional GA wells, one at the CMP 55 series location and the other at the CMP 10 series location, are scheduled to be installed in 2019 to further ensure the GA is adequately monitored to detect potential plume migration. Modeling does not predict contamination to reach the GA at levels above MCLs (WSRC 2002, SRNS 2017).

2.2.2.2 Cis-1,2-Dichloroethylene (c-1,2-DCE)

c-1,2-DCE was detected in seven wells in 2018. Concentrations were all low values, with a maximum of 1.5 µg/L at well CMP 37D, well below the 70 µg/L MCL. Wells (CMP 37D, CMP 39D, and CMP 40D) which are located near Pen Branch continue to show concentrations of c-1,2-DCE, suggesting degradation of PCE and TCE is occurring in the Pen Branch wetlands. This is supported by results collected from an independent study, as discussed in Section 2.2.4. The preferential degradation pathway for TCE is c-1,2-DCE as trans-1,2-dichloroethylene (t-1,2-DCE) and 1,1-DCE both of which are non-detect as discussed below.

The lack of high detectable results in other monitoring wells confirms that VOC degradation is not widely occurring throughout the plume and that advection and dispersion are the main MNA processes occurring. VOC degradation is mainly occurring in the wetland areas near Pen Branch.

2.2.2.3 Trans-1,2-Dichloroethylene (t-1,2-DCE)

In 2018, all t-1,2-DCE results were non-detect.

2.2.2.4 1,1-Dichloroethylene (1,1-DCE)

In 2018, all 1,1-DCE results were non-detect.

2.2.2.5 Vinyl Chloride (VC)

In 2018, VC was detected at estimated concentrations of 0.69 µg/L during 2Q2018 and 0.55 µg/L during 4Q2018, less than the MCL of 2 µg/L, in LAZ well CMP 13B. VC was also detected in GA well CMP 12A at estimated concentrations of 0.74 µg/L during 2Q2018 and 0.26 µg/L during 4Q2018. All other 2018 CMP monitoring results were non-detect for VC.

2.2.2.6 1,4-Dioxane

1,4-Dioxane is analyzed annually at CMP Pits. There is currently no MCL for 1,4-dioxane, but the current United States Environmental Protection Agency (USEPA) tap water regional screening level (RSL) is 0.46 µg/L. The current lab detection limit of 1 µg/L does not meet the RSL value, while the sample quantitation limit was 3 µg/L. There is no SC certified lab that has detection limits for 1,4-dioxane that can meet the current USEPA RSL. SRS will continue to look for and work with the labs to try to achieve the lowest possible detection limits. SRS is in the contractual process of acquiring a laboratory that can use method EPA522 which can achieve detection limits less than the current RSL; however, that process will be finalized sometime during 2019. Once available, SRS will collect additional samples for 1,4-dioxane using the EPA522 method, likely during the 4Q2019 sampling event.

Detections of 1,4-dioxane occurred in 13 of the 55 wells sampled (24%) at locations within the PCE/TCE plume hotspots. The maximum concentration was 61 µg/L at well CMP 11D, which reflects a decrease from 2017 levels at this well (99 µg/L). Detects occurred in the TZ, MAZ (Figure 18) and LAZ (Figure 19). It was not detected in wells north of Pen Branch. In general, 1,4-dioxane is detected around the CMP Pits source area and in the wetland area wells near Pen Branch but is minimally detected at intermediate wells. As seen in Appendix B, concentrations increased in some wells since 2017, and decreased in others with no significant variations. The distribution of 1,4-dioxane detected in the TZ, MAZ, and LAZ during 2018 is similar to the 2017 findings. The RSL is used as the groundwater protection standard (GWPS) for contouring plume maps (Figures 18 and 19) and cross-sections (Figures 20, 21, and 22).

2.2.2.7 Carbon Tetrachloride (CCl_4)

CCl_4 was detected in 15 wells during 2018, but only exceeded the MCL of 5.0 µg/L in five wells: CMP 8, CMP 10D, CMP 10C, CMP 35D, and CMP064BU, with a maximum concentration of 24.5 µg/L at well CMP 35D. Plume maps were not created due to the limited number of exceedances.

2.2.2.8 Chloroform

Chloroform was detected in 20 wells during 2018. None of the results exceeded the MCL of 80 µg/L. The maximum result was at well CMP 35D with a value of 27.0 µg/L. The highest concentrations coincide with wells that have CCl_4 contamination as chloroform is a degradation product of CCl_4.

2.2.2.9 Dichloromethane (DCM)

In 2018, five monitoring wells, CMP 8, CMP 10C, CMP 35D, CMP 48D, and CMP 52BU, had DCM detections at estimated concentrations ranging from 0.99 to 2.37 µg/L that were well below the MCL of 5 µg/L.

2.2.2.10 Bromodichloromethane

In 2018, bromodichloromethane was detected at low concentrations in seven wells. The maximum result was found at CMP 35D at 9.4 µg/L, well below the MCL of 80 µg/L.

2.2.2.11 1,1,2-Trichloroethane (1,1,2-TCA)

In 2018, 1,1,2-TCA was detected in only one well, CMP 35, at an estimated concentration of 0.35 µg/L, significantly below the MCL of 5 µg/L.

2.2.2.12 Lindane

Nineteen wells were analyzed for lindane in 2018. The MCL for lindane is 0.2 µg/L and five wells (CMP 10C, CMP 35D, CMP 45D, CMP 46D, and CMP 47D) had lindane concentrations that exceeded this level. (See Figures 23 and 24). Cross-sections with lindane plumes and concentrations are provided in Figures 25 through 27. Most of the 19 wells monitored for lindane

in 2018 show slightly decreasing or steady trends in concentrations as shown in Appendix B and Figures 28, 29 and 31.

The highest lindane concentration for 2018 was 7.07 µg/L found in CMP 35D during 2Q2018, with concentrations decreased to 6.6 µg/L in 4Q2018. This well has shown fluctuations in concentrations over the years (Appendix B, page B-54). Factors contributing to this include the complex hydrogeology of groundwater flow paths, surface shape of the TCCZ (Section 1.3 and Figure 3), perched water table conditions, and above average rainfall during the last five years (Section 1.4, Figure 6, and Figure 8). Increases at CMP 35D have occurred as concentrations at well CMP 10D have decreased. The inversely related trends in wells CMP 10D and CMP 35D (Figure 30), for both lindane and VOCs, suggest the increases could be tied to hydrogeologic processes associated with the radial groundwater flow patterns due to surface shape of the TCCZ and dry zones in the TZ. Higher water table elevations have possibly provided a mechanism to release contamination trapped in the vadose zone pore space or capillary fringe, as well as for groundwater to flow towards the northwest providing more opportunity for dispersion and diffusion from CMP 10D and CMP Pits. The low permeability cap retards infiltration so the effect of water table elevation increases may be more pronounced since CMP 35D is located directly outside the cap area. Figure 30 indicates a possible correlation between water elevation and contaminant levels of lindane at CMP 35D.

CMP 10C, in the Upper LAZ, shows concentrations generally decreasing and stabilizing over the past five years. Well CMP 10B, which is screened at the bottom of the LAZ (Figure 25), remains non-detect. Due to the shape of the TCCZ surface and the subsequent dry area that is created in the TZ (Figure 3), contamination may have been funneled towards the south and southeast towards CMP 10D from the high concentration area around CMP 35D and the CMP Pits. Fluctuating water elevations could move groundwater back and forth between CMP 10D and CMP 35D or potentially release contaminants into the water table that were trapped in pore space or clay zones.

Lindane was detected at well CMP064BU (Upper LAZ) at a concentration of 0.166 µg/L during 2Q2018 and dropped to 0.1 µg/L in 4Q2018. Well CMP065BU (MAZ) detected lindane at estimated concentrations of 0.0.125 and 0.016 µg/L in 2Q2018 and 4Q2018, respectively.

The lindane plume is estimated at approximately 4.2 acres (1.7 hectares) in the UTRA (Figures 23 and 24). The majority of the plume (including the highest concentrations) resides in the TZ. The MAZ concentrations slightly fluctuated in 2018 with wells CMP 45D, CMP 46D, and CMP 47D slightly above the MCL. The plume is more diffused and spread out within the MAZ (Figure 23) and overall concentrations appear to be stable to decreasing.

A comparison of lindane plume concentrations over the last 10 years (2018 values compared to 2008 values) can be seen in Figures 28 and 29 and Table 5. In the TZ, plume concentrations have increased at well CMP 35D as discussed above, but lindane concentrations above the MCL is currently limited to only this well. In the MAZ, the area to the north and northwest of the pits has experienced minor fluctuations in concentration over the past 10 years with three wells (CMP 45D, CMP 46D, and CMP 47D) slightly exceeding MCLs in 2018. Beginning in 2008 the LAZ experienced an initial increase in concentrations southeast of the pits at well CMP 10C; however, lindane concentrations at this location have decreased since 2015. The increase first seen at CMP 10C in 2008 is believed to be due to the shape of the surface of the Tan Clay, localized radial groundwater flow around the CMP Pits knoll and leaky conditions within the TCCZ and TCLC. Contamination does not extend deeper than the upper portion of LAZ (Figure 25). The lindane plumes have minimally increased in extent in the TZ and LAZ, which is believed to be caused by contamination trapped in the vadose zone pore space or capillary fringe, the stratigraphy of the Tan Clay, subsequent dry areas in the TZ and MAZ, and radial groundwater flow. Although lindane does not diffuse in aquifers as quickly as VOCs, the factors mentioned above may be further hindering contaminant advection and dispersion.

2.2.3 Surface Water Sampling Results

Surface water in Pen Branch is sampled semi-annually at five locations along the groundwater discharge boundary (Figure 4). Two additional locations were added in 2017 in a tributary leading to Pen Branch (CMP-SW-20 and CMP-SW-21).

Surface water samples are analyzed for VOCs. Table 3 and Figures 9, 10, 16, and 17 show the PCE/TCE results at each station. Modeling results show an expected VOC discharge to Pen Branch above MCLs. In 2018, there were no detections of VOCs in surface water. Only once in

4Q2015, PCE was detected above the MCL at 8.49 µg/L at station CMP-SW-08. 1,4-Dioxane was analyzed at all five required surface water stations (CMP-SW-06 through CMP-SW-10) during 4Q2018 and all results were non-detect.

These results agree with the independent data as described in Section 2.2.4 as no surface water samples had detections of VOCs. The surface water stations were all non-detect for all analytes during 2018. CMP Pits VOC groundwater plume effects on Pen Branch are negligible as VOCs have not been detected in surface water since 4Q2015.

Stream flow measurements were collected in 3Q2018 and 4Q2018 at all seven of the surface water stations. Measurements are provided in the Field Data section of Table 3. Measurements from Pen Branch during 4Q2018 were higher than 3Q measurements due to increased rainfall. Stream flow measurements ranged from 1.98 cubic feet per second (ft^3/s) on the eastern portion of Pen Branch (CMP-SW-06) to 3.06 ft^3/s downstream to the west. Measurements taken in the tributary to Pen Branch during 4Q2018 were 0.383 ft^3/s and 0.353 ft^3/s at surface water stations CMP-SW-20 and CMP-SW-21, respectively. The tributary is approximately 40 to 45% of the flow after the confluence with Pen Branch. The tributary originates northeast of Road C.

Pen Branch is a gaining stream. The slightly decreasing flow rates downstream at surface water stations CMP-SW-09 and CMP-SW-10 are explained by the stream channel widening as it flows west. In the CMP Pit Pen Branch area, the eastern side of Pen Branch in confined to a discrete channel. Downstream, starting west of the CMP-SW-07 station, the surface topography starts to flatten and causes the stream to become wider and travel less through a single open channel and flows under and around trees, roots, and wetland vegetation. Once at the CMP-SW-10 location, the stream is braided through a wide wetland area that is greater than 200 ft across. A marsh/swamp vegetation coverage has been added to the planar maps.

2.2.4 Additional Data from Independent Analysis

Sampling for VOCs was conducted in and around Pen Branch by a South Carolina State University (SCSU) group during 1Q2018 and 3Q2018 under a grant provided by the United States Department of Energy (USDOE). The focus of the study is the MNA processes occurring in the stream and wetlands around Pen Branch as the VOC plume moves towards and discharges into

Pen Branch. Many of the SCSU samples are collected from the groundwater immediately before discharge into Pen Branch. During 1Q2018 and 3Q2018, SCSU collected 33 groundwater and 18 surface water samples at locations depicted on Figures 32 and 33. A summary of the 2018 results is provided in Table 6. A complete listing of results is provided in Table 7.

The groundwater samples collected were a combination of samples taken from beneath the Pen Branch stream bed and locations immediately adjacent to the stream bed. Groundwater samples were collected using passive diffusion bags (PDBs). Surface water was collected as grab samples and using PDBs. All samples were analyzed for PCE, TCE, and associated degradation products. The results are considered to be screening level based on field heterogeneity and lack of data validation.

SCSU reported that PCE and TCE were detected in groundwater samples at a maximum concentration of 81 µg/L and 42 µg/L, respectively. These results are similar with the SRS distal plume wells concentrations in the TZ and MAZ. Additionally, the data results confirm that VOC degradation is occurring near the stream and within the plume within the hyporheic zone. The contaminant discharges are thin or discrete which quickly mix with clean surface water, as surface water is not contaminated with PCE or TCE above MCLs. Previous detections sporadically downgradient indicate there are small discrete preferential pathways where contamination is migrating to Pen Branch in the MAZ and LAZ.

SCSU study results continue to indicate that VOC anaerobic biodegradation is occurring almost exclusively through the c-1,2-DCE pathway, as results for 1,1-DCE and t-1,2-DCE were all non-detect. Cis-1,2-DCE was detected in 67% of the groundwater samples with a maximum concentration of 99 µg/L, although most samples were far below the MCL of 70 µg/L. Three groundwater stations (5D1B, 5DZ3 and 5DB), located on the south bank or below the stream bed before discharge into Pen Branch, exceeded the c-1,2-DCE MCL. However, the collocated surface water sample and surface water downstream from those stations were non-detect indicating that contaminant discharge is very discrete, not widespread, and that concentrations are quickly reduced once they enter the surface water (Figure 32).

SCSU found VC detections in 45% of the samples concentrated in the area downgradient of well CMP 40D (Figure 33). Fifteen samples had detections of VC with the maximum concentration of 98 µg/L, although most of the detections were below 20 µg/L. Thirteen of the groundwater sampled exceeded the VC MCL of 2 µg/L. The vast majority of groundwater and surface water sample results downstream of CMP-SW-07 were non-detect for VOCs indicating that the main area of VOC degradation is occurring in the wetland area between surface water station CMP-SW-06 and CMP-SW-07. This is the area where VOCs are expected to mainly be discharging to Pen Branch as stations CMP 8 and CMP064BU show relatively high PCE and TCE contamination levels. Based on the SCSU study findings, surface water station CMP-SW-22 will be added 150 ft. upstream of surface water station CMP-SW-07 to ensure representative surface water samples are collected near this area of Pen Branch. Surface water monitoring will continue at CMP-SW-07; however, sampling at station CMP-SW-21 will be discontinued as sampling over the last two years has shown that portion of the Pen Branch tributary has not been impacted by the contaminant plumes. Monitoring will continue at the adjacent tributary location CMP-SW-20.

Overall, the VOC detections in 2018 were similar to previous years, but with higher counts of degradation product occurrences. However, this is due to a reduction in the number of stations monitored as hotspots and downgradient locations were focused upon. The results from the SCSU sampling show discrete areas of preferred groundwater contaminant transport, but also demonstrate that the overall impact to Pen Branch surface water is negligible. Degradation of VOCs in the wetlands through vegetative processes is being studied by SCSU; however, their studies were halted due to lack of continued grant funding. If future grants are awarded, vegetative studies will resume and results will be submitted in future CMP Pits EMRs.

3.0 SUMMARY

Surface maps of the Tan Clay (both the TCCZ and the TCLC) have been presented to aid in the understanding of radial groundwater flow at CMP Pits and probable contaminant transport mechanisms. Another year of above average rainfall during 2018 has slightly raised the water table, and the areas estimated to be dry in the TZ and MAZ have marginally decreased in size from last year. Perched water tables most likely exist in parts of the TZ and MAZ. The shape of the tan clay layer and the level of the water table restrict groundwater flow movement in the TZ and

MAZ and cause complex radial groundwater flow paths. This would explain some increasing contaminant trends, as contaminants may have become re-suspended but limited in lateral movement.

Advection and dispersion are the main MNA processes occurring at CMP Pits, with some anaerobic biodegradation occurring in the hyporheic zone and within the wetlands. Effectiveness monitoring data collected through 2018 indicates that the MNA remedy is working as predicted. Groundwater and surface water results are consistent with modeling predictions (WSRC 2002, SRNS 2017). Maximum core concentrations are decreasing. Implementation of the ERH/SVE RA has depleted the VOC source term in the vadose zone at the CMP Pits and created conditions which have allowed the MNA remedy for groundwater to work as predicted. Overall, the majority of VOC concentrations are decreasing or steady in the TZ and MAZ. Some increases in the LAZ are most likely due to plume migration vertically from the MAZ to the LAZ consistent with modeling expectations (WSRC 2002, SRNS 2017). Contamination remains in the uppermost portion of the LAZ while many concentrations near the actual CMP Pits are decreasing.

The increase in VOCs and lindane at well CMP 35D appears to be related to water elevation rise releasing contamination trapped in the vadose zone; however, VOC and lindane concentrations in nearby wells indicate that the contaminants are minimum and highly localized near the CMP 35D location. Lindane has been decreasing in the LAZ at well CMP 10C over the last five years with contamination limited to the upper portions of the LAZ. Only five wells exceed lindane MCLs in 2018.

Wells located north of Pen Branch confirm that contamination is not flowing underneath Pen Branch to the northwest and that groundwater on both the north and south sides of Pen Branch discharge into the stream. Wells located in the distal plume area towards the northeast show a possible preferential pathway for groundwater as relatively high levels of VOC contaminants and low concentrations of lindane exist in this area. Dry zones may be slightly redirecting groundwater flow which may explain elevated concentrations to the northeast.

With the elimination of the source term, short term increases are not unusual, as the stratigraphy within the CMP Pits area is highly variable and heterogeneous and high clay content can retard

groundwater flow or cause preferential pathways. Additionally, modeling has predicted that contamination will remain above MCLs for many decades. The most important indicator that the MNA remedy is performing as predicted is an evaluation of the long-term concentration trends of many monitoring wells and an interpolation of the data showing decrease in plume size over time. Although the overall plume size has minimally changed since the completion of the source term RA eight years ago, core concentrations continue to decline, and surface water is minimally impacted as concentrations are generally non-detect. VOC biodegradation in the wetlands around Pen Branch are likely reducing the flux of VOCs into Pen Branch.

1,4-Dioxane was analyzed at a majority of the CMP Pits wells and at surface water stations in 2018. Detections were found in 24% of the wells with a maximum concentration of 61 µg/L. The plume coincides with the locations of the PCE and TCE plumes but is only a third of the area. All surface water station samples were non-detect for 1,4-dioxane. Due to its presence in groundwater, 1,4-dioxane is monitored annually. SRS is in the contractual process of acquiring a laboratory that can use method EPA522 which can achieve detection limits less than the current RSL; however, that process will be finalized sometime during 2019. Once available, SRS will collect additional samples for 1,4-dioxane using the EPA522 method, likely during the 4Q2019 sampling event.

Screening level data presented within this report from SCSU has shown agreement between the SRS monitoring well and surface water near the Pen Branch stream sampling performed last year. The anaerobic biodegradation breakdown products c-1,2-DCE and VC are prevalent in the shallow groundwater around the stream but are non-detect within Pen Branch surface water. Results also suggest that c-1,2-DCE is the main degradation pathway for PCE and TCE which occurs in the area around Pen Branch in the northeast around wells CMP 39D and CMP 40D. SCSU's results indicated VC is present at levels above MCLs in the groundwater downgradient from well CMP 40D, but concentrations quickly drop to non-detect in surface water and downstream indicating no buildup of contaminants.

Two additional GA wells, one at the CMP 55 series location and the other at the CMP 10 series location, are scheduled to be installed in 2019 to further ensure the GA is adequately monitored to detect potential plume migration. Based on the SCSU study findings, surface water station CMP-SW-22 will be added 150 ft. upstream of surface water station CMP-SW-07 to ensure

representative surface water samples are collected near this area of Pen Branch. Surface water monitoring will continue at CMP-SW-07; however, sampling at station CMP-SW-21 will be discontinued as sampling over the last two years has shown that portion of the Pen Branch tributary has not been impacted by the contaminant plumes. Monitoring will continue at the adjacent tributary location CMP-SW-20.

4.0 REFERENCES

SRNS, 2008. *Post-Construction Report (PCR) for the Chemicals, Metals, and Pesticides Pits Operable Unit (080-170G, 080-171G, 080-180G, 080-181G, 080-182G, 080-183G and 080-190G) (U),* WSRC-RP-2007-4070, Rev. 1.1, April, Savannah River Nuclear Solutions LLC, Savannah River Site, Aiken, SC

SRNS, 2009. *Effectiveness Monitoring Report for the Electrical Resistance Heating (ERH)/Soil Vapor Extraction (SVE) System and Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) (U) March 2008 through March 2009,* SRNS-RP-2009-00573, Rev. 0, June, Savannah River Nuclear Solutions LLC, Aiken, SC

SRNS, 2010. *Effectiveness Monitoring Report for the Electrical Resistance Heating (ERH)/Soil Vapor Extraction (SVE) and Monitored Natural Attenuation (MNA) at the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) (U) March 2009 through March 2010,* SRNS-RP-2010-00896, Savannah River Site, Rev. 0, June, Savannah River Nuclear Solutions LLC, Aiken, SC

SRNS, 2017. *Groundwater Flow and Solute Transport Model of the CMP Pits OU (U),* SRNS-TR-2017-00312, Savannah River Site, Rev. 0, December, Savannah River Nuclear Solutions LLC, Aiken, SC

WSRC, 1999. *Interim Record of Decision Remedial Alternative Selection for the Chemicals, Metals, and Pesticides Pits (U).* WSRC-RP-98-4192, Rev. 1, August, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2002. *Groundwater Modeling for the Chemicals, Metals, and Pesticides (CMP) Pits (U)*. WSRC-RP-2002-4195, October, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2003. *RCRA Facility Investigation/Remedial Investigation Addendum with Baseline Risk Assessment for the CMP Pits (U),* WSRC-RP-2002-4049, Rev. 1.1, August, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2004. *Record of Decision/Remedial Alternative Selection for the Chemicals, Metals, and Pesticides Pits Operable Unit (080-170G, 080-171G, 080-180G, 080-181G, 080-182G, 080-183G and 080-190G) (U),* WSRC-RP-2004-4090, Rev. 1, December, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2006a. *Interim Post-Construction Report (IPCR) for the Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit – Ballast Area (080-170G, 080-171G, 080-180G, 080-181G, 080-182G, 080-183G and 080-190G) (U),* WSRC-RP-2005-4065, Rev. 1, January, Washington Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2006b. *Effectiveness Monitoring Plan for the Electrical Resistance Heating (ERH)/Soil Vapor Extraction (SVE) System and Monitored Natural Attenuation at the Chemicals, Metals, and Pesticides Pits Operable Unit (U),* WSRC-RP-2005-4077, Rev. 1, February, Washington Savannah River Company, Savannah River Site, Aiken, SC

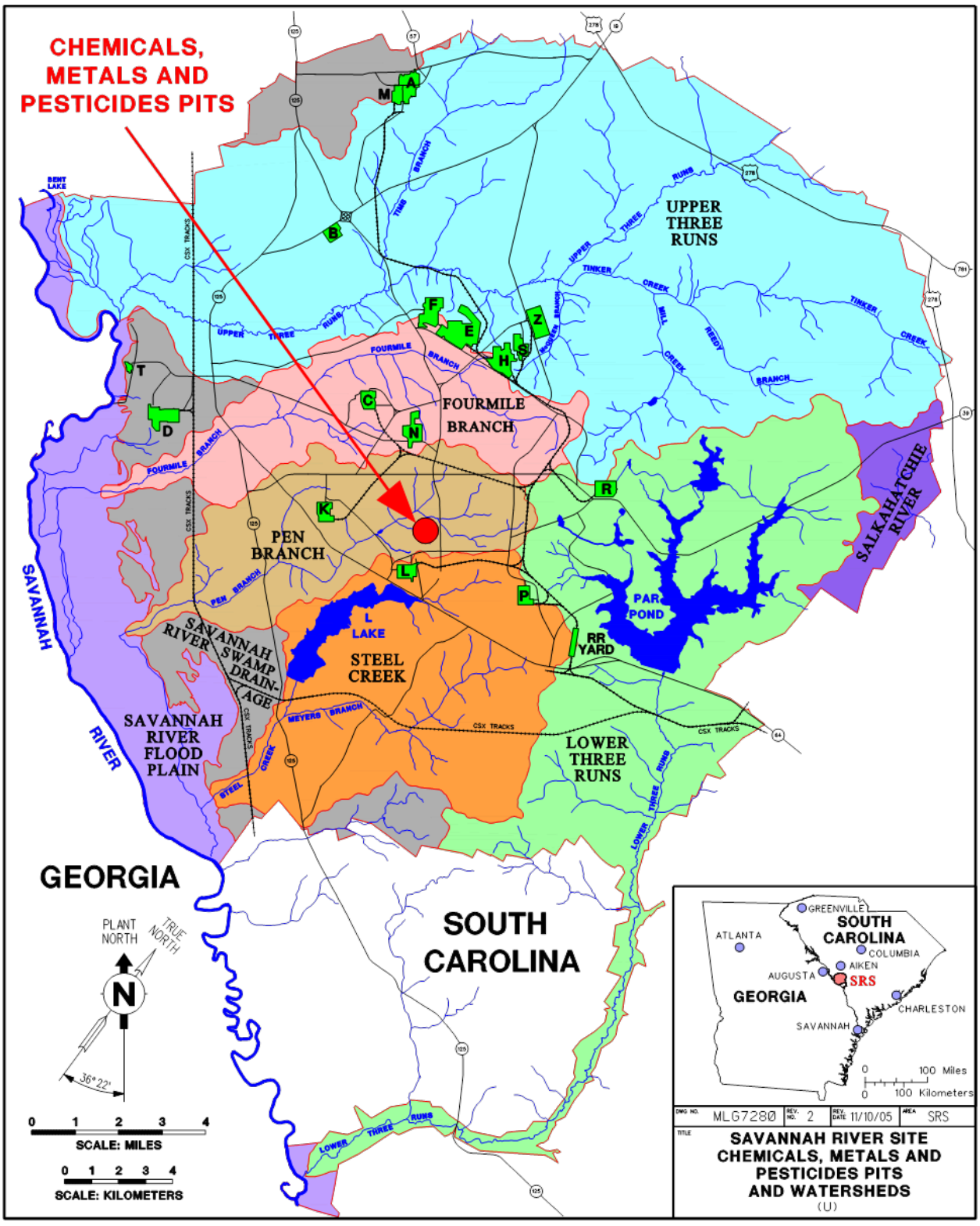


Figure 1. Location of the CMP Pits OU within the Savannah River Site

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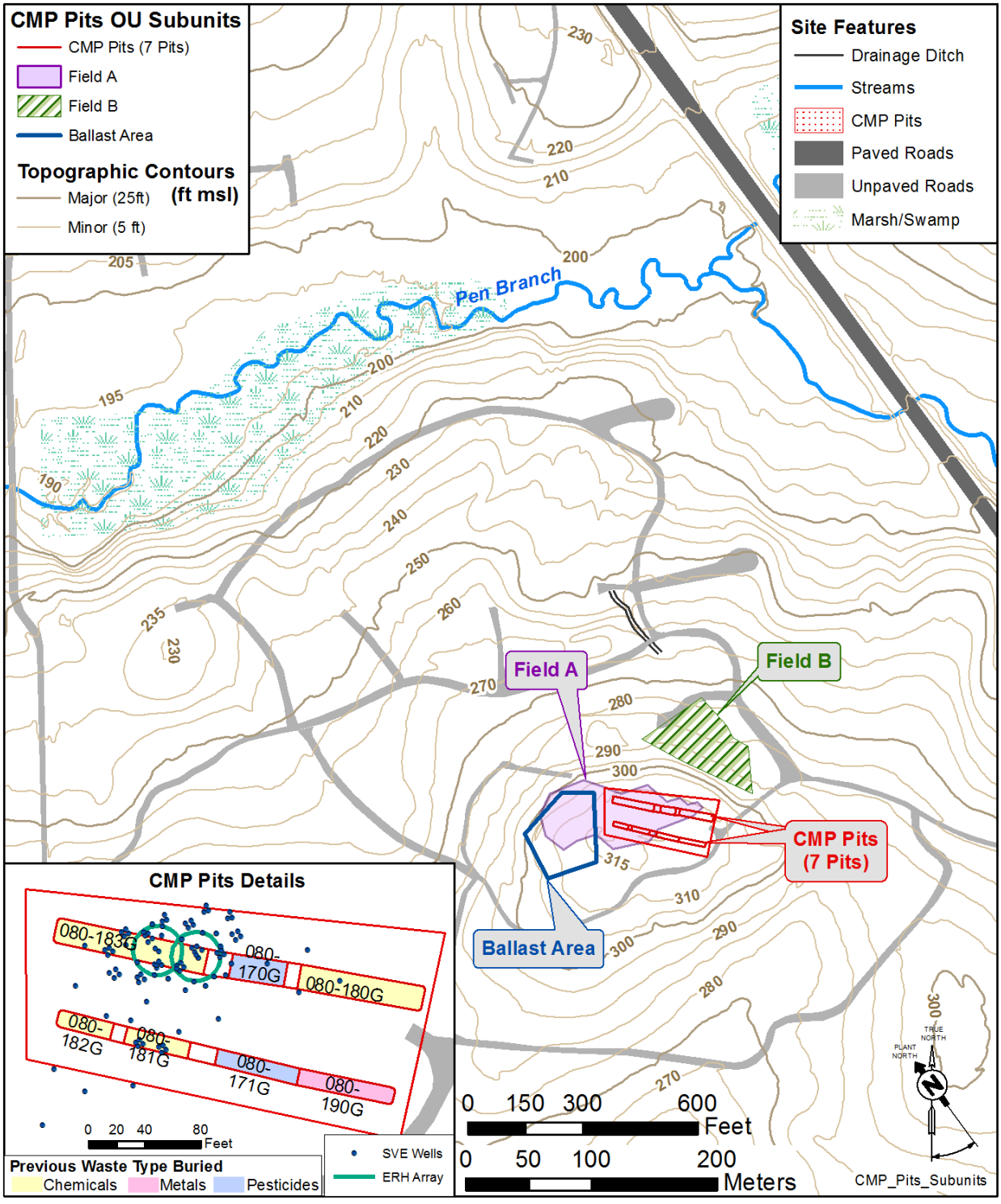


Figure 2. CMP Pits OU Subunits

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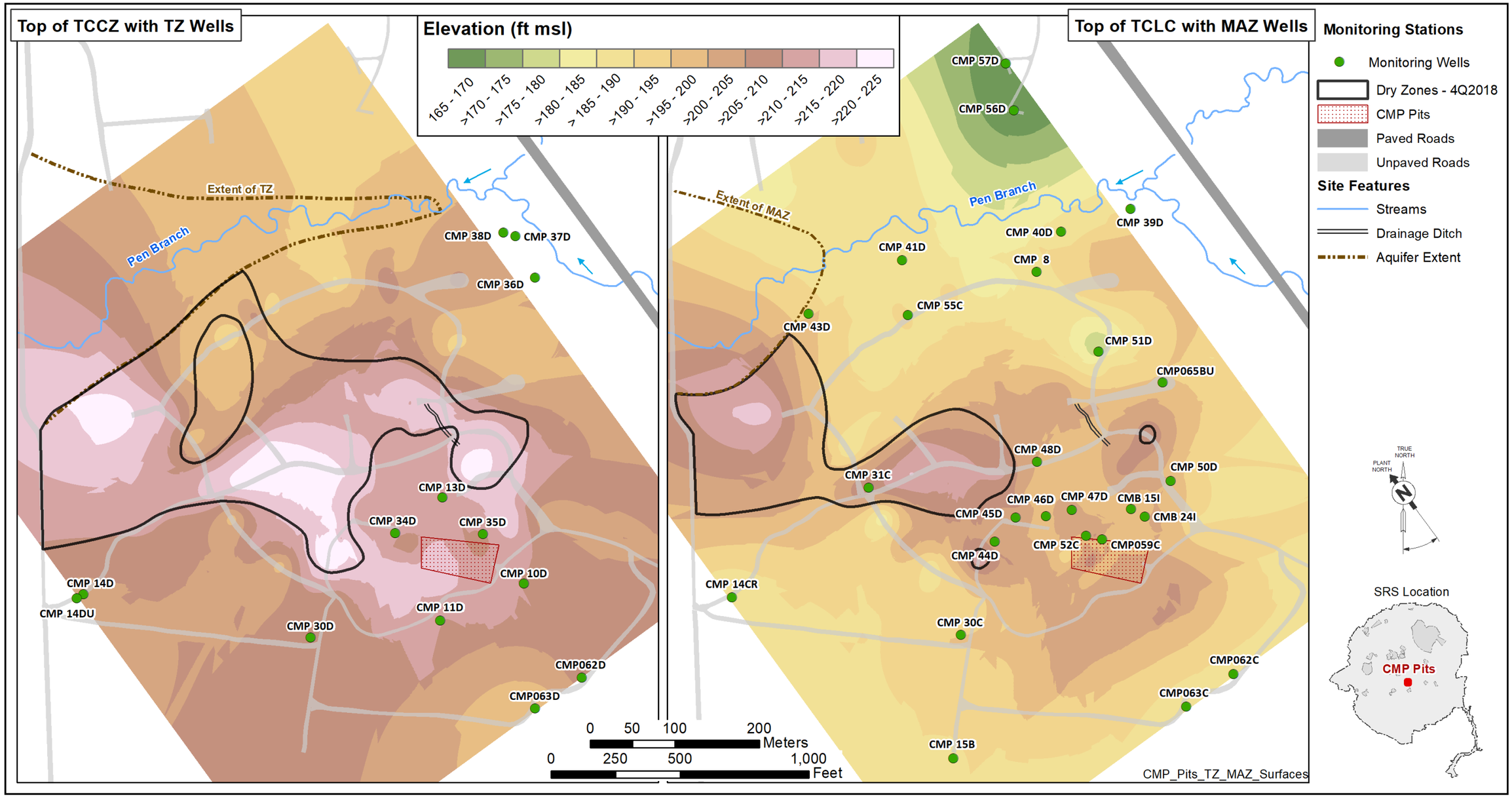


Figure 3. Stratigraphic Surfaces of the TCCZ and TCLC

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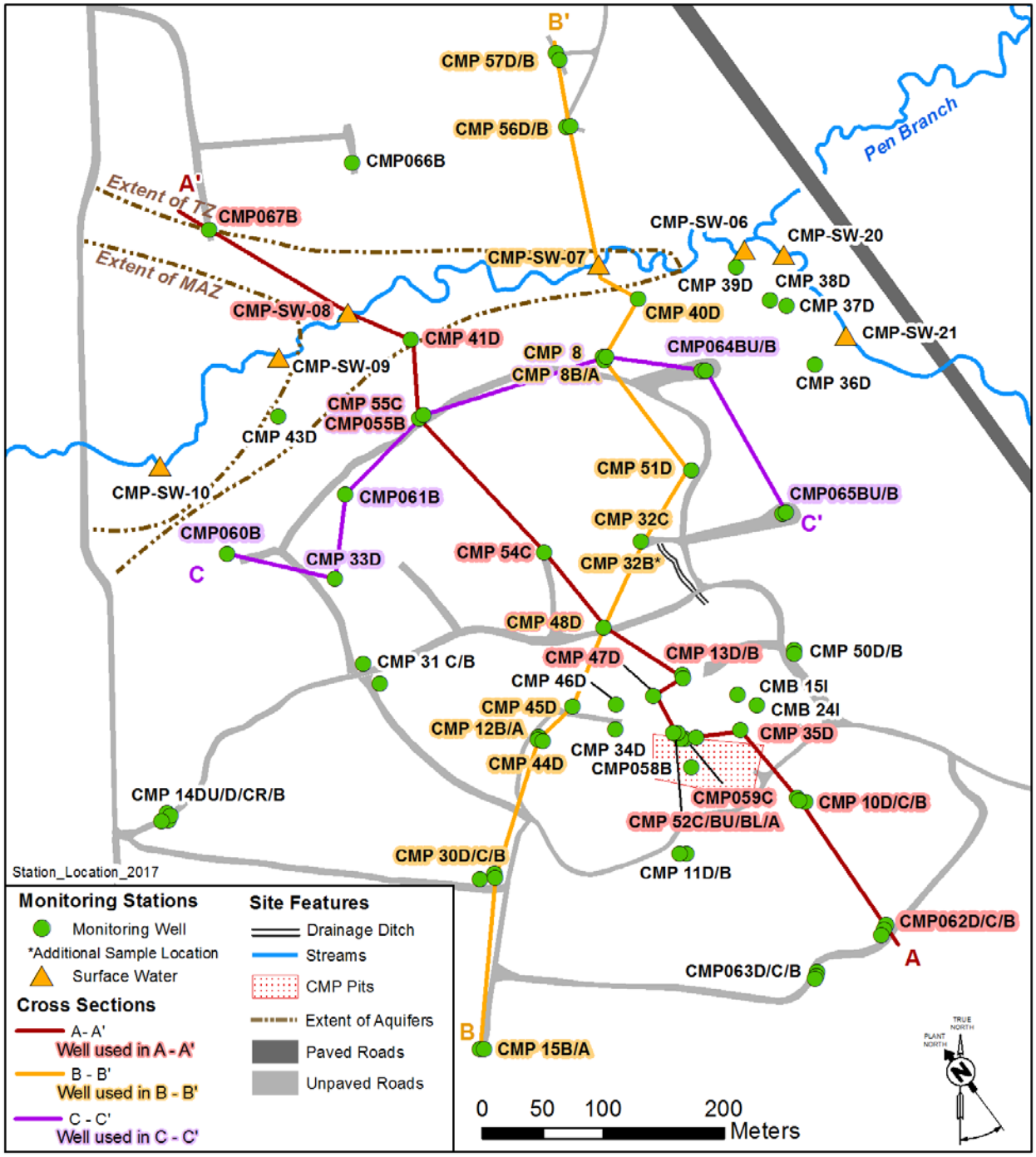


Figure 4. CMP Pits OU Monitoring Network, and Cross Section Lines

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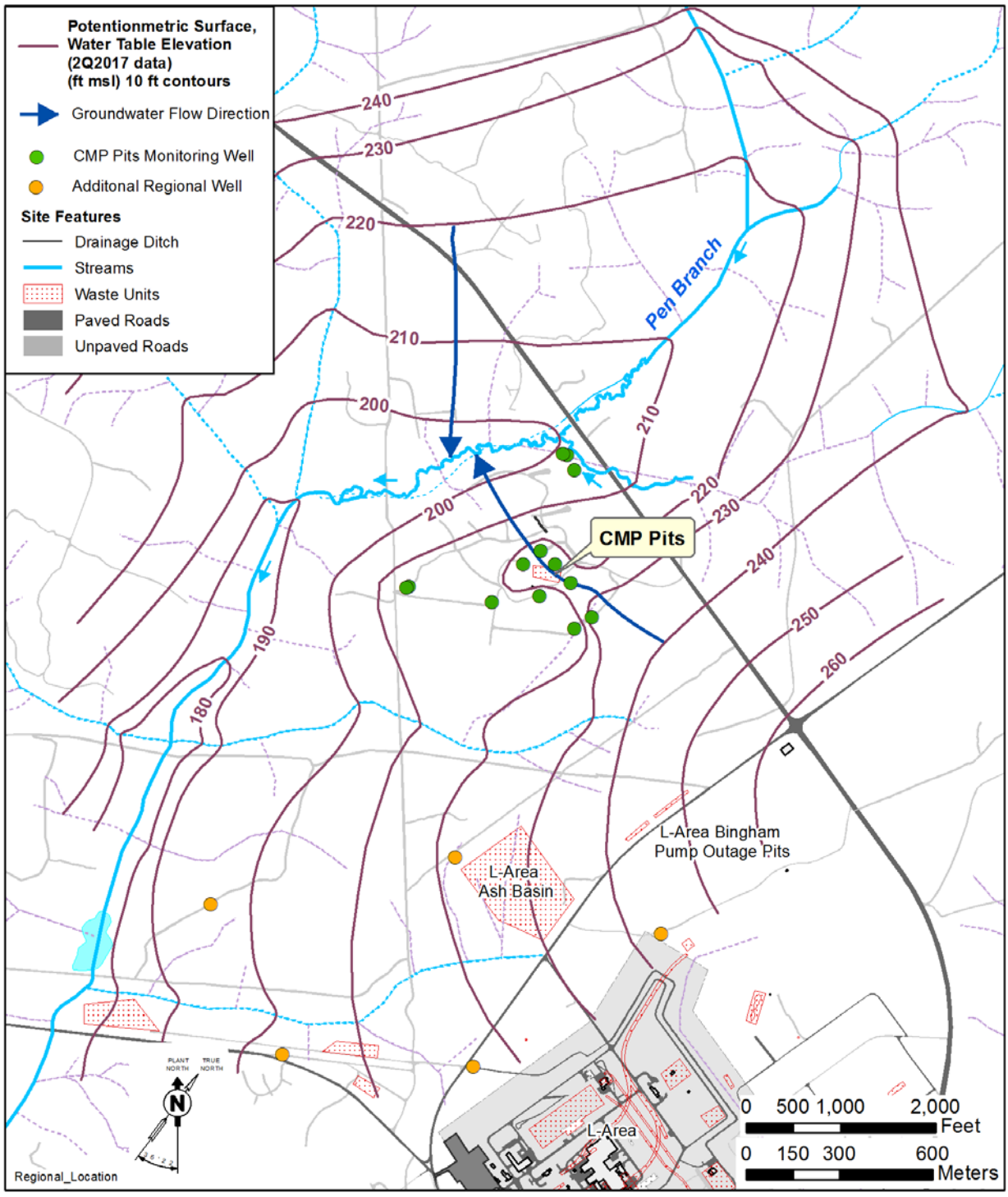


Figure 5. Regional Water Table Potentiometric Surface

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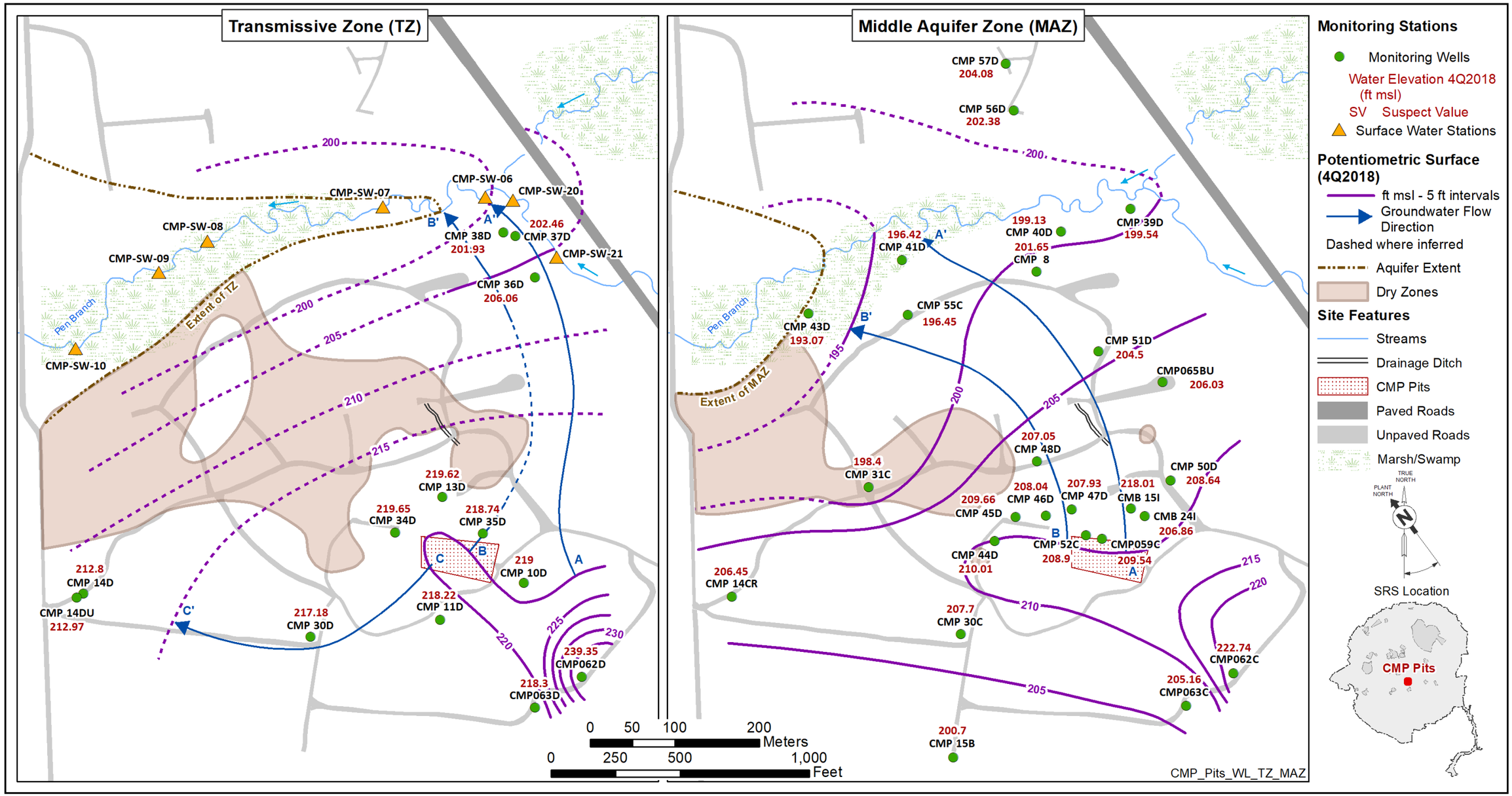


Figure 6. 2018 Potentiometric Surface for the TZ and MAZ

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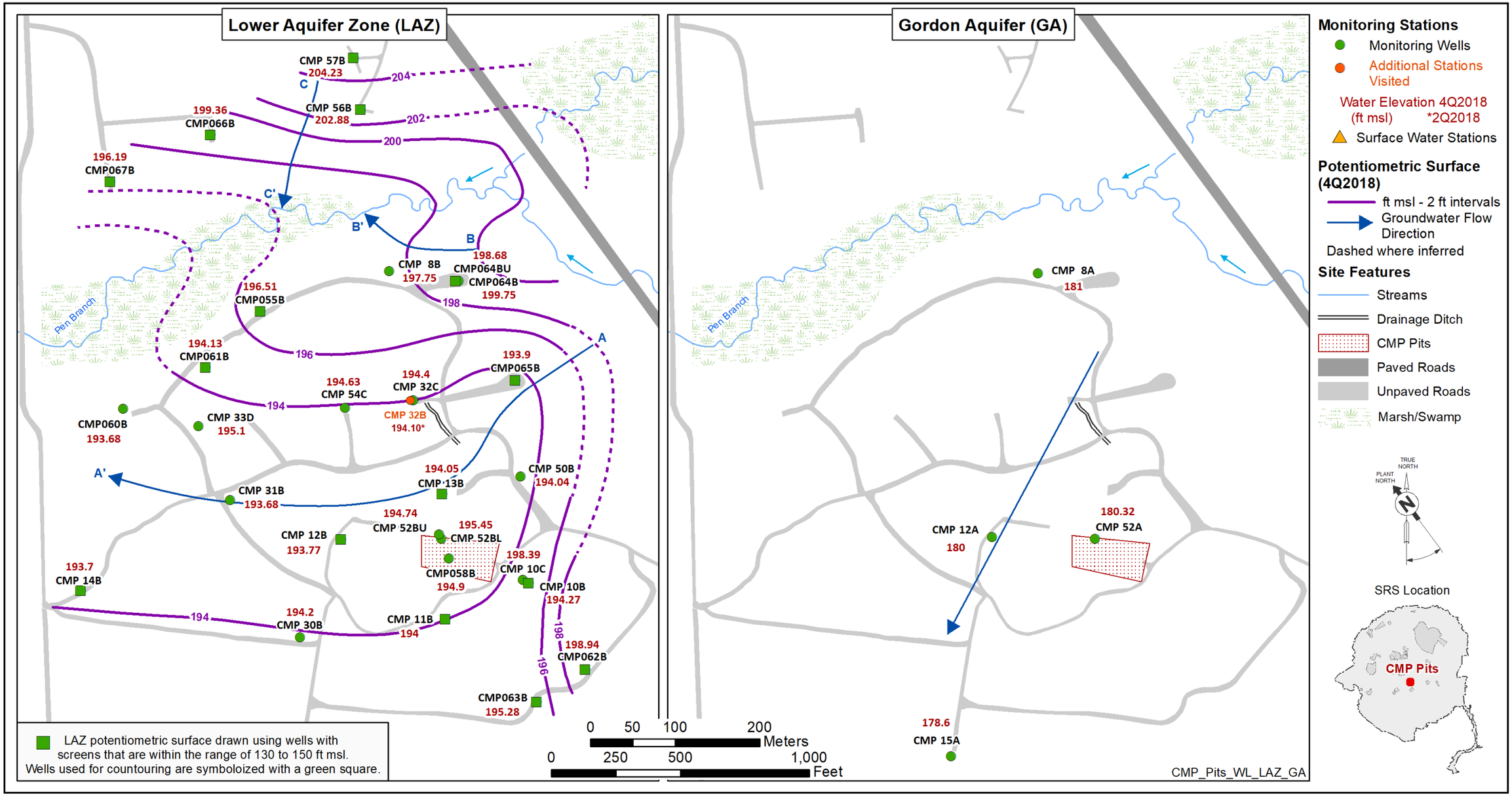


Figure 7. 2018 Potentiometric Surface for the LAZ and GA

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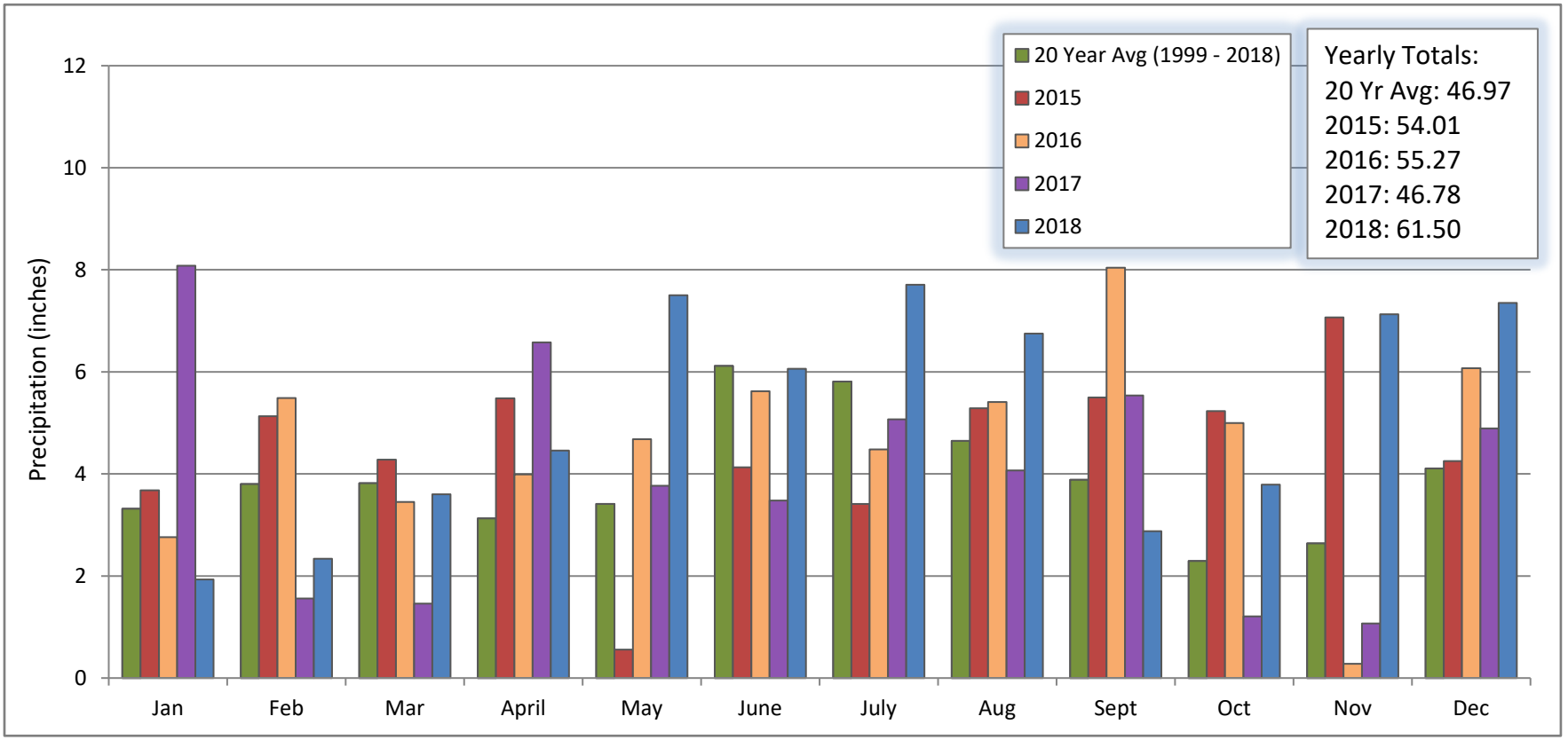


Figure 8. Monthly Rainfall Measurements in L-Area for 2018, 2017, 2016, 2015, and the 20-Year Average

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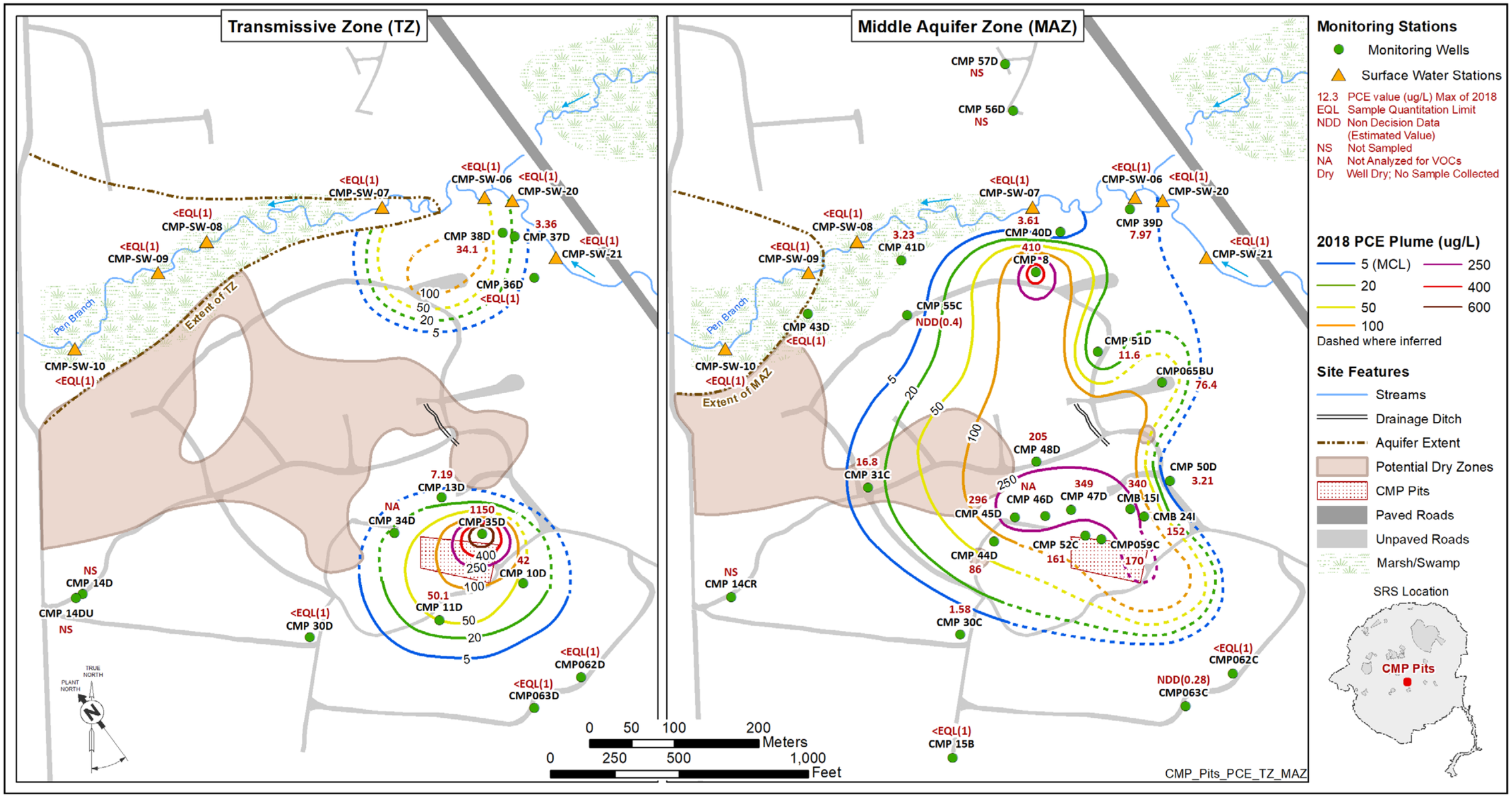


Figure 9. 2018 PCE Plume and Groundwater and Surface Water Results for the TZ and MAZ

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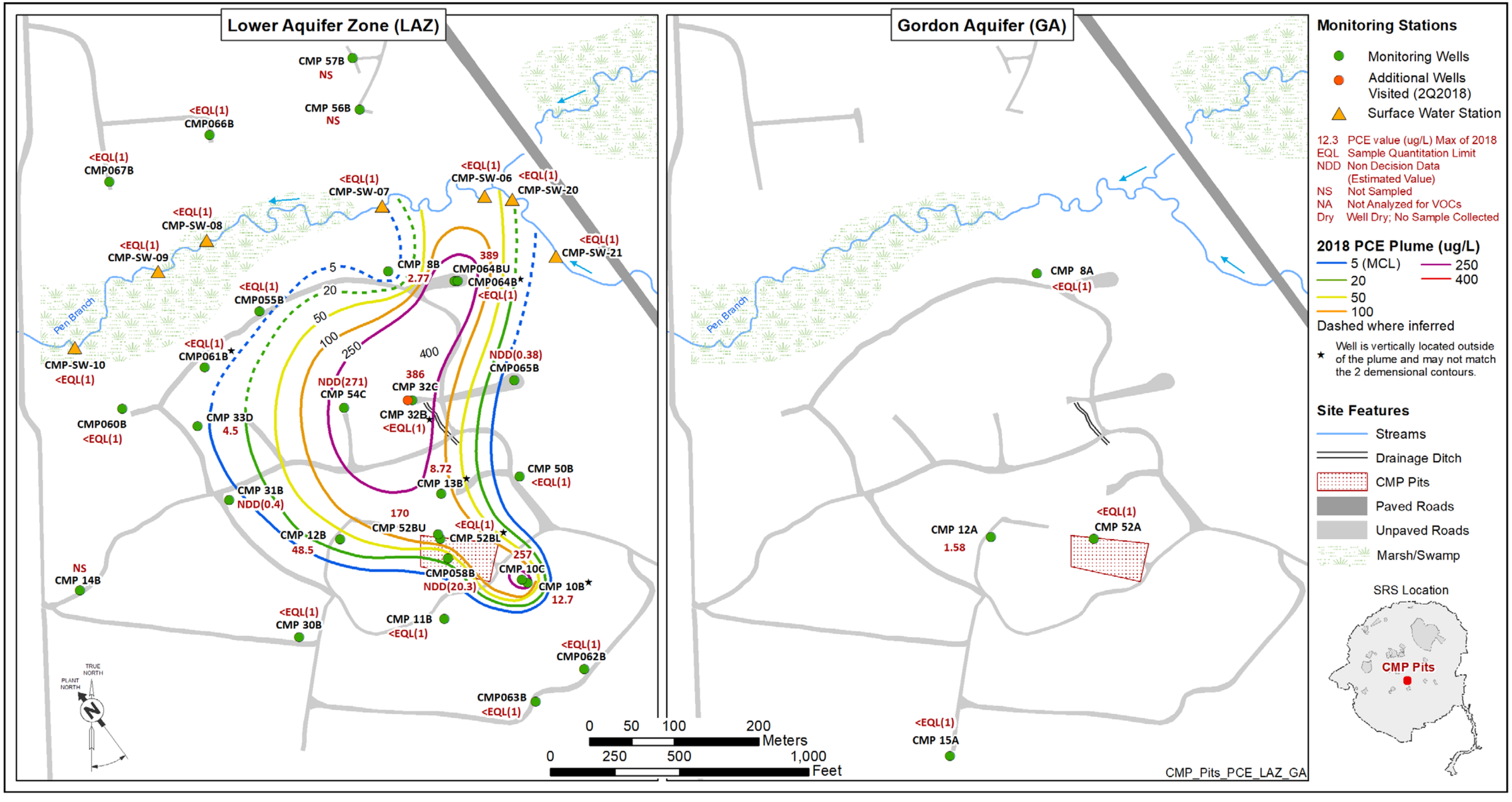


Figure 10. 2018 PCE Plume and Groundwater Results for the LAZ and GA

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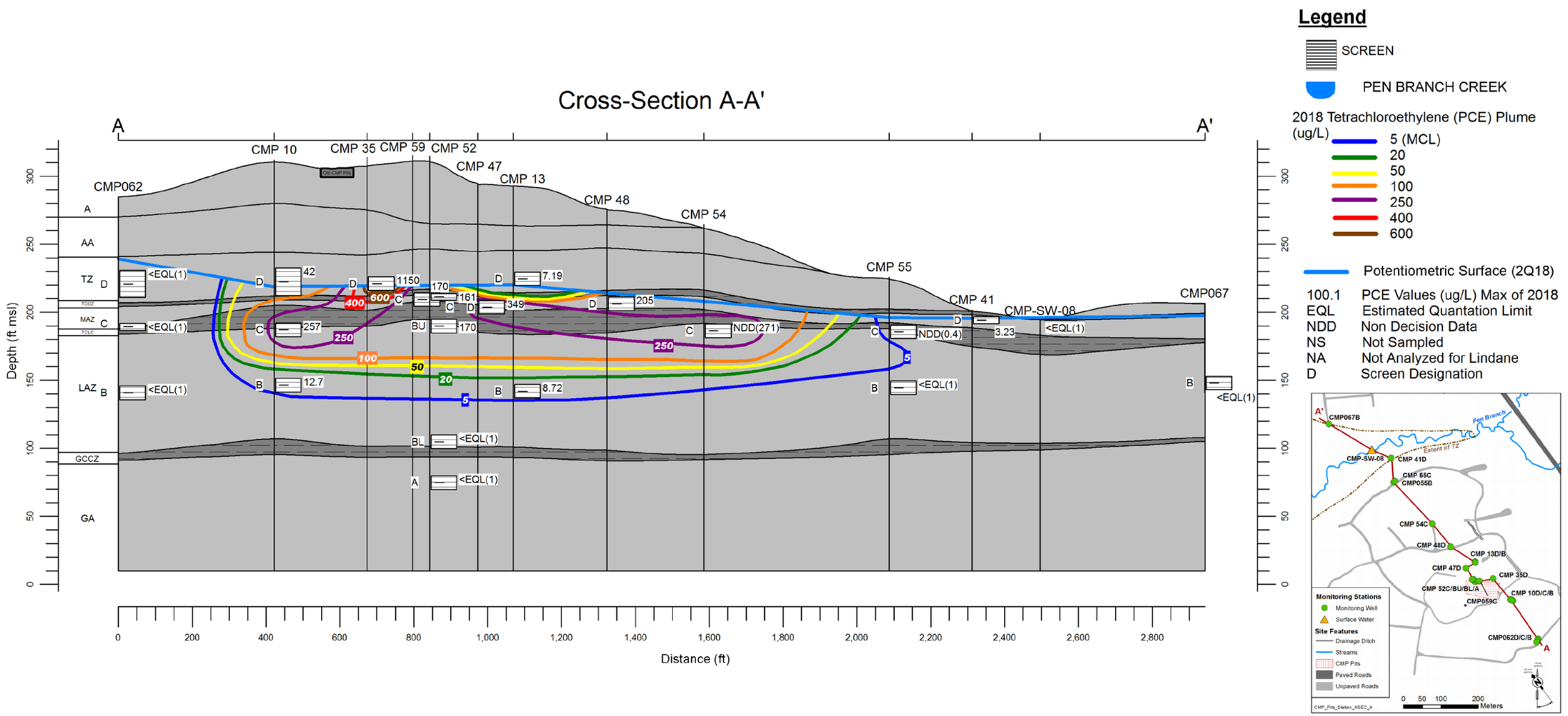


Figure 11. Cross Section A - A' at the CMP Pits OU Area with 2018 PCE Plume and Results

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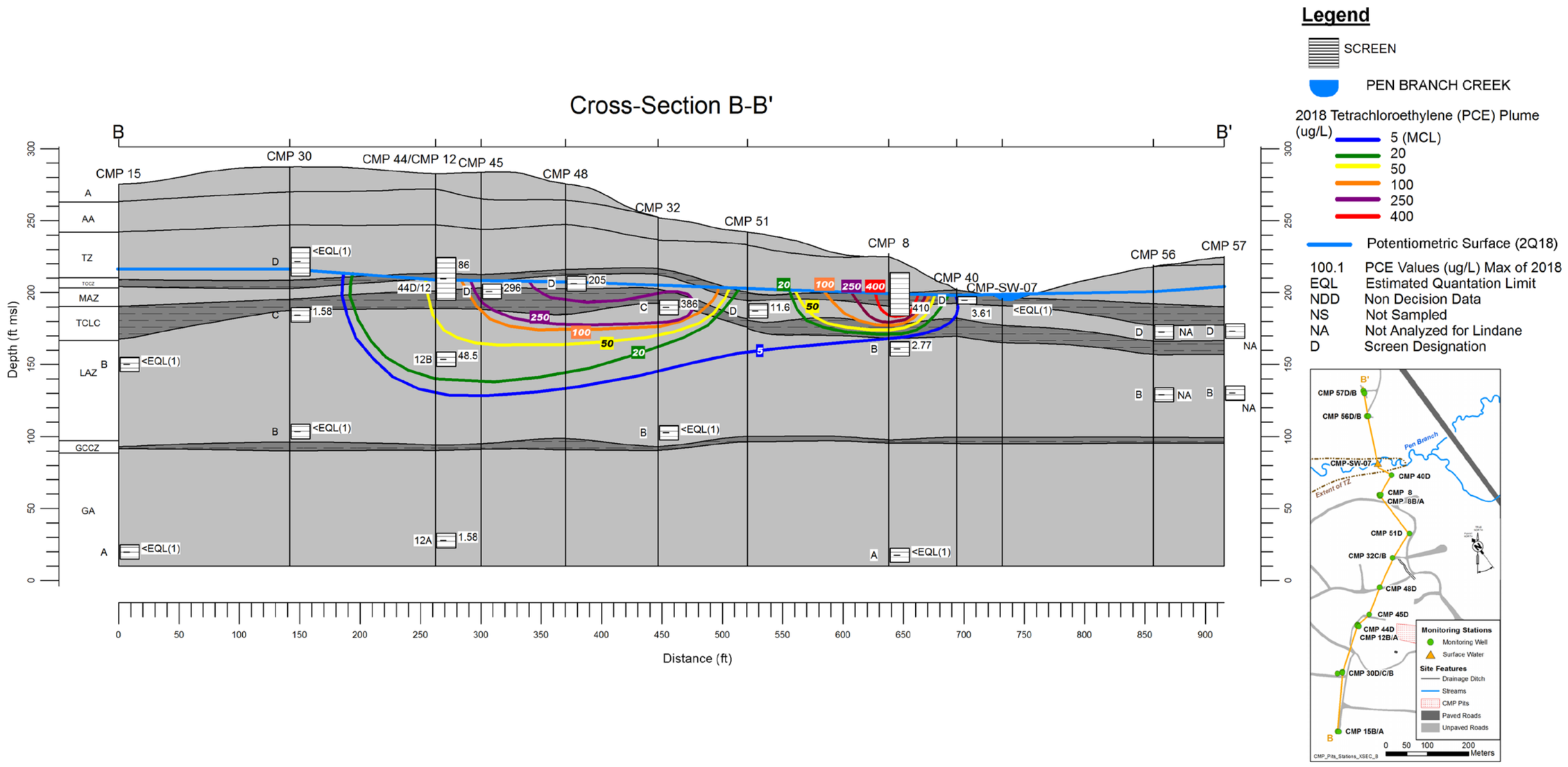


Figure 12. Cross Section B - B' at the CMP Pits OU Area with 2018 PCE Plume and Results

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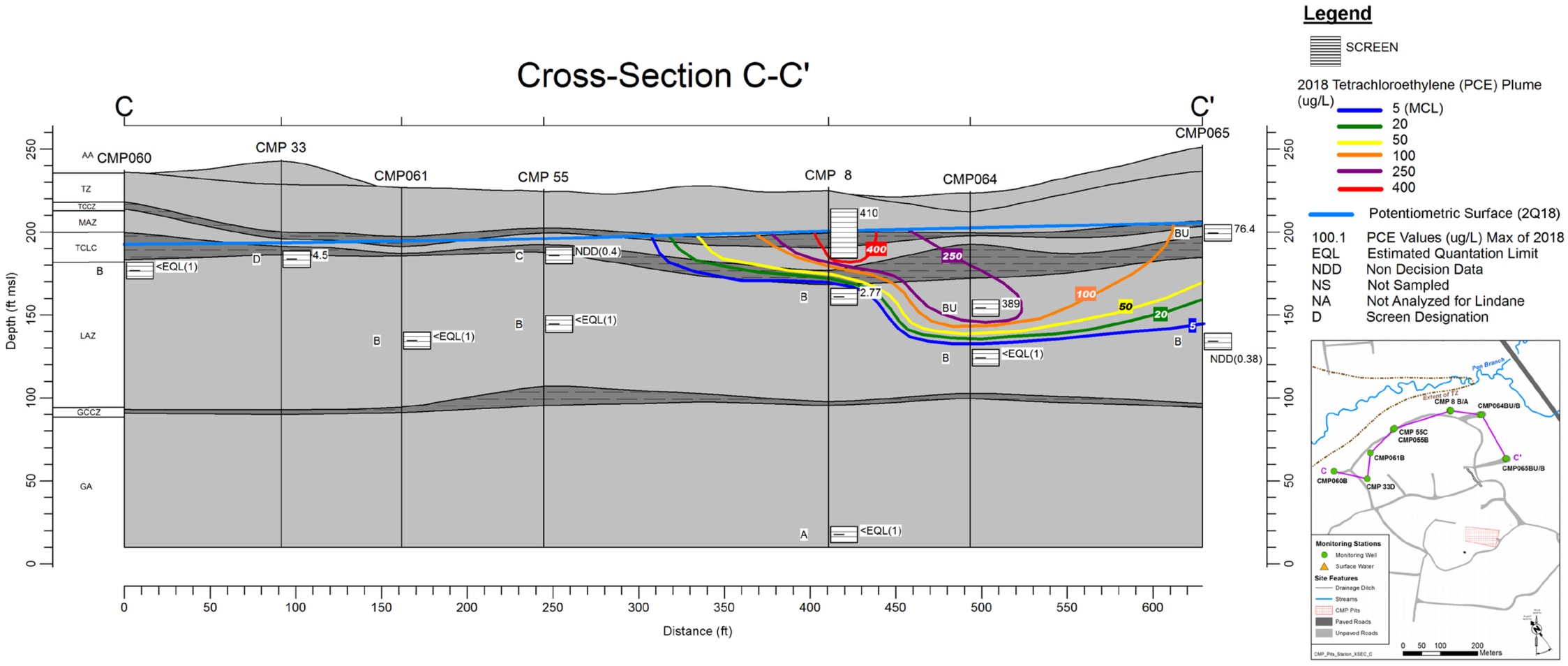


Figure 13. Cross Section C - C' at the CMP Pits OU Area with 2018 PCE Plume and Results

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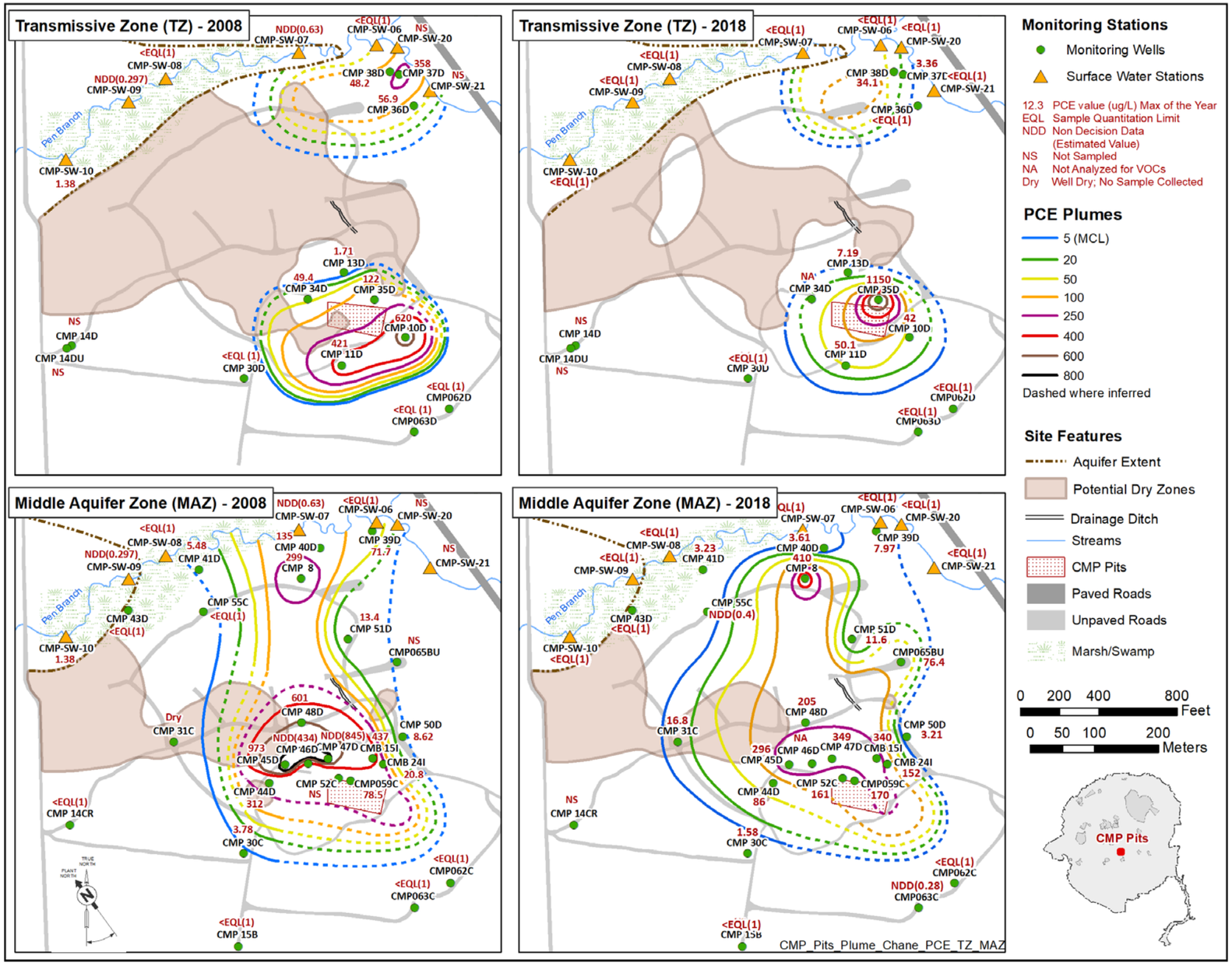


Figure 14. PCE Plume Comparison from 2008 and 2018 in the TZ and MAZ

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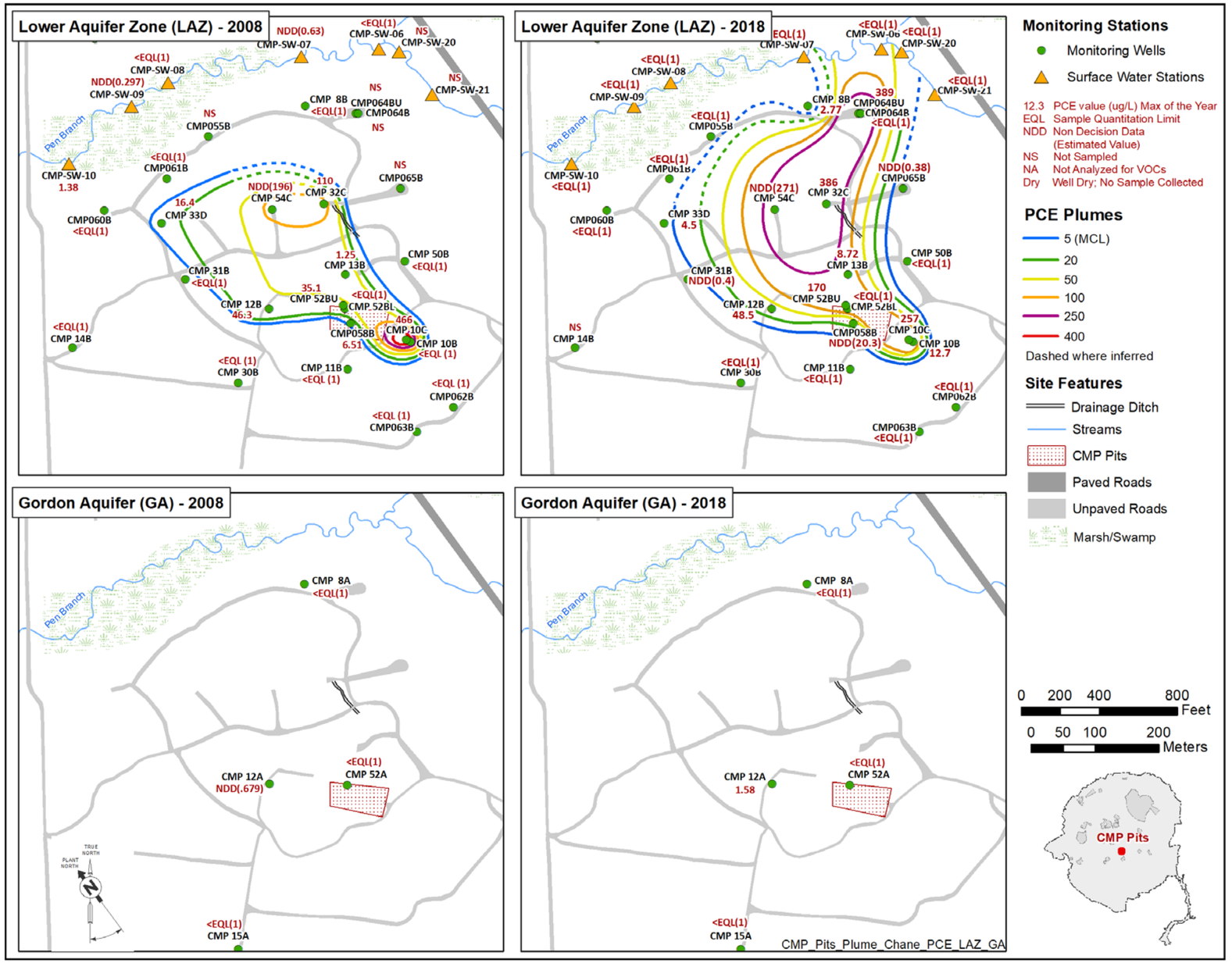


Figure 15. PCE Plume Comparison from 2008 and 2018 in the LAZ and GA

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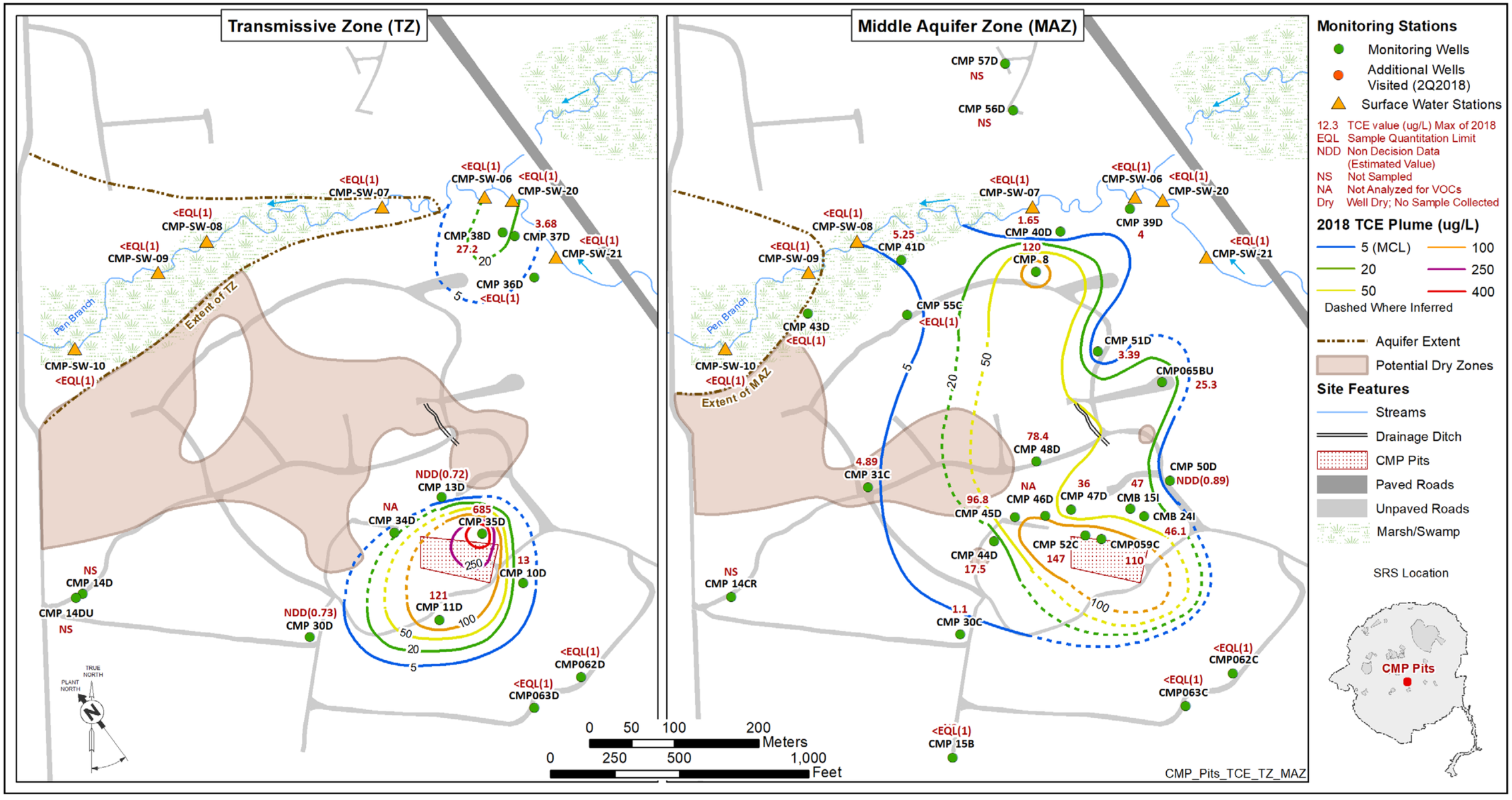


Figure 16. 2018 TCE Plume and Groundwater and Surface Water Results in the TZ and MAZ

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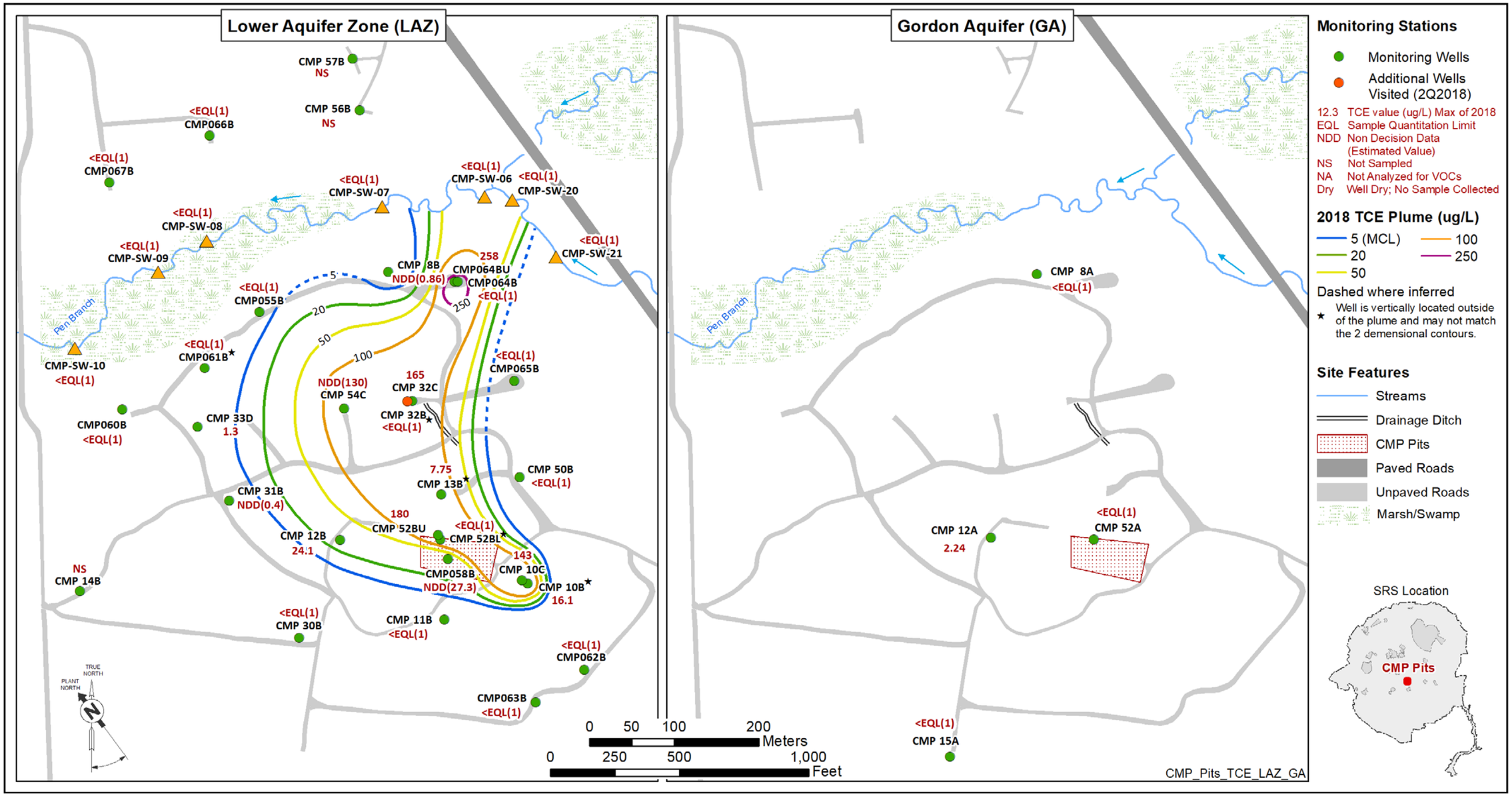


Figure 17. 2018 TCE Plume and Groundwater Results for the LAZ and GA

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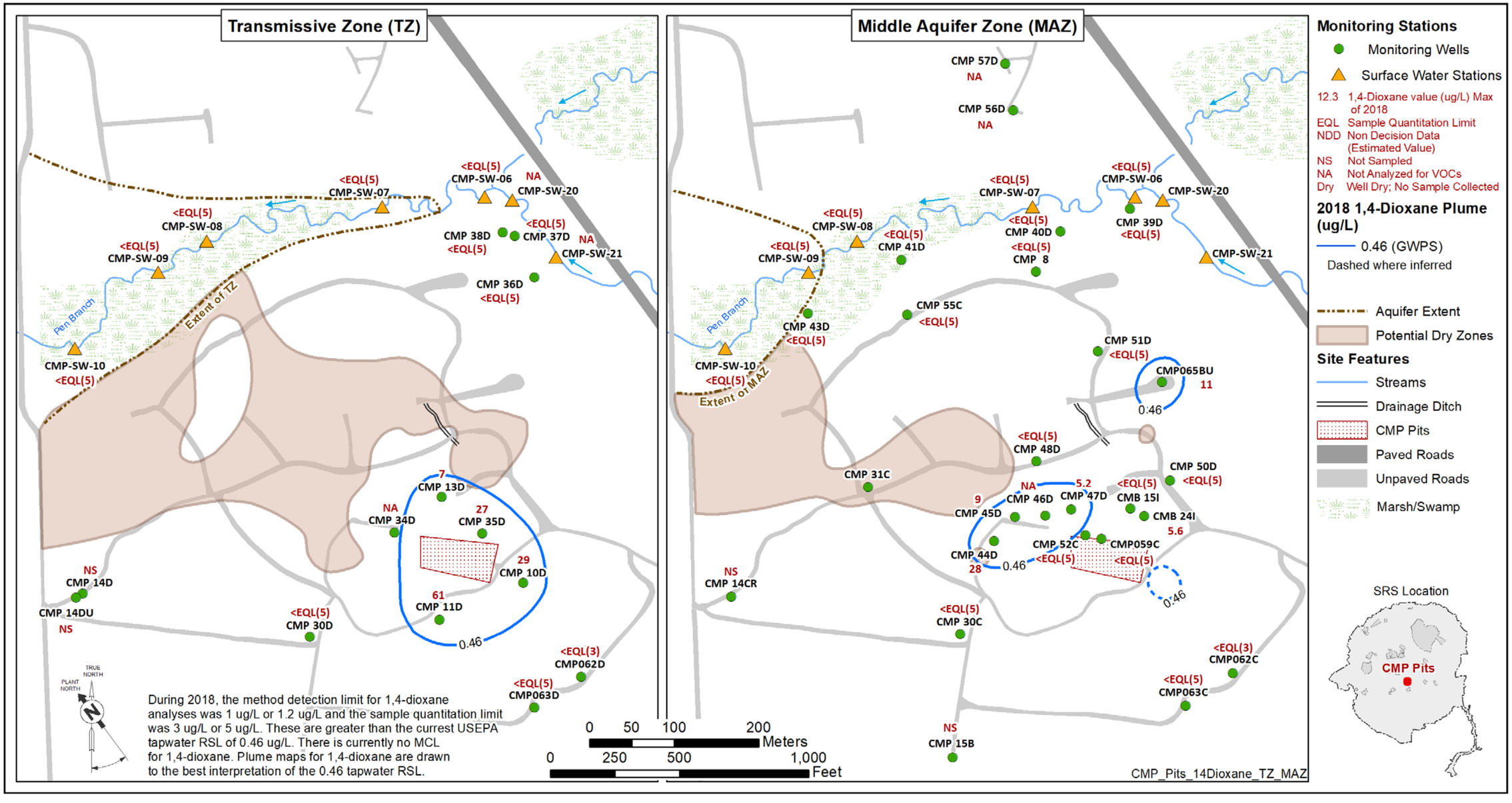


Figure 18. 2018 1,4-Dioxane Plume and Groundwater Results for the TZ and MAZ

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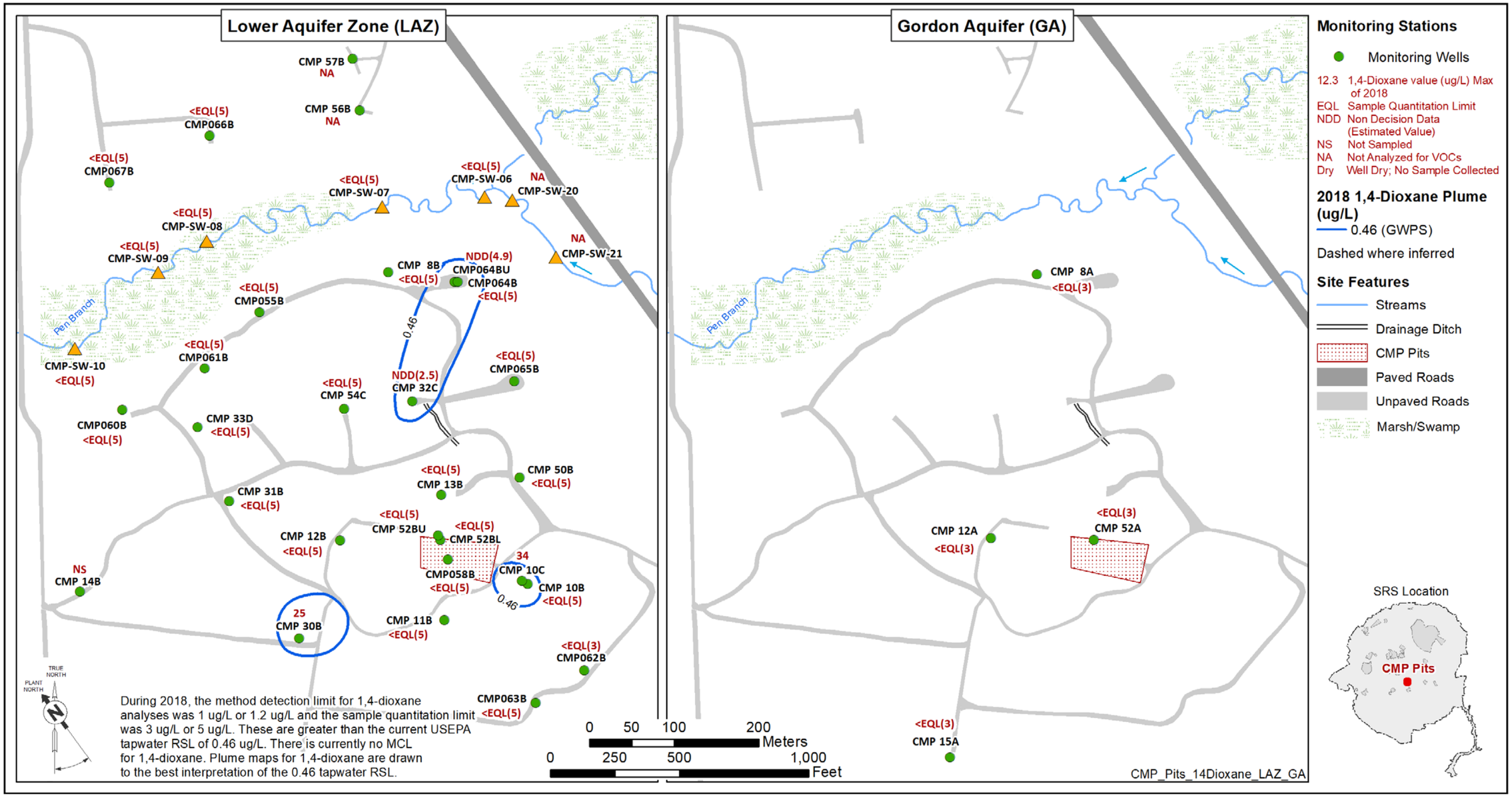


Figure 19. 2018 1,4-Dioxane Plume and Groundwater Results for the LAZ and GA

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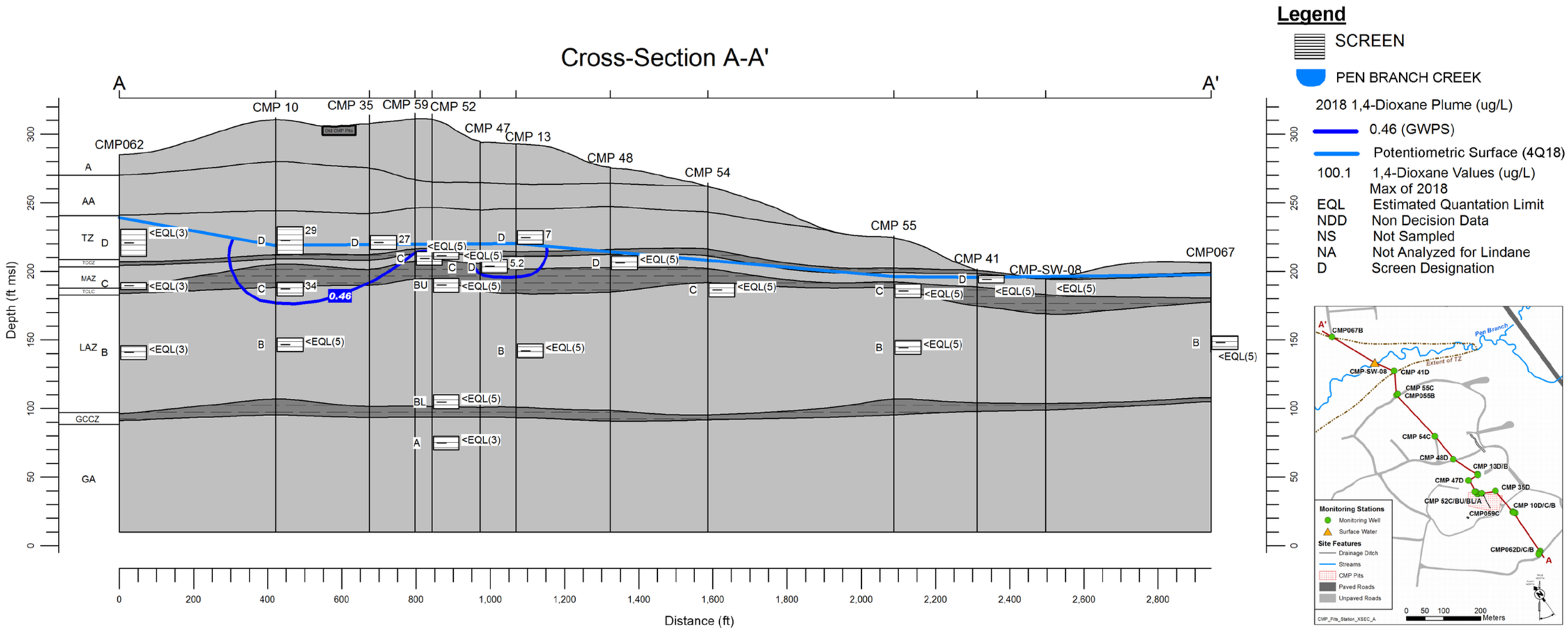


Figure 20. Cross Section A - A' at the CMP Pits OU Area with 2018 1,4-Dioxane Plume and Results

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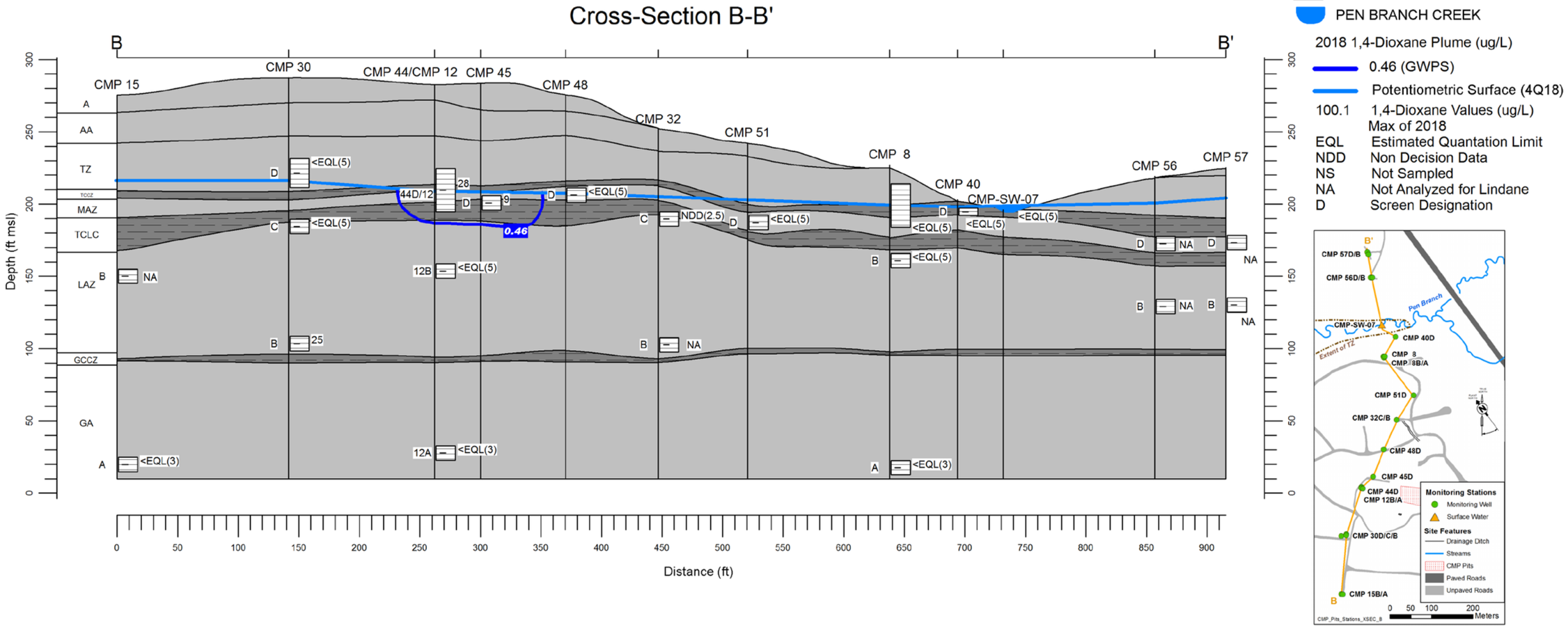


Figure 21. Cross Section B - B' at the CMP Pits OU Area with 2018 1,4-Dioxane Plume and Results

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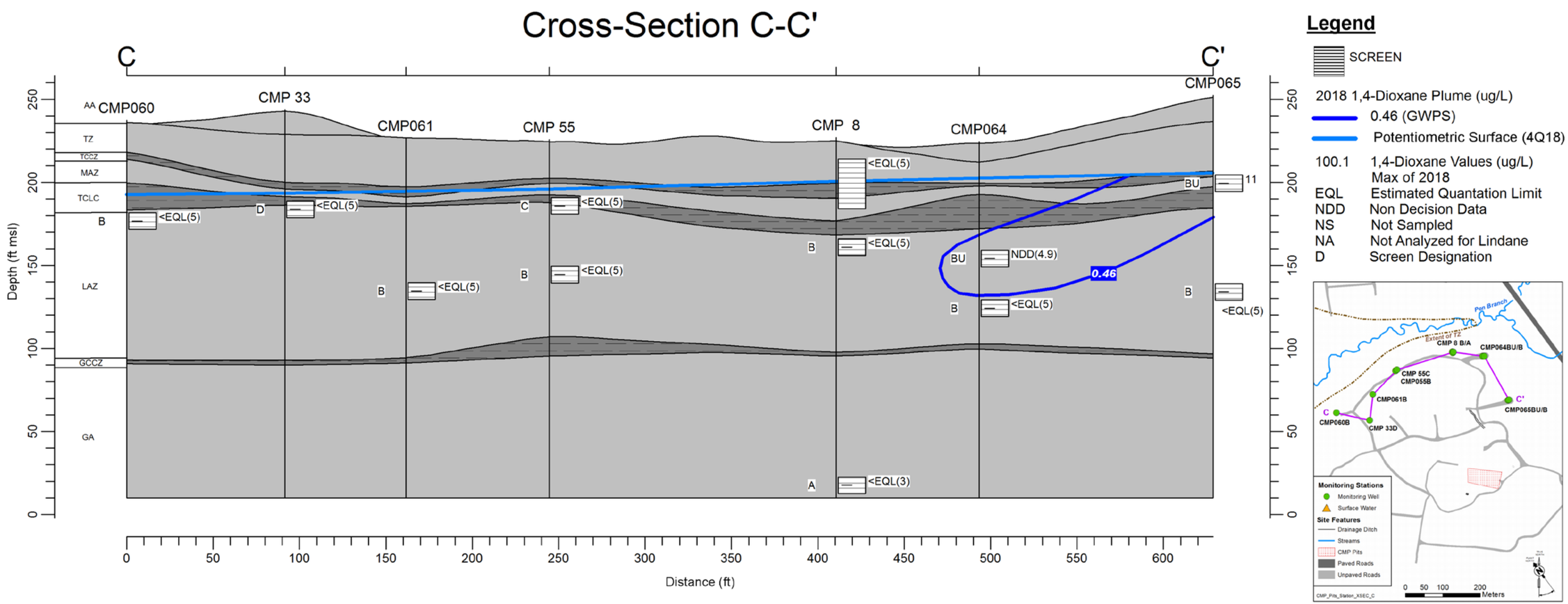


Figure 22.Cross Section C - C' at the CMP Pits OU Area with 2018 1,4-Dioxane Plume and Results

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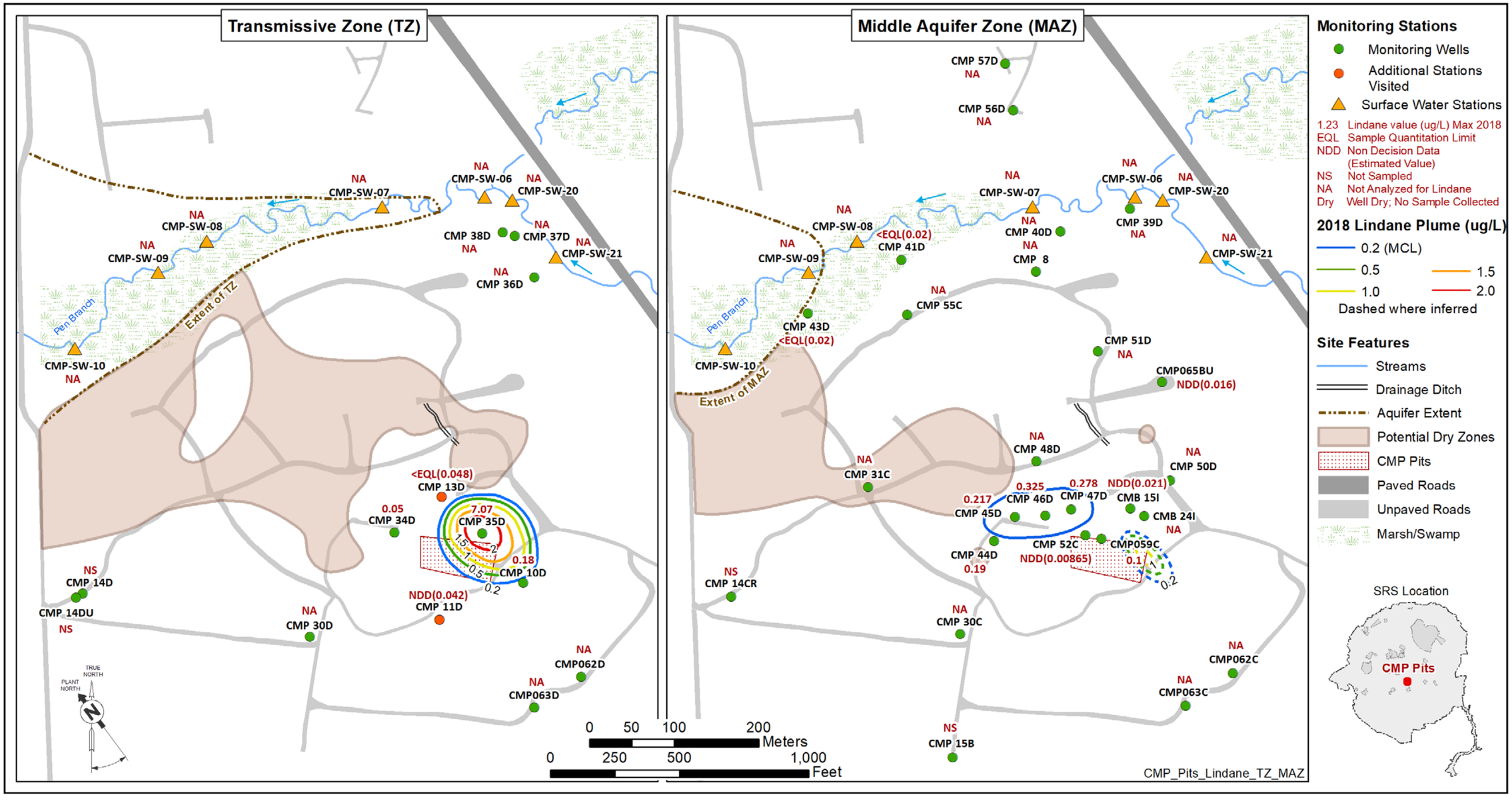


Figure 23. 2018 Lindane Plume and Groundwater Results for the TZ and MAZ

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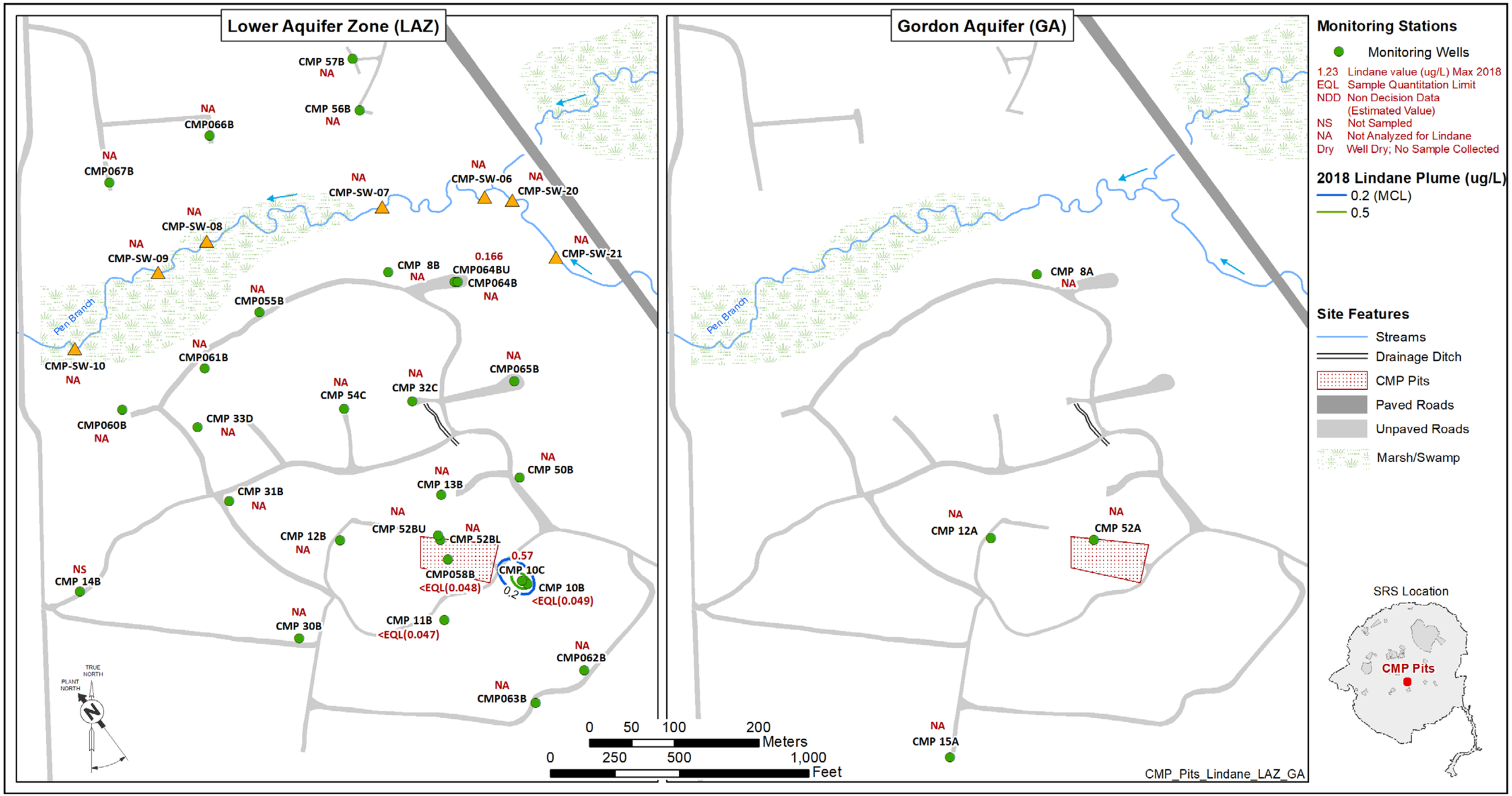


Figure 24. 2018 Lindane Plume and Groundwater Results for the LAZ and GA

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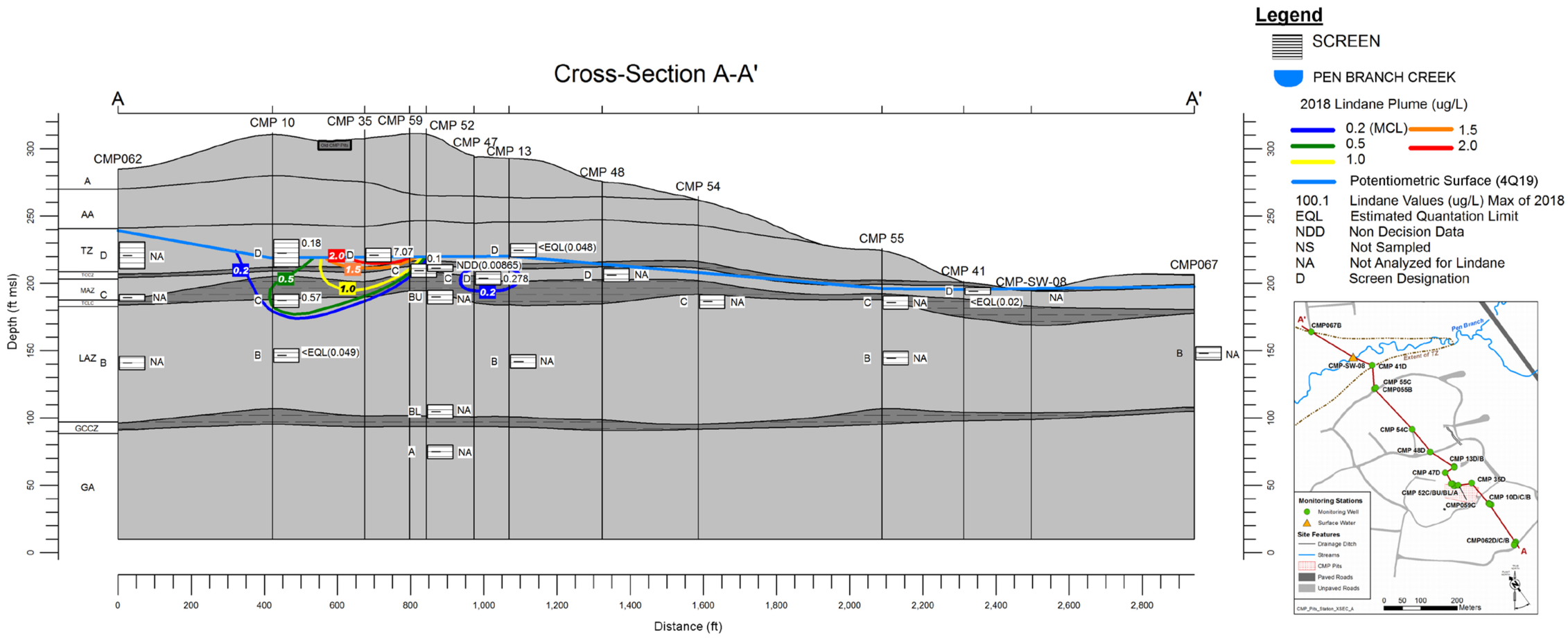


Figure 25. Cross Section A - A' at the CMP Pits OU Area with 2018 Lindane Plume and Results

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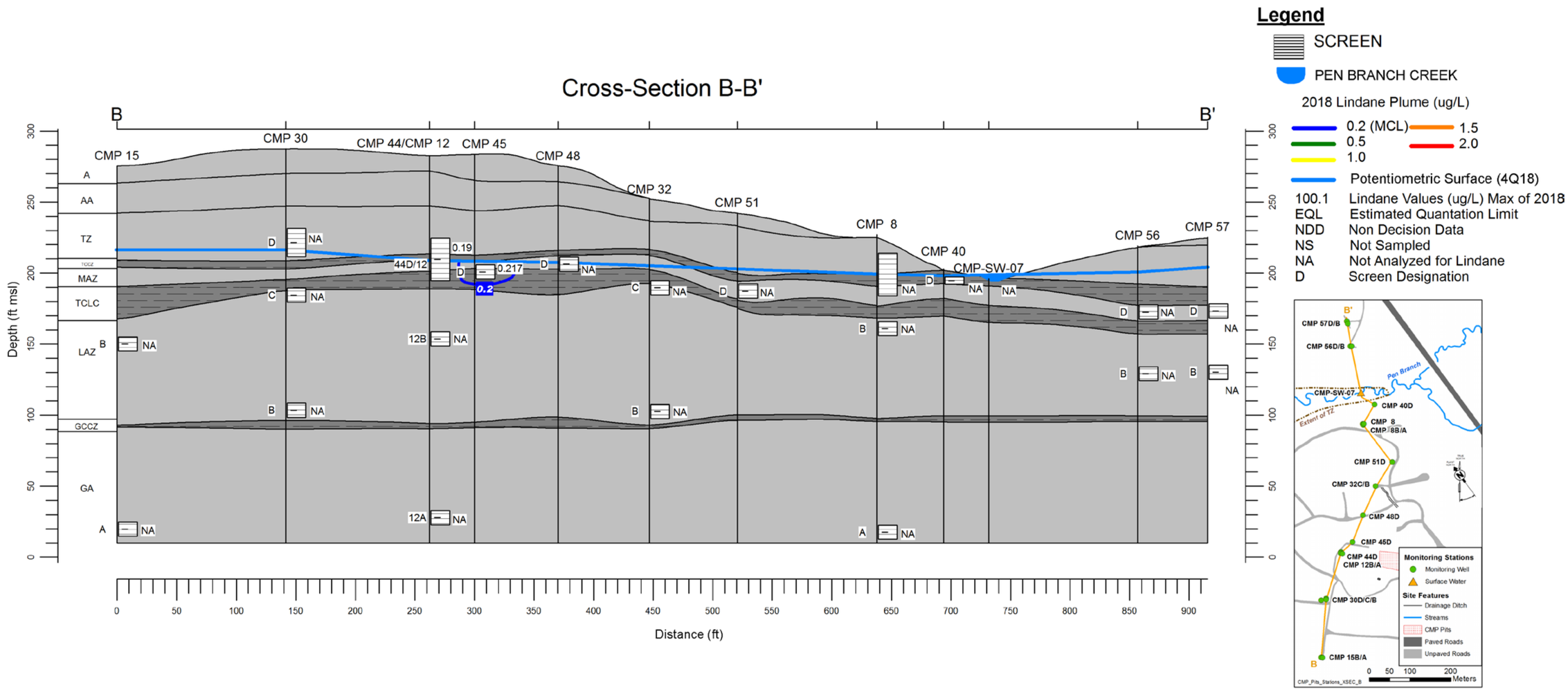


Figure 26. Cross Section B - B' at the CMP Pits OU Area with 2018 Lindane Plume and Results

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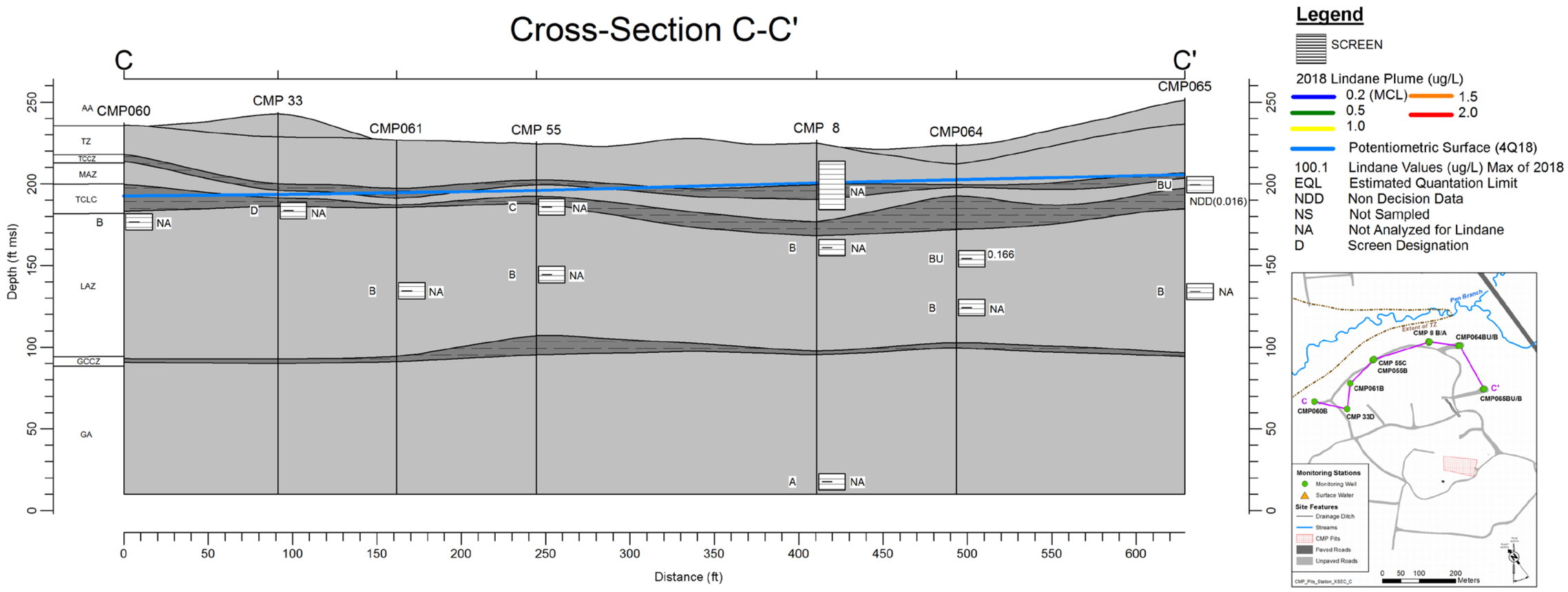


Figure 27. Cross Section C - C' at the CMP Pits OU Area with 2018 Lindane Plume and Results

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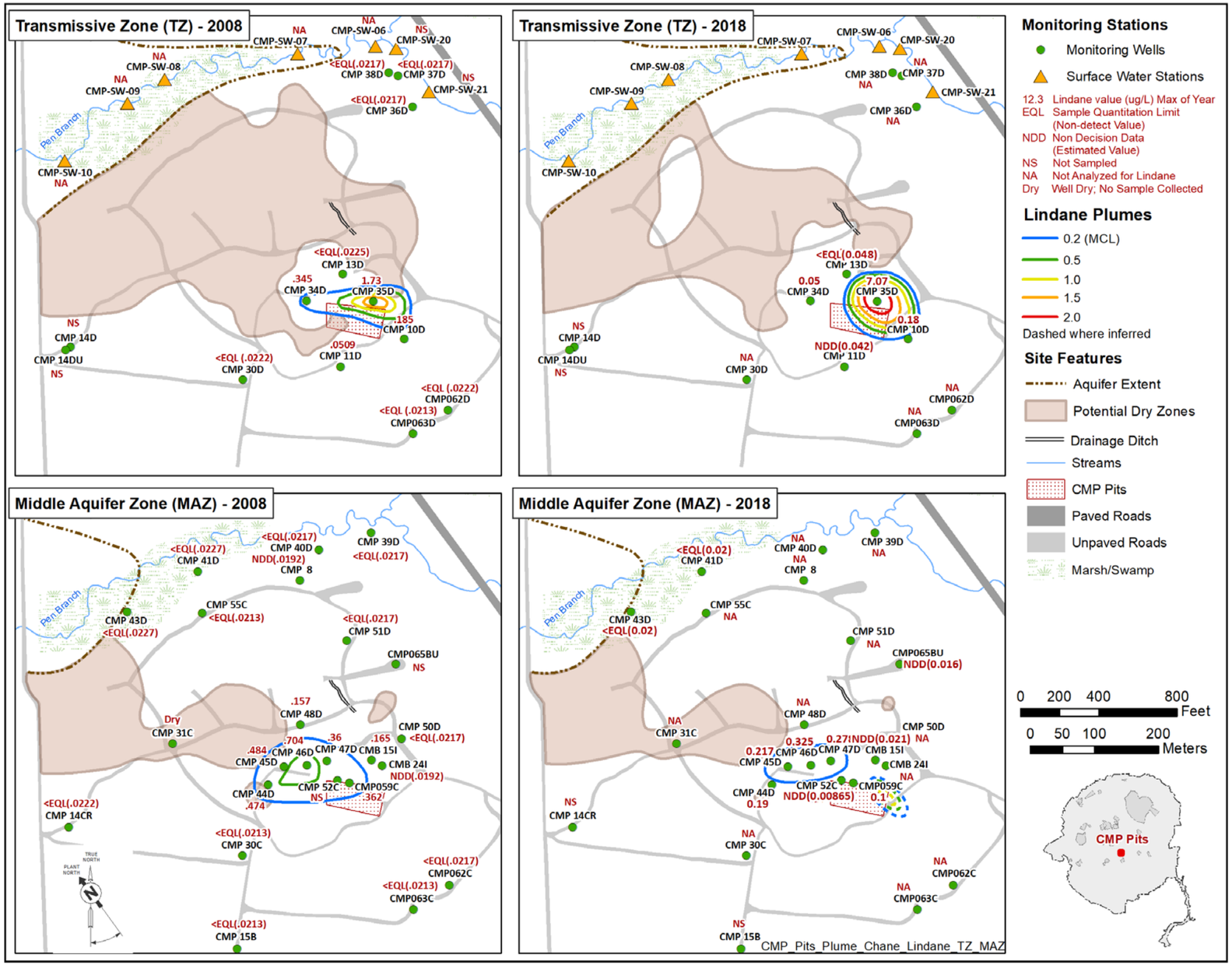


Figure 28. Lindane Plume Comparison from 2008 and 2018 in the TZ and MAZ

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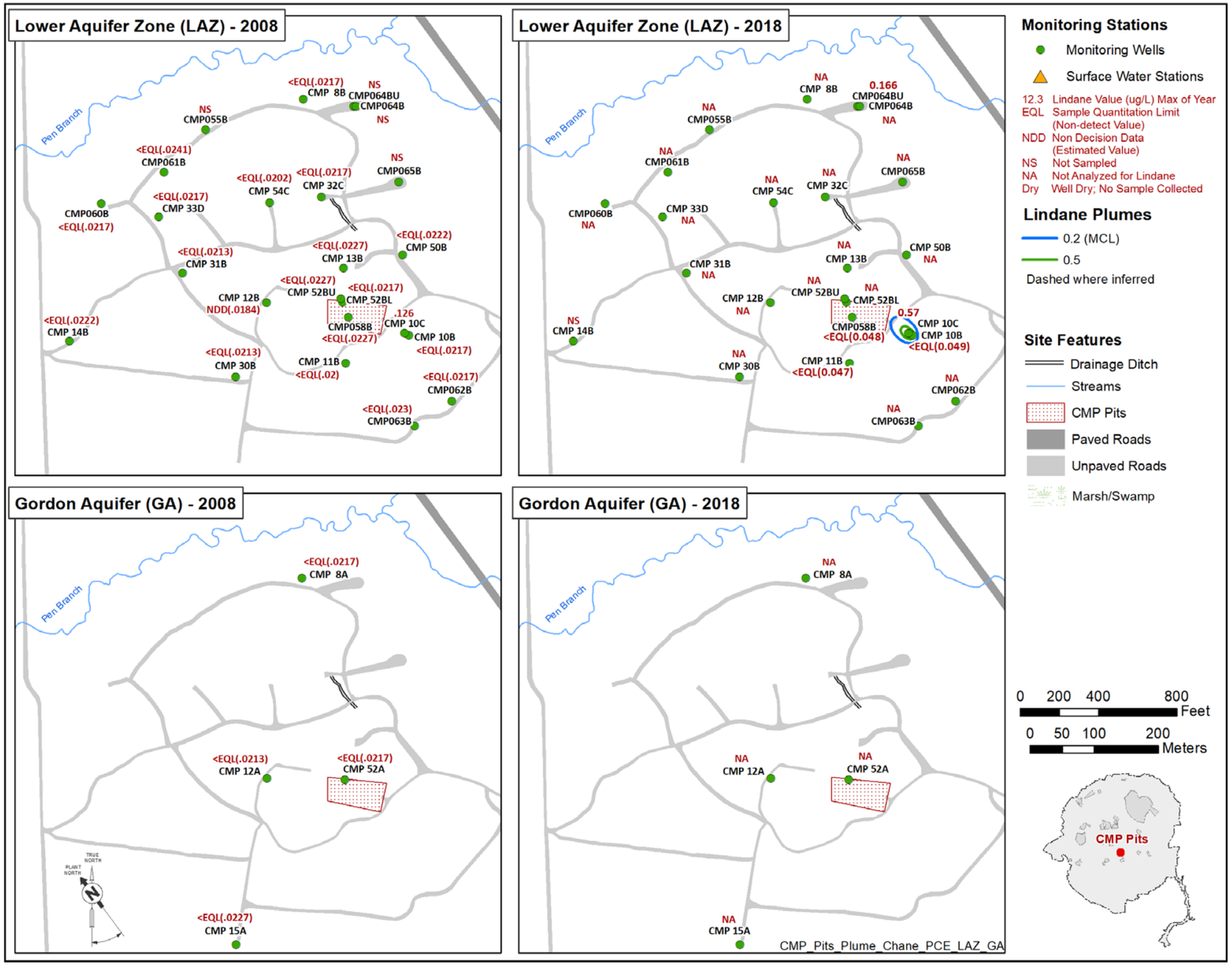
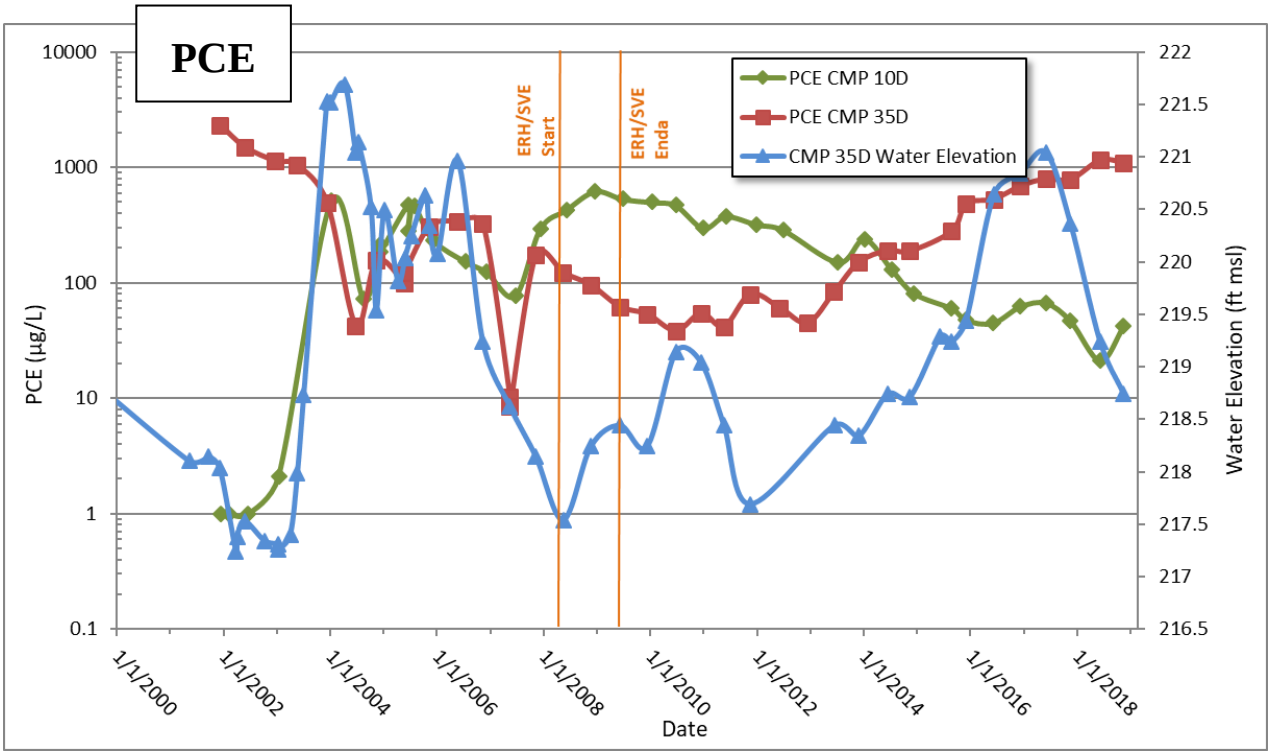


Figure 29. Lindane Plume Comparison from 2008 and 2018 in the LAZ and GA

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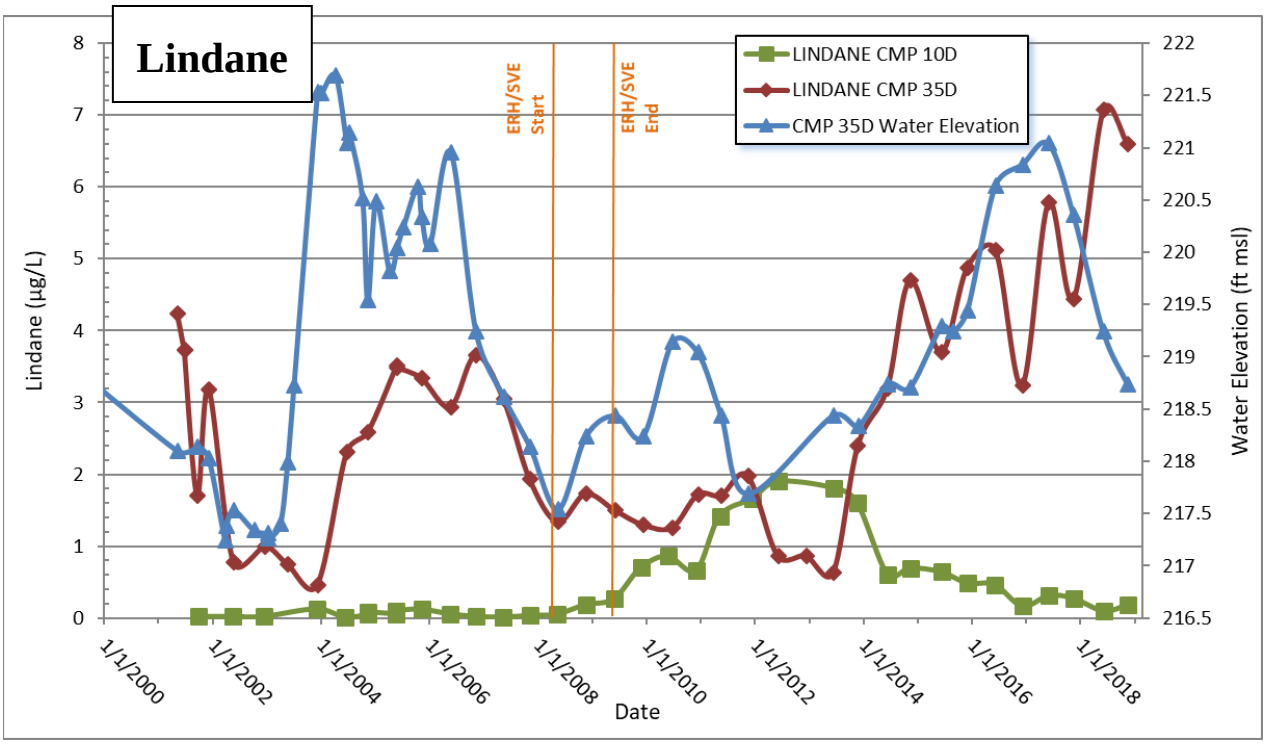
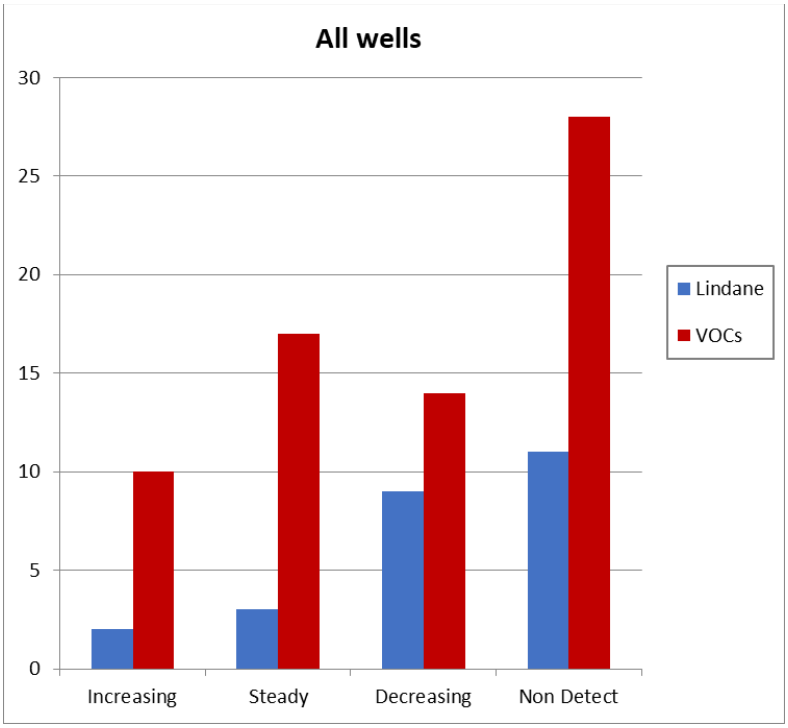
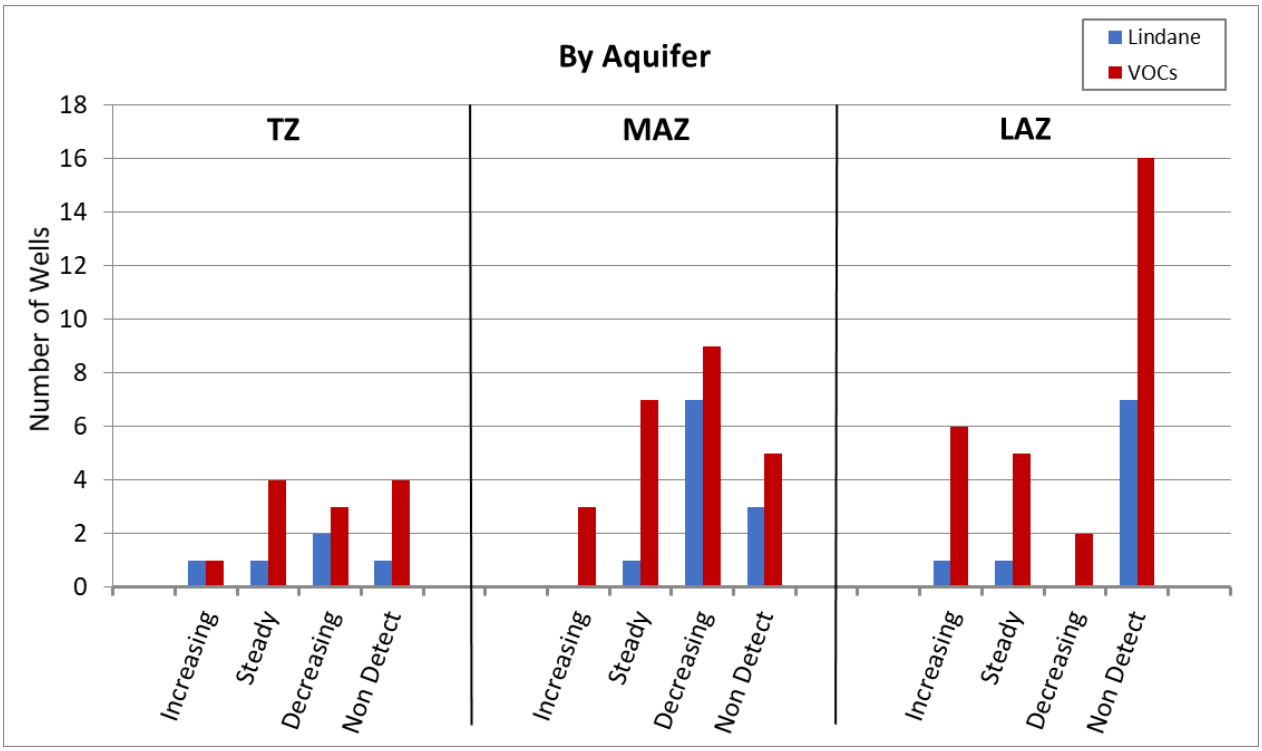


Figure 30. Comparison of PCE and Lindane Trends in CMP 10D and CMP 35D

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Identification of the wells trend type can be found on the "Trends" tab in the Excel file (CMP_EMR_2018) located on the CD supplied with this report.

Figure 31. Contaminant Concentration Well Trends and Well Trends by Aquifer

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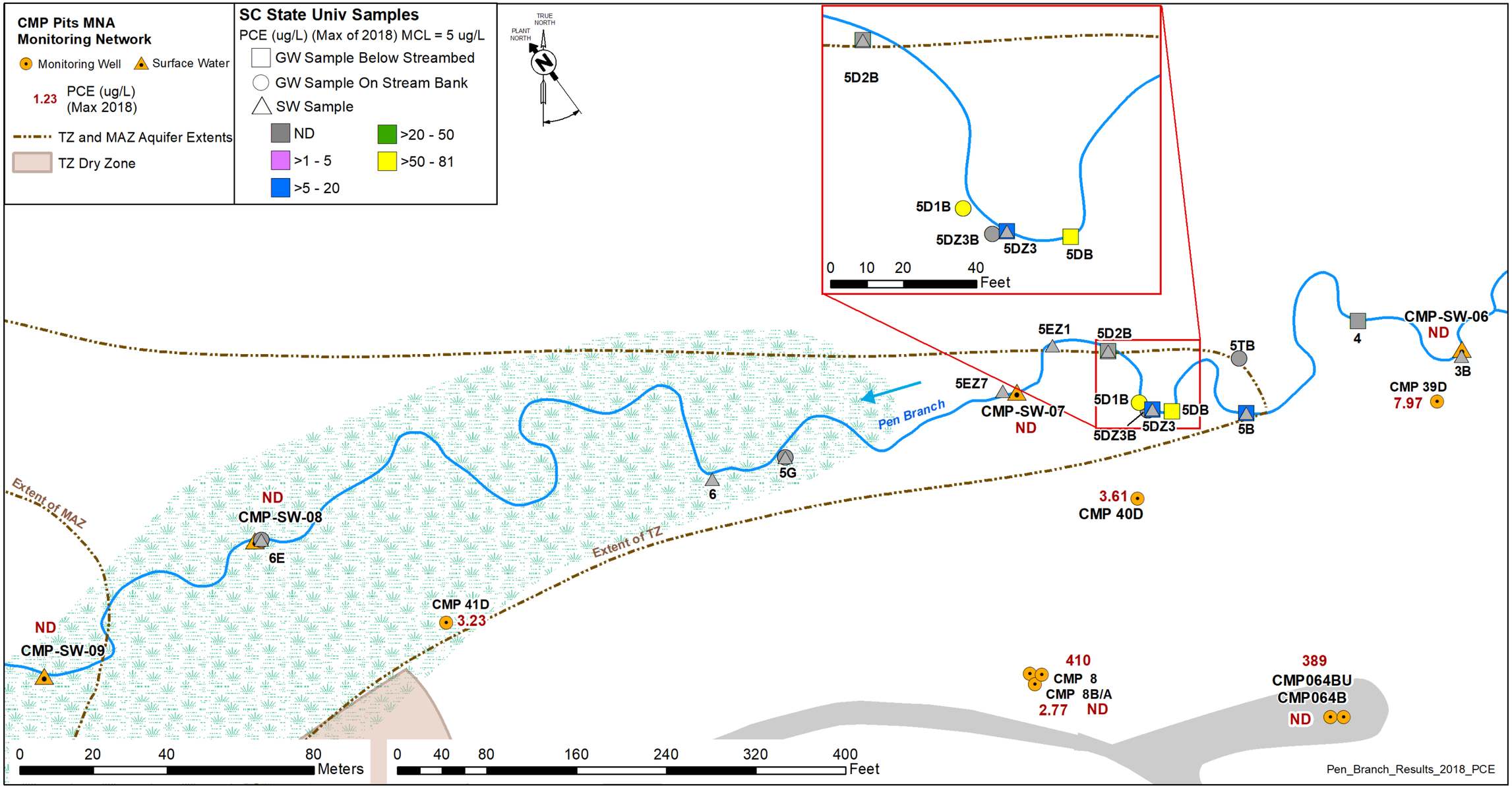


Figure 32. Independent Pen Branch Sampling Area and Summary of 2018 Results for PCE

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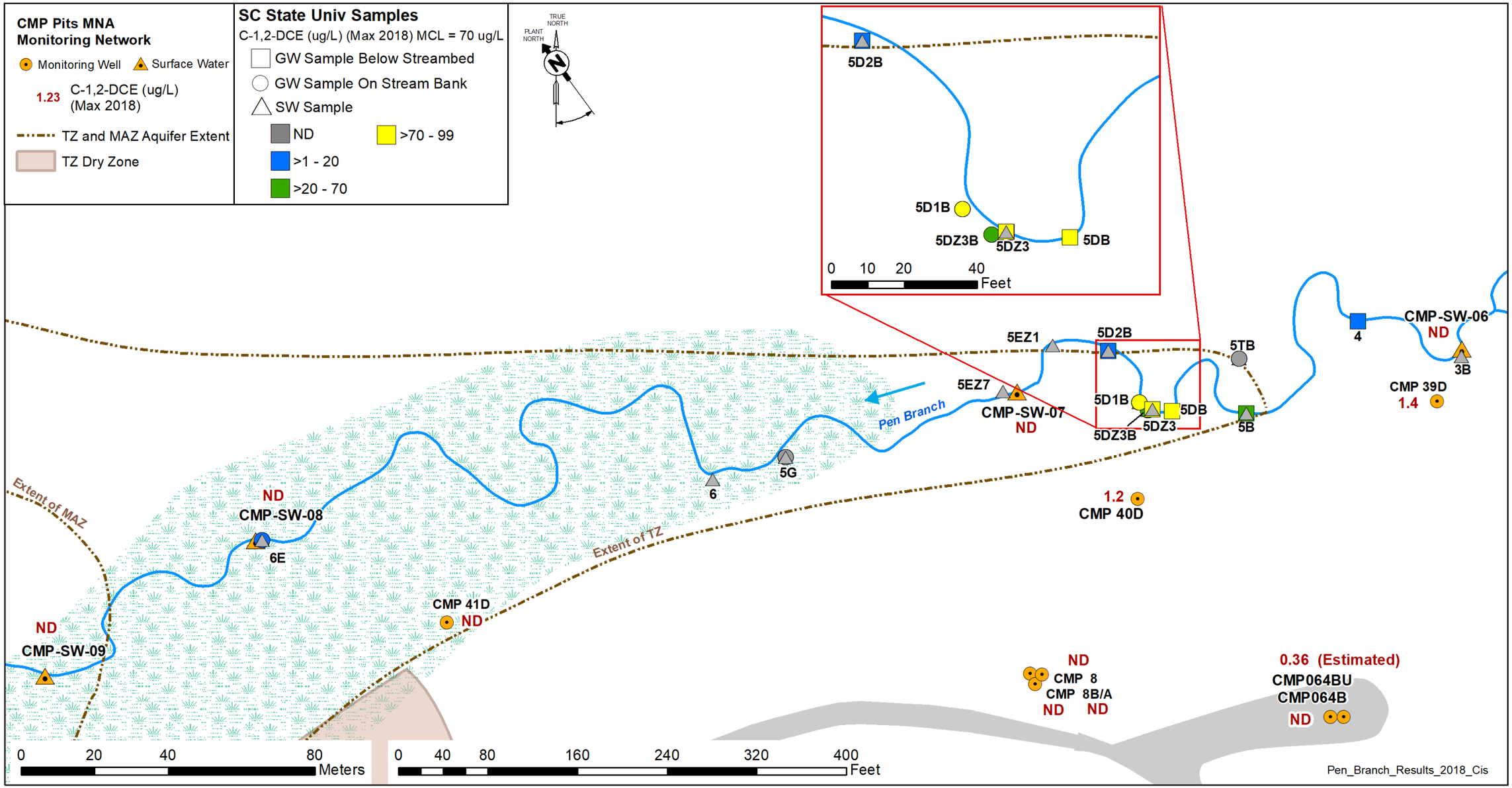


Figure 33. Independent Pen Branch Sampling Area and Summary of 2018 Results for C-1,2-DCE

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Table 1. CMP Pits OU MNA Monitoring Network

Station	Aquifer Unit	Lab Analyses			Screen Zone (ft msl)		screen length (ft)
		VOCs	1,4-Dioxane	Lindane	Bottom	Top	
CMB 15I	MAZ	2Q, 4Q	4Q	2Q, 4Q	210.7	212.4	1.7
CMB 24I	MAZ	2Q, 4Q	4Q		201	203	2
CMP 8	MAZ	2Q, 4Q	4Q		184	214	30
CMP 8A	GA	2Q	2Q		13.7	23.5	9.8
CMP 8B	LAZ (Upper)	2Q, 4Q	4Q		156.6	166.6	10
CMP 10B	LAZ (Mid)	2Q, 4Q	4Q	2Q, 4Q	137.4	147.4	10
CMP 10C	LAZ (Upper)	2Q, 4Q	4Q	2Q, 4Q	179.6	189.6	10
CMP 10D	TZ	2Q, 4Q	4Q	2Q, 4Q	209.6	229.6	20
CMP 11B	LAZ (Mid)	2Q, 4Q	4Q	2Q, 4Q	139.7	149.7	10
CMP 11D	TZ	2Q, 4Q	4Q		209.47	229.87	20.4
CMP 12A	GA	2Q	2Q		22.1	32.1	10
CMP 12B	LAZ (Mid)	2Q, 4Q	4Q		148	158	10
CMP 13B	LAZ (Mid)	2Q, 4Q	4Q		134.2	144.2	10
CMP 13D	TZ	2Q, 4Q	4Q		217.5	227.5	10
CMP 14B	LAZ (Mid)				130	140	10
CMP 14CR	MAZ				186.49	196.49	10
CMP 14D	TZ				204.1	224.5	20.4
CMP 14DU	TZ				202.57	212.57	10
CMP 15A	GA	2Q	2Q		14.2	24.2	10
CMP 15B	MAZ				145.1	155.1	10
CMP 30B	LAZ (Lower)	2Q, 4Q	4Q		97.4	107.5	10.1
CMP 30C	MAZ	2Q, 4Q	4Q		179.5	189.5	10
CMP 30D	TZ	2Q, 4Q	4Q		211.6	231.6	20
CMP 31B	LAZ (Lower)	2Q, 4Q	4Q		110.03	120.03	10
CMP 31C	MAZ	2Q, 4Q	4Q		197.9	207.9	10
CMP 32C	LAZ (Upper)	2Q, 4Q	4Q		185.2	195.2	10
CMP 32B[1]	LAZ (Lower)				97.7	107.7	10
CMP 33D	LAZ (Upper)	2Q, 4Q	4Q		178.6	188.6	10
CMP 34D	TZ			2Q, 4Q	215.6	225.6	10
CMP 35D	TZ	2Q, 4Q	4Q	2Q, 4Q	213.8	223.8	10
CMP 36D	TZ	2Q, 4Q	4Q		199.2	204.2	5
CMP 37D	TZ	2Q, 4Q	4Q		193.3	198.3	5
CMP 38D	TZ	2Q, 4Q	4Q		196.7	201.7	5
CMP 39D	MAZ	2Q, 4Q	4Q		190.9	195.9	5
CMP 40D	MAZ	2Q, 4Q	4Q		192.13	197.13	5
CMP 41D	MAZ	2Q, 4Q	4Q	2Q	191.7	196.7	5
CMP 43D	MAZ	2Q, 4Q	4Q	2Q	187.8	192.8	5
CMP 44D	MAZ	2Q, 4Q	4Q	2Q, 4Q	204.06	214.06	10
CMP 45D	MAZ	2Q, 4Q	4Q	2Q, 4Q	195.84	205.84	10
CMP 46D	MAZ			2Q, 4Q	198.44	208.44	10
CMP 47D	MAZ	2Q, 4Q	4Q	2Q, 4Q	196.37	206.37	10

[1] Well or surface water station is not part of the official monitoring network.

Table 1. CMP Pits OU MNA Monitoring Network (continued)

Station	Aquifer Unit	Lab Analyses			Screen Zone (ft msl)		Screen Length (ft)
		VOCs	1,4-Dioxane	Lindane	Bottom	Top	
CMP 48D	MAZ	2Q, 4Q	4Q	4Q – 3rd year*	198.83	208.83	10
CMP 50B	LAZ (Upper)	2Q, 4Q	4Q		167.33	172.33	5
CMP 50D	MAZ	2Q, 4Q	4Q		202.99	212.99	10
CMP 51D	MAZ	2Q, 4Q	4Q		182.27	192.27	10
CMP 52A	GA	2Q	2Q		66.65	76.65	10
CMP 52BL	LAZ (Lower)	2Q, 4Q	4Q		96.59	106.59	10
CMP 52BU	LAZ (Upper)	2Q, 4Q	4Q		180.91	190.91	10
CMP 52C	MAZ	2Q, 4Q	4Q		204.69	209.69	5
CMP 54C	LAZ (Upper)	2Q, 4Q	4Q		178.34	188.34	10
CMP055B	LAZ (Mid)	2Q, 4Q	4Q		136.4	146.4	10
CMP 55C	MAZ	2Q, 4Q	4Q		177.62	187.62	10
CMP 56B	LAZ (Mid)				124.6	134.6	10
CMP 56D	MAZ				167.55	177.55	10
CMP 57B	LAZ (Mid)				125.25	135.25	10
CMP 57D	MAZ				168.21	178.21	10
CMP058B	LAZ (Upper)	2Q, 4Q	4Q	2Q, 4Q	182.7	192.6	9.9
CMP059C	MAZ	2Q, 4Q	4Q	2Q, 4Q	200.8	210.7	9.9
CMP060B	LAZ (Upper)	2Q, 4Q	4Q		171.6	181.6	10
CMP061B	LAZ (Mid)	2Q, 4Q	4Q		129.5	139.5	10
CMP062B	LAZ (Mid)	2Q	2Q		136	146	10
CMP062C	MAZ	2Q	2Q		186.8	191.8	5
CMP062D	TZ	2Q	2Q		210.6	230.6	20
CMP063B	LAZ (Mid)	4Q	2Q		126.1	136.1	10
CMP063C	MAZ	4Q	2Q		184.4	189.4	5
CMP063D	TZ	4Q	2Q		195.7	215.7	20
CMP064BU	LAZ (Upper)	2Q, 4Q	4Q	2Q, 4Q	149.2	159.2	10
CMP064B	LAZ (Lower)	2Q, 4Q	4Q		118.8	128.8	10
CMP065BU	MAZ	2Q, 4Q	4Q	2Q, 4Q	194.37	204.37	10
CMP065B	LAZ (Mid)	2Q, 4Q	4Q		128.94	138.94	10
CMP066B	LAZ (Mid)	4Q	4Q		138.7	148.7	10
CMP067B	LAZ (Mid)	4Q	4Q		143.1	153.1	10
CMPSW-06	SW	2Q, 4Q	4Q				
CMPSW-07	SW	2Q, 4Q	4Q				
CMPSW-08	SW	2Q, 4Q	4Q				
CMPSW-09	SW	2Q, 4Q	4Q				
CMPSW-10	SW	2Q, 4Q	4Q				
CMP-SW-20	SW	2Q, 4Q	4Q				
CMP-SW-21	SW	2Q, 4Q	4Q				

*Lindane is analyzed every third year (i.e., 2020, 2023, 2026, etc.)

[1] Well or surface water station is not part of the official monitoring network.

Table 2. CMP Pits OU Horizontal Groundwater Flow Velocities (4Q18)

GW Flow Line	Gradient (dh/dl)	Velocity (ft/day)	Velocity (ft/year)
TZ			
A - A'	0.01332	2.66	972.70
B - B'	0.01452	2.90	1060.57
C - C'	0.00454	0.91	331.79
	TZ Avg.	**2.16**	**788.36**
MAZ			
A - A'	0.00924	1.54	562.71
B - B'	0.01139	1.90	693.22
	MAZ Avg.	**1.72**	**627.97**
LAZ			
A - A'	0.00219	0.15	53.24
B - B'	0.00717	0.48	174.64
C - C'	0.01325	0.88	322.60
	LAZ Avg.	**0.50**	**183.49**

dh= difference in head; dl= difference in length

Table 3. CMP Pits OU Annual MNA Results, 2018

See insert on the next page

Table 3. CMP Pits Annual MNA Results, 2018

	Station	Well Use	Aquifer Zone	Field Data: SAMPLE COLLECTION DATE	DEPTH TO WATER	SAMPLING EVENT WATER ELEVATION	STREAM FLOW RATE	PH	SPECIFIC CONDUCTANCE	OXYGEN	OXIDATION/REDUCTION POTENTIAL	TURBIDITY	PHENOLPHTHALEIN ALKALINITY (AS CACO3)	TOTAL ALKALINITY (AS CACO3)	AIR TEMPERATURE	VOLUME PURGED	WATER TEMPERATURE	SYNCHRONOUS MEASUREMENT DATE	SYNCHRONOUS WATER ELEVATION	FIELD CONDITIONS	Constituent	CMP MNA Analyte Suite: Pesticides: LINDANE	Volatiles: TETRACHLOROETHYLENE (PCE)	TRICHLOROETHYLENE (TCE)	1,1-DICHLOROETHYLENE	CIS-1,2-DICHLOROETHYLENE	TRANS-1,2-DICHLOROETHYLENE	CHLOROETHENE (VINYL CHLORIDE)	CARBON TETRACHLORIDE	CHLOROFORM	DICHLOROMETHANE (METHYLENE CHLORID	BROMODICHLOROMETHANE	1,1,2-TRICHLOROETHANE	1,4-DIOXANE
				day-month-year	ft	ft	ft³/sec	pH	uS/cm	mg/L	mV	NTU	mg/L	mg/L	degC	gal	degC	day-month-year	ft		Unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
																				GWPS	0.2	5	5	7	70	100	2	5	80	5	100	5	0.46
TZ	CMP 10D	Monitoring Well	TZ_UAZ_UTRAU	06-Jun-2018	92.7	219		5.8	22	NS	NS	1	0	0	23.3	2	20.2	NS	NS	W		0.0956	21.2	8.76	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	9.5	1.2	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 10D	Monitoring Well	TZ_UAZ_UTRAU	14-Nov-2018	92.7	219		4.7	16	NS	NS	13.6	NS	NS	12.6	2	18.4	NS	NS	W		0.18	42	13	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	8.8	2.5	<EQL (1)	[0.45]	<EQL (1)	29
	CMP 11D	Monitoring Well	TZ_UAZ_UTRAU	06-Jun-2018	92.75	218.45		6.1	36	5.33	132	3.1	0	3	24.1	5	19.3	NS	NS	X		NS	50.1	113	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	2.41	6.08	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 11D	Monitoring Well	TZ_UAZ_UTRAU	13-Jun-2018	92.74	218.46		6.4	34	4.94	193	14.7	0	8	30.7	7	26.6	NS	NS	X		NS	50	121	<EQL (1)	[0.37]	<EQL (1)	<EQL (1)	2.15	6.61	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 11D	Monitoring Well	TZ_UAZ_UTRAU	14-Nov-2018	92.98	218.22		6.5	39	6.29	127	5.7	0	10	11.5	6	20.6	NS	NS	X		[0.042]	47	120	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	2.1	6	<EQL (1)	<EQL (1)	<EQL (1)	61
	CMP 13D	Monitoring Well	TZ_UAZ_UTRAU	06-Jun-2018	71.55	219.15		5.3	43	4.63	231	2.7	0	0	27.3	3	20.3	NS	NS			NS	7.19	[0.72]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 13D	Monitoring Well	TZ_UAZ_UTRAU	13-Jun-2018	71.5	219.2		5.4	42	5.03	242	3.4	0	2	27.6	4	21.5	NS	NS			NS	[4.5]	[0.43]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 13D	Monitoring Well	TZ_UAZ_UTRAU	14-Nov-2018	71.08	219.62		5.1	29	6	243	0.6	0	0	12.1	5	20.3	NS	NS			<EQL (0.048)	2.2	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	7
	CMP 30D	Monitoring Well	TZ_UAZ_UTRAU	29-May-2018	73.16	217.04		5.8	53	3.92	231	13.9	0	8	24.3	7	19.2	NS	NS			NS	<EQL (1)	[0.64]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 30D	Monitoring Well	TZ_UAZ_UTRAU	27-Nov-2018	73.02	217.18		5.8	38	7.77	252	7.5	0	3	5.5	4	17.6	NS	NS			NS	<EQL (1)	[0.73]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 34D	Monitoring Well	TZ_UAZ_UTRAU	06-Jun-2018	87	219.15		5.9	27	NS	NS	3	0	0	33.8	2	20.7	NS	NS	W		0.0355	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	CMP 34D	Monitoring Well	TZ_UAZ_UTRAU	15-Nov-2018	86.5	219.65		4.7	5	NS	NS	2.3	NS	NS	7.7	2	18.3	NS	NS	W		0.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	CMP 35D	Monitoring Well	TZ_UAZ_UTRAU	06-Jun-2018	94.8	219.24		5.8	43	NS	NS	0.7	0	0	24.7	2	20.5	NS	NS	W		7.07	1150	685	<EQL (1)	1.14	<EQL (1)	<EQL (1)	24.5	26.6	[2.04]	9.19	[0.35]	NS	
	CMP 35D	Monitoring Well	TZ_UAZ_UTRAU	15-Nov-2018	95.3	218.74		4.7	10	NS	NS	3.6	NS	NS	7.5	2	19.9	NS	NS	W		6.6	1100	640	<EQL (1)	1.1	<EQL (1)	<EQL (2)	20	27	[0.99]	9.4	<EQL (1)	27
	CMP 36D	Monitoring Well	TZ_UAZ_UTRAU	29-May-2018	6.5	206.36		4.5	22	6.27	309	11.2	0	0	24.5	2	18.7	NS	NS			NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 36D	Monitoring Well	TZ_UAZ_UTRAU	12-Nov-2018	6.8	206.06		5	25	2.92	218	7.2	0	0	10.7	3	18	NS	NS			NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 37D	Monitoring Well	TZ_UAZ_UTRAU	29-May-2018	4.7	202.67		4.3	33	3.48	197	2.1	0	0	24.4	3	18.3	NS	NS			NS	3.36	3.68	<EQL (1)	1.06	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 37D	Monitoring Well	TZ_UAZ_UTRAU	12-Nov-2018	4.91	202.46		4.9	35	3.9	117	7.1	0	0	11.1	3	18.3	NS	NS			NS	2.1	3.1	<EQL (1)	1.5	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 38D	Monitoring Well	TZ_UAZ_UTRAU	29-May-2018	7.7	201.93		4.5	24	3.39	298	1.5	0	0	24.7	2	18.4	NS	NS			NS	34.1	27.2	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	1.07	2.05	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 38D	Monitoring Well	TZ_UAZ_UTRAU	12-Nov-2018	8.04	201.59		5	24	4.14	197	0.3	0	1	10.8	2	18.6	NS	NS			NS	13	16	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	[0.46]	1.2	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP062D	Monitoring Well	TZ_UAZ_UTRAU	30-May-2018	49.51	238.24		5.3	16	8.62	211	3	0	3	26.1	10	20.2	12-Nov-2018	239.35			NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	<EQL (3)
	CMP063D	Monitoring Well	TZ_UAZ_UTRAU	14-Nov-2018	62.78	218.3		5.7	21	3.51	224	1.3	0	6	11.7	8	21.3	29-May-2018	218.18			NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
MAZ	CMB 15I	Monitoring Well	MAZ_UTRAU	13-Jun-2018	69.94	218.47		5.2	18	6.52	245	5.2	0	3	25.8	2	20	NS	NS			[0.0157]	134	45.4	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (10)	<EQL (2)	<EQL (2)	NS
	CMB 15I	Monitoring Well	MAZ_UTRAU	15-Nov-2018	70.4	218.01		5	18	6.4	272	2.7	0	0	5.9	2	19.4	NS	NS			[0.021]	340	47	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (5)	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (5)
	CMB 24I	Monitoring Well	MAZ_UTRAU	29-May-2018	84.42	206.01		5.2	19	1.82	244	1.2	0	3	25.1	1	20.1	NS	NS			NS	152	46.1	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	2.5	[1.12]	<EQL (10)	<EQL (2)	<EQL (2)	NS
	CMB 24I	Monitoring Well	MAZ_UTRAU	15-Nov-2018	83.57	206.86		5.2	19	6.65	215	0.8	0	0	6.2	2	19.5	NS	NS			NS	92	38	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	[0.5]	[0.44]	<EQL (1)	<EQL (1)	<EQL (1)	5.6
	CMP 8	Monitoring Well	MAZ_UTRAU	05-Jun-2018	27.6	201.2		5	20	2.91	221	0.5	0	0	23.1	24	23	NS	NS			NS	198	57.4	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	5.07	2.09	[2.37]	[0.48]	<EQL (1)	NS
	CMP 8	Monitoring Well	MAZ_UTRAU	13-Nov-2018	27.15	201.65		5.1	20	4.3	194	1	0	0	13.5	23	20.3	NS	NS			NS	410	120	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	4.5	1.8	<EQL (1)	[0.46]	<EQL (1)	<EQL (5)
	CMP 30C	Monitoring Well	MAZ_UTRAU	29-May-2018	82.52	207.48		5.6	21	5.43	217	0.4	0	7	27.6	10	21.4	NS	NS			NS	1.58	1.09	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 30C	Monitoring Well	MAZ_UTRAU	14-Nov-2018	82.3	207.7		5.6	21	5.1	289	0.3	0	6	11.2	10	18.6	NS	NS			NS	[0.97]	1.1	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 31C	Monitoring Well	MAZ_UTRAU	29-May-2018	56.42	198.88		4.8	16	4.16	278	342	0	0	24.8	2	20.3	NS	NS			NS	16.8	4.89	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 31C	Monitoring Well	MAZ_UTRAU	14-Nov-2018	56.9	198.4		NS	NS	NS	NS	NS	NS	NS	12.2	0	NS	NS	NS	D		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	CMP 39D	Monitoring Well	MAZ_UTRAU	29-May-2018	5.4	199.94		4.6	28	2.32	82	2	0	0	25.6	3	18.4	NS	NS			NS	7.97	4	<EQL (1)	1.03	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 39D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	5.8	199.54		5.4	28	6.12	64	3.3	0	3	11.4	3	18.5	NS	NS			NS	2.9	1.9	<EQL (1)	1.4	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 40D	Monitoring Well	MAZ_UTRAU	29-May-2018	7.8	199.13		5	26	3.58	173	149	0	0	26.7	2	20.4	NS	NS	X		NS	3.61	1.65	<EQL (1)	[0.73]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 40D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	7.8	199.13		5.3	31	4.46	165	7.7	0	3	11.9	1	17.3	NS	NS	X		NS	[0.84]	[0.73]	<EQL (1)	1.2	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 41D	Monitoring Well	MAZ_UTRAU	13-Jun-2018	7.7	196.33		4.7	23	3	199	48.7	0	0	24.3	2	19	NS	NS	X		<EQL (0.02)	3.23	5.25	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 41D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	7.61	196.42		5.2	25	3.92	159	14.2	0	4	11.1	3	16.9	NS	NS			NS	1.2	2.4	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 43D	Monitoring Well	MAZ_UTRAU	13-Jun-2018	5.4	192.95		4.5	28	2.54	220	4.4	0	0	25.6	2	19.7	NS	NS			<EQL (0.02)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 43D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	5.28	193.07		4.7	26	4.12	200	1.7	0	0	10.9	4	17.1	NS	NS			NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 44D	Monitoring Well	MAZ_UTRAU	06-Jun-2018	75.3	209.91		5.9	20	NS	NS	2.9	0	0	35.2	2	21	NS	NS	W		0.153	83.3	14	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.51]	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 44D	Monitoring Well	MAZ_UTRAU	18-Jun-2018	75.42	209.79		4.9	20	NS	NS	2.6	NS	NS	25.7	2	19.7	NS	NS	W		NS	57.2	17.5	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.43]	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 44D	Monitoring Well	MAZ_UTRAU	15-Nov-2018	75.2	210.01		4.4	5	NS	NS	7.5	NS	NS	7.8	2	18	NS	NS	W		0.19	86	14	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	[0.49]	<EQL (1)	<EQL (1)	<EQL (1)	28
	CMP 45D	Monitoring Well	MAZ_UTRAU	31-May-2018	76.8	208.66		NS	NS	NS	NS	NS	NS	NS	27.8	17	NS	NS	NS	W		0.217	296	96.8	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.51]	[0.77]	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 45D	Monitoring Well	MAZ_UTRAU	15-Nov-2018	75.8	209.66		NS	NS	NS	NS	NS	NS	NS	4.2	20	NS	NS	NS	W		0.1	150	50	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (10)	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (5)	9
	CMP 46D	Monitoring Well	MAZ_UTRAU	31-May-2018	83.8	207.94		NS	NS	NS	NS	NS	NS	NS	25.1	13	NS	NS	NS	W		0.325	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	CMP 46D	Monitoring Well	MAZ_UTRAU	15-Nov-2018	83.7	208.04		NS	NS	NS	NS	NS	NS	NS	6.4	14	NS	NS	NS	W		0.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	CMP 47D	Monitoring Well	MAZ_UTRAU	31-May-2018	84.8	207.98		NS	NS	NS	NS	NS	NS	NS	25.8	17	NS	NS	NS	W		0.278	349	33.9	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.41]	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 47D	Monitoring Well	MAZ_UTRAU	15-Nov-2018	84.85	207.93		0	0	NS	NS	0	0	0	5.8	16	0	NS	NS	W		0.2	330	36	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (5)	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	5.2
	CMP 48D	Monitoring Well	MAZ_UTRAU	05-Jun-2018	67.8	207.25		4.8	17	5.52	246	1.8	0	0	35.3	13	21.6	NS	NS			NS	205	78.4	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.39]	[1.9]	<EQL (1)	<EQL (1)	NS
	CMP 48D	Monitoring Well	MAZ_UTRAU	18-Jun-2018	68.03	207.02		4.8	17	5.55	259	1.5	0	0	31.7	12	20.5	NS	NS			NS	157	63.5	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 48D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	68	207.05		4.8	17	7	303	1.8	0	0	10	14	20.3	NS	NS			NS	180	60	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (10)	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (5)	<EQL (5)
	CMP 50D	Monitoring Well	MAZ_UTRAU	29-May-2018	74.8	208.34		7.2	29	5.4	145	6.6	0	12	24.9	8	22.1	NS	NS			NS	3.21	[0.89]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 50D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	74.5	208.64		6	27	5.1	367	6.4	0	14	9.4	9	19.8	NS	NS			NS	[0.85]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 51D	Monitoring Well	MAZ_UTRAU	05-Jun-2018	40.5	204.05		6.3	57	4.38	205	2.1	0	21	34.6	31	21.2	NS	NS			NS	11.6	3.39	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 51D	Monitoring Well	MAZ_UTRAU	12-Nov-2018	40.05	204.5		6.2	50	7.08	235	8.6	0	8	11.4	30	19.1	NS	NS			NS	4.2	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 52C	Monitoring Well	MAZ_UTRAU	13-Jun-2018	104.53	209.17		5.2	19	3.86	253	59	0	4	32.1	2	22.4	NS	NS			[0.00865]	161	147	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.73]	[0.99]	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 52C	Monitoring Well	MAZ_UTRAU	12-Nov-2018	104.8	208.9		5.4	19	7.6	297	26.7	0	3	14	1	18.6	NS	NS			NS	100	88	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (5)	<EQL (2.5)	[0.69]	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (5)
	CMP 55C	Monitoring Well	MAZ_UTRAU	29-May-2018	29.2	196.25		6.1	29	3.86	254	3.8	0	7	34.6	7	21.1	NS	NS			NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 55C	Monitoring Well	MAZ_UTRAU	12-Nov-2018	29	196.45		6.1	33	4.4	255	5.2	0	15	12.3	7	18.2	NS	NS			NS	[0.4]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP059C	Monitoring Well	MAZ_UTRAU	06-Jun-2018	105.75	209.39		5.7	26	5.48	217	5.8	0	2	33.3	1	21.6	NS	NS			0.0917	151	98	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (2)	<EQL (10)	<EQL (2)	<EQL (2)	NS
	CMP059C	Monitoring Well	MAZ_UTRAU	15-Nov-2018	105.6	209.54		4.8	28	1.22	273	4.9	0	0	7.4	2	19.7	NS	NS			0.1	170	110	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	[0.56]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP062C	Monitoring Well	MAZ_UTRAU	30-May-2018	62.42	225.62		5.4	22	7.3	136	0.9	0	5	34.7	4	19.2	12-Nov-2018	222.74	X		NS	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	<EQL (3)
	CMP063C	Monitoring Well	MAZ_UTRAU	14-Nov-2018	76	205.16		6.1	41	2.86	205	1.2	0	12	12	8	22.2	29-May-2018	204.86			NS	[0.28]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP065BU	Monitoring Well	MAZ_UTRAU	18-Jun-2018	49.63	205.3		4.6	22	2.18	306	0.8	0	0	30.7	2	19.8	NS	NS			[0.0125]	76.4	25.3	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	1.14	[0.68]	<EQL (5)	[0.45]	<EQL (1)	NS
	CMP065BU	Monitoring Well	MAZ_UTRAU	15-Nov-2018	48.9	206.03		5.6	21	4.9	308	3.2	0	6	6.4	1	19.1	NS	NS			[0.016]	44	12	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	[0.51]	[0.5]	<EQL (1)	[0.26]	<EQL (1)	11
LAZ	CMP 8B	Monitoring Well	LAZ_UTRAU	29-May-2018	32.26	197.44		7.7	110	6.33	155	2.5	0	55	24.2	54	19.4	NS	NS			NS	2.77	[0.86]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 8B	Monitoring Well	LAZ_UTRAU	14-Nov-2018	31.95	197.75		6.6	109	5.93	242	1.4	0	47	10.5	54	18.5	NS	NS			NS	2.6	[0.81]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 10B	Monitoring Well	LAZ_UTRAU	05-Jun-2018	117.1	193.8		7.6	184	4.54	238	0.8	0	84	21.3	76	19.9	NS	NS			<EQL (0.02)	12.7	16.1	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	[0.39]	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 10B	Monitoring Well	LAZ_UTRAU	18-Jun-2018	117.39	193.51		7.4	186	5.32	205	0.3	0	77	25.4	74	19.9	NS	NS			NS	5.75	8.53	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 10B	Monitoring Well	LAZ_UTRAU	14-Nov-2018	116.63	194.27		7.8	183	2.43	163	0.4	0	91	11.7	77	19.1	NS	NS			<EQL (0.049)	11	15	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	[0.31]	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 10C	Monitoring Well	LAZ_UTRAU	06-Jun-2018	113.9	198.2		5.9	59	NS	NS	0.9	0	0	28.2	2	20.2	NS	NS	W		0.55	257	143	<EQL (1)	1.12	<EQL (1)	<EQL (1)	6.85	6.07	[1.99]	1.3	<EQL (1)	NS
	CMP 10C	Monitoring Well	LAZ_UTRAU	14-Nov-2018	113.71	198.39		5.3	12	NS	NS	5.2	NS	NS	12.6	2	18.4	NS	NS	W		0.57	220	110	<EQL (2.5)	<EQL (2.5)	<EQL (2.5)	<EQL (5)	5.4	5.4	<EQL (2.5)	[1.2]	<EQL (2.5)	34
	CMP 11B	Monitoring Well	LAZ_UTRAU	31-May-2018	116.32	193.98		8.1	183	6.73	130	0.6	0	55	24.5	100	20.2	NS	NS			<EQL (0.02)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 11B	Monitoring Well	LAZ_UTRAU	14-Nov-2018	116.3	194		7.7	185	1.77	214	0.5	0	79	10.7	106	18.8	NS	NS			<EQL (0.047)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (2)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)
	CMP 12B	Monitoring Well	LAZ_UTRAU	05-Jun-2018	90.7	193.4		7.8	180	4.58	189	0.2	0	94	35.2	60	20.5	NS	NS			NS	48.5	24.1	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
	CMP 12B	Monitoring Well	LAZ_UTRAU	18-Jun-2018	90.98	193.12		7.7	181	5.74	114	0.2	0

Table 4. CMP Pits OU PCE Max Results from 2008 and 2018 (µg/L)

Station	Aquifer	2008 Max (Pre ERH/SVE)	2018 Max
CMP 10D	TZ	620	42
CMP 11D	TZ	421	50.1
CMP 13D	TZ	1.71	7.19
CMP 14D	TZ	NS	NS
CMP 14DU	TZ	NS	NS
CMP 30D	TZ	<EQL(1)	<EQL(1)
CMP 34D	TZ	49.4	NA
CMP 35D	TZ	122	1150
CMP 36D	TZ	56.9	<EQL(1)
CMP 37D	TZ	358	3.36
CMP 38D	TZ	48.2	34.1
CMP062D	TZ	<EQL(1)	<EQL(1)
CMP063D	TZ	<EQL(1)	<EQL(1)
CMB 15I	MAZ	437	340
CMB 24I	MAZ	20.8	152
CMP 8	MAZ	299	410
CMP 14CR	MAZ	<EQL(1)	NS
CMP 15B	MAZ	<EQL(1)	<EQL(1)
CMP 30C	MAZ	3.78	1.58
CMP 31C	MAZ	NS - Dry	16.8
CMP 39D	MAZ	71.7	7.97
CMP 40D	MAZ	135	3.61
CMP 41D	MAZ	5.48	3.23
CMP 43D	MAZ	<EQL(1)	<EQL(1)
CMP 44D	MAZ	312	86
CMP 45D	MAZ	973	296
CMP 46D	MAZ	NDD(434)	NA
CMP 47D	MAZ	NDD(845)	349
CMP 48D	MAZ	601	205
CMP 50D	MAZ	8.62	3.21
CMP 51D	MAZ	13.4	11.6
CMP 52C	MAZ	NS	161
CMP 55C	MAZ	<EQL(1)	NDD(0.4)
CMP 56D	MAZ	NS	NS
CMP 57D	MAZ	NS	NS
CMP059C	MAZ	78.5	170
CMP062C	MAZ	<EQL(1)	<EQL(1)
CMP063C	MAZ	<EQL(1)	NDD(0.28)
CMP065BU	MAZ	NS	76.4

Station	Aquifer	2008 Max (Pre ERH/SVE)	2018 Max
CMP 8B	LAZ	<EQL(1)	2.77
CMP 10B	LAZ	<EQL(1)	12.7
CMP 10C	LAZ	466	257
CMP 11B	LAZ	<EQL(1)	<EQL(1)
CMP 12B	LAZ	46.3	48.5
CMP 13B	LAZ	1.25	8.72
CMP 14B	LAZ	<EQL(1)	NS
CMP 30B	LAZ	<EQL(1)	<EQL(1)
CMP 31B	LAZ	<EQL(1)	NDD(.4)
CMP 32C	LAZ	110	386
CMP 33D	LAZ	16.4	4.5
CMP 50B	LAZ	<EQL(1)	<EQL(1)
CMP 52BL	LAZ	<EQL(1)	<EQL(1)
CMP 52BU	LAZ	35.1	170
CMP 54C	LAZ	NDD(196)	NDD(271)
CMP055B	LAZ	NS	NS
CMP 56B	LAZ	NS	NS
CMP 57B	LAZ	NS	<EQL(1)
CMP058B	LAZ	6.51	NDD(20.3)
CMP060B	LAZ	<EQL(1)	<EQL(1)
CMP061B	LAZ	<EQL(1)	<EQL(1)
CMP062B	LAZ	<EQL(1)	<EQL(1)
CMP063B	LAZ	<EQL(1)	<EQL(1)
CMP064BU	LAZ	NS	<EQL(1)
CMP064B	LAZ	NS	389
CMP065B	LAZ	NS	NDD(.38)
CMP066B	LAZ	NS	<EQL(1)
CMP067B	LAZ	NS	<EQL(1)
CMP 8A	GA	<EQL(1)	<EQL(1)
CMP 12A	GA	NDD(0.679)	1.58
CMP 15A	GA	<EQL(1)	<EQL(1)
CMP 52A	GA	<EQL(1)	<EQL(1)
CMP-SW-06	SW	<EQL(1)	<EQL(1)
CMP-SW-07	SW	NDD(0.63)	<EQL(1)
CMP-SW-08	SW	<EQL(1)	<EQL(1)
CMP-SW-09	SW	<EQL(1)	<EQL(1)
CMP-SW-10	SW	1.38	<EQL(1)
CMP-SW-20	SW	NS	<EQL(1)
CMP-SW-21	SW	NS	<EQL(1)

EQL=Sample Quantitation Limit (non-detect result); NDD=Not Decision Data (estimated result); NS = Not sampled; NA= Not analyzed for VOCs

Table 5. CMP Pits OU Lindane Max Results from 2008 and 2018 (µg/L)

Station	Aquifer	2008 Max (Pre ERH/SVE)	2018 Max
CMP 10D	TZ	0.185	0.18
CMP 11D	TZ	0.0509	NDD(.042)
CMP 13D	TZ	<EQL(0.0225)	<EQL(.048)
CMP 14D	TZ	NS	NS
CMP 14DU	TZ	NS	NS
CMP 30D	TZ	<EQL(0.0222)	NA
CMP 34D	TZ	0.345	0.05
CMP 35D	TZ	1.73	7.07
CMP 36D	TZ	<EQL(0.0217)	NA
CMP 37D	TZ	<EQL(0.0217)	NA
CMP 38D	TZ	<EQL(0.0217)	NA
CMP062D	TZ	<EQL(1)	NA
CMP063D	TZ	<EQL(1)	NA
CMB 15I	MAZ	0.165	0.021
CMB 24I	MAZ	NDD(0.0192)	NA
CMP 8	MAZ	NDD(0.0192)	NA
CMP 14CR	MAZ	<EQL(0.0222)	NS
CMP 15B	MAZ	<EQL(0.0213)	NS
CMP 30C	MAZ	<EQL(0.0213)	NA
CMP 31C	MAZ	NS - Dry	NA
CMP 39D	MAZ	<EQL(0.0217)	NA
CMP 40D	MAZ	<EQL(0.0217)	NA
CMP 41D	MAZ	<EQL(0.0227)	<EQL(.02)
CMP 43D	MAZ	<EQL(1)	<EQL(.02)
CMP 44D	MAZ	0.474	0.19
CMP 45D	MAZ	0.484	0.217
CMP 46D	MAZ	0.704	0.325
CMP 47D	MAZ	0.36	0.278
CMP 48D	MAZ	0.157	NA
CMP 50D	MAZ	<EQL(0.0217)	NA
CMP 51D	MAZ	<EQL(0.0217)	NA
CMP 52C	MAZ	NS	NDD(.00865)
CMP 55C	MAZ	<EQL(0.0213)	NA
CMP 56D	MAZ	NS	NA
CMP 57D	MAZ	NS	NA
CMP059C	MAZ	0.362	0.1
CMP062C	MAZ	<EQL(0.0213)	NA
CMP063C	MAZ	<EQL(0.0217)	NA
CMP065BU	MAZ	NS	NDD(.016)

Station	Aquifer	2008 Max (Pre ERH/SVE)	2018 Max
CMP 8B	LAZ	<EQL(0.0217)	NA
CMP 10B	LAZ	<EQL(0.0217)	<EQL(.049)
CMP 10C	LAZ	0.126	0.57
CMP 11B	LAZ	<EQL(0.02)	<EQL(.047)
CMP 12B	LAZ	NDD(0.0184)	NA
CMP 13B	LAZ	<EQL(0.0227)	NA
CMP 14B	LAZ	<EQL(0.0222)	NS
CMP 30B	LAZ	<EQL(0.0213)	NA
CMP 31B	LAZ	<EQL(0.0213)	NA
CMP 32C	LAZ	<EQL(0.0217)	NA
CMP 33D	LAZ	<EQL(0.0217)	NA
CMP 50B	LAZ	<EQL(0.0222)	NA
CMP 52BL	LAZ	<EQL(0.0217)	NA
CMP 52BU	LAZ	<EQL(0.0227)	NA
CMP 54C	LAZ	<EQL(0.0202)	NA
CMP 56B	LAZ	NS	NA
CMP 57B	LAZ	NS	NA
CMP055B	LAZ	NS	NA
CMP058B	LAZ	<EQL(0.0227)	<EQL(.048)
CMP060B	LAZ	<EQL(0.0217)	NA
CMP061B	LAZ	<EQL(0.0241)	NA
CMP062B	LAZ	<EQL(0.023)	NA
CMP063B	LAZ	<EQL(0.0217)	NA
CMP064B	LAZ	NS	NA
CMP064BU	LAZ	NS	0.166
CMP065B	LAZ	NS	NA
CMP066B	LAZ	NS	NA
CMP067B	LAZ	NS	NA
CMP 8A	GA	<EQL(0.0217)	NA
CMP 12A	GA	<EQL(0.0213)	NA
CMP 15A	GA	<EQL(0.0227)	NA
CMP 52A	GA	<EQL(0.0217)	NA
CMP-SW-06	SW	NA	NA
CMP-SW-07	SW	NA	NA
CMP-SW-08	SW	NA	NA
CMP-SW-09	SW	NA	NA
CMP-SW-10	SW	NA	NA
CMP-SW-20	SW	NS	NA
CMP-SW-21	SW	NS	NA

EQL=Sample Quantitation Limit (non-detect result); NDD=Not Decision Data (estimated result); NS = Not sampled; NA= Not analyzed for lindane

Table 6. SCSU Pen Branch Area 2018 Sample Results Summary

Analyte		Number of detects	Minimum Detected Result (µg/L)	Maximum Result (µg/L)
Groundwater (33 samples)				
	PCE	9	4.9	81
	TCE	11	1.1	42
	1,1-DCE	ND	ND	ND
	cis-1,2-DCE	22	1.4	99
	trans-1,2-DCE	ND	ND	ND
	VC	15	1.2	98
Surface Water (18 samples)				
	PCE	ND	ND	ND
	TCE	ND	ND	ND
	1,1-DCE	ND	ND	ND
	cis-1,2-DCE	ND	ND	ND
	trans-1,2-DCE	ND	ND	ND
	VC	ND	ND	ND

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Table 7. SCSU Complete Pen Branch Area 2018 Sample Results

	STATION ID	COLLECTION DATE	Sample Type	Sample Location	PCE	TCE	1,1-DCE	CIS-1,2-DCE	T-1,2-DCE	VC
Upstream	SCSU-CMP-3B	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-3B	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-4	2/13/2018	GW - PDB	Below Stream Bottom	ND	ND	ND	5.8	ND	22
	SCSU-CMP-4	3/13/2018	GW - Pump	Below Stream Bottom	ND	ND	ND	4.5	ND	7.5
	SCSU-CMP-4	7/30/2018	GW - PDB	Below Stream Bottom	ND	ND	ND	4.4	ND	8.8
	SCSU-CMP-5B	2/13/2018	GW - PDB	Below Stream Bottom	13	9.4	ND	20	ND	ND
	SCSU-CMP-5B	3/13/2018	GW - Pump	Below Stream Bottom	4.9	3.5	ND	6.6	ND	ND
	SCSU-CMP-5B	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5B	7/30/2018	GW - PDB	Below Stream Bottom	ND	1.1	ND	26	ND	2.2
	SCSU-CMP-5B	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5TB	2/13/2018	GW - PDB	North Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5TB	3/13/2018	GW - Pump	North Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5TB	7/30/2018	GW - PDB	North Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5DB	2/13/2018	GW - PDB	Below Stream Bottom	81	42	ND	99	ND	ND
	SCSU-CMP-5DB	3/13/2018	GW - Pump	Below Stream Bottom	20	13	ND	50	ND	ND
	SCSU-CMP-5DB	6/21/2018	GW - Pump	Below Stream Bottom	79	38	ND	25	ND	ND
	SCSU-CMP-5DB	7/30/2018	GW - PDB	Below Stream Bottom	43	28	ND	15	ND	ND
	SCSU-CMP-5DZ3	2/13/2018	GW - PDB	Below Stream Bottom	ND	ND	ND	44	ND	98
	SCSU-CMP-5DZ3	3/13/2018	GW - Pump	Below Stream Bottom	ND	ND	ND	20	ND	32
	SCSU-CMP-5DZ3	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5DZ3	7/30/2018	GW - PDB	Below Stream Bottom	7.9	4.7	ND	93	ND	5.3
	SCSU-CMP-5DZ3	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5DZ3B	2/13/2018	GW - PDB	South Bank	ND	ND	ND	3.5	ND	17
	SCSU-CMP-5DZ3B	3/13/2018	GW - Pump	South Bank	ND	ND	ND	ND	ND	1.7
	SCSU-CMP-5DZ3B	7/30/2018	GW - PDB	South Bank	ND	1.9	ND	43	ND	17
	SCSU-CMP-5D1B	2/13/2018	GW - PDB	South Bank	ND	ND	ND	99	ND	71
	SCSU-CMP-5D1B	3/13/2018	GW - Pump	South Bank	ND	ND	ND	39	ND	40
	SCSU-CMP-5D1B	6/21/2018	GW - Pump	South Bank	67	28	ND	76	ND	3.1
	SCSU-CMP-5D1B	7/30/2018	GW - PDB	South Bank	40	24	ND	93	ND	1.2
	SCSU-CMP-5D2B	2/13/2018	GW - PDB	Below Stream Bottom	ND	ND	ND	2.9	ND	ND
	SCSU-CMP-5D2B	3/13/2018	GW - Pump	Below Stream Bottom	ND	ND	ND	1.5	ND	ND
	SCSU-CMP-5D2B	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5D2B	6/21/2018	GW - Pump	Below Stream Bottom	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5D2B	7/30/2018	GW - PDB	Below Stream Bottom	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5D2B	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5EZ1	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5EZ1	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5EZ7	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5EZ7	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5G	2/13/2018	GW - PDB	South Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5G	3/13/2018	GW - Pump	South Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5G	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5G	7/30/2018	GW - PDB	South Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-5G	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-6	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-6	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
Downstream	SCSU-CMP-6E	2/13/2018	GW - PDB	South Bank	ND	ND	ND	1.4	ND	2.4
	SCSU-CMP-6E	3/13/2018	GW - Pump	South Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-6E	3/14/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND
	SCSU-CMP-6E	7/30/2018	GW - PDB	South Bank	ND	ND	ND	ND	ND	ND
	SCSU-CMP-6E	9/20/2018	SW - PDB	Within Stream	ND	ND	ND	ND	ND	ND

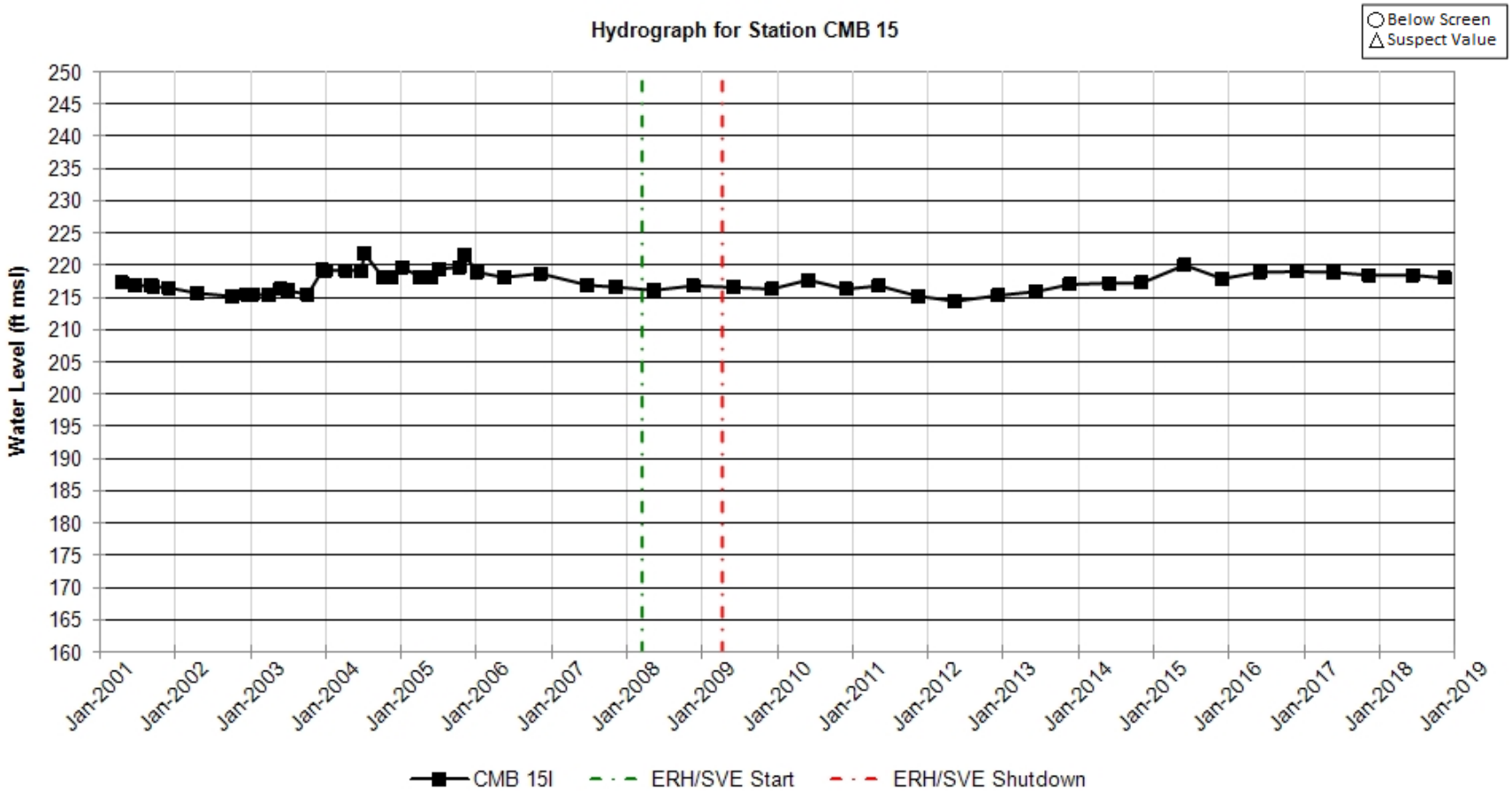
All result unit in µg/L; ND= Non-detect; < MCL > MCL

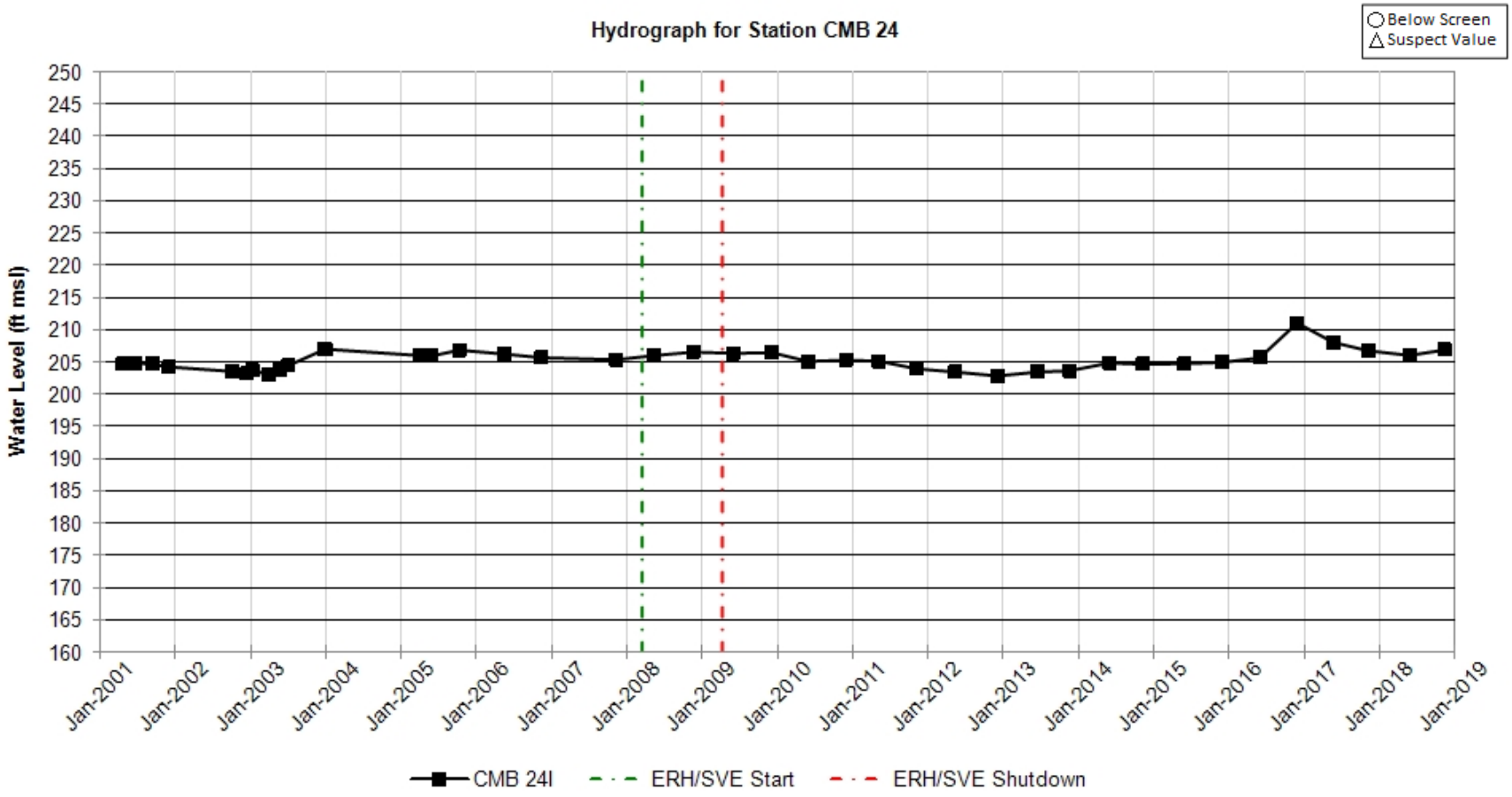
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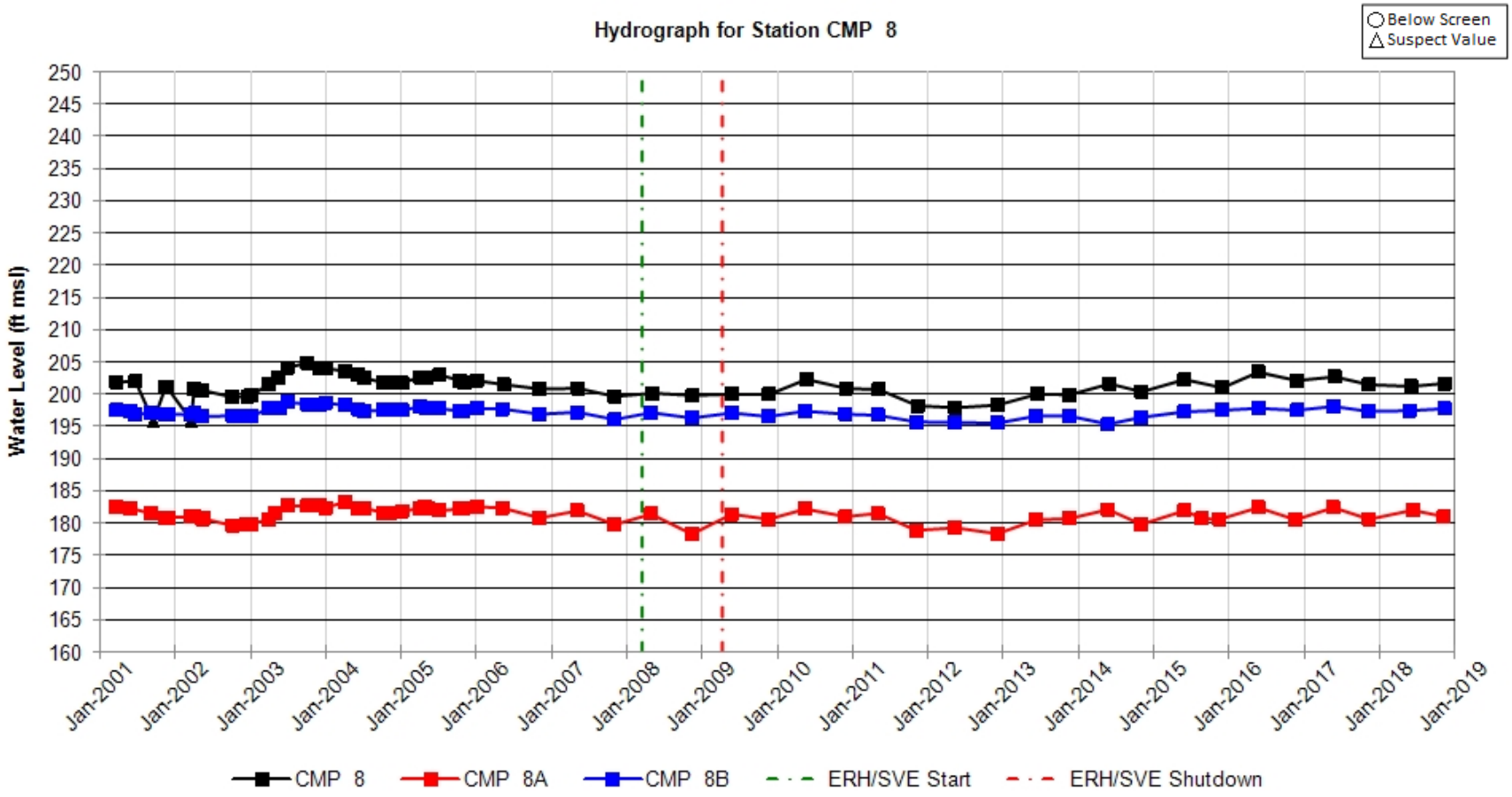
Appendix A

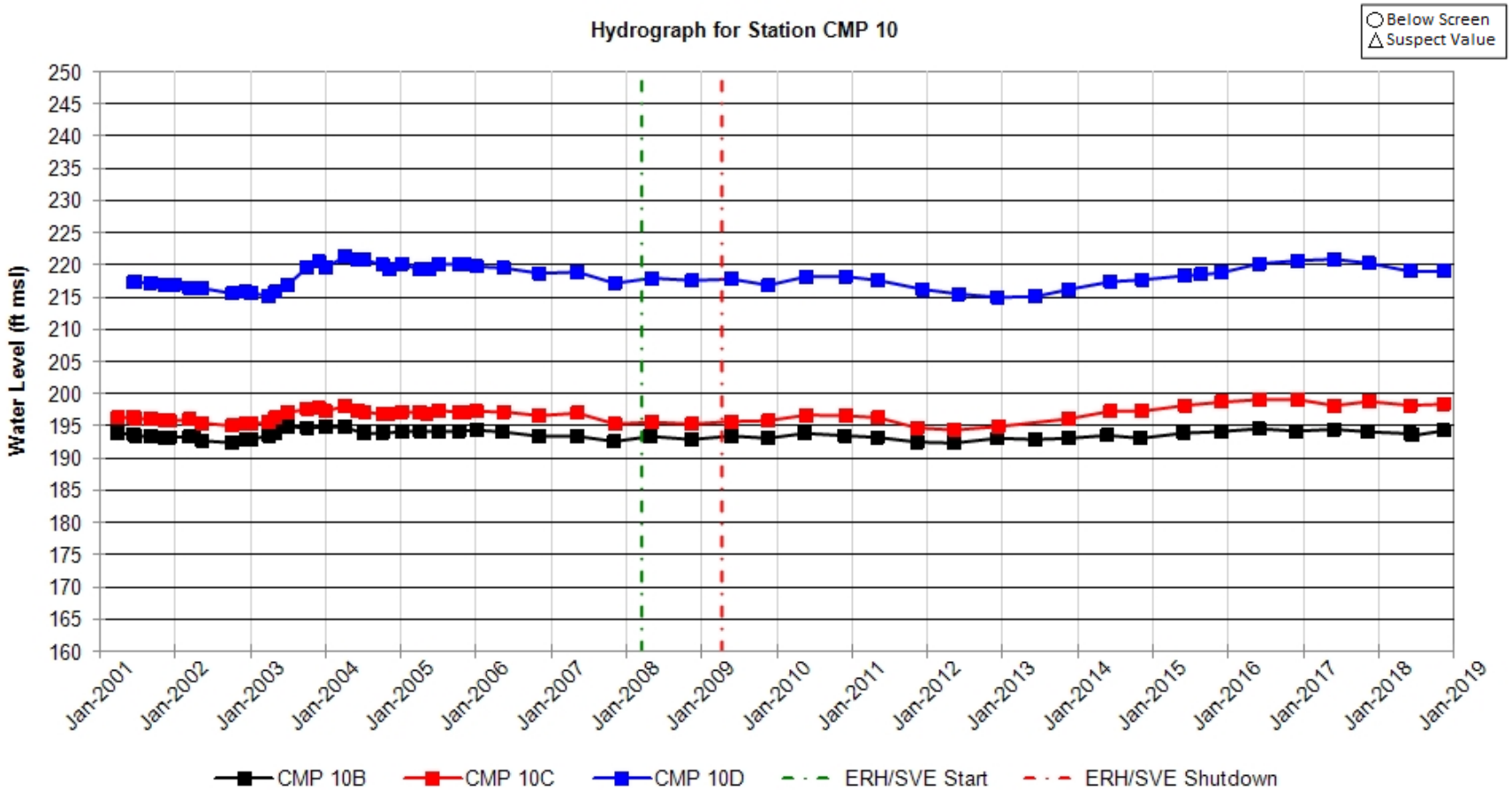
Hydrographs

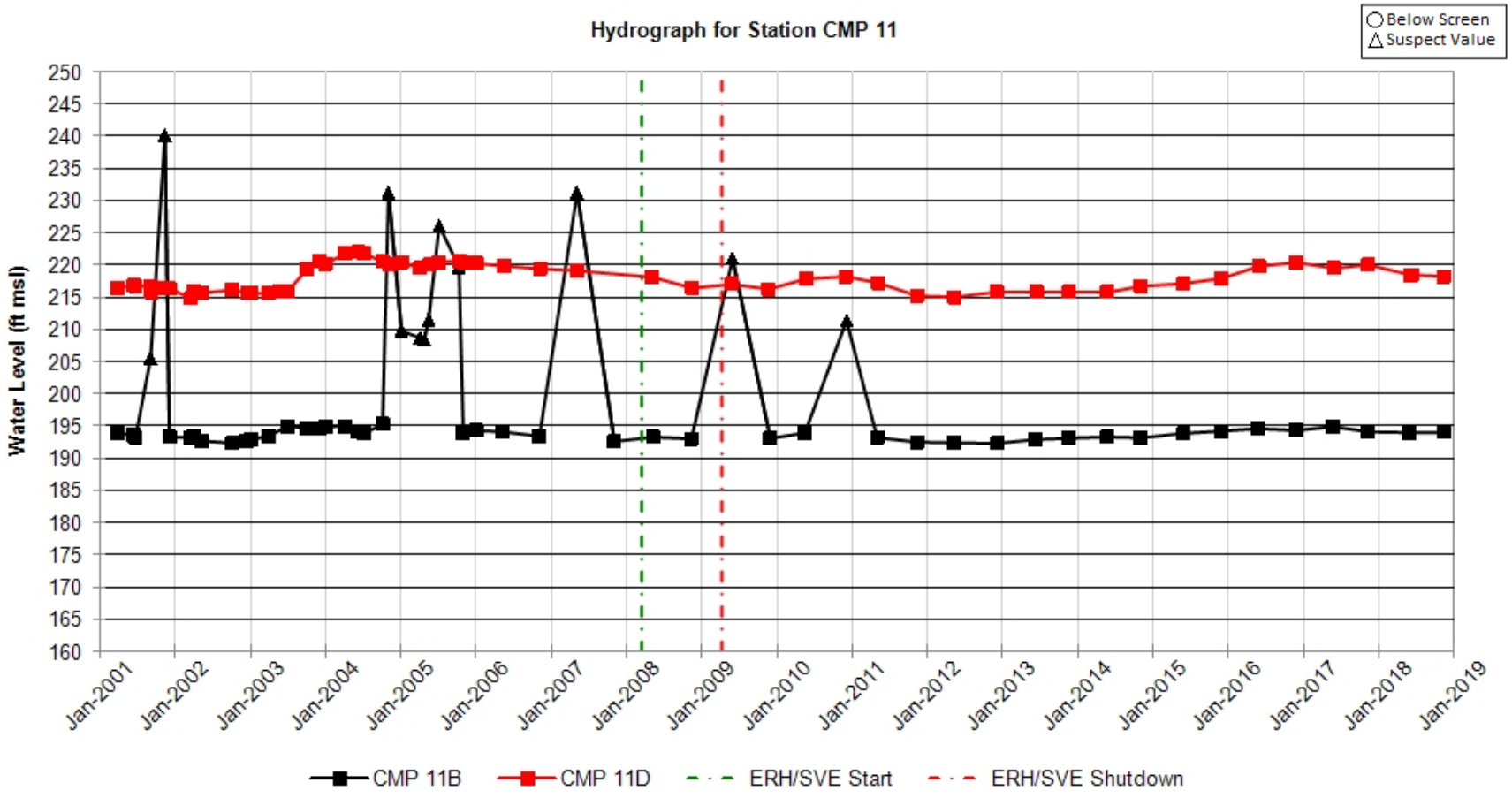
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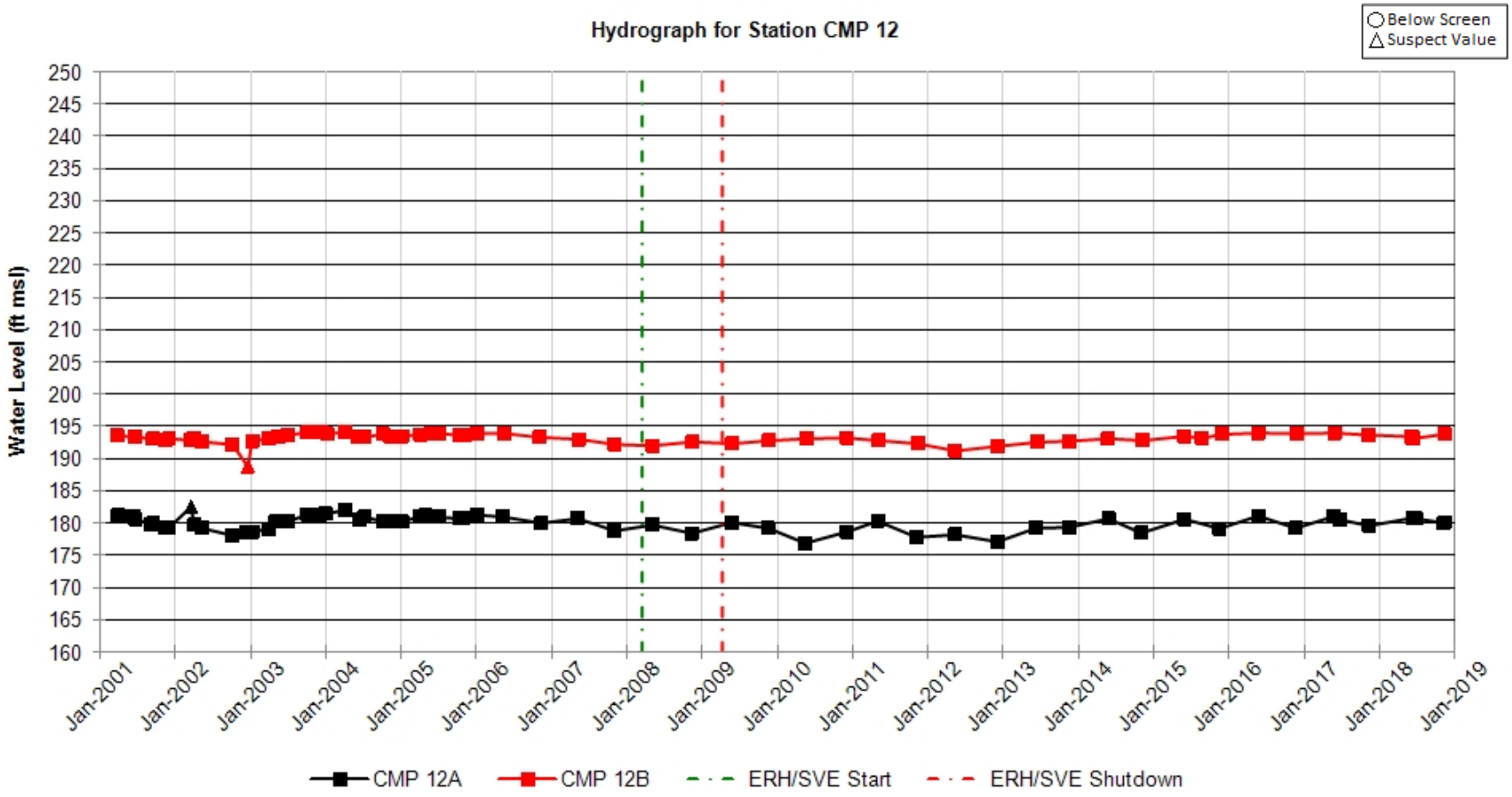

Hydrograph for Station CMB 15
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2018
Jan-2019
CMB 15I
ERH/SVE Start
ERH/SVE Shutdown

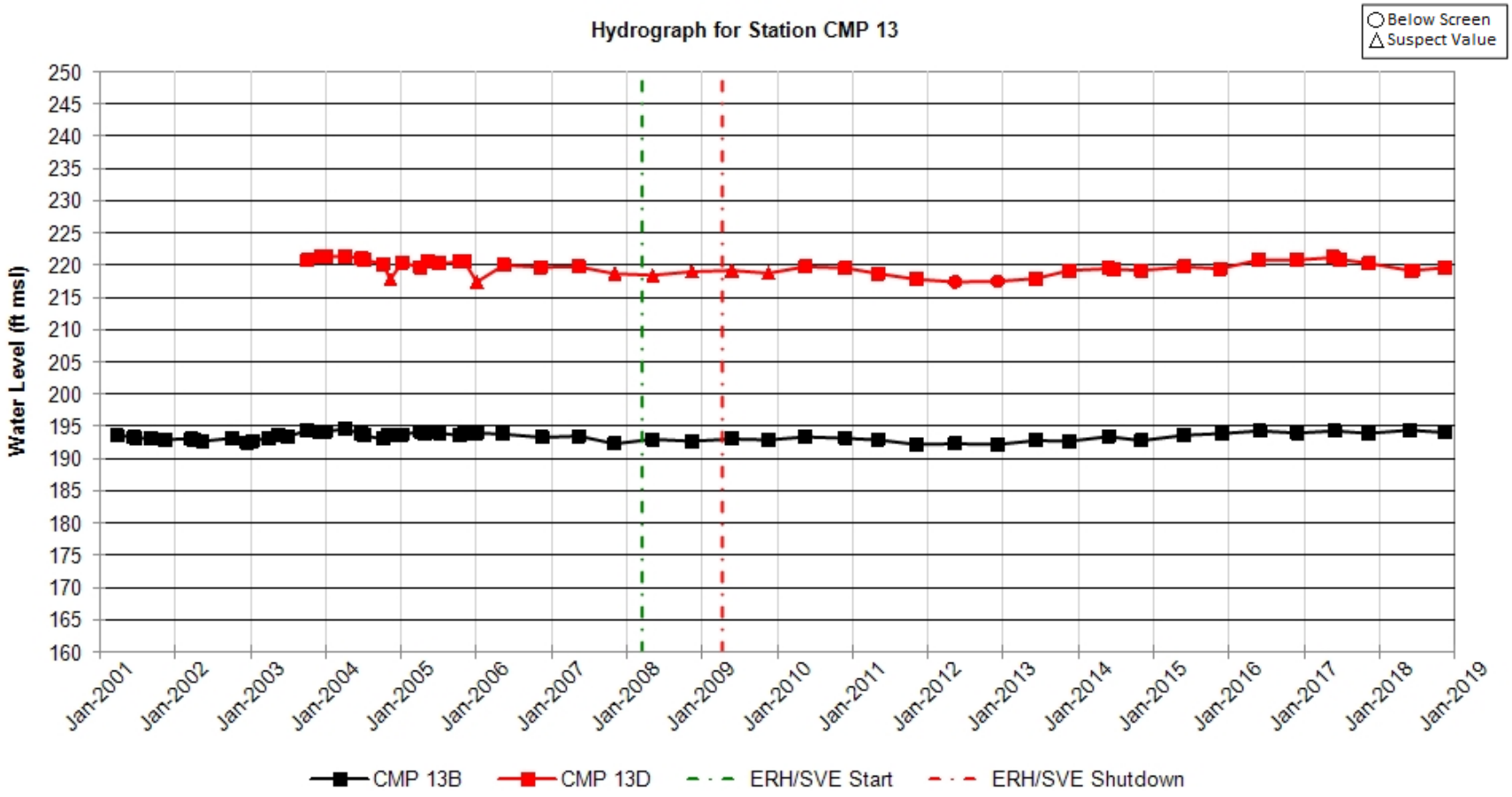

Hydrograph for Station CMB 24
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2010
Jan-2011
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 24I
ERH/SVE Start
ERH/SVE Shutdown

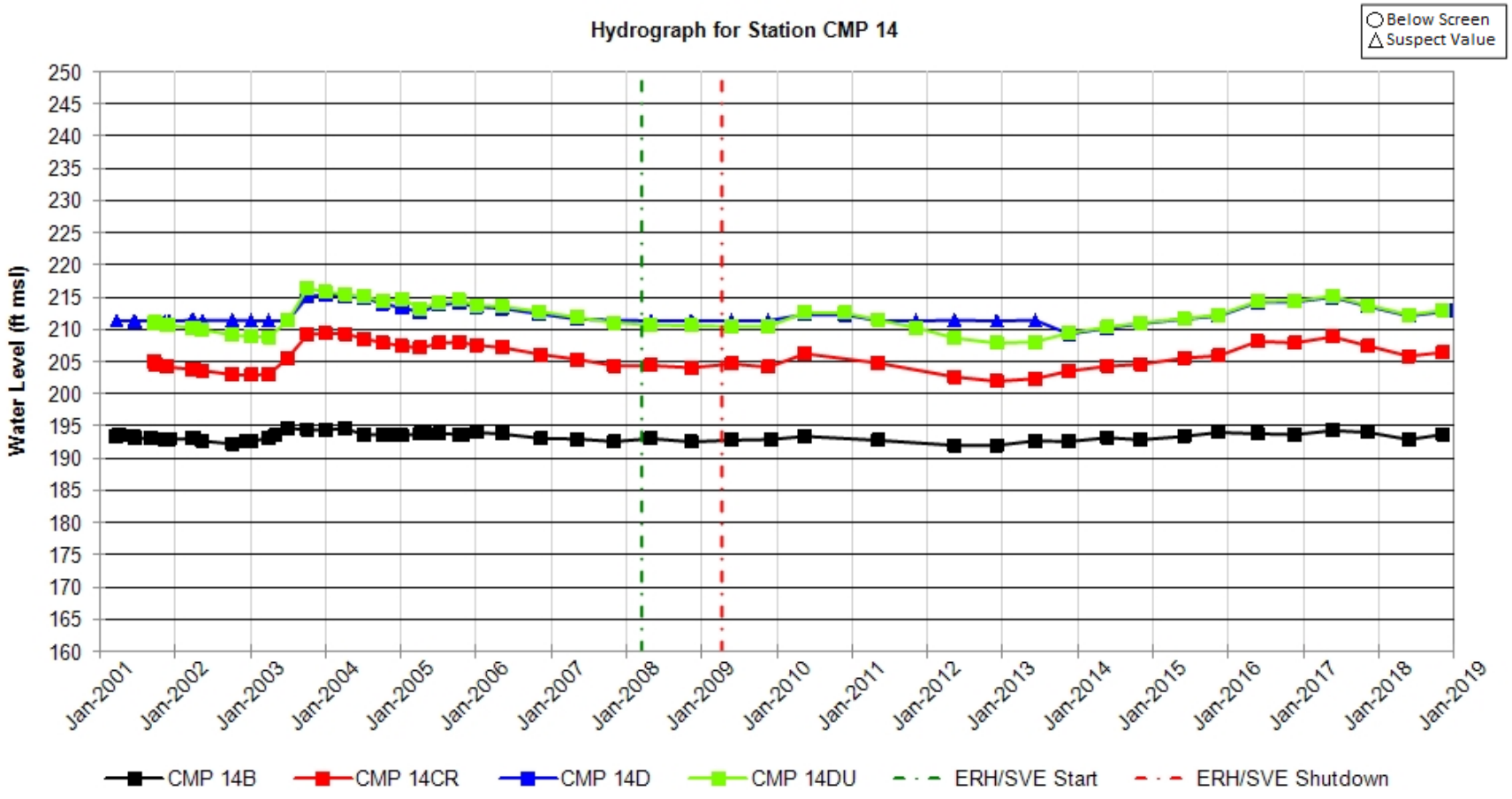

Hydrograph for Station CMP 8
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
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Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 8
CMP 8A
CMP 8B
ERH/SVE Start
ERH/SVE Shutdown

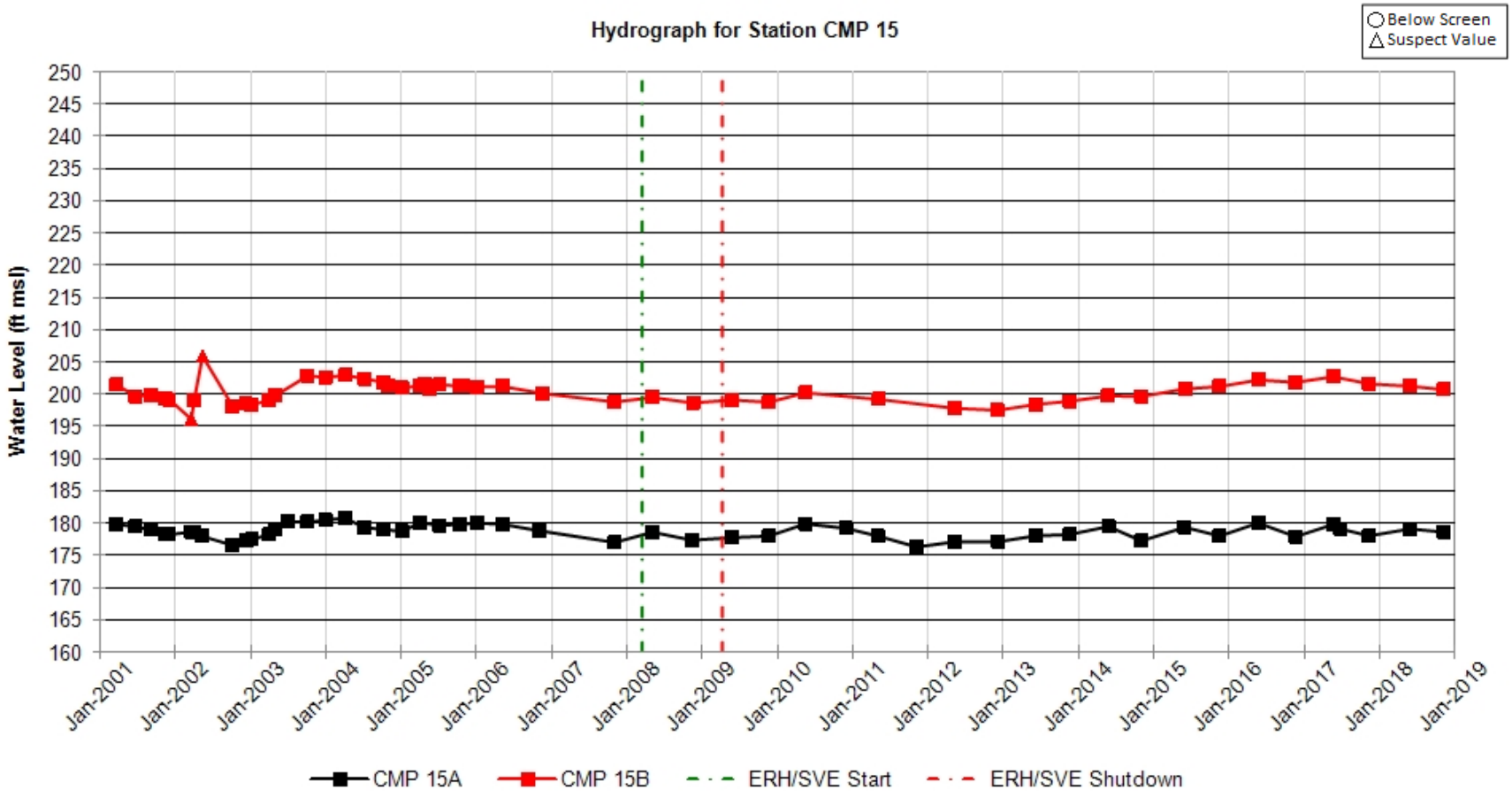

Hydrograph for Station CMP 10
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 10B
CMP 10C
CMP 10D
ERH/SVE Start
ERH/SVE Shutdown

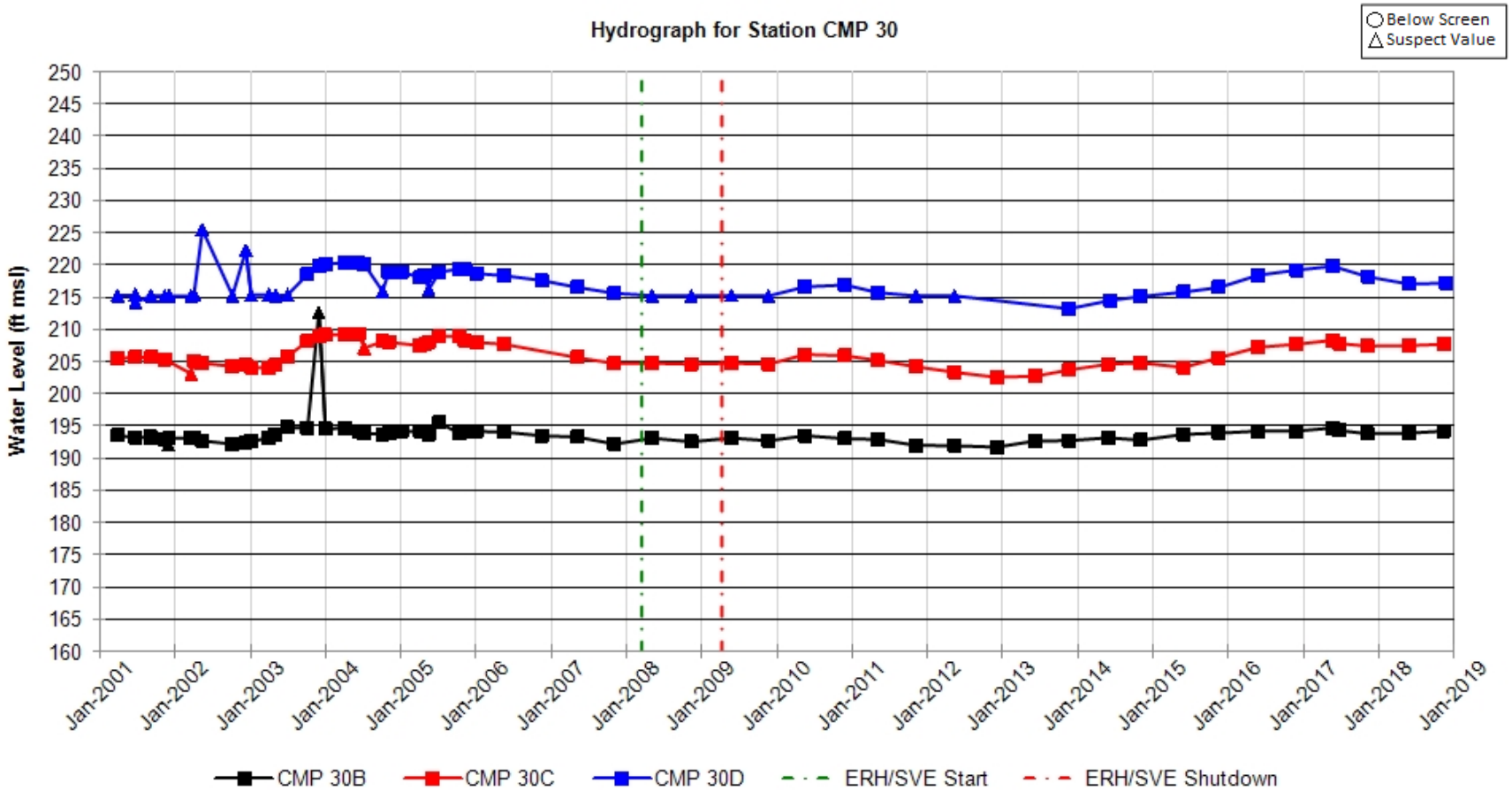

Hydrograph for Station CMP 11
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
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Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 11B
CMP 11D
ERH/SVE Start
ERH/SVE Shutdown

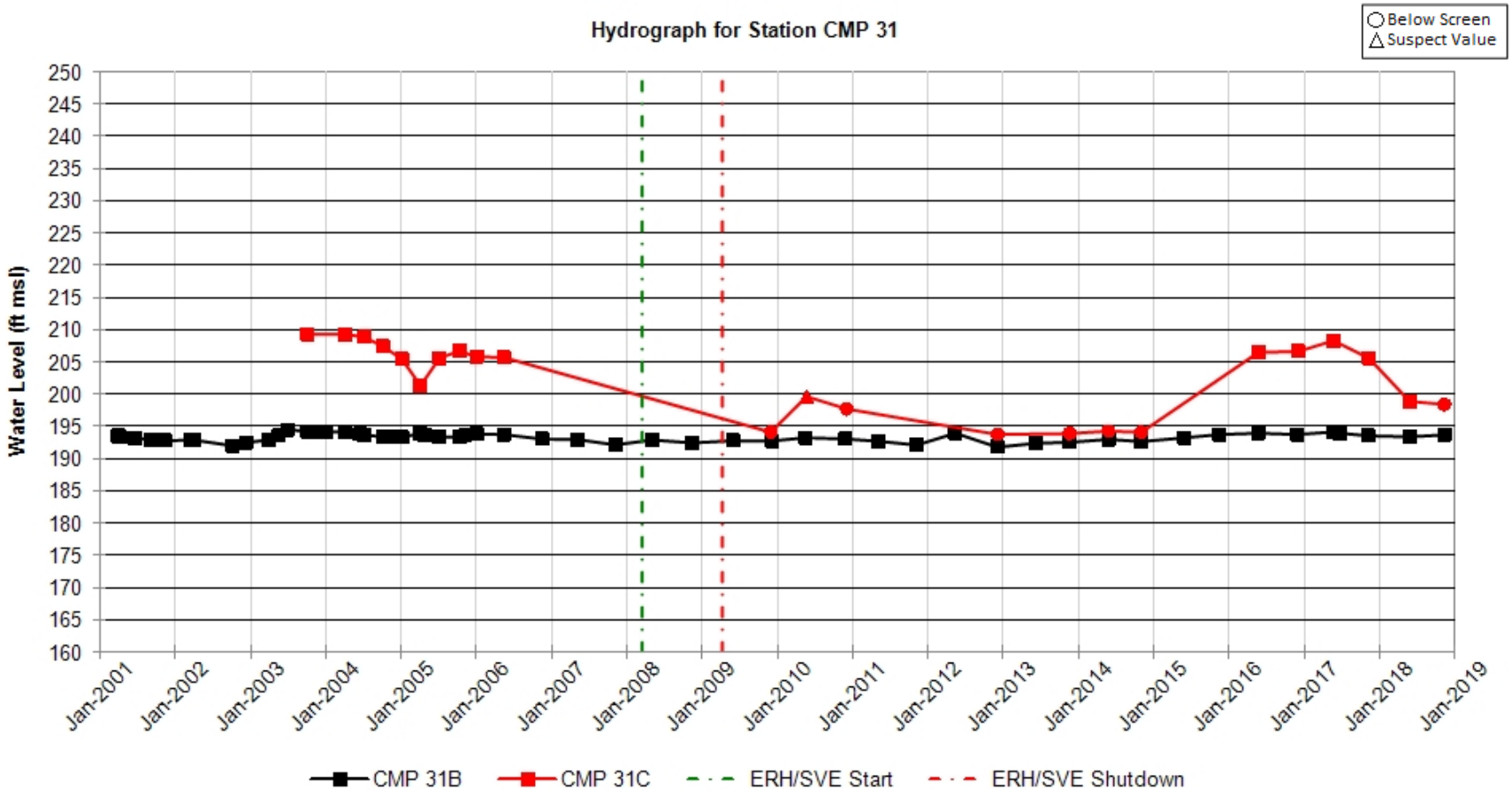

Hydrograph for Station CMP 12
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
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165
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Jan-2001
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Jan-2018
Jan-2019
CMP 12A
CMP 12B
ERH/SVE Start
ERH/SVE Shutdown

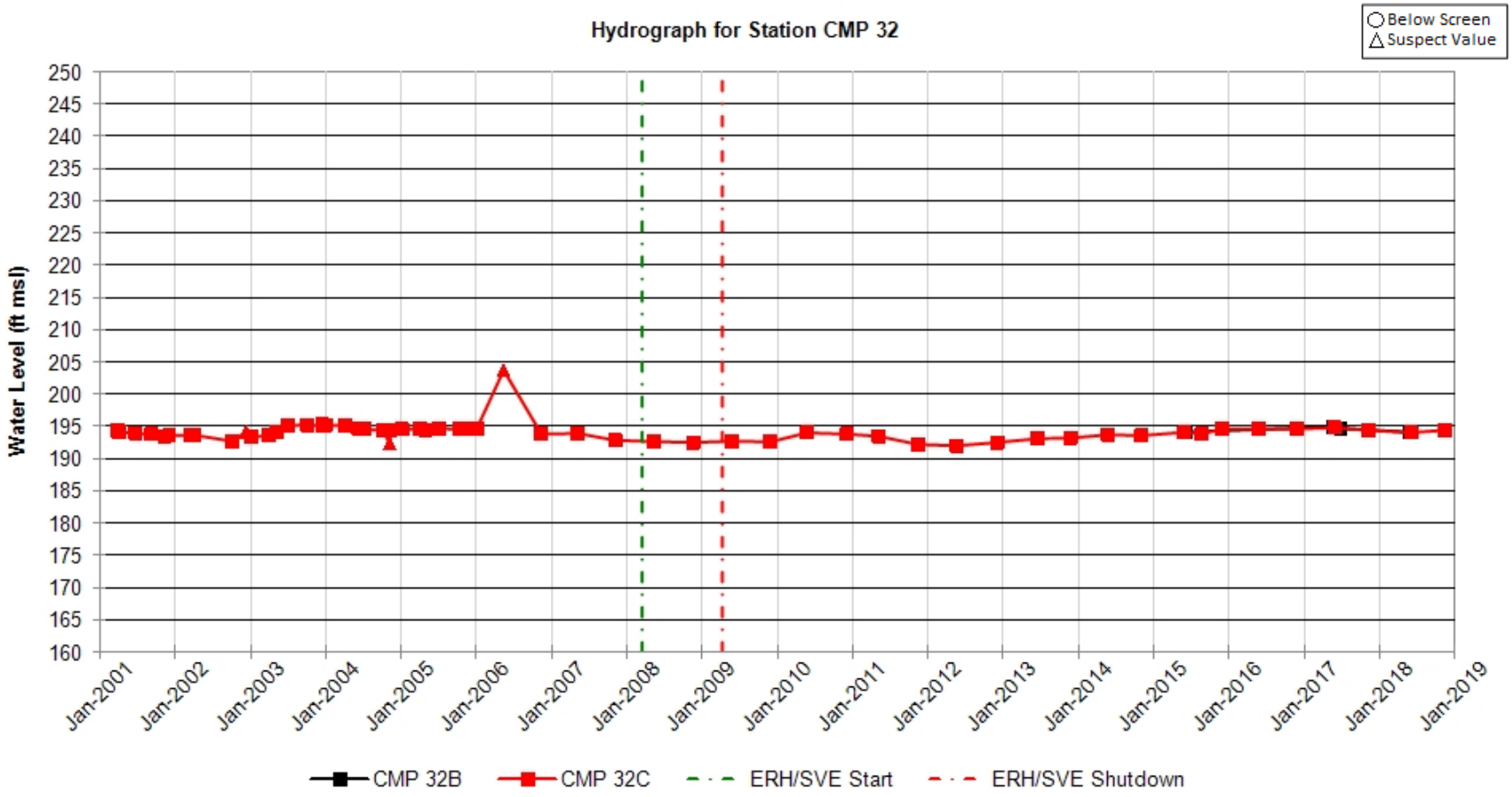

Hydrograph for Station CMP 13
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
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175
170
165
160
Jan-2001
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Jan-2013
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Jan-2018
Jan-2019
CMP 13B
CMP 13D
ERH/SVE Start
ERH/SVE Shutdown

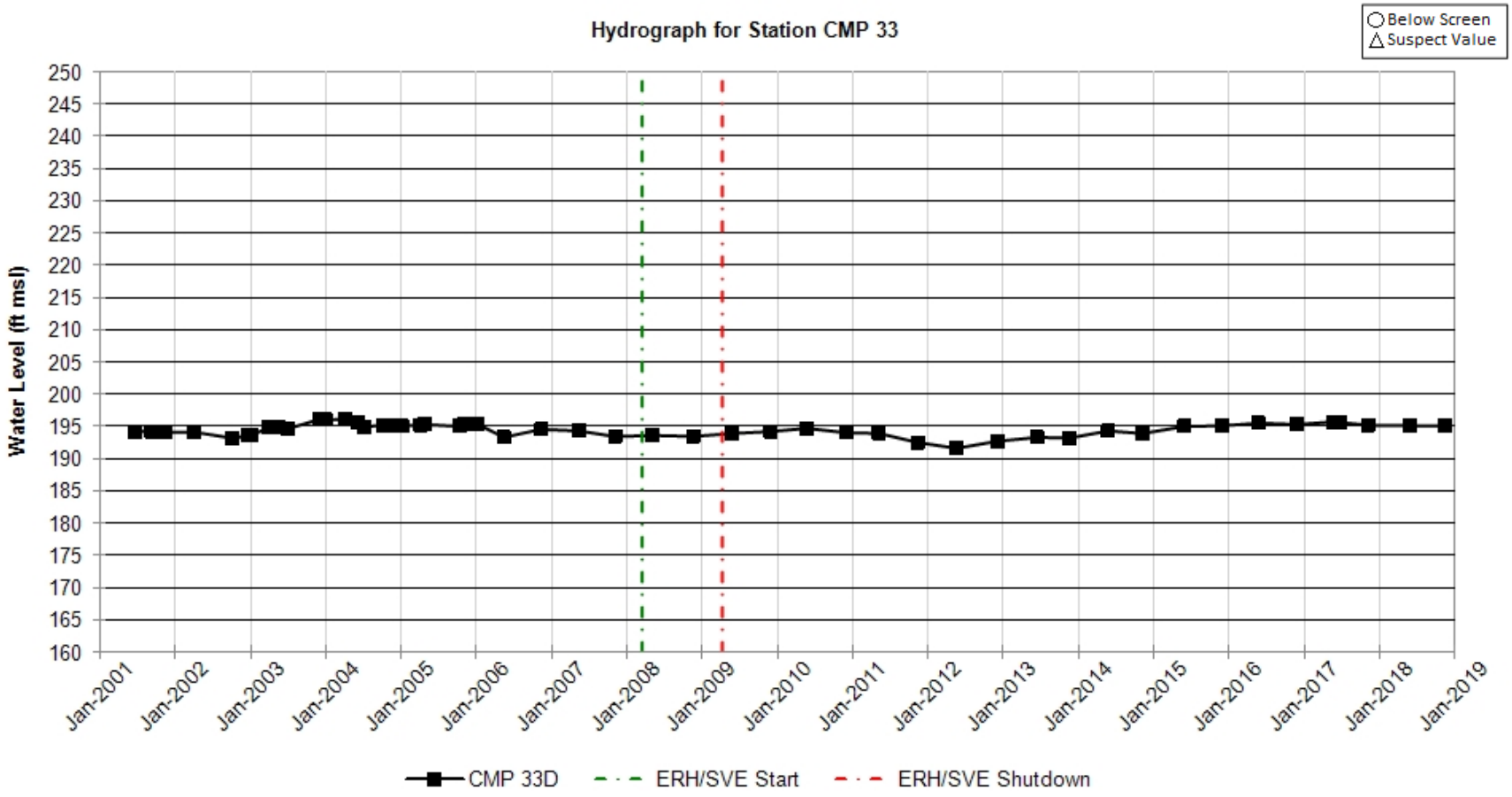

Hydrograph for Station CMP 14
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
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Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 14B
CMP 14CR
CMP 14D
CMP 14DU
ERH/SVE Start
ERH/SVE Shutdown

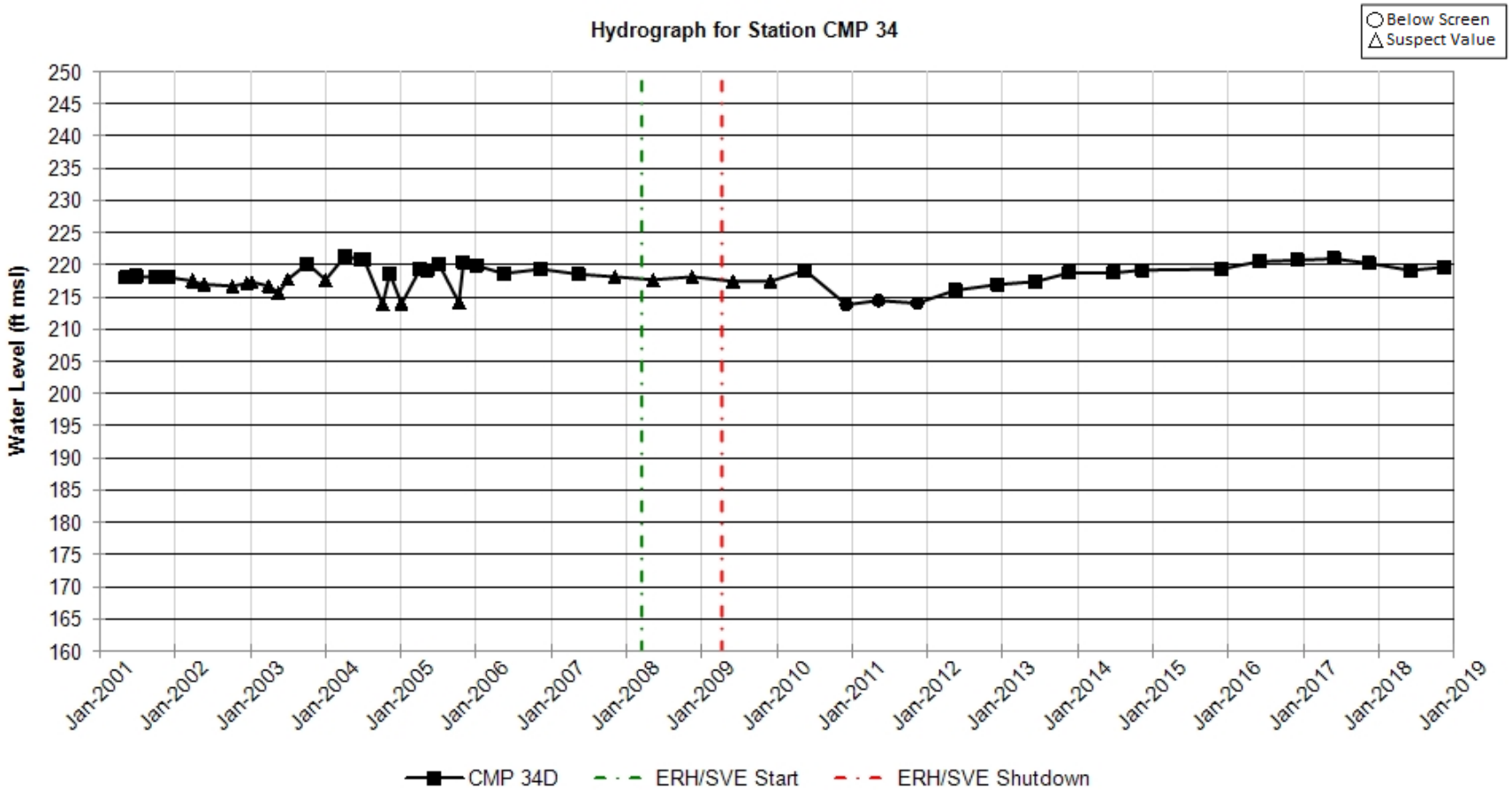

Hydrograph for Station CMP 15
Below Screen
Suspect Value
Water Level (ft msl)
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245
240
235
230
225
220
215
210
205
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195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 15A
CMP 15B
ERH/SVE Start
ERH/SVE Shutdown

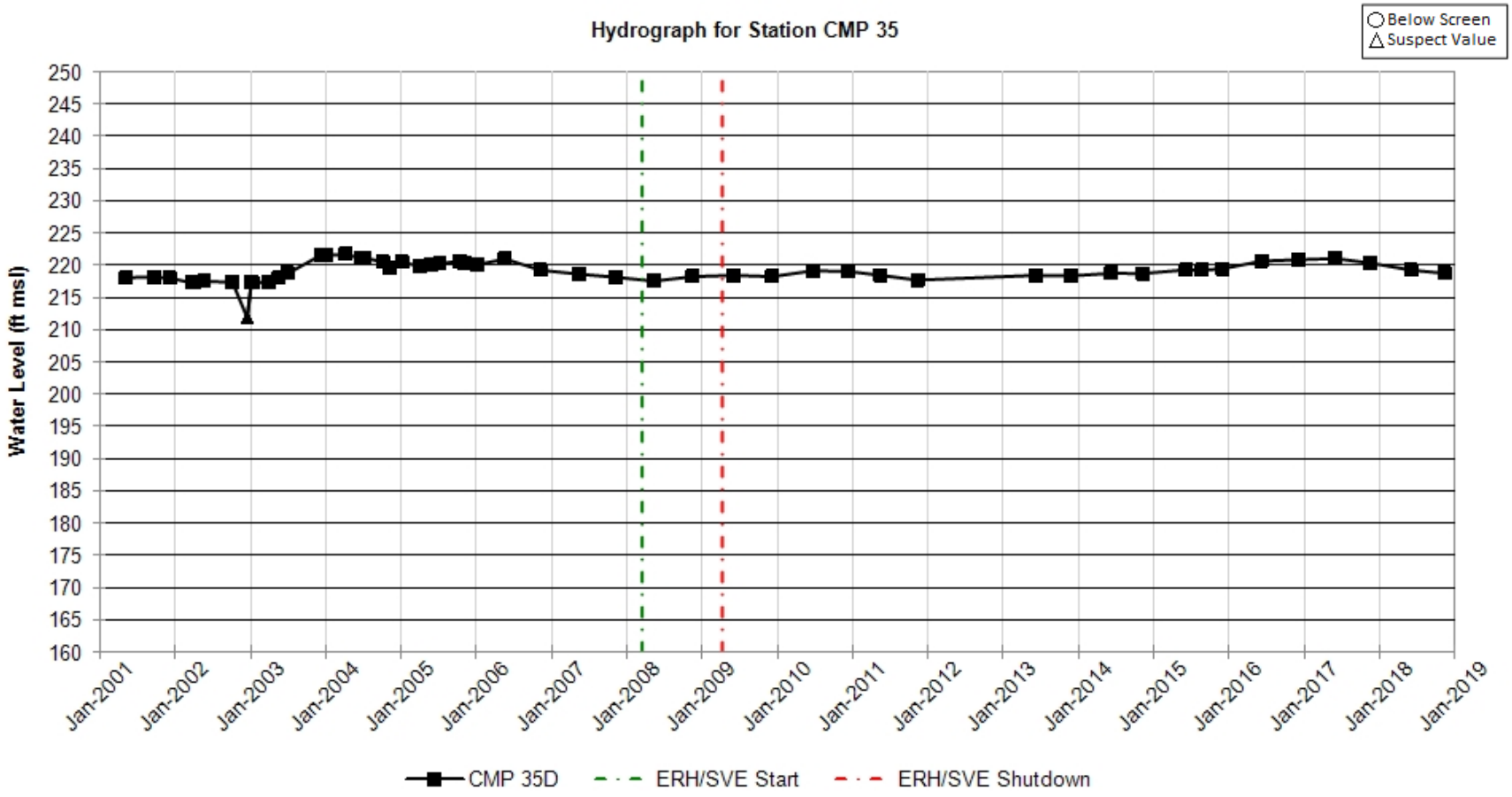

Hydrograph for Station CMP 30
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
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160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 30B
CMP 30C
CMP 30D
ERH/SVE Start
ERH/SVE Shutdown

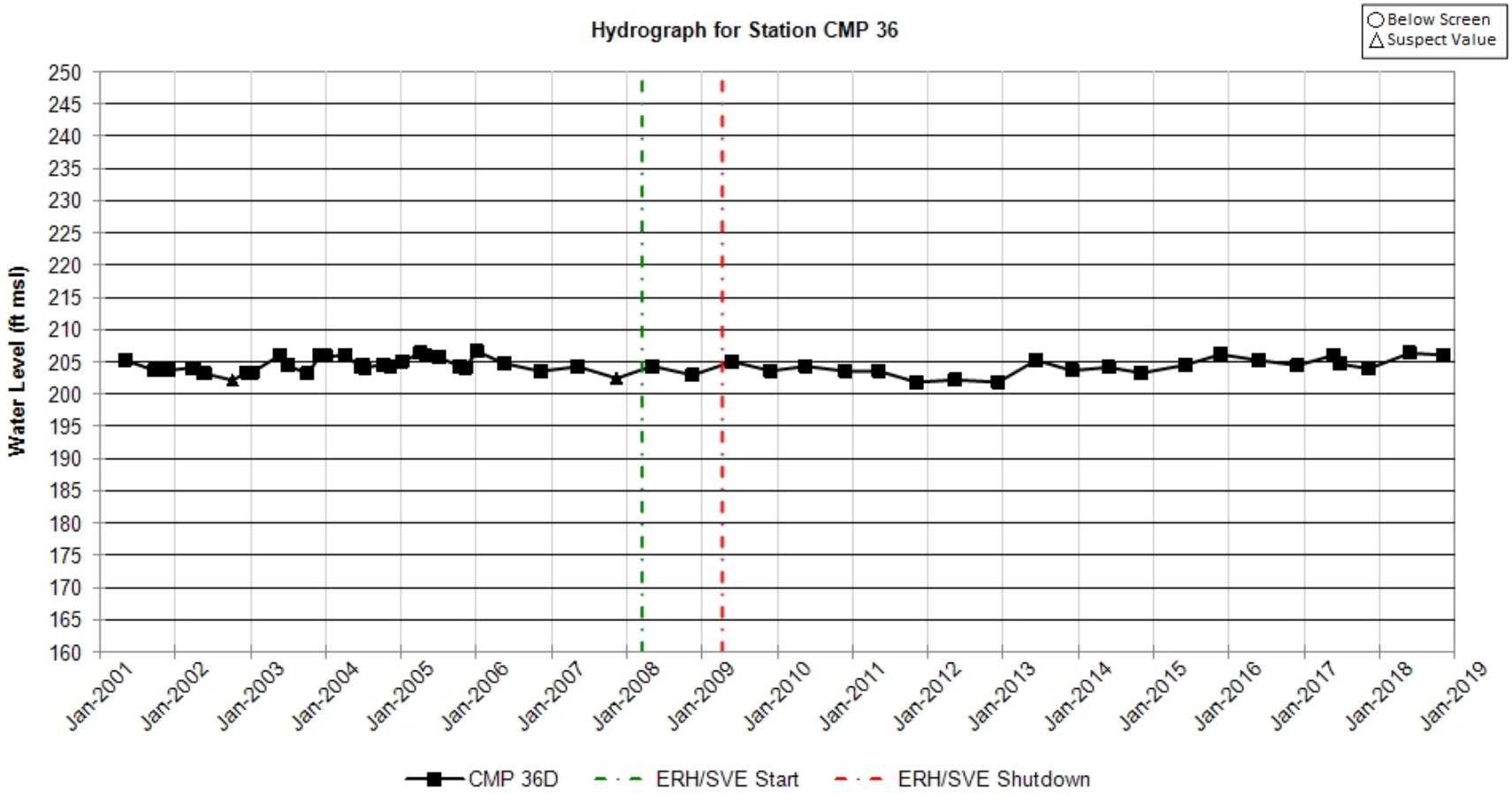

Hydrograph for Station CMP 31
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2008
Jan-2009
Jan-2010
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 31B
CMP 31C
ERH/SVE Start
ERH/SVE Shutdown

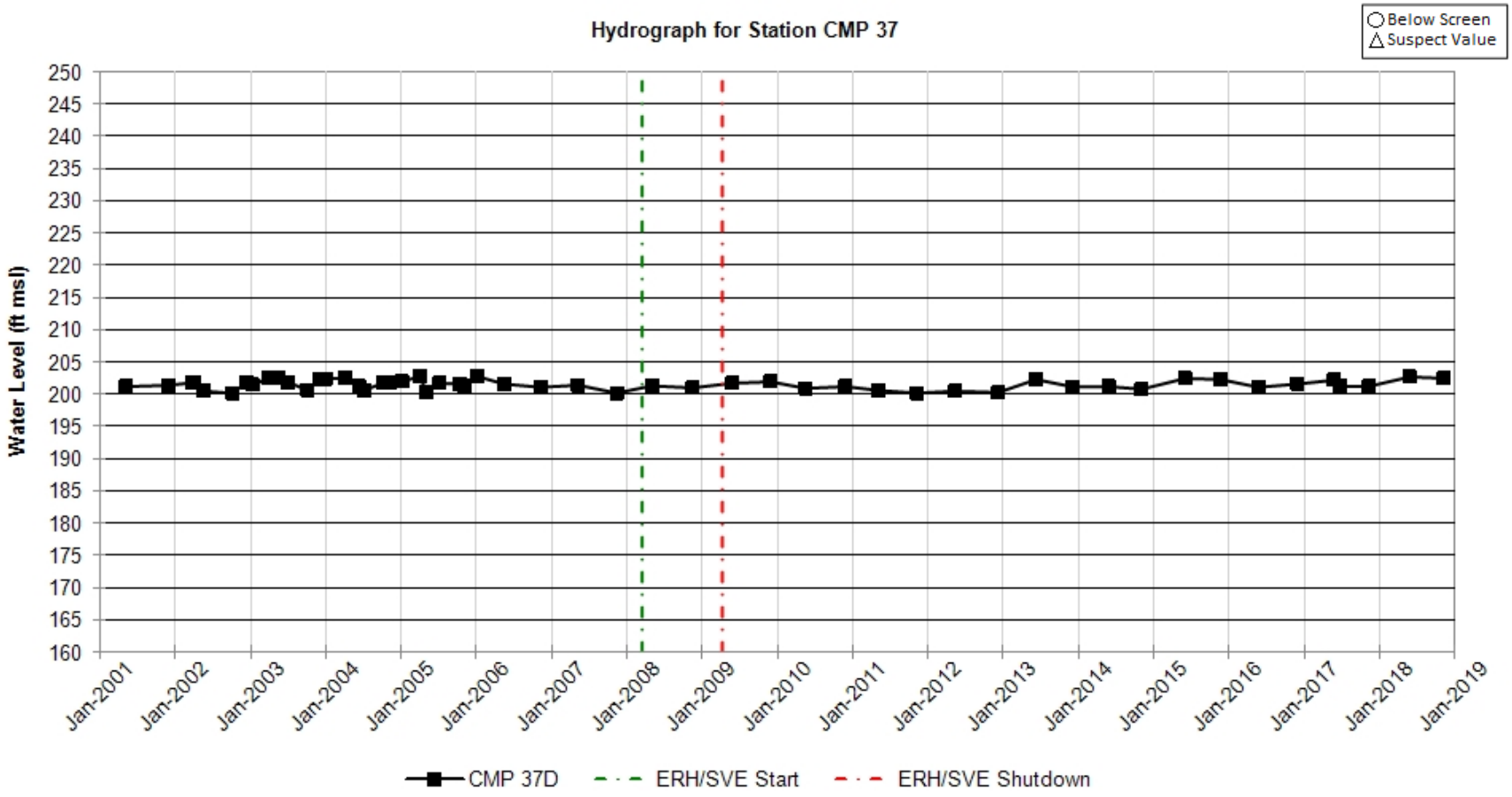

Hydrograph for Station CMP 32
Below Screen
Suspect Value
Water Level (ft msl)
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240
235
230
225
220
215
210
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190
185
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Jan-2001
Jan-2002
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Jan-2004
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Jan-2018
Jan-2019
CMP 32B
CMP 32C
ERH/SVE Start
ERH/SVE Shutdown

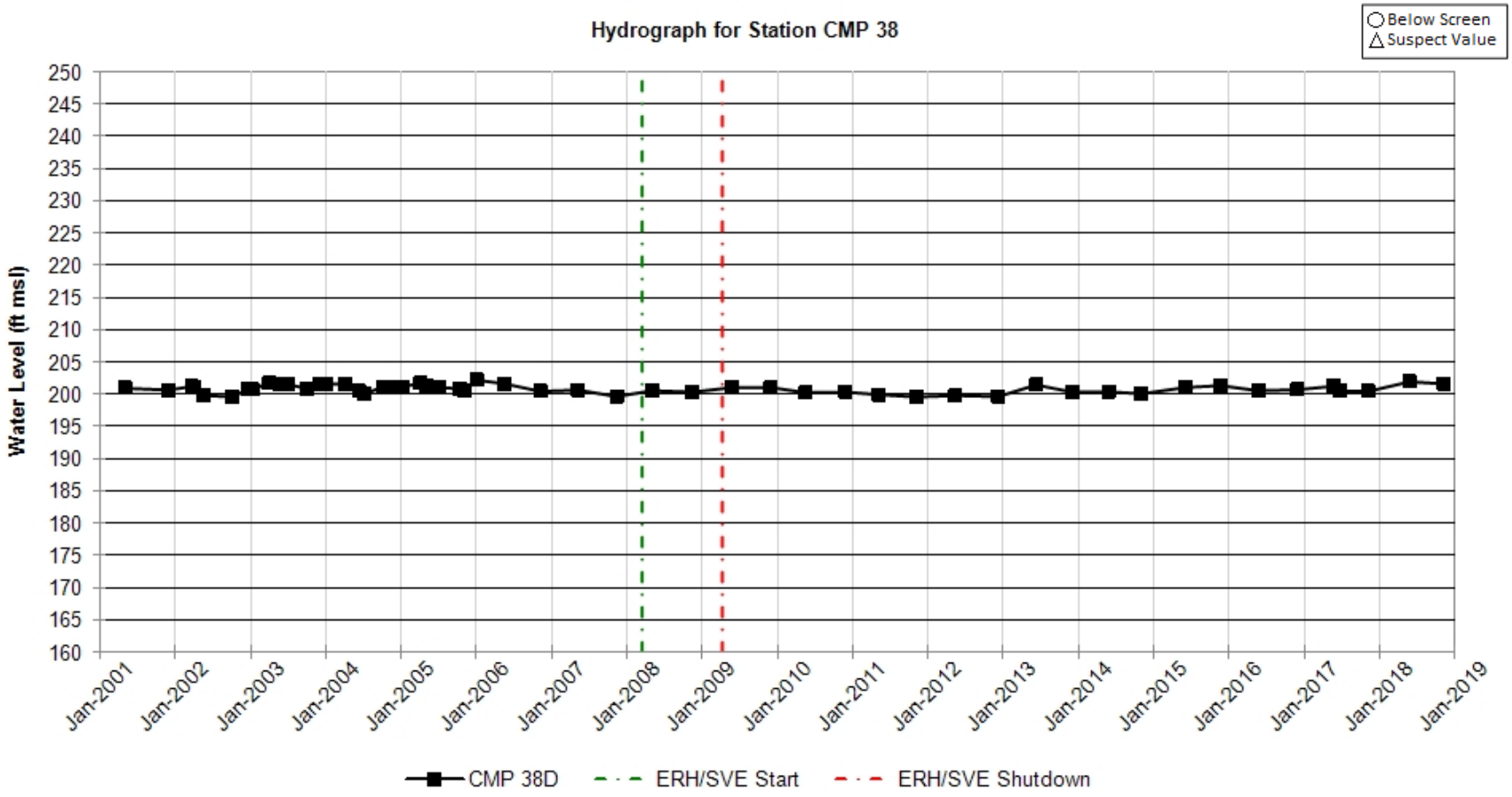

Hydrograph for Station CMP 33
Below Screen
Suspect Value
Water Level (ft msl)
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245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2008
Jan-2009
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 33D
ERH/SVE Start
ERH/SVE Shutdown

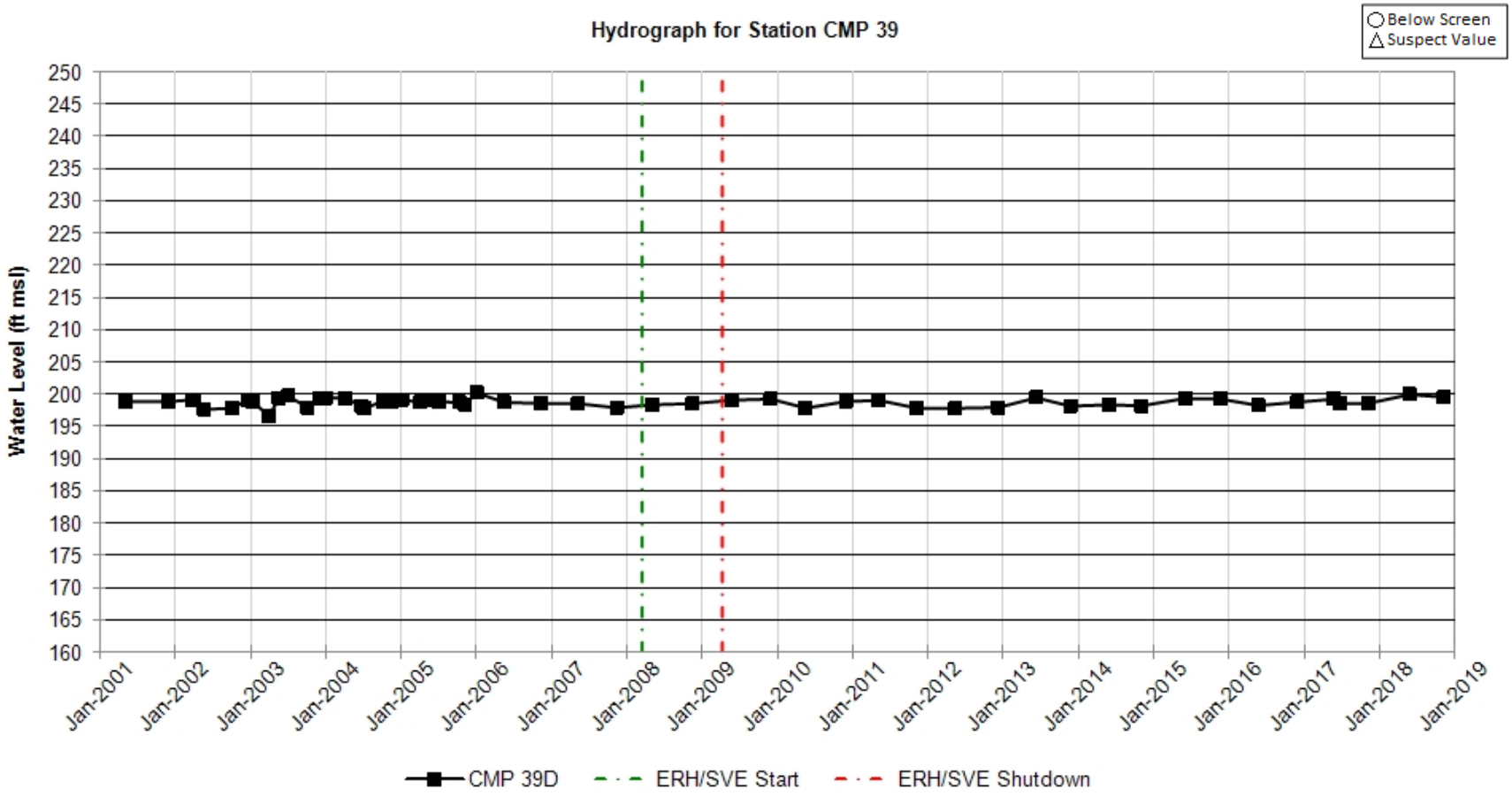

Hydrograph for Station CMP 34
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
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165
160
Jan-2001
Jan-2002
Jan-2003
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Jan-2007
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 34D
ERH/SVE Start
ERH/SVE Shutdown

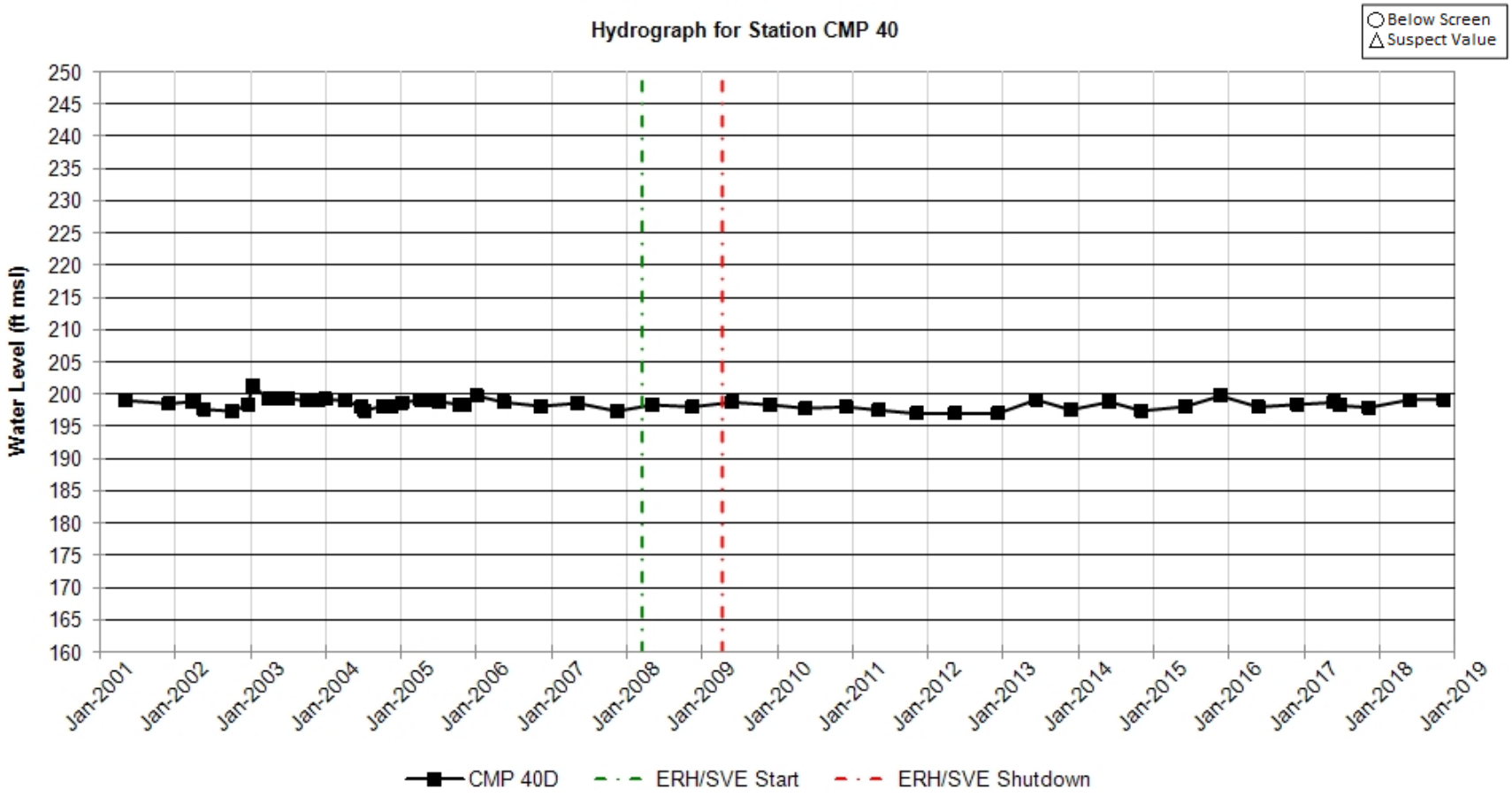

Hydrograph for Station CMP 35
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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235
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225
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215
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Jan-2001
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Jan-2019
CMP 35D
ERH/SVE Start
ERH/SVE Shutdown

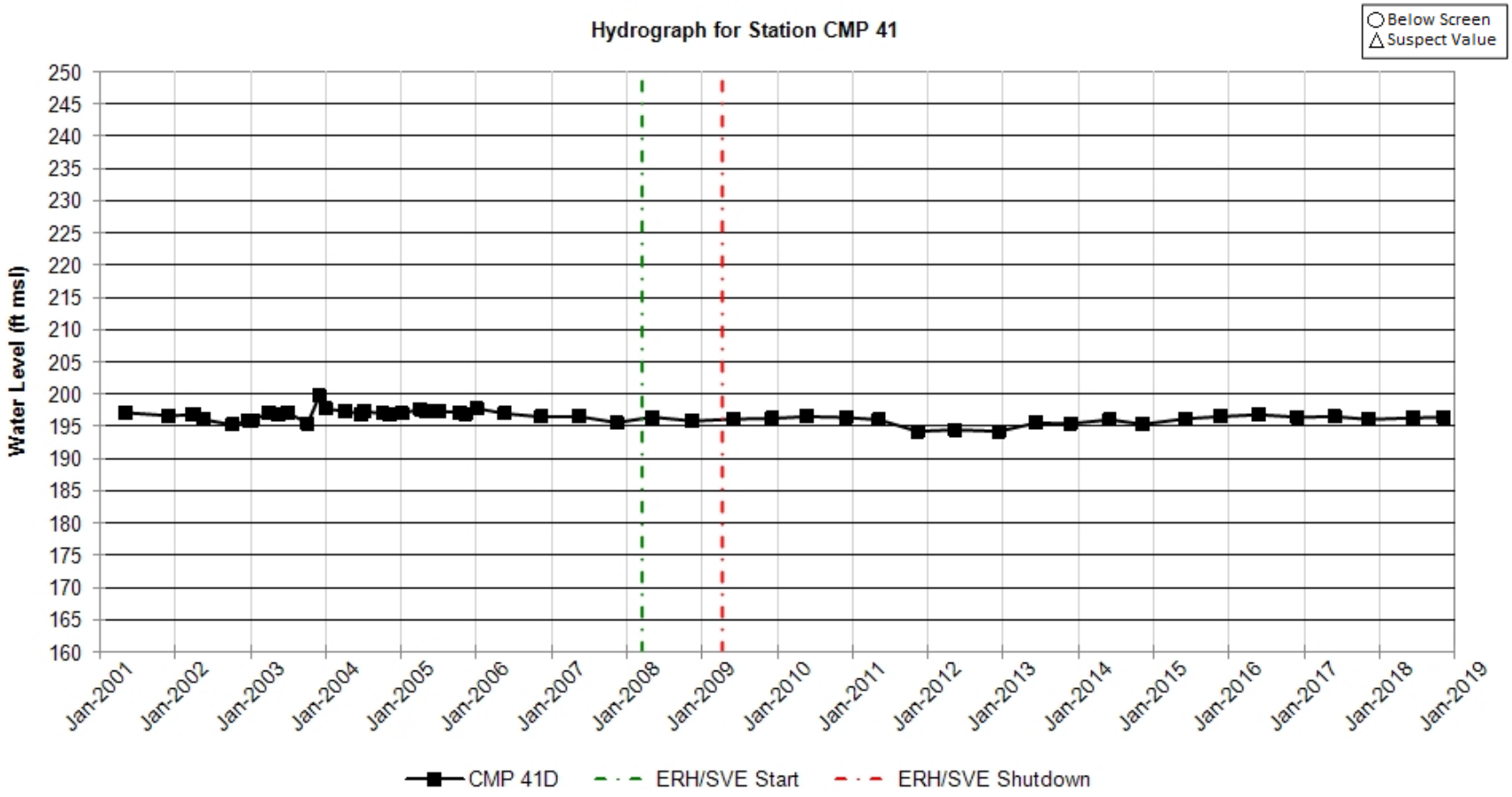

Hydrograph for Station CMP 36
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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225
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215
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Jan-2001
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Jan-2019
CMP 36D
ERH/SVE Start
ERH/SVE Shutdown

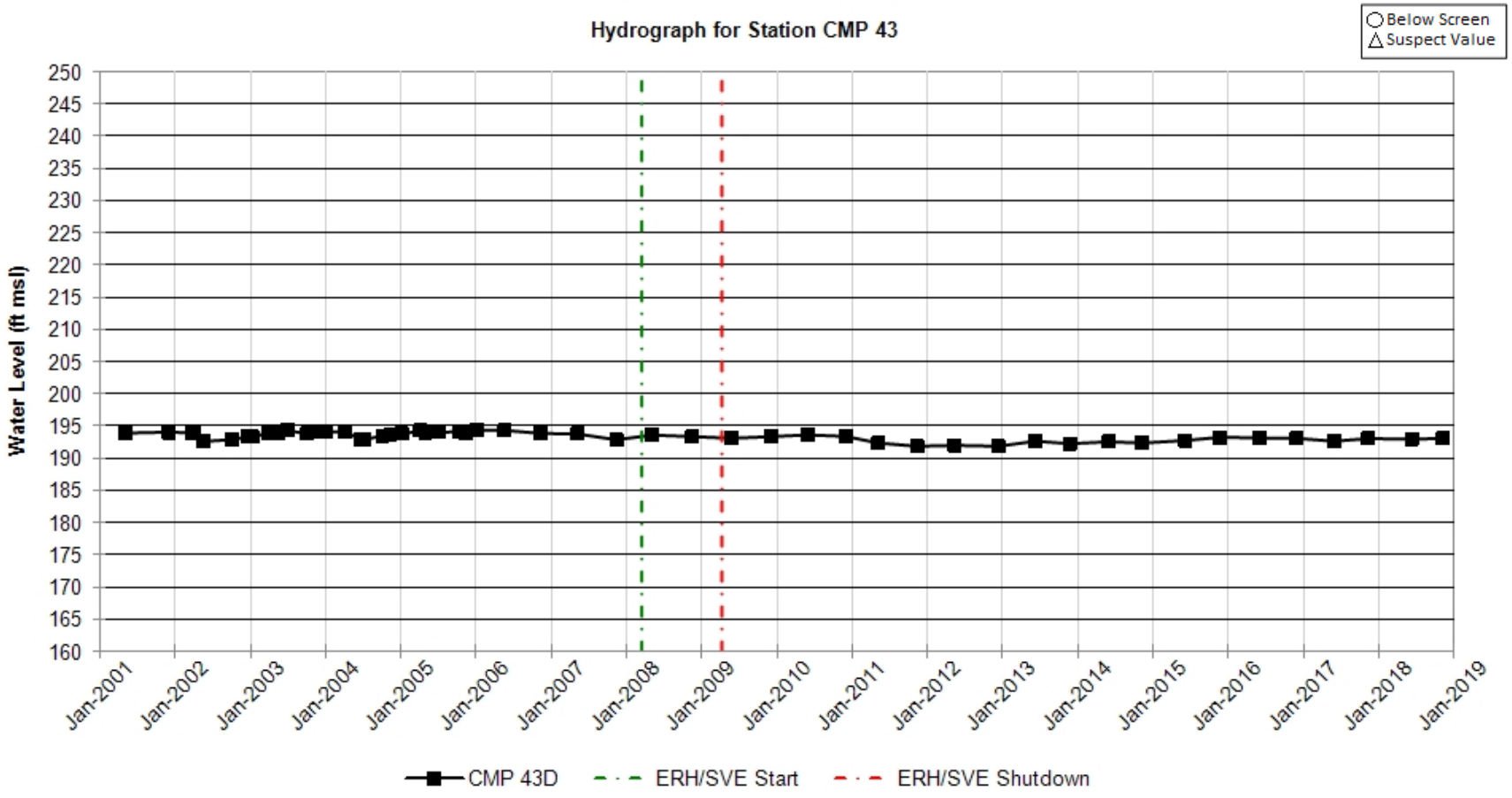

Hydrograph for Station CMP 37
Below Screen
Suspect Value
Water Level (ft msl)
250
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225
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Jan-2001
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Jan-2019
CMP 37D
ERH/SVE Start
ERH/SVE Shutdown

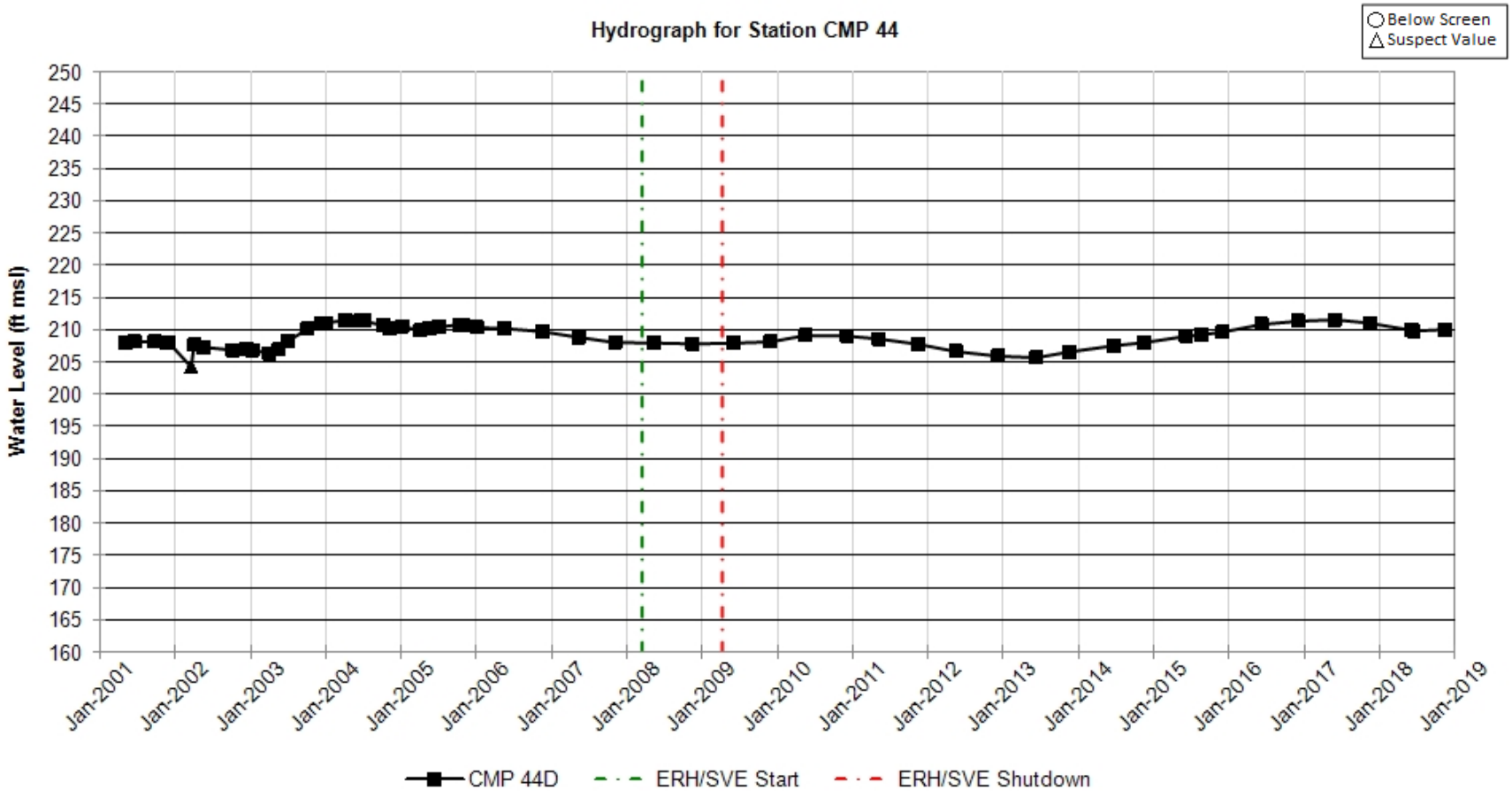

Hydrograph for Station CMP 38
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 38D
ERH/SVE Start
ERH/SVE Shutdown

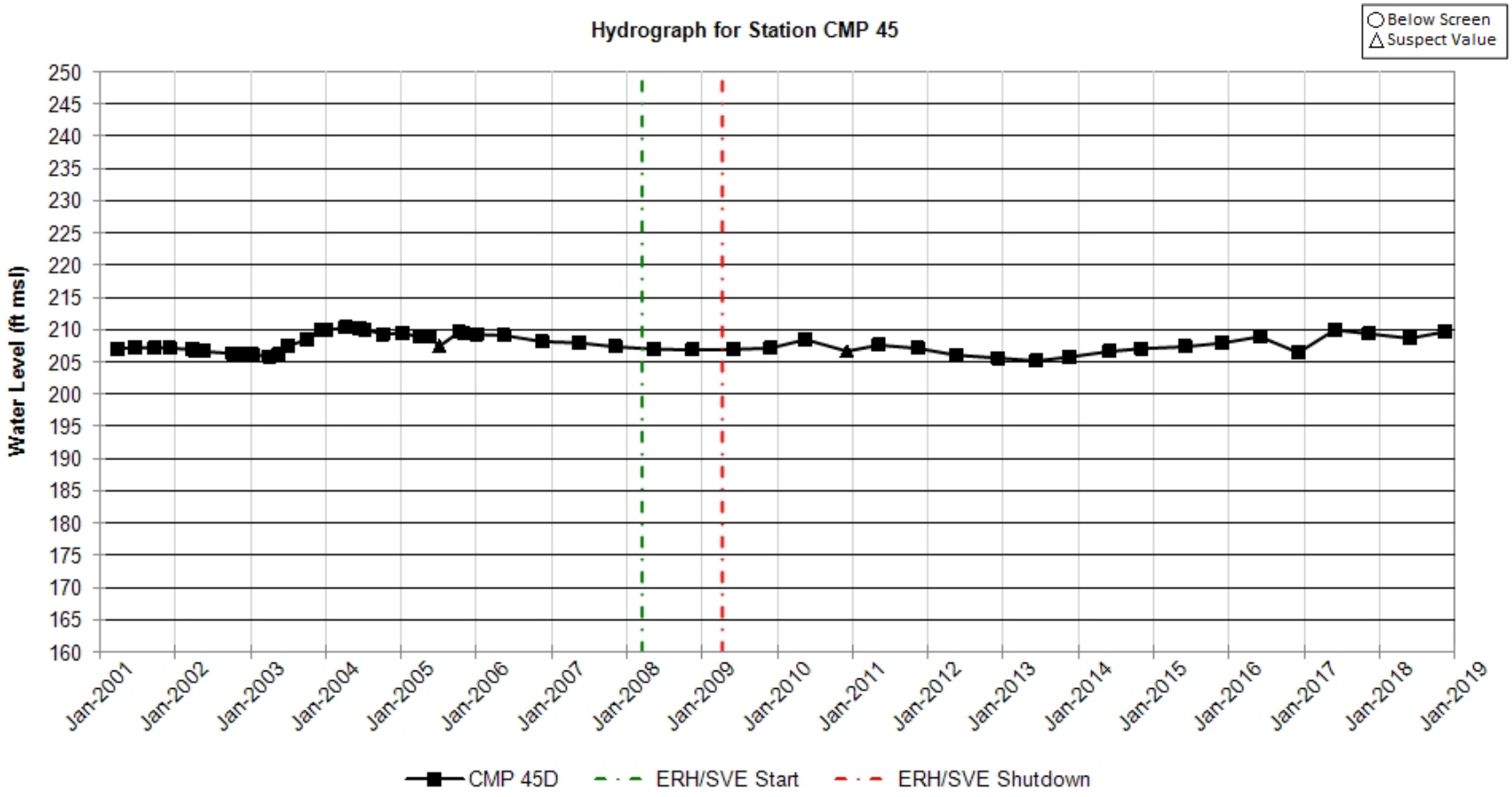

Hydrograph for Station CMP 39
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 39D
ERH/SVE Start
ERH/SVE Shutdown

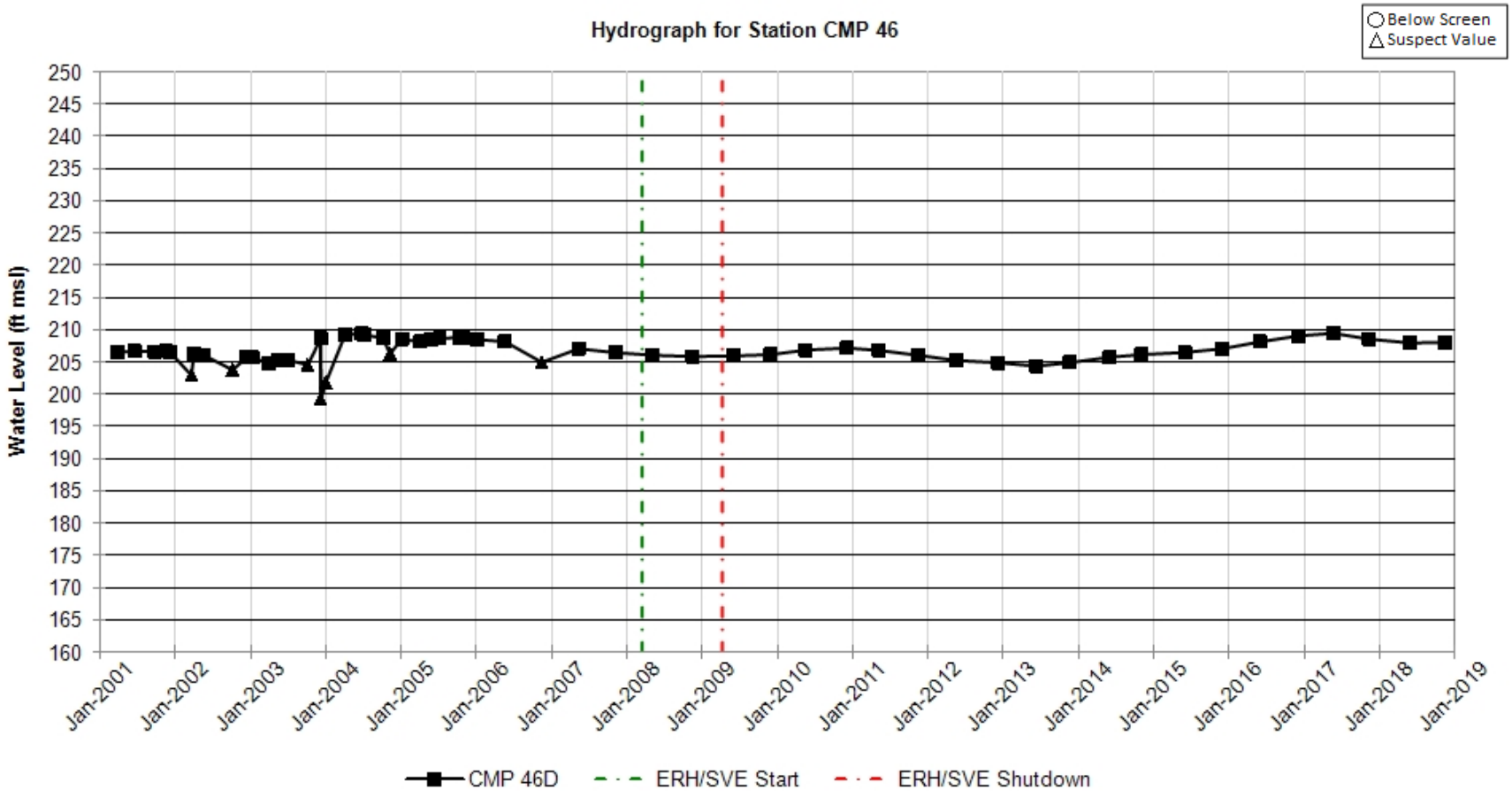

Hydrograph for Station CMP 40
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 40D
ERH/SVE Start
ERH/SVE Shutdown

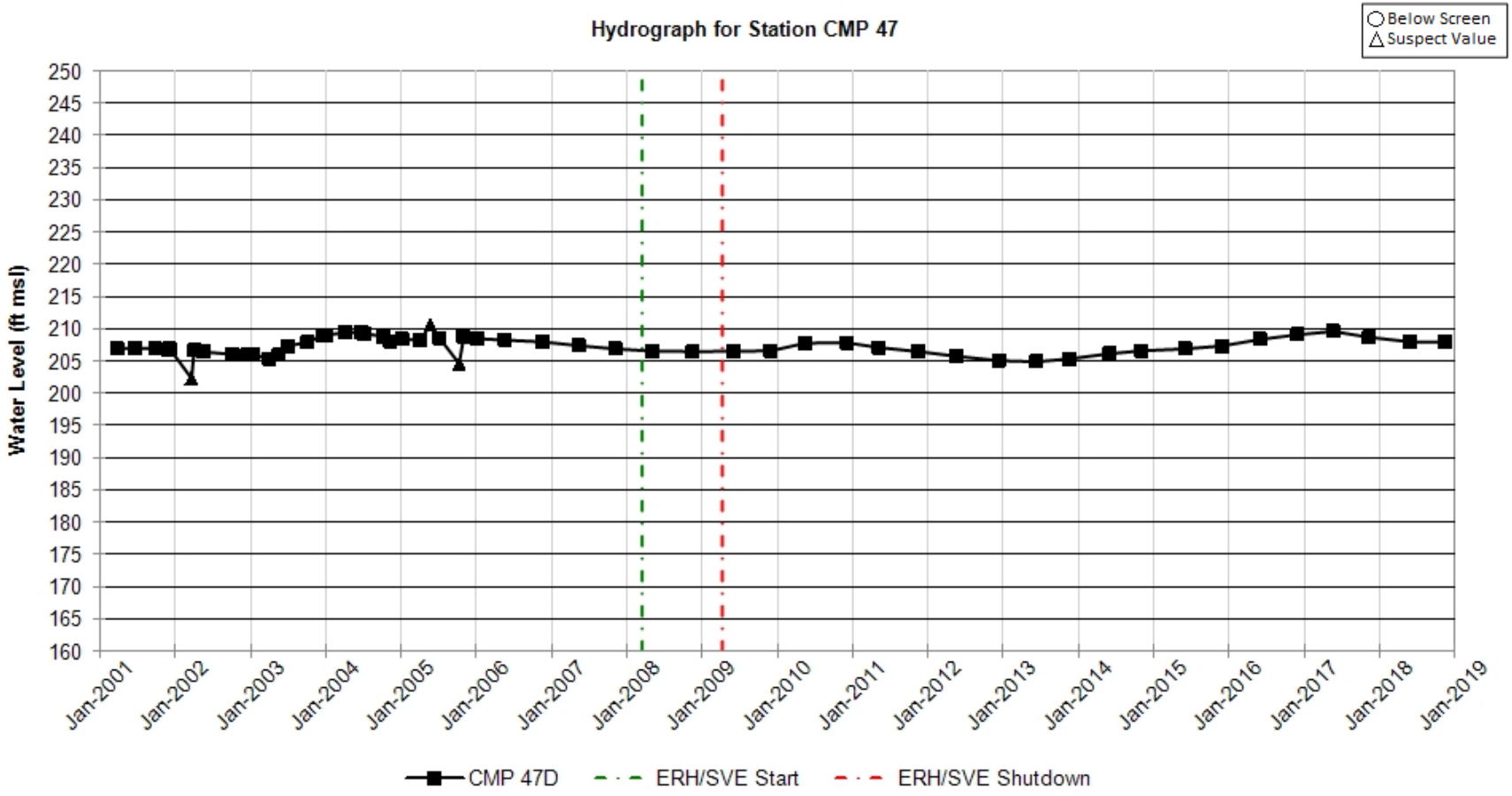

Hydrograph for Station CMP 41
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 41D
ERH/SVE Start
ERH/SVE Shutdown

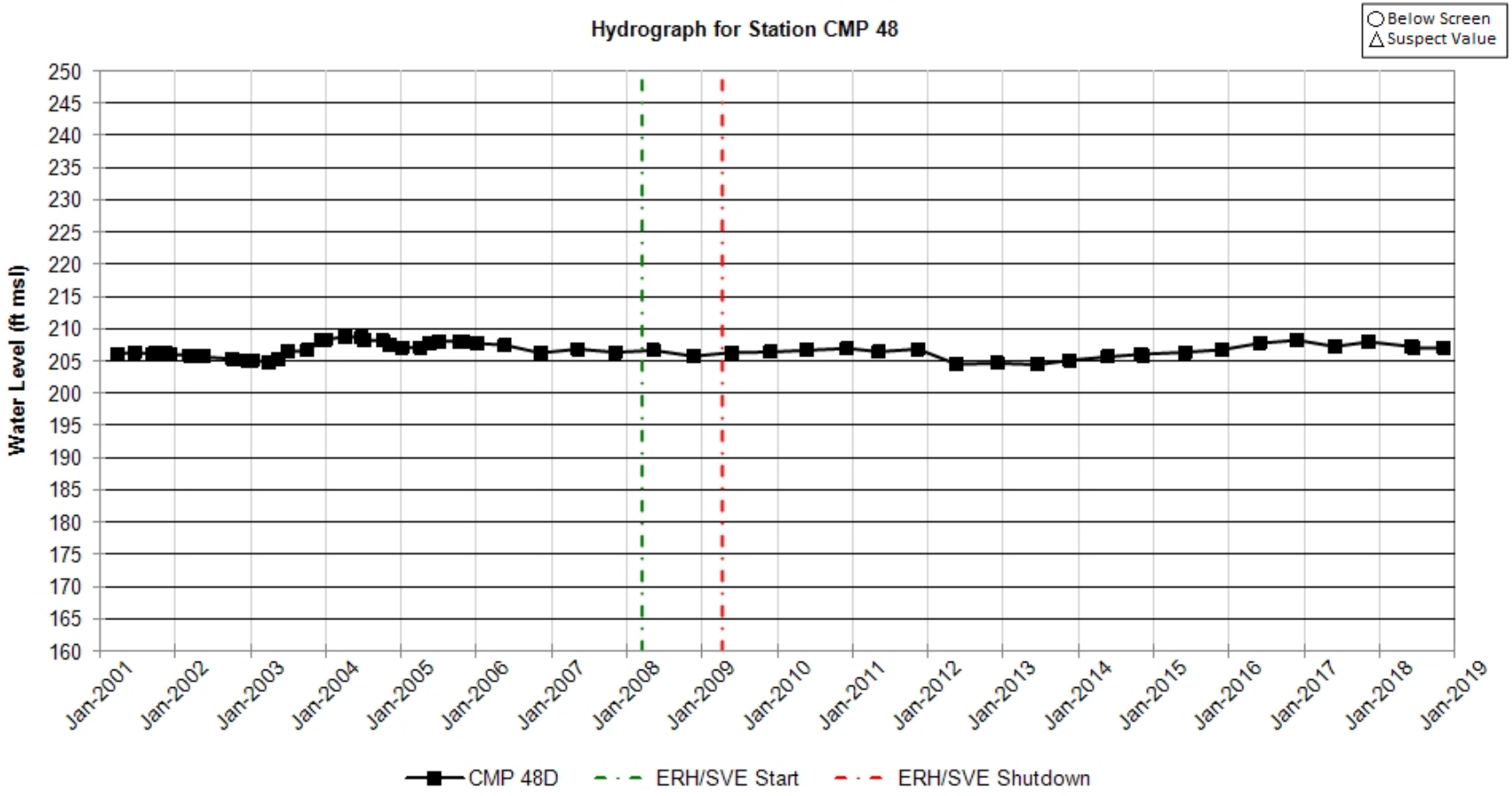

Hydrograph for Station CMP 43
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2018
Jan-2019
CMP 43D
ERH/SVE Start
ERH/SVE Shutdown

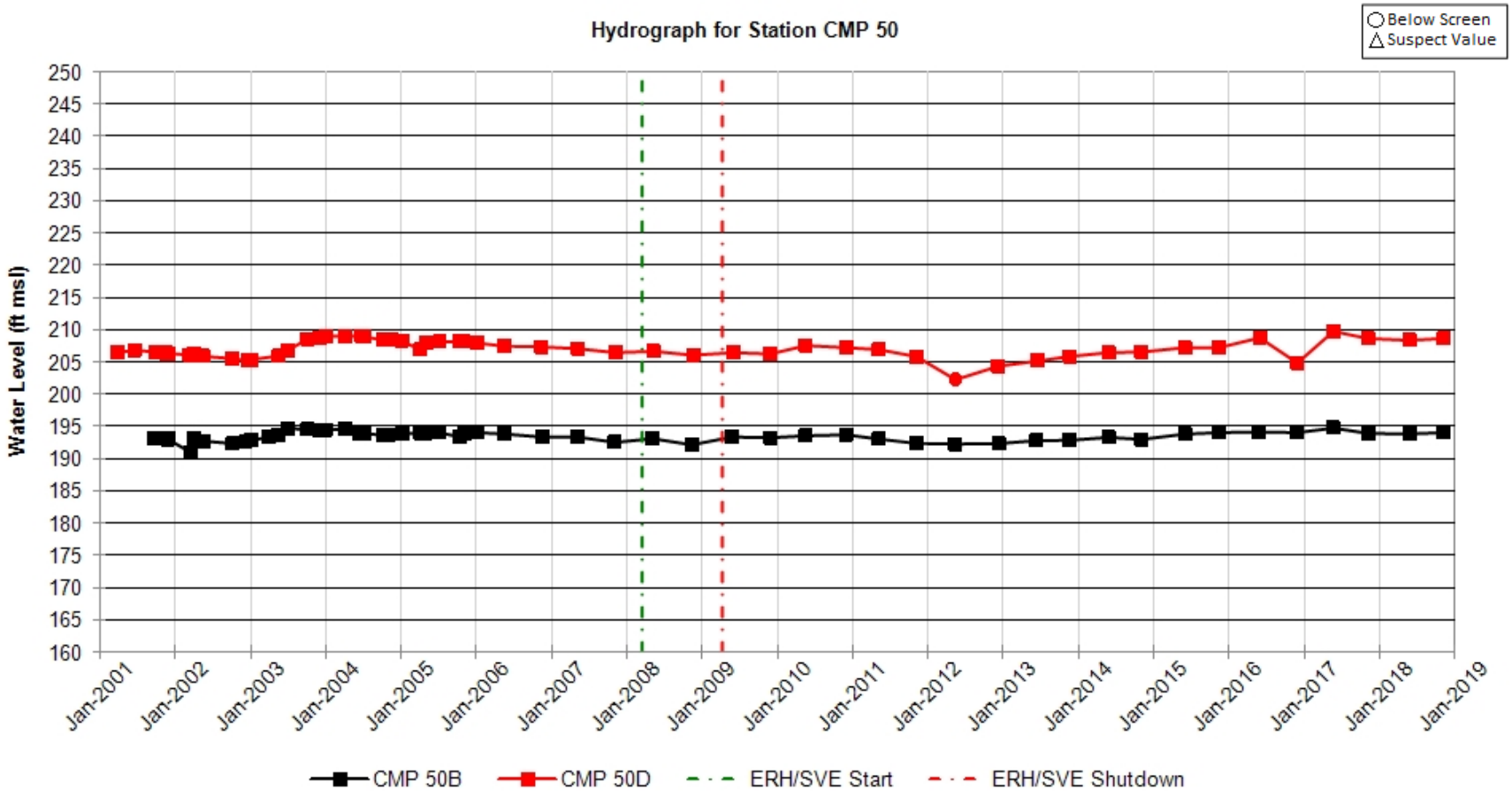

Hydrograph for Station CMP 44
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2019
CMP 44D
ERH/SVE Start
ERH/SVE Shutdown

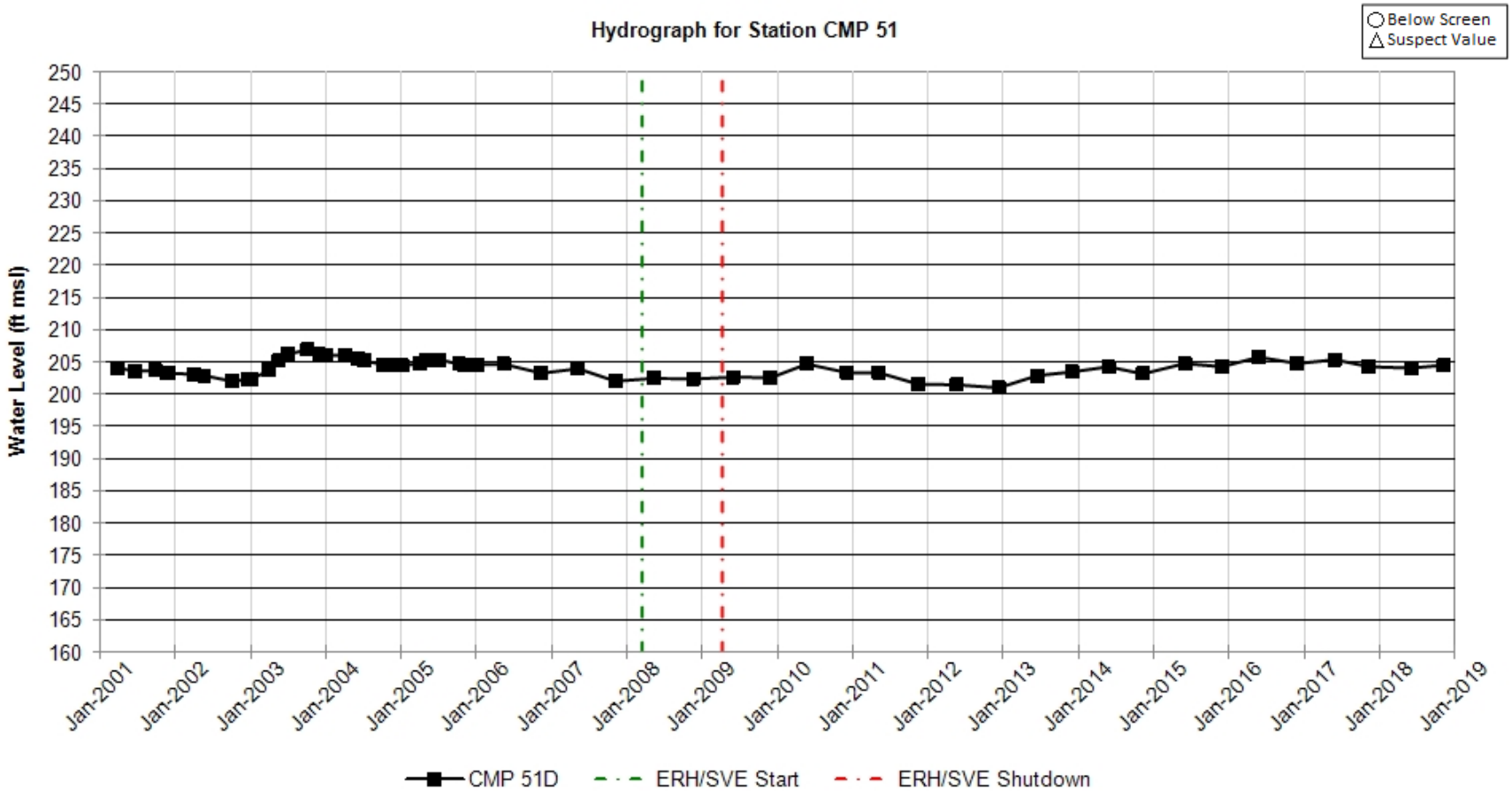

Hydrograph for Station CMP 45
Below Screen
Suspect Value
Water Level (ft msl)
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Jan-2001
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Jan-2019
CMP 45D
ERH/SVE Start
ERH/SVE Shutdown

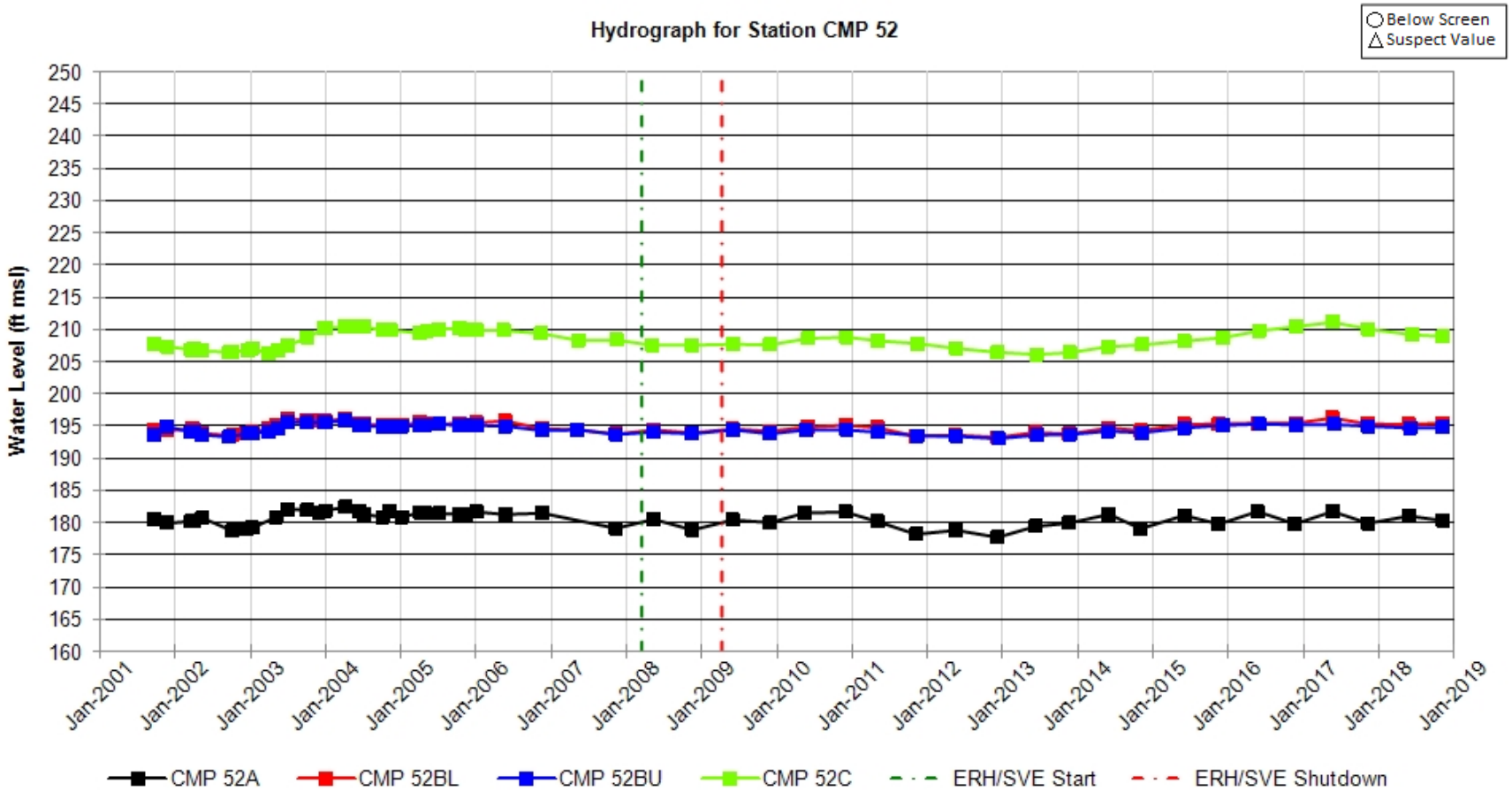

Hydrograph for Station CMP 46
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2018
Jan-2019
CMP 46D
ERH/SVE Start
ERH/SVE Shutdown

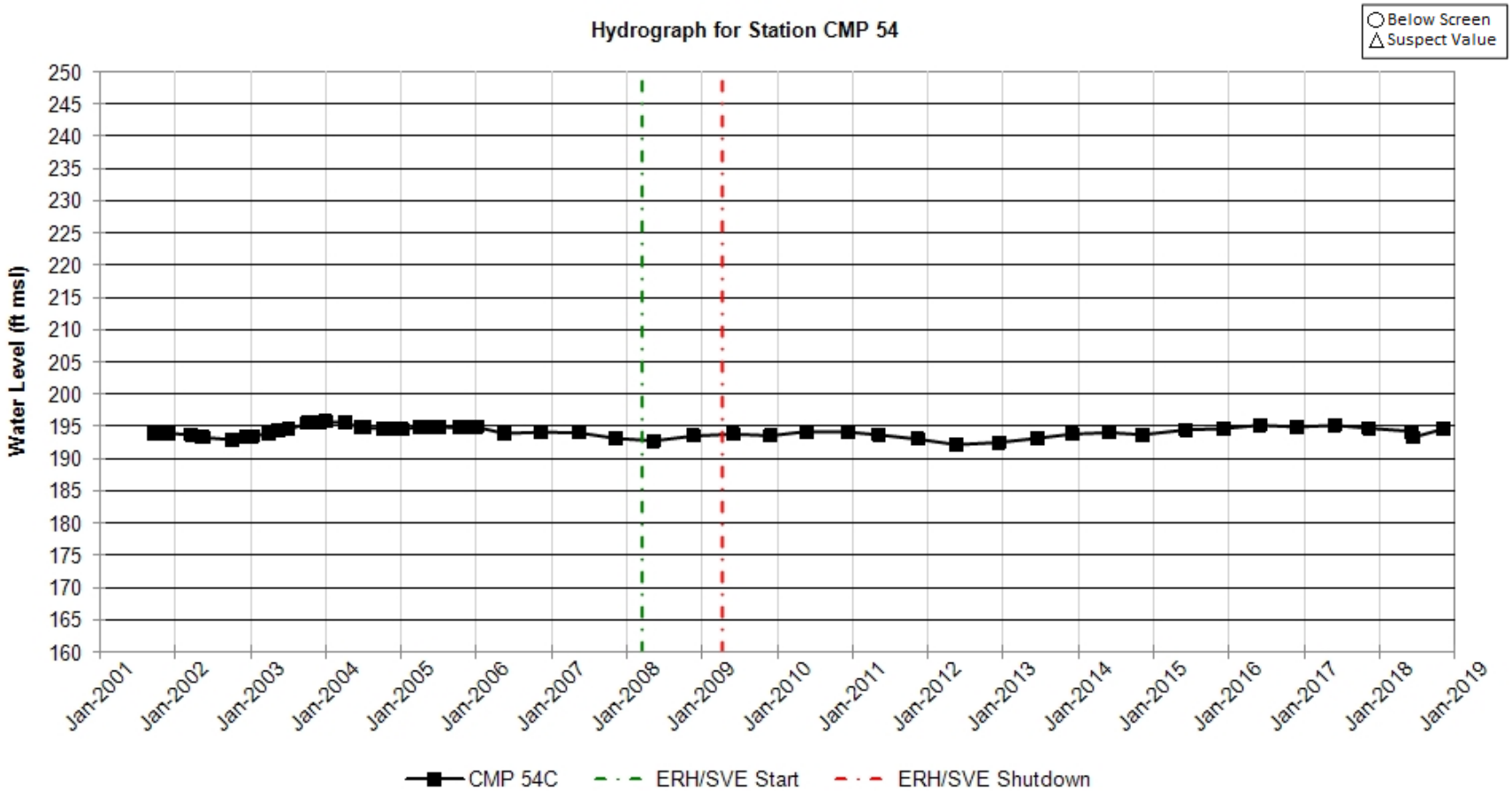

Hydrograph for Station CMP 47
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 47D
ERH/SVE Start
ERH/SVE Shutdown

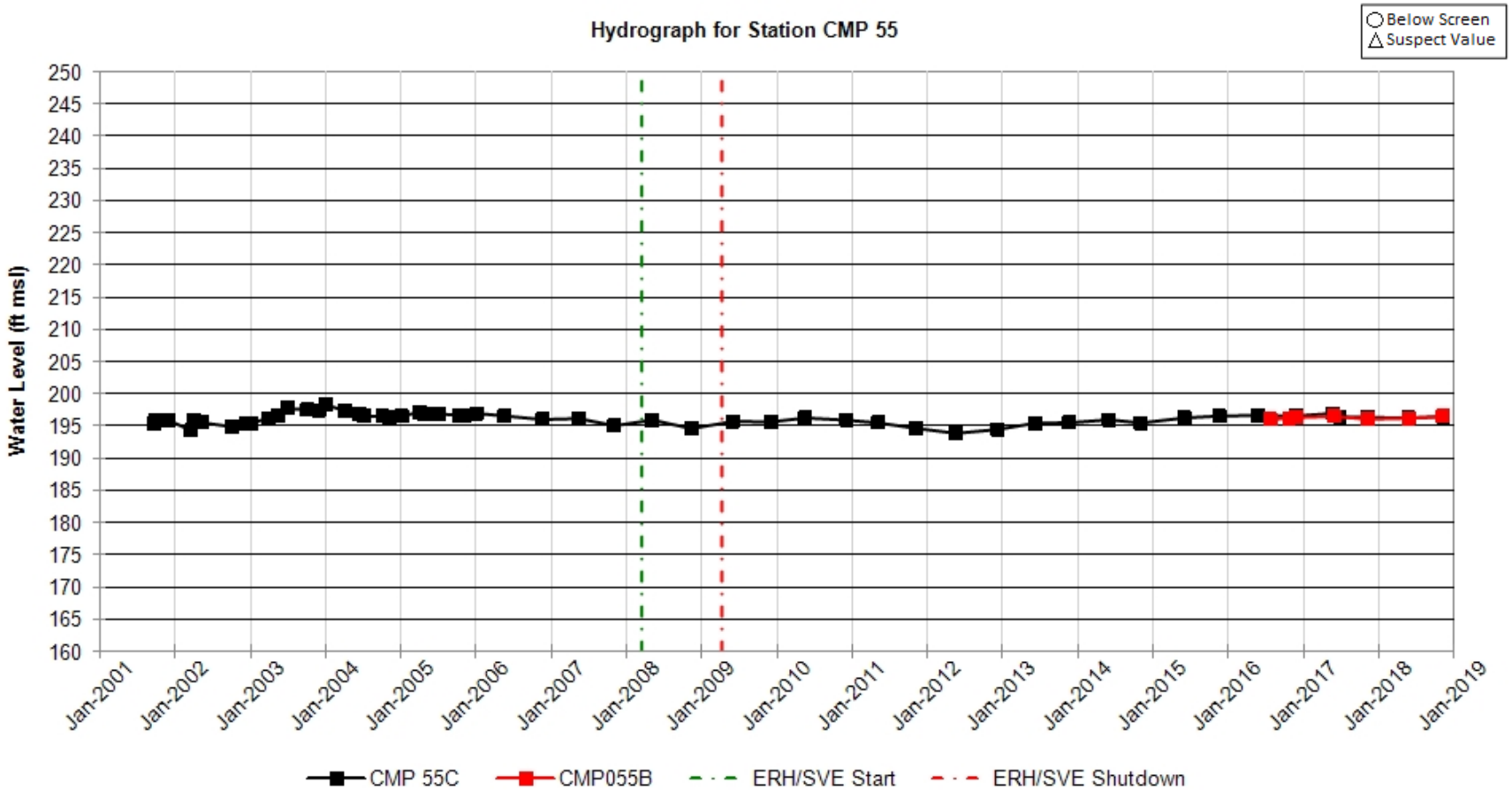

Hydrograph for Station CMP 48
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 48D
ERH/SVE Start
ERH/SVE Shutdown

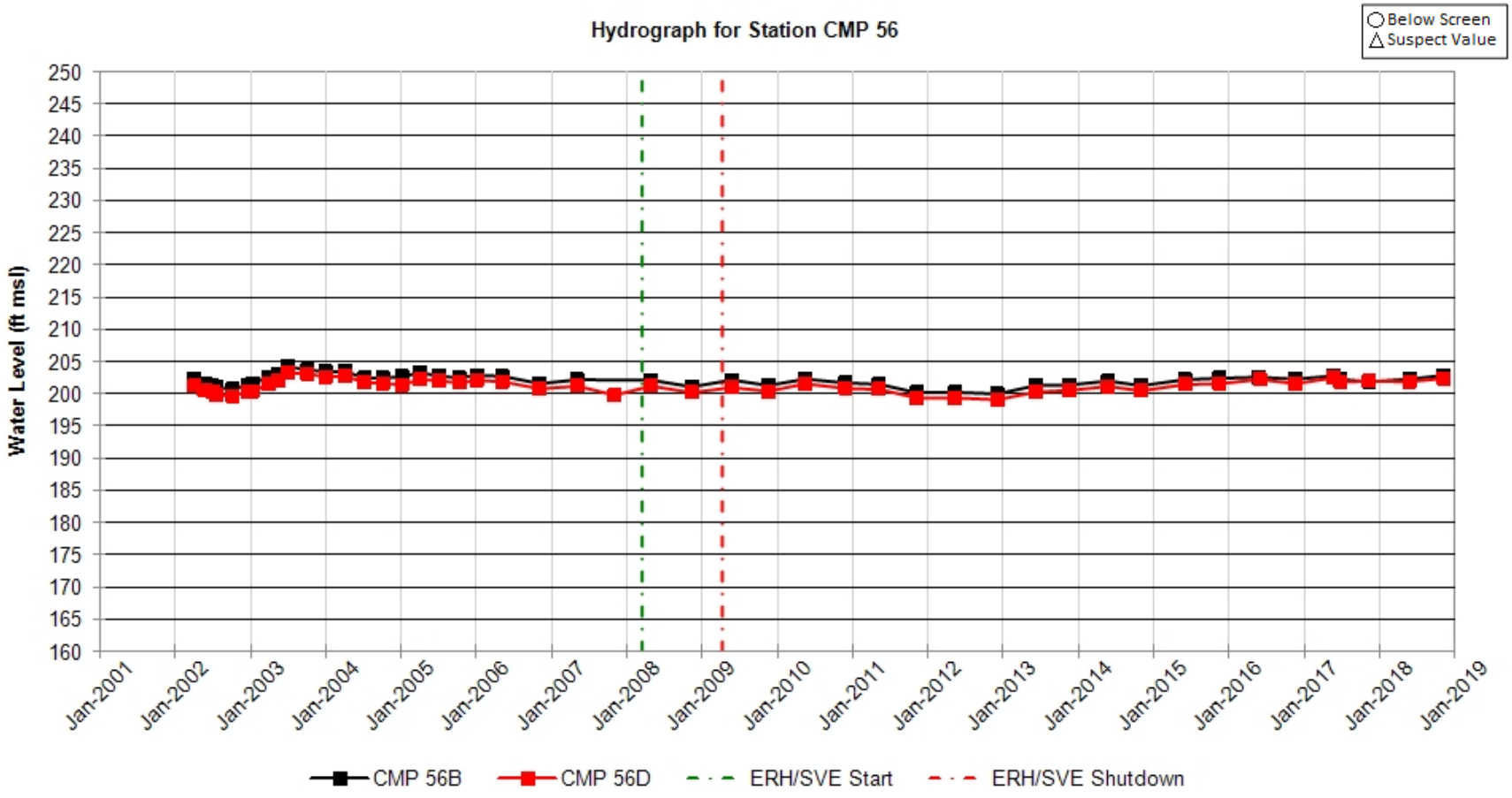

Hydrograph for Station CMP 50
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2018
Jan-2019
CMP 50B
CMP 50D
ERH/SVE Start
ERH/SVE Shutdown

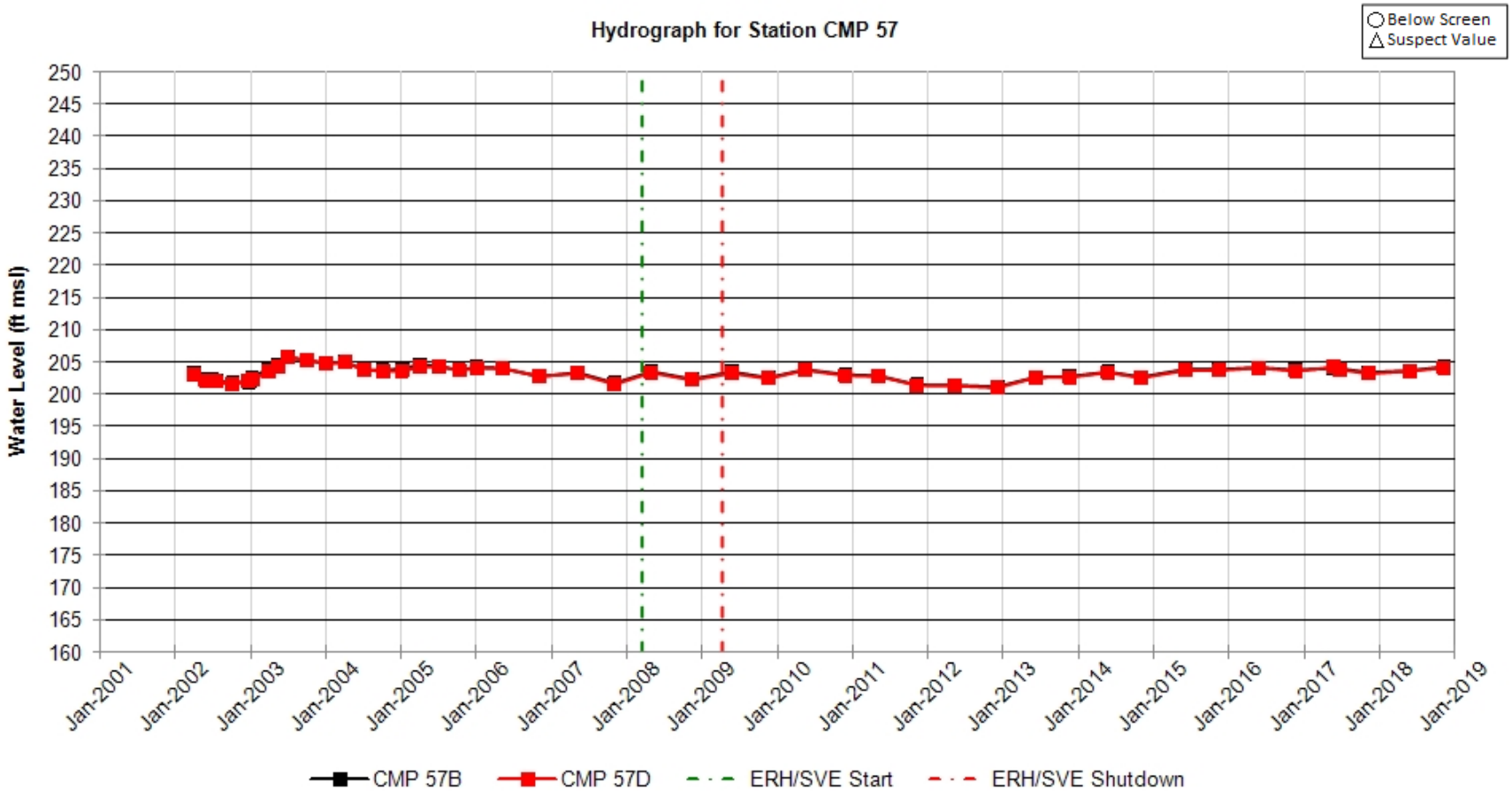

Hydrograph for Station CMP 51
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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Jan-2001
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Jan-2018
Jan-2019
CMP 51D
ERH/SVE Start
ERH/SVE Shutdown

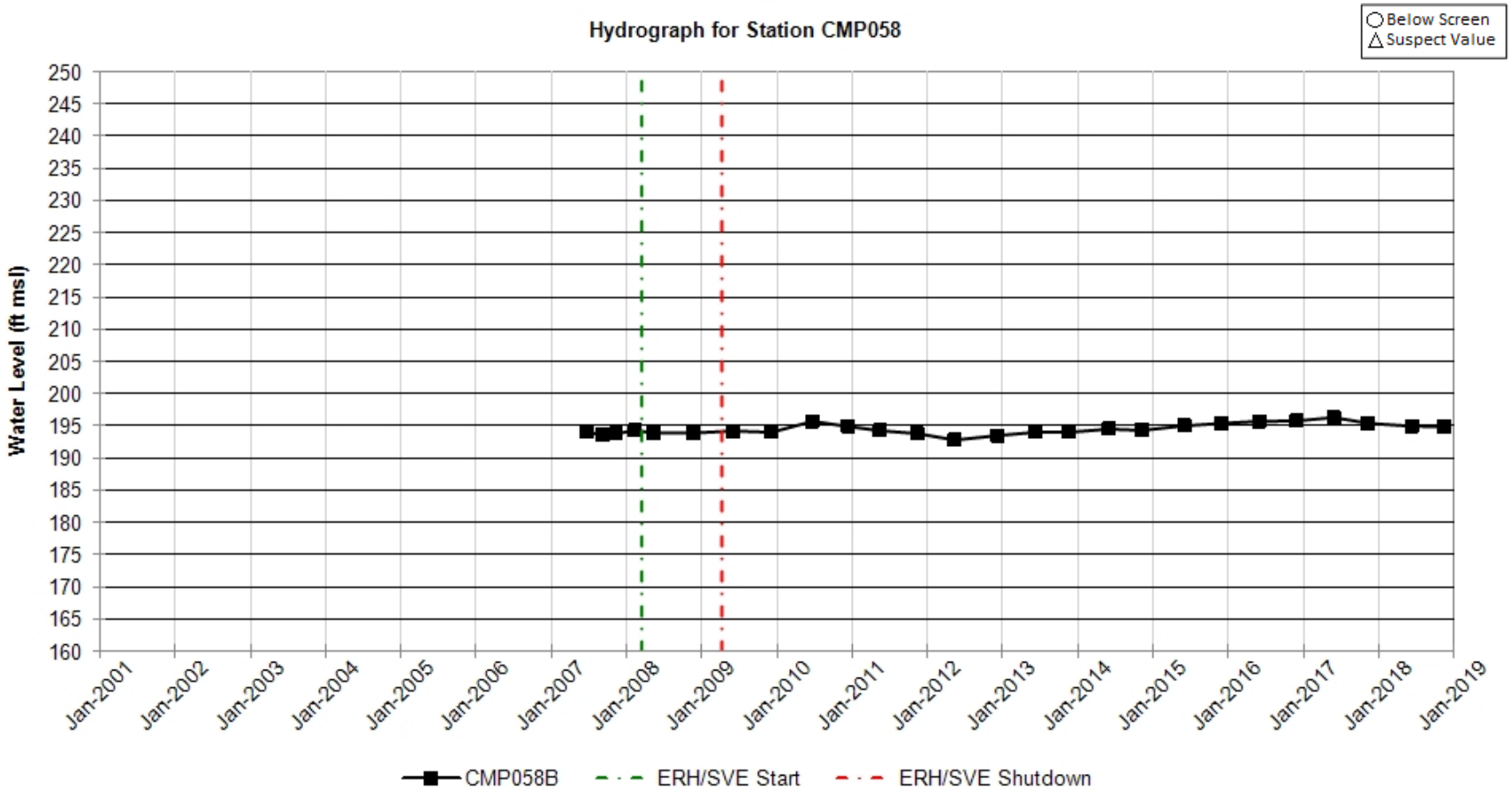

Hydrograph for Station CMP 52
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2001
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Jan-2019
CMP 52A
CMP 52BL
CMP 52BU
CMP 52C
ERH/SVE Start
ERH/SVE Shutdown

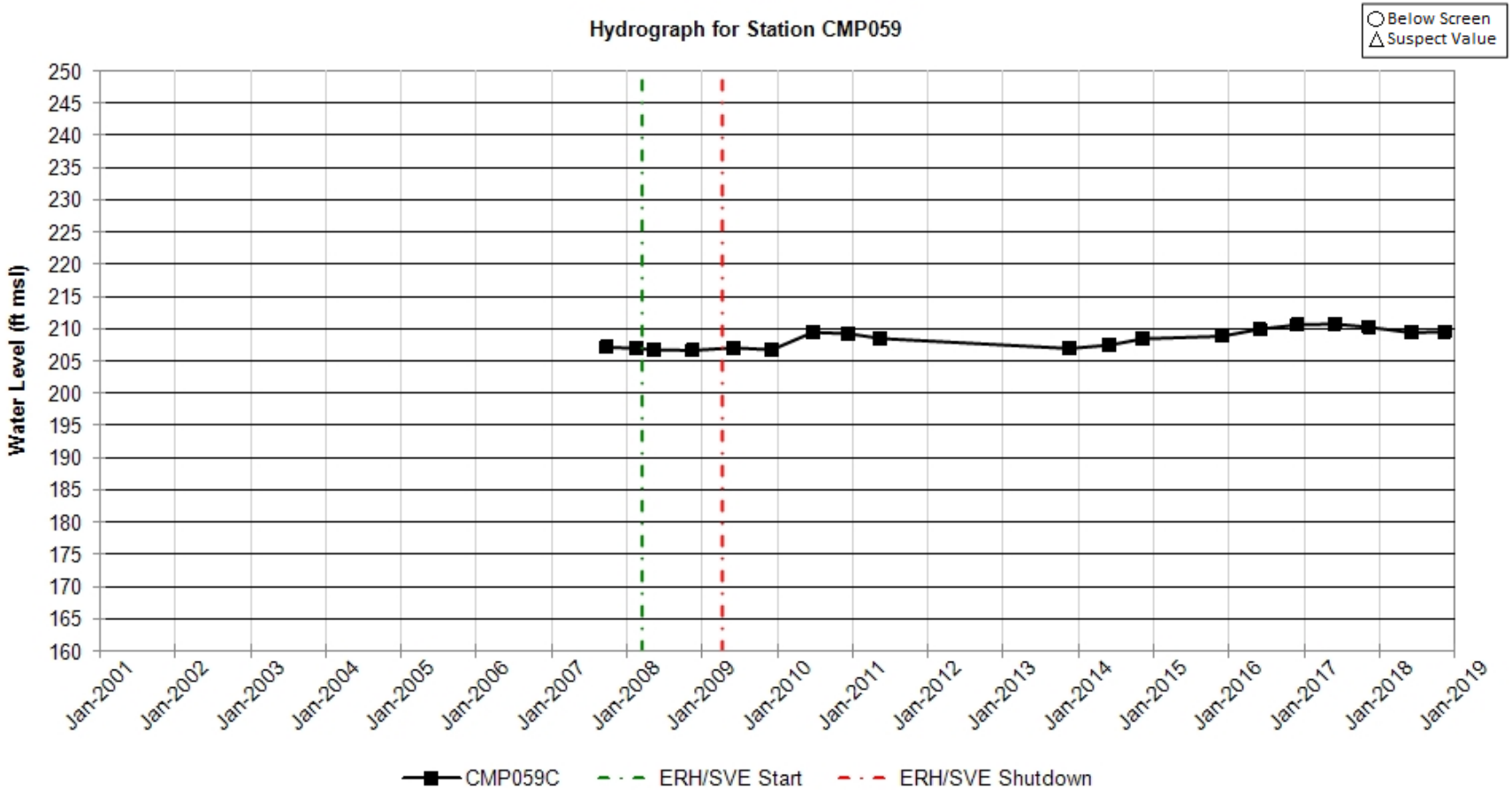

Hydrograph for Station CMP 54
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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Jan-2001
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Jan-2018
Jan-2019
CMP 54C
ERH/SVE Start
ERH/SVE Shutdown

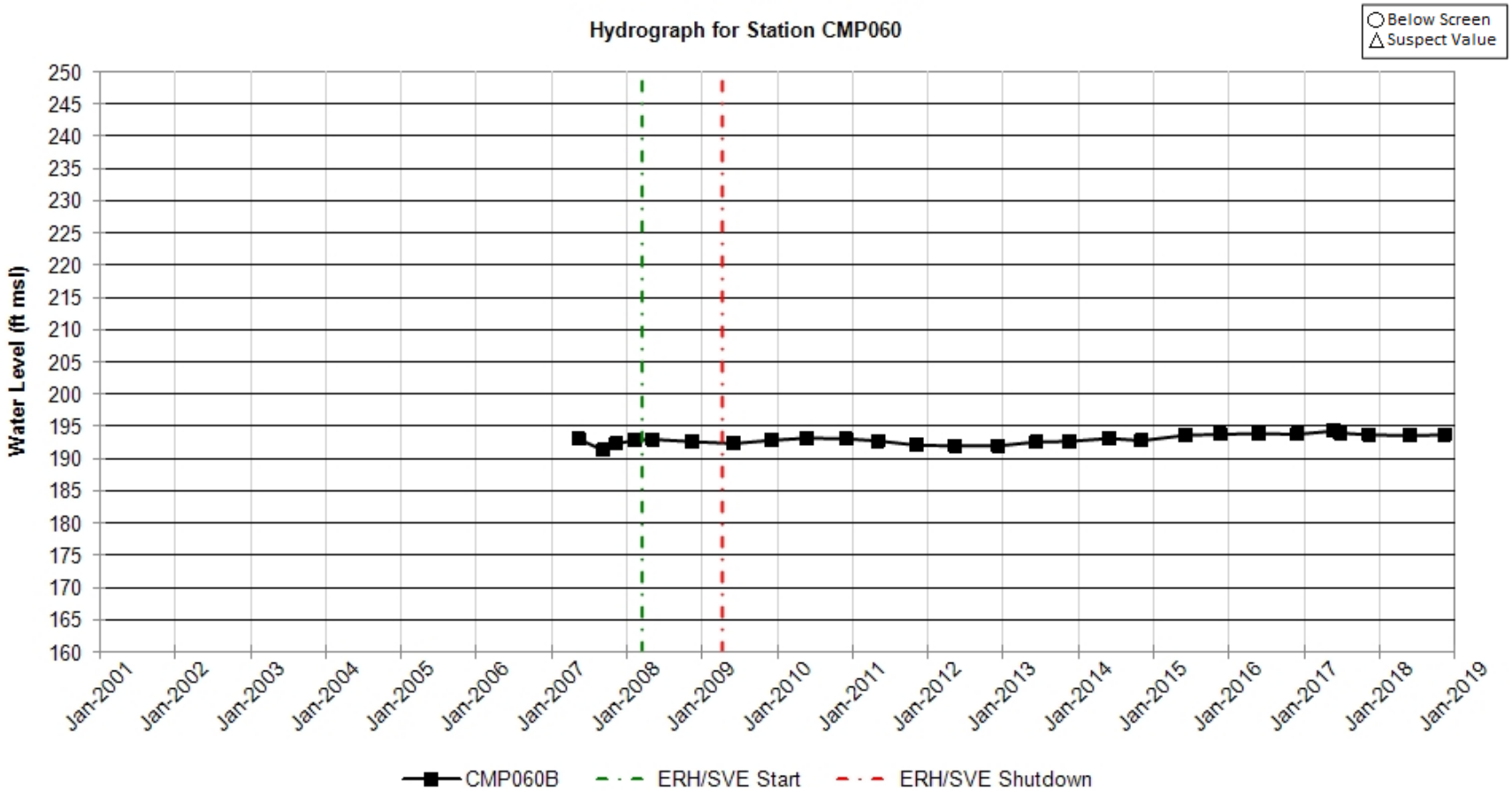

Hydrograph for Station CMP 55
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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Jan-2001
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Jan-2018
Jan-2019
CMP 55C
CMP055B
ERH/SVE Start
ERH/SVE Shutdown

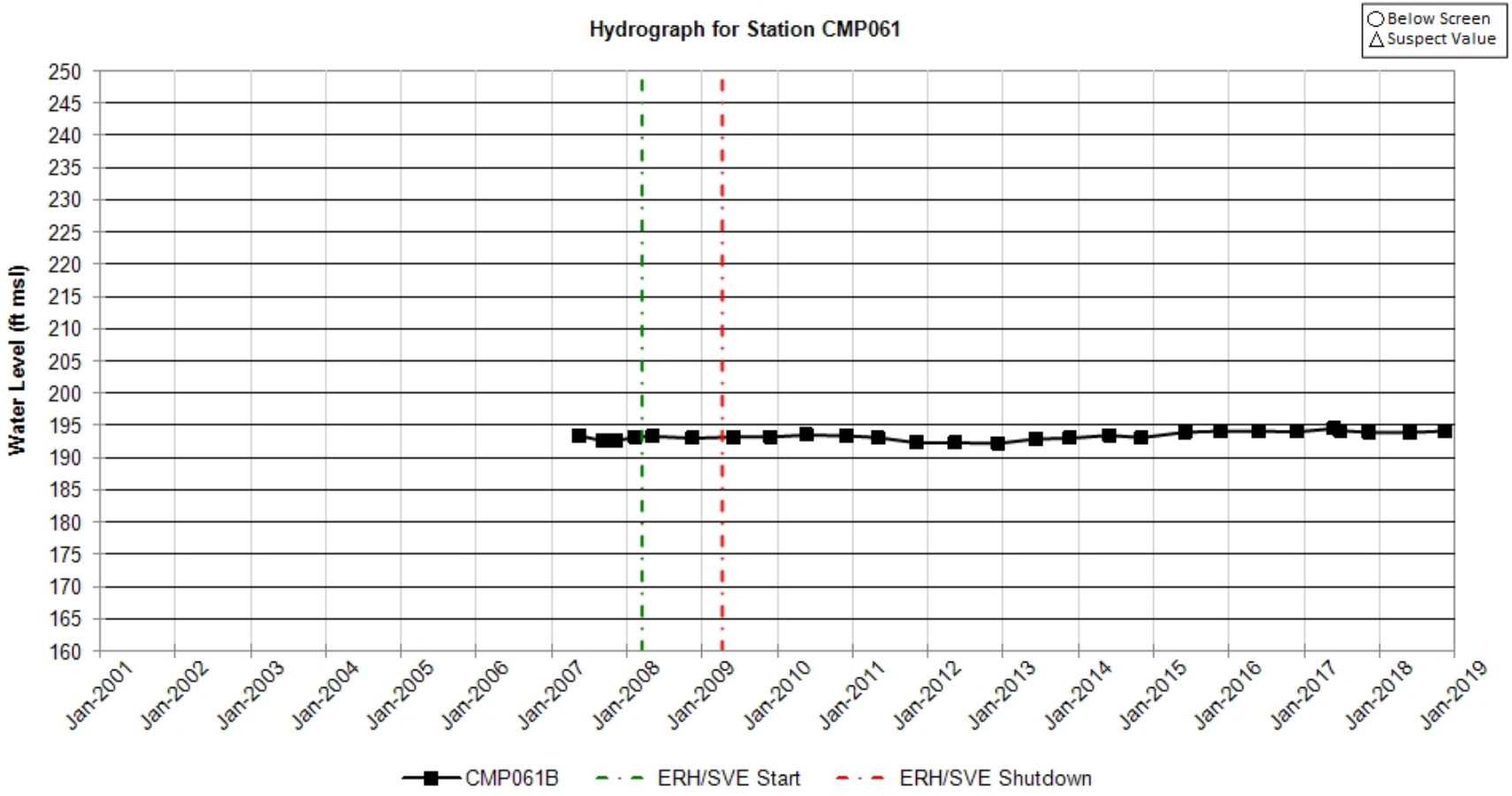

Hydrograph for Station CMP 56
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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Jan-2001
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Jan-2018
Jan-2019
CMP 56B
CMP 56D
ERH/SVE Start
ERH/SVE Shutdown

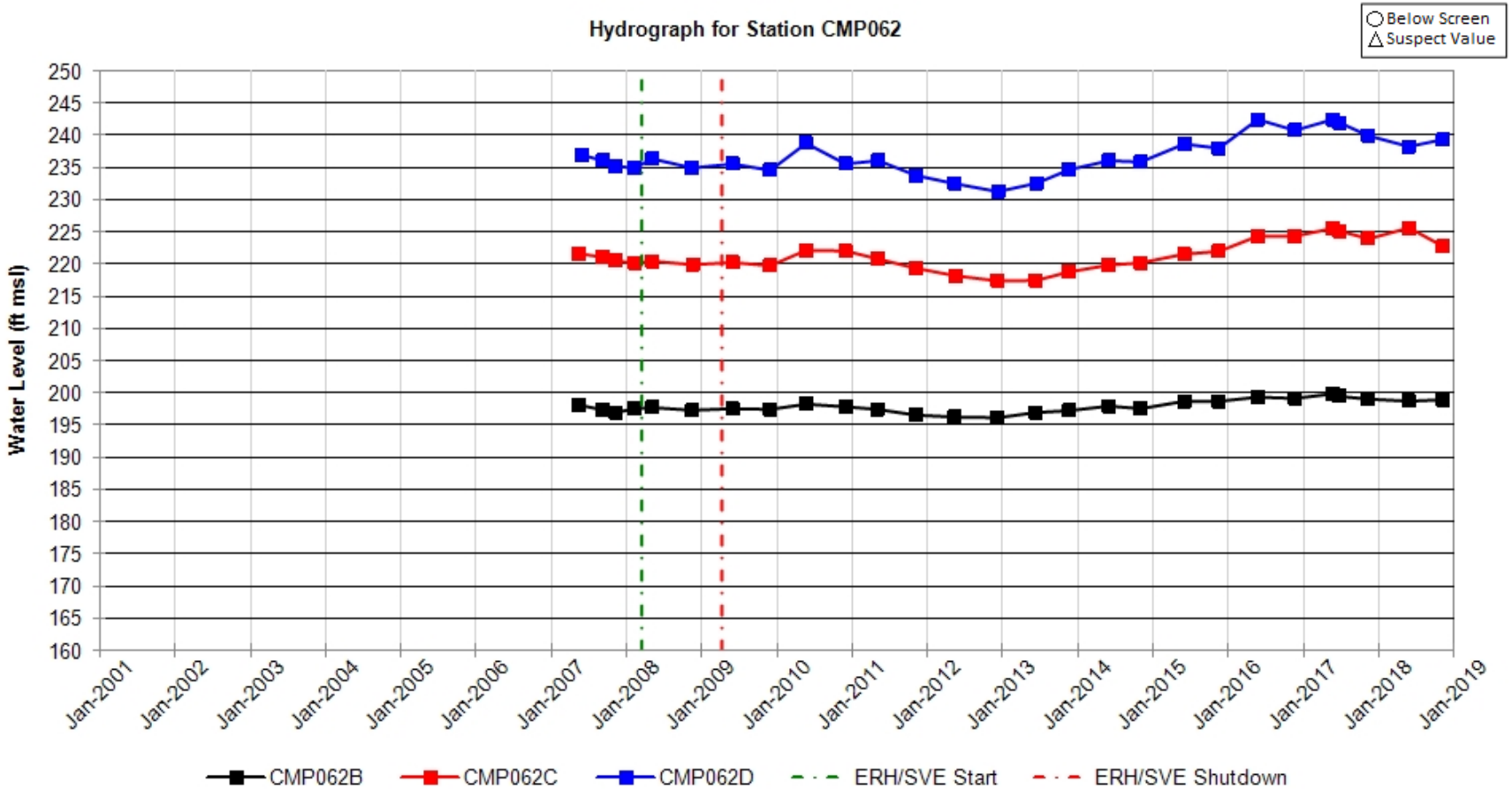

Hydrograph for Station CMP 57
Below Screen
Suspect Value
Water Level (ft msl)
250
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Jan-2019
CMP 57B
CMP 57D
ERH/SVE Start
ERH/SVE Shutdown

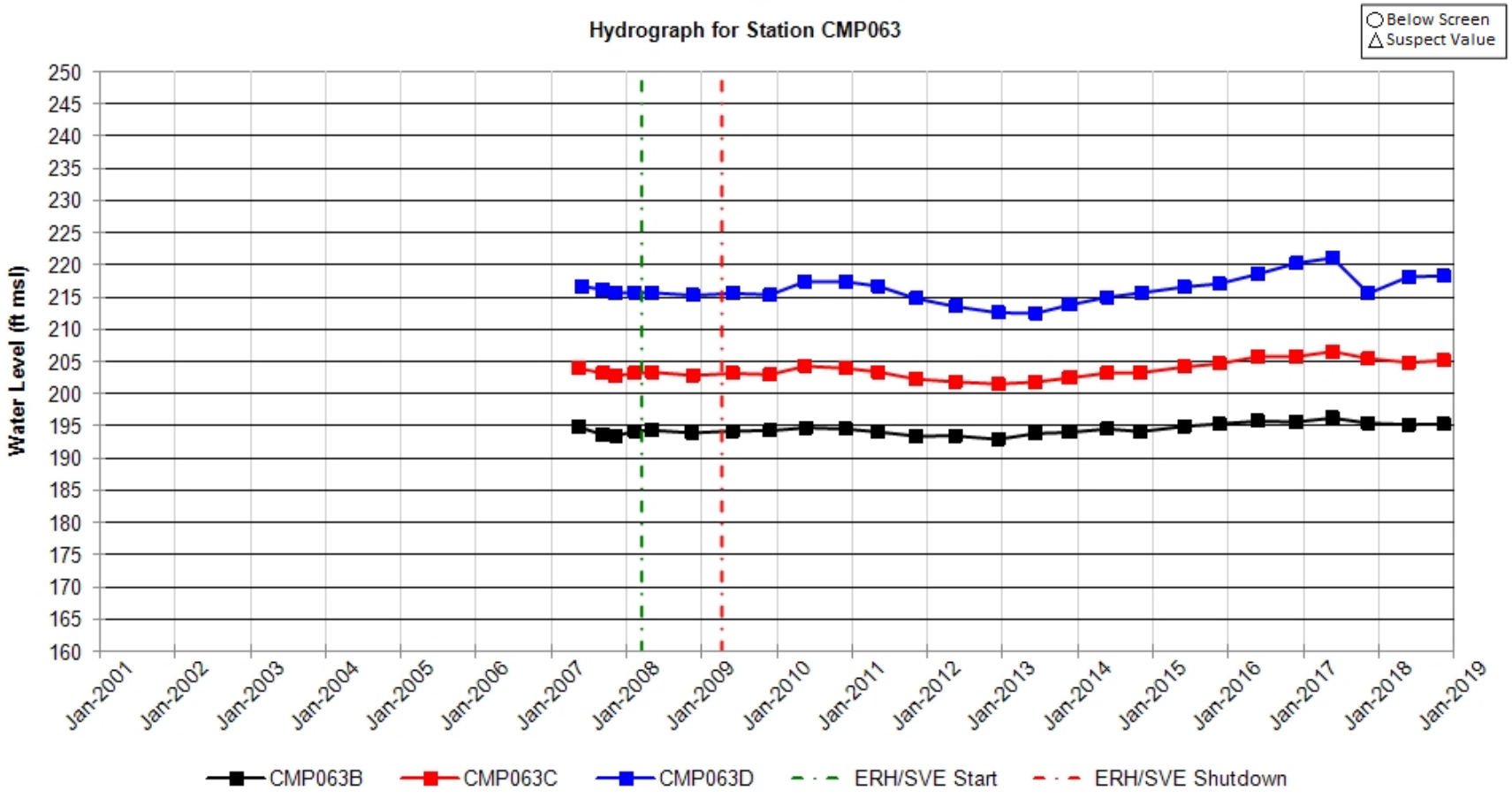

Hydrograph for Station CMP058
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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Jan-2001
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Jan-2019
CMP058B
ERH/SVE Start
ERH/SVE Shutdown

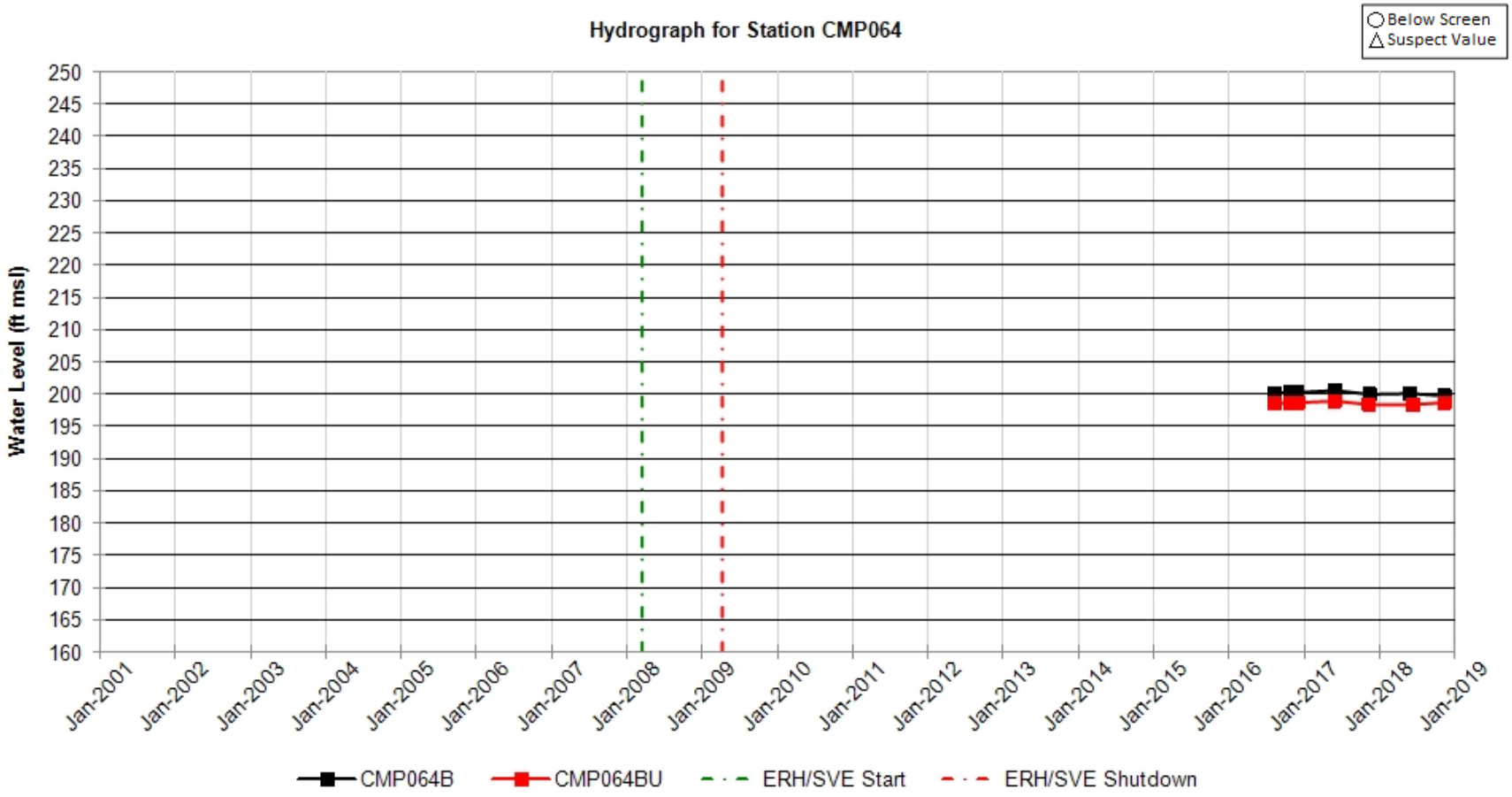

Hydrograph for Station CMP059
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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190
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Jan-2001
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Jan-2019
CMP059C
ERH/SVE Start
ERH/SVE Shutdown

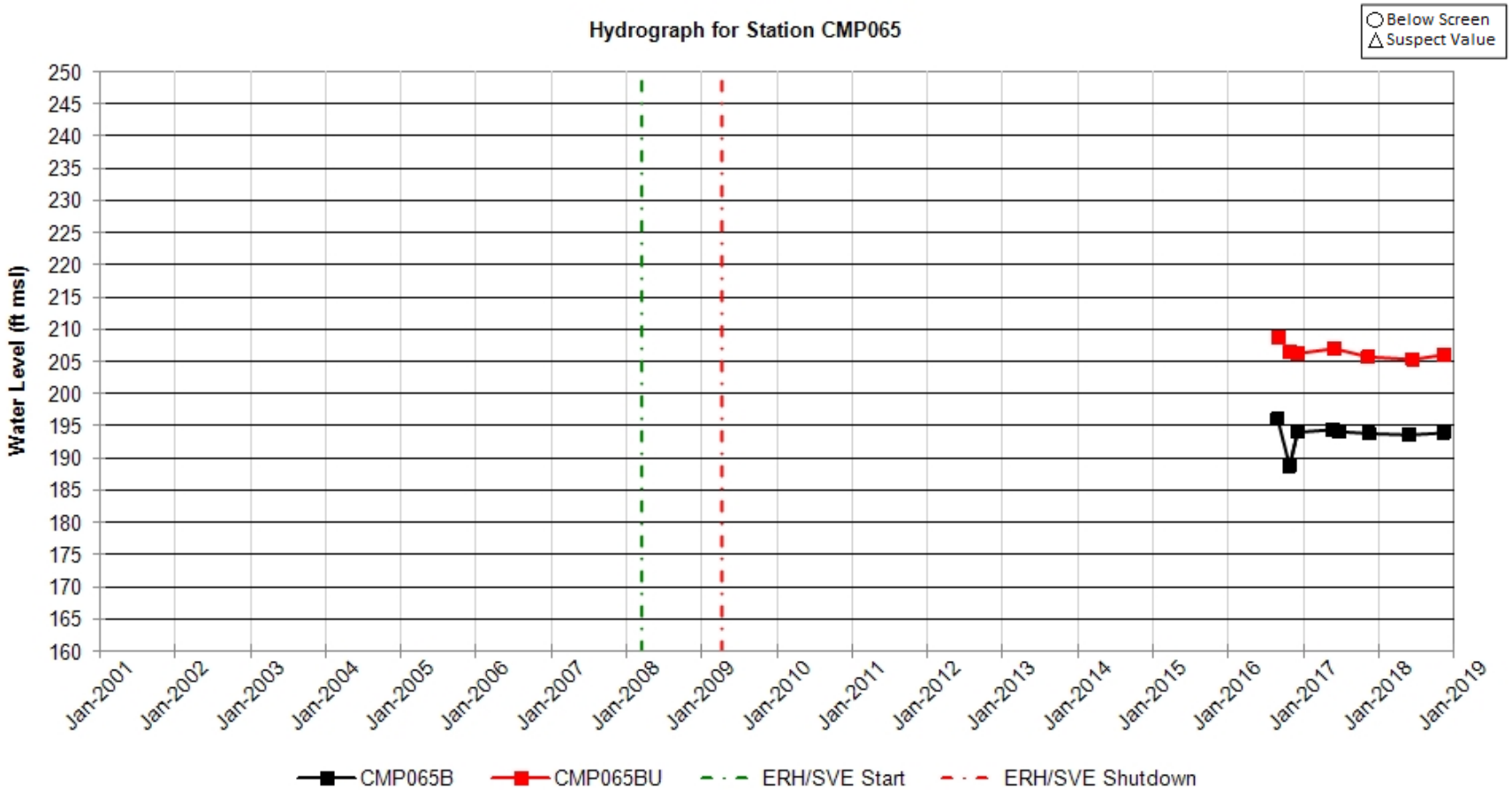

Hydrograph for Station CMP060
Below Screen
Suspect Value
Water Level (ft msl)
250
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200
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190
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Jan-2001
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Jan-2019
CMP060B
ERH/SVE Start
ERH/SVE Shutdown

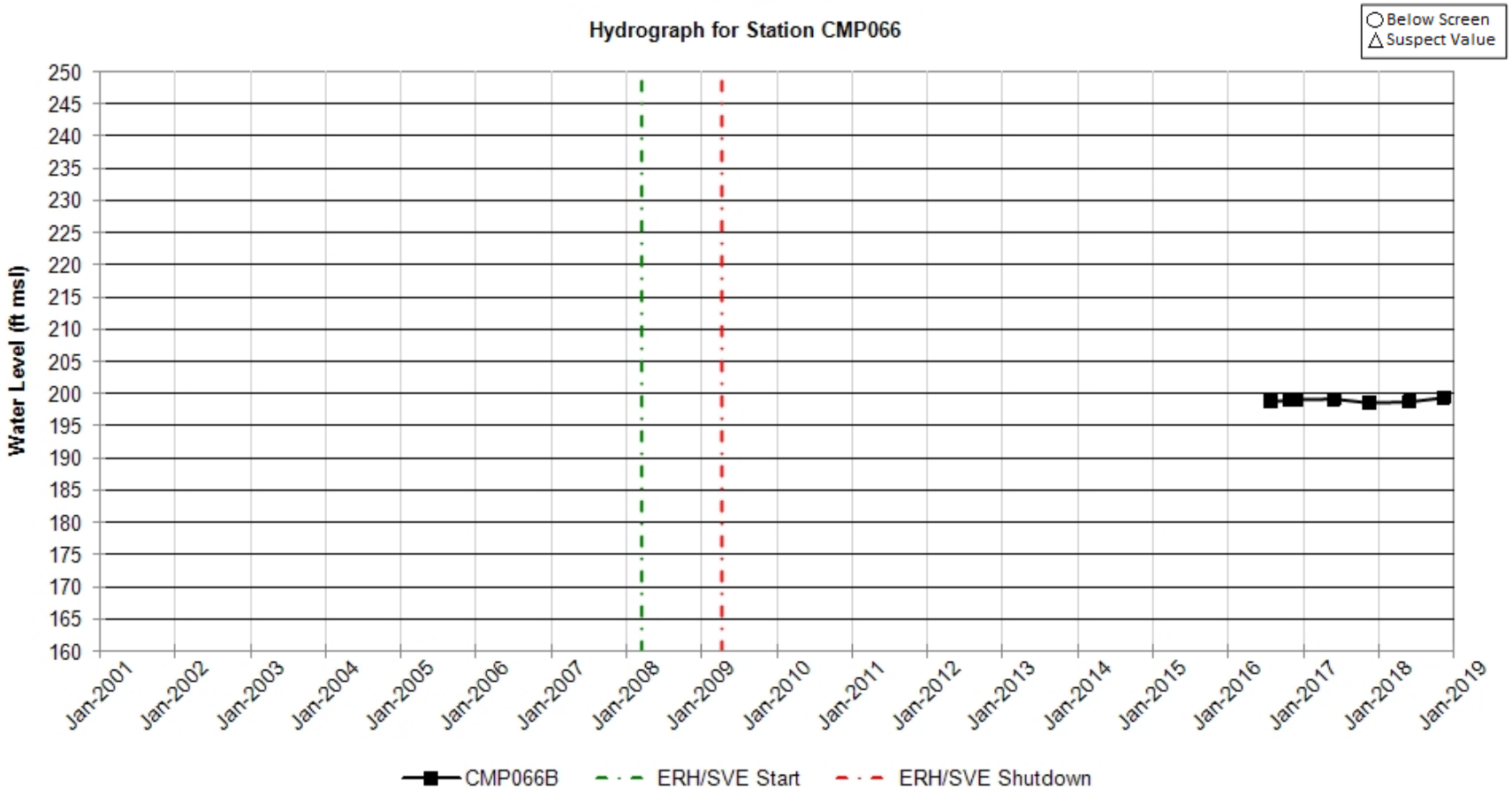

Hydrograph for Station CMP061
Below Screen
Suspect Value
Water Level (ft msl)
250
245
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190
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Jan-2001
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Jan-2019
CMP061B
ERH/SVE Start
ERH/SVE Shutdown

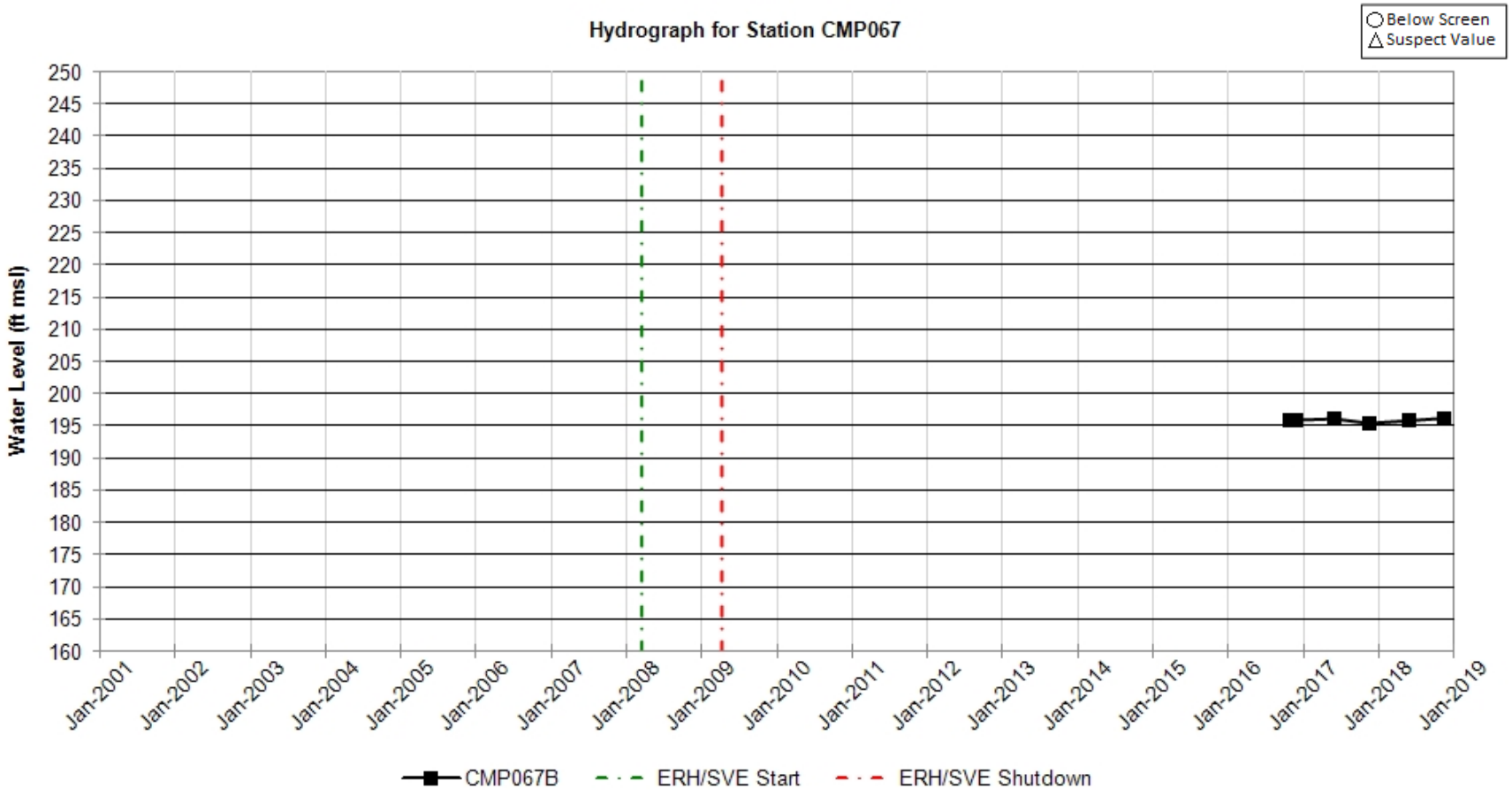

Hydrograph for Station CMP062
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP062B
CMP062C
CMP062D
ERH/SVE Start
ERH/SVE Shutdown


Hydrograph for Station CMP063
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP063B
CMP063C
CMP063D
ERH/SVE Start
ERH/SVE Shutdown


Hydrograph for Station CMP064
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP064B
CMP064BU
ERH/SVE Start
ERH/SVE Shutdown


Hydrograph for Station CMP065
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP065B
CMP065BU
ERH/SVE Start
ERH/SVE Shutdown

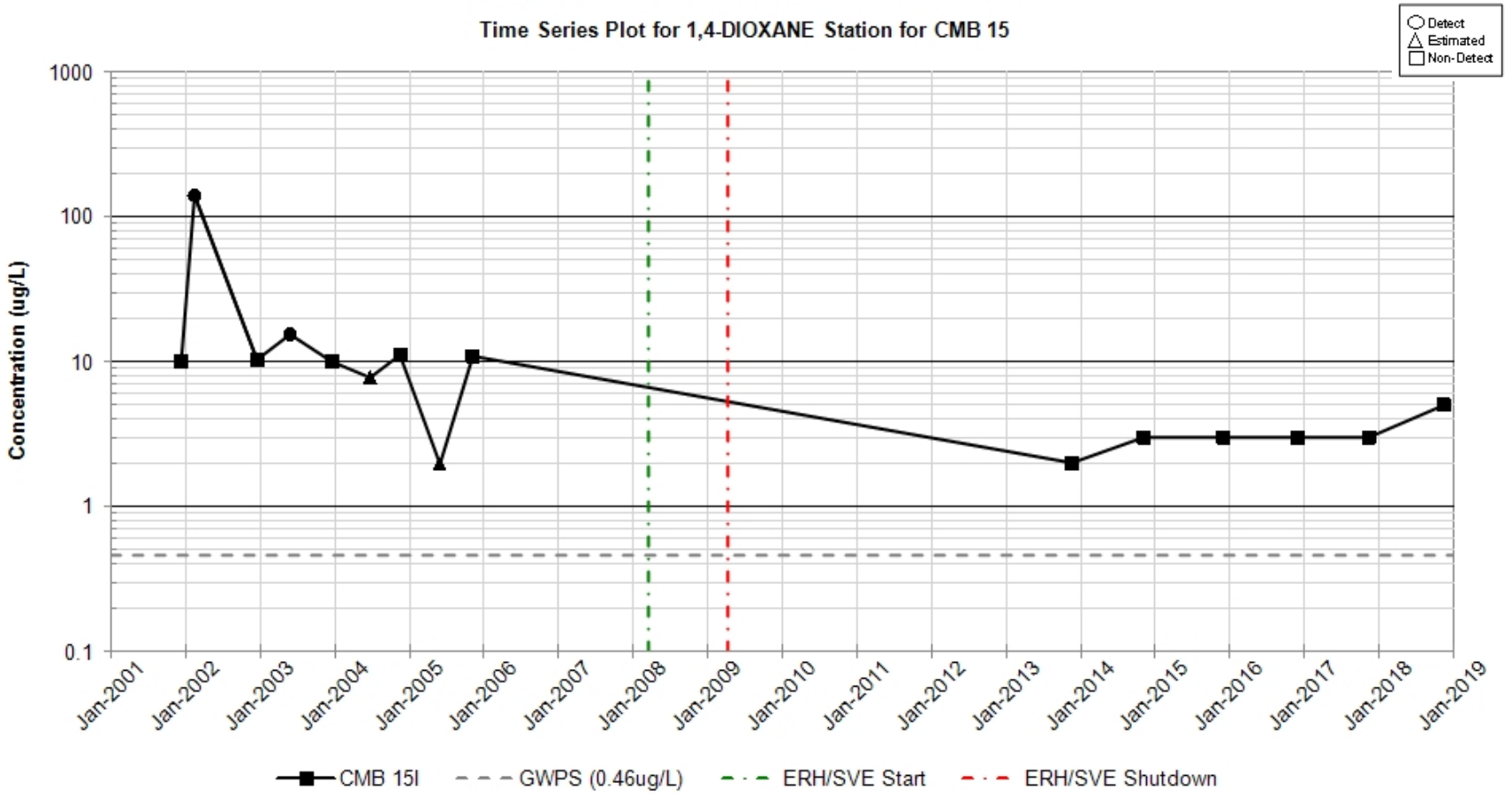

Hydrograph for Station CMP066
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP066B
ERH/SVE Start
ERH/SVE Shutdown

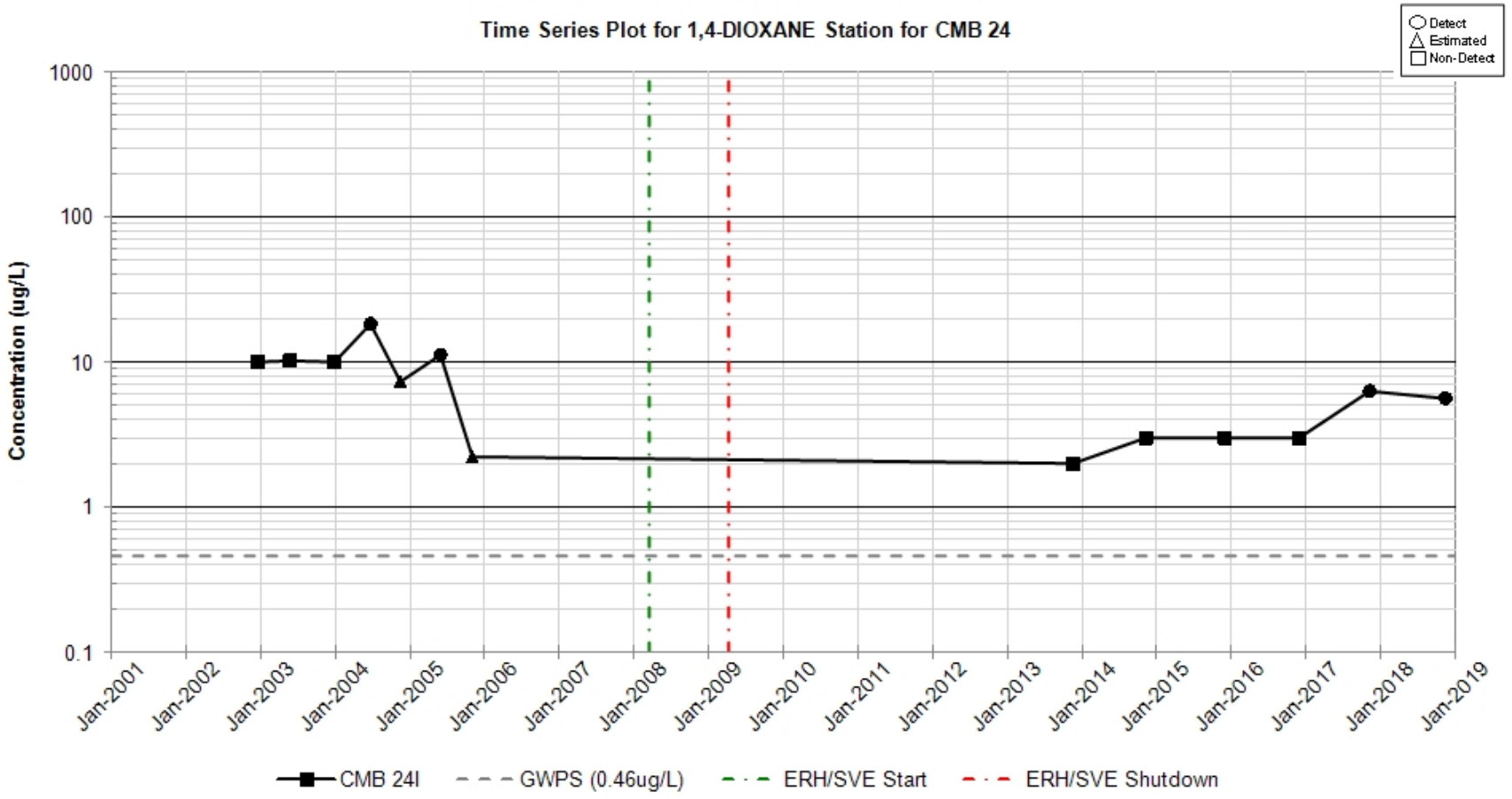

Hydrograph for Station CMP067
Below Screen
Suspect Value
Water Level (ft msl)
250
245
240
235
230
225
220
215
210
205
200
195
190
185
180
175
170
165
160
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP067B
ERH/SVE Start
ERH/SVE Shutdown

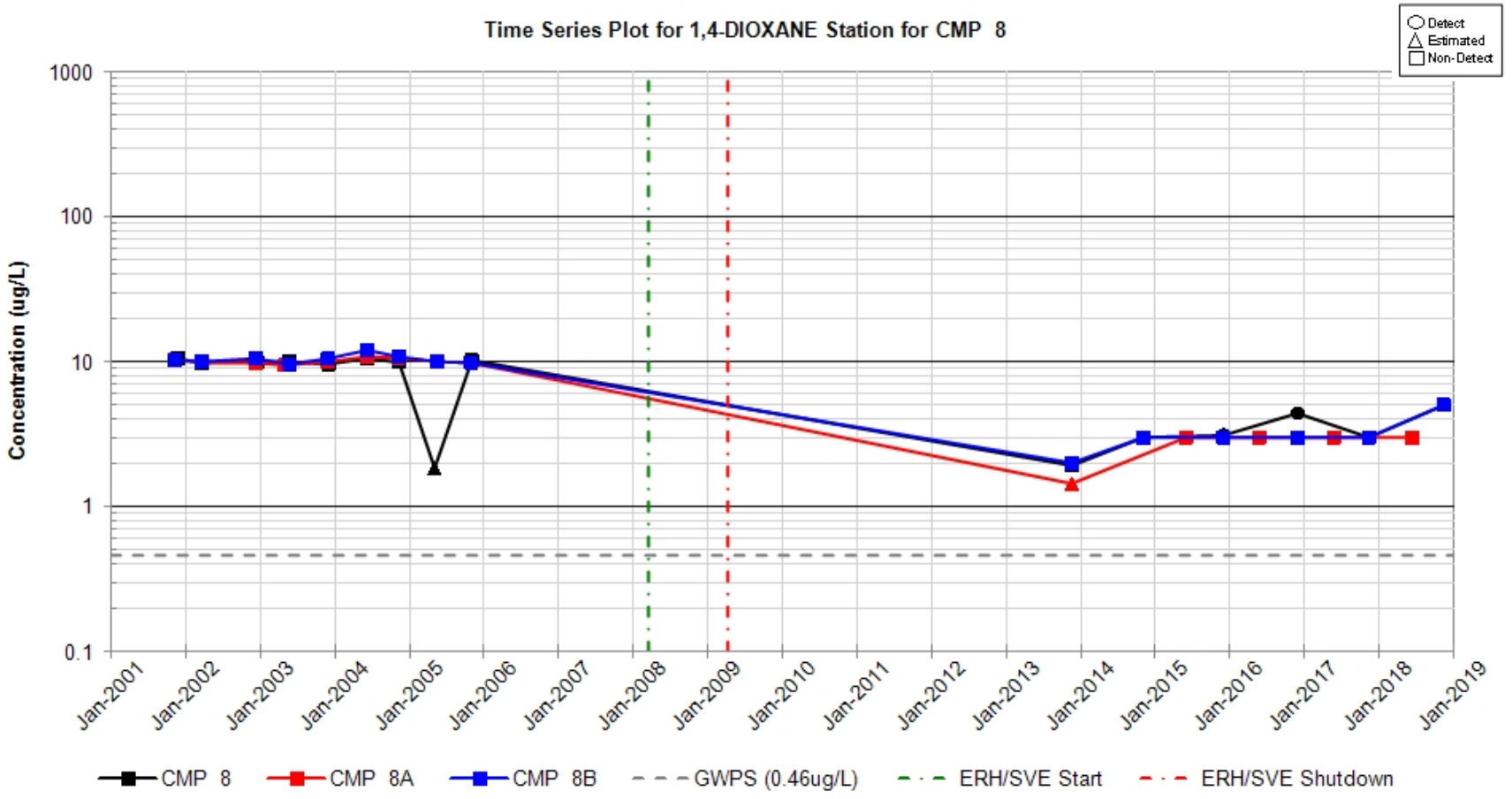
Appendix B

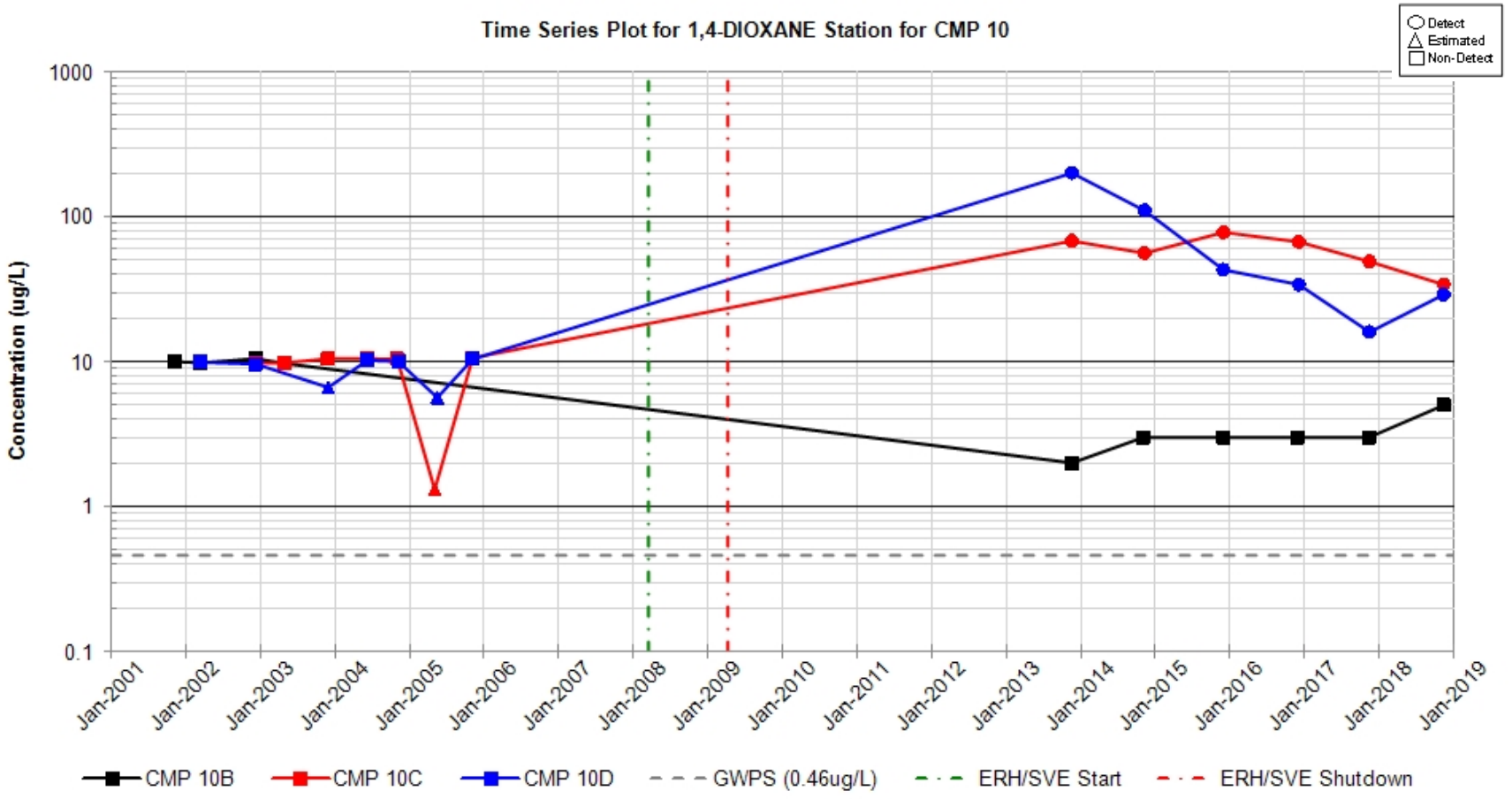
Time-Series Plots

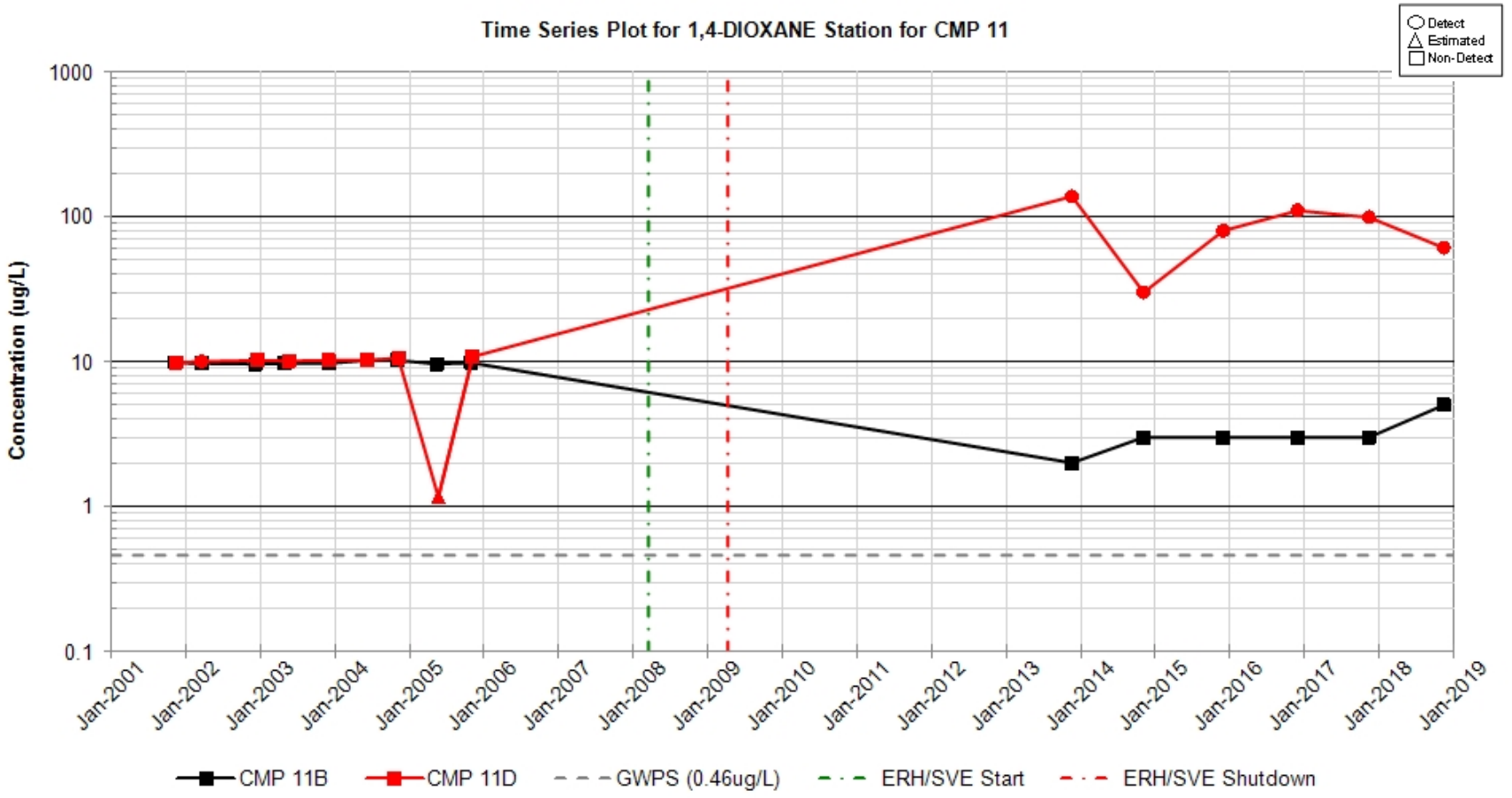
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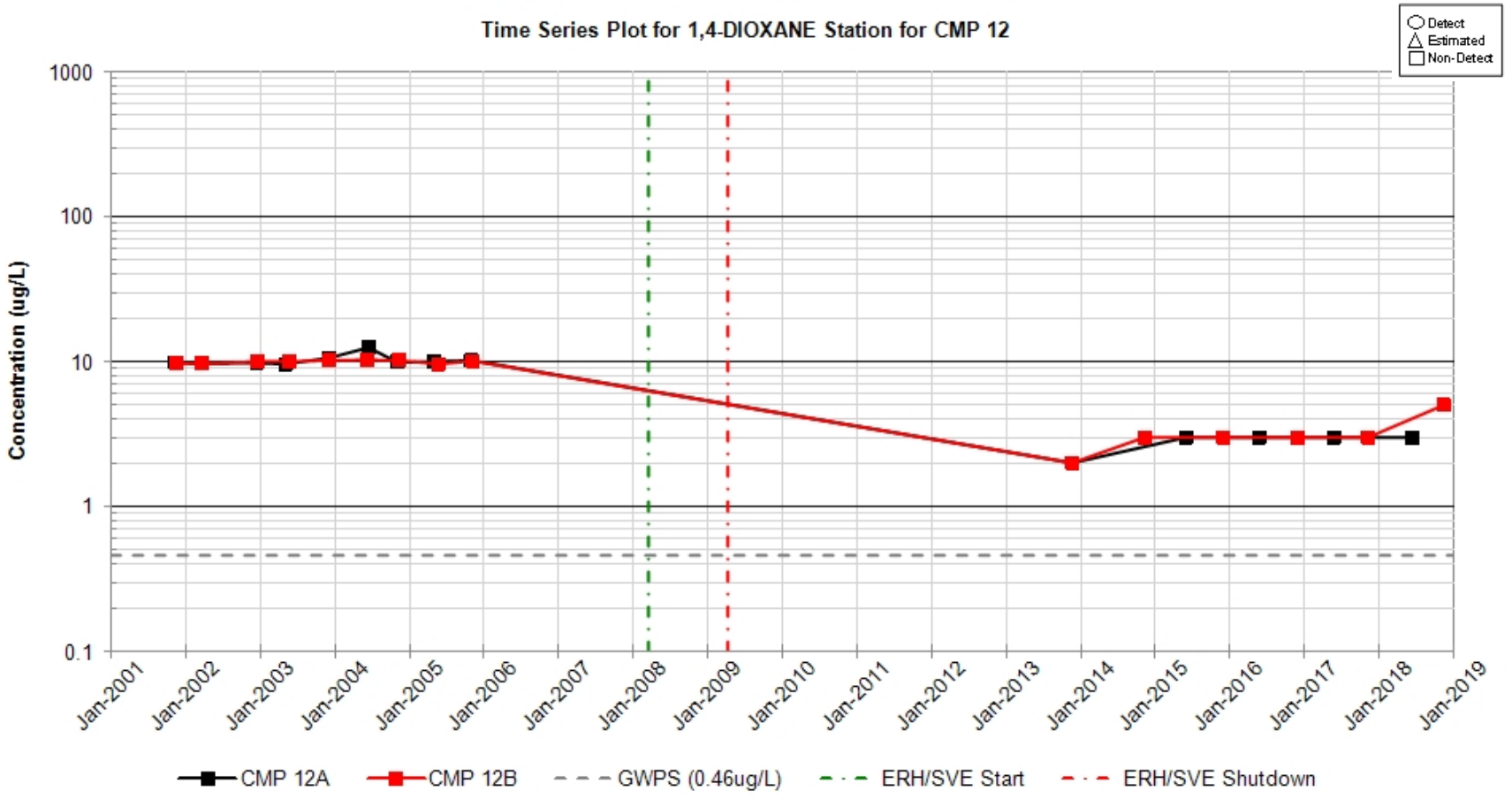

Time Series Plot for 1,4-DIOXANE Station for CMB 15
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 15I
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

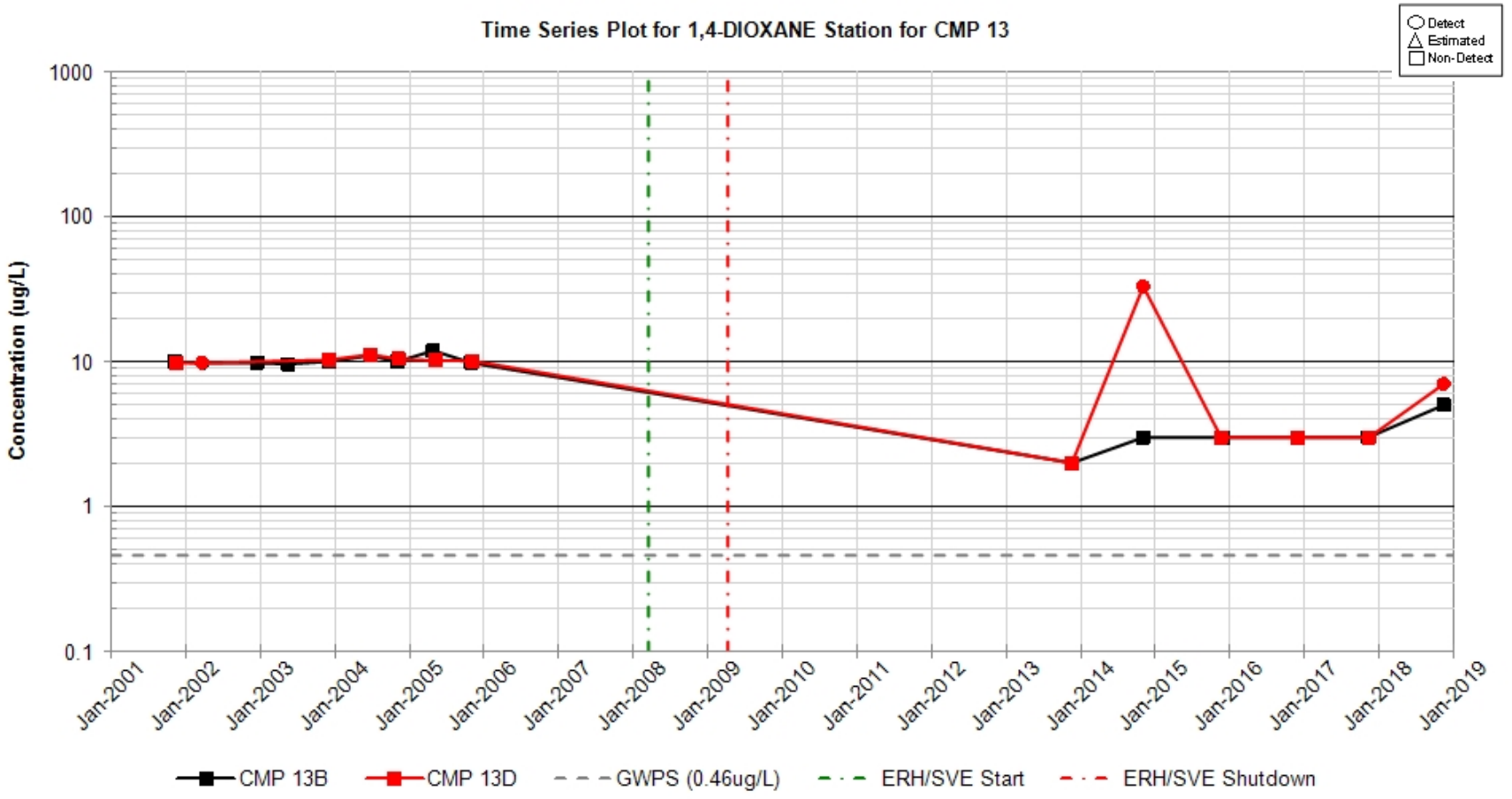

Time Series Plot for 1,4-DIOXANE Station for CMB 24
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 24I
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

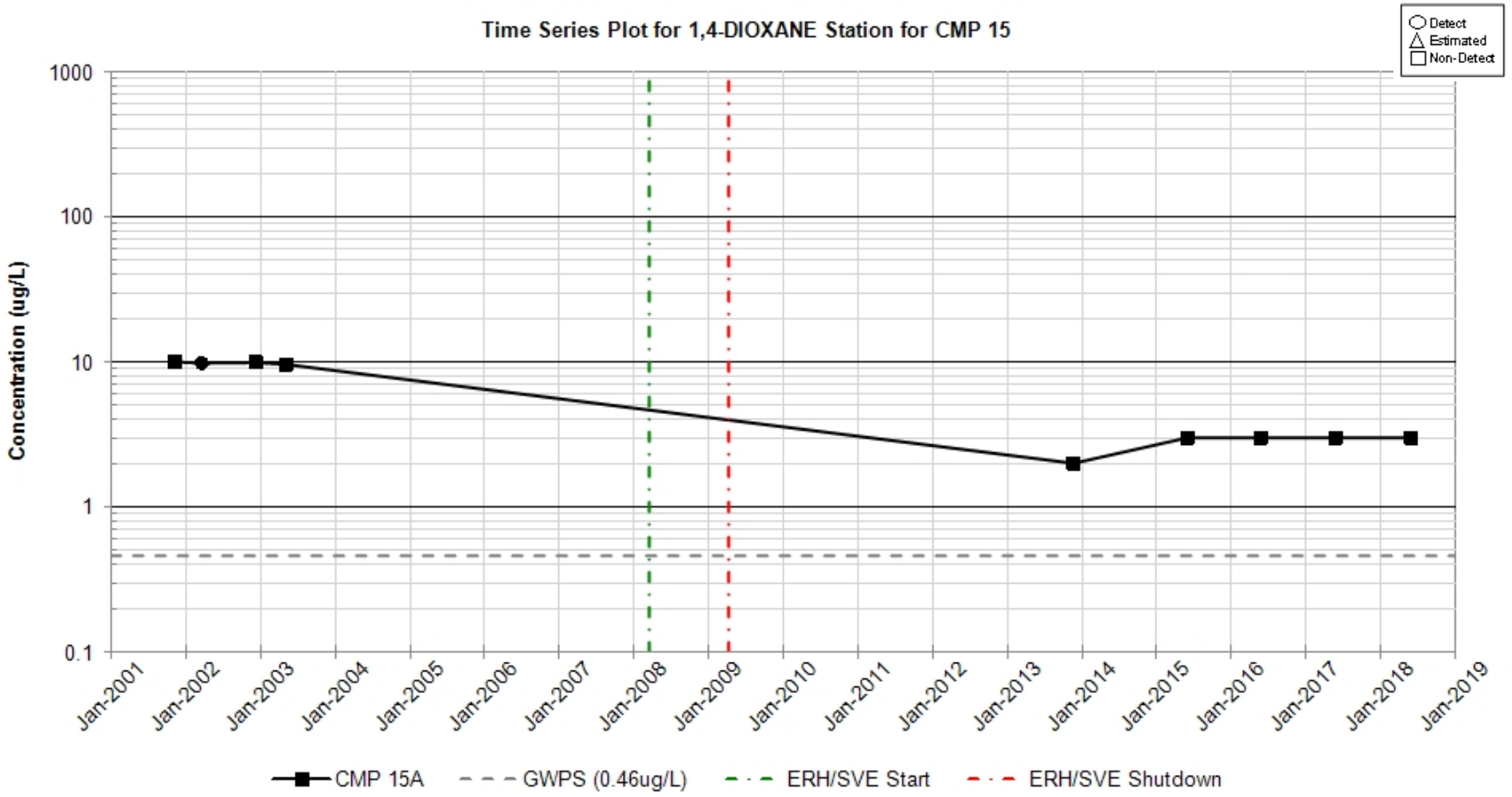

Time Series Plot for 1,4-DIOXANE Station for CMP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 8
CMP 8A
CMP 8B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

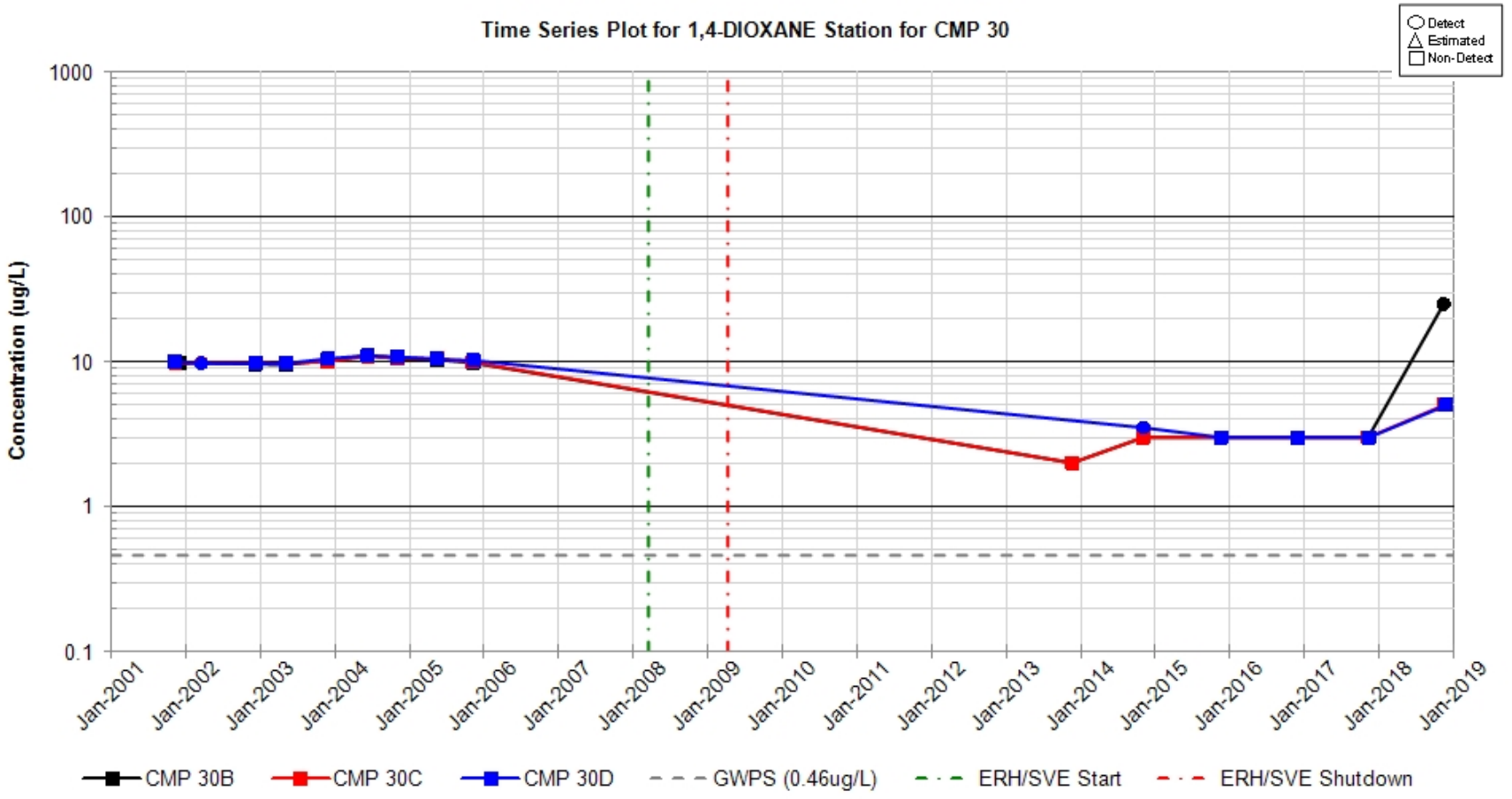

Time Series Plot for 1,4-DIOXANE Station for CMP 10
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 10B
CMP 10C
CMP 10D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

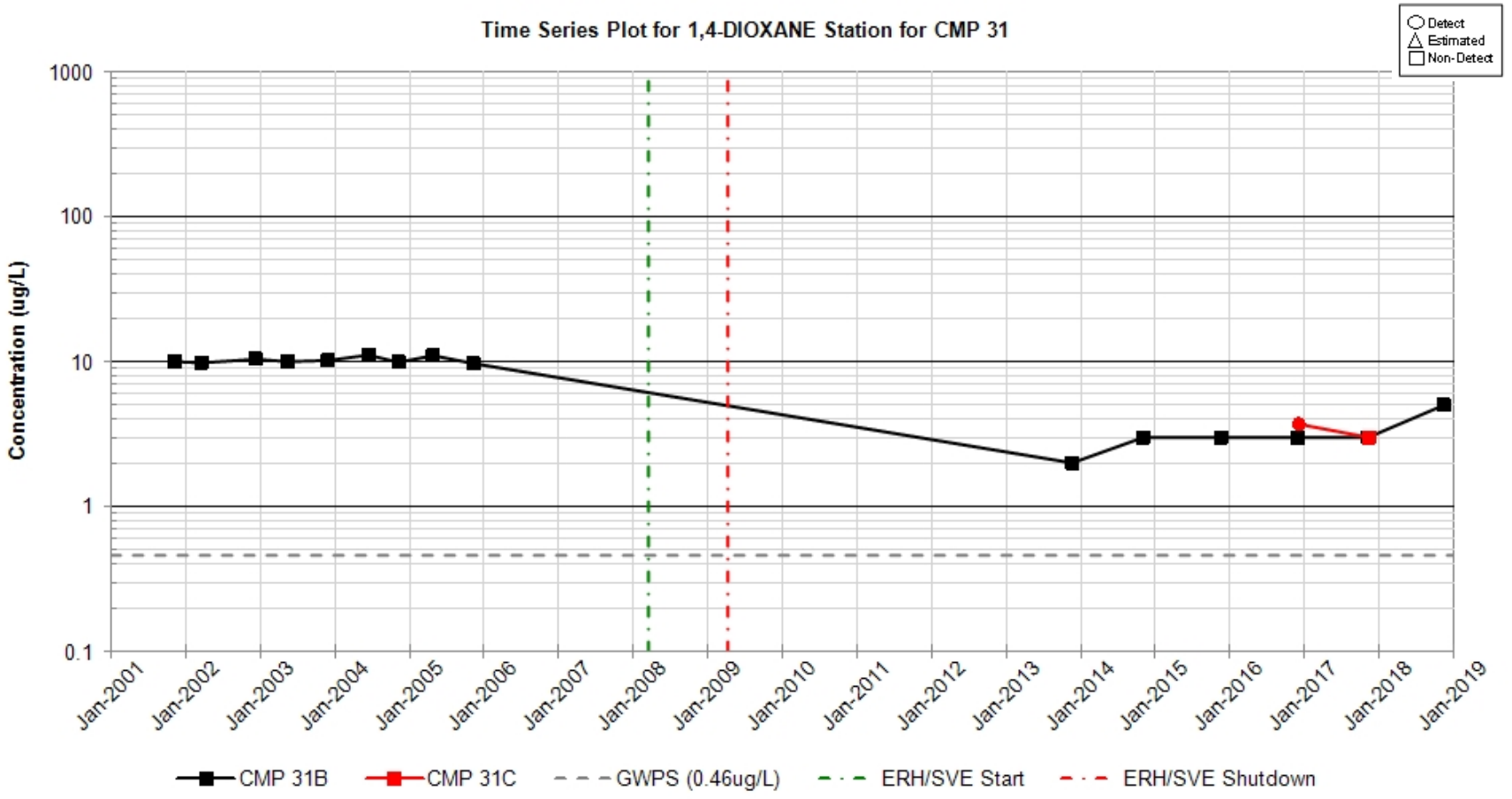

Time Series Plot for 1,4-DIOXANE Station for CMP 11
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 11B
CMP 11D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

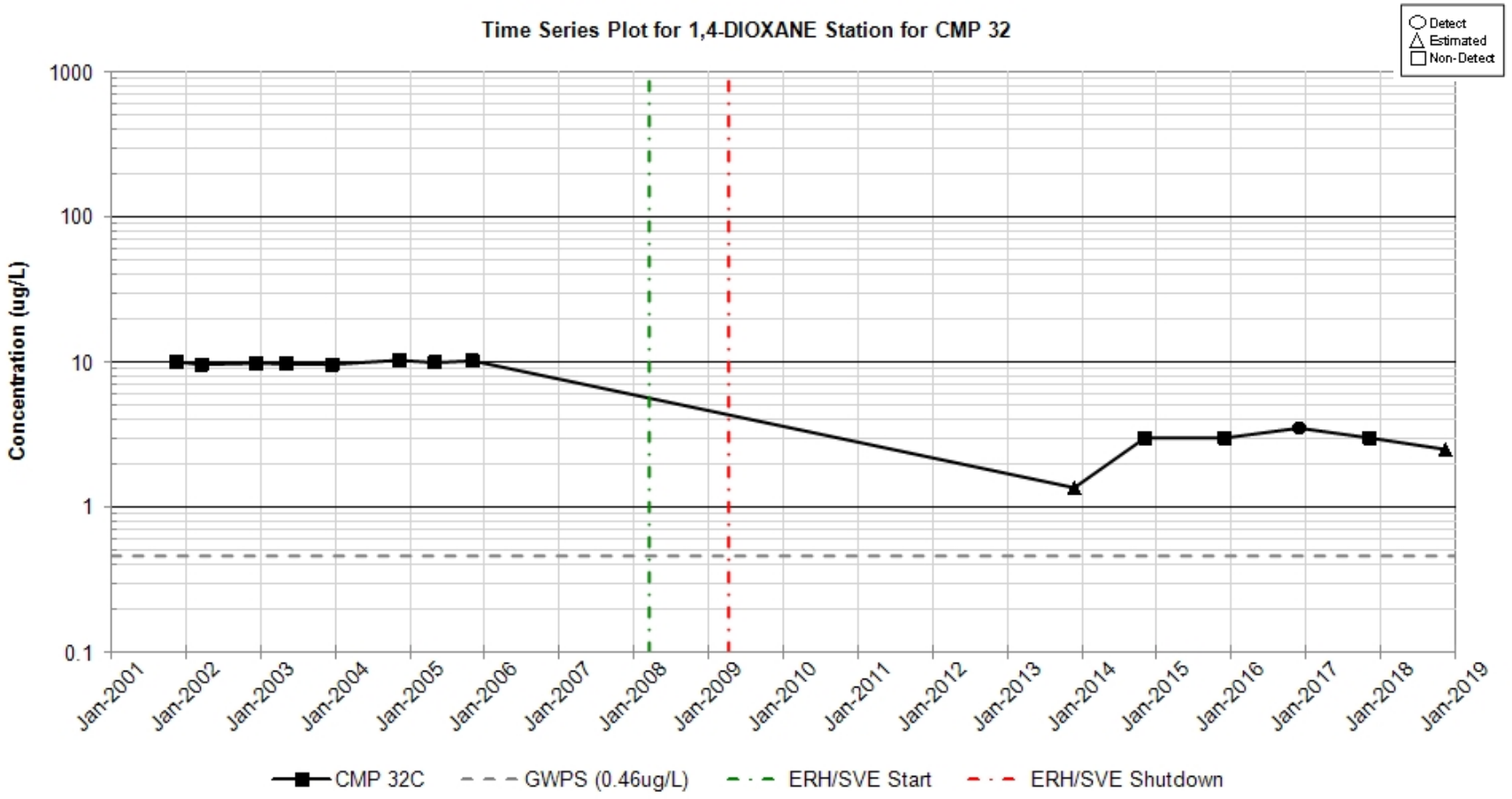

Time Series Plot for 1,4-DIOXANE Station for CMP 12
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 12A
CMP 12B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

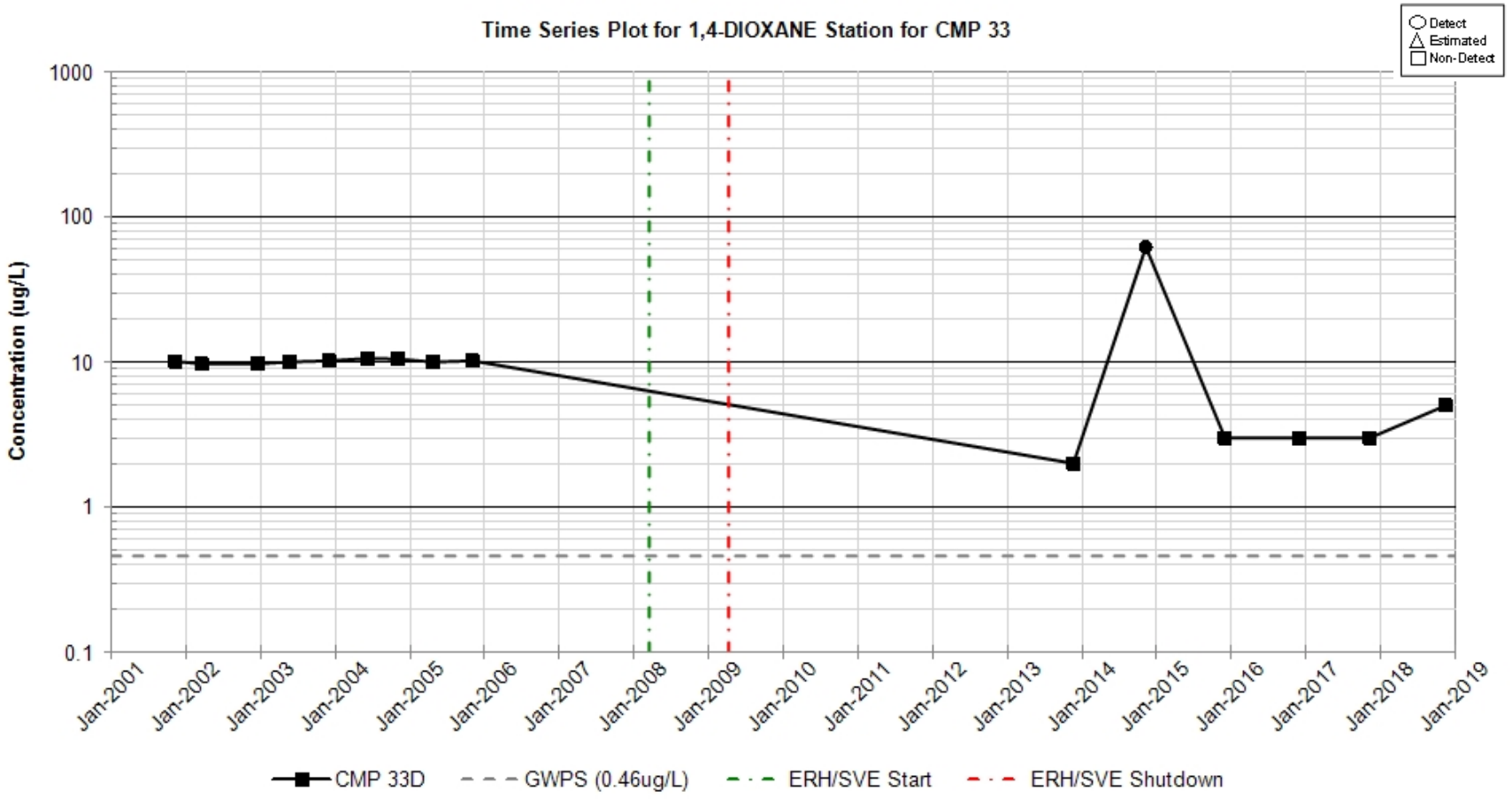

Time Series Plot for 1,4-DIOXANE Station for CMP 13
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 13B
CMP 13D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

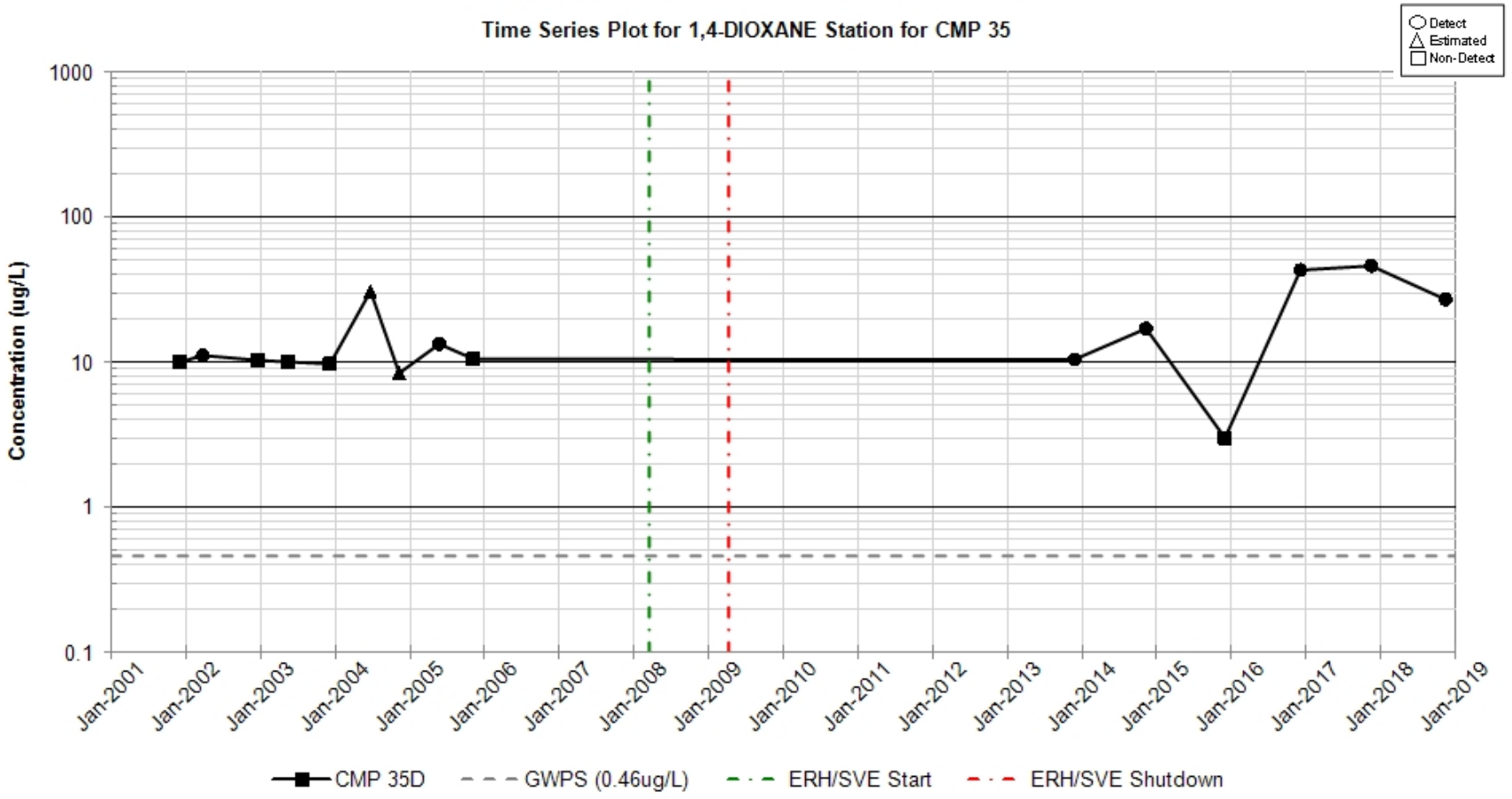

Time Series Plot for 1,4-DIOXANE Station for CMP 15
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 15A
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

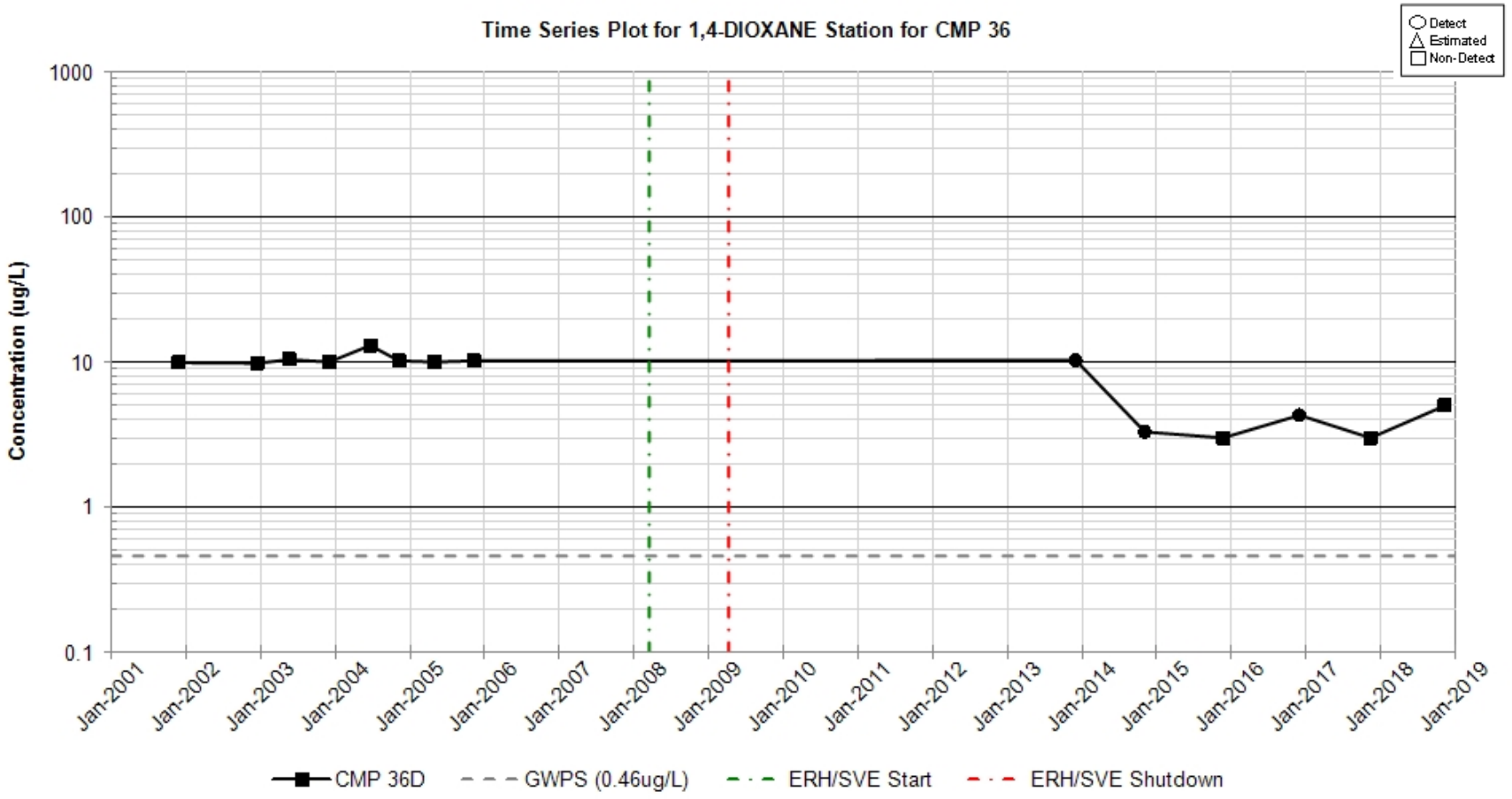

Time Series Plot for 1,4-DIOXANE Station for CMP 30
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 30B
CMP 30C
CMP 30D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

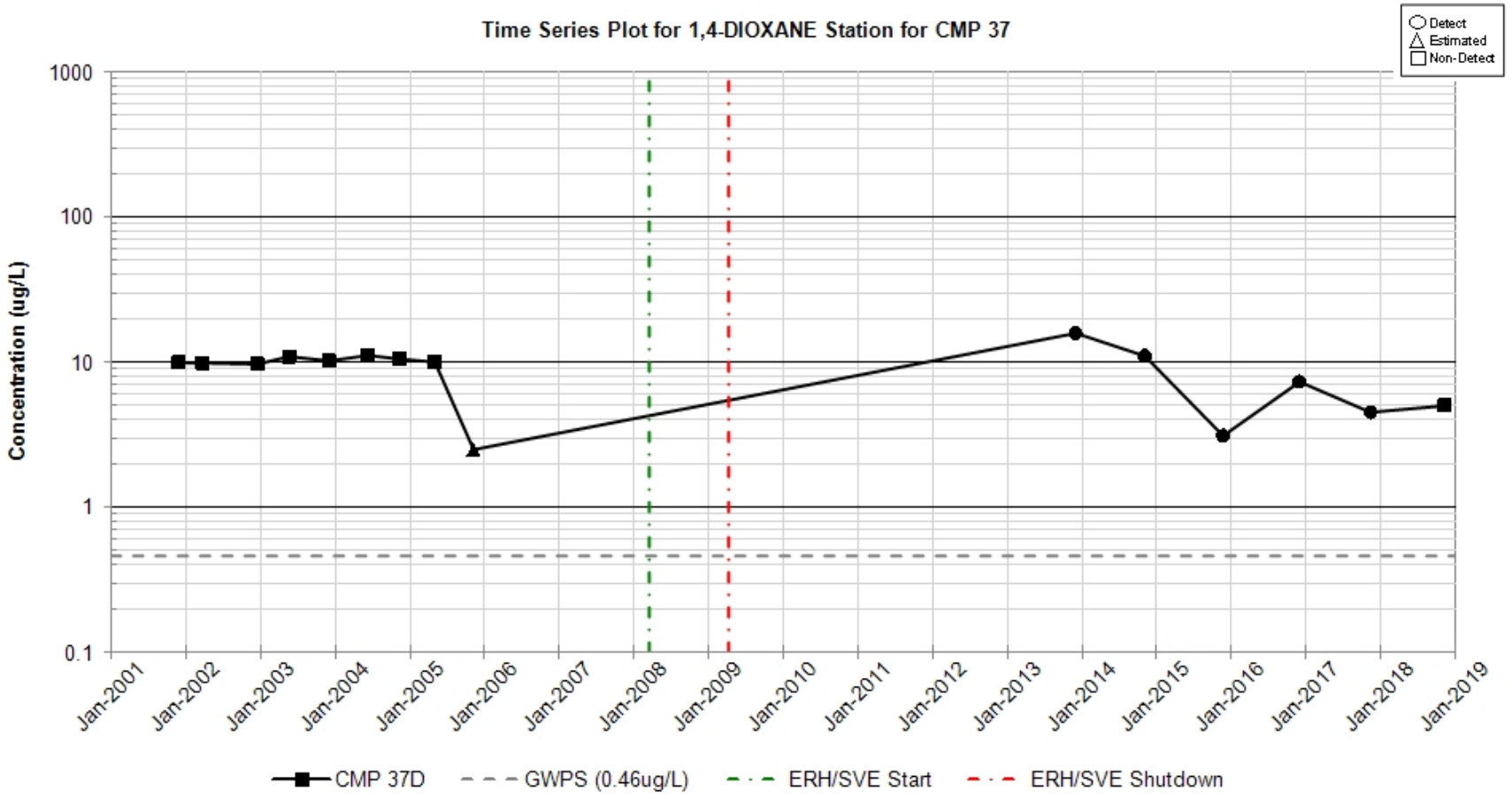

Time Series Plot for 1,4-DIOXANE Station for CMP 31
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 31B
CMP 31C
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

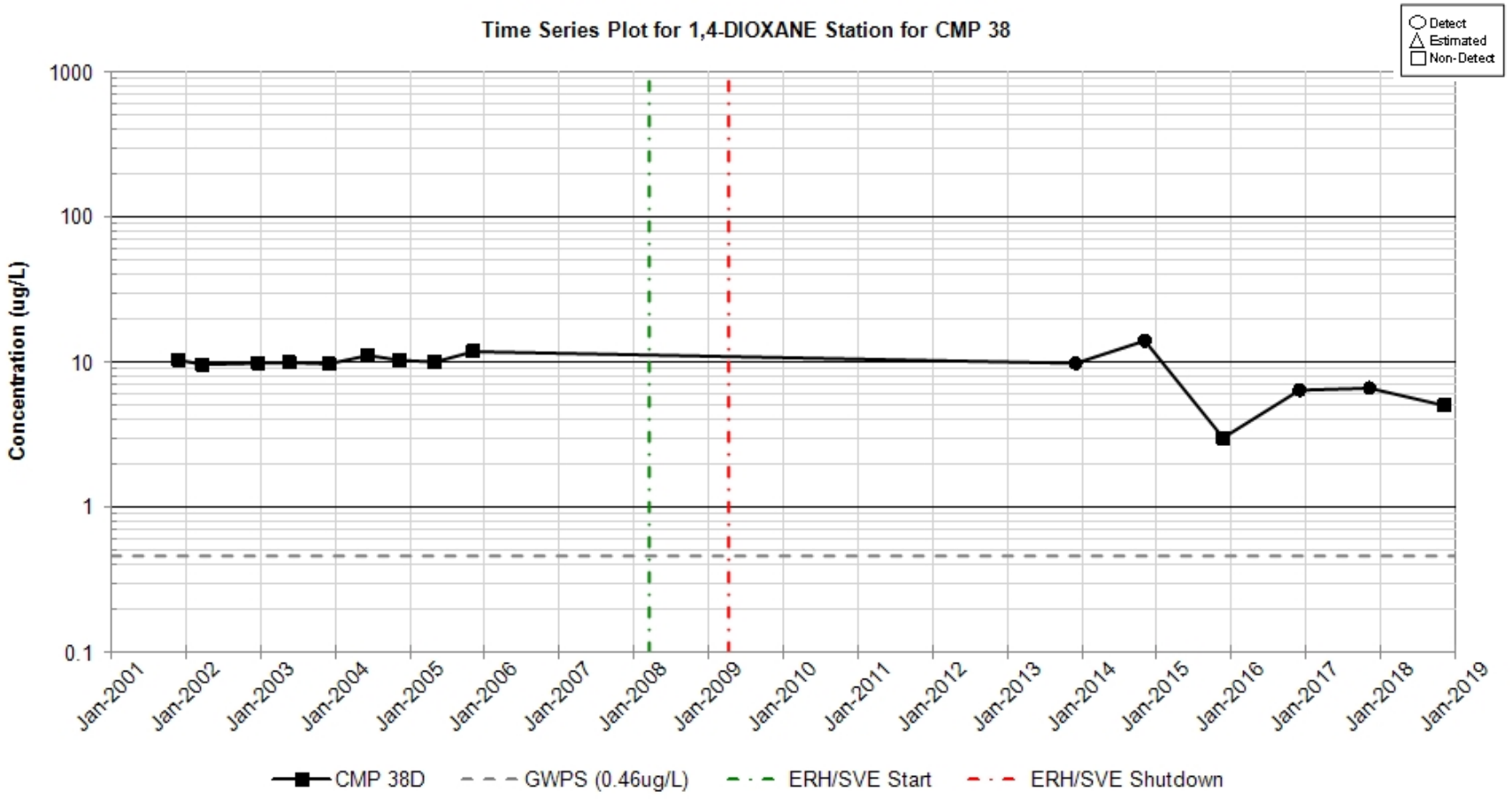

Time Series Plot for 1,4-DIOXANE Station for CMP 32
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 32C
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

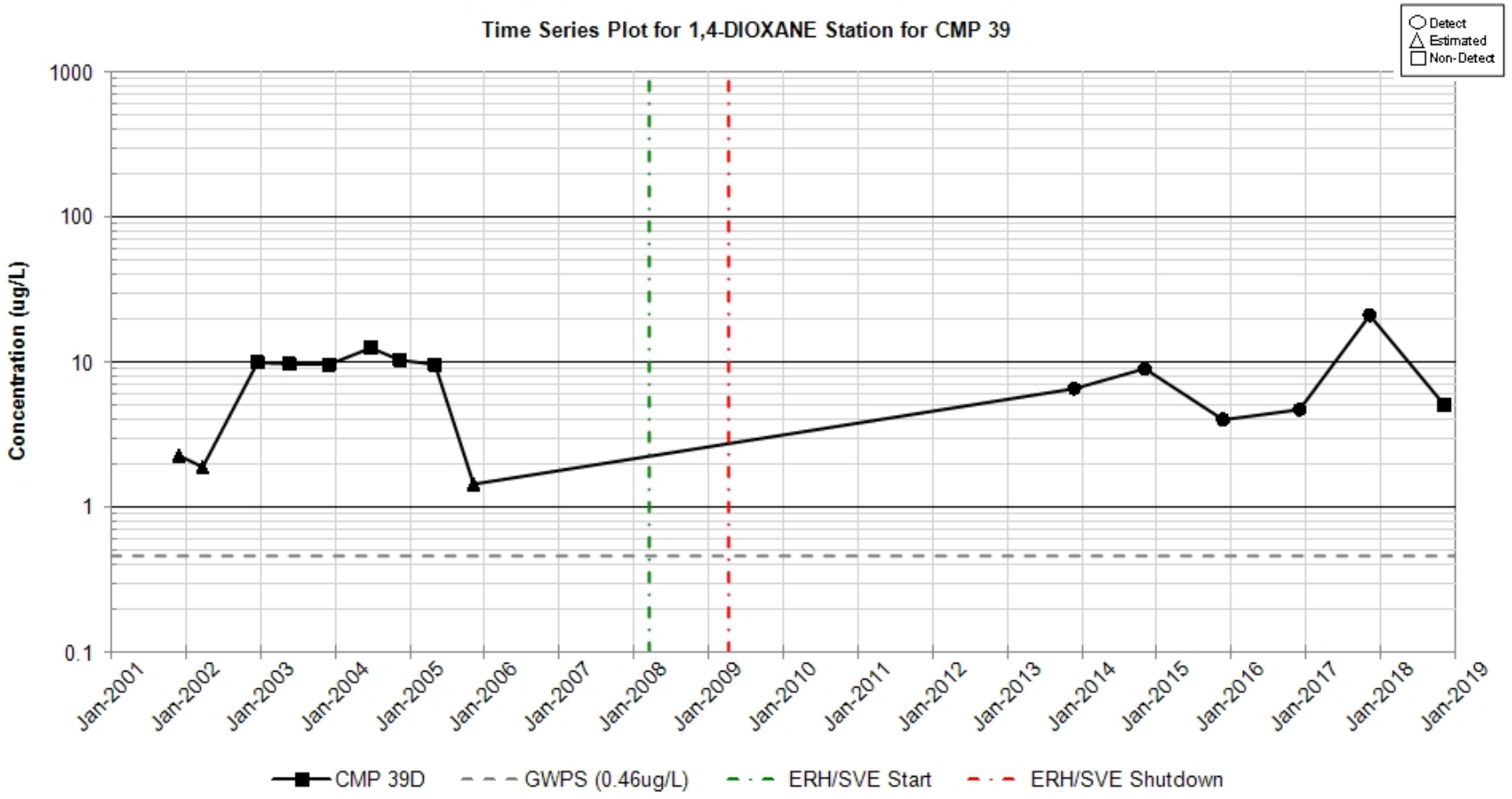

Time Series Plot for 1,4-DIOXANE Station for CMP 33
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 33D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

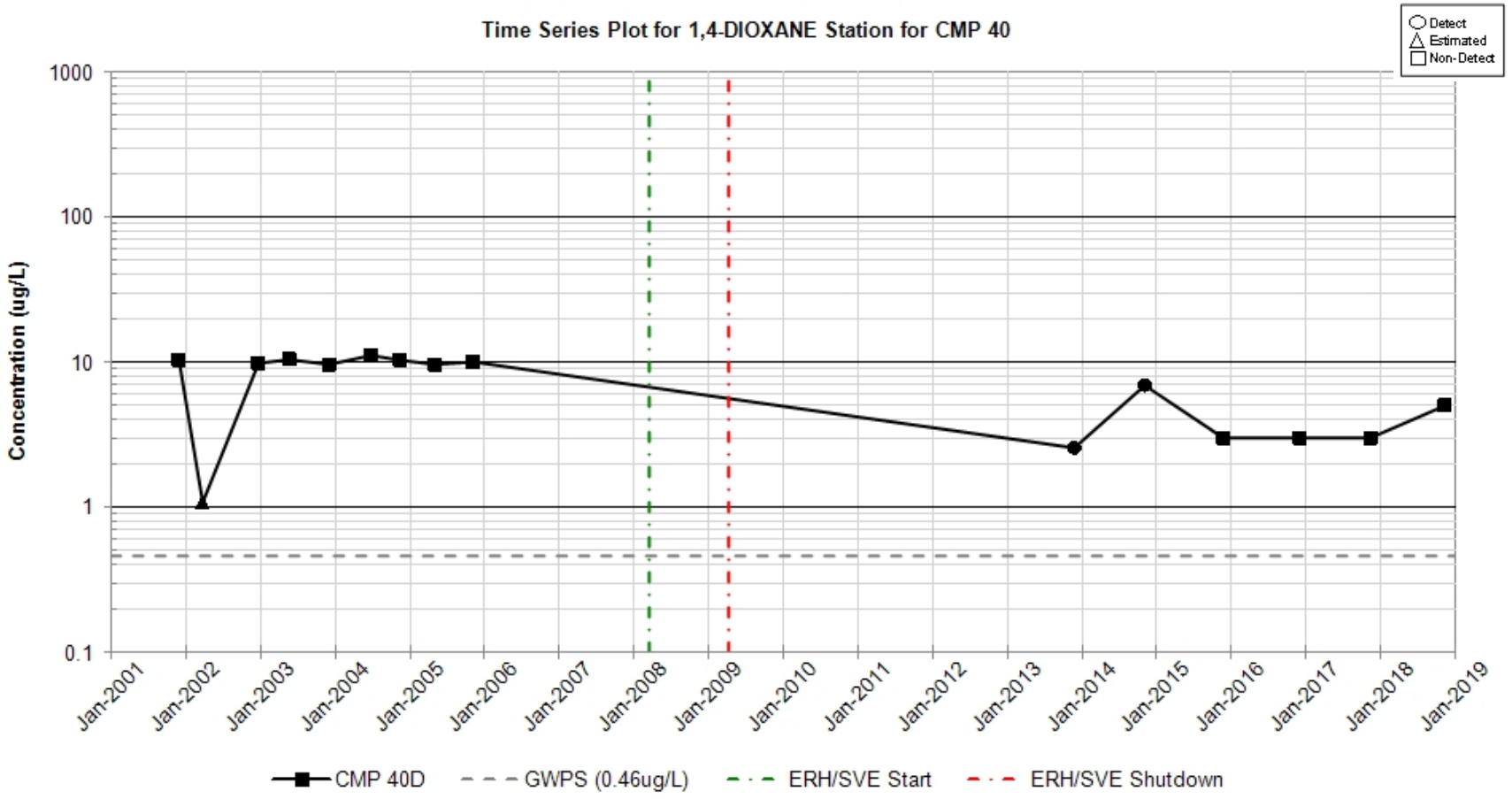

Time Series Plot for 1,4-DIOXANE Station for CMP 35
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 35D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

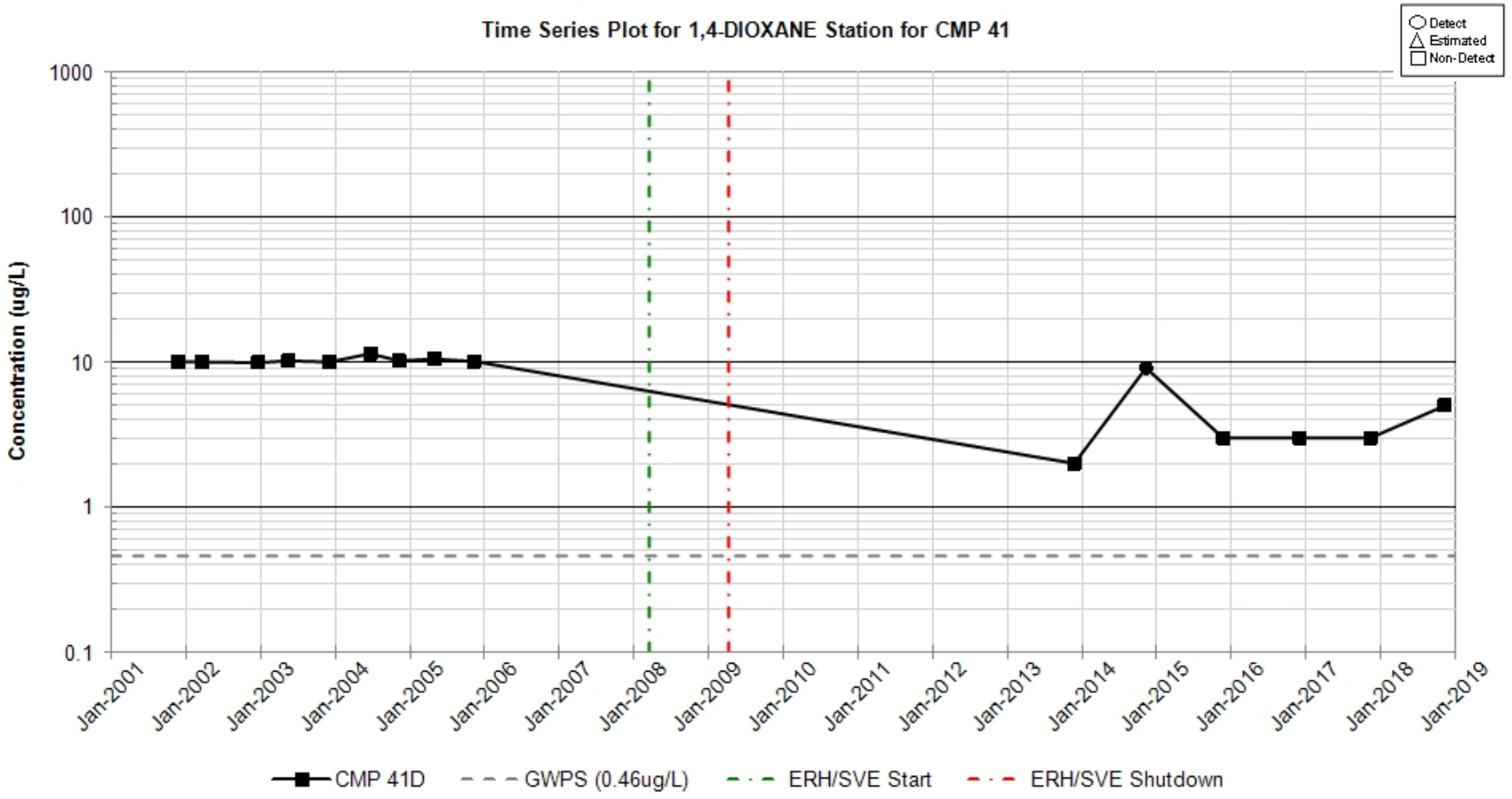

Time Series Plot for 1,4-DIOXANE Station for CMP 36
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 36D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

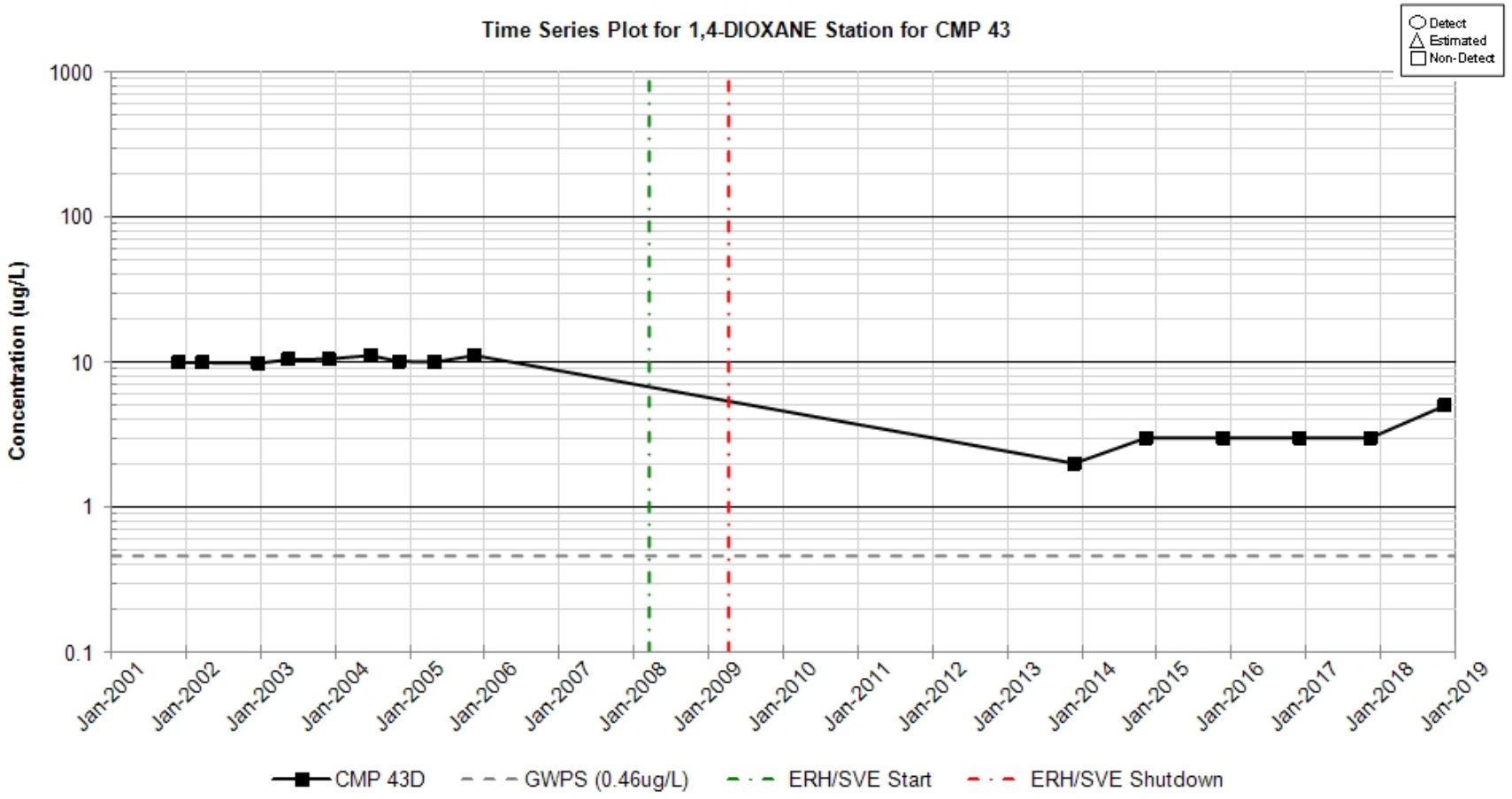

Time Series Plot for 1,4-DIOXANE Station for CMP 37
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 37D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

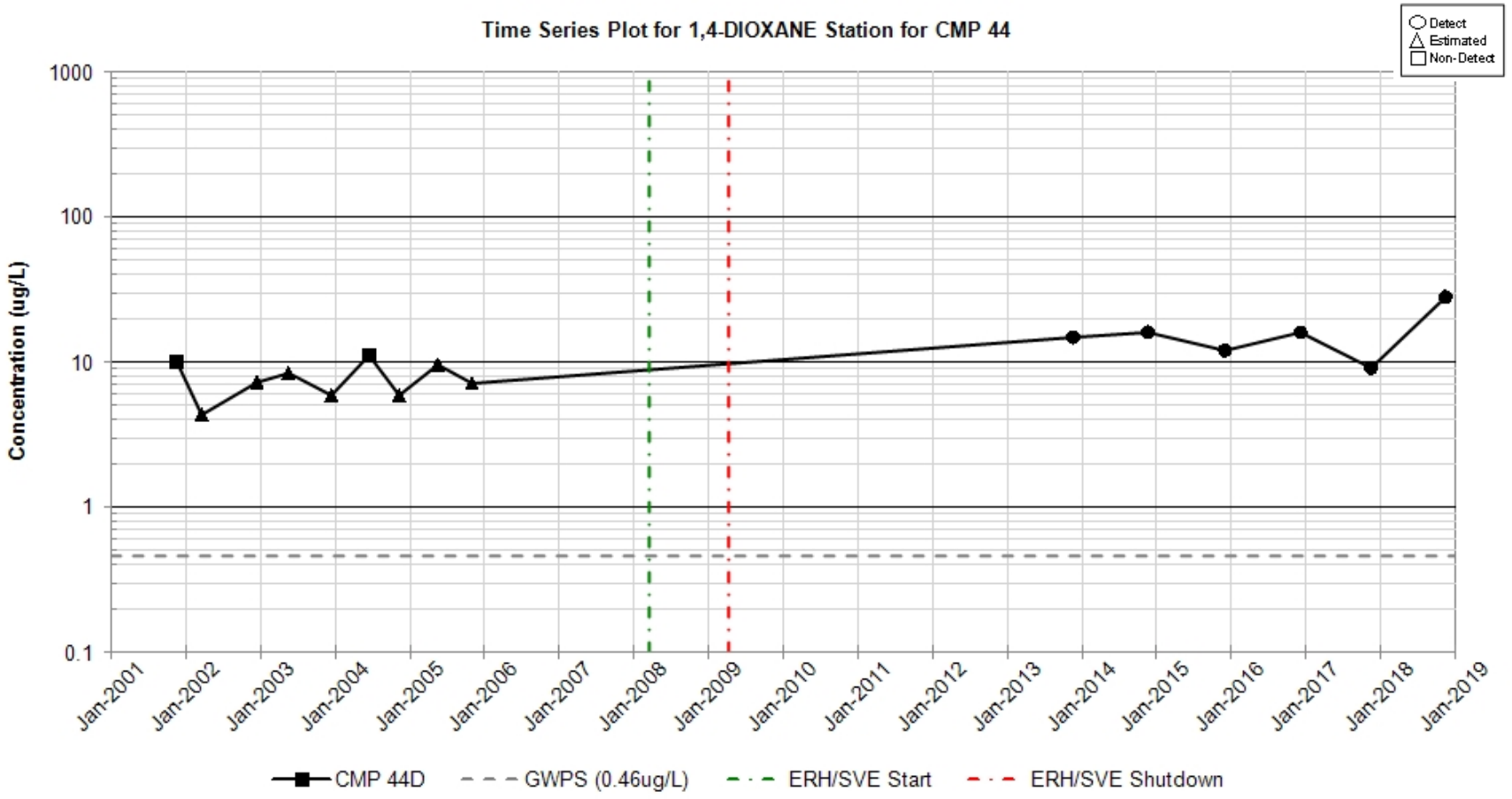

Time Series Plot for 1,4-DIOXANE Station for CMP 38
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 38D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

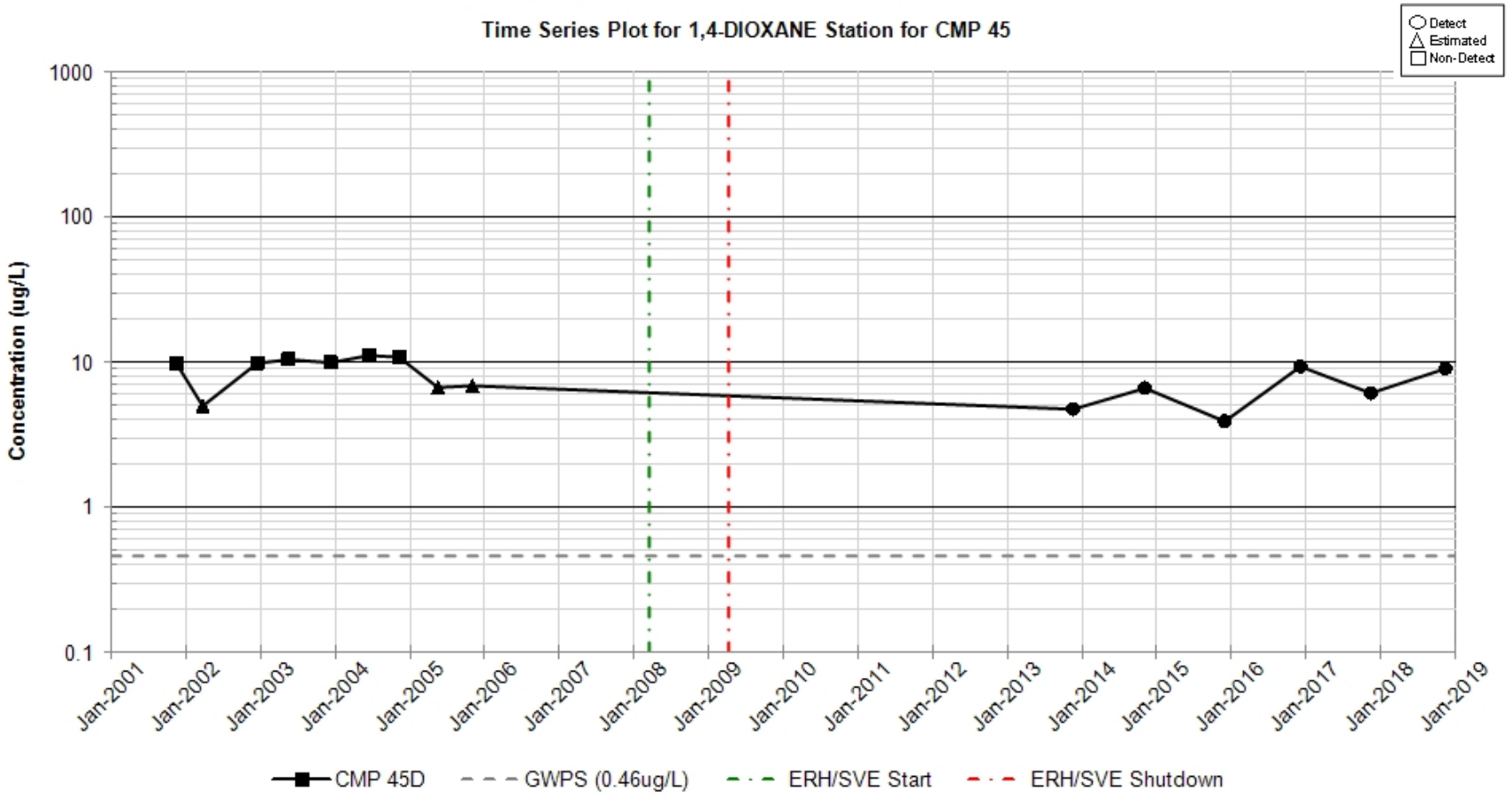

Time Series Plot for 1,4-DIOXANE Station for CMP 39
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 39D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

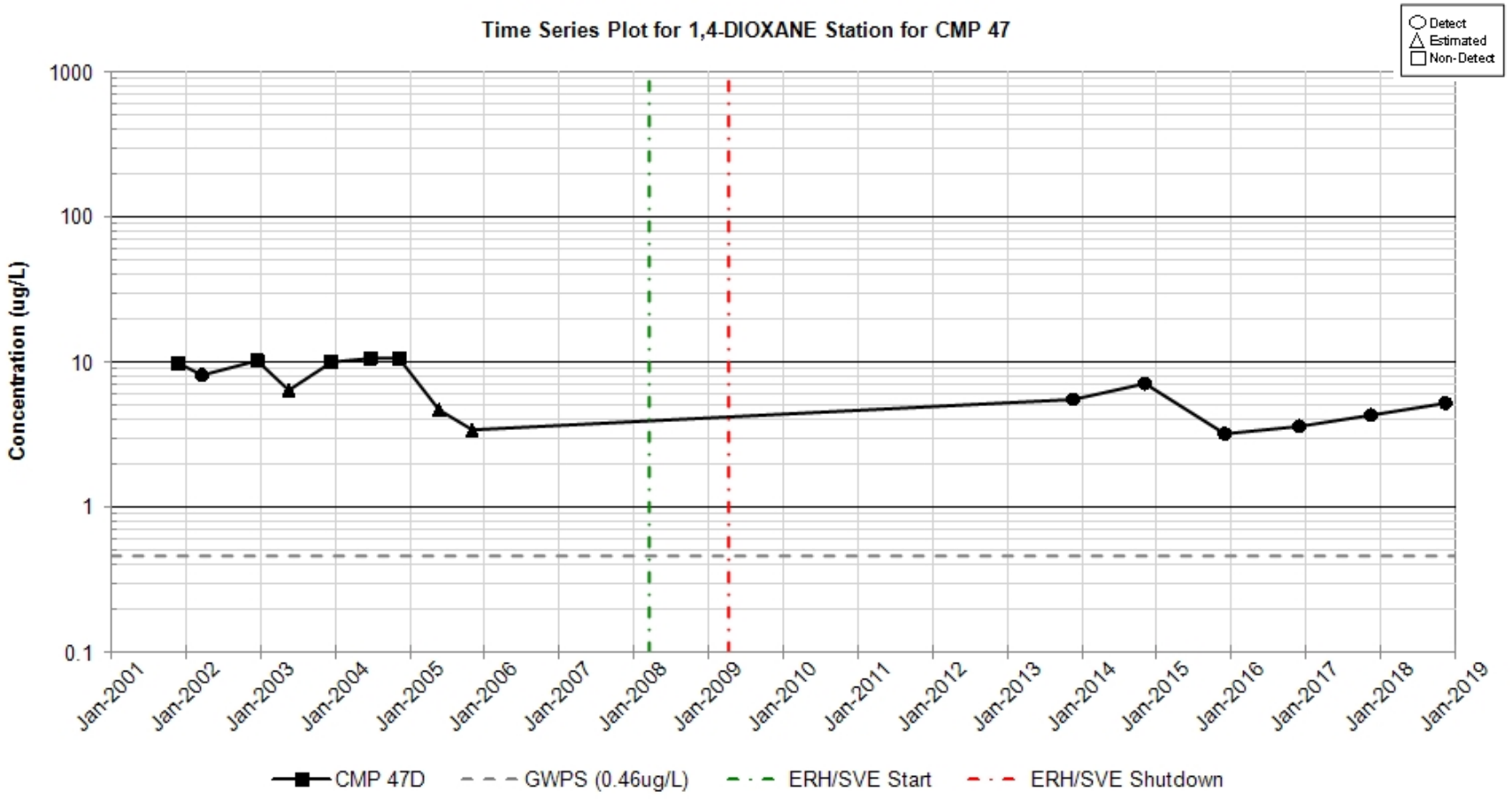

Time Series Plot for 1,4-DIOXANE Station for CMP 40
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 40D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

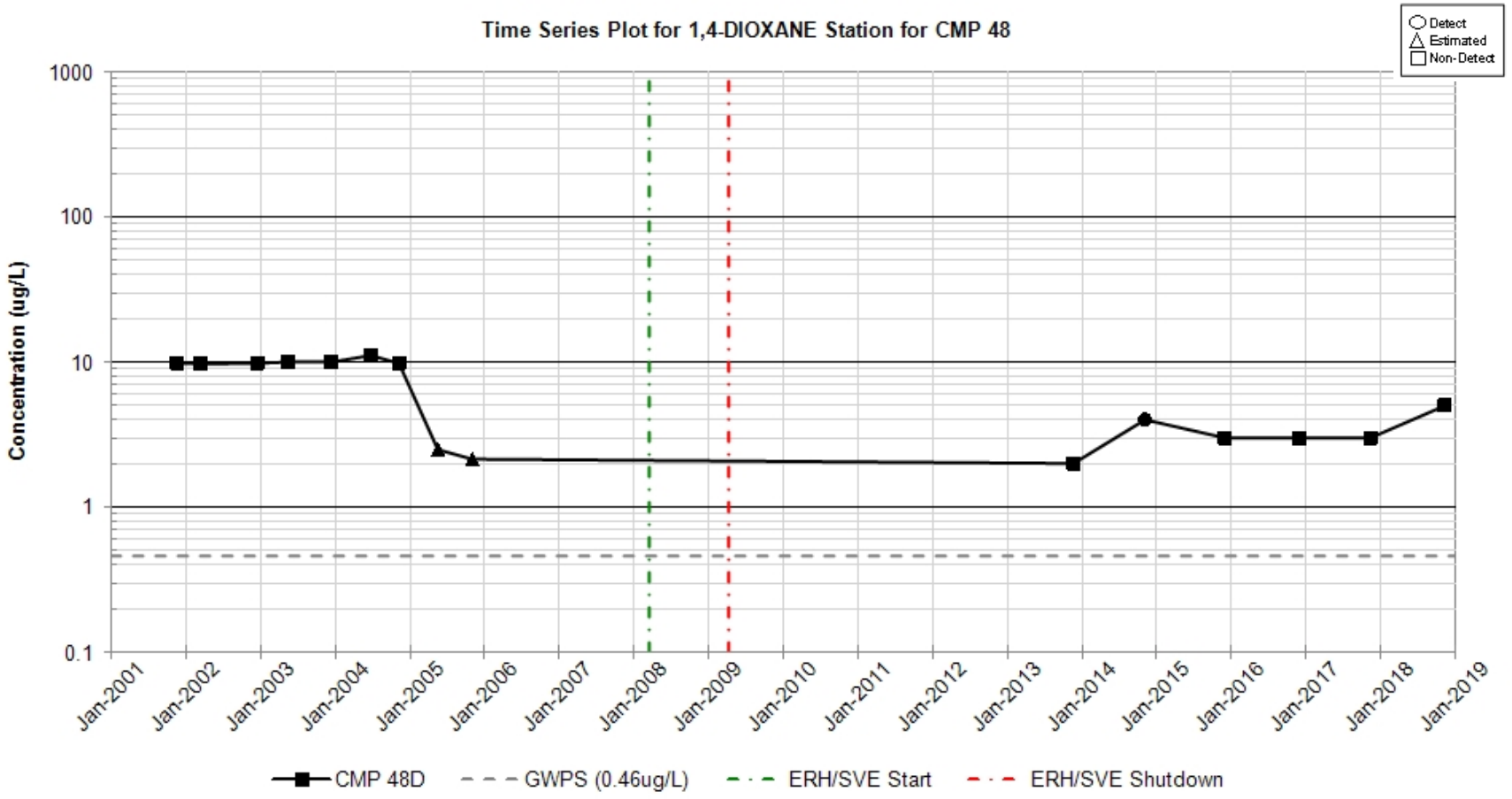

Time Series Plot for 1,4-DIOXANE Station for CMP 41
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 41D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

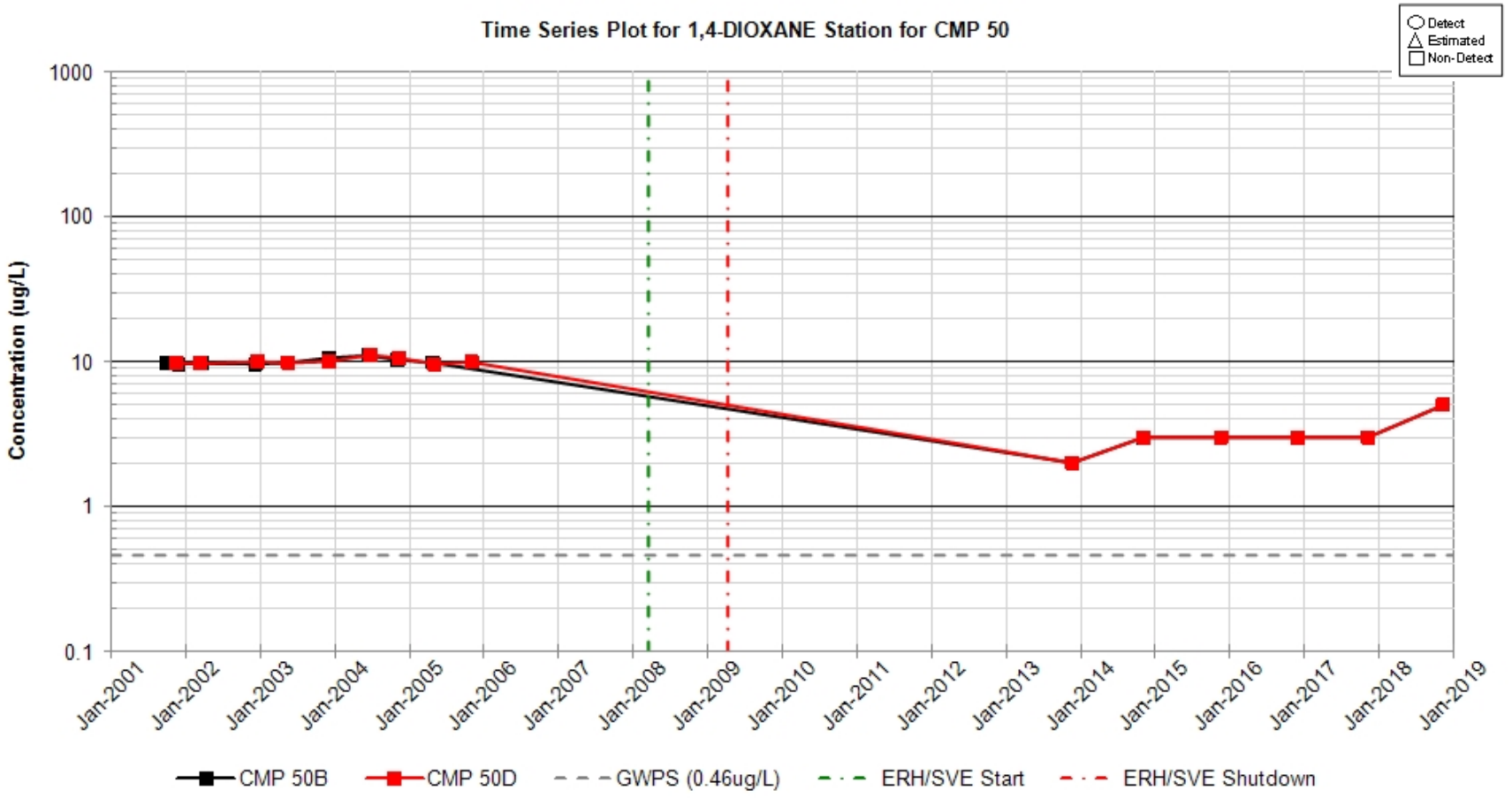

Time Series Plot for 1,4-DIOXANE Station for CMP 43
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 43D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

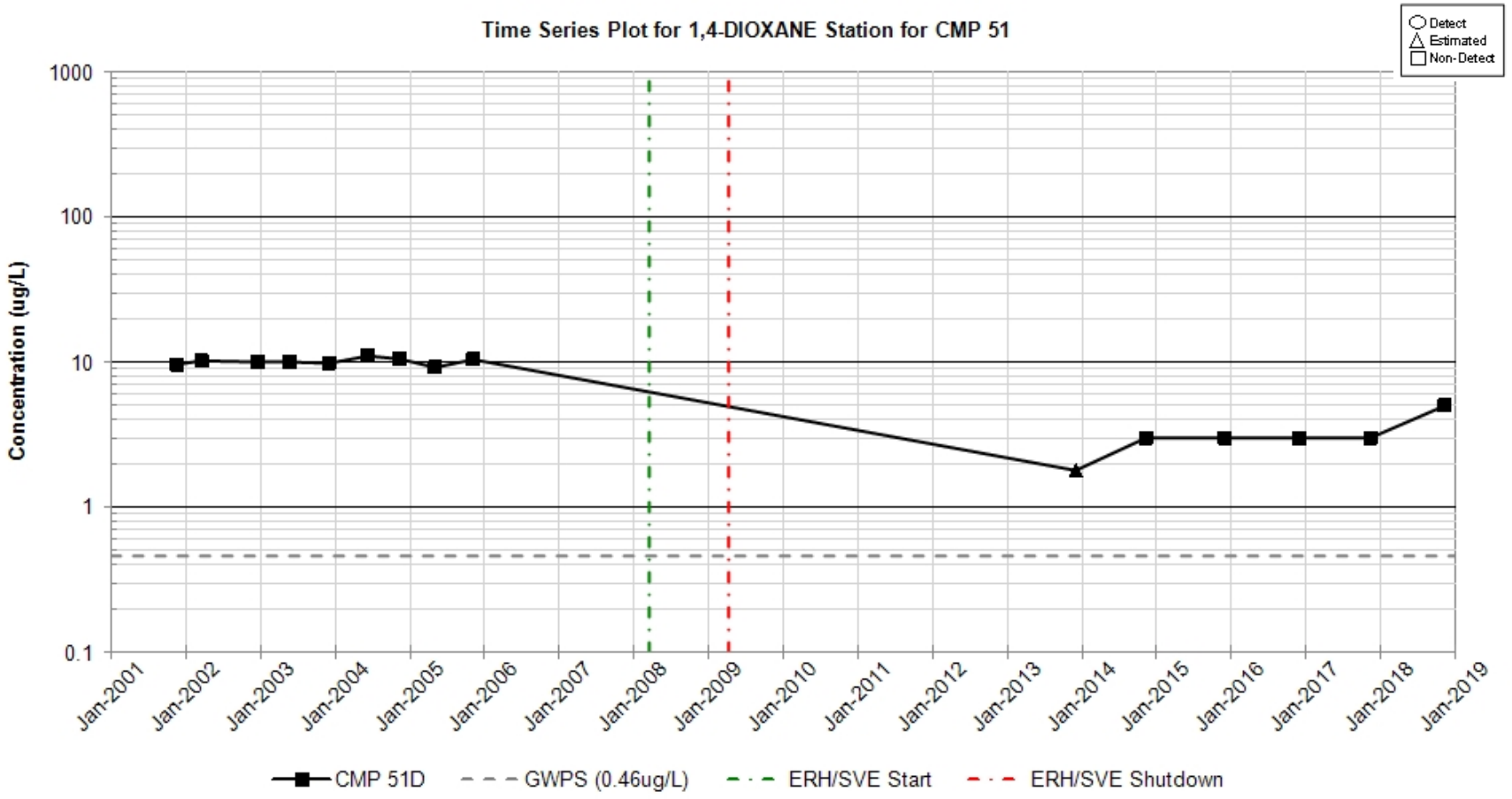

Time Series Plot for 1,4-DIOXANE Station for CMP 44
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 44D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

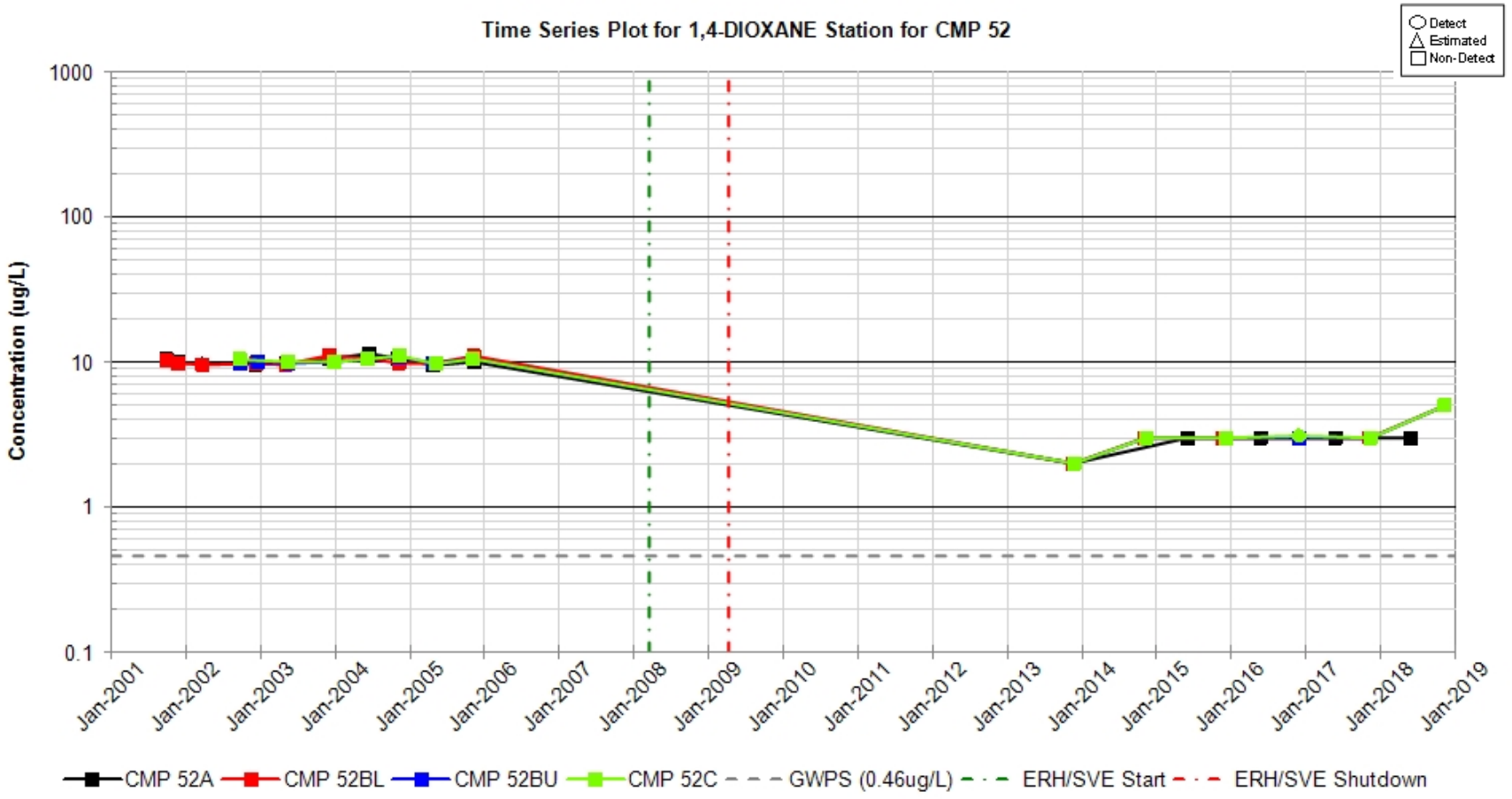

Time Series Plot for 1,4-DIOXANE Station for CMP 45
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 45D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

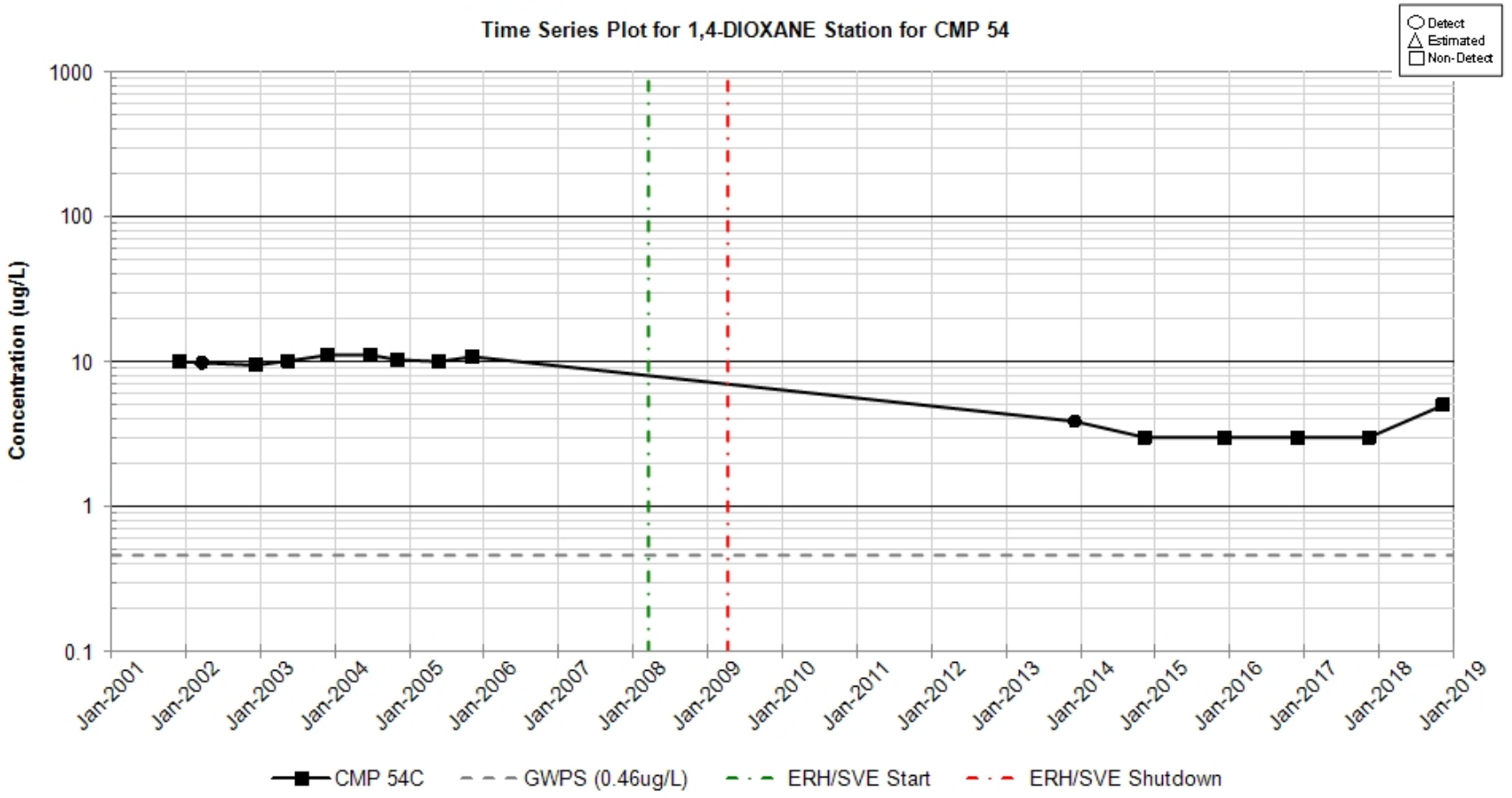

Time Series Plot for 1,4-DIOXANE Station for CMP 47
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 47D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

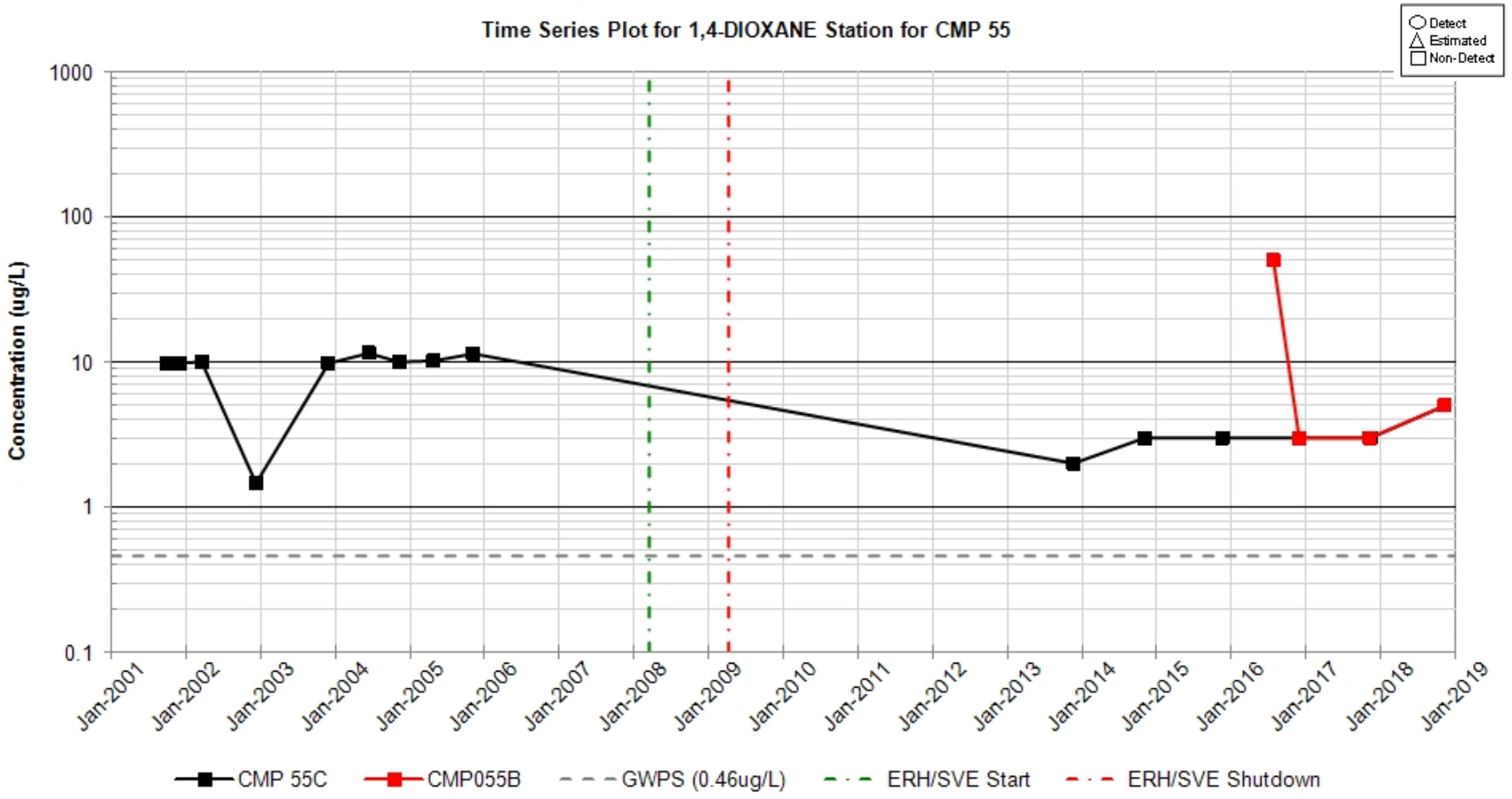

Time Series Plot for 1,4-DIOXANE Station for CMP 48
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 48D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

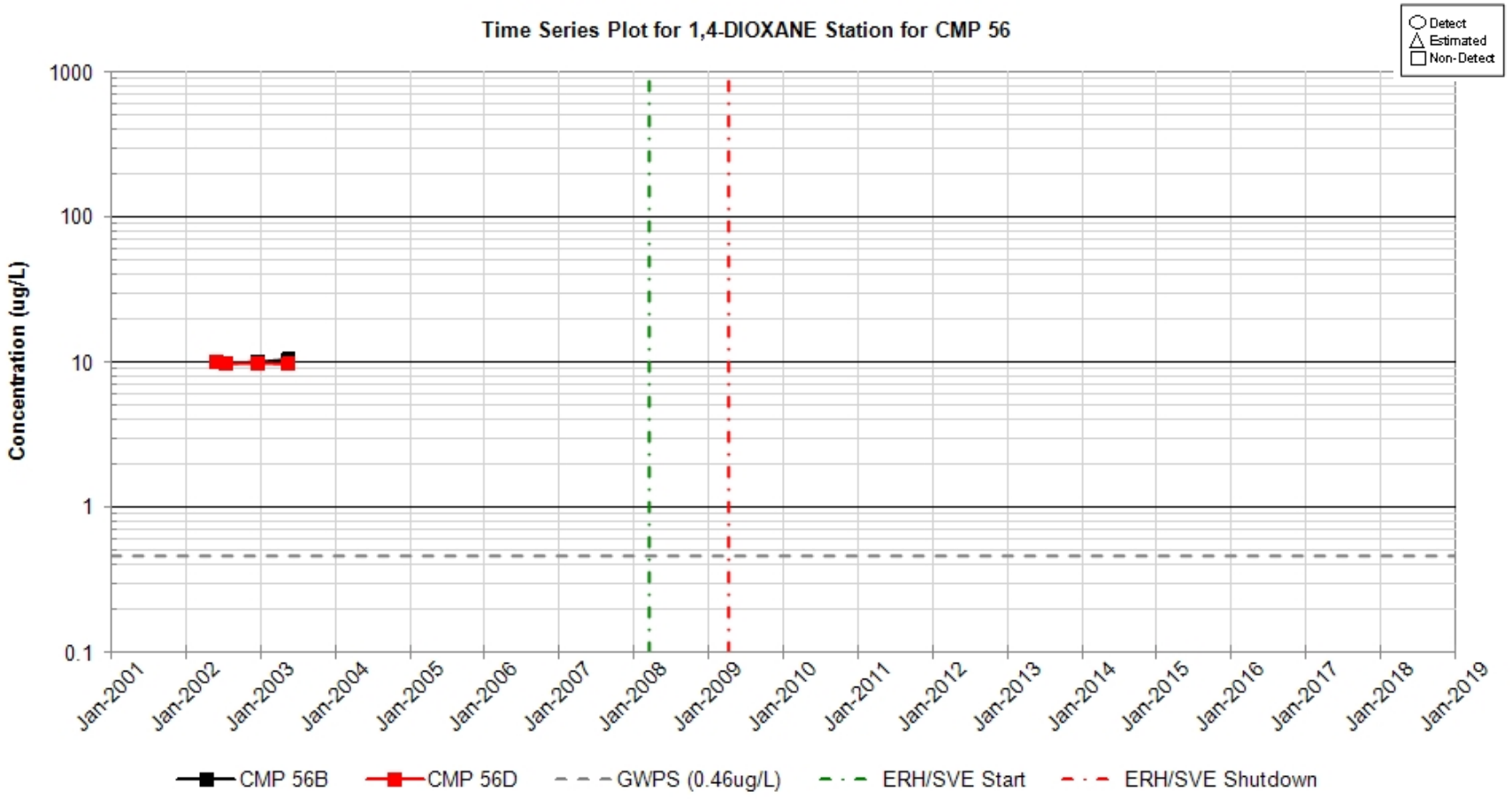

Time Series Plot for 1,4-DIOXANE Station for CMP 50
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 50B
CMP 50D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

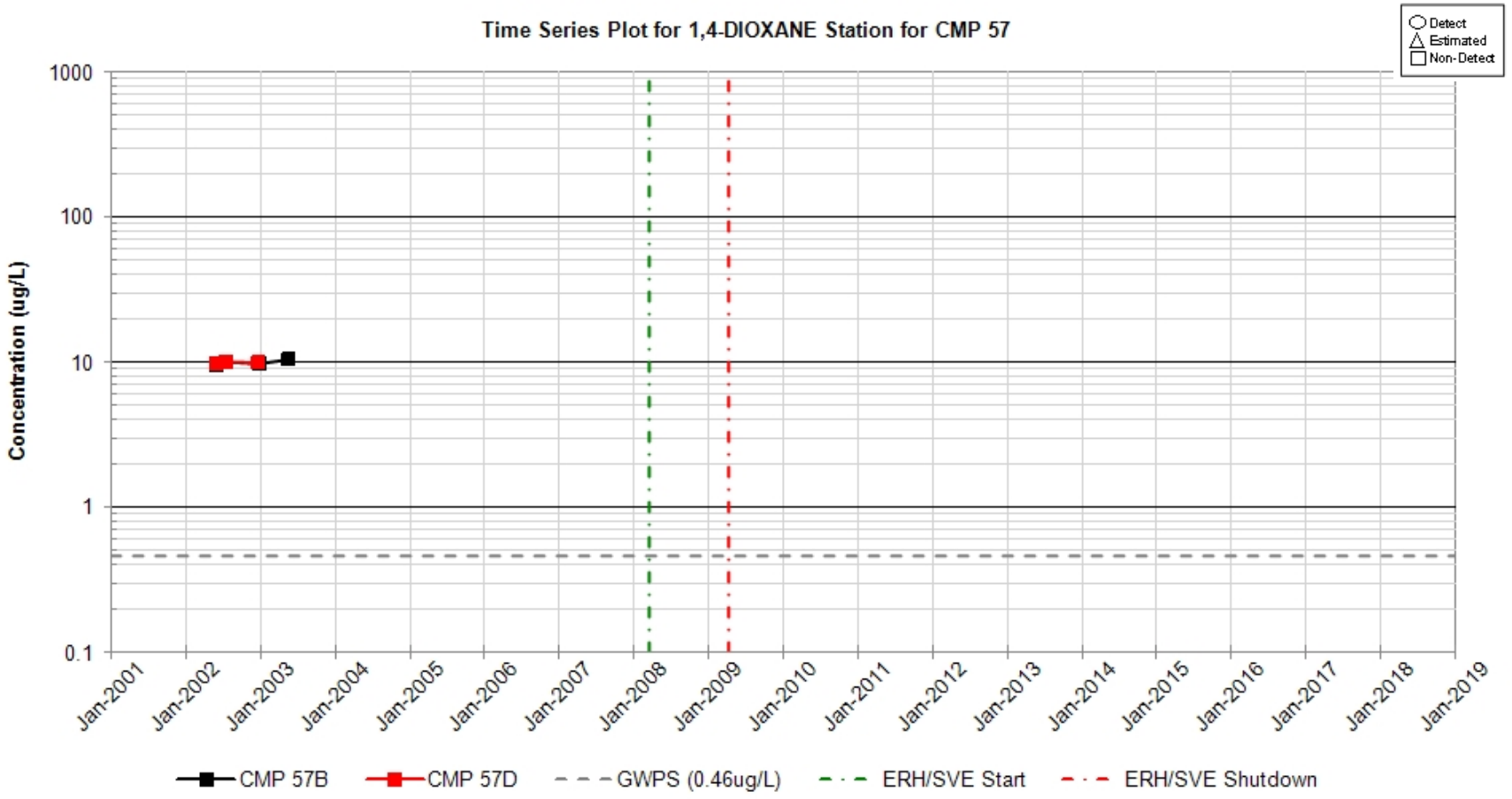

Time Series Plot for 1,4-DIOXANE Station for CMP 51
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 51D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

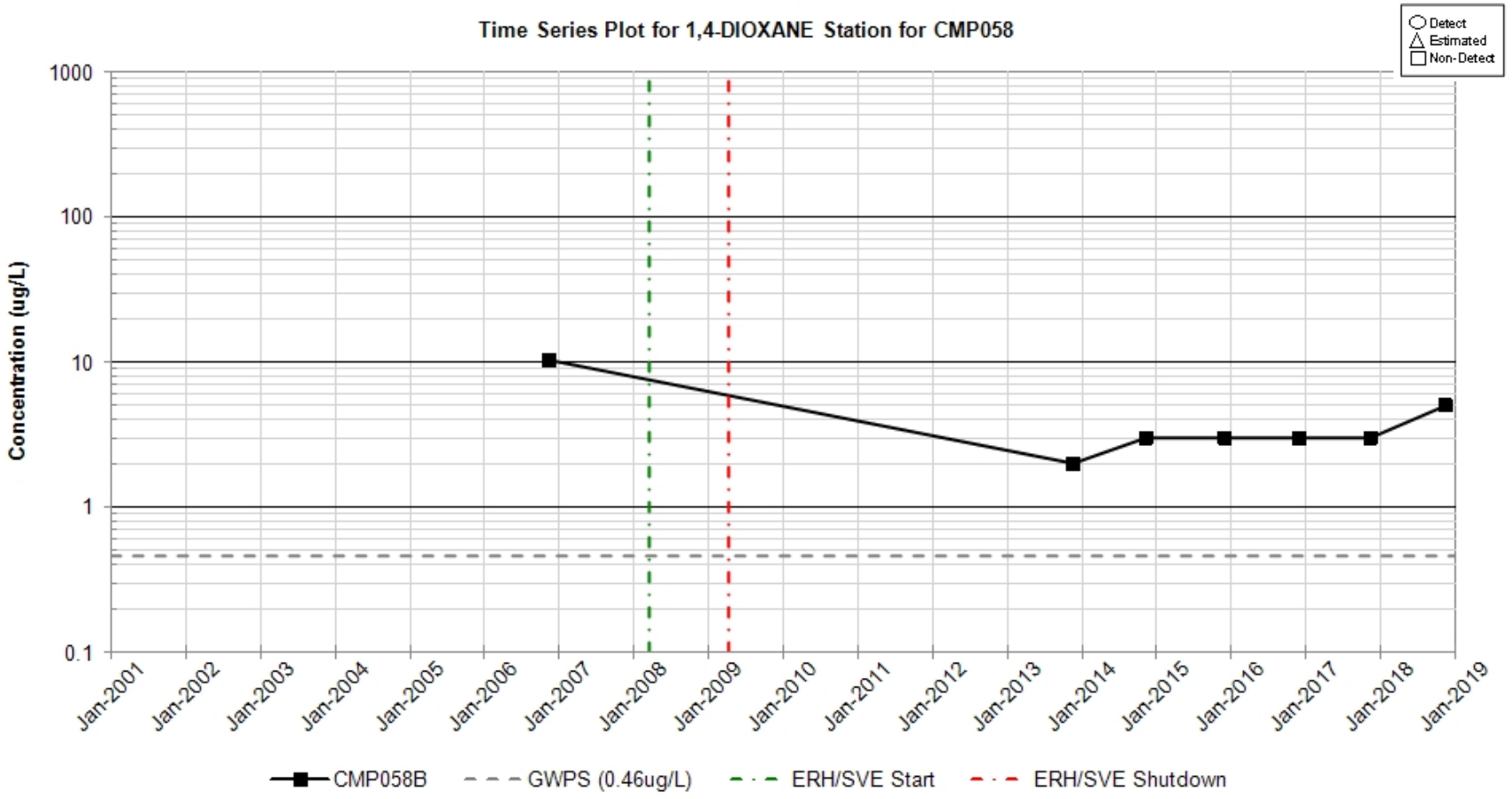

Time Series Plot for 1,4-DIOXANE Station for CMP 52
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 52A
CMP 52BL
CMP 52BU
CMP 52C
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

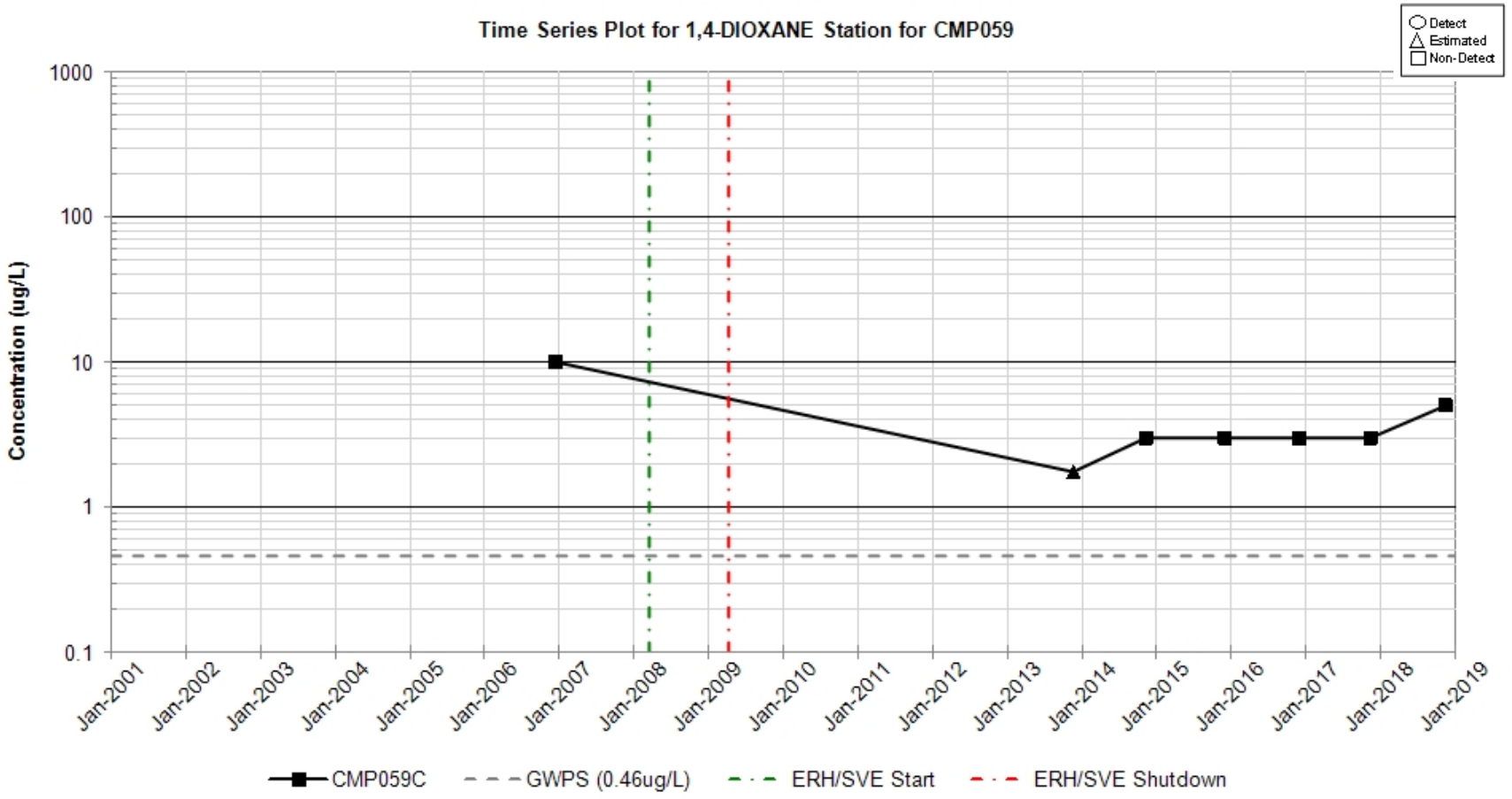

Time Series Plot for 1,4-DIOXANE Station for CMP 54
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 54C
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

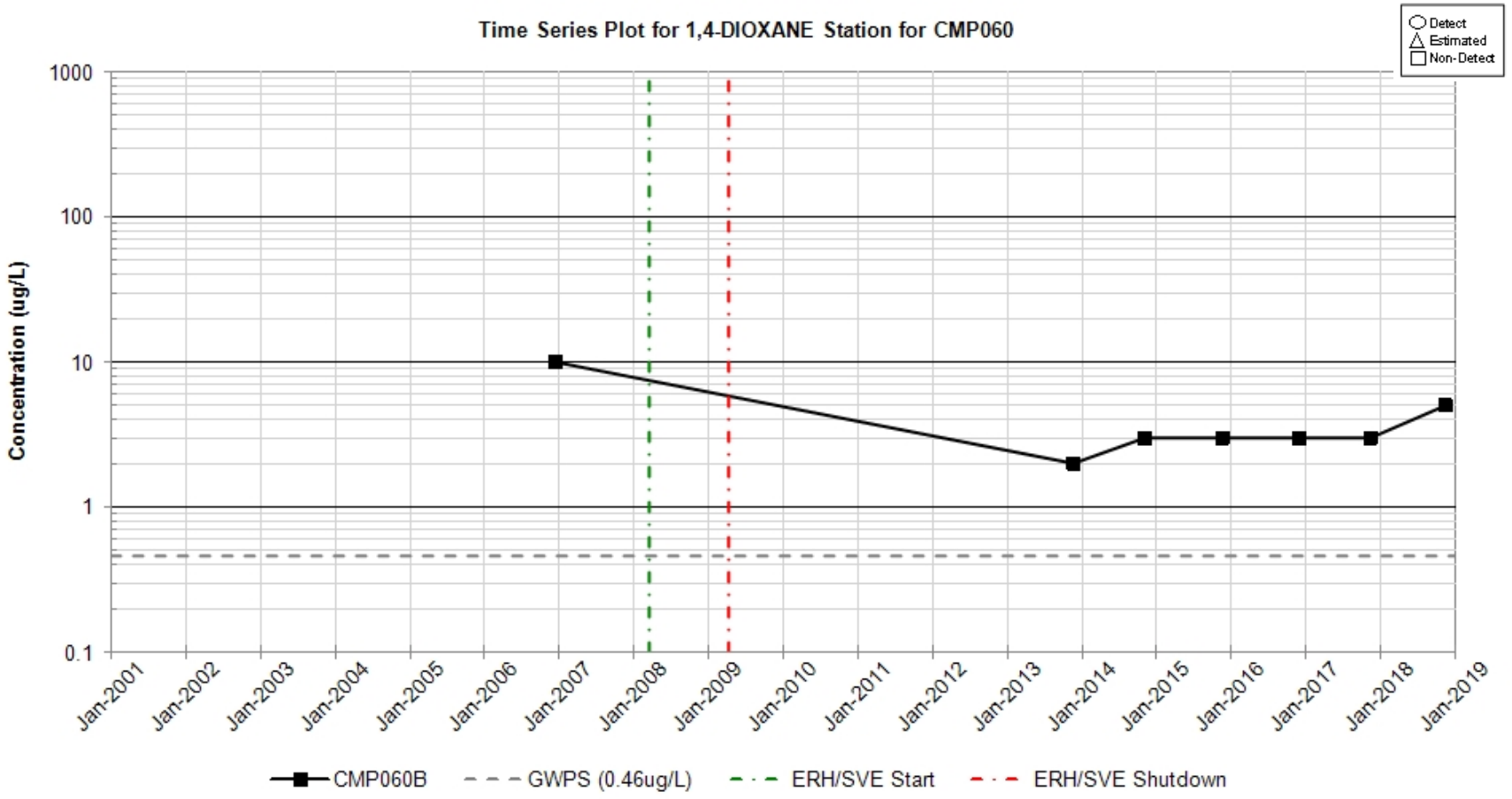

Time Series Plot for 1,4-DIOXANE Station for CMP 55
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 55C
CMP055B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

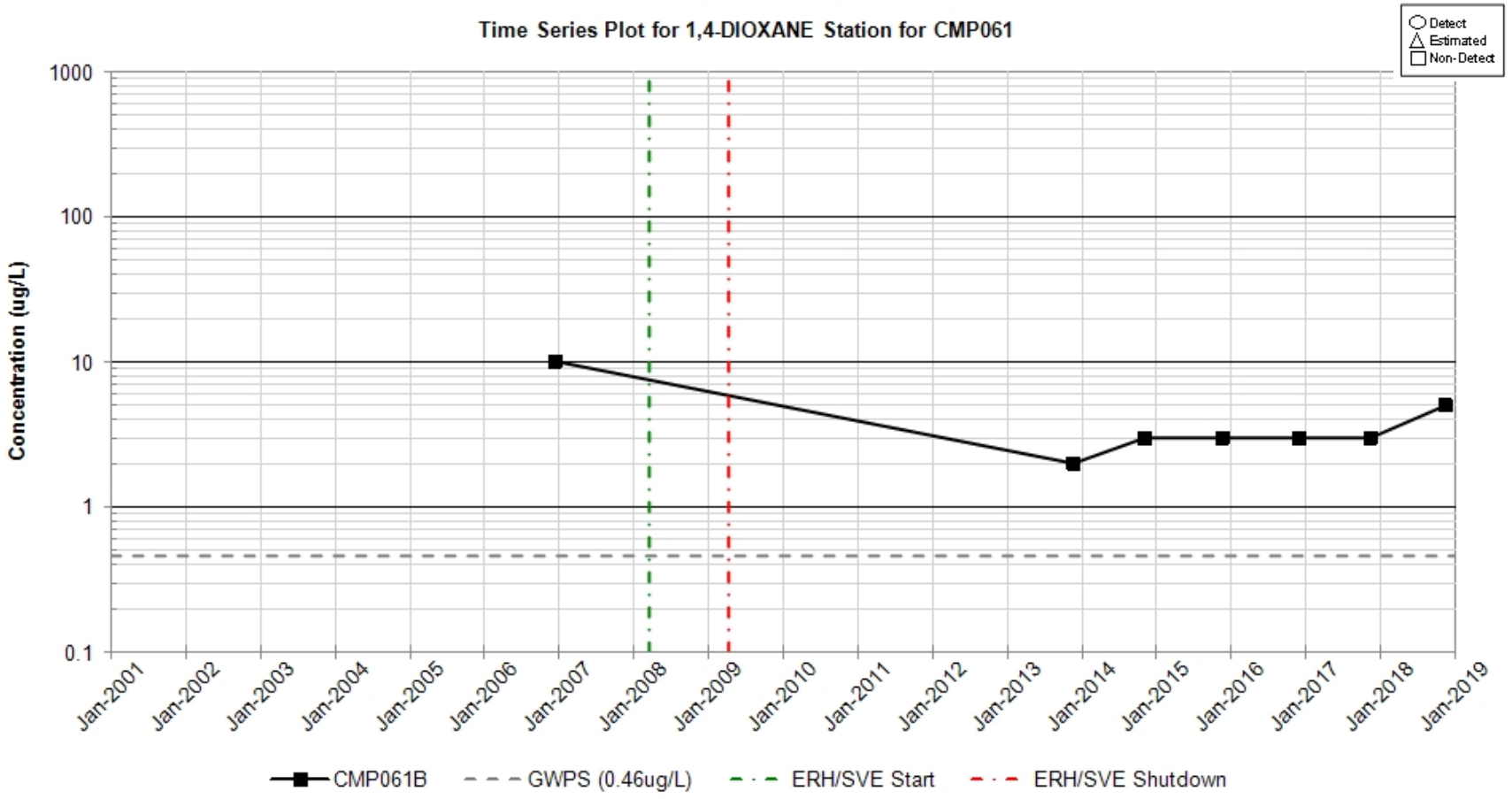

Time Series Plot for 1,4-DIOXANE Station for CMP 56
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 56B
CMP 56D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

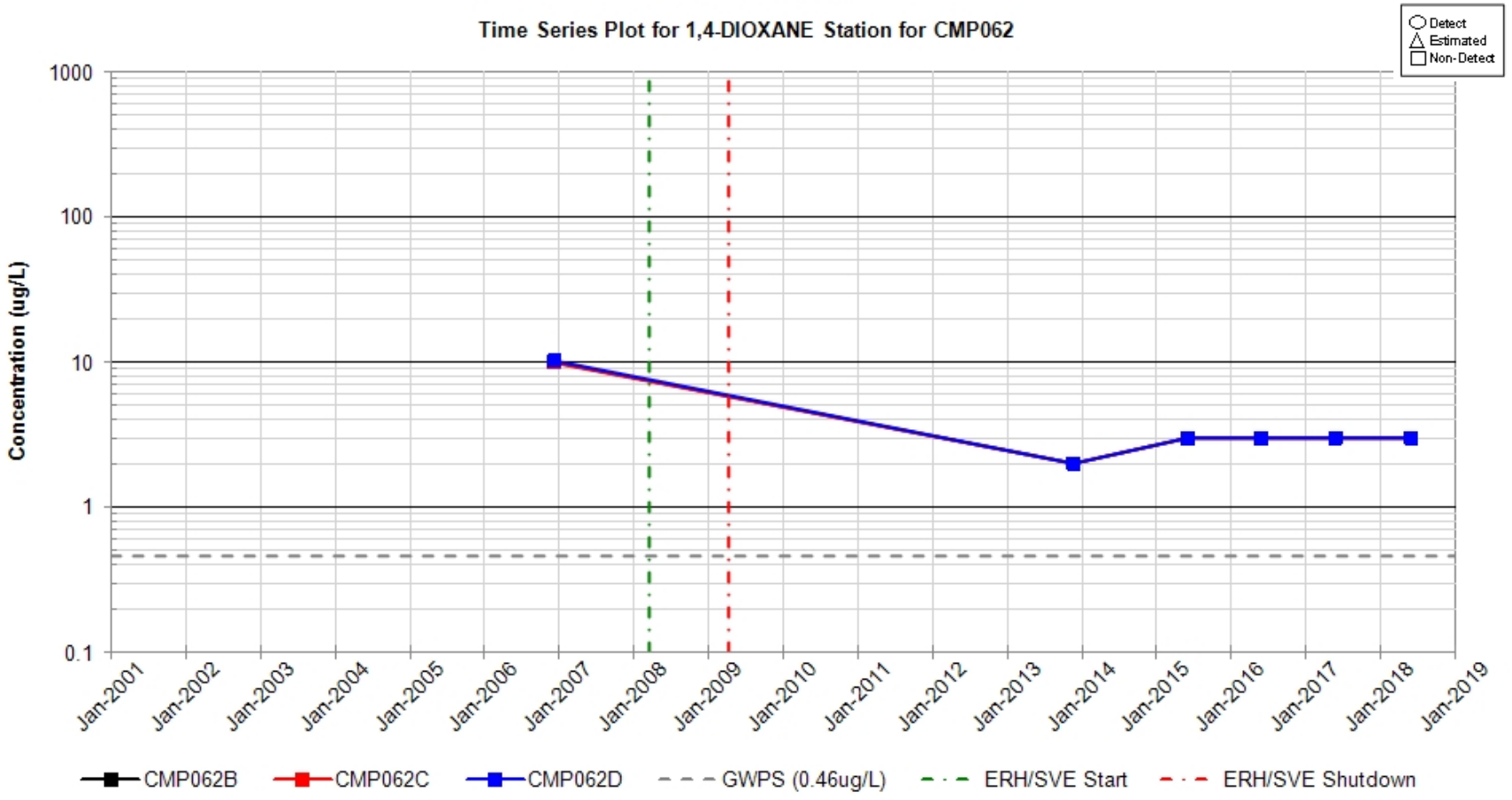

Time Series Plot for 1,4-DIOXANE Station for CMP 57
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 57B
CMP 57D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

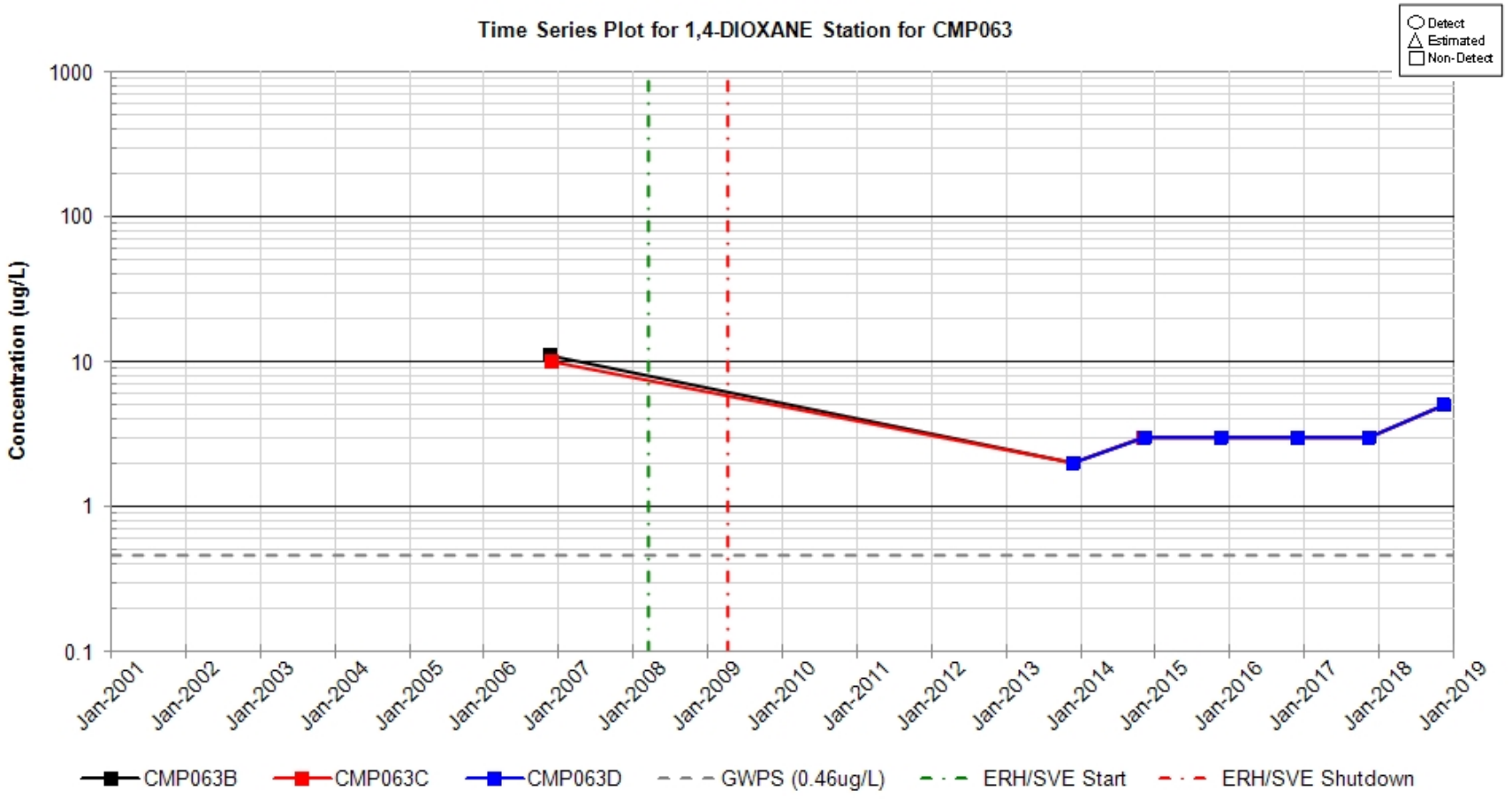

Time Series Plot for 1,4-DIOXANE Station for CMP058
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP058B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

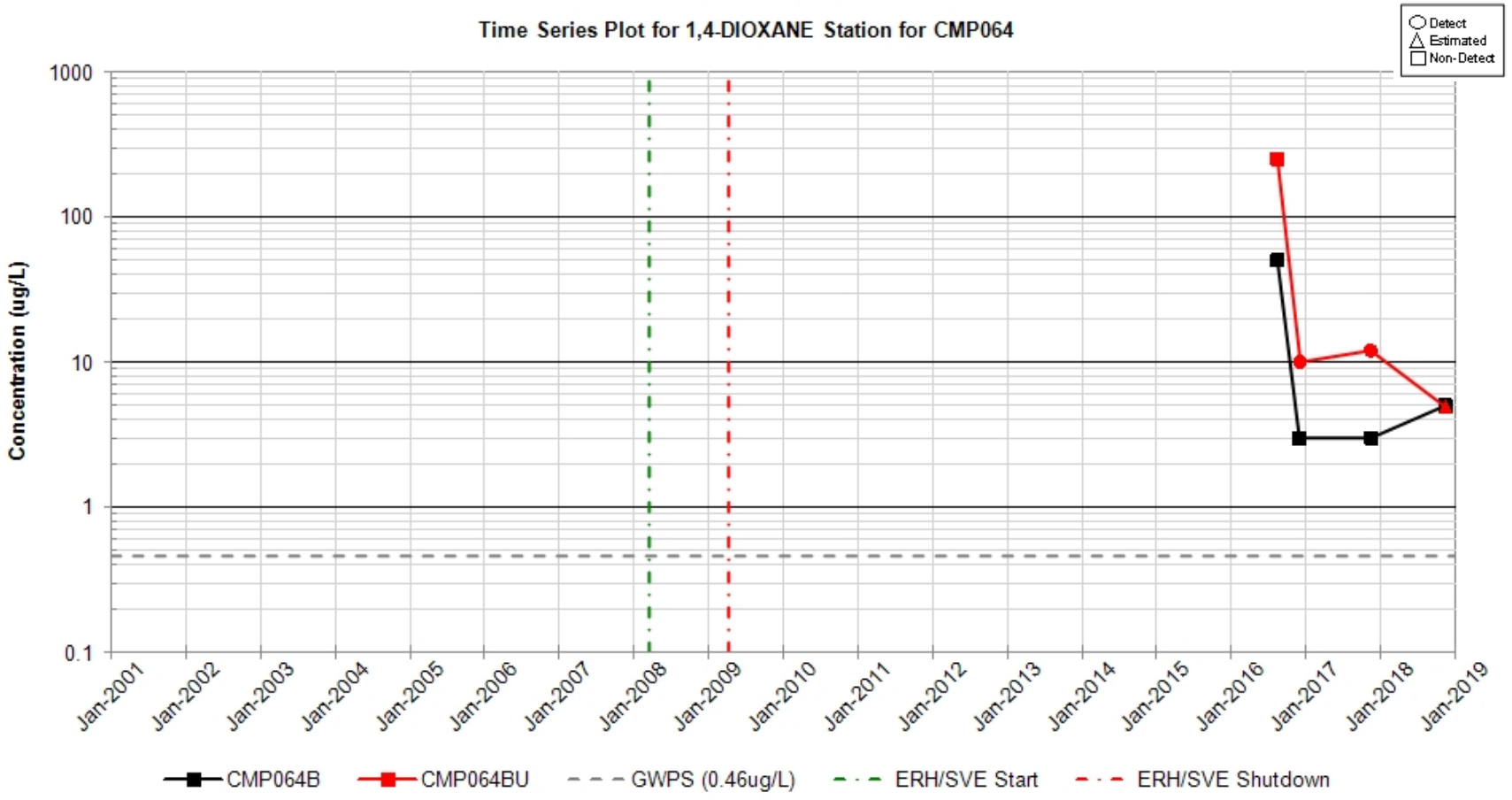

Time Series Plot for 1,4-DIOXANE Station for CMP059
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP059C
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

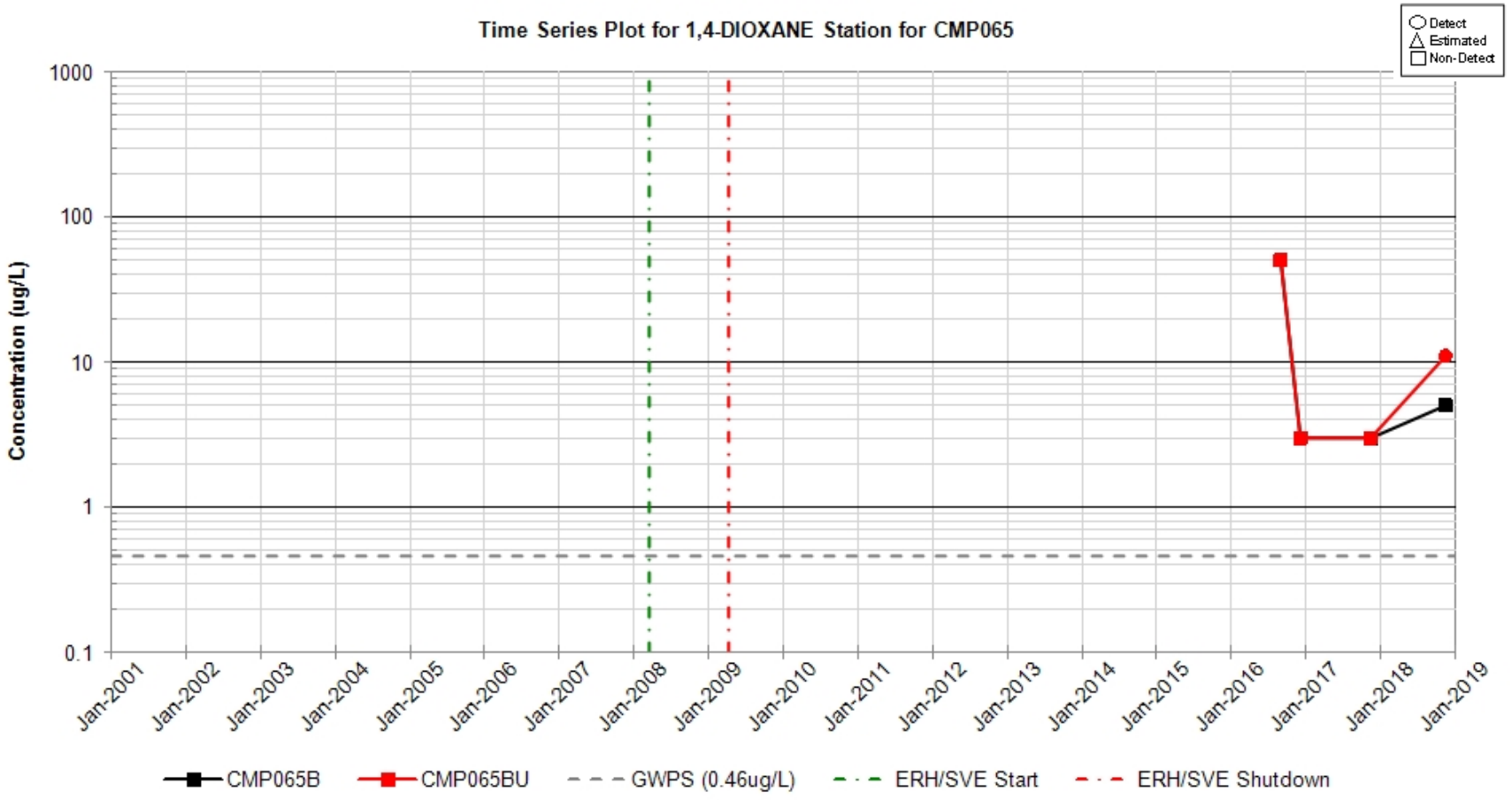

Time Series Plot for 1,4-DIOXANE Station for CMP060
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP060B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

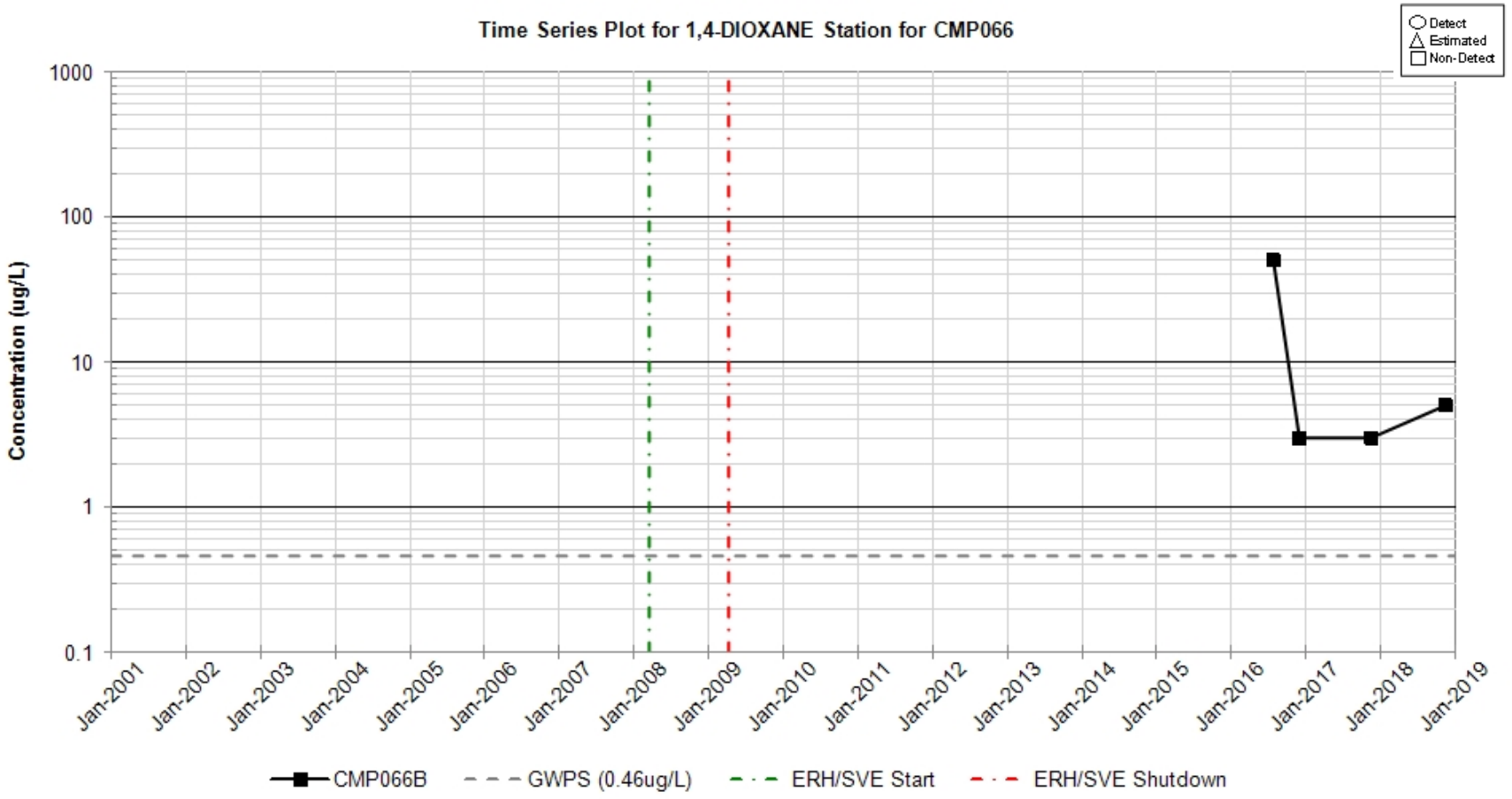

Time Series Plot for 1,4-DIOXANE Station for CMP061
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP061B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

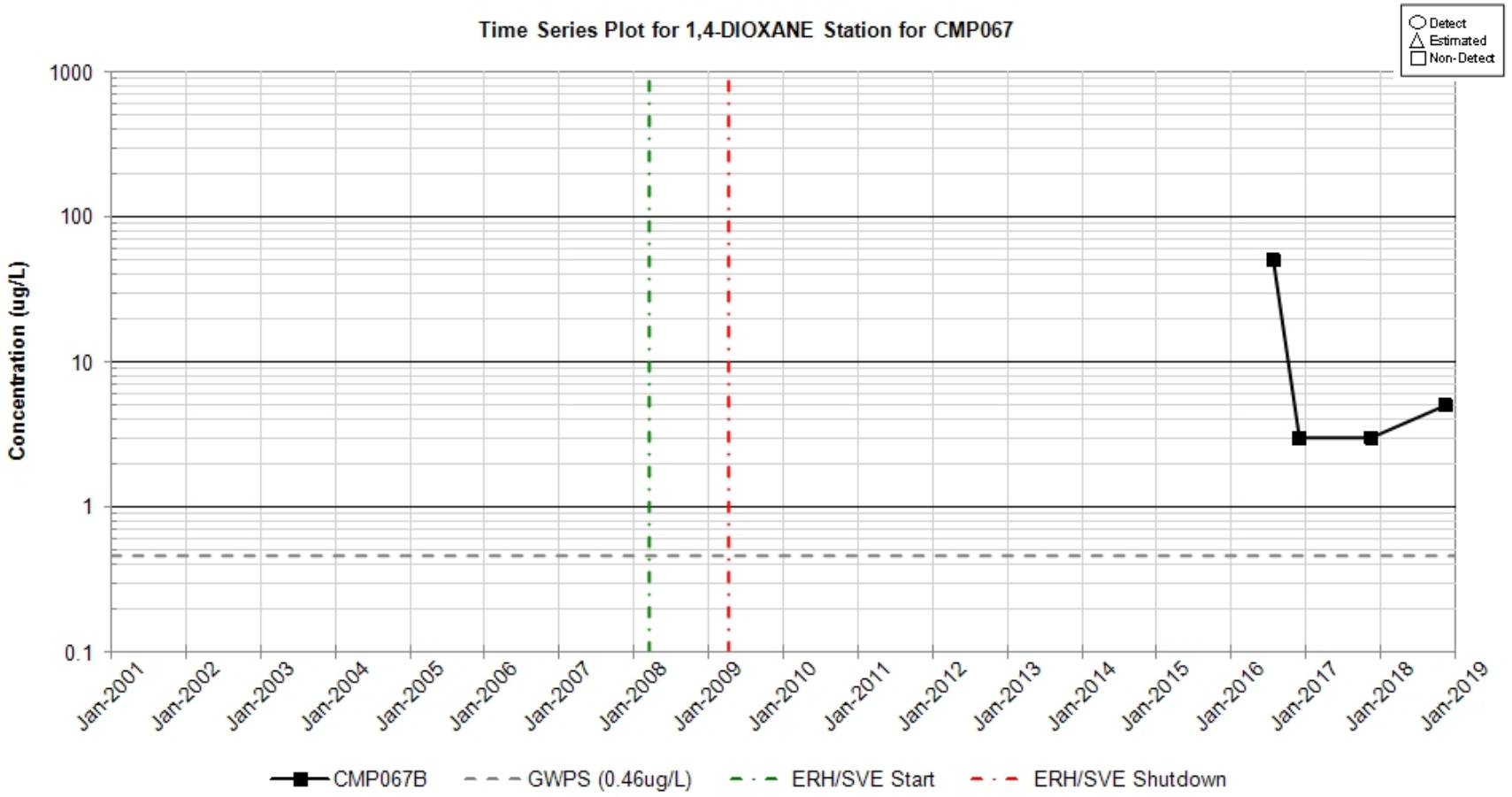

Time Series Plot for 1,4-DIOXANE Station for CMP062
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP062B
CMP062C
CMP062D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

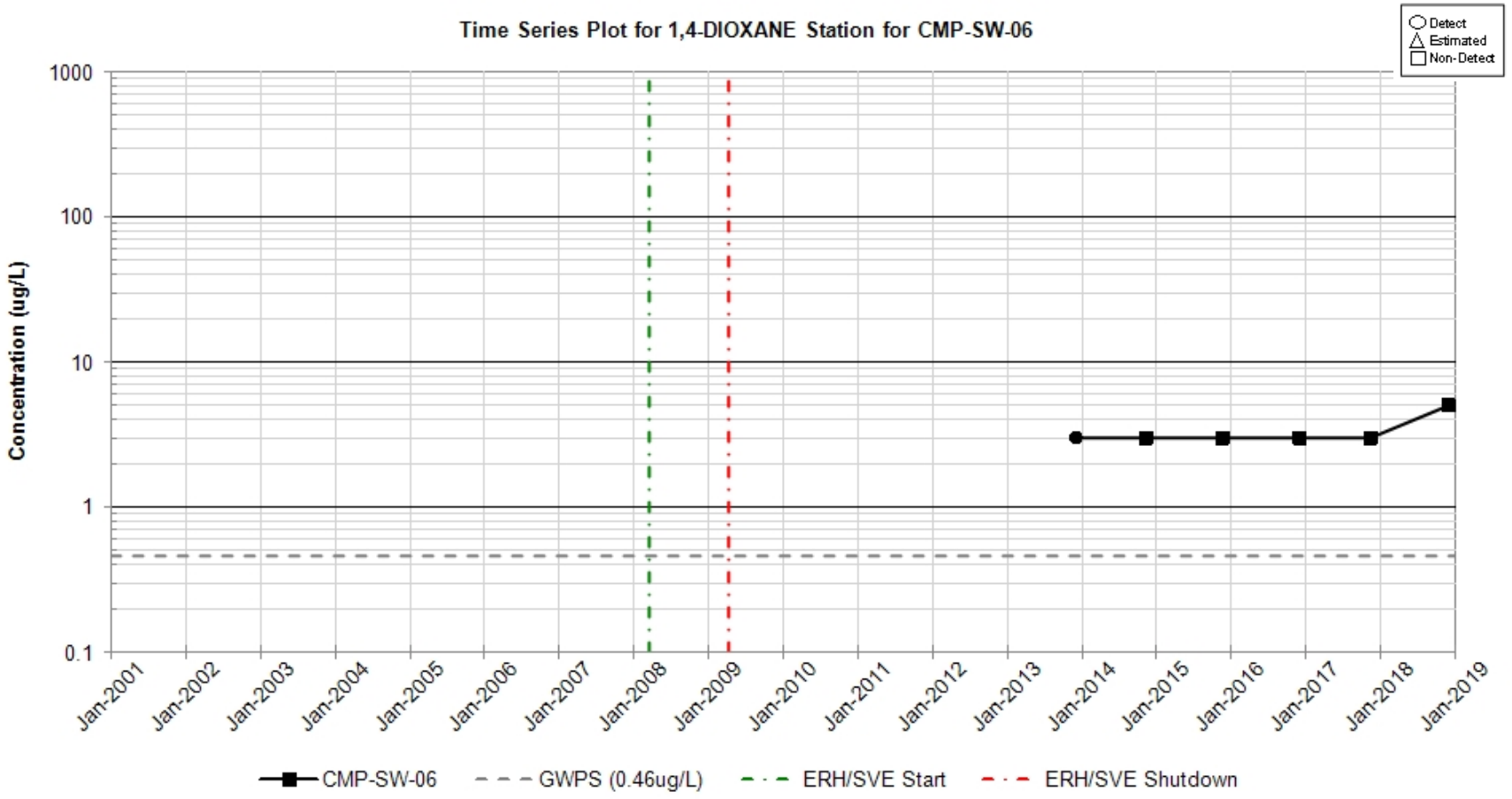

Time Series Plot for 1,4-DIOXANE Station for CMP063
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP063B
CMP063C
CMP063D
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

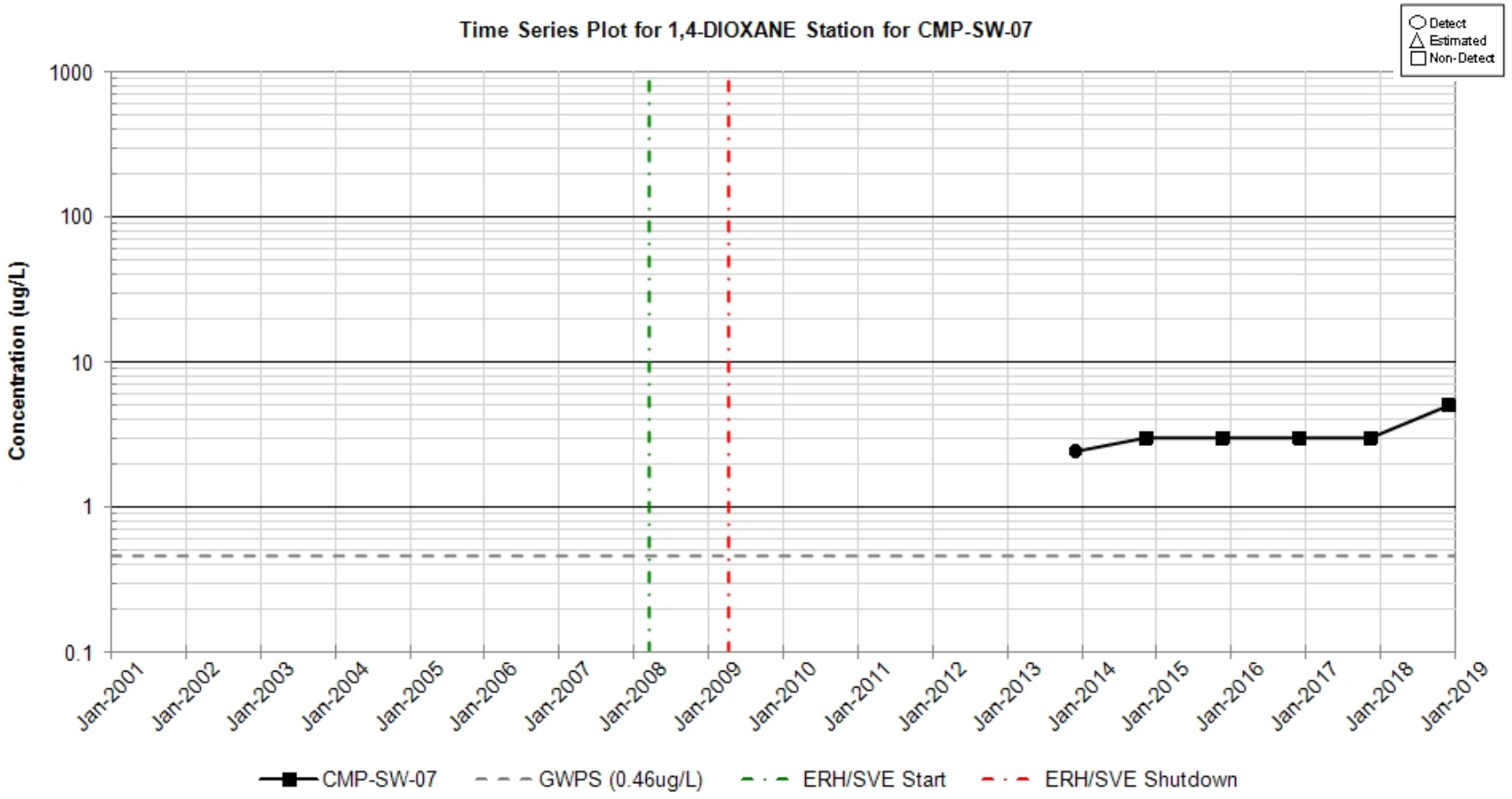

Time Series Plot for 1,4-DIOXANE Station for CMP064
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP064B
CMP064BU
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

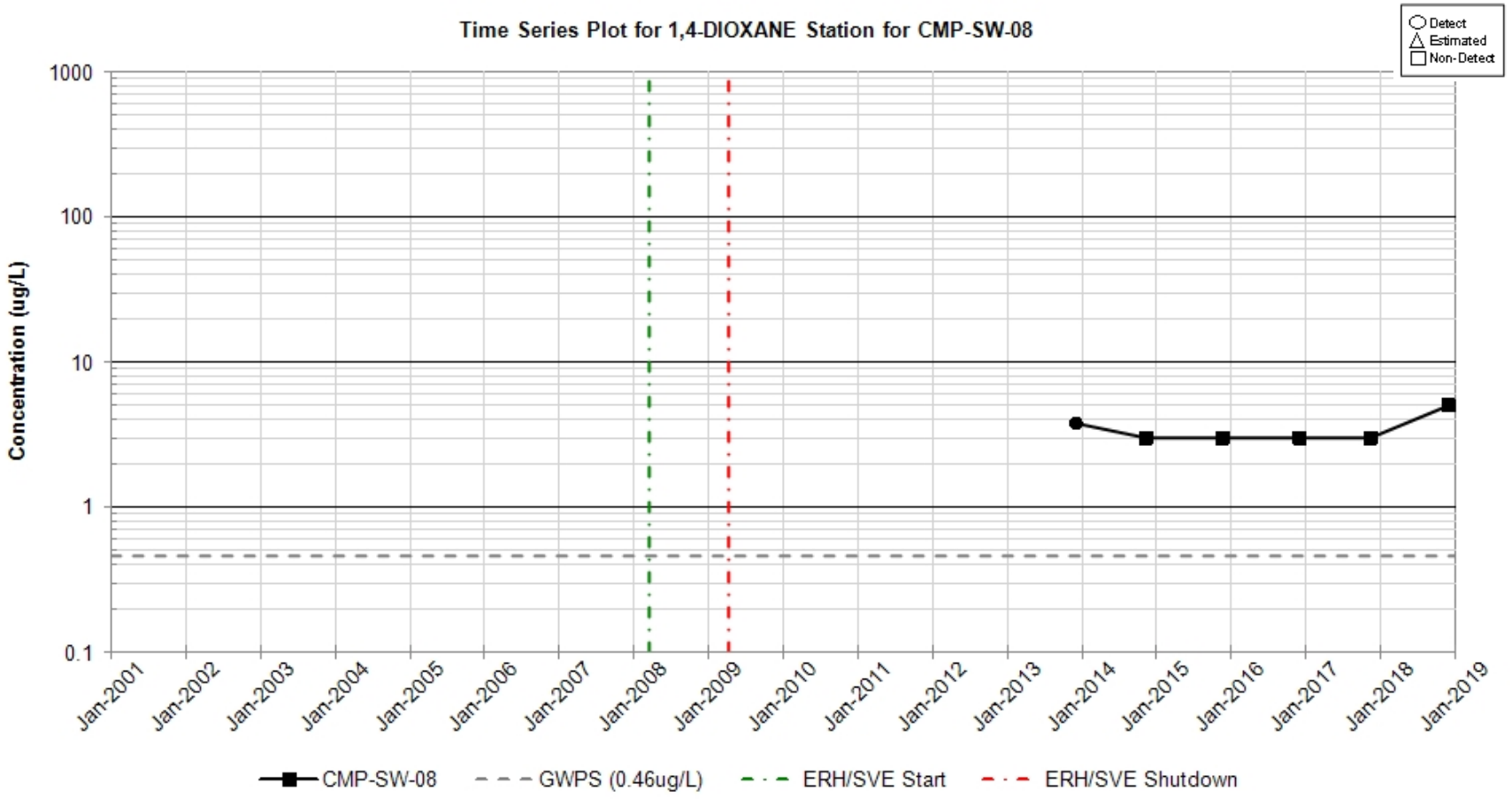

Time Series Plot for 1,4-DIOXANE Station for CMP065
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP065B
CMP065BU
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

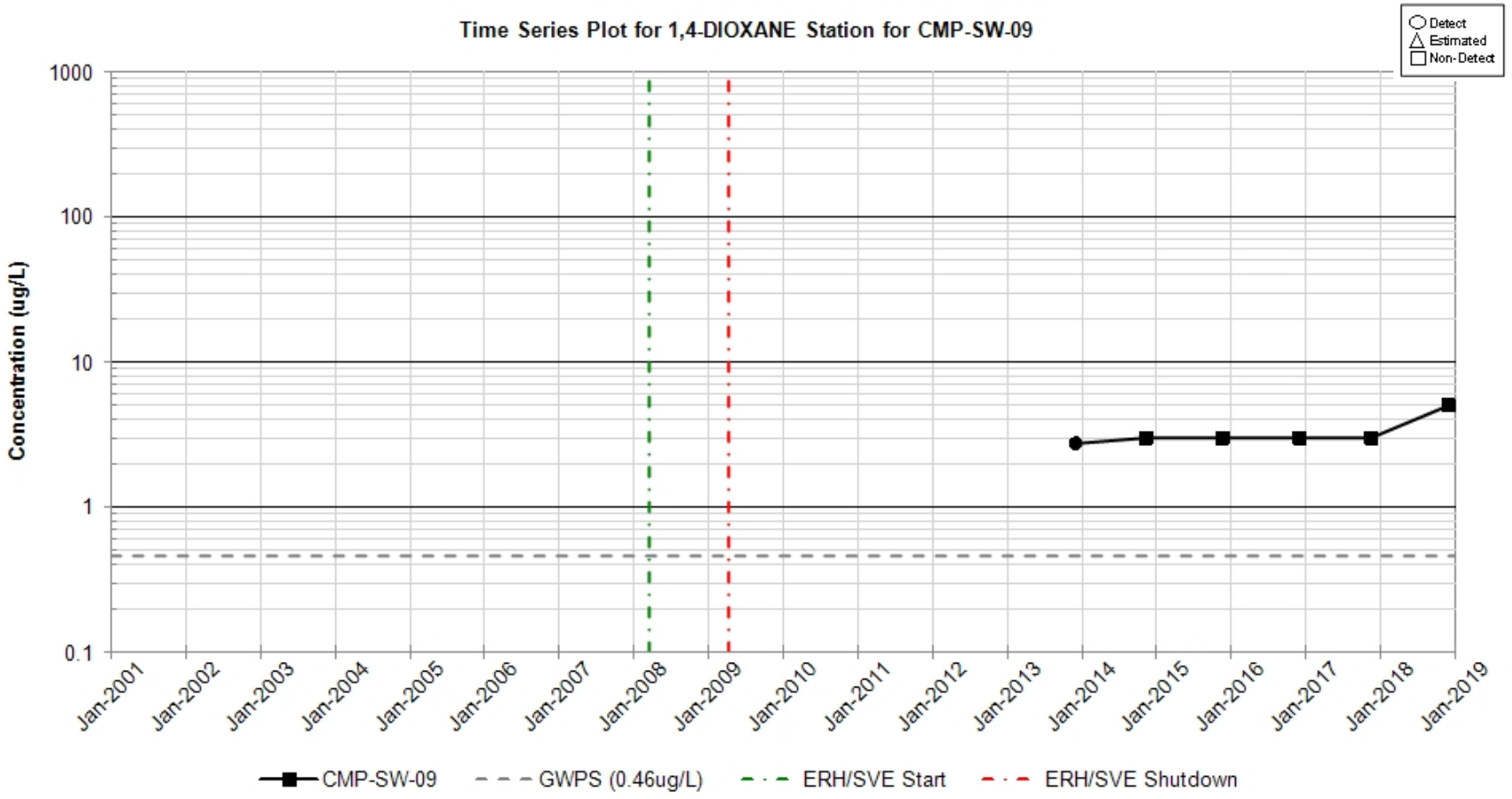

Time Series Plot for 1,4-DIOXANE Station for CMP066
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP066B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

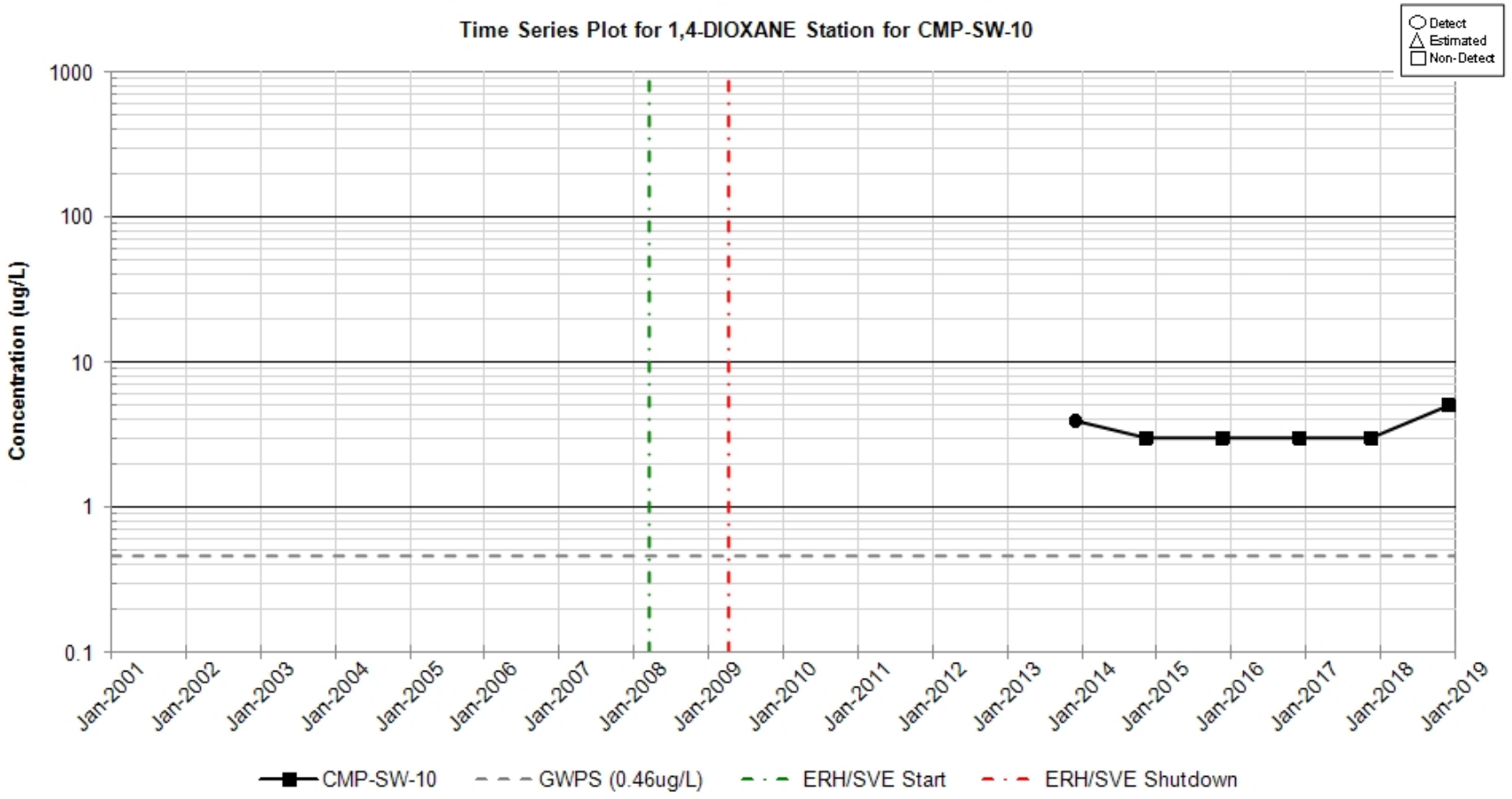

Time Series Plot for 1,4-DIOXANE Station for CMP067
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP067B
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

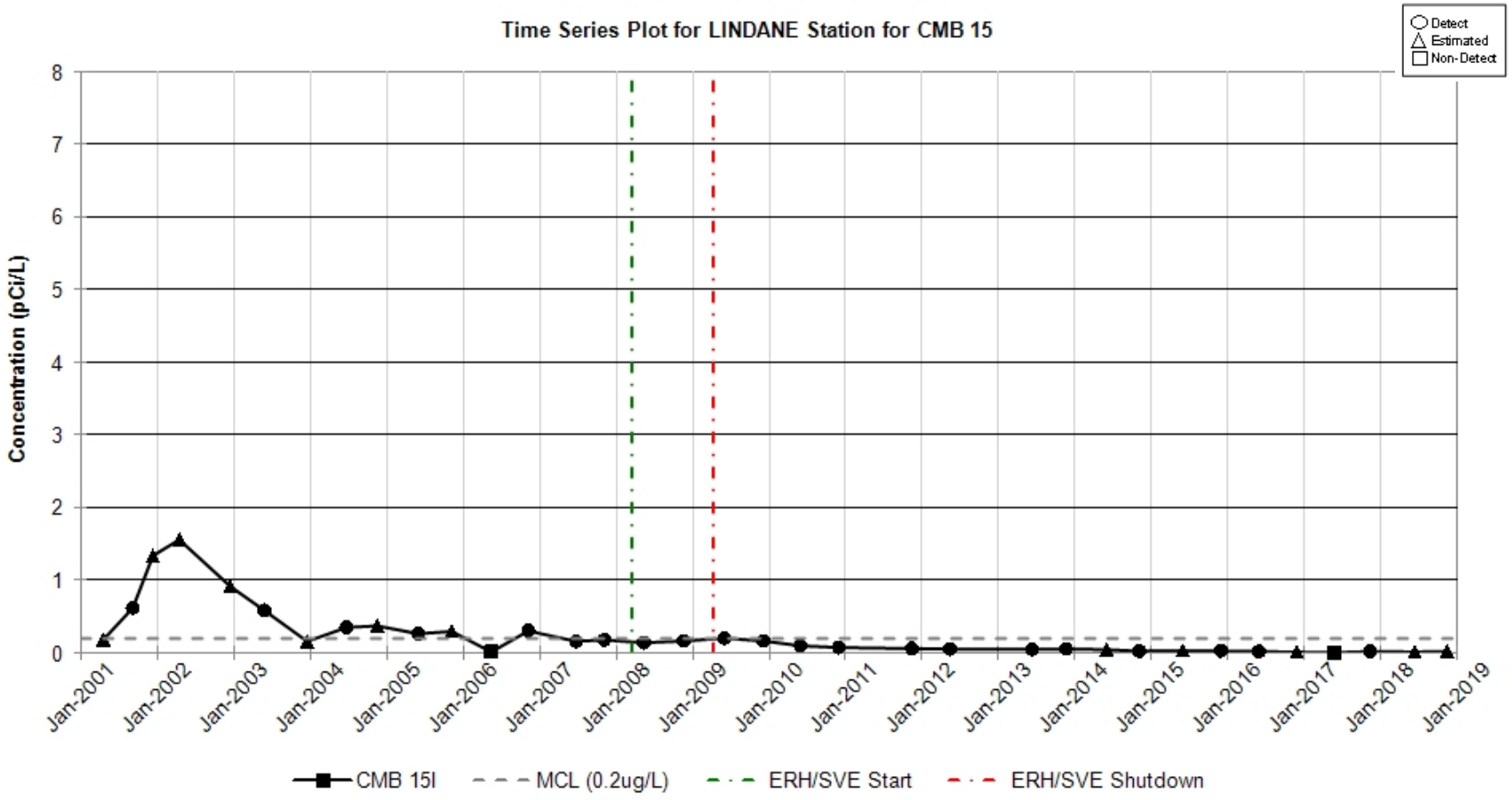

Time Series Plot for 1,4-DIOXANE Station for CMP-SW-06
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-06
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

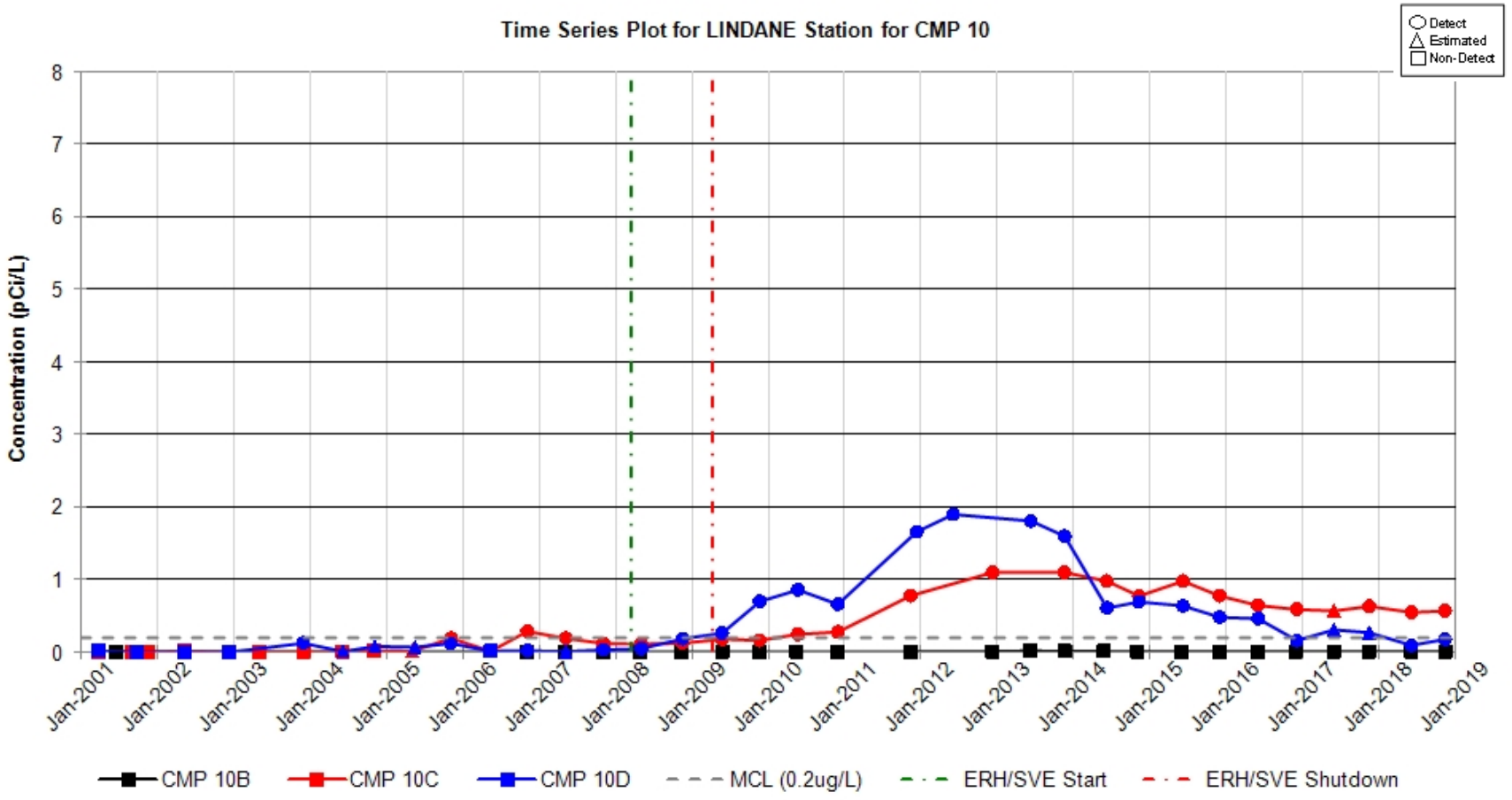

Time Series Plot for 1,4-DIOXANE Station for CMP-SW-07
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-07
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

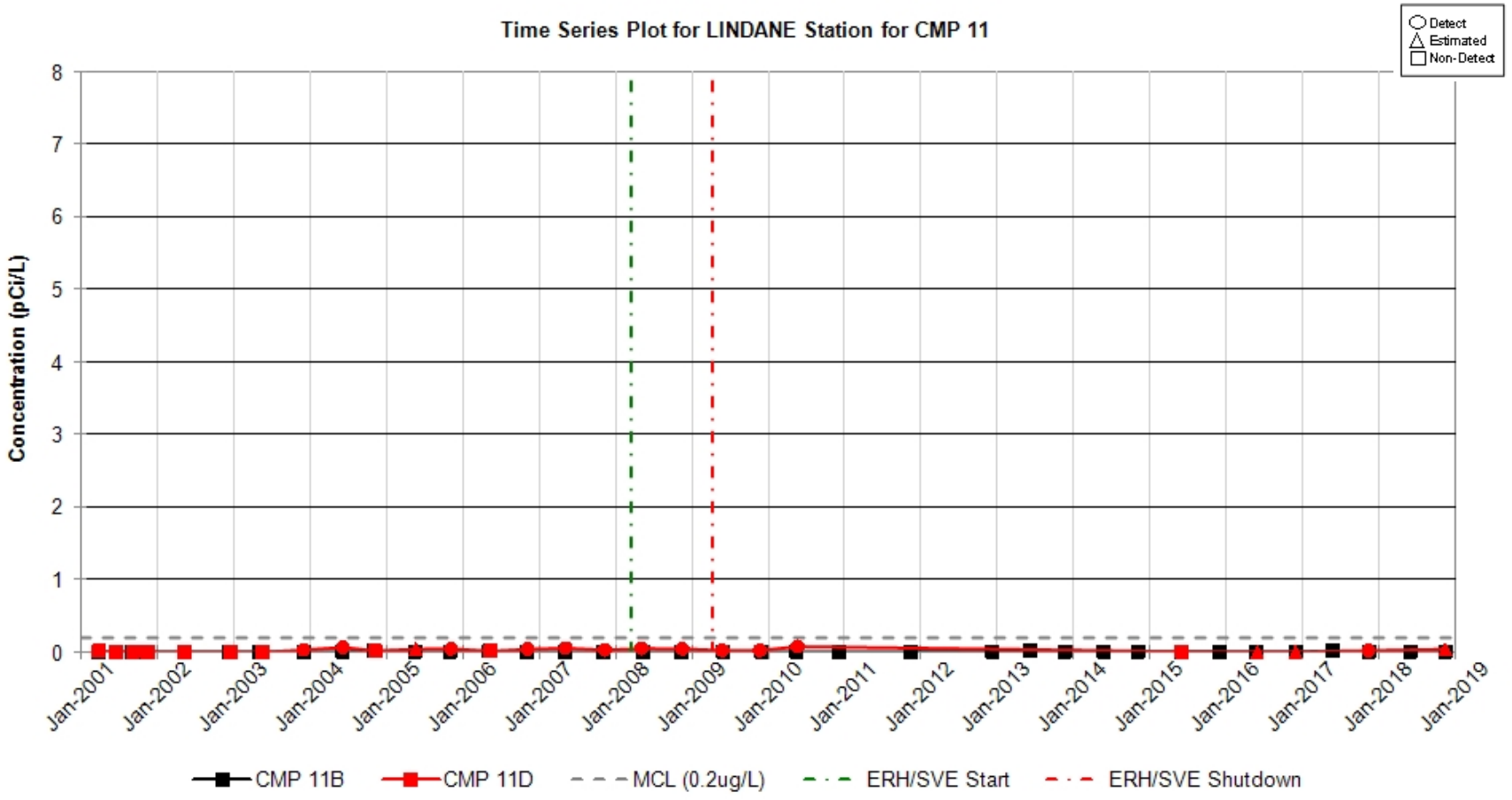

Time Series Plot for 1,4-DIOXANE Station for CMP-SW-08
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-08
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

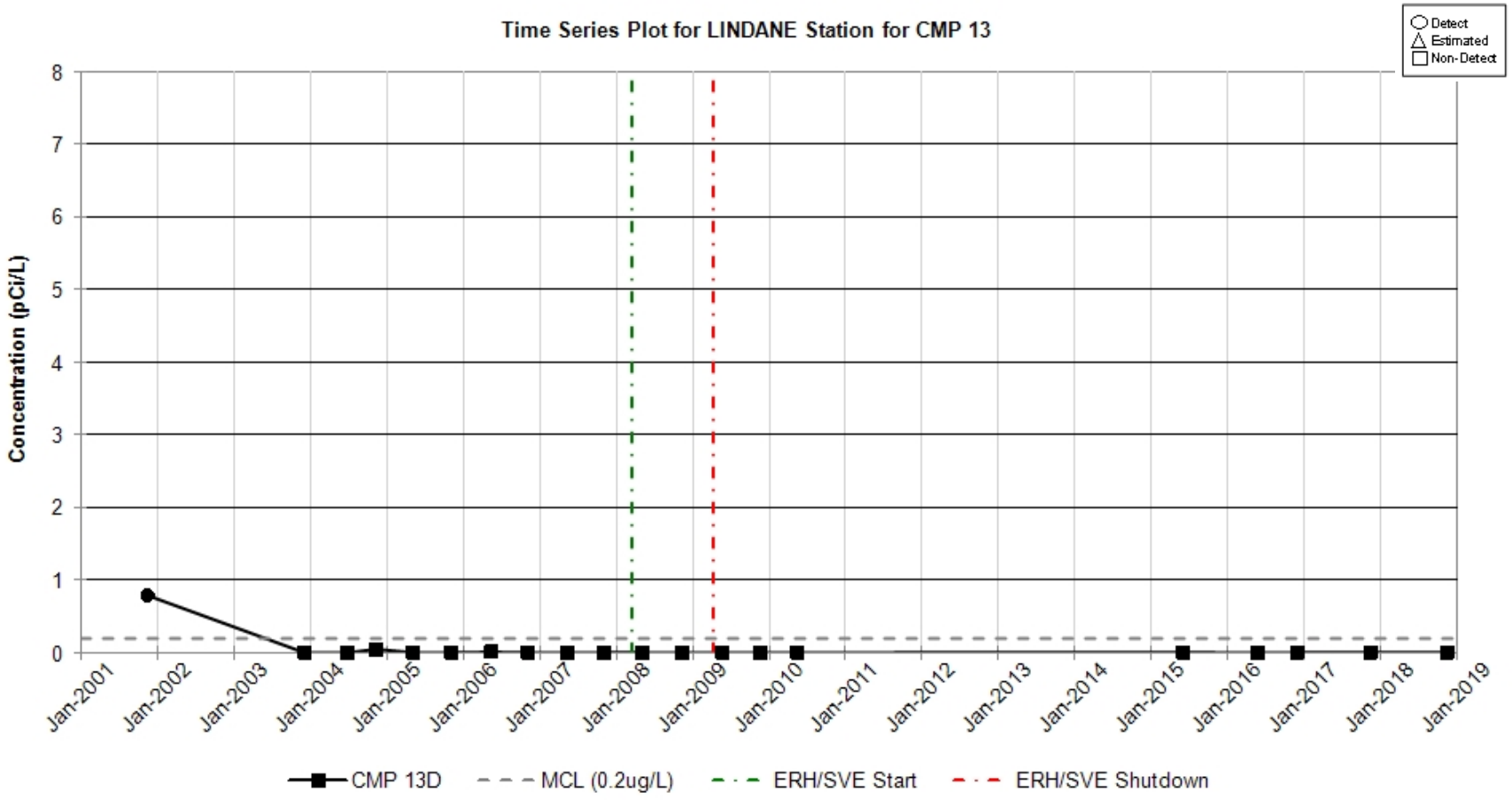

Time Series Plot for 1,4-DIOXANE Station for CMP-SW-09
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-09
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

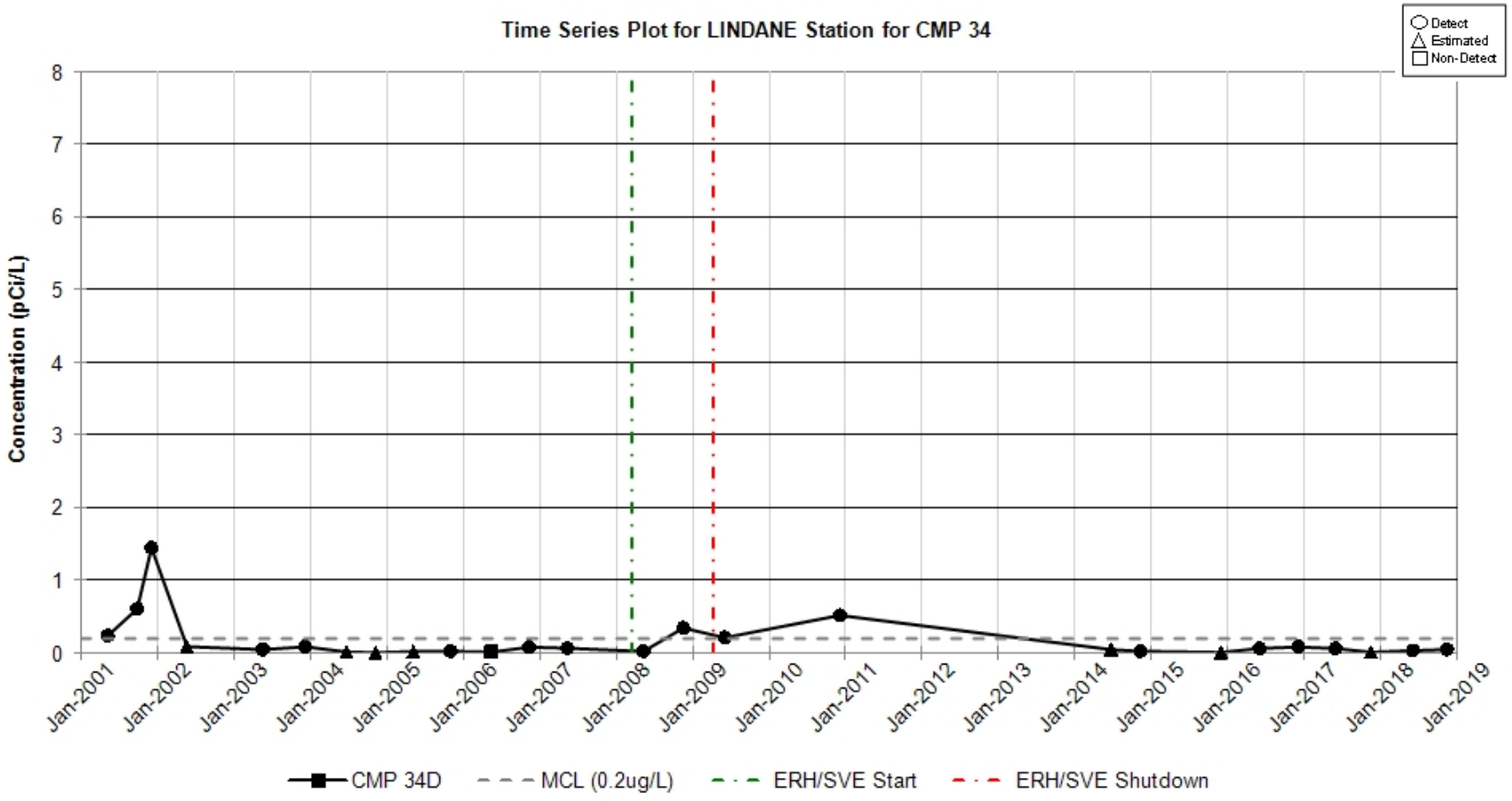

Time Series Plot for 1,4-DIOXANE Station for CMP-SW-10
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-10
GWPS (0.46ug/L)
ERH/SVE Start
ERH/SVE Shutdown

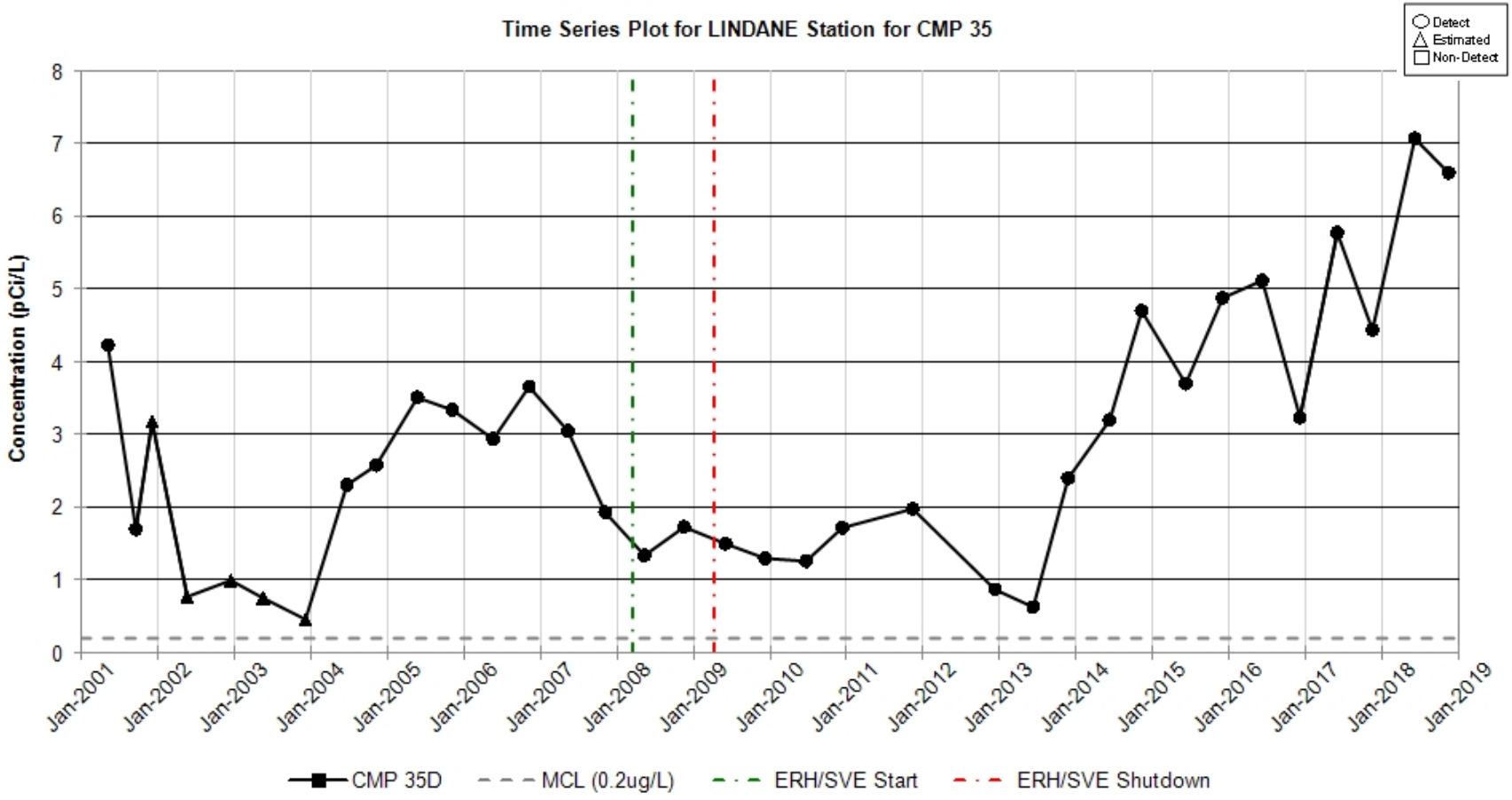

Time Series Plot for LINDANE Station for CMB 15
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 15I
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

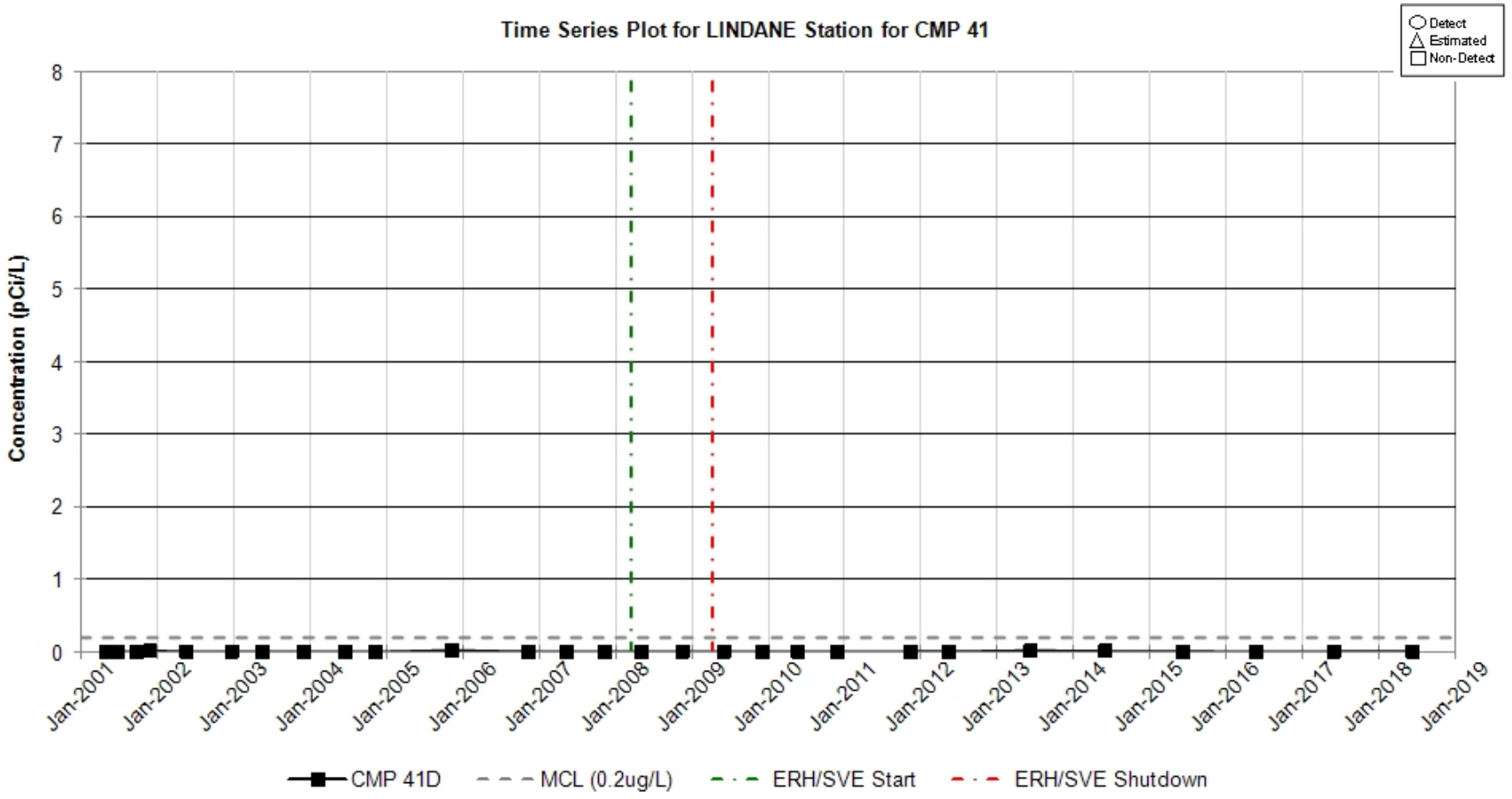

Time Series Plot for LINDANE Station for CMP 10
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 10B
CMP 10C
CMP 10D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

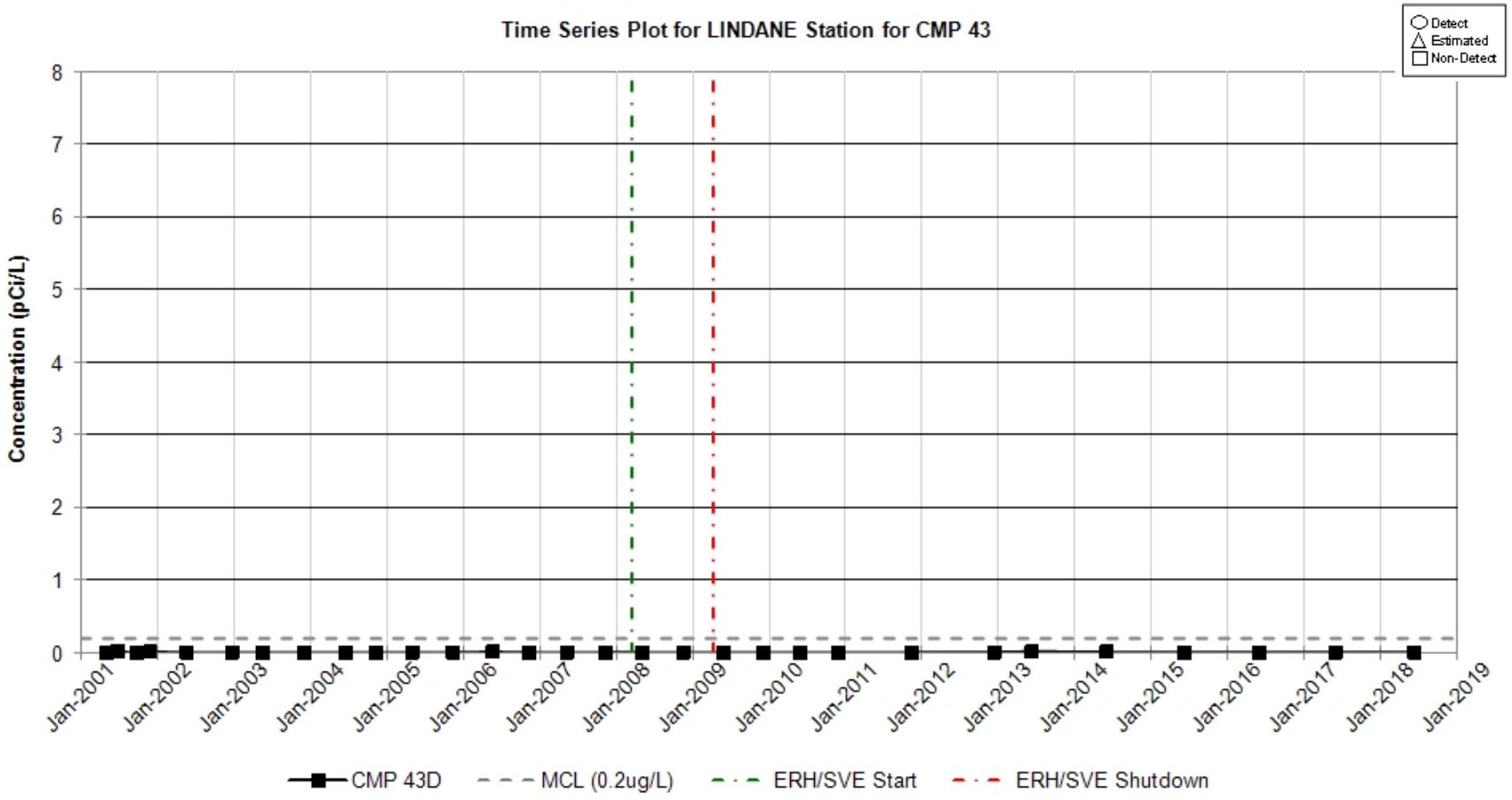

Time Series Plot for LINDANE Station for CMP 11
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 11B
CMP 11D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

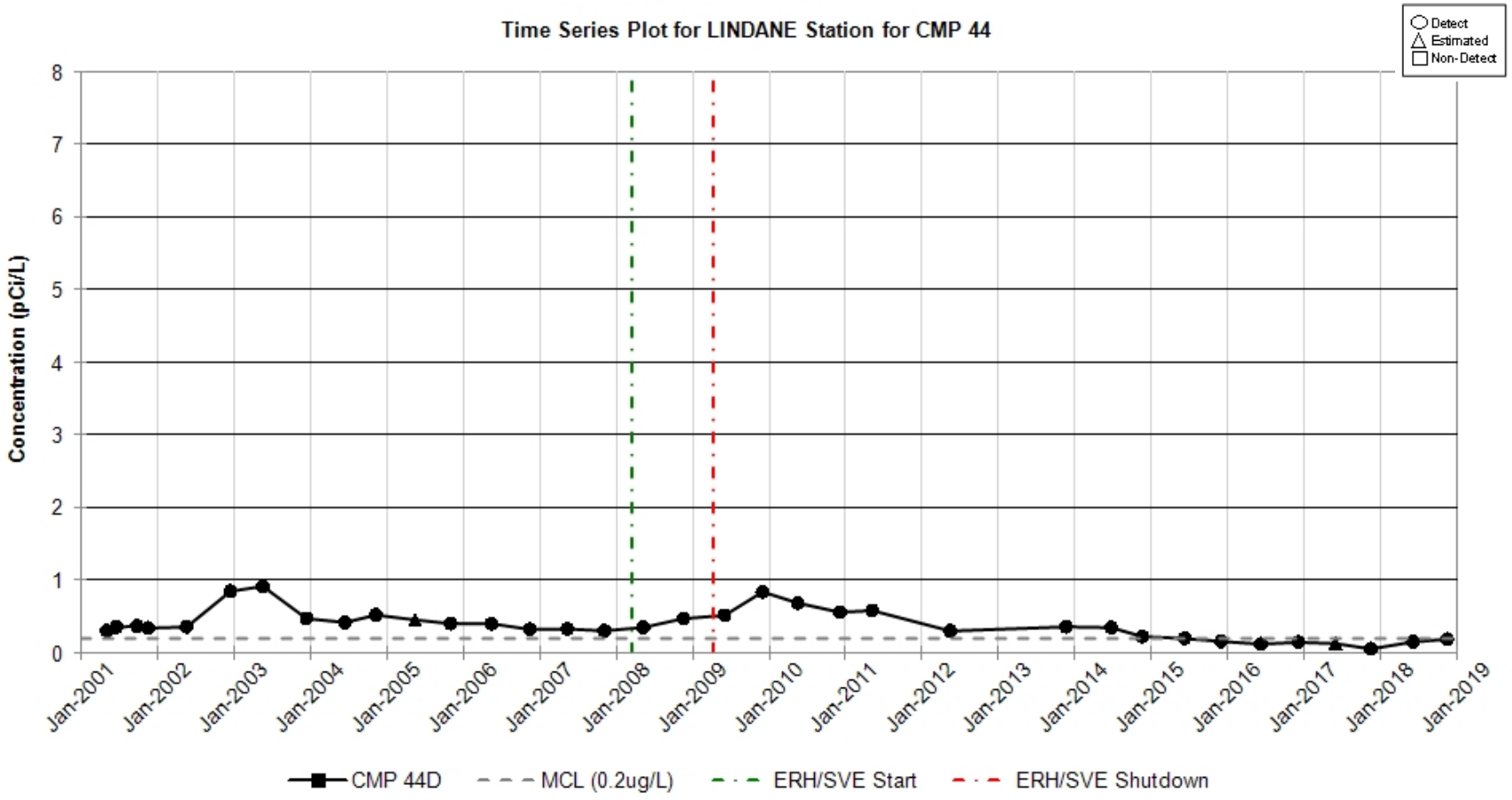

Time Series Plot for LINDANE Station for CMP 13
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 13D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

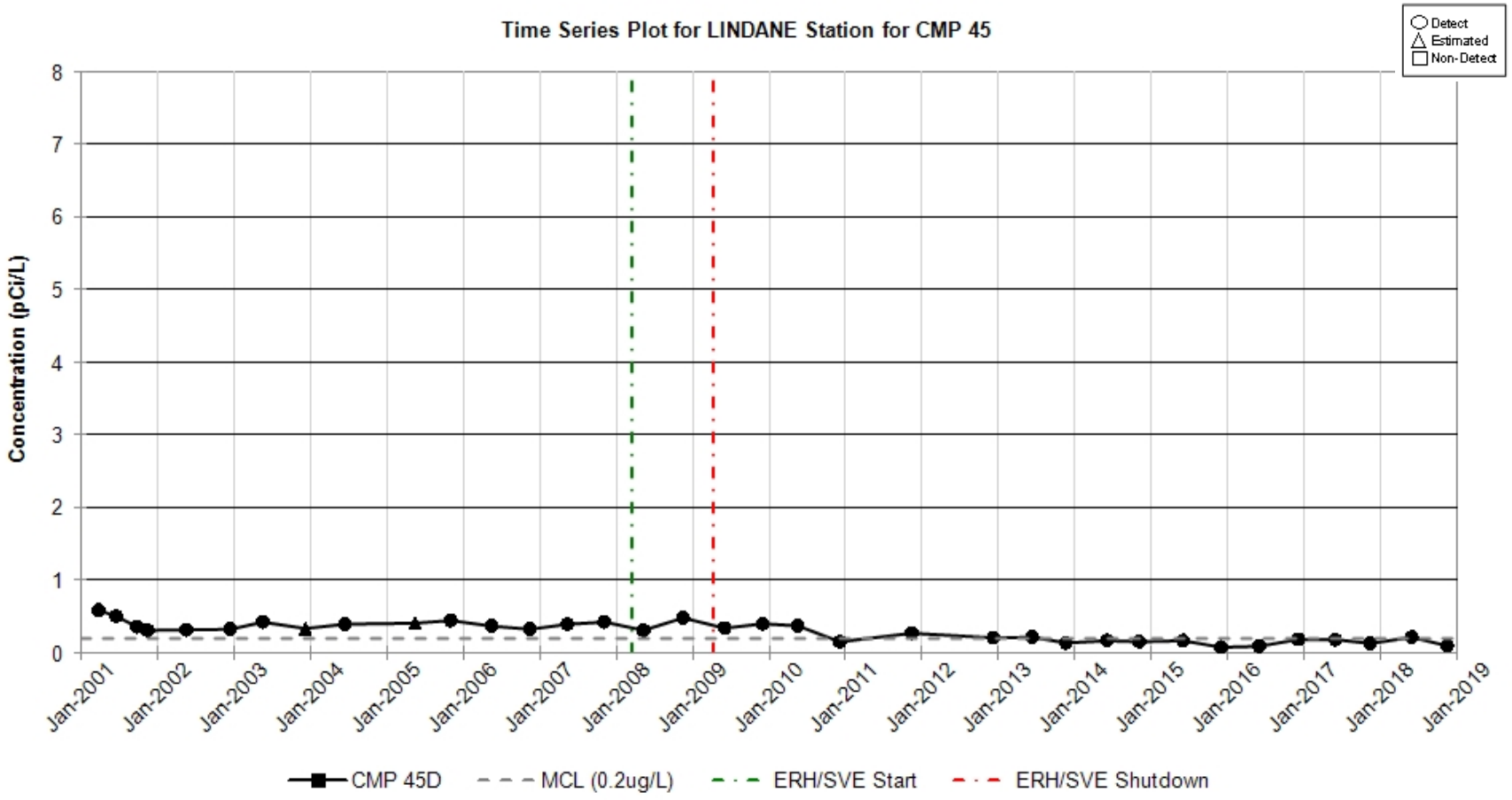

Time Series Plot for LINDANE Station for CMP 34
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 34D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

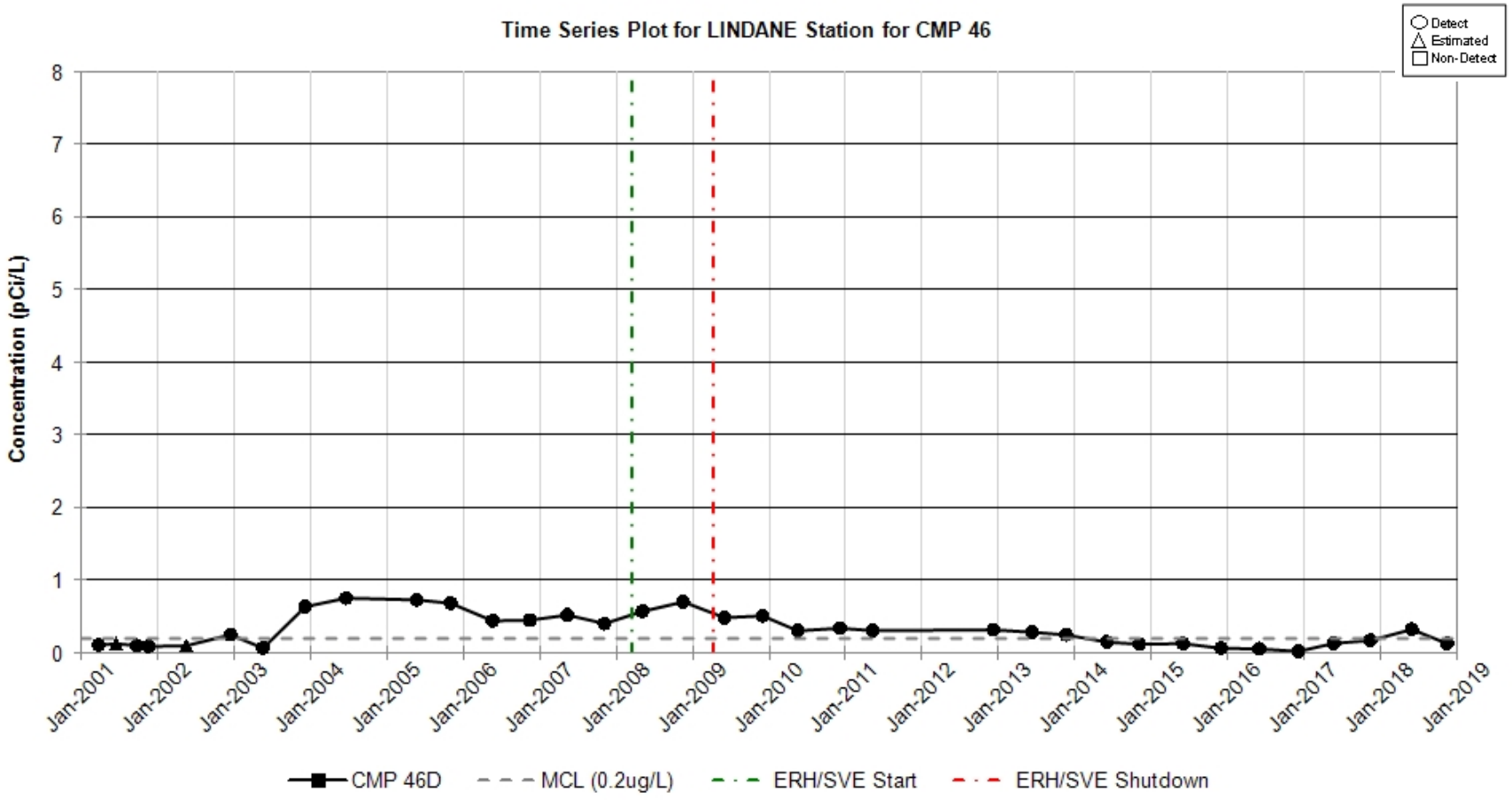

Time Series Plot for LINDANE Station for CMP 35
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 35D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

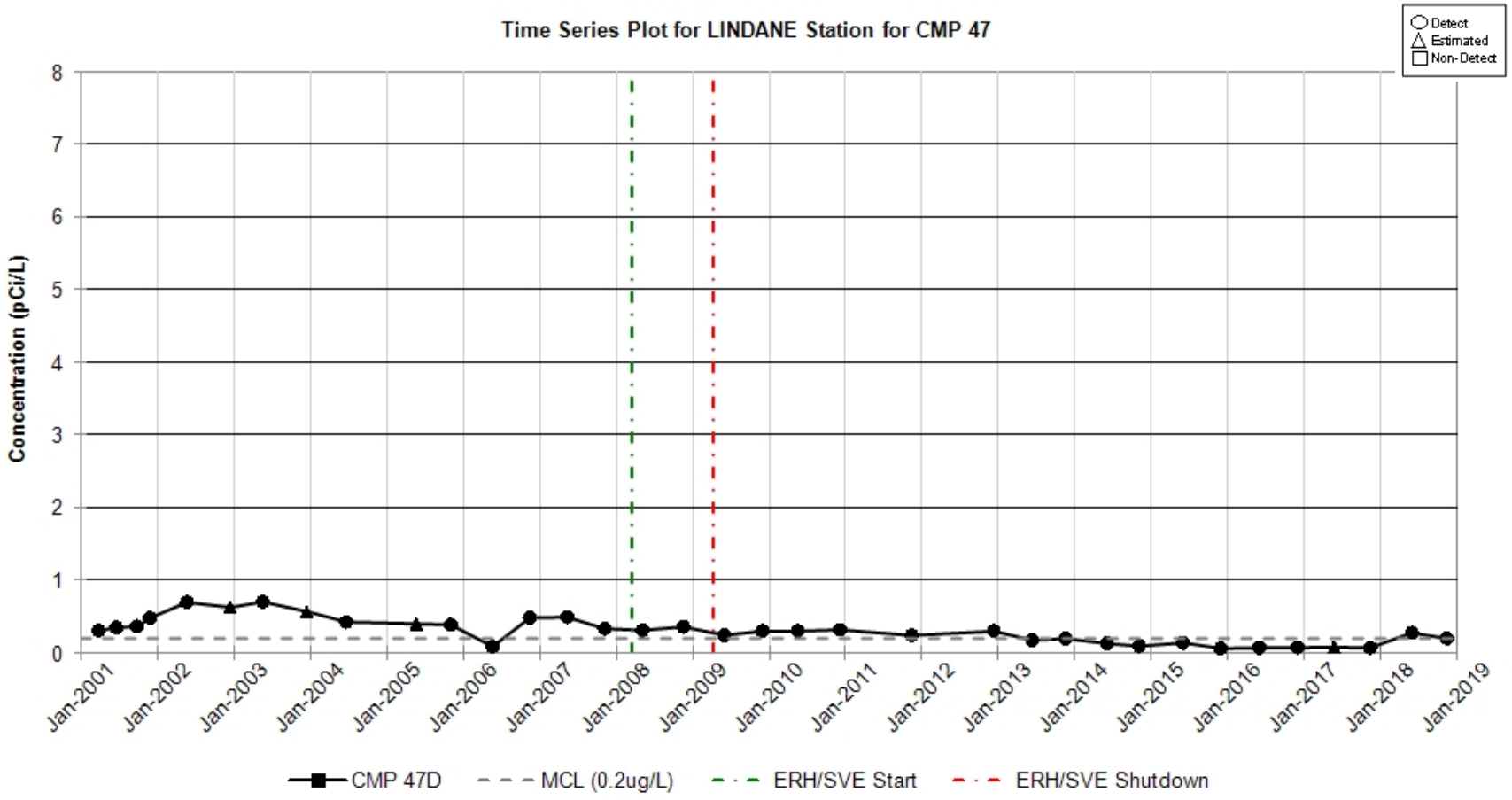

Time Series Plot for LINDANE Station for CMP 41
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 41D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

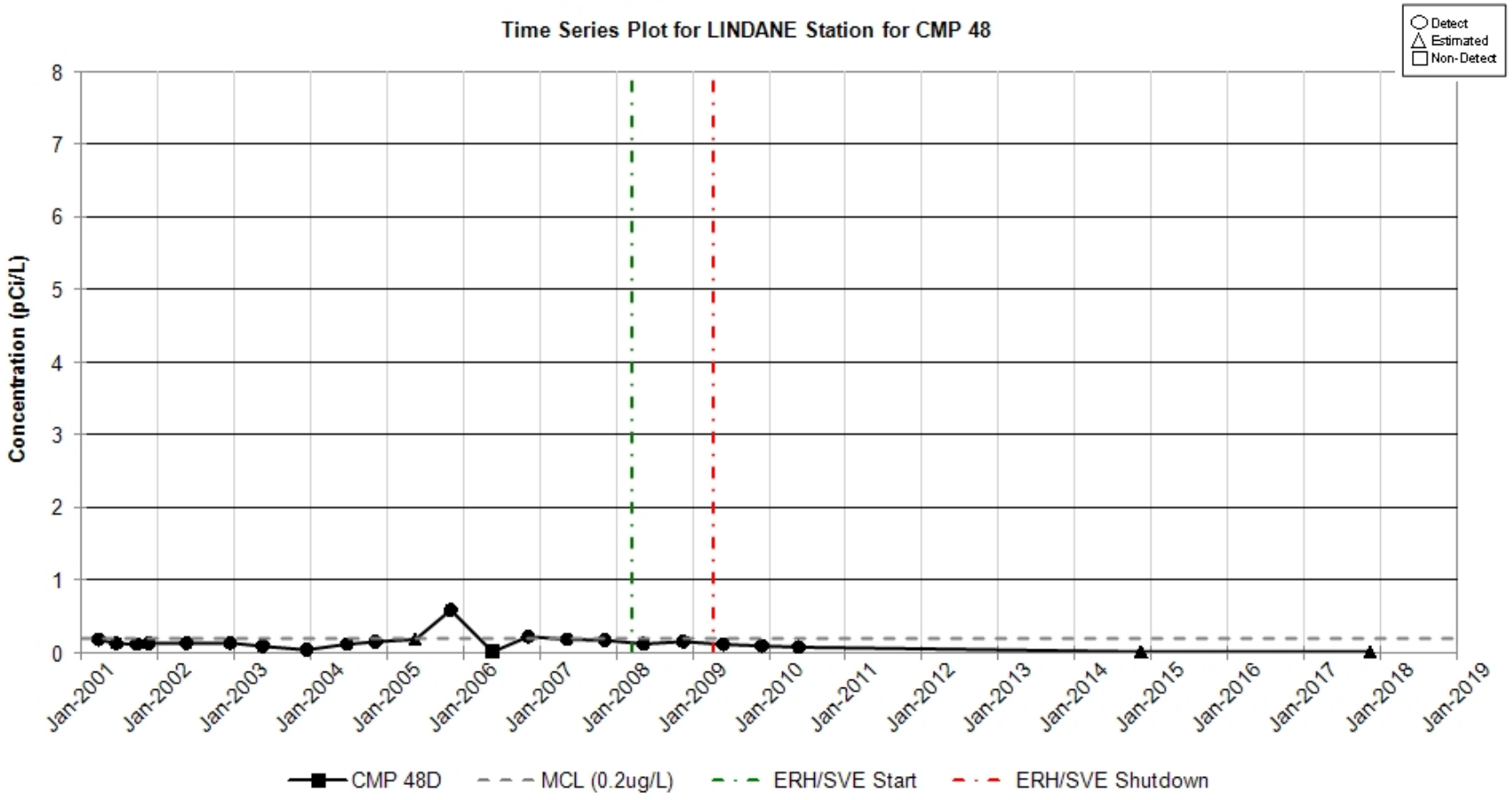

Time Series Plot for LINDANE Station for CMP 43
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 43D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

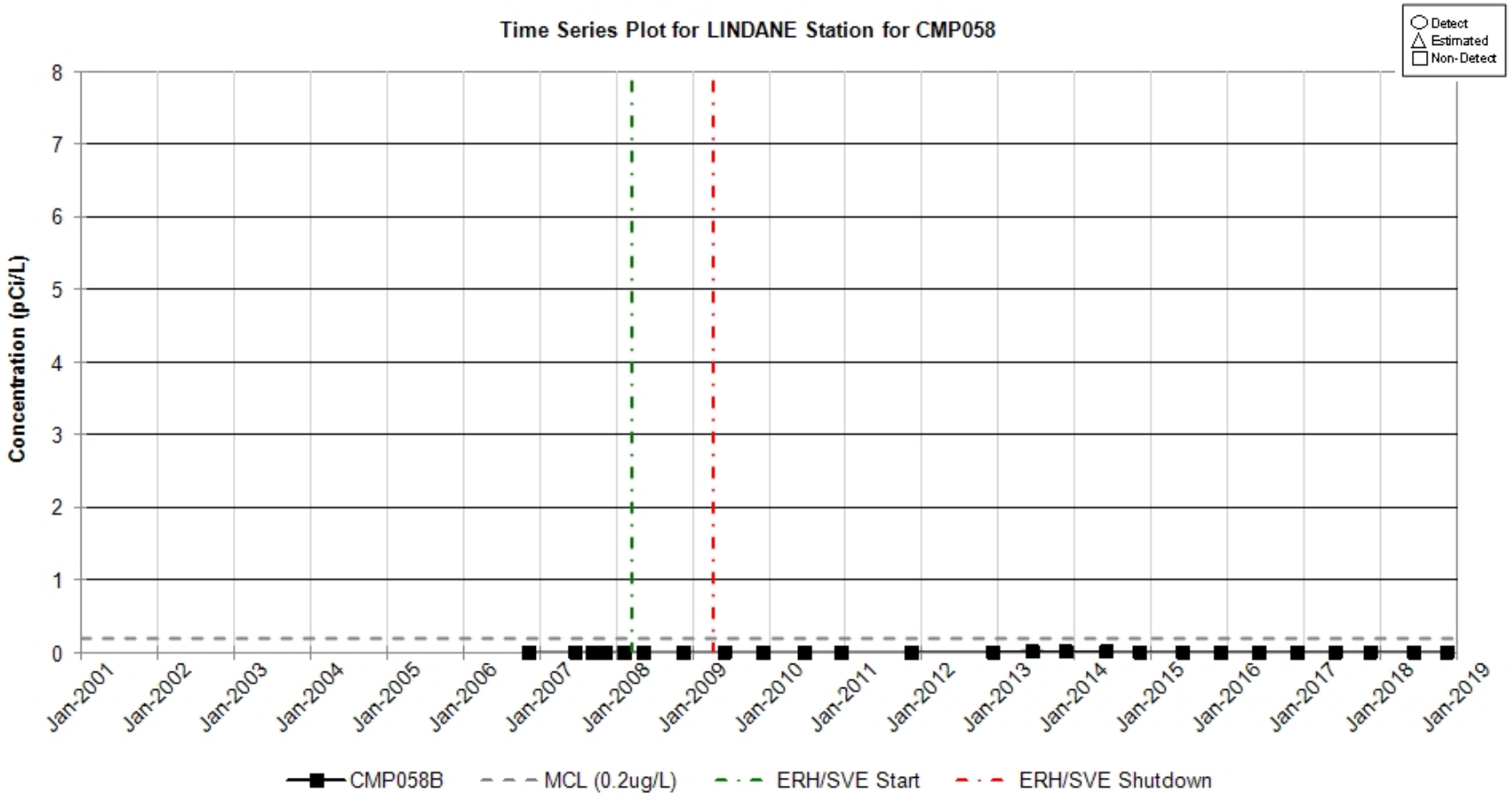

Time Series Plot for LINDANE Station for CMP 44
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 44D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

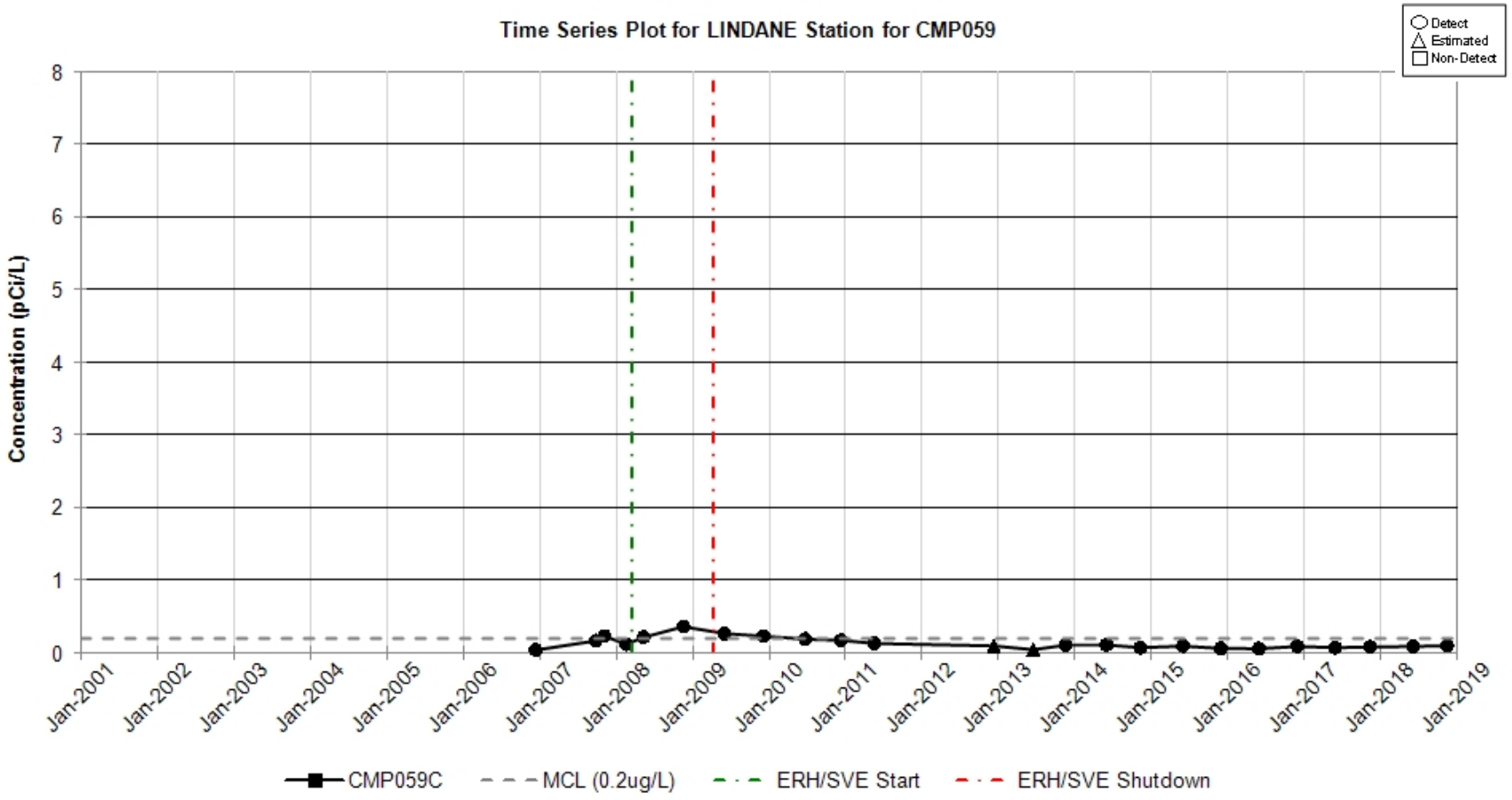

Time Series Plot for LINDANE Station for CMP 45
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 45D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

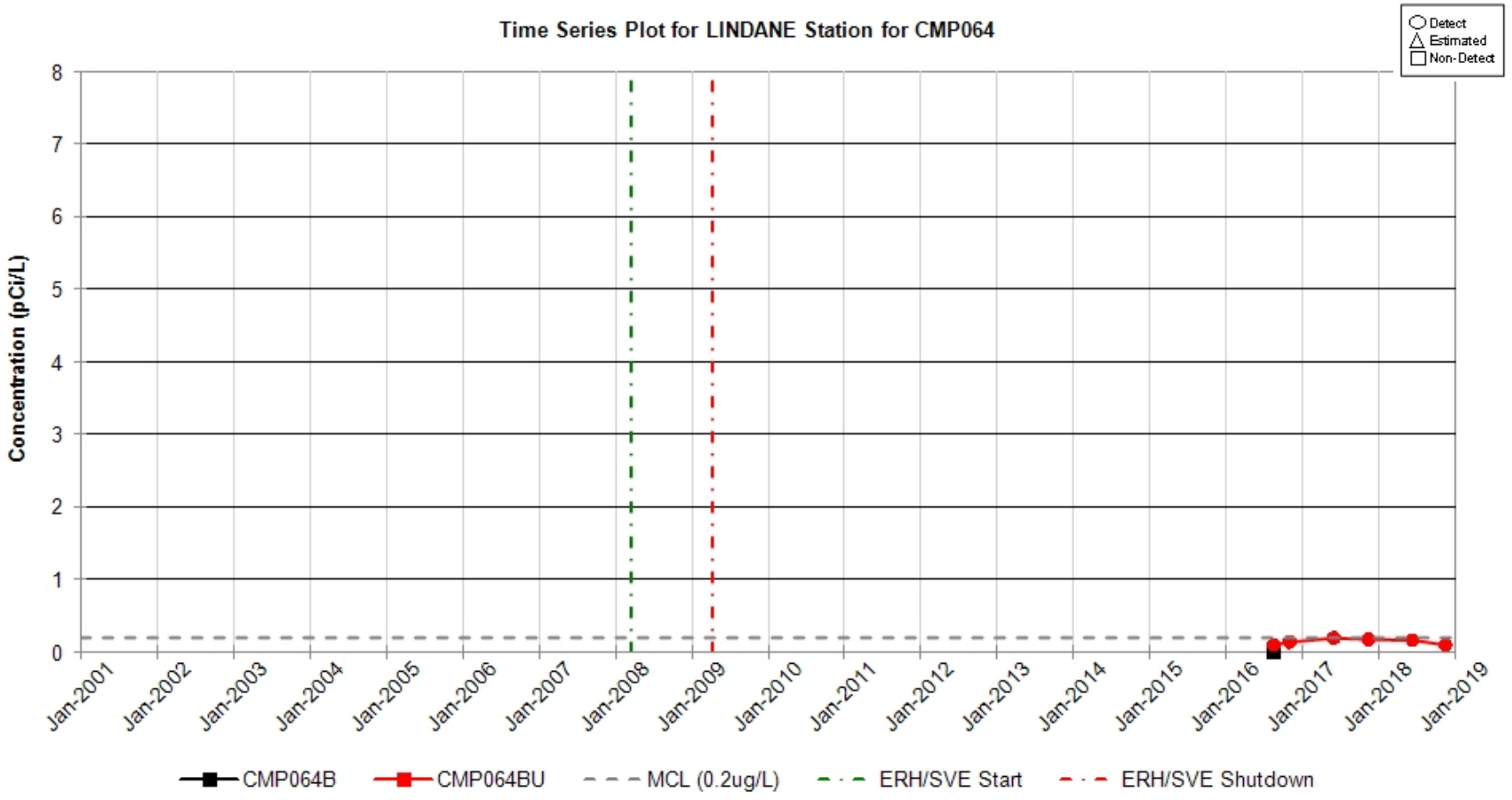

Time Series Plot for LINDANE Station for CMP 46
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 46D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

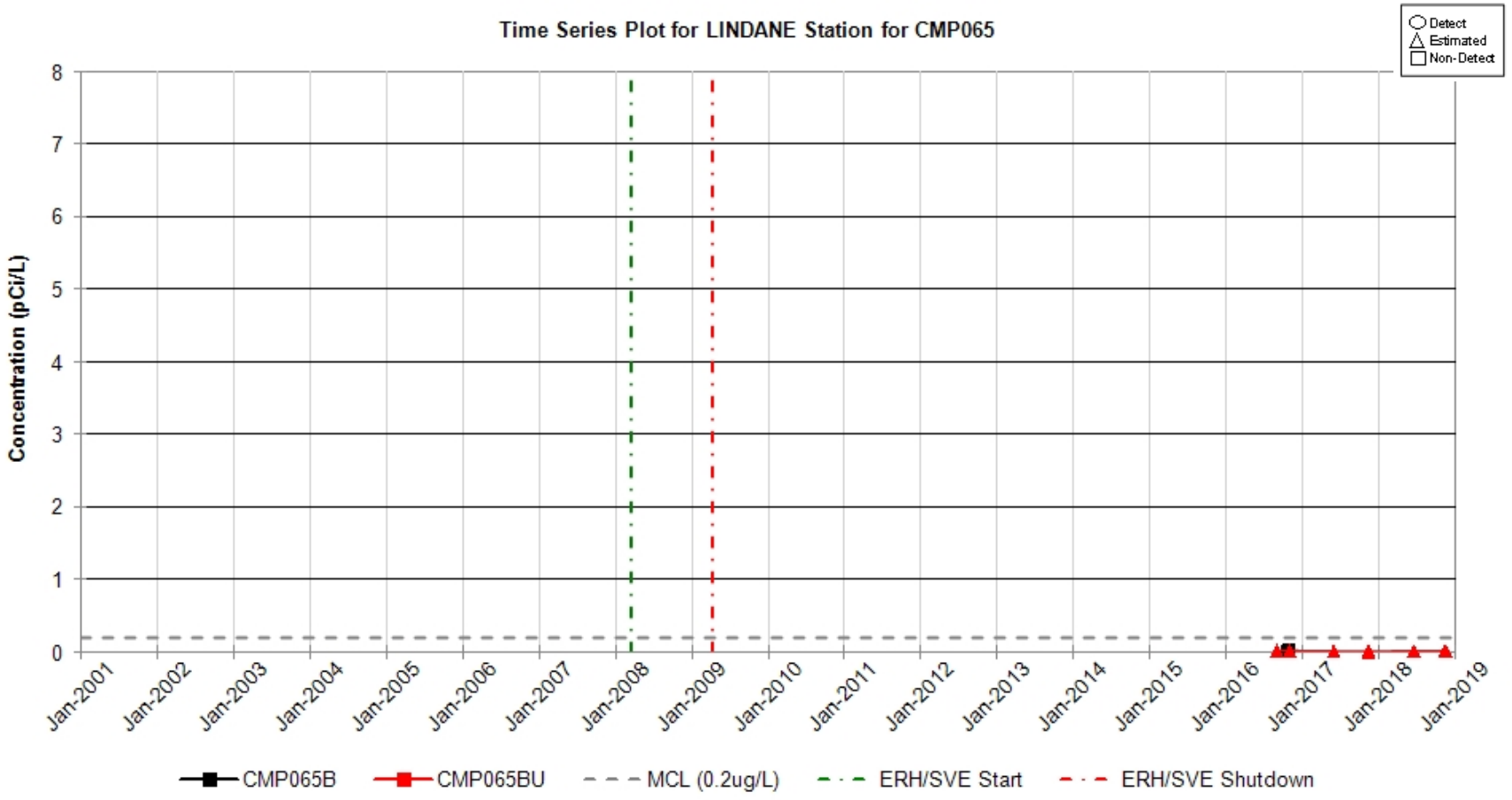

Time Series Plot for LINDANE Station for CMP 47
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 47D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

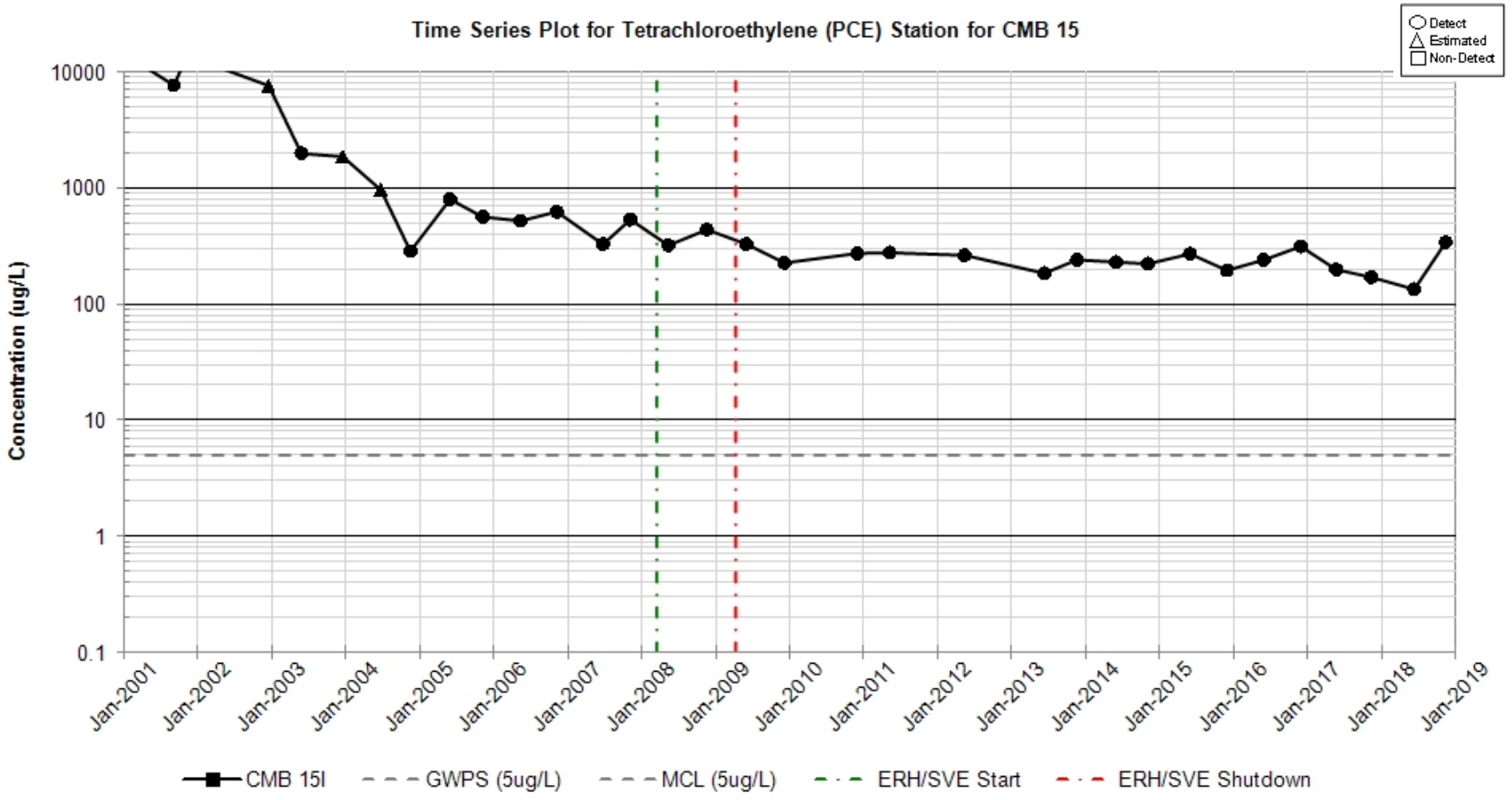

Time Series Plot for LINDANE Station for CMP 48
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 48D
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

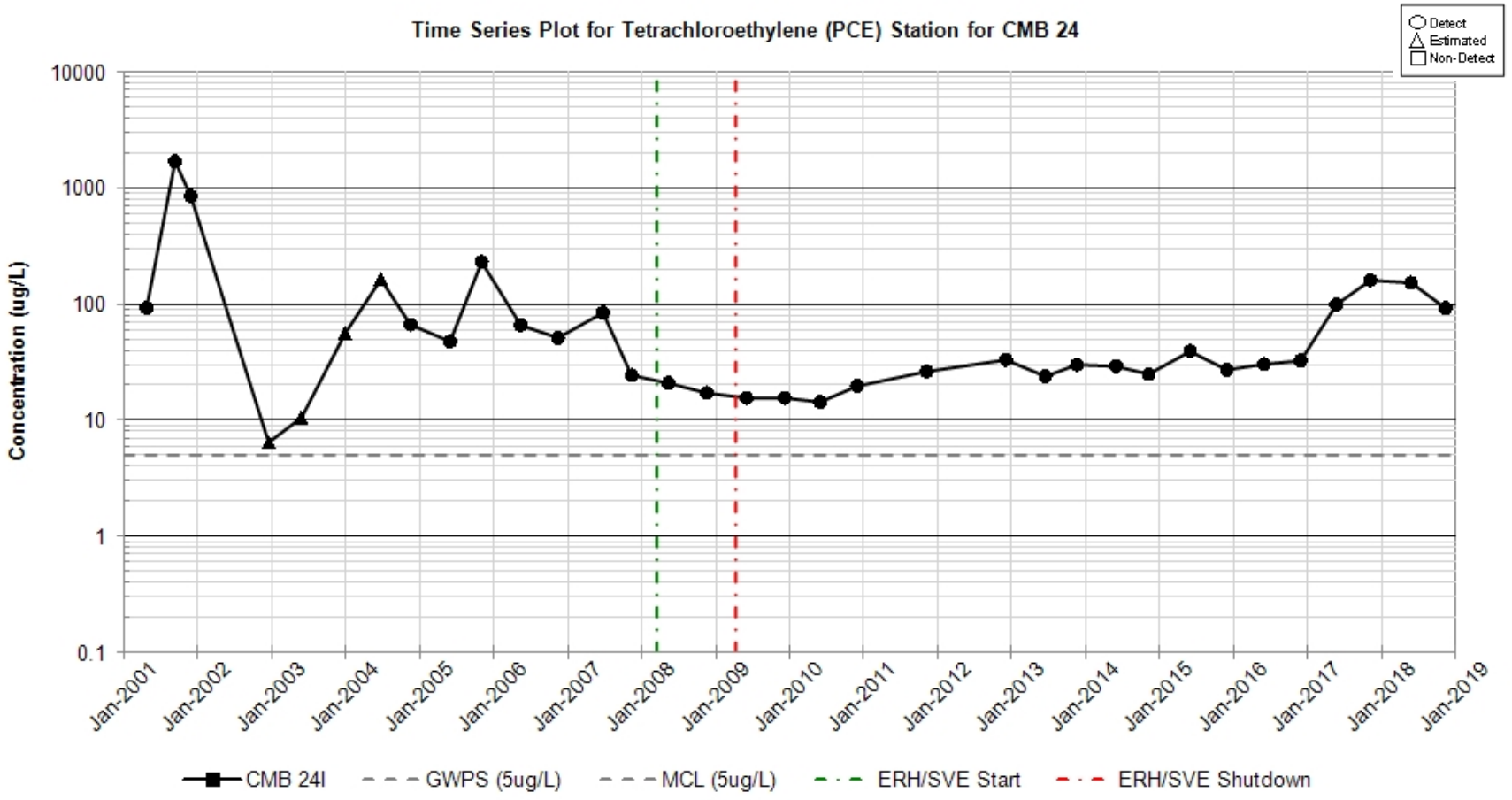

Time Series Plot for LINDANE Station for CMP058
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP058B
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

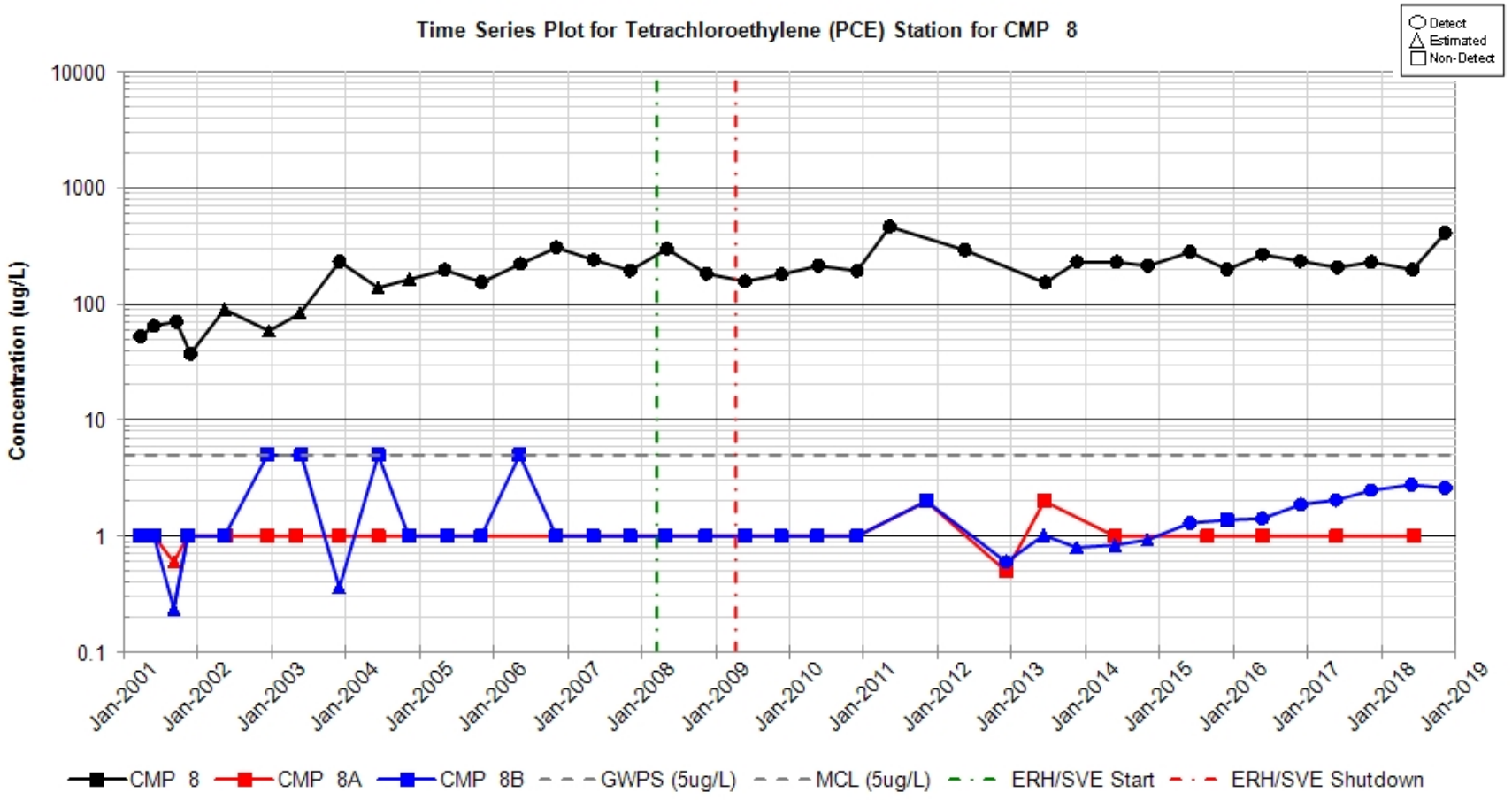

Time Series Plot for LINDANE Station for CMP059
Detect
Estimated
Non-Detect
Concentration (pCi/L)
8
7
6
5
4
3
2
1
0
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP059C
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

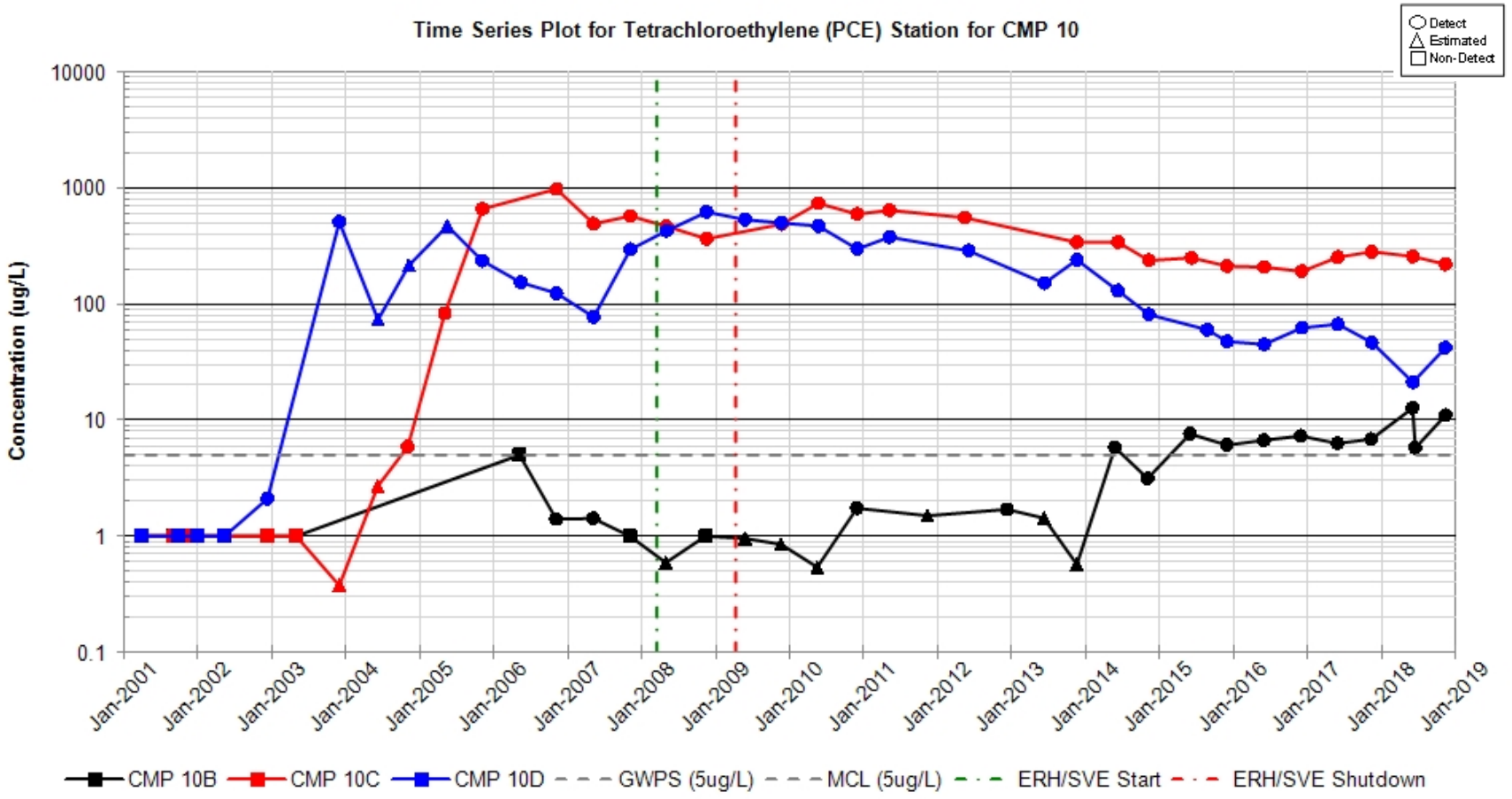

Time Series Plot for LINDANE Station for CMP064
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP064B
CMP064BU
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

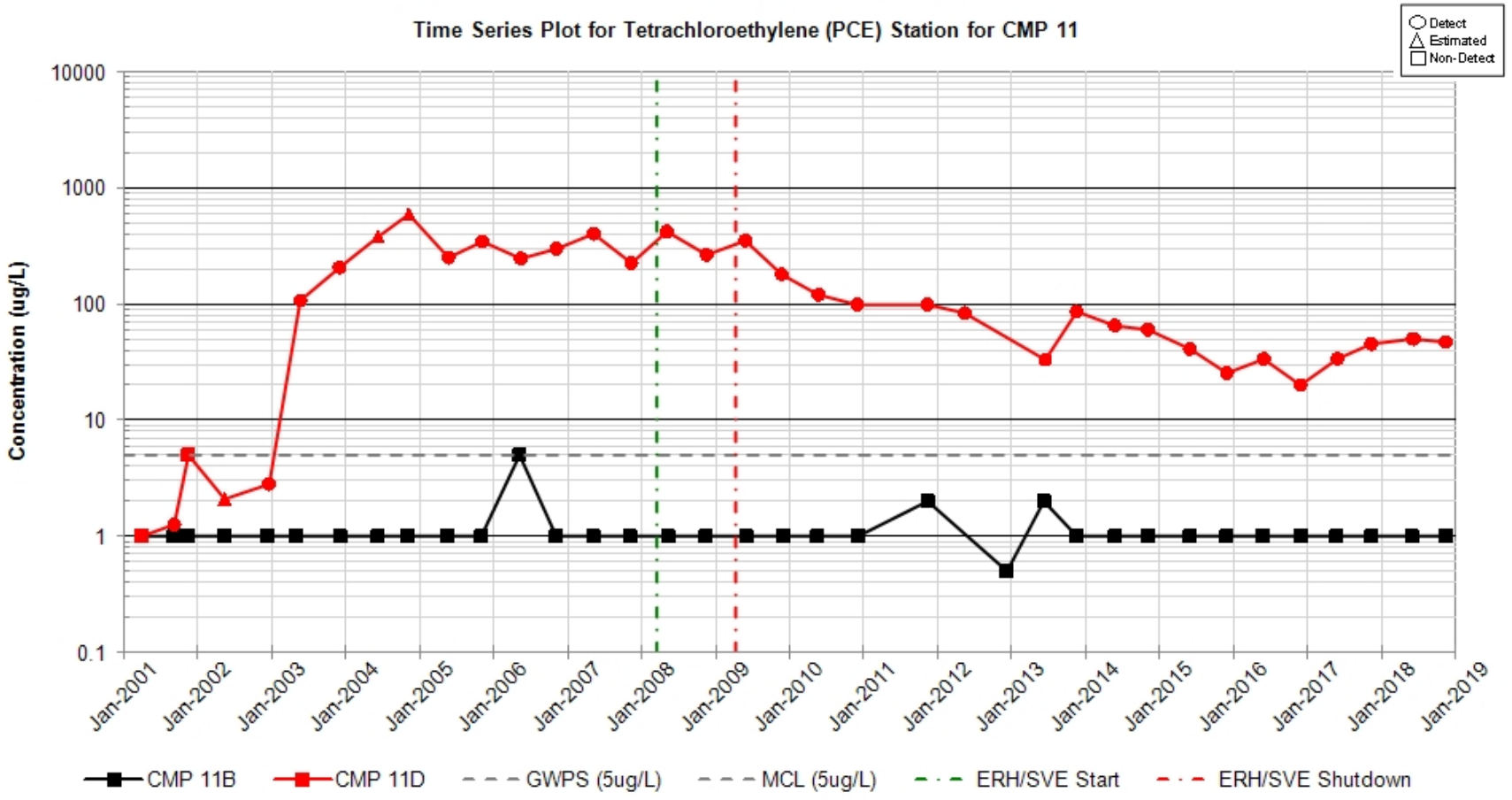

Time Series Plot for LINDANE Station for CMP065
Detect
Estimated
Non-Detect
Concentration (pCi/L)
0
1
2
3
4
5
6
7
8
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP065B
CMP065BU
MCL (0.2ug/L)
ERH/SVE Start
ERH/SVE Shutdown

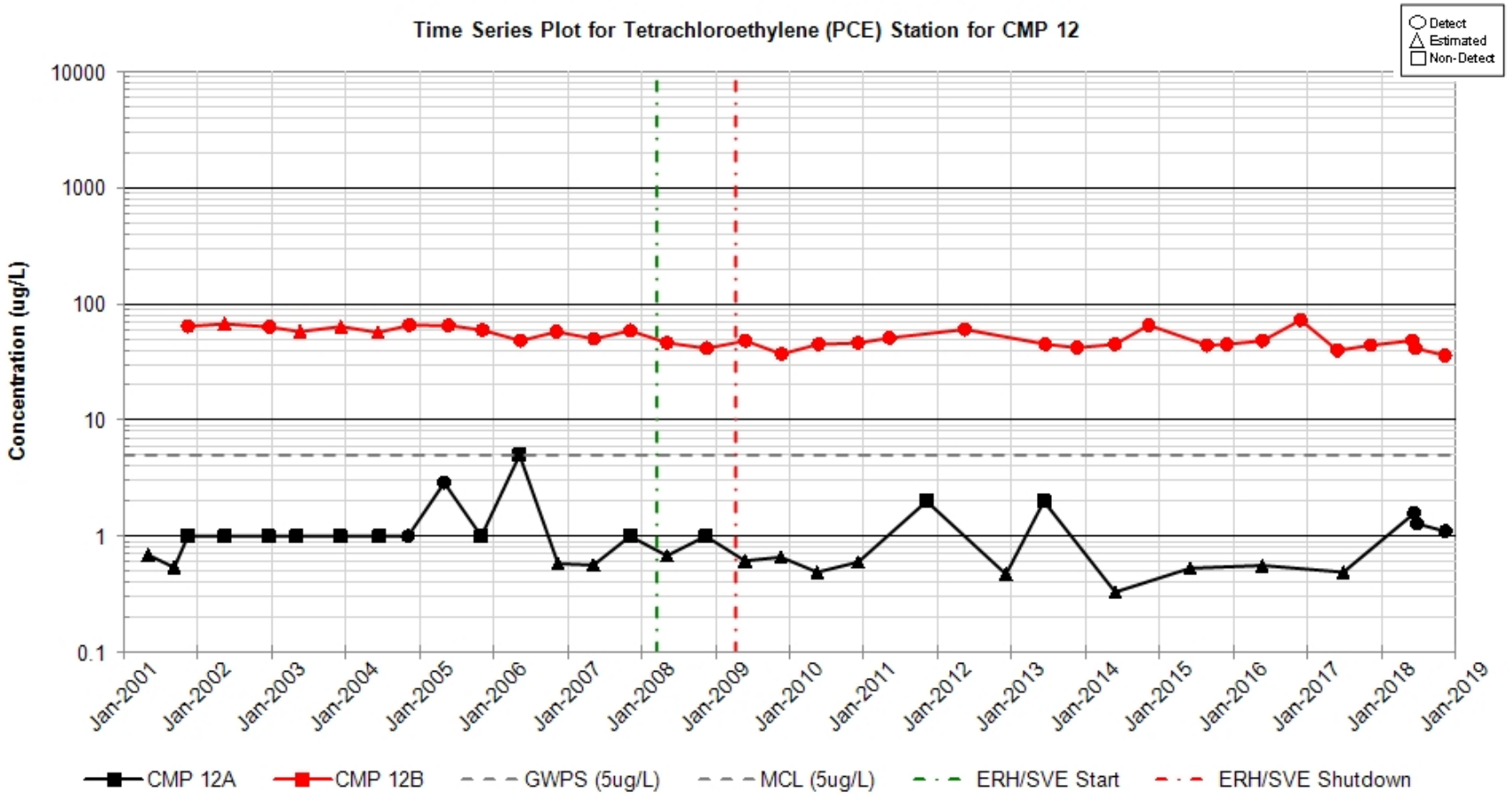

Time Series Plot for Tetrachloroethylene (PCE) Station for CMB 15
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 15I
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

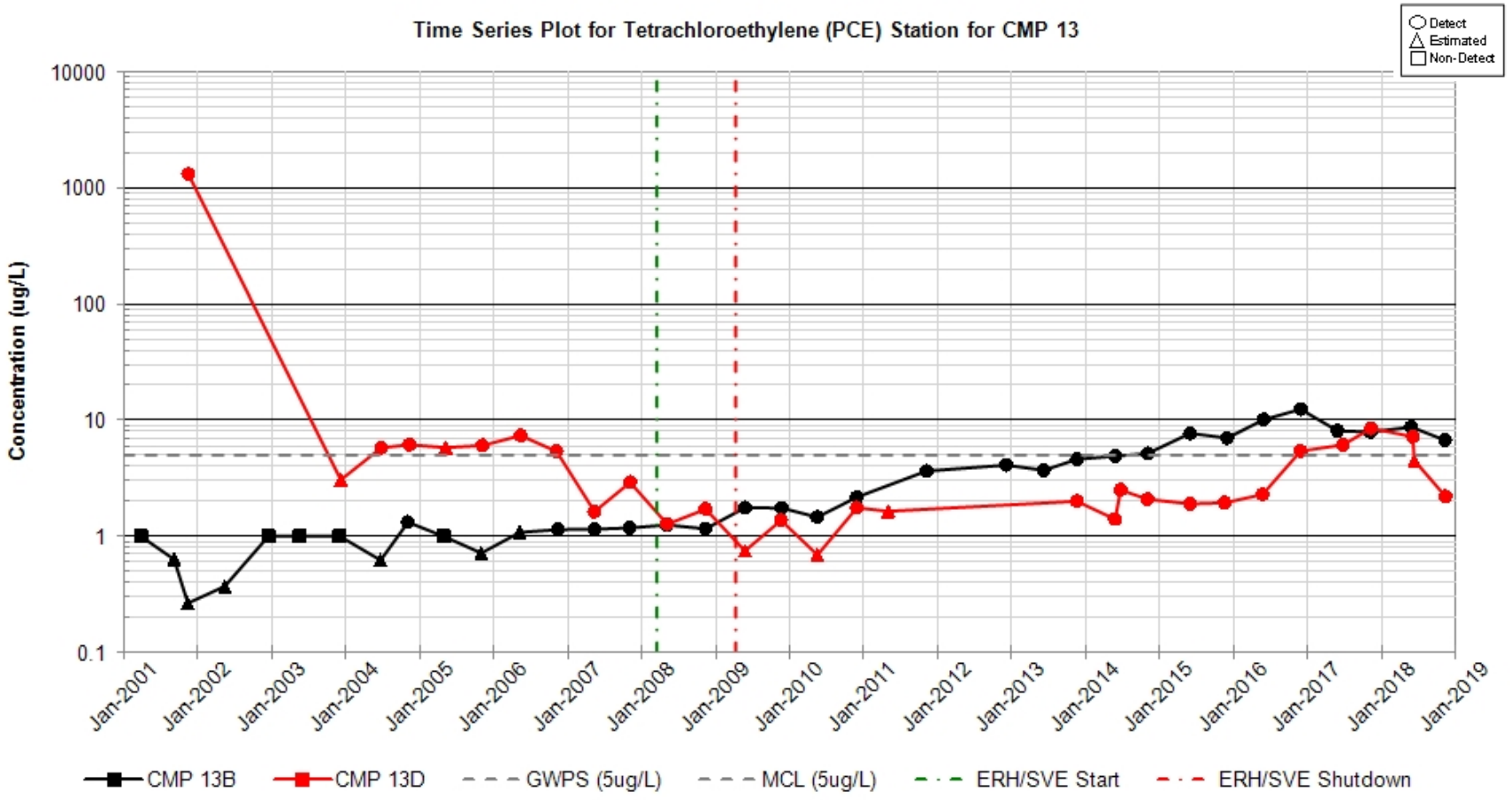

Time Series Plot for Tetrachloroethylene (PCE) Station for CMB 24
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 24I
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

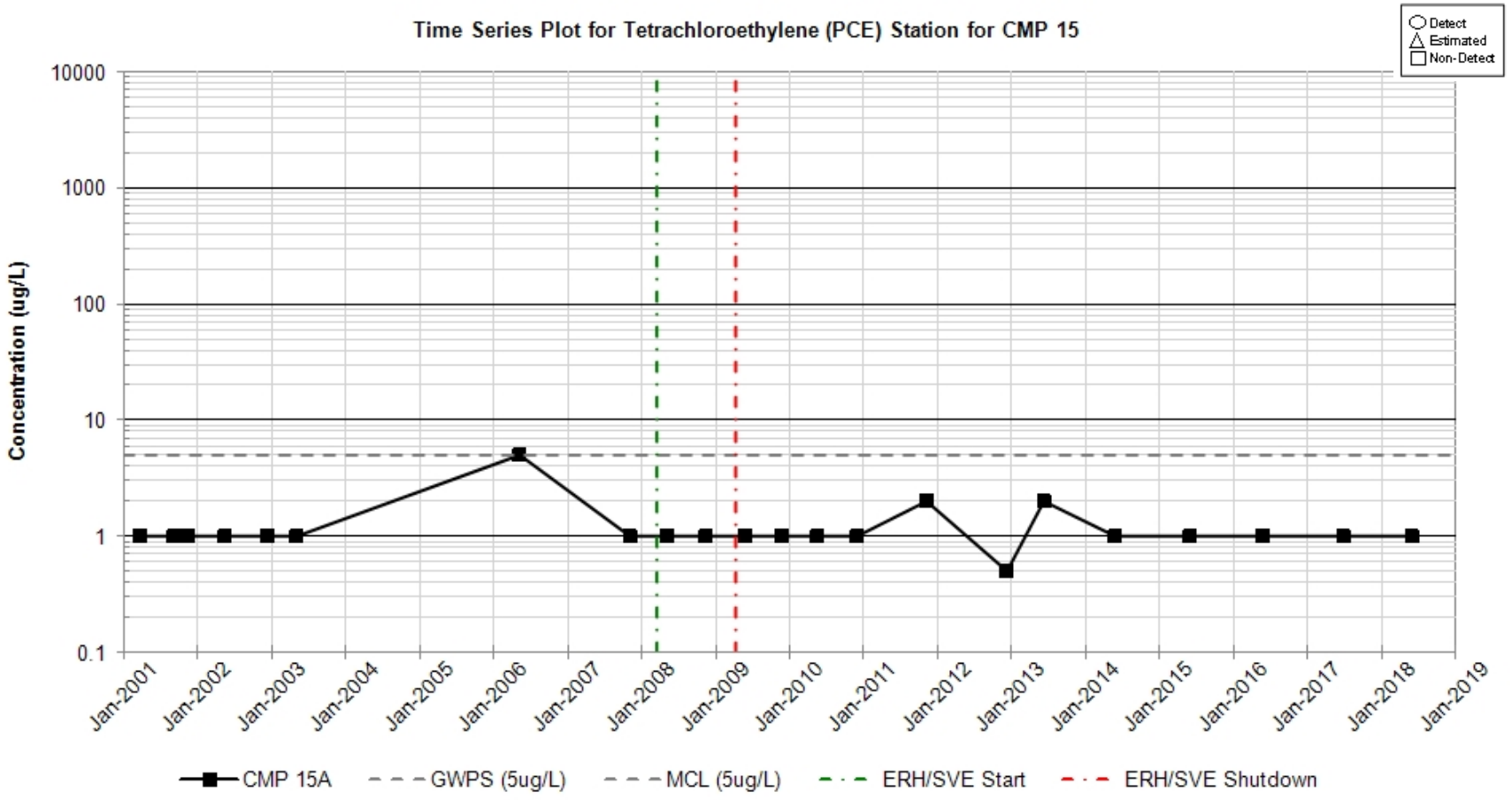

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 8
CMP 8A
CMP 8B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

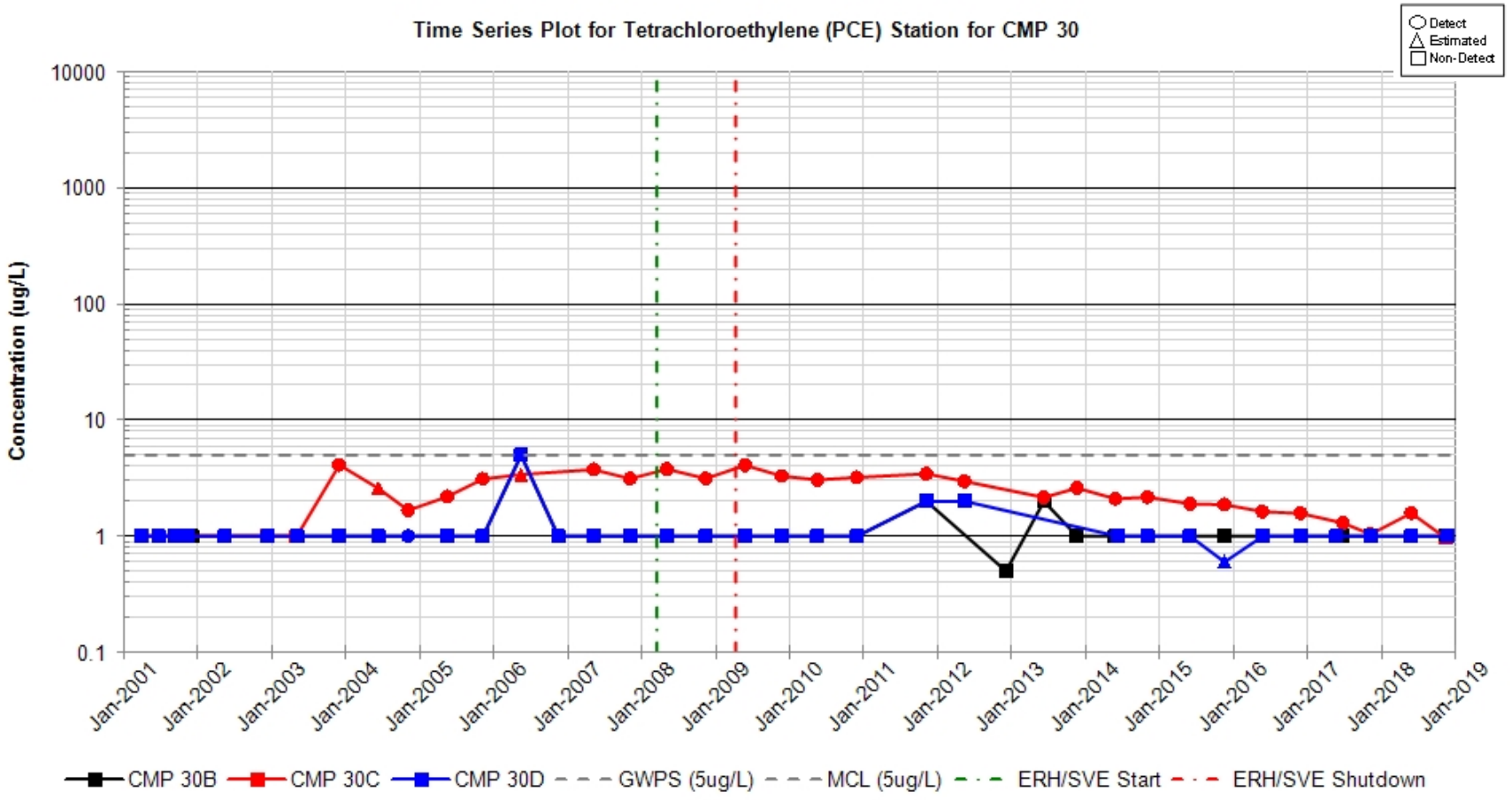

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 10
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 10B
CMP 10C
CMP 10D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

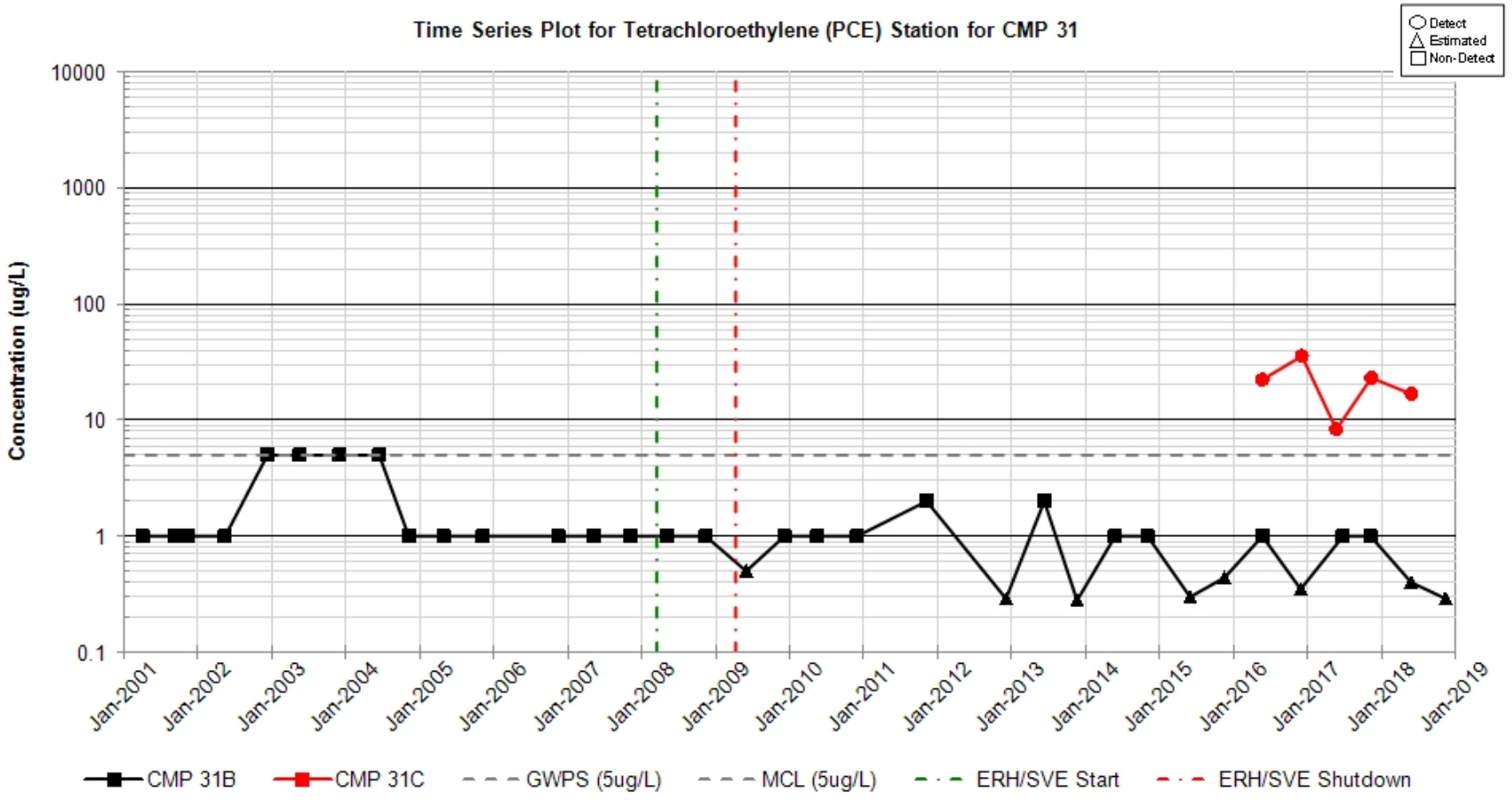

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 11
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 11B
CMP 11D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

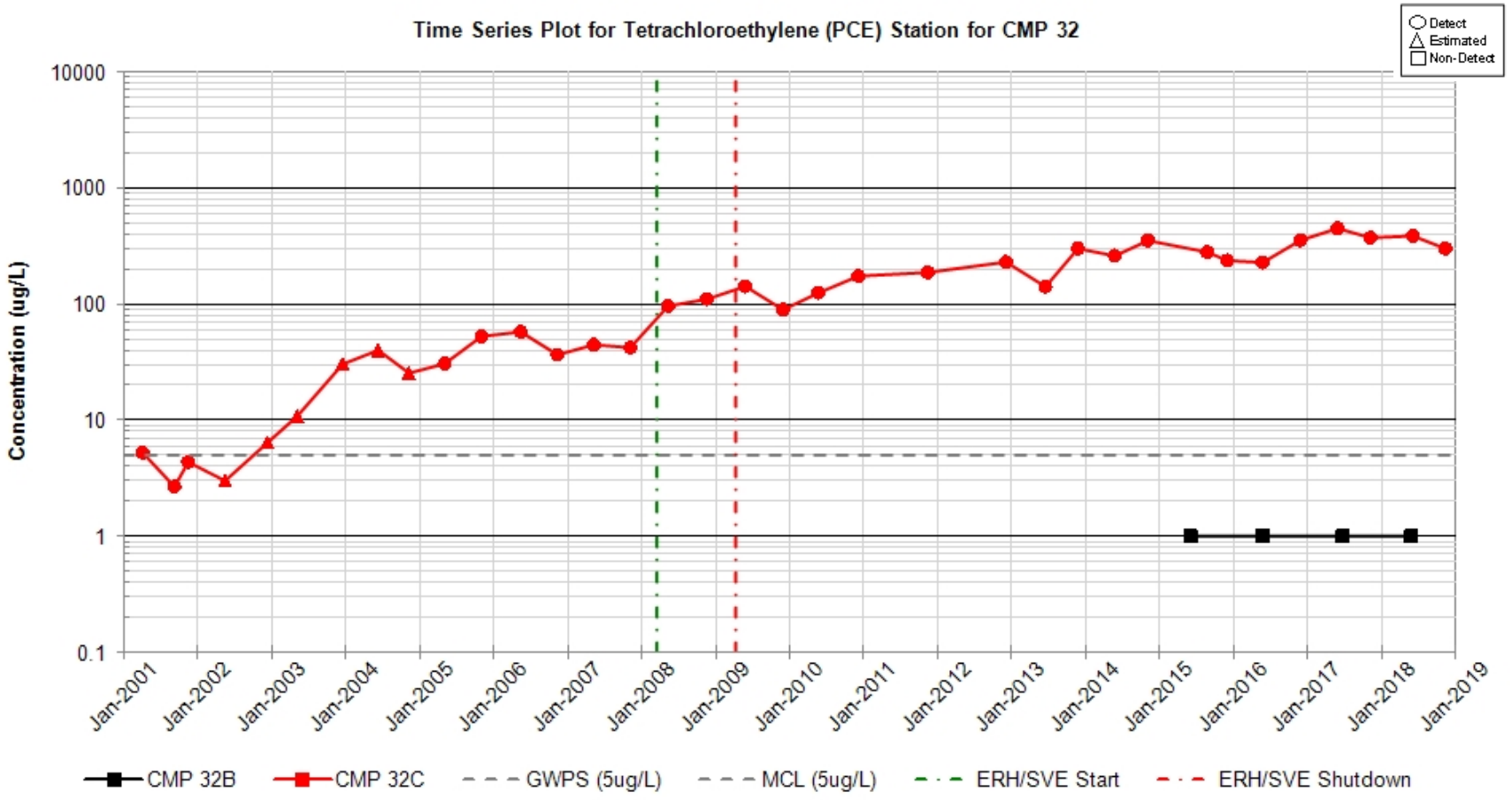

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 12
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 12A
CMP 12B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

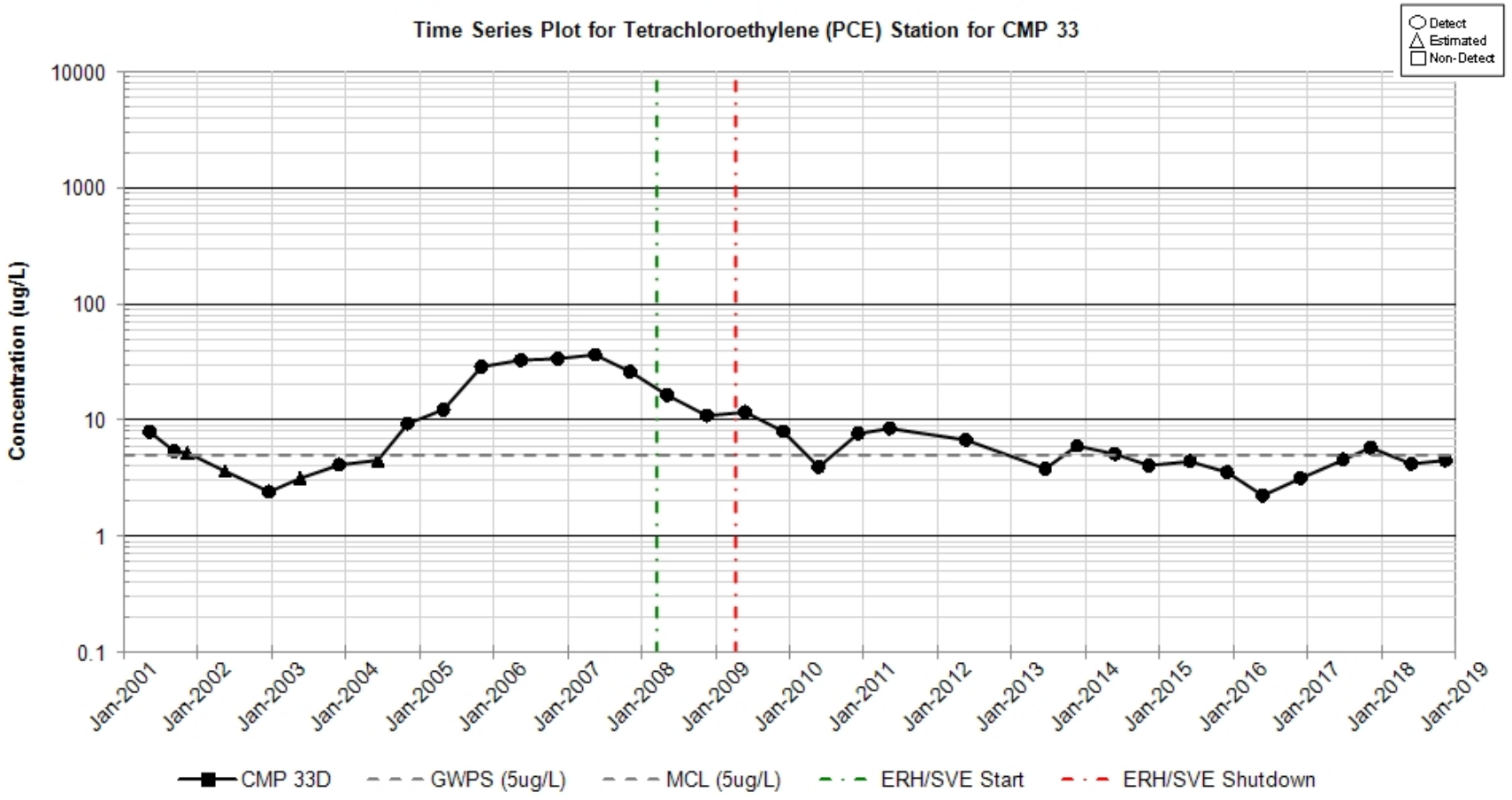

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 13
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 13B
CMP 13D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

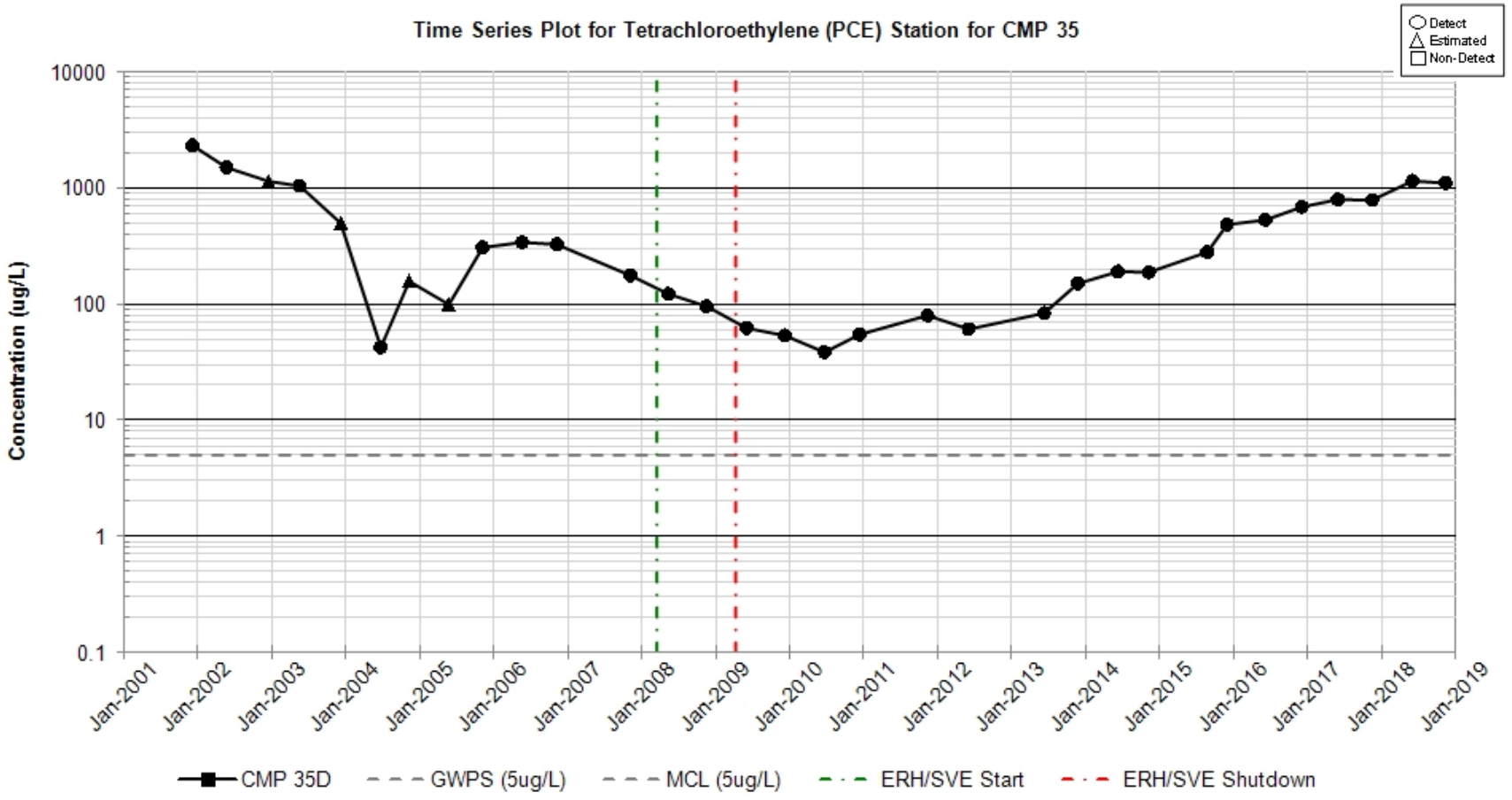

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 15
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 15A
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

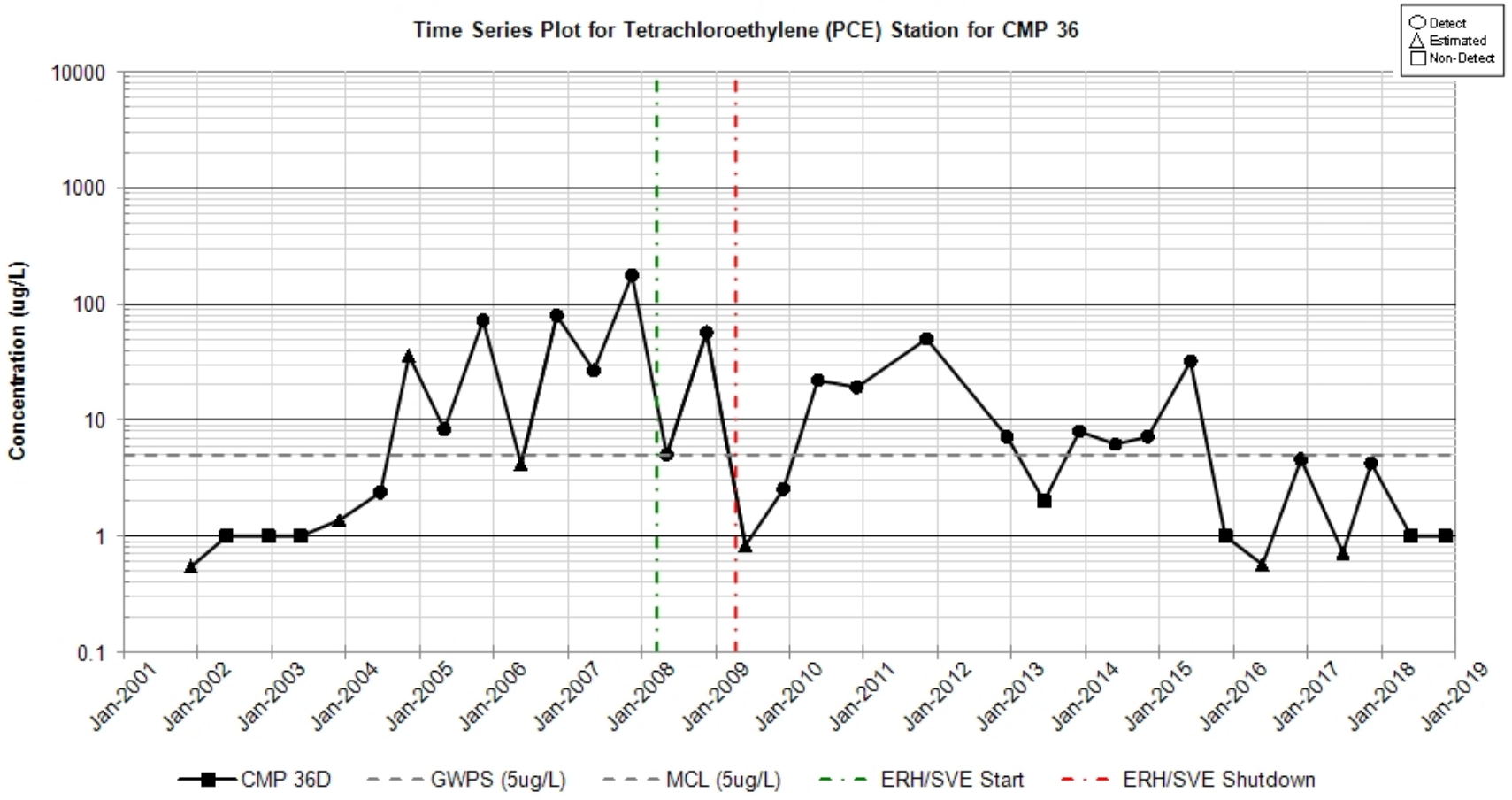

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 30
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 30B
CMP 30C
CMP 30D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

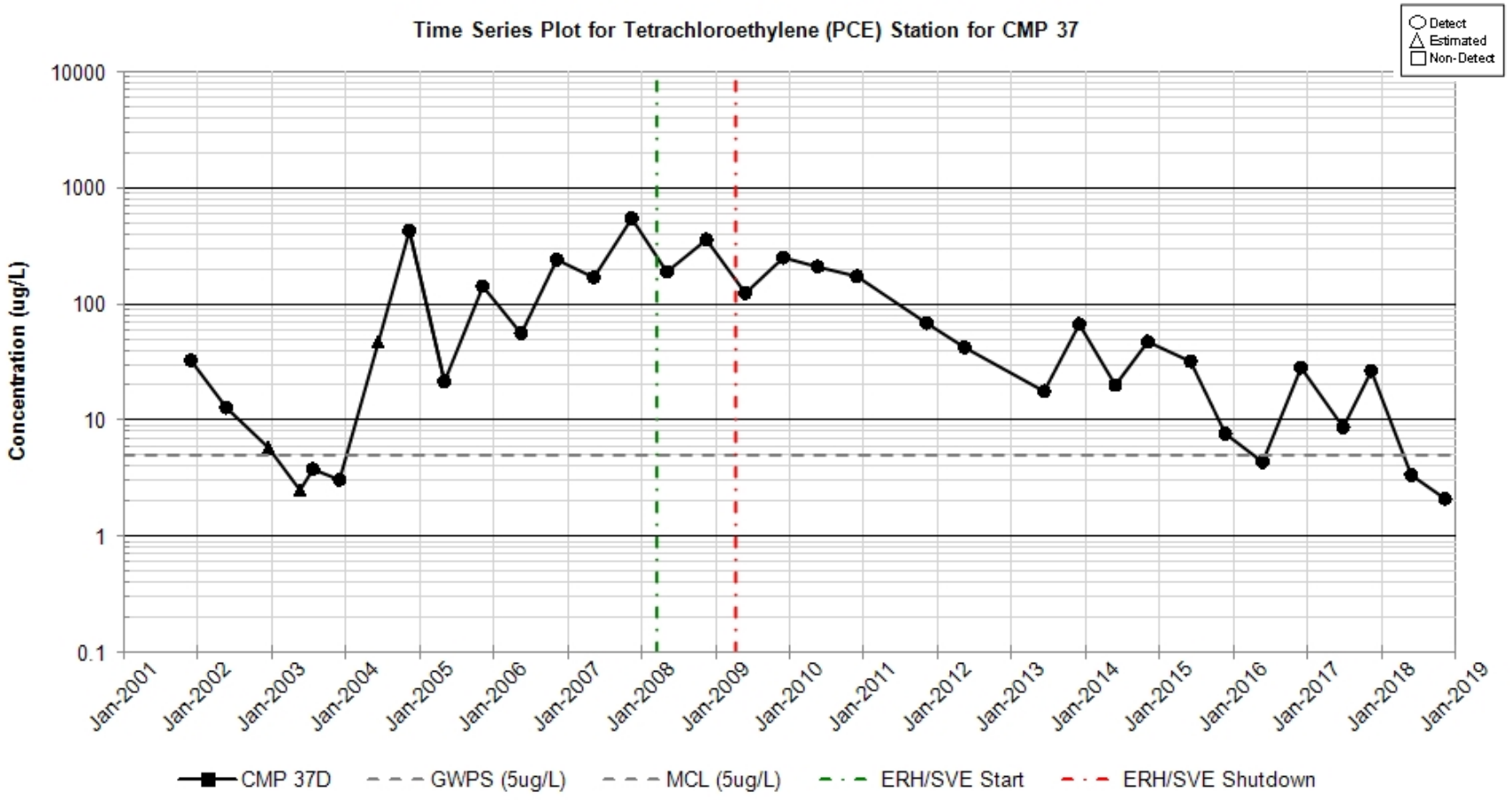

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 31
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 31B
CMP 31C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

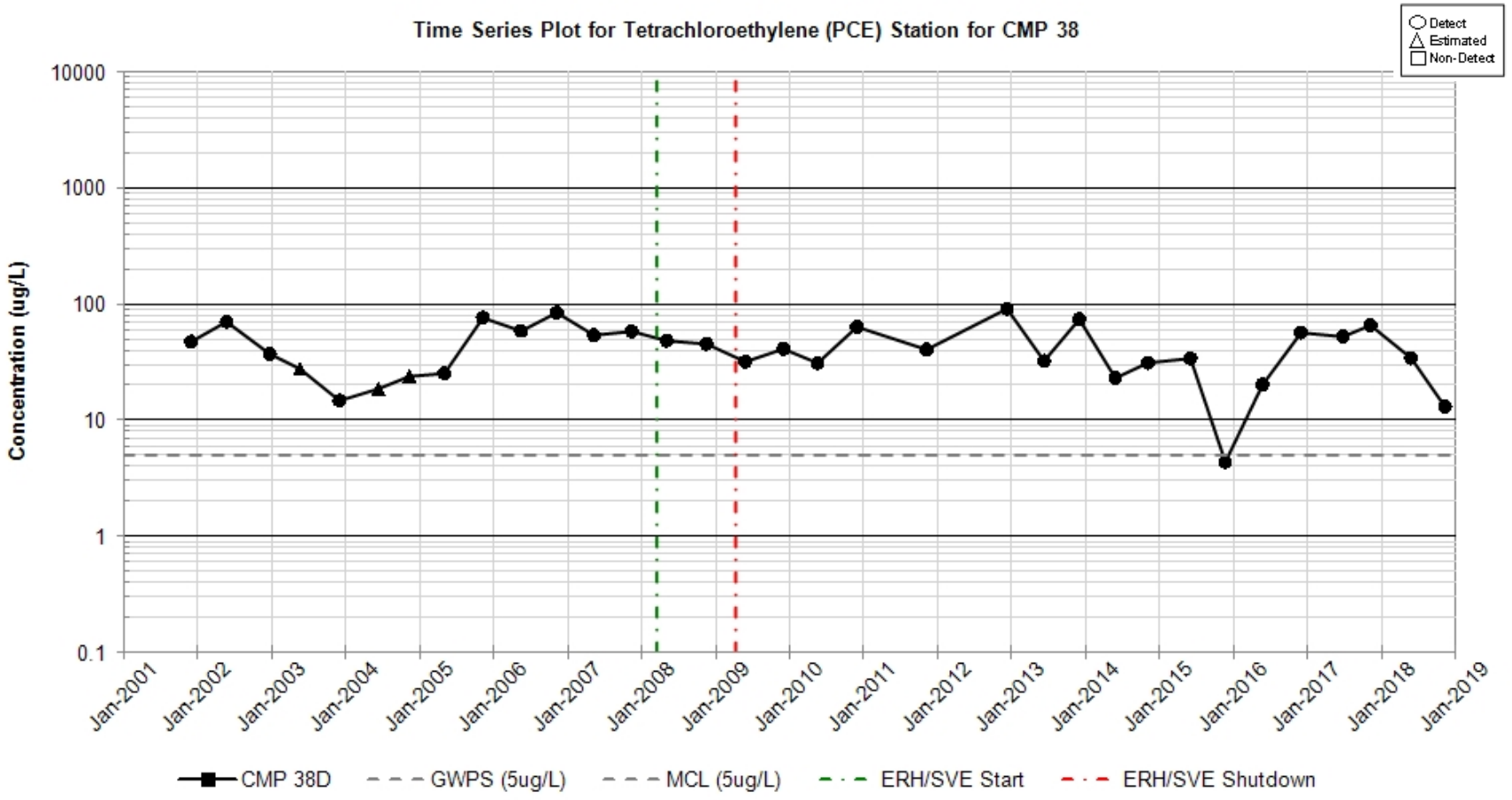

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 32
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 32B
CMP 32C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

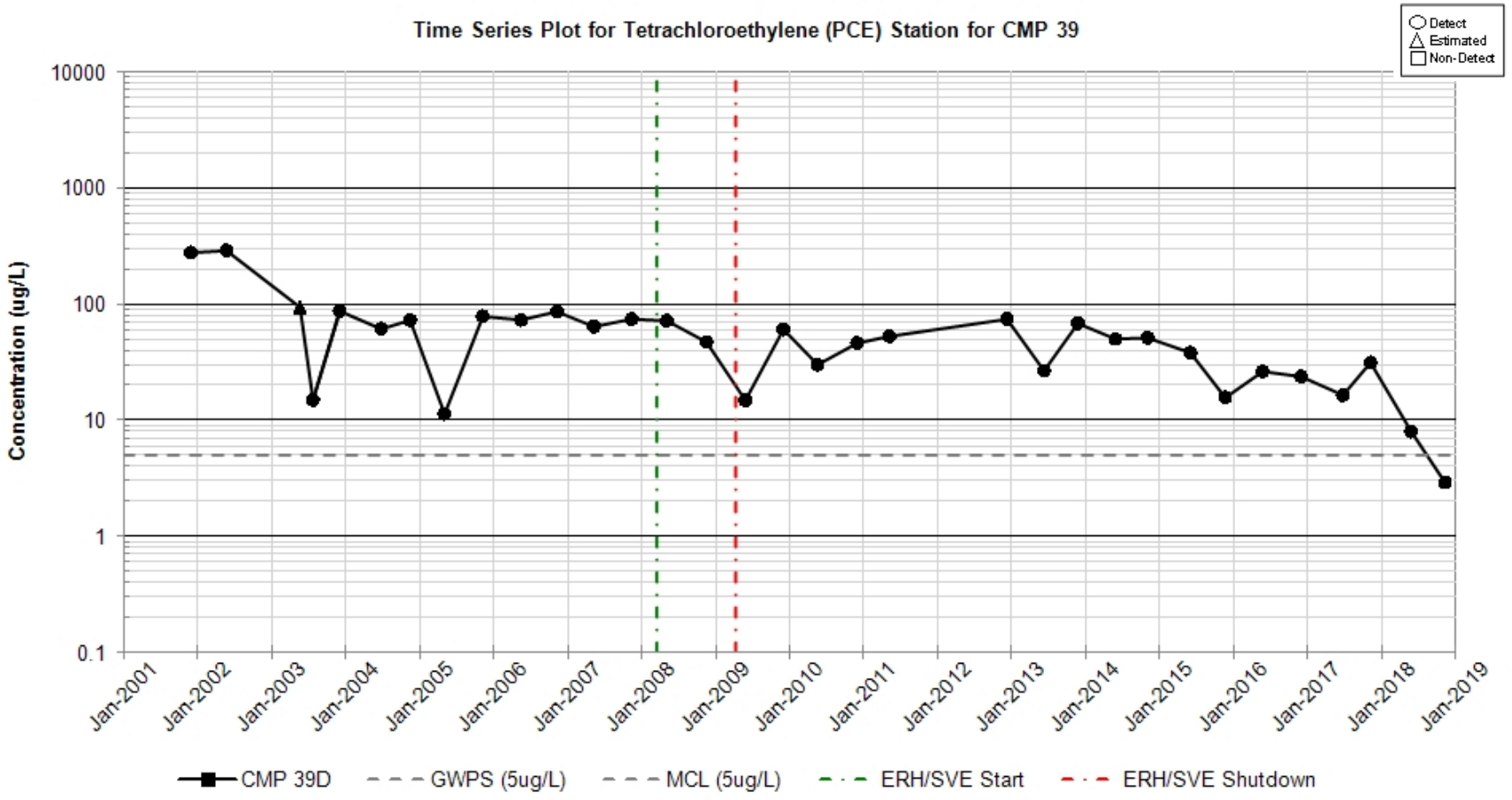

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 33
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 33D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

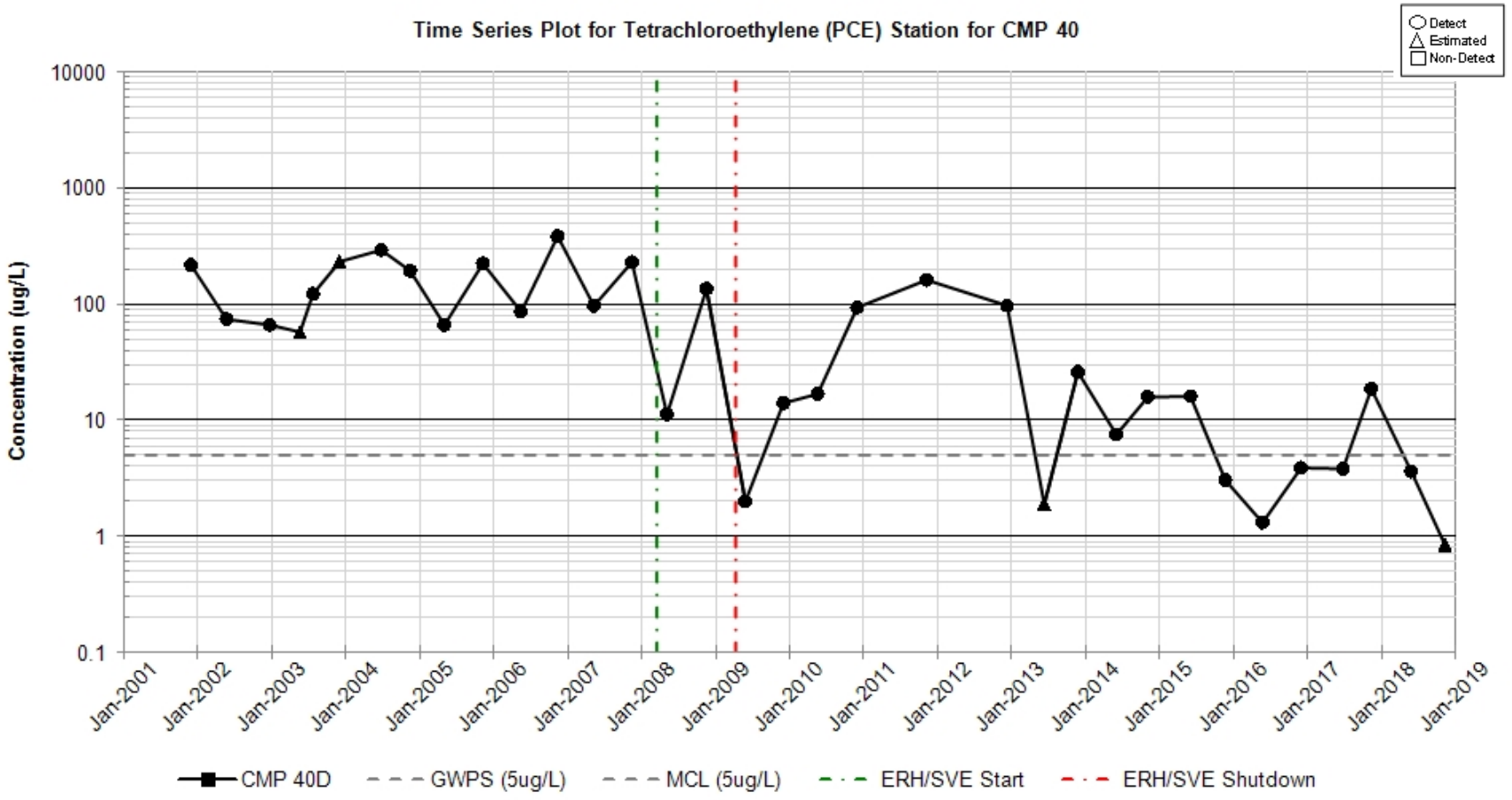

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 35
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 35D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

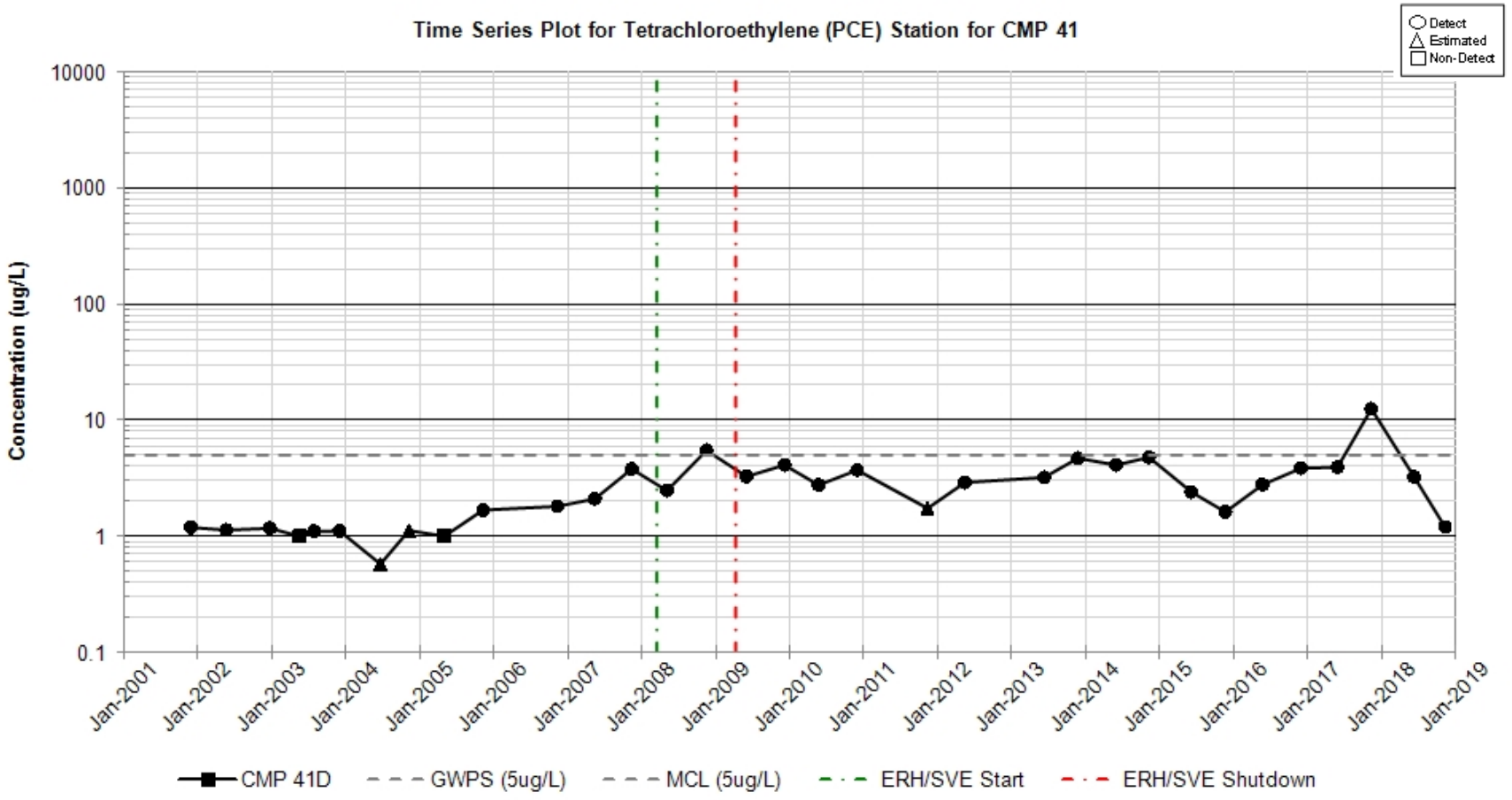

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 36
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 36D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

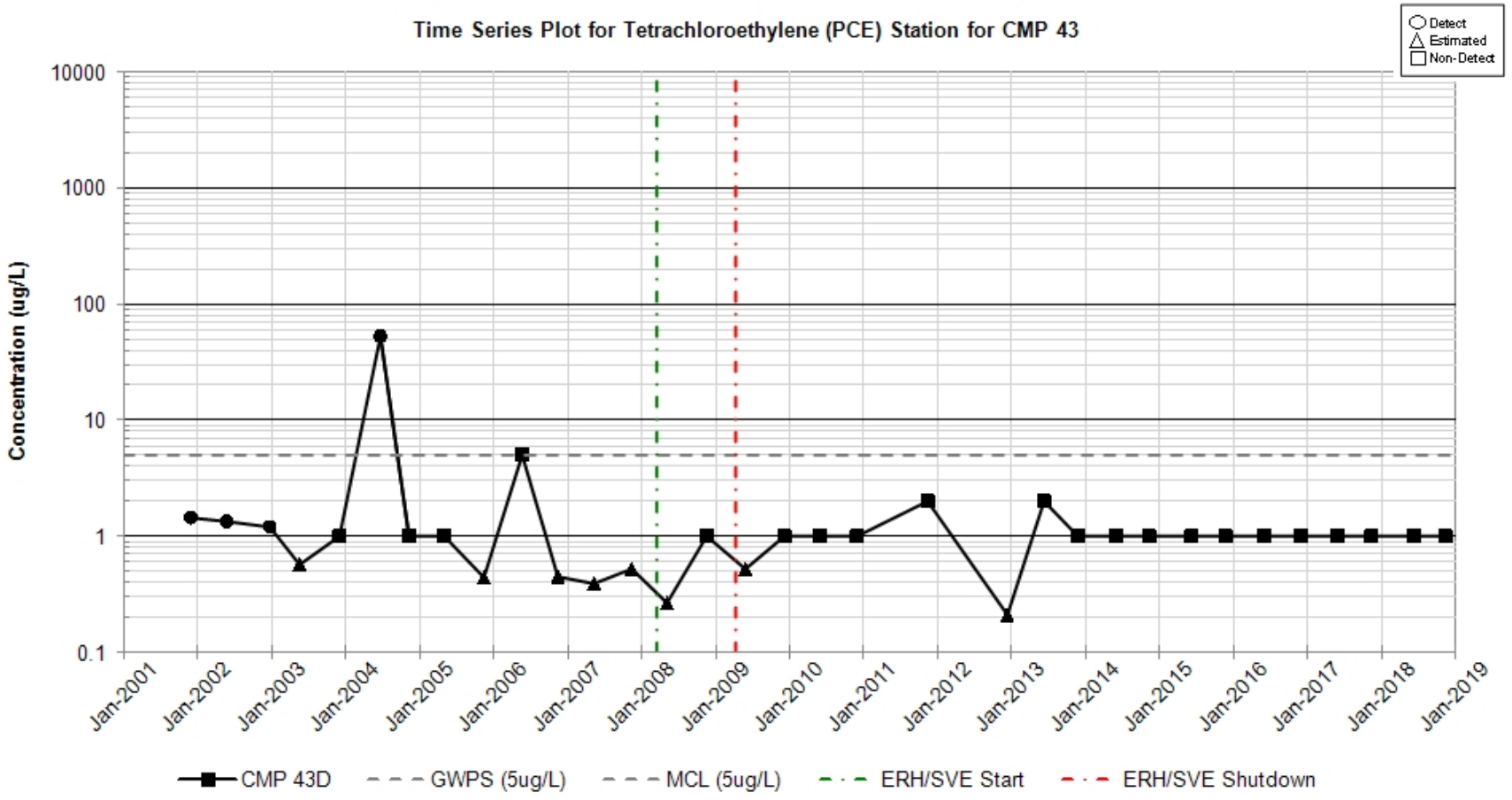

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 37
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 37D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

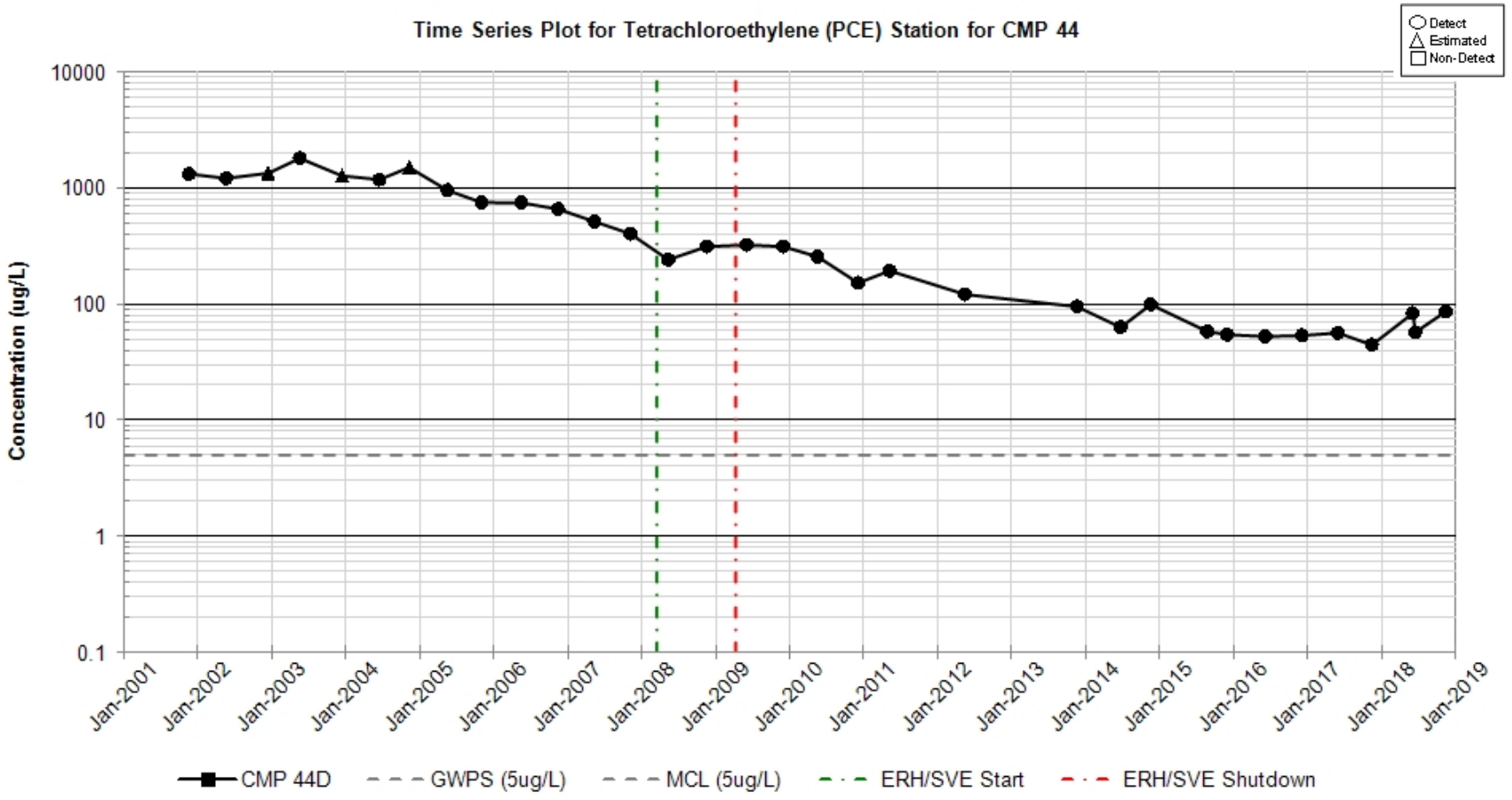

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 38
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 38D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

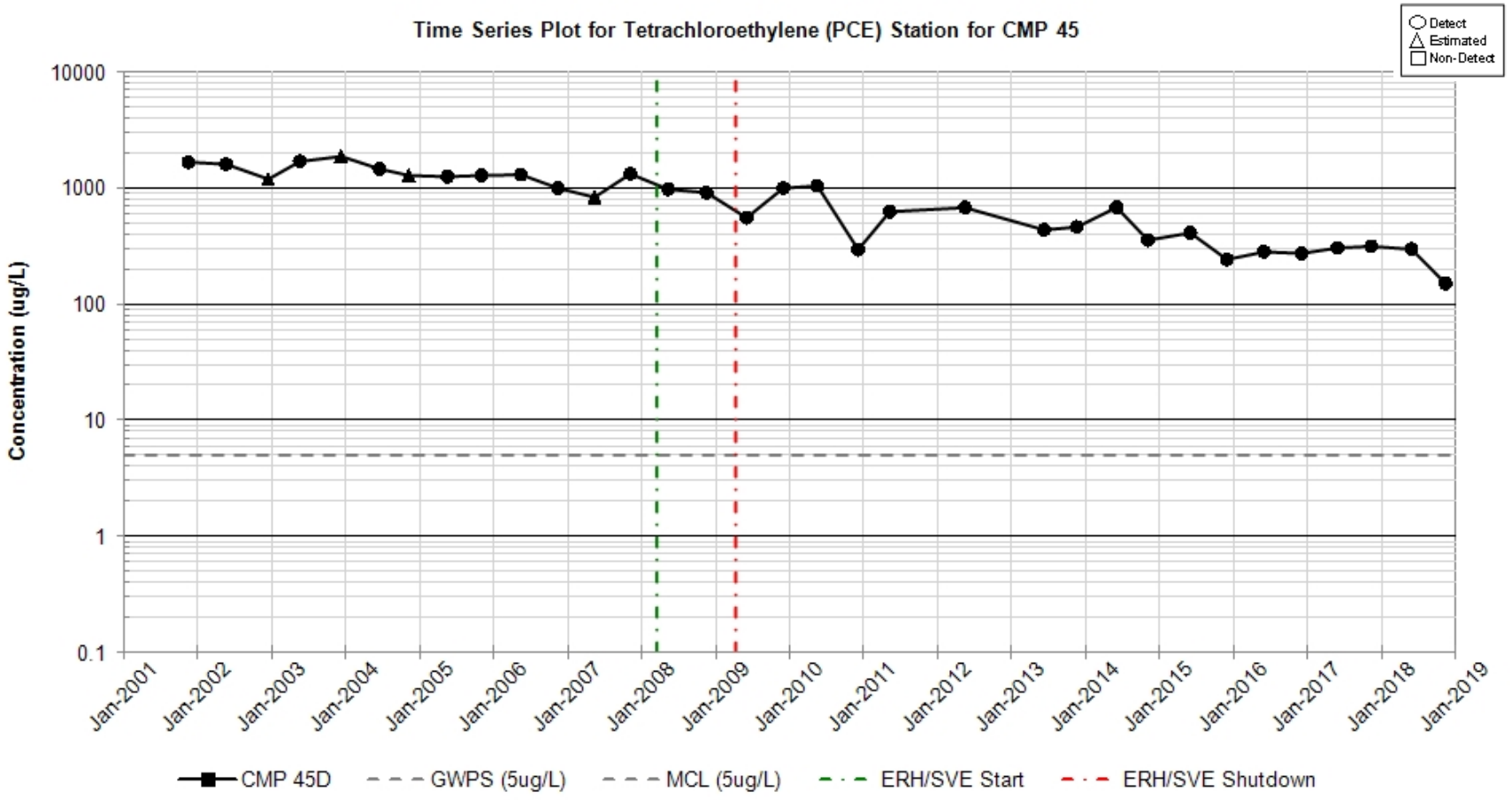

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 39
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 39D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

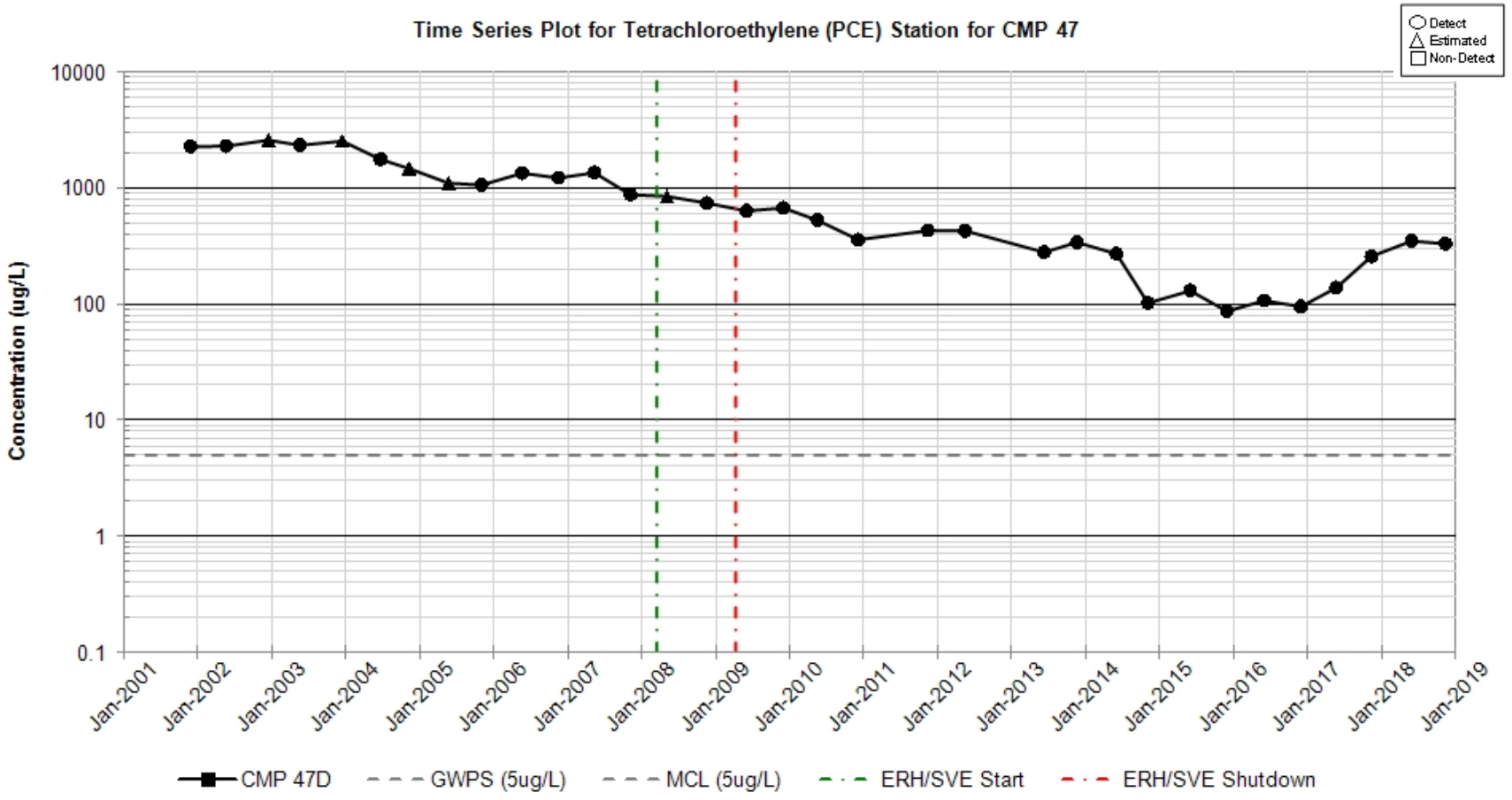

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 40
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 40D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

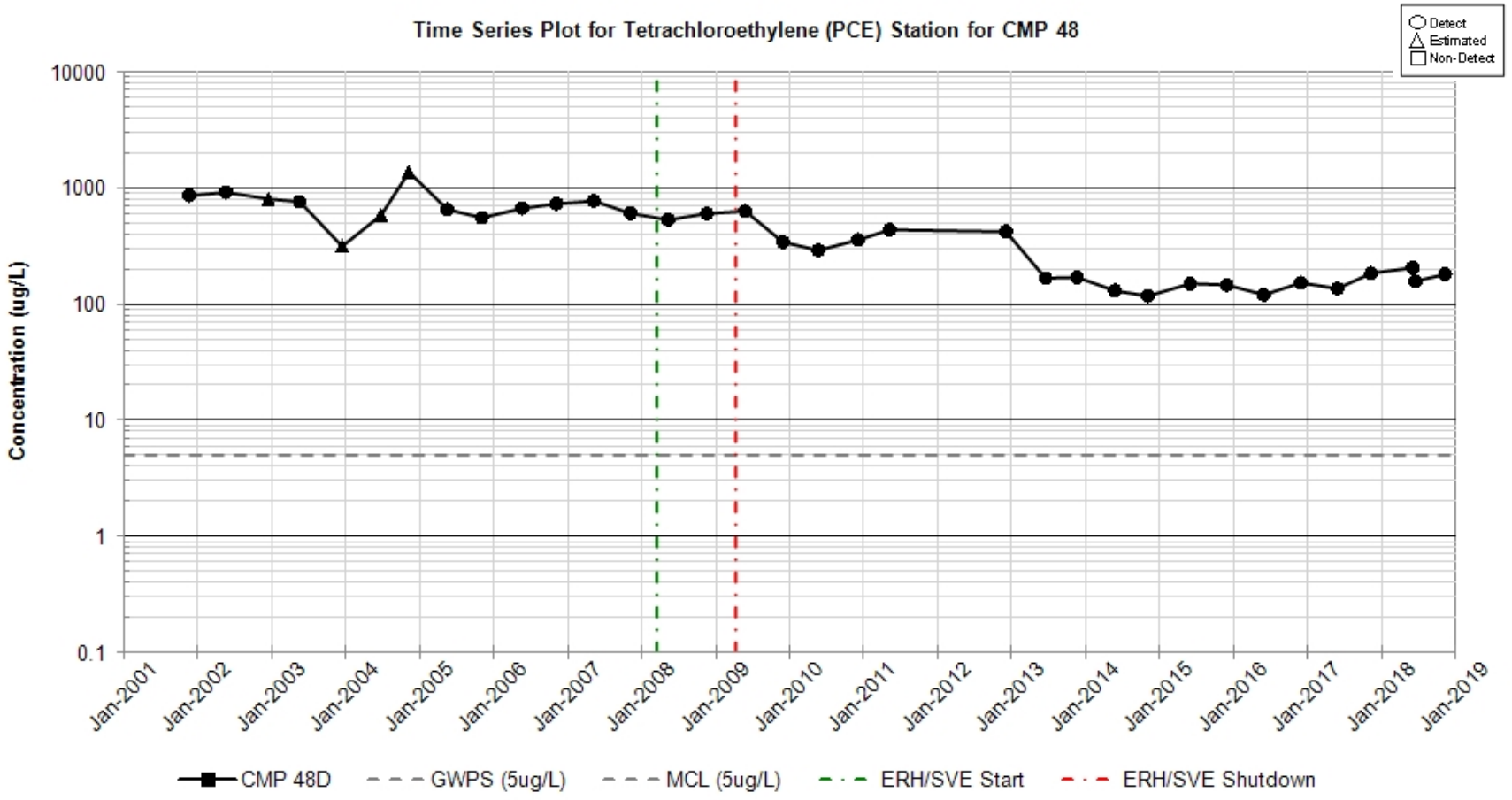

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 41
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 41D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

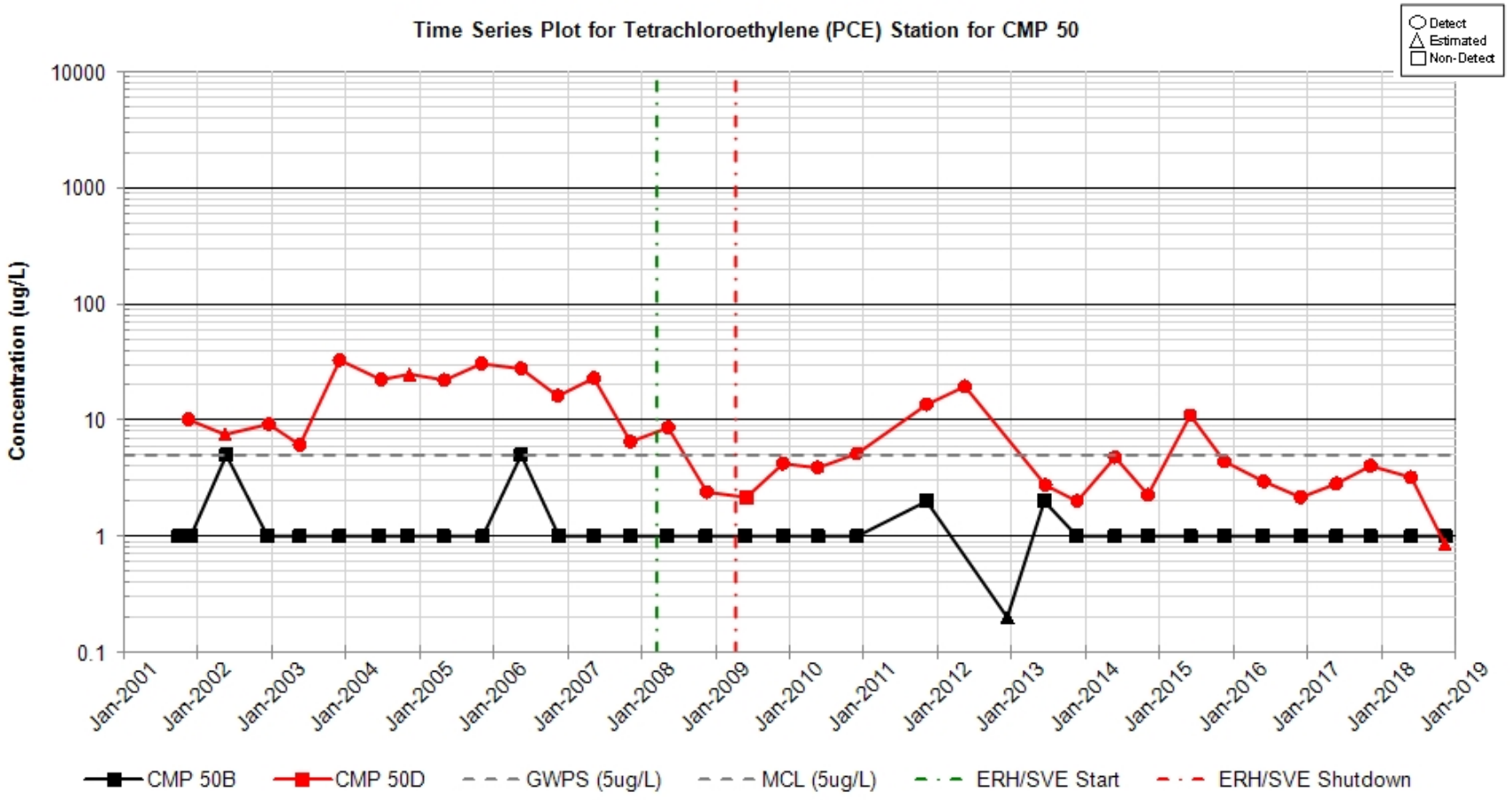

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 43
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 43D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

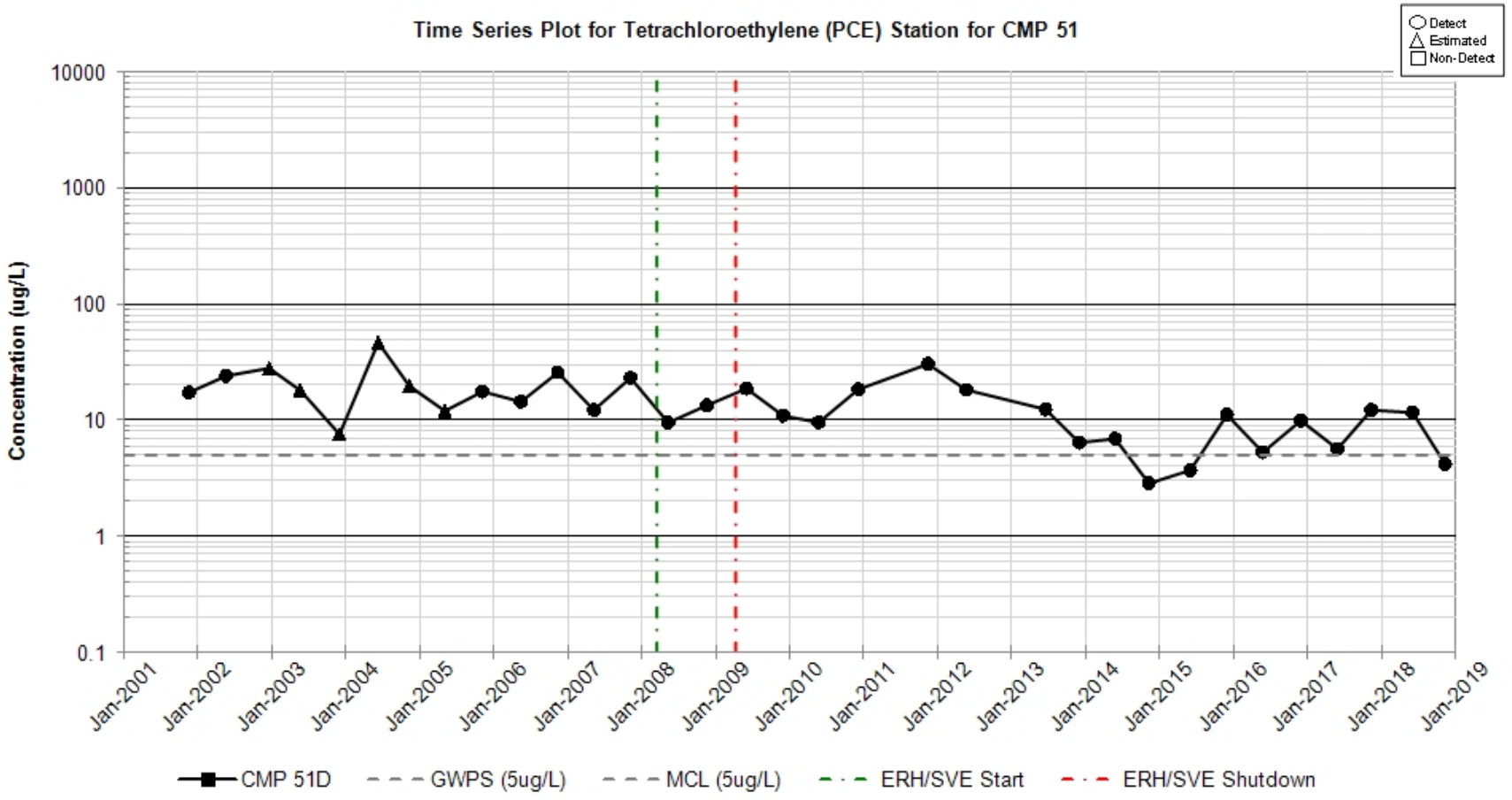

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 44
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 44D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

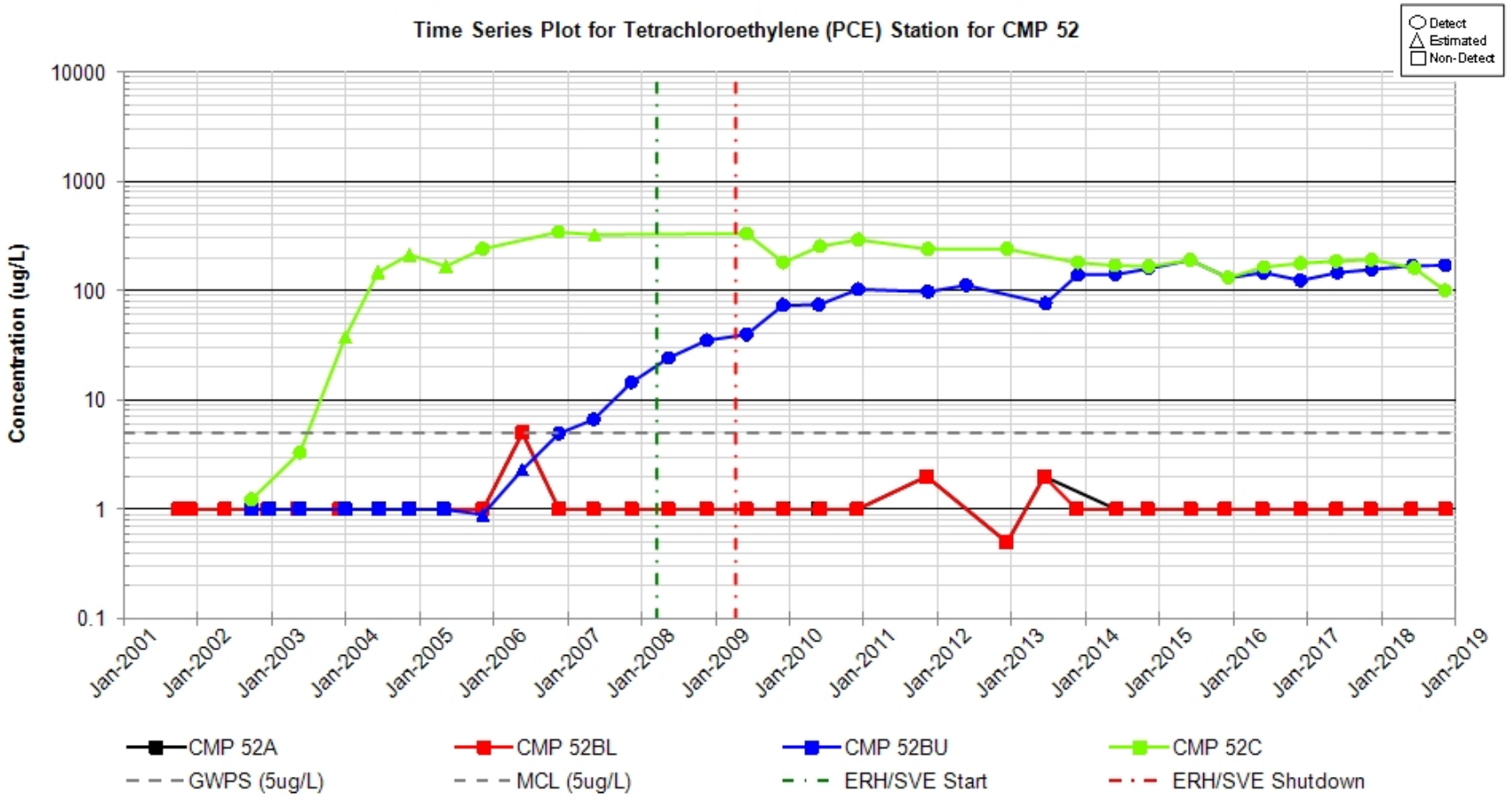

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 45
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 45D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

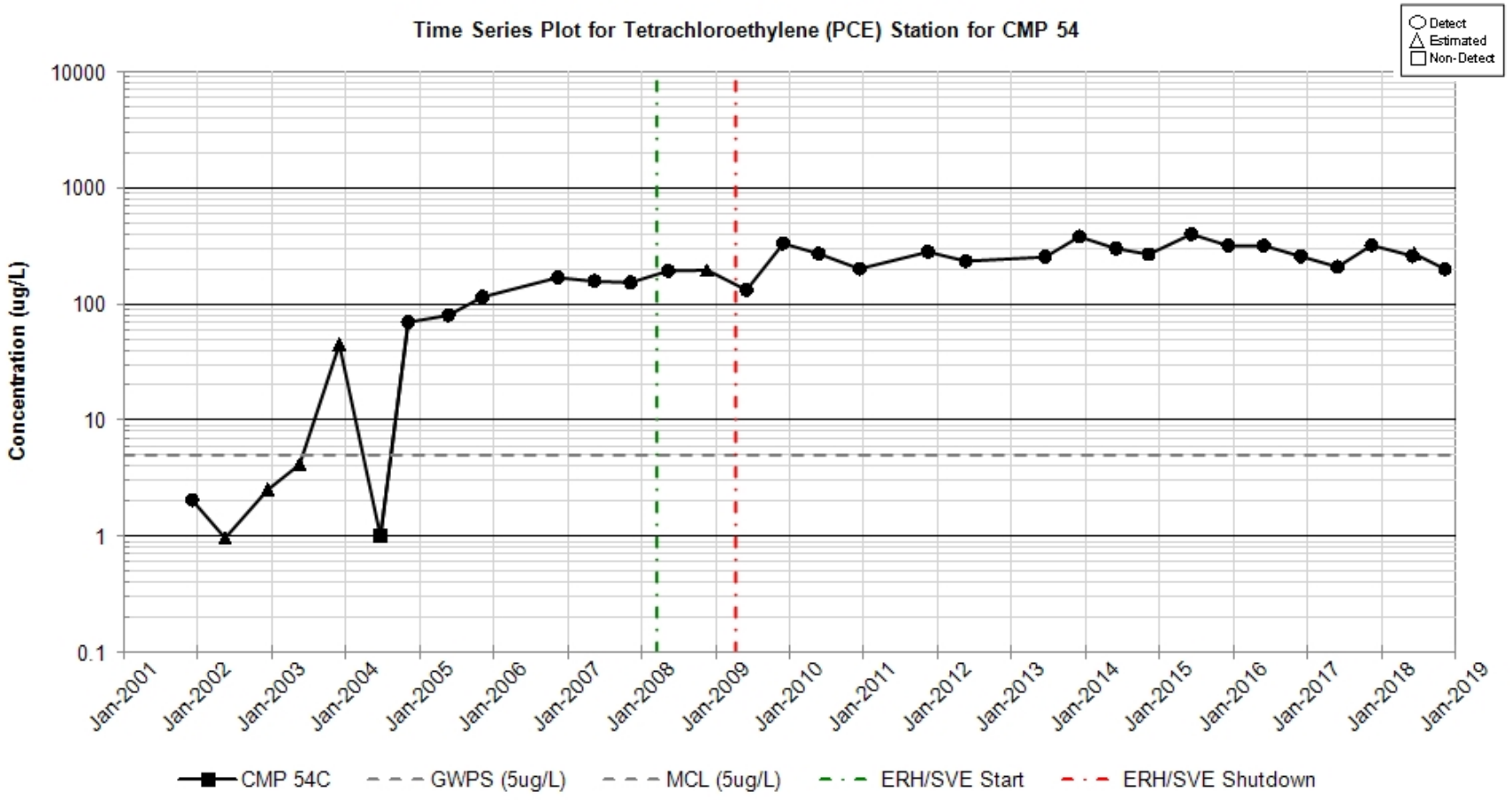

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 47
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 47D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

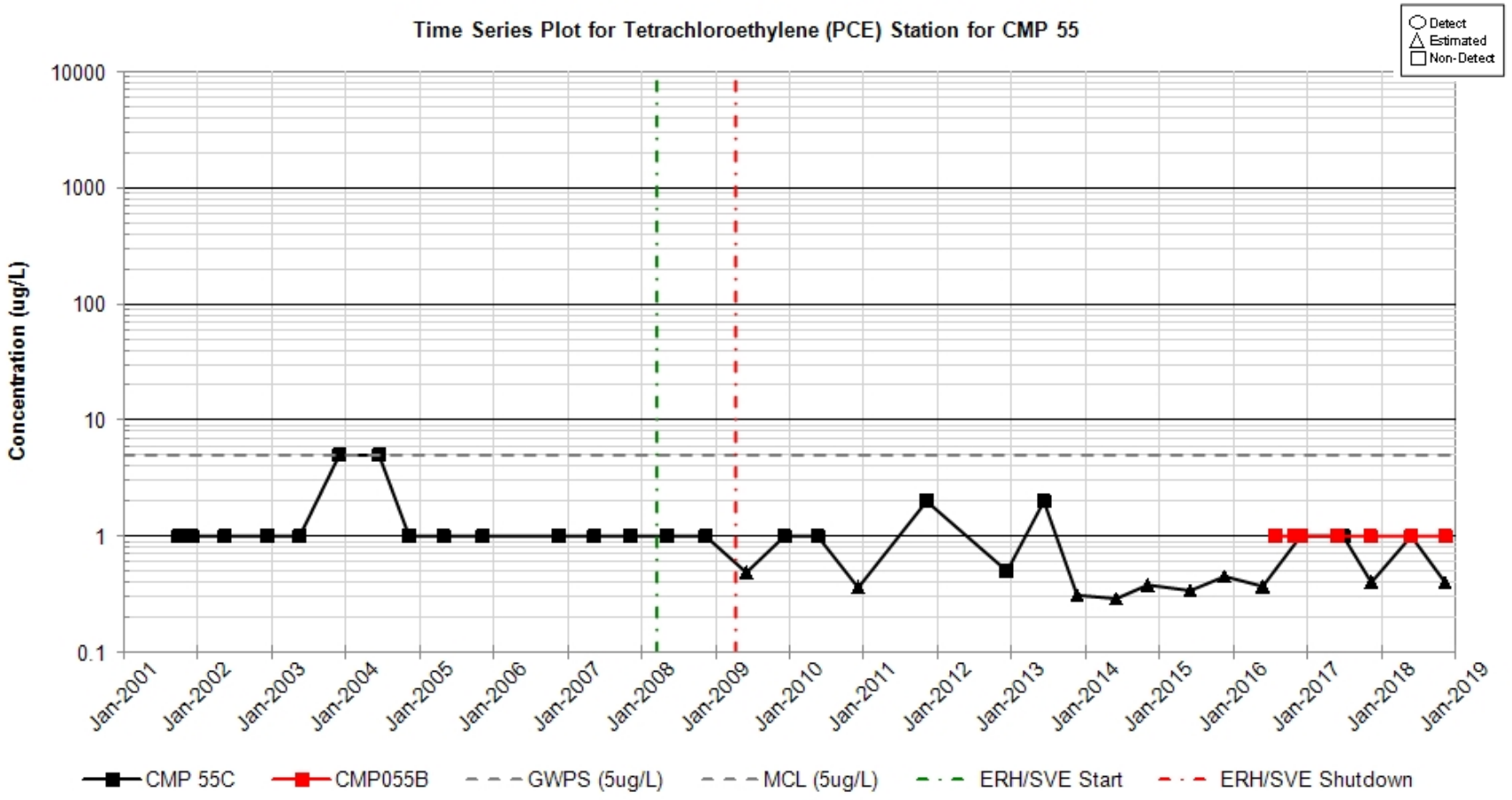

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 48
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 48D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

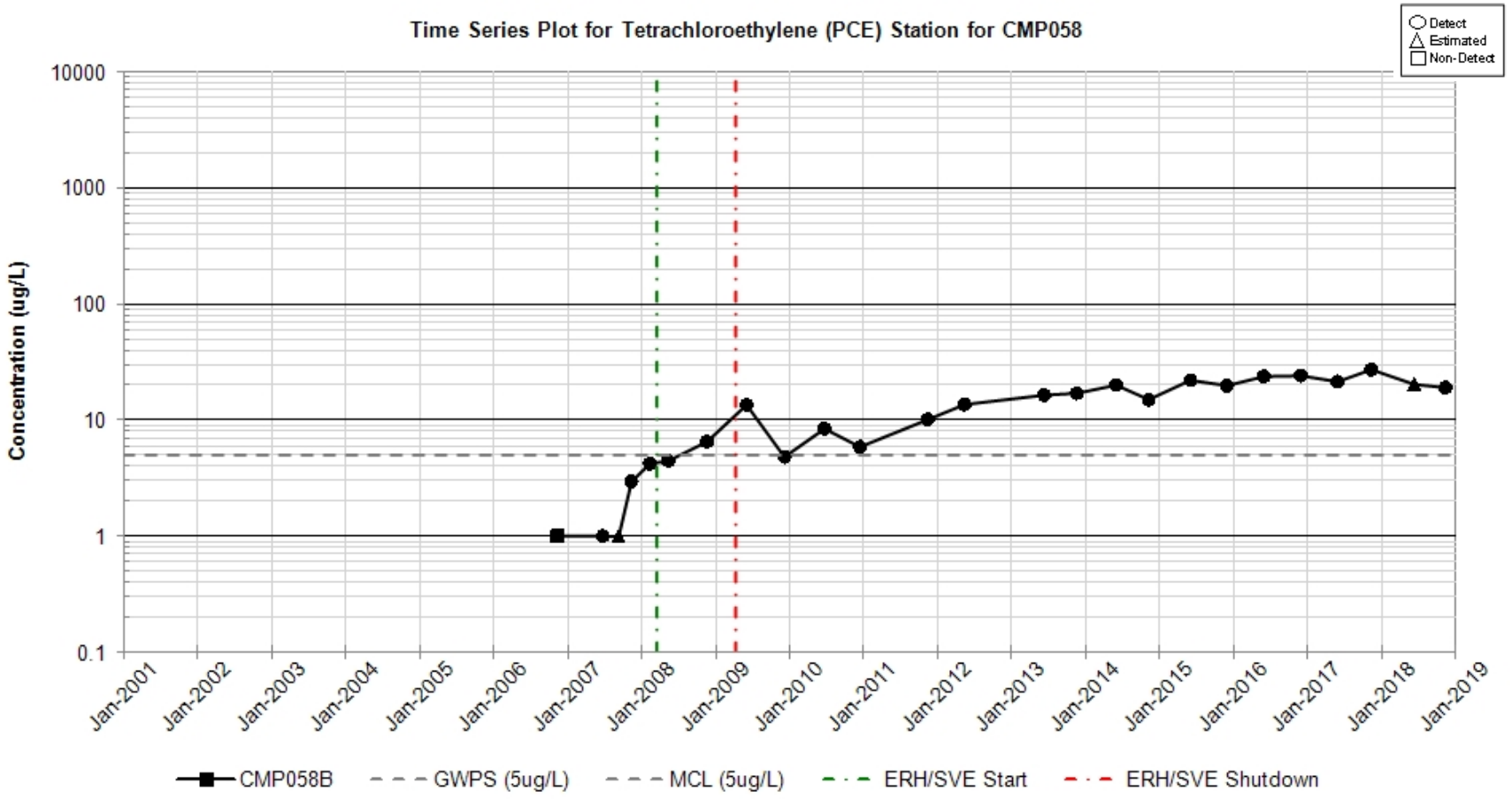

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 50
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 50B
CMP 50D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

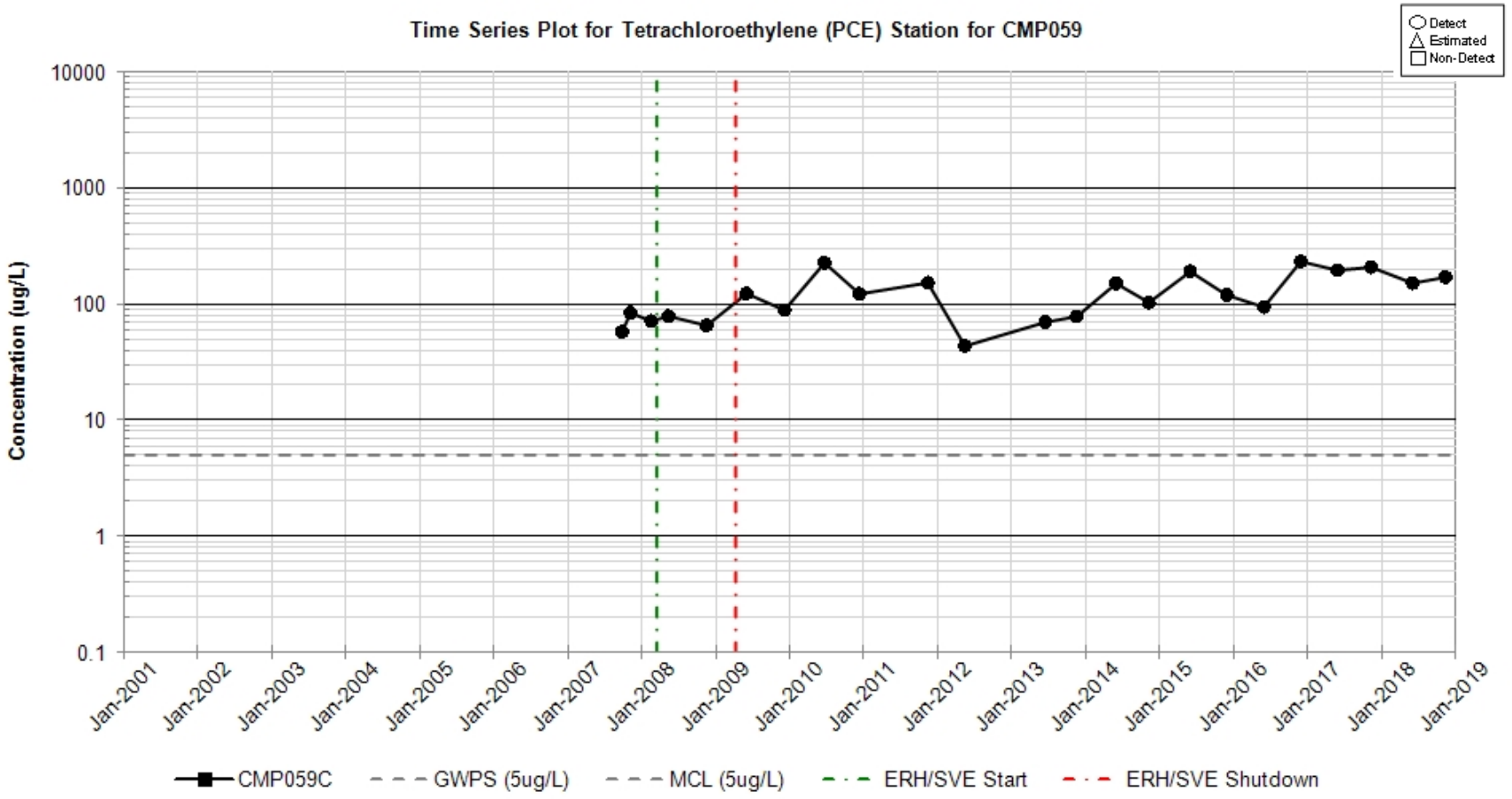

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 51
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 51D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

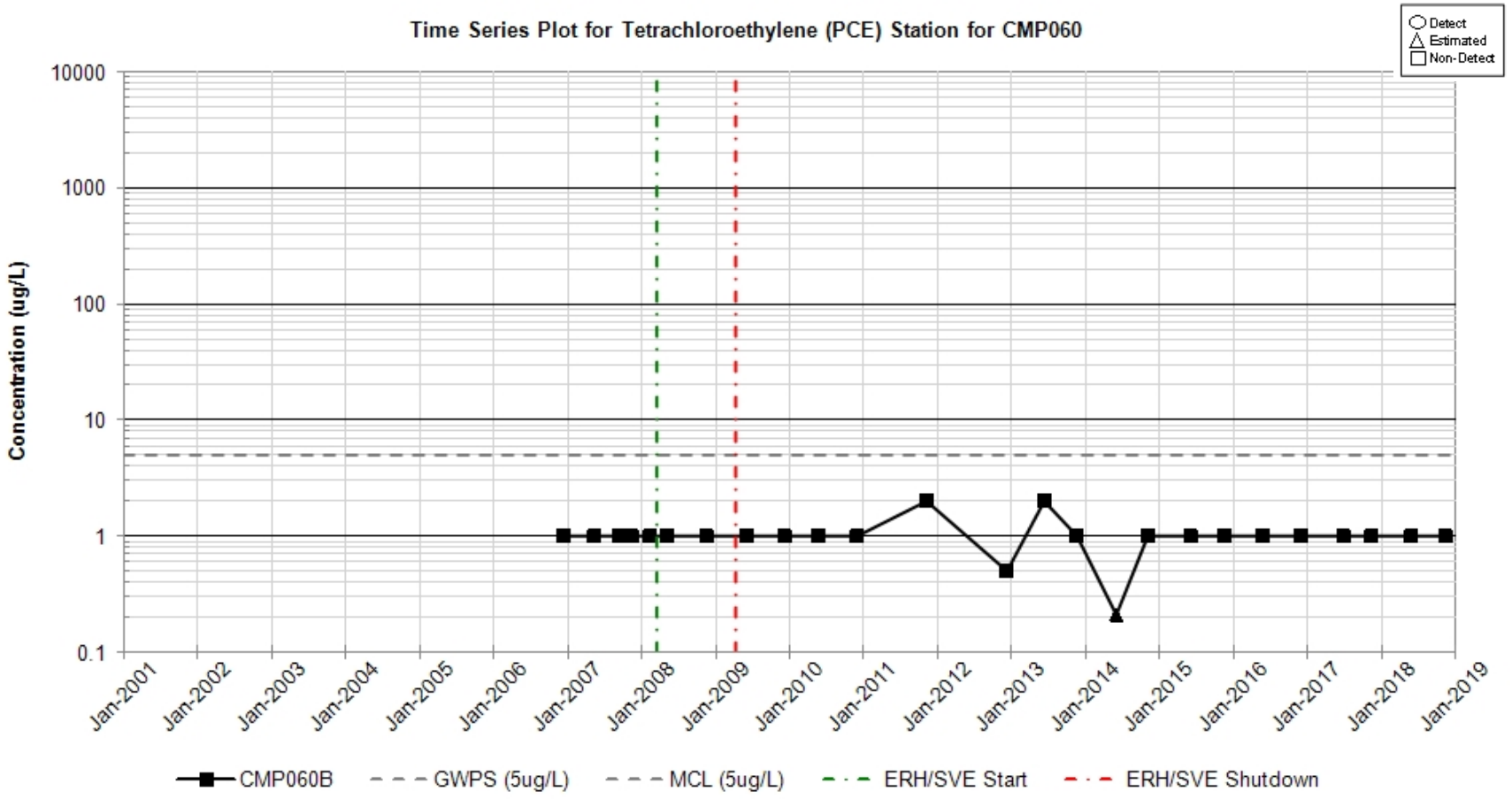

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 52
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 52A
CMP 52BL
CMP 52BU
CMP 52C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

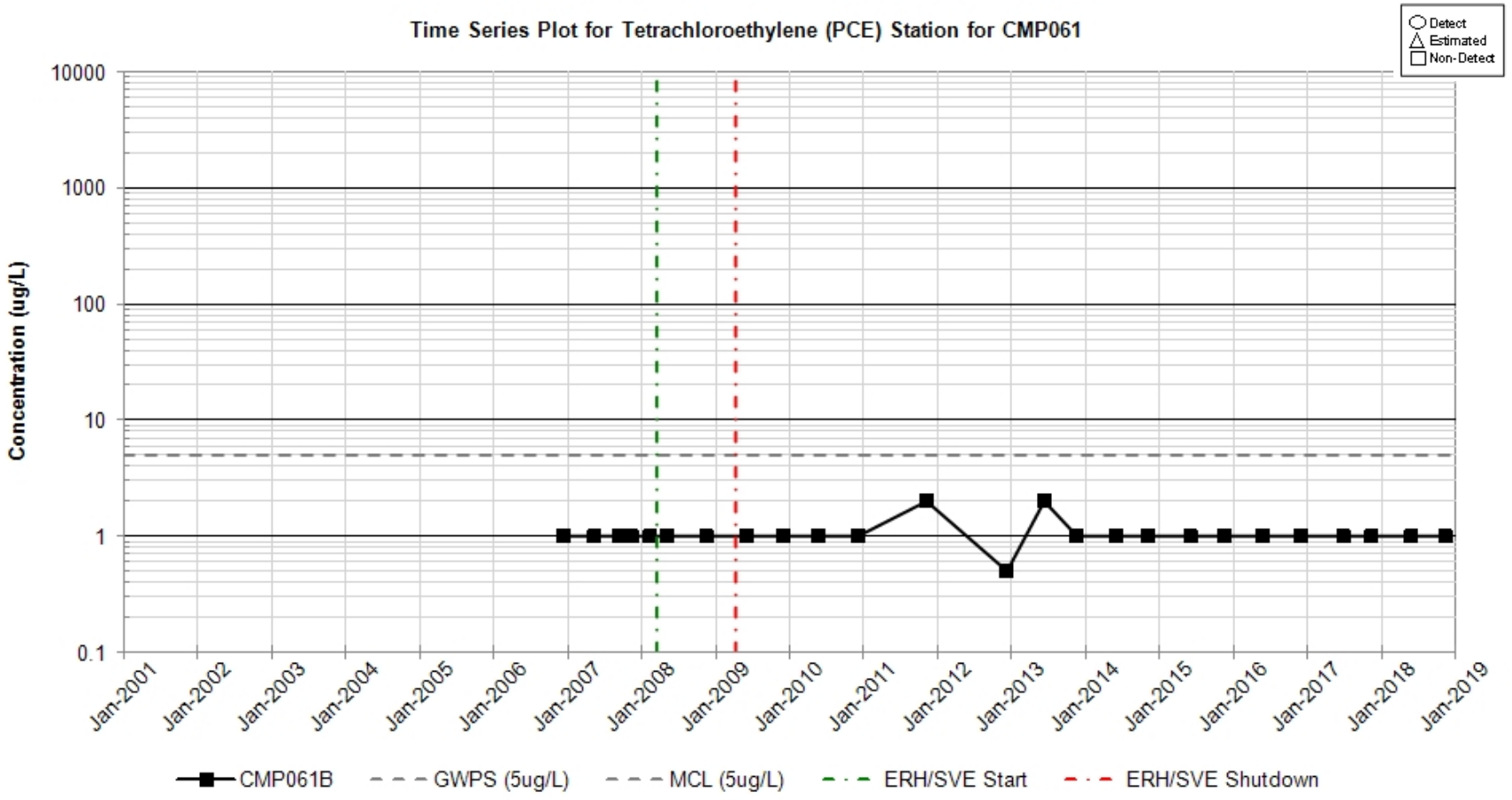

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 54
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 54C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

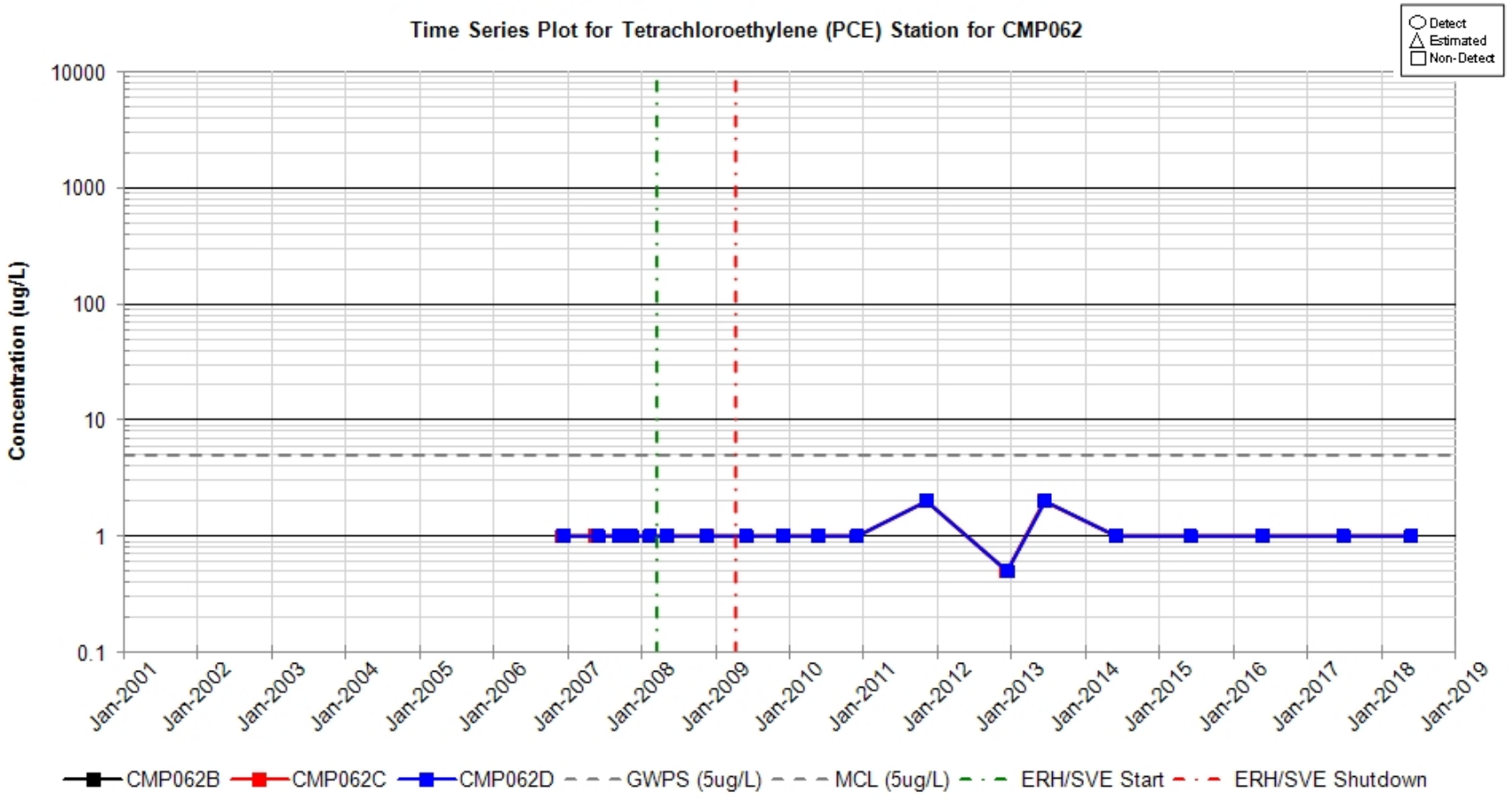

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP 55
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 55C
CMP055B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

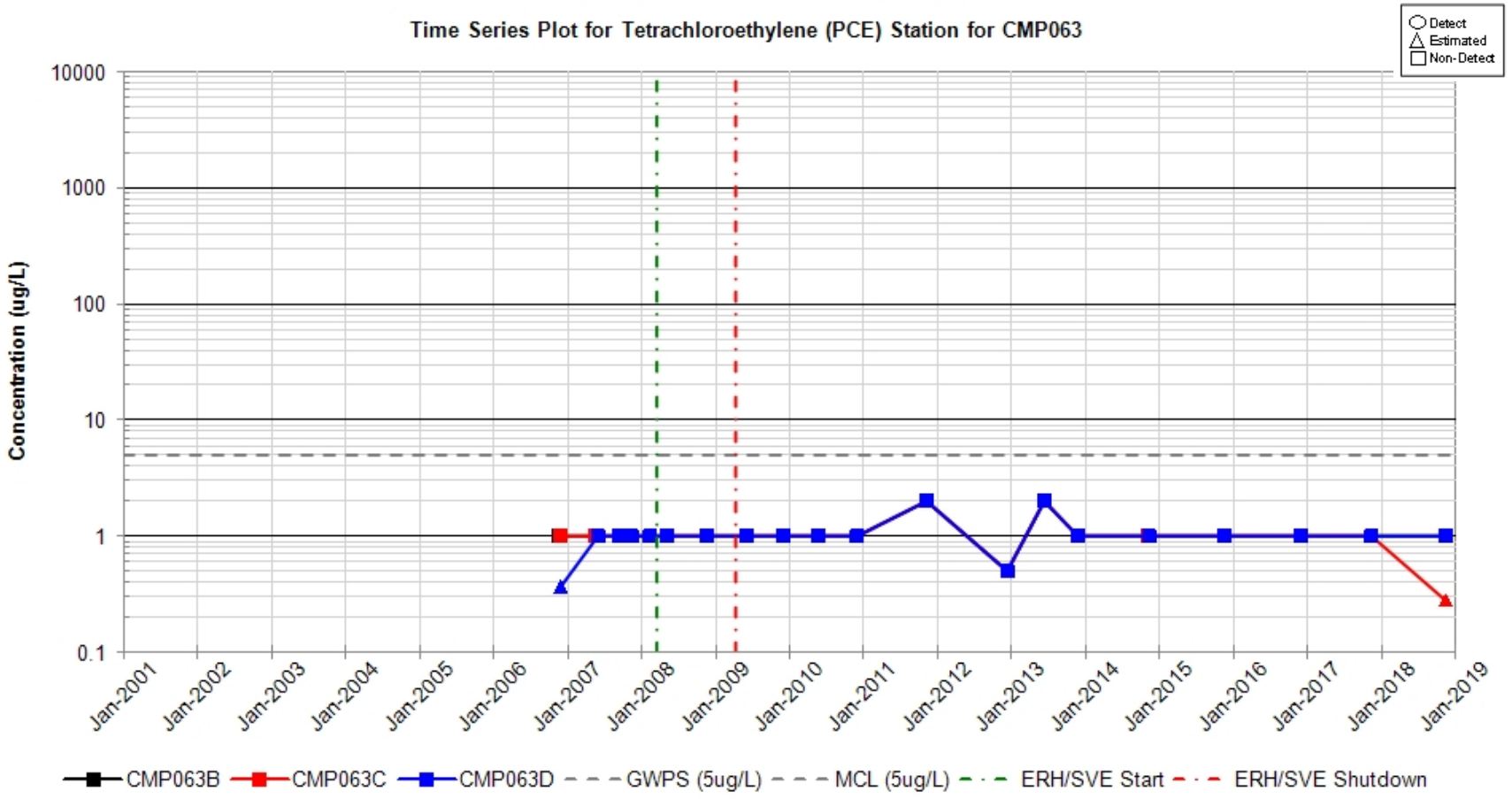

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP058
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP058B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

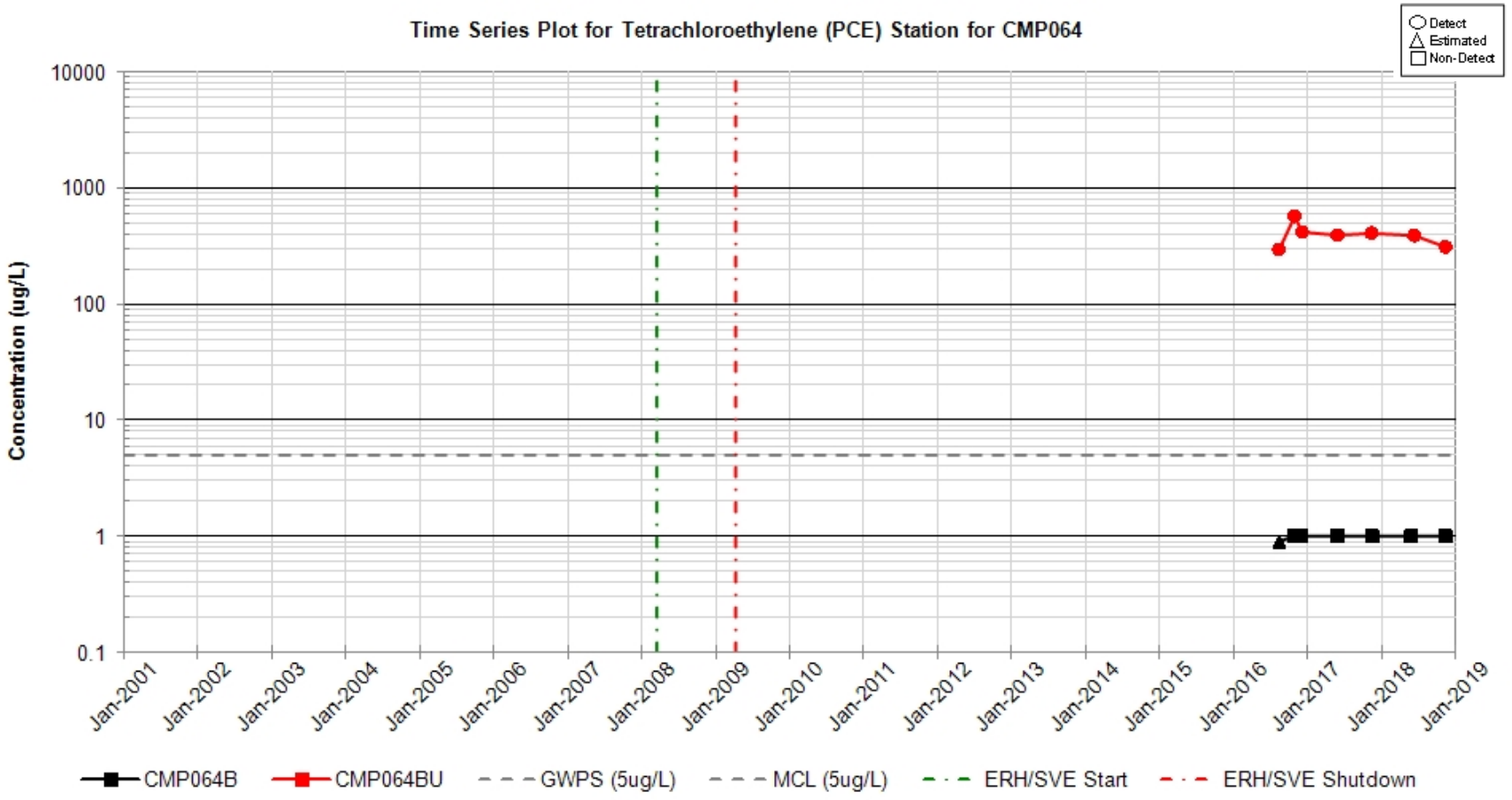

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP059
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP059C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

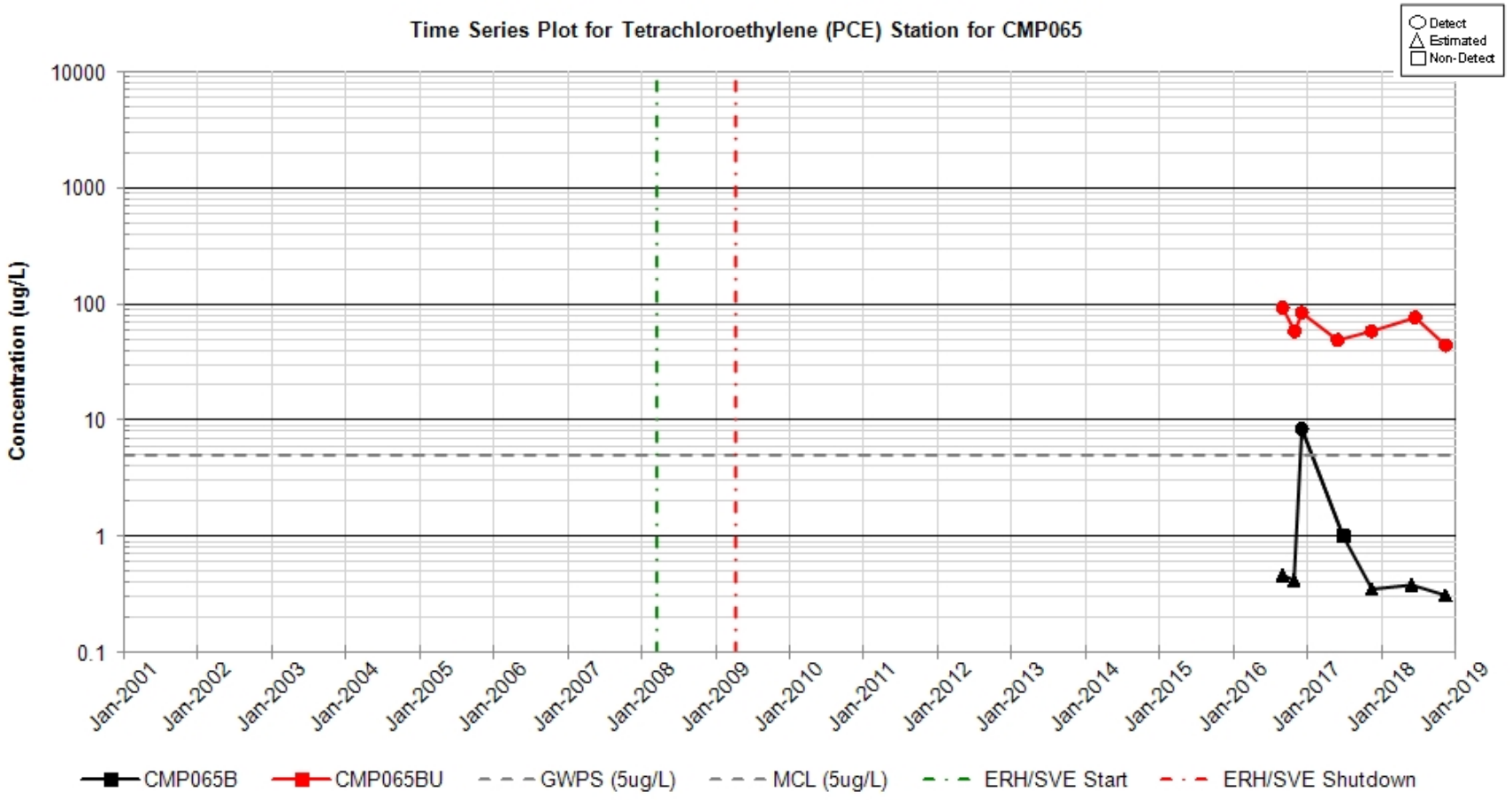

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP060
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP060B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

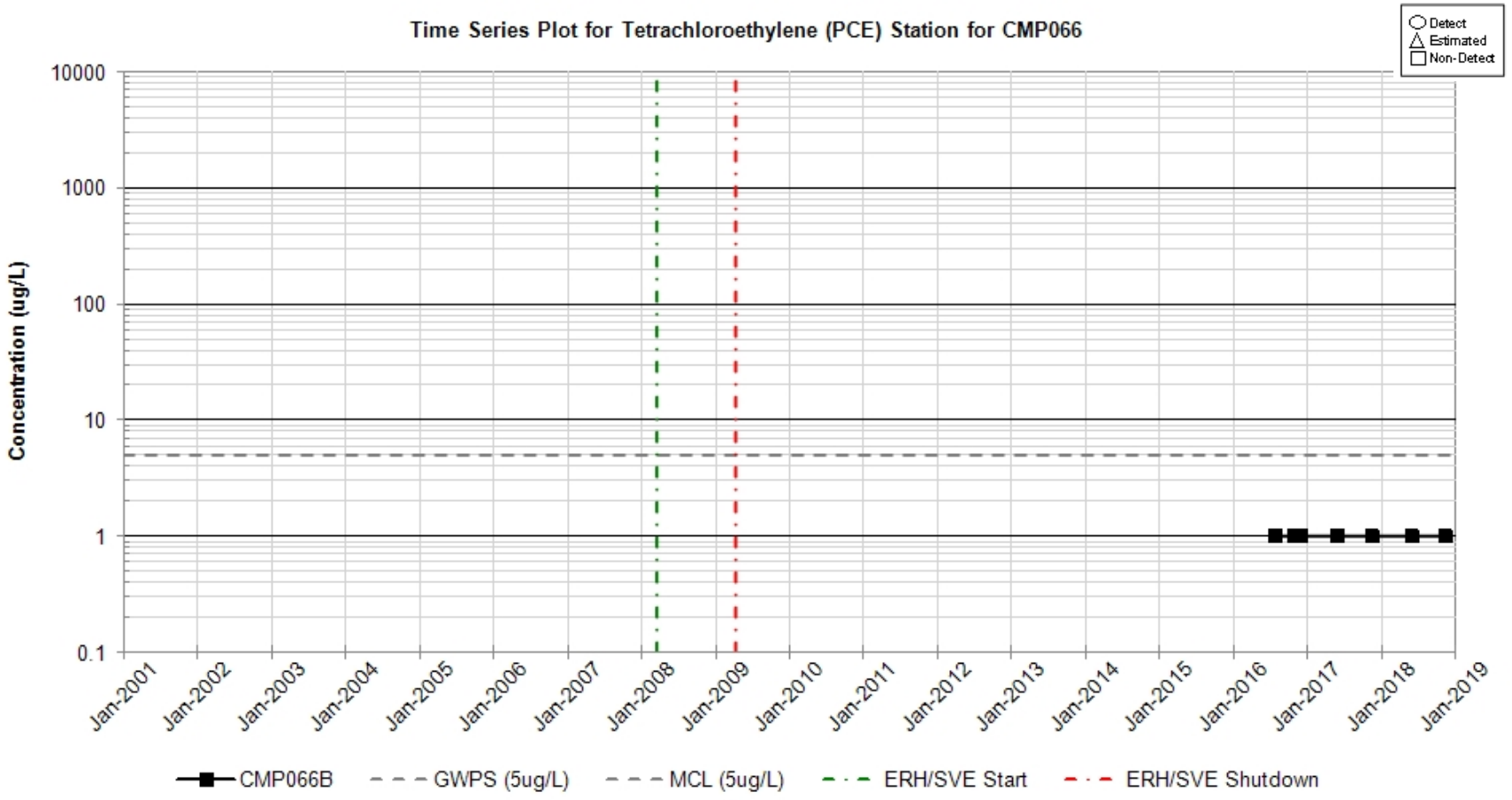

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP061
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP061B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

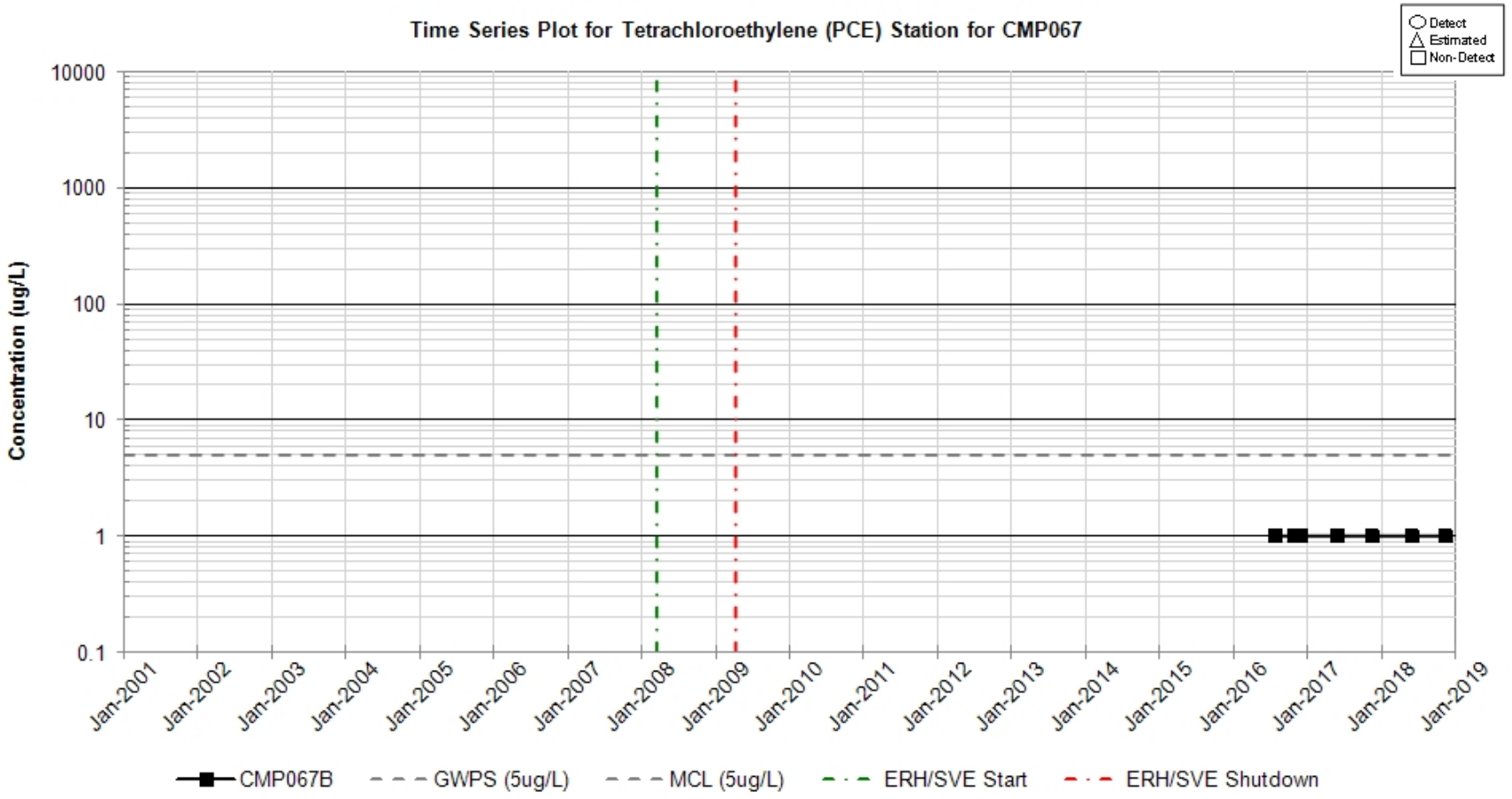

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP062
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP062B
CMP062C
CMP062D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

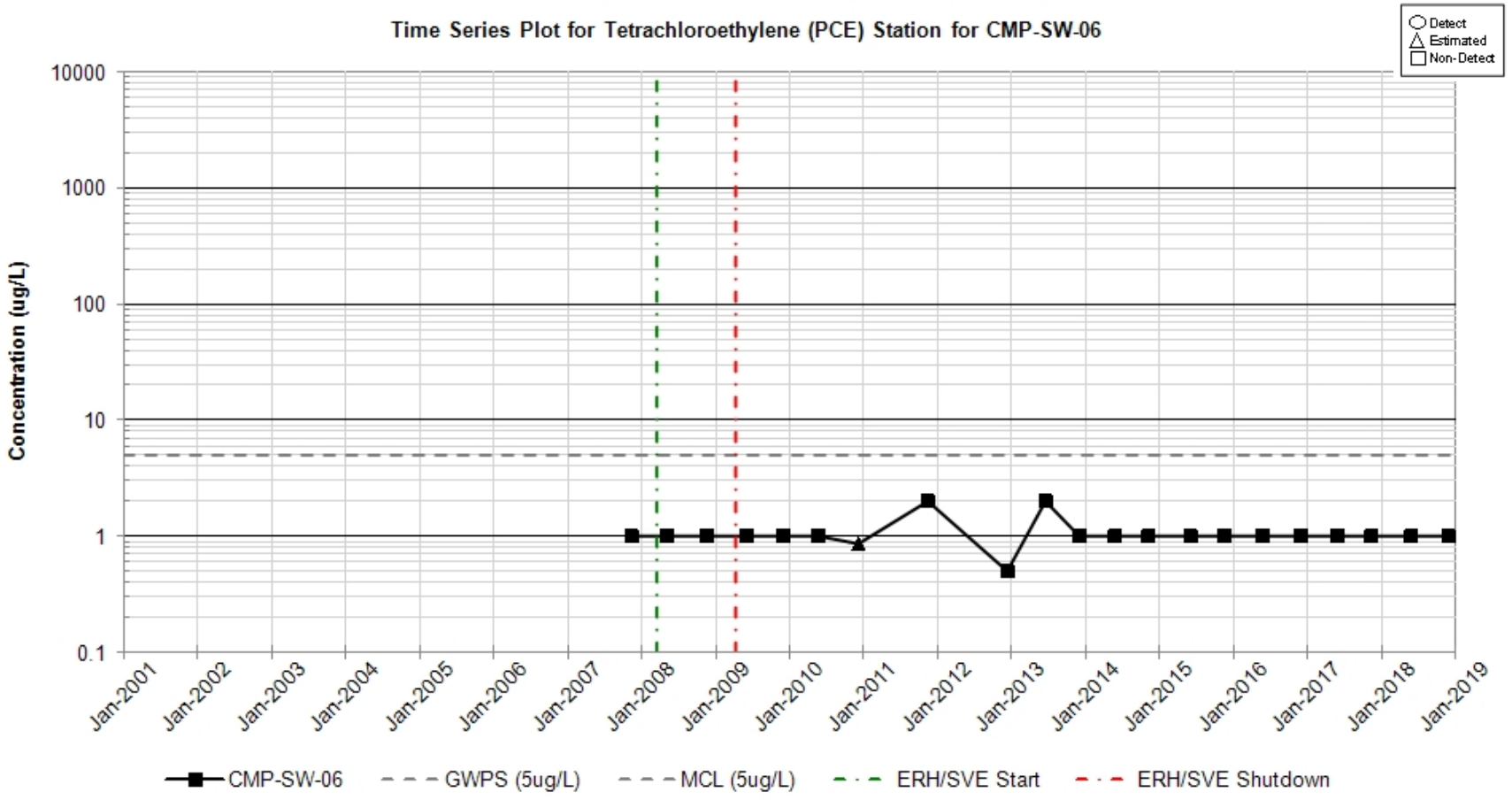

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP063
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP063B
CMP063C
CMP063D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

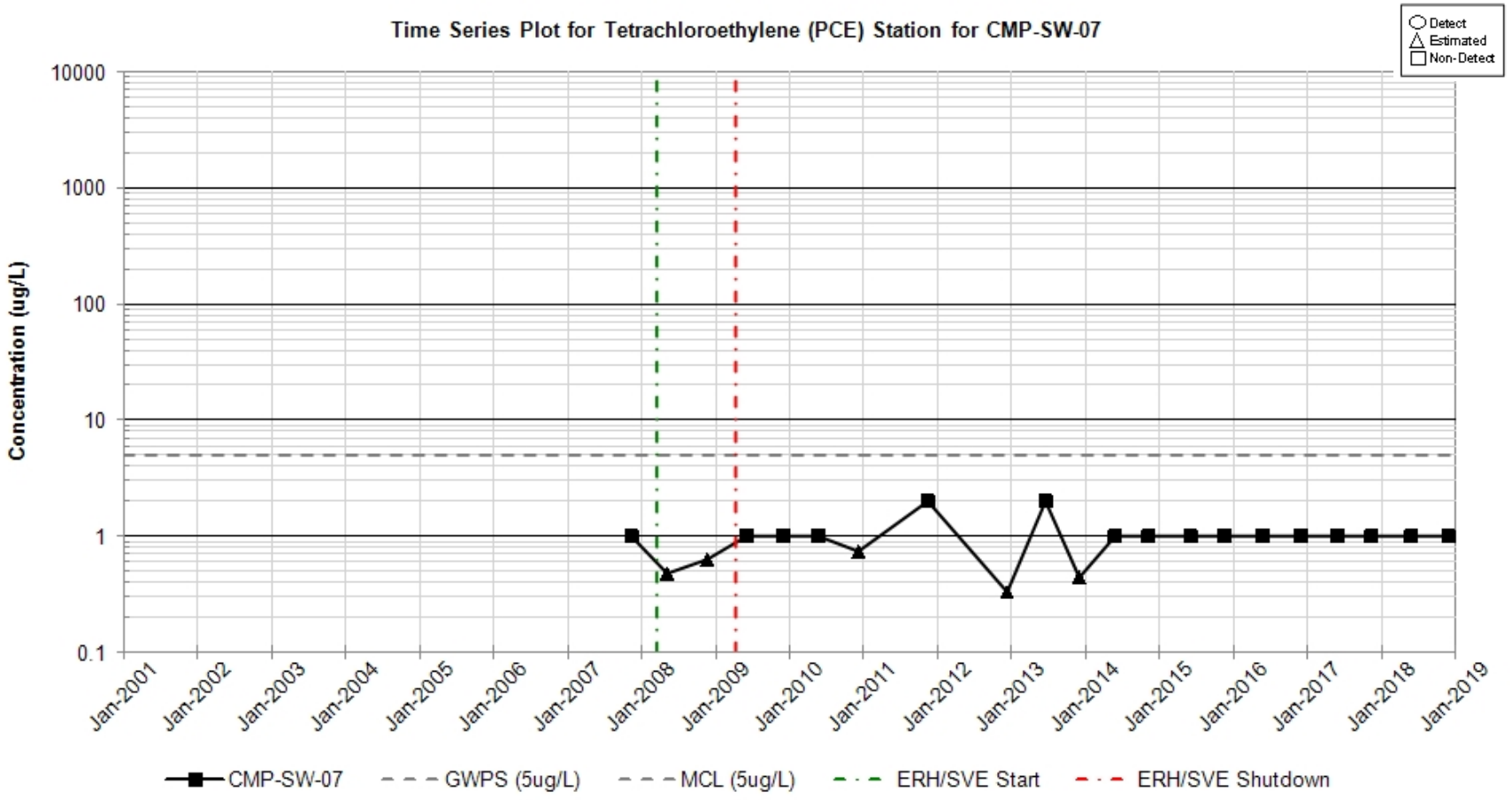

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP064
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP064B
CMP064BU
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

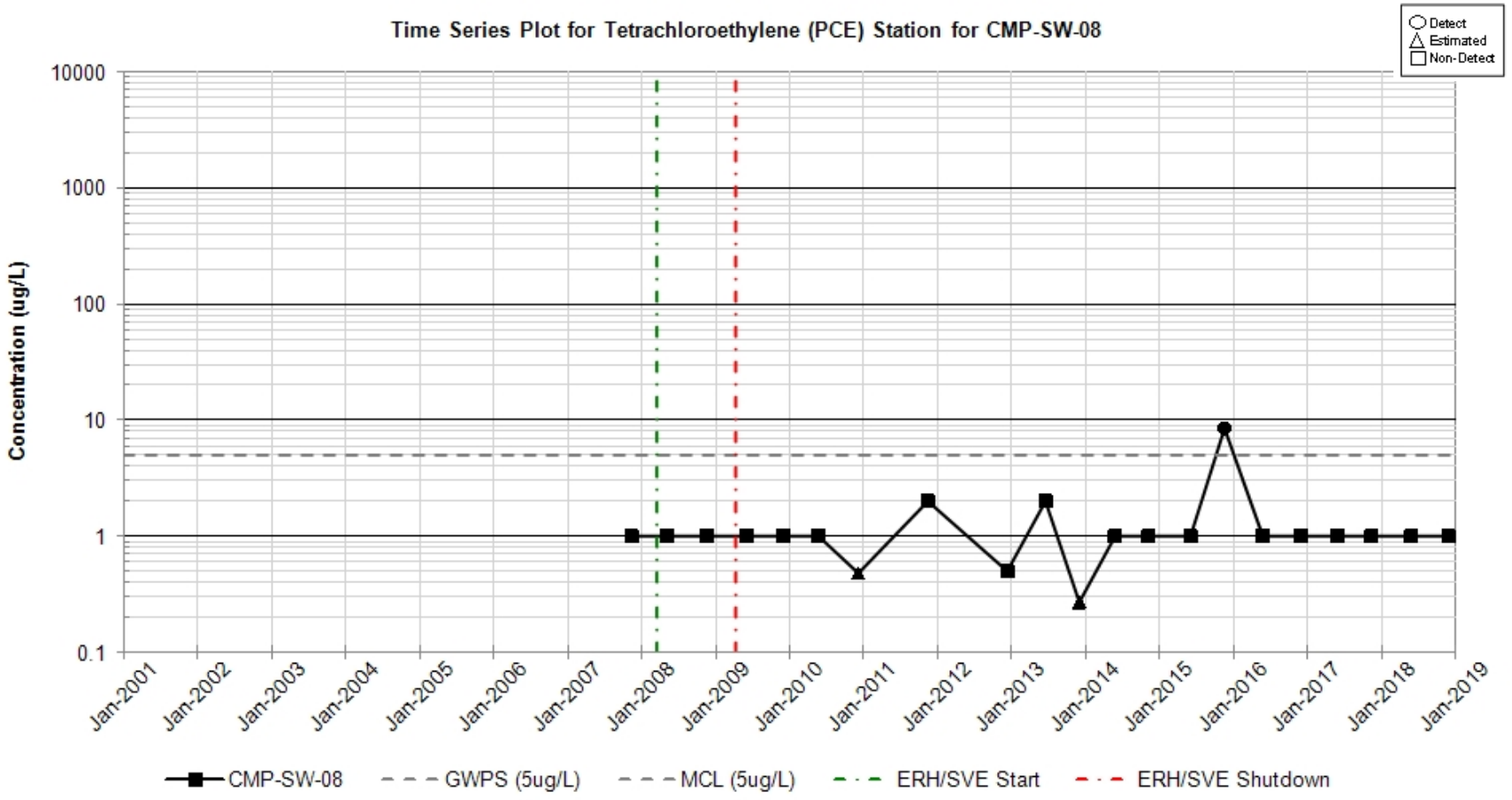

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP065
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP065B
CMP065BU
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

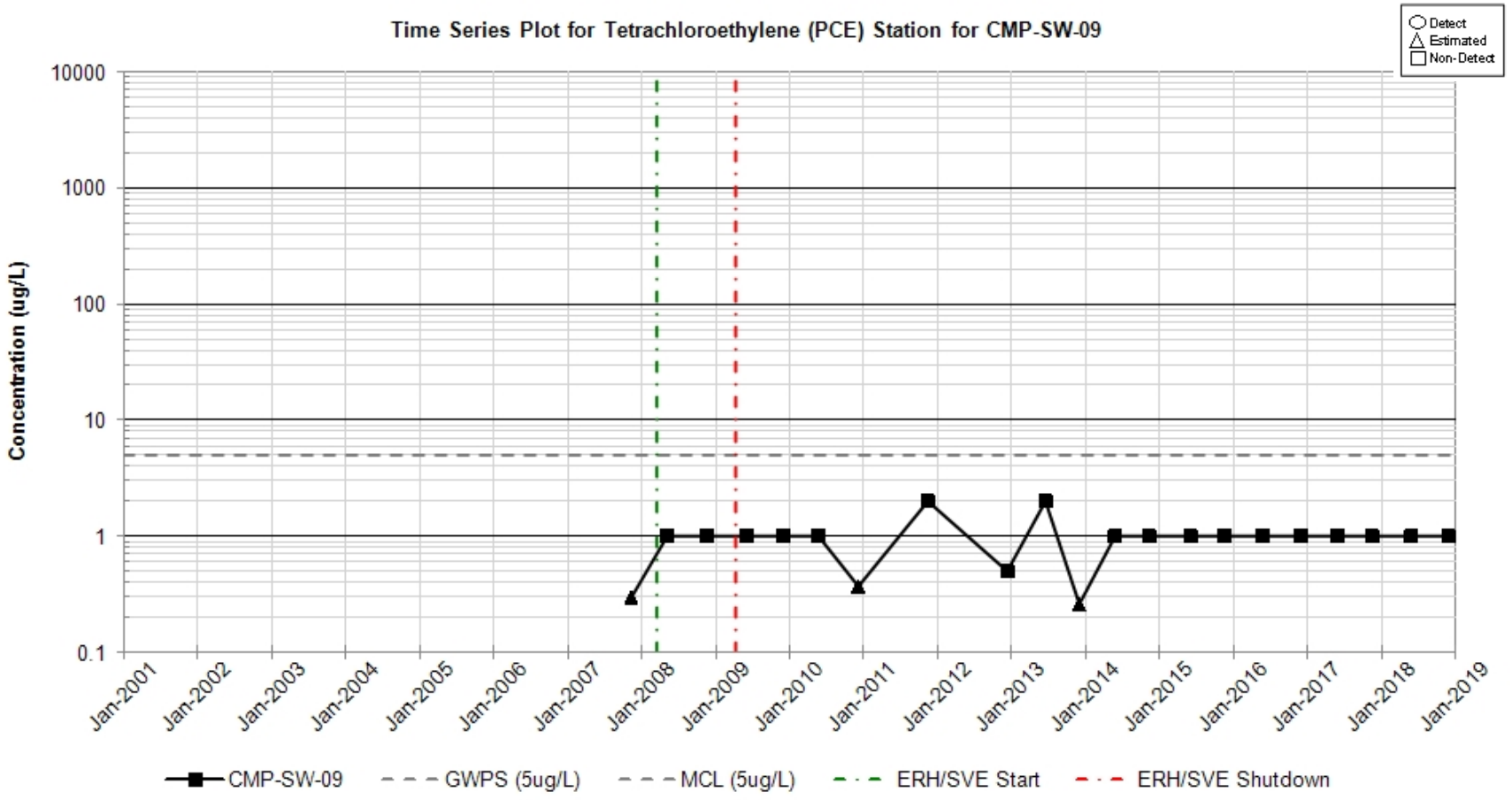

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP066
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP066B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

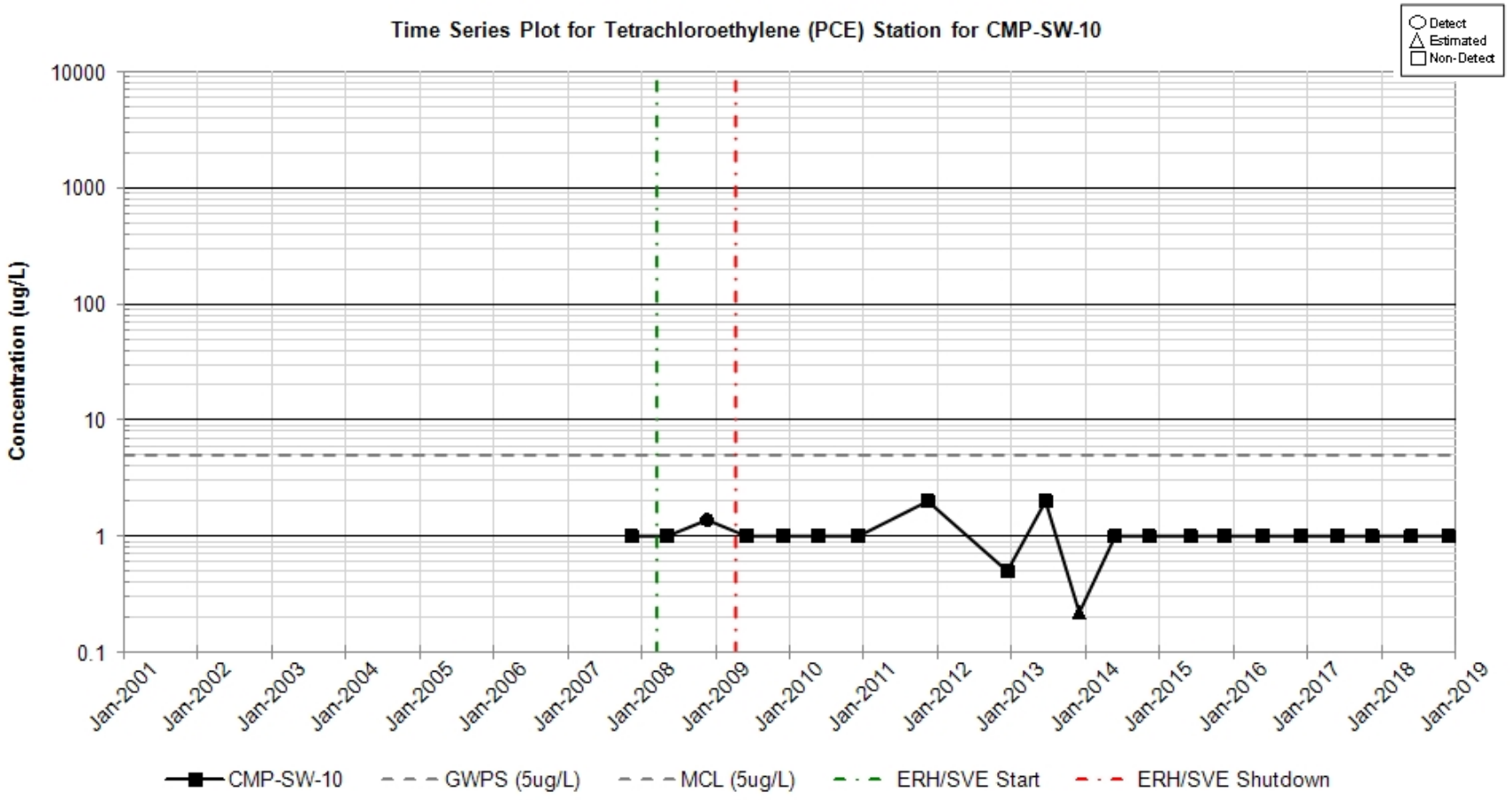

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP067
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP067B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

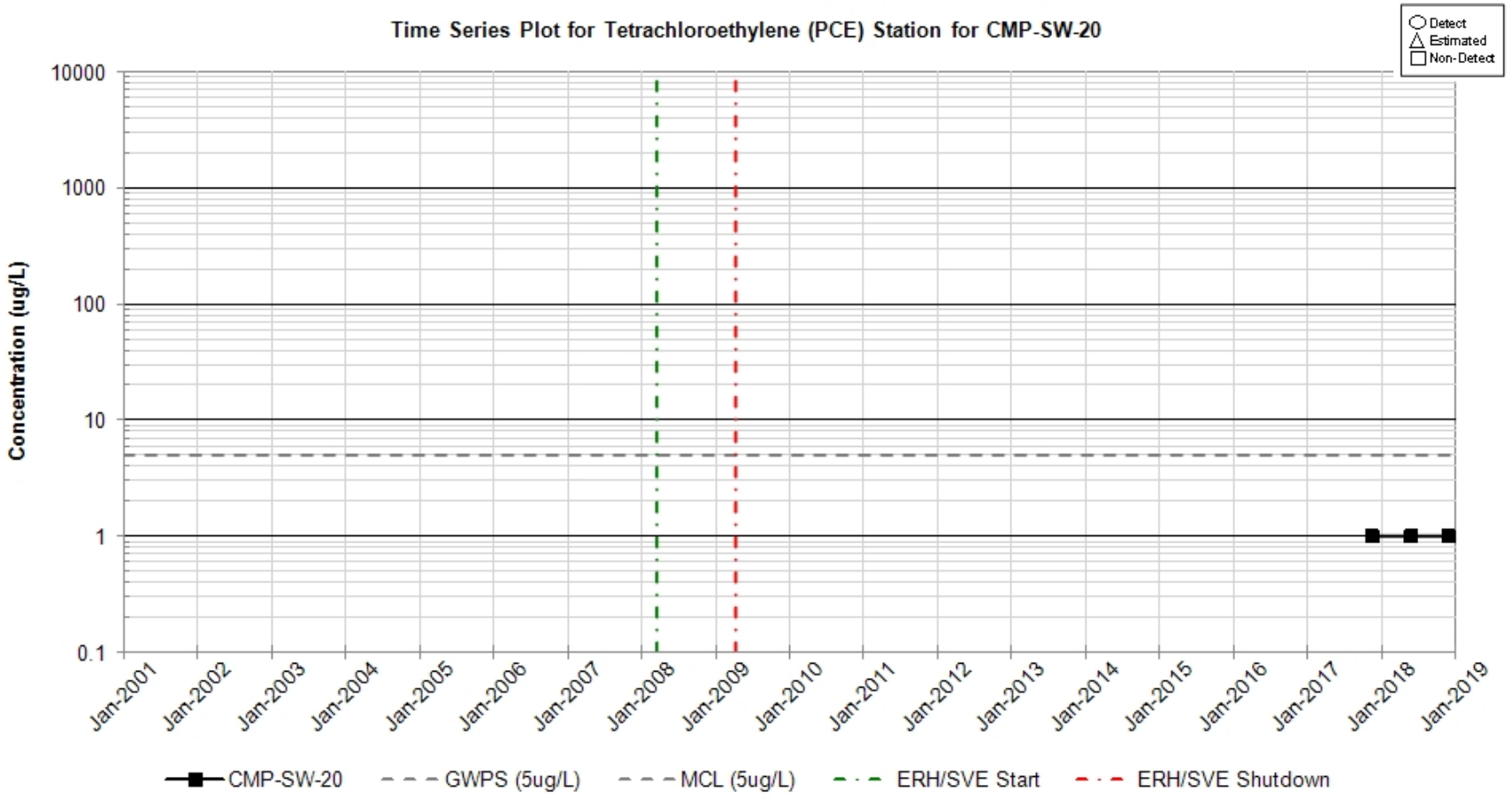

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-06
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-06
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

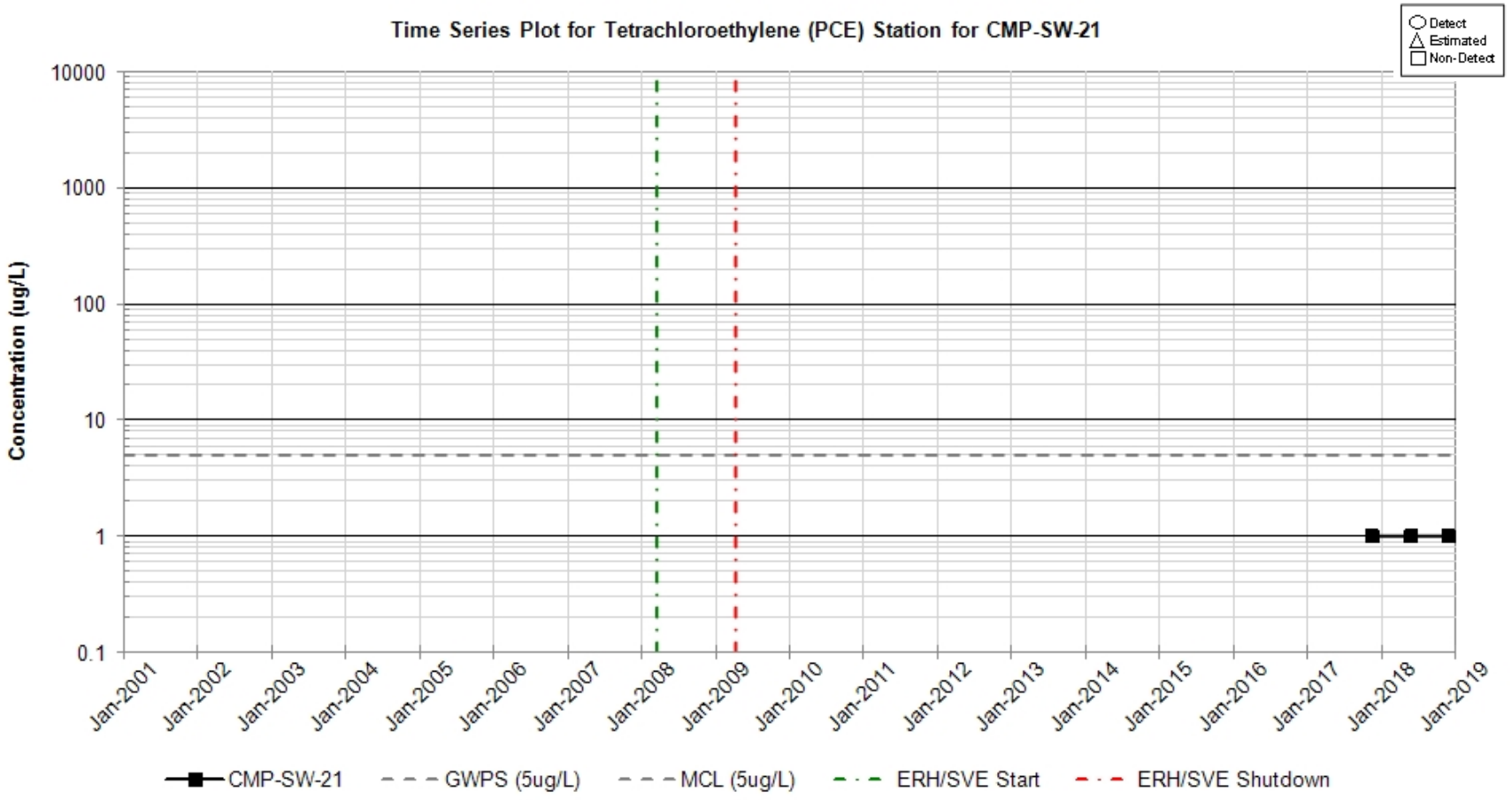

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-07
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-07
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

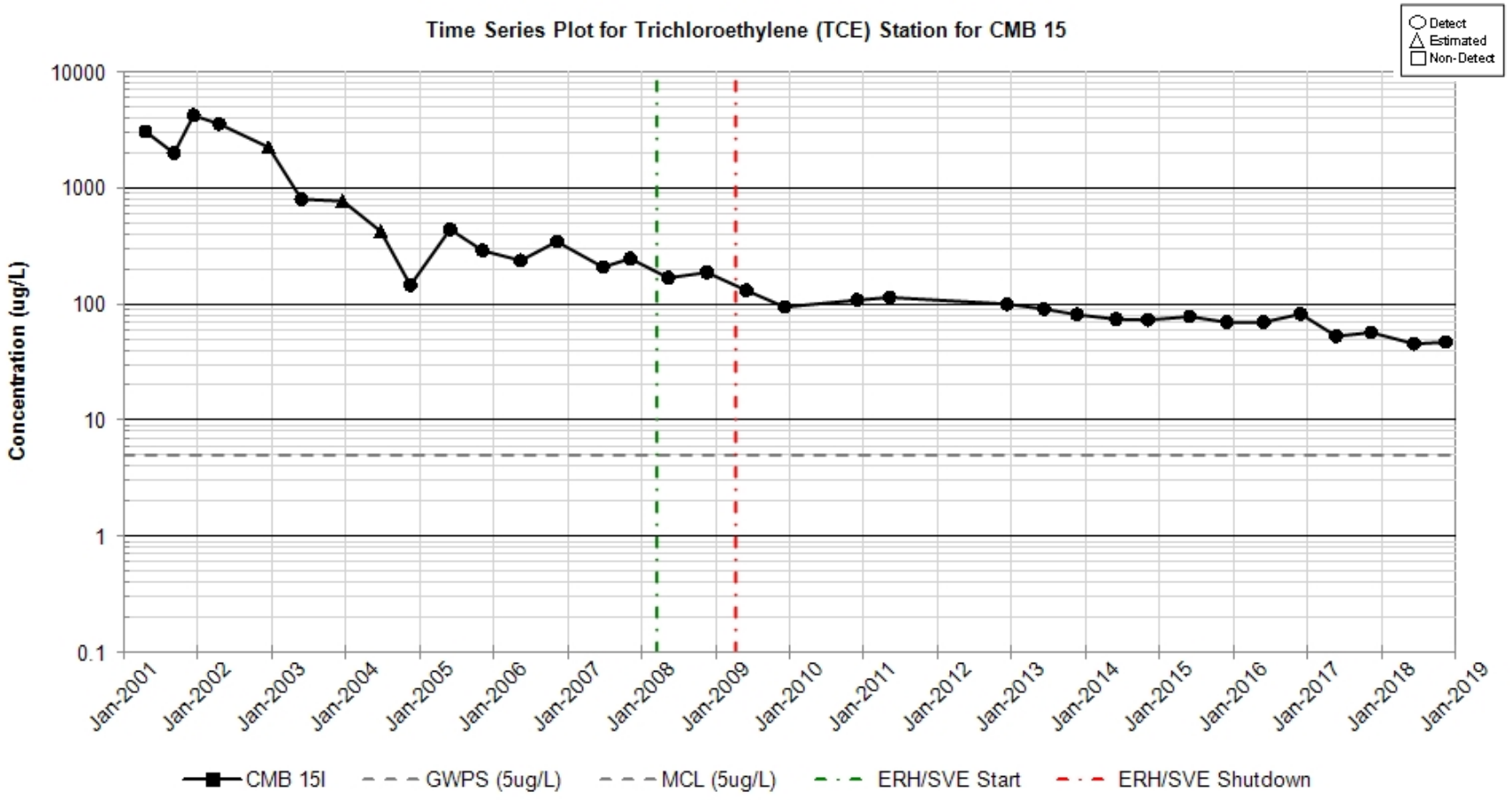

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-08
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-08
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

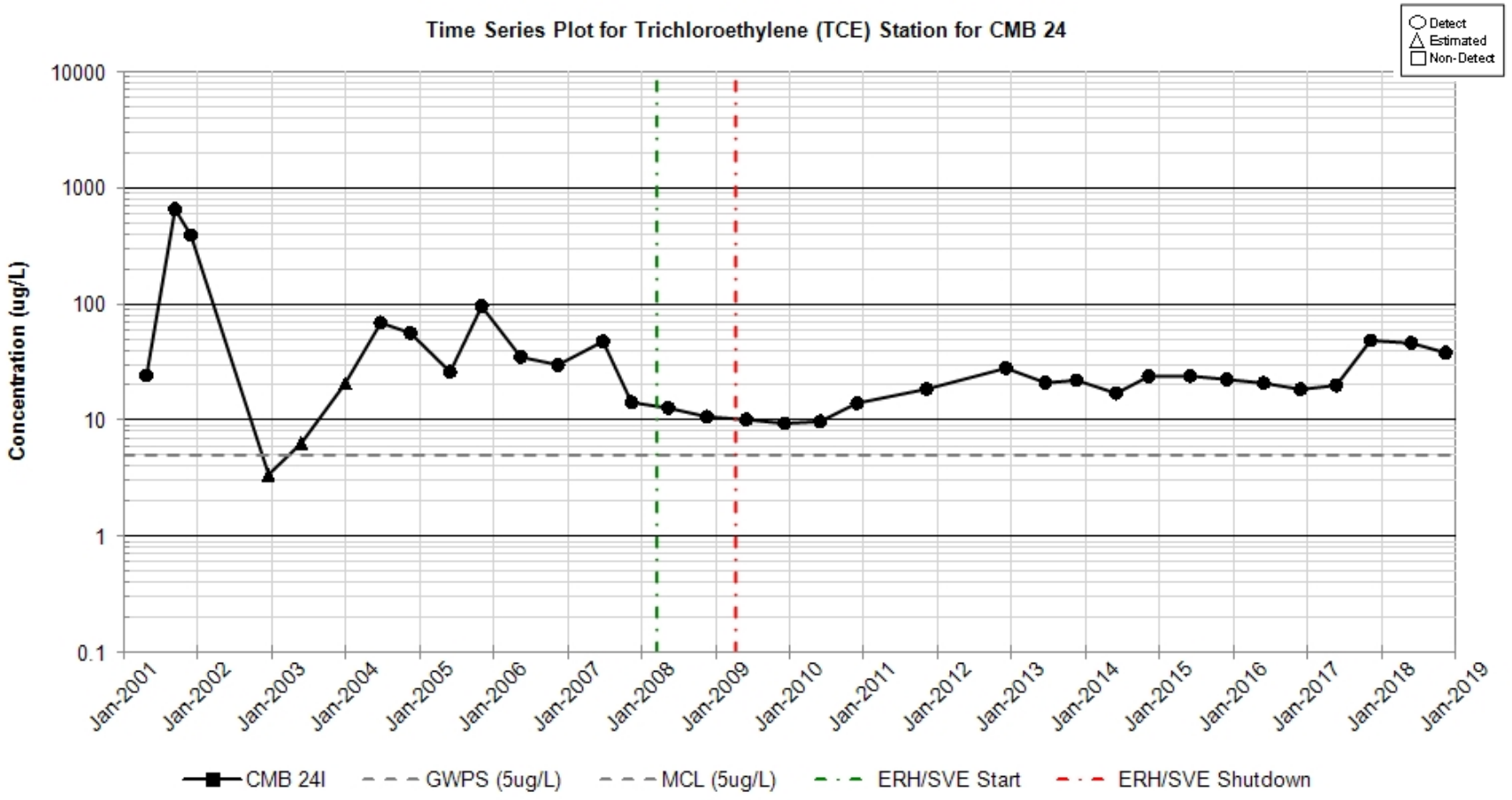

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-09
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-09
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

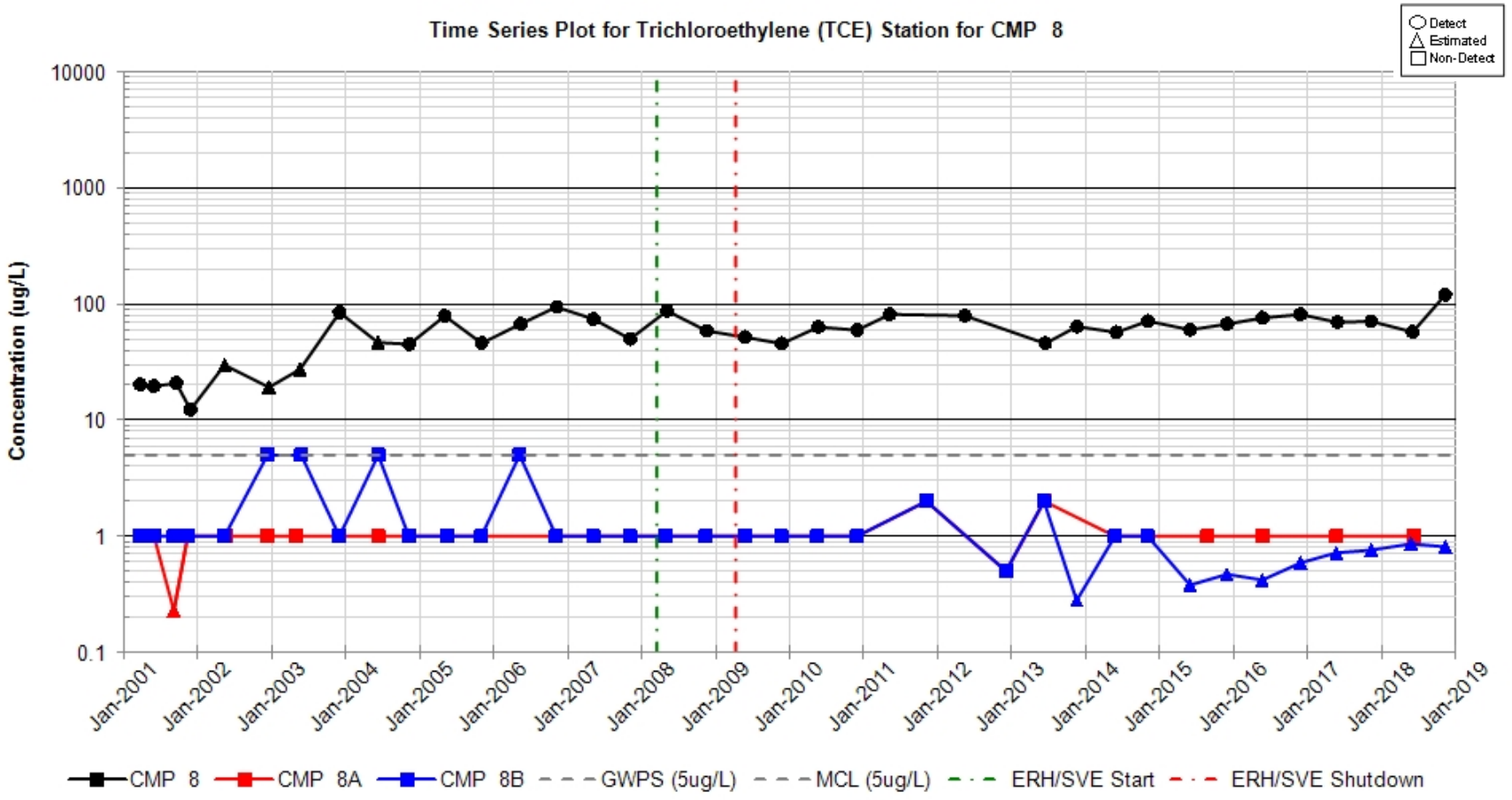

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-10
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-10
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

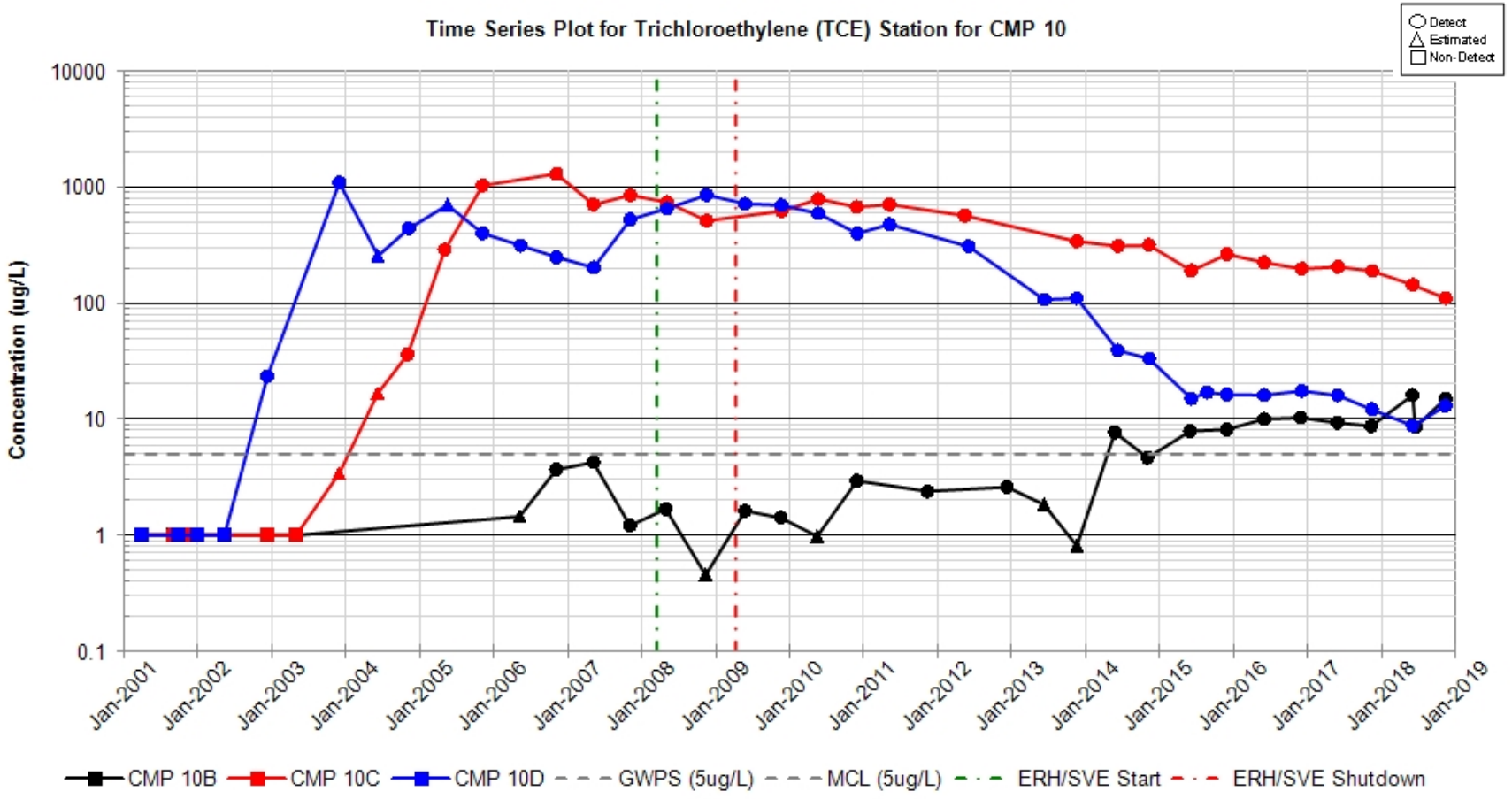

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-20
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-20
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

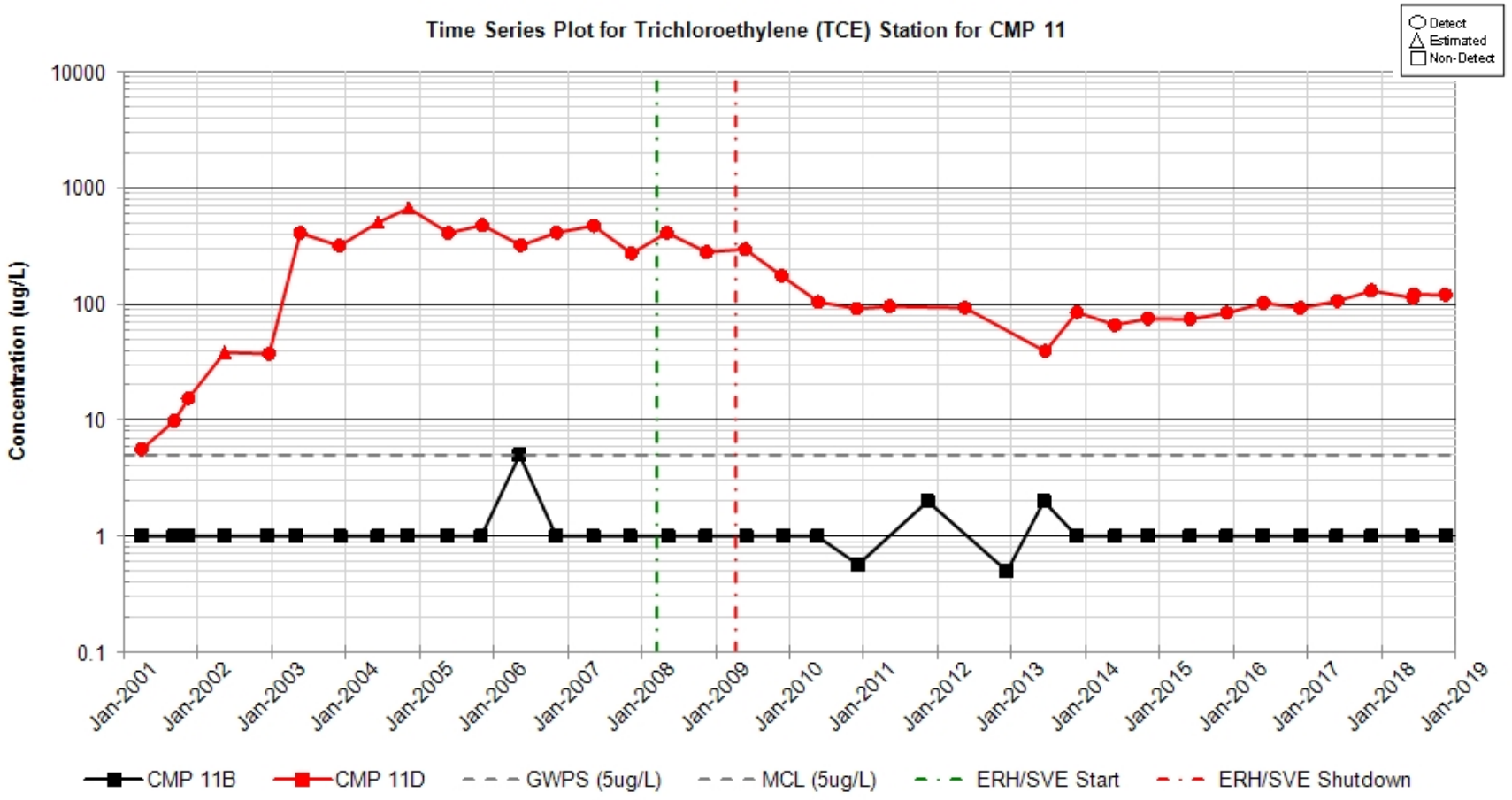

Time Series Plot for Tetrachloroethylene (PCE) Station for CMP-SW-21
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-21
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

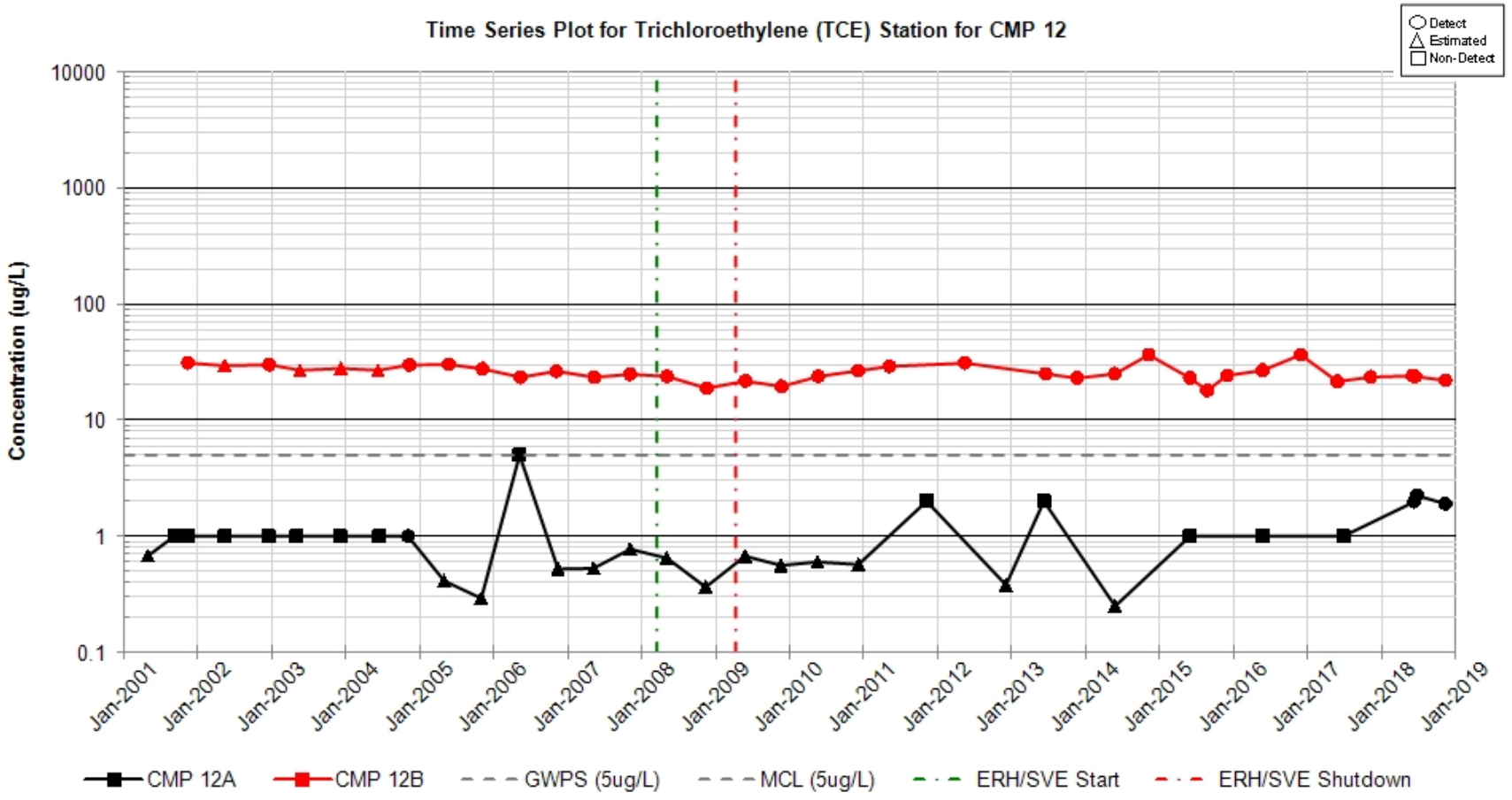

Time Series Plot for Trichloroethylene (TCE) Station for CMB 15
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 15I
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

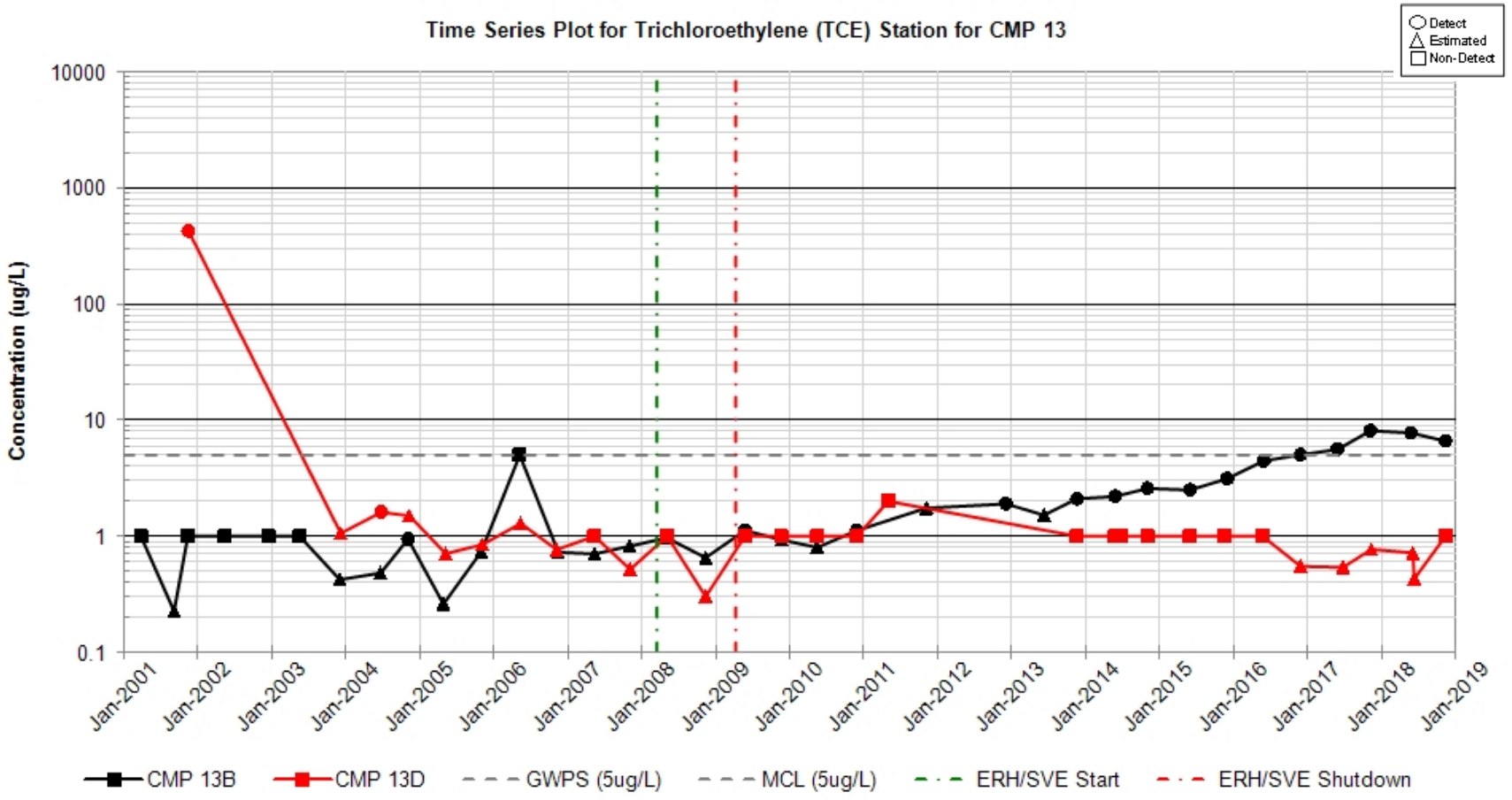

Time Series Plot for Trichloroethylene (TCE) Station for CMB 24
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMB 24I
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

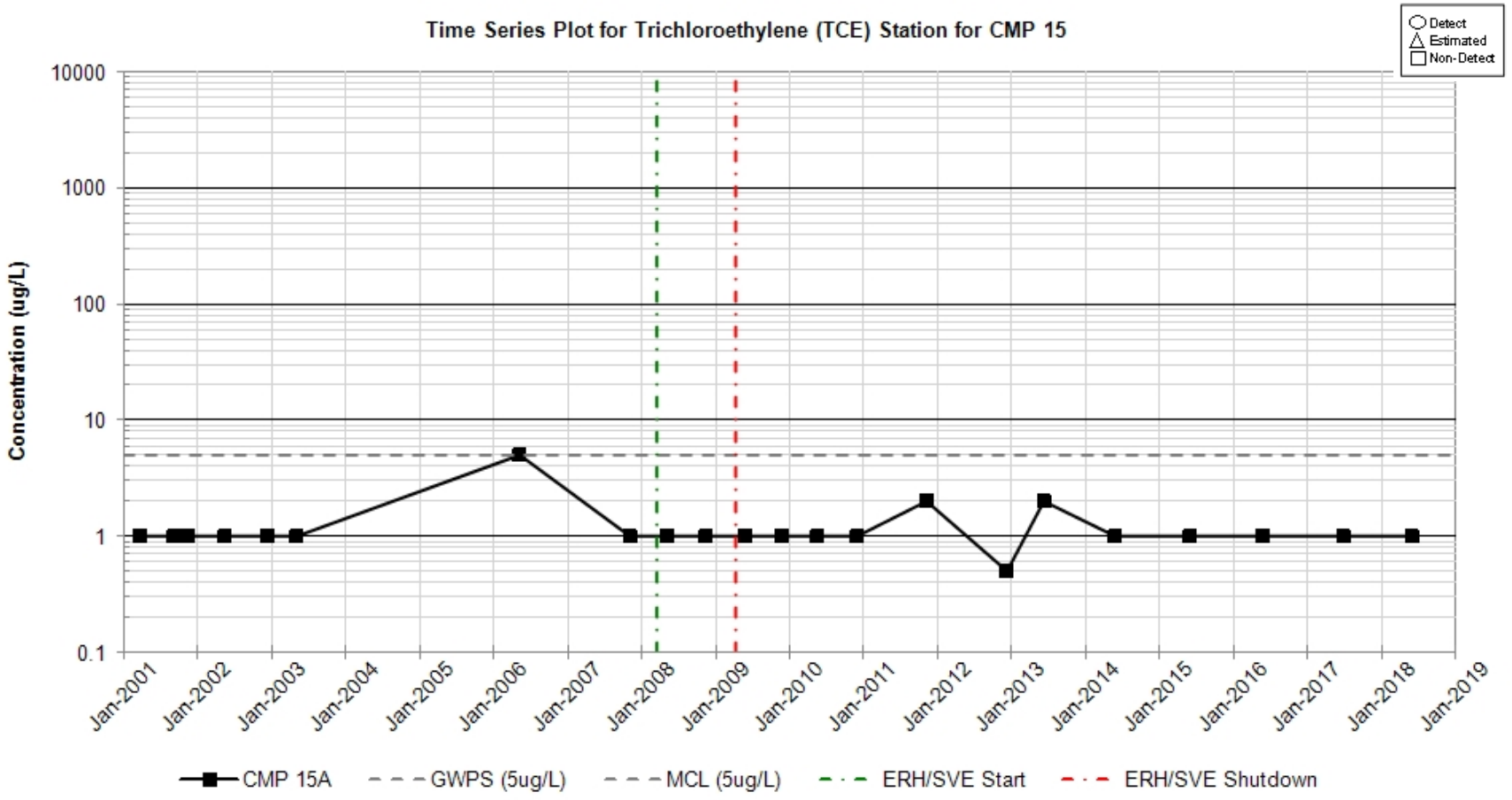

Time Series Plot for Trichloroethylene (TCE) Station for CMP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 8
CMP 8A
CMP 8B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

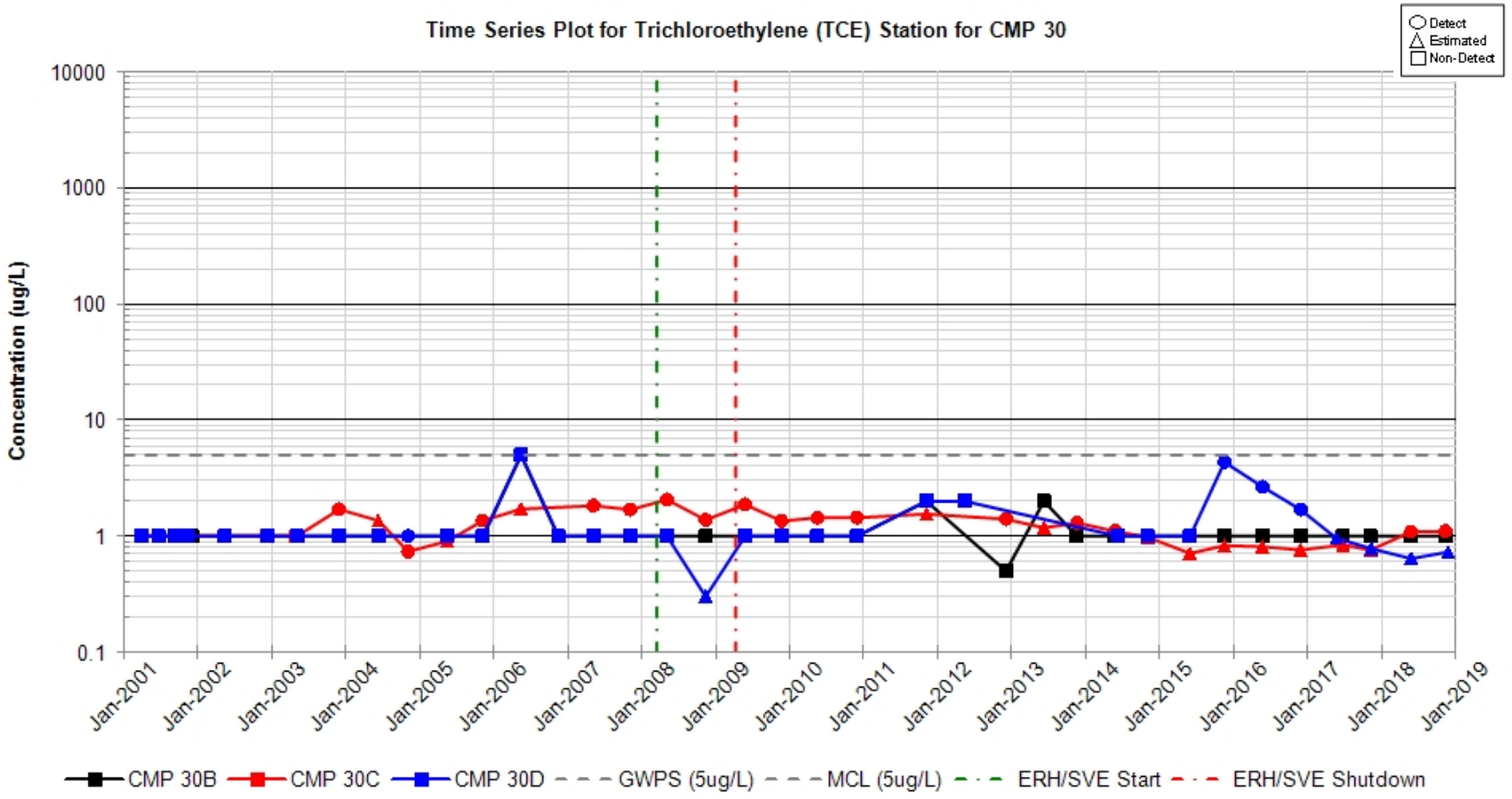

Time Series Plot for Trichloroethylene (TCE) Station for CMP 10
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 10B
CMP 10C
CMP 10D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

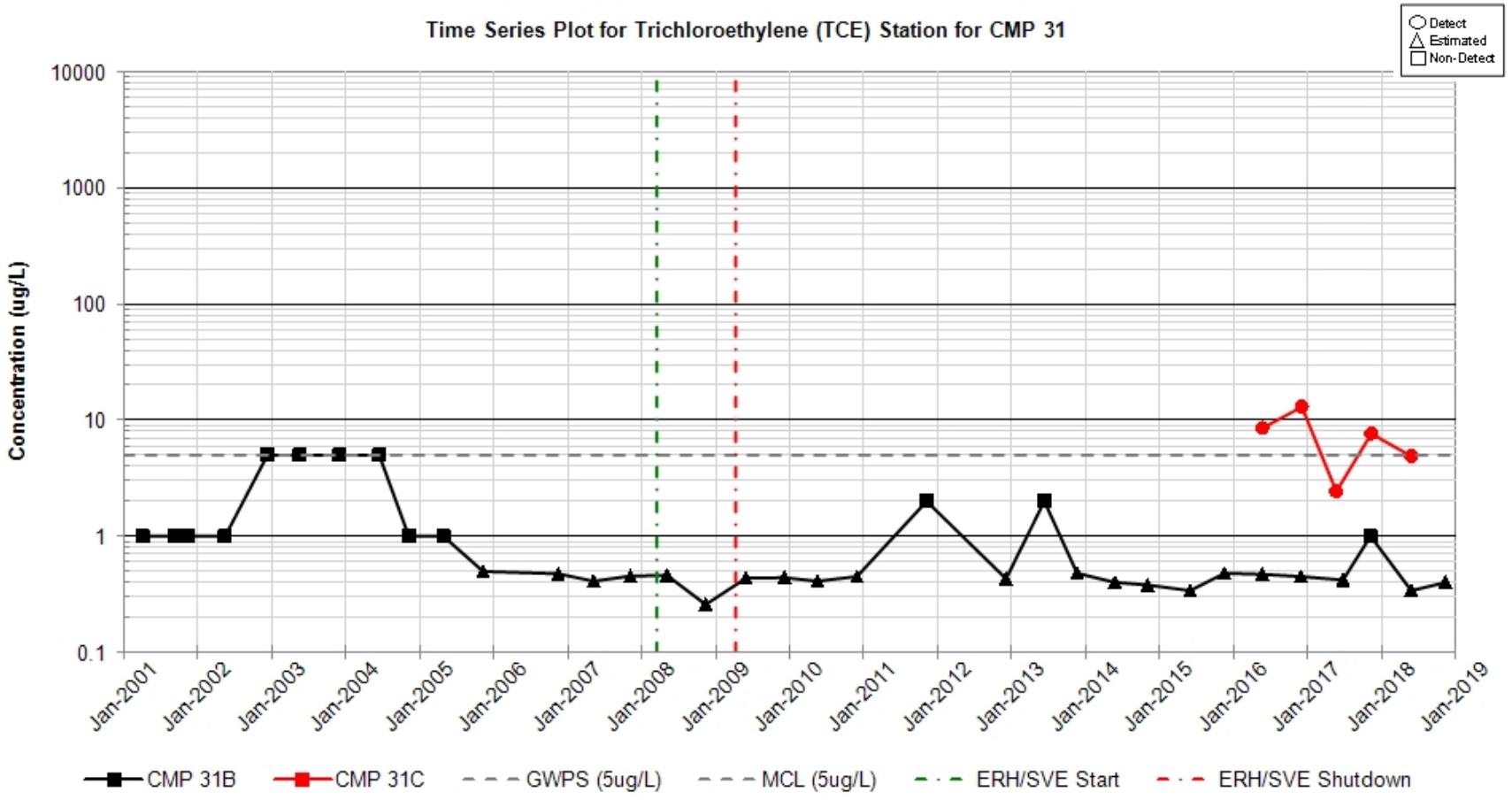

Time Series Plot for Trichloroethylene (TCE) Station for CMP 11
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 11B
CMP 11D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

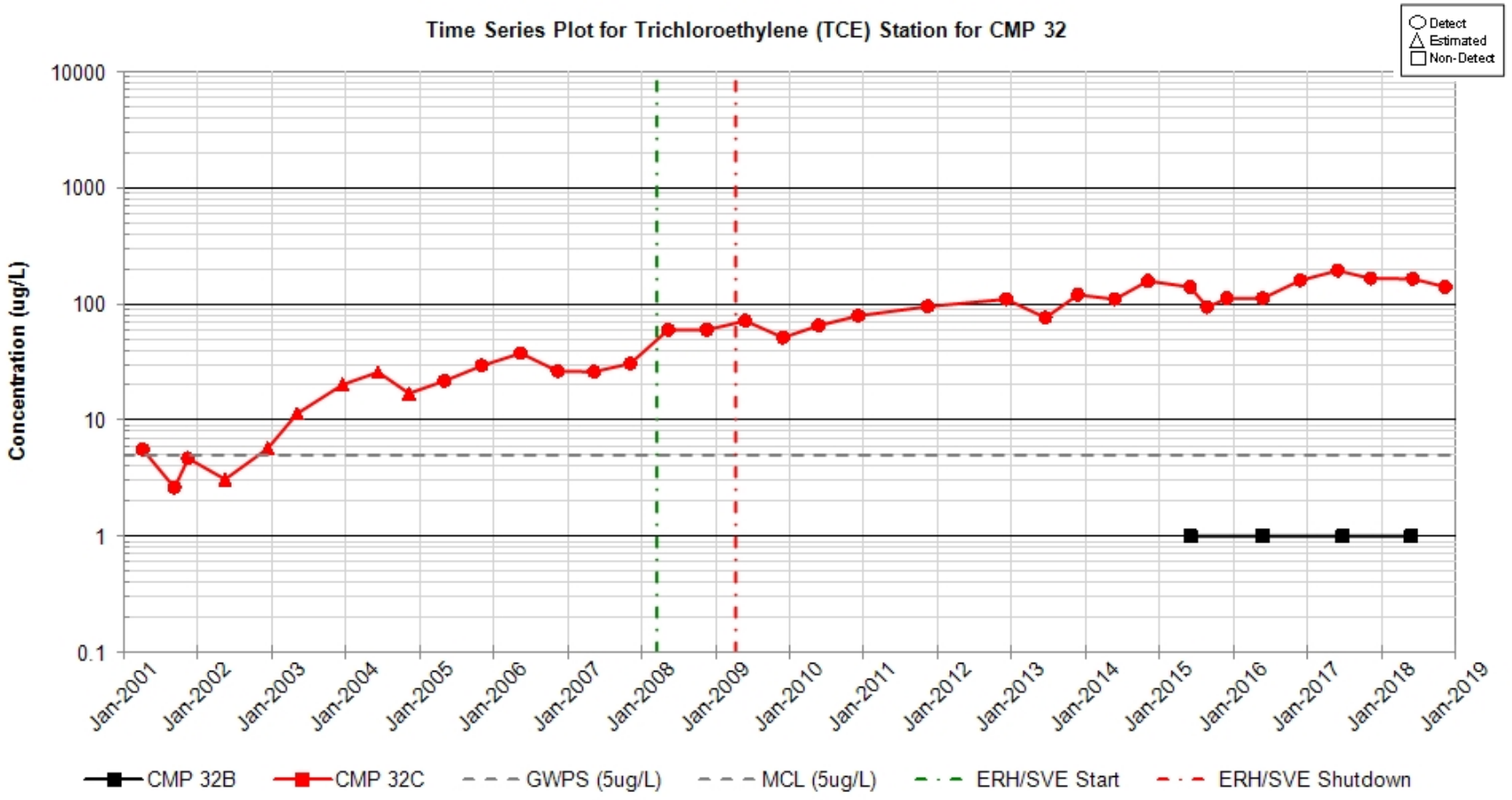

Time Series Plot for Trichloroethylene (TCE) Station for CMP 12
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 12A
CMP 12B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

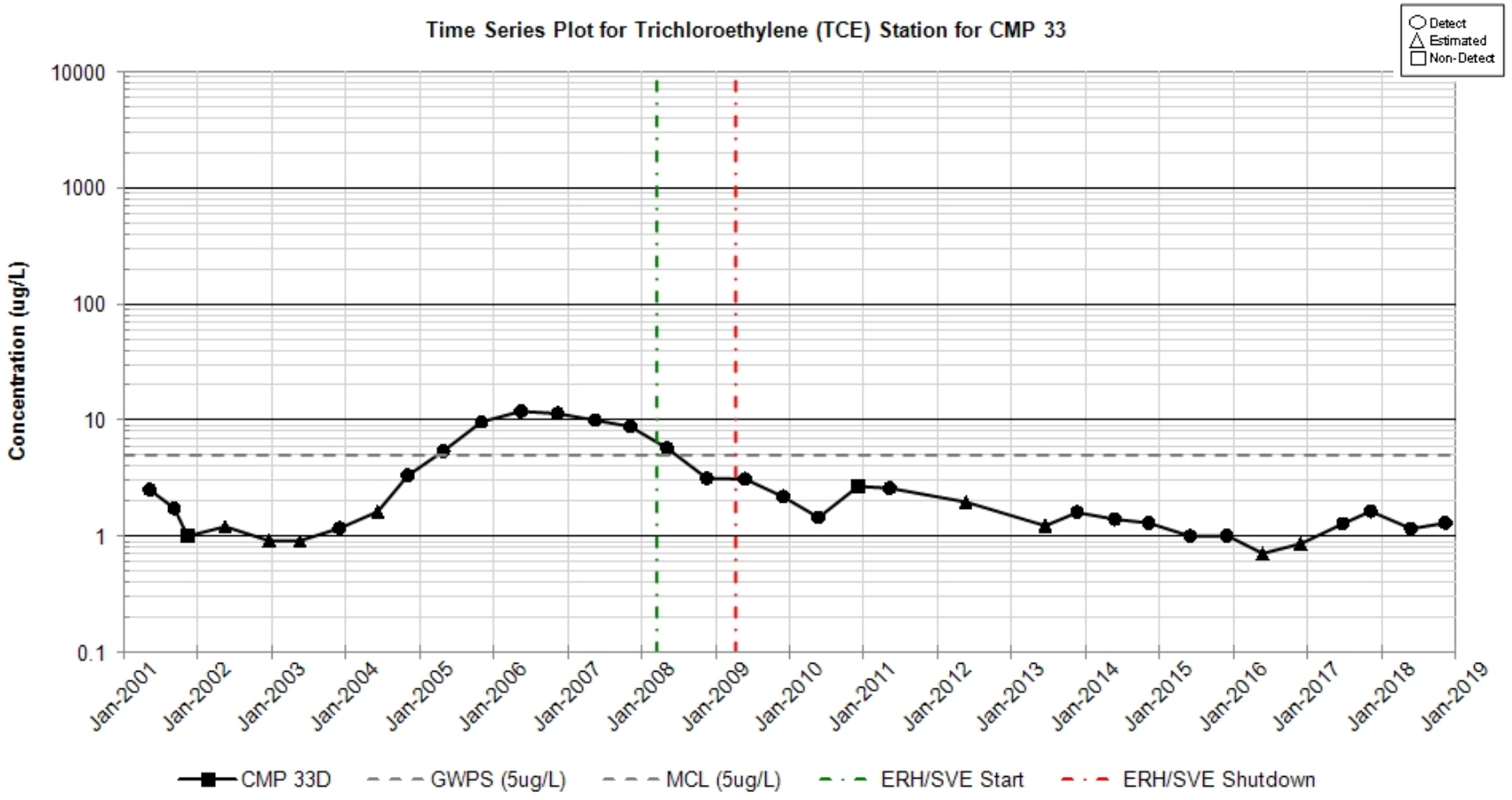

Time Series Plot for Trichloroethylene (TCE) Station for CMP 13
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 13B
CMP 13D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

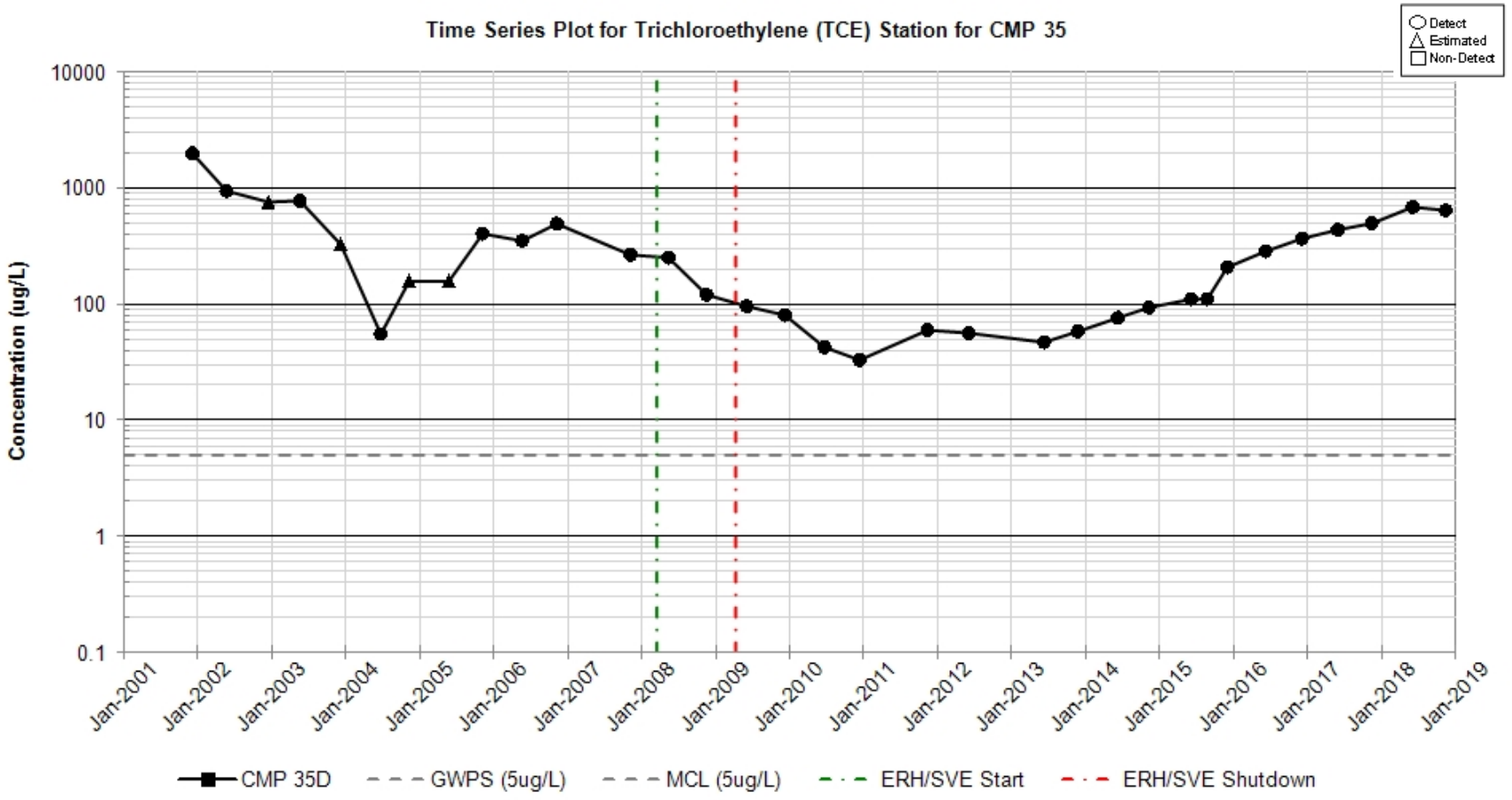

Time Series Plot for Trichloroethylene (TCE) Station for CMP 15
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 15A
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

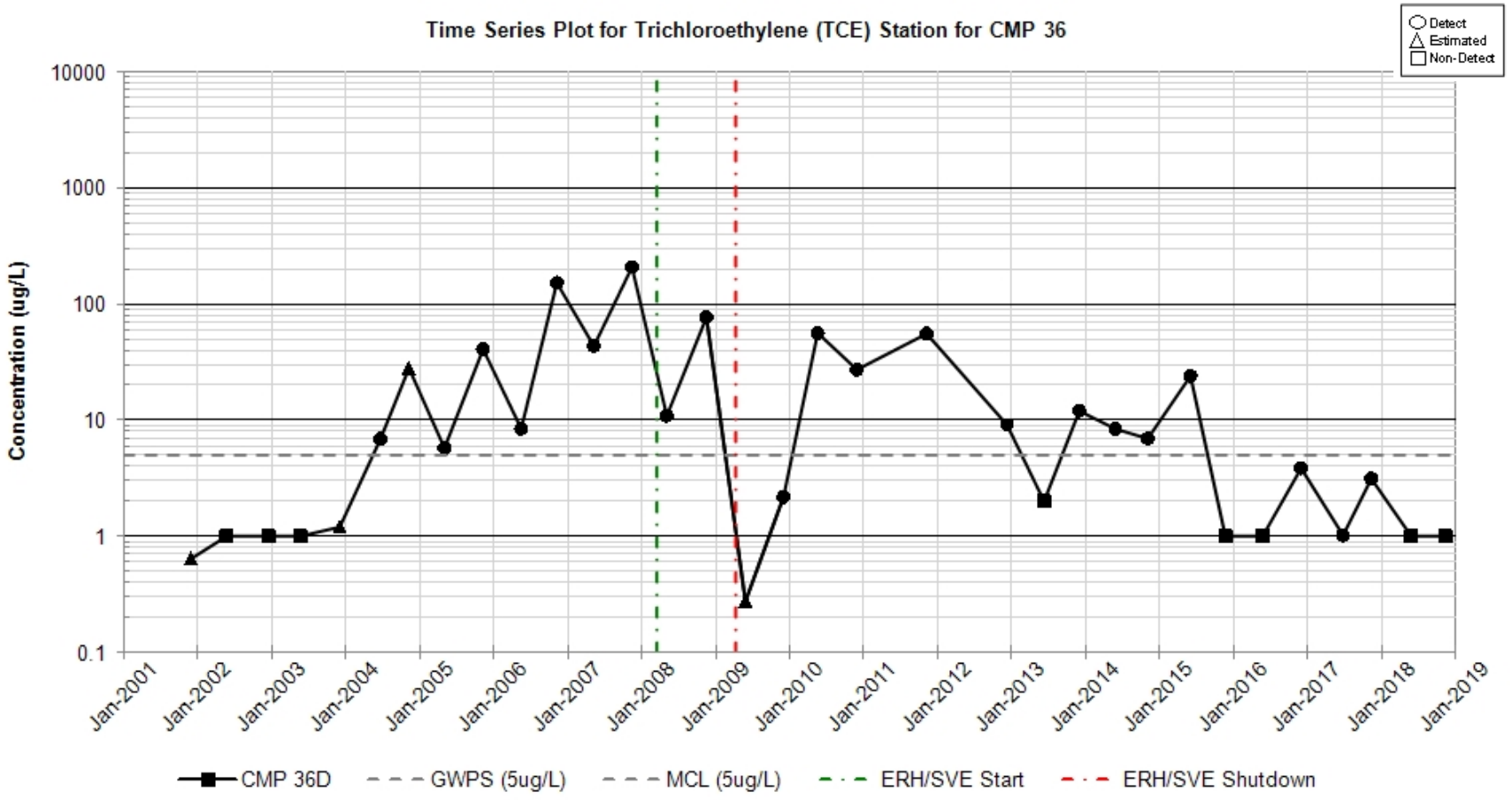

Time Series Plot for Trichloroethylene (TCE) Station for CMP 30
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 30B
CMP 30C
CMP 30D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

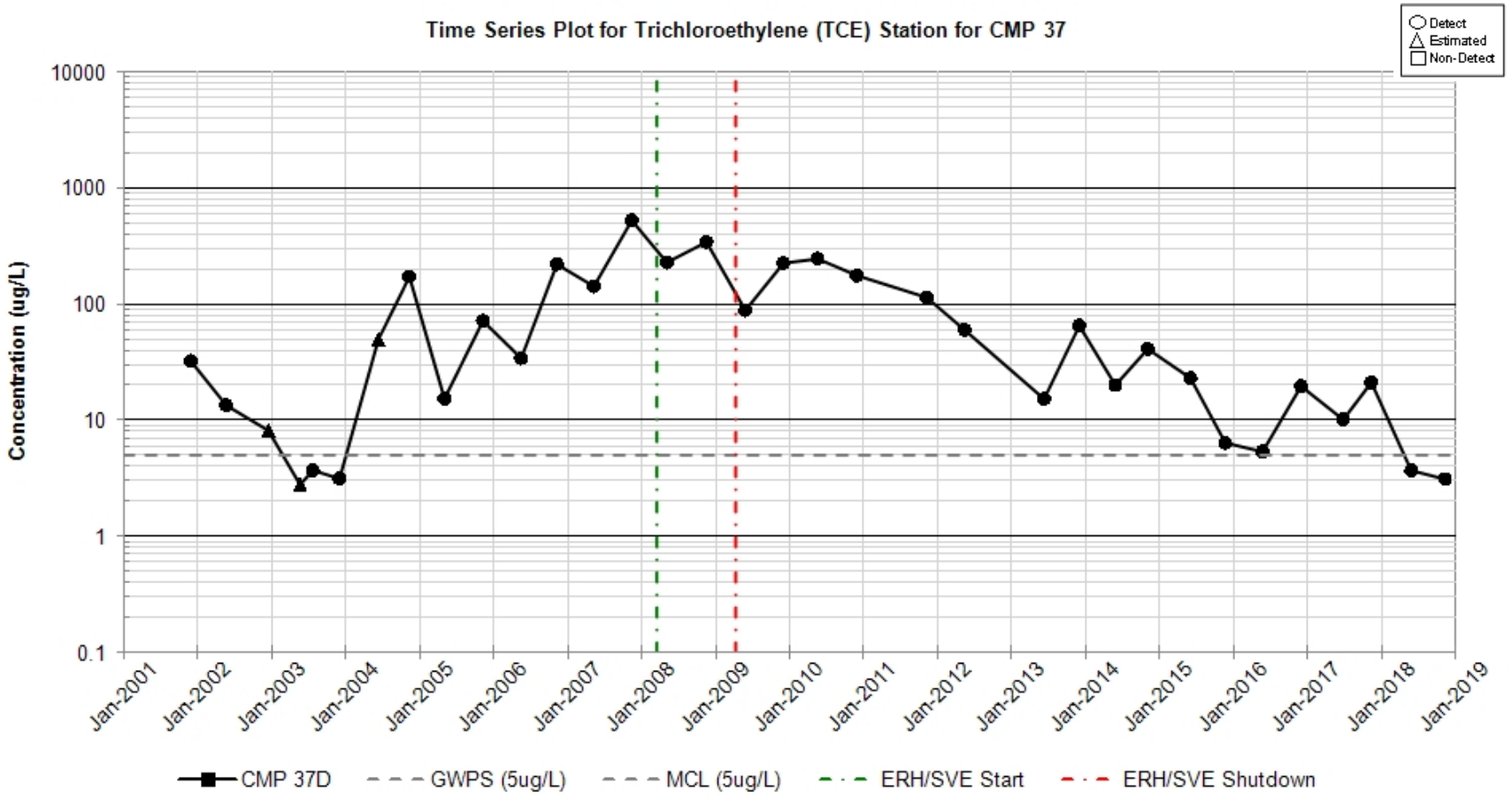

Time Series Plot for Trichloroethylene (TCE) Station for CMP 31
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 31B
CMP 31C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

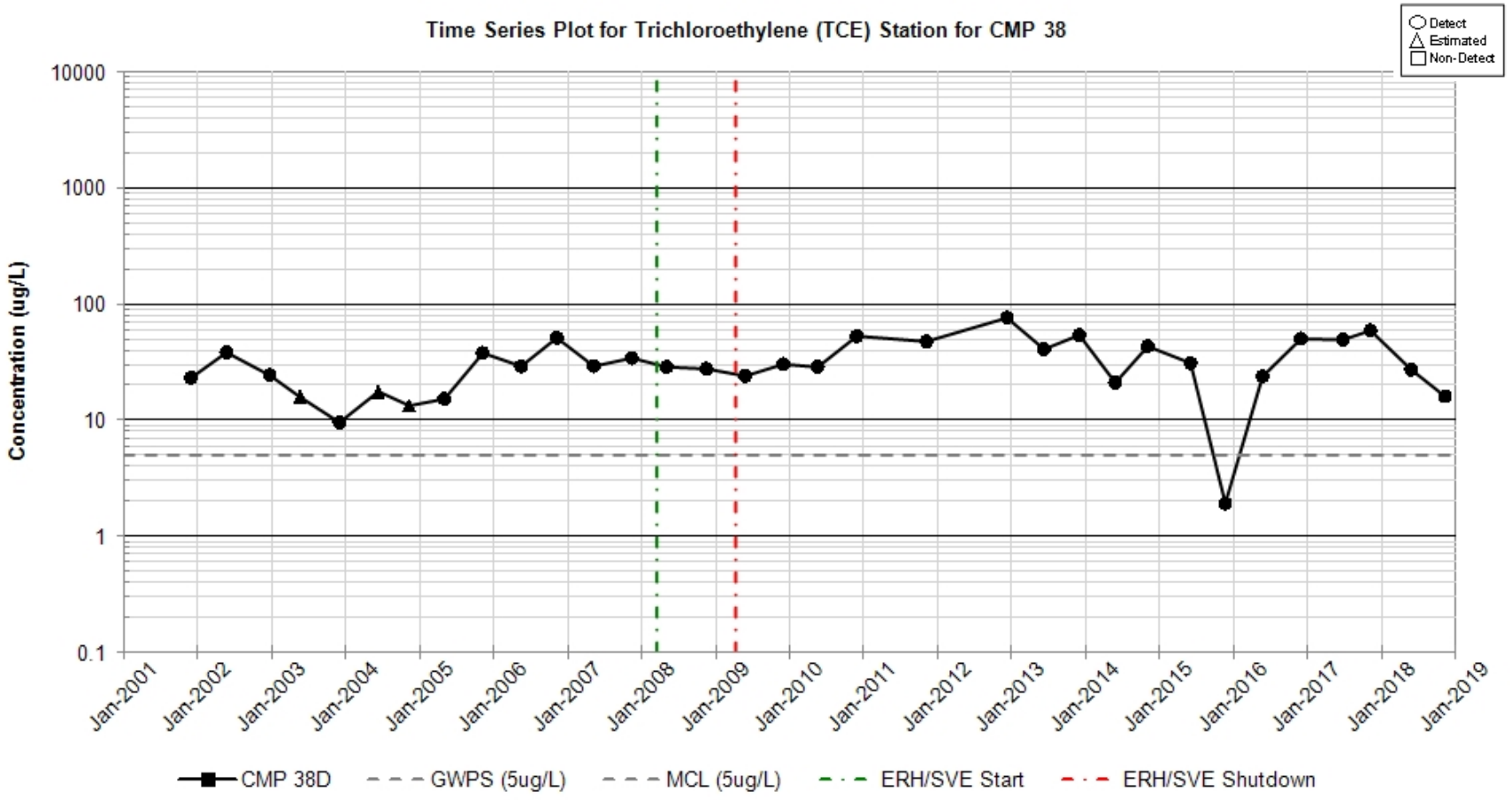

Time Series Plot for Trichloroethylene (TCE) Station for CMP 32
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 32B
CMP 32C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

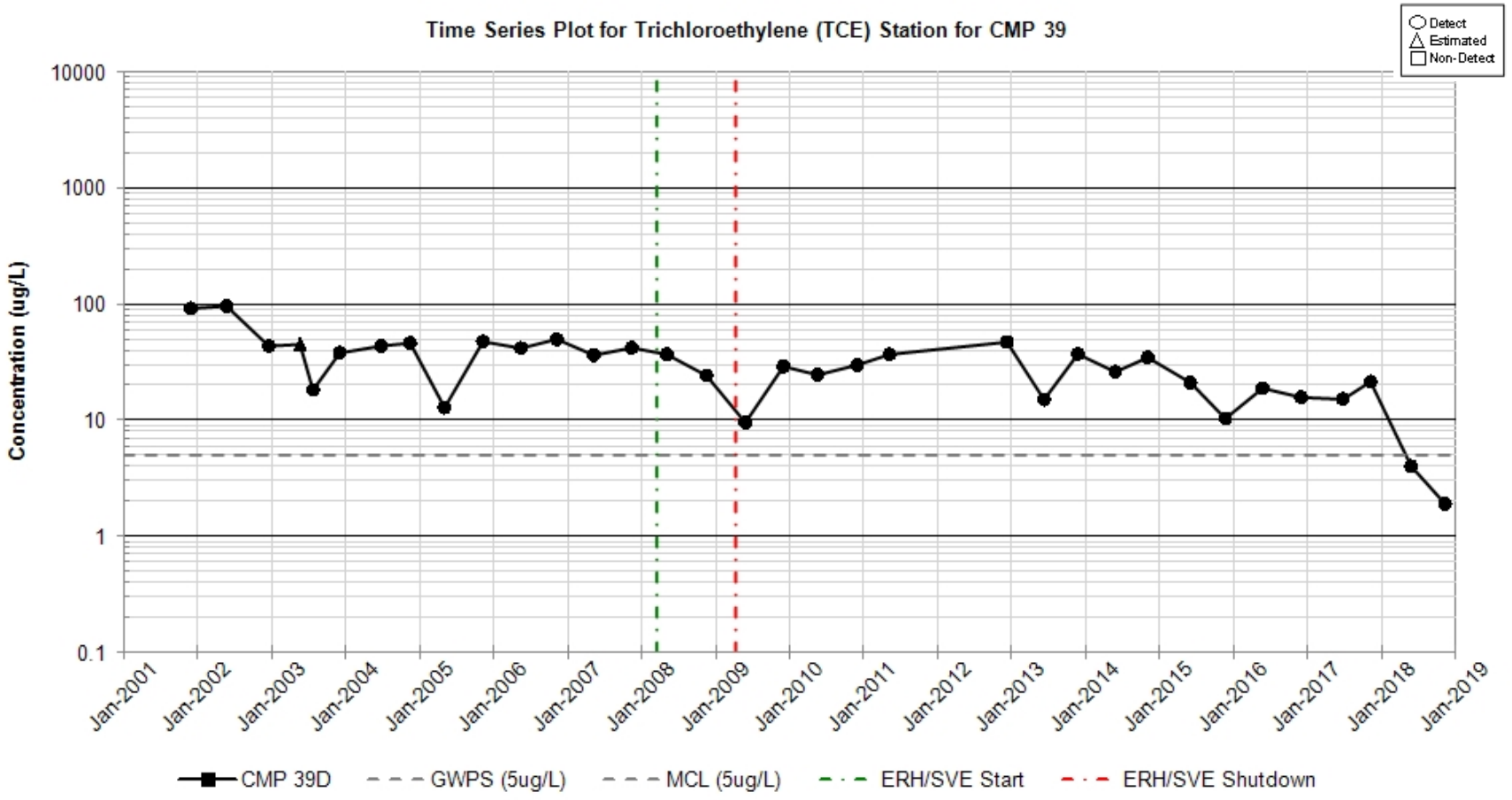

Time Series Plot for Trichloroethylene (TCE) Station for CMP 33
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 33D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

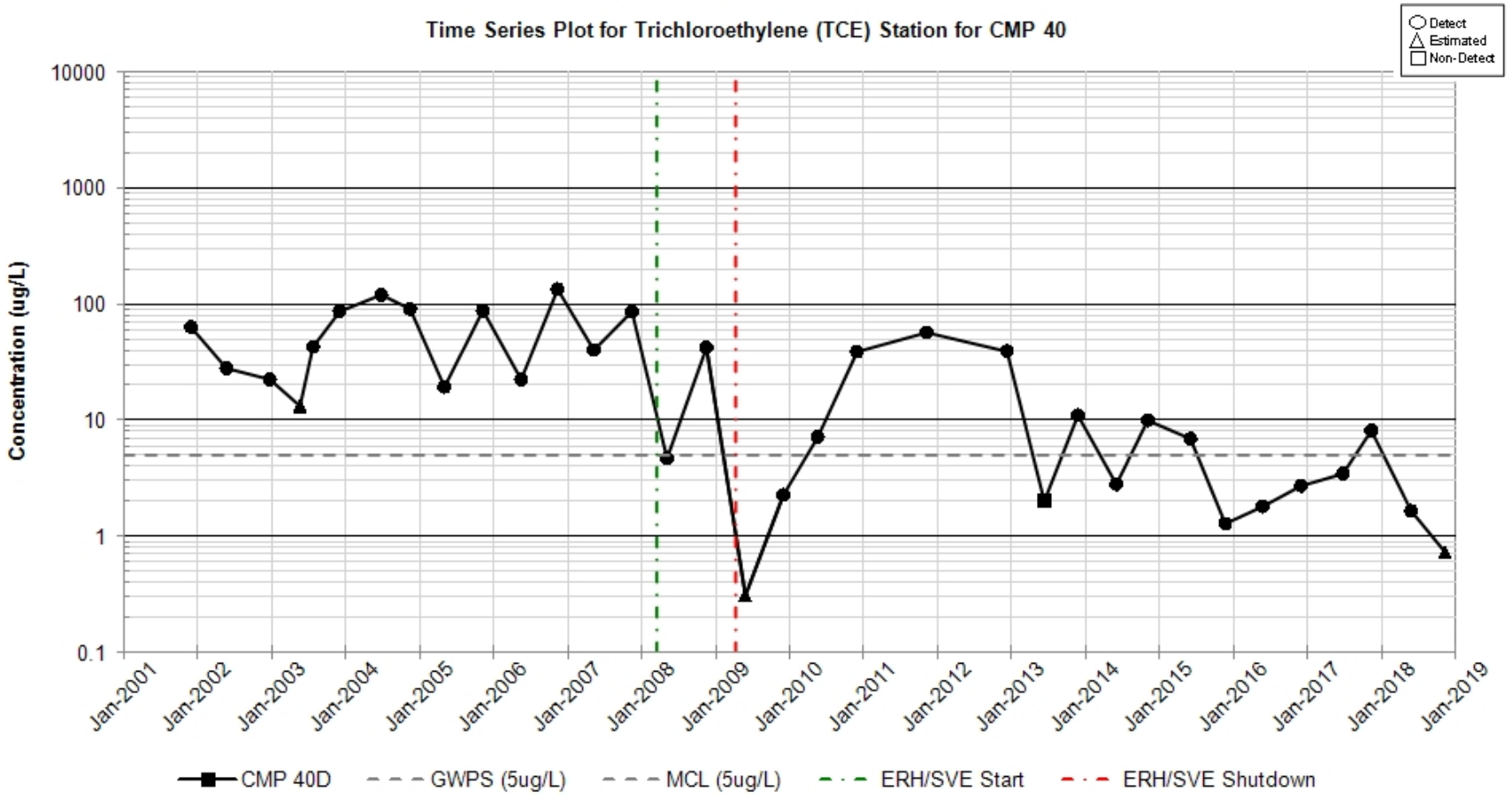

Time Series Plot for Trichloroethylene (TCE) Station for CMP 35
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 35D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

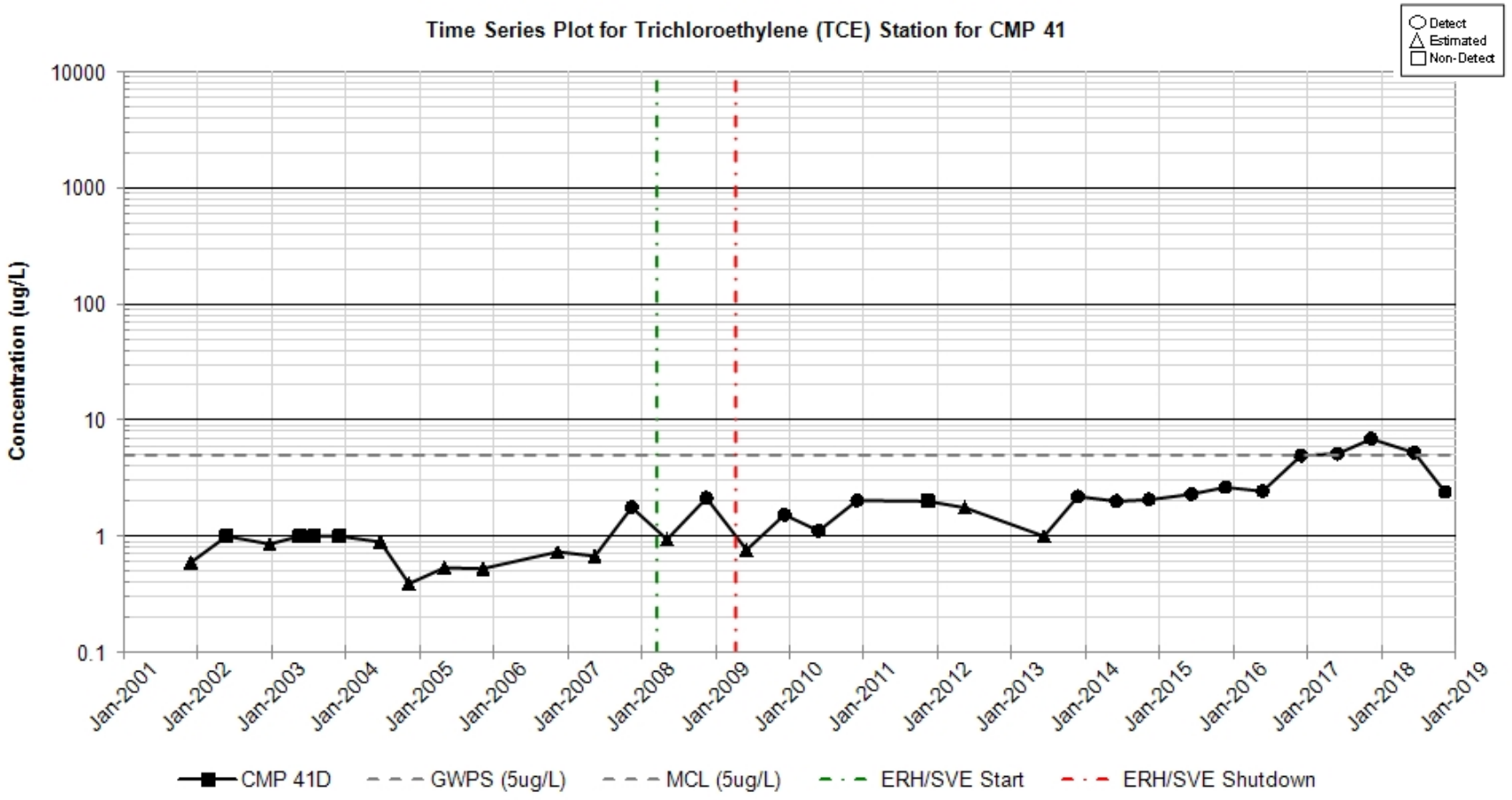

Time Series Plot for Trichloroethylene (TCE) Station for CMP 36
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 36D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

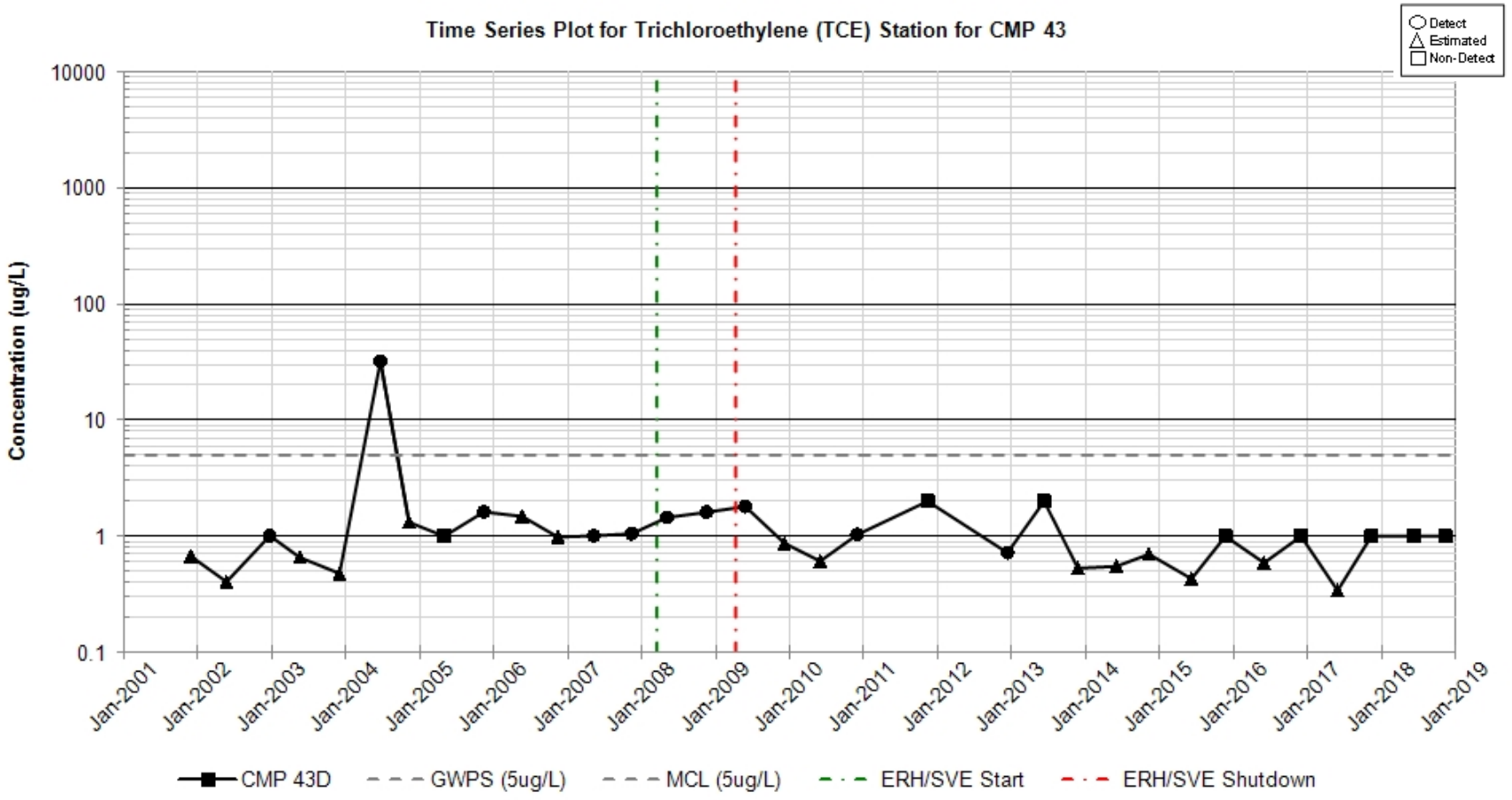

Time Series Plot for Trichloroethylene (TCE) Station for CMP 37
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 37D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

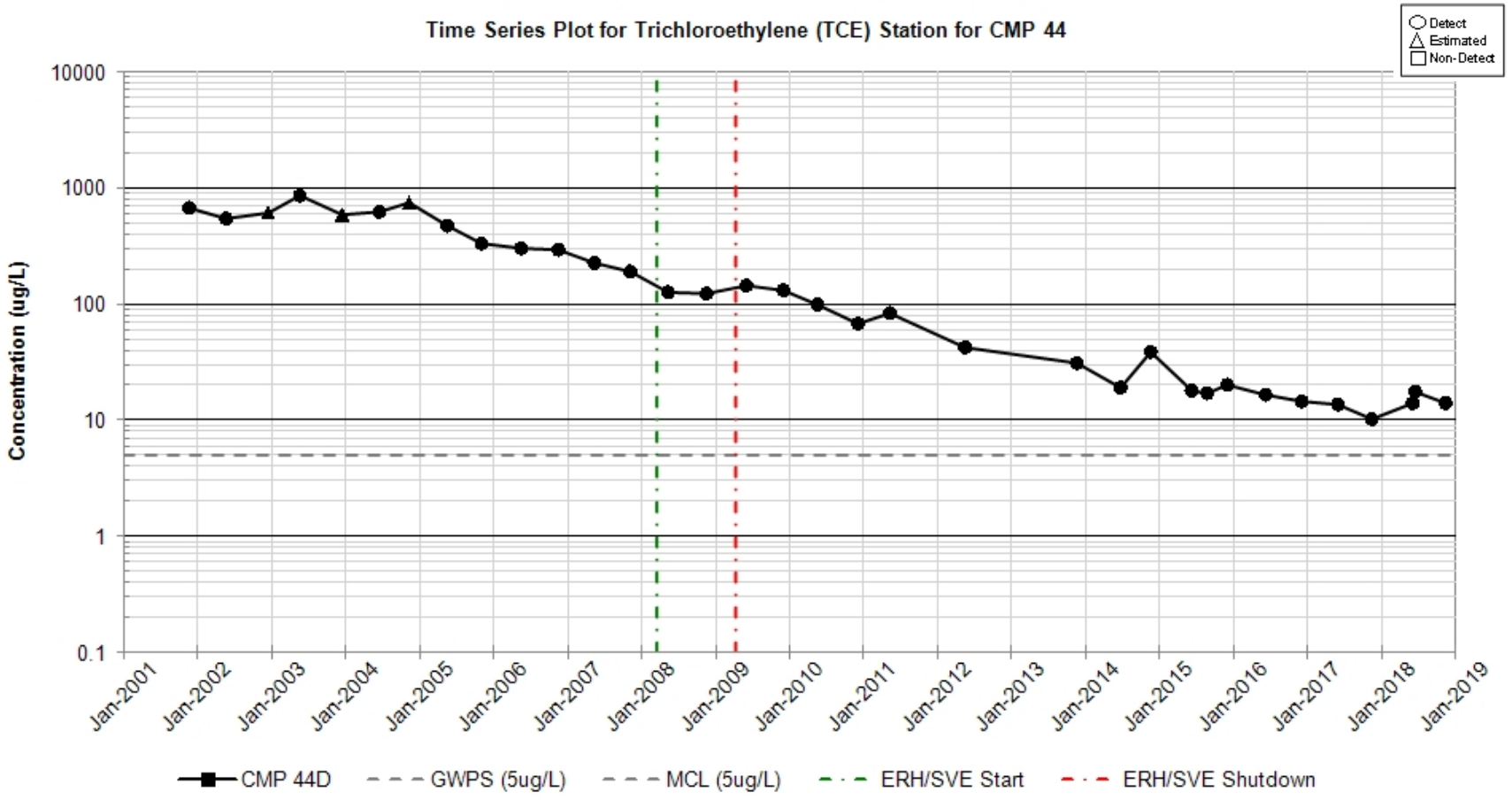

Time Series Plot for Trichloroethylene (TCE) Station for CMP 38
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 38D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

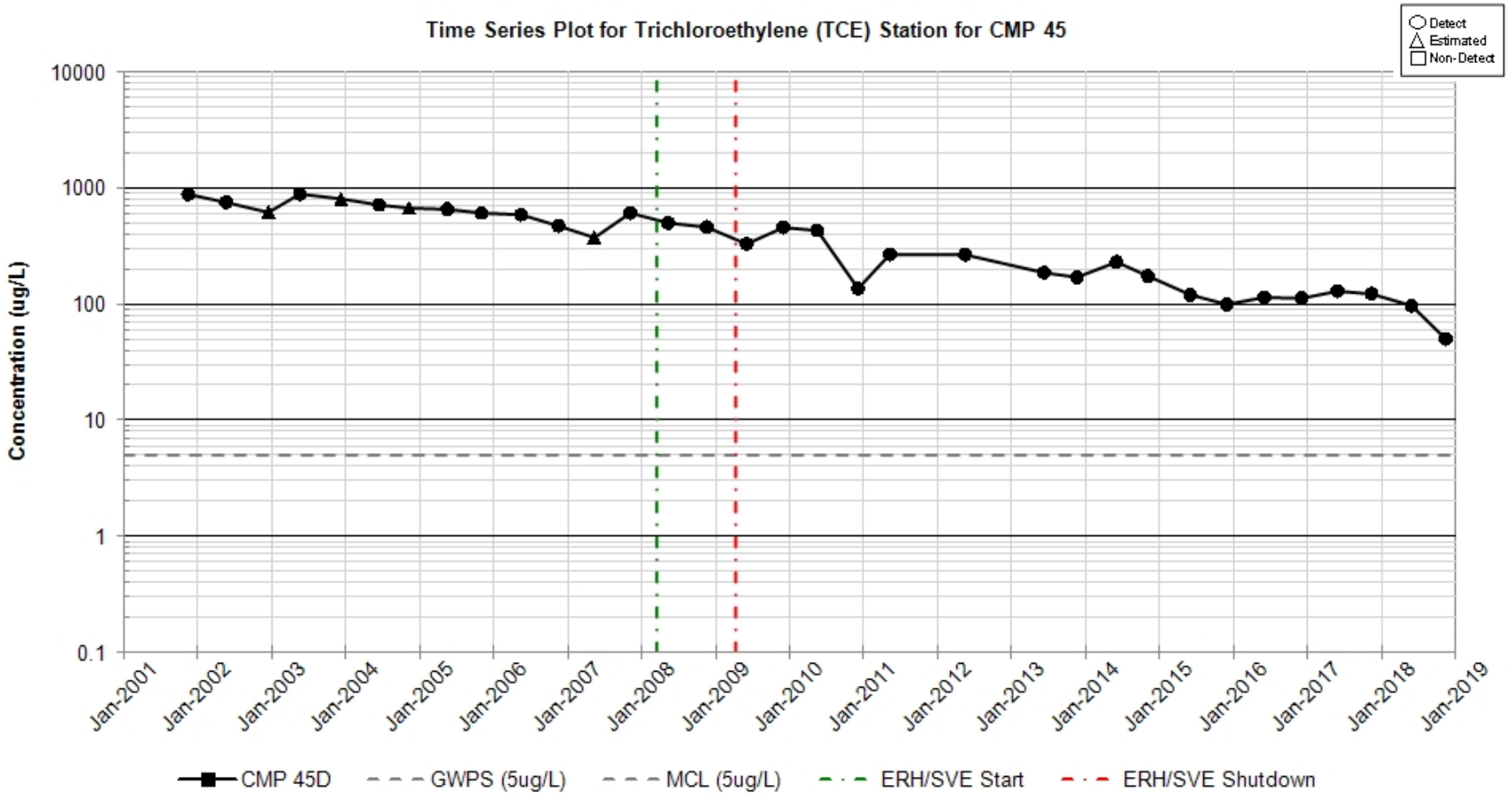

Time Series Plot for Trichloroethylene (TCE) Station for CMP 39
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 39D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

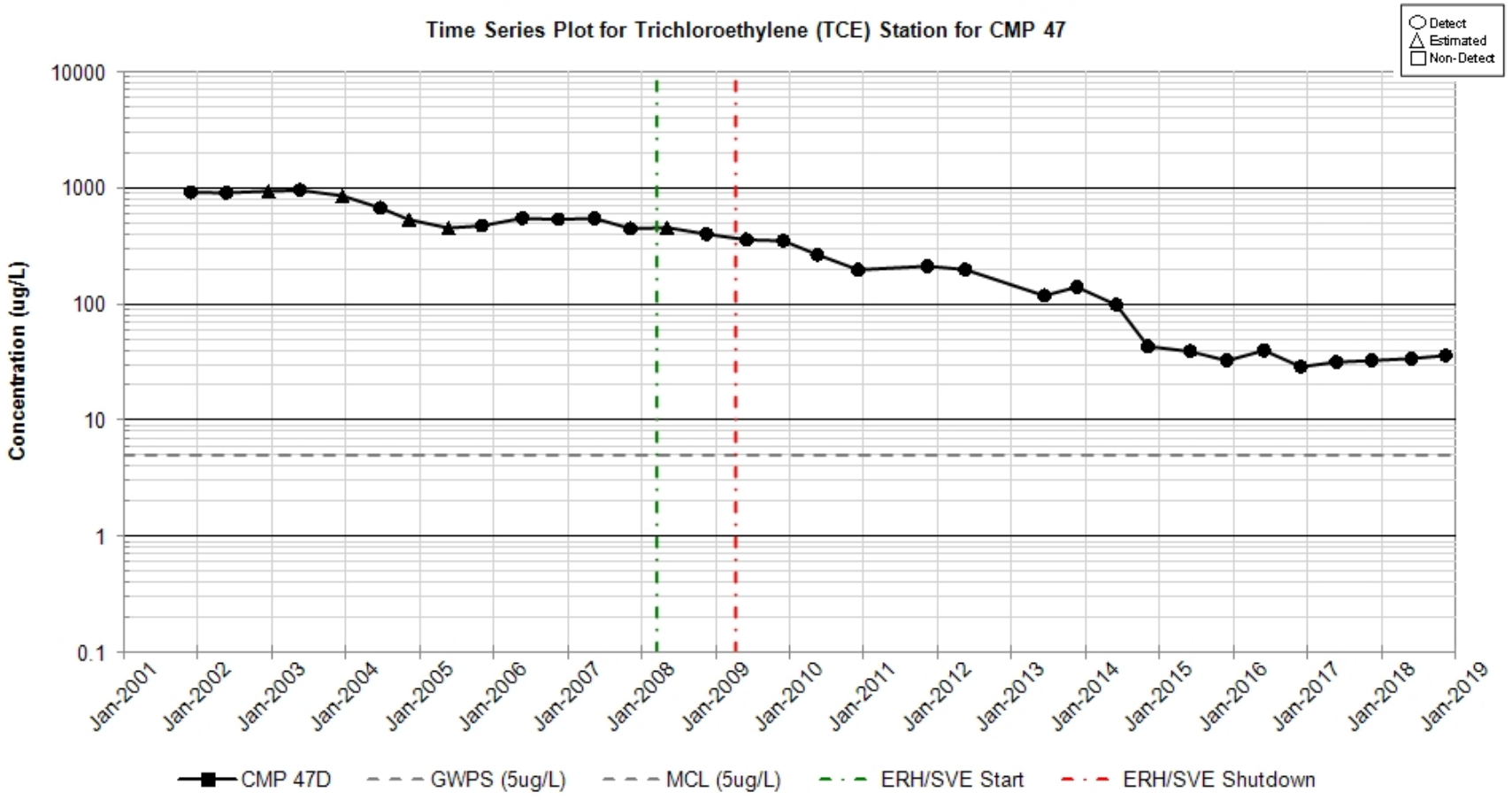

Time Series Plot for Trichloroethylene (TCE) Station for CMP 40
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 40D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

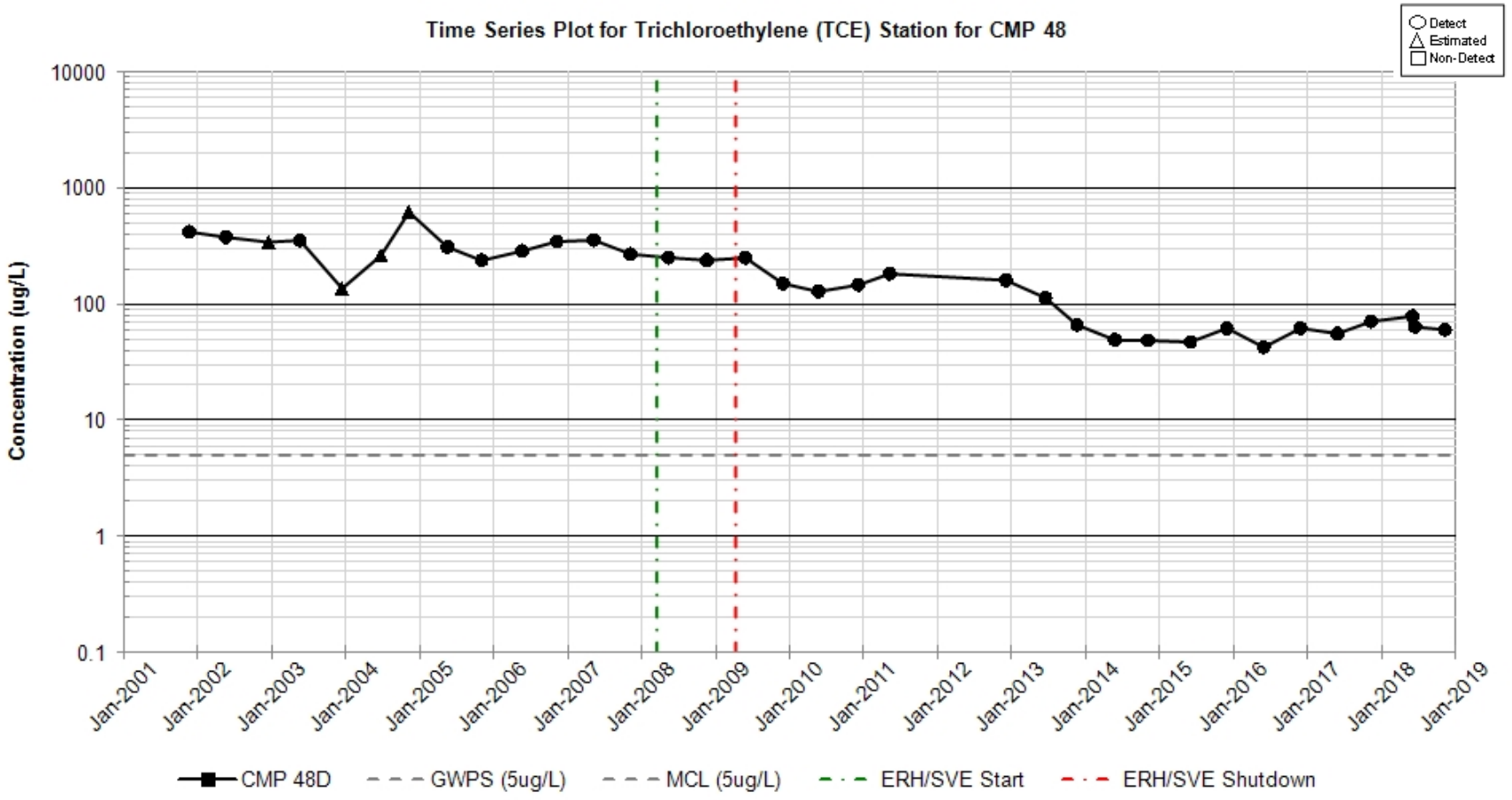

Time Series Plot for Trichloroethylene (TCE) Station for CMP 41
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 41D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

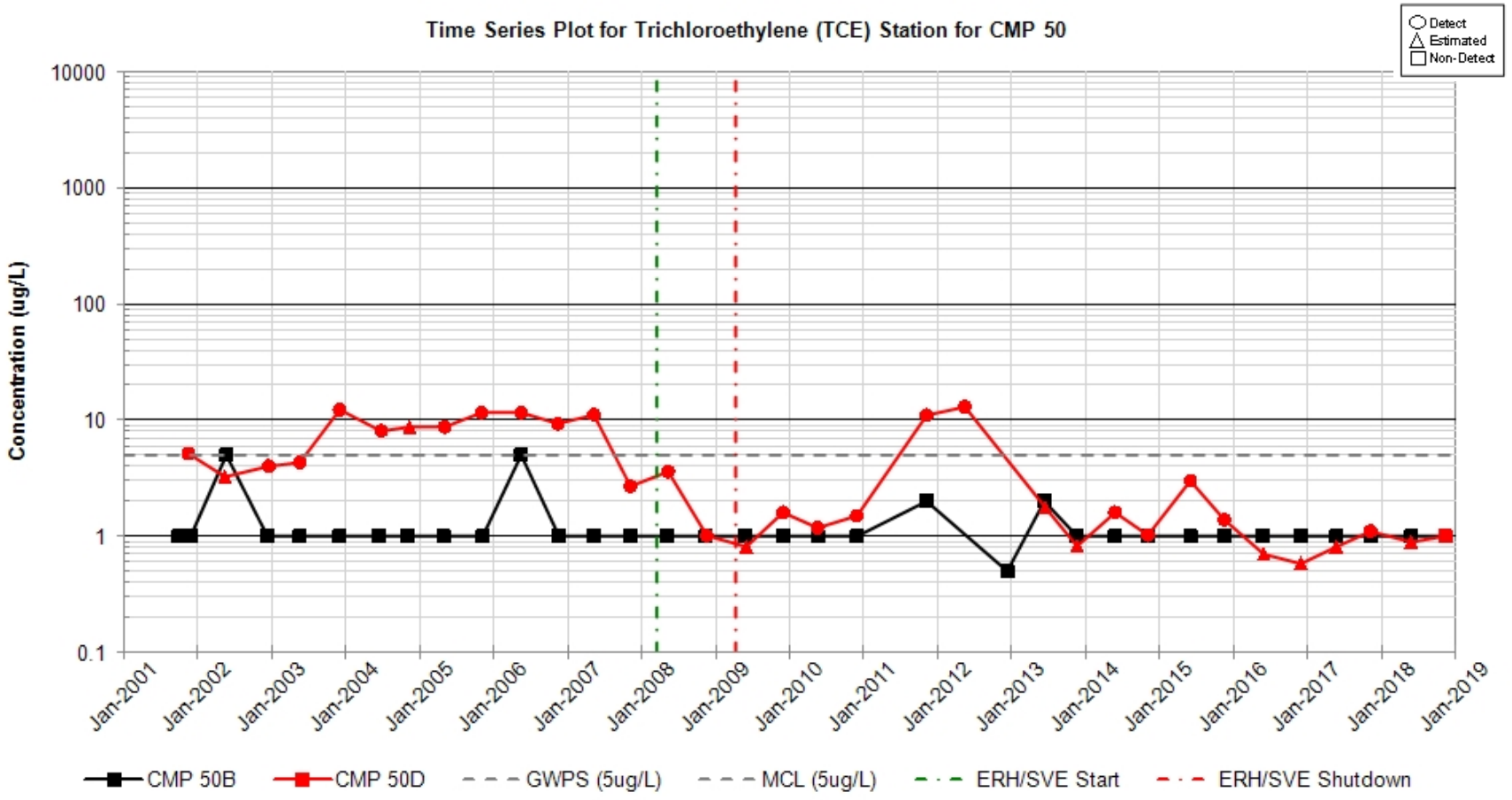

Time Series Plot for Trichloroethylene (TCE) Station for CMP 43
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 43D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

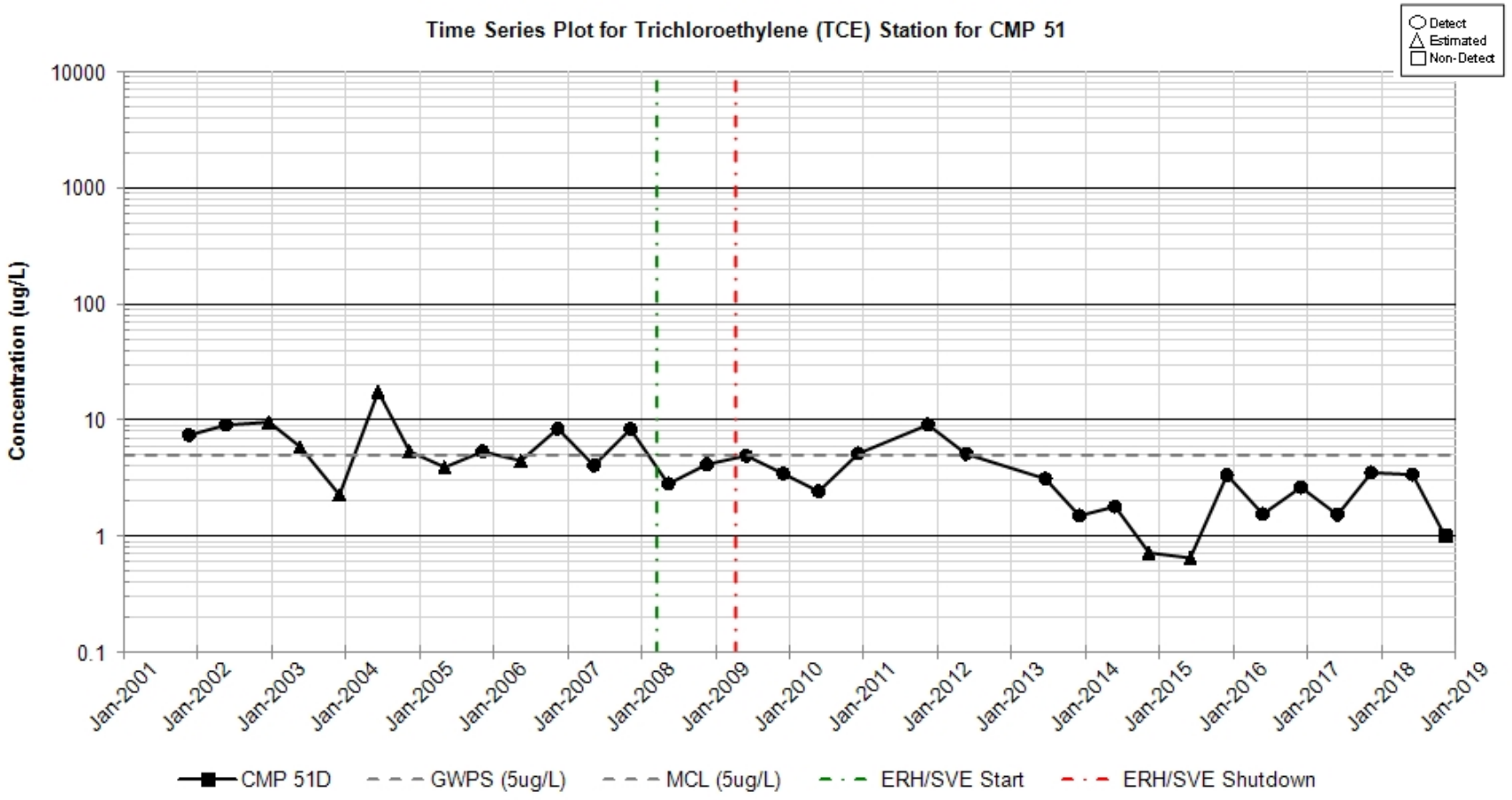

Time Series Plot for Trichloroethylene (TCE) Station for CMP 44
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 44D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

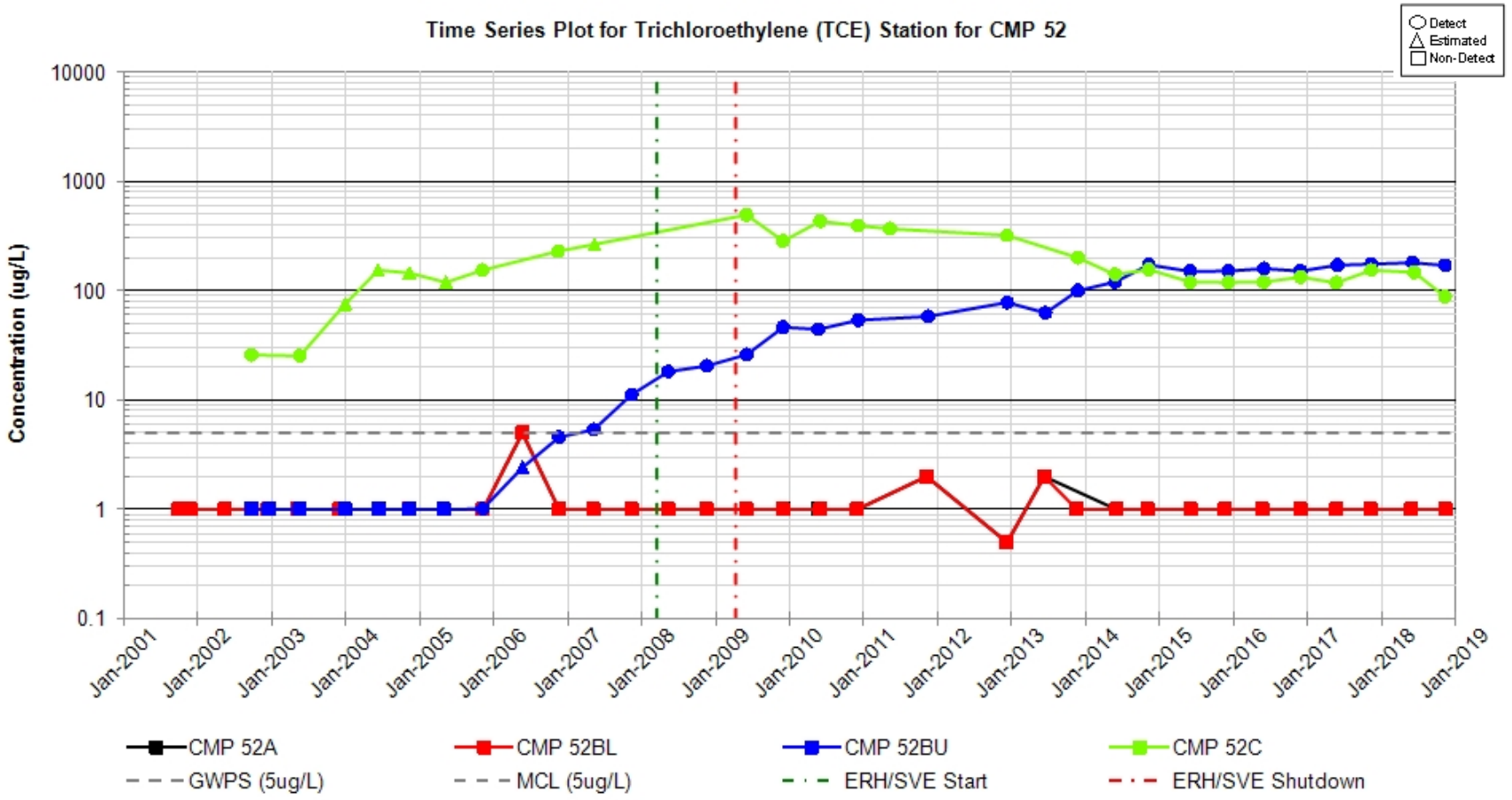

Time Series Plot for Trichloroethylene (TCE) Station for CMP 45
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 45D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

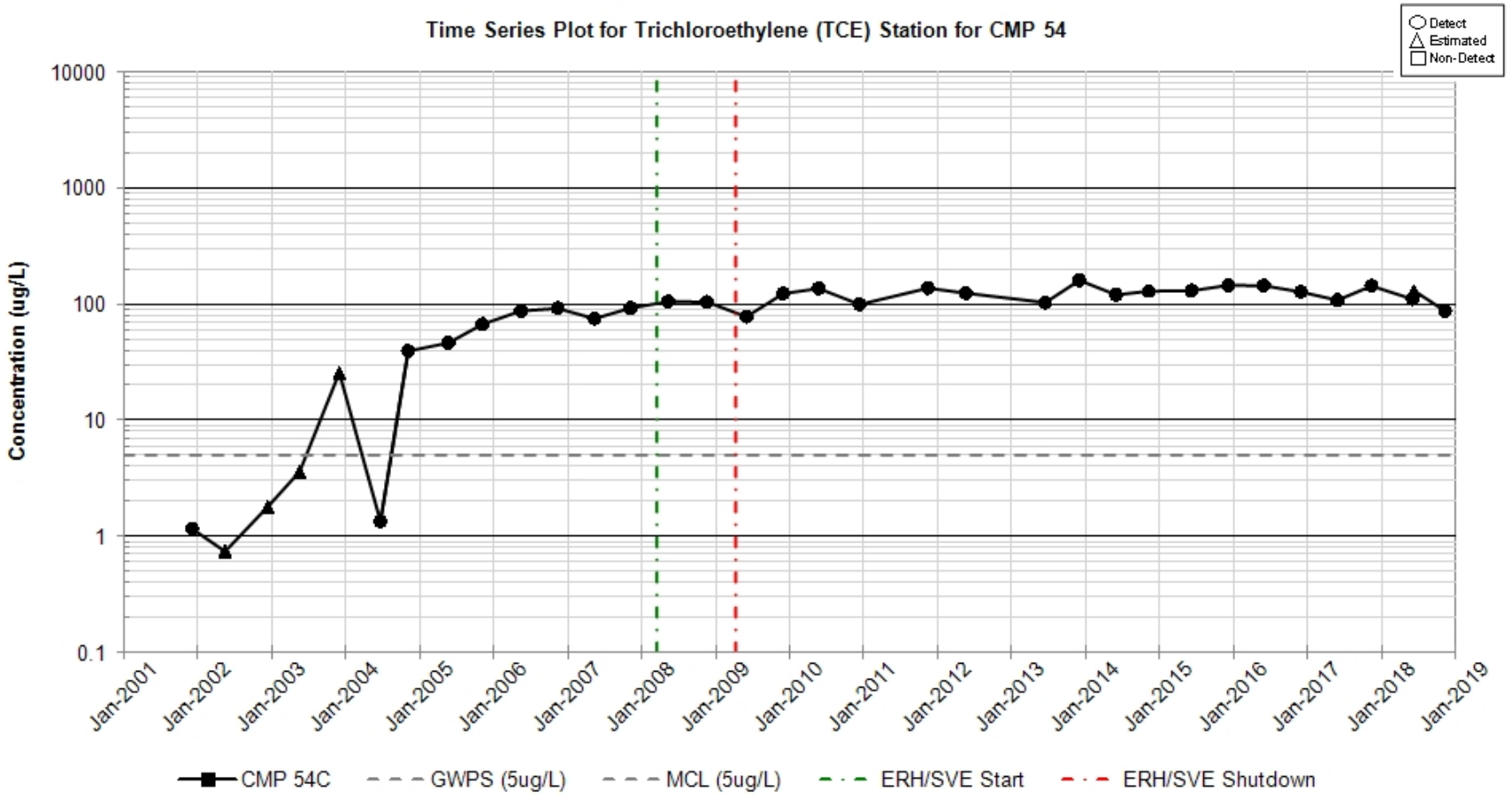

Time Series Plot for Trichloroethylene (TCE) Station for CMP 47
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 47D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

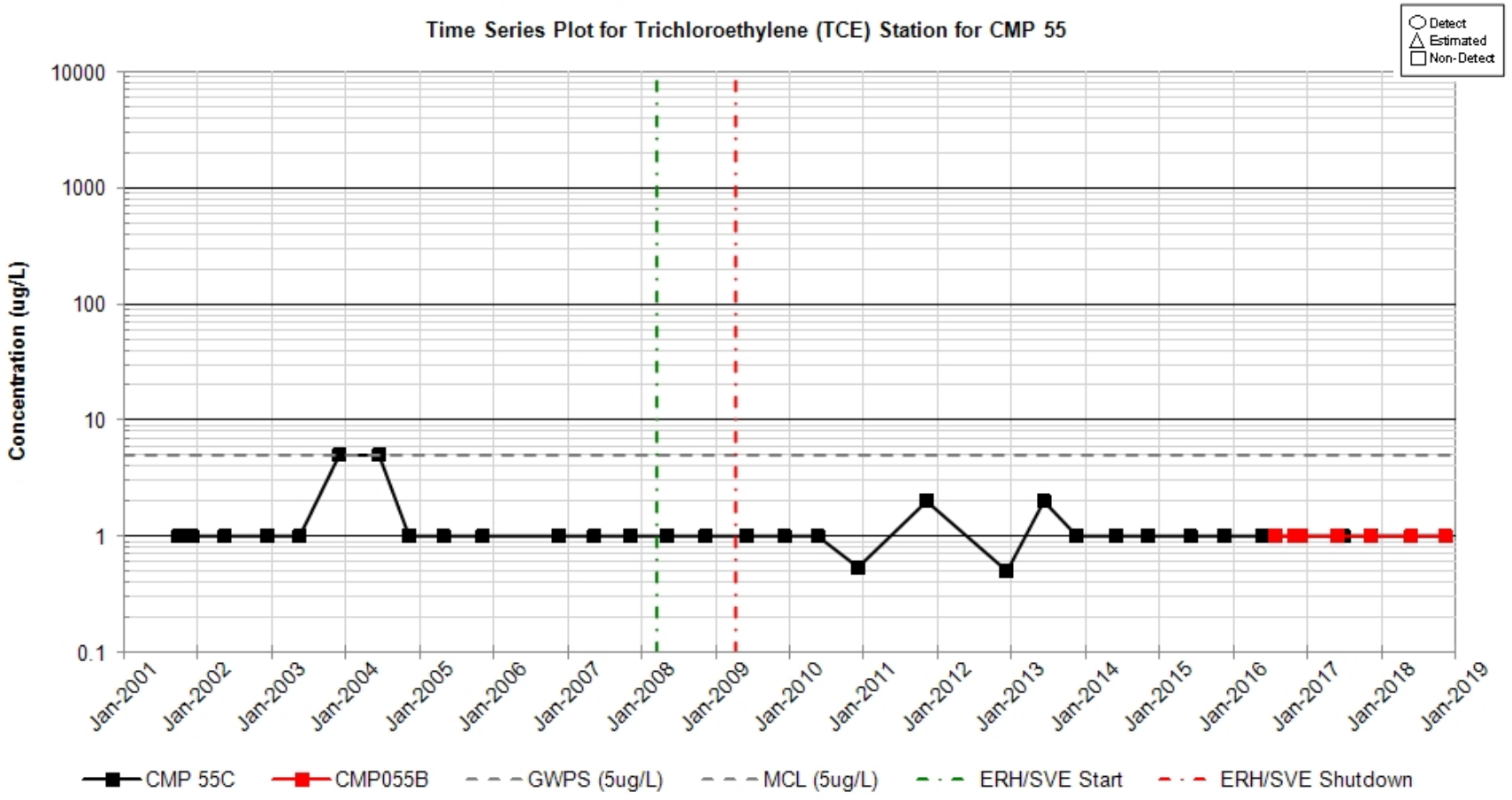

Time Series Plot for Trichloroethylene (TCE) Station for CMP 48
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 48D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

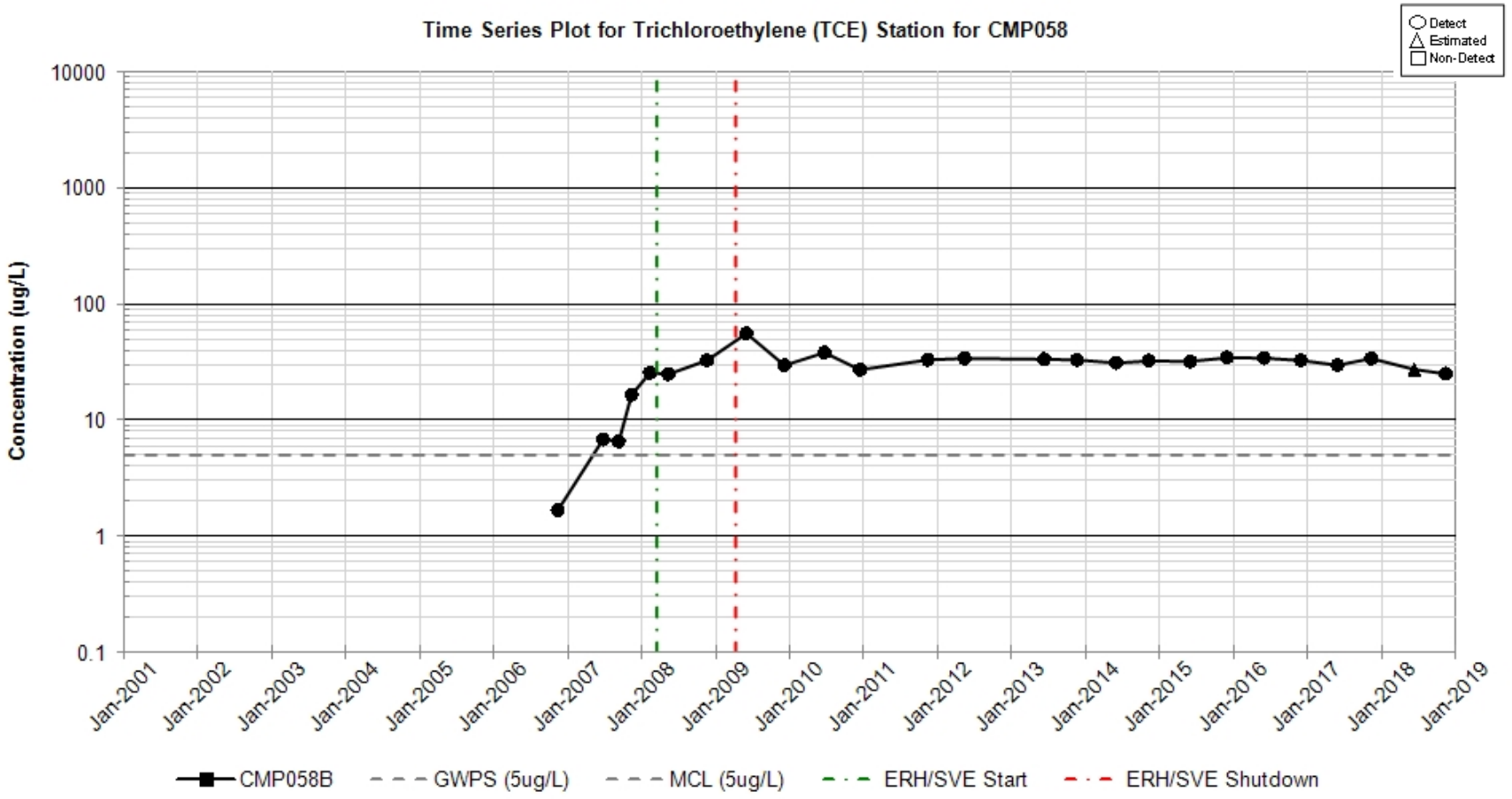

Time Series Plot for Trichloroethylene (TCE) Station for CMP 50
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 50B
CMP 50D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

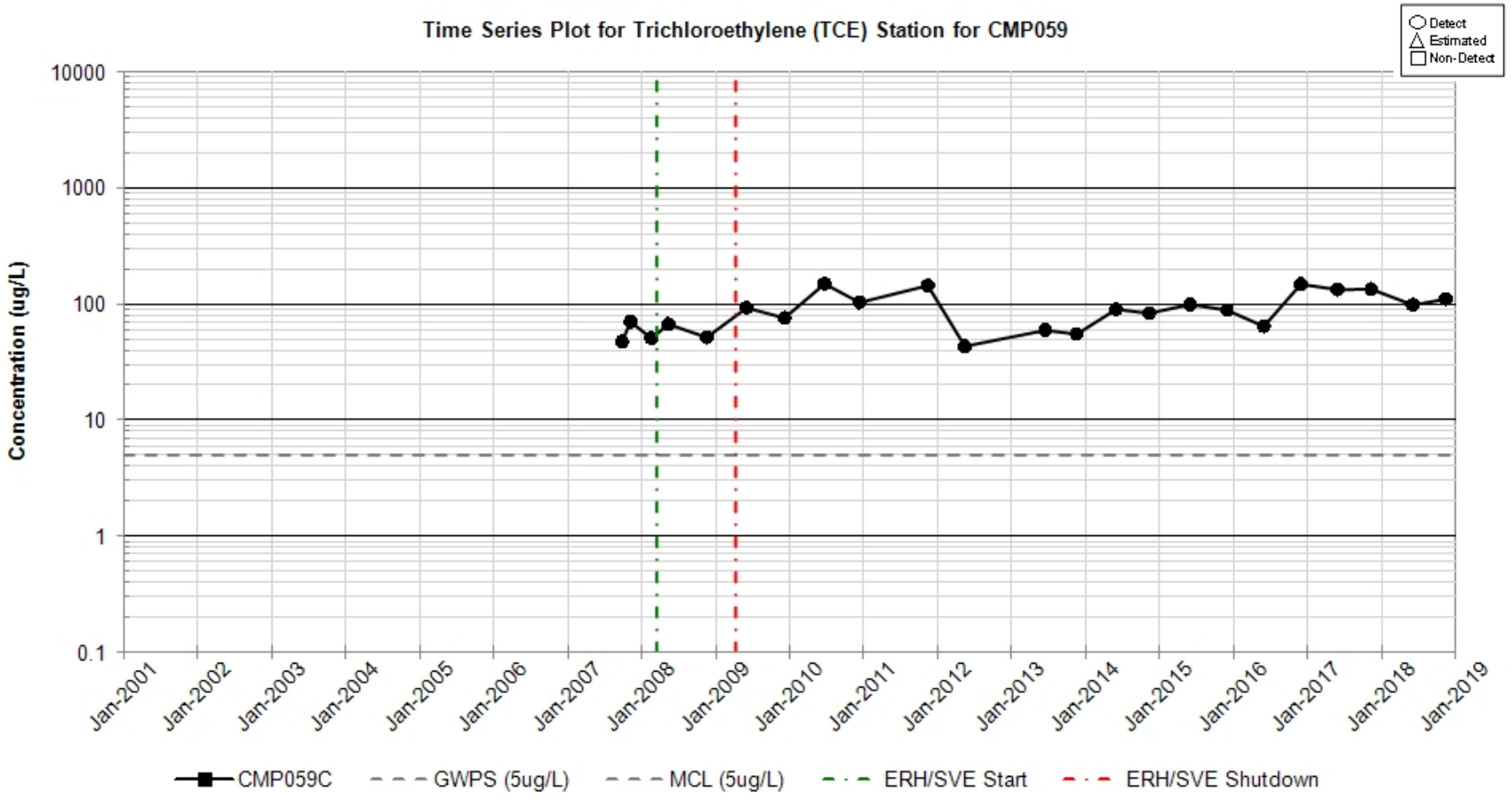

Time Series Plot for Trichloroethylene (TCE) Station for CMP 51
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 51D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

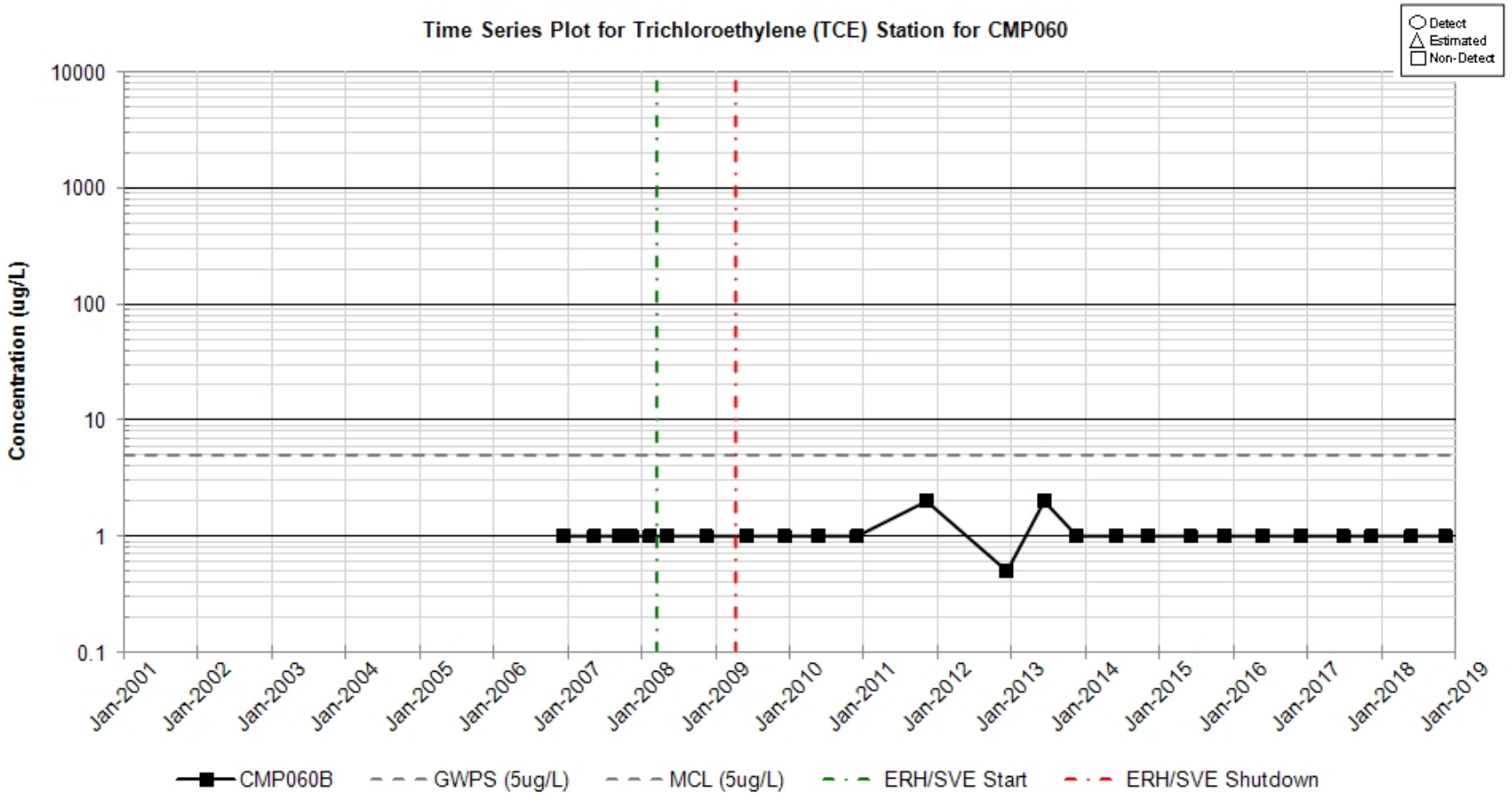

Time Series Plot for Trichloroethylene (TCE) Station for CMP 52
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 52A
CMP 52BL
CMP 52BU
CMP 52C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

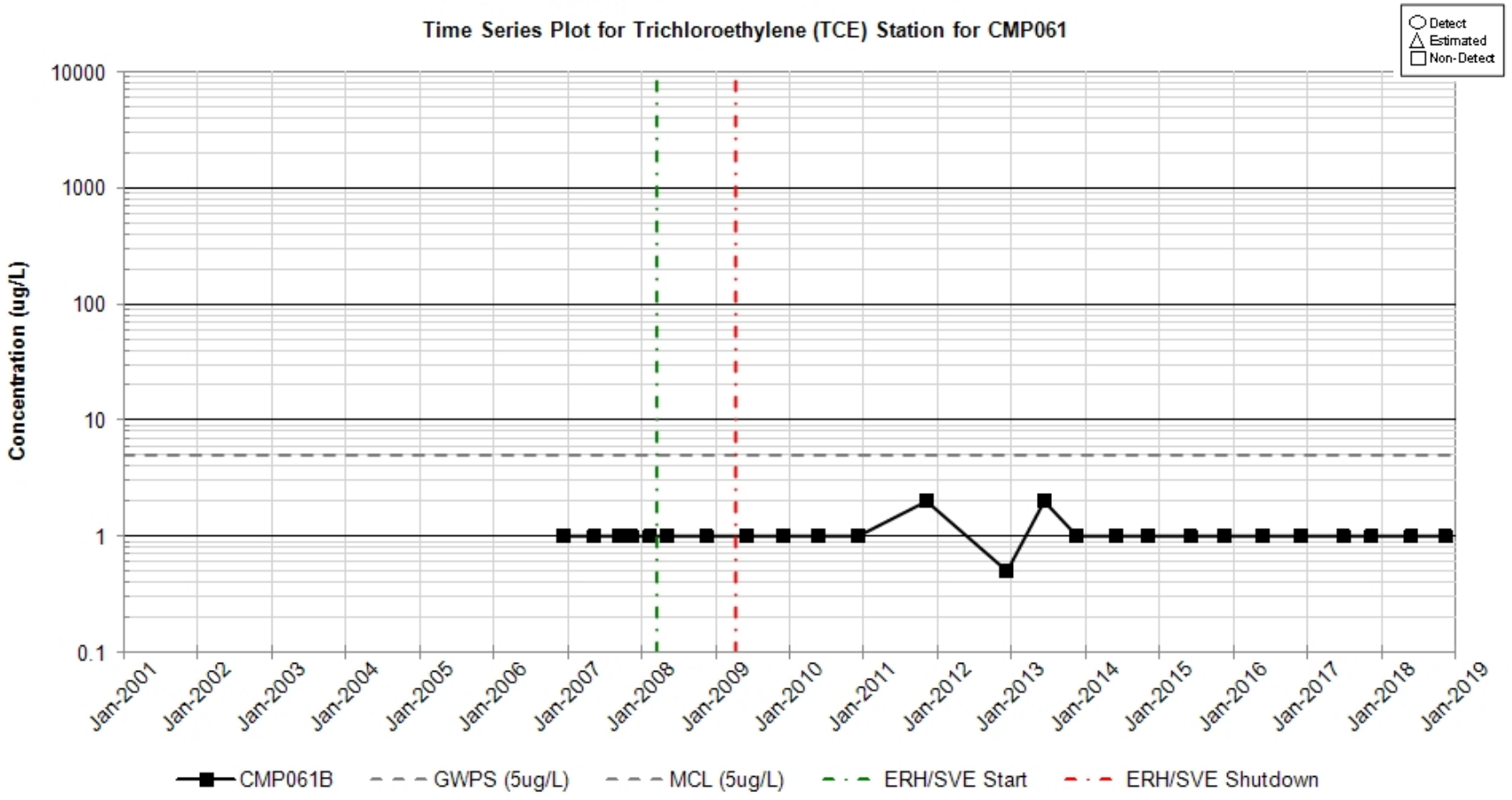

Time Series Plot for Trichloroethylene (TCE) Station for CMP 54
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 54C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

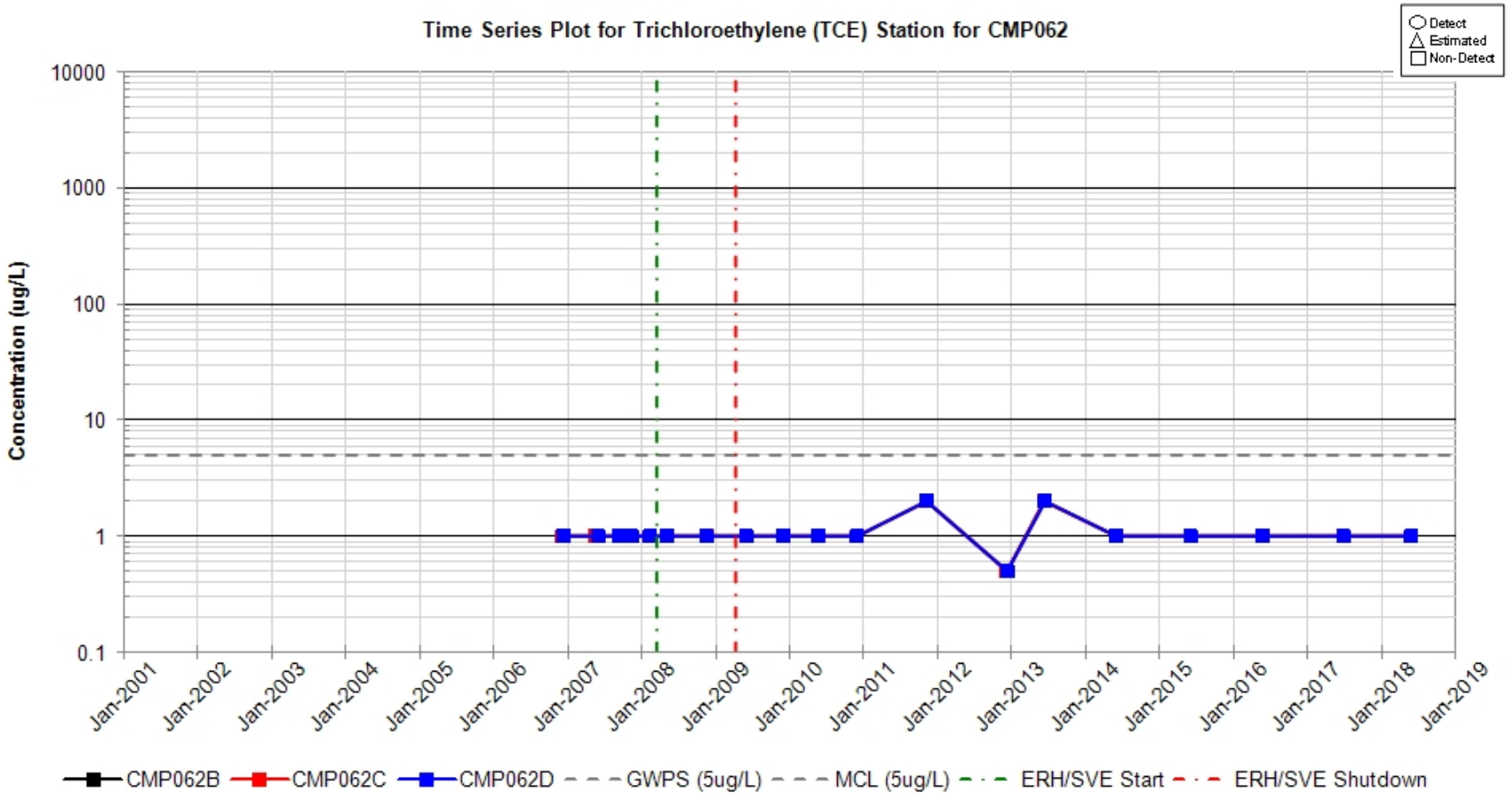

Time Series Plot for Trichloroethylene (TCE) Station for CMP 55
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP 55C
CMP055B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

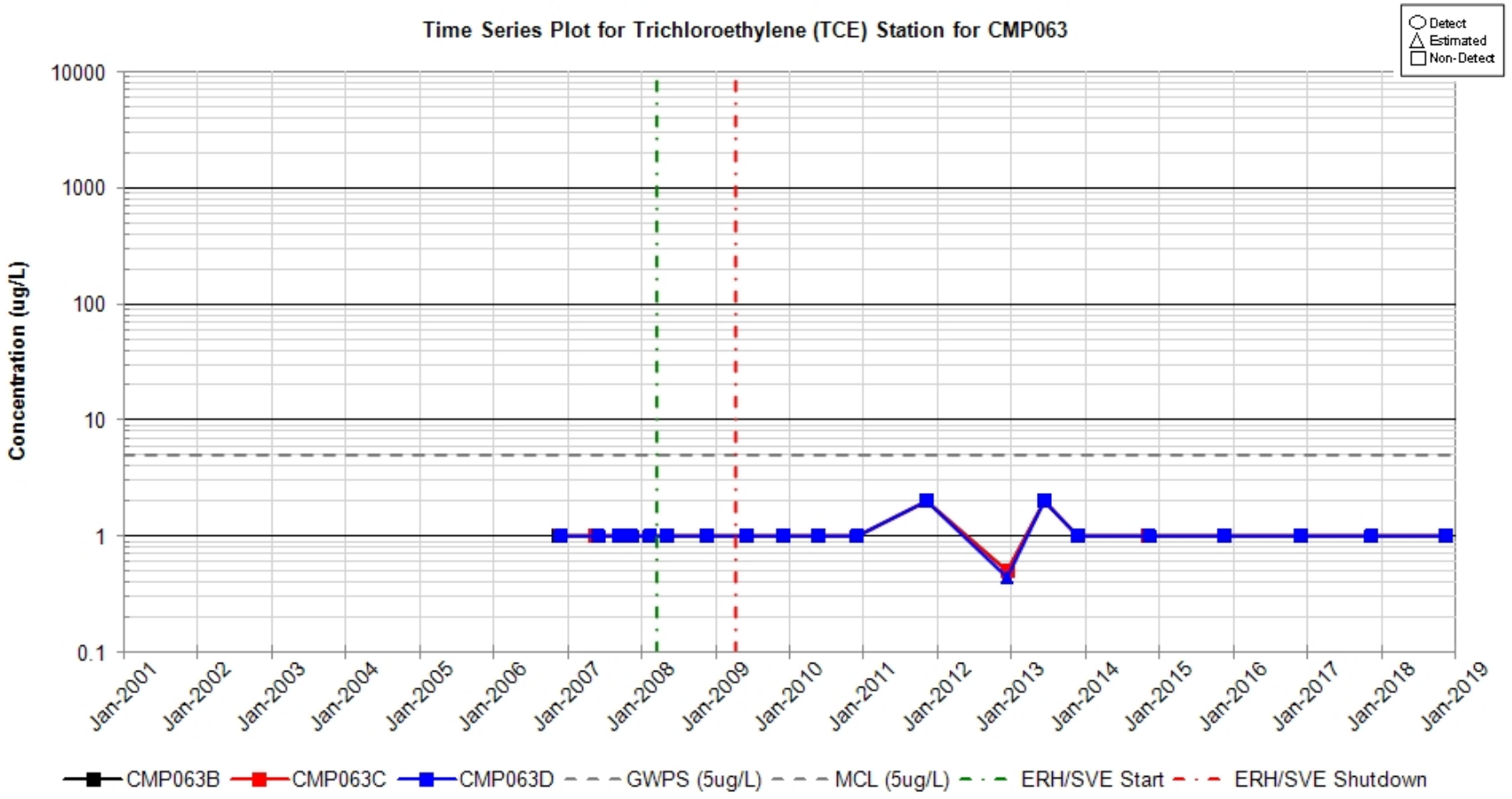

Time Series Plot for Trichloroethylene (TCE) Station for CMP058
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP058B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

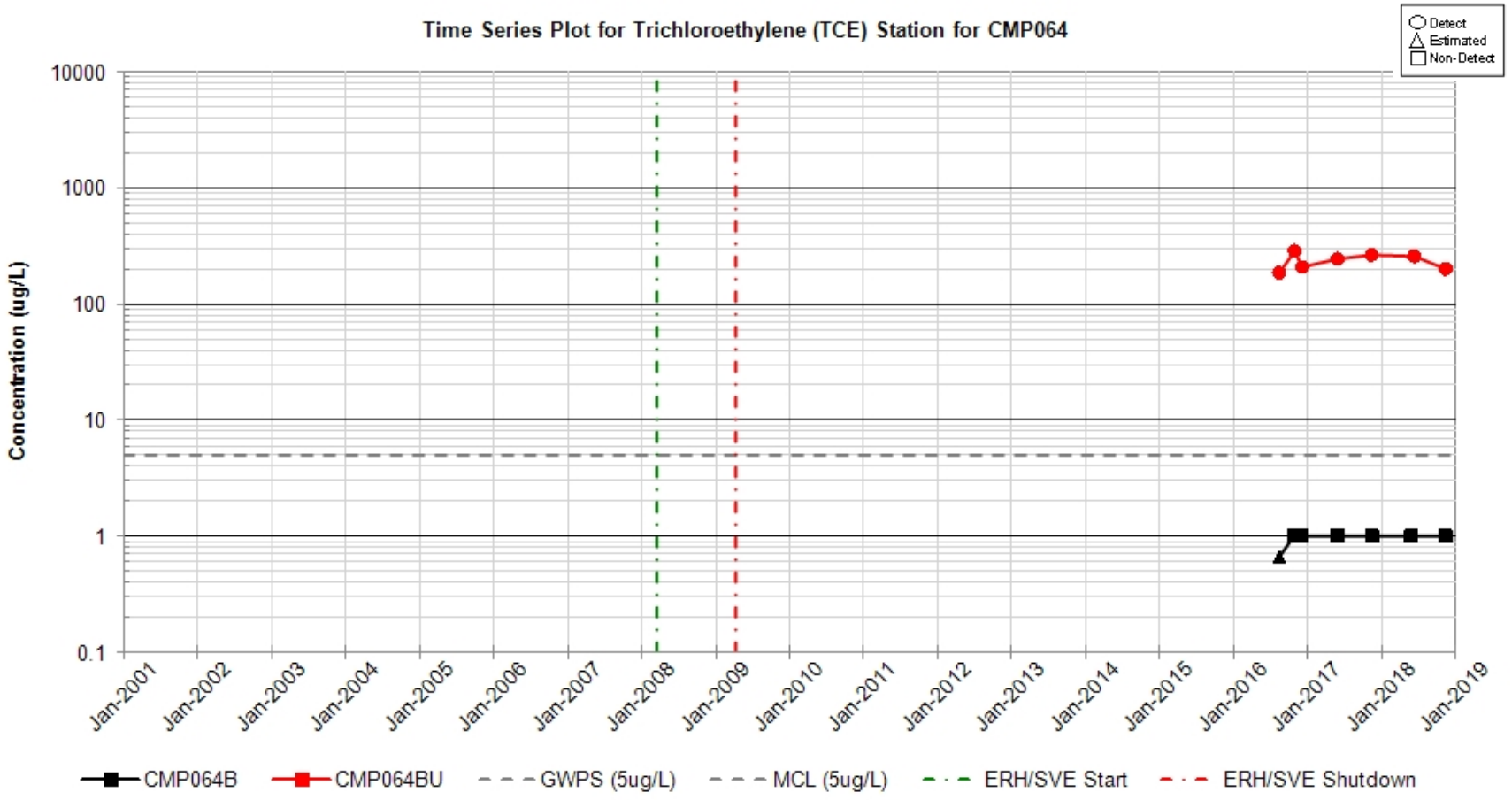

Time Series Plot for Trichloroethylene (TCE) Station for CMP059
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP059C
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

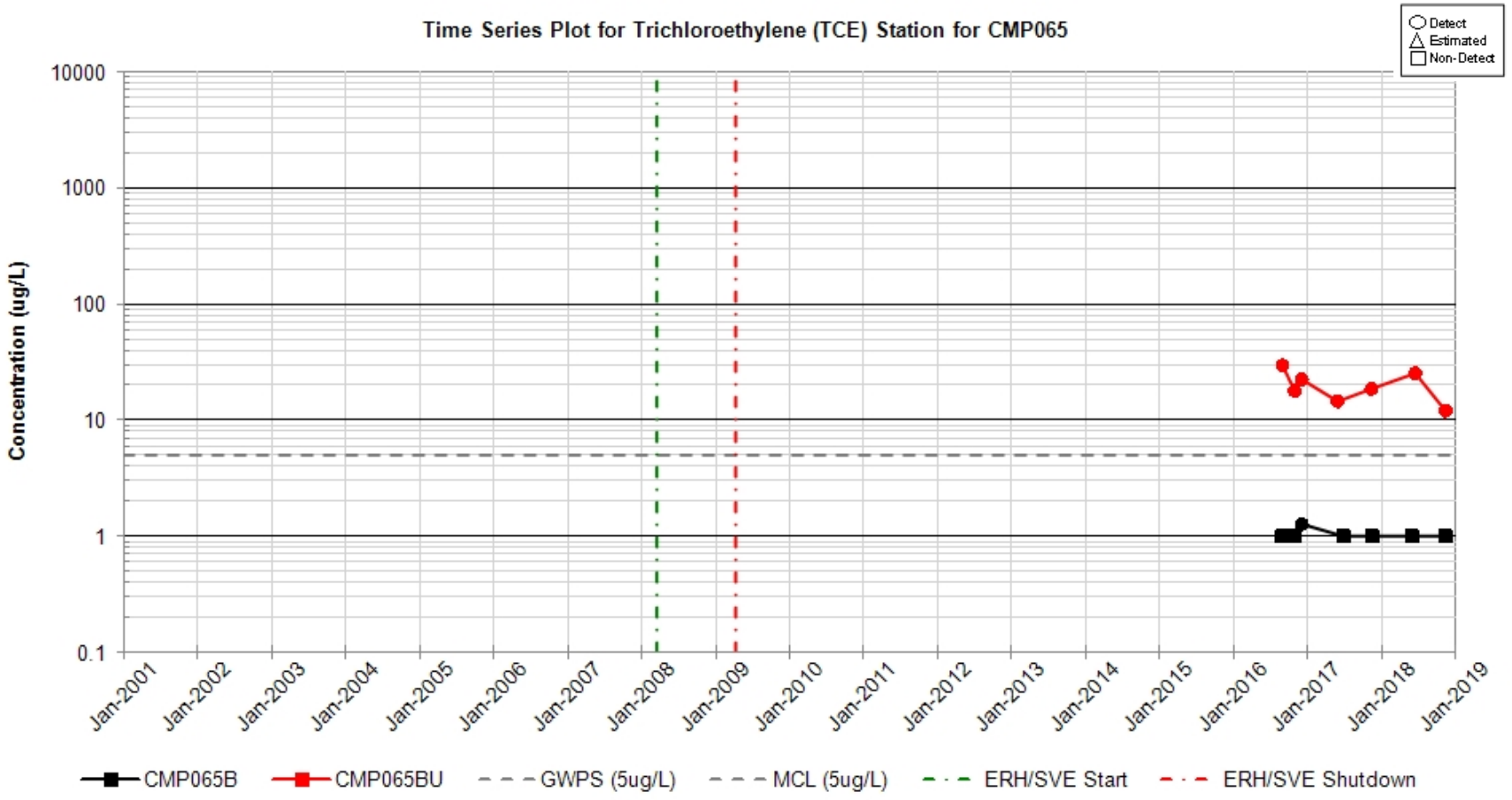

Time Series Plot for Trichloroethylene (TCE) Station for CMP060
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP060B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

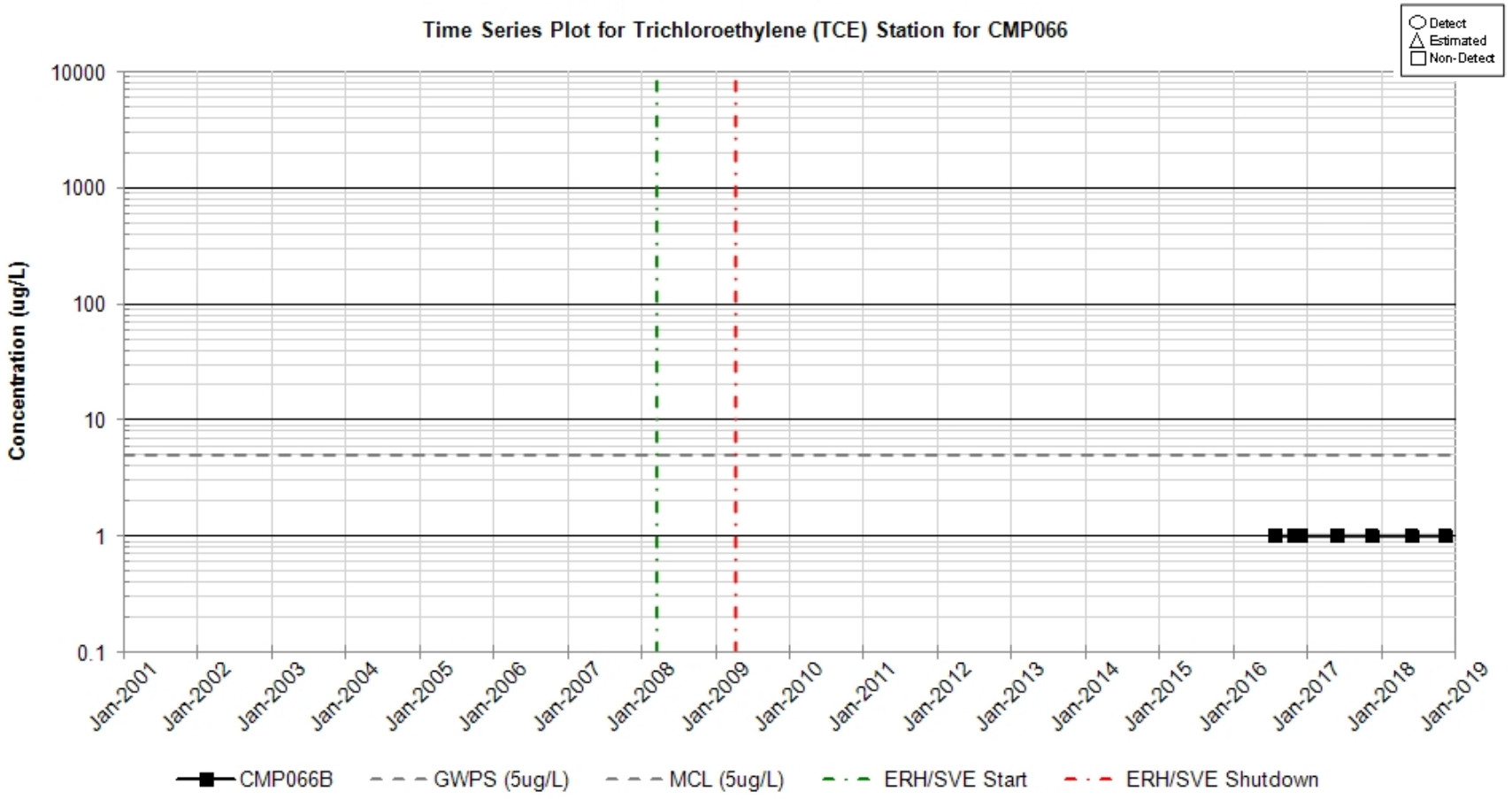

Time Series Plot for Trichloroethylene (TCE) Station for CMP061
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP061B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

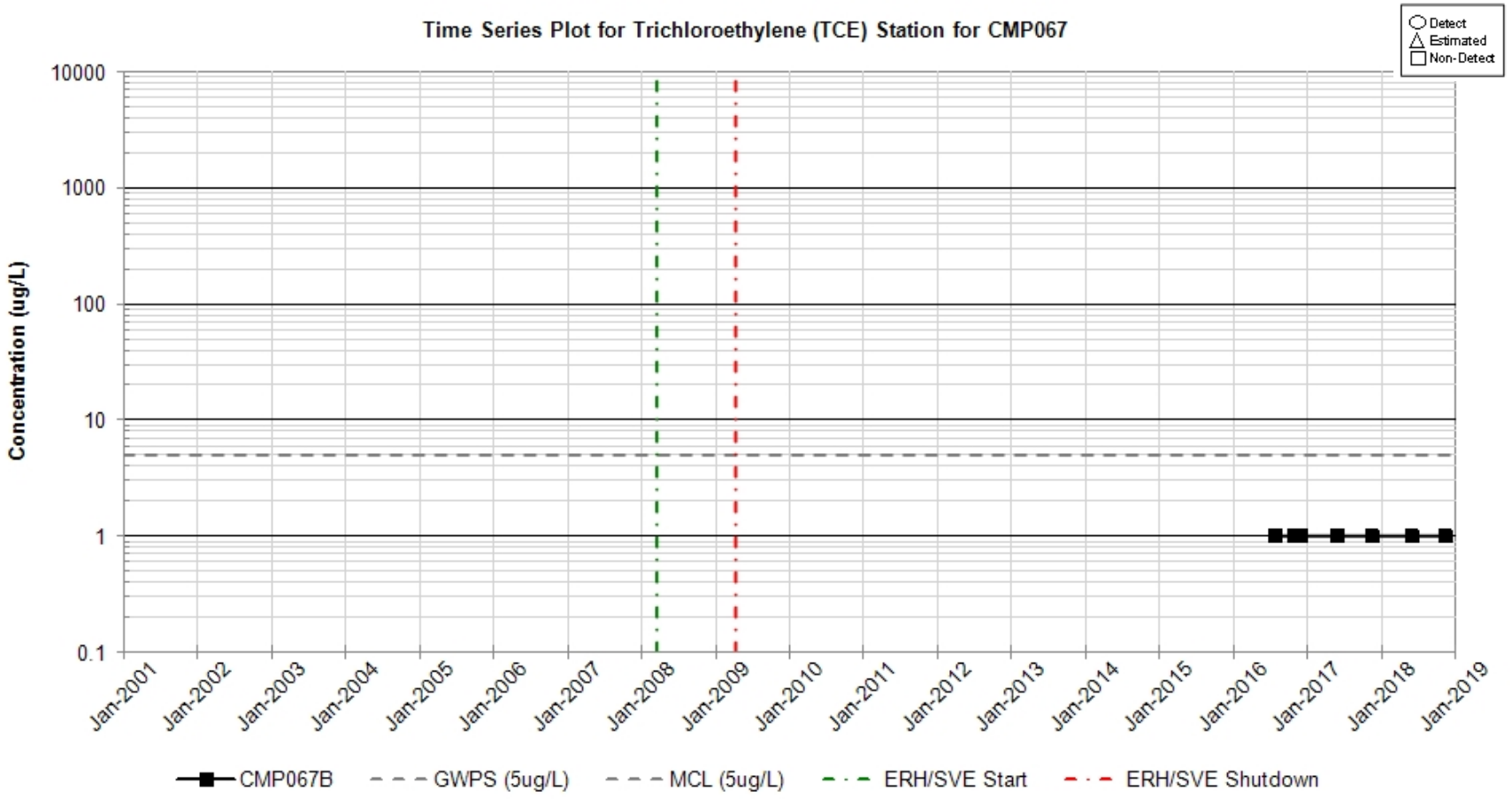

Time Series Plot for Trichloroethylene (TCE) Station for CMP062
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP062B
CMP062C
CMP062D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

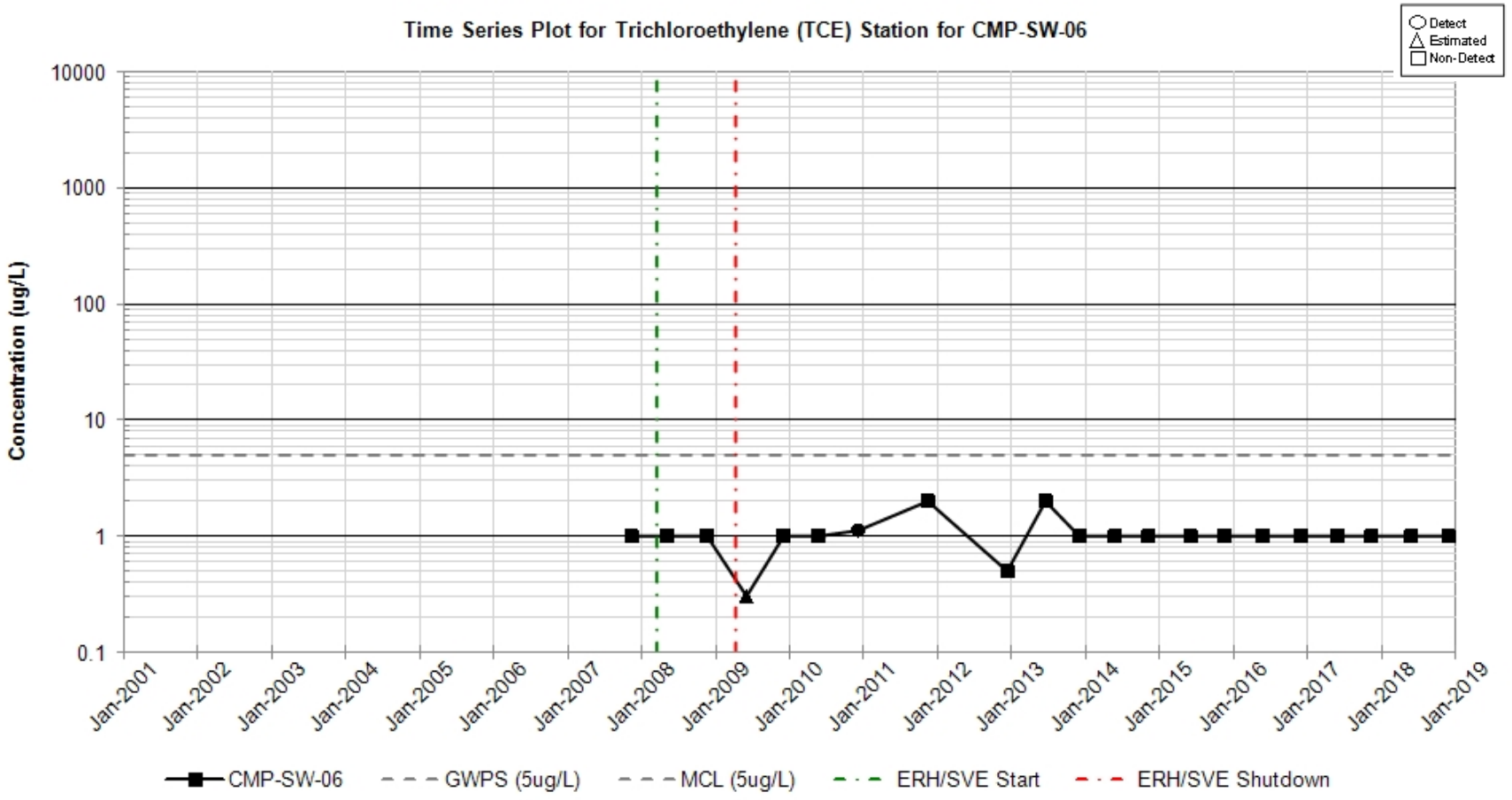

Time Series Plot for Trichloroethylene (TCE) Station for CMP063
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP063B
CMP063C
CMP063D
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

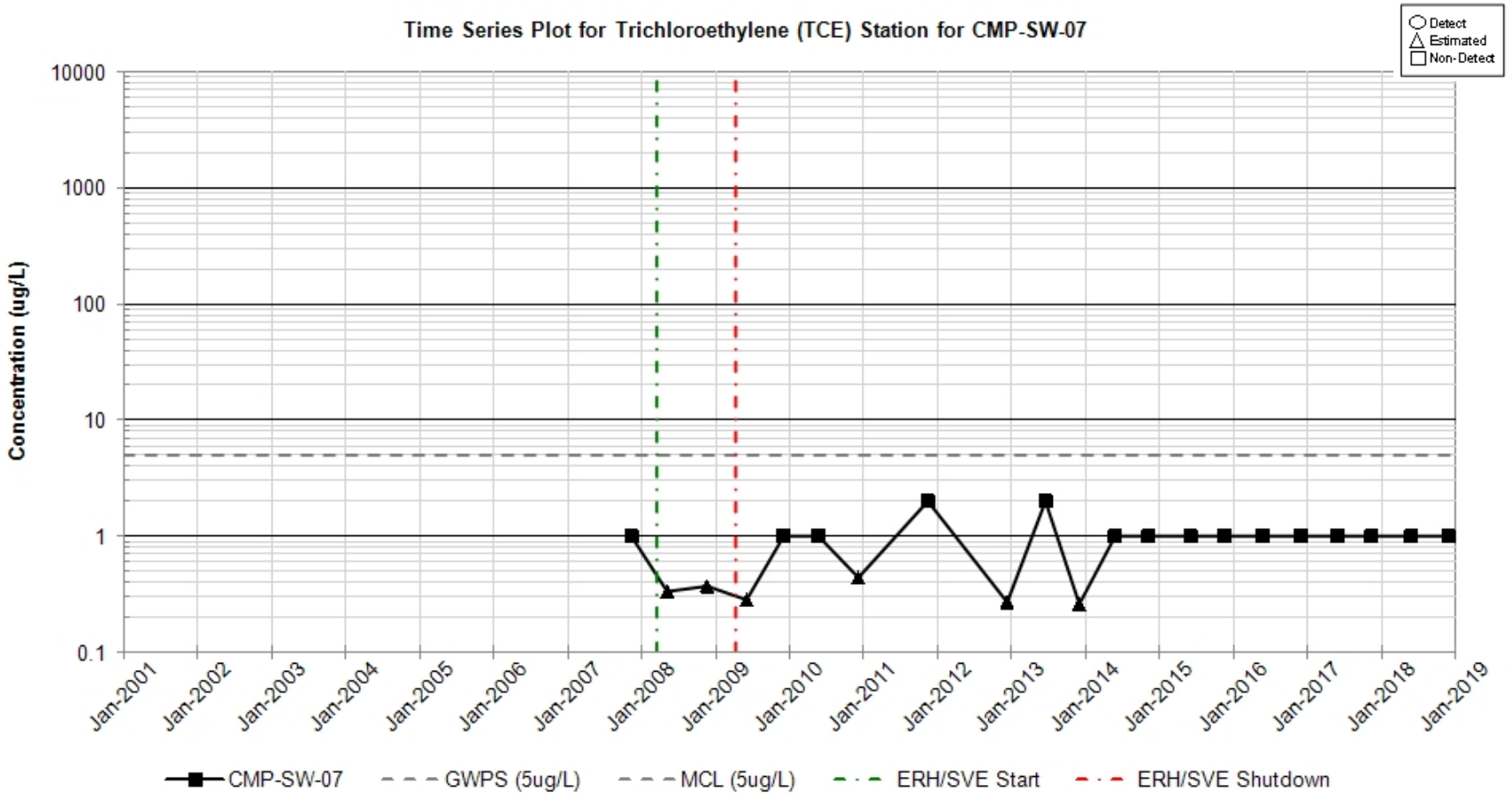

Time Series Plot for Trichloroethylene (TCE) Station for CMP064
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP064B
CMP064BU
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

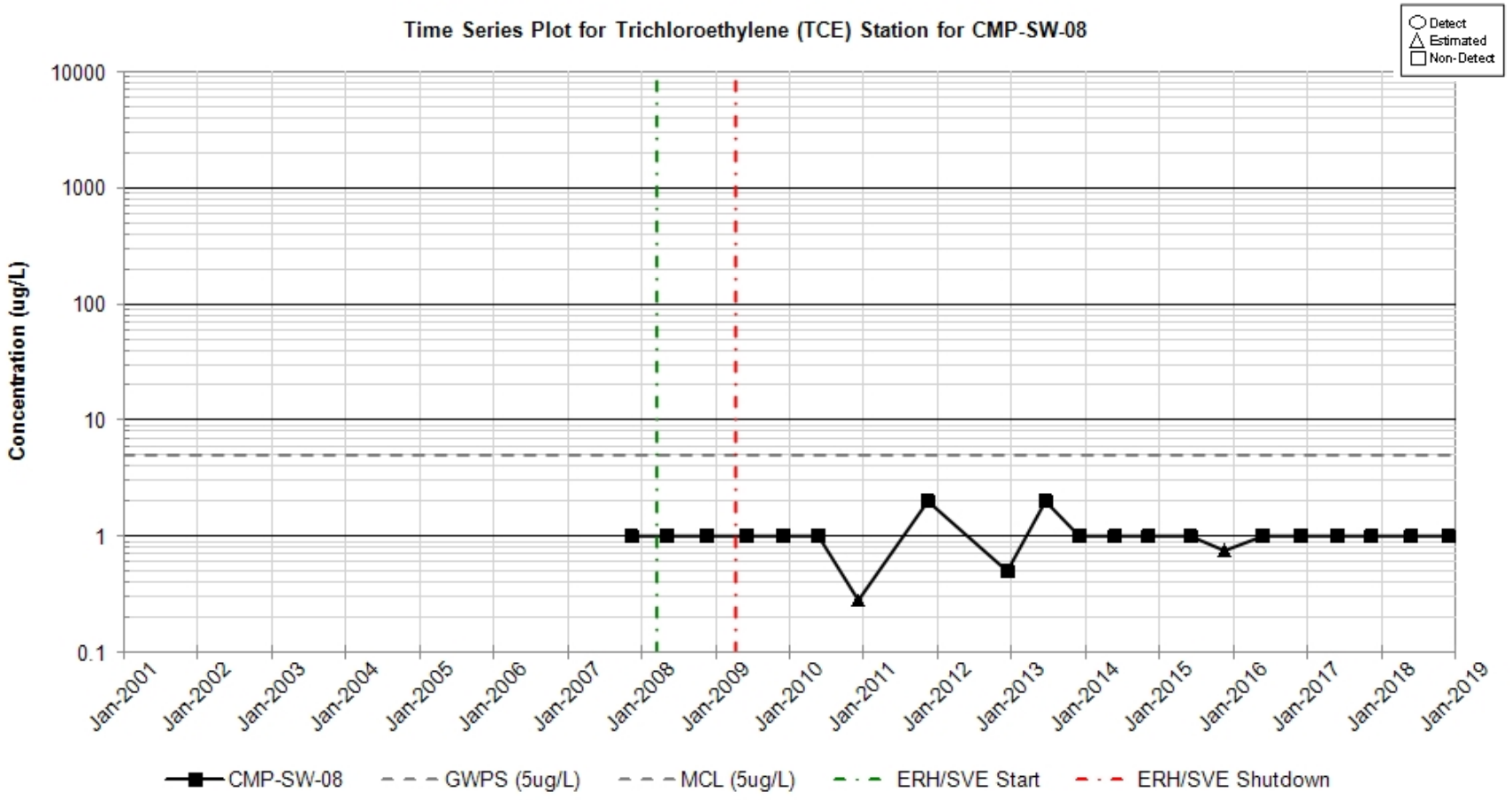

Time Series Plot for Trichloroethylene (TCE) Station for CMP065
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP065B
CMP065BU
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

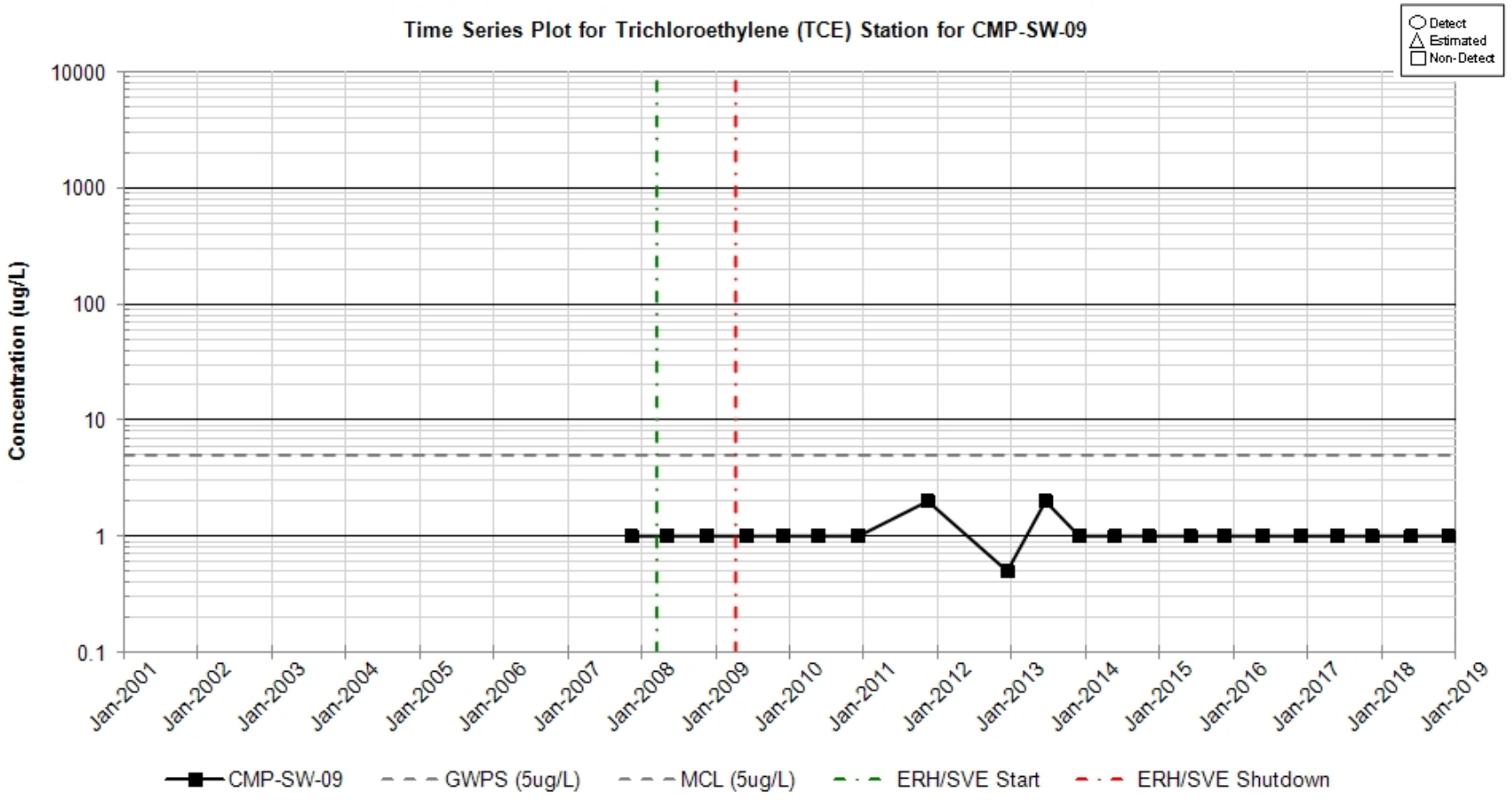

Time Series Plot for Trichloroethylene (TCE) Station for CMP066
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP066B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

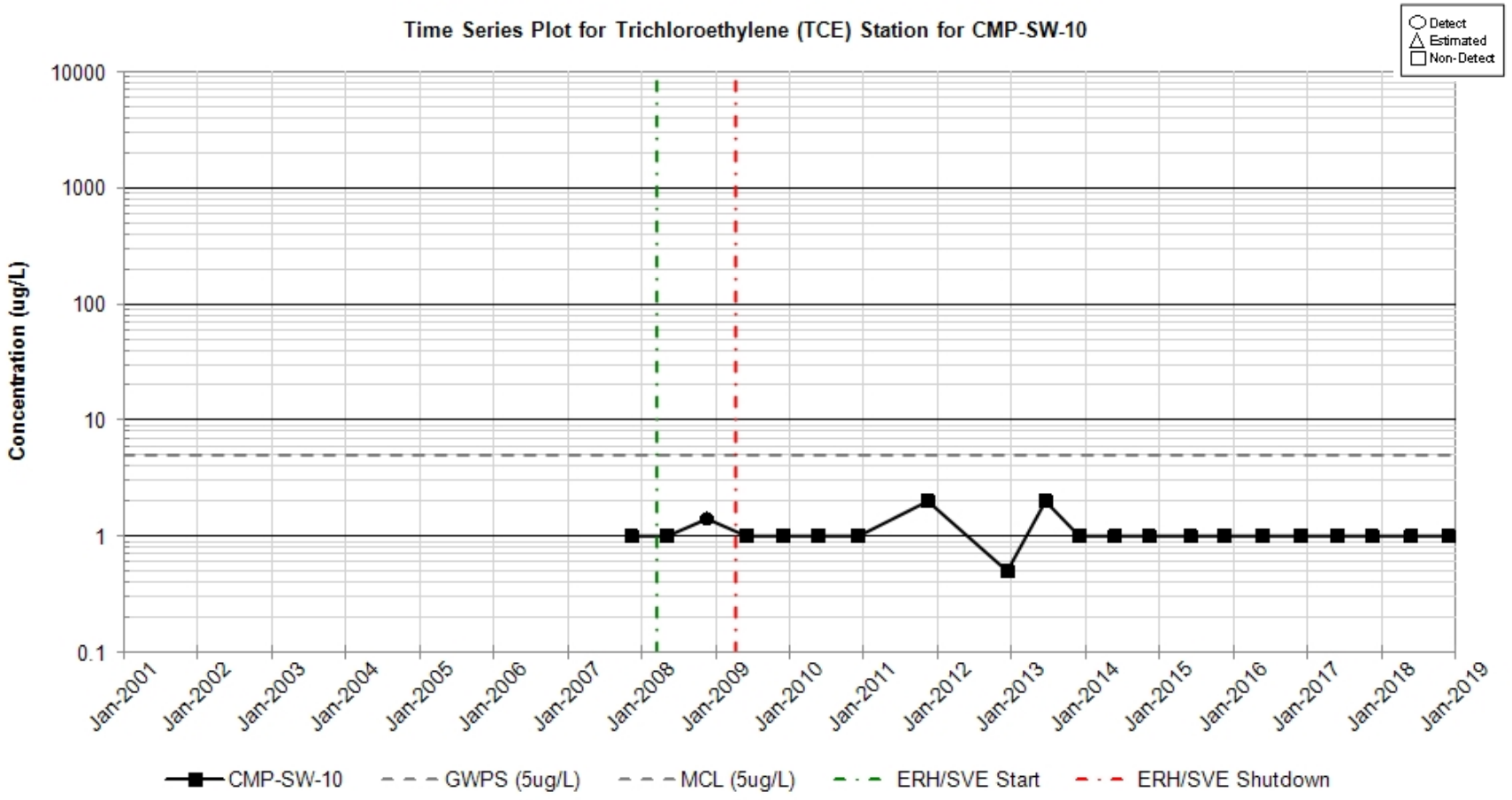

Time Series Plot for Trichloroethylene (TCE) Station for CMP067
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP067B
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

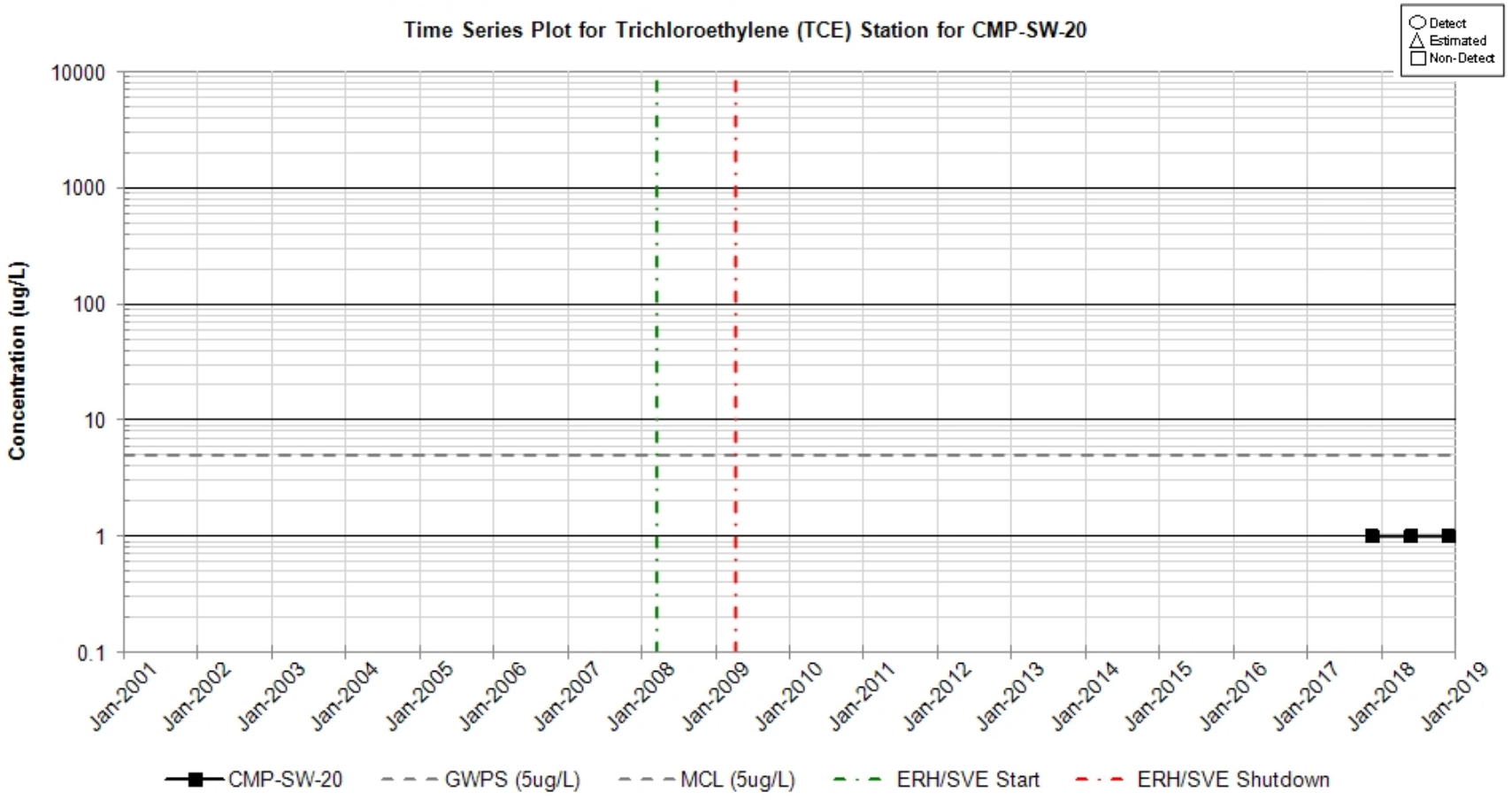

Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-06
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-06
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

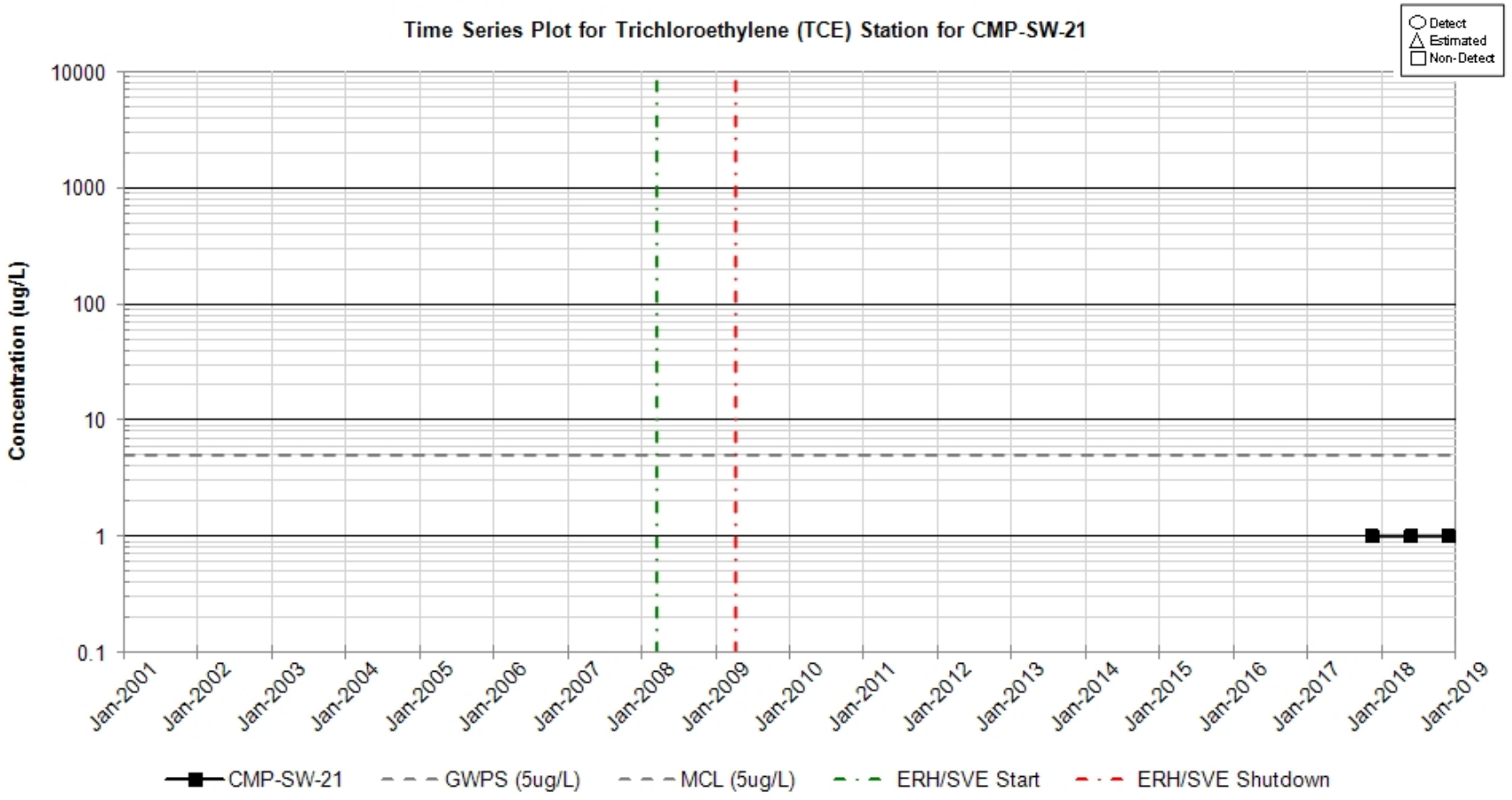

Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-07
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-07
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown


Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-08
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-08
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown


Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-09
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-09
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown


Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-10
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-10
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown


Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-20
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-20
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown


Time Series Plot for Trichloroethylene (TCE) Station for CMP-SW-21
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
CMP-SW-21
GWPS (5ug/L)
MCL (5ug/L)
ERH/SVE Start
ERH/SVE Shutdown

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