Savannah River NUCLEAR SOLUTIONS℠

2025 Groundwater Mixing Zone Report for the D-Area Oil Seepage Basin (631-G) (U)

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LIST OF ABBREVIATIONS AND ACRONYMS

~	approximate, approximately
2Q	second quarter
aka	also known as
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cis-1,2-DCE	cis-1,2-dichloroethylene
cm	centimeter
cm/sec	centimeter per second
CO_2	carbon dioxide
COC	constituent of concern
1,1-DCE	1,1-dichloroethylene
DCE	dichloroethylene
DCM	dichloromethane
DO	dissolved oxygen
DOSB	D-Area Oil Seepage Basin
EQL	estimated quantitation limit
ft	foot (feet)
ft/day	foot (feet) per day
GAU	Gordon Aquifer Unit
GCU	Gordon Confining Unit
GWMZ	groundwater mixing zone
in.	inch(es)
IRA	interim remedial action
km	kilometer(s)
LAZ	lower aquifer zone
LLC	Limited Liability Company
µg/L	micrograms per liter
MCL	maximum contaminant level
m	meter(s)
m/day	meter(s) per day
mg/L	milligram per liter
mi	mile(s)
msl	mean sea level
mV	millivolts
MZCL	mixing zone concentration limit
NA	natural attenuation
ORP	oxidation reduction potential
OU	operable unit

LIST OF ABBREVIATIONS AND ACRONYMS *(Continued/End)*

PCE	tetrachloroethylene
RCRA	Resource Conservation and Recovery Act
RFI/RI	RCRA Facility Investigation/Remedial Investigation
SCDES	South Carolina Department of Environmental Services[1]
SRNS	Savannah River Nuclear Solutions, LLC
SRS	Savannah River Site
TCE	trichloroethylene
VC	vinyl chloride
VOC	volatile organic compound
USEPA	United States Environmental Protection Agency
UTRAU	Upper Three Runs aquifer unit
WSRC	Washington Savannah River Company
yr	year(s)

[1] South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control (SCDHEC) prior to July 1, 2024.

1.0 INTRODUCTION

This 2025 Groundwater Mixing Zone (GWMZ) Report has been prepared to support the regulatory reporting requirements for the D-Area Oil Seepage Basin (DOSB) (631-G) Operable Unit (OU). The reporting requirements are specified in the Groundwater Mixing Zone Application for the D-Area Oil Seepage Basin, Revision 1.5 (SRNS 2009), which was approved by the United States Environmental Protection Agency (USEPA) and the South Carolina Department of Environmental Services (SCDES). In accordance with the GWMZ Application, a report must be submitted on or before July 31 to report and summarize groundwater data and conditions for the previous calendar year. During even-numbered years (e.g., 2026), a mixing zone report that contains groundwater data tables, contaminant plume maps, and descriptions of groundwater monitoring data and results is submitted. During odd-numbered years (e.g., 2025), a letter report that summarizes groundwater monitoring data and results is submitted.

1.1 Unit Description and History

The DOSB OU is located within the Savannah River Site (SRS) approximately (~) 1.6 kilometers (km) (1 mile [mi]) north of the D-Area Powerhouse and ~3 km (1.9 mi) from the nearest SRS boundary (Figure B-1). The DOSB OU is at an elevation of 45 meters (m) (150 feet [ft]) above mean sea level (amsl). During 2025, the water table (i.e., lower aquifer zone [LAZ] of the Upper Three Runs Aquifer [UTRA]) ranged from ~1.9 m (6.3 ft) to 3.5 m (11.6 ft) below ground surface (bgs) (143.1 ft to 144.5 ft amsl) in the area of the DOSB OU (Figures B-2 and B-5). Surface drainage is to the southwest, towards the Savannah River, which is at an elevation ~19.5 m (65 ft) below the elevation of the DOSB OU.

The DOSB was constructed in 1952 as a series of unlined trenches for disposal of waste oil products from A Area and other areas at SRS that were unacceptable for incineration in the 400-D powerhouse boilers. In 1975, the basin was removed from service and backfilled with soil. The DOSB is ~115 m (383 ft) long by 32.4 m (108 ft) wide and 2.4 m (8 ft)

deep. The terrain is flat, with no discernible slope or relief, and is surrounded by a mature forest of hardwoods and softwoods.

The closest surface water feature is a Carolina Bay, a natural wetland located ~33 m (108 ft) to the west of DOSB (Figure B-3). The Carolina Bay is dry during the summer months or periods of little to no precipitation but may contain surface water during wet seasons. Other seasonal wetlands exist ~75 m (250 ft) south of the unit and extend across the width of the mixing zone area.

An intermittent stream is located just south of the DOB 15 well cluster within the mixing zone area, which directs surface drainage, when present, southward out of the mixing zone near the distal end of the boundary (Figure B-3). The major local surface water drainage system is the Savannah River (and associated swamps), located ~2.57 km (1.6 mi) to the west of the unit (Figure B-1).

1.2 Regulatory History

The DOSB OU is listed as a Resource Conservation and Recovery Act (RCRA) 3004(u) Solid Waste Management Unit/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) unit in Appendix C of the Federal Facility Agreement for SRS. A preliminary unit evaluation and a unit reconnaissance were performed in August 1988. These evaluations concluded that hazardous substances were associated with buried drums within the unit (WSRC 1995a). The principal threat source material was described as subsurface hazardous liquids including drum contents, pumpable free product, and discernible layers of sludges. Since the DOSB had received hazardous substances, a unit-screening investigation was implemented, and field investigations were conducted between 1988 and 1994.

Groundwater and soil sampling were performed in 1996 as part of the RCRA Facility Investigation/Remedial Investigation (RFI/RI) Work Plan (WSRC 1995b). The investigation revealed that volatile organic compounds (VOCs) were present in deep soil zones and in groundwater. The RFI/RI Report and Baseline Risk Assessment for the

DOSB OU (WSRC 1997) identified eight VOCs as final constituents of concern (COCs): benzene, 1,1-dichloroethylene (1,1-DCE), 1,2-dichloroethylene, cis-1,2-dichloroethylene (cis-1,2-DCE), dichloromethane (methylene chloride) (DCM), tetrachloroethylene (PCE), trichloroethylene (TCE), and chloroethene (vinyl chloride) (VC).

An interim remedial action (IRA) was implemented in 1996 to remove drums, debris and principal threat source material. The IRA included testing the efficacy of a bioventing remedial technology for the vadose zone and shallow groundwater. Two horizontal pipes were used to introduce fresh air, nutrients, and tracers into the soil at a depth of ~2.4 m (8 ft) (WSRC 1999b). The tests showed that microbial activity in the basin soil did not respond to further stimulation by air injection.

The selected final remedy for the DOSB OU was no further action for soil and a GWMZ for groundwater. The specific controls associated with the DOSB OU required to prevent unauthorized exposure to the contaminated groundwater include: 1) controlled access to the DOSB OU through existing SRS security gates and SRS perimeter fences and compliance with SRS Site Use/Site Clearance procedures; and 2) controlled installation of groundwater wells through existing SRS procedures. The goal of the groundwater remedial action is to decrease the concentration of VOCs in groundwater to levels at or below maximum contaminant levels (MCLs). Groundwater modeling was initially performed as part of the Revision 1.1 GWMZ Application (WSRC 1998) to demonstrate the efficacy of a Natural Attenuation (NA)/GWMZ strategy for DOSB OU groundwater.

In January 2000, a groundwater monitoring and reporting program was implemented to demonstrate compliance with the Mixing Zone Concentration Limits (MZCLs) in plume compliance wells and with the MCLs at the compliance boundary, as required by the GWMZ application. This report is produced to satisfy the requirement of the approved GWMZ application and to provide a biennial report to SCDES and USEPA.

A revised GWMZ Application (Revision 1.2) (WSRC 2005) was submitted in June 2005 to address exceedances of the MCLs specified in the Revision 1.1 GWMZ Application. Subsequent revisions (Revision 1.3 and Revision 1.4) were prepared to address regulator

comments, and the Revision 1.5 GWMZ Application was submitted in January 2009 (SRNS 2009). The Revision 1.5 GWMZ Application was approved by SCDES and USEPA.

As a result of comments received regarding the Revision 1.2 GWMZ Application, SRS reanalyzed groundwater data and the changing conditions of the DOSB OU. The groundwater data showed that contaminant plumes present at the DOSB OU continue to evolve (i.e., change in composition) over time. The primary source contaminants, PCE, TCE, and waste oils were disposed of in trenches at the DOSB where the wastes were periodically ignited in the trenches. Since the water table was present near the base of the DOSB trenches, the oil served as a ready source of carbon for microbes to biodegrade PCE and TCE in the vadose zone near the source and in shallow groundwater downgradient from the source.

From the actions of the IRA (source removal and bioventing) and the reductive dechlorination that occurred (and other active attenuation processes), concentrations of PCE and TCE have decreased, and the degradation products (cis-1,2-DCE and VC) are present and undergoing NA. As discussed in Section 3.3 of this document, groundwater geochemical conditions have evolved and the present NA processes include possible localized aerobic degradation of VC depending on the availability of carbon and physical attenuation (i.e., dispersion and mixing with uncontaminated groundwater).

The paradigm formulated for NA presently occurring at the DOSB OU was incorporated into the 2009 Revision 1.5 GWMZ Application. Results of the modeling performed in 2007 predicted that the VC plume will not exceed the MCL at the GWMZ boundary and will continue to shrink to less than the MCL by 2027. Review of recent trends and data shows that the VC plume will likely not shrink to levels less than the MCL by that time. Despite this, concentration levels are steadily decreasing over time, and it remains highly unlikely that levels will increase above the MZCL.

2.0 SITE HYDROLOGY

The updated and detailed hydrostratigraphic interpretations of the DOSB OU area were used to formulate the numerical models used in the Revision 1.2 and Revision 1.5 GWMZ Applications (WSRC 2005 and SRNS 2009, respectively).

The Floridan aquifer system is within the DOSB OU area and is divided into two aquifer units (separated by a confining unit). From top to bottom, hydrostratigraphy at the DOSB OU includes the UTRAU, the Gordon Confining Unit (GCU [aka the Green Clay Confining Unit]), and the Gordon Aquifer Unit (GAU) (Figure B-2). The Crouch Branch Confining Unit and the deeper Crouch Branch Aquifer Unit are located beneath the GAU. Only the shallow aquifer zones (i.e., UTRAU and GAU) have been impacted by DOSB OU contamination.

The water table aquifer (LAZ of the UTRA) at the DOSB OU is composed of the sands of Dry Branch, Santee and Clinchfield Formations and is in the LAZ of the UTRAU. Locally, the LAZ of the UTRAU is subdivided into three aquifer zones: AQ1, AQ2, and AQ3. These zones are separated by two "weak" aquitards (designated as AT1 and AT2). The shallowest of these aquitards (AT1) underlies AQ1 at ~3 m (10 ft) bgs. The AT1 is described as a gravelly, clay-rich bed at the base of the Dry Branch Formation, resting on the Santee/Clinchfield Unconformity. The AT1 is ~0.9 m (3 ft) thick and has an irregular surface. The second aquitard (AT2) is ~0.9 to 1.2 m (3 to 4 ft) thick and occurs at a depth of ~7.5 m (25 ft). AT2 is absent beneath the eastern portion of the basin and is not laterally continuous outside the immediate area of the DOSB OU.

Underlying AQ3 and directly beneath the basin is another weak aquitard, designated as "AT-Unnamed" (located about 13.5 m [45 ft] bgs). Downgradient from the DOSB OU, the AT-Unnamed pinches out (near the DOSB GWMZ boundary). Beneath AT-Unnamed is another aquifer zone labeled "AQ-Unnamed". The AQ-Unnamed zone is 1.5 m (5 ft) thick beneath the DOSB OU and thickens to roughly 6 m (20 ft) thick downgradient in the section.

The GCU separates the LAZ of the UTRAU from the GAU. The GCU is ~1.5 m (5 ft) thick and the hydraulic head differential across the GCU is normally about 1.8 to 3.3 m (6 to 11 ft). The hydraulic head gradient across the GCU is south-southwest. The GAU is subdivided into three transmissive zones (GAU-AQ1, GAU-AQ2, and GAU-AQ3) that are separated by aquitards (GAU-AT1 and GAU-AT2). Monitoring wells at the DOSB are installed in GAU-AQ1 and GAU-AQ2 to determine impacts and monitor the vertical extent of the contamination. The conceptual cross section of the DOSB hydrostratigraphy can be observed in Figure B-2.

According to water levels measured at well clusters DOB 15 and DOB 21, hydraulic heads in the LAZ of the UTRAU exhibit a downward flow potential. At the DOB 15 and DOB 21 well clusters, the head in the AQ3 zone of the LAZ of the UTRAU is normally 0.9 to 3 m (3 to 10 ft) higher than the GAU. The horizontal hydraulic conductivity of the LAZ ranges from 3 to 7.2 m/day (10 to 24 ft/day), while the horizontal hydraulic conductivity from the calibrated groundwater flow model ranges from 0.15 to 30 m/day (0.5 to 100 ft/day) (WSRC 1998).

3.0 REMEDIAL ACTION

3.1 Objectives

The objective of the remedial action for DOSB OU groundwater is to decrease the concentration of contaminants in the groundwater to levels at or below MCLs for the identified COCs. Since the selected remedy is NA/GWMZ with institutional controls, concentrations of approved GWMZ constituents may exist at elevated concentrations above MCLs within the established GWMZ compliance boundary. Groundwater monitoring is performed to ensure that established groundwater concentration limits (MCLs at GWMZ boundaries and MZCLs within the boundaries) are not exceeded.

3.2 Groundwater Mixing Zone Elements

The purpose of compliance monitoring at the DOSB OU is to demonstrate compliance with MCLs at the compliance boundary wells and compliance with the MZCLs at the plume compliance wells as required. The downgradient GWMZ compliance boundary is located ~495 m (1,650 ft) downgradient of the southern perimeter of the OU, placing it slightly beyond the farthest extent of the VOC plume above the MCL when it was characterized in 1996 (Figure B-3).

The approved Revision 1.5 GWMZ Application requires monitoring of 18 wells (Figure B-4) for groundwater quality and indicator parameters. These wells include two background wells (DOB 9 and DOL 1), nine plume compliance wells (DOB 15, DOB 15A, DOB 15D, DOB 15PZ, DOB 16, DOB 19, DOB19A, DOB 23, and DOL 2), and seven boundary compliance wells (DOB 20, DOB 20A, DOB 21, DOB 21A, DOB 21PZ, DOB 22 and DOB 22A). The 'A' wells are generally screened in the AQ2 aquifer zone, while the wells without a letter designation are usually screened in the AQ3 aquifer zone. Background well DOB 9 is screened in AQ1/AQ2 aquifer zones, and DOL 1 is screened in AQ3.

The groundwater quality parameters (VOCs) are monitored for compliance with MCLs and MZCLs, while indicator parameters are monitored to evaluate the NA processes occurring in the DOSB OU groundwater. The MCLs and MZCLs or GWMZ constituents are shown in Table 1. A summary of monitoring well and surface water sampling and comparison criteria is presented in Table 2.

In addition to the background, plume compliance, and boundary compliance wells, SRS monitors four near source "additional" wells (DOB 11, DOB 12, DOB 13 and DOB 14). These wells are located near the source area and are screened in the AQ2 aquifer zone. SRS also monitors one surface water location (DOBSW1) when sufficient surface water is present. Because of consistently dry conditions at DOBSW1 over the last six years, a replacement surface water station, DOBSW1R, will be used as a replacement for surface water sampling beginning with the 2026 report.

The DOSB OU plume compliance and boundary compliance wells are sampled on an annual basis. These were sampled during the second quarter (2Q) 2025 sampling event. Biennial sampling is required for the DOSB OU background wells, with the most recent sampling conducted in 2Q2024.

3.2.1 Background Wells

The background groundwater quality is used as a baseline to evaluate the extent of attenuation occurring in the plume. The term "background" refers to the data collected from existing background wells DOL 1 and DOB 9.

3.2.2 Plume Compliance Wells

The purpose of plume compliance wells is to verify that contaminants do not exceed MZCLs within GWMZ boundaries. The Revision 1.5 GWMZ Application contains updated MZCLs for PCE, TCE, cis-1,2-DCE and VC. If the concentration of a GWMZ constituent exceeds the MZCL at a plume compliance well, the well will be re-sampled within 30 days of receipt of a valid data report to confirm that the exceedance occurred. If the event is validated by the confirmation sample results, SRS will notify the USEPA and SCDES of this occurrence. If directed by the DOSB OU Core Team, SRS will begin implementing the corrective action strategy as outlined in the Conceptual Corrective Action Plan Strategy (WSRC 1999a).

3.2.3 Boundary Compliance Wells

The purpose of boundary compliance wells is to verify that contaminants do not exceed MCLs at the southern edge of the GWMZ boundary. If the concentration of a GWMZ constituent exceeds the standards listed in Regulation 61-58: State Primary Drinking Water Regulations, or the MCL at a boundary compliance well, the well will be re-sampled within 30 days of receipt of a valid data report to confirm that the exceedance occurred. If the event is validated by the confirmation sample results, SRS will notify the USEPA and SCDES of this occurrence. If directed by the DOSB OU Core Team, SRS will begin

implementing the corrective action strategy as outlined in the Conceptual Corrective Action Plan Strategy (WSRC 1999a).

3.3 Natural Attenuation

As stated in the *Groundwater Mixing Zone Application for the D-Area Oil Seepage Basin (631-G) (U)* (SRNS 2009), reductive dechlorination is not considered a continuous viable process at the DOSB OU. At SRS, groundwater aquifers are normally depleted in natural carbon. However, petroleum hydrocarbons and chlorinated solvents, including PCE and TCE, were co-disposed at the DOSB (1952 to 1975), which provided the carbon source needed for reductive dechlorination of PCE and TCE in groundwater. Biodegradation of PCE and TCE likely also occurred in the vadose zone, but the water table is shallow at the DOSB OU (1.9 to 3.5 m [6.3 to 11.6 ft] bgs). At the DOSB, past biogeochemical zonation may have included reductive dechlorination zones in the groundwater near the source, followed by oxidative degradation of VC at some point downgradient. Over time and with the source removal/treatment of the DOSB OU (1995 to 1997), the concentrations of PCE and TCE have significantly declined, as well as the concentrations of the petroleum hydrocarbons.

The presence of degradation products (cis-1,2-DCE and VC) in the plume wells suggest that past biodegradation has significantly degraded the parent compounds. Since the source of the carbon has become depleted, groundwater has reverted to natural aerobic conditions. Overall, current data does not show reductive dechlorination as a viable process due to aquifer conditions. However, it is possible that reductive dechlorination is still occurring at the DOSB in discrete zones near the source and in "pockets" along the centerline of the plume. Natural attenuation at the DOSB OU relies mainly on physical processes (dispersion/dilution), except for possible localized aerobic degradation of vinyl chloride.

For evaluation, trends for pH, alkalinity, oxidation reduction potential (ORP) and dissolved oxygen (DO) sampled between 2000 and 2006 are compared to 2025 data. Groundwater conditions have evolved over time back to an aerobic environment, so the current

parameters are compared to data from 2000 to 2006 when conditions were more anaerobic and suitable for reductive dechlorination.

In terms of pH, wells sampled between 2000 and 2006 had pH values ranging from 3.5 to 7.8 as compared to the 2025 data (Table A-1) with pH values ranging from 4.5 to 7.3. Microbes capable of degrading chlorinated aliphatic hydrocarbons and petroleum hydrocarbons generally prefer pH values ranging from 6 to 8.

Wells sampled between 2000 and 2006 had ORP values ranging from -30 to 600 millivolts (mV), while the 2025 data show ORP values ranging from -11 to 284 mV. The ORP of groundwater is an indicator of the relative tendency of a solution to accept or transfer electrons. Redox reactions in groundwater containing organic compounds are usually biologically mediated and therefore, the ORP of a groundwater system depends upon and influences rates of biodegradation. In addition, ORP is important because some biological processes operate only within a prescribed ORP range. Reductive dechlorination typically occurs at an ORP range of -200 to 50 mV; however, 16 of the 20 measurements were above this range with the majority of them above 100 mV.

Wells sampled between 2000 and 2006 had DO values ranging from 0 to 8.4 mg/L, while the 2025 data show DO values ranging from 1.59 to 6.71 mg/L. DO is the most thermodynamically favored electron acceptor used by microbes for the biodegradation of organic carbon, whether natural or anthropogenic. Anaerobic bacteria generally cannot function at DO concentrations greater than 0.5 mg/L.

Alkalinity values for wells sampled between 2000 and 2006 ranged from 0 to 180 mg/L, while the 2025 data show alkalinity values range between 0 and 164 mg/L. Six out of 20 measurements were 0 mg/L. There is a positive correlation between zones of microbial activity and increased alkalinity. Increases in alkalinity result from the dissolution of rock driven by the production of carbon dioxide (CO_2) produced by the metabolism of microorganisms. Alkalinity is important in the maintenance of groundwater pH because it buffers the groundwater against acids generated during both aerobic and anaerobic

biodegradation. However, alkalinity does not have a direct effect on reductive dechlorination at the DOSB OU.

Based on the comparison of data collected in 2025 with known reductive dechlorination parameters, reductive dechlorination is not occurring at the DOSB.

More details about the current potential processes affecting concentration trends observed at DOSB are provided in Section 4.4.6 below.

4.0 GROUNDWATER MONITORING

4.1 Monitoring Well Network

The GWMZ monitoring network includes two background wells, nine plume compliance wells, and seven boundary compliance wells (i.e. distal plume monitoring wells). In addition to the approved GWMZ monitoring network, SRS samples four additional wells (near the source) and one surface water location to provide plume detail. The monitoring wells are used to monitor contaminant concentrations in background wells, near the DOSB OU source, beneath the existing plume, in the plume, and at the downgradient compliance boundary. Table 3 provides a list of these 22 wells, the monitoring category, and well screen intervals/aquifer zones monitored.

No changes to the monitoring well network occurred in 2025. Elevations of the wells within the monitoring network were re-evaluated in preparation for this report, and a survey was conducted in 2026. The historical elevation data were found to be inconsistent with the survey results, and as a result, current and historical elevation data were updated with the results of the 2026 survey. The hydrographs and time series plots included in the appendices reflect the more accurate water elevations.

4.2 Sampling and Analysis

During 2025, the scheduled groundwater sampling was completed for all the DOSB wells. Groundwater samples were analyzed for VOCs (PCE, TCE, 1,1-DCE, cis-1,2-DCE, VC,

DCM, and benzene), and field measurements of pH, specific conductance, alkalinity, and NA indicator parameters (ORP and DO) in 2Q2025. The surface water location (DOSBW1) was dry and unable to be sampled in 2Q2025. Background wells DOB 9 and DOL 1 are sampled biennially and were last sampled in 2024.

A recommendation came from the Fourth Five-Year Remedy Review Report for SRS OUs with Groundwater Remedies (SRNS-RP-2015-00419, Revision 1, July 2016) to sample for 1,4-dioxane at the DOSB OU. 1,4-Dioxane exists at the DOSB likely due to the presence of chlorinated solvents which often include 1,4-dioxane as a stabilizer and corrosion inhibitor. Per the recommendation, all 22 monitoring wells and the surface water were sampled for 1,4-dioxane in 2016, and its presence was confirmed. 1,4-Dioxane has since only been detected in three monitoring wells (DOB 15, DOL 2, and DOB 16), making it unnecessary to sample all wells in the DOSB OU for 1,4-dioxane. These three wells were sampled for 1,4-dioxane during the second quarter of 2025 to collect trending data. Results from these three wells are presented in Table A-1 and Appendix D and discussed in section 4.4 below. 1,4-Dioxane will continue to be sampled at these three wells to collect sufficient trending data. There is currently no MCL for 1,4-dioxane, but the current USEPA tap water regional screening level is 0.46 µg/L.

4.3 Monitoring Results

No anomalous data were identified for the DOSB OU groundwater samples. The Groundwater Monitoring Results and Data Review Key are included in Appendix A. Figures are included in Appendix B, hydrographs are included in Appendix C, and the time series plots are included in Appendix D.

4.4 Compliance and Mixing Zone Monitoring

The analyte concentrations and baseline levels for GWMZ monitoring network wells sampled during 2025 are provided in Table A-1. The potentiometric data and the analytical results are depicted in Figures B-5 through B-12. In each table, the sample results are compared with the applicable concentration limits according to the category of the well

sampled. Table 2 includes the specific well categories and limits that apply. The 2025 GWMZ Report indicates the following:

- The field measurements in groundwater samples from 2025 for pH, alkalinity, and specific conductance are similar to past results.
- NA indicator parameters ORP and DO in groundwater samples from 2025 are similar to past results.
- There were no exceedances of the MZCLs in the plume compliance wells nor the near source "additional" wells.
- There were no exceedances of the MCLs in the boundary compliance wells.

4.4.1 Background Wells

Background wells DOL 1 and DOB 9 are sampled on a biennial basis during even numbered years (Figure B-4). DOL 1 and DOB 9 were last sampled during 2Q2024 and were non-detect for all VOCs.

4.4.2 Plume Compliance Wells

There are nine plume compliance wells: DOB 15, DOB 15A, DOB 15D, DOB 15PZ, DOB 16, DOB 19, DOB 19A, DOB 23, and DOL 2 (Figure B-4). All VOC concentrations detected in the plume compliance wells were below their respective MZCLs (Table A-1). 1,1-DCE and DCM were not detected in any of the plume compliance wells.

The maximum VOC concentrations detected in the plume compliance wells were mostly from the same AQ3 well, DOB 15 (PCE at 3.94 µg/L; TCE at 10.1 µg/L; and cis-1,2-DCE at 39.1 µg/L). VC was slightly higher at nearby well DCB 15A, screened in AQ2, than at DOB 15 (8.81 µg/L versus 8.36 µg/L, respectively). DOB 15A also had an estimated detect for benzene (0.89 µg/L). 1,4-Dioxane was detected in wells DOB 15 (0.628 µg/L), DOB 16 (3.01 µg/L), and DOL 2 (1.57 µg/L). Low-level detections of VOCs were also observed at wells DOB, 16, 19, 19A, 23, and DOL 2 – all below their respective MZCLs. Although

significantly below their respective MZCLs, VC and TCE were the only analytes that exceeded their MCLs. VC was detected above its MCL of 2 µg/L in DOB 15 and DOB 15A, and TCE was detected above its MCL of 5 µg/L in wells DOB 15 and DOL 2.

4.4.3 Boundary Compliance Wells

There are seven boundary compliance wells: DOB 20, DOB 20A, DOB 21, DOB 21A, DOB 21PZ, DOB 22, and DOB 22A (Figure B-4). No VOCs were detected in any of the boundary compliance wells with the exception of one estimated detection of cis-1,2-DCE at well DOB 22A (0.35 µg/L) which was below the MCL (5 µg/L) (Table A-1).

4.4.4 Near Source "Additional" Wells

The near source "additional" wells DOB 11, DOB 12, DOB 13, and DOB 14 are monitored for plume definition (Figure B-4). All VOC concentrations detected in these wells were below their respective MZCLs. 1,1-DCE and DCM were non-detect in all four wells (Table A-1).

The maximum VOC concentrations, with exception to PCE, detected in the additional wells were from well DOB 11 (VC at 2.97 µg/L; cis-1,2-DCE at 5.69 µg/L; PCE at 1.78 µg/L; and TCE at 7.62 µg/L). Concentrations of cis-1,2-DCE (2.16 µg/L), PCE (1.99 µg/L) and TCE (3.64 µg/L) were detected in well DOB 12. Benzene was an estimated detect in well DOB 11 at a concentration of 0.92 µg/L. All other VOC concentrations were below detection in wells DOB 11, DOB 12, DOB 13 and DOB 14.

The only analytes to exceed MCLs in the near source "additional" wells were VC and TCE. Both analytes were significantly below their MZCLs and were detected in the same well, DOB 11.

4.4.5 Surface Water Sample

Surface water station DOBSW1 is sampled when sufficient surface water is available (Figure B-4). This location was dry and unable to be sampled in 2025. The surface water location was last sampled in 2019 with low-level detections well below MCLs. As

previously mentioned, because of these consistently dry conditions at DOBSW1 over the last six years, a replacement surface water station (DOBSW1R) will be used beginning with the 2026 report.

4.4.6 Trend Analysis

The time-series plots for all DOSB GWMZ wells (2Q2001 to 2Q2025) and the surface water sampling location (DOBSW1), when available, are provided in Appendix D. The DOSB GWMZ constituents included in the plots are PCE, TCE, cis-1,2-DCE, and VC.

For PCE, there have been no exceedances of the MCL (5 µg/L) for PCE in the boundary compliance wells since sampling began for the GWMZ. Likewise, none of the plume compliance wells have exceeded the MZCL (78 µg/L) for PCE since sampling began for the GWMZ. Concentrations in three plume compliance wells (DOB 15, DOB 16, and DOL 2) display steady concentrations near or below the MCL (5 µg/L) (Figures D-6, D-10, and D-23, respectively), while all other plume compliance wells display decreasing trends or are non-detect for PCE. Only one near source "additional" well (DOB 13) had detects that exceeded the MZCL (78 µg/L) for PCE in 2010, however this well displays a decreasing trend and has been non-detect for PCE since 2015 (Figure D-4). All other results from the near source "additional" wells have been below the MZCL for PCE and also display decreasing trends over the last 10 to 12 years. No exceedances of PCE have occurred in the surface water location (DOBSW1) when samples were able to be collected.

For TCE, there have been no exceedances of the MCL (5 µg/L) for TCE in the boundary compliance wells since sampling began for the GWMZ. Likewise, none of the plume compliance wells have exceeded the MZCL (78 µg/L) for TCE since sampling began for the GWMZ. Plume compliance wells DOB 15 and DOB 2 display a steadily decreasing trend but remain slightly above the MCL (5 µg/L), while wells DOB 15A and DOB 15D remain near or below the MCL for TCE with DOB 15A displaying variability in data (Figures D-29, D-46, D-30, and D-31). Other plume compliance wells display a decreasing trend or are non-detect for TCE. Two of the near source "additional" wells (DOB 11 in 2003 and DOB 13 in 2010) had detects that exceeded the MZCL (200 µg/L) for TCE

(Figures D-25 and D-27). All other results from the near source "additional" wells have been below the MZCL for TCE and display generally decreasing trends since monitoring began. No exceedances of TCE have occurred in the surface water location (DOBSW1) when samples were able to be collected.

There have been no exceedances of the MCL (70 µg/L) for cis-1,2-DCE in the boundary compliance wells since sampling began for the GWMZ. None of the plume compliance wells have exceeded the MZCL (1,164 µg/L) for cis-1,2-DCE since sampling began for the GWMZ. Plume compliance wells DOB 15, DOB 15A, and DOB 15D have not exceeded the MCL within the past 10 years and show either decreasing or stable trends below the MCL. Only one near source "additional" well (DOB 11) had a detect in 2003 that exceeded the MZCL (1,164 µg/L) for cis-1,2-DCE. All other results for the near source "additional" wells have been below the MZCL for cis-1,2-DCE. Like the plume compliance wells, there have been no MCL exceedances in the near source "additional" wells over the past 10 years, and these additional wells generally show either a decreasing trend or remain below detection limits. No exceedances of cis-1,2-DCE have occurred in the surface water location (DOBSW1) when samples were able to be collected.

There have been no exceedances of the MCL for VC in the boundary compliance wells since sampling began for the GWMZ. Only two boundary compliance wells (DOB 21 and DOB 21A) have had detects of VC which occurred in 2005 and were below the MCL (2 µg/L). None of the plume compliance wells have exceeded the MZCL (147 µg/L) for vinyl chloride. At well DOB 15, concentrations have consistently remained above the MCL since monitoring began, though they have shown a slight decrease since 2022. Well DOB 15A exhibits greater variability in VC concentrations, but for the past 15 years results have consistently remained near the MCL, periodically slightly above and below the MCL. The other plume compliance wells have been either steadily decreasing or non-detect. Near source "additional" well DOB 11 has also shown variability in concentrations with results slightly elevated above the MCL over the past 10 years. The other near source "additional" wells have shown decreasing concentrations or have been non-detect for VC. No

exceedances of VC have occurred in the surface water location (DOBSW1) when samples were able to be collected.

Over the past five years, 1,4-dioxane concentrations have been the greatest at DOB 16 with a maximum concentration of 3.7 µg/L in 2021 and displaying overall decreasing concentrations since that time (Figure D-93).

Contaminant transport time estimates for shallow wells suggest that peak concentrations of PCE and TCE should have already occurred within the GWMZ. For PCE and TCE, maximum concentrations in 2006 were 54 µg/L and 100 µg/L, respectively, whereas the highest concentrations of PCE and TCE in 2025 were 3.94 µg/L and 10.1 µg/L, respectively. In general, most VOC concentrations continue to show an overall decreasing trend in the DOSB OU wells. However, VOC concentrations intermittently increase/decrease in various wells, including the additional well DOB 11 and plume compliance wells DOB 15A, DOB 15D and DOB 16. This trend may indicate the following: 1) core plume movement downgradient from the original source area; 2) effects of variability in rainfall thereby impacting the water levels and hydraulic gradients; and 3) degradation of parent VOC contaminants. Periods of high water levels may correlate with increased contaminant concentrations with some lag time to account for water movement. Residual vadose zone contaminants may be released into the groundwater as water elevations rise from lower to higher water elevations due to variability in rainfall (Figures 1-4). Furthermore, contaminant trends presented in Appendix D have been plotted along with the water level hydrographs at the wells to provide evidence that concentration variability might be due to variability in rainfall/water elevations especially in source area wells. For example, VOC concentrations of PCE, TCE, cis-1,2-DCE, and VC at well DOB 11 seem to correlate with rainfall (Figures D-2, D-25, D-48, and D-71, respectively). Similar impact of rainfall/water level variability on VOC concentrations can also be observed for other wells, albeit at different magnitudes. However, it can be observed that even during times of increased VOC concentrations, contaminant levels in the DOB wells are still far below historical highs and below the MZCLs. Additionally, contaminant trends

at the highest concentration well, DOB 15, show steady concentrations of PCE, TCE, cis-1,2-DCE, and VC (Figures D-6, D-29, D-52, and D-75, respectively).

These trends may be related to retardation of the VOCs by the aquitards and clayey zones and/or restricted groundwater flow zones through tighter aquifer zones. Wells DOB 15, DOB 16 and DOL 2 are located within or below clayey zones in which VOCs appear to be sorbing to those clays, thereby prolonging the physical attenuation process (dispersion) as well as slowing the transport vertically. These layers, present at approximately 35 to 45 ft below ground surface at wells DOB 15 and DOB 16, were described as partially lithified clayey sand to silty sand during well installation and soil boring activities. It is unlikely that these layers serve as significant sources of secondary contamination. One likely possibility is that these layers serve as slightly impermeable zones that slow vertical movement of groundwater. Back diffusion of VOCs from the low permeability zone above the more permeable aquifer zone A3 could contribute to the contamination consistently found within the aquifer at DOB 15. Figure B-12 shows the VC plume in cross-section and vertical well distribution. The amount of aerobic and physical degradation of VC in the plume is at least equal to the release from low permeability secondary source areas, as downgradient well locations (DOB 19, DOB 19A and DOB 23) have never exceeded MCLs. As shown in Appendix D, trends of parent and daughter VOCs at wells DOB 11 (source), DOL 2 (near source), and DOB 15 (distal from source) show that there has not been much divergence of contaminant trends (increases of degradation products compared to parent products) to indicate that degradation is occurring at a significant rate after the source removal action.

Contaminant levels in wells downgradient of well cluster DOB 15 (wells DOB 19 and DOB 19A) display decreasing trends (Appendix D). Modeling performed in 2007 indicated that an increase in VC could occur around 2016; however, the trends shown at well DOB 15 show that an increase in VC above levels seen since the beginning of monitoring has not occurred and contaminant transport has more retardation than the modeling indicated. Additionally, further downgradient boundary compliance wells (well

clusters DOB 20, DOB 21, and DOB 22) concentrations continue to be below MCLs or remain non-detect; therefore, the DOSB OU GWMZ is performing adequately.

5.0 GROUNDWATER FLOW DIRECTION AND RATE

5.1 Water Elevation Measurements

Synchronous water level measurements taken in May 2025 were used to prepare a potentiometric surface map (Figure B-5) for AQ1/AQ2, AQ3, and GAU. The hydrographs in Appendix C include the water elevation history for all the wells sampled during 2025.

The maps and hydrographs provide information to calculate the groundwater flow direction and flow rate, as well as the effectiveness of the well network and GWMZ boundaries. The existing well network and GWMZ boundaries are adequate for the DOSB OU plume as the plume is contained within the boundaries and the distribution of monitoring wells defines the horizontal and vertical extent of the existing plume.

Although the spatial distribution of the potentiometric data is limited, the characterization data for the contaminant plumes and the DOSB OU numerical modeling studies to support the GWMZ Application indicate primary groundwater flow and contaminant transport pathways. The DOSB OU monitoring wells are located in-line with primary transport pathways and provide a representative sample of the DOSB OU plume in groundwater.

5.2 Horizontal and Vertical Flow Rates

The groundwater flow rate (or average linear groundwater velocity) is calculated using the following equation:

$$\text{Flow (ft/day)} = \frac{\text{Hydraulic Conductivity, } K_h \text{ (ft/day)}}{\text{Effective Porosity (unitless)}} \times \frac{dh \text{ (ft)}}{dl \text{ (ft)}}$$

The value *dh* is the difference in head, and *dl* is the length of the flow path shown on the map (Figure B-5). The ratio *dh/dl* is the horizontal gradient. A porosity of 0.3 was assumed for the calculations, which is consistent with porosity values used at other SRS OUs. The

groundwater flow velocity is directly related to the hydraulic gradient. A gradient of 0.0005 to 0.0030 was calculated based on data collected between October 1994 and March 1995 (WSRC 1998). The calculated (2025) hydraulic (horizontal) gradient is 0.0037 in the AQ1/AQ2 zones, 0.0028 in the AQ3 zone, and 0.0055 in the GAU. Based on slug test results, the horizontal hydraulic conductivity for the combined AQ1/AQ2 zones ranges from 3.4×10^{-3} to 8.5×10^{-3} cm/sec (10 to 24 ft/day). For the purposes of this calculation, the mid-point of the range, 6.0×10^{-3} cm/sec (17 ft/day) was used. The hydraulic conductivity for AQ3 was calculated at 1.4×10^{-3} cm/sec (3.9 ft/day), approximately four times lower than the combined AQ1/AQ2 zones (WSRC 1998). The hydraulic conductivity for GAU was estimated to be 1.41×10^{-3} cm/sec (4 ft/day). Using the values listed above, the calculated (2025) horizontal flow rate is 75.59 ft/year (ft/yr) in the AQ1/AQ2 zones, 13.19 ft/yr in the AQ3 zones, and 26.79 ft/yr in the GAU. The estimated horizontal gradients and groundwater flow rates are shown in Table 4A.

Based on the 2Q2025 water elevation data, the difference in hydraulic head (comparing AQ1/AQ2 water level measurements with GAU-AQ1 measurements in DOB 15 and DOB 21) range between 2.0 and 2.8 m (6.5 and 9.0 ft). The head difference across the GCU (i.e., hydraulic head difference between the UTRAU/Unnamed-AQ and the GAU) is typically 1.8 to 3.3 m (6 to 11 ft). The hydraulic (vertical) gradients for the DOB 15 and DOB21 wells are 0.57 ft/ft and 0.39 ft/ft, respectively. Using the vertical conductivity of the DOSB OU sediments as 1.0E-5 cm/sec (0.028 ft/day) and porosity as 0.3, the estimated vertical groundwater flow rate, averaged between two points (DOB15 and DOB21 clusters), is about 5.0 m/yr (16.4 ft/yr). The estimated vertical gradients and groundwater flow rates are shown in Table 4B.

In AQ1/AQ2, the estimated horizontal groundwater flow rate for 2Q2025 is ~4 times as much as the estimated vertical flow rate. In AQ3, the vertical flow rate is approximately the same as the estimated 2Q2025 horizontal flow rate. This indicates that, in 2025, the horizontal flow was approximately the same as the vertical flow in AQ3. The groundwater beneath the DOSB OU flows to the southwest towards the Savannah River, and the GWMZ boundaries are adequate for the DOSB OU plume.

5.3 Recharge and Precipitation Measurements

The groundwater recharge rate can be estimated using site-specific precipitation data. Typically, the amount of precipitation that enters groundwater as recharge is 25% of the total measured precipitation. Table 5 is a summary of rainfall over the last two decades (2005 to 2025). The meteorological data was taken from the meteorological station in C Area for the years 2012-2013 due to some technical issues at the D-Area station. Starting in March 2020, rainfall measurements for D Area are radar derived. During 2025, the total rainfall in D Area was 126.4 cm (49.78 in.), which is slightly above the average rainfall rate over the last 20 years (122.8 cm [48.34 in.]). Based on the annual precipitation rate for the year 2025, the recharge to the water table was ~31.61 cm (12.4 in) compared with 34.30 cm (13.5 in) in 2024 and 39.98 cm (15.7 in.) in 2023. The average groundwater recharge over the last 20 years was 30.70 cm (12.1 in.).

6.0 CONCLUSIONS

The scheduled sampling and chemical analyses were completed for all DOSB OU wells in 2025. Surface water location (DOBSW1) was dry and unable to be sampled in 2025. The surface water location was last sampled in 2019 with low-level detections well below MCLs. Due to the consistently dry conditions at DOBSW1, a replacement surface water station (DOBSW1R) is planned to be sampled for the 2026 report. The groundwater data presented in this 2025 GWMZ Report show that the DOSB OU contaminant plume continues to remain below the MZCLs for the plume compliance and near source "additional" wells and below the MCLs for the boundary compliance wells. The maximum concentrations of all GWMZ constituents detected were significantly less than the established criteria.

Along with the chemical analysis, all the DOSB OU well samples were analyzed for NA indicator parameters in 2025. The 2Q2025 results for pH, alkalinity, ORP and DO indicate that the groundwater conditions are too aerobic to support reductive dechlorination. Natural attenuation at the DOSB OU relies mainly on physical processes

(dispersion/dilution) except for possible aerobic degradation of VC depending on the availability of carbon.

The 2025 water levels in individual wells are, on average, 0.14 m (0.47 ft) higher than the 2024 levels (Appendix C). Groundwater flow remains to the southwest toward the Savannah River.

Overall, the groundwater data presented in this 2025 GWMZ Report show that the DOSB OU contaminant plumes continue to remain below the respective MZCLs and MCLs for each well. Based on these results, the 2025 groundwater data confirm that the existing GWMZ boundaries remain adequate for the DOSB OU plume.

The previously modeled timeframe for COCs to decrease to levels below MCLs was approximately 20 years from the time of modeling, or 2027. Although MCLs will not be achieved in that timeframe, the 2025 groundwater data confirm the adequacy of the GWMZ boundaries, and that the plume is not expanding. Further, the most recent Five-Year Remedy Review for Savannah River Site Operable Units with Groundwater Remedies, approved in July 2025, concluded that the DOSB GWMZ with institutional controls is protective of human health and the environment. The DOSB plume is also upgradient of the much larger DAGW plumes. In addition, COC trends are either stable or decreasing (specifically, at wells DOB 19 and DOB 19A), indicating there is no continuing source of contamination. Thus, SRS expects to see concentrations adequately decrease by NA through dispersion and dilution over time.

7.0 REFERENCES

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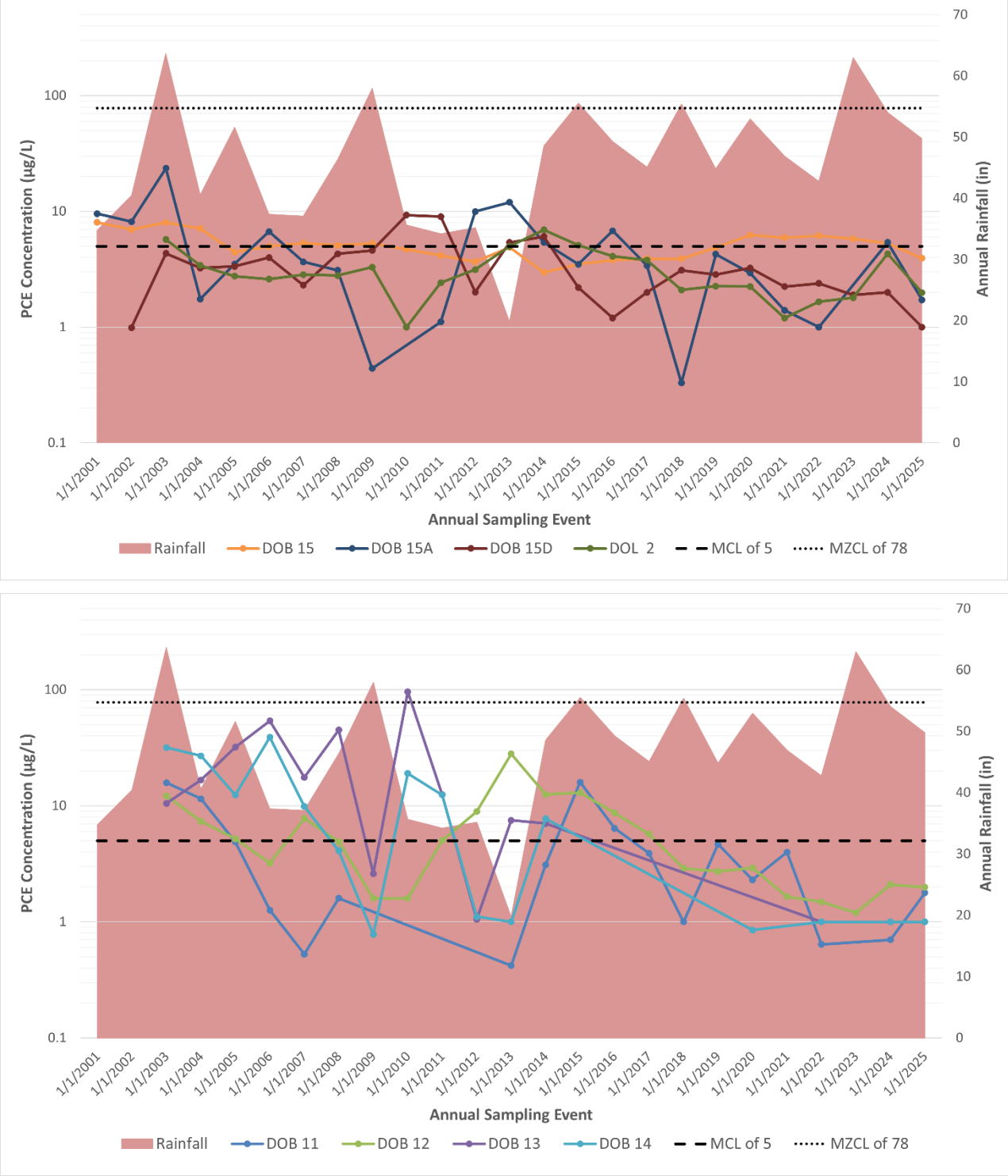


Figure 1. PCE Concentrations vs. Rainfall at Plume Compliance Wells (DOB 15, 15A, 15D and DOL 2) and Additional Wells (DOB 11, 12, 13 and 14) at the DOSB OU

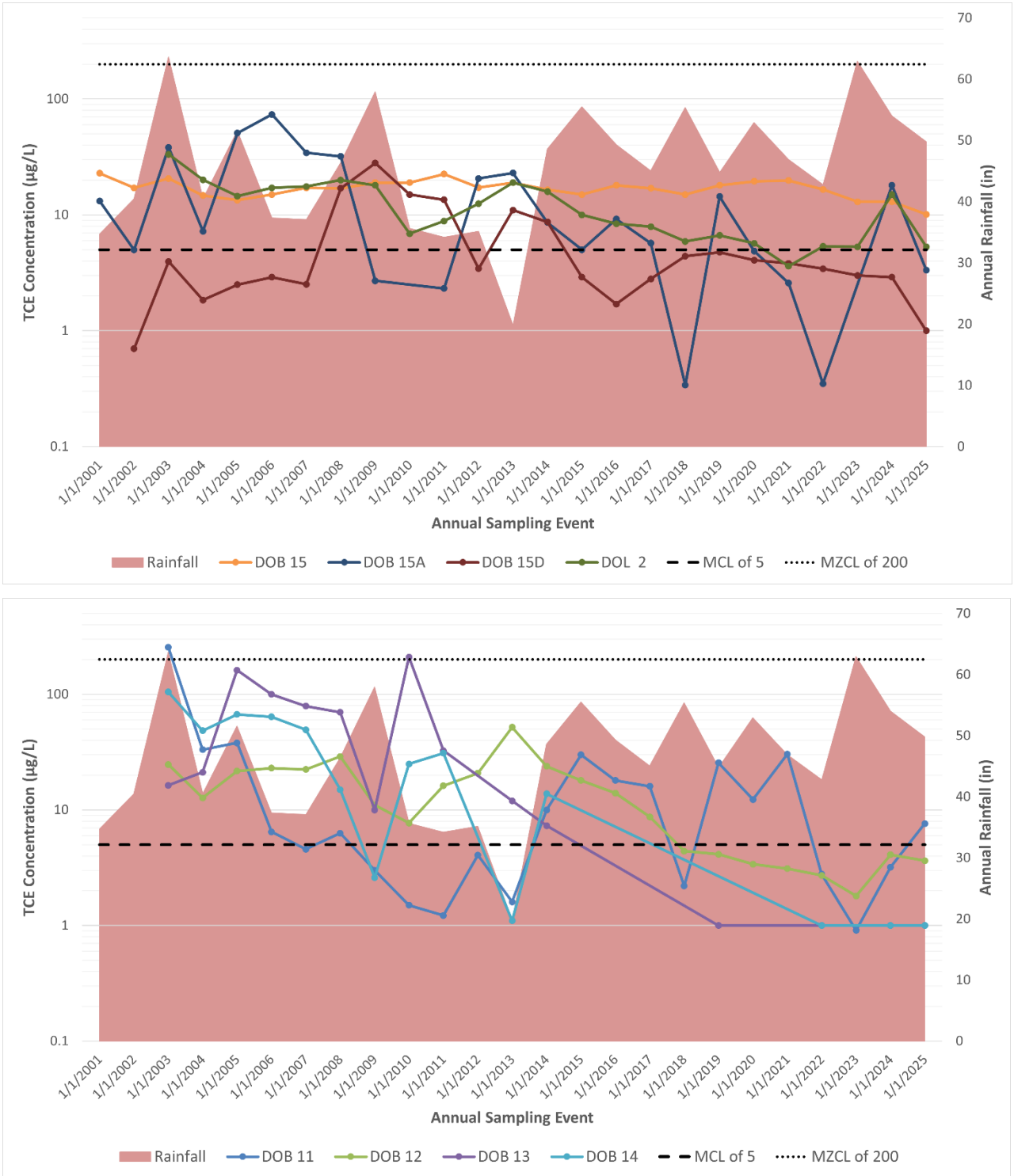


Figure 2. TCE Concentrations vs. Rainfall at Plume Compliance Wells (DOB 15, 15A, 15D and DOL 2) and Additional Wells (DOB 11, 12, 13 and 14) at the DOSB OU

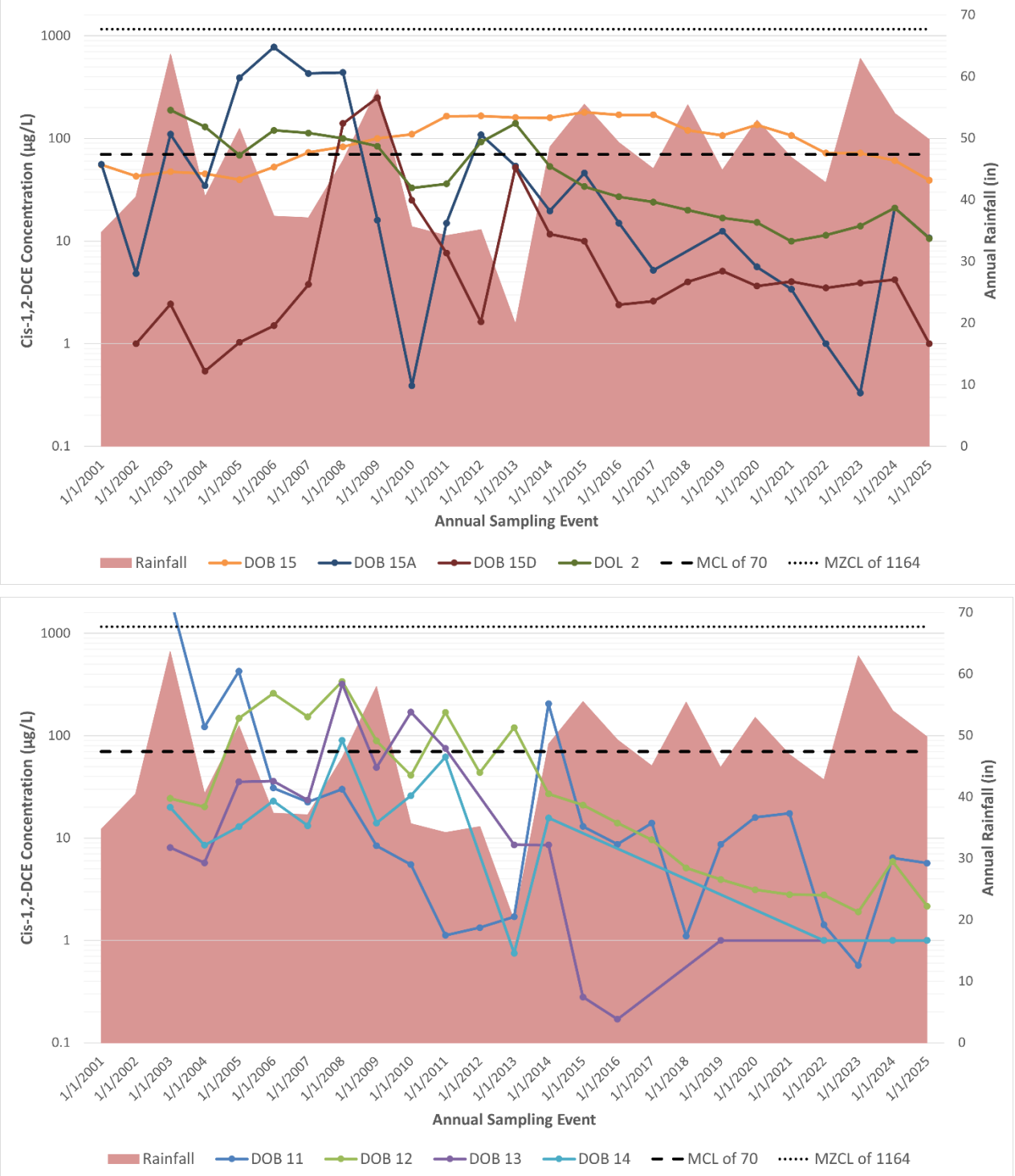


Figure 3. **cis-1,2-DCE Concentrations vs. Rainfall at Plume Compliance Wells (DOB 15, 15A, 15D and DOL 2) and Additional Wells (DOB 11, 12, 13 and 14) at the DOSB OU**

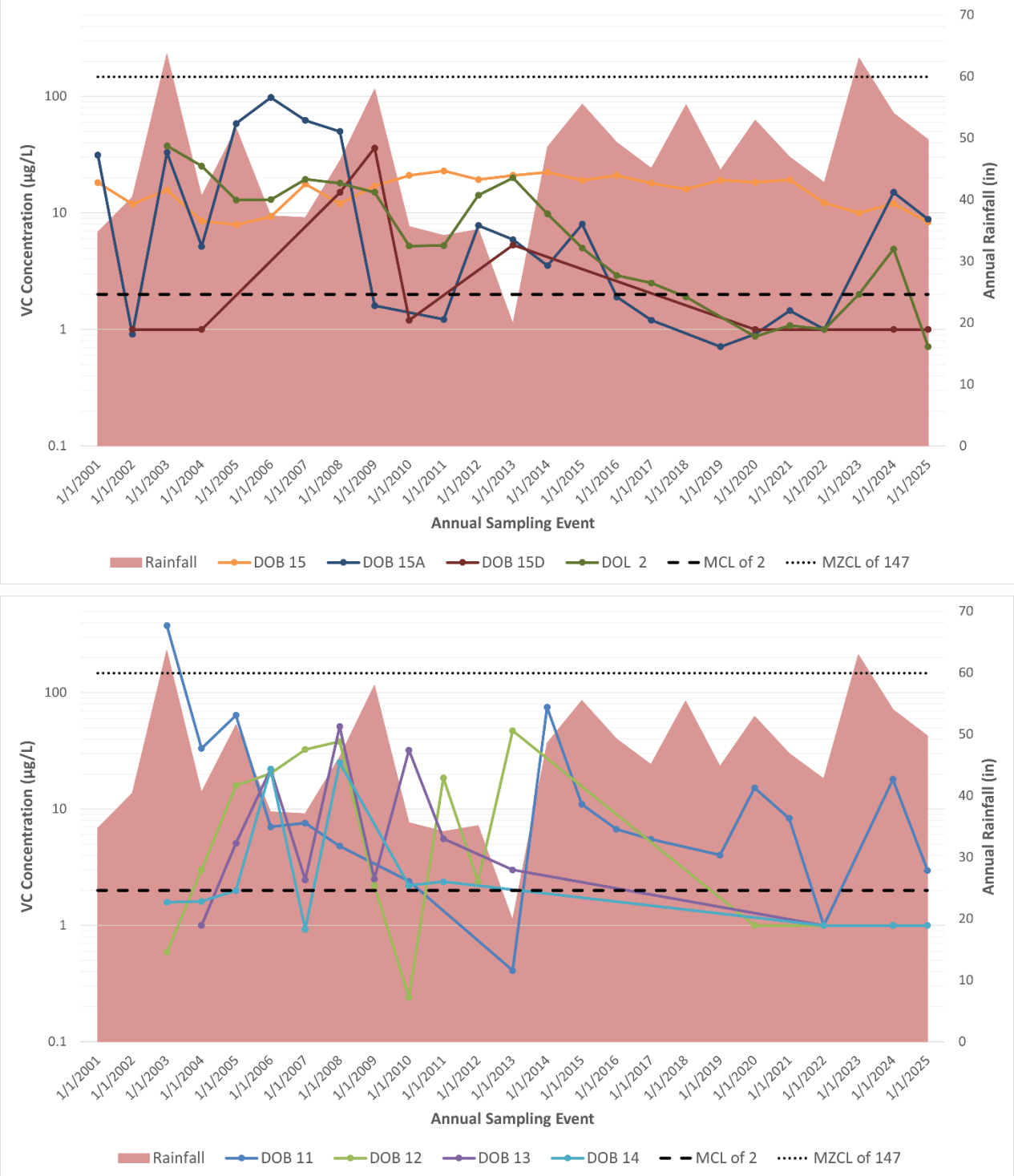


Figure 4. VC Concentrations vs. Rainfall at Plume Compliance Wells (DOB 15, 15A, 15D and DOL 2) and Additional Wells (DOB 11, 12, 13 and 14) at the DOSB OU

Table 1. Comparison Criteria for GWMZ Constituents

GWMZ Constituents	Baseline Value from Background Wells (DOL 1 and DOB 9)	MCL *(µg/L)*	MZCL *(µg/L)*
Tetrachloroethylene (PCE)	<EQL	5	78
Trichloroethylene (TCE)	<EQL	5	200
Cis-1,2-Dichloroethylene (cis-1,2-DCE)	<EQL	70	1,164
1,1-Dichloroethylene (1,1-DCE)	<EQL	7	7
Vinyl Chloride (VC)	<EQL	2	147
Benzene	<EQL	5	5
Dichloromethane (DCM)	<EQL	5	5

Table 2. Monitoring Well and Surface Water Sampling

Well Identification	Constituents Analyzed	Comparison Criteria[1]	Sampling Frequency
Background Wells: DOB 9, DOL 1	GWMZ Constituents, Field Parameters[2]	Baseline	Biennial (2Q)
Plume Compliance Wells DOB 15, DOB 15A, DOB 15D, DOB 15PZ, DOB 16, DOB 19, DOB 19A, DOB 23, DOL 2	GWMZ Constituents, Field Parameters[2]	MZCLs	Annual (2Q)
Boundary Compliance Wells DOB 20, DOB 20A, DOB 21, DOB 21A, DOB 21PZ, DOB 22, DOB 22A	GWMZ Constituents, Field Parameters[2]	MCLs	Annual (2Q)
Additional Wells DOB 11, DOB12, DOB13, DOB14	GWMZ Constituents, Field Parameters[2]	MZCLs	Annual (2Q)
Surface Water DOBSW1	GWMZ Constituents, Field Parameters[3]	MCLs	Annual (2Q)

1 - See Table 1
2 - Field parameters are alkalinity, pH, specific conductance, temperature, turbidity, oxidation reduction potential, dissolved oxygen, volume purged and water level measurements
3 - Field parameters are oxidation reduction potential, dissolved oxygen, pH, specific conductance, and turbidity

Table 3. Details of DOSB Monitoring Wells and Surface Water Location

Well	Monitoring Category	Screen Zone Top *(ft msl)*	Screen Zone Bottom *(ft msl)*	Aquifer Zone
DOL 1	Background Well	119.2	109.2	AQ3
DOB 9	Background Well	148.5	128.5	AQ1/2
DOB 11	Additional Well	131.1	126.1	AQ2
DOB 12	Additional Well	138.8	133.8	AQ2
DOB 13	Additional Well	131.0	126.0	AQ2
DOB 14	Additional Well	137.6	132.6	AQ2
DOL 2	Plume Compliance Well	123.6	113.6	AQ3
DOB 15	Plume Compliance Well	115.7	110.6	AQ3
DOB 15A	Plume Compliance Well	132.7	122.7	AQ2
DOB 15D	Plume Compliance Well	72.35	62.3	GAU-AQ1
DOB 15PZ	Plume Compliance Well	54.8	49.8	GAU-AQ2
DOB 16	Plume Compliance Well	108.2	103.0	AQ-Unnamed
DOB 19	Plume Compliance Well	114.5	104.5	AQ3
DOB 19A	Plume Compliance Well	129.5	119.5	AQ2
DOB 23	Plume Compliance Well	81.02	76.0	GAU-AQ1
DOB 20	Boundary Compliance Well	112.7	102.7	AQ3
DOB 20A	Boundary Compliance Well	129.5	119.5	AQ2
DOB 21	Boundary Compliance Well	113.3	103.4	AQ3
DOB 21A	Boundary Compliance Well	128.9	118.9	AQ2
DOB 21PZ	Boundary Compliance Well	46.3	41.3	GAU-AQ2
DOB 22	Boundary Compliance Well	111.8	101.8	AQ3
DOB 22A	Boundary Compliance Well	127.5	117.5	AQ2
DOBSW1	Surface Water	NA	NA	NA

NA = Not Applicable

Table 4A. Horizontal Groundwater Flow Rate Summary

Aquifer Zones	Sample Period	Well 1 & Water elevation (ft)	Well 2 & Water elevation (ft)	Hydraulic Gradient	Flow Rate *(ft/yr)*
AQ1/AQ2, LAZ of the UTRAU	2Q2025	DOB 11: 146.1	DOB 22A: 140.68	0.0037	75.59
AQ3, LAZ of the UTRAU	2Q2025	DOL 2: 144.46	DOB 22: 140.83	0.0028	13.19
GAU	2Q2025	DOB 15PZ: 139.82	DOB 21PZ: 133.67	0.0055	26.79

Table 4B. Vertical Groundwater Flow Rate Summary

Aquifer Zones	Sample Period	Well 1 & Water elevation (ft)	Well 2 & Water elevation (ft)	Hydraulic Gradient	Flow Rate *(ft/yr)*
UTRAU & GAU	2Q2025	DOB 15A: 146.3	DOB 15PZ: 139.8	0.57	19.52
UTRAU & GAU	2Q2025	DOB 21A: 142.7	DOB 21PZ: 133.7	0.39	13.35

Table 5. Rainfall Measurements at 400-D (in), 2005 to 2025

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2005	2.35	4.43	6.07	1.26	4.12	9.57	5.19	4.64	2.07	2.95	2.53	6.4	51.58
2006	3.19	2.61	1.35	2.29	2.34	6	5.26	1.59	2.81	1.77	3.76	4.4	37.37
2007	3.18	2.87	1.7	2.48	1.23	5.42	4.97	3.04	0.91	1.47	0.14	9.67	37.08
2008	4	5.89	4.66	2.35	2.42	0.27	6.82	6.86	0.57	4.47	2.93	5.13	46.37
2009	2.03	0.8	4.25	5.86	8.21	1.72	4.47	7.67	5.74	2.89	4.56	9.75	57.95
2010	4.9	2.62	2.5	1.71	1.34	7.29	2.39	7.04	2.51	0.48	1.45	1.41	35.64
2011	2.2	4.95	5.67	3.53	1.17	2.81	2.5	2.54	2.38	1.86	2.68	1.91	34.2
2012*	2.07	2.33	3.16	2.16	8.2	2.88	6.78	8.64	3.08	0.49	1.51	5.1	46.4
2013*	0.92	9.89	3.65	5.17	3.17	10.87	11.44	7.39	1.06	0.51	1.58	4.92	60.57
2014	2.77	5.15	3.15	3.69	4.08	5.2	6.1	3.8	4.46	1.13	3.88	5.17	48.58
2015	3.47	5.09	4.12	7.08	0.35	6.03	4.33	2.81	4.64	4.99	7.25	5.36	55.52
2016	1.62	5.13	3.37	3.42	6.81	4.88	4.61	1.96	6.06	4.71	0.49	6.22	49.28
2017	4.5	1.43	1.57	7.23	3.41	6.53	3.26	3.27	6.12	1.27	1.58	4.9	45.07
2018	2.4	1.96	4.04	4.08	8.39	5.25	5.32	1.77	3.45	3.92	7.58	7.24	55.4
2019	4.96	1.09	2.67	4.12	1.78	7.75	1.21	1.93	1.79	4.42	4.39	8.69	44.8
2020	5.51	10.34	4.76	5.65	2.77	4.13	3.52	4.84	6.53	0.48	2.15	2.26	52.94
2021	4.17	8.01	2.99	1.69	2.23	4.26	6.21	5.81	3.51	2.6	0.28	5.13	46.89
2022	4.21	1.86	2.45	4.57	2.28	4.4	4.68	7.16	2.31	2.82	2.43	3.59	42.76
2023	7	4.67	3.79	3.72	3.62	6.34	11.68	11.04	3.18	2.73	1.64	3.55	62.96
2024	2.21	3.71	6.22	1.84	3.89	2.79	9.57	8.62	6.02	0	6.86	2.29	54.02
2025	2.23	1.65	3.97	3.16	9.6	8.74	7.98	7.03	0.53	1.58	0.13	3.18	49.78
Average	3.33	4.12	3.62	3.67	3.88	5.39	5.63	5.21	3.32	2.26	2.85	5.06	48.34
Max	7	10.34	6.22	7.23	9.6	10.87	11.68	11.04	6.53	4.99	7.58	9.75	102.83
Min	0.92	0.8	1.35	1.26	0.35	0.27	1.21	1.59	0.53	0	0.13	1.41	9.82

* For 2012-2013, 100-C rain gauge used for rainfall measurement data because of issues with the D-Area rain gauge.

APPENDIX A

DOSB 2025 GROUNDWATER MONITORING RESULTS TABLES AND DATA REVIEW KEY

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LIST OF FIGURES

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Table A-1. DOSB Groundwater Monitoring Results, 2Q2025 11

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Key to Reading the Tables
The following abbreviations may appear in the data tables:

Constituents

1,2,3,4,6,7,8-HPCDD	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin
1,2,3,4,6,7,8-HPCDF	1,2,3,4,6,7,8-heptachlorodibenzo-p-furan
1,2,3,4,7,8-HXCDD	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin
1,2,3,4,7,8-HXCDF	1,2,3,4,7,8-hexachlorodibenzo-p-furan
Lindane	gamma-benzene hexachloride
PCB	polychlorinated biphenyl
1,2,3,7,8-PCDD	1,2,3,7,8-pentachlorodibenzo-p-dioxin
1,2,3,7,8-PCDF	1,2,3,7,8-pentachlorodibenzo-p-furan
Sp. conductance	specific conductance
TCDD	tetrachlorodibenzo-p-dioxin
TCDF	tetrachlorodibenzo-p-furan

Laboratories

EBL	Environmental Bioassay Laboratory (SRS)
GEL	General Engineering Laboratories, Inc.
TAL	Test America Laboratory

Nomenclature

AZ	Aquifer Zone
CBAU	Crouch Branch Aquifer Unit (previously Black Creek)
CBCU	Crouch Branch Confining Unit
GAU	Gordon Aquifer Unit
GCU	Gordon Confining Unit
GCCZ	Green Clay Confining Zone
LAZ	Lower Aquifer Zone
LLAZ	Lost Lake Aquifer Zone
LLLAZ	Lower Lost Lake Aquifer Zone (previously Lower Congaree)
MAAZ	M-Area Aquifer Zone (previously Water Table)
MSAZ	Middle Sand Aquifer Zone (previously Ellenton Sand)
PZ	Perched Zone
UAZ	Upper Aquifer Zone
ULLAZ	Upper Lost Lake Aquifer Zone (previously Upper Congaree)
UNK	Unknown
UTRAU	Upper Three Runs Aquifer Unit

Sampling Codes

B	blank sample was collected
C	well was pumping continuously
D	well was dry
E	equipment blank was collected
I	well went dry during sampling; insufficient water to collect all samples
L	well went dry before sampling began; only depth to water can be determined
N	well was not stabilized before sampling began
P	inaccessibility or mechanical failure prevented sample collection and field analysis of the water
S	no water in standpipe; for water level events only
T	samples were collected, but some samples were not sent to the laboratory due to high turbidity
W	unable to sample well because of stabilization or sampling equipment failure; water-level measurements were obtained
X	well went dry during purging; samples collected after well recovered

Sampling Methods – ("Pump" column)

B	sample collected using an open-bucket bailer
O	sample collected by method other than bailer or pump
P	sample collected using a bladder pump
S	sample collected using a single-speed centrifugal downhole pump
V	sample collected using a variable-speed pump

Units

deg. C	degrees Celsius
Deg N	Degrees North
Deg W	Degrees West
E	East
ft	feet
mg/L	milligrams per liter
mV	millivolts
msl	mean sea level
N	North
nM	nanomoles
NTU	nepholometric turbidity unit
pCi/L	picocuries per liter
pCi/mL	picocuries per milliliter
pH	pH unit
µg/L	micrograms per liter
µS/cm	microsiemens per centimeter

Other

CLP	USEPA Functional Guideline Codes
CS	carbon steel
DOSB	D-Area Oil Seepage Basin
DF	dilution factor column in data tables
E	exponential notation (e.g., 1.1E–09 = 1.1 x 10^{-9} = 0.0000000011)
STORET	USEPA STORET result qualifiers
Filt.	Data results after application of the Data Usability filter
GWPS	groundwater protection standard
MCL	Maximum contaminant level
MZCL	Mixing zone concentration limit
RSL	Regional screening level
MCS	monitoring constituent standard
Mod	modifier column in data tables
NDD	"not decision data"
NR	Not required sampling
PDWS	primary drinking water standard
PVC	polyvinyl chloride
ST	exceeded the GWPS or MCS column in data tables
TOC	top of casing
<EQL	less than the sample-specific estimated quantitation limit

Results Below Detection

If the analyte is not detected, the sample-specific estimated quantitation limit (EQL) is entered into the result field and is reported with a less than [<] sign. The EQL is defined as the lowest concentration that can be achieved reliably within specified limits of precision and accuracy during routine laboratory operating conditions. The sample-specific EQL is modified for sample concentration or dilution or unusual aliquot size that affects analytical sensitivity.

Uncertainty and Data Usability

In April 1998, the South Carolina Department of Environmental Services (SCDES) accepted guidance proposed by Savannah River Site (SRS) to apply a method for minimizing uncertainty in compliance decisions potentially affecting long-term monitoring or remediation (SCDES 1998). The method is applied by processing or "filtering" the data, using the United States Environmental Protection Agency (USEPA) Functional Guideline Codes (USEPA 1994; USEPA 1999) applied by the laboratories to qualify the analytical results. By removing all data with a result qualifier of "L", "R", "U", and "J" from consideration, groundwater data users can ensure that only quantified

numerical results are applied to the decision process. The output of the filtering process populates the “Filt” column as follows:

1) "Null" or “blank” – Data not remarked. The analytical result is acceptable for use as reported, and the result is not greater than an associated concentration limit for the analyte.
   Rationale: The best result would be one without qualifiers, so the preferred choice would be the maximum result that did not have any qualifiers.

2) "J", “L”, “N”, “NJ”, or “JL” – “J” identifies that the analyte was positively identified; the associated numerical value is an estimated concentration of the analyte in the sample. "L" Indicates the sample result is off scale high. "JL" Indicates an estimated quantity of a sample that is off scale high. “N” is used for all TIC (tentatively identified compounds) and indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification. “NJ” means the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

   Rationale: an estimate can still provide useful information. Although there may be a range of uncertainty around the actual value, the value itself may still grossly exceed a regulatory standard. However, an estimated value is less certain than an unqualified result. Therefore, this would be labeled as "NDD" (not decision data).

3) "U" - material analyzed for but not detected. The analyte concentration is less than the sample specific Estimated Quantitation Limit and labeled “<EQL”.

   Rationale: a result above the detection limit would be chosen before a result below detection so that the process is not biased toward false negatives.

4) "UJ" - result is not above the reported sample quantitation limit, but the reported quantitation limit itself is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

   Rationale: the additional qualifiers make this result less reliable for use than the "U" without qualifiers. These results would be labeled “<EQL”.

5) “Rejected” – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

   Rationale: the only value in providing this result in the report is to indicate that the lab attempted to analyze the sample. If there are any other results available, the result with the “R” qualifier should not be reported. If it is reported, it is definitely “NDD” (not decision data).

Holding Times

Standard analytical methods include a limit (i.e., holding time) on the maximum elapsed time between sample collection and extraction or analysis by the laboratory. In the data tables, the result qualifier Q in the "EPA" column indicates that holding time was exceeded. Analyses performed beyond holding times may not yield valid results.

SCDES allows only 15 minutes elapsing between sampling and analysis for pH. Thus, only field pH measurements can meet the holding time criterion; laboratory pH analyses always will exceed it.

The laboratory procedure used for the determination of specific conductance allows one day elapsing between sampling and analysis. Thus, laboratory specific conductance measurements may exceed the holding time criterion.

Data Qualification

The contract laboratories submit sample- or batch-specific quality assurance/quality control information either at the same time as analytical results or in a quarterly summary. Properly defined and used, data qualifiers can be a key component in assessing data usability. The USEPA Functional Guideline Codes (USEPA 1994; EPA 1999) used by the analytical laboratories are shown in the CLP result qualifier column are defined below. These modifiers appear in the data tables under the column *CLP*. EPA STORET codes appear in the data tables under the column labeled *EPA*.

"CLP" Qualifiers - USEPA Functional Guidelines Codes (USEPA 1994 and USEPA 1999)

(Blank)	Data not remarked. The analytical result is acceptable for use as reported.
J	The analyte was positively identified; the associated numerical value is an estimated concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification. Used for all TIC results.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence of absence of the analyte cannot be verified. Assignment of *R* requires approval by the appropriate WSRC data validation coordinator.
U	Material analyzed for but not detected. Analytical result reported is less than the sample quantitation limit.
NJ	The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. The reported quantitation limit is approximate, and may not represent the actual limit of

quantitation necessary to accurately and precisely measure the analyte in the sample.

Note: These are only some of the qualifiers present in the database. All modifiers associated with the data are published in the official repository of the data.

"EPA" Qualifiers – USEPA STORET Codes

(Blank)	Data not remarked
C	The result is calculated.
I	The result is less than the ssEQL, but equal to or greater than the MDL. Always reported with an associated EPA functional Guideline Code qualifier of *J*.
K	The actual concentration is known to be less than the reported result.
L	The actual concentration is known to be less than the reported result.
O	Sample received by laboratory, but the analysis was lost or not performed.
Q	Sample was held beyond normal holding time prior to analysis.
V	The analyte was detected in both the method blank and the sample.
Y	The result is from an unpreserved or incorrectly preserved sample; the data may not be accurate.

Note: These are only some of the qualifiers present in the database. All modifiers associated with the data are published in the official repository of the data.

APPENDIX A - REFERENCES

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USEPA, 1994. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, 9240.1-05-01, PB 94-963502, EPA540/R-94/013, U.S. Environmental Protection Agency, Washington, DC

USEPA, 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-05A-P, PB99-963506, EPA540/R-99/008, U.S. Environmental Protection Agency, Washington, DC

DOSB 2025 Field Parameters Table			Field Data															Analytical Data								
			SAMPLE COLLECTION DATE	DEPTH TO WATER	SAMPLING EVENT WATER ELEVATION	OXIDATION/REDUCTION POTENTIAL	OXYGEN	PH	PHENOLPHTHALEIN ALKALINITY (AS CACO3)	SPECIFIC CONDUCTANCE	TOTAL ALKALINITY (AS CACO3)	TURBIDITY	VOLUME PURGED	WATER TEMPERATURE	SYNCHRONOUS WATER ELEVATION	SYNCHRONOUS MEASUREMENT DATE	FIELD CONDITIONS	Compliance Comparison	1,1-DICHLOROETHYLENE	BENZENE	CHLOROETHENE (VINYL CHLORIDE)	CIS-1,2-DICHLOROETHYLENE	DICHLOROMETHANE (METHYLENE CHLORIDE	TETRACHLOROETHYLENE (PCE)	TRICHLOROETHYLENE (TCE)	1,4-DIOXANE
																		Unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
																		Limit for Plume Boundary Wells - MZCL	7	5	147	1164	5	78	200	
																		Limit for Plume Boundary Wells - MCL	7	5	2	70	5	5	5	0.46*
Station	Well Use	Aquifer Zone	Day-Month-Year	ft	ft msl	mV	mg/L	pH	mg/L	uS/cm	mg/L	NTU	gal	degC	ft	Day-Month-Year		Limit for Each Well								
DOB 11	Additional	AQ2	21-May-2025	8.63	146.1	-11	4.83	7.3	0	250	164	81	6	18.4	146.1	22-May-2025	No Comments	NR	<EQL (1)	[0.92]	2.97	5.69	<EQL (5)	1.78	7.62	NS
DOB 12	Additional	AQ2	21-May-2025	8.6	147.275	210	4.4	5.4	0	60	8	3.2	5	18.2	147.275	22-May-2025	No Comments	NR	<EQL (1)	<EQL (1)	<EQL (1)	2.16	<EQL (5)	1.99	3.64	NS
DOB 13	Additional	AQ2	21-May-2025	9.97	145.753	200	5.73	5.5	0	63	17	3.9	7	19.1	145.753	22-May-2025	No Comments	NR	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 14	Additional	AQ2	21-May-2025	9.73	145.945	201	6.71	5.5	0	49	17	5.8	4	18.8	145.945	22-May-2025	No Comments	NR	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 9	Background Well	AQ1/2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	No Comments	MCL	NS	NS	NS	NS	NS	NS	NS	NS
DOL 1	Background Well	AQ3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	No Comments	MCL	NS	NS	NS	NS	NS	NS	NS	NS
DOB 20	Boundary Compliance	AQ3	21-May-2025	9.07	143.153	120	4.99	6.3	0	208	9	0.5	13	18.8	143.153	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 20A	Boundary Compliance	AQ1/2	21-May-2025	9.05	142.907	193	4.95	4.7	0	46	0	0.9	9	17.6	142.907	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 21	Boundary Compliance	AQ3	21-May-2025	8.48	142.721	21	4.49	6.8	0	154	10	0.5	13	18.8	142.721	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 21A	Boundary Compliance	AQ1/2	21-May-2025	8.62	142.748	153	4.77	5	0	46	1	0.7	8	17.8	142.748	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 21PZ	Boundary Compliance	GAU	21-May-2025	17.68	133.674	183	3.39	4.7	0	39	0	0.3	31	19	133.674	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 22	Boundary Compliance	AQ3	21-May-2025	9.29	140.831	38	1.59	6.6	0	140.2	18	1.1	13	19	140.831	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	[0.35]	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 22A	Boundary Compliance	AQ1/2	21-May-2025	9.12	140.683	194	3.21	4.9	0	49	9	0.3	10	18.5	140.683	22-May-2025	No Comments	MCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 15	Plume Compliance	AQ3	21-May-2025	7.93	145.515	284	3.44	4.6	0	183	0	1.1	10	18.5	145.515	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	8.36	39.1	<EQL (5)	3.94	10.1	0.628
DOB 15A	Plume Compliance	AQ2	21-May-2025	6.45	146.288	68	4.1	5.8	0	129	18	1	10	18	146.288	22-May-2025	No Comments	MZCL	<EQL (1)	[0.89]	8.81	10.7	<EQL (5)	1.72	3.34	NS
DOB 15D	Plume Compliance	GAU	21-May-2025	10.1	142.858	205	5.6	4.9	0	32	0	1	30	19	146.508	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 15PZ	Plume Compliance	GAU	21-May-2025	12.7	139.817	178	3.5	4.8	0	52	0	0.8	30	19.1	139.817	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOB 16	Plume Compliance	AQ_Unnamed	21-May-2025	9.26	144.793	12	3.97	6.3	0	242	72	1.7	12	17.9	144.793	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	[0.63]	8.17	<EQL (5)	<EQL (1)	<EQL (1)	3.01
DOB 19	Plume Compliance	AQ3	21-May-2025	6.31	143.113	144	2.77	6.6	0	170.3	16	0.7	13	19.6	143.113	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	<EQL (1)	1.4	<EQL (5)	<EQL (1)	[0.35]	NS
DOB 19A	Plume Compliance	AQ2	21-May-2025	6.42	142.765	120	2.72	6.4	0	174.2	14	0.7	8	18.5	142.765	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	[0.74]	2.03	<EQL (5)	<EQL (1)	[0.7]	NS
DOB 23	Plume Compliance	GAU	21-May-2025	8.92	140.467	202	2.98	5.5	0	42.8	14	0.9	22	19.2	140.467	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	<EQL (1)	[0.79]	<EQL (5)	<EQL (1)	<EQL (1)	NS
DOL 2	Plume Compliance	AQ3	21-May-2025	11.63	144.46	260	4.83	4.5	0	203	0	4.8	11	18	144.46	22-May-2025	No Comments	MZCL	<EQL (1)	<EQL (1)	[0.71]	10.6	<EQL (5)	1.99	5.31	1.57
DOBSW1	Surface Water	AQ1/2	21-May-2025	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA	NS	NS	NS	Dry	NR	NS	NS	NS	NS	NS	NS	NS	NS

* The Regional Screening Value (RSL) is used for 1,4-Dioxane instead of an MCL

Explanation

[##]	EPA Functional Guideline Code of 'J' was applied to the result, indicating an estimated quantity.
<EQL(##)	Constituent was below detection. The sample-specific Estimated Quantitation Limit is in parentheses.
	Result exceeds applicable limit.
	Result exceeds MCL but is below the applicable limit of the MZCL
REJ	Result Rejected.
	Result is less than the applicable limit and without EPA Functional Guidline qualifiers.
NS	Requested to be sampled but was not. See comments as to why not.
Blue Text	Not a required sample analysis.
NA	Not Applicable

Table A-1. DOSB Groundwater Monitoring Results, 2Q2025

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APPENDIX B

DOSB 2025 FIGURES

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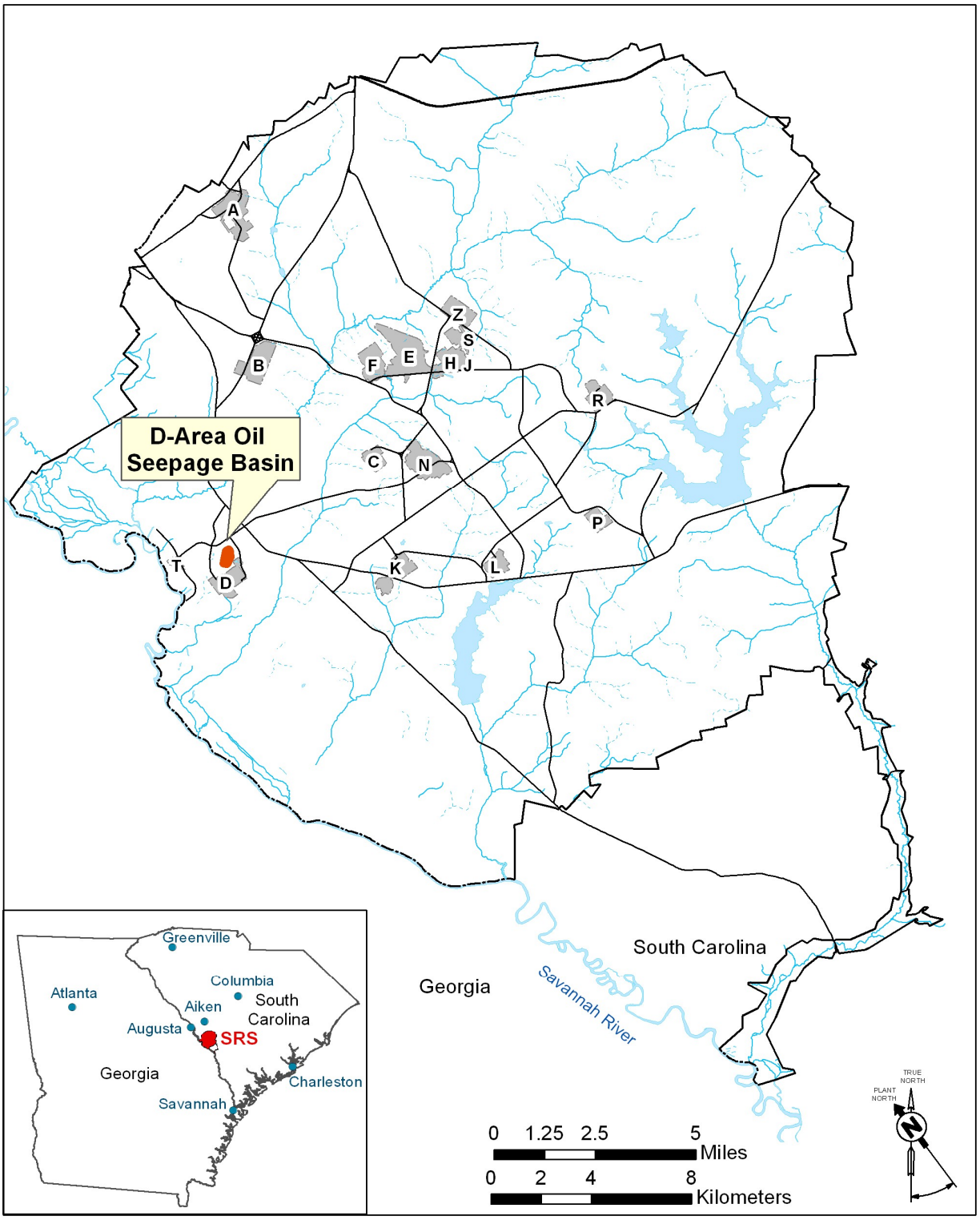


Figure B-1. Location of D-Area Oil Seepage Basin (DOSB) at Savannah River Site

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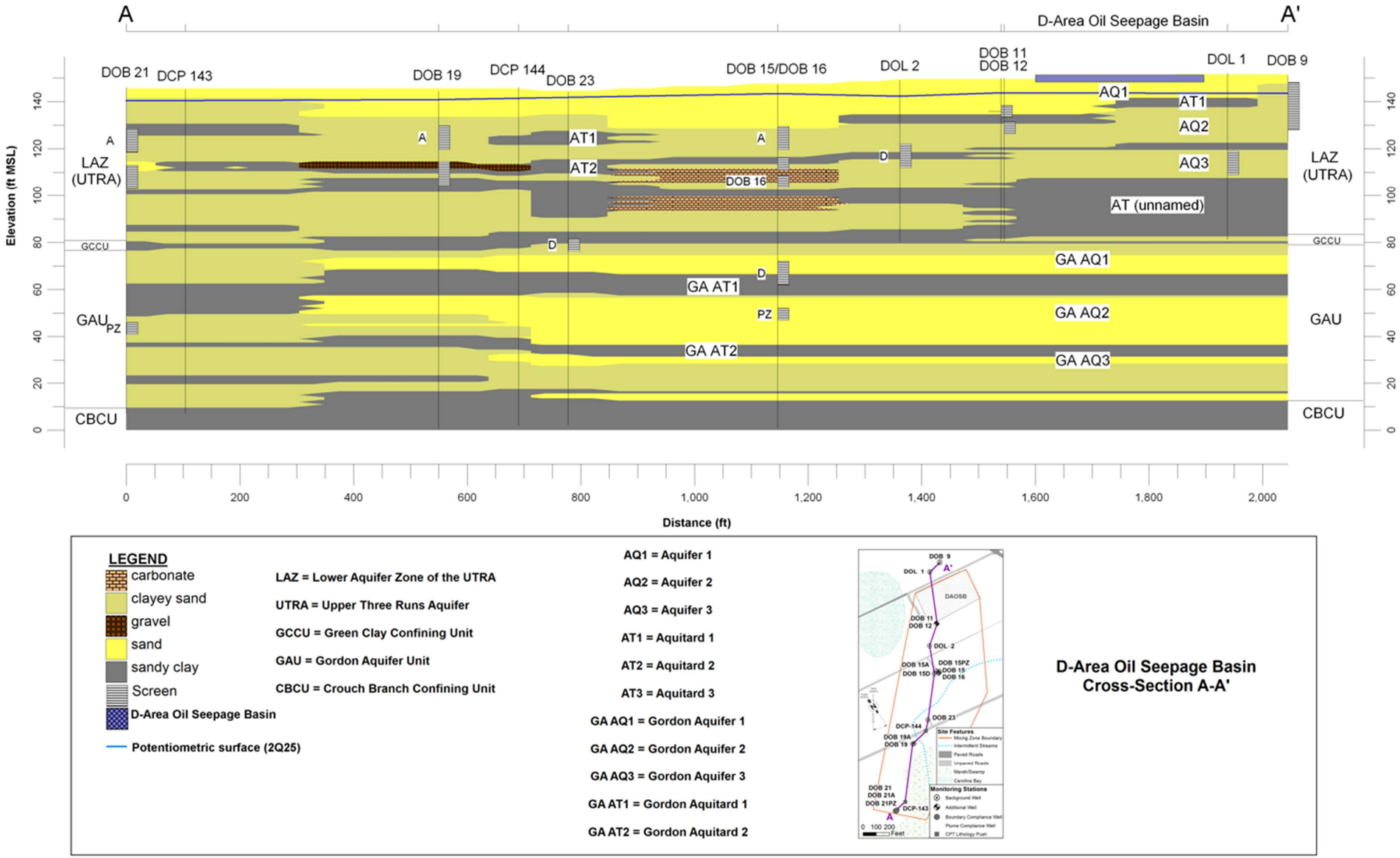


Figure B-2. DOSB Conceptual Cross-Section A-A'

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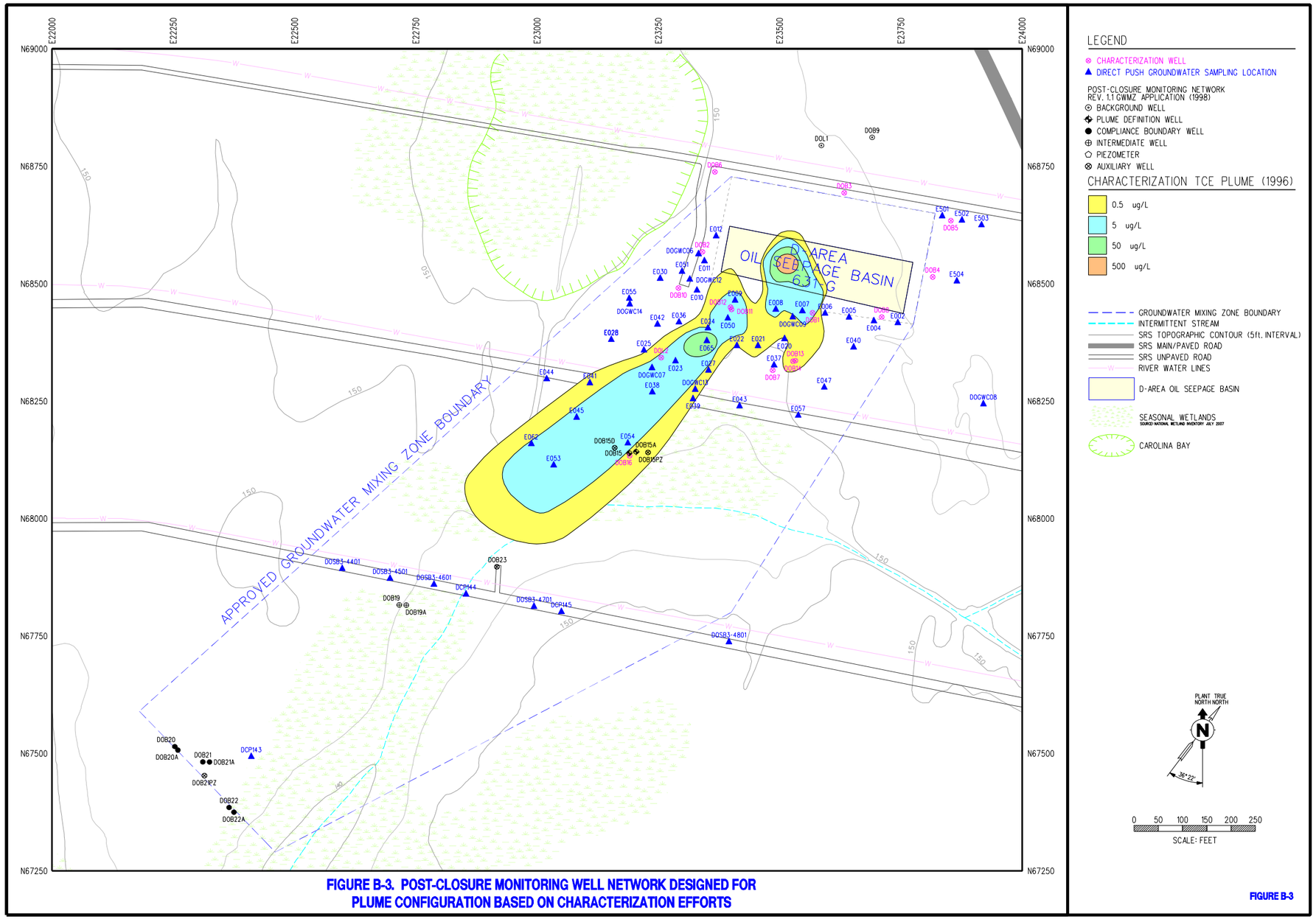


FIGURE B-3. POST-CLOSURE MONITORING WELL NETWORK DESIGNED FOR PLUME CONFIGURATION BASED ON CHARACTERIZATION EFFORTS

Figure B-3. Post-Closure Monitoring Well Network Designed for Plume Configuration Based on Characterization Efforts

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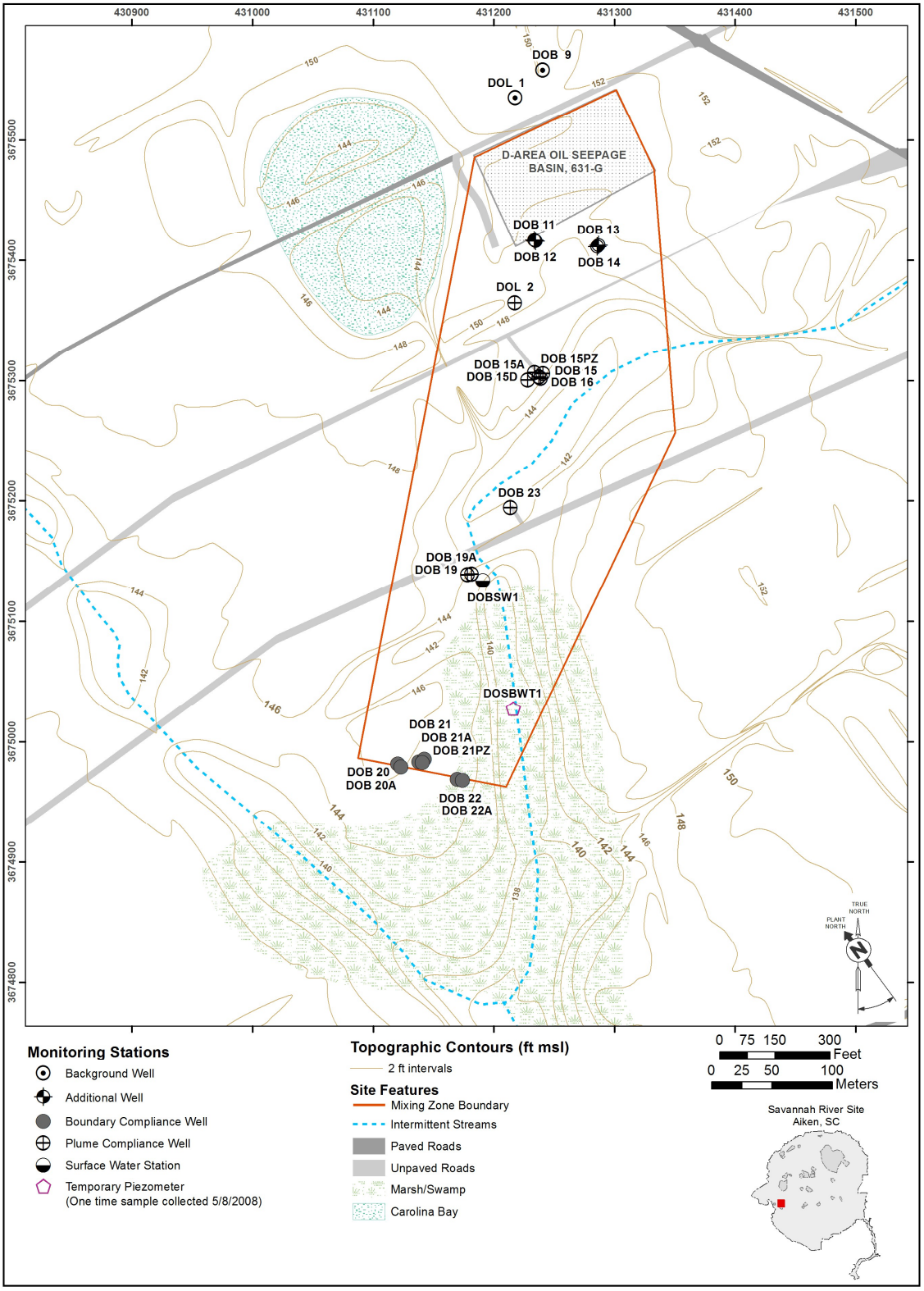


Figure B-4. DOSB Monitoring Well Network

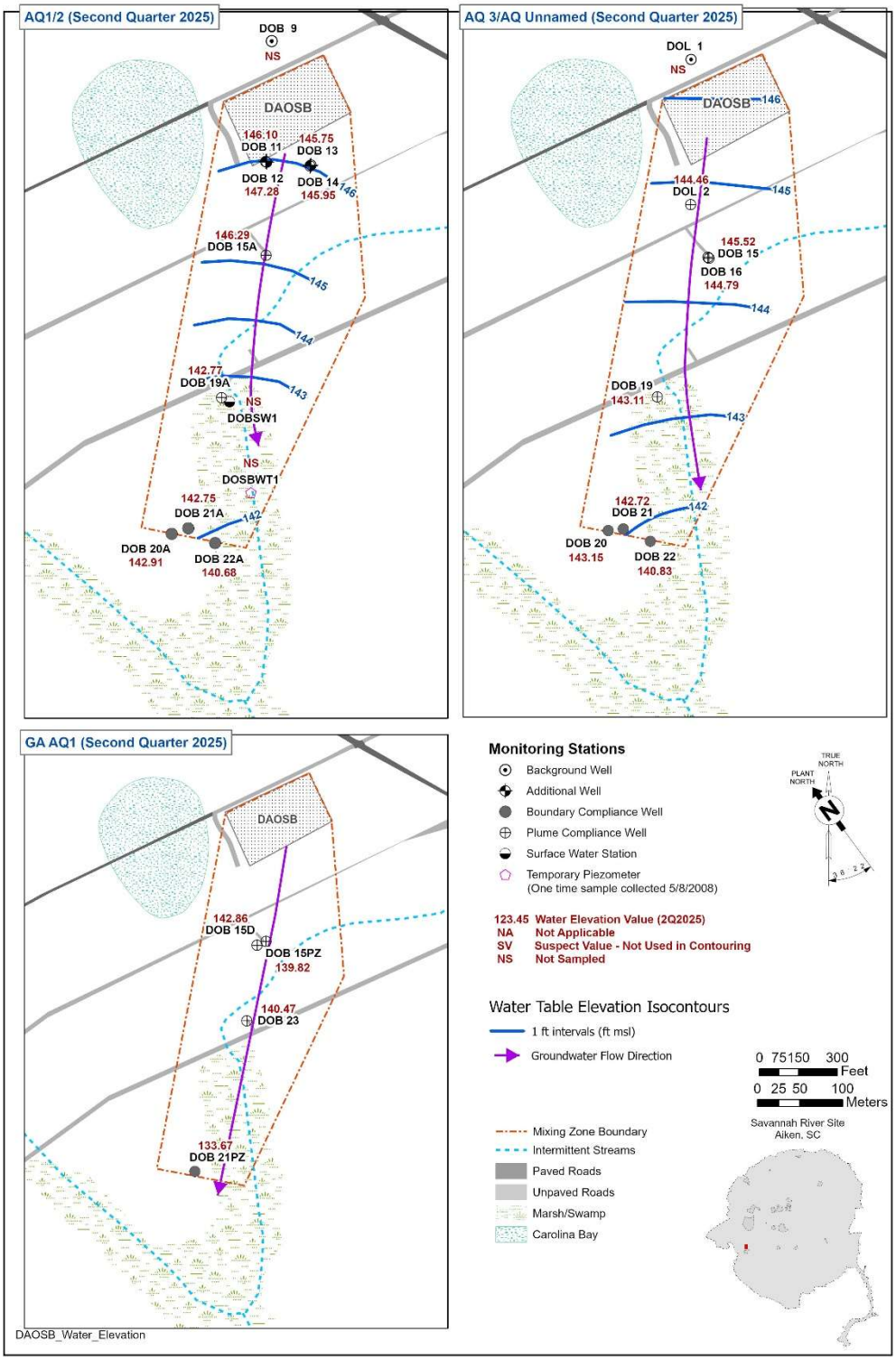


Figure B-5. DOSB Potentiometric Data – AQ1/2, 3 and GAU AQ1, 2025

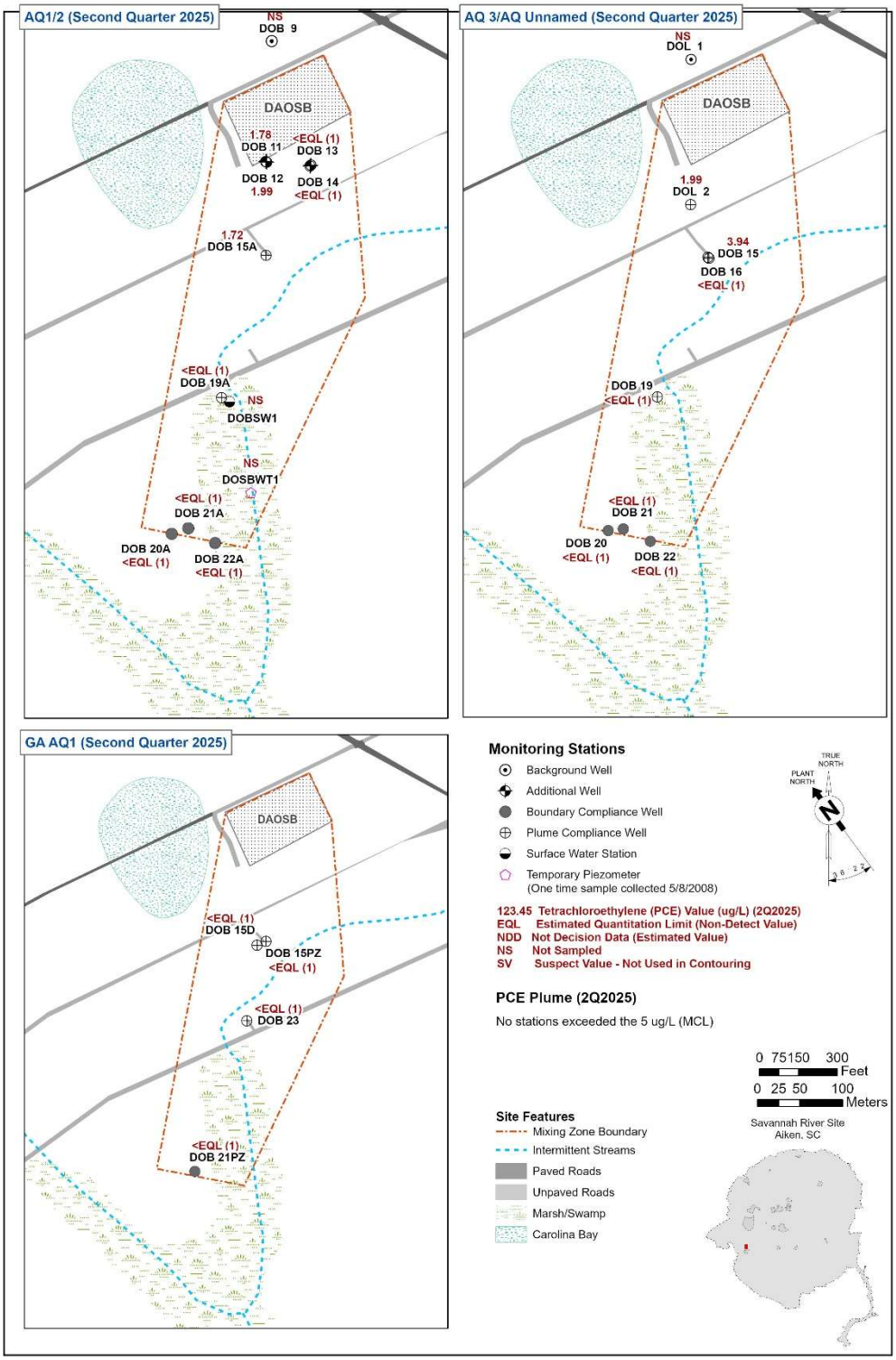


Figure B-6. DOSB PCE Concentrations in AQ1/2, 3 and GA AQ1, 2025

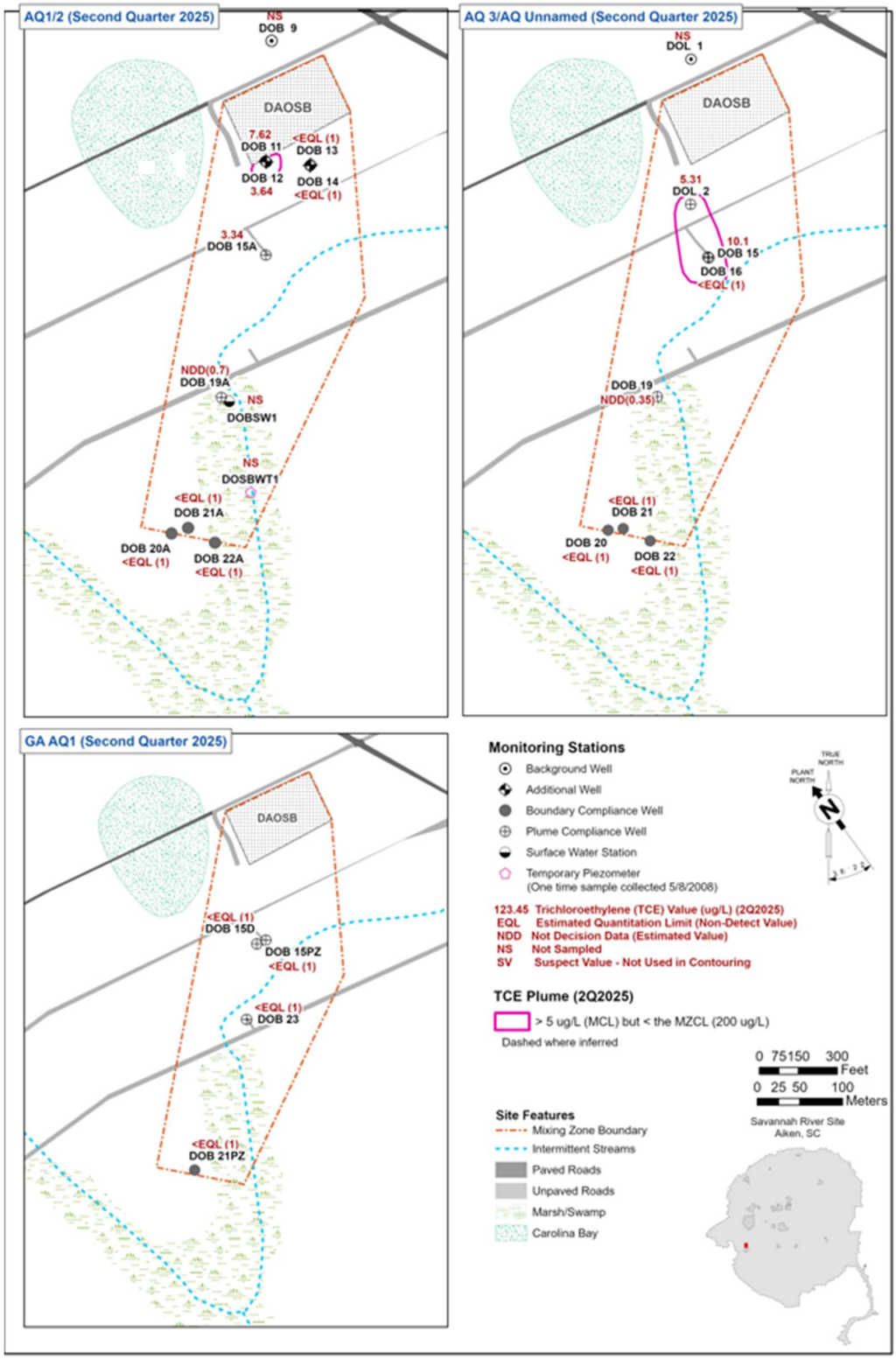


Figure B-7. DOSB TCE Concentrations in AQ1/2, 3 and GA AQ1, 2025

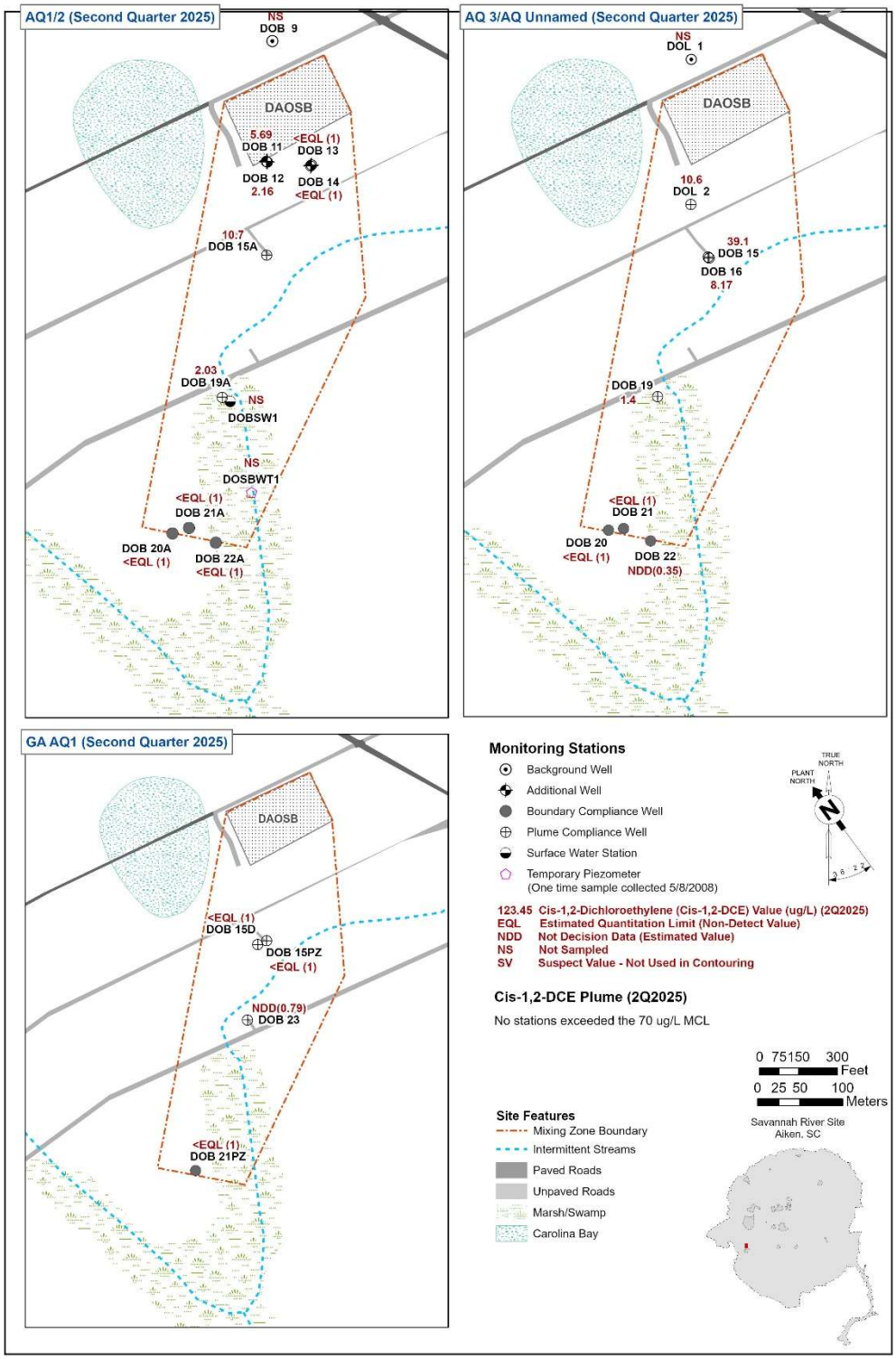


Figure B-8. DOSB cis-1,2-DCE Concentrations in AQ1/2, 3 and GA AQ1, 2025

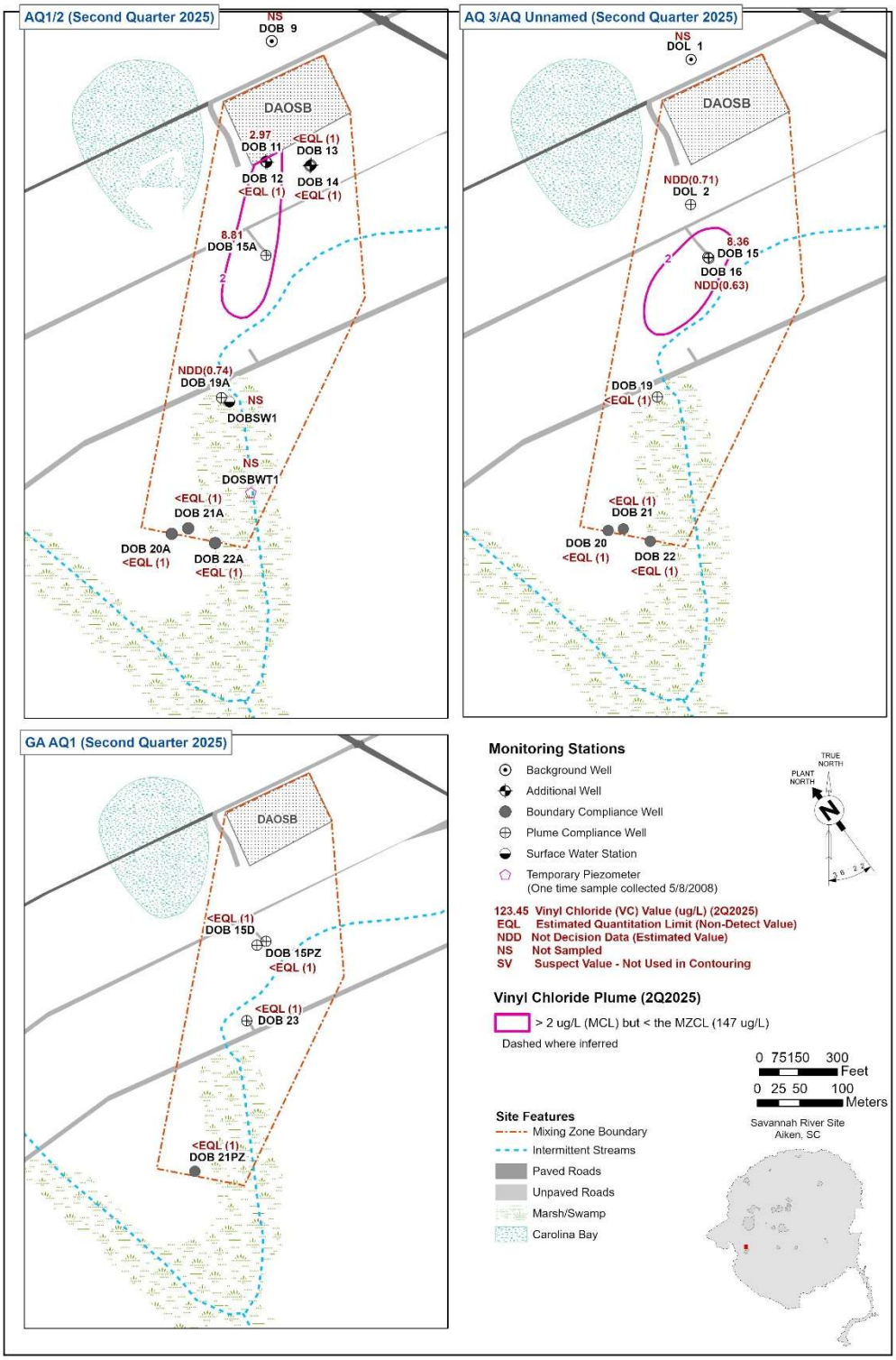


Figure B-9. DOSB Vinyl Chloride in AQ1/2, 3 and GA AQ1, 2025

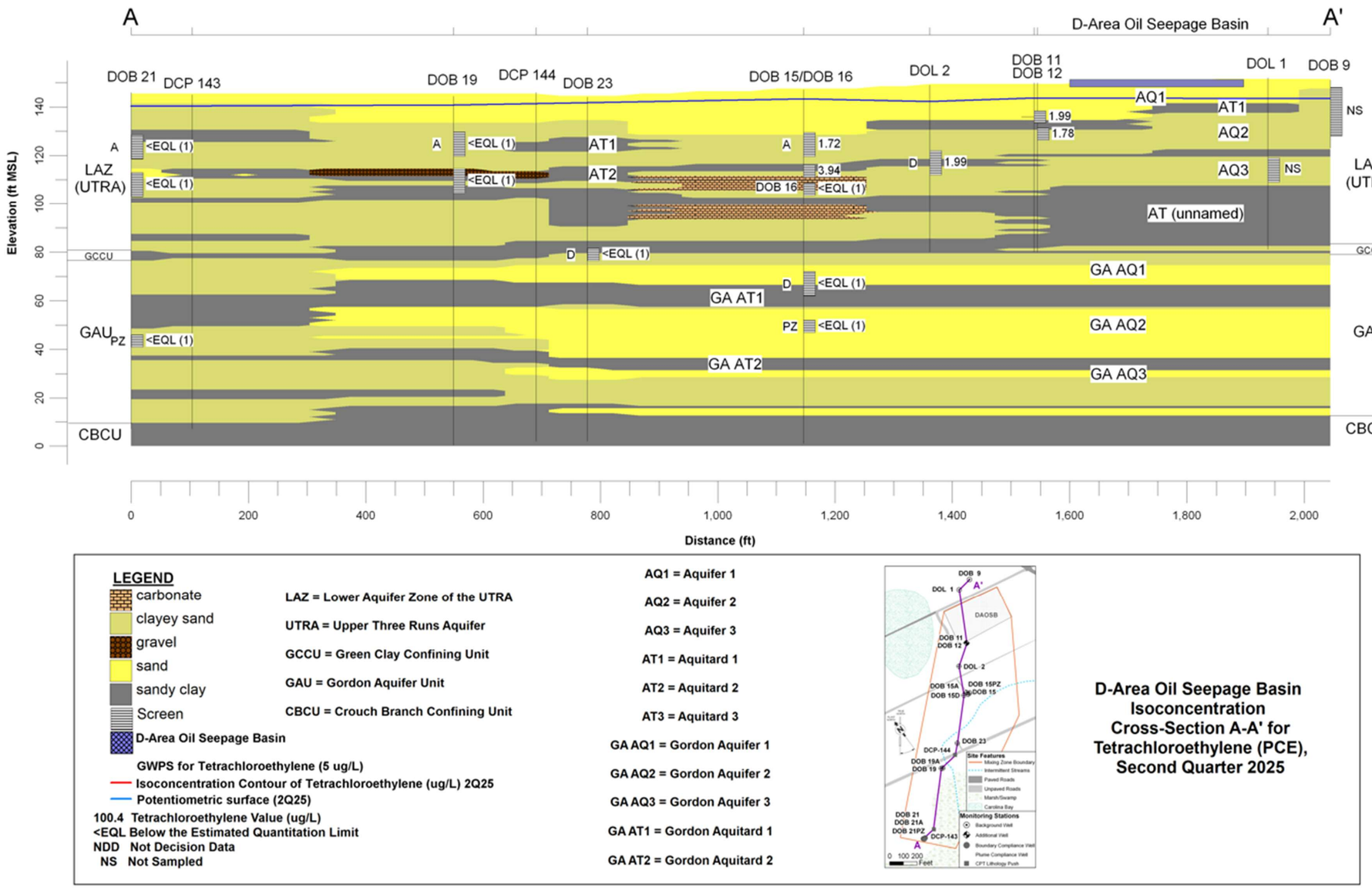


Figure B-10. DOSB Isoconcentration Cross-Section A-A’ for PCE, 2Q2025

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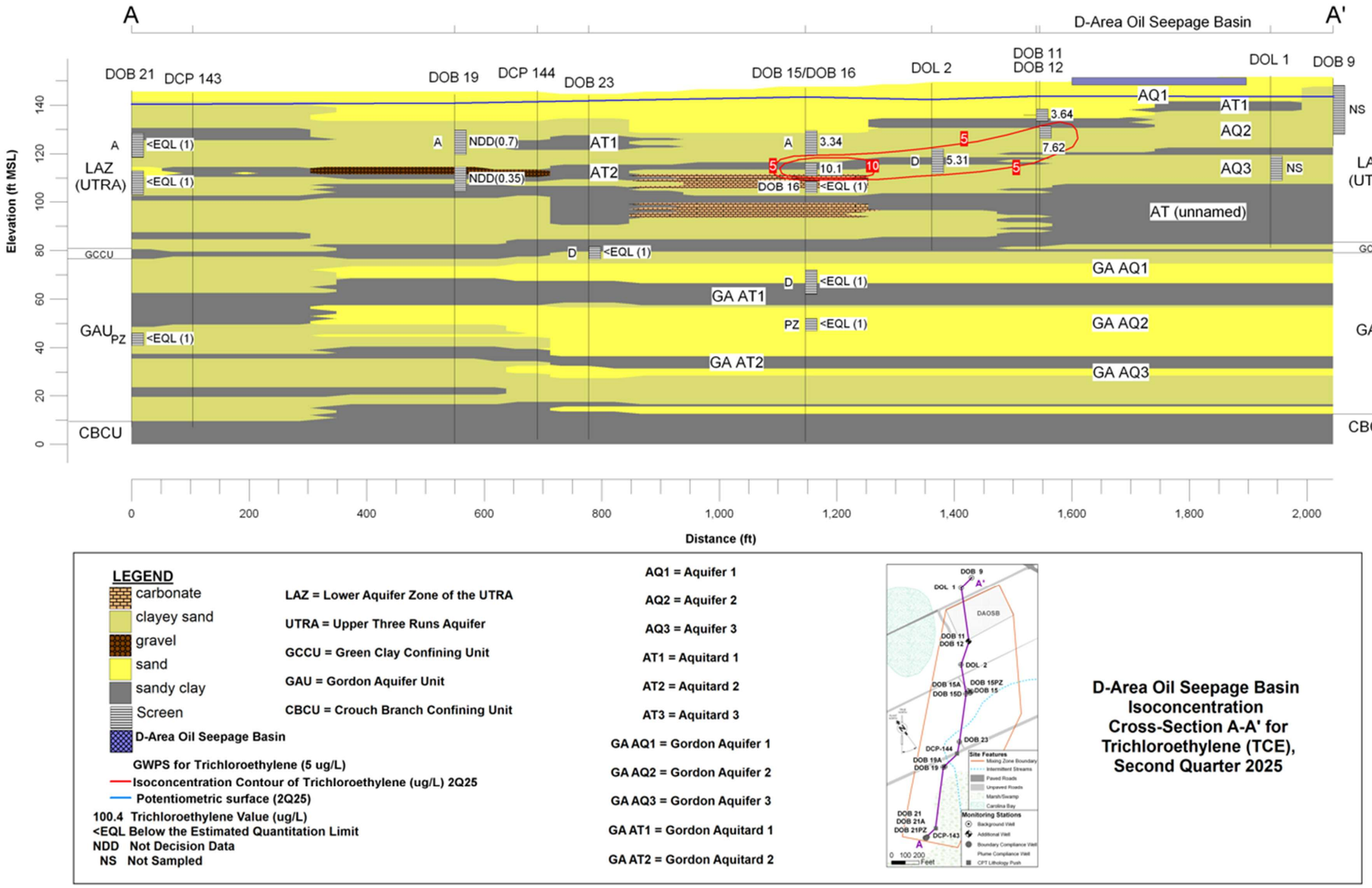


Figure B-10. DOSB Isoconcentration Cross-Section A-A’ for TCE, 2Q2025

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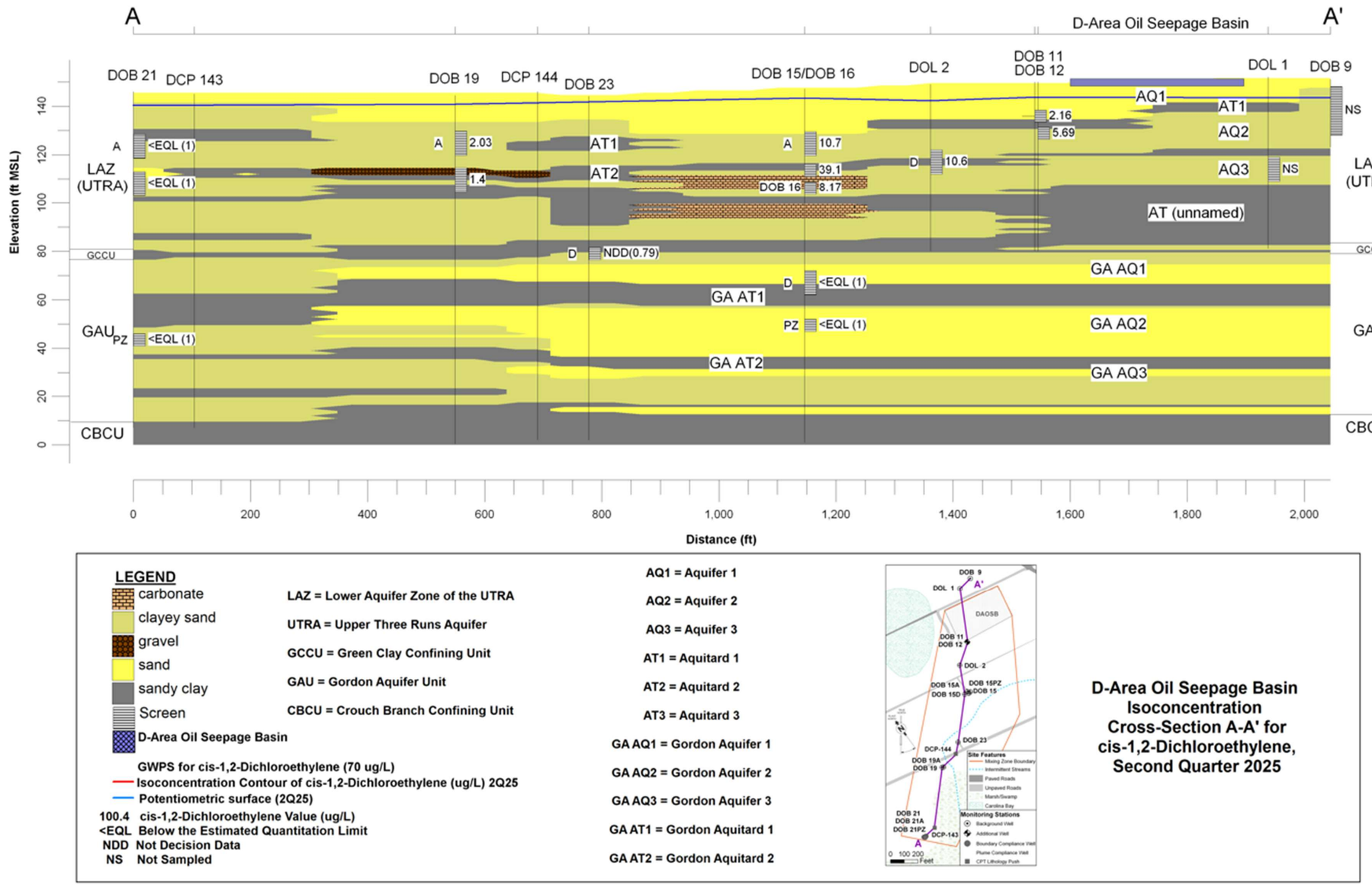


Figure B-11. DOSB Isoconcentration Cross-Section A-A’ for cis-1,2-DCE, 2Q2025

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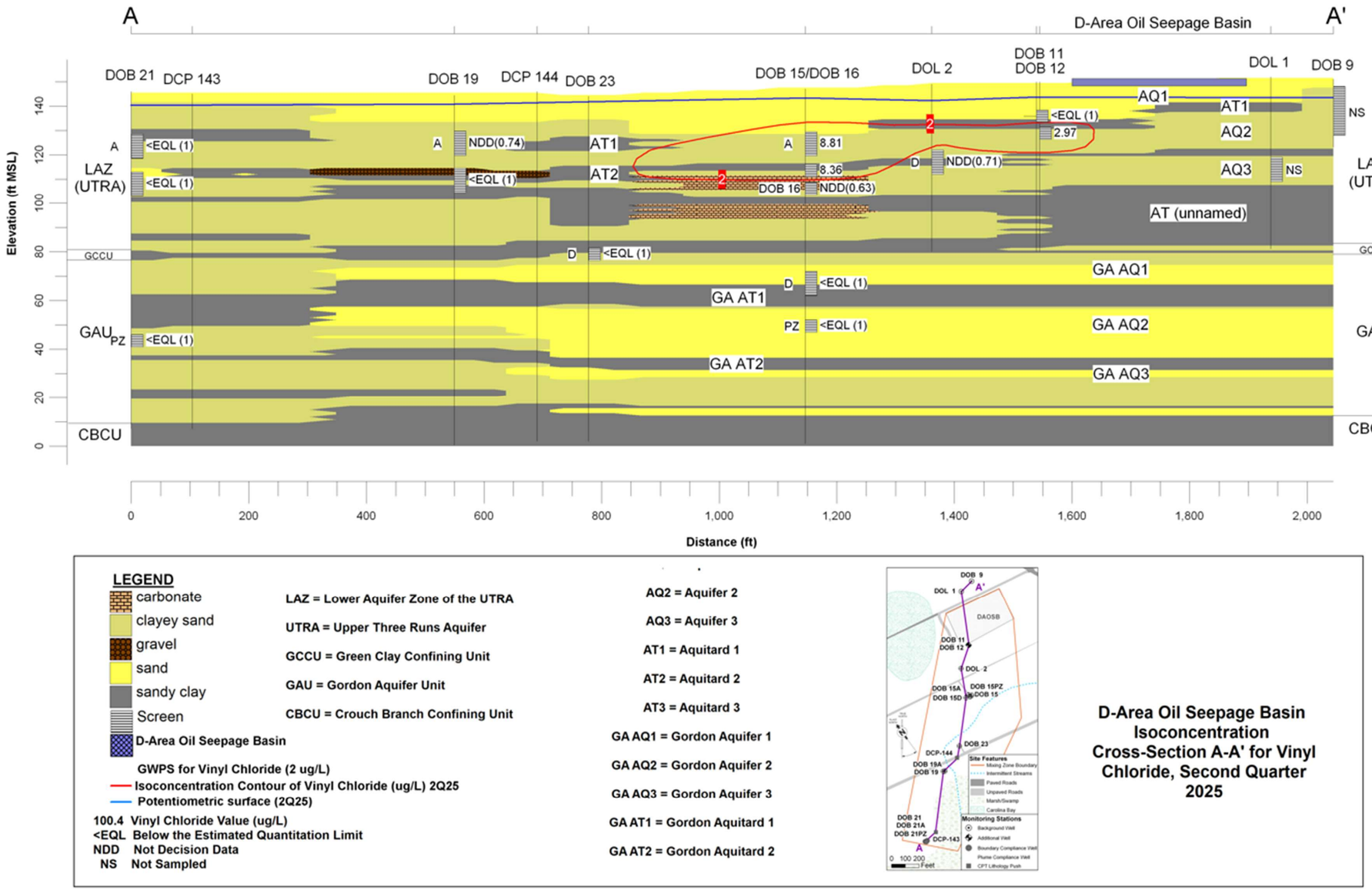


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APPENDIX C

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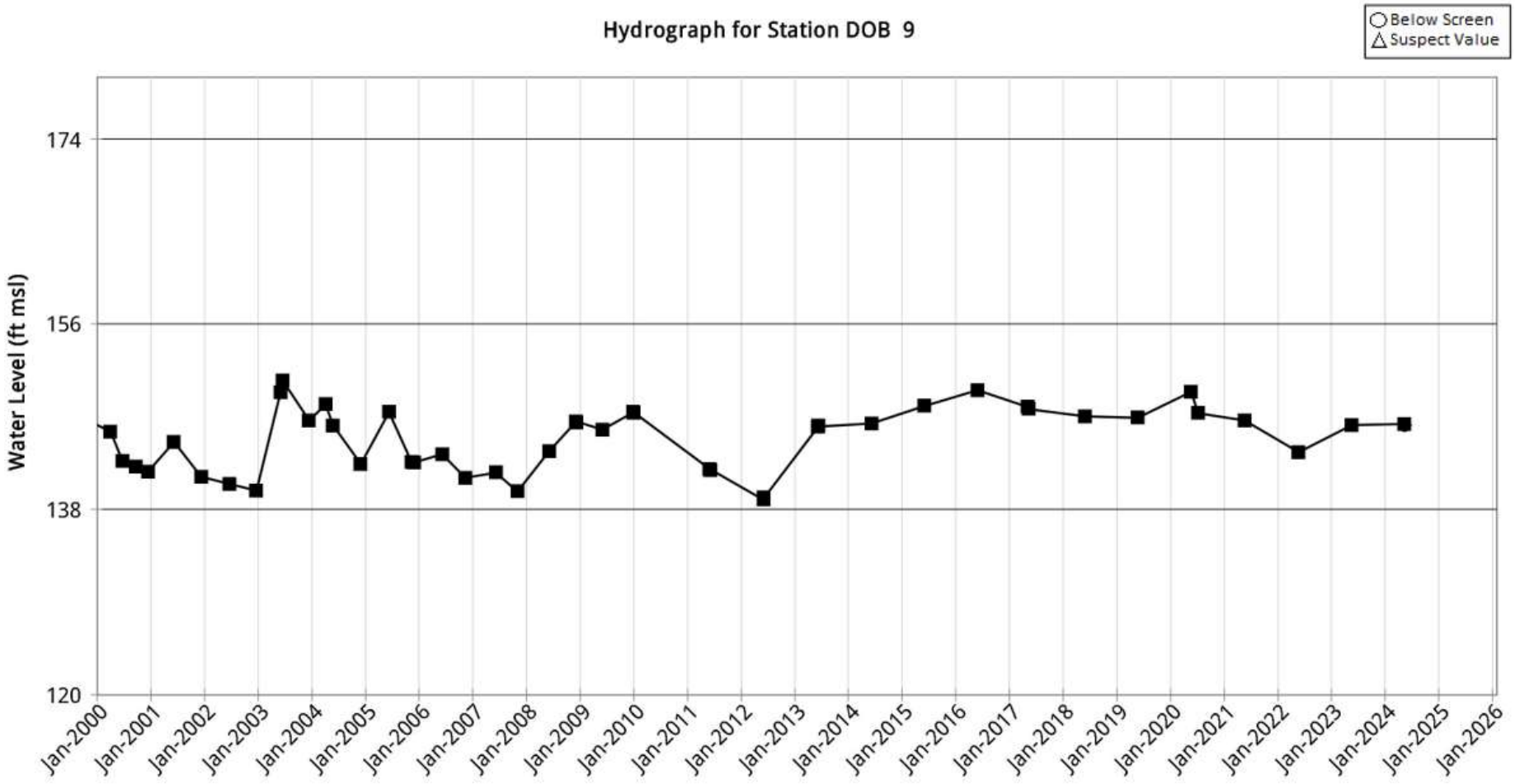


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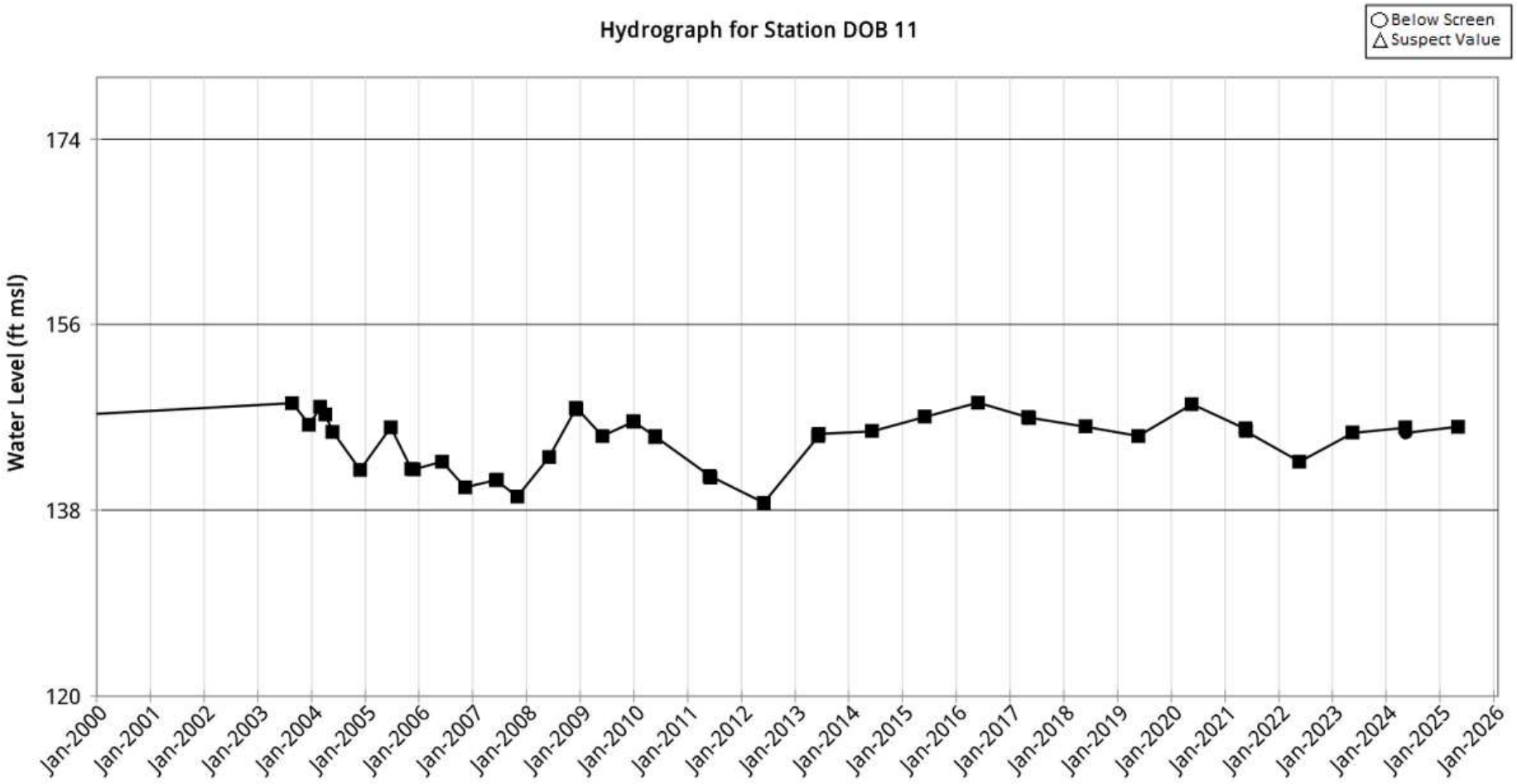


Figure C-2. Hydrograph for Station DOB 11

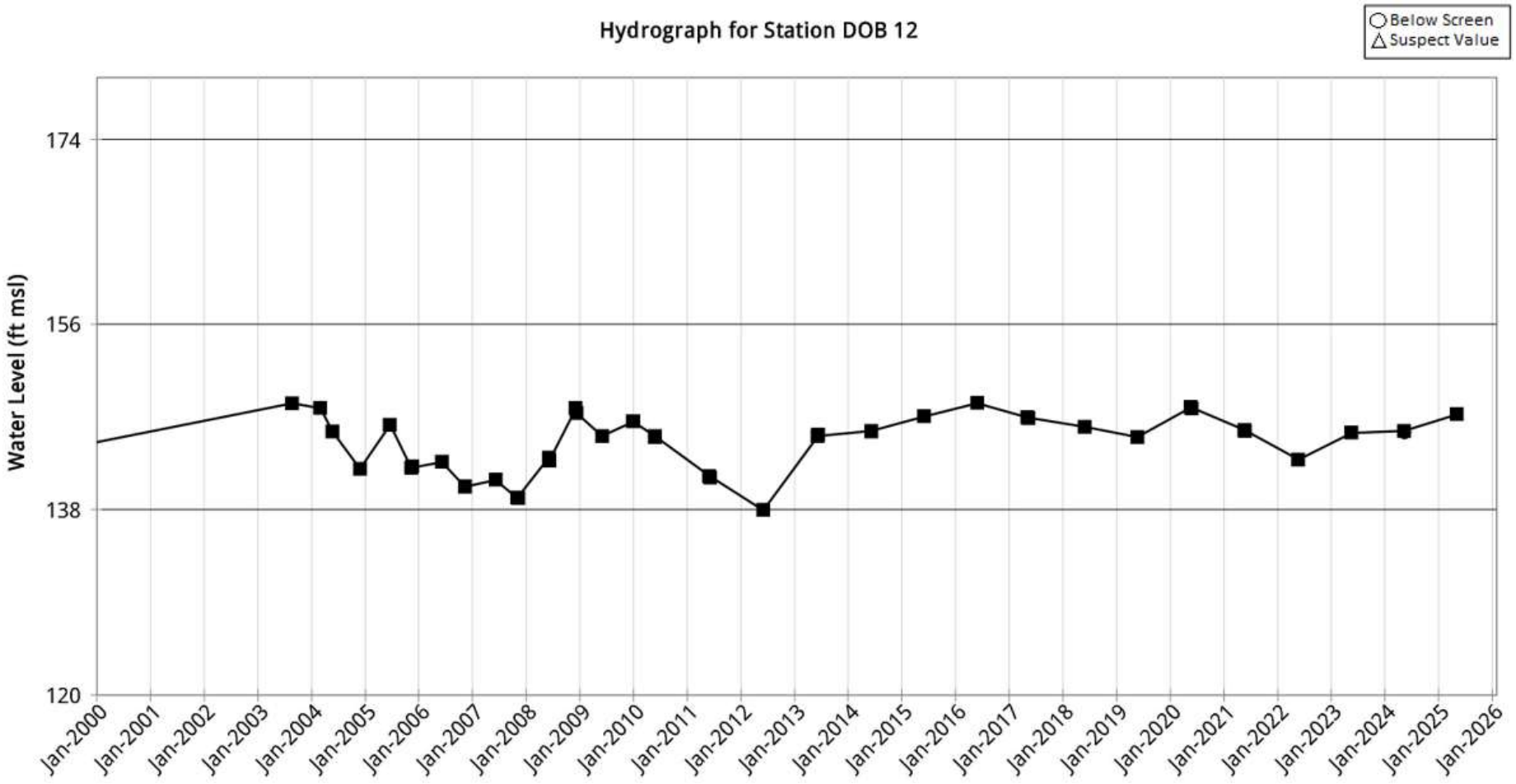


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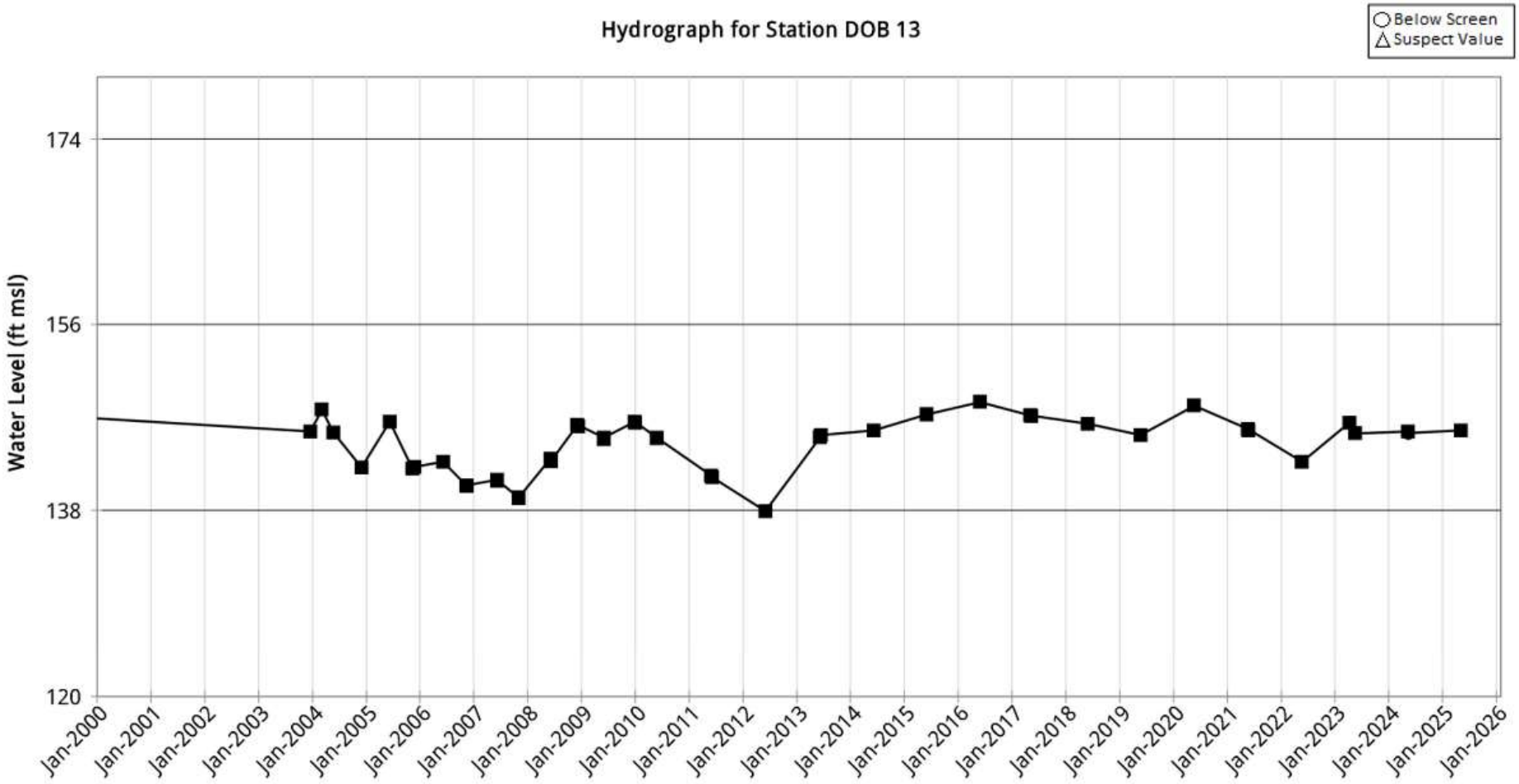


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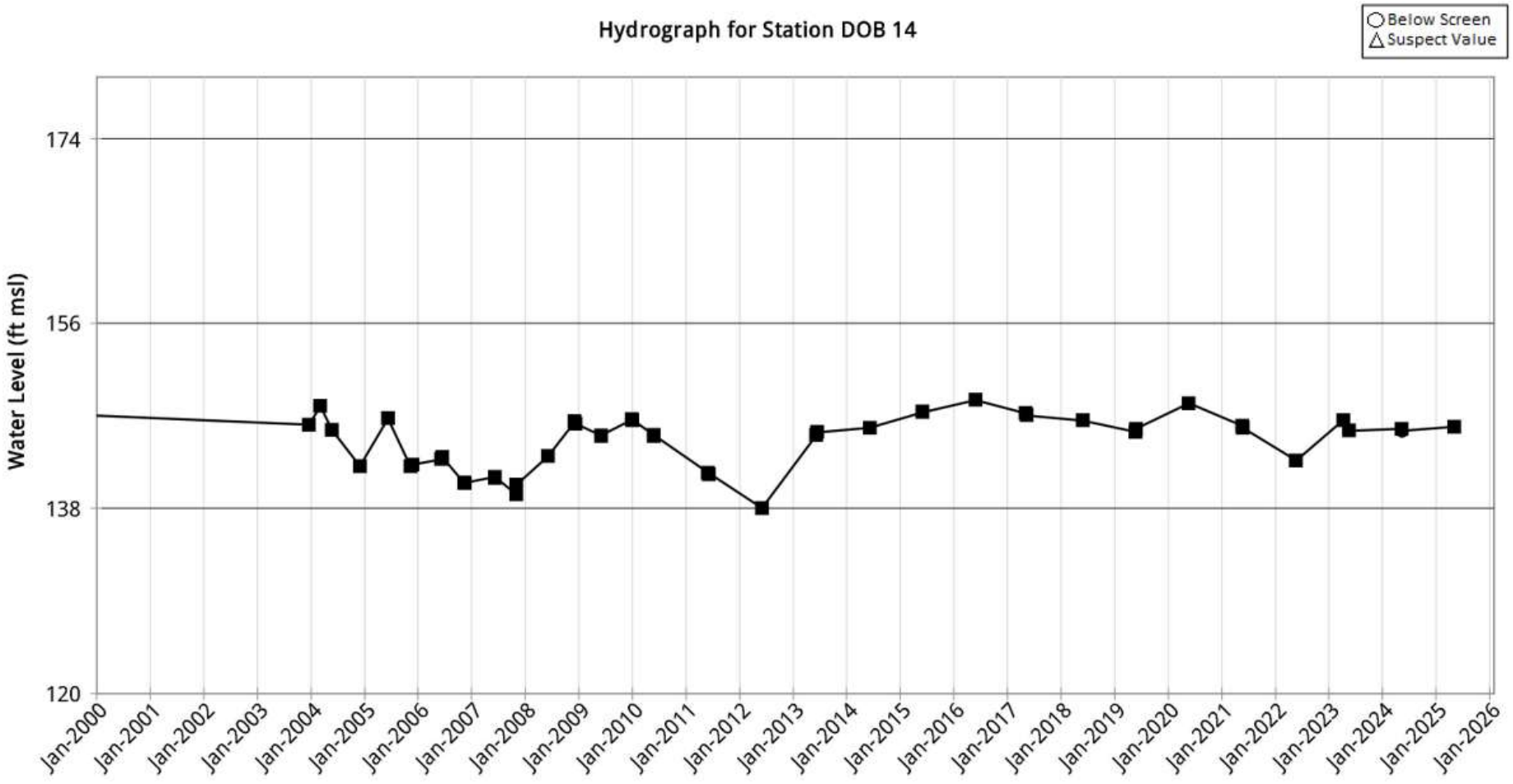


Figure C-5. Hydrograph for Station DOB 14

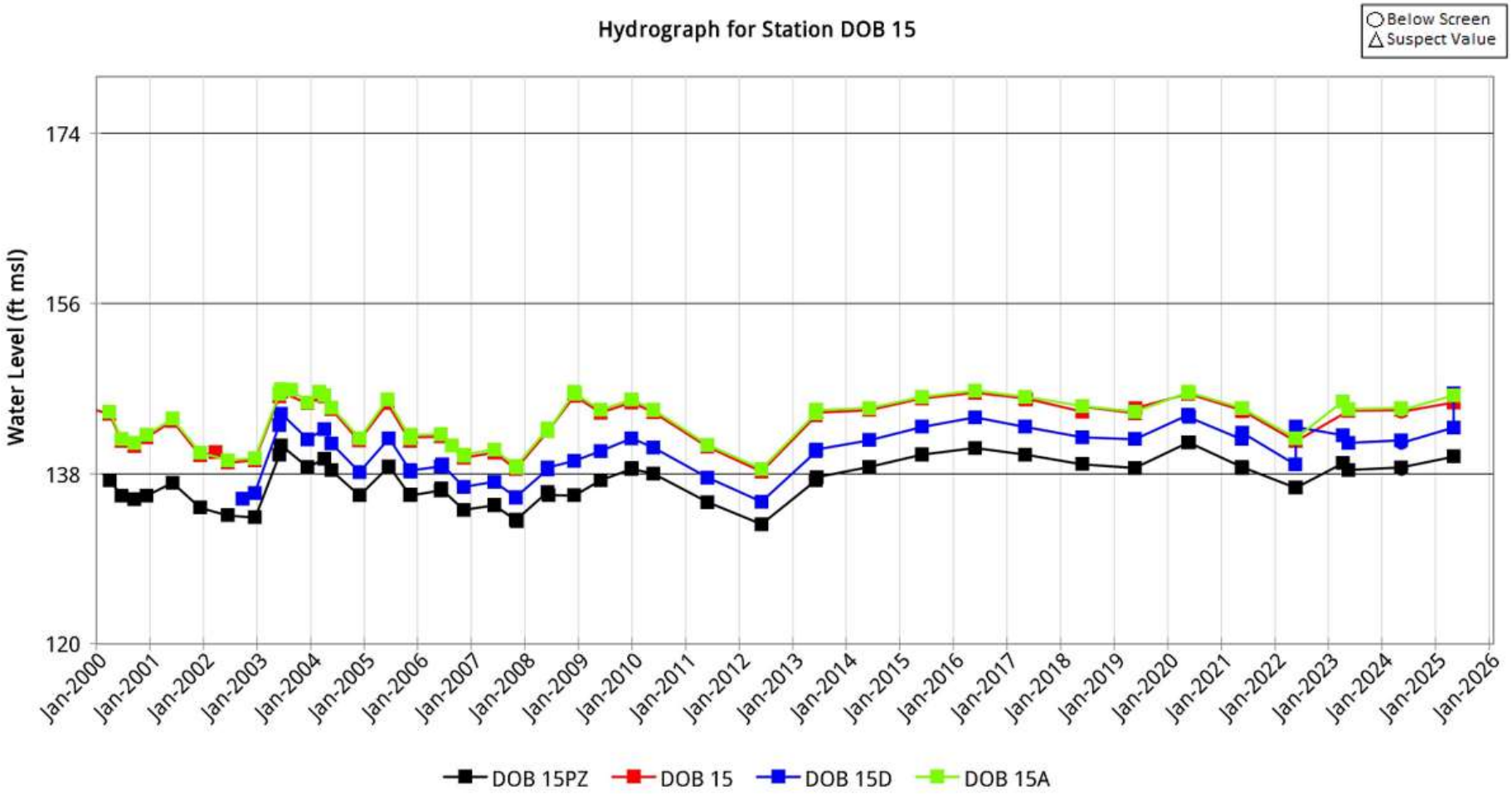


Figure C-6. Hydrograph for Station DOB 15

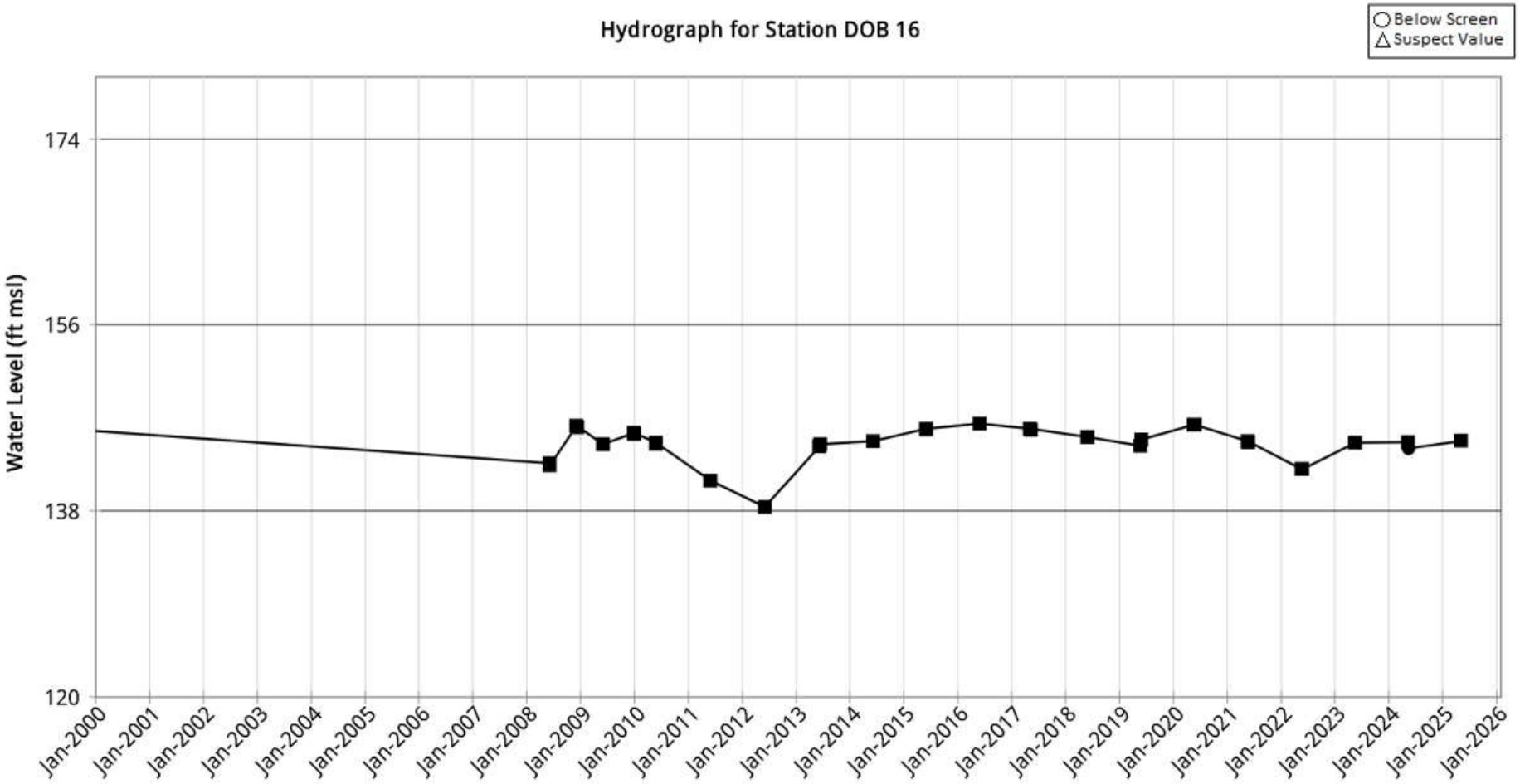


Figure C-7. Hydrograph for Station DOB 16

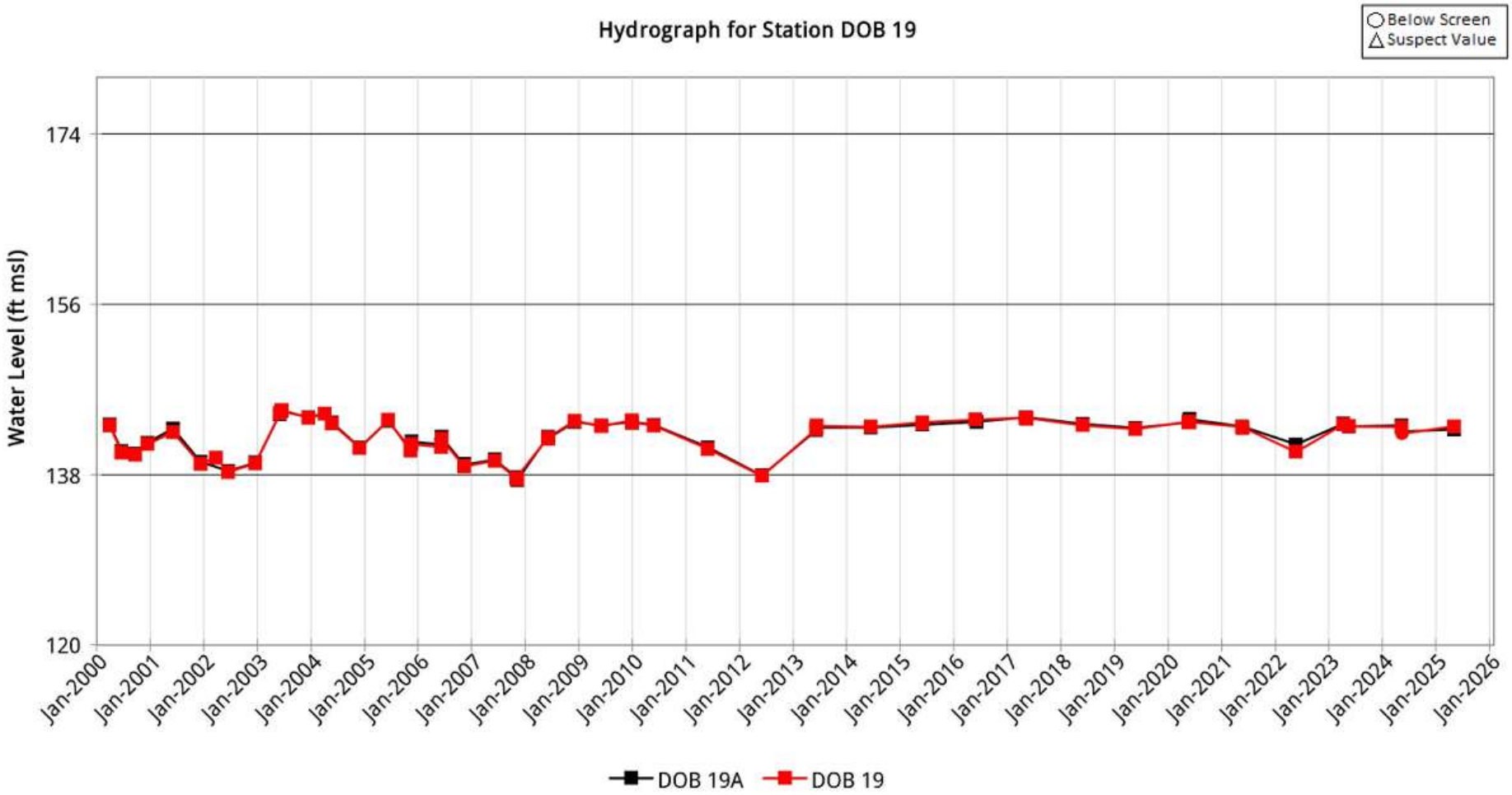


Figure C-8. Hydrograph for Station DOB 19

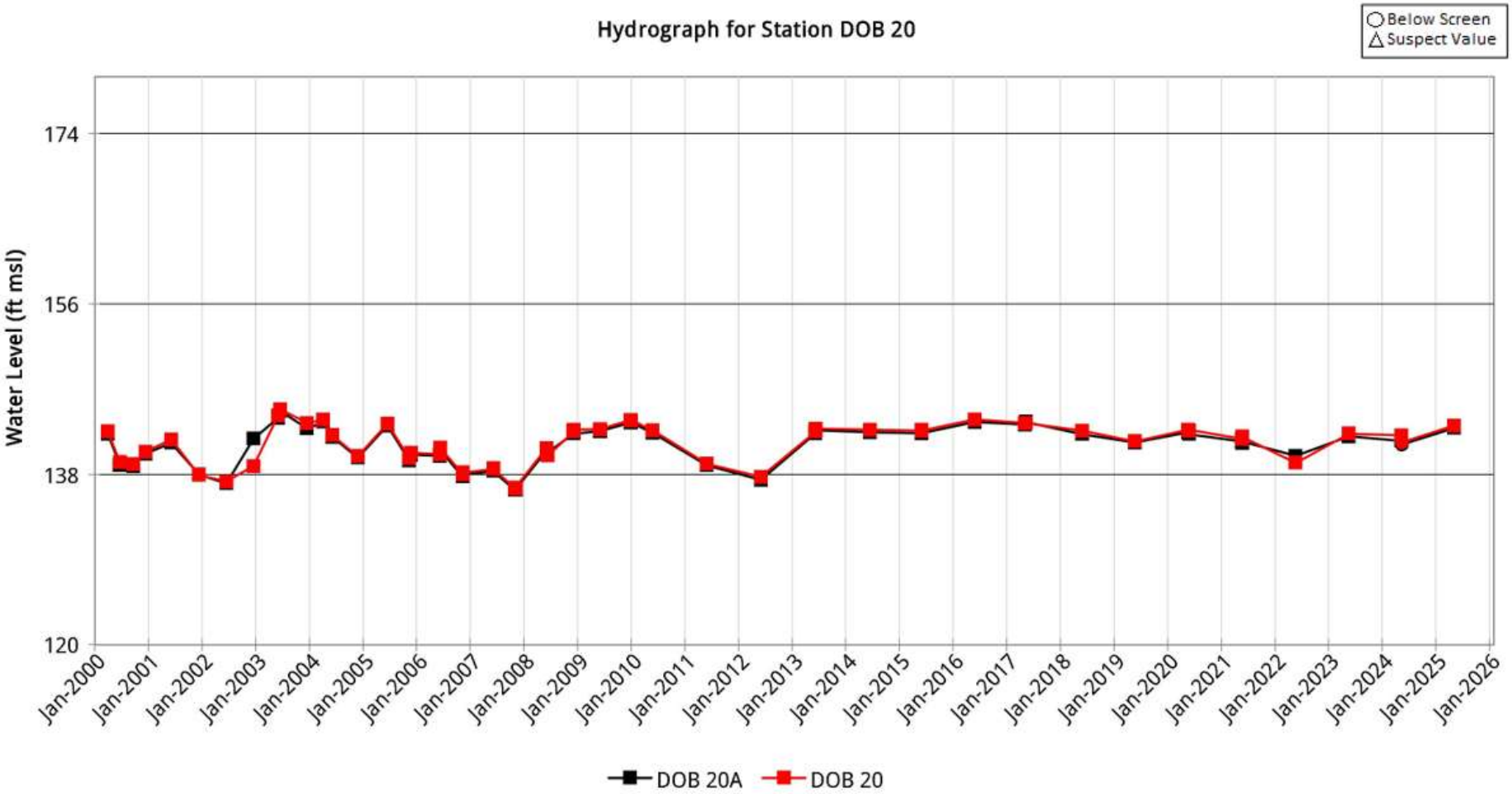


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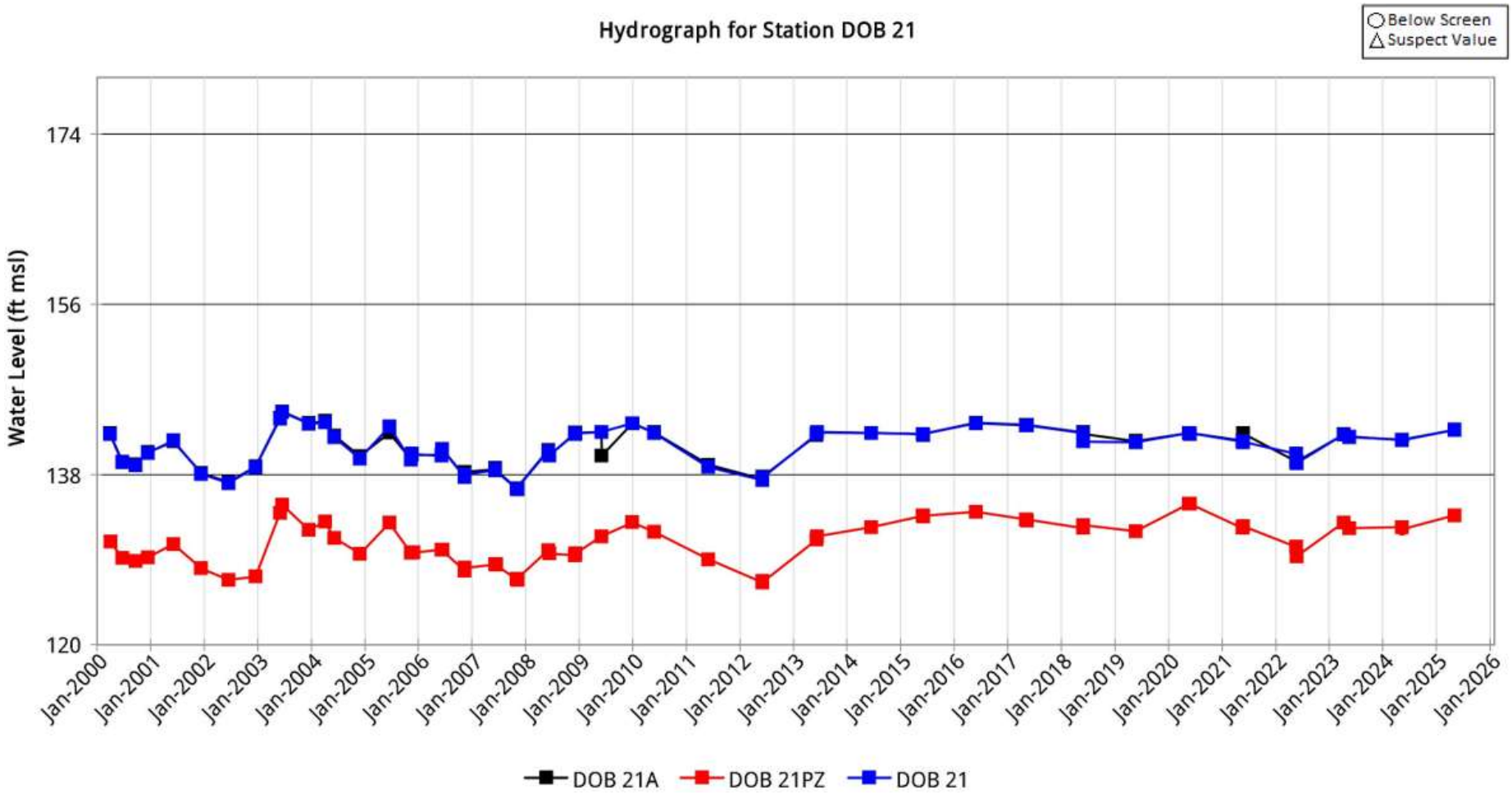


Figure C-10. Hydrograph for Station DOB 21

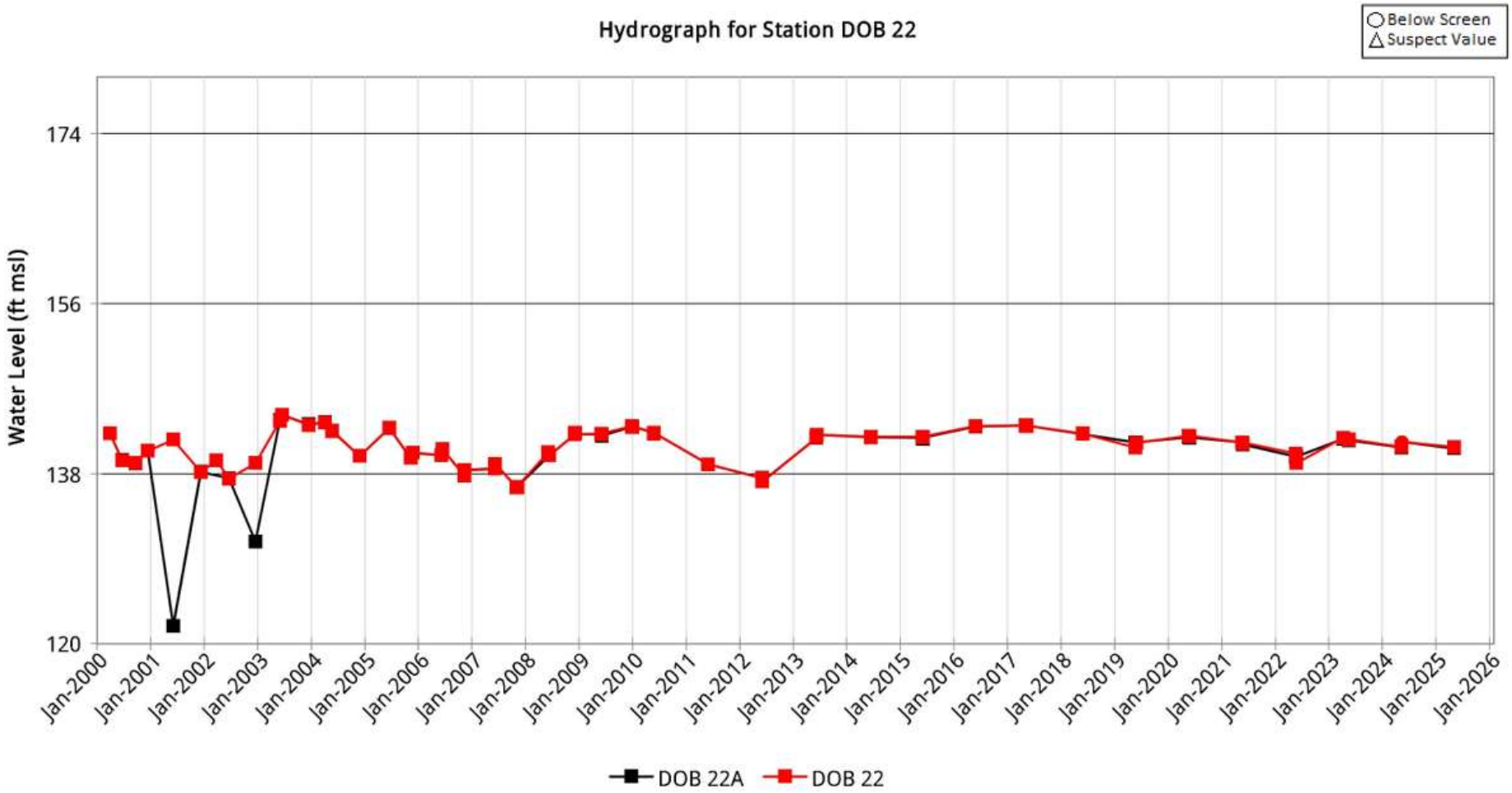


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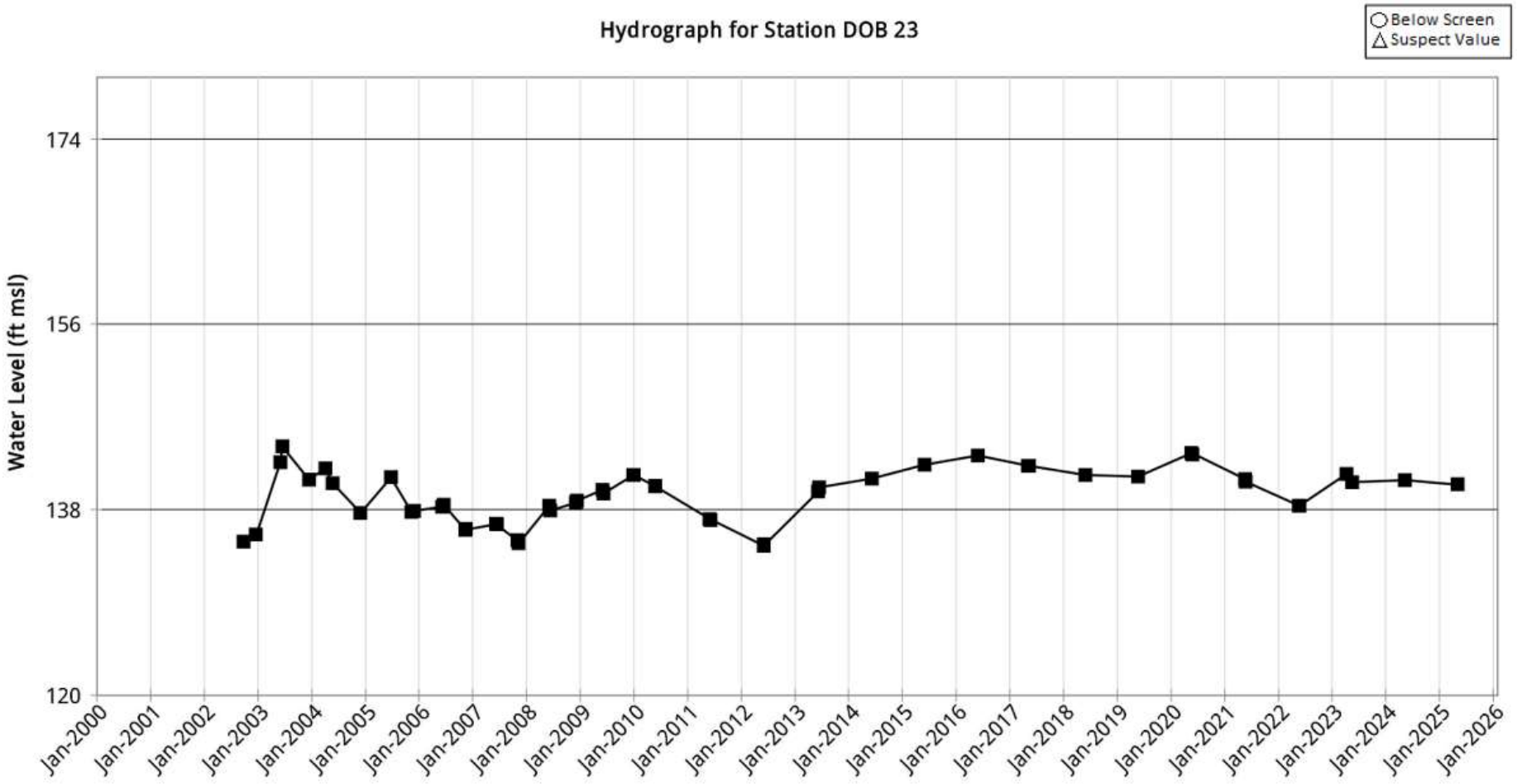


Figure C-12. Hydrograph for Station DOB 23

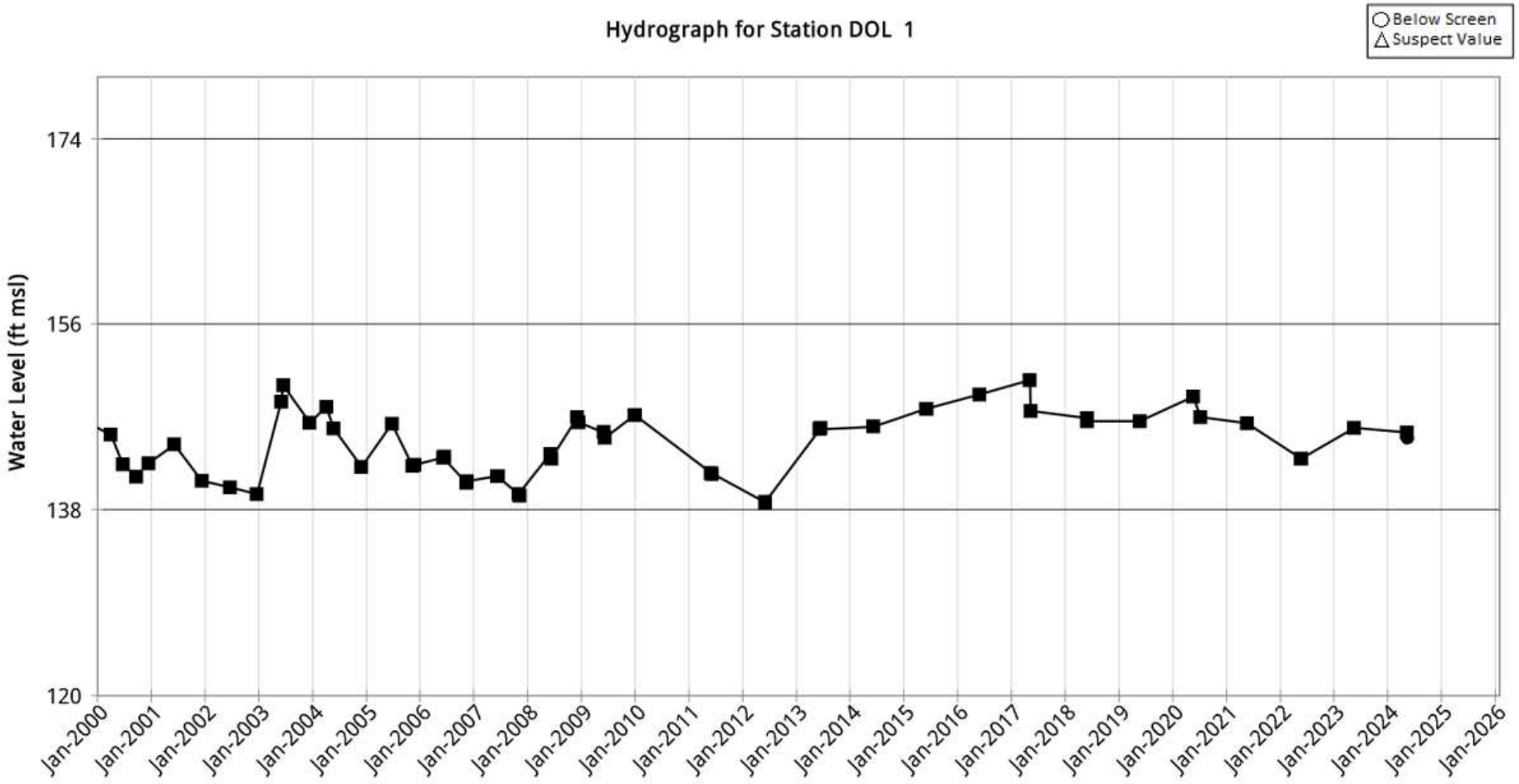


Figure C-13. Hydrograph for Station DOL 1

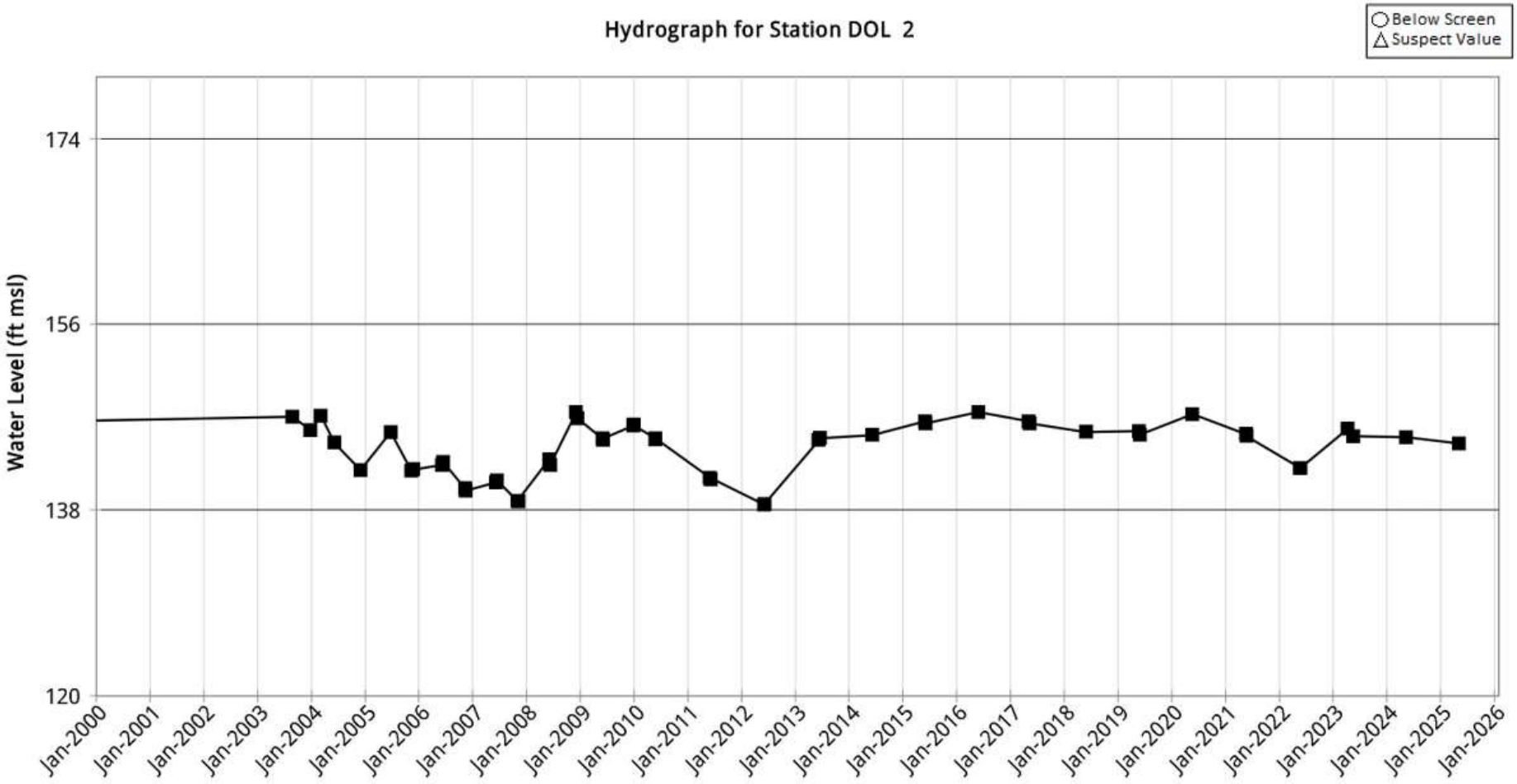


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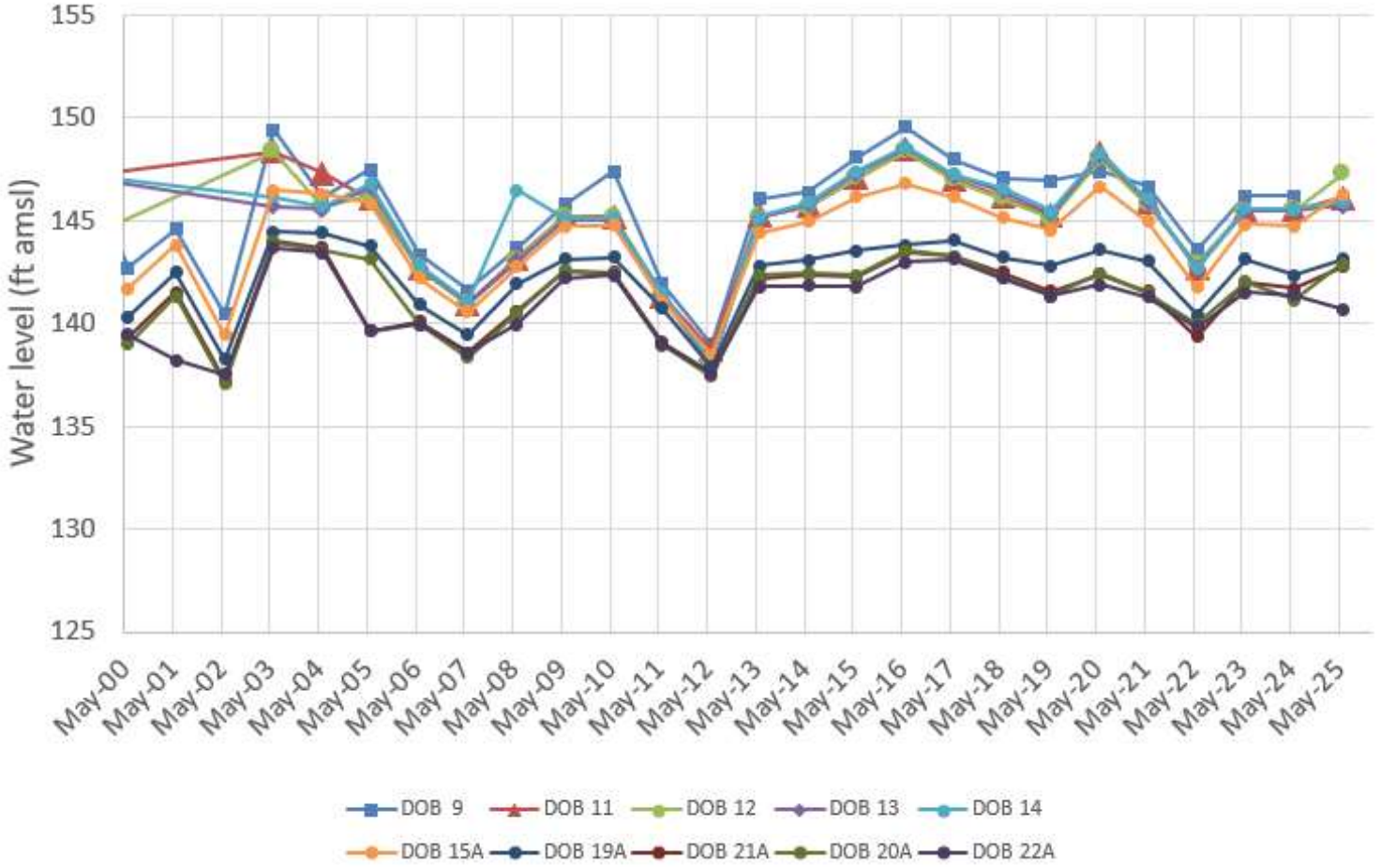


Figure C-15. Hydrographs for wells in AQ1/2

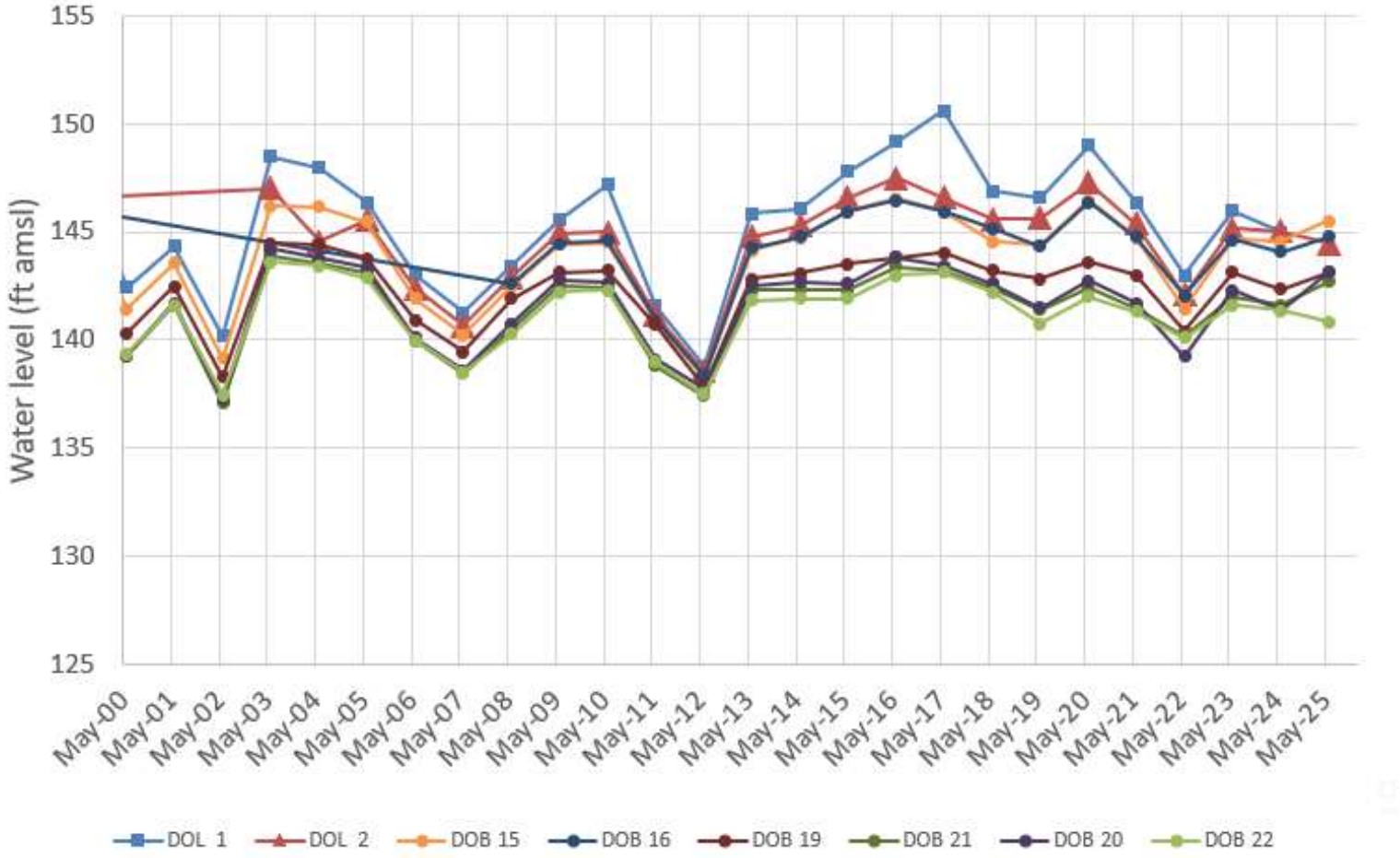


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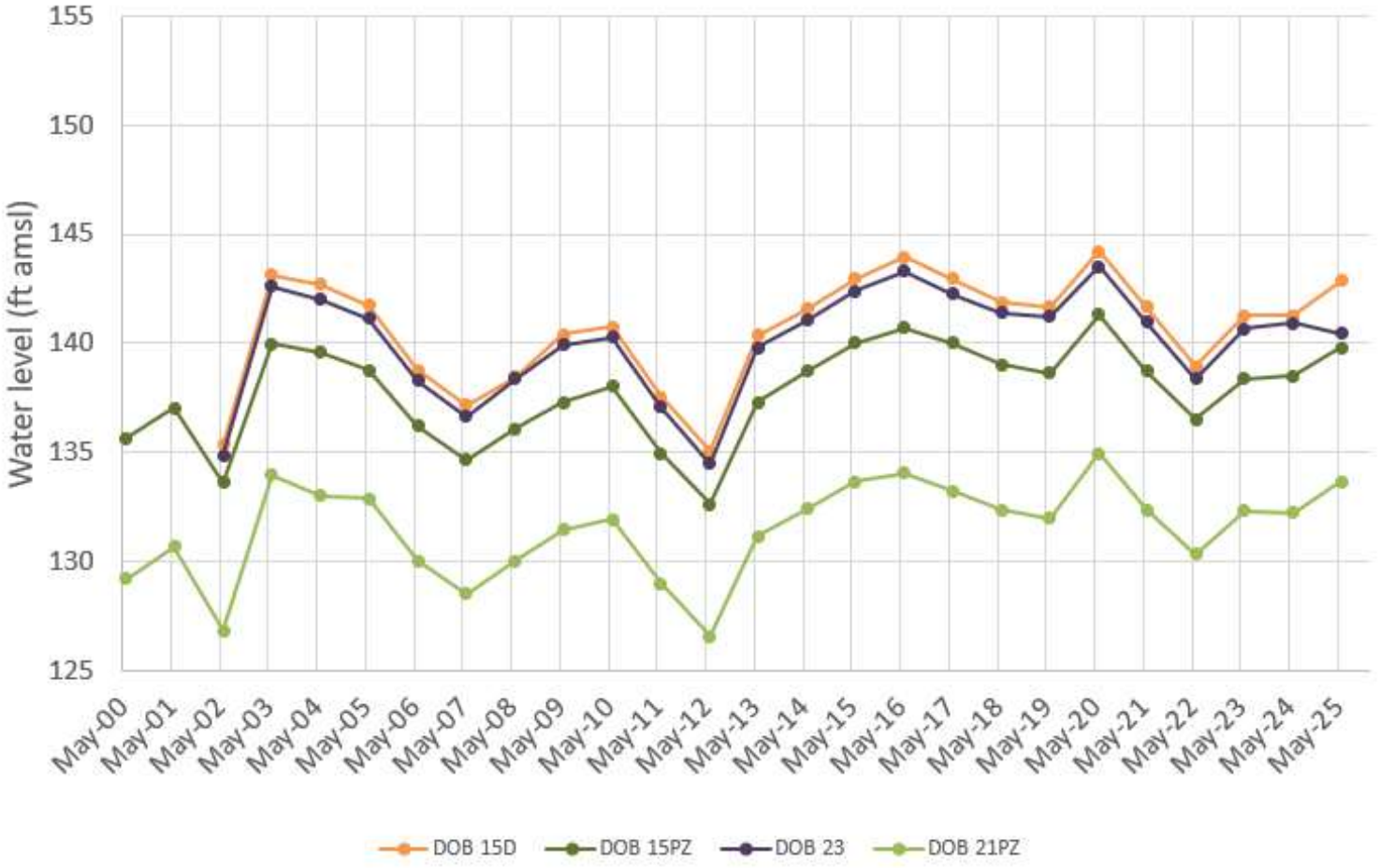


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APPENDIX D

DOSB 2025 TIME SERIES PLOTS

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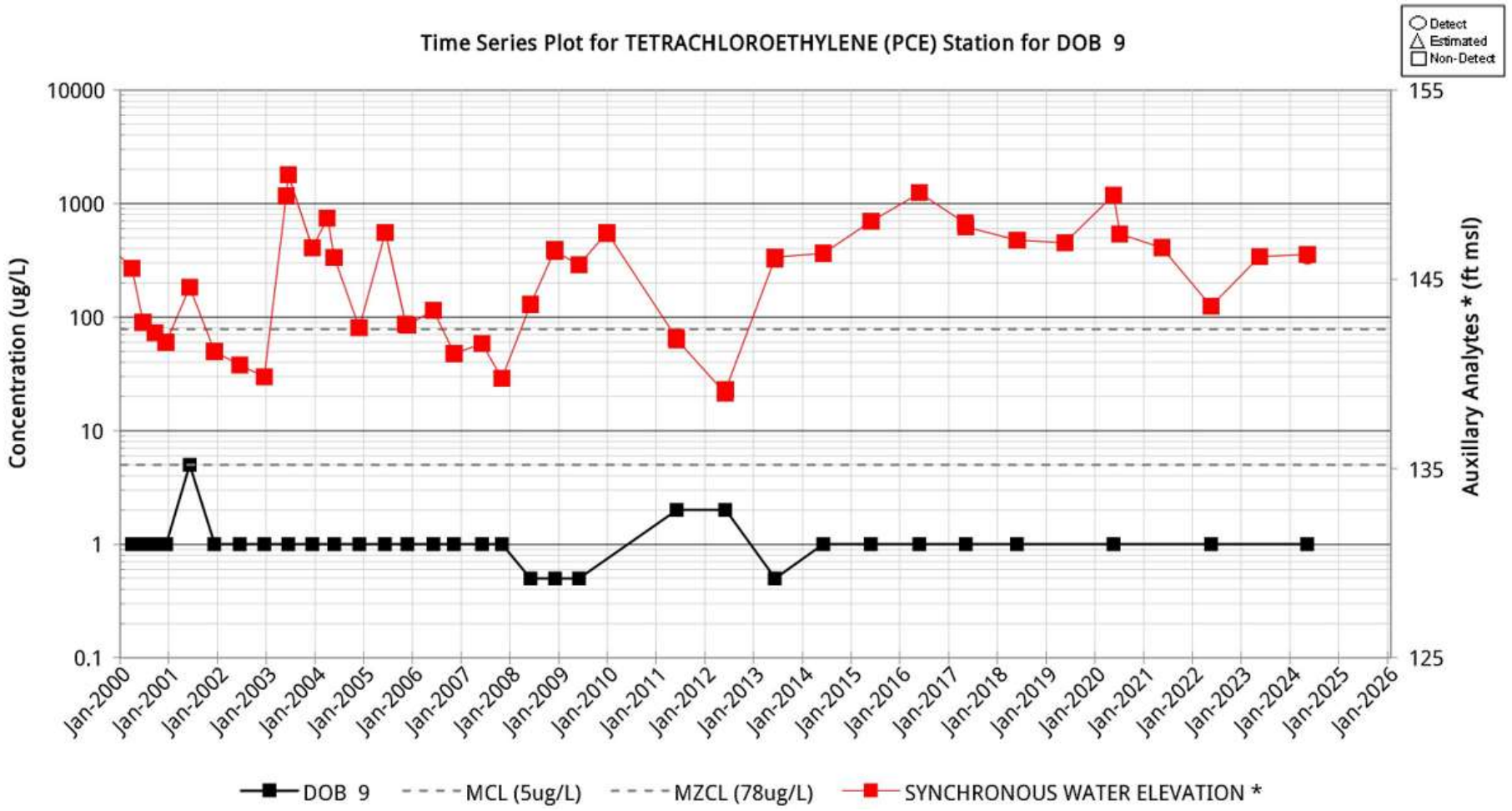


Figure D-1. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 9

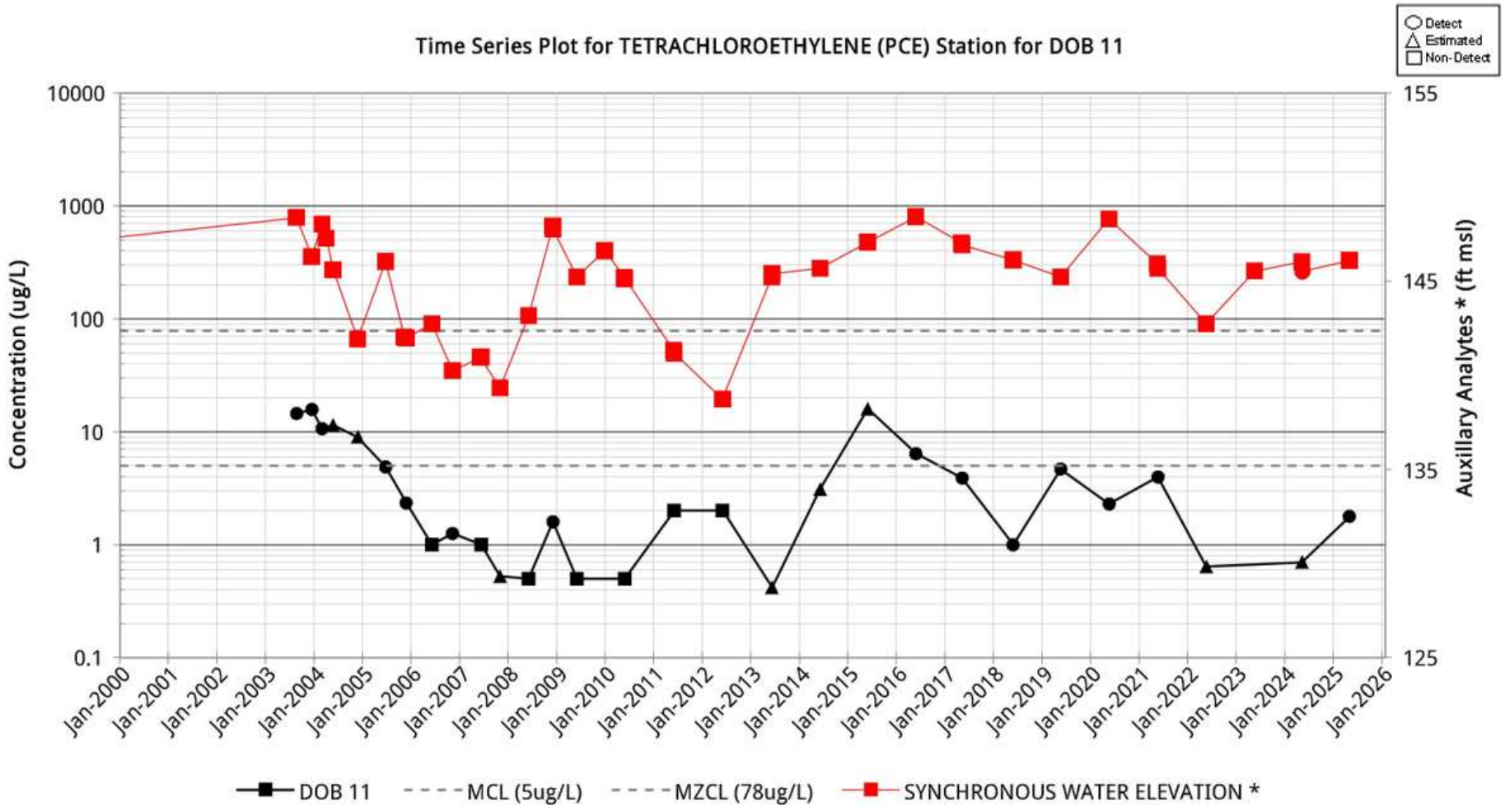


Figure D-2. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 11

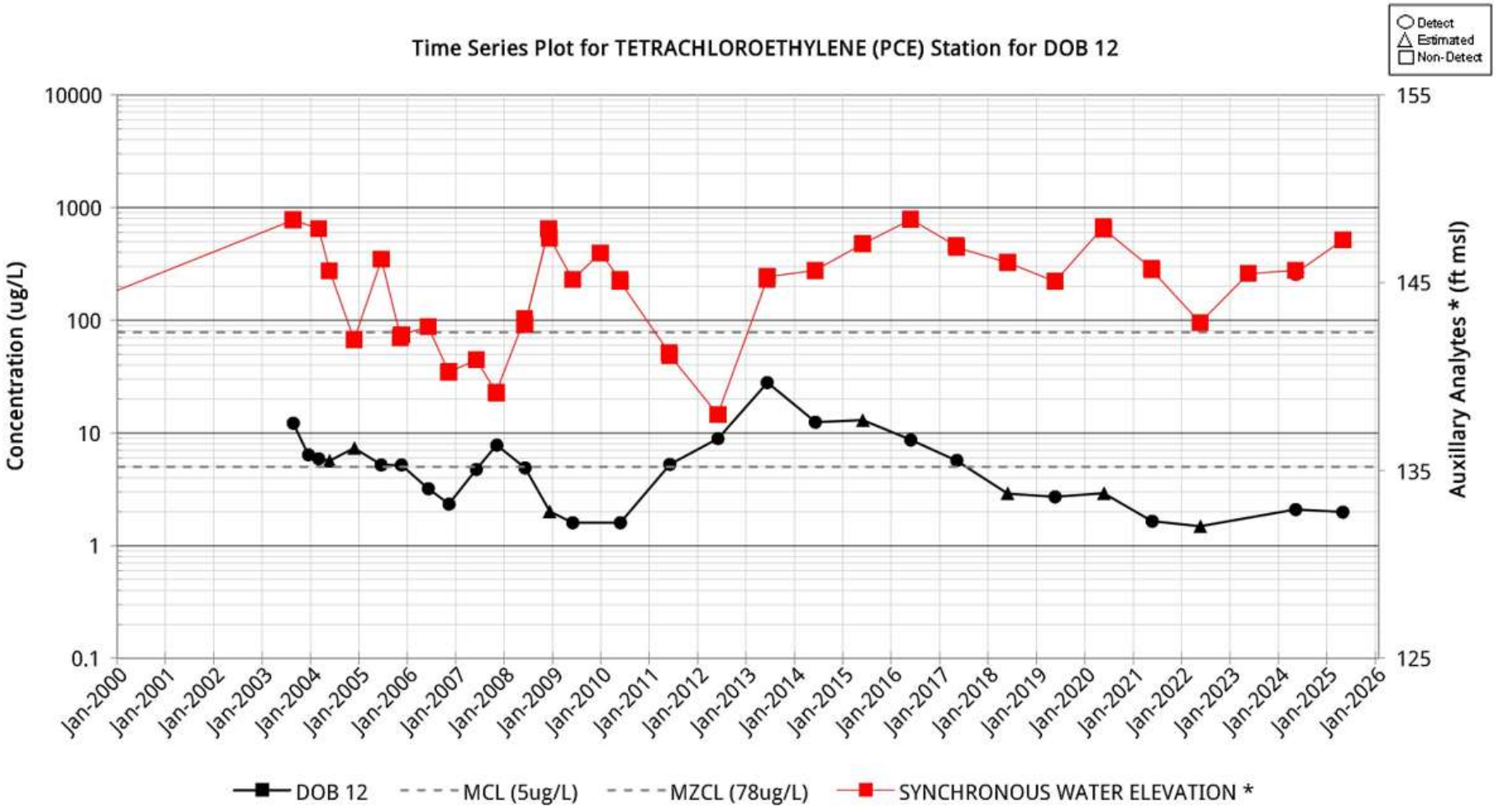


Figure D-3. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 12

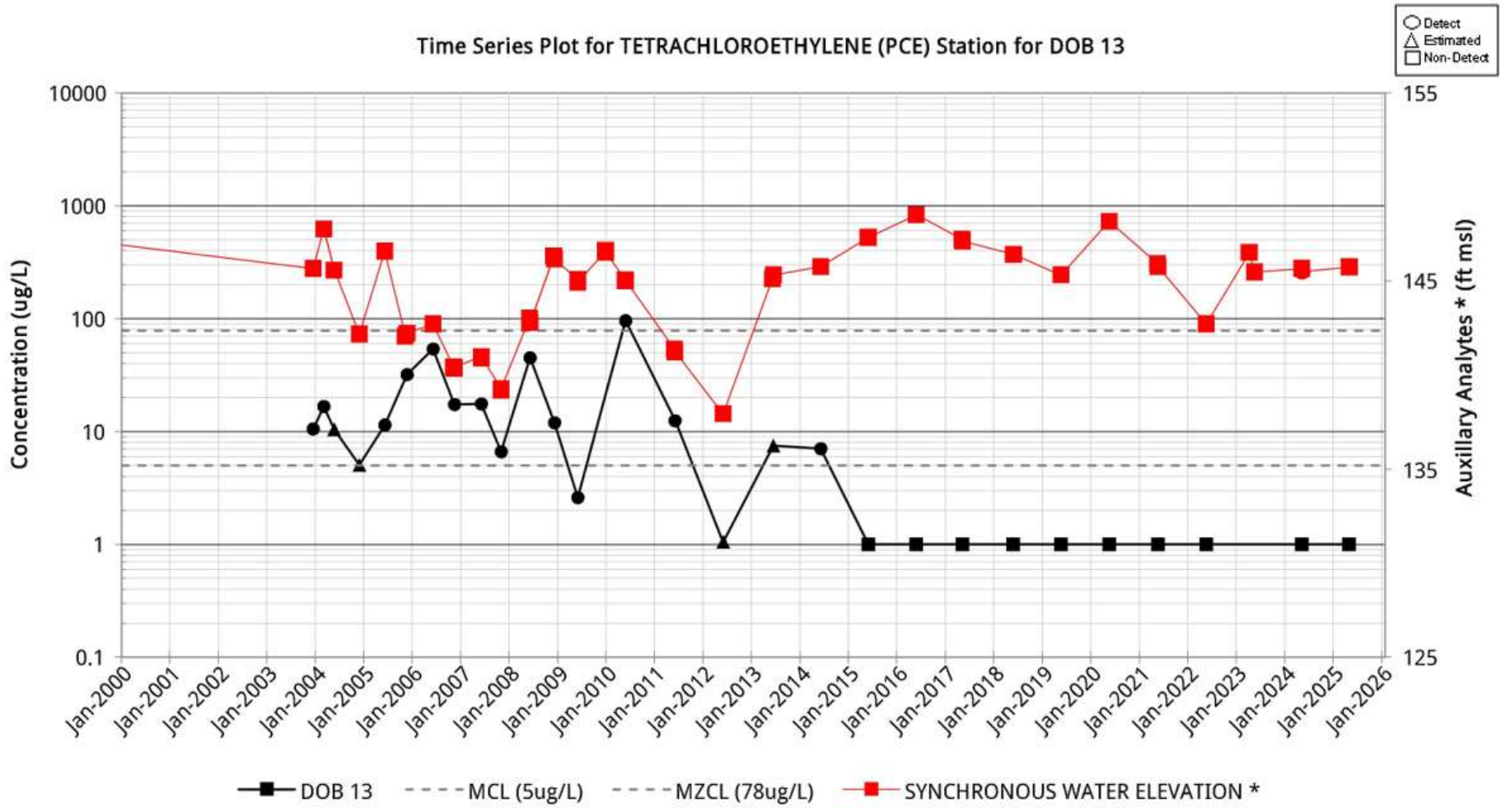


Figure D-4. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 13

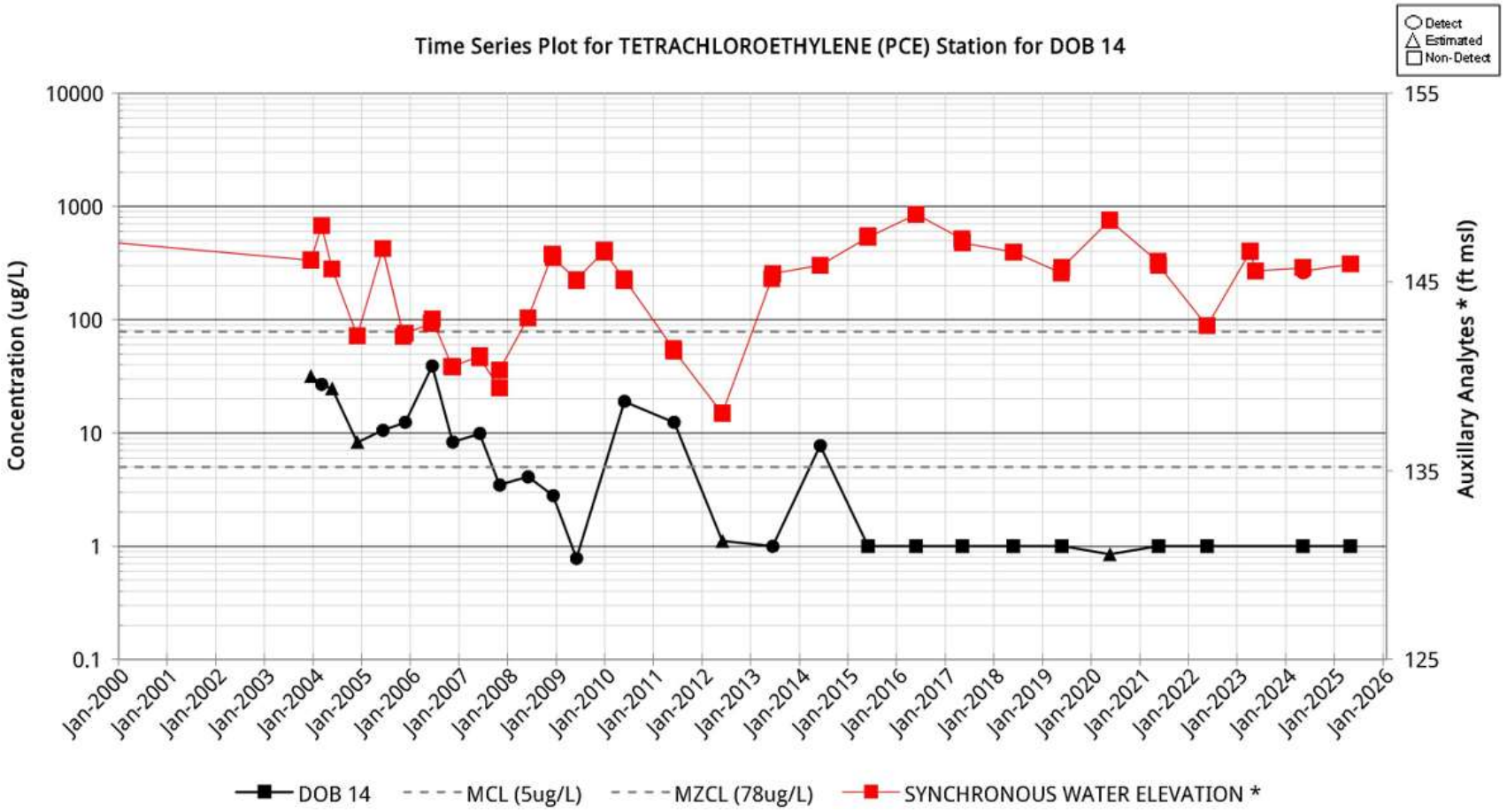


Figure D-5. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 14

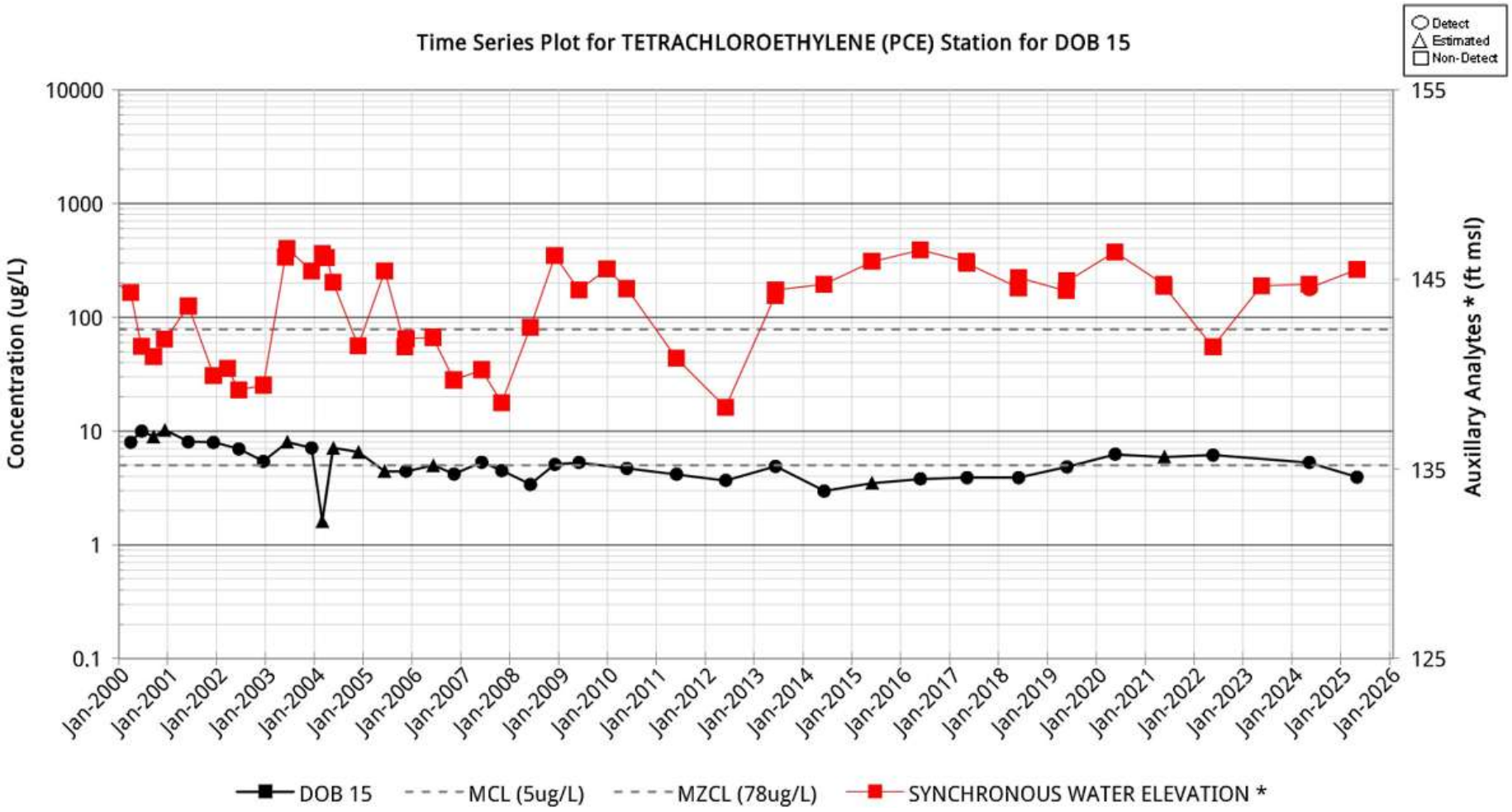


Figure D-6. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 15

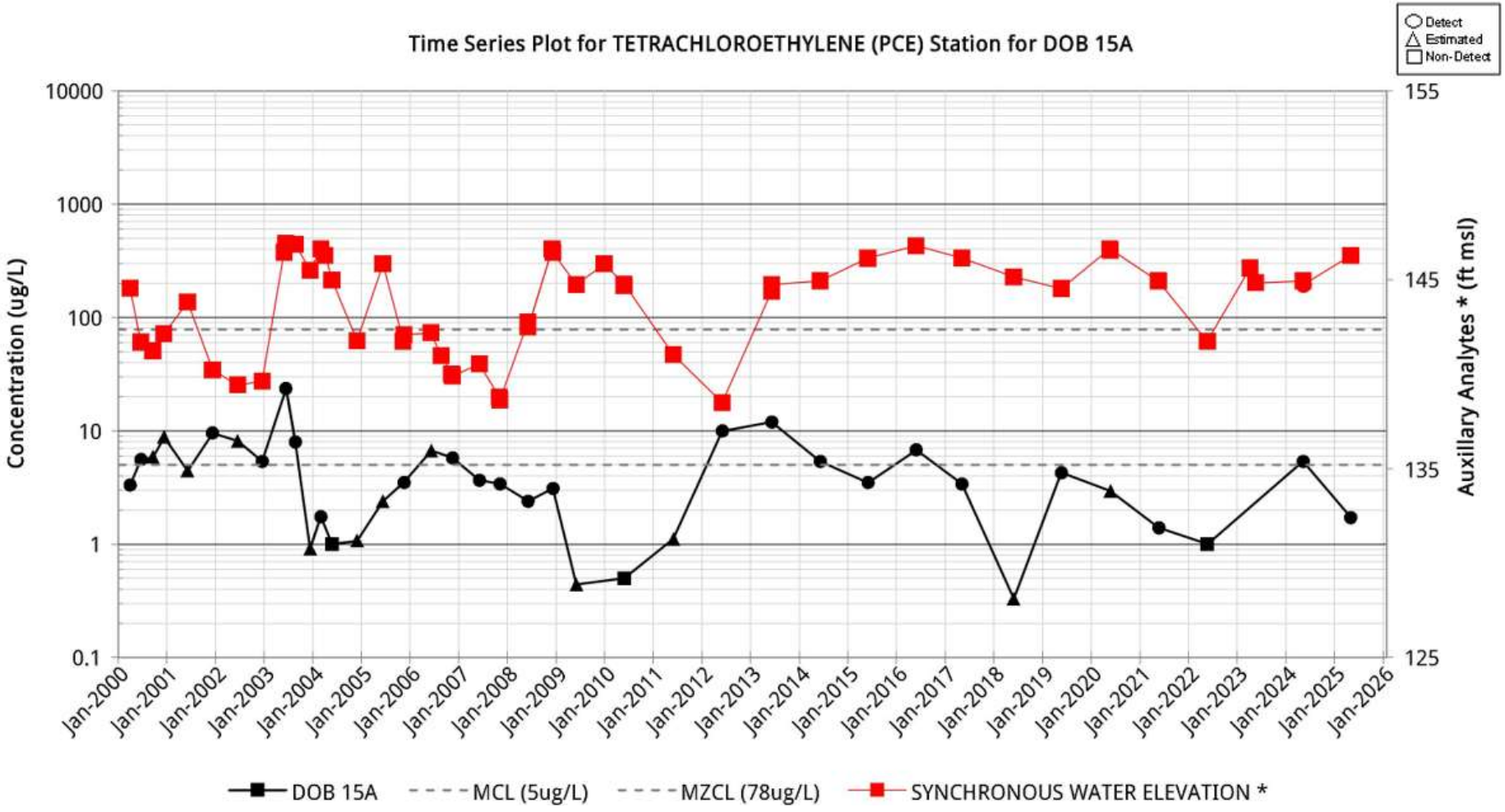


Figure D-7. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 15A

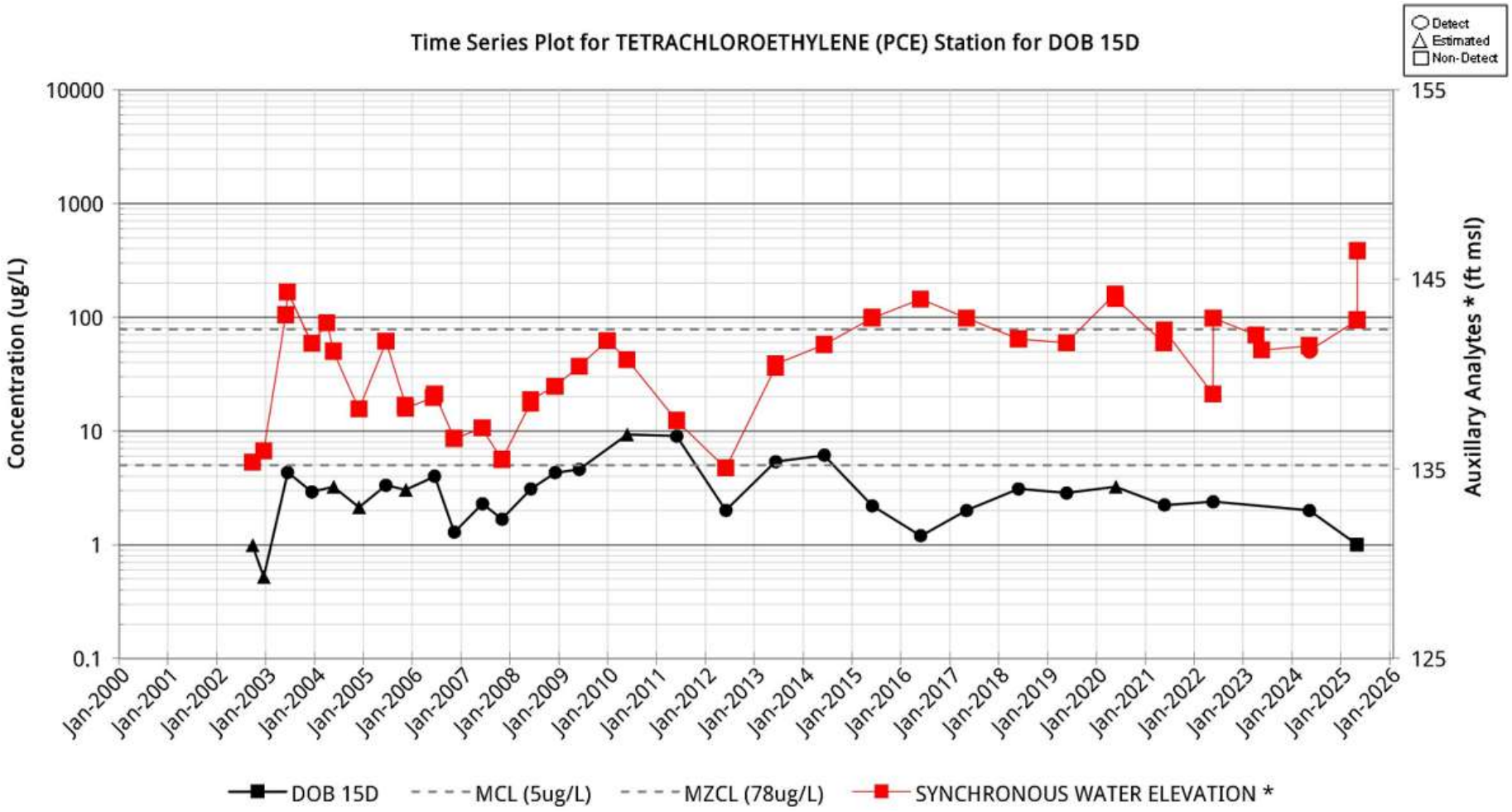


Figure D-8. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 15D

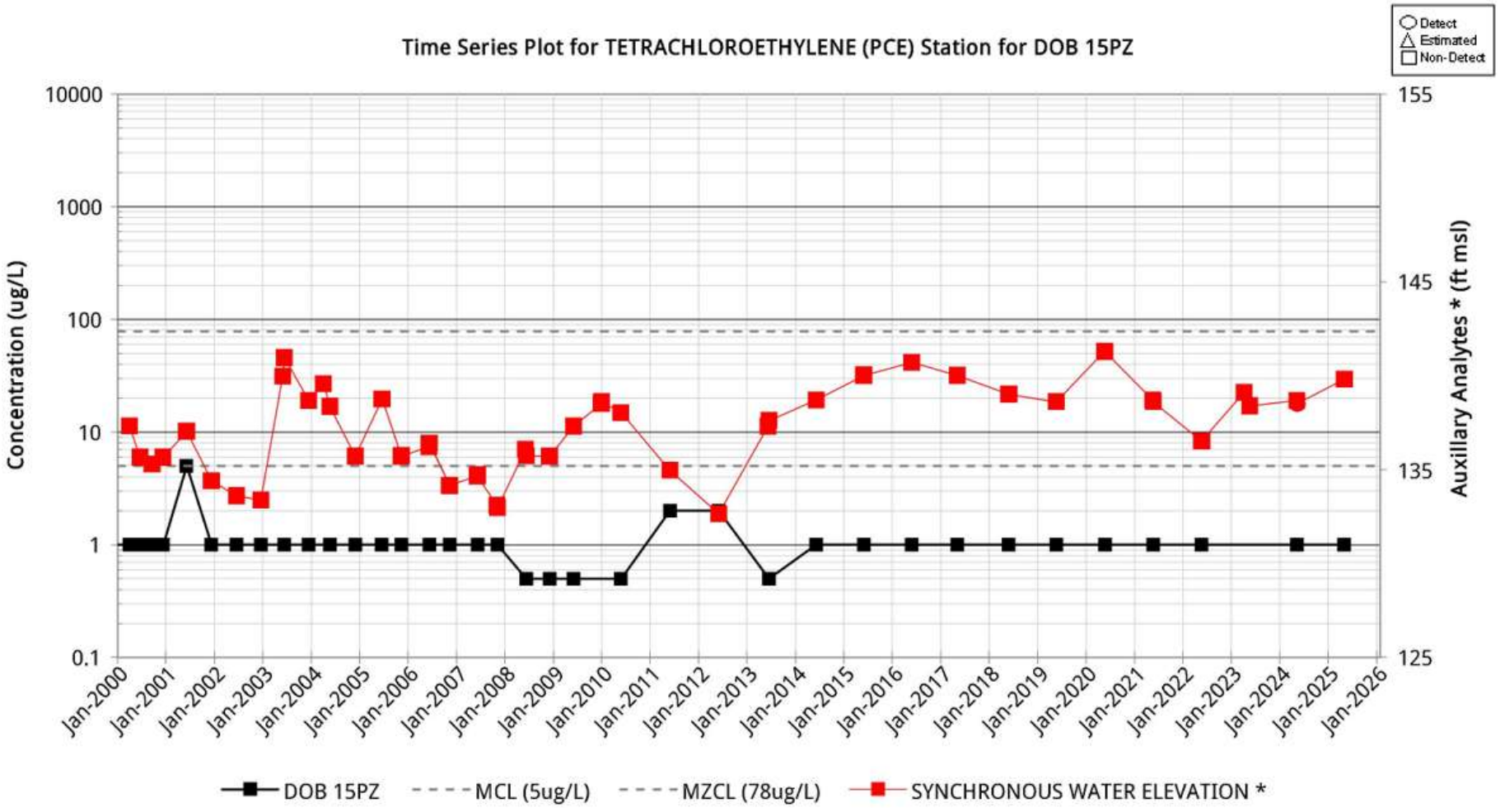


Figure D-9. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 15PZ

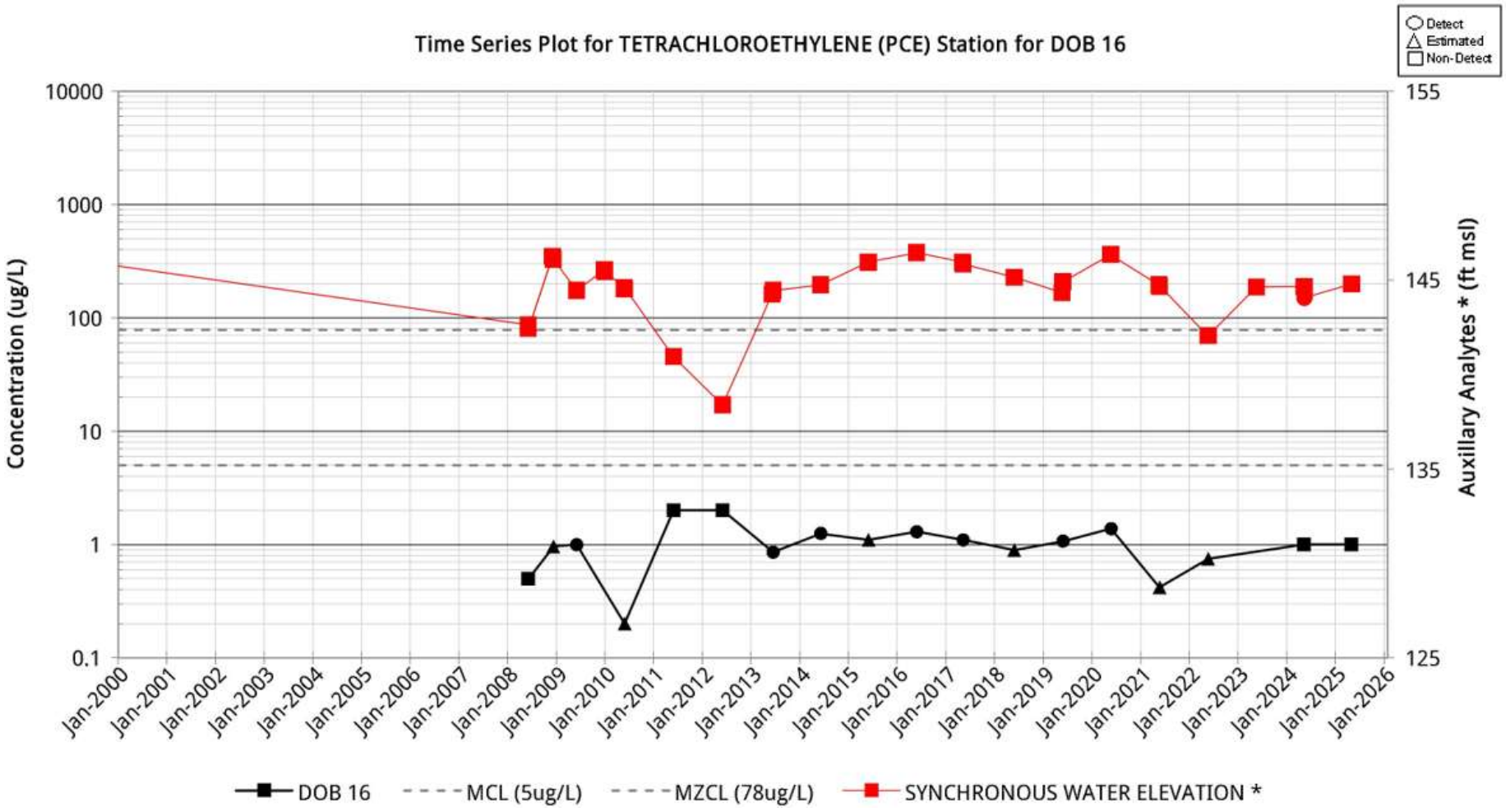


Figure D-10. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 16

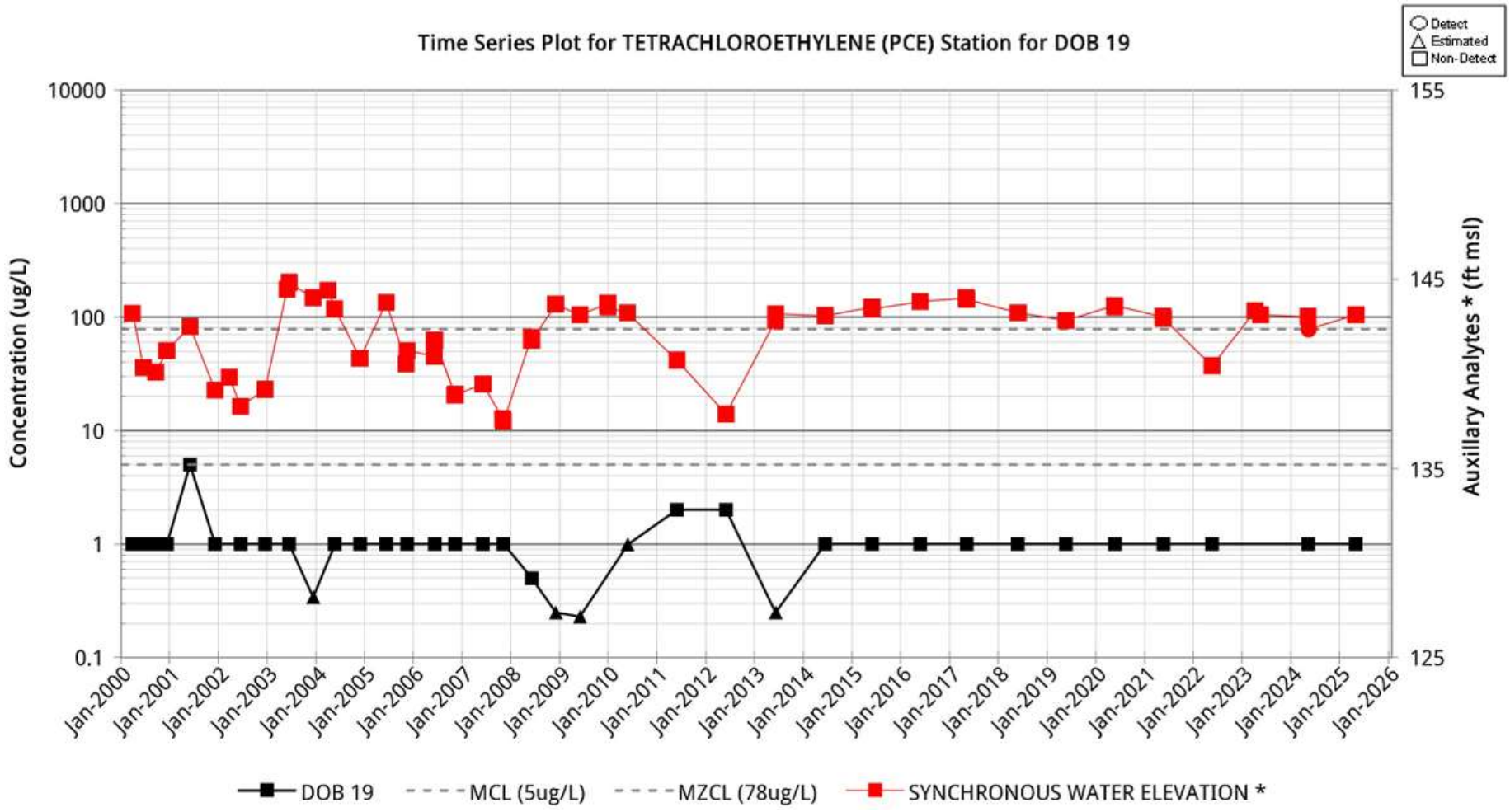


Figure D-11. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 19

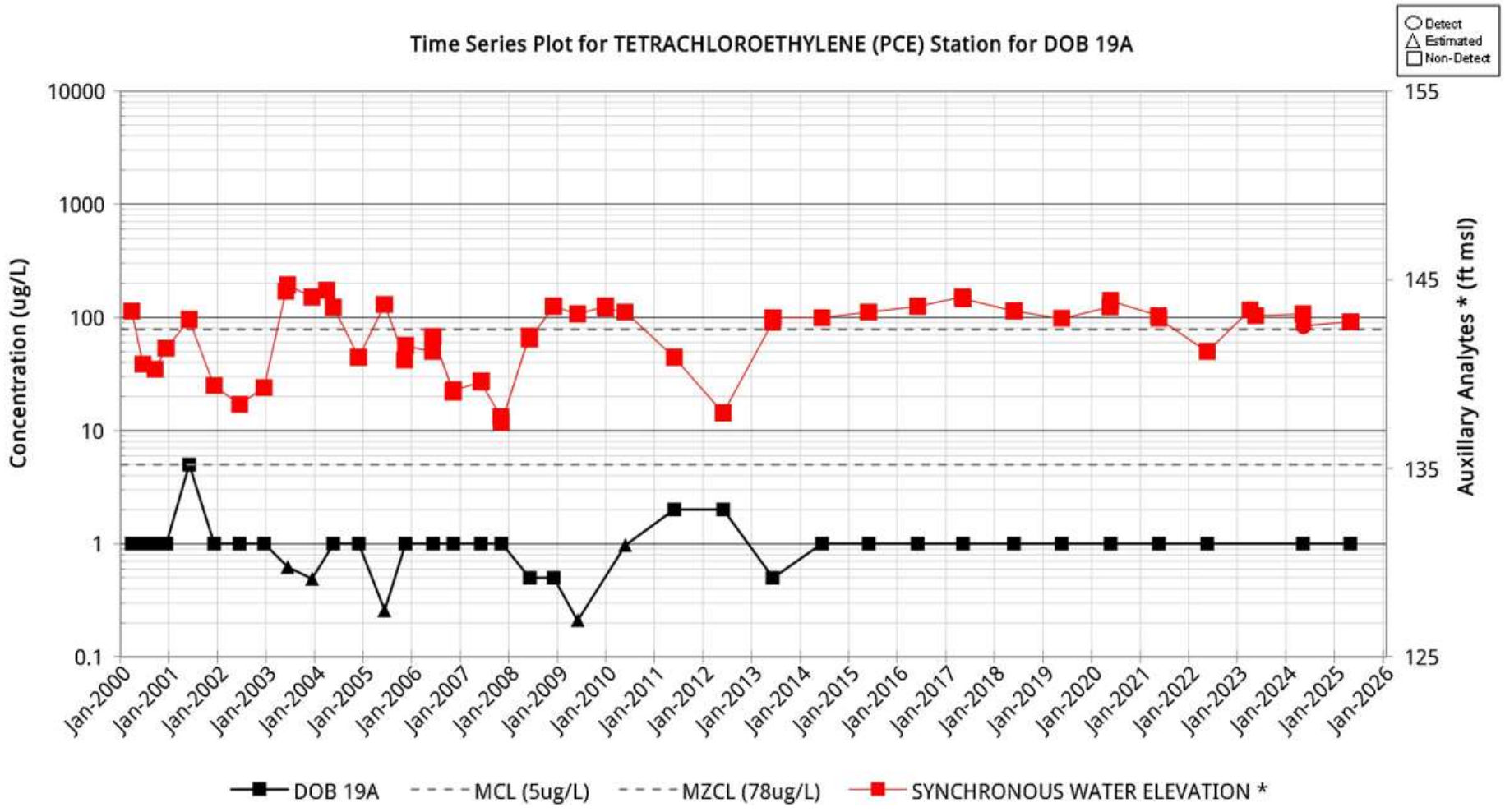


Figure D-12. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 19A

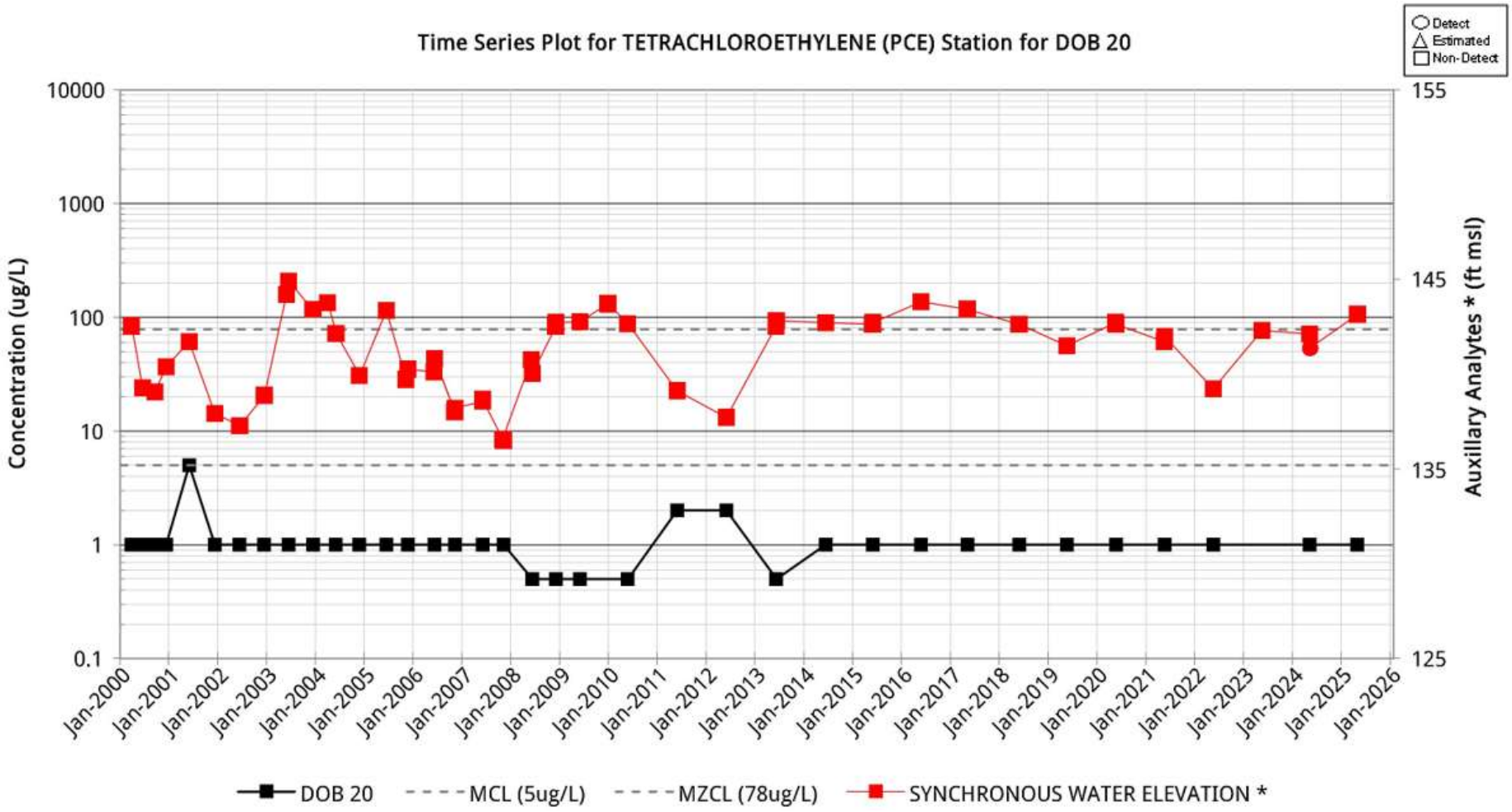


Figure D-13. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 20

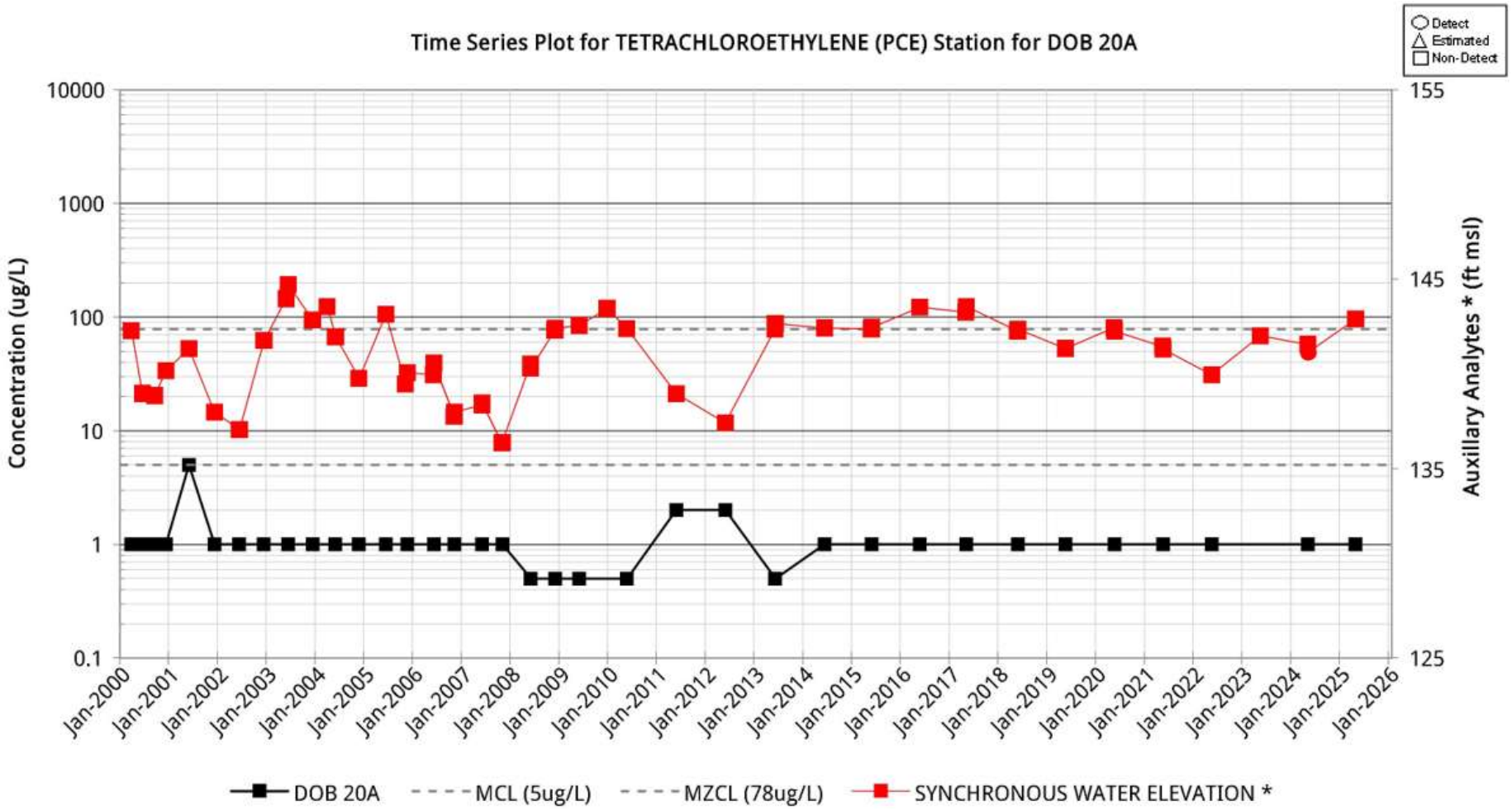


Figure D-14. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 20A

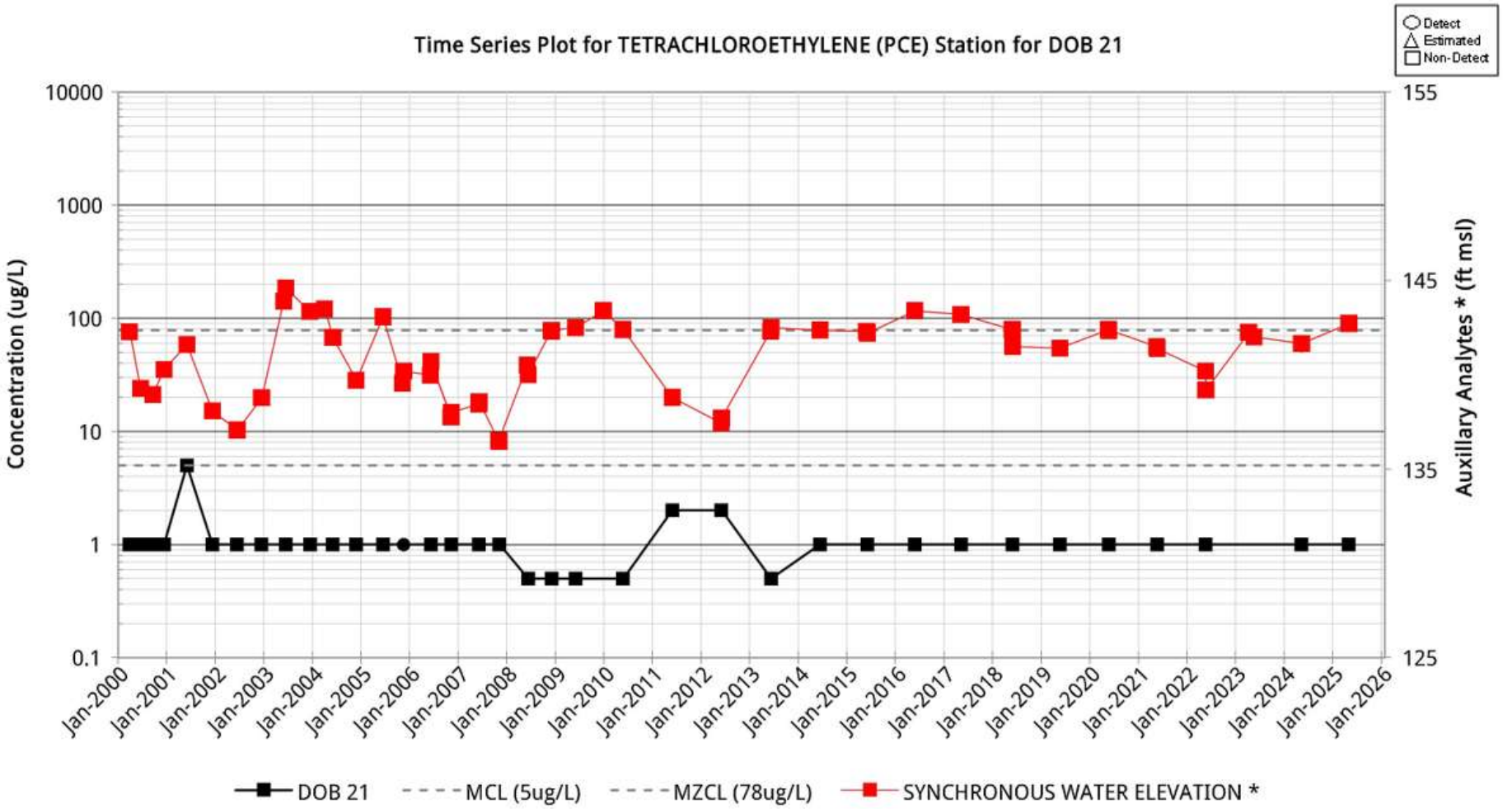


Figure D-15. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 21

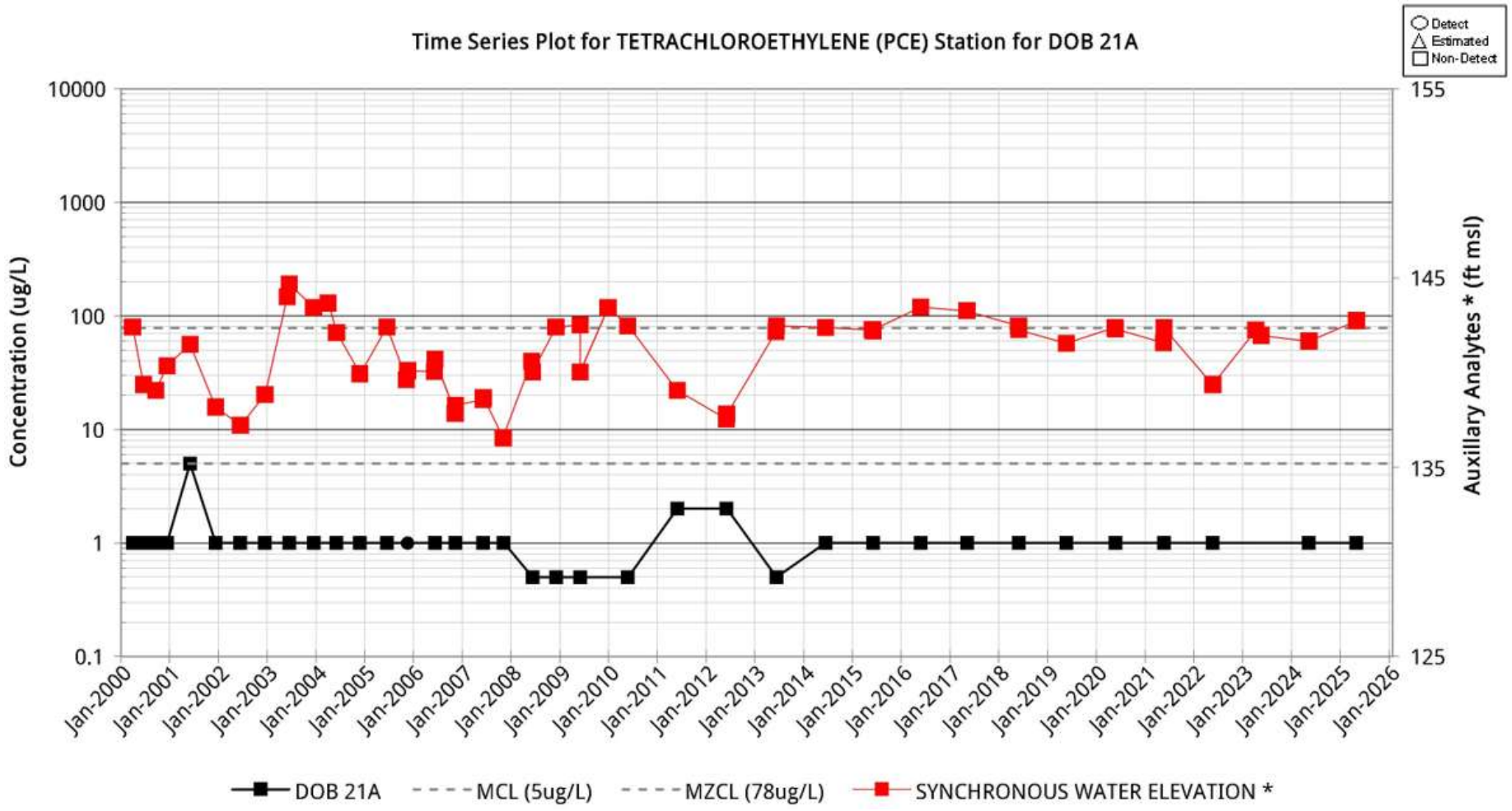


Figure D-16. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 21A

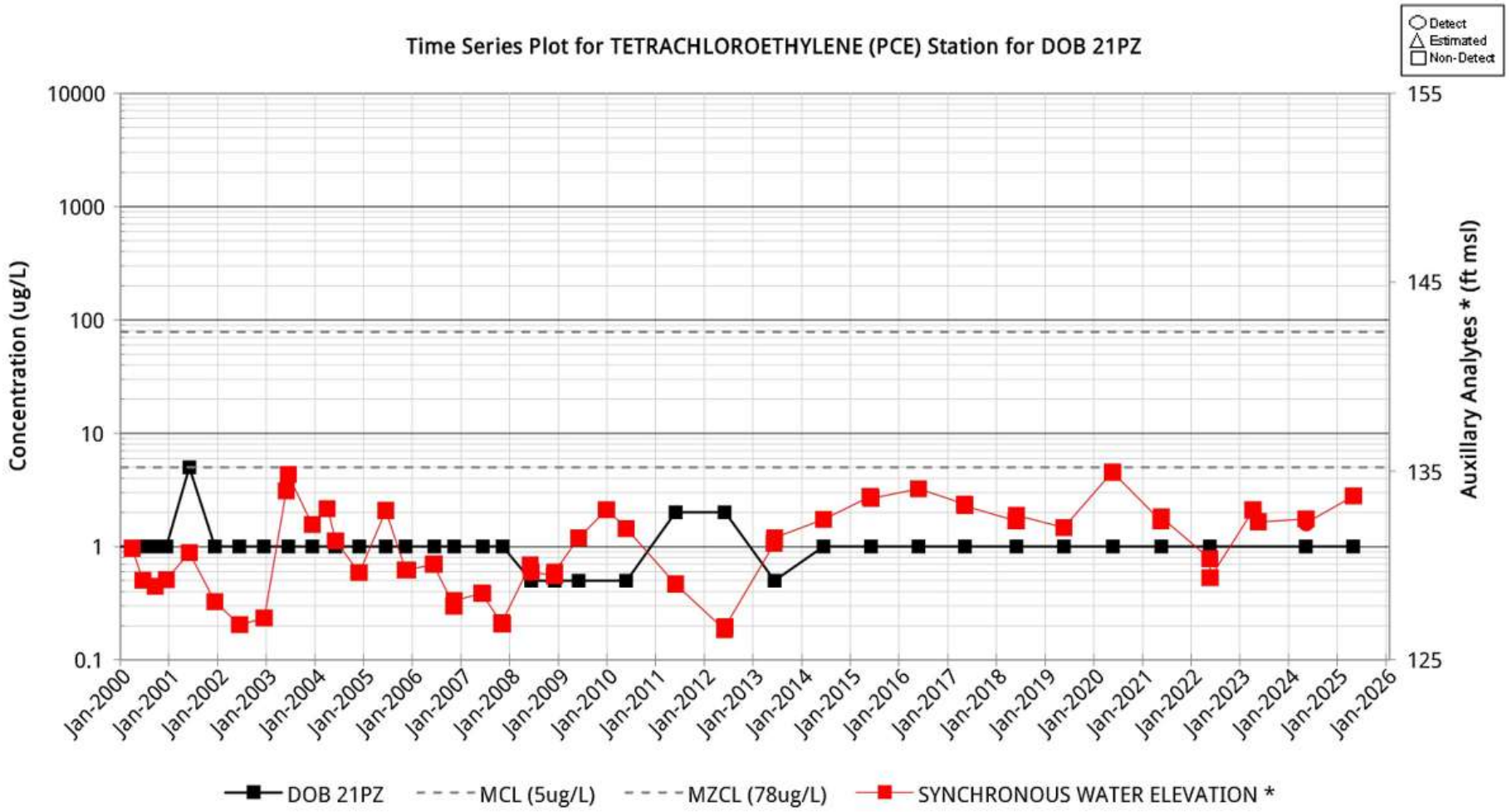


Figure D-17. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 21PZ

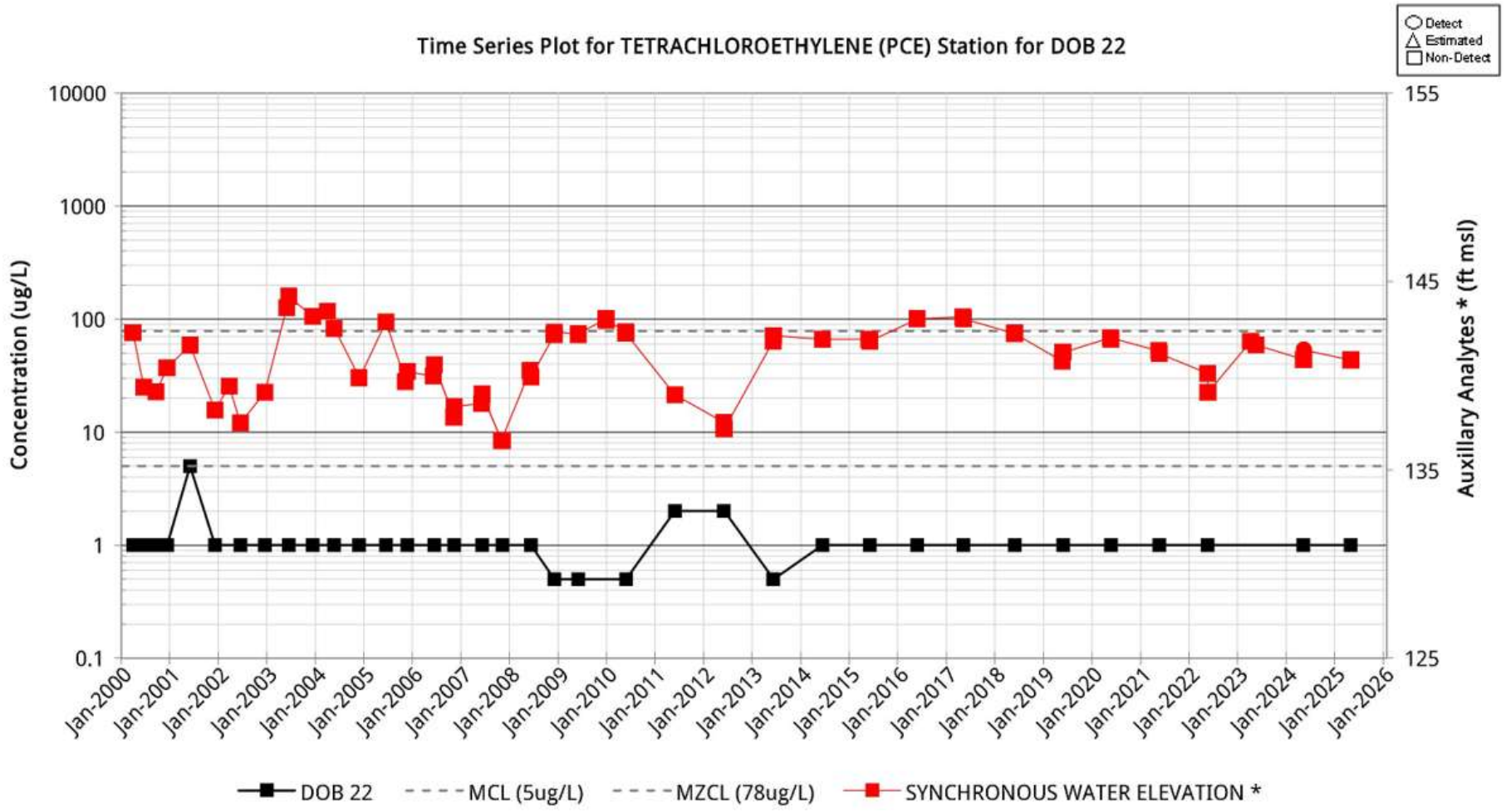


Figure D-18. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 22

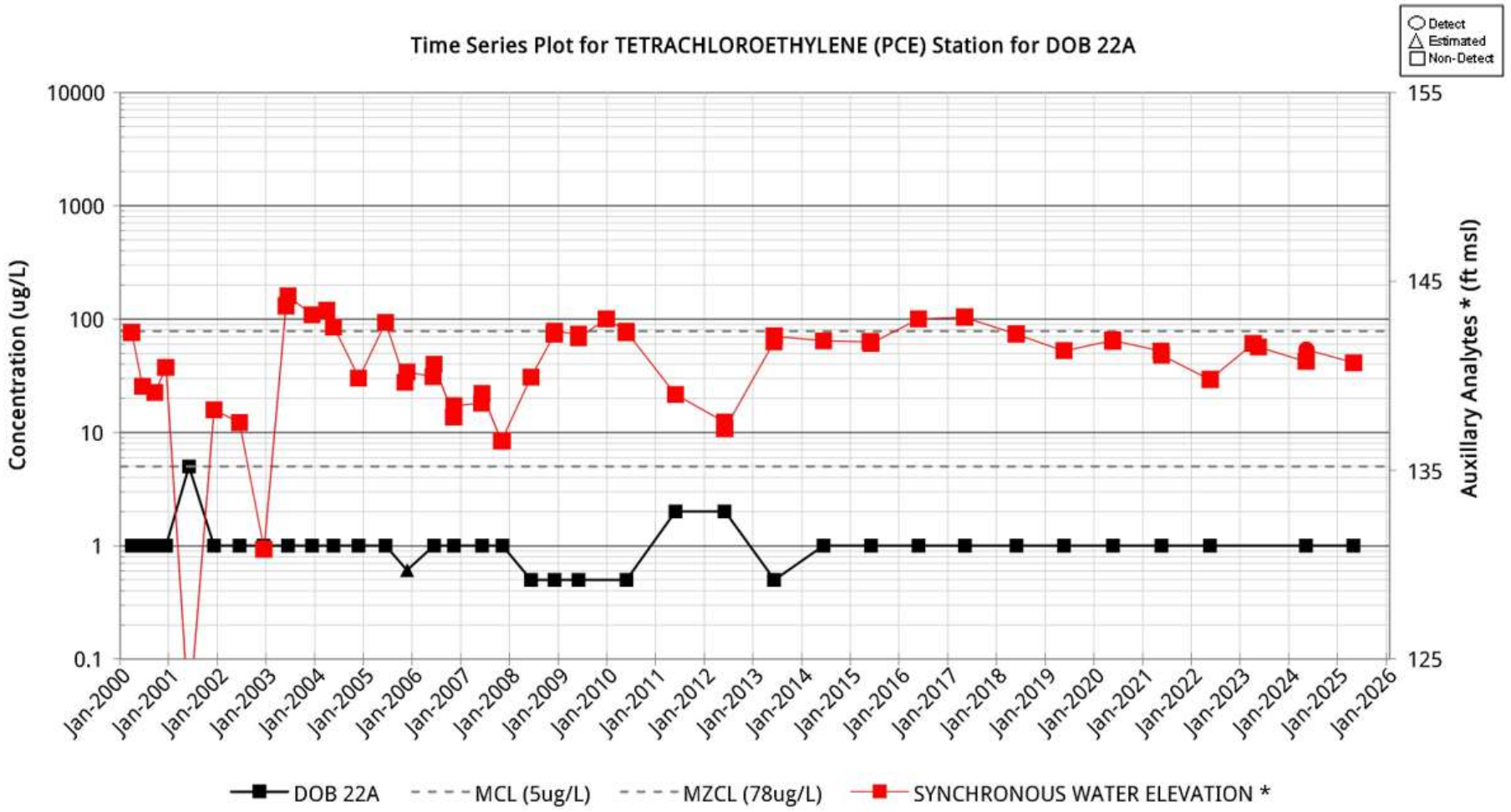


Figure D-19. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 22A

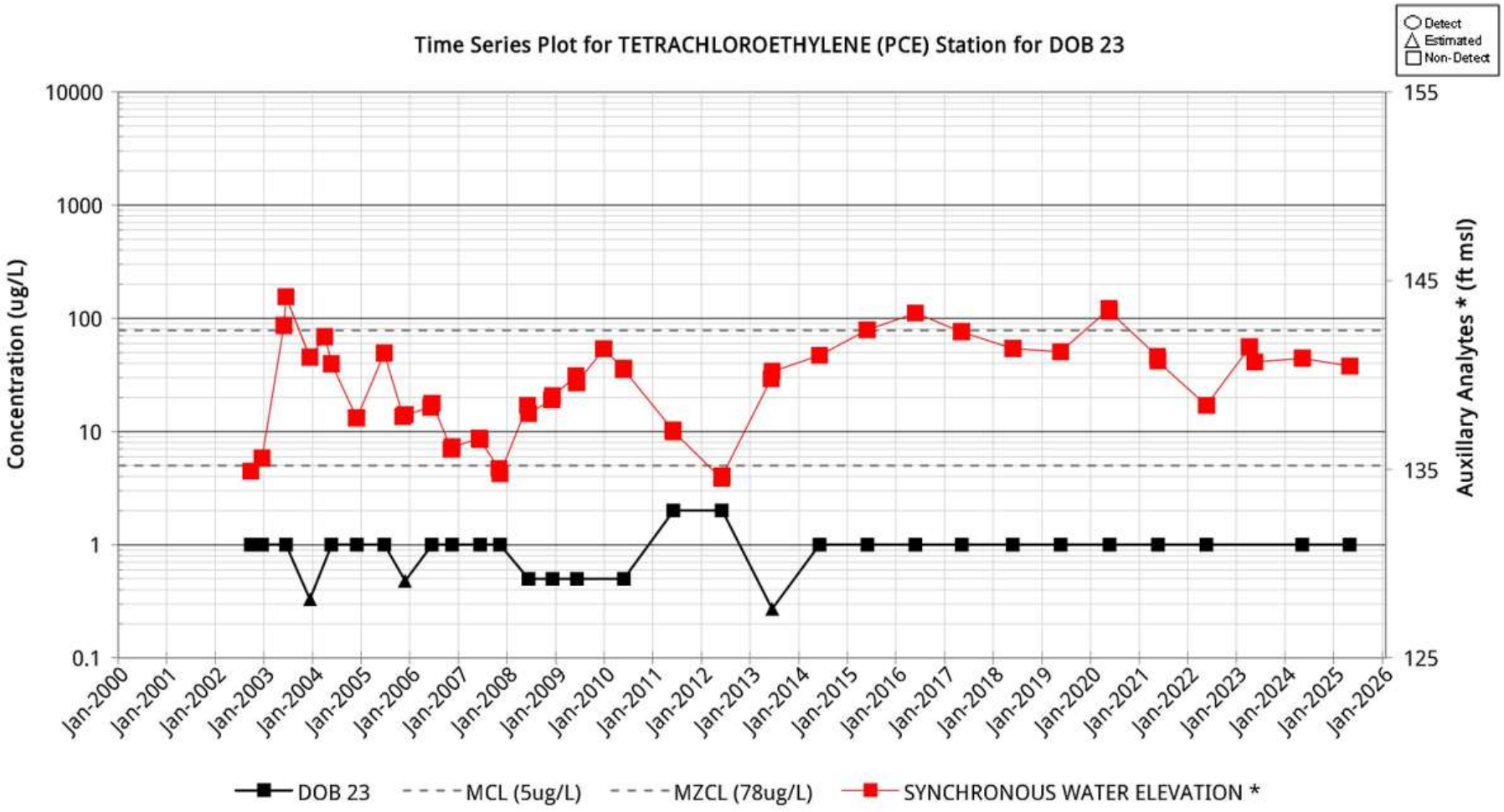


Figure D-20. Time Series Plot for Tetrachloroethylene (PCE) Station for DOB 23

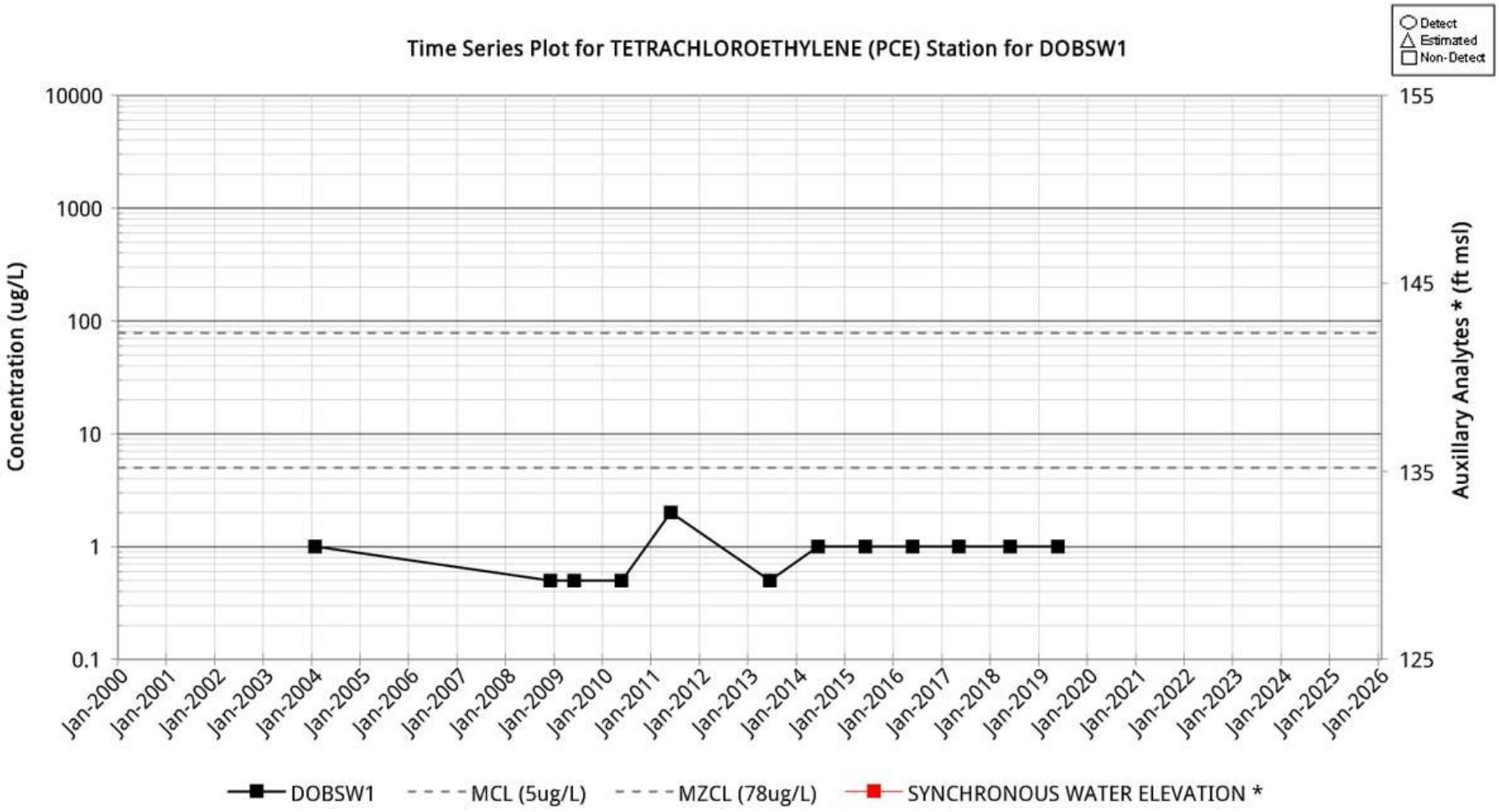


Figure D-21. Time Series Plot for Tetrachloroethylene (PCE) Station for DOBSW1

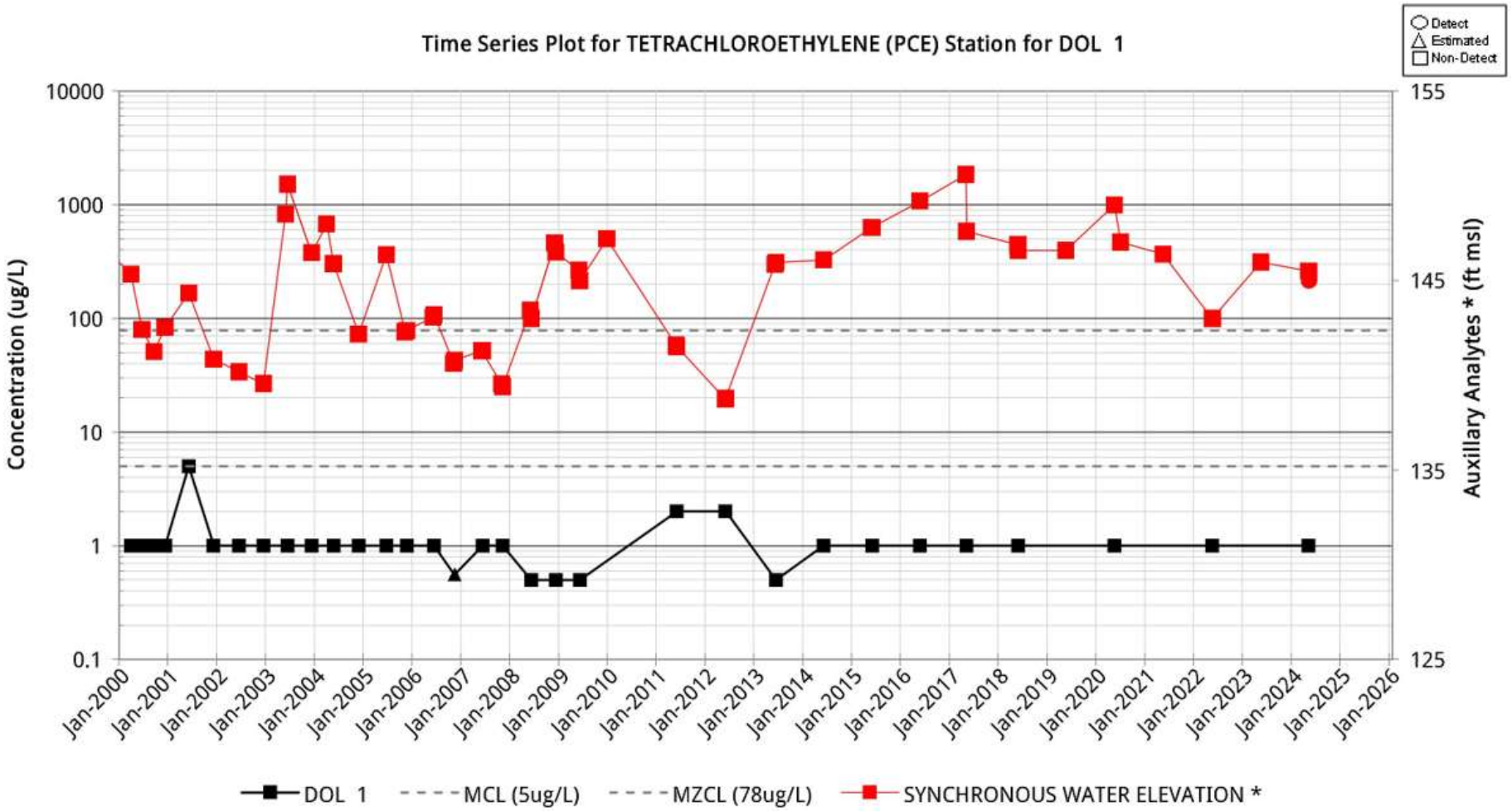


Figure D-22. Time Series Plot for Tetrachloroethylene (PCE) Station for DOL 1

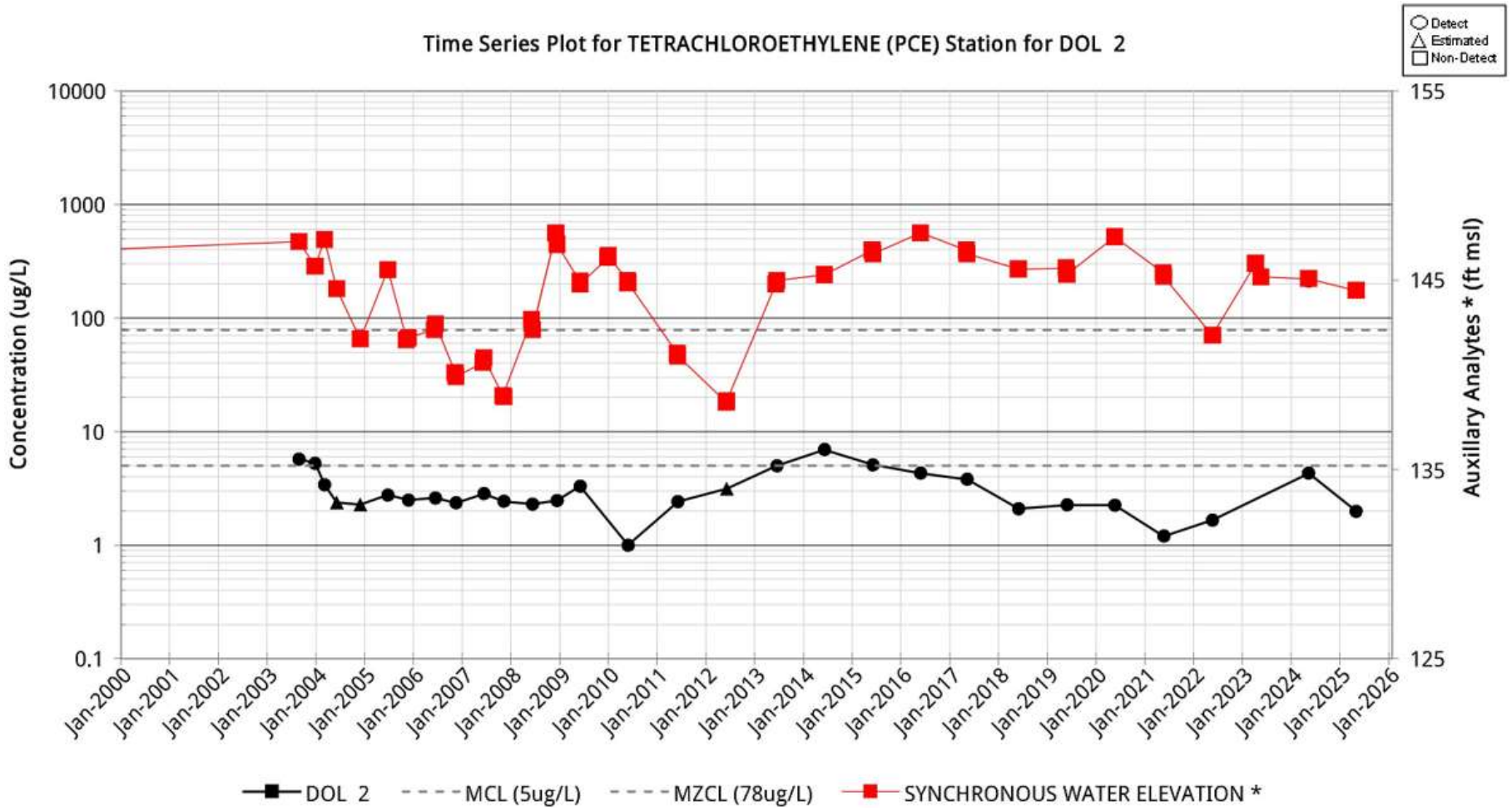


Figure D-23. Time Series Plot for Tetrachloroethylene (PCE) Station for DOL 2

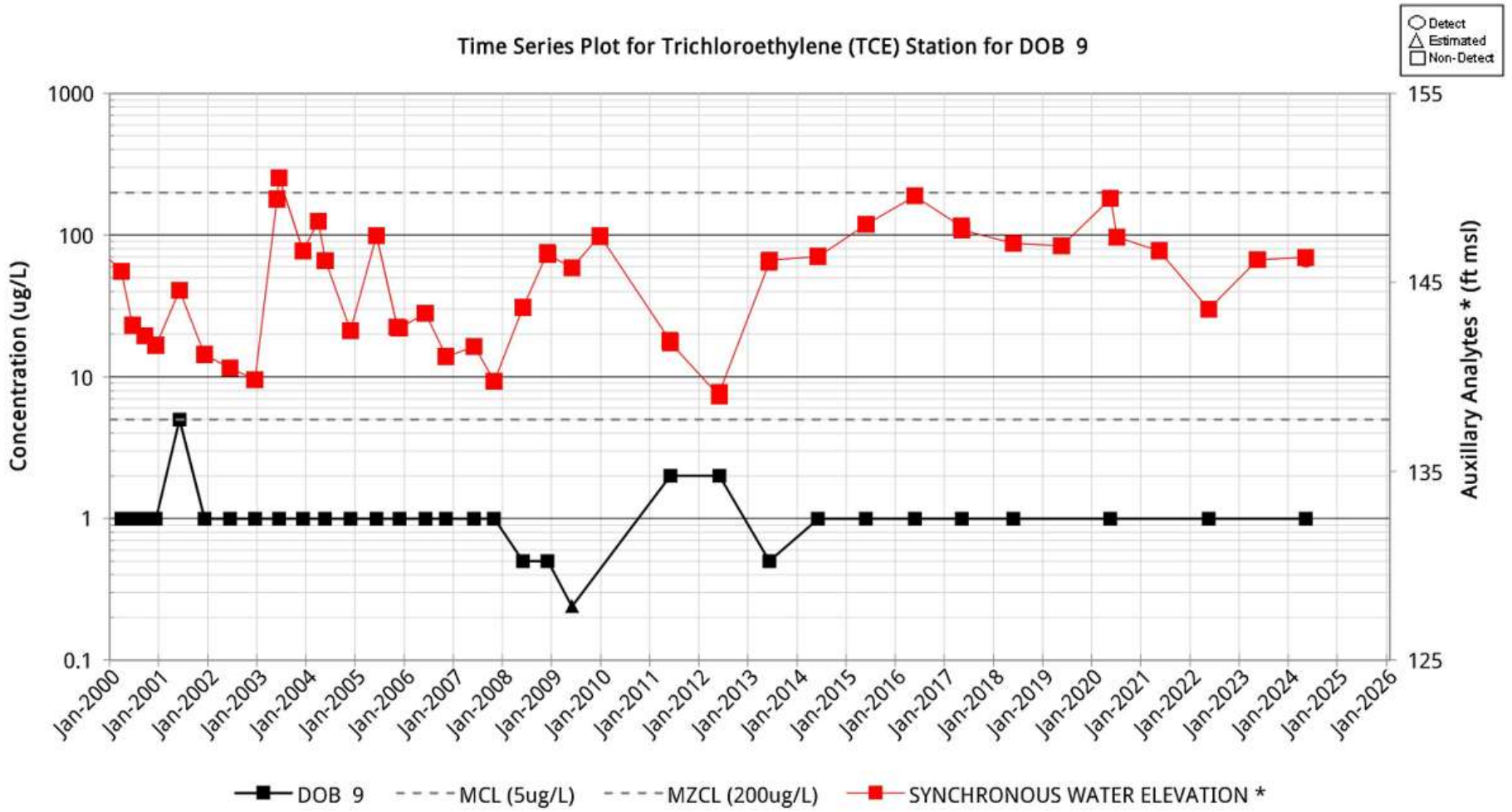


Figure D-24. Time Series Plot for Trichloroethylene (TCE) Station for DOB 9

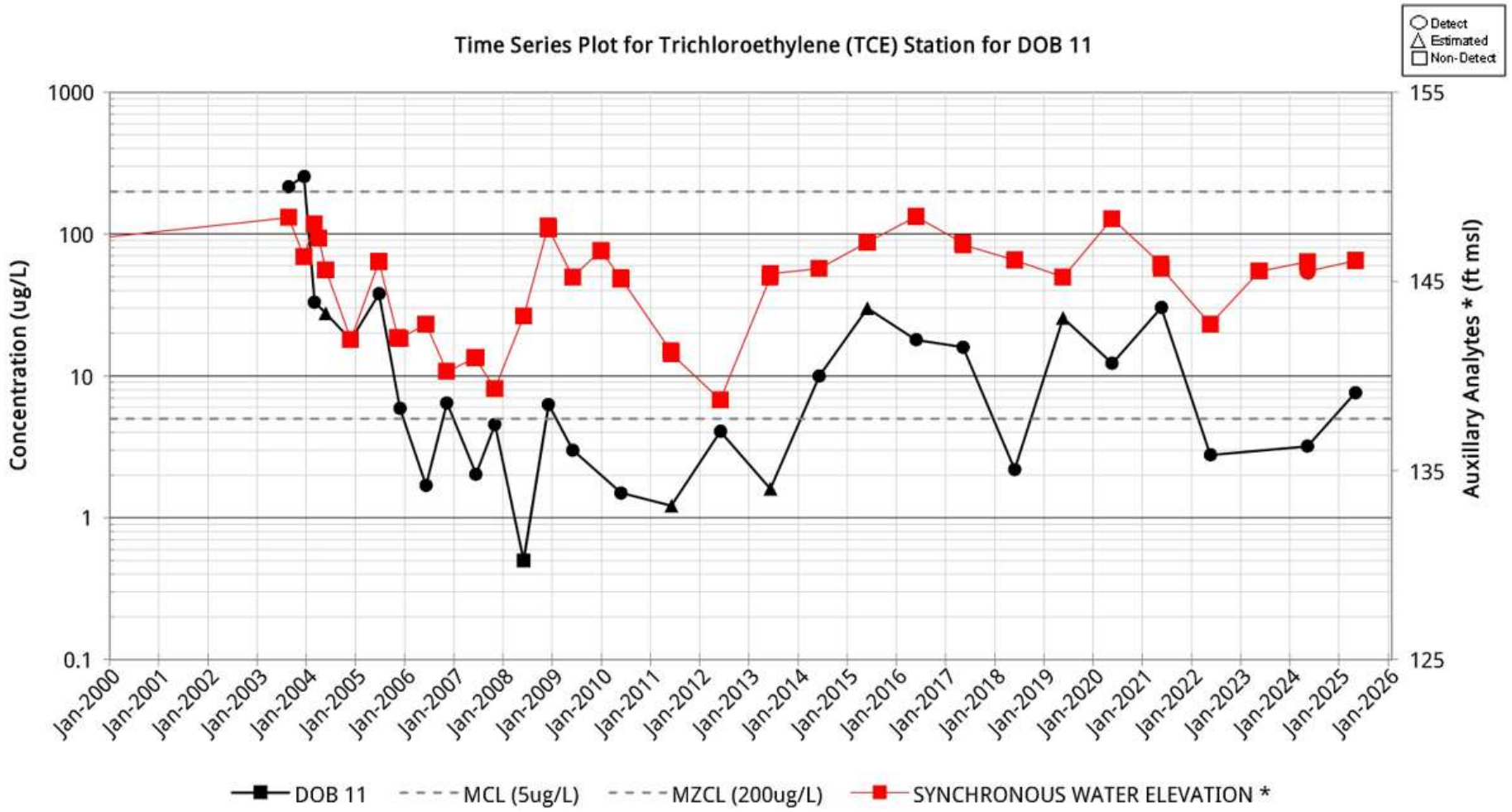


Figure D-25. Time Series Plot for Trichloroethylene (TCE) Station for DOB 11

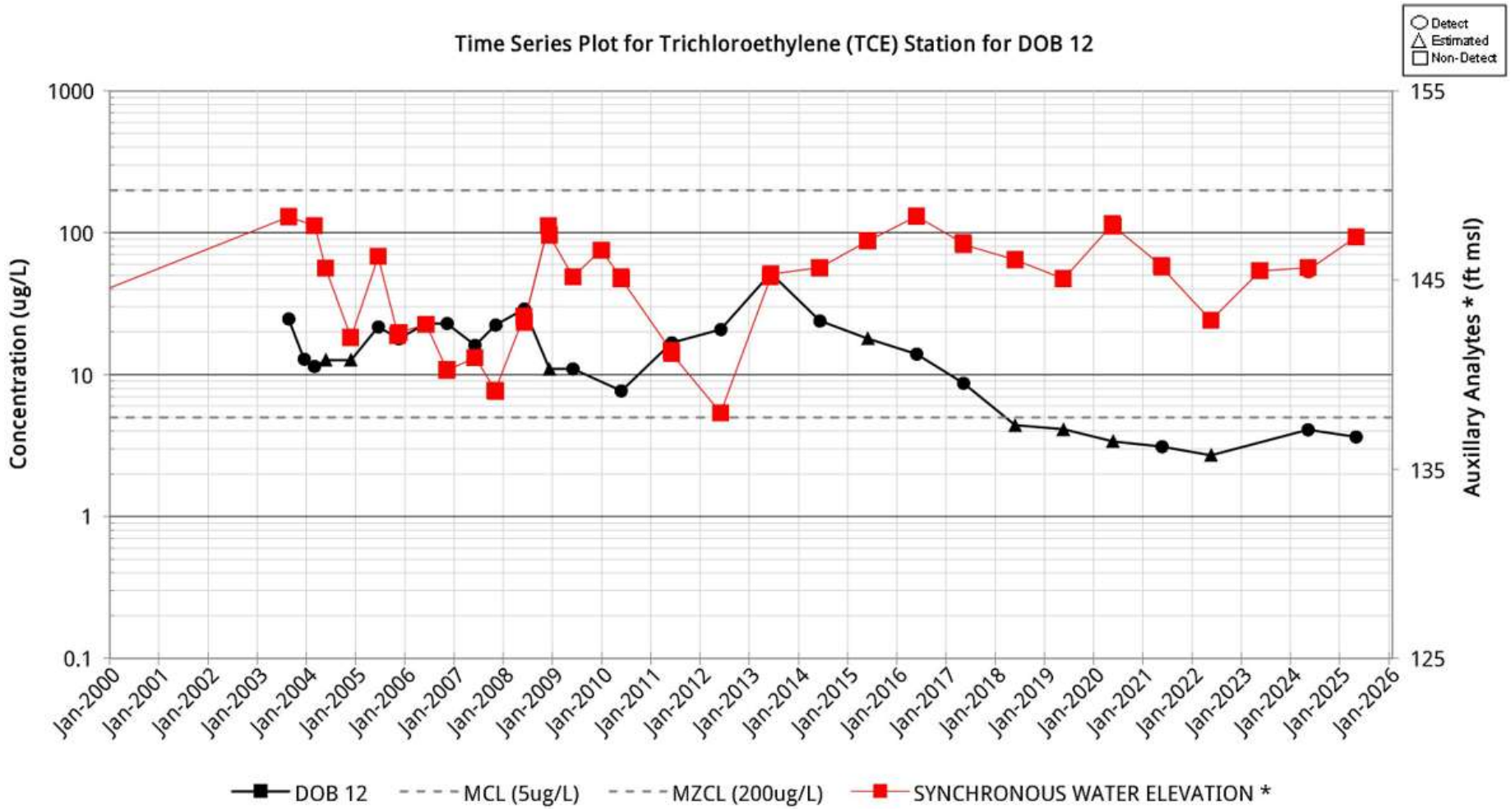


Figure D-26. Time Series Plot for Trichloroethylene (TCE) Station for DOB 12

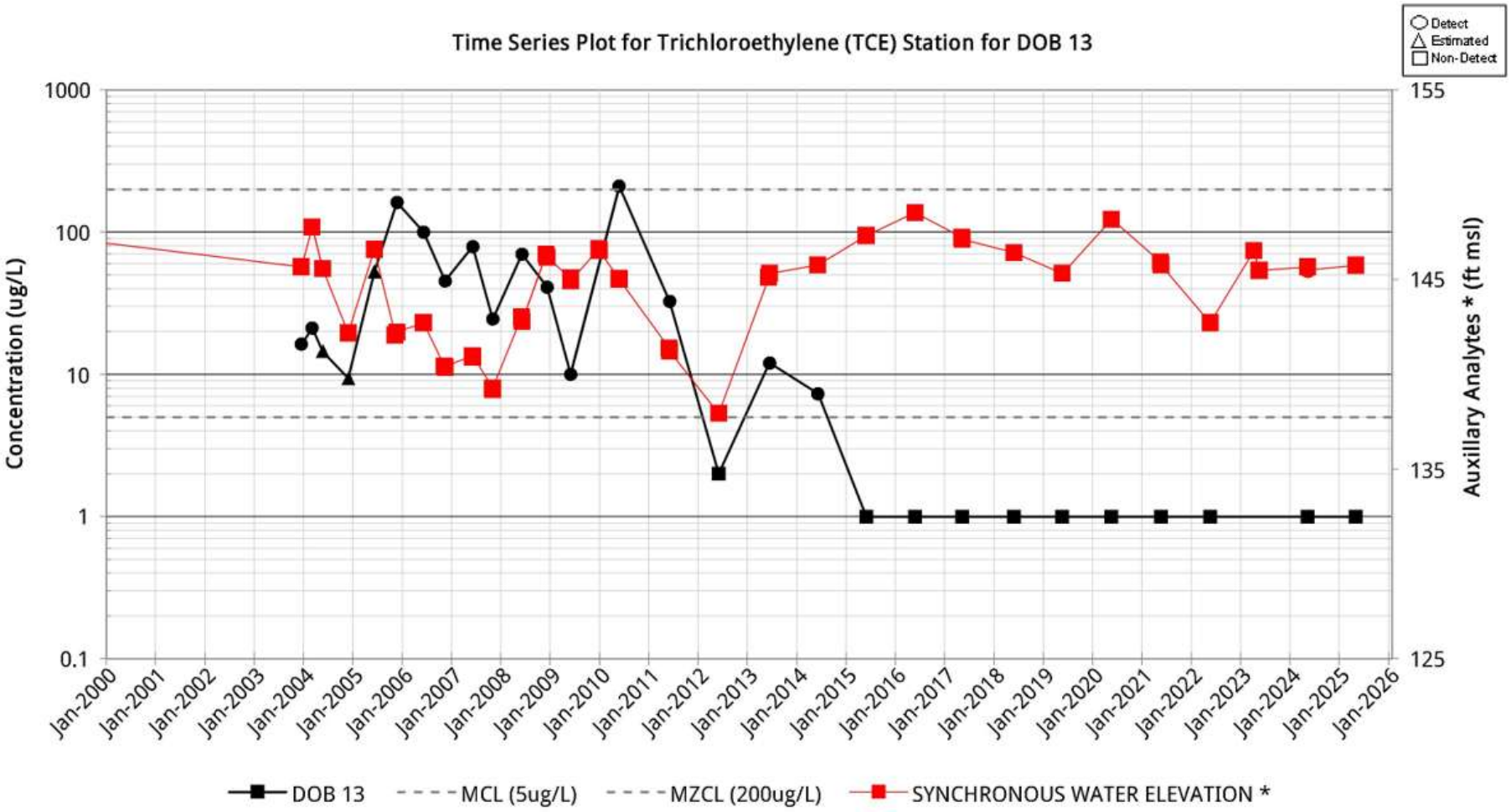


Figure D-27. Time Series Plot for Trichloroethylene (TCE) Station for DOB 13

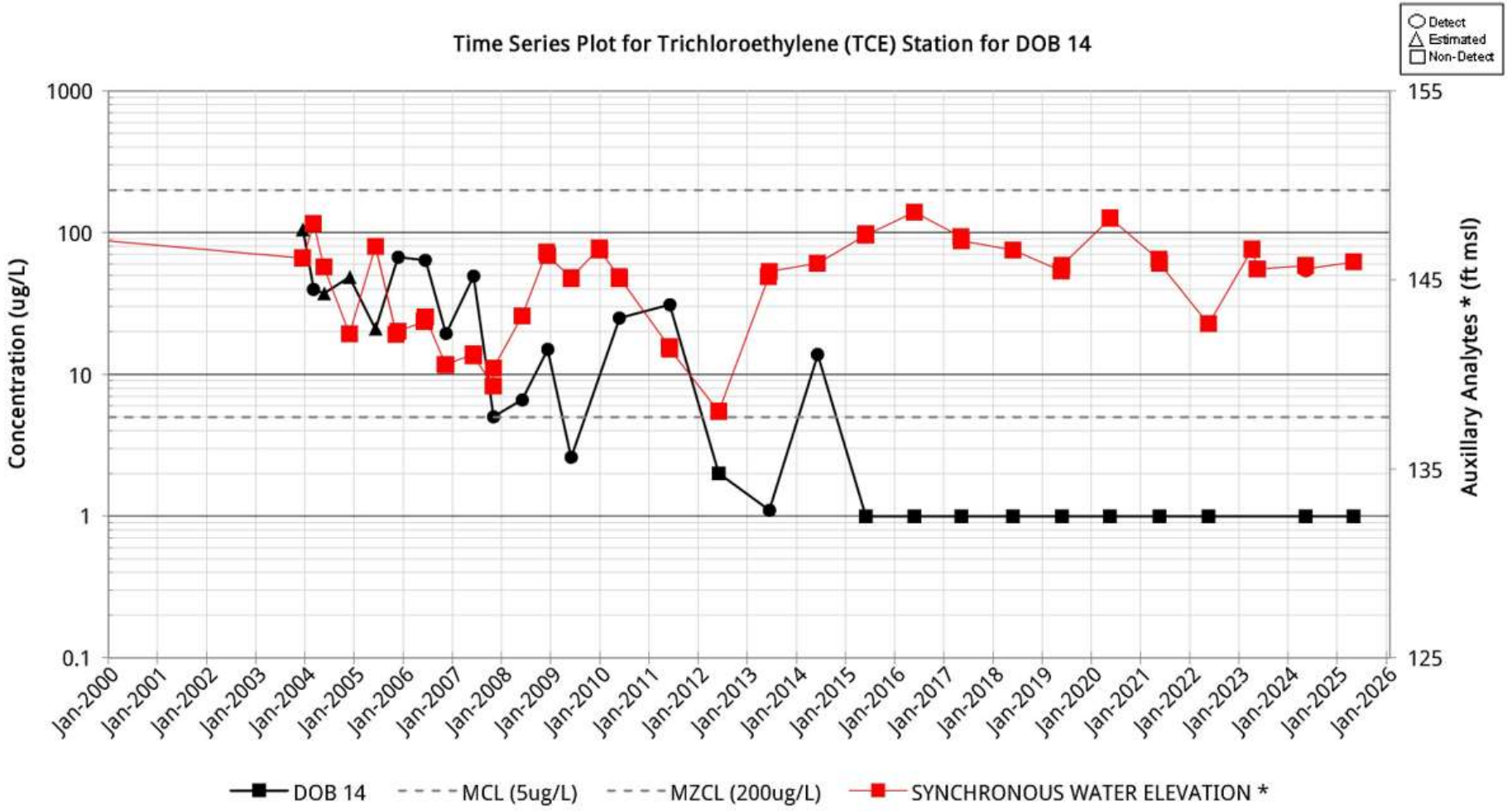


Figure D-28. Time Series Plot for Trichloroethylene (TCE) Station for DOB 14

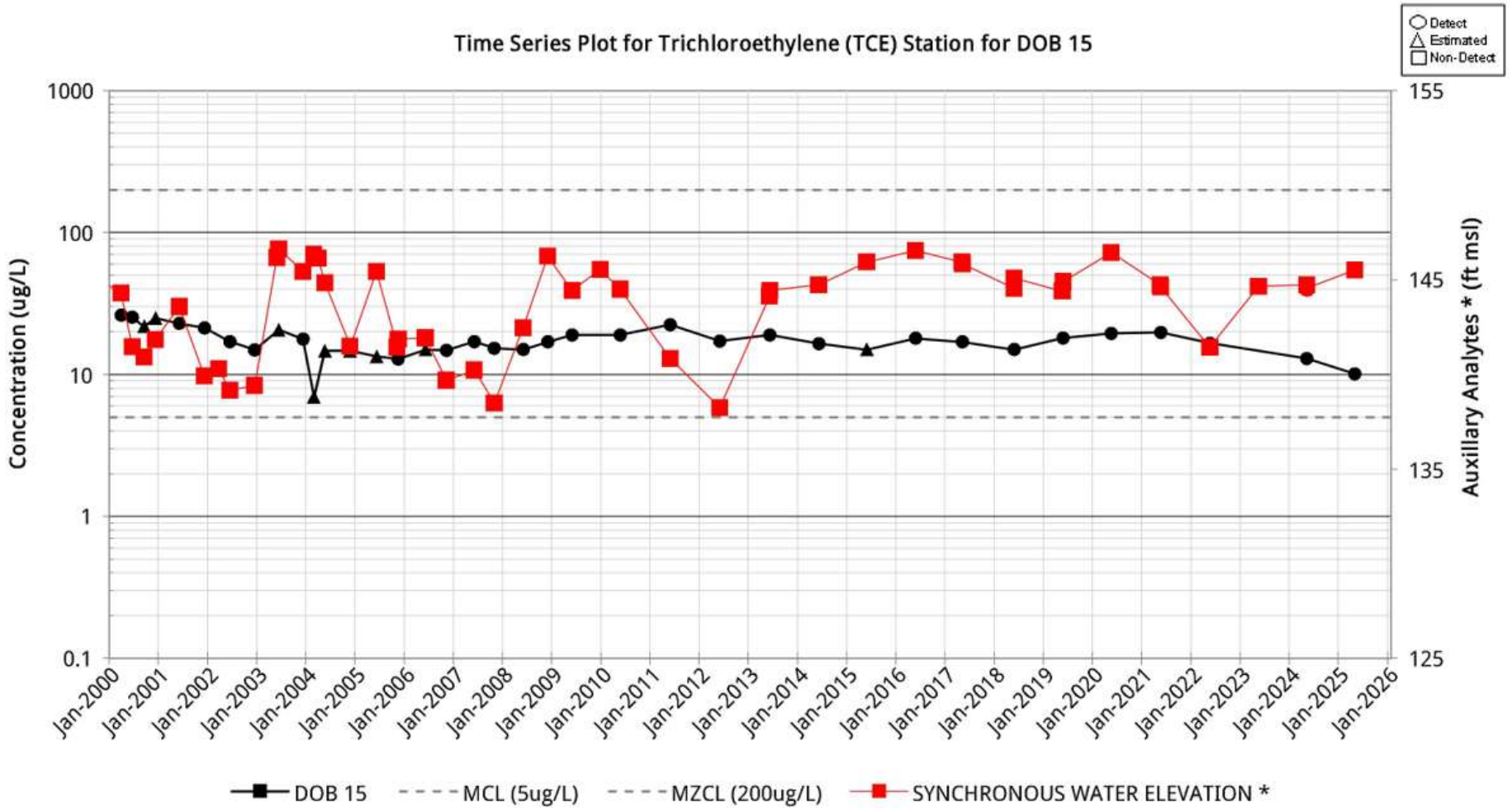


Figure D-29. Time Series Plot for Trichloroethylene (TCE) Station for DOB 15

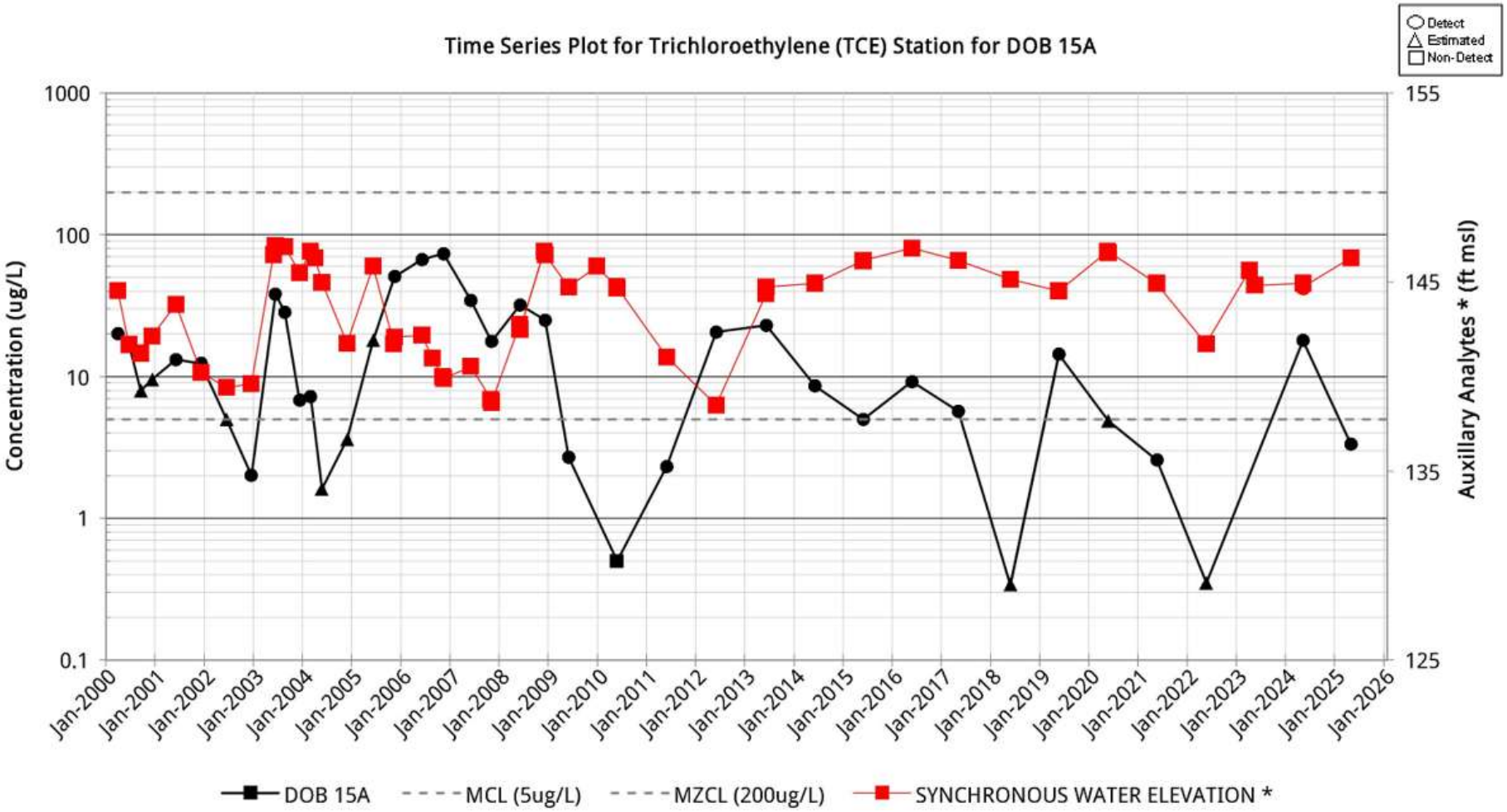


Figure D-30. Time Series Plot for Trichloroethylene (TCE) Station for DOB 15A

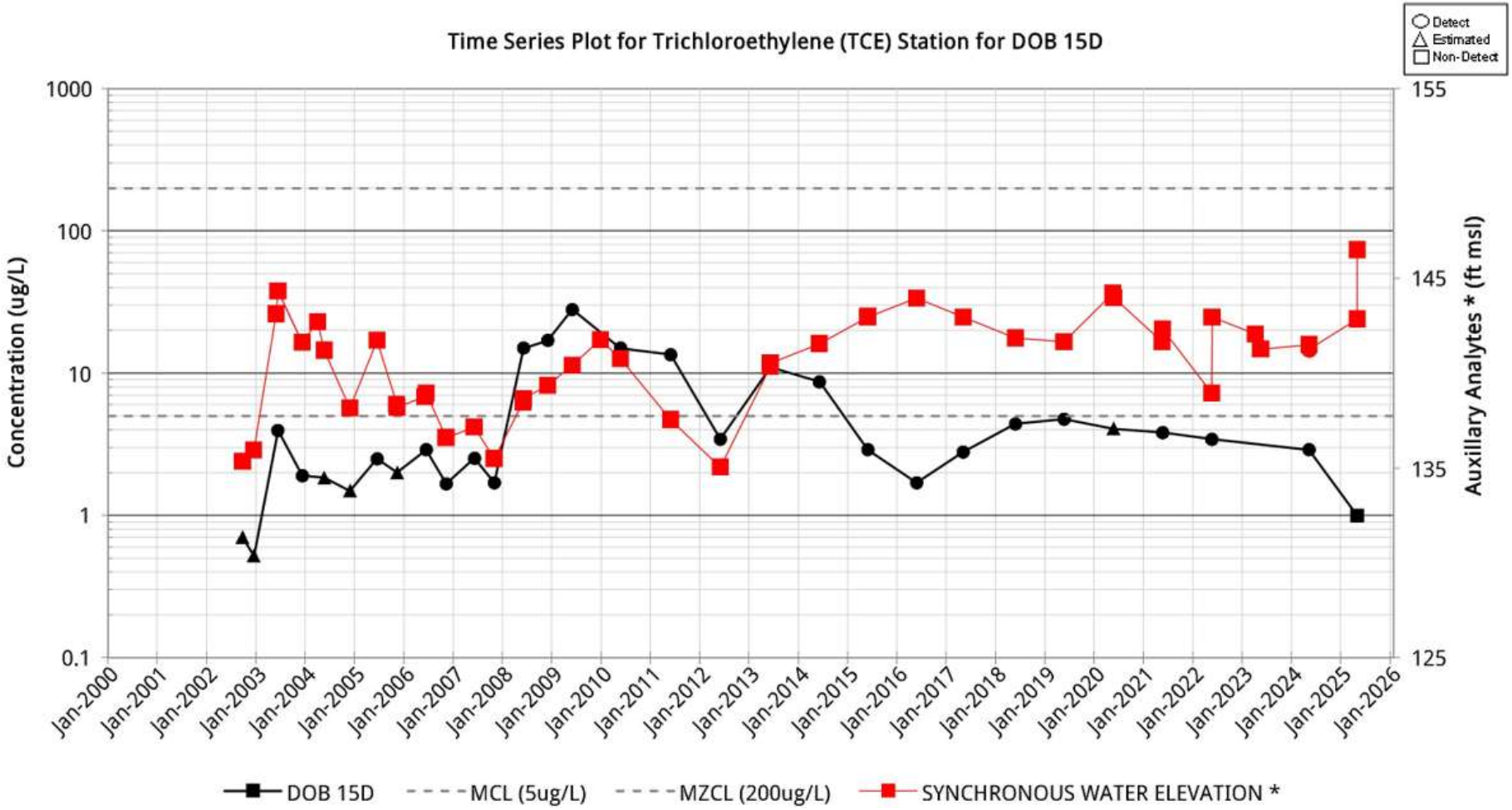


Figure D-31. Time Series Plot for Trichloroethylene (TCE) Station for DOB 15D

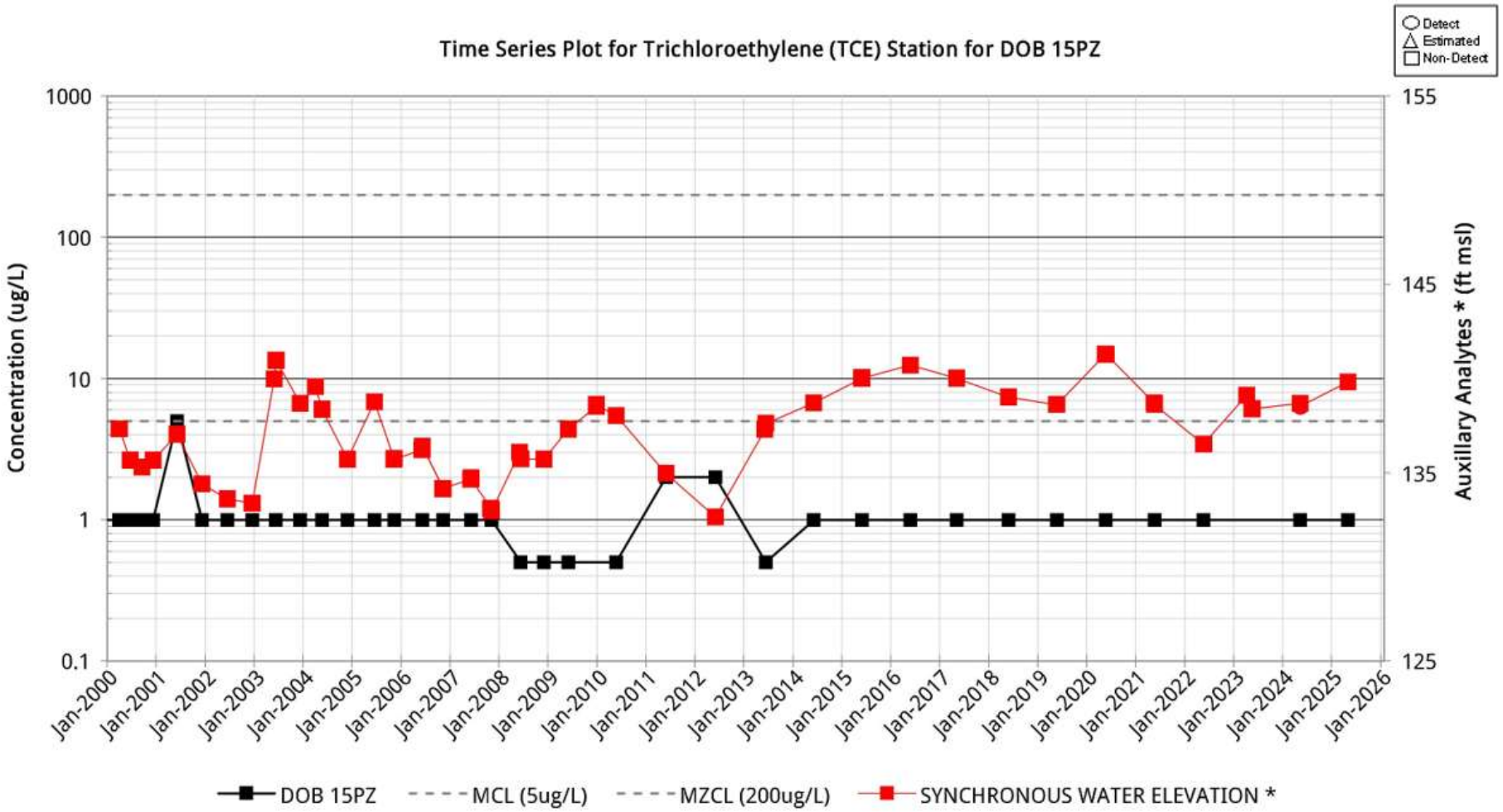


Figure D-32. Time Series Plot for Trichloroethylene (TCE) Station for DOB 15PZ

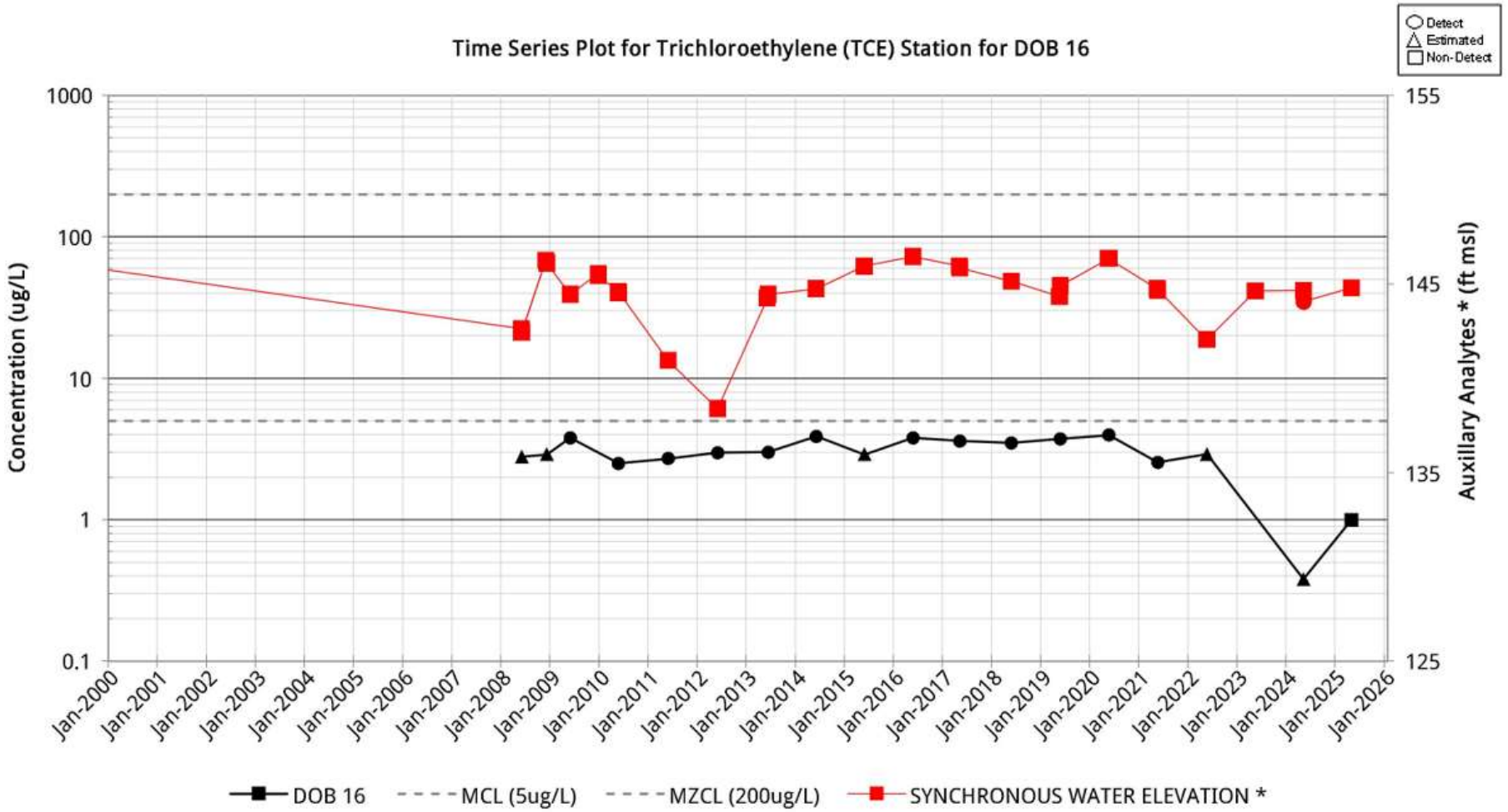


Figure D-33. Time Series Plot for Trichloroethylene (TCE) Station for DOB 16

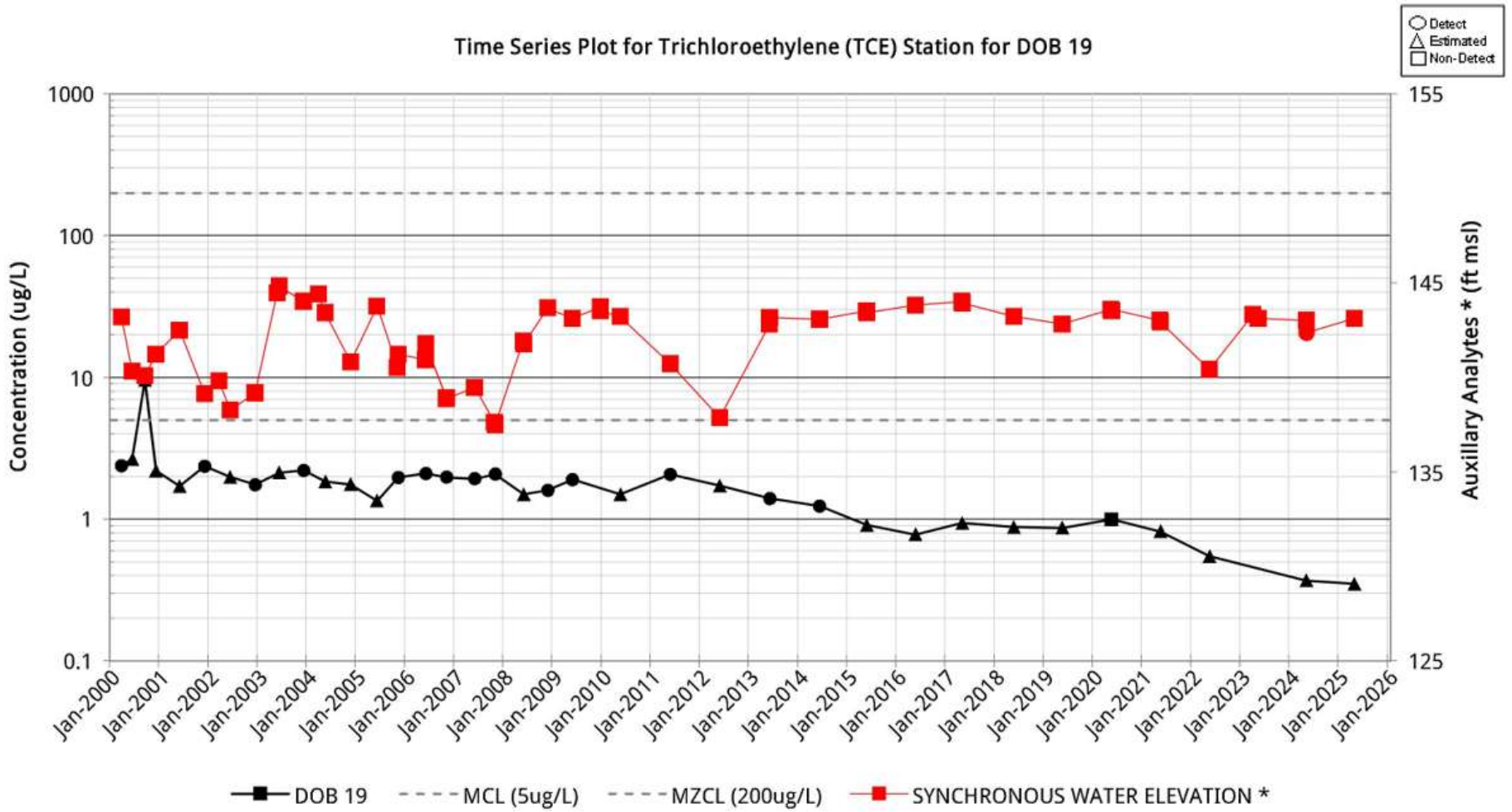


Figure D-34. Time Series Plot for Trichloroethylene (TCE) Station for DOB 19

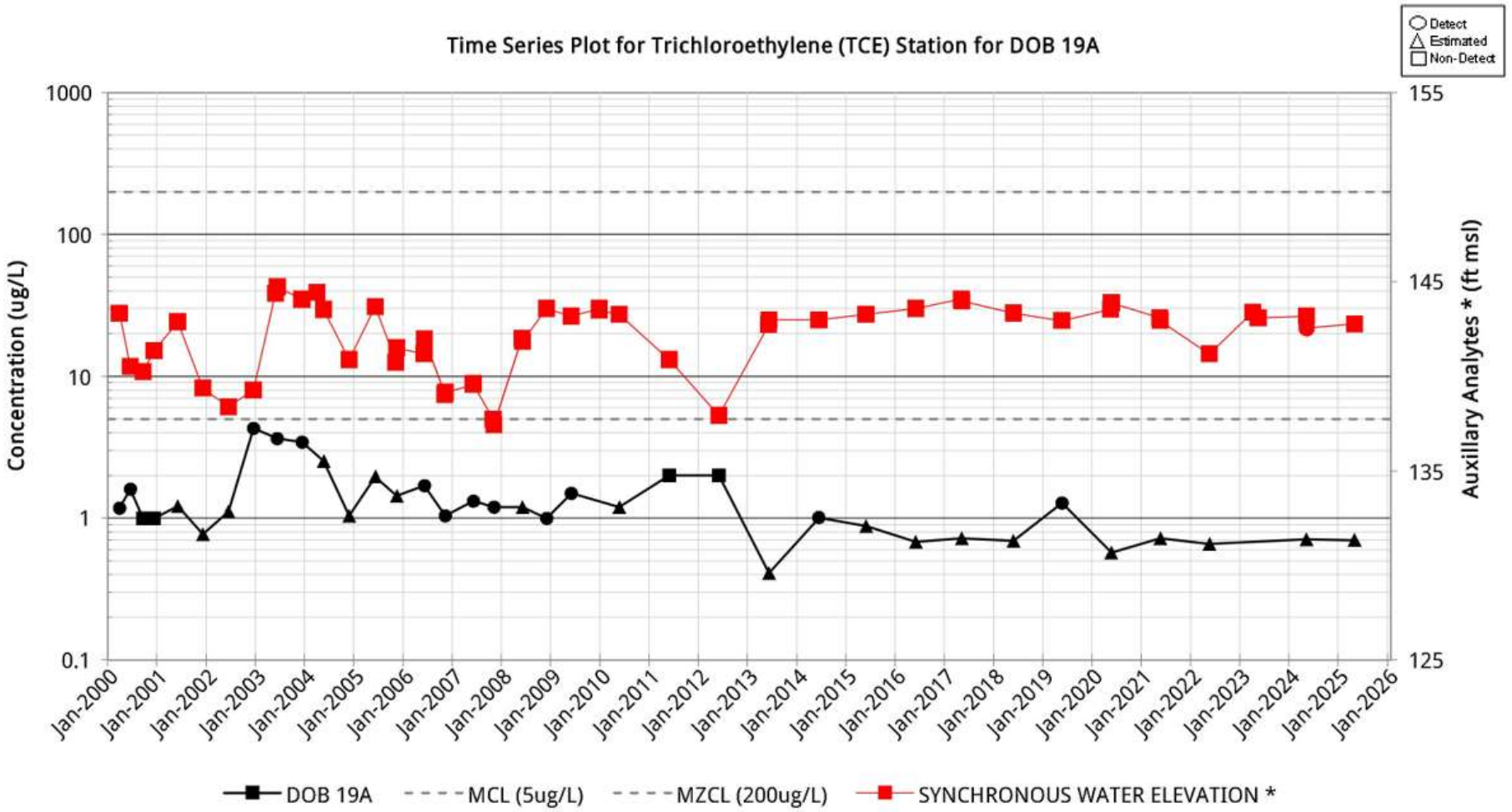


Figure D-35. Time Series Plot for Trichloroethylene (TCE) Station for DOB 19A

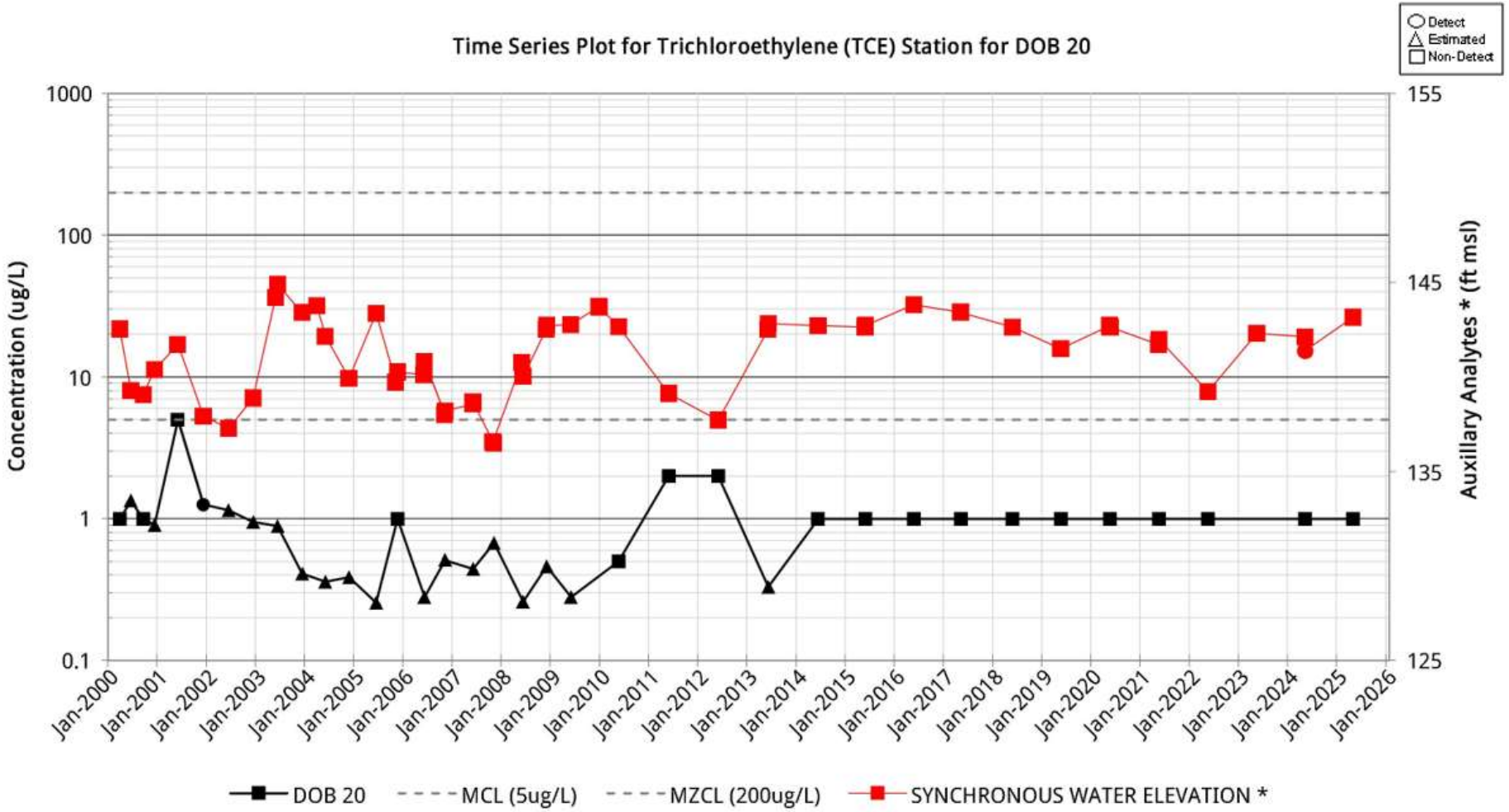


Figure D-36. Time Series Plot for Trichloroethylene (TCE) Station for DOB 20

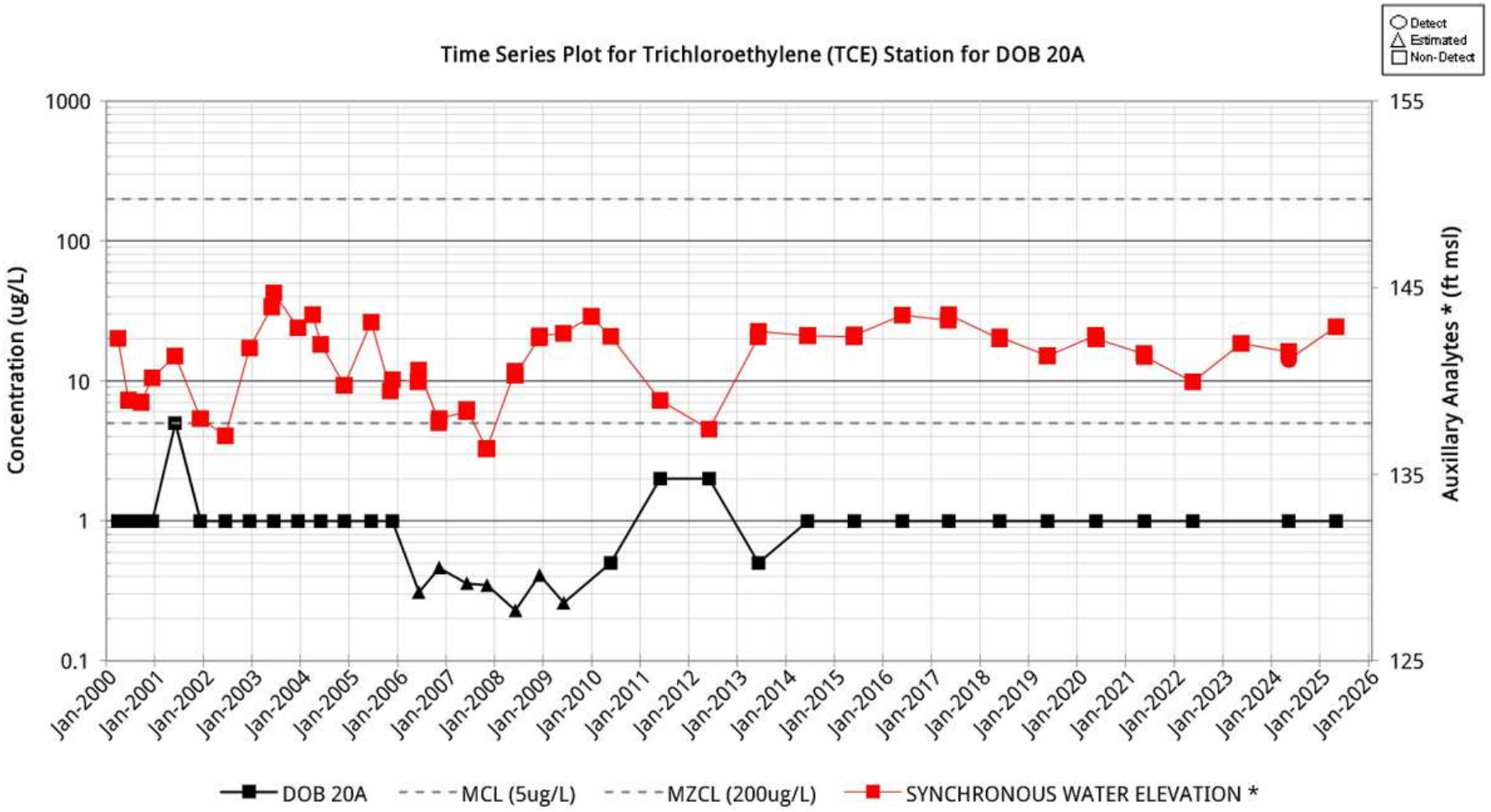


Figure D-37. Time Series Plot for Trichloroethylene (TCE) Station for DOB 20A

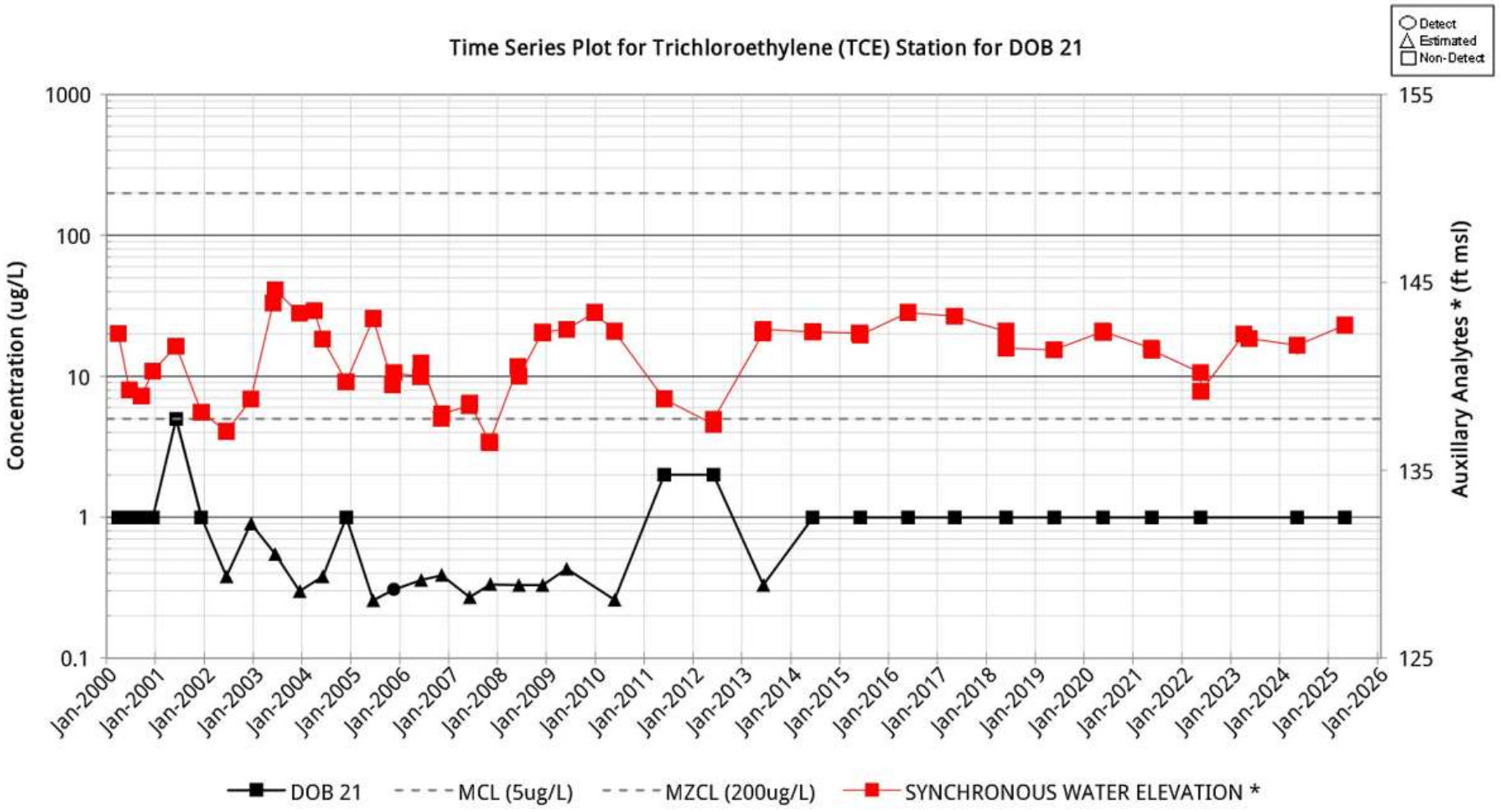


Figure D-38. Time Series Plot for Trichloroethylene (TCE) Station for DOB 21

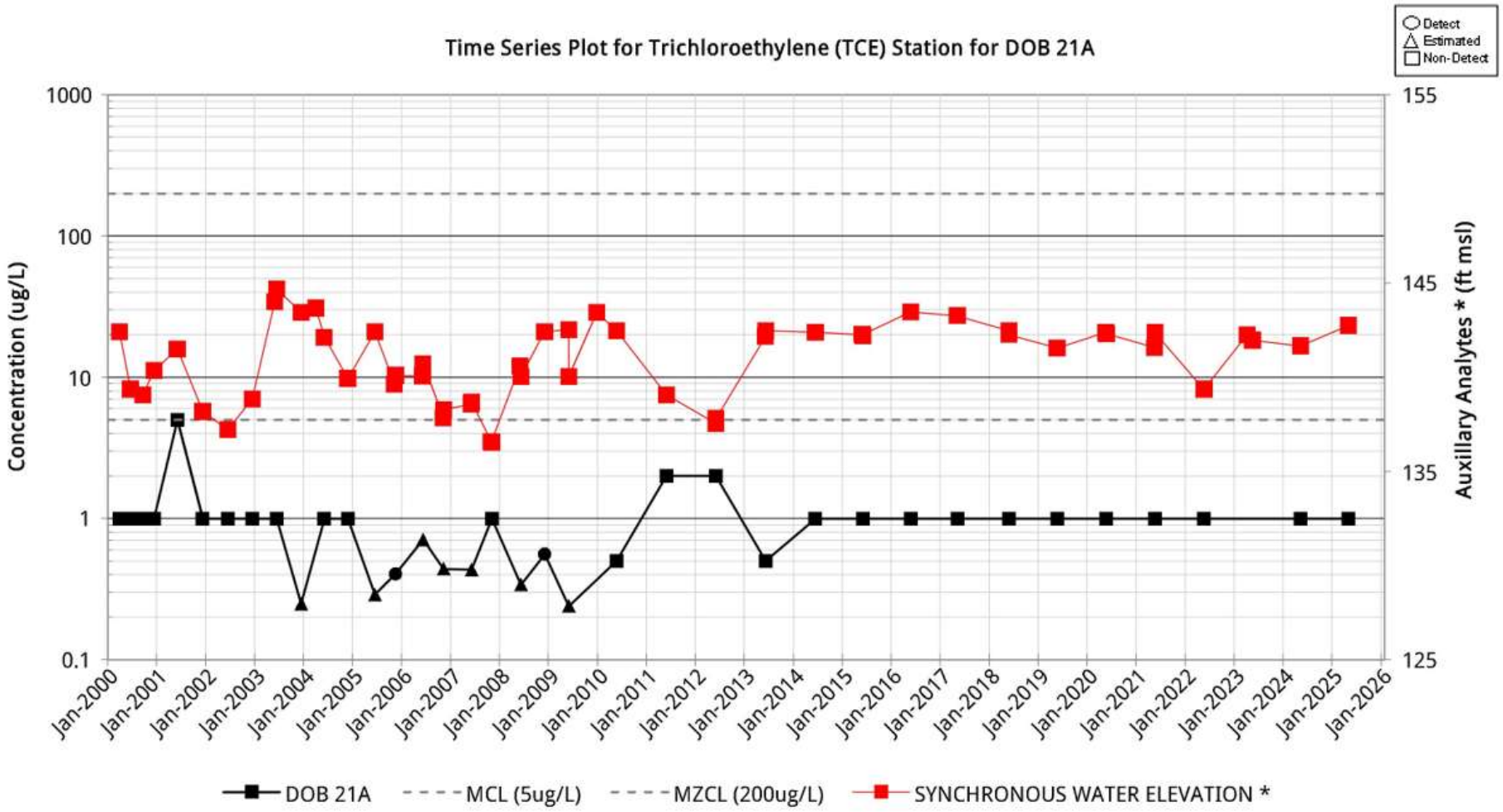


Figure D-39. Time Series Plot for Trichloroethylene (TCE) Station for DOB 21A

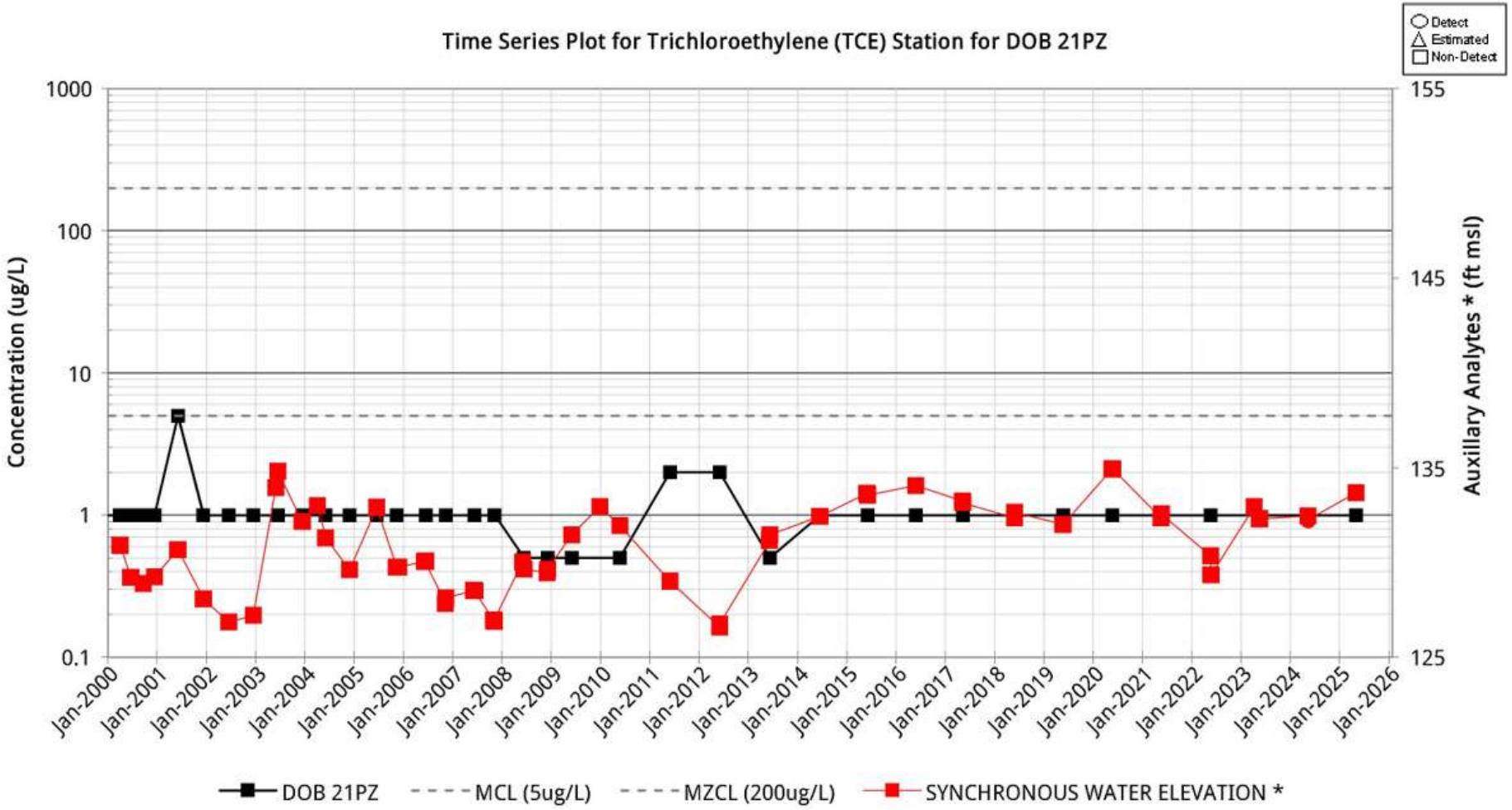


Figure D-40. Time Series Plot for Trichloroethylene (TCE) Station for DOB 21PZ

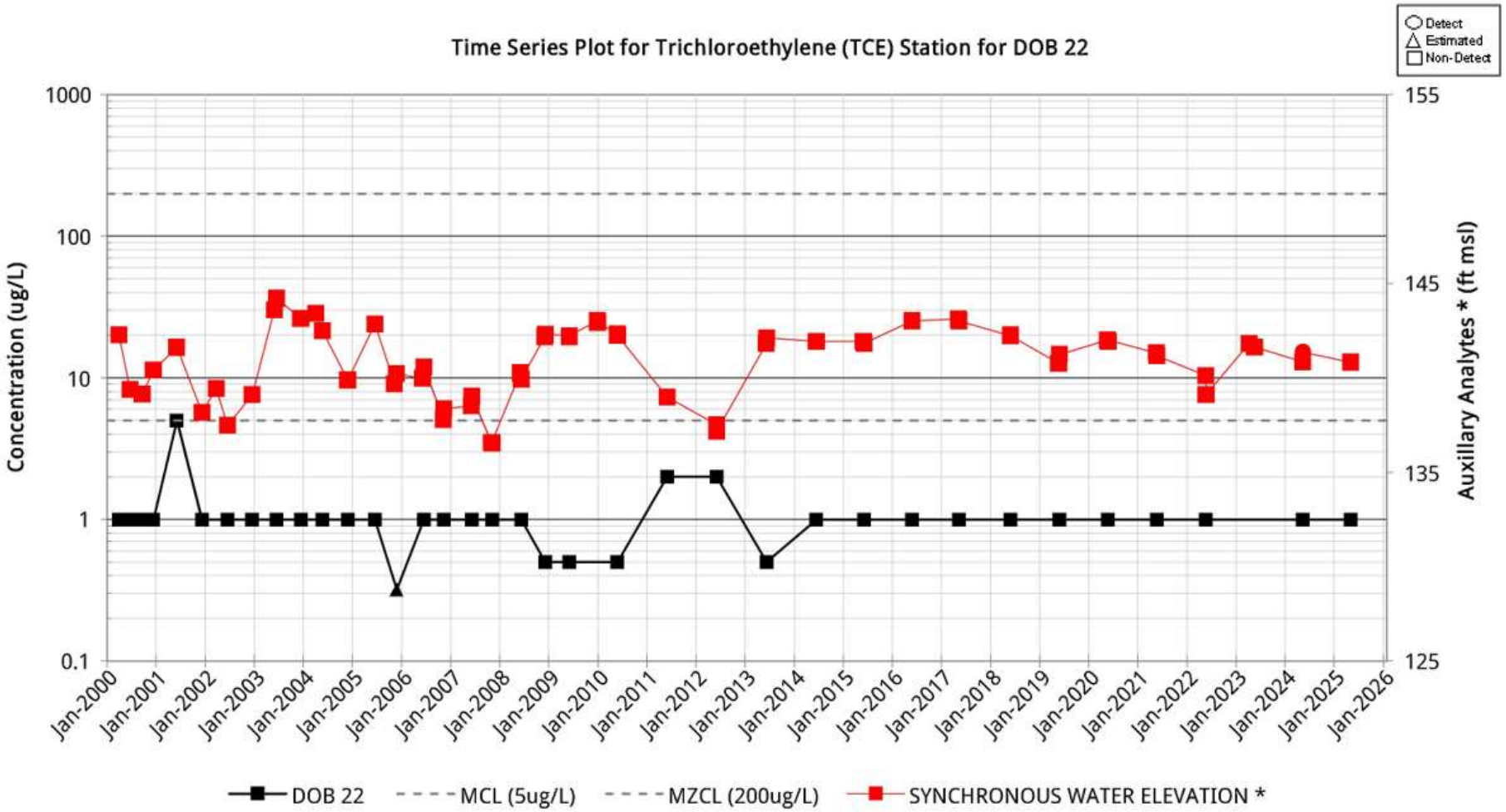


Figure D-41. Time Series Plot for Trichloroethylene (TCE) Station for DOB 22

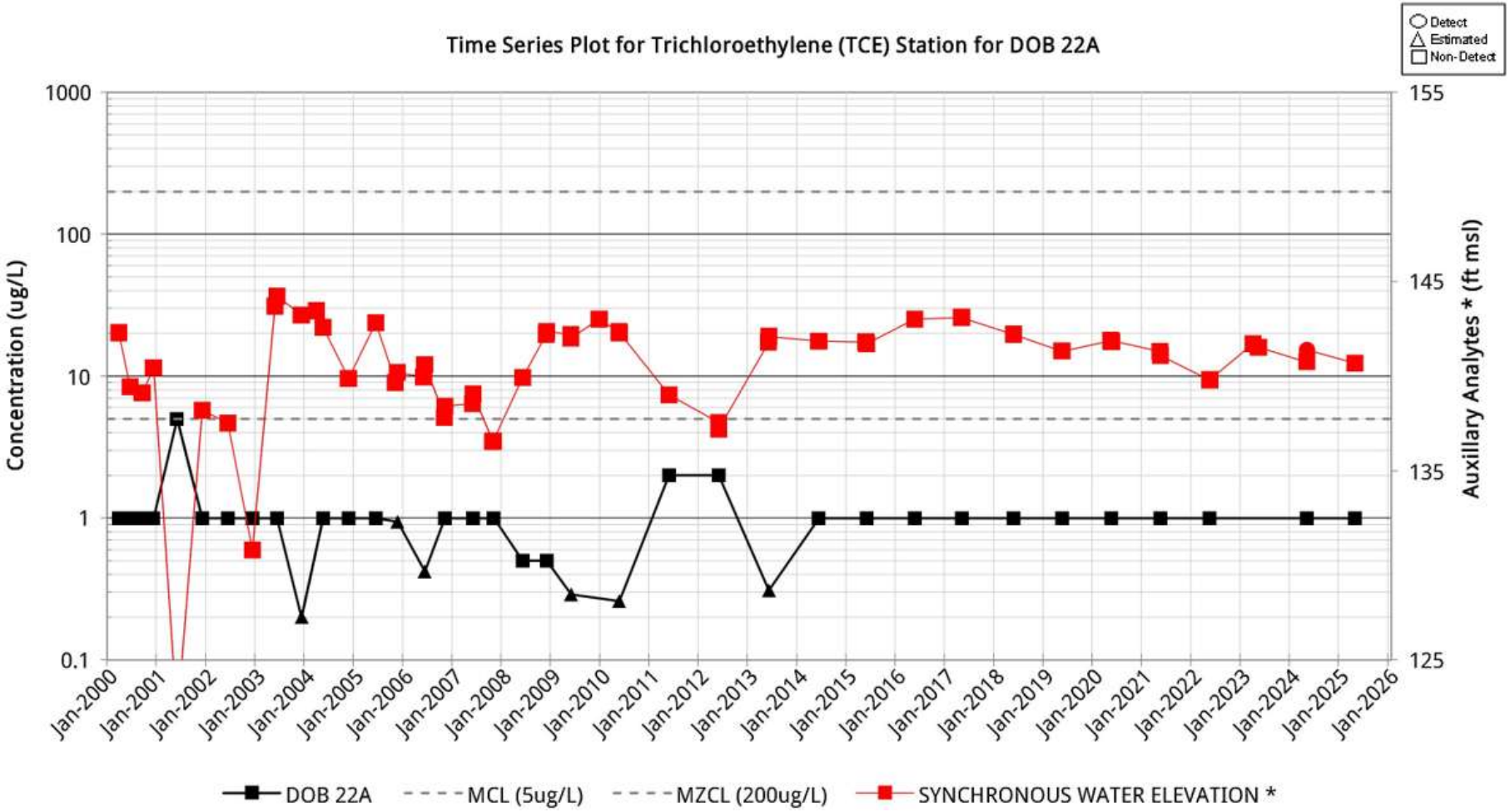


Figure D-42. Time Series Plot for Trichloroethylene (TCE) Station for DOB 22A

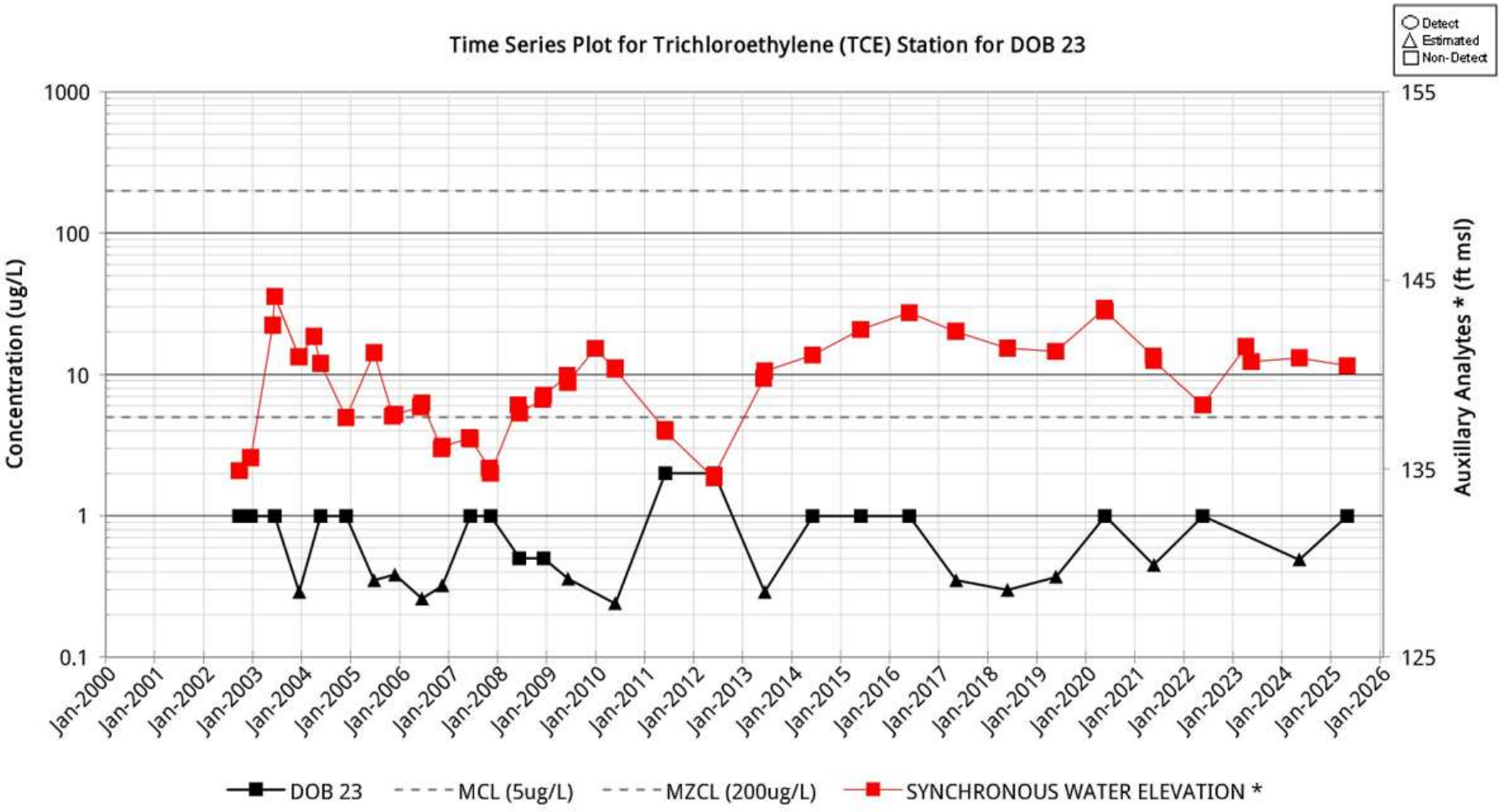


Figure D-43. Time Series Plot for Trichloroethylene (TCE) Station for DOB 23

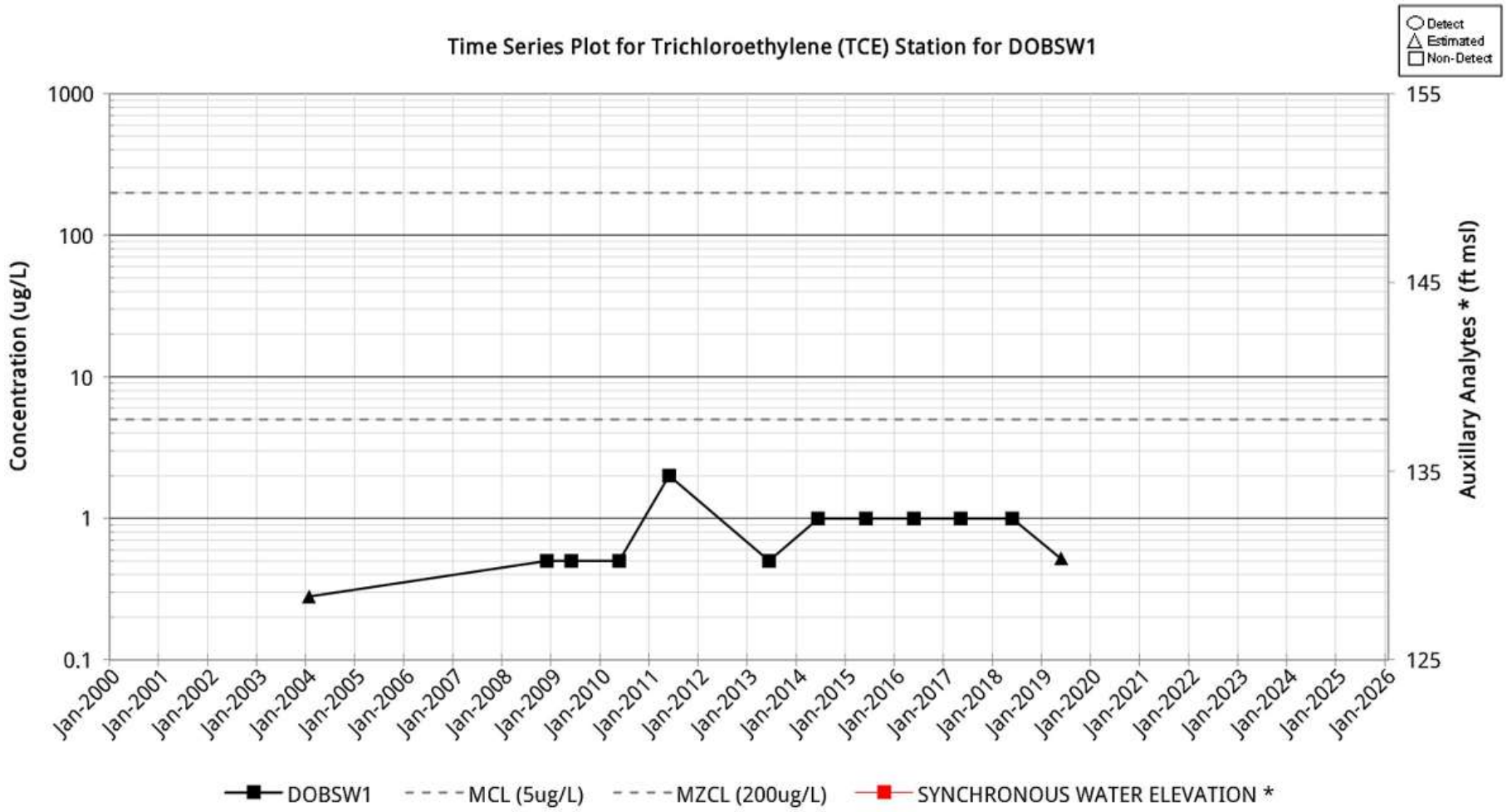


Figure D-44. Time Series Plot for Trichloroethylene (TCE) Station for DOBSW1

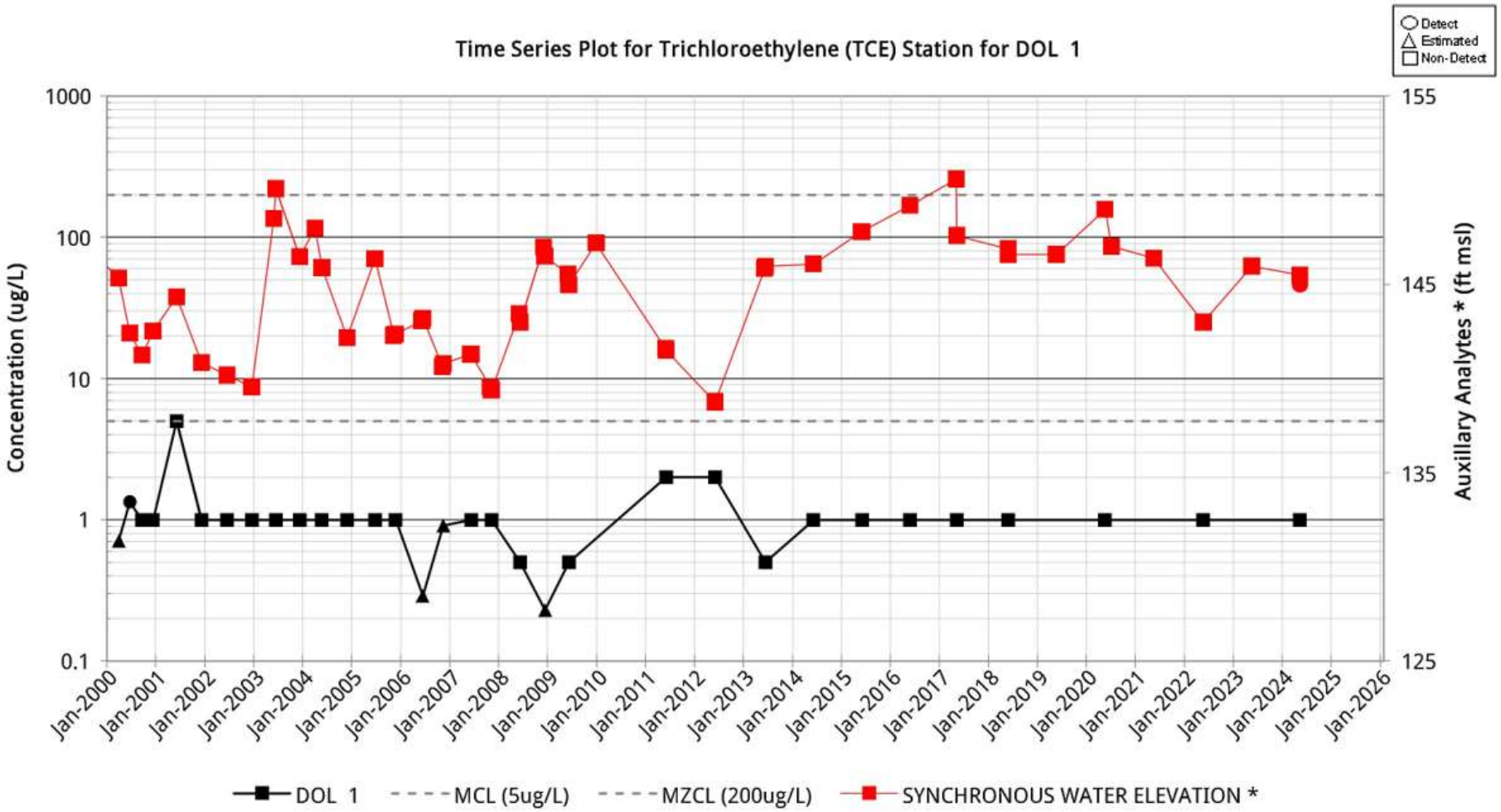


Figure D-45. Time Series Plot for Trichloroethylene (TCE) Station for DOL 1

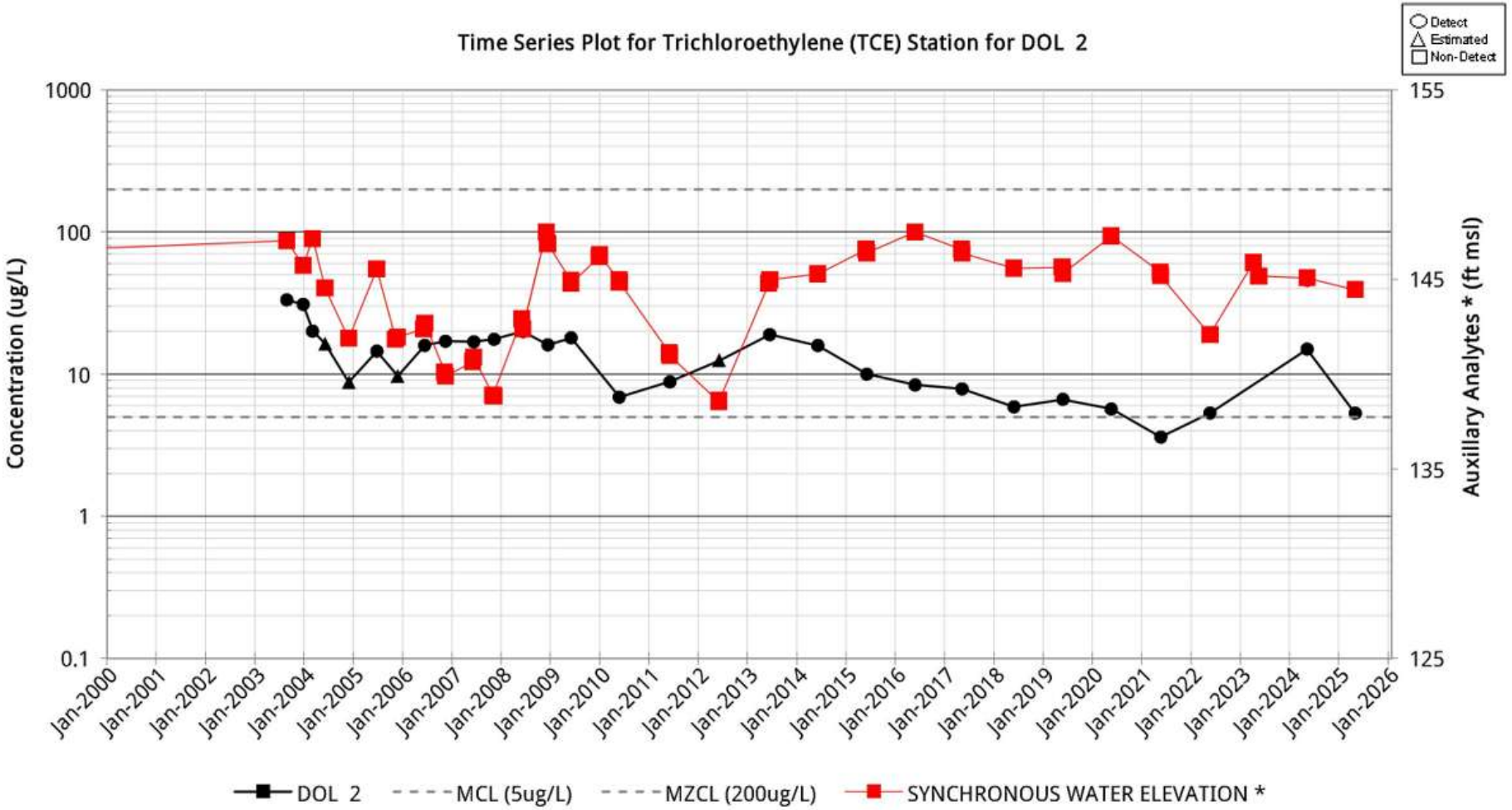


Figure D-46. Time Series Plot for Trichloroethylene (TCE) Station for DOL 2

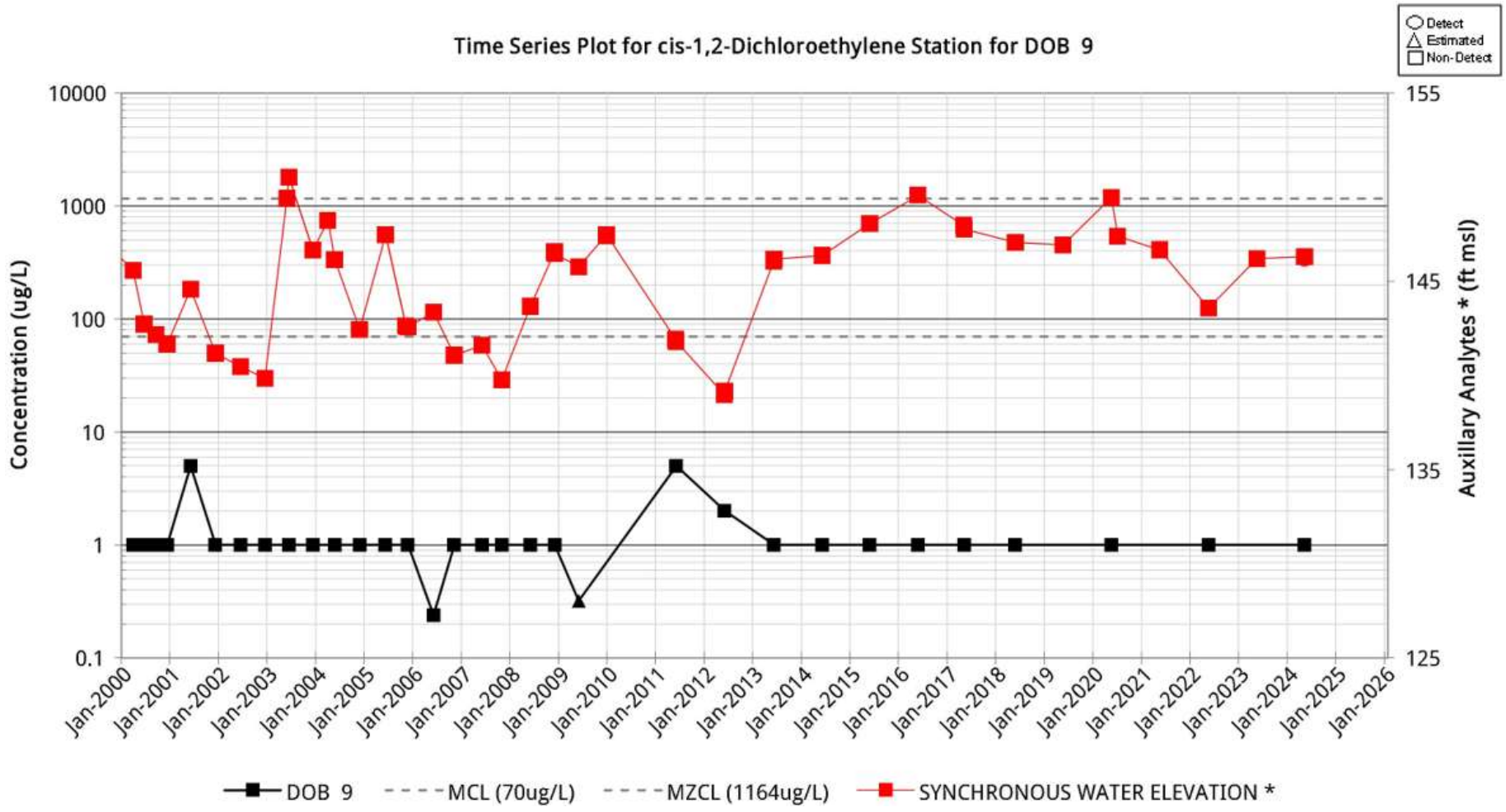


Figure D-47. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 9

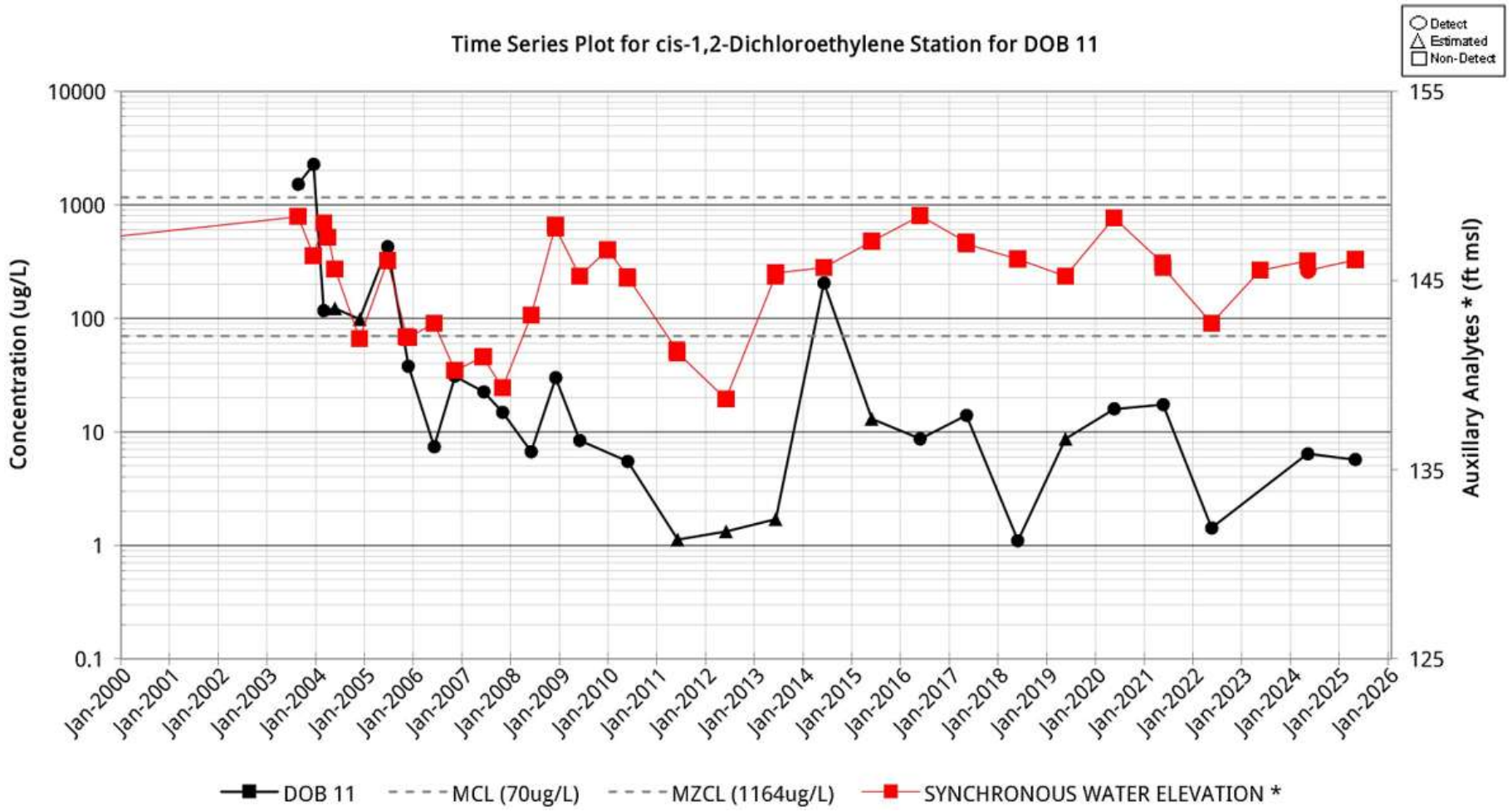


Figure D-48. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 11

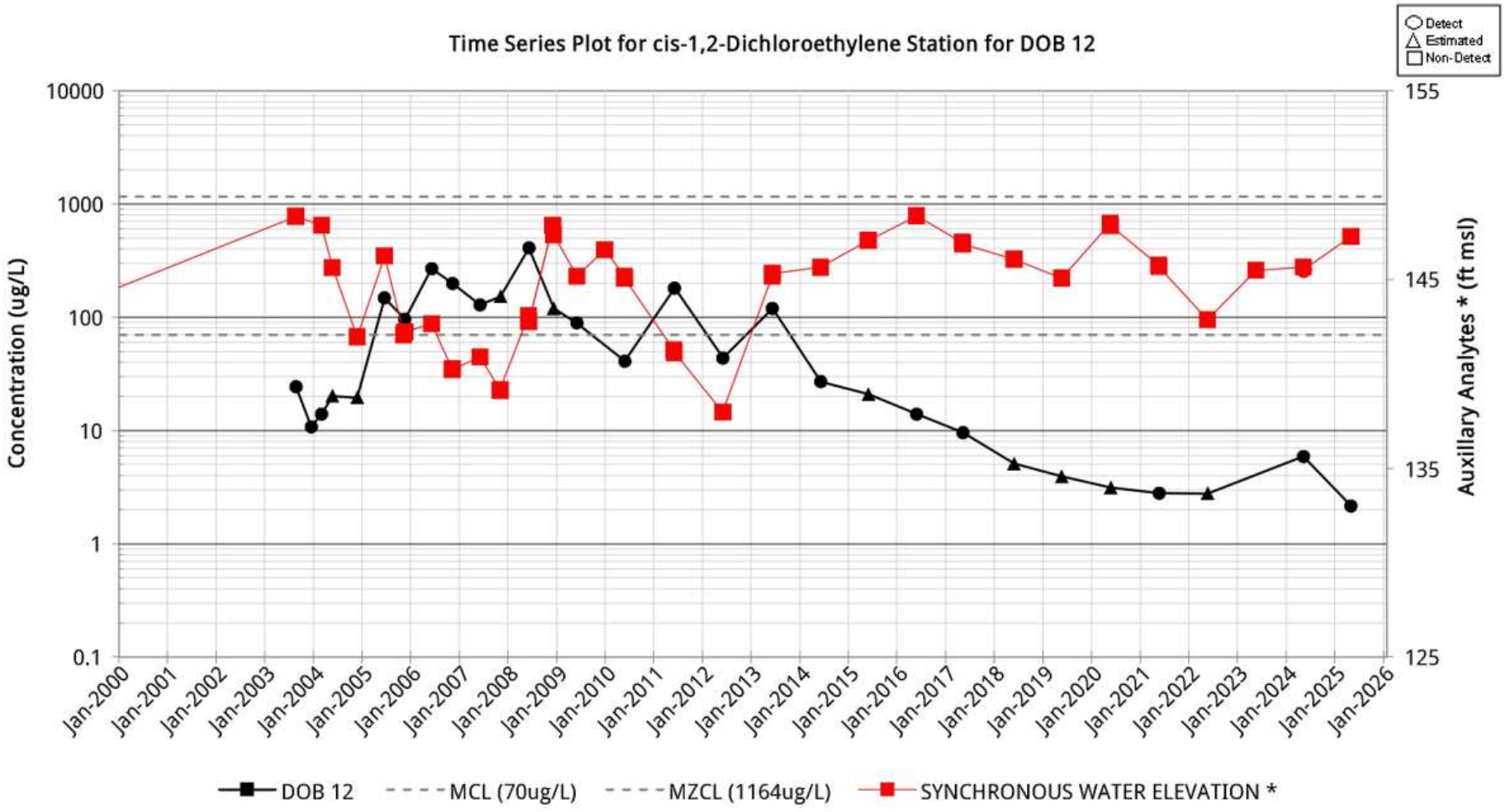


Figure D-49. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 12

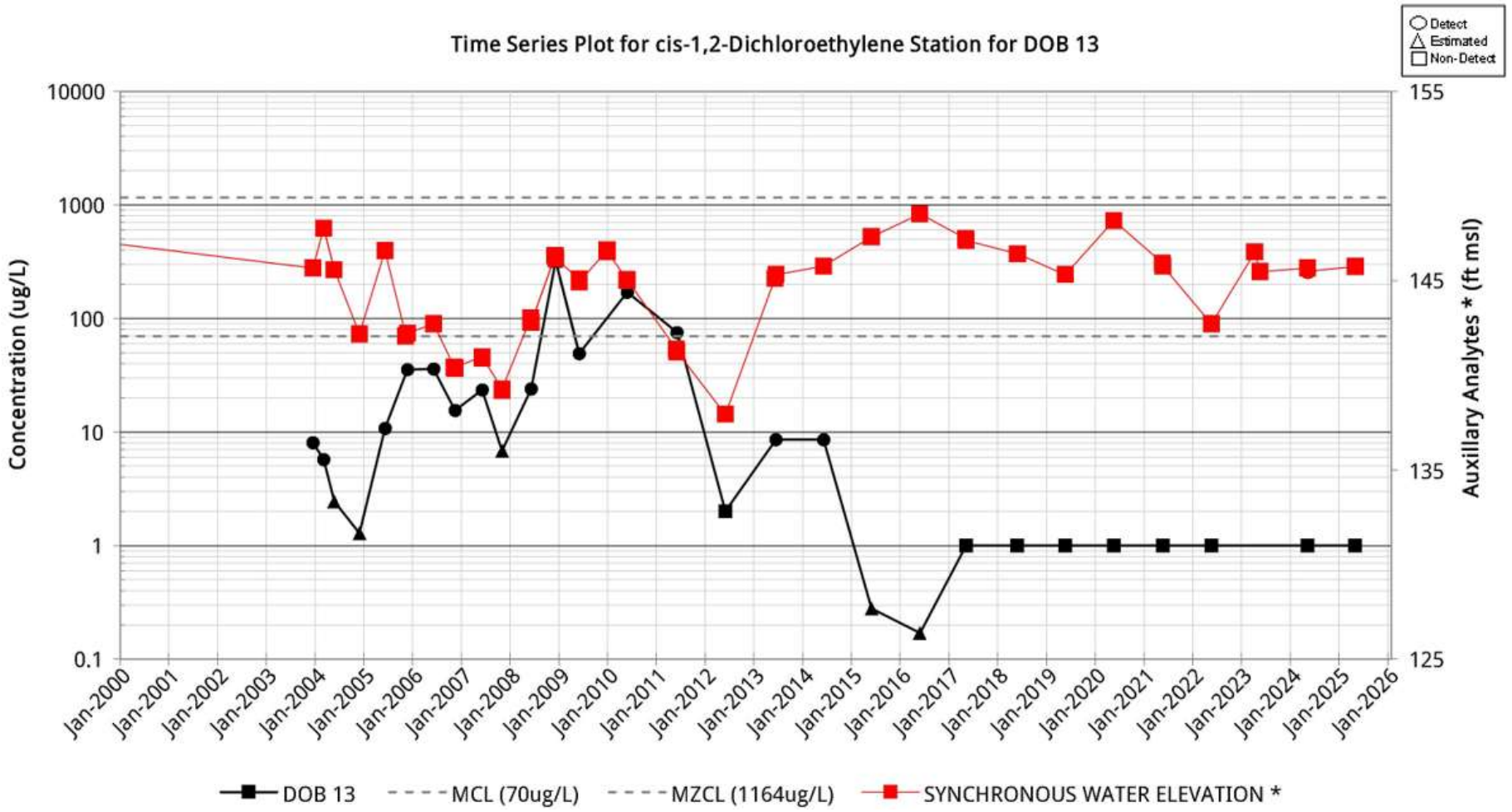


Figure D-50. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 13

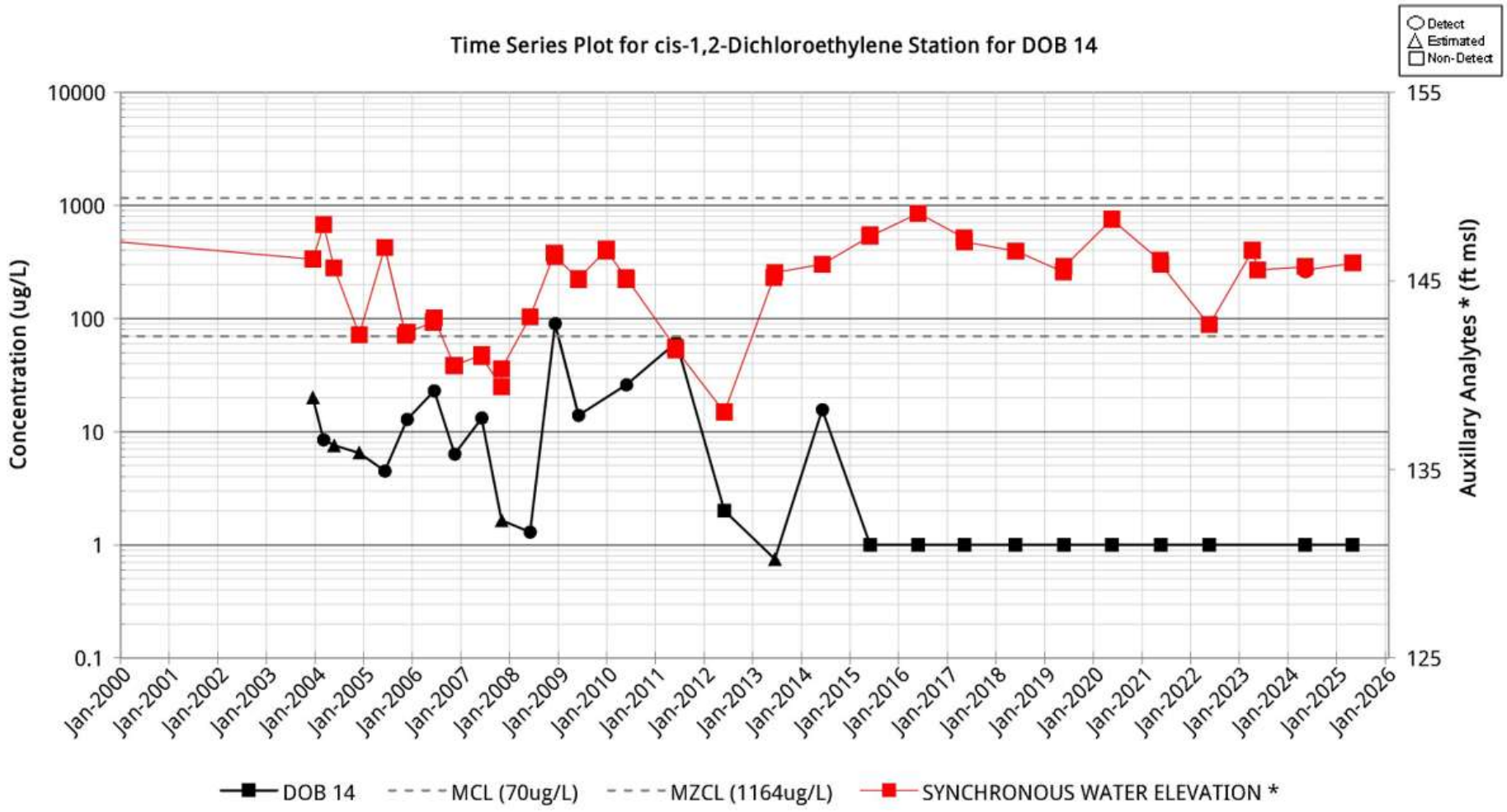


Figure D-51. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 14

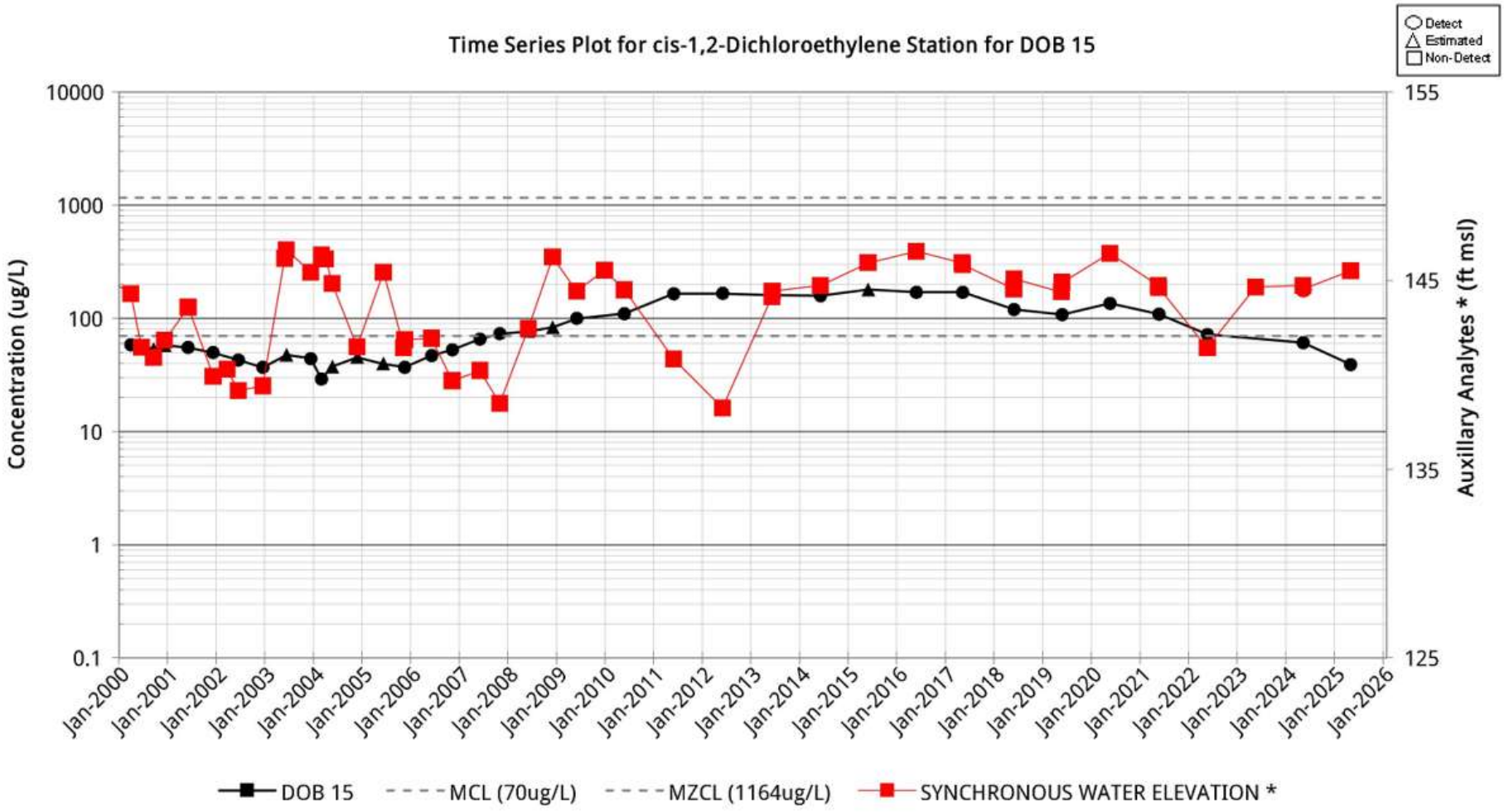


Figure D-52. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 15

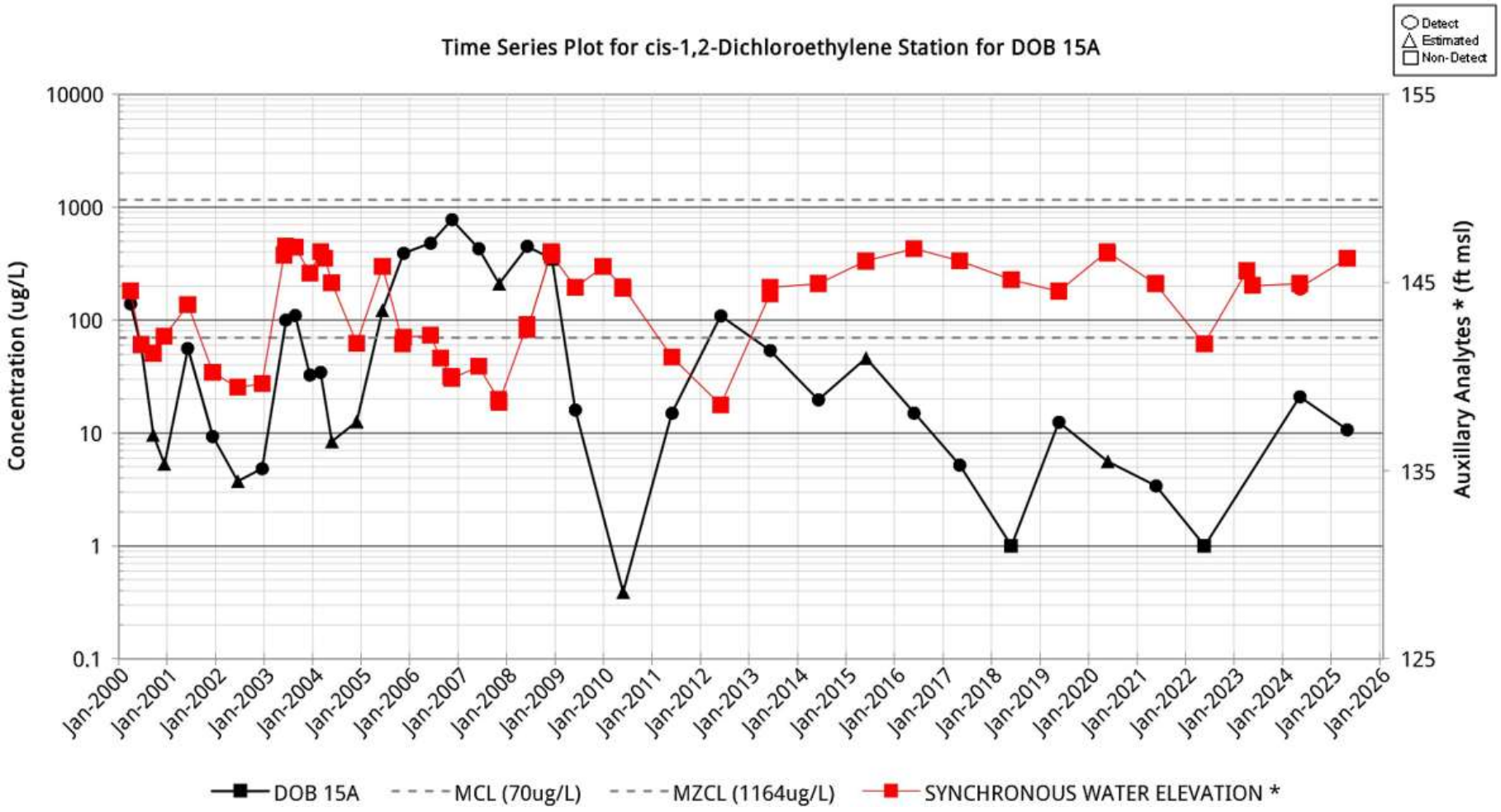


Figure D-53. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 15A

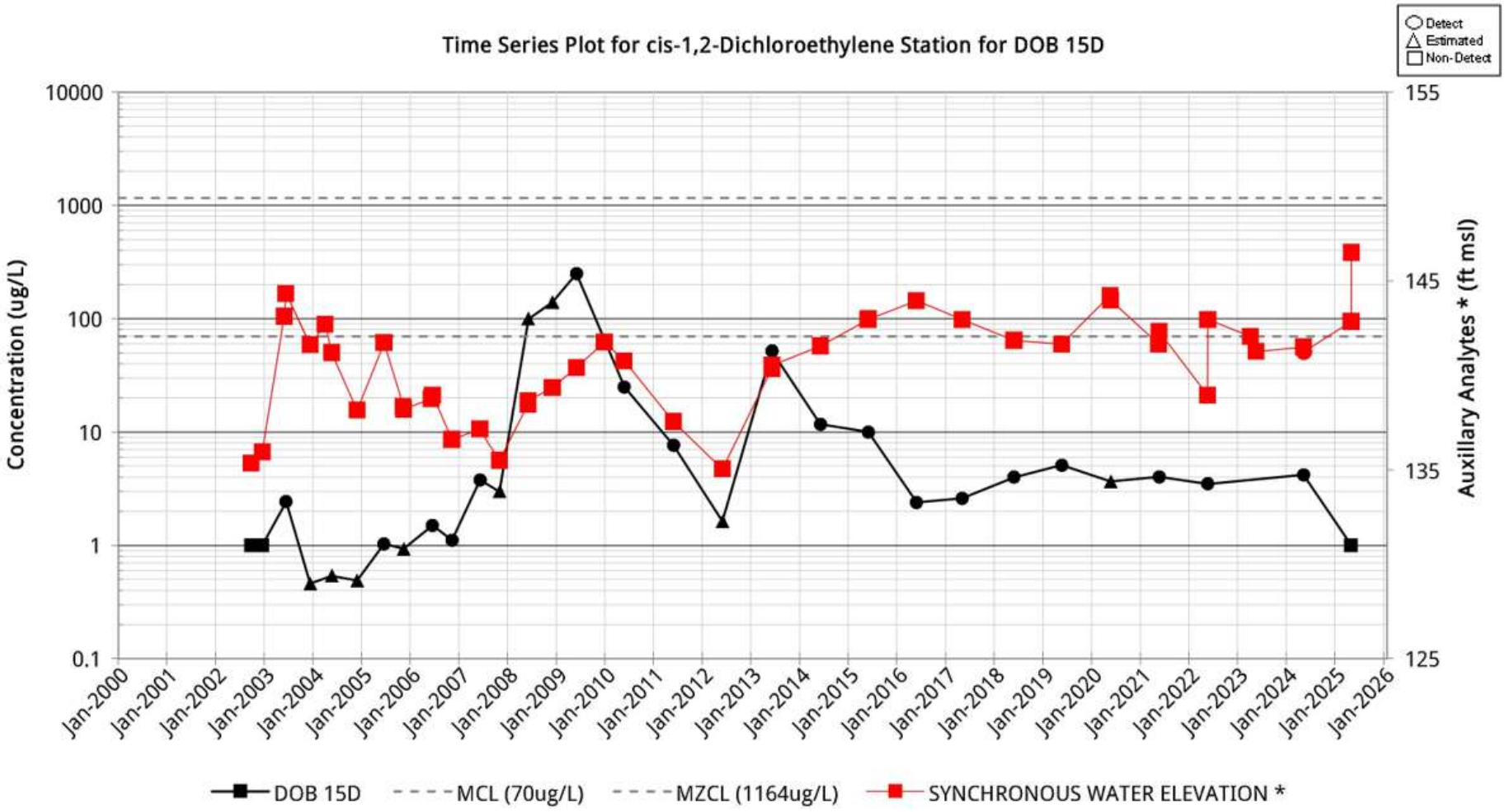


Figure D-54. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 15D

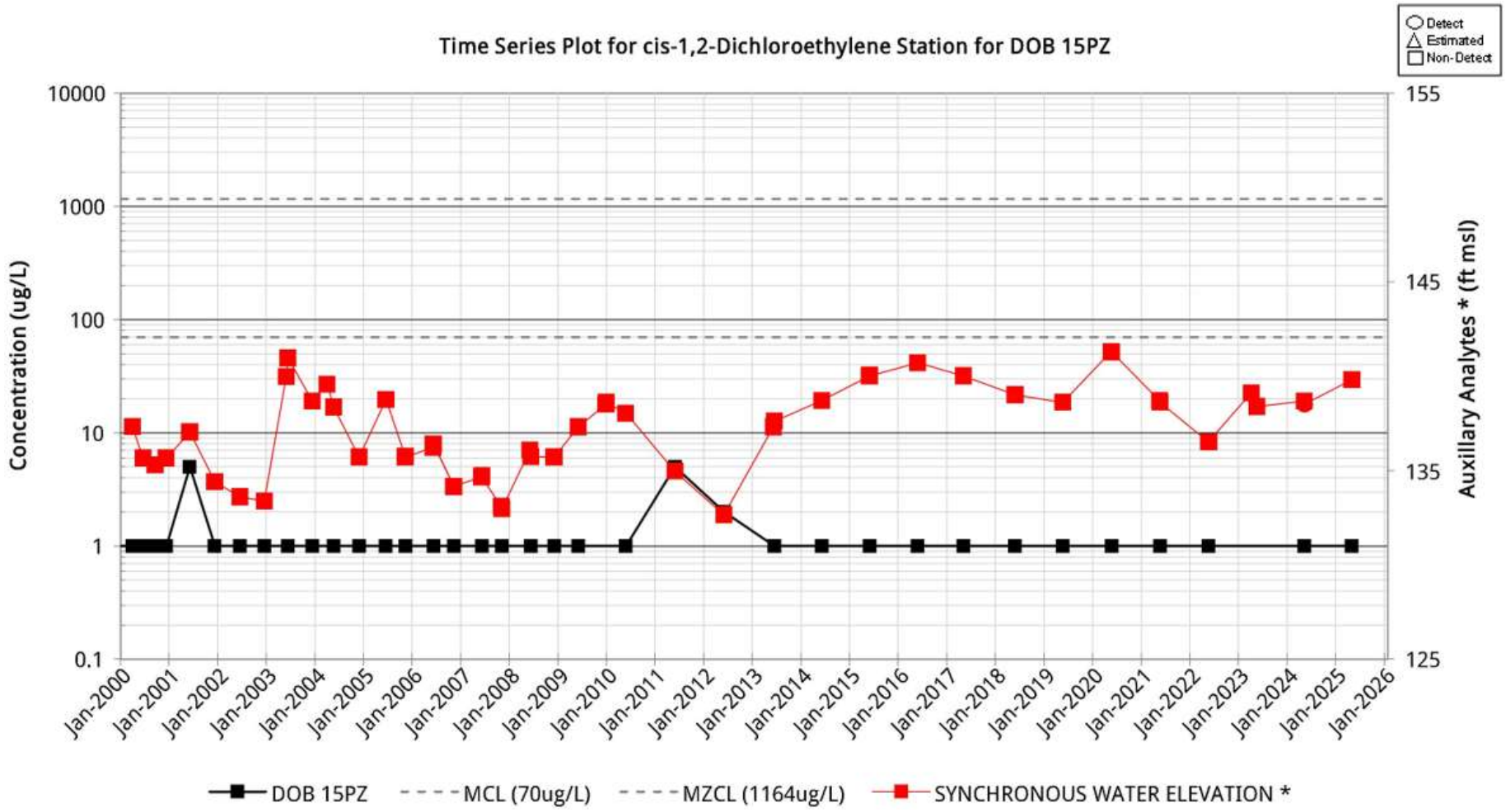


Figure D-55. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 15PZ

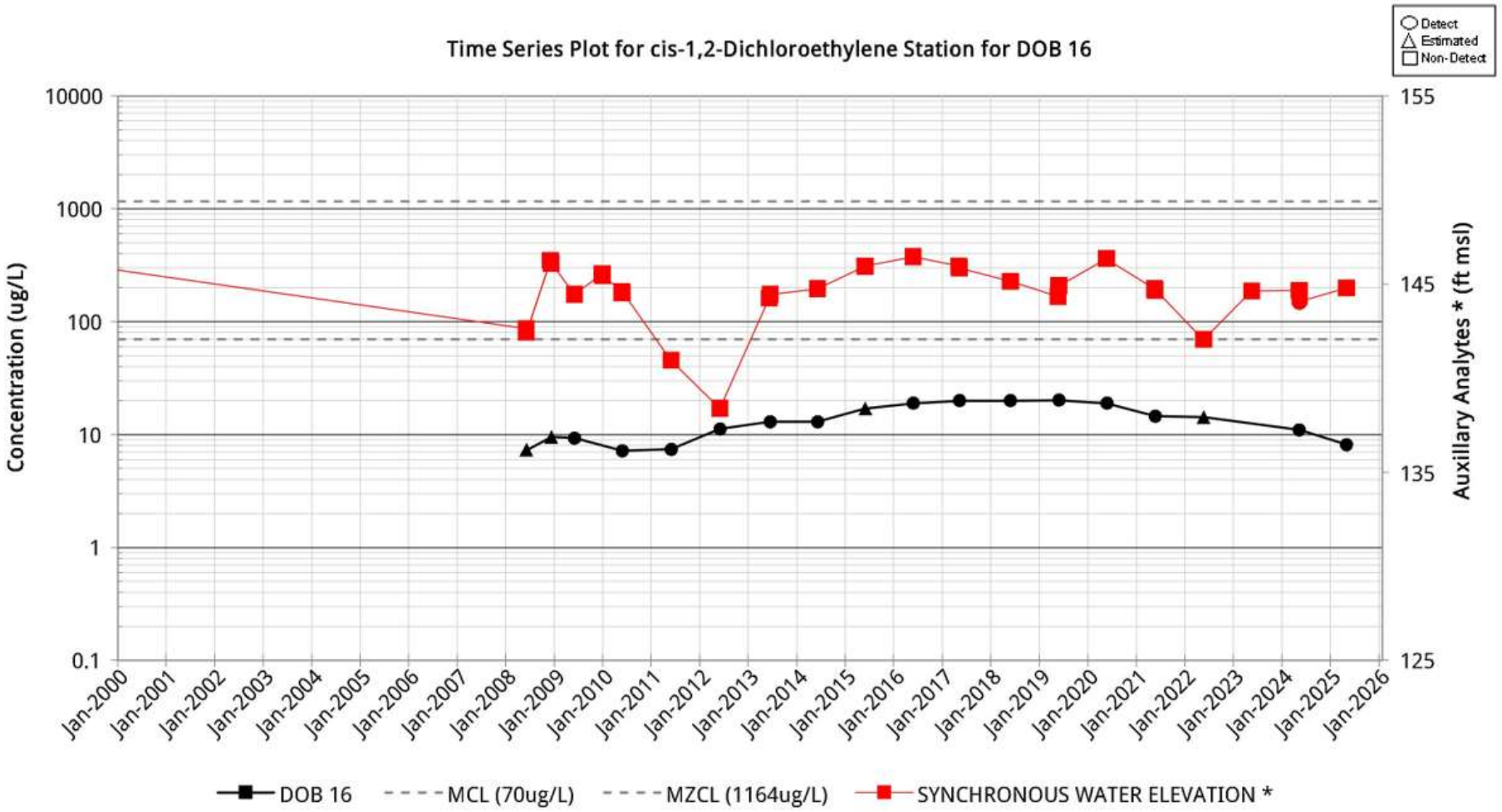


Figure D-56. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 16

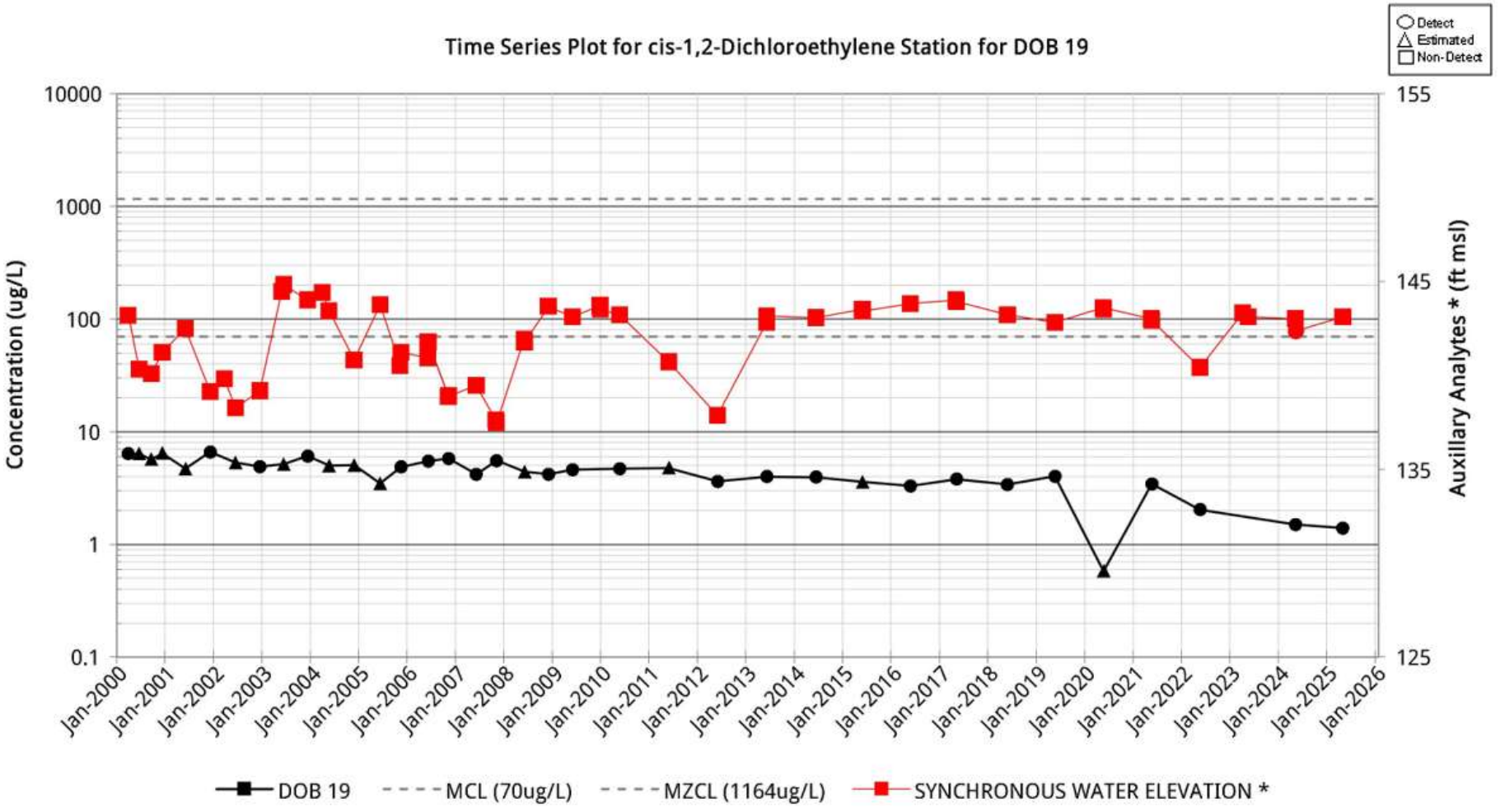


Figure D-57. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 19

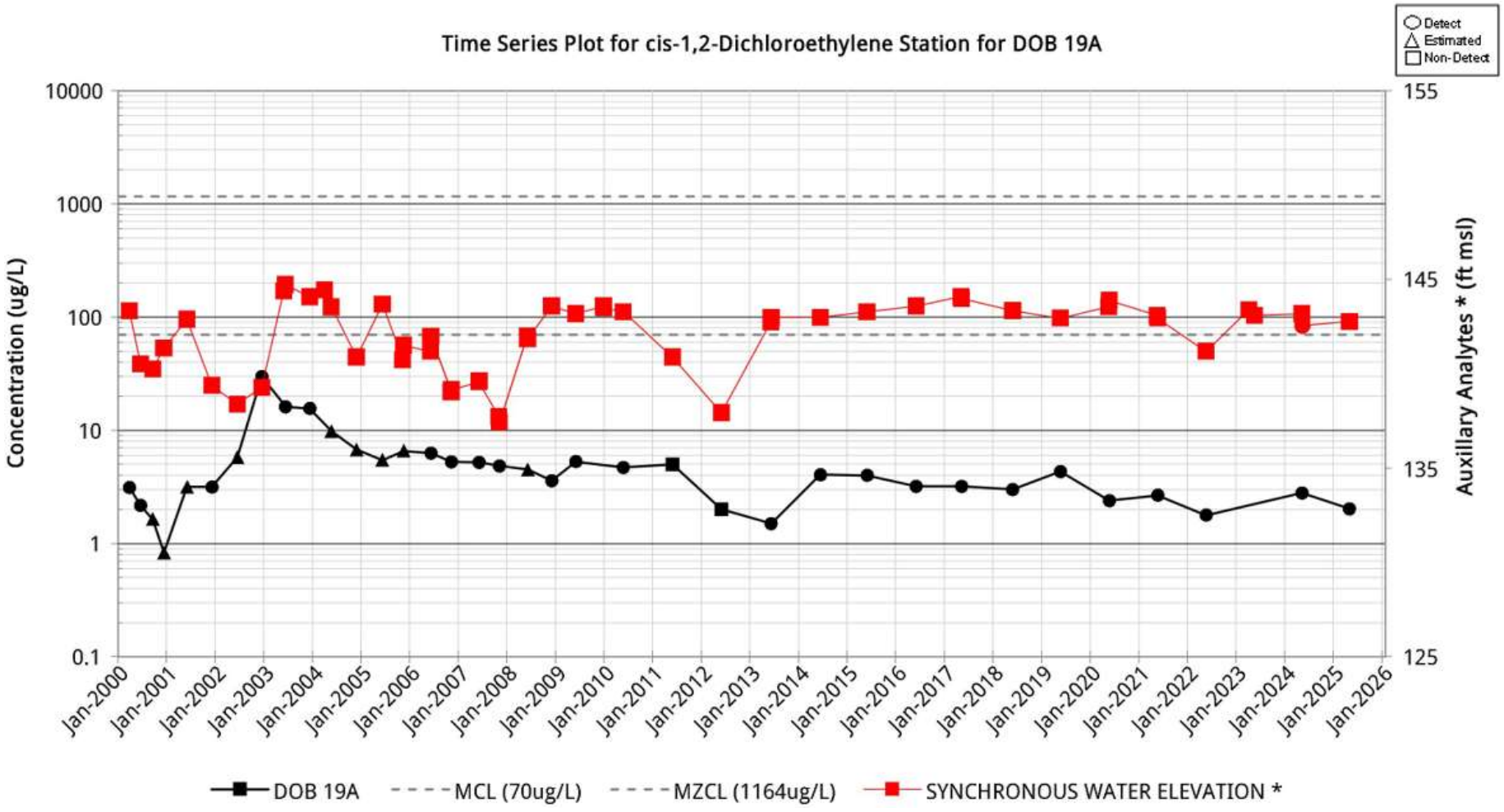


Figure D-59. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 19A

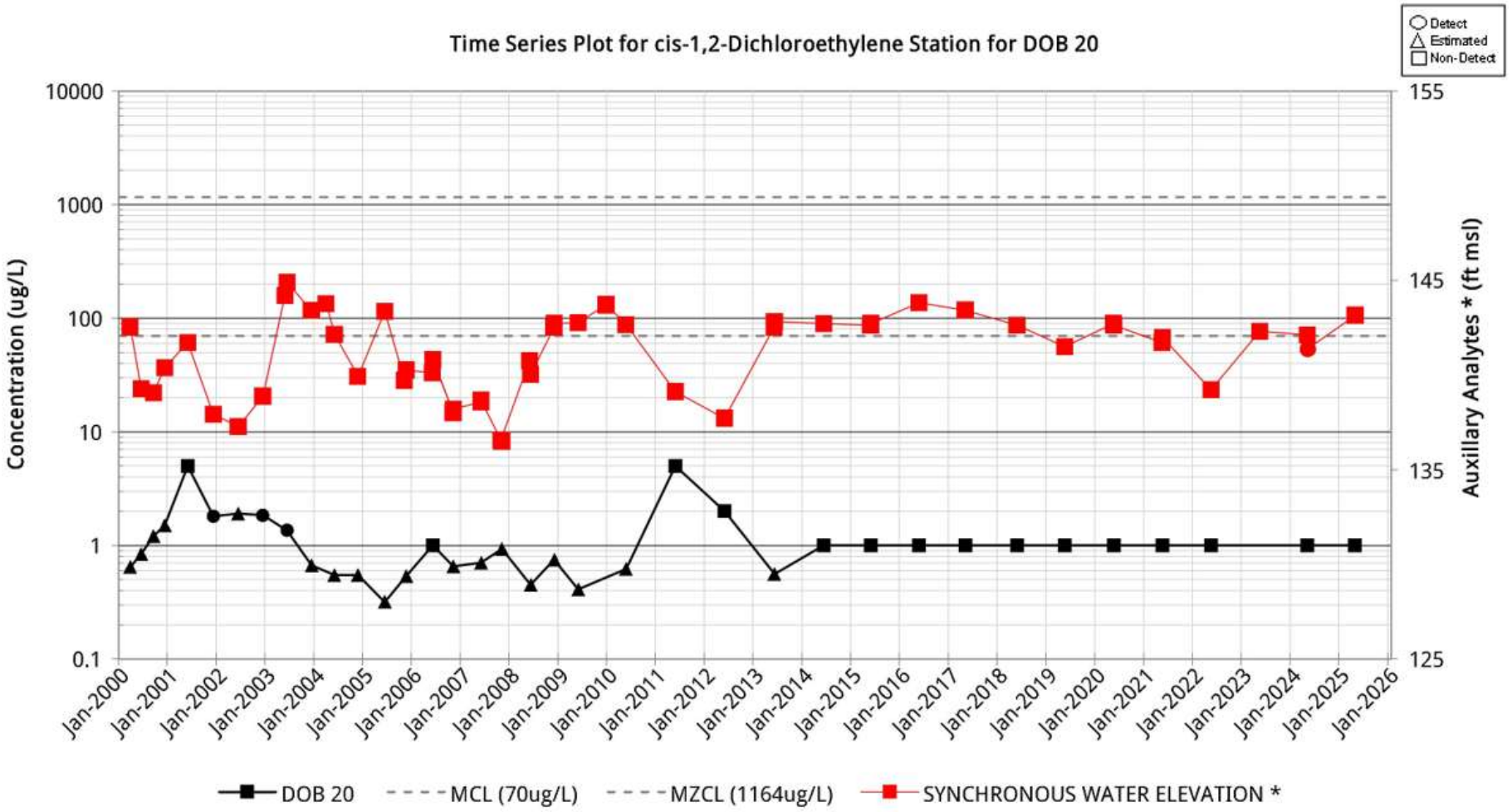


Figure D-59. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 20

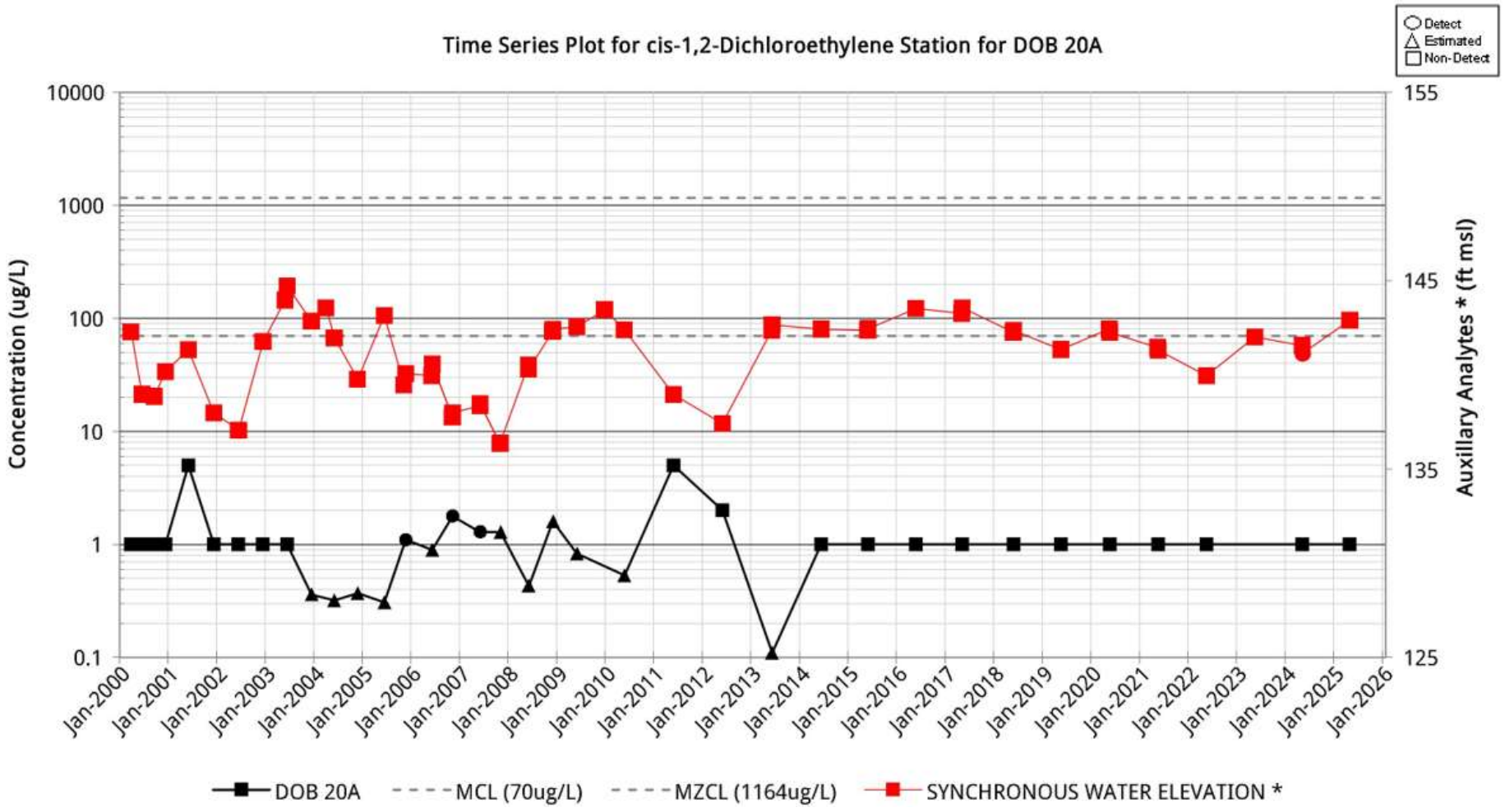


Figure D-60. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 20A

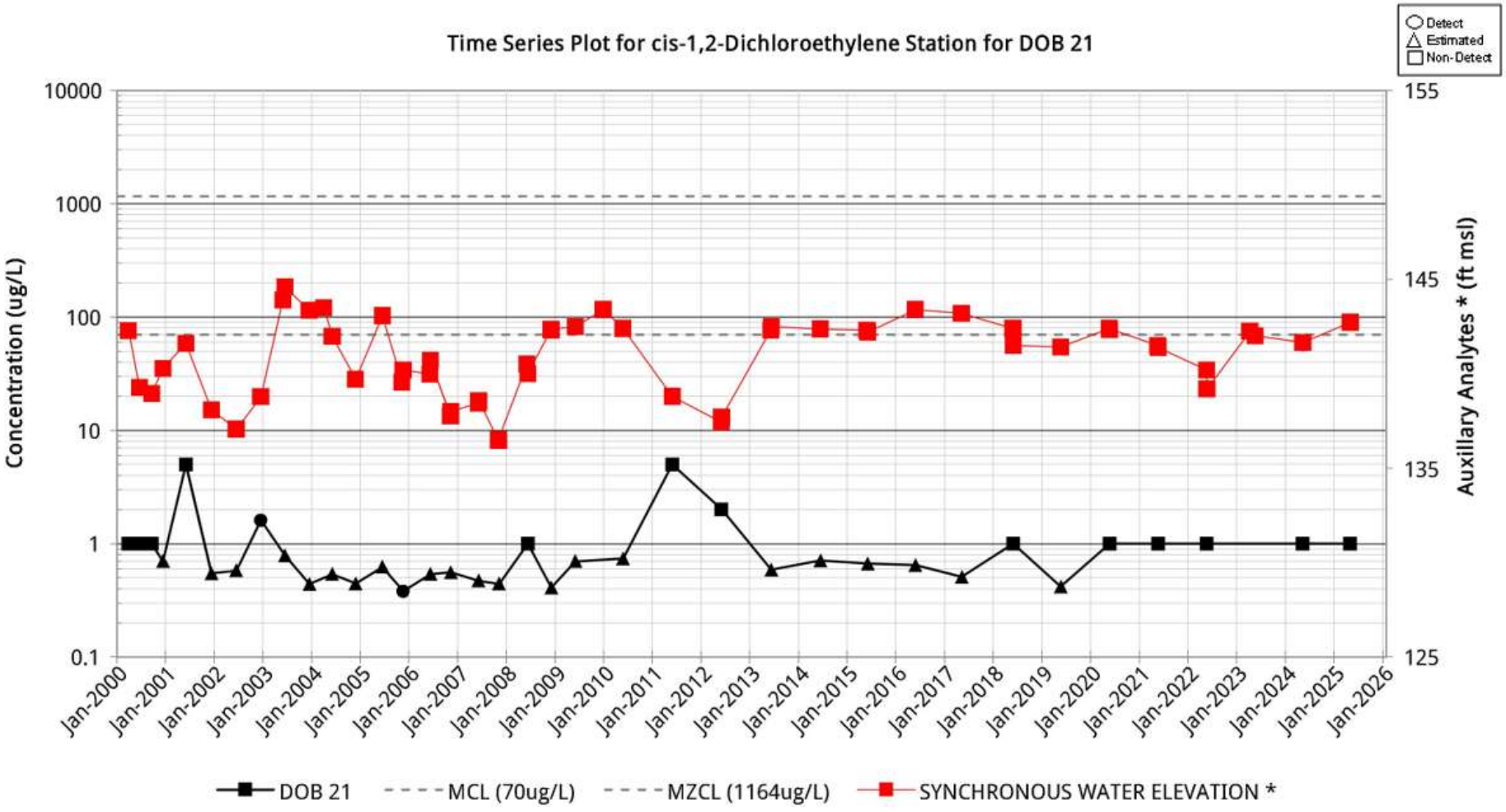


Figure D-61. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 21

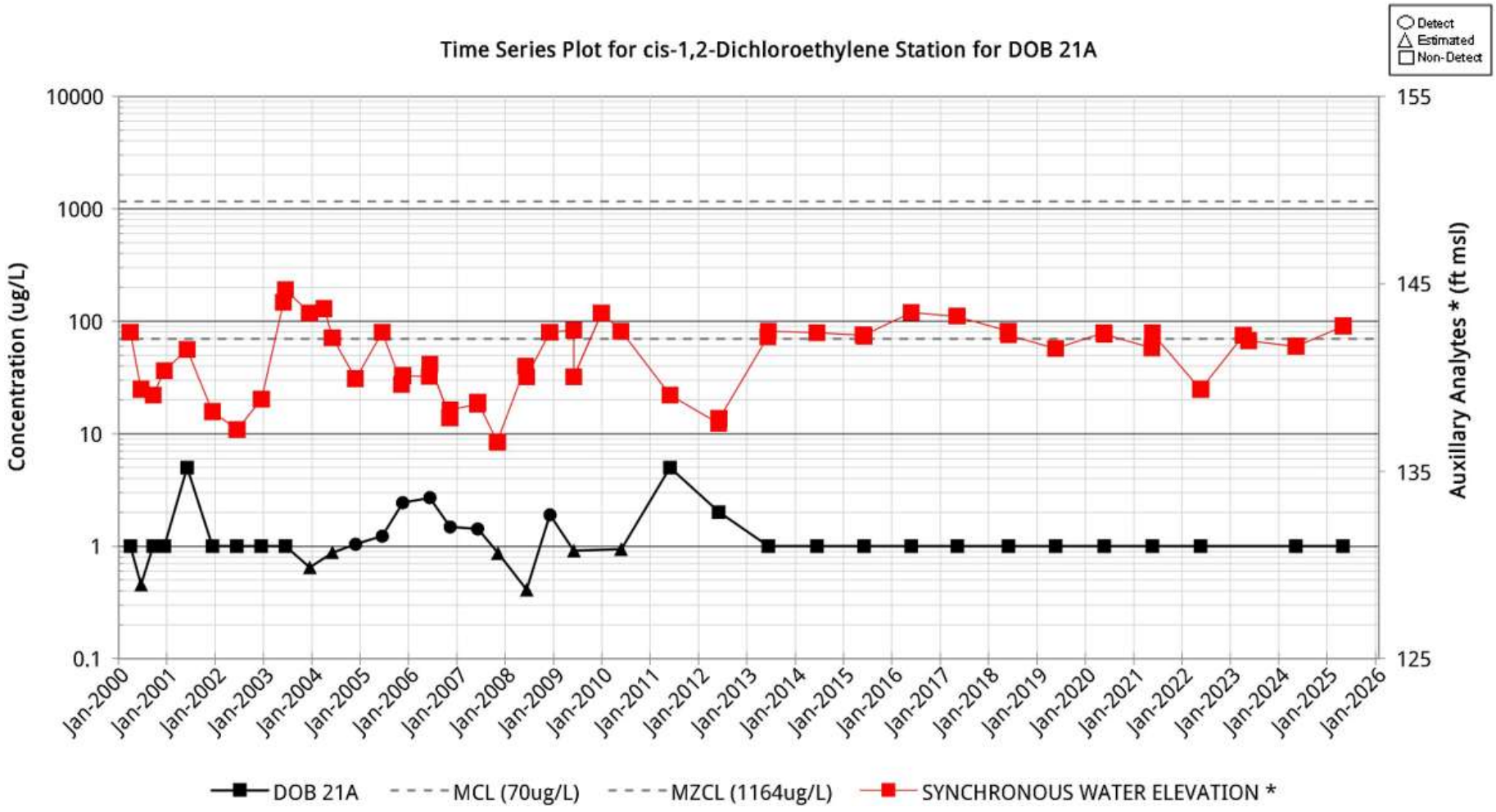


Figure D-62. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 21A

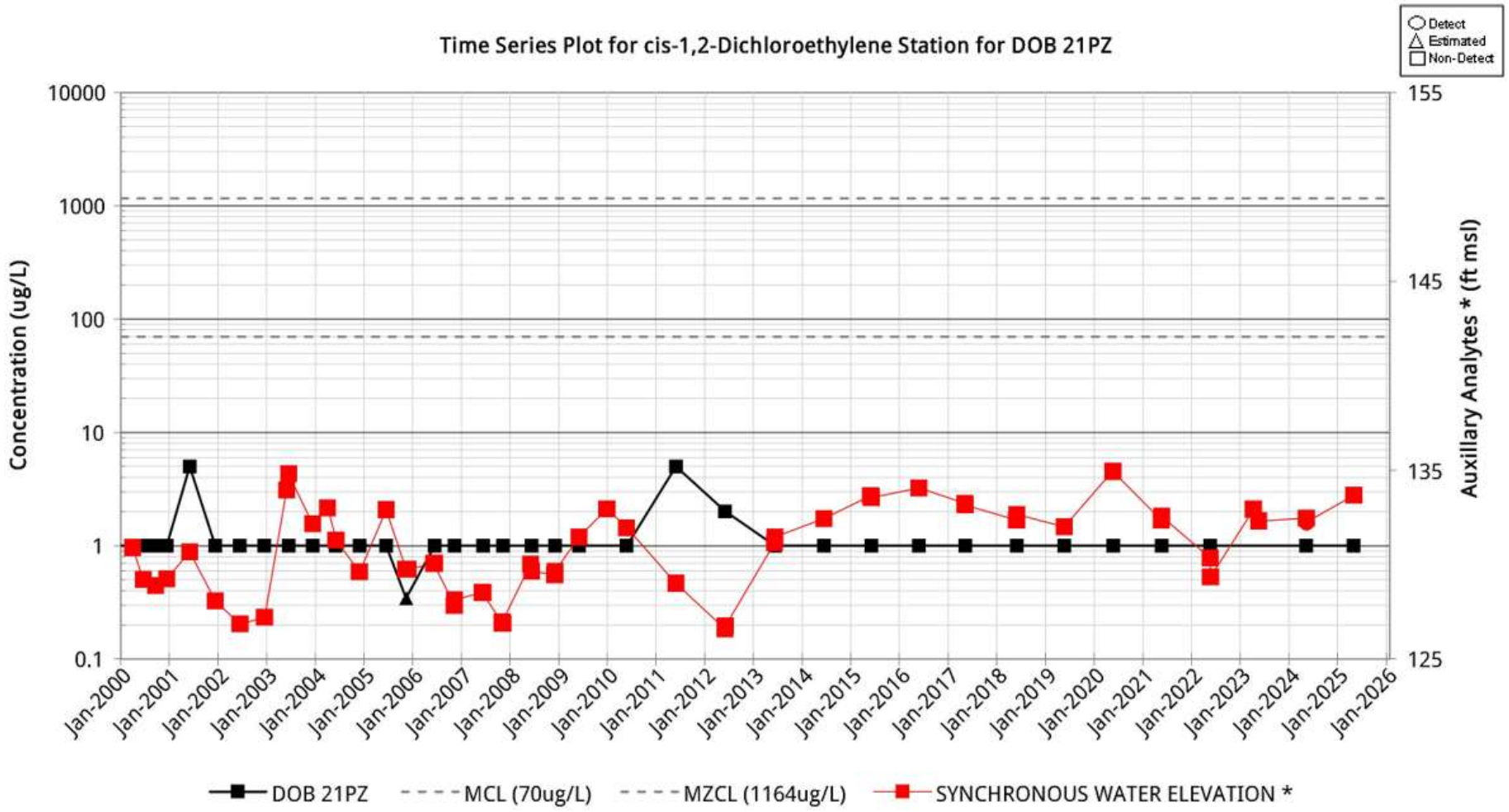


Figure D-63. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 21PZ

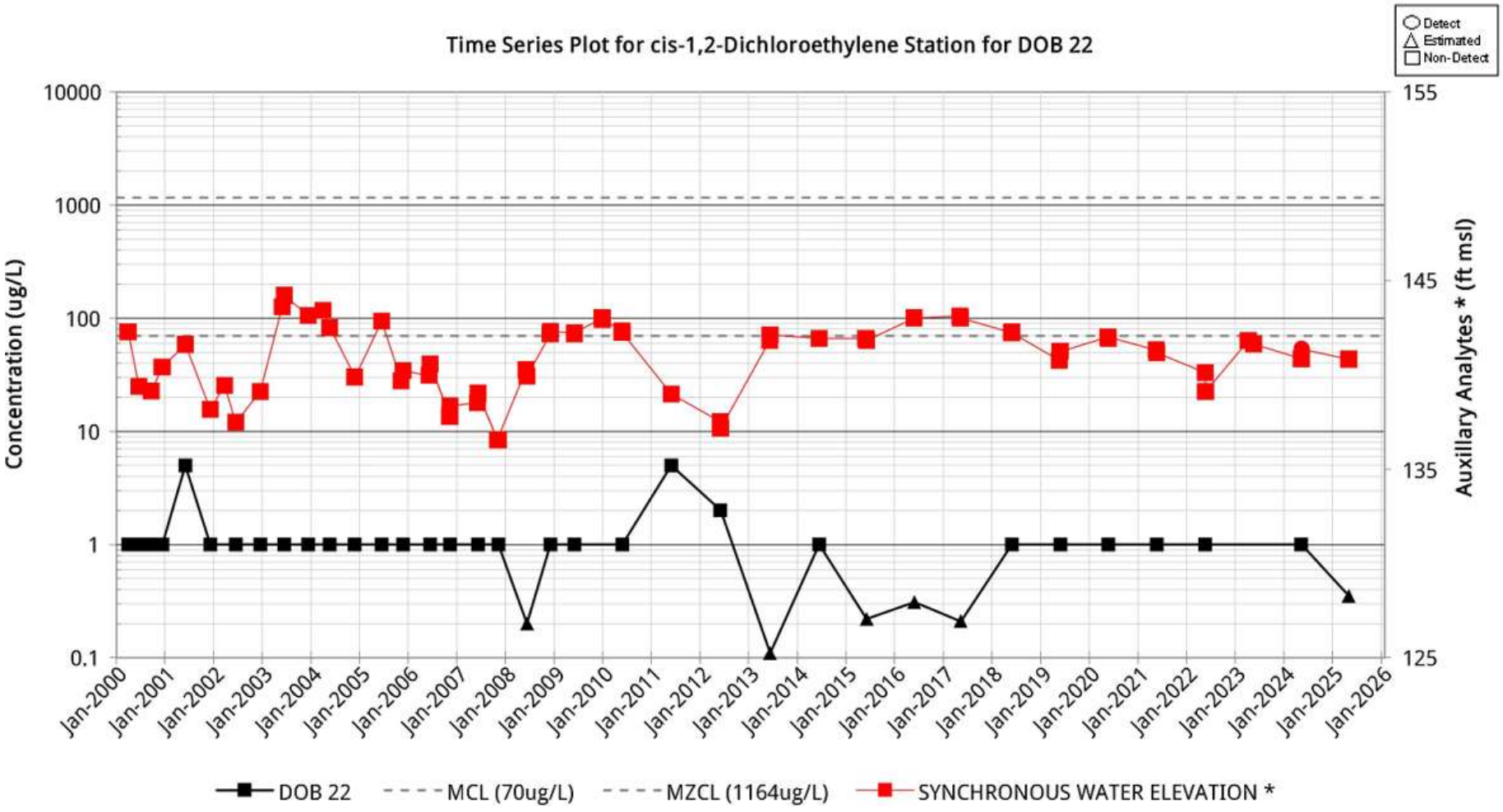


Figure D-64. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 22

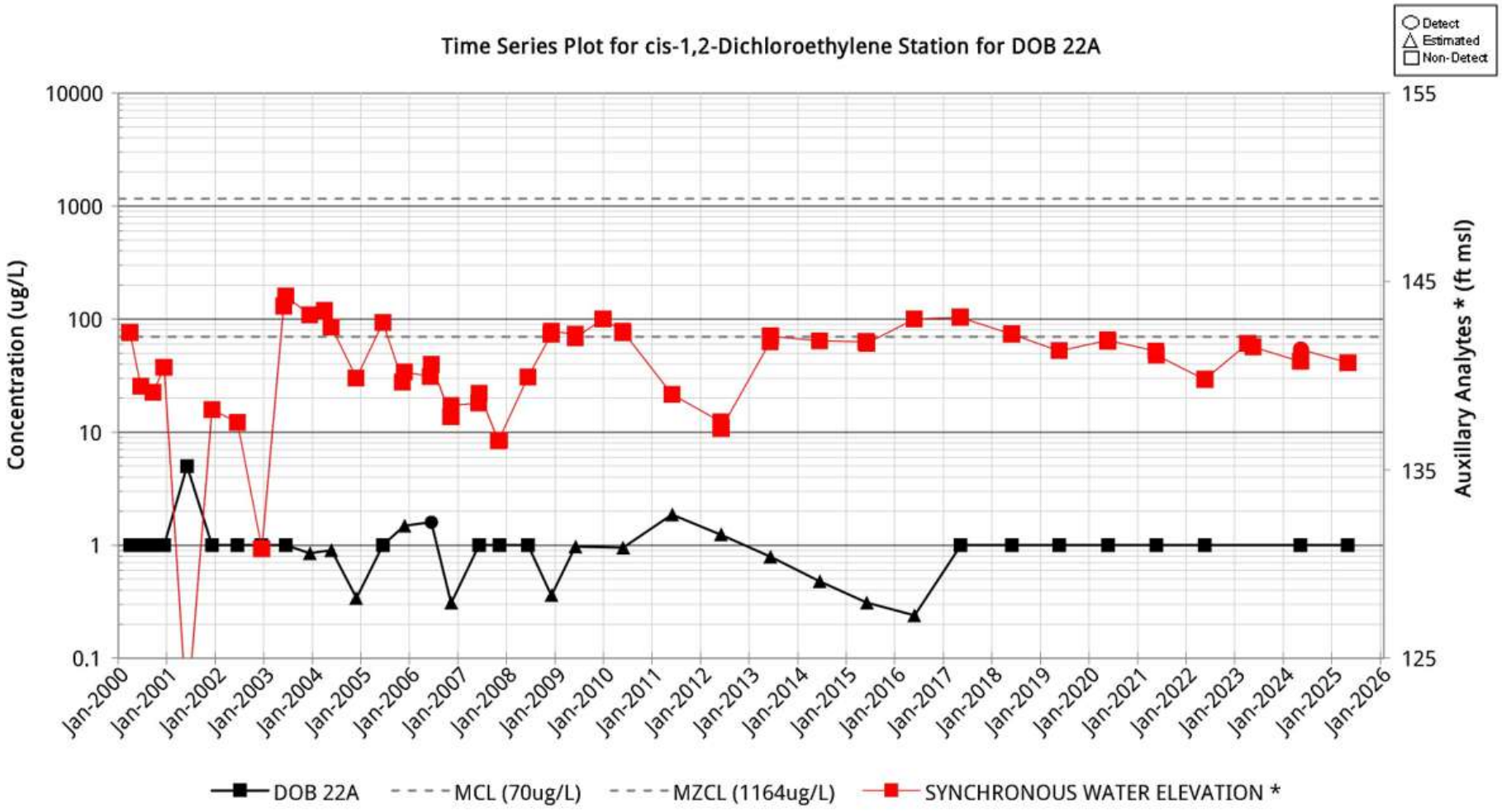


Figure D-65. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 22A

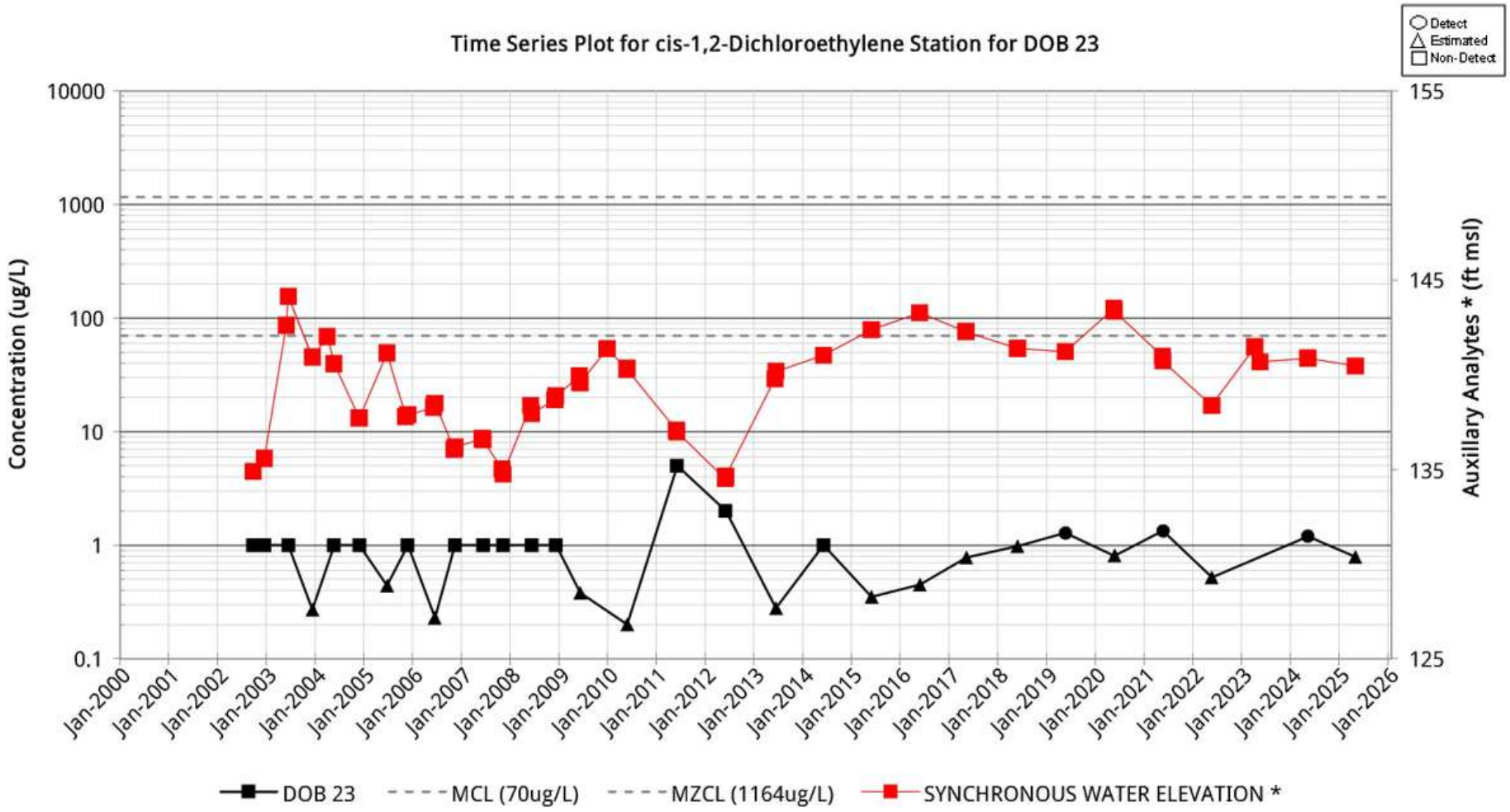


Figure D-66. Time Series Plot for cis-1,2-Dichloroethylene Station for DOB 23

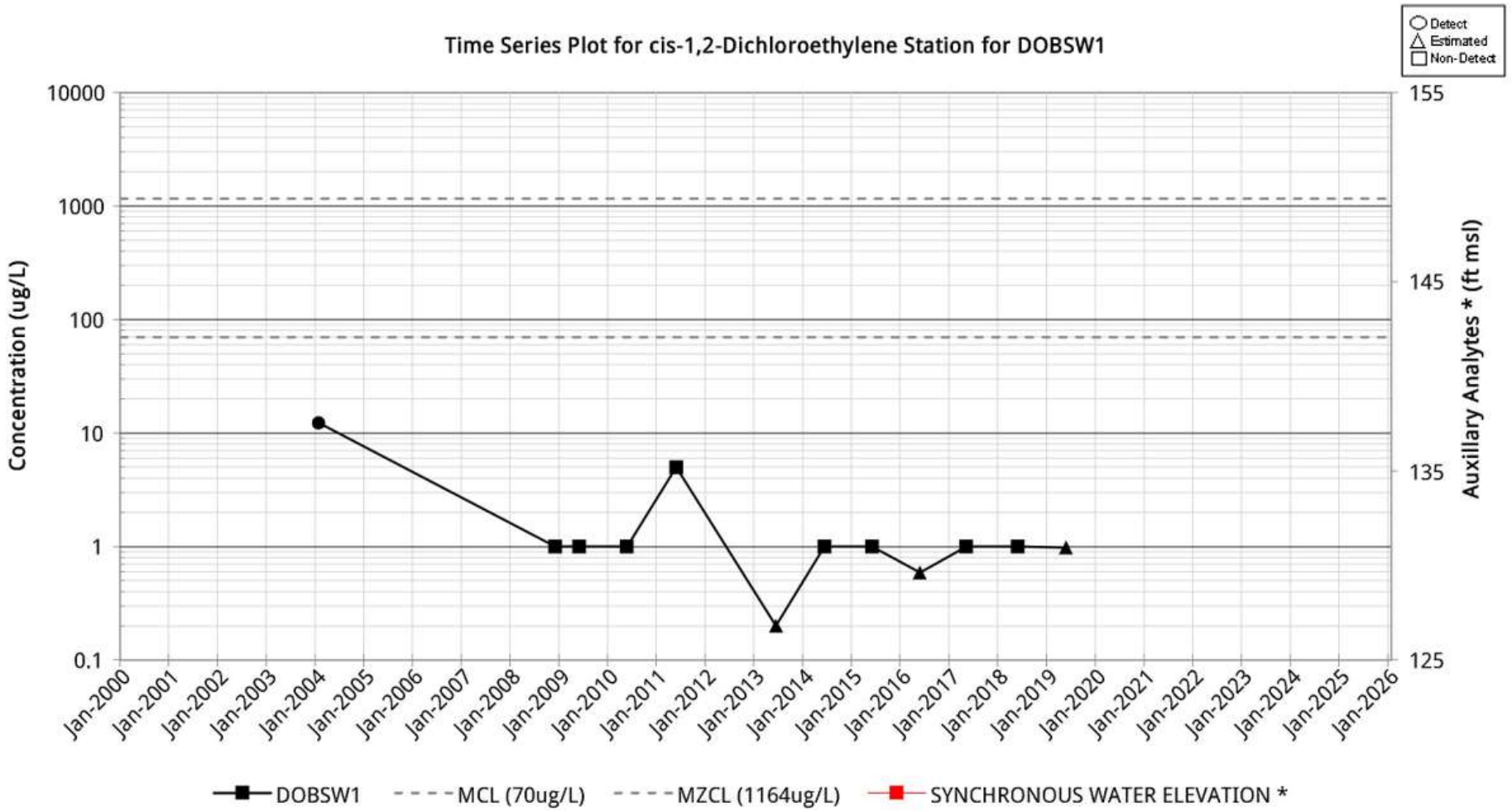


Figure D-67. Time Series Plot for cis-1,2-Dichloroethylene Station for DOBSW1

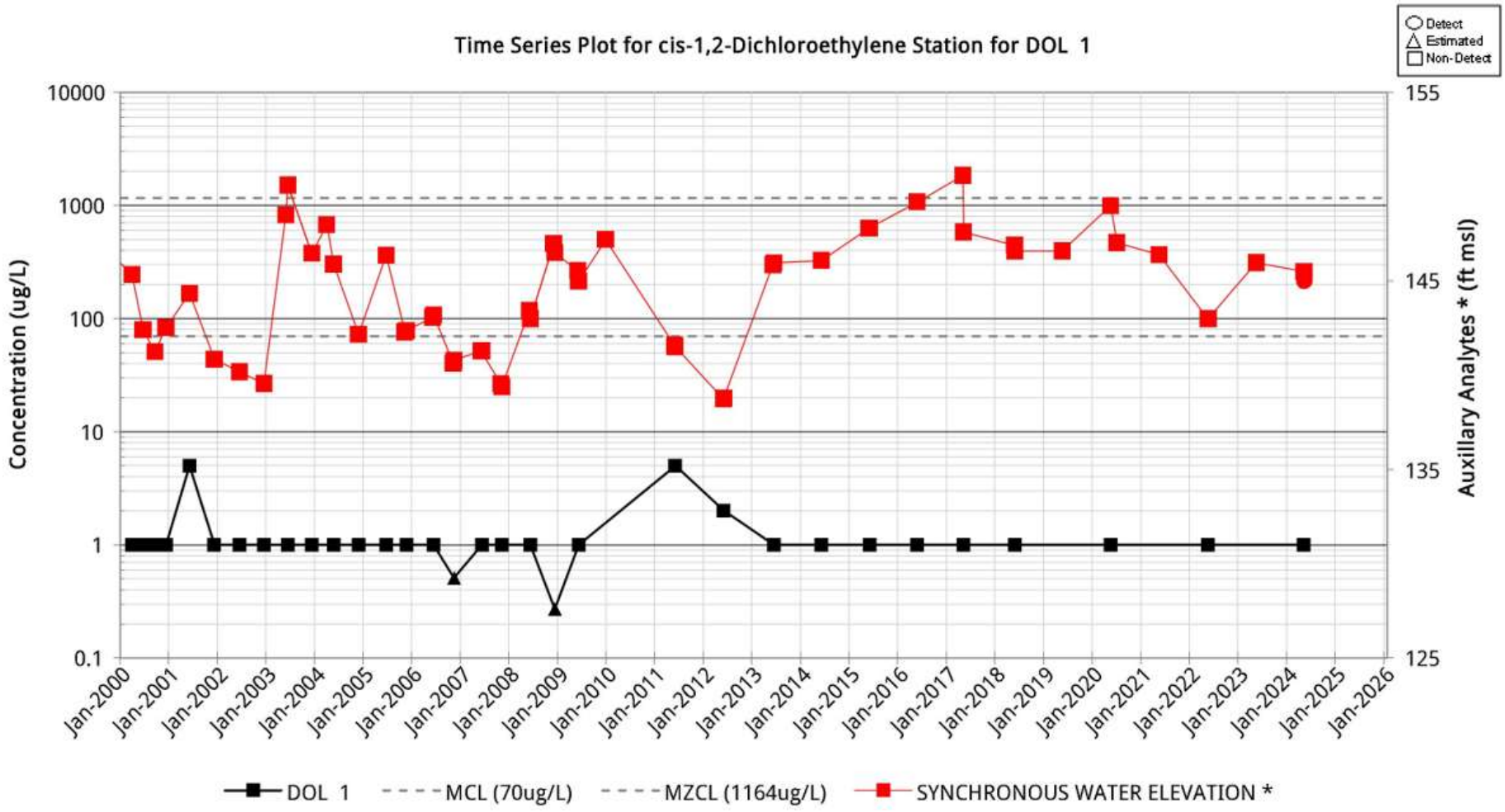


Figure D-68. Time Series Plot for cis-1,2-Dichloroethylene Station for DOL 1

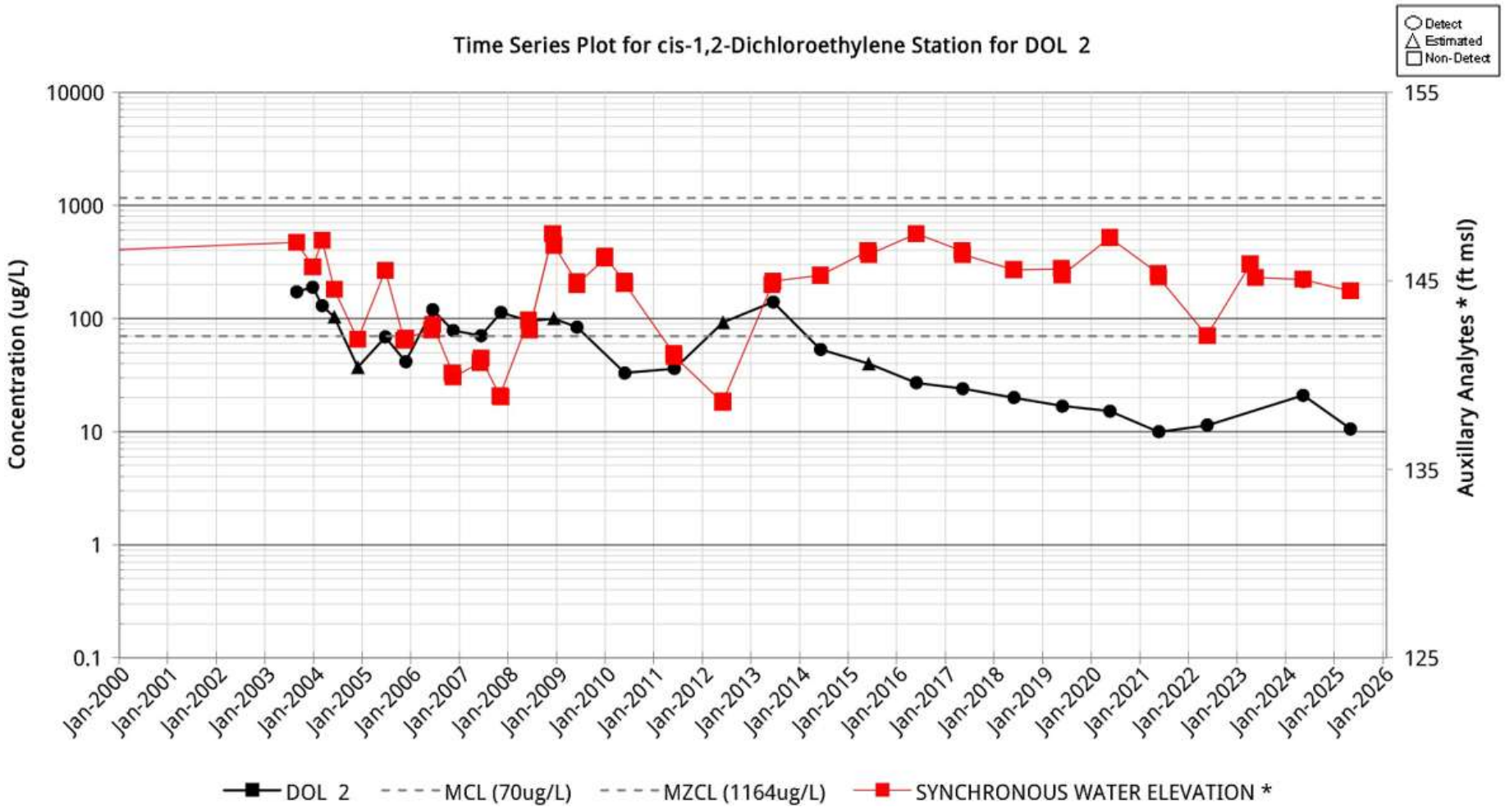


Figure D-69. Time Series Plot for cis-1,2-Dichloroethylene Station for DOL 2

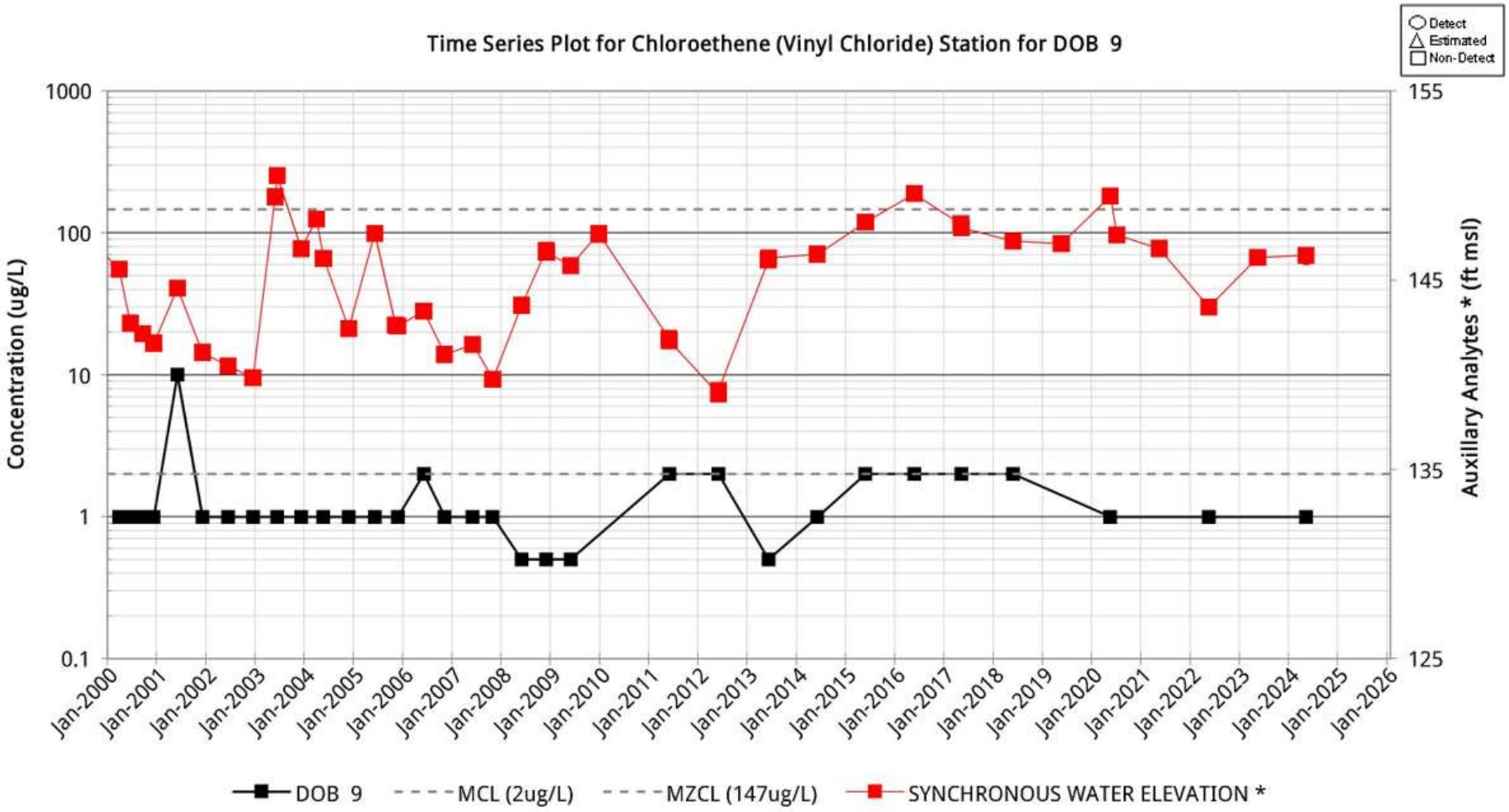


Figure D-70. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 9

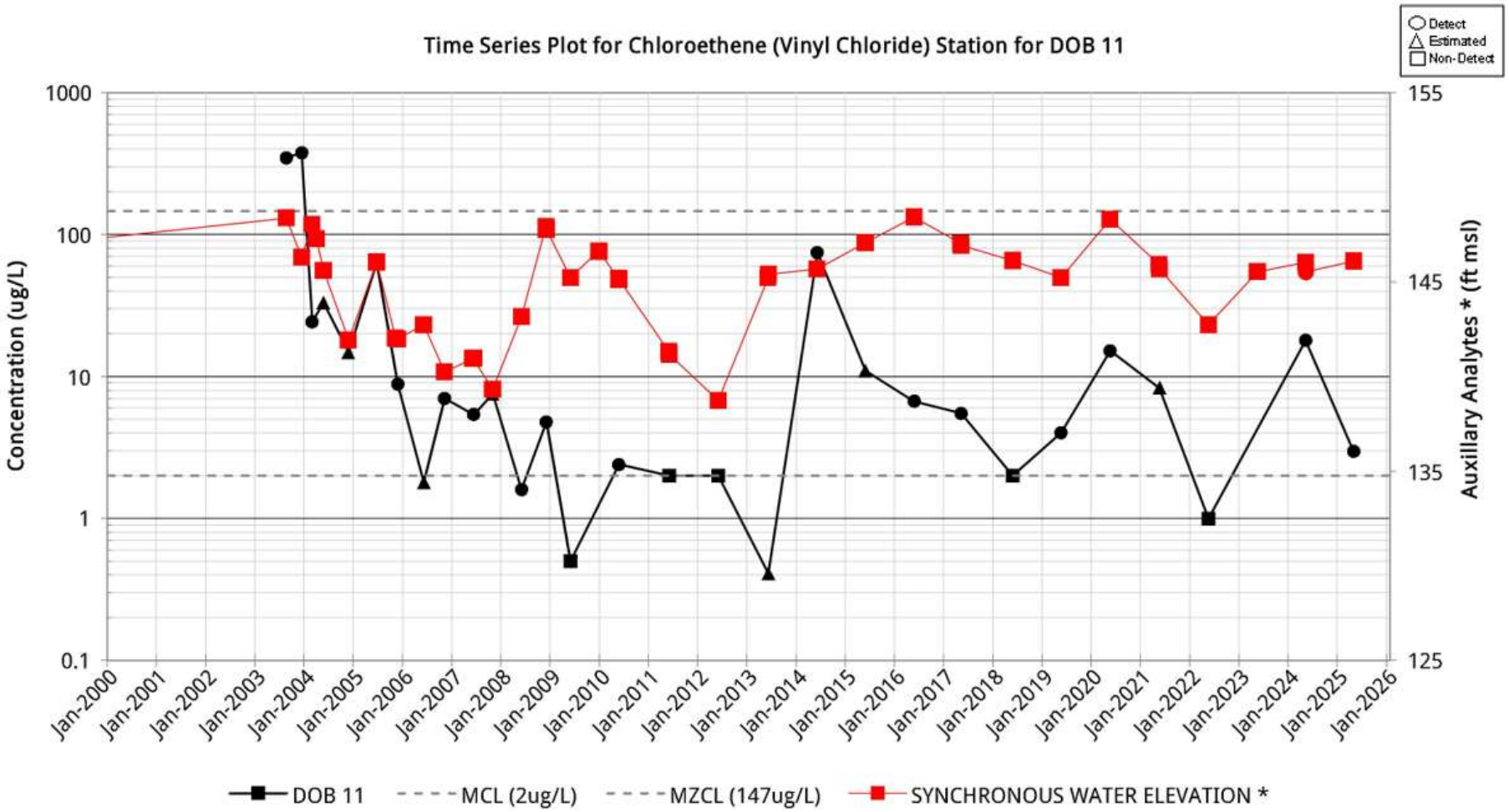


Figure D-71. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 11

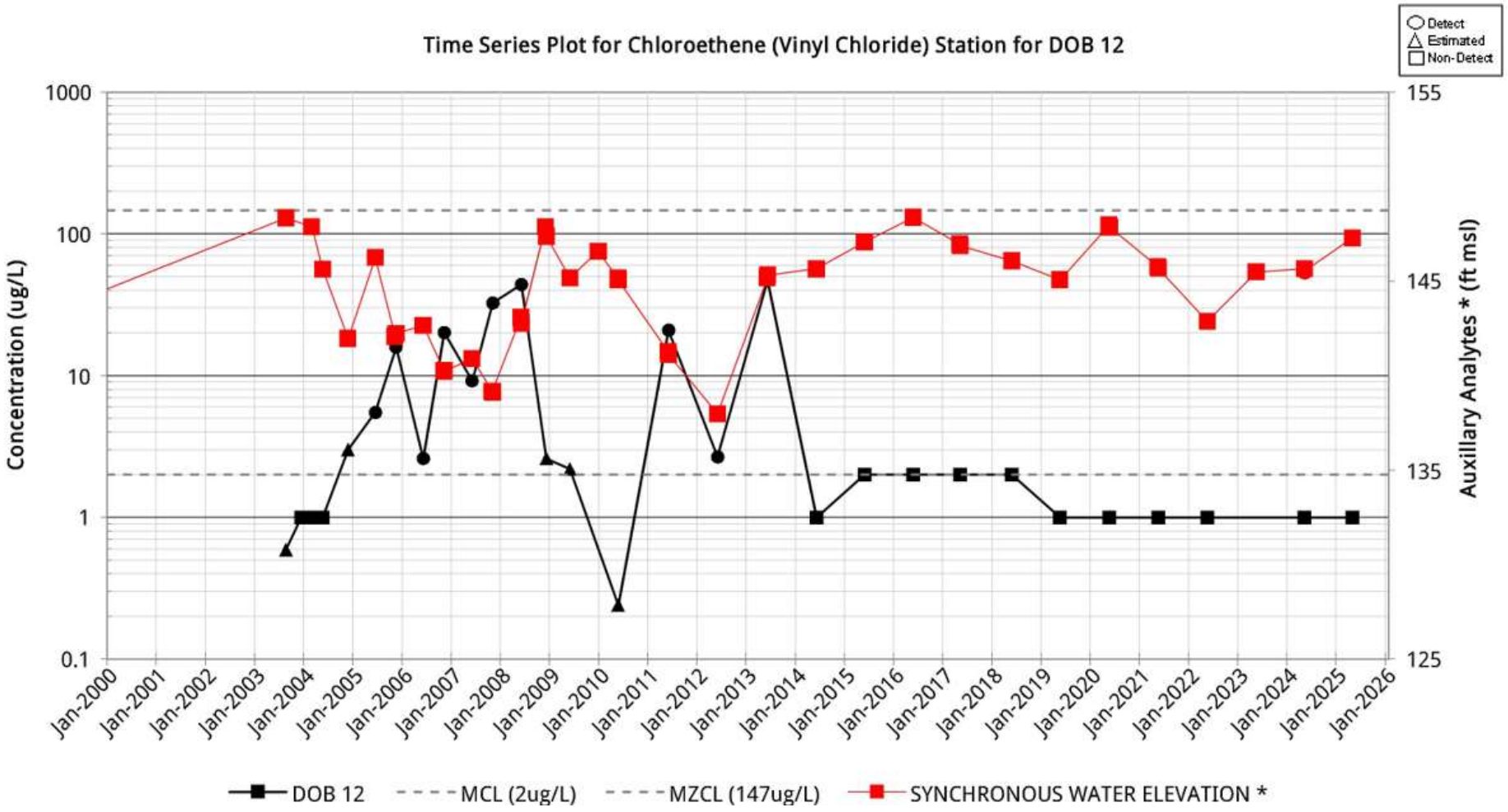


Figure D-72. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 12

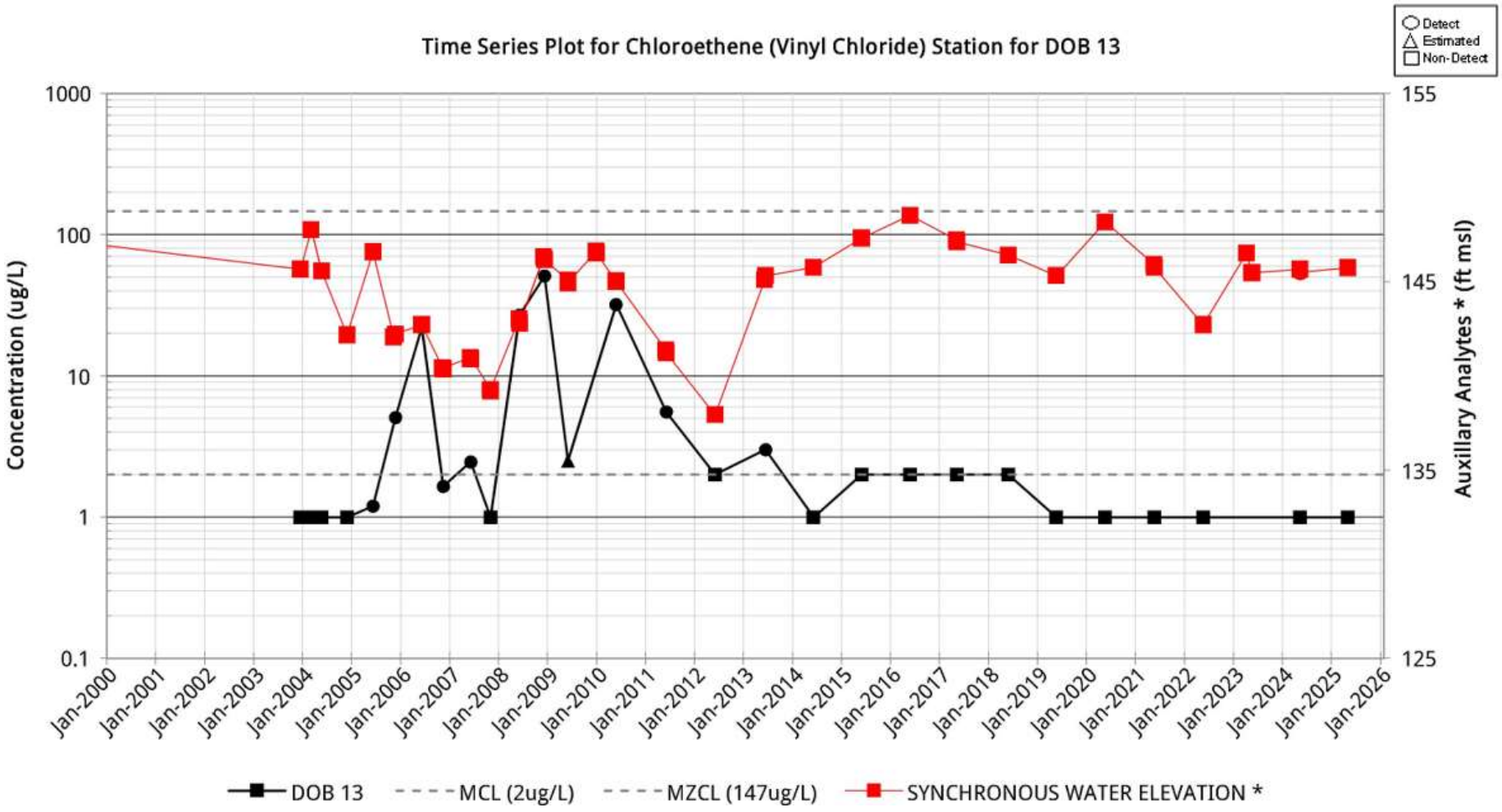


Figure D-73. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 13

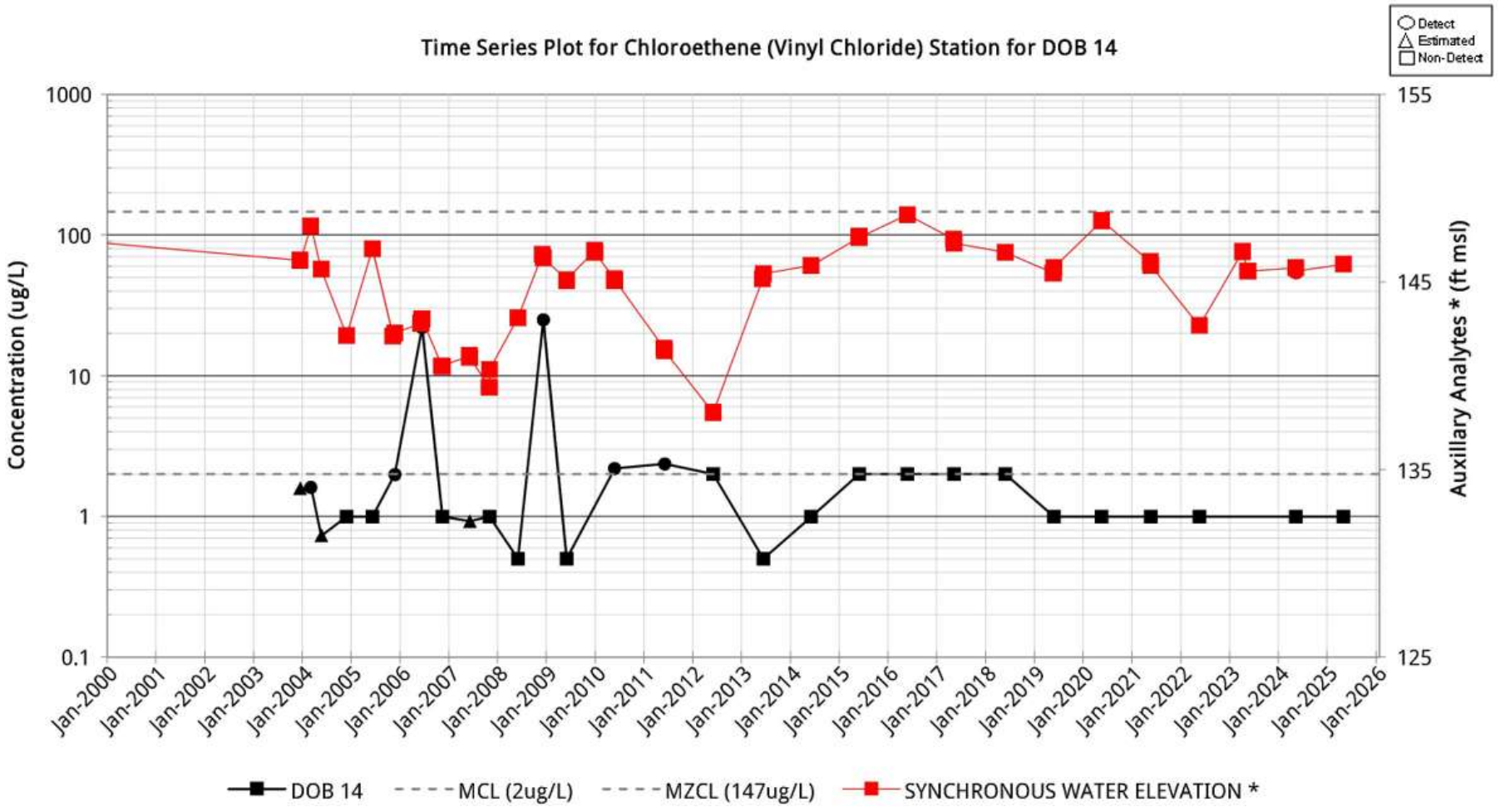


Figure D-74. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 14

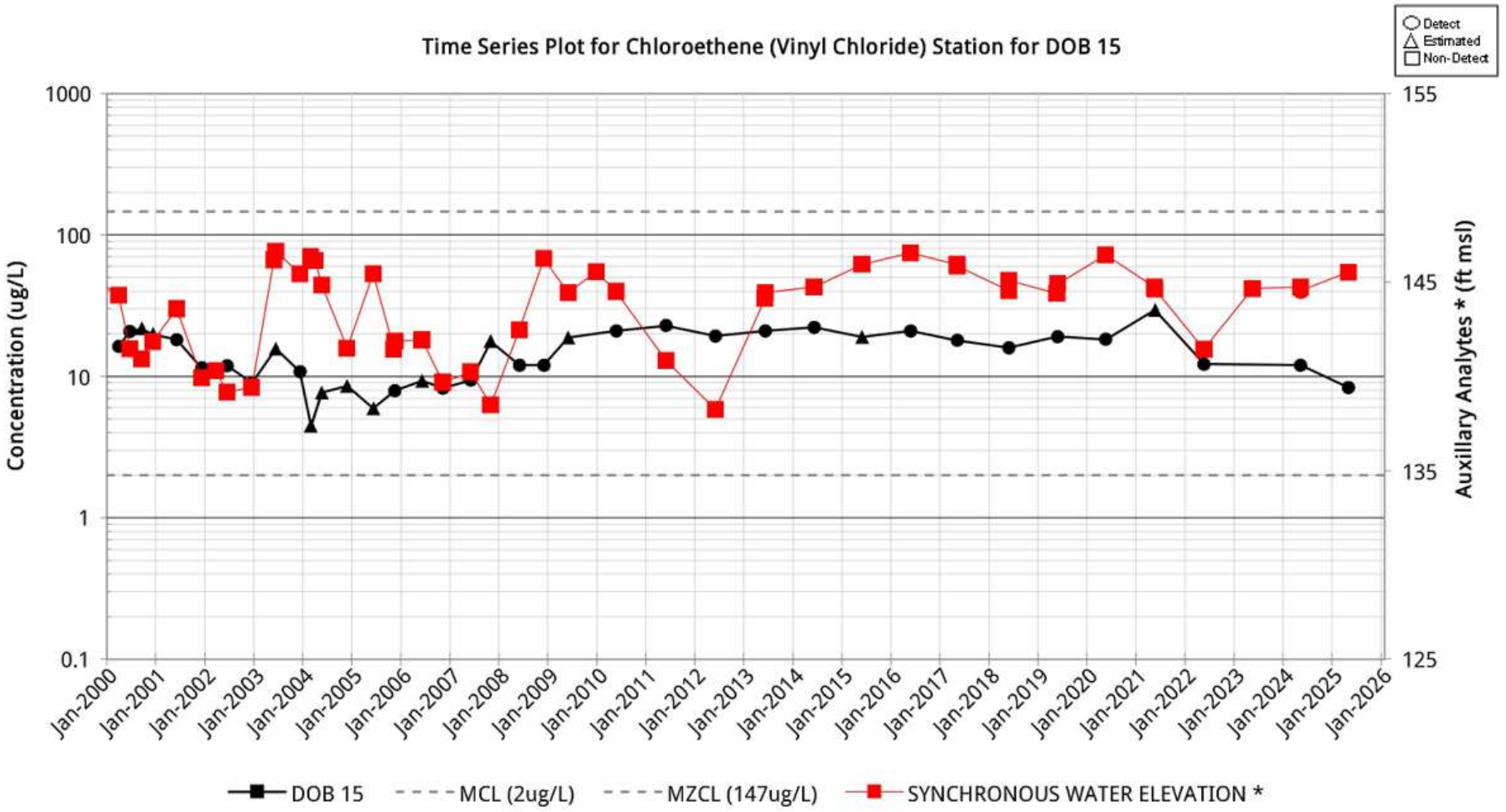


Figure D-75. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 15

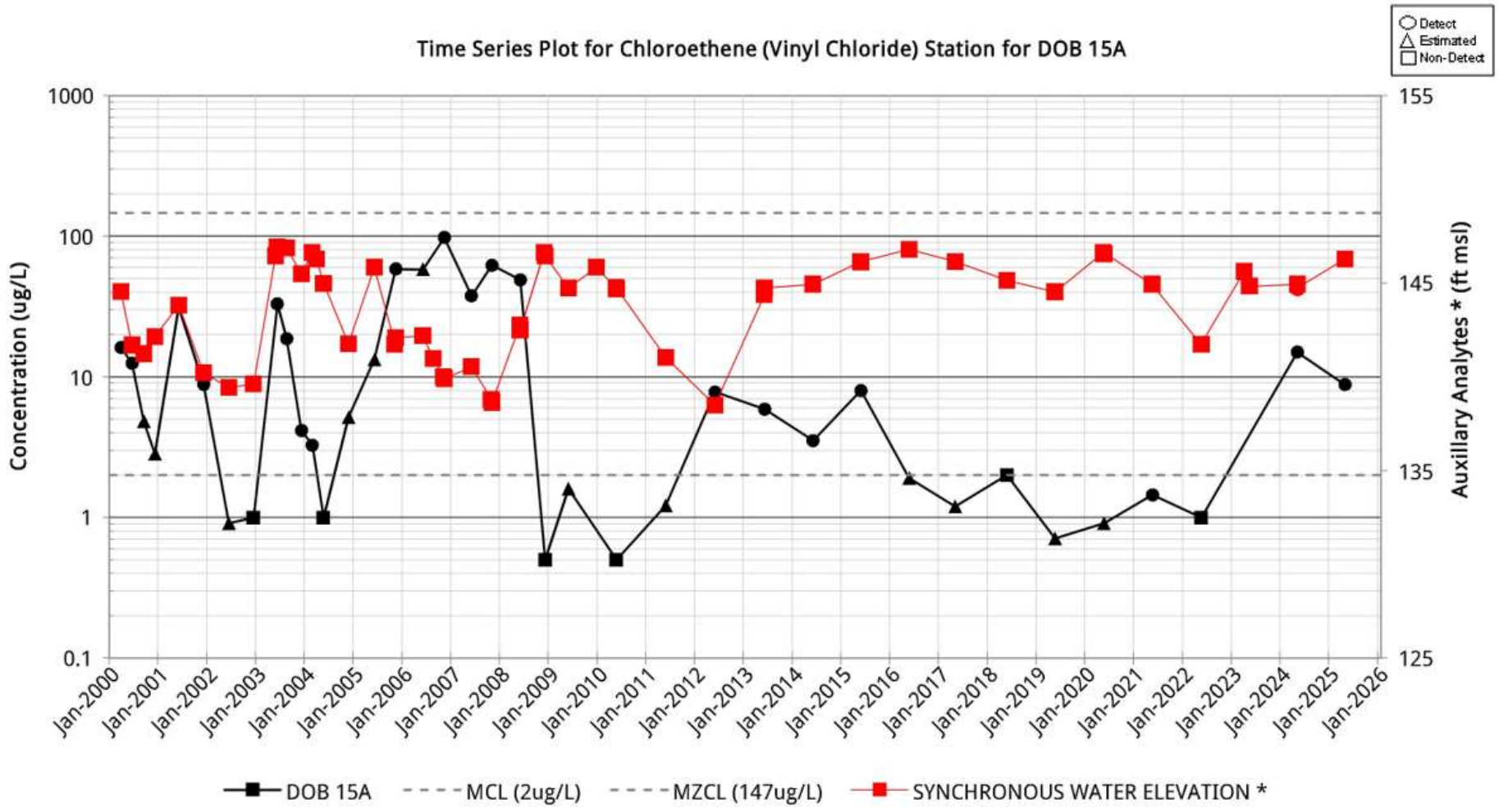


Figure D-76. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 15A

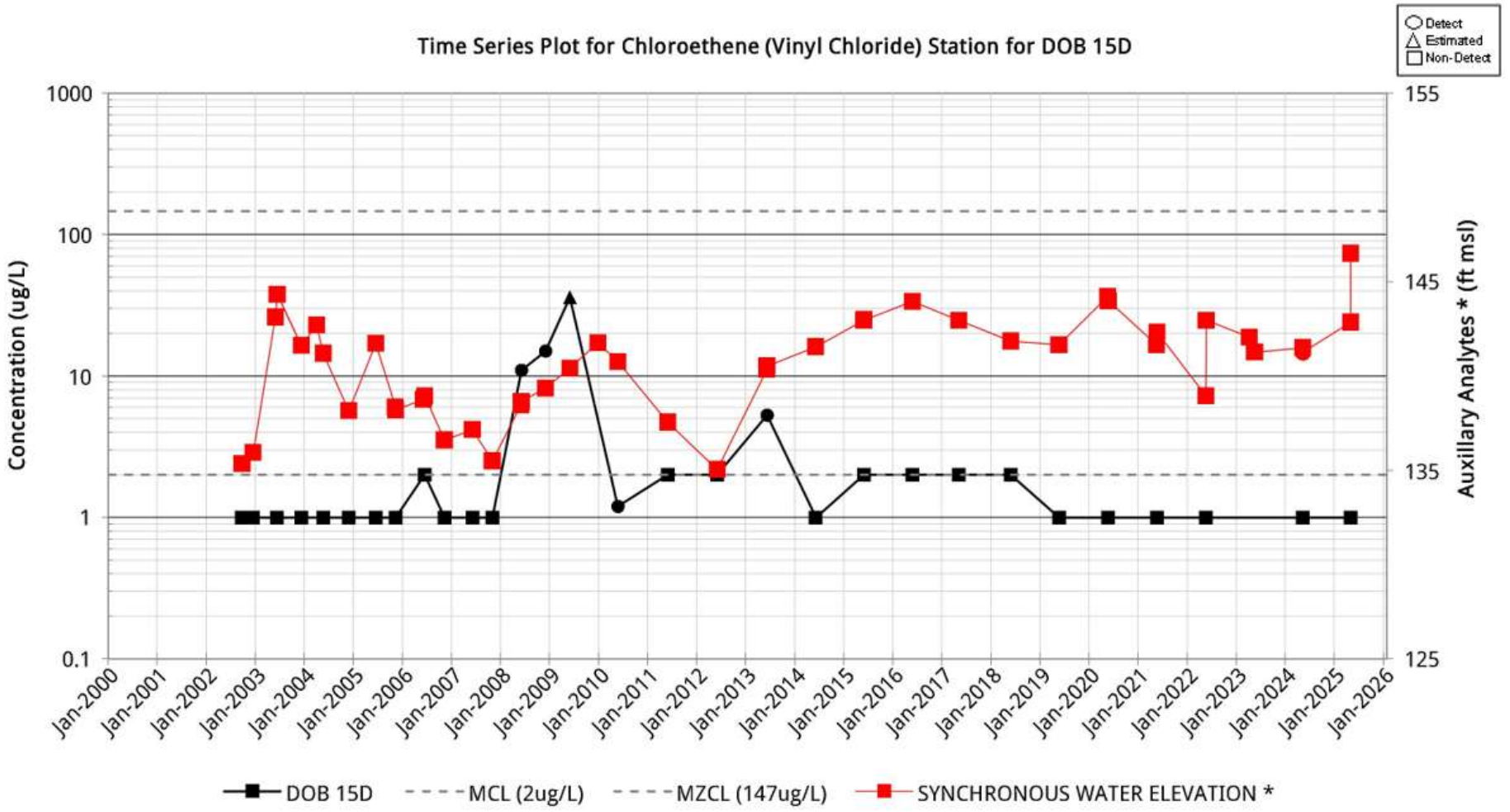


Figure D-77. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 15D

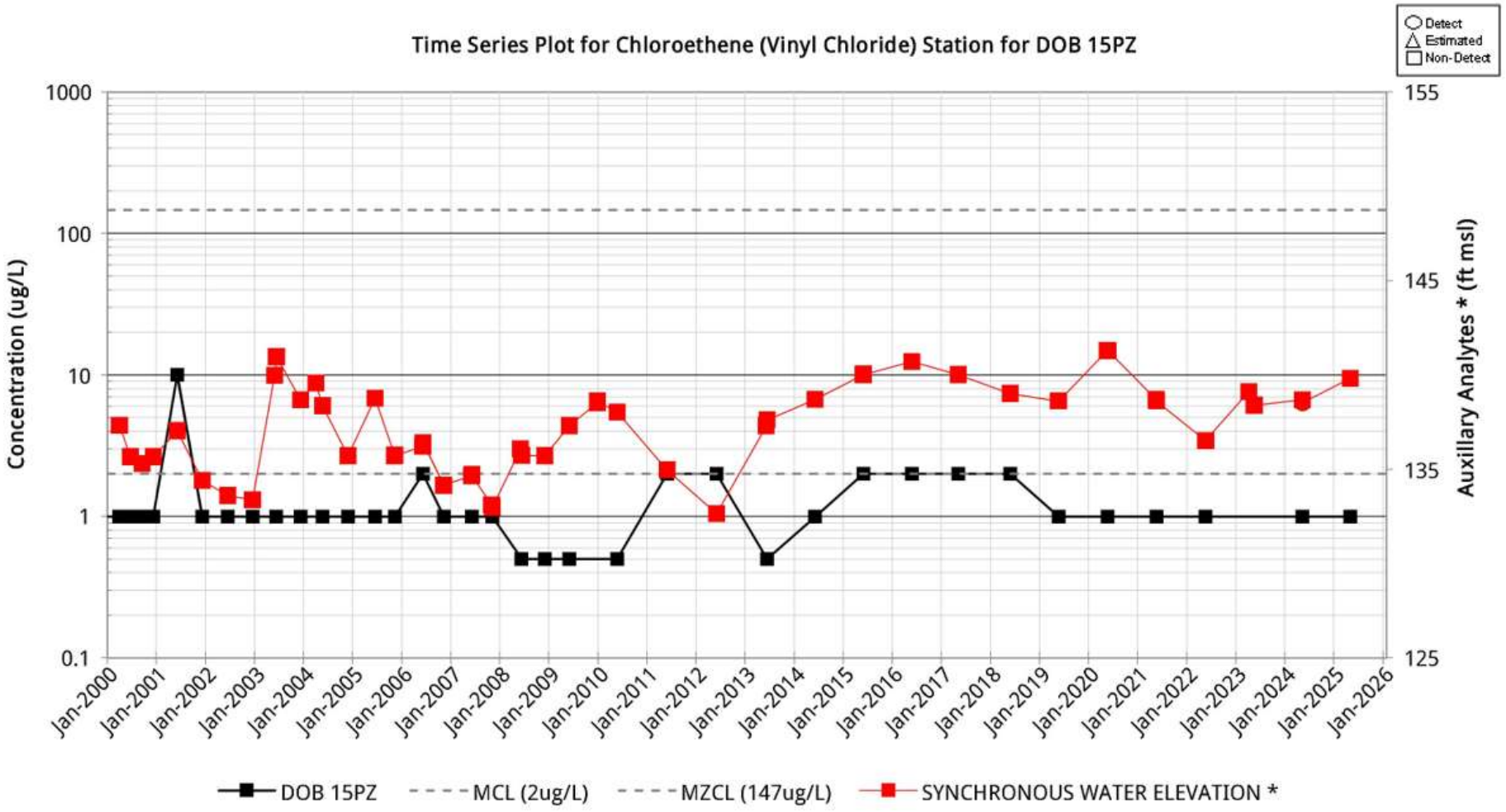


Figure D-78. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 15PZ

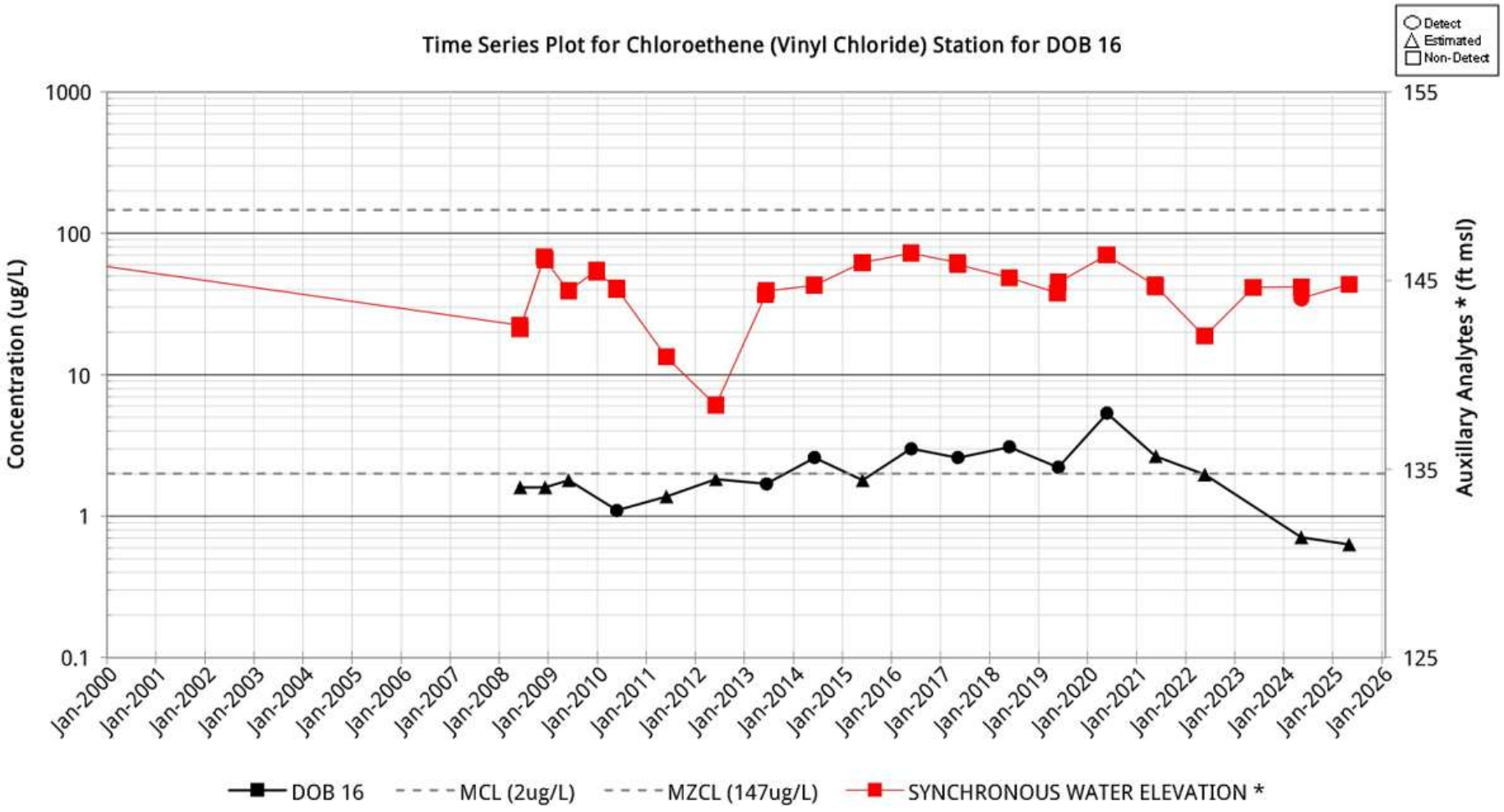


Figure D-79. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 16

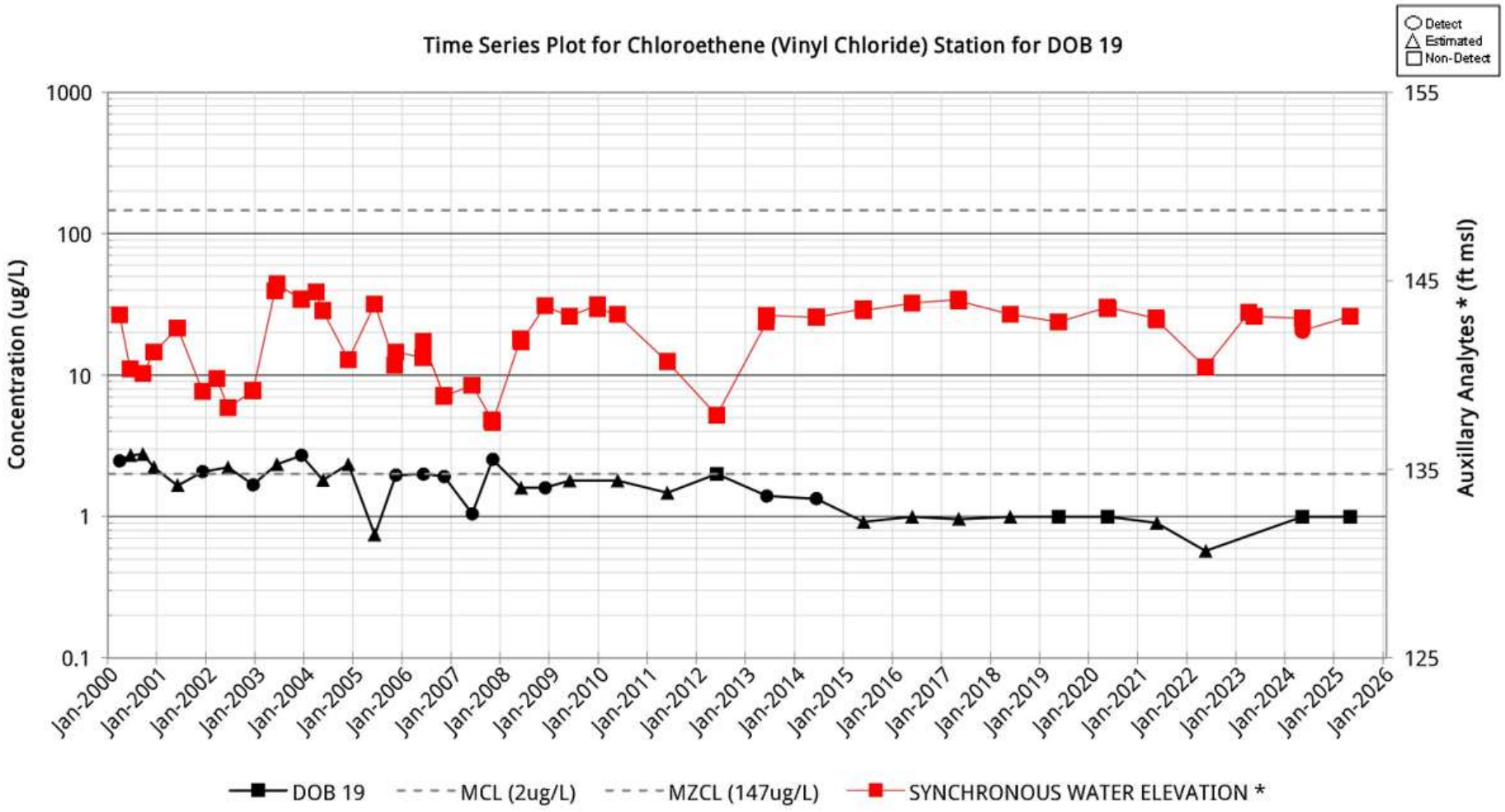


Figure D-80. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 19

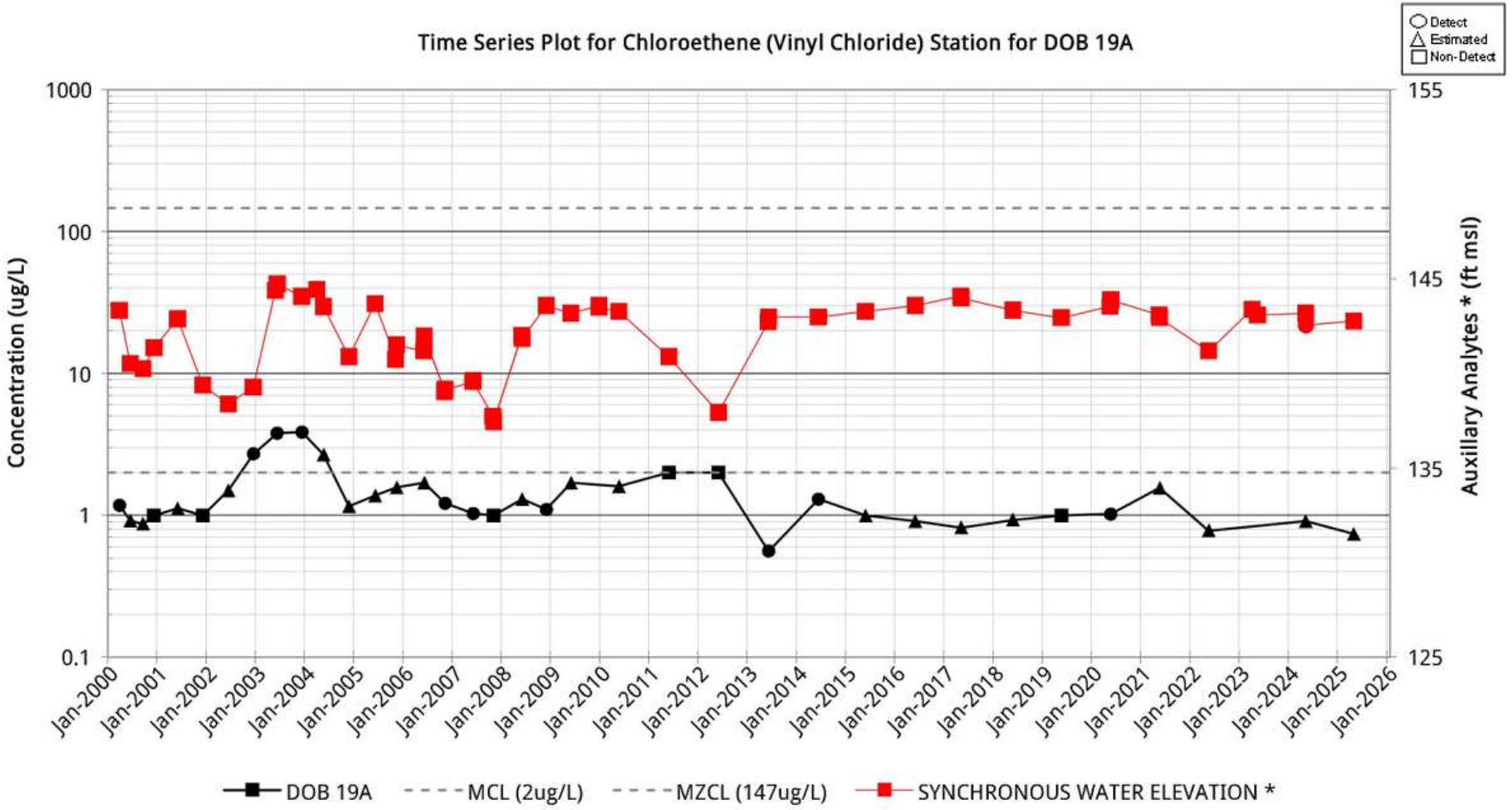


Figure D-81. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 19A

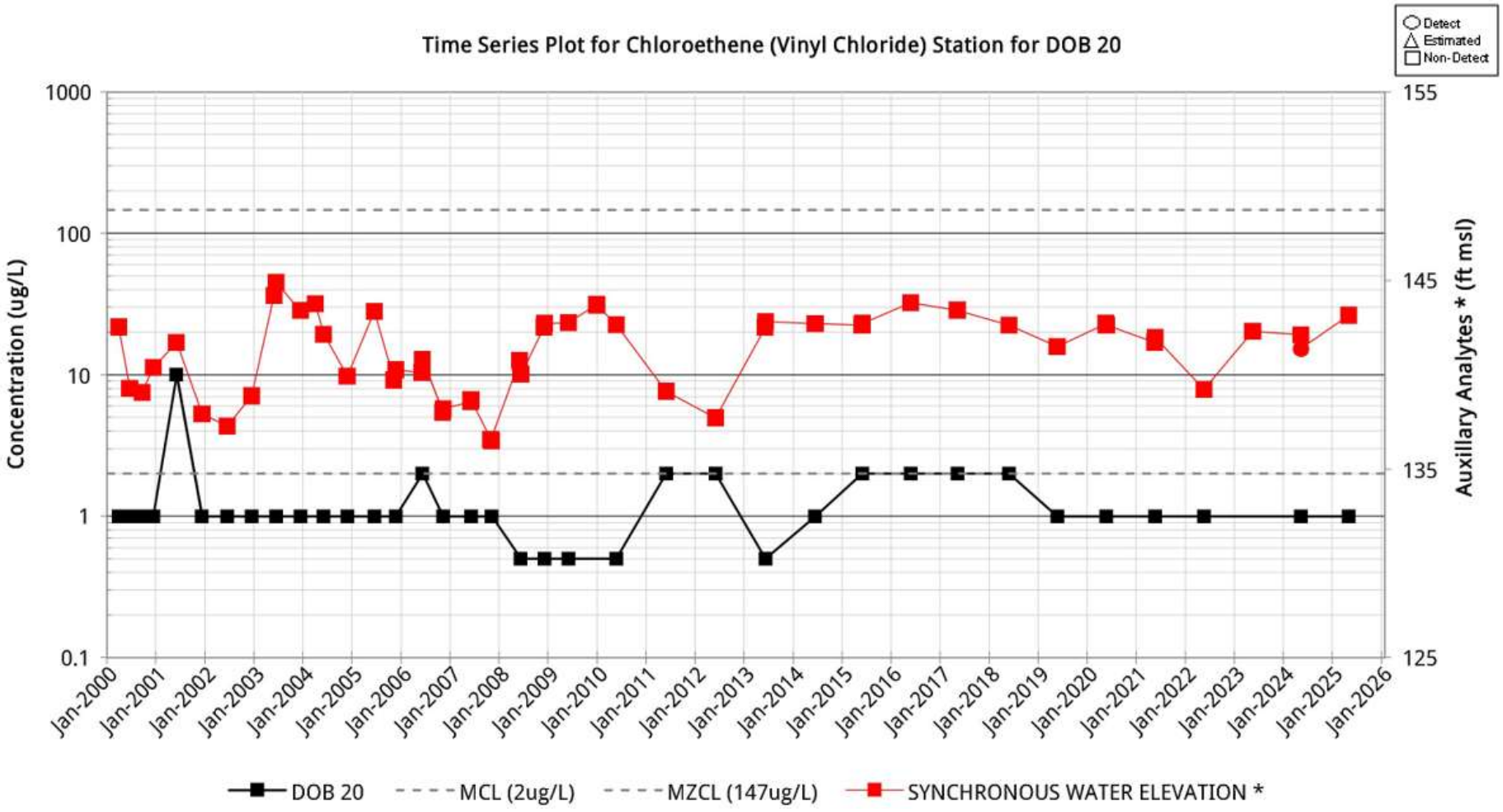


Figure D-82. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 20

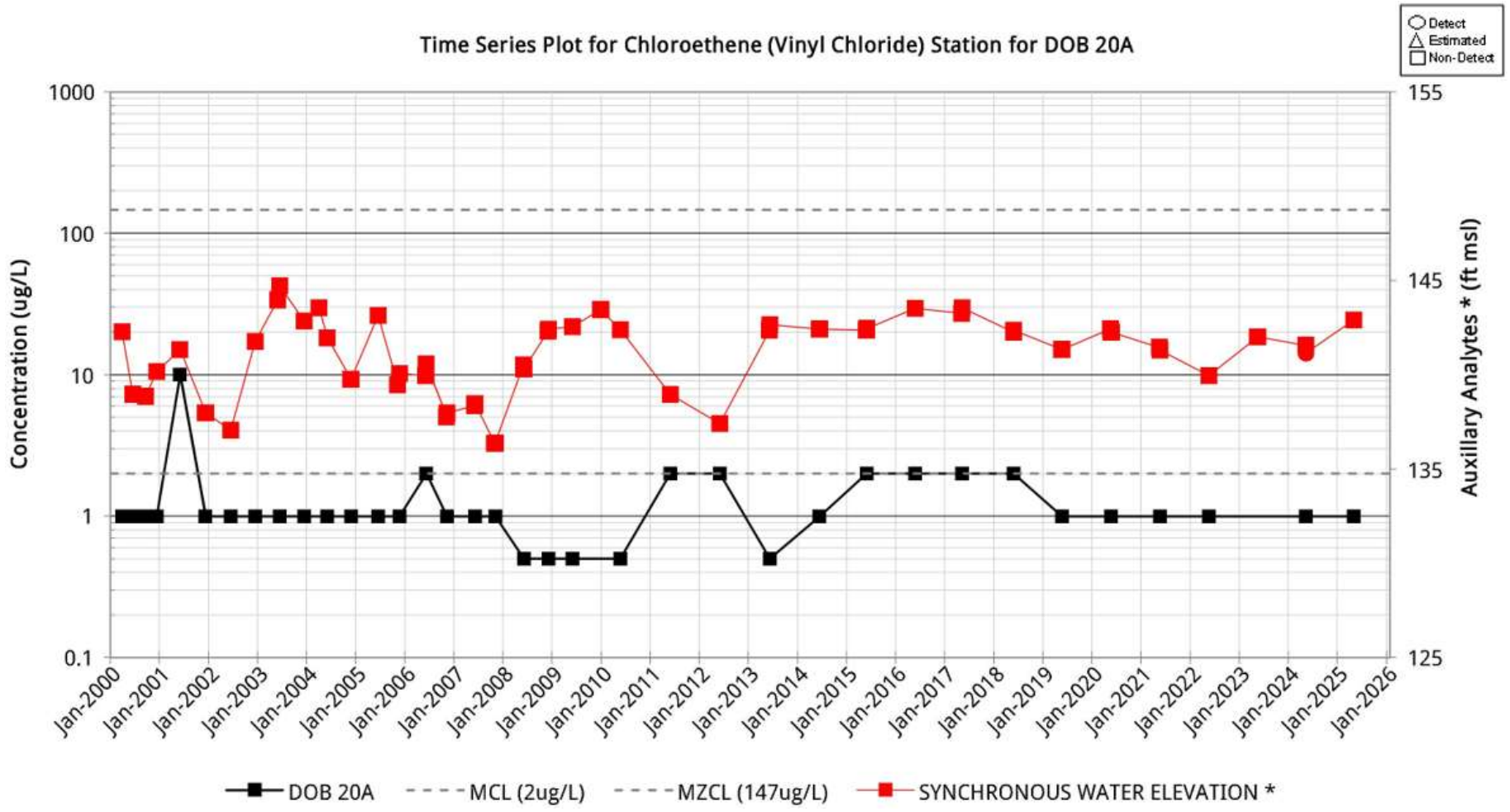


Figure D-83 Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 20A

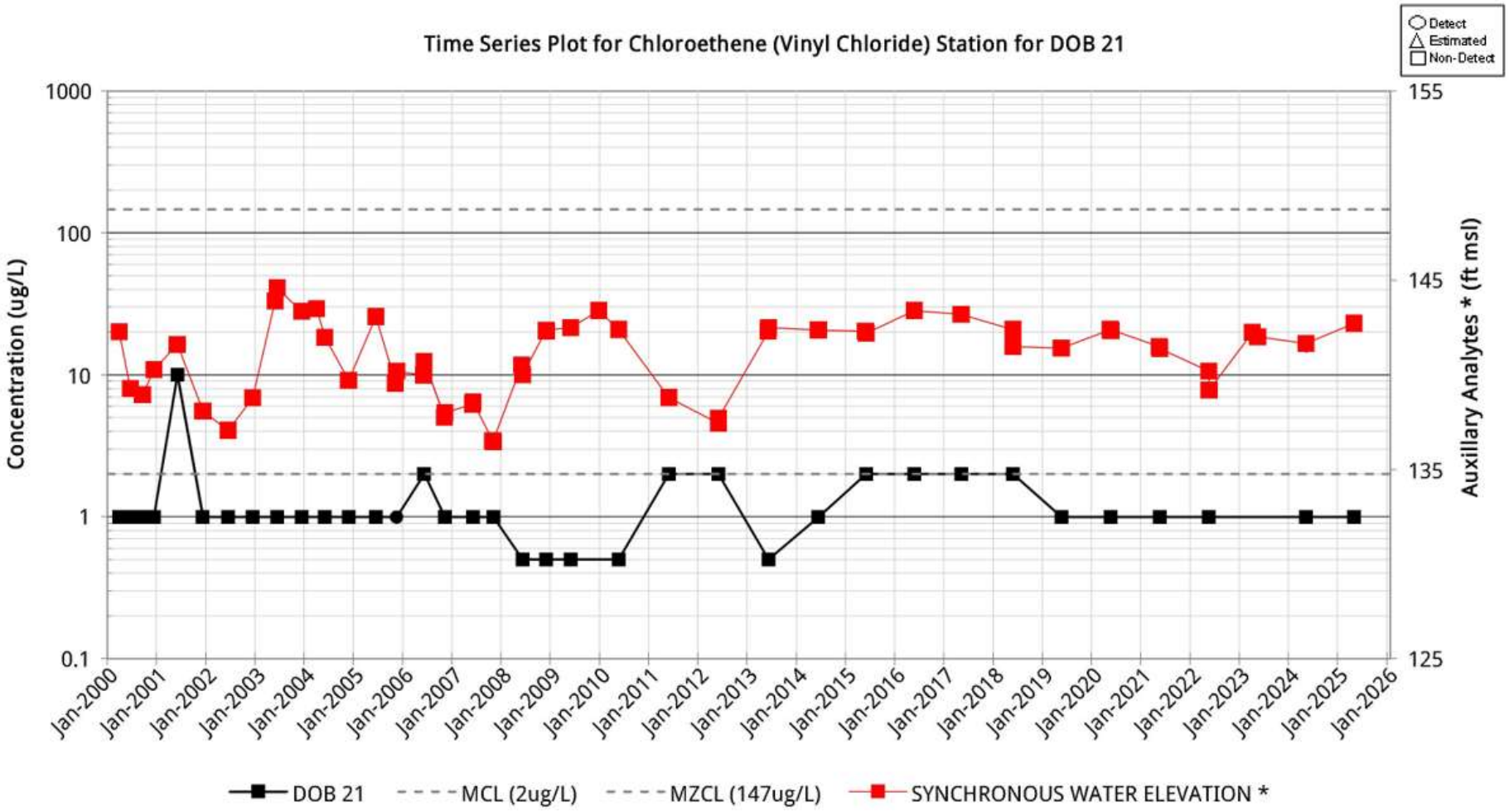


Figure D-84. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 21

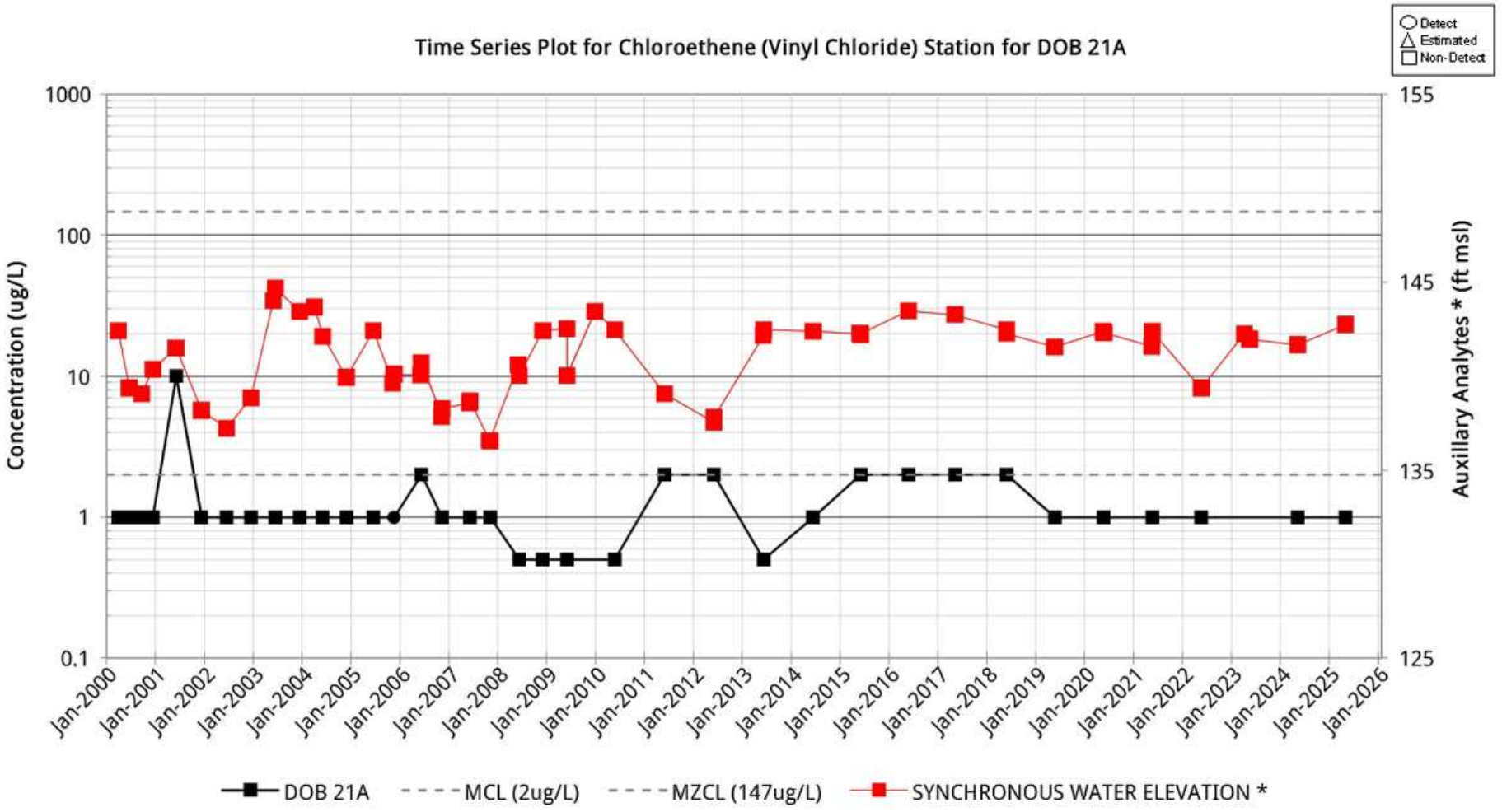


Figure D-85. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 21A

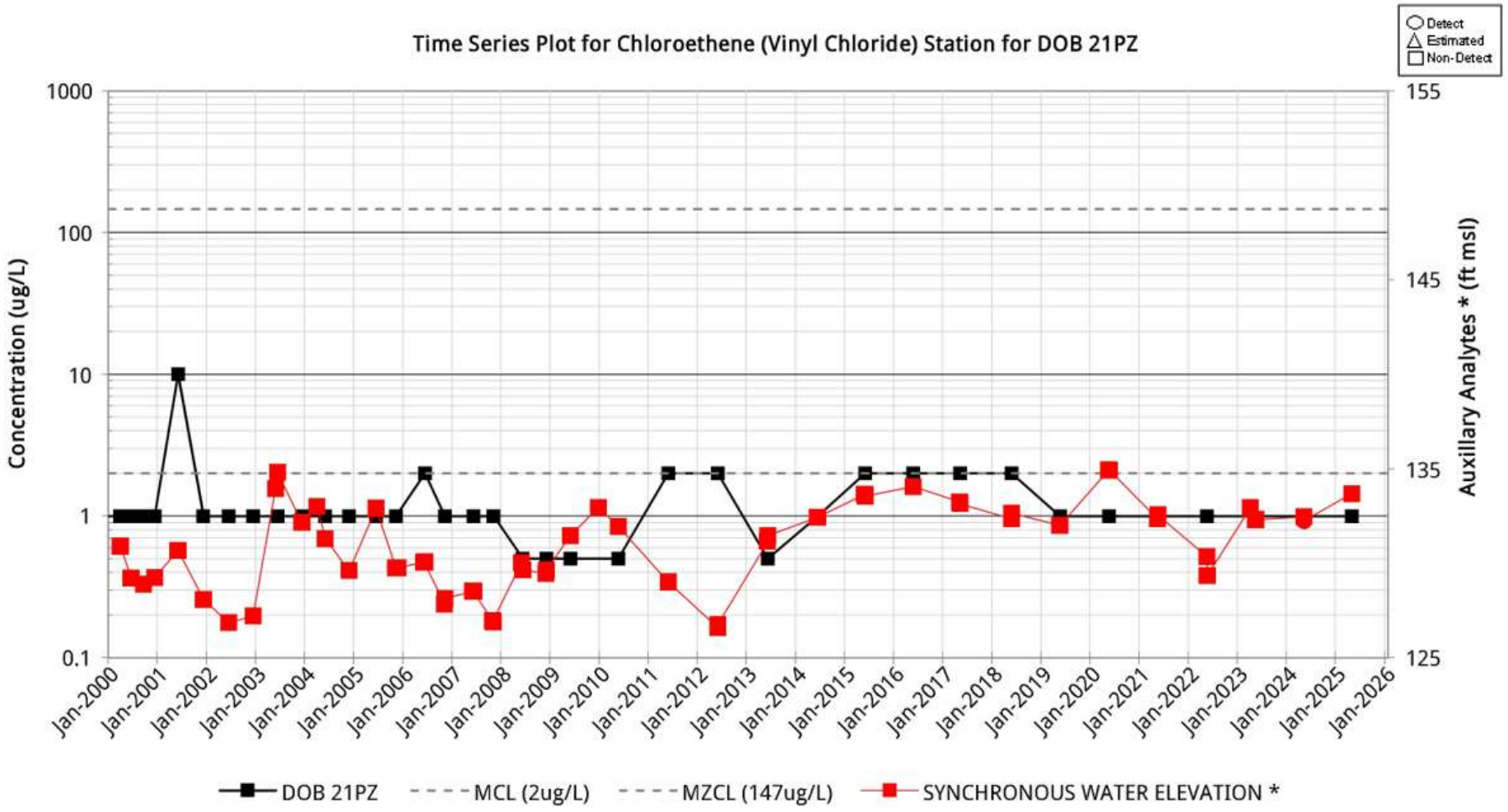


Figure D-86. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 21PZ

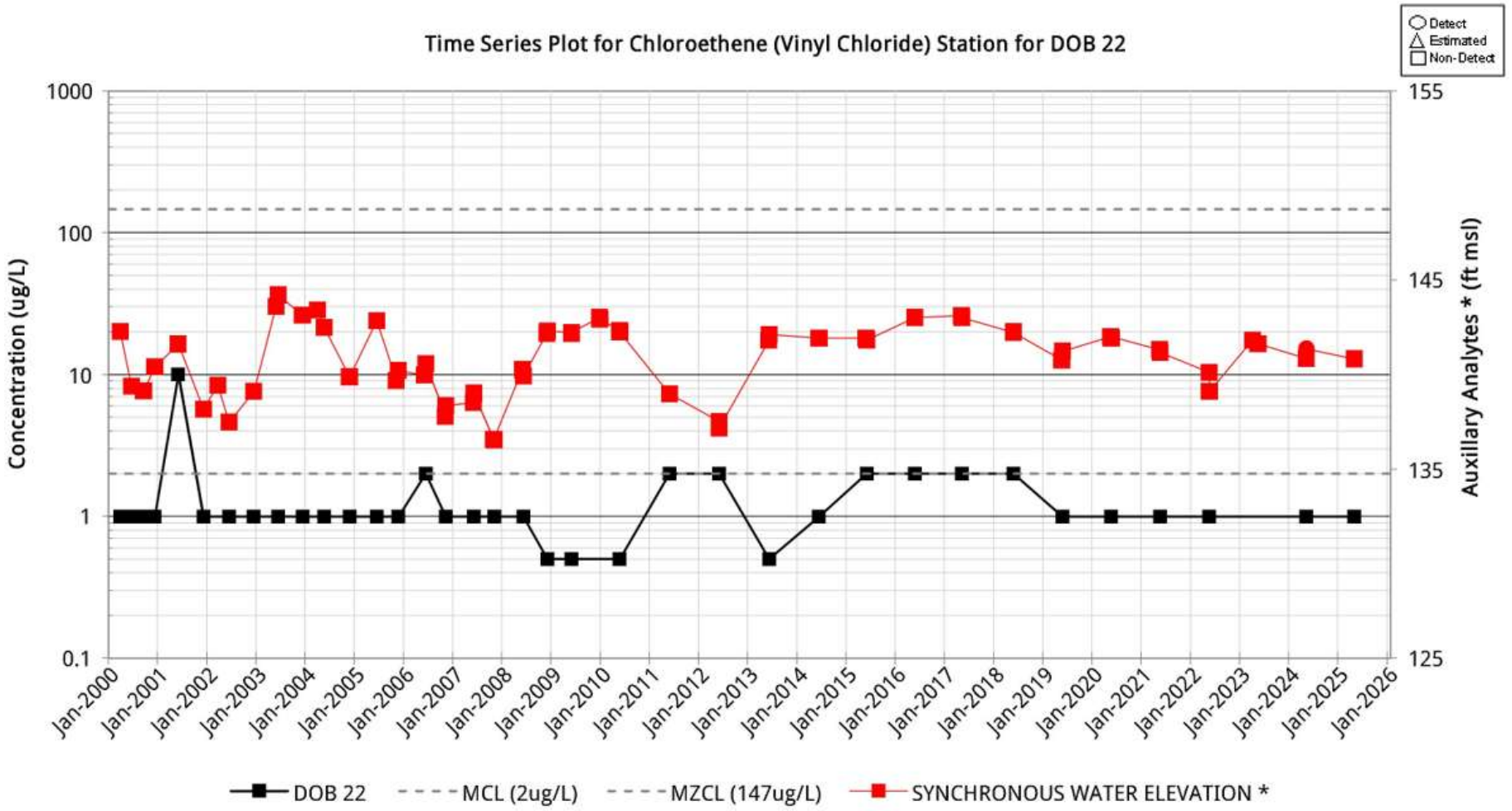


Figure D-87. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 22

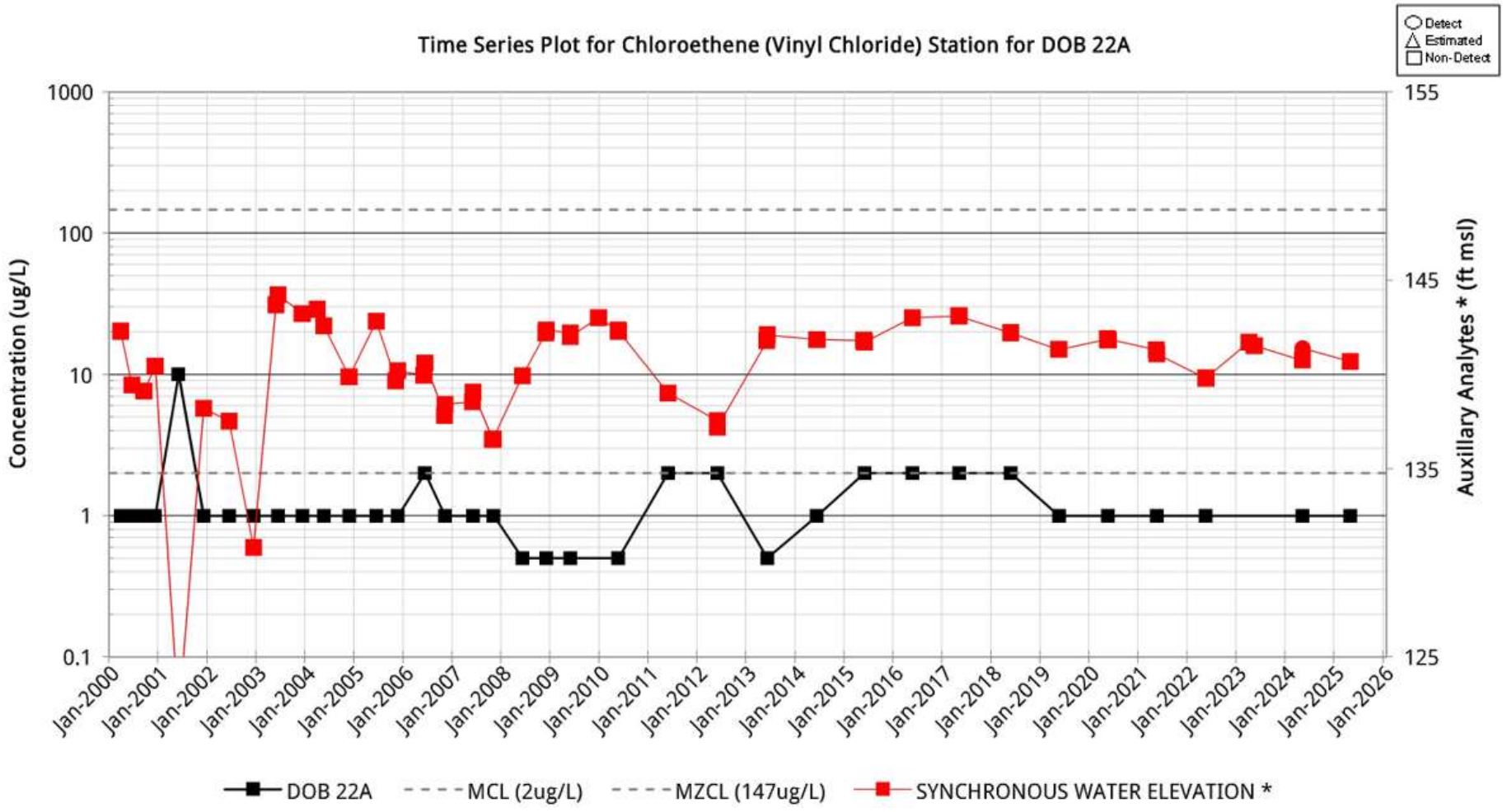


Figure D-88. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 22A

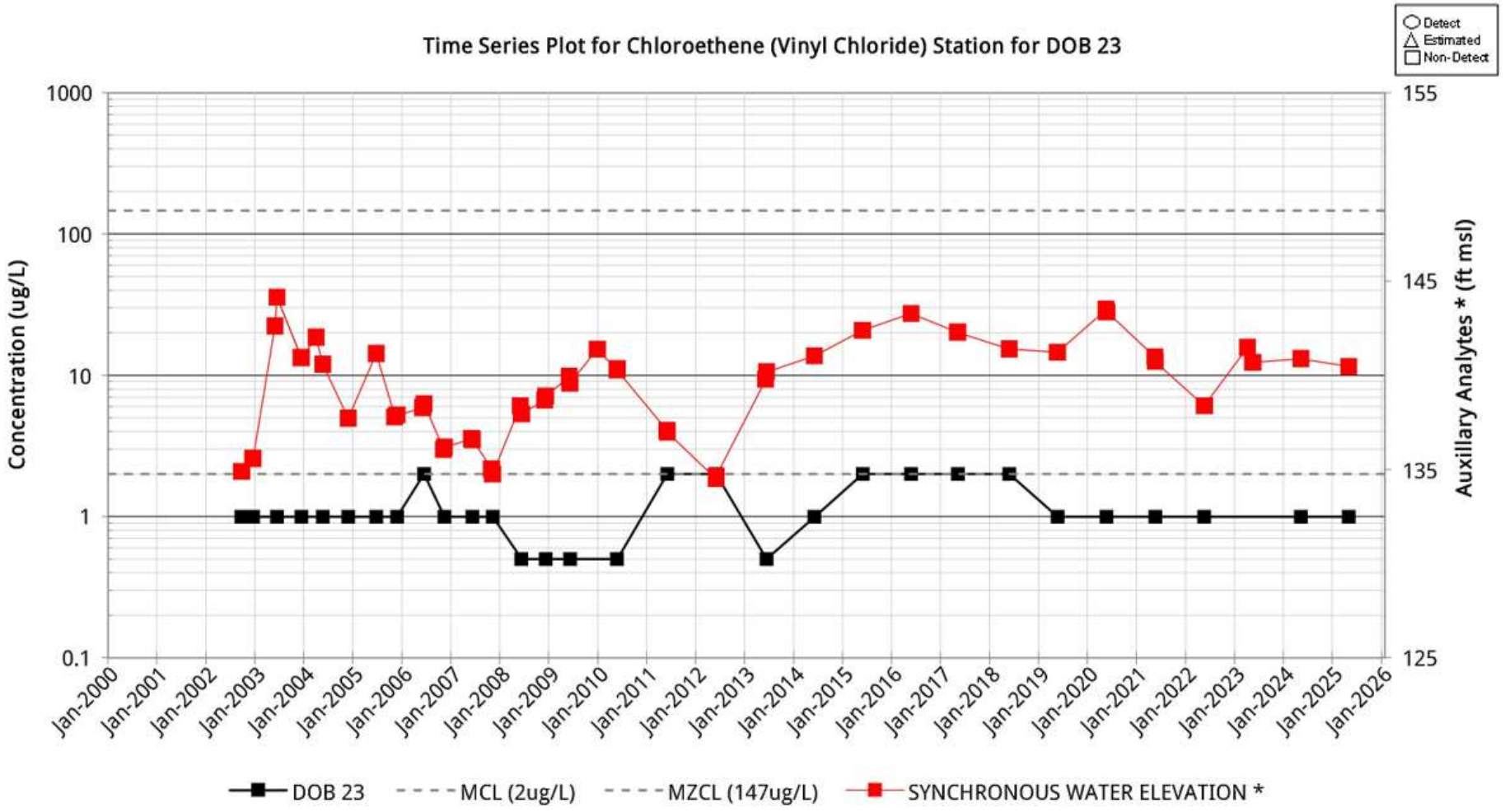


Figure D-89. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOB 23

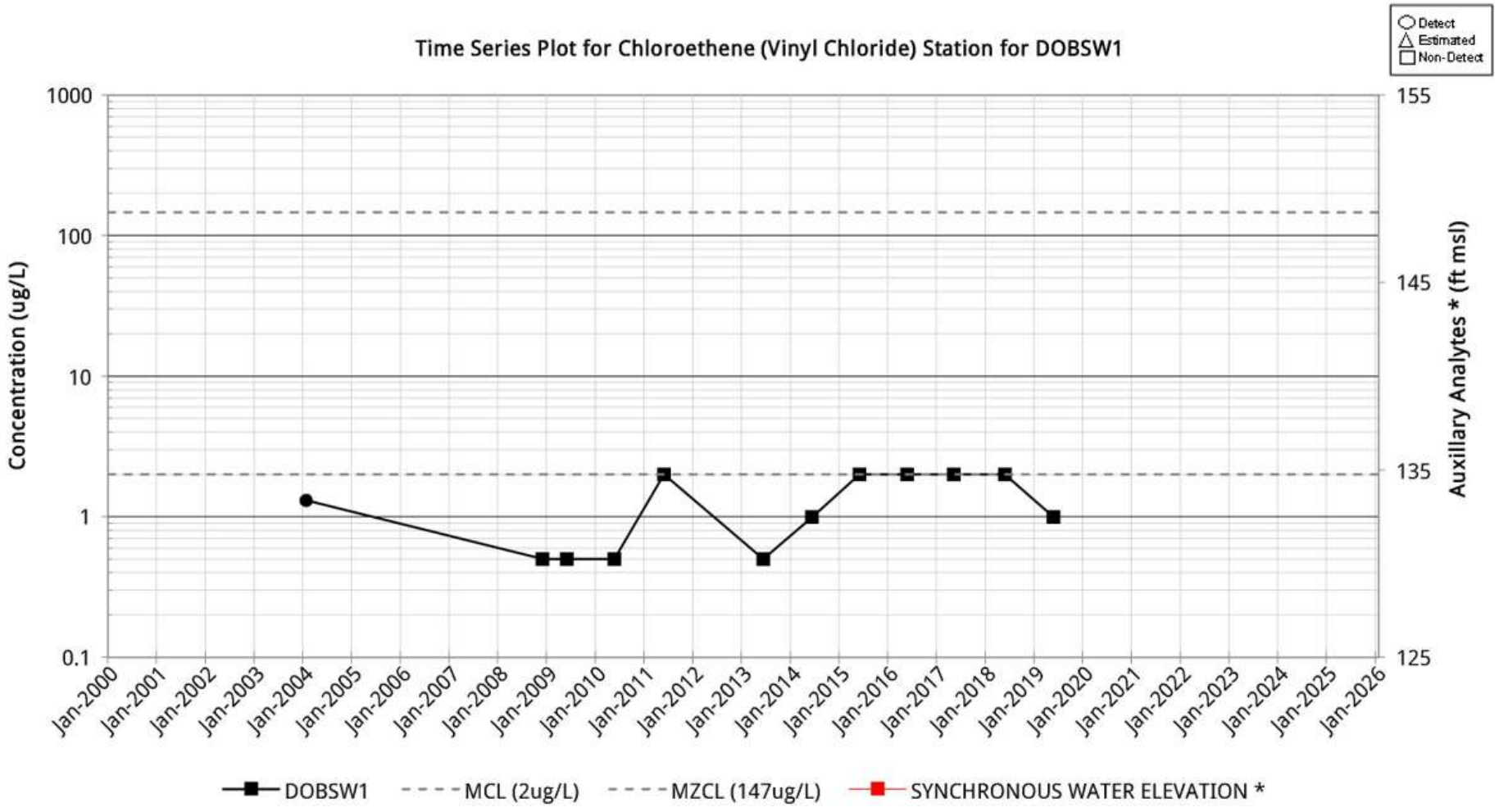


Figure D-90. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOBSW1

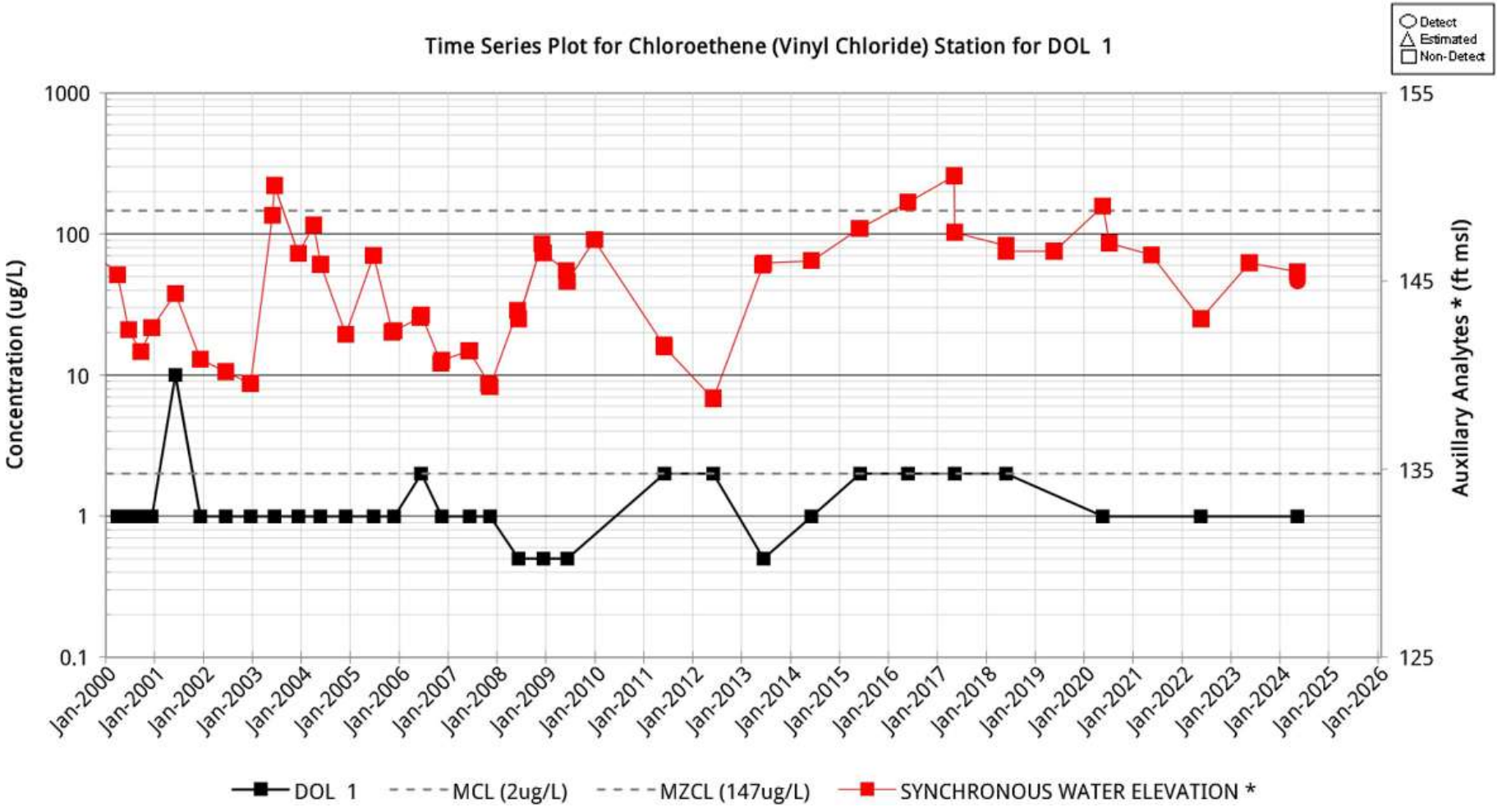


Figure D-91. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOL 1

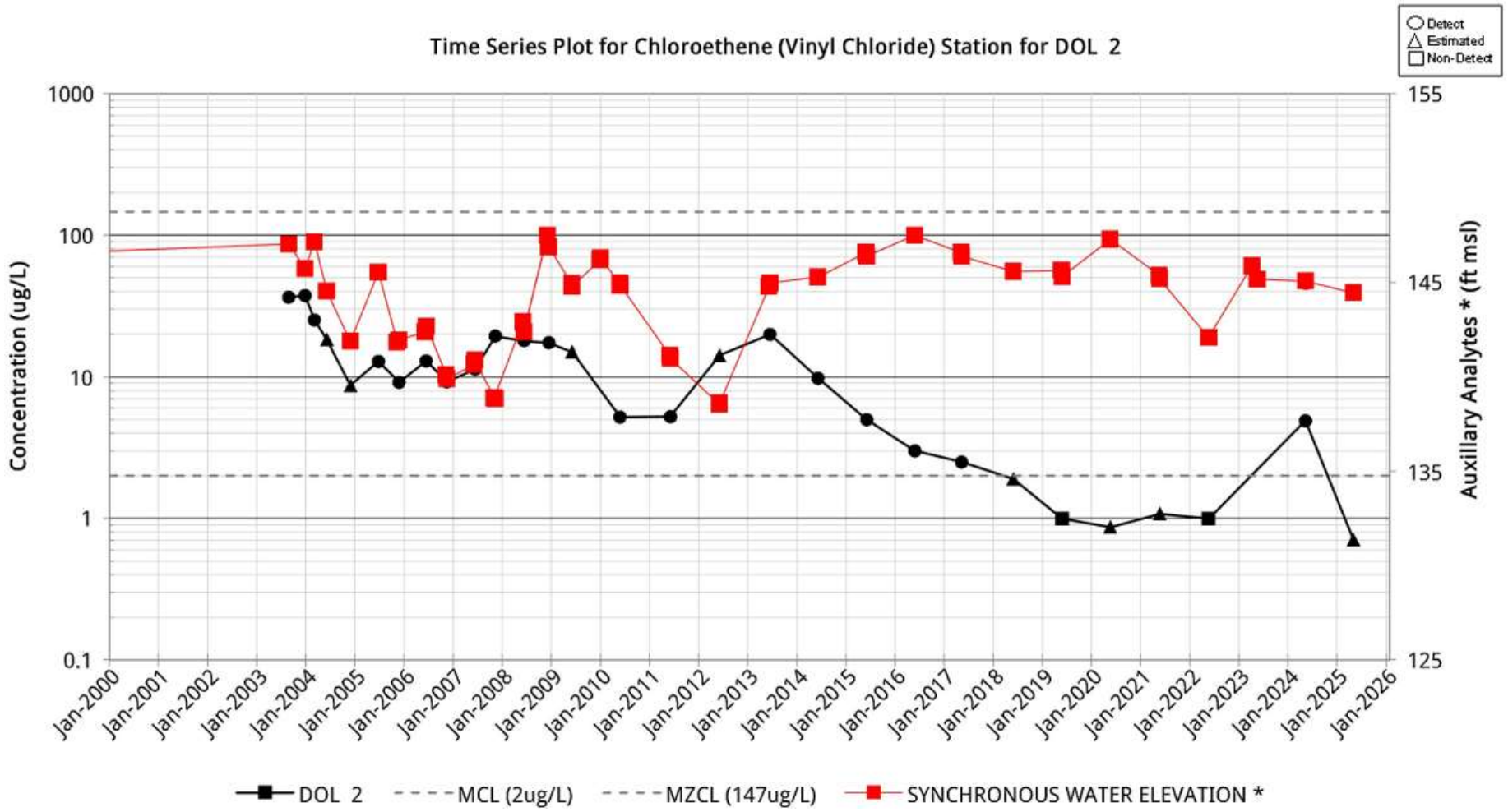


Figure D-92. Time Series Plot for Chloroethene (Vinyl chloride) Station for DOL 2

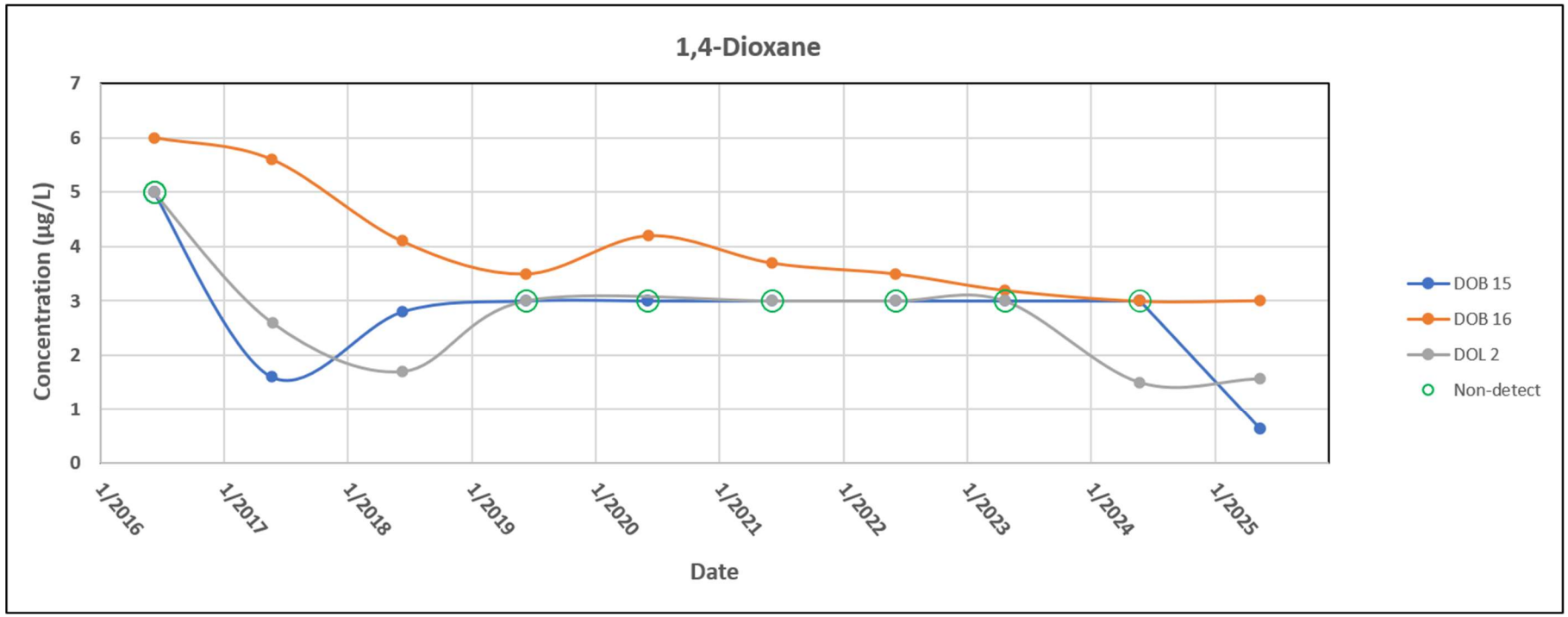


Figure D-93. Time Series Plot for 1,4-Dioxane for DOB 15, DOB 16, and DOL 2