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By Alameda County Environmental Health at 2:15 pm, Apr 16, 2014



April 15, 2014

Timothy L. Bishop,
P.G.
Project Manager
Marketing Business Unit

**Chevron Environmental
Management Company**
6101 Bollinger Canyon Road
Suite 5213
San Ramon, CA 94583
Tel (925) 790-6463
TimBishop@chevron.com

Mr. Keith Nowell
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: Response to Comments and Focused Conceptual Site Model Submittal

500 Bancroft Avenue, San Leandro, California
Fuel Leak Case No.: RO0000499

Dear Mr. Nowell,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at (925) 790-6463.

Sincerely,

A handwritten signature in blue ink that reads "Tim Bishop".

Timothy Bishop
Union Oil of California – Project Manager

Attachment
Response to Comments and Focused Conceptual Site Model



ARCADIS U.S., Inc.
2000 Powell Street
7th Floor
Emeryville
California 94608
Tel 510.652.4500
Fax 510.652.4906
www.arcadis-us.com

Mr. Keith Nowell
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject:
Response to Comments and Focused Conceptual Site Model
500 Bancroft Avenue, San Leandro, California
Fuel Leak Case No.: RO0000499

ENVIRONMENT

Dear Mr. Nowell:

Date:
April 15, 2014

On behalf of Chevron Environmental Management Company's affiliate, Union Oil Company of California ("Union Oil"), ARCADIS U.S., Inc. (ARCADIS) is pleased to submit the response to comments and Focused Conceptual Site Model (CSM) for the following facility (site):

Contact:
Katherine Brandt

<u>Facility No.</u>	<u>Case No.</u>	<u>Location</u>
5367	RO0000499	500 Bancroft Avenue San Leandro, California

Phone:
510.596.9675

Email:
Katherine.Brandt@
arcadis-us.com

Alameda County Department of Environmental Health (ACEH), Union Oil, and ARCADIS attended a joint meeting on January 21, 2014 to discuss action items to move this case towards closure. In an email to Union Oil dated January 28, 2014, ACEH requested a Focused CSM to address technical comments. A response to comments is provided in this letter with Focused CSM figures, tables, and data trend graphs included as an attachment. The Focused CSM provides additional or updated information to the CSM and Closure Request dated November 20, 2012.

Our ref:
B0047943

Response to Comments

Comment 1: Data Trends

The most recent groundwater monitoring event, conducted on March 1, 2013, reported concentration increases for total petroleum hydrocarbons as gasoline (TPHg) for several wells and detectable TPHg concentrations in wells that have been historically non-detect. Please conduct an additional round of groundwater monitoring to assess the data trends recently observed for the site.

Response:

During the March 1, 2013 event, elevated TPHg (also referred to as Total Purgeable Petroleum Hydrocarbons [TPPH]) concentrations were reported for the following monitoring wells: MW-1, MW-2, MW-4, MW-5, and MW-6. The cause of the elevated TPPH concentrations is suspected to be the result of a sample collection error.

As requested by the ACEH, an additional groundwater monitoring event was conducted on February 12, 2014. The TPPH concentrations for these monitoring wells decreased to concentrations consistent with historical data (Table 1 and Temporal Monitoring Trend Graphs). The Focused CSM includes the most recent data; these data are also documented in the First Half Monitoring Report 2014 dated April 15, 2014.

Comment 2: Beneficial Use Wells

Three nearby down gradient domestic wells, one located along Dowling Boulevard and two along Victoria Court, were identified in the August 22, 2006 sensitive receptor survey performed for the subject site. Occupants of the three parcels did not respond to inquiries made regarding the status of the wells. The Dowling Boulevard well is situated less than 280 feet from groundwater monitoring well MW-6, which was most recently (March 1, 2013) reported to contain 210 micrograms per liter (ug/L) TPHg.

Response:

On April 4, 2014, ARCADIS conducted a door-to-door survey for all wells shown on Figure 1 and listed in Table 2. ARCADIS confirmed 10 wells were not in use or not present on the property; one well (number 13) is in use as an irrigation well.

The Dowling Boulevard well referenced in ACEH's comment is identified on Figure 1 as well number 20. The resident at 580 Dowling Boulevard confirmed there are no wells on the property. Additionally, the elevated TPPH concentration reported for well MW-6 on March 1, 2013 was suspected to be the result of a sample collection error. During the February 12, 2014 event, the TPPH concentration decreased to a non-detectable level which is consistent with historical data (Table 1 and Temporal Monitoring Trend Graphs). The update TPPH plume map is shown on Figure 2 and Figure 3.

The specific wells along Victoria Court are not identified in ACEH's comment. However, five of the 10 wells located along Victoria Court were confirmed to be not in use or not present on the property.

Comment 3: Contaminant Plume Length

The LTCP Media-Specific Criteria for Groundwater includes criteria for plume length that exceeds Water Quality Objectives (WQOs) and for the distance from leading edge of the plume to the nearest supply well. ACEH noted MW-6, a down gradient groundwater monitoring well, was most recently (March 1, 2013) reporting to contain 210 ug/L TPHg; therefore, the plume has not been defined to the west-northwest of the site.

Response:

The elevated TPPH concentration reported for well MW-6 on March 1, 2013 was suspected to be the result of a sample collection error. Subsequently, a groundwater monitoring event was conducted on February 12, 2014. The TPPH concentration decreased to a non-detectable level which is consistent with historical data (Table 1 and Temporal Monitoring Trend Graphs). Monitoring well MW-6 provides down gradient plume delineation.

Comment 4: SVE Equipment Removal

Aging soil vapor and groundwater extraction systems remediation equipment has sat idle in the property since March 1997. ACEH agreed with the request for the removal of the remediation equipment.

Arrangements are being made to decommission the soil vapor extraction (SVE) and groundwater extraction systems.

Conclusions

Based on the TPPH data collected during the February 12, 2014 event, the site continues to meet the Low Threat Closure Policy Class 1 criteria for groundwater.

- **1a. The contaminant plume that exceeds water quality objectives is less than 100 feet in length**

In the CSM and Closure Request dated November 20, 2012, the TPPH plume length was estimated to be 86 feet based on analytical data collected on August 16, 2012. Using the most recent TPPH data collected on February 12, 2014, the plume length is approximately 76 feet. Both data sets indicate the plume length is less than 100 feet.

- **1b. There is no free product**

Free product was measured in monitoring well MW-1 between September 1987 and April 1988. A maximum free product thickness of 0.38 feet was

measured at MW-1 in November 1988. Approximately 2.5 gallons of free product were removed from MW-1 between September and November 1987 (Applied GeoSystems 1987). Free product has not been detected in MW-1 since April 1988, and there is currently no evidence of free product at the site.

1c. The nearest existing water supply well or surface-water body is greater than 250 feet from the defined plume boundary

The distance from the leading edge of the plume to the nearest down gradient well receptor number 19 is 281 feet (Figure 3). The nearest surface-water body, San Leandro Creek, is greater than 1,900 feet southeast (cross gradient) from the site.

If you have any questions, please contact Katherine Brandt at 510.596.9675.

Sincerely,

Katherine Brandt
Certified Project Manager

David W. Lay, P.G., C.P.G.
Principal Geologist



Copies:

Mr. Timothy Bishop, Union Oil (electronic copy only)
Netaj LLC, Property Owners

Attachments:

Focused Conceptual Site Model:

Table 1: Groundwater Gauging and Analytical Results
Table 2: Well Receptor Survey Data
Figure 1: Well Receptor Locations
Figure 2: TPPH Isoconcentration Contour Map (February 12, 2014)
Figure 3: TPPH Isoconcentration Contour Map and Well Receptor Locations
Temporal Monitoring Trend Graphs

Reference:

Applied GeoSystems. 1987. Report of Subsurface Environmental Investigation. Unocal Station No. 5367, San Leandro, California. August 12.



Imagine the result

Union Oil Company of California

Focused Conceptual Site Model

500 Bancroft Avenue, San Leandro, California

Fuel Leak Case No.: RO0000499

April 15, 2014



Tables

Table 1
Groundwater Gauging and Analytical Results
 500 Bancroft Avenue, San Leandro, California

Well ID	Date Sampled	TOC Elevation (ft amsl)	DTW (ft bTOC)	LPH Thickness (ft)	GW Elevation (ft amsl)	TPPH (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	EDB (µg/L)	EDC (µg/L)	Ethanol (µg/L)	Comments
MW-1	2/12/2014	57.83	33.42	--	24.41	2,200	0.53	<0.50	20	<1.0	<0.50	<0.50	<0.50	<250	A01 (TPH-g result)
MW-2	2/12/2014	58.13	33.29	--	24.84	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-3	2/12/2014	57.92	32.90	--	25.02	340	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-4	2/12/2014	58.29	33.65	--	24.64	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-5	2/12/2014	58.50	33.94	--	24.56	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-6	2/12/2014	56.96	32.57	--	24.39	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-7	2/12/2014	57.25	32.89	--	24.36	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-8	2/12/2014	57.71	33.26	--	24.45	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-9	2/12/2014	56.47	31.95	--	24.52	<50	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<250	
MW-10	2/12/2014	58.94	--	--	--	--	--	--	--	--	--	--	--	--	Not accessible

Abbreviations:

- Not available
- BOLD** Result detected above laboratory reporting limit
- A01 Practical quantitation limit and method detection limit are raised due to sample dilution.
- < Not detected at or above laboratory detection limit
- amsl Above mean sea level
- btoc Below top of casing
- DTW Depth to water
- EDB 1,2-dibromoethane
- EDC 1,2-dichloroethane (same as ethylene dichloride)
- ft Feet
- GW Groundwater
- LPH Liquid-phase hydrocarbons
- µg/l Micrograms per liter (approx. equivalent to parts per billion, ppb)
- MTBE Methyl tertiary butyl ether
- TOC Top of casing (surveyed reference elevation)
- TPPH Total purgeable petroleum hydrocarbons

Table 2
Well Receptor Survey Data
500 Bancroft Avenue, San Leandro, California

Map Identifier	Well Site Address	Approximate Distance to Site (feet)	Well Type	In use? (Yes / No)	Well Destroyed? (Yes / No)	Purpose of Well	Total Well Depth (ft bgs)	Screen Interval (ft bgs)	Comments
1	505 Dowling Blvd	600	Unknown	--	--	--	--	--	No Answer
2	531 Dowling Blvd	501	Unknown	No	No	--	--	--	Pump removed; Well Casing Remains.
3	543 Dowling Blvd	437	Irrigation	--	--	--	--	--	No Answer
4	549 Dowling Blvd	382	Irrigation	--	--	--	--	--	No Answer
5	563 Dowling Blvd	339	Unknown	No	--	--	--	--	Owner/resident could not verify a well is on the property (assumes not in use and potentially destroyed).
6	573 Dowling Blvd	296	Unknown	--	--	--	--	--	No Answer
7	509 Victoria Court	762	Unknown	--	--	--	--	--	No Answer
8	521 Victoria Court	743	Unknown	No	--	--	--	--	No well on property.
9	428 Victoria Court	876	Unknown	--	--	--	--	--	No Answer
10	533 Victoria Court	695	Unknown	--	--	--	--	--	No Answer
11	545 Victoria Court	660	Unknown	--	--	--	--	--	No Answer
12	551 Victoria Court	615	Unknown	--	--	--	--	--	No Answer
13	510 Dowling Blvd/ 490 Warwick Avenue	616	Unknown	Yes	No	Irrigation	--	--	Owner/resident says well is now owned by property at 490 Warwick Avenue and that water is used for irrigation. Pump and well were visible from the street; property was inaccessible due to locked gate.
14	540 Dowling Blvd	576	Unknown	--	--	--	--	--	No Answer
15	542 Dowling Blvd	528	Irrigation	No	--	--	--	--	No well on property.
16	544 Dowling Blvd	486	Unknown	--	--	--	--	--	No Answer
17	550 Dowling Blvd	445	Unknown	--	--	--	--	--	Gated front yard; could not enter.
18	560 Dowling Blvd	404	Unknown	--	--	--	--	--	No Answer
19	566 Dowling Blvd	366	Unknown	--	--	--	--	--	No Answer
20	580 Dowling Blvd	325	Irrigation	No	--	--	--	--	No well on property.
21	492 Dowling Blvd	761	Unknown	--	--	--	--	--	No Answer
22	454 Dowling Blvd	815	Unknown	No	--	--	--	--	No well on property.
23	431 Dowling Blvd	995	Unknown	--	--	--	--	--	No Answer
24	435 Dowling Blvd	940	Unknown	--	--	--	--	--	No Answer
25	439 Dowling Blvd	884	Unknown	--	--	--	--	--	No Answer
26	443 Dowling Blvd	839	Water Well	--	--	--	--	--	No Answer
27	453 Dowling Blvd	785	Unknown	--	--	--	--	--	No Answer
28	495 Dowling Blvd	728	Water Well	--	--	--	--	--	No Answer
29	674 Victoria Court	854	Water Well	--	--	--	--	--	No Answer
30	586 Victoria Court	744	Unknown	No	--	--	--	--	No well on property.

Table 2
Well Receptor Survey Data
500 Bancroft Avenue, San Leandro, California

Map Identifier	Well Site Address	Approximate Distance to Site (feet)	Well Type	In use? (Yes / No)	Well Destroyed? (Yes / No)	Purpose of Well	Total Well Depth (ft bgs)	Screen Interval (ft bgs)	Comments
31	570 Victoria Court	799	Irrigation	No	--	--	--	--	Owner/resident could not verify a well is on the property (assumes not in use and potentially destroyed).
32	588 Victoria Court	764	Unknown	--	--	--	--	--	No Answer
33	544 Victoria Court	850	Unknown	--	--	--	--	--	No Answer
34	530 Victoria Court	890	Irrigation	--	--	--	--	--	No Answer
35	520 Victoria Court	870	Unknown	No	--	--	--	--	Owner/resident could not verify a well is on the property (assumes not in use and potentially destroyed).
36	614 Victoria Court	726	Water Well	No	No	Water Well	Unknown	Unknown	Well and pump installed; Property owner says pump makes periodic noise; does not use the well for irrigation or drinking purposes.
37	621 Victoria Court	458	Water Well	--	--	--	--	--	No Answer

Abbreviations:

-- Not Available
ft bgs Feet below ground surface

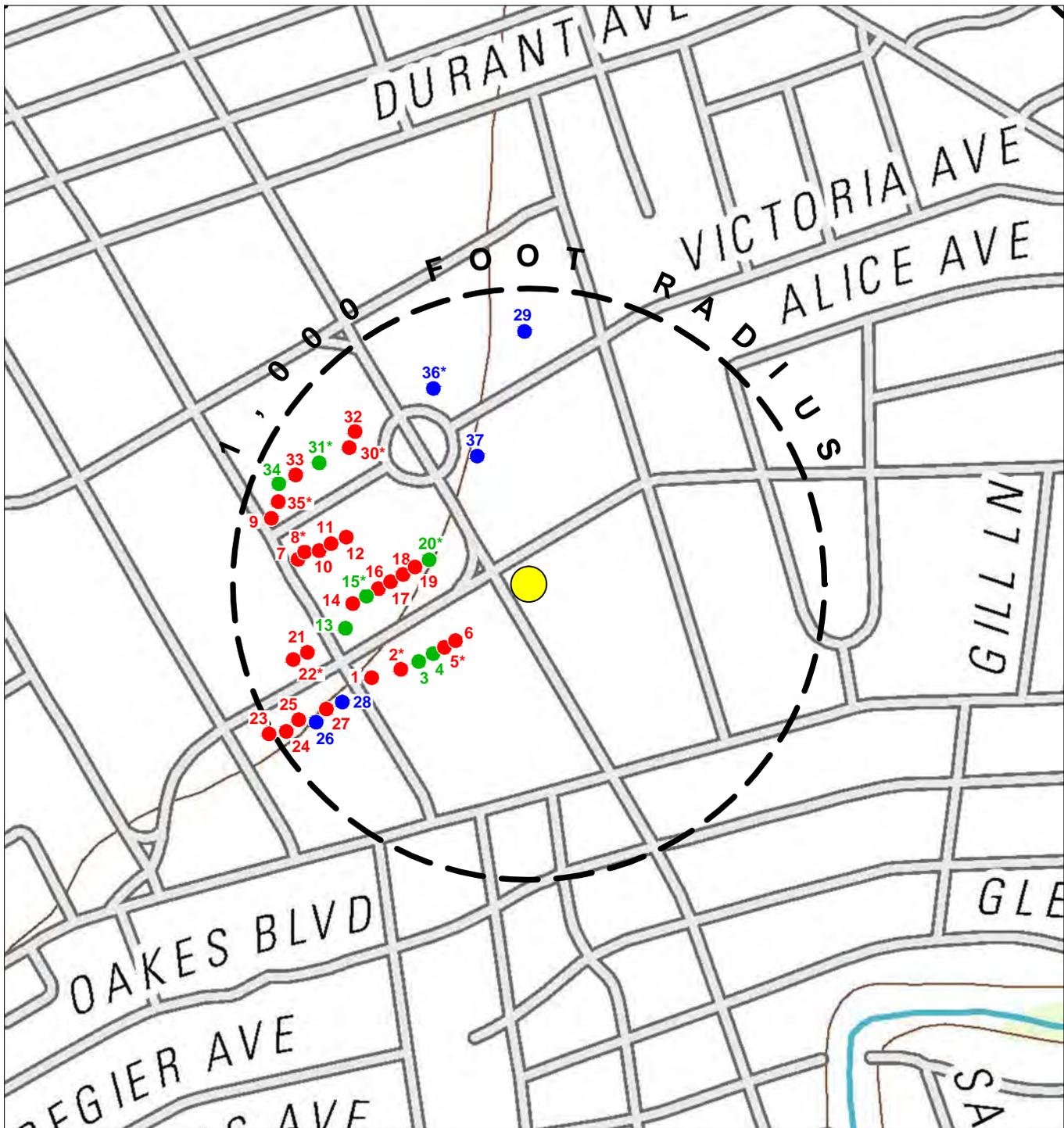
Notes:

Well Receptor Survey Data are based on the August 22, 2006 well survey conducted by Delta Environmental and a door-to-door survey conducted by ARCADIS on April 4, 2014.



Figures

CITY: SAN RAFAEL, CA (PETALUMA) DIV/GROUP: ENV DB: J. HARRIS C:\Users\jhamis\Desktop\ENV\CAD\B0047943\2014\0002\DWG\47943\N01.dwg LAYOUT: 1 SAVED: 4/9/2014 9:15 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 4/9/2014 9:43 AM BY: HARRIS, JESSICA



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., SAN LEANDRO, CALIFORNIA, 2012.



LEGEND:

- SITE LOCATION
- IRRIGATION WELL
- WATER WELL
- UNKNOWN WELL DESIGNATION

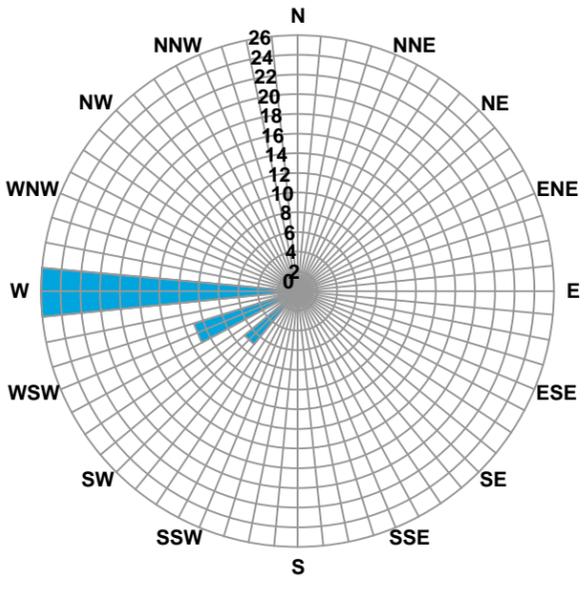
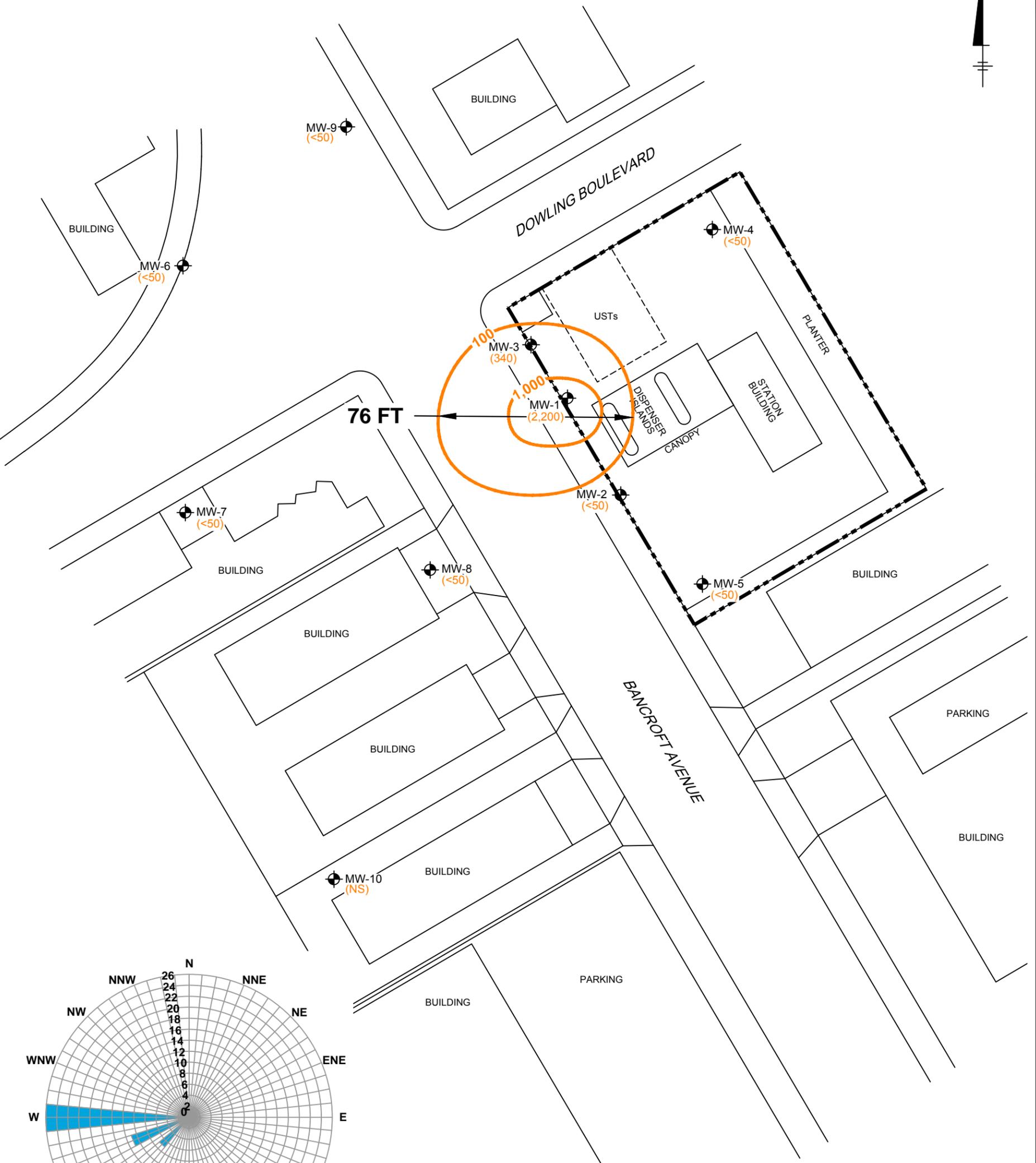
NOTES:

1. WELL LOCATIONS PROVIDED BY STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES.
2. ALL FEATURES AND LOCATIONS ARE APPROXIMATE.
3. * INDICATES RESIDENT STATED WELL IS NOT IN USE OR NOT PRESENT ON THE PROPERTY.



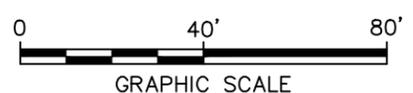
UNION OIL COMPANY OF CALIFORNIA 76 SERVICE STATION 5367 500 BANCROFT AVENUE SAN LEANDRO, CALIFORNIA	
WELL RECEPTOR LOCATIONS	
	FIGURE 1

XREFS: IMAGES: PROJECTNAME: ---
 47943X01



NOTES:

1. BASE MAP PROVIDED BY CRA, DATED 2/3/2011. BASED ON A MAP PROVIDED BY DELTA CONSULTANTS, FIGURE 2, TITLED "SITE PLAN", DATED 12/15/2010.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.



LEGEND	
	PROPERTY BOUNDARY
	MONITORING WELL
(340)	TPPH CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
	TPPH CONCENTRATION CONTOUR IN µg/L, DASHED WHERE INFERRED
(NS)	MONITORING WELL NOT SAMPLED
TPPH	TOTAL PURGEABLE PETROLEUM HYDROCARBONS
<	DETECTED BELOW LABORATORY REPORTING LIMIT

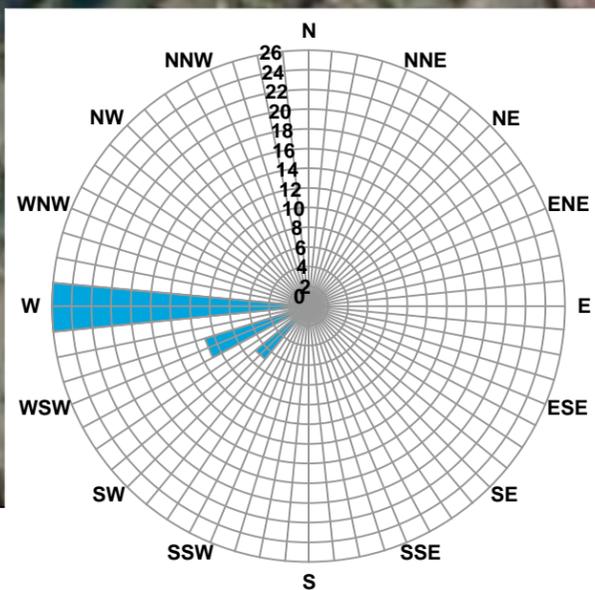
UNION OIL COMPANY OF CALIFORNIA
 76 SERVICE STATION 35-1563
 500 BANCROFT AVENUE
 SAN LEANDRO, CALIFORNIA

**TPPH ISOCONCENTRATION
 CONTOUR MAP
 FEBRUARY 12, 2014**



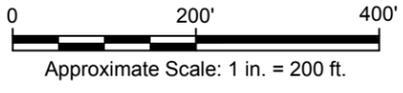
FIGURE
2

XREFS: IMAGES: PROJECTNAME: ---
 47943X01 San Leandro 2012 with aerial.jpg



- NOTES:
1. BASE MAP PROVIDED BY CRA, DATED 2/3/2011. BASED ON A MAP PROVIDED BY DELTA CONSULTANTS, FIGURE 2, TITLED "SITE PLAN", DATED 12/15/2010.
 2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
 3. GROUNDWATER SAMPLES AND TPPH DATA FROM SITE MONITORING WELLS WERE COLLECTED ON FEBRUARY 12, 2014.

REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., SAN LEANDRO, CALIFORNIA, 2012.



- LEGEND
- PROPERTY BOUNDARY
 - IRRIGATION WELL
 - WATER WELL
 - UNKNOWN WELL DESIGNATION
 - TPPH CONCENTRATION CONTOUR (µg/L) (2/12/2014)
 - TPPH TOTAL PURGEABLE PETROLEUM HYDROCARBONS
 - µg/L MICROGRAMS PER LITER
 - * INDICATES RESIDENT STATED WELL IS NOT IN USE OR NOT PRESENT ON THE PROPERTY

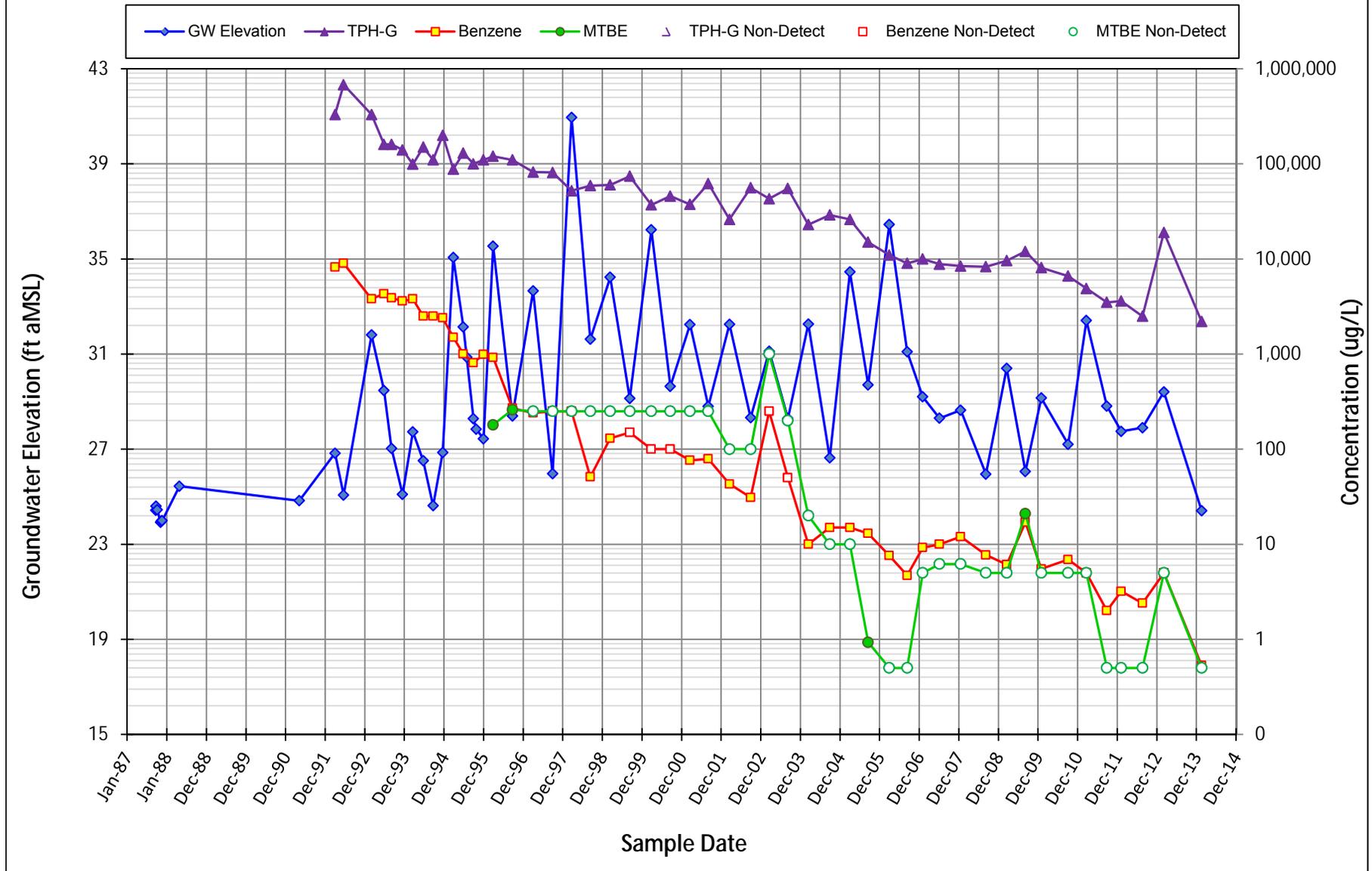
UNION OIL COMPANY OF CALIFORNIA
 76 SERVICE STATION 5367
 500 BANCROFT AVENUE
 SAN LEANDRO, CALIFORNIA

TPPH ISOCONCENTRATION CONTOUR MAP AND WELL RECEPTOR LOCATIONS



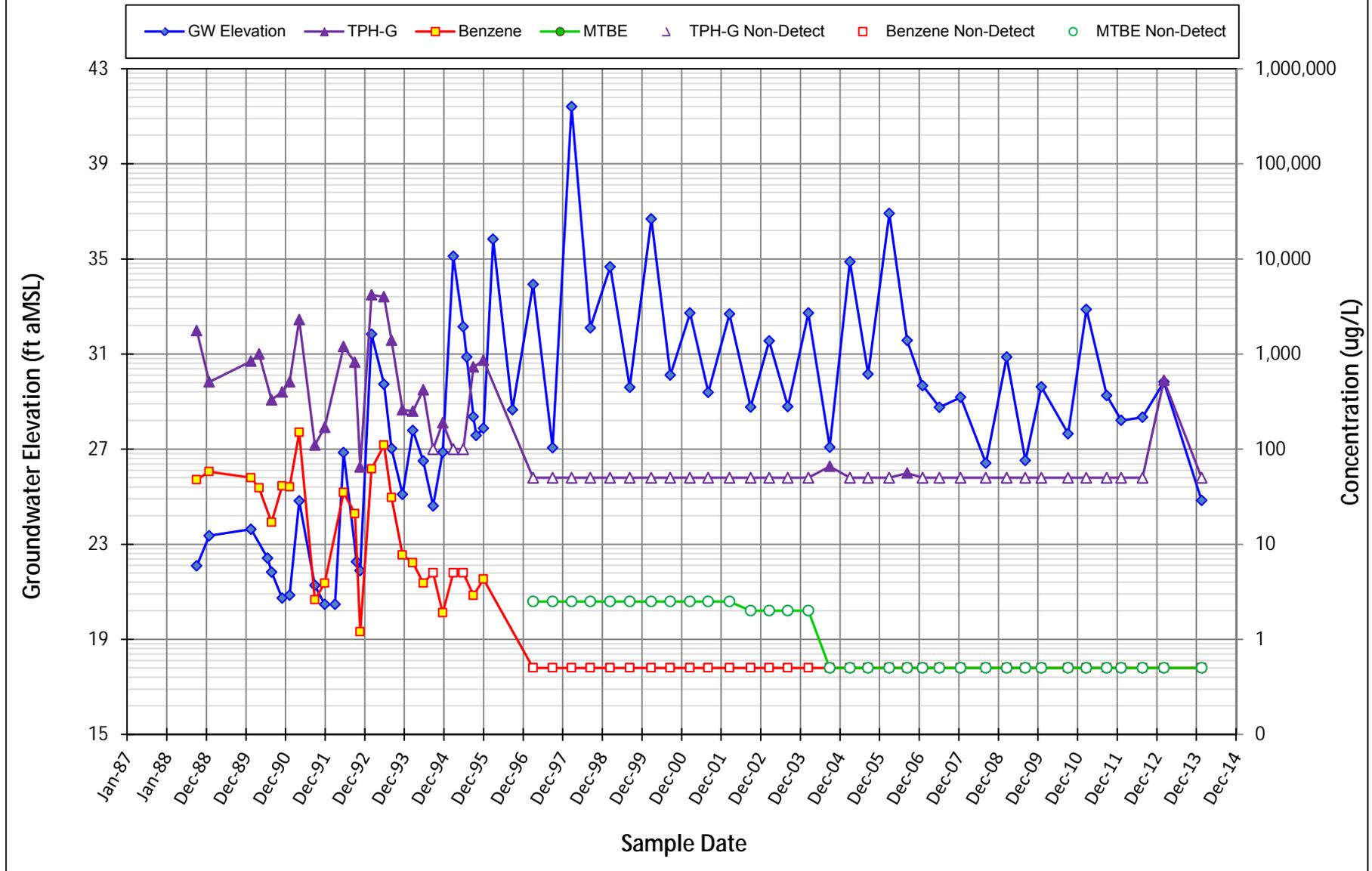
**Temporal Monitoring Trend
Graphs**

Temporal Monitoring Trends for MW-1



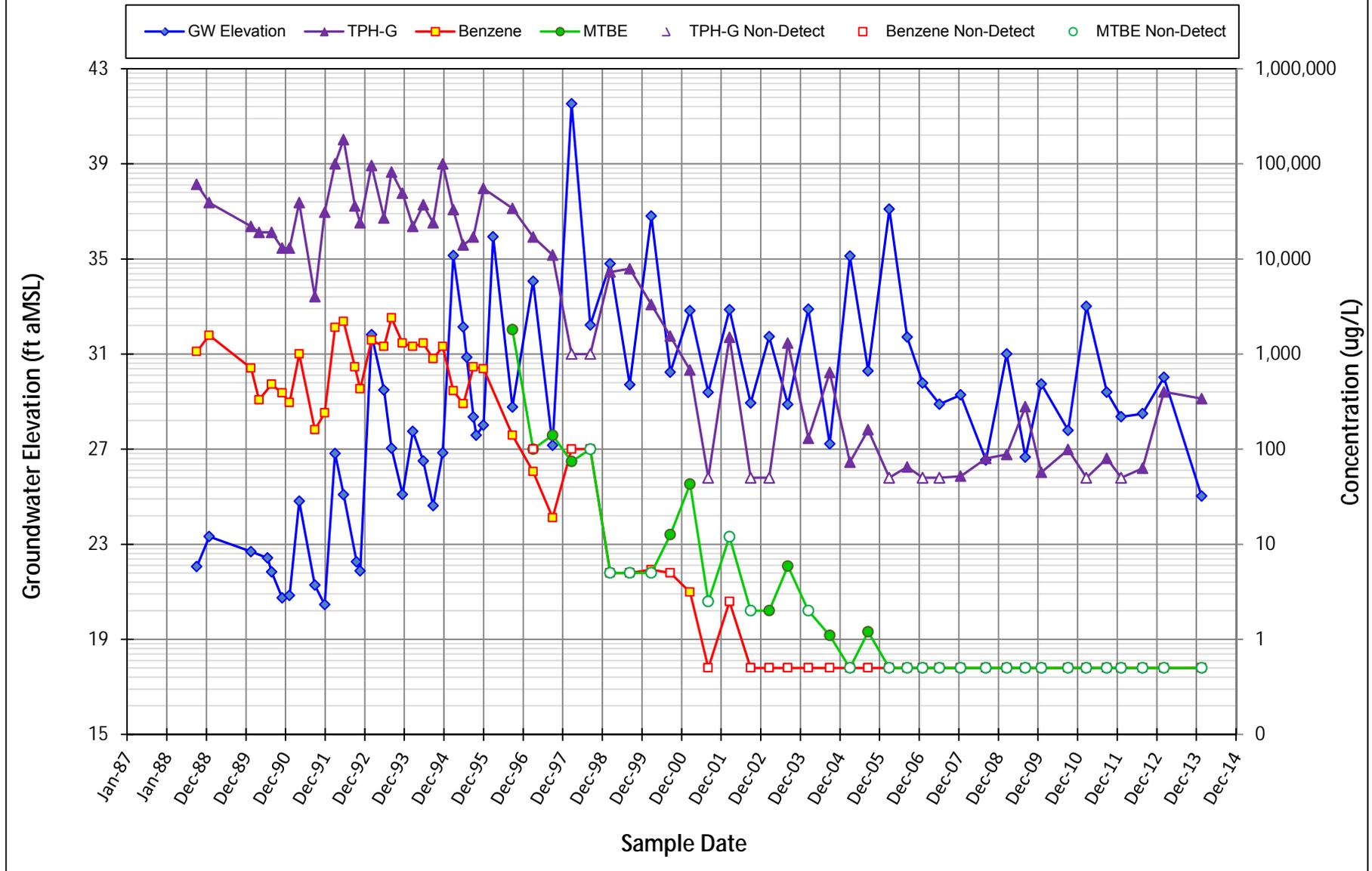
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-2



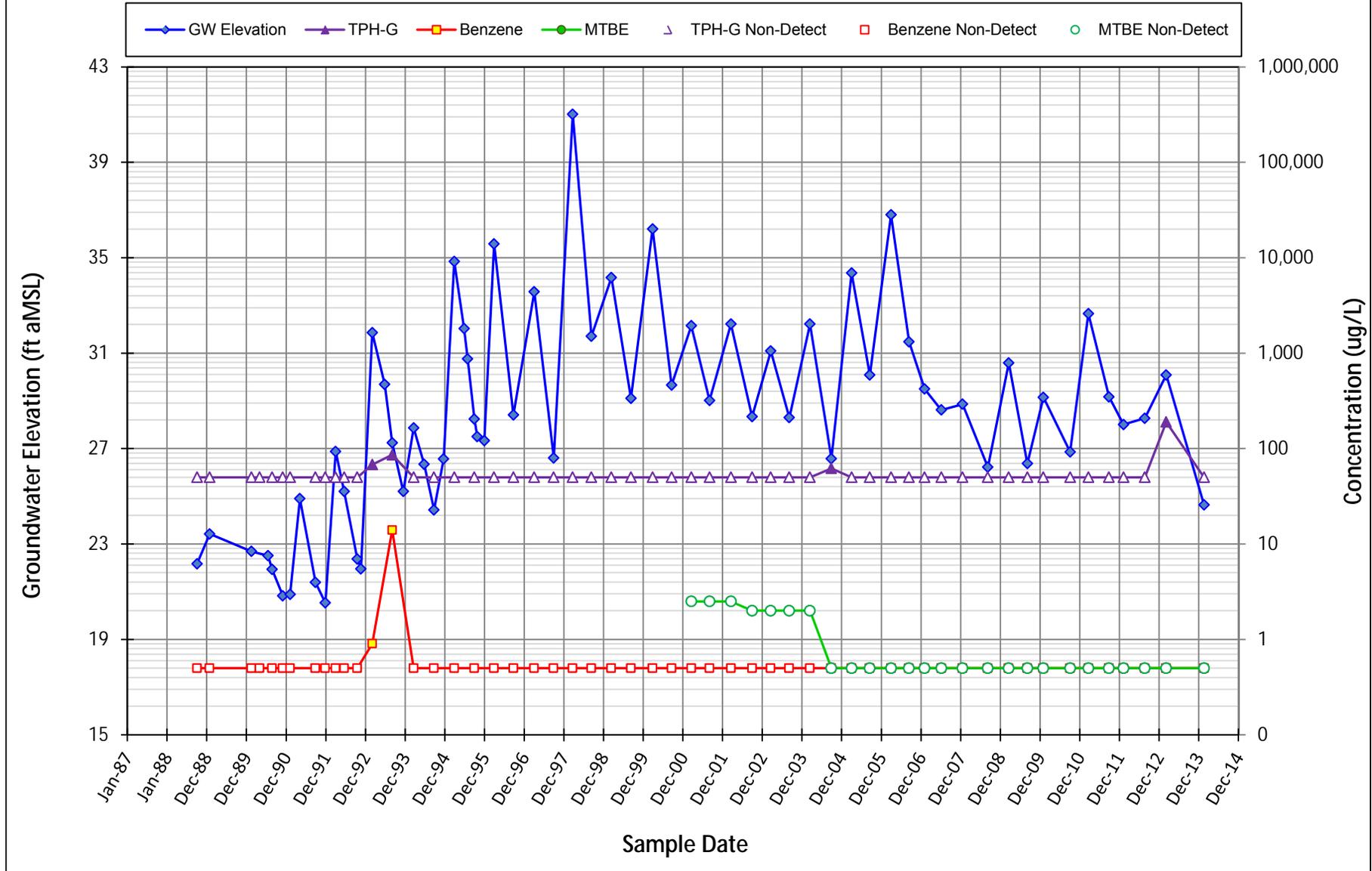
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-3



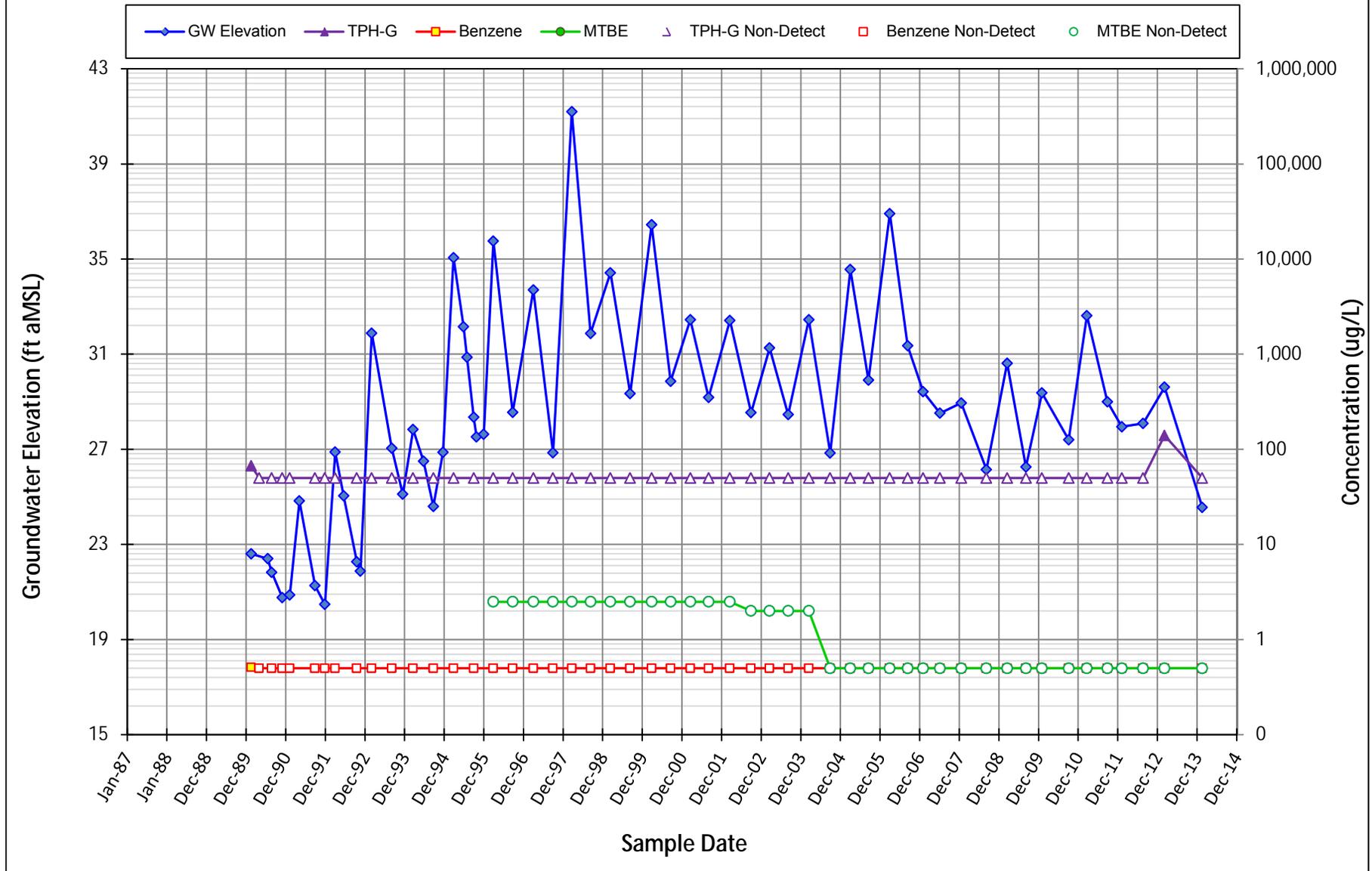
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-4



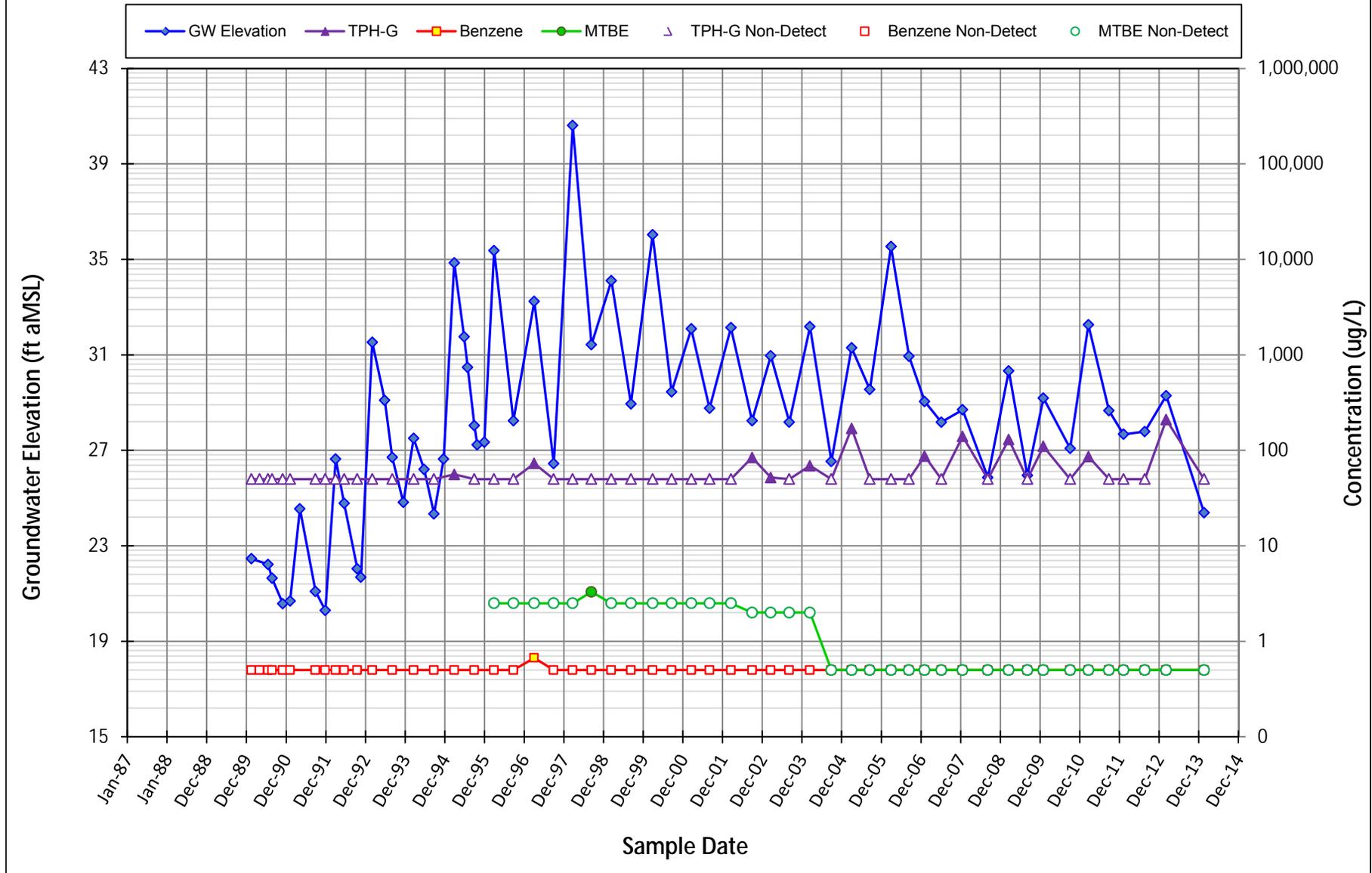
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-5



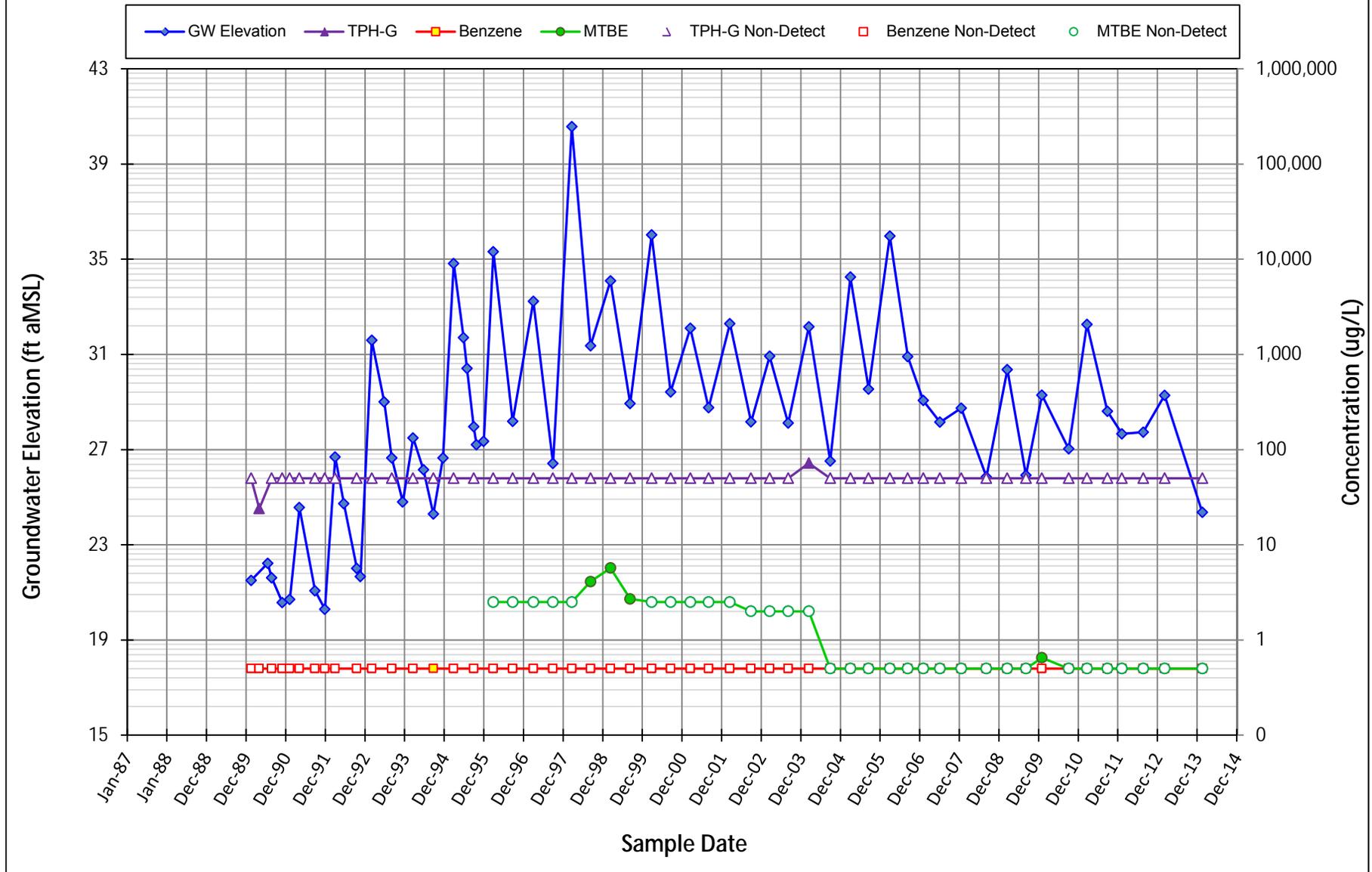
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-6



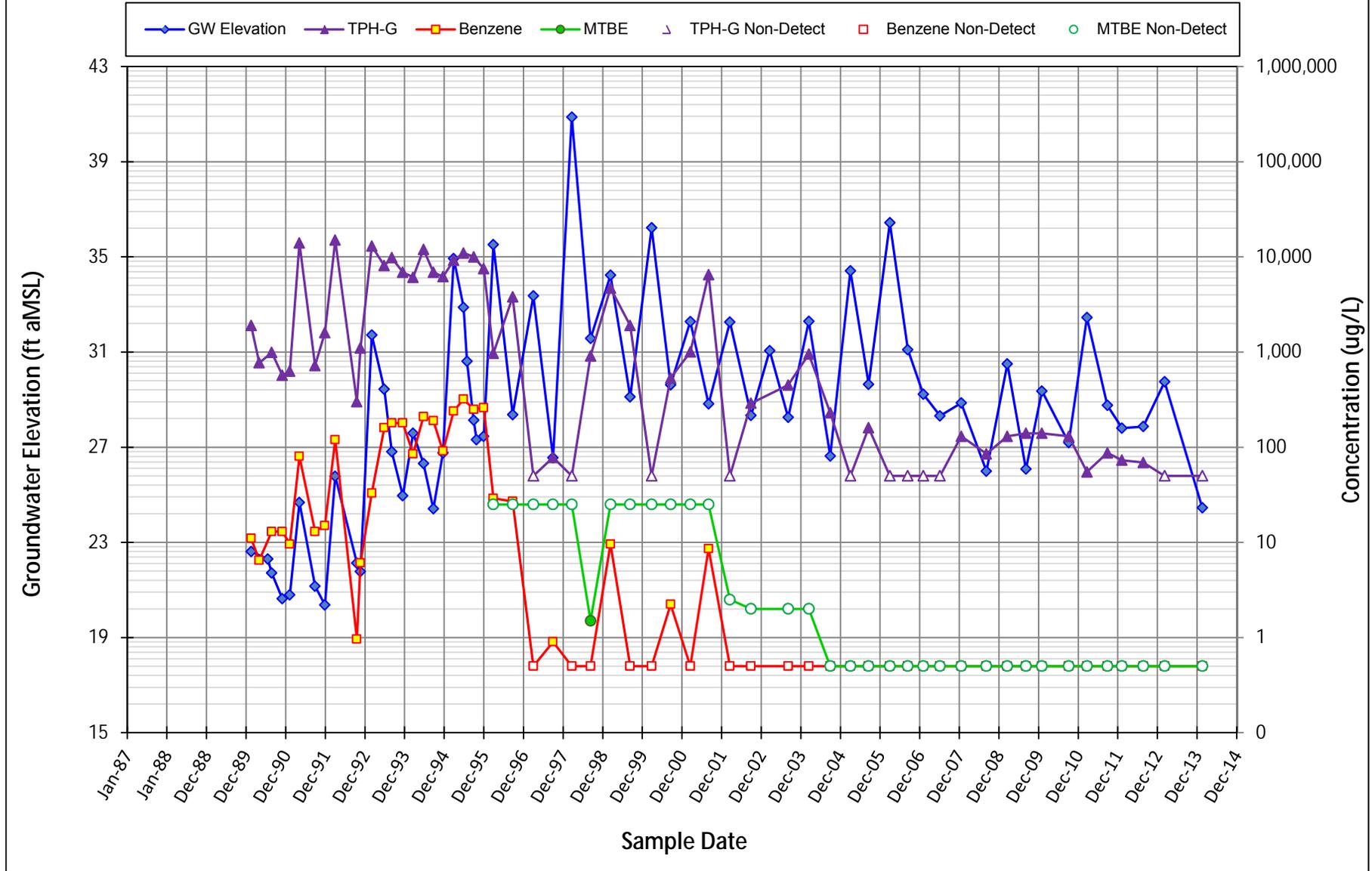
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-7



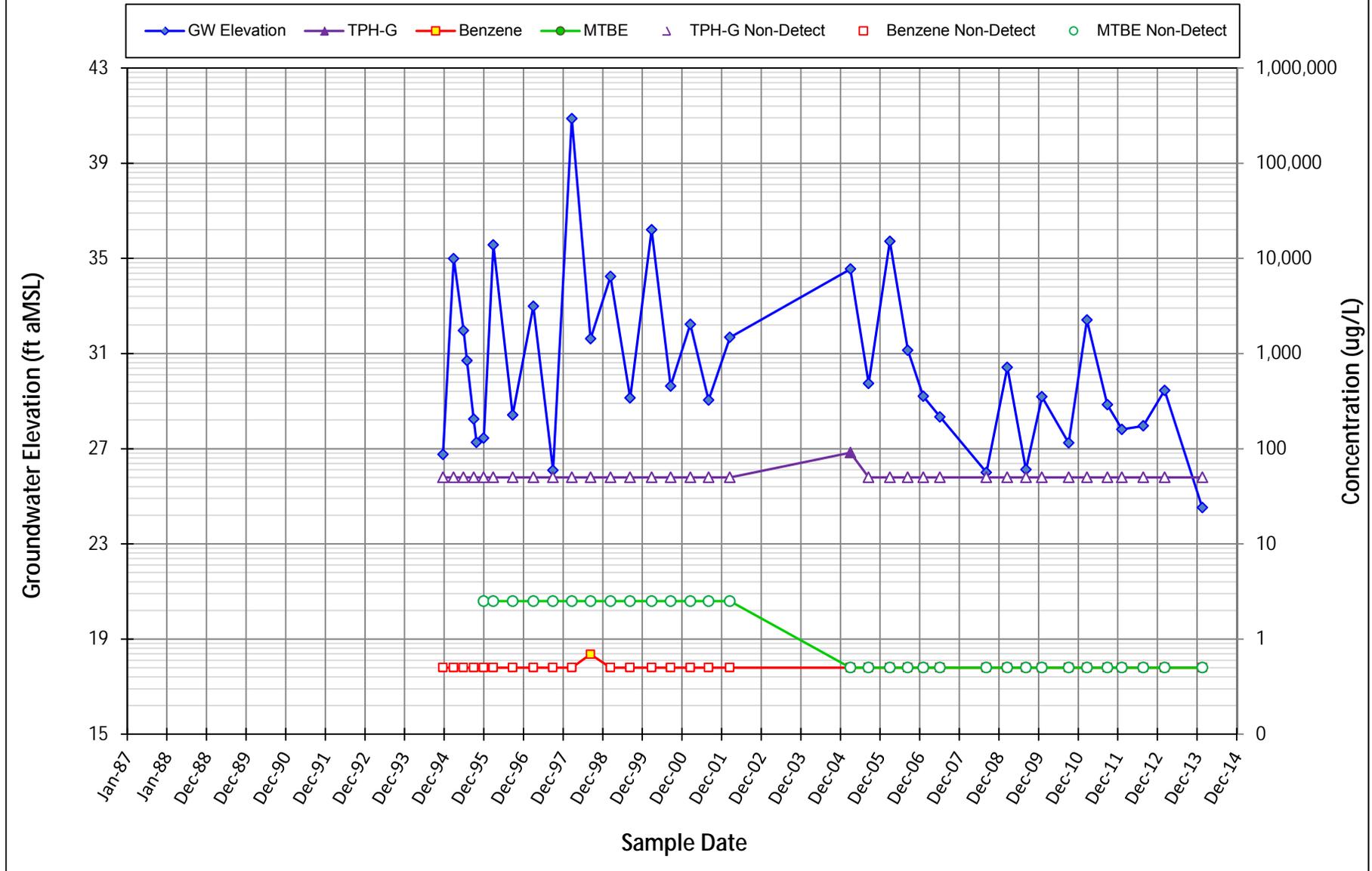
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-8



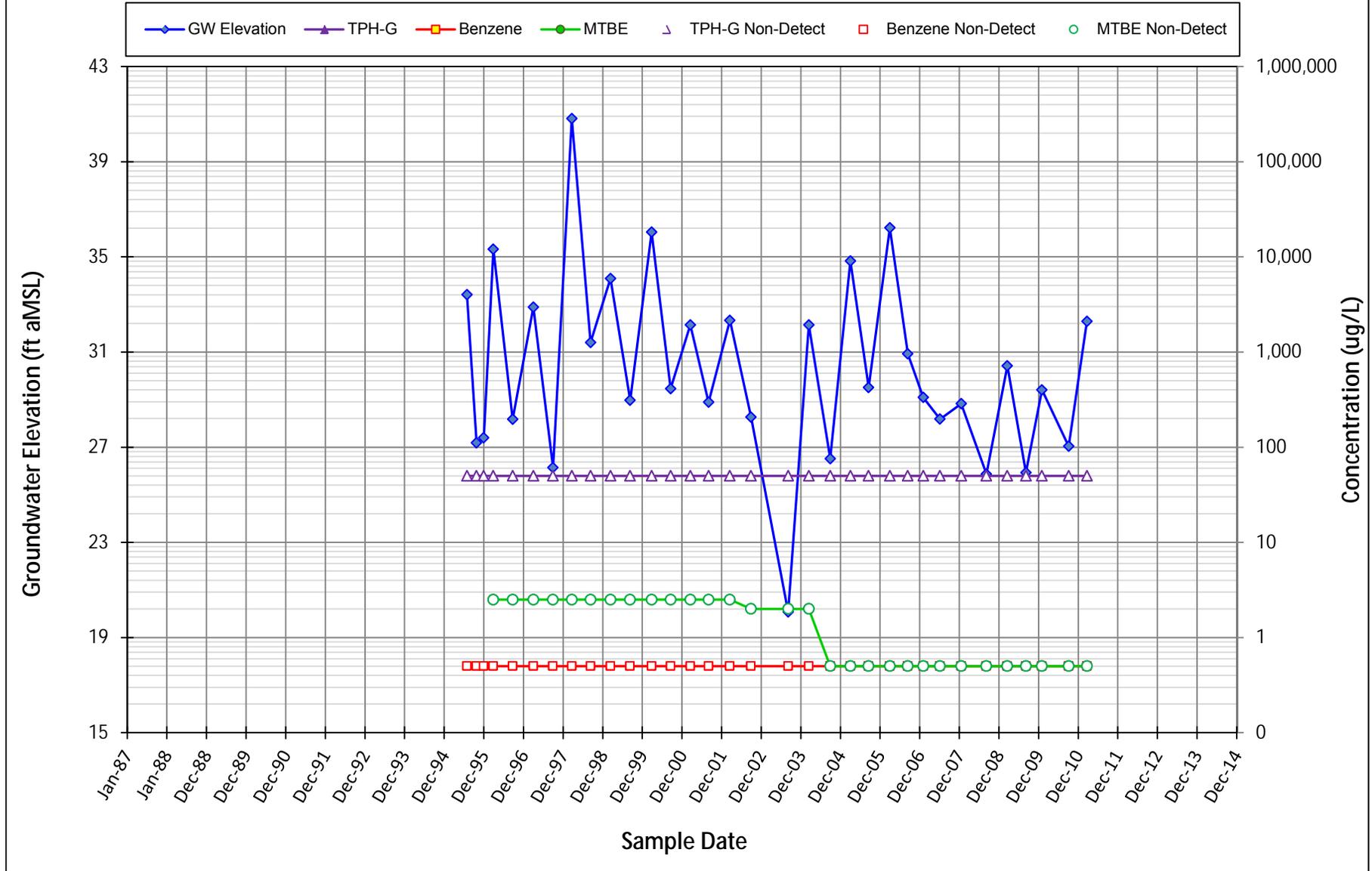
Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-9



Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter

Temporal Monitoring Trends for MW-10



Notes:
 ft aMSL = Feet above Mean Sea Level
 ug/L = Micrograms per liter