

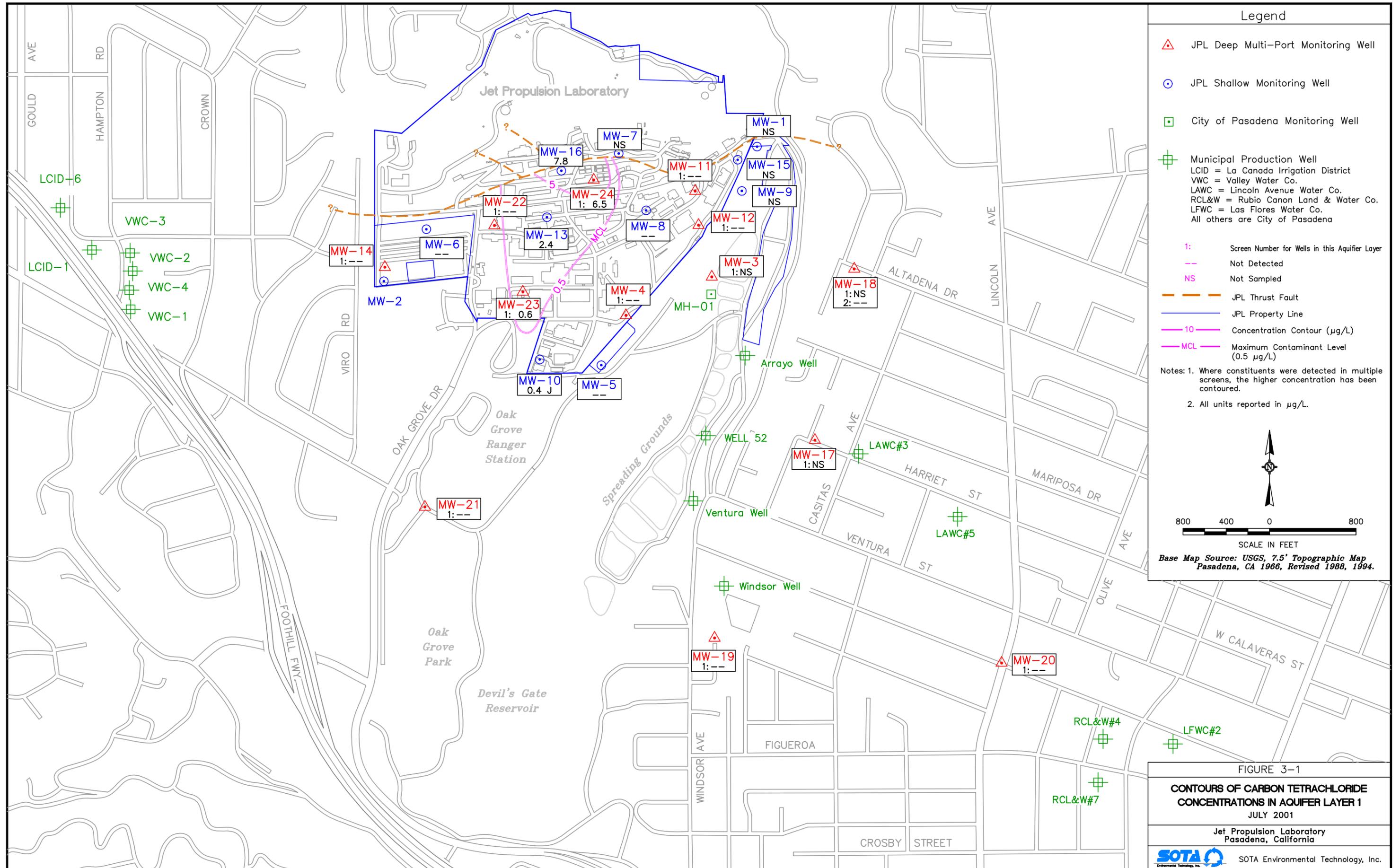
Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWG = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena


 800 400 0 800
 SCALE IN FEET
 Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 1-1
LOCATIONS OF JPL GROUNDWATER MONITORING WELLS AND NEARBY MUNICIPAL PRODUCTION WELLS
 Jet Propulsion Laboratory
 Pasadena, California

 SOTA Environmental Technology, Inc.

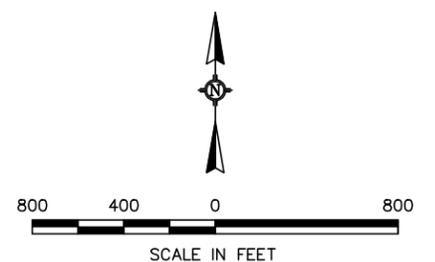


Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

- 1: Screen Number for Wells in this Aquifer Layer
- Not Detected
- NS Not Sampled
- JPL Thrust Fault
- JPL Property Line
- 10 Concentration Contour (µg/L)
- MCL Maximum Contaminant Level (0.5 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.



Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-1
CONTOURS OF CARBON TETRACHLORIDE CONCENTRATIONS IN AQUIFER LAYER 1
 JULY 2001
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.

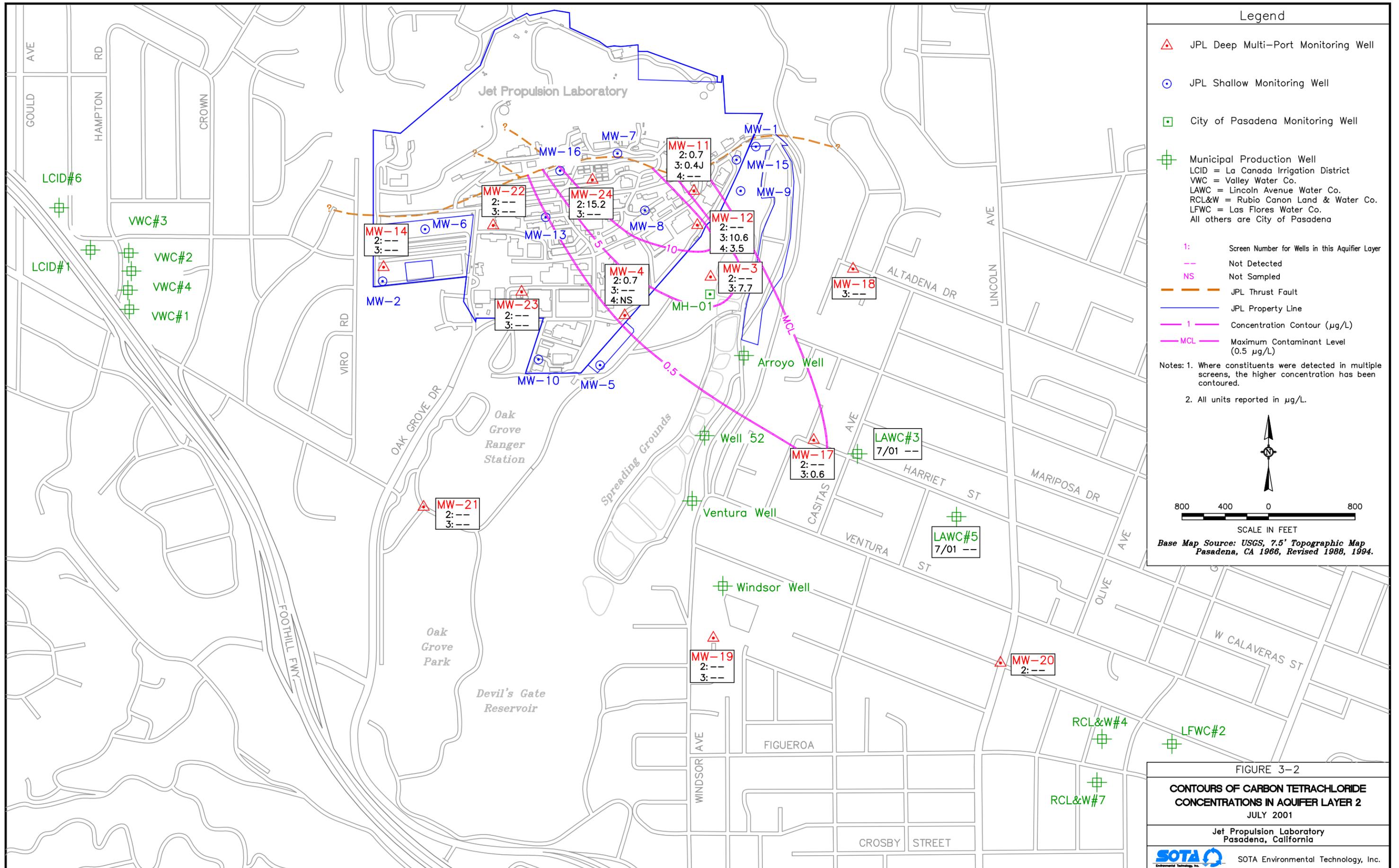
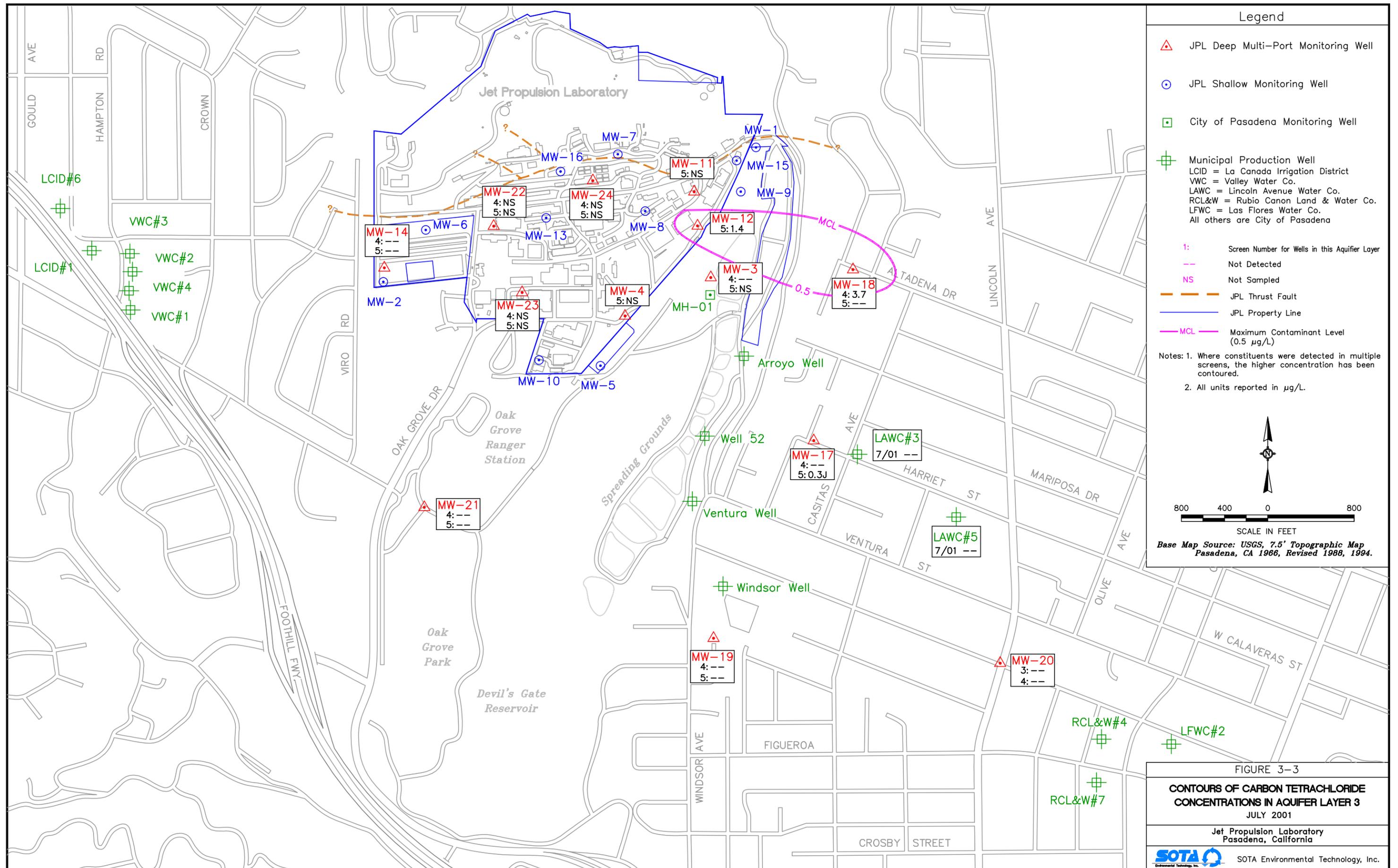


FIGURE 3-2
CONTOURS OF CARBON TETRACHLORIDE CONCENTRATIONS IN AQUIFER LAYER 2
 JULY 2001
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAW = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

MCL Maximum Contaminant Level (0.5 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.



800 400 0 800

SCALE IN FEET

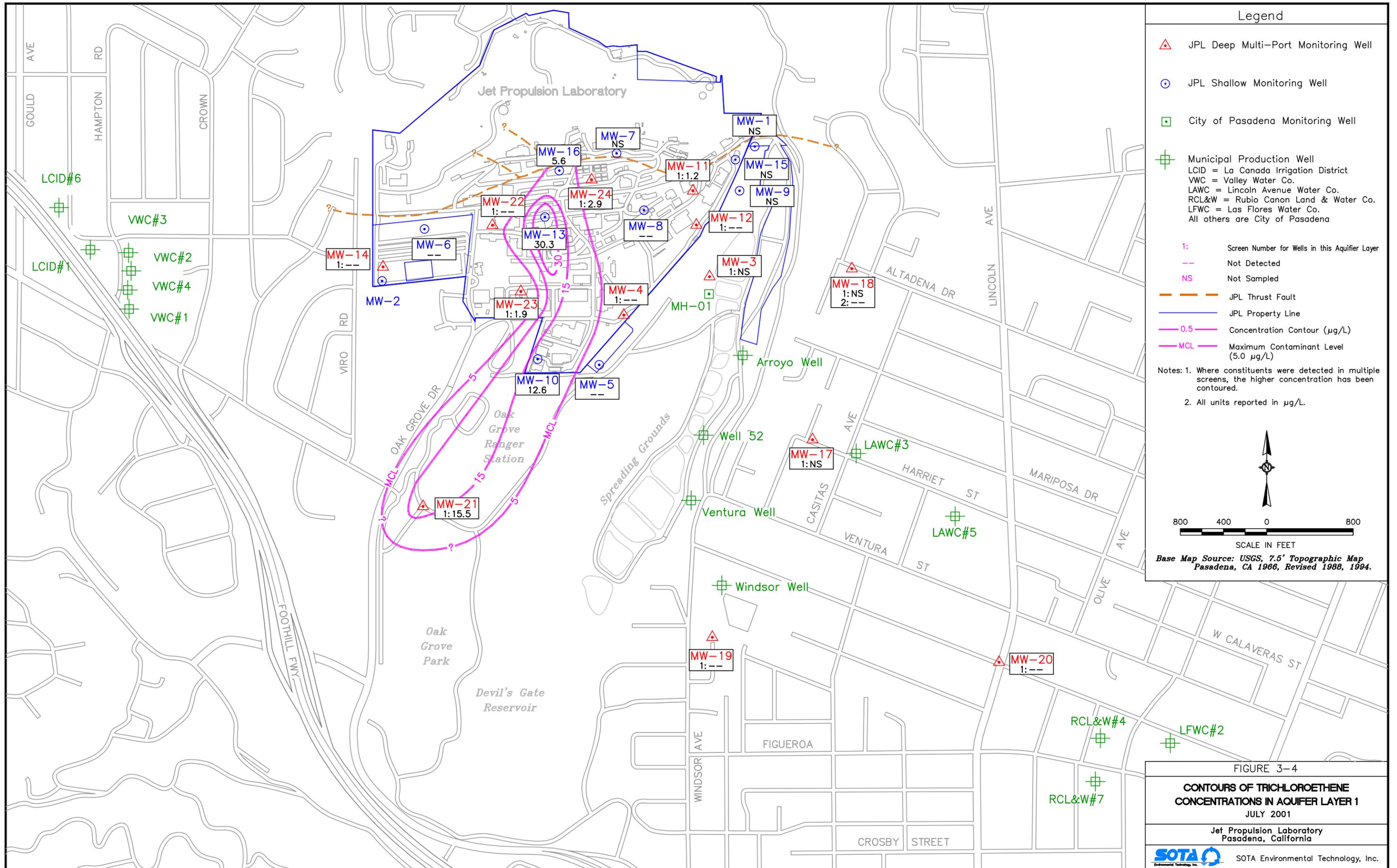
Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-3

CONTOURS OF CARBON TETRACHLORIDE CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer
 --- Not Detected
 NS Not Sampled

--- JPL Thrust Fault
--- JPL Property Line
--- 0.5 Concentration Contour (µg/L)
--- MCL Maximum Contaminant Level (5.0 µg/L)

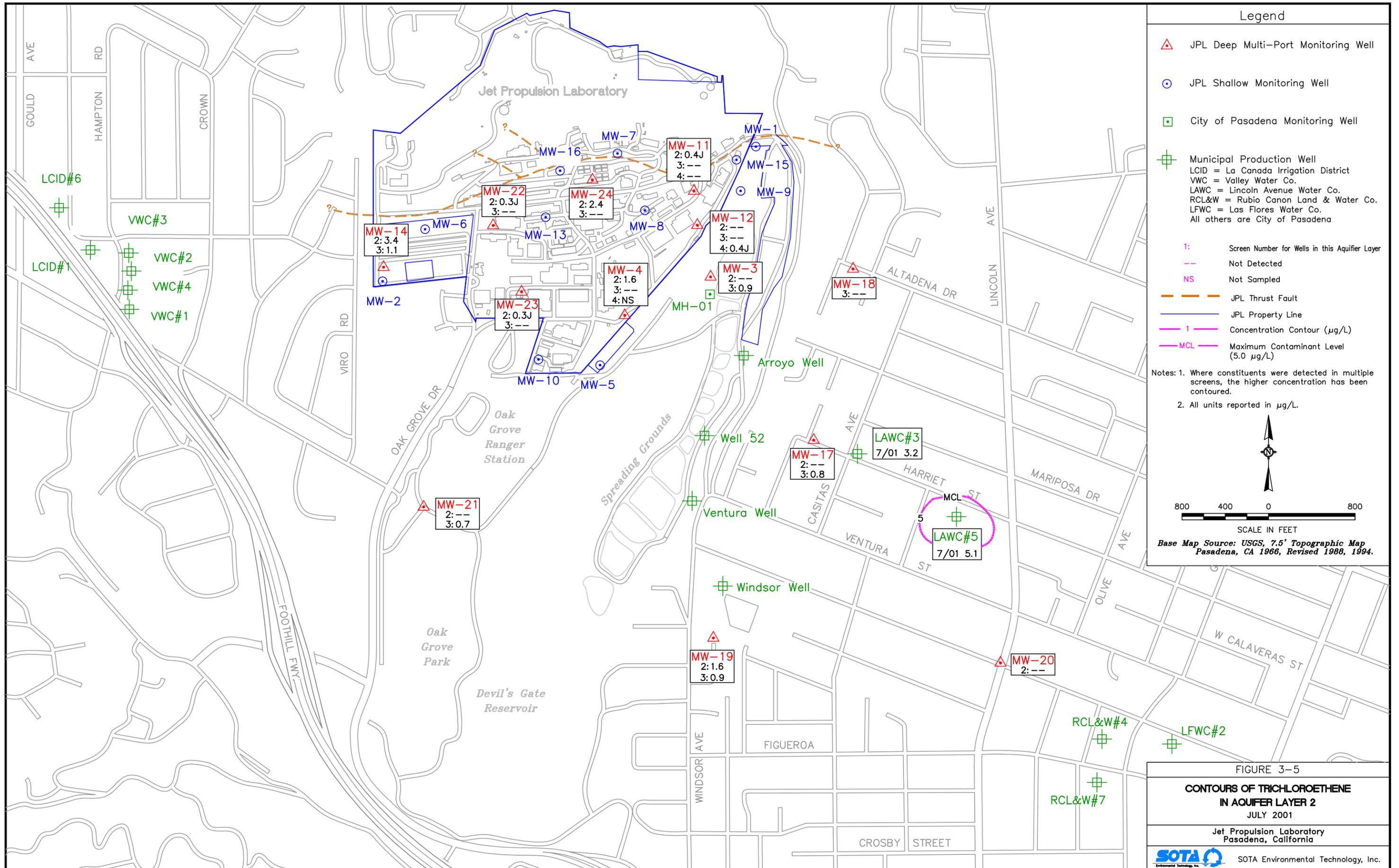
Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.



800 400 0 800
SCALE IN FEET

Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-4
**CONTOURS OF TRICHLOROETHENE
 CONCENTRATIONS IN AQUIFER LAYER 1
 JULY 2001**
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer
 --- Not Detected
 NS Not Sampled

- JPL Thrust Fault
- JPL Property Line
- 1 Concentration Contour (µg/L)
- MCL Maximum Contaminant Level (5.0 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800
 SCALE IN FEET
 Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-5
**CONTOURS OF TRICHLOROETHENE
 IN AQUIFER LAYER 2**
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.

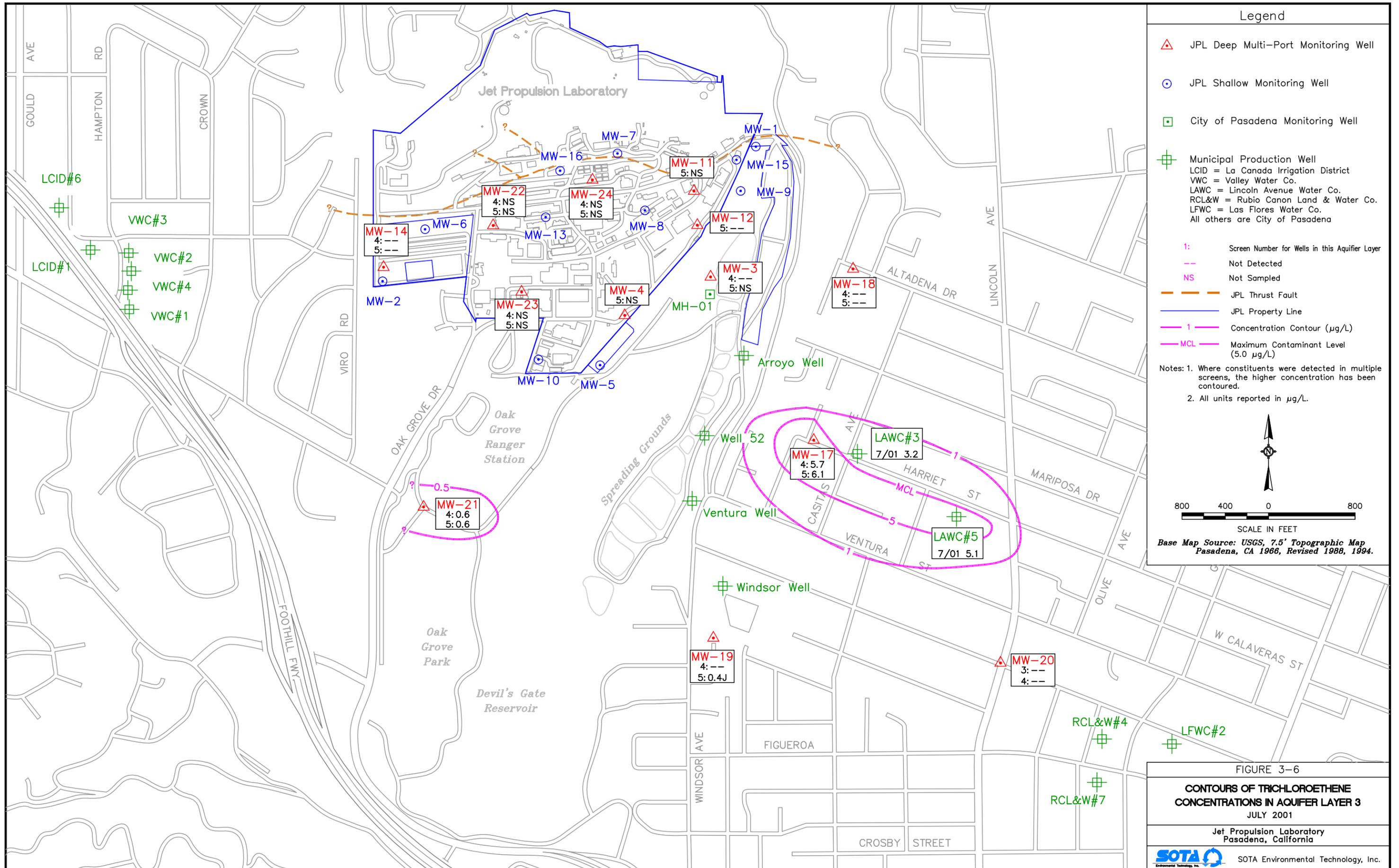


FIGURE 3-6
CONTOURS OF TRICHLOROETHENE CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.

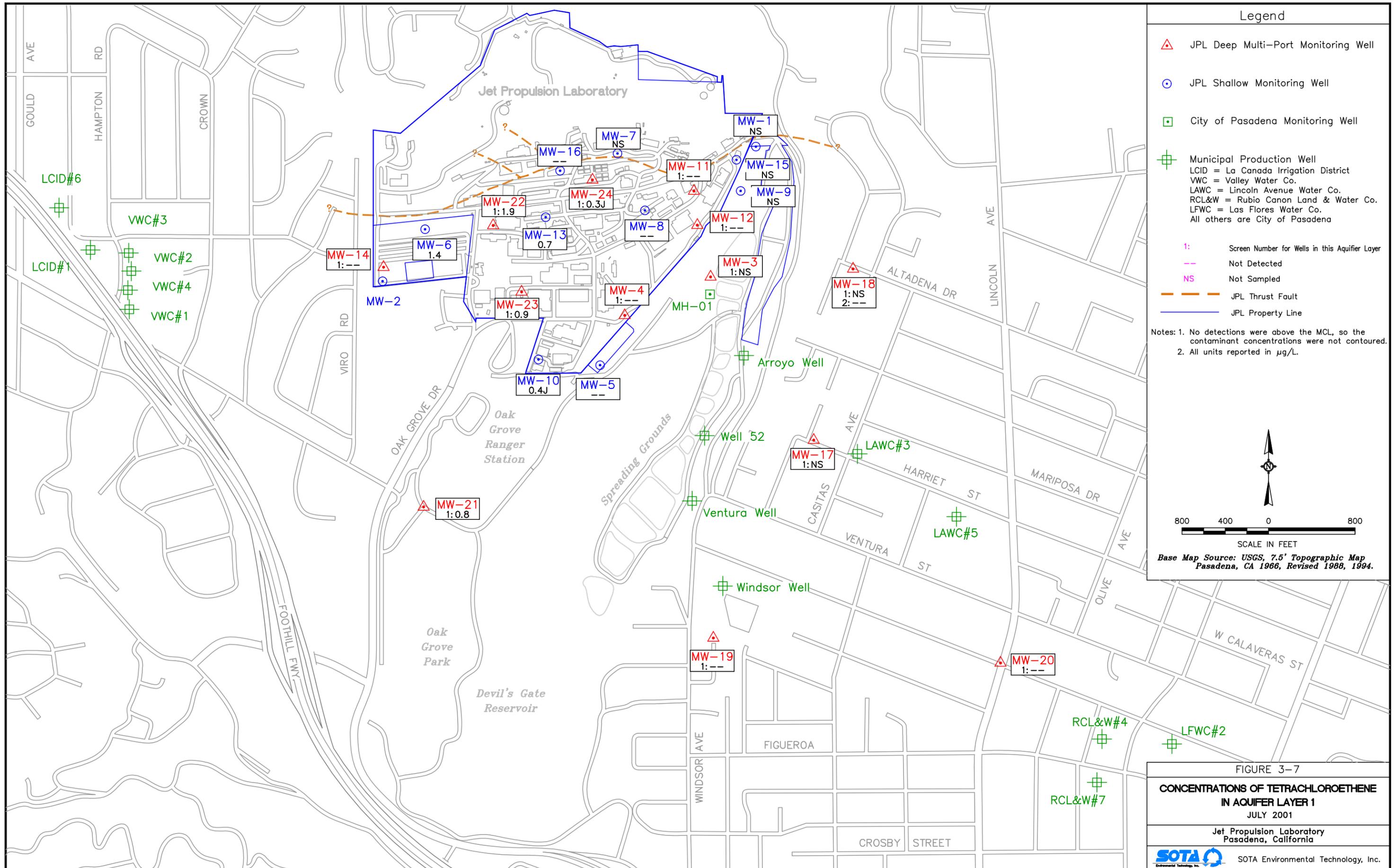
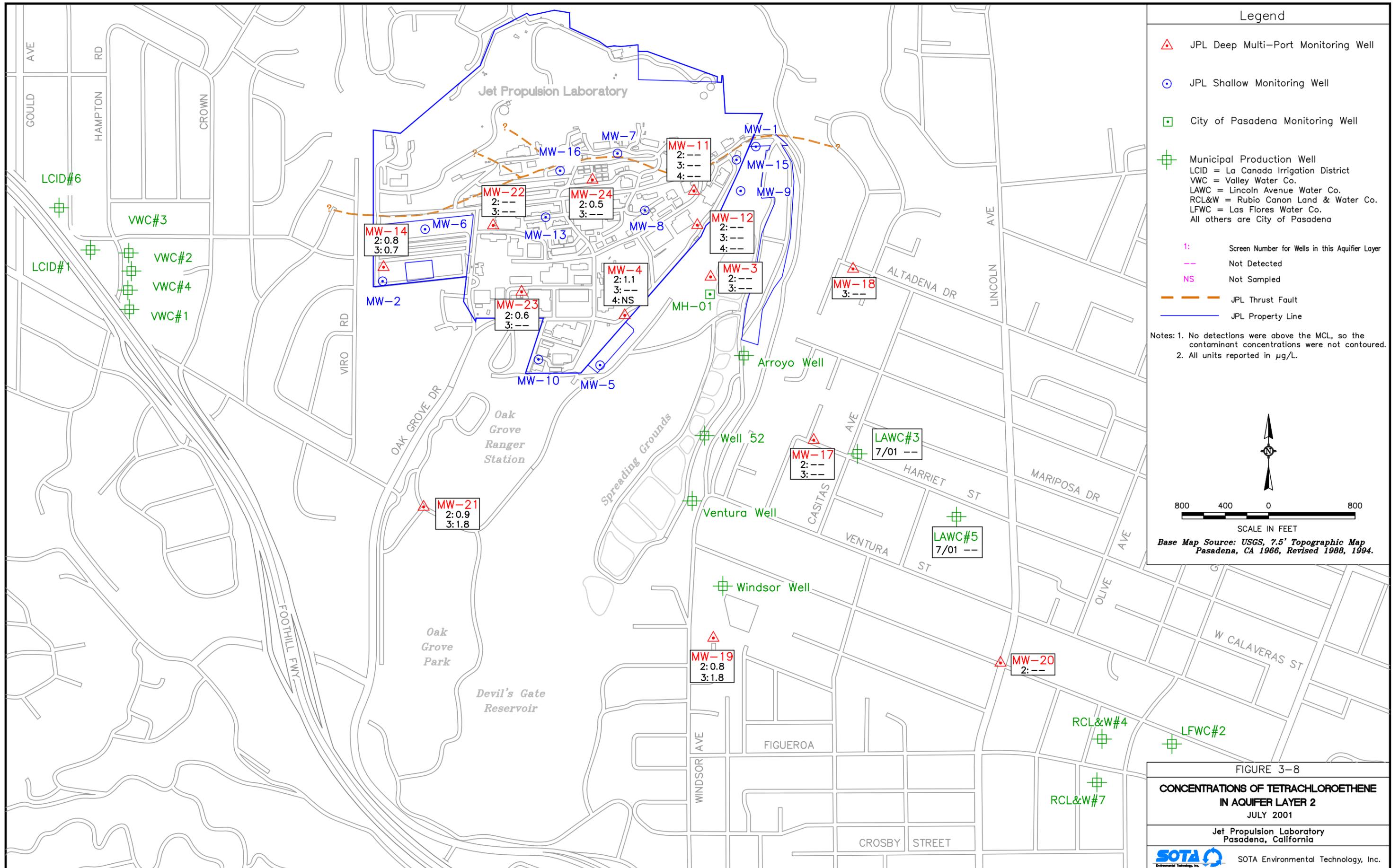


FIGURE 3-7
**CONCENTRATIONS OF TETRACHLOROETHENE
 IN AQUIFER LAYER 1
 JULY 2001**
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAW = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer
 --- Not Detected
 NS Not Sampled

--- JPL Thrust Fault
--- JPL Property Line

Notes: 1. No detections were above the MCL, so the contaminant concentrations were not contoured.
 2. All units reported in µg/L.

SCALE IN FEET

800 400 0 800

Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

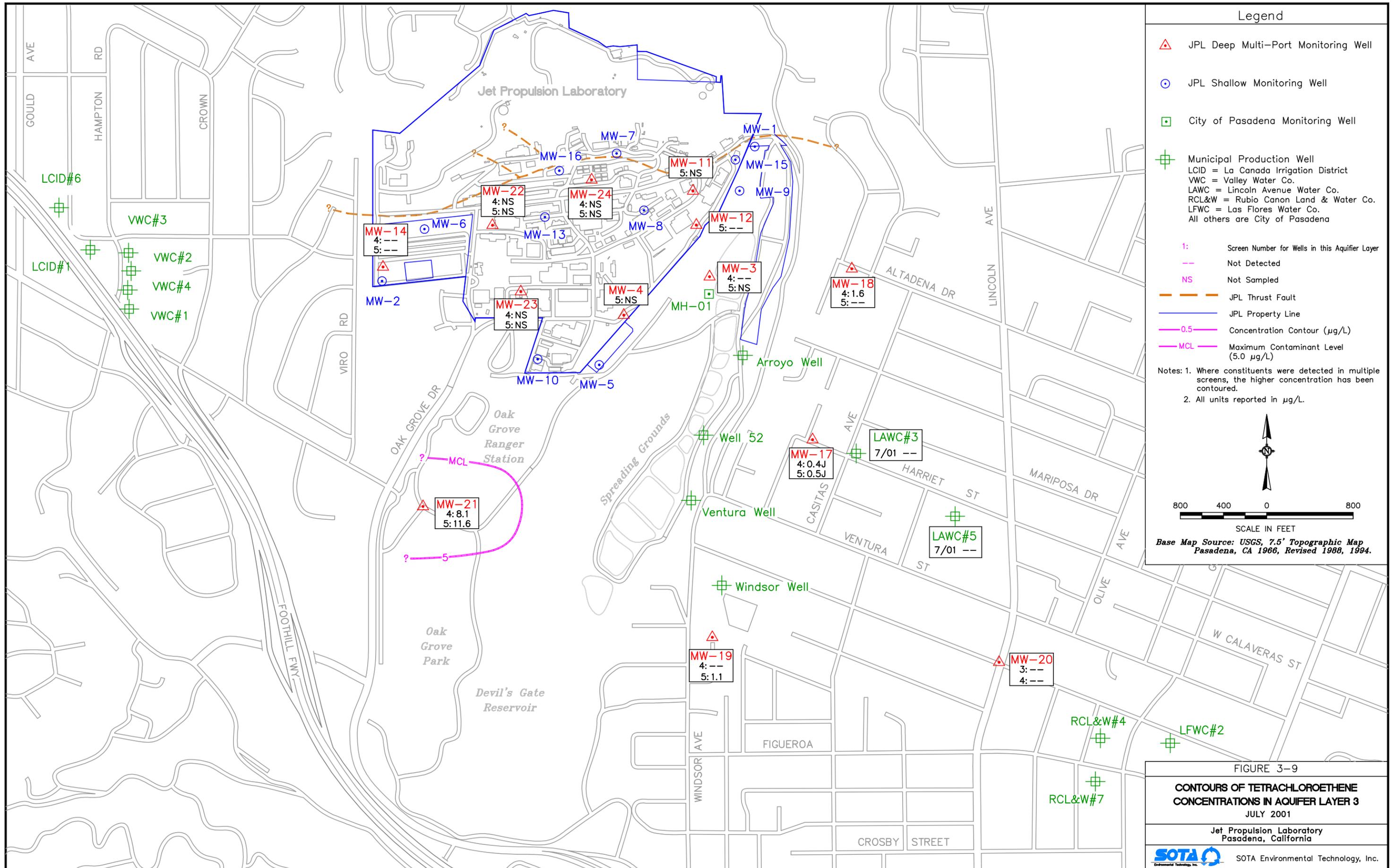
FIGURE 3-8

**CONCENTRATIONS OF TETRACHLOROETHENE
 IN AQUIFER LAYER 2
 JULY 2001**

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.

Well ID	Screen 1	Screen 2	Screen 3	Screen 4
MW-1	---	---	---	---
MW-2	---	---	---	---
MW-3	---	---	---	---
MW-4	2: 1.1	3: ---	4: NS	---
MW-5	---	---	---	---
MW-6	---	---	---	---
MW-7	---	---	---	---
MW-8	---	---	---	---
MW-9	---	---	---	---
MW-10	---	---	---	---
MW-11	---	---	---	---
MW-12	---	---	---	---
MW-13	---	---	---	---
MW-14	2: 0.8	3: 0.7	---	---
MW-15	---	---	---	---
MW-16	---	---	---	---
MW-17	---	---	---	---
MW-18	---	---	---	---
MW-19	2: 0.8	3: 1.8	---	---
MW-20	---	---	---	---
MW-21	2: 0.9	3: 1.8	---	---
MW-22	---	---	---	---
MW-23	2: 0.6	3: ---	---	---
MW-24	2: 0.5	3: ---	---	---
MH-01	---	---	---	---
LCID#1	---	---	---	---
LCID#6	---	---	---	---
VWC#1	---	---	---	---
VWC#2	---	---	---	---
VWC#3	---	---	---	---
VWC#4	---	---	---	---
LAWC#3	7/01	---	---	---
LAWC#5	7/01	---	---	---
RCL&W#4	---	---	---	---
RCL&W#7	---	---	---	---
LFWC#2	---	---	---	---



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

- 1: Screen Number for Wells in this Aquifer Layer
- Not Detected
- NS Not Sampled
- - - - JPL Thrust Fault
- JPL Property Line
- 0.5 Concentration Contour (µg/L)
- MCL Maximum Contaminant Level (5.0 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.





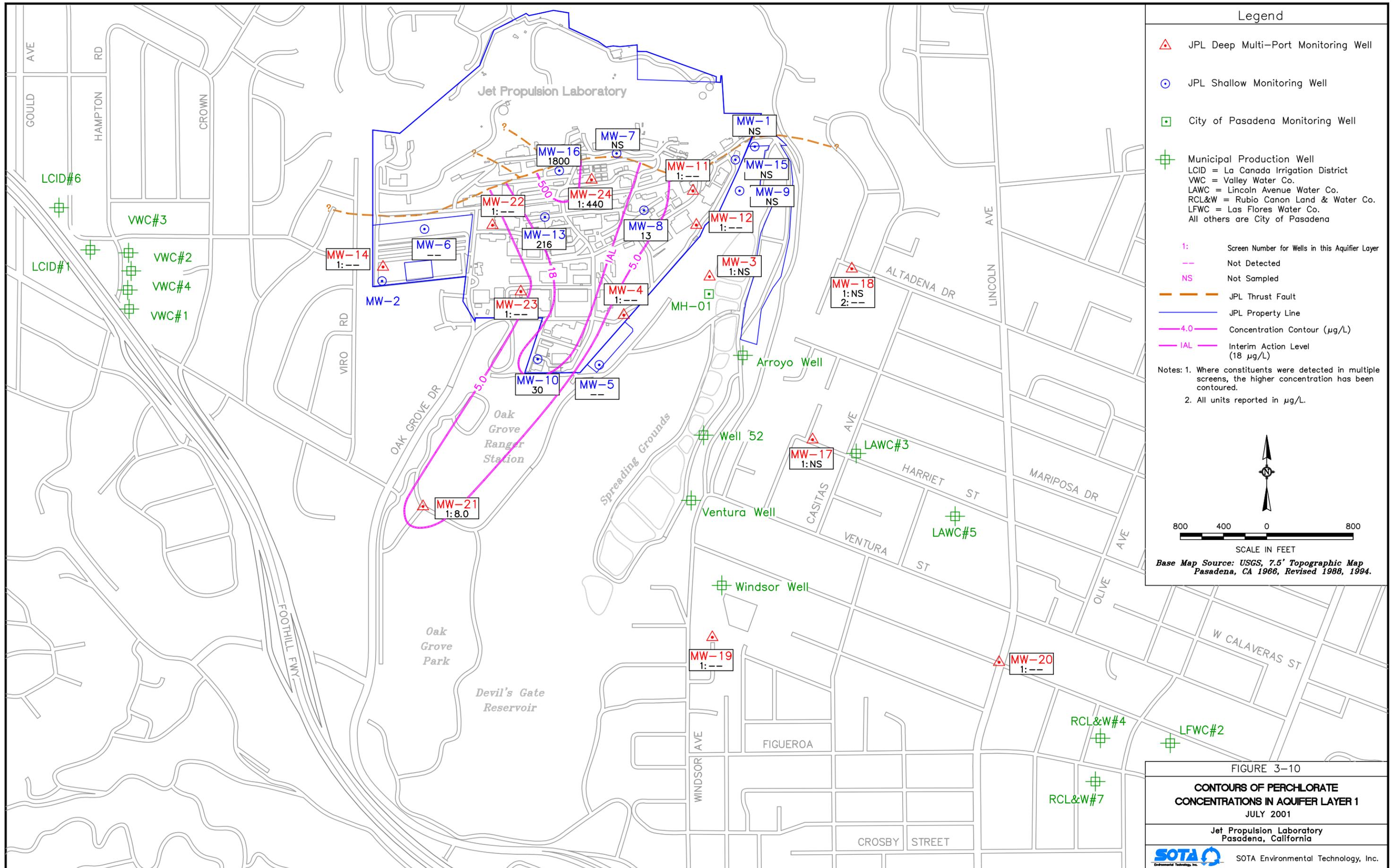
SCALE IN FEET

Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-9
**CONTOURS OF TETRACHLOROETHENE
 CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001**

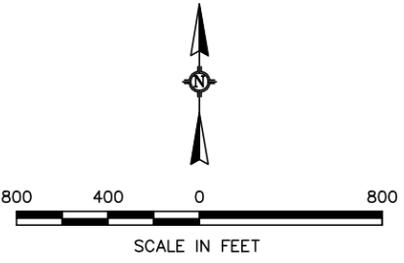
Jet Propulsion Laboratory
 Pasadena, California

 SOTA Environmental Technology, Inc.



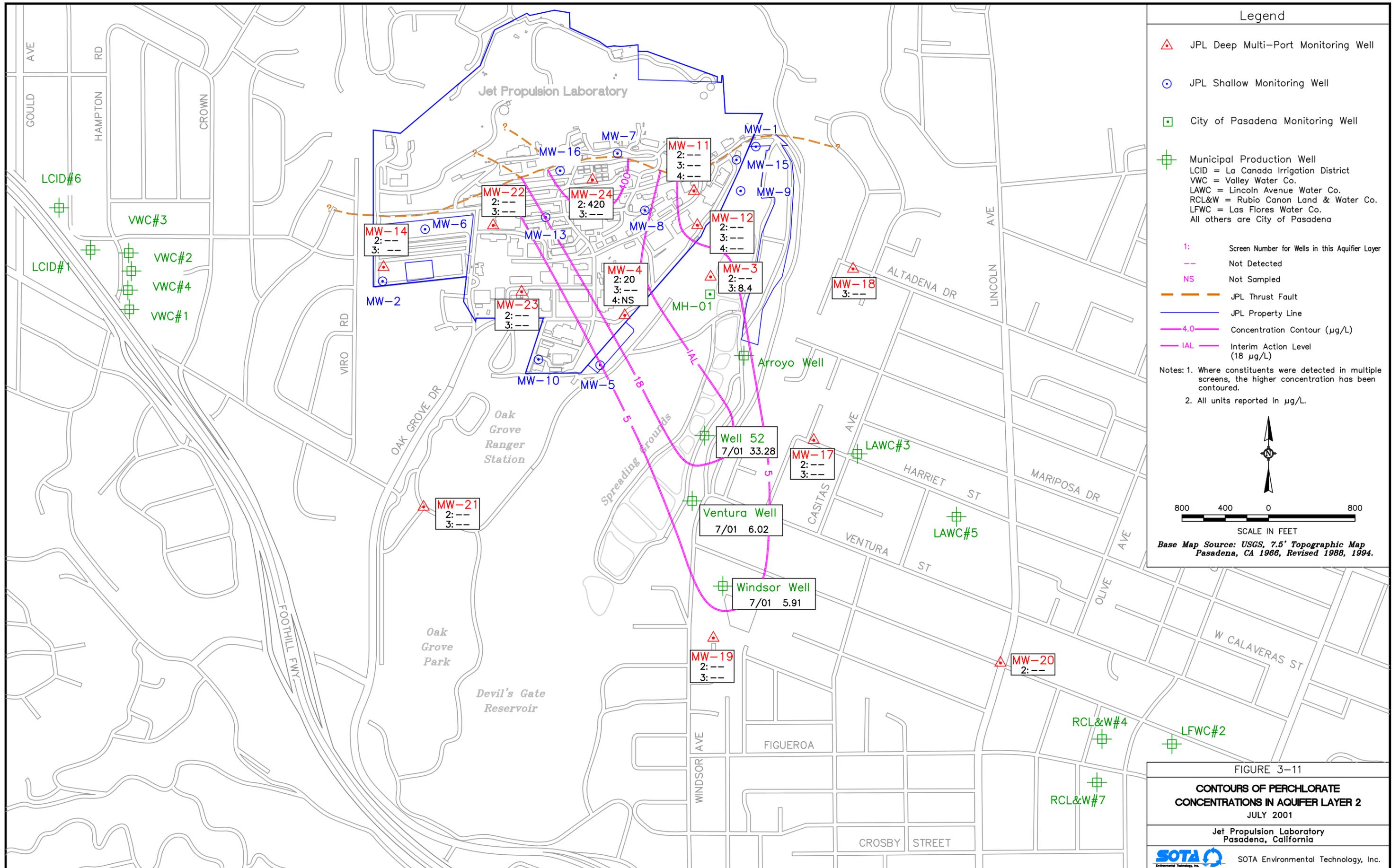
Legend

- ▲ JPL Deep Multi-Port Monitoring Well
 - JPL Shallow Monitoring Well
 - City of Pasadena Monitoring Well
 - ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAW = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena
 - 1: Screen Number for Wells in this Aquifer Layer
 - Not Detected
 - NS Not Sampled
 - JPL Thrust Fault
 - JPL Property Line
 - 4.0 Concentration Contour (µg/L)
 - IAL Interm Action Level (18 µg/L)
- Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.



Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-10
CONTOURS OF PERCHLORATE CONCENTRATIONS IN AQUIFER LAYER 1
 JULY 2001
 Jet Propulsion Laboratory
 Pasadena, California
 SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAW = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

4.0 Concentration Contour (µg/L)

IAL Interim Action Level (18 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800

SCALE IN FEET

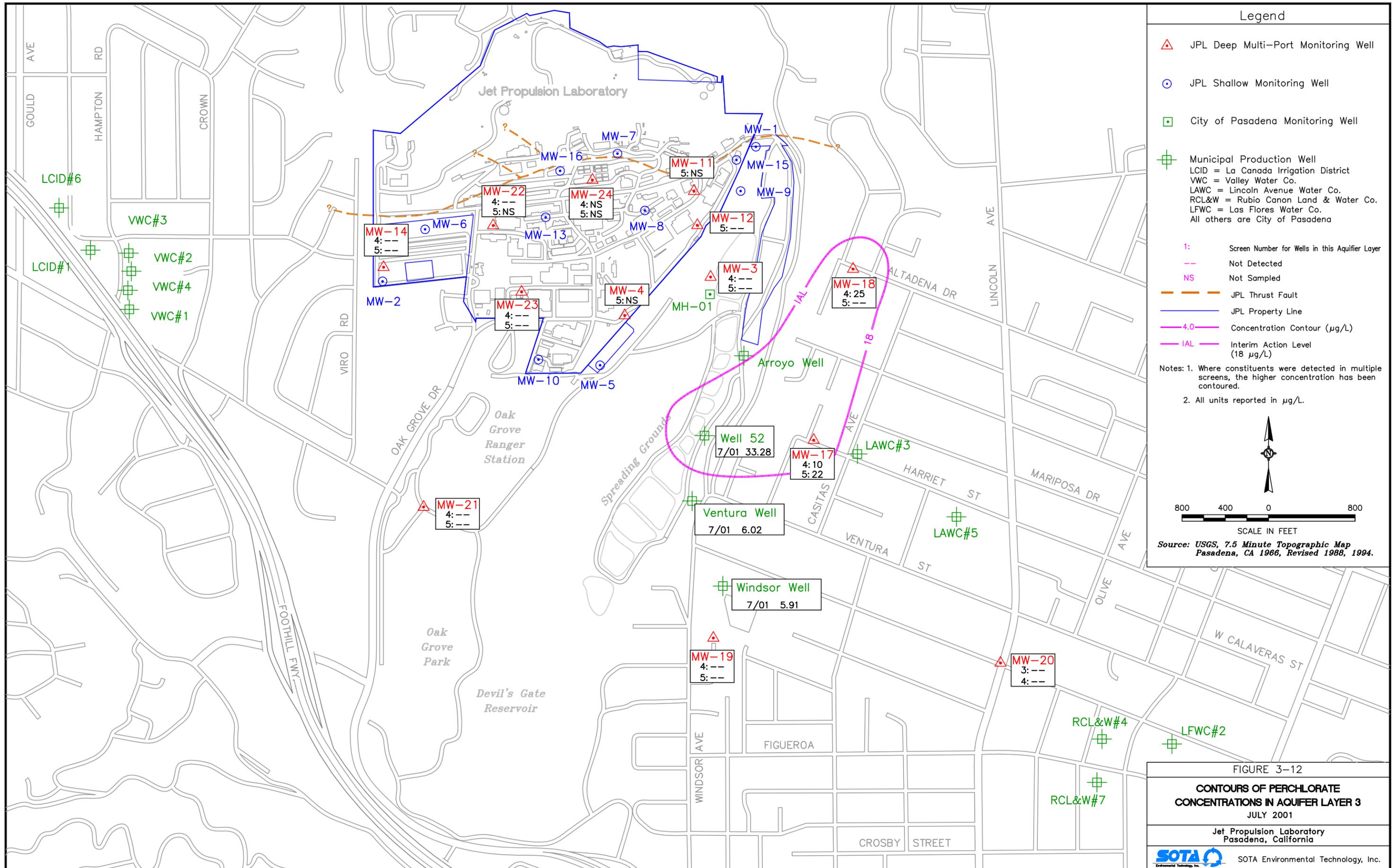
Base Map Source: USGS, 7.5' Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-11

CONTOURS OF PERCHLORATE CONCENTRATIONS IN AQUIFER LAYER 2
 JULY 2001

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.



Legend

- ▲ JPL Deep Multi-Port Monitoring Well
- JPL Shallow Monitoring Well
- City of Pasadena Monitoring Well
- ⊕ Municipal Production Well
 LCID = La Canada Irrigation District
 VWC = Valley Water Co.
 LAWAC = Lincoln Avenue Water Co.
 RCL&W = Rubio Canon Land & Water Co.
 LFWC = Las Flores Water Co.
 All others are City of Pasadena

1: Screen Number for Wells in this Aquifer Layer

--- Not Detected

NS Not Sampled

--- JPL Thrust Fault

--- JPL Property Line

4.0 Concentration Contour (µg/L)

IAL Interim Action Level (18 µg/L)

Notes: 1. Where constituents were detected in multiple screens, the higher concentration has been contoured.
 2. All units reported in µg/L.

800 400 0 800

SCALE IN FEET

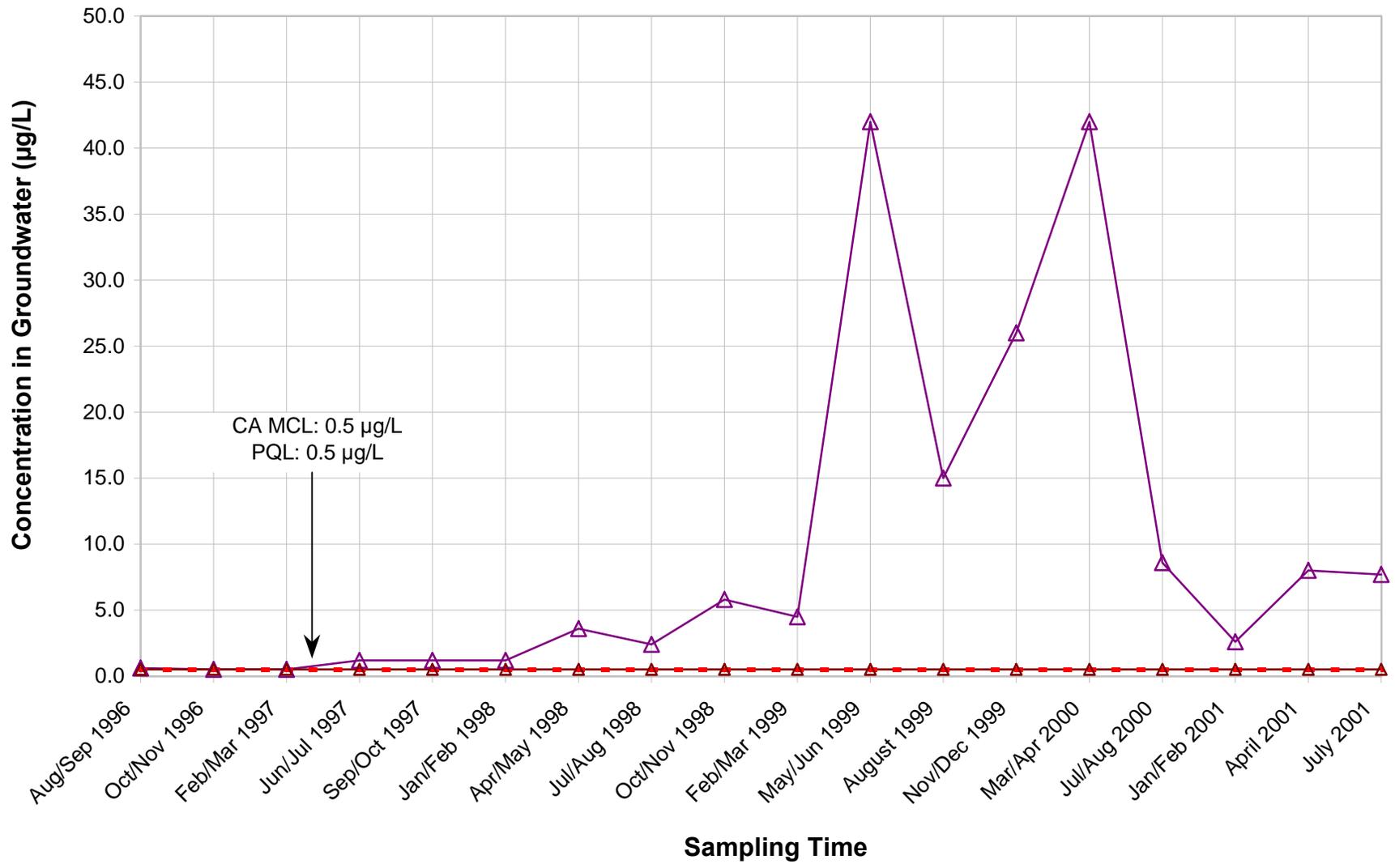
Source: USGS, 7.5 Minute Topographic Map Pasadena, CA 1966, Revised 1988, 1994.

FIGURE 3-12

**CONTOURS OF PERCHLORATE
 CONCENTRATIONS IN AQUIFER LAYER 3
 JULY 2001**

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.

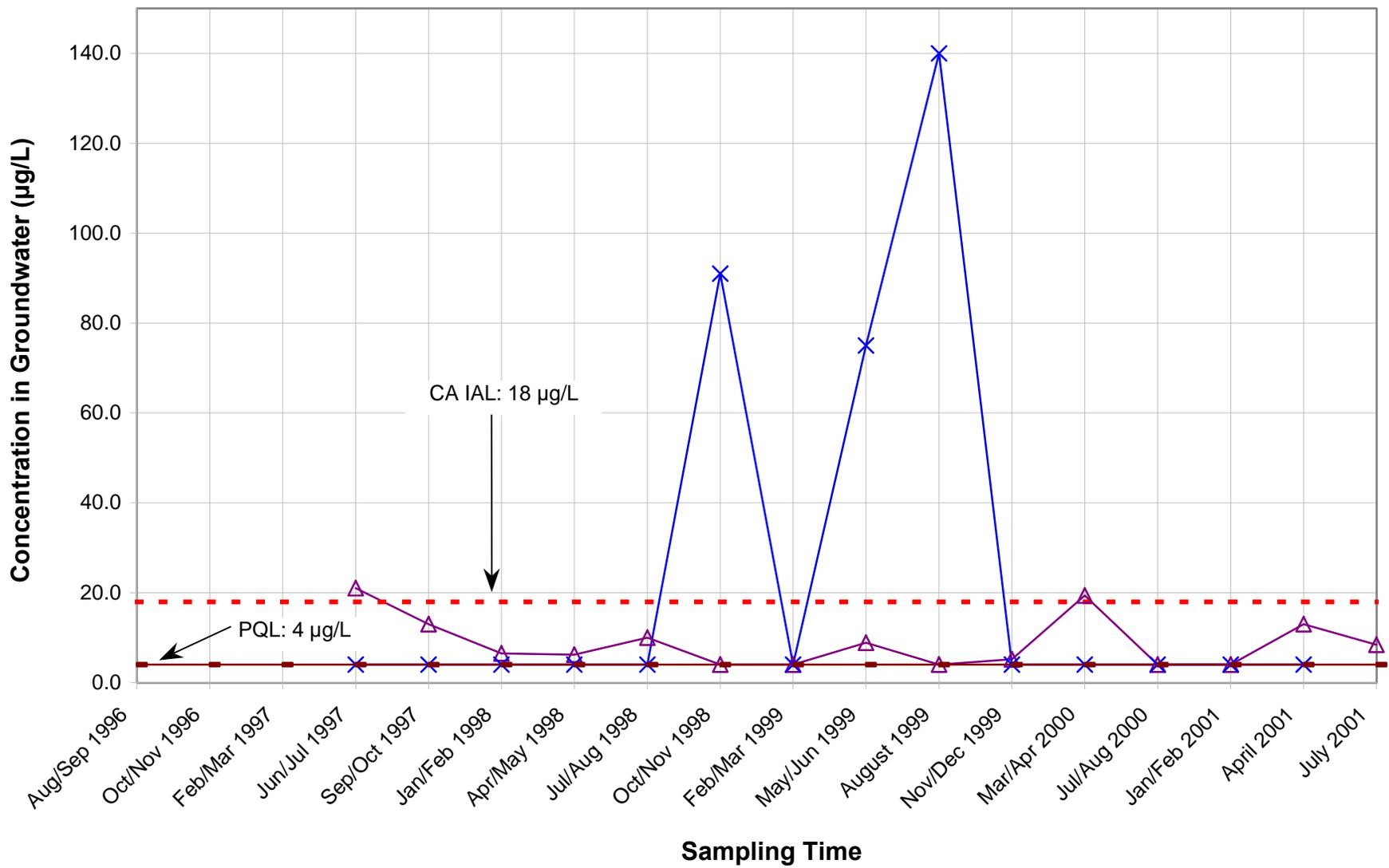


Legend

- △— Screen 3
- △— PQL
- - - CA MCL

Only concentrations above PQL are plotted. Screens 2 and 4 concentrations were below PQL. Screens 1 and 5 were not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-13
CARBON TETRACHLORIDE DETECTED AT MW-3 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA <small>Environmental Technology, Inc.</small>
SOTA Environmental Technology, Inc.

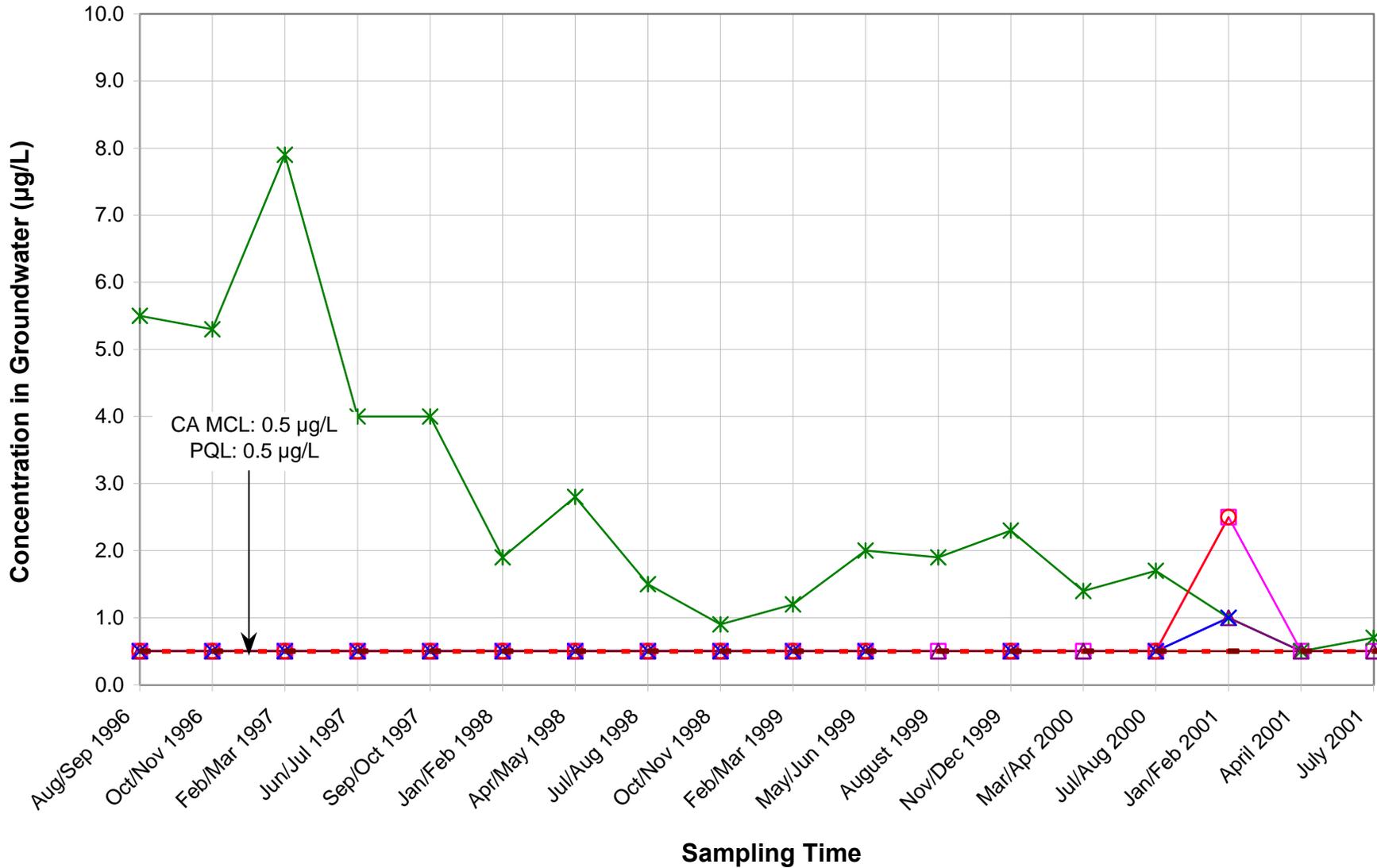


Legend

—△— Screen 3
 —×— Screen 5
 —●— PQL
 - - - CA IAL

Only concentrations above PQL are plotted. Screens 1, 2 and 4 concentrations were below PQL.
 Screen 1 was not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-14	
PERCHLORATE DETECTED AT MW-3 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

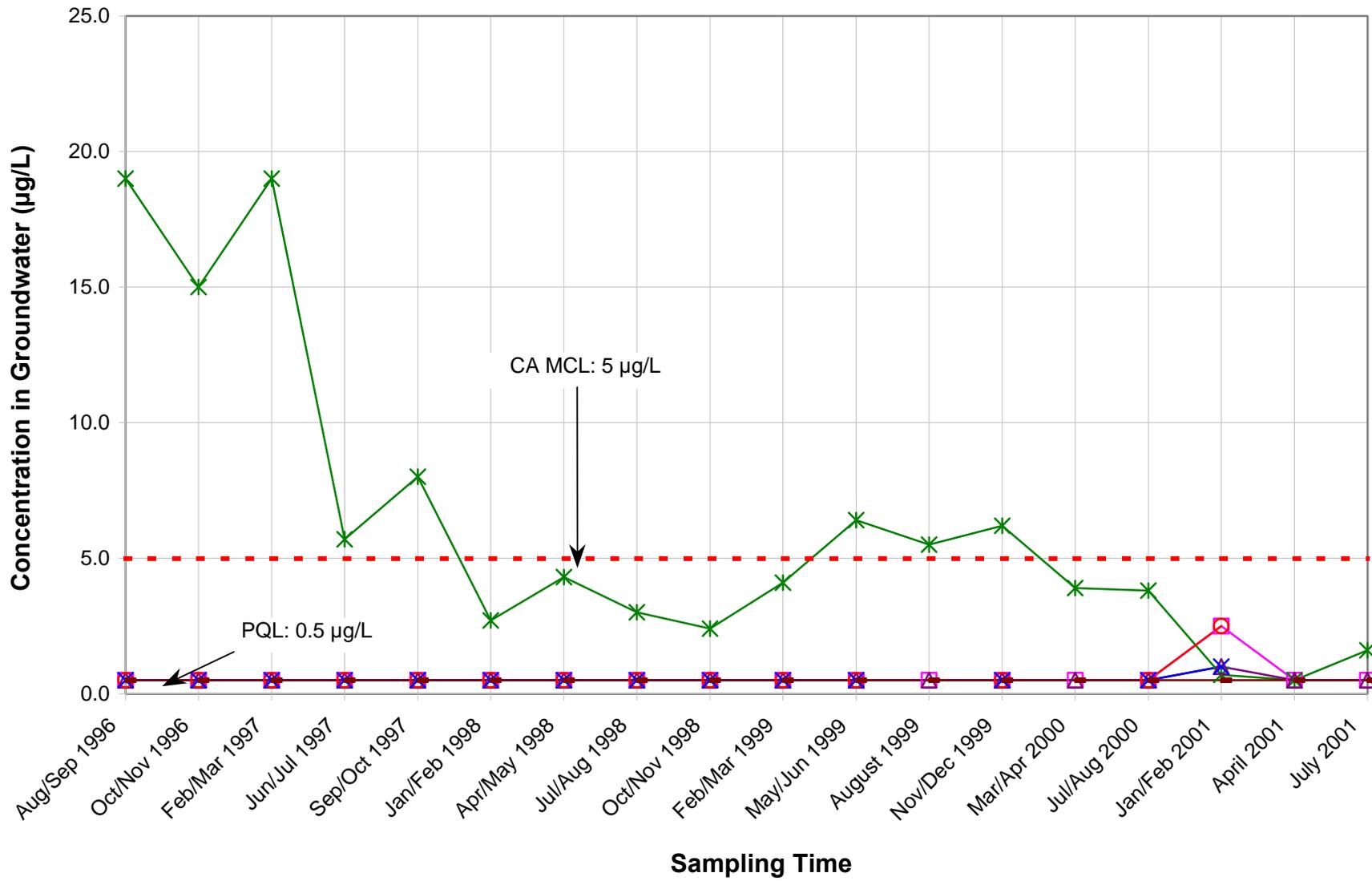


Legend

- Screen 1
- *— Screen 2
- △— Screen 3
- Screen 4
- ×— Screen 5
- PQL
- - - CA MCL

Only concentrations above PQL are plotted. Screens 1, 2, 4, and 5 concentrations at Jan/Feb 2001 were below PQL (2.5 µg/L). Screens 4 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-15
CARBON TETRACHLORIDE DETECTED AT MW-4 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA Environmental Technology, Inc.



Legend

- Screen 1
- ✱ Screen 2
- △ Screen 3
- Screen 4
- ✱ Screen 5
- PQL
- - - CA MCL

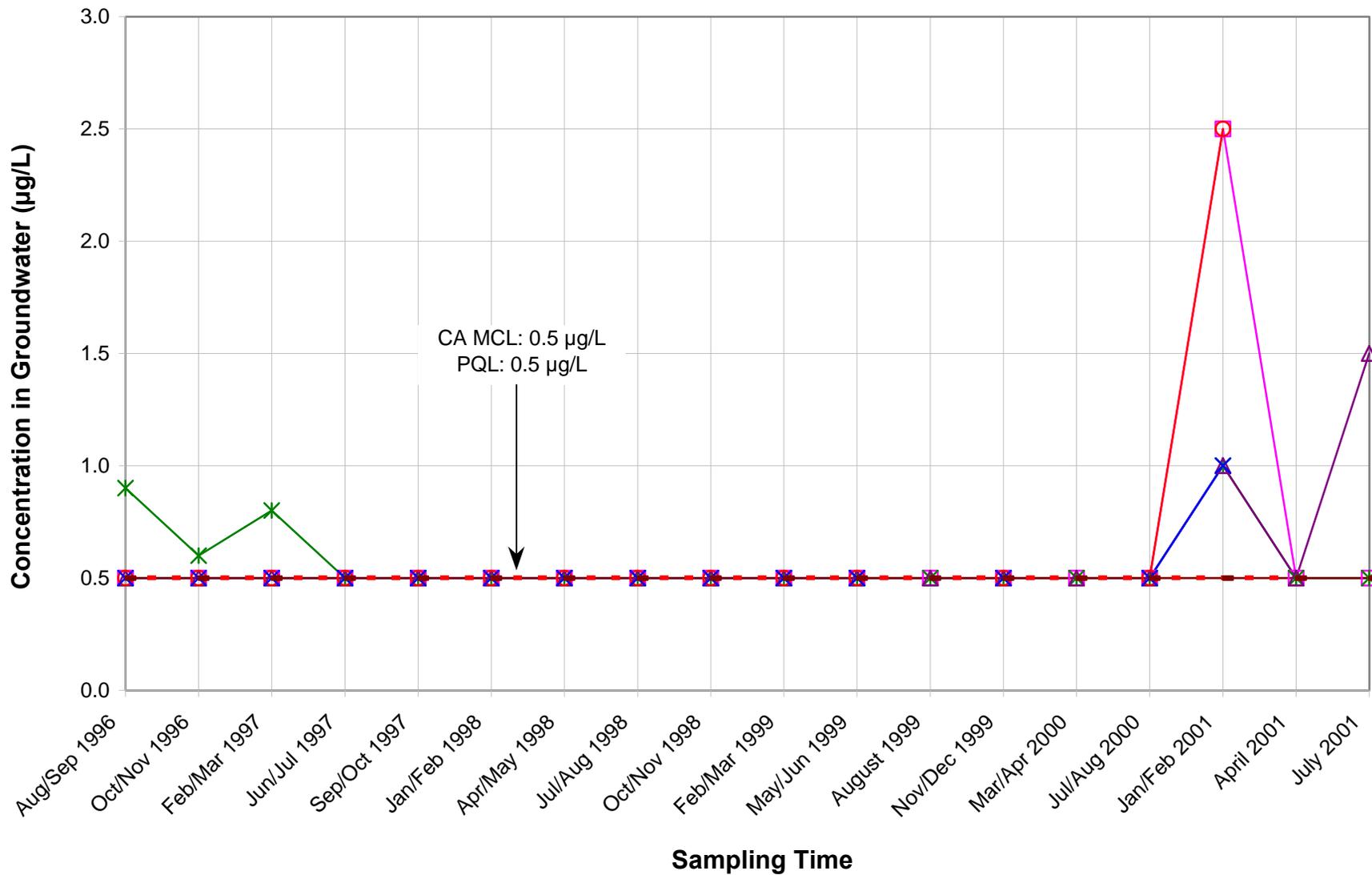
Only concentrations above PQL are plotted. Screens 1, 2, 3, 4, and 5 concentrations at Jan/Feb 2001 were below PQL (2.5 µg/L). Screens 4 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-16
**TRICHLOROETHENE DETECTED AT MW-4
 FROM AUG/SEP 1996 TO JULY 2001**

Jet Propulsion Laboratory
 Pasadena, California

SOTA Environmental Technology, Inc.



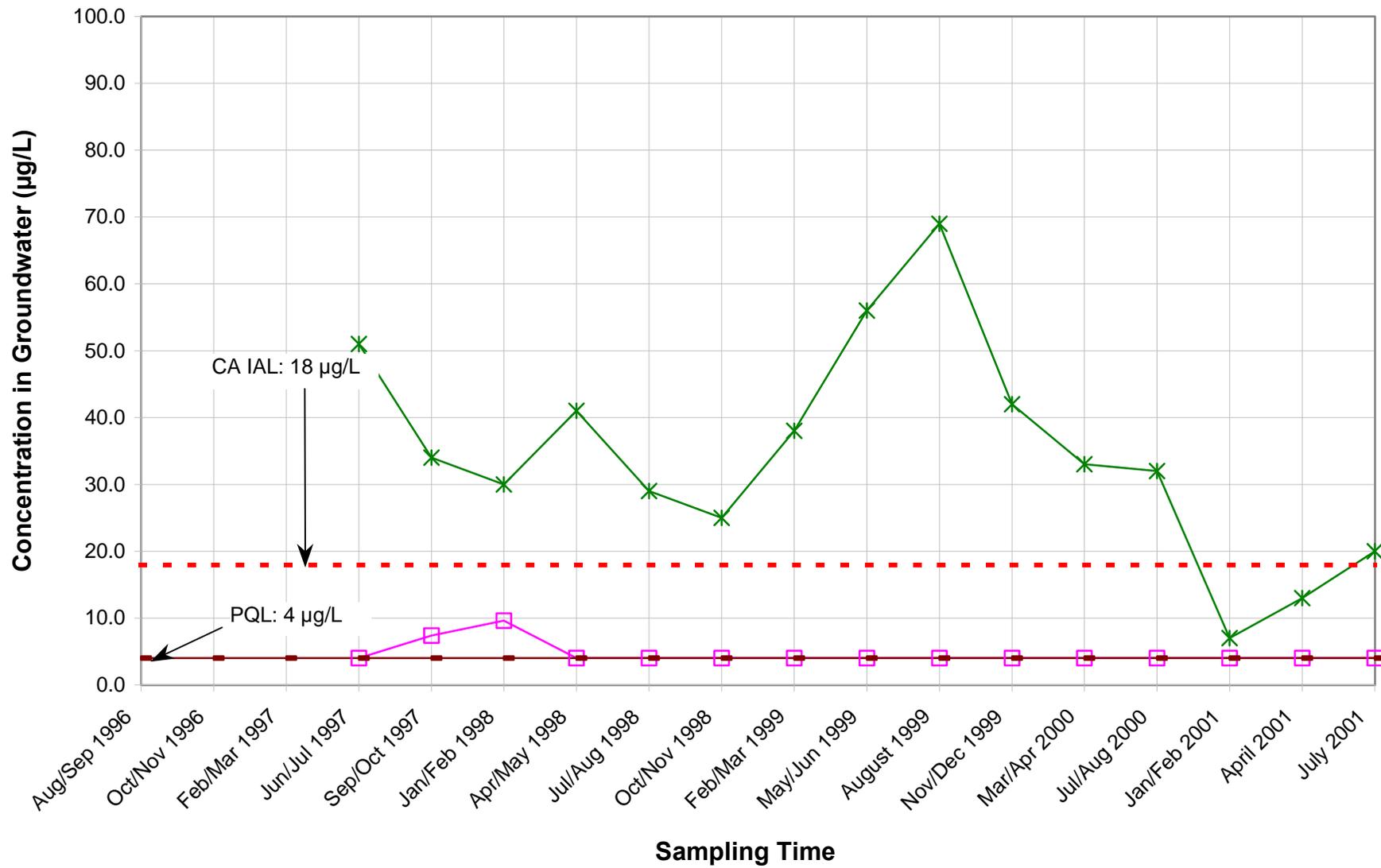


Legend

- Screen 1
- *— Screen 2
- △— Screen 3
- Screen 4
- ×— Screen 5
- PQL
- CA MCL

Only concentrations above PQL are plotted. Screens 1, 2, 3, 4, and 5 concentrations at Jan/Feb 2001 were below PQL (2.5 µg/L). Screens 4 and 5 were not sampled in July 2001. Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-17	
1, 2-DCA DETECTED AT MW-4 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

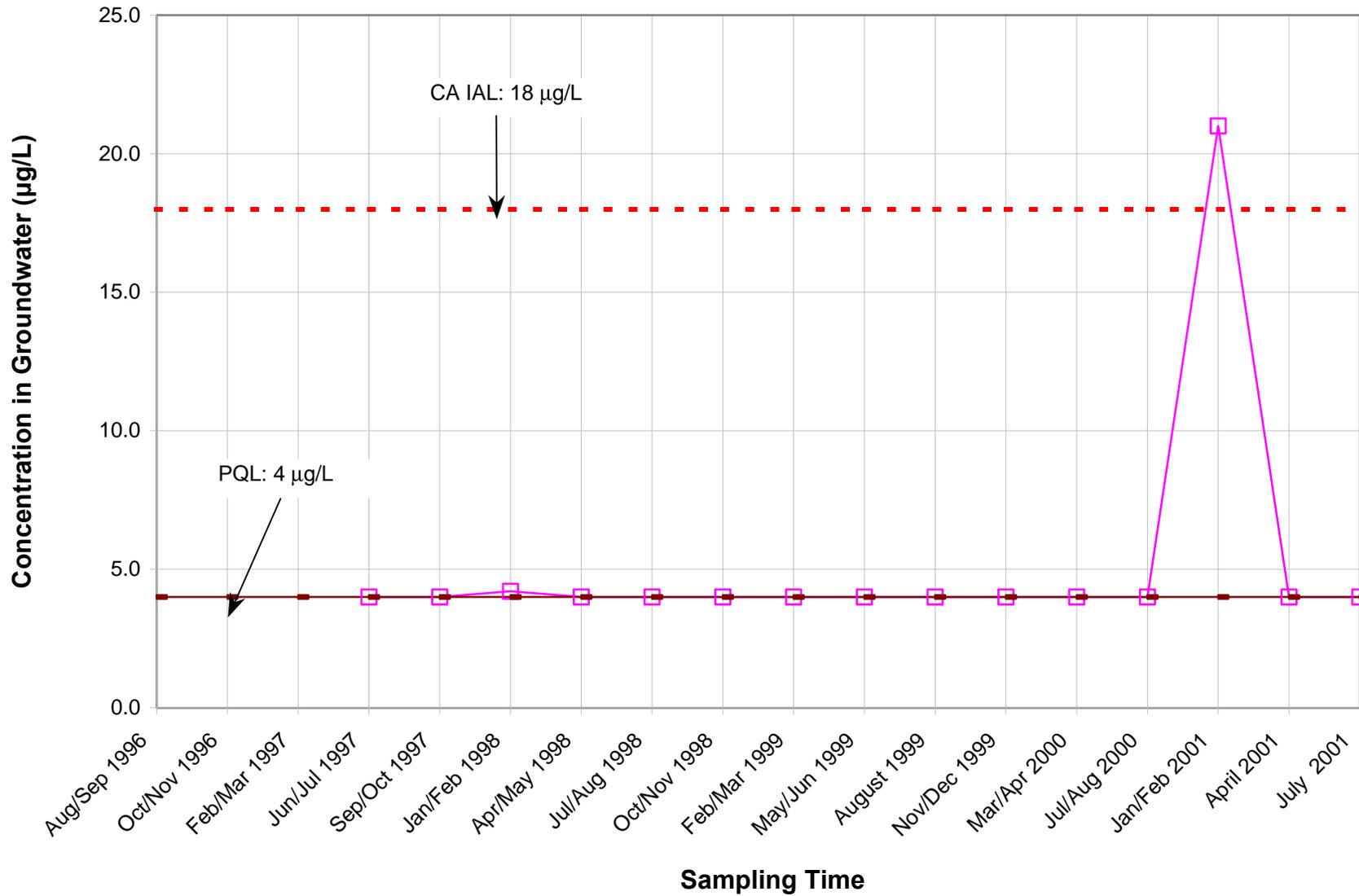


Legend

—□— Screen 1
 —*— Screen 2
 —●— PQL
 - - - CA IAL

Only concentrations above PQL are plotted. Screens 3, 4, and 5 concentrations were below PQL.
 Screens 4 and 5 were not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-18 PERCHLORATE DETECTED AT MW-4 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA Environmental Technology, Inc.

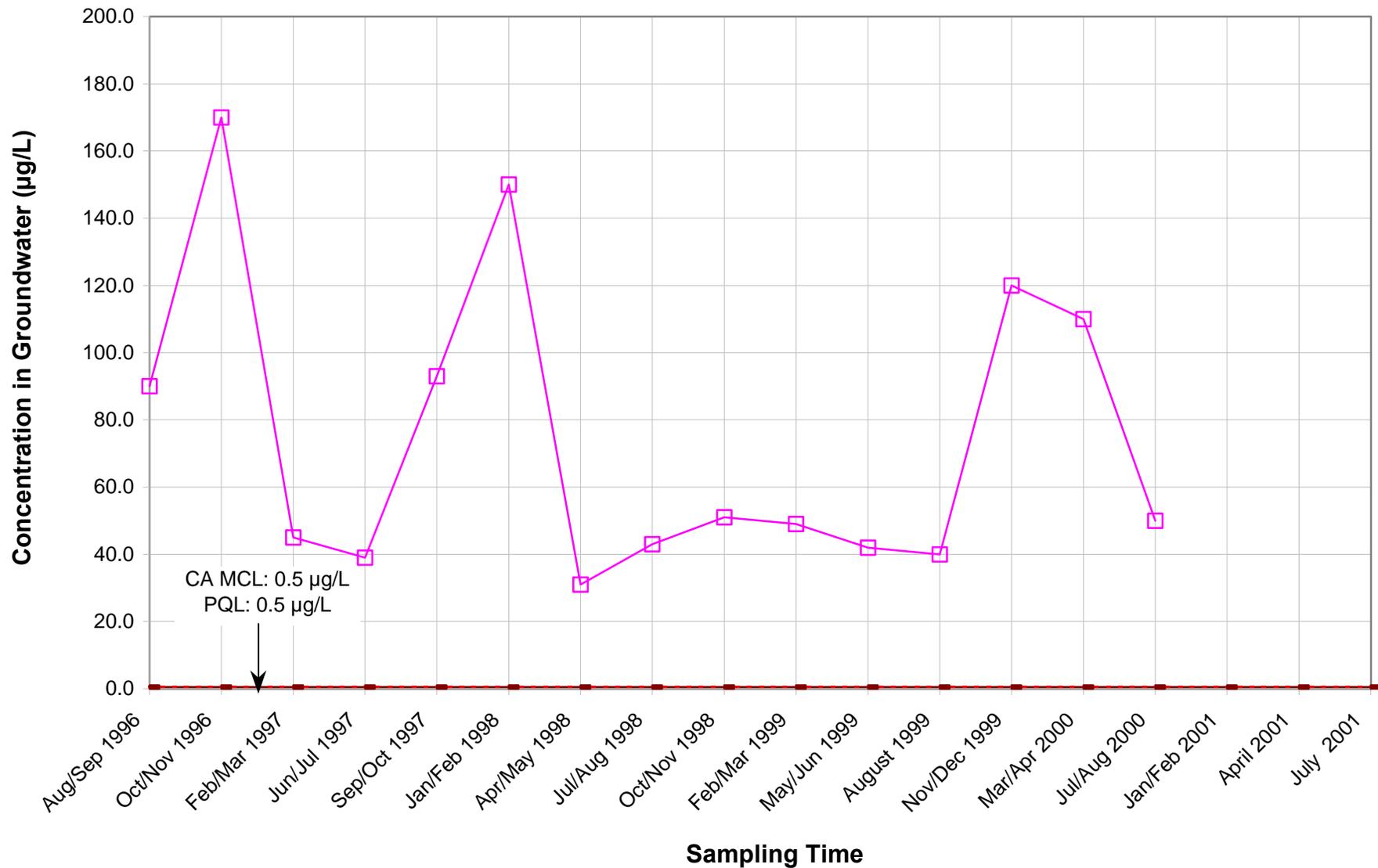


Legend

—□— Shallow Well —●— PQL - - - CA IAL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-19
PERCHLORATE DETECTED AT MW-5 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.

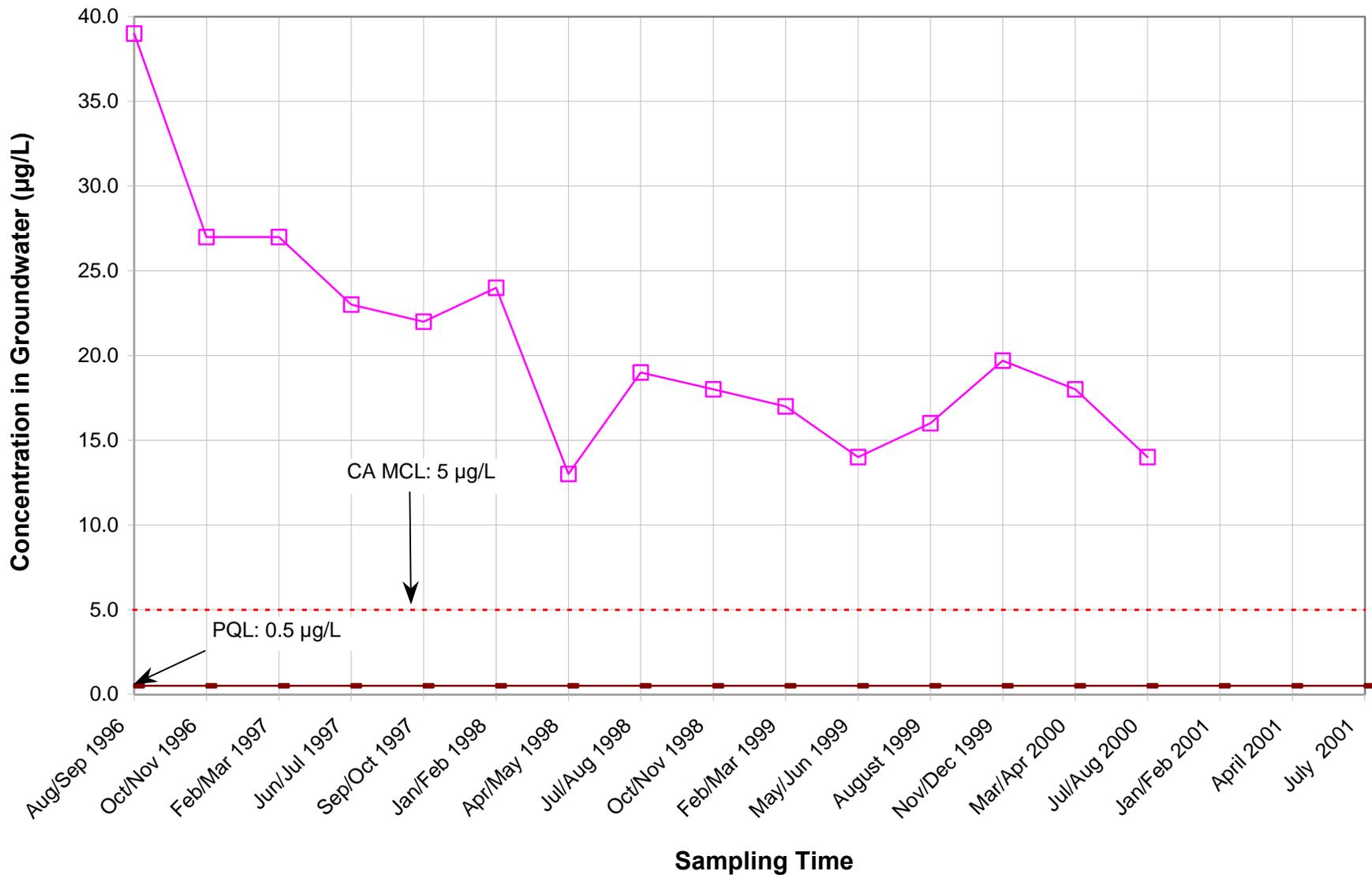


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Reference US Filter Pilot Test Report for current water quality data). Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-20	
CARBON TETRACHLORIDE DETECTED AT MW-7 FROM AUG/SEP 1996 TO JUL/AUG 2000	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

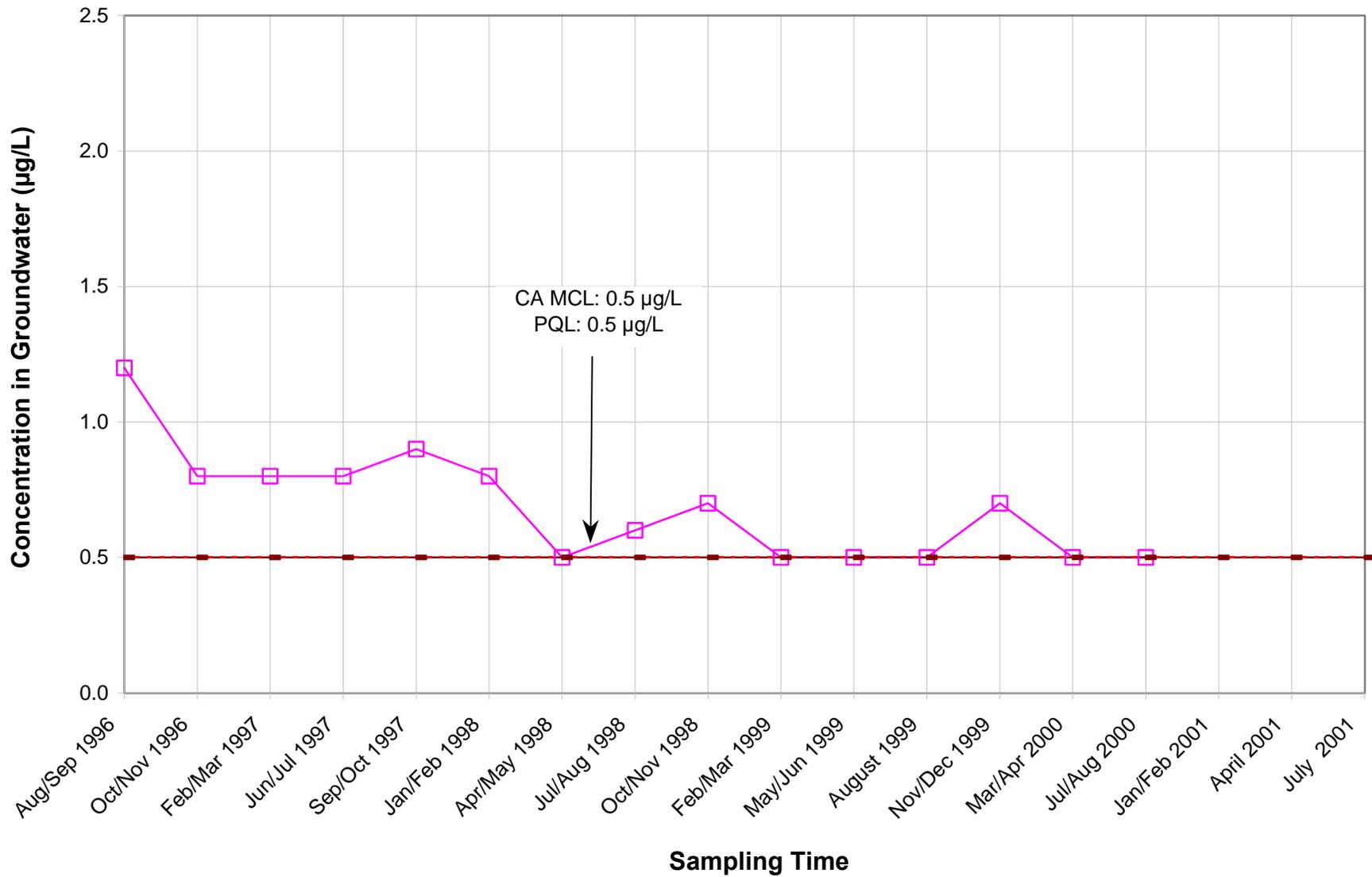


Legend

- Shallow Well
- PQL
- - - CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Reference US Filter Pilot Test Report for current water quality data). Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-21	
TRICHLOROETHENE DETECTED AT MW-7 FROM AUG/SEP 1996 TO JUL/AUG 2000	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

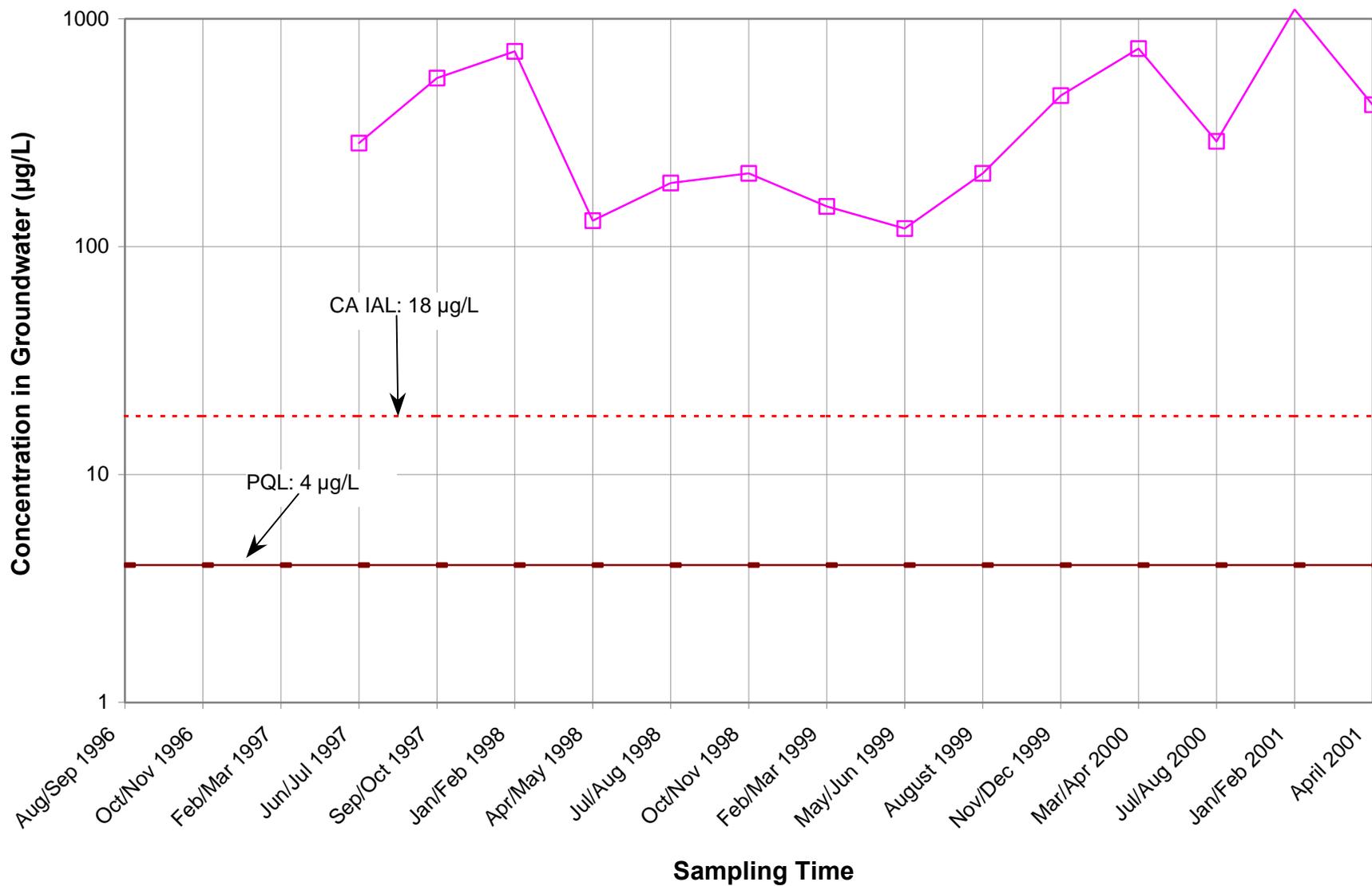


Legend

- Shallow Well
- PQL
- CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Reference US Filter Pilot Test Report for current water quality data). Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-22	
1, 2-DCA DETECTED AT MW-7 FROM AUG/SEP 1996 TO JUL/AUG 2000	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.



Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted. No sample was collected during Jan/Feb, April, and July 2001 events due to the ongoing Pilot Test at MW-7 (Results for MW-7 obtained from US Filter Pilot Test Report).

Values in (Y) axis are represented in Logarithmic scale.

Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

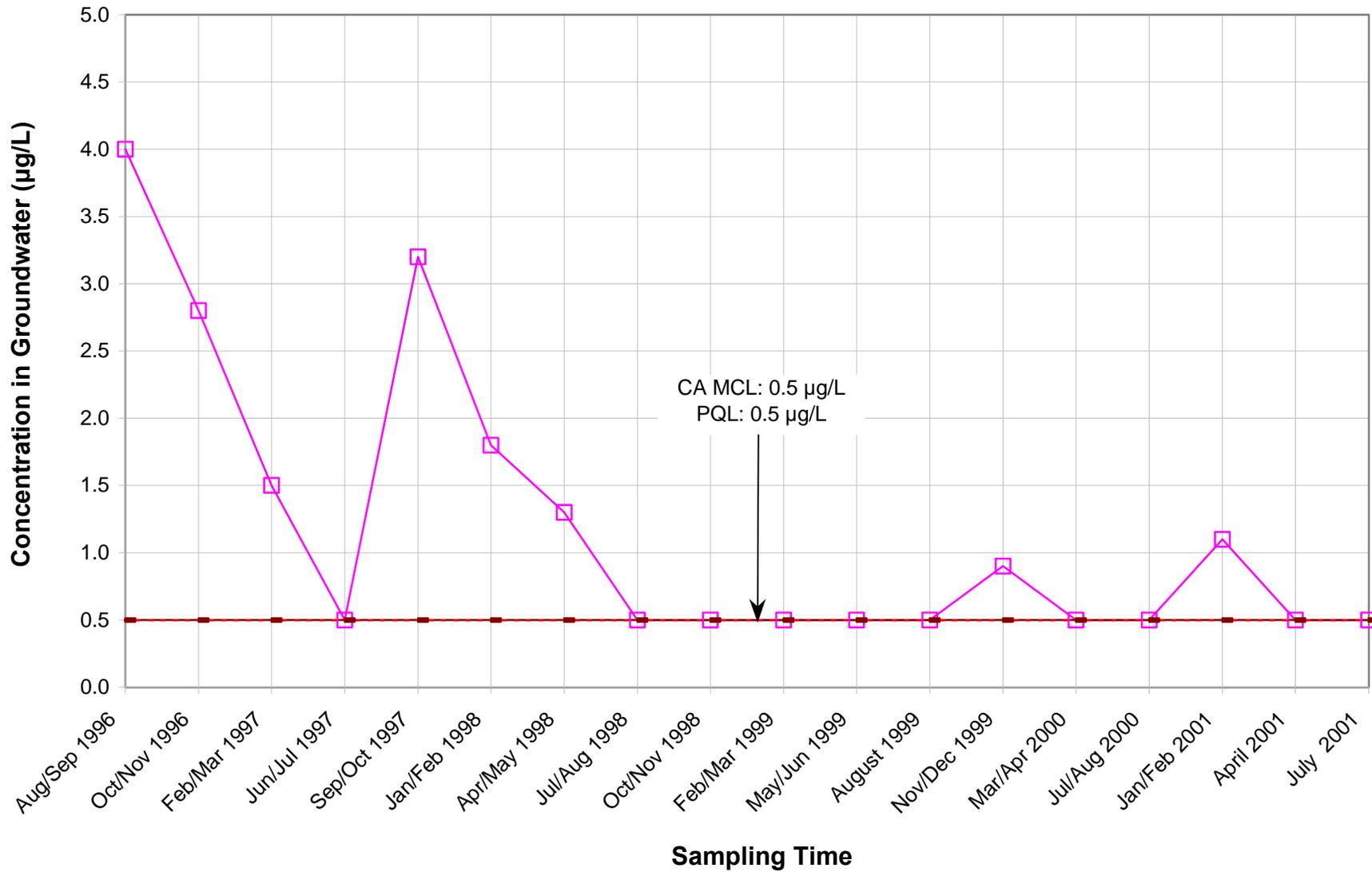
FIGURE 3-23

PERCHLORATE DETECTED AT MW-7
FROM AUG/SEP 1996 TO APRIL 2001

Jet Propulsion Laboratory
Pasadena California



SOTA Environmental Technology, Inc.

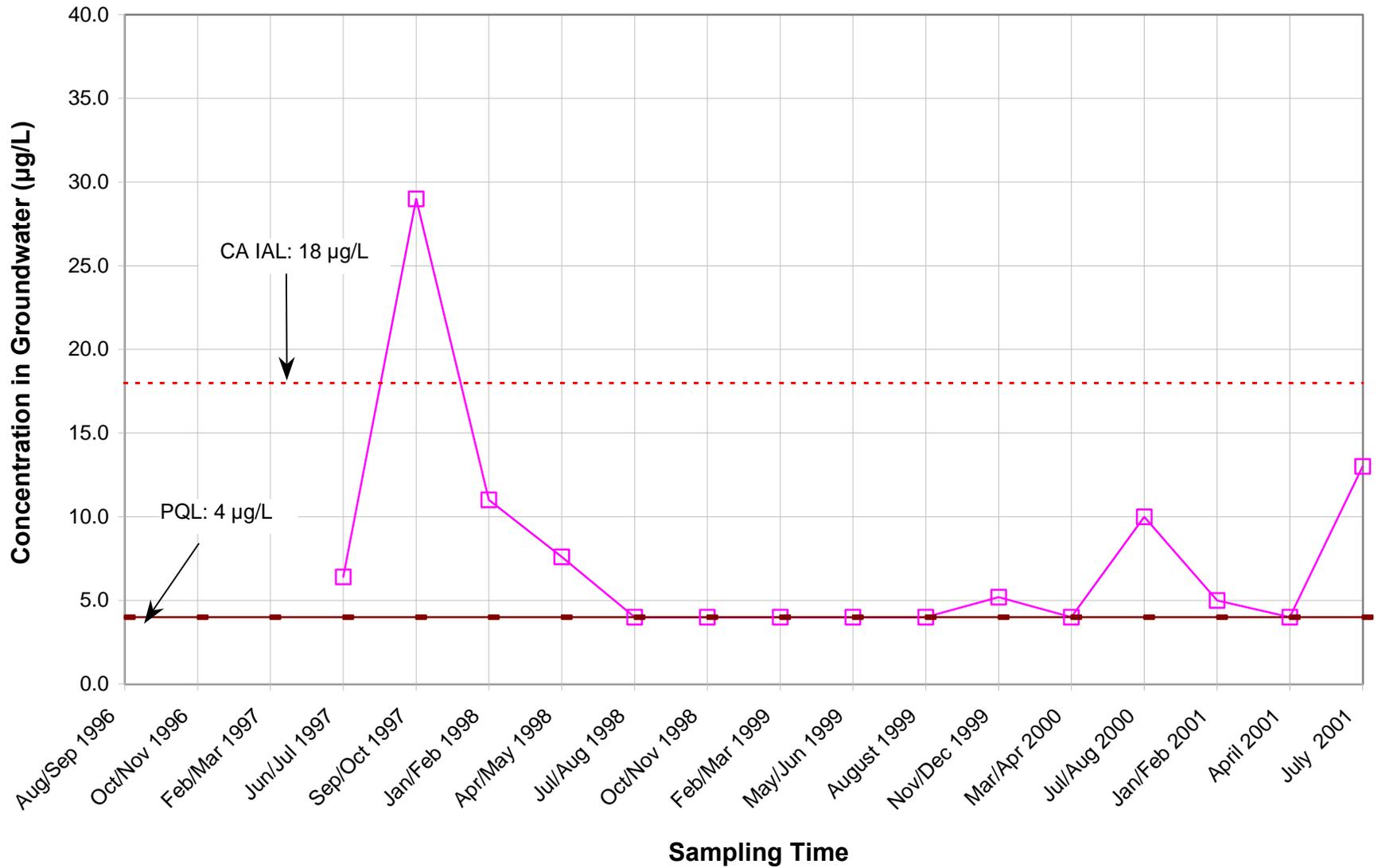


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-24	
CARBON TETRACHLORIDE DETECTED AT MW-8 FROM AUG/SEP 1996 TO JULY 2001	
Jet Propulsion Laboratory Pasadena, California	
	SOTA Environmental Technology, Inc.

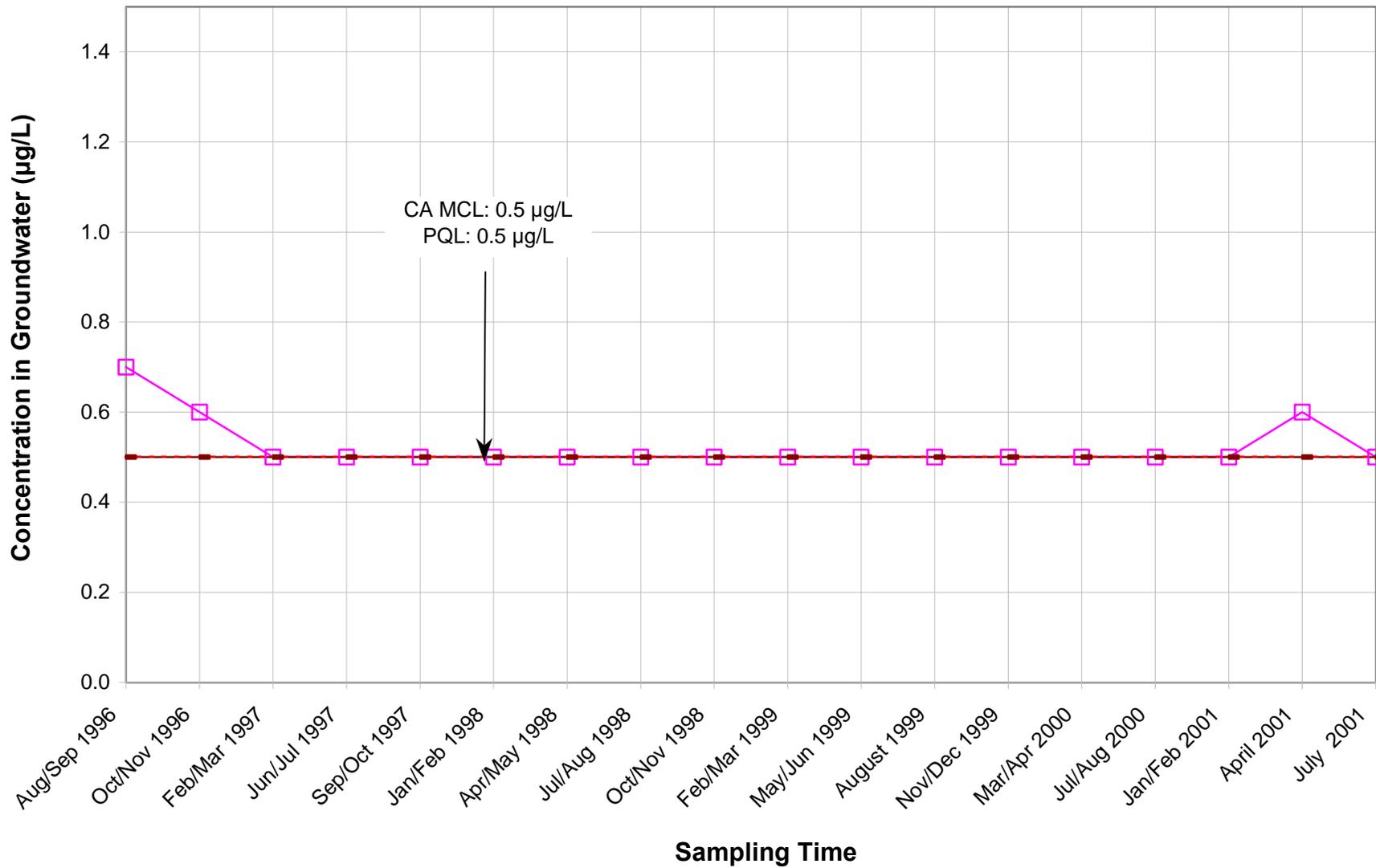


Legend

—□— Shallow Well —●— PQL - - - - CA IAL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-25
PERCHLORATE DETECTED AT MW-8 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.

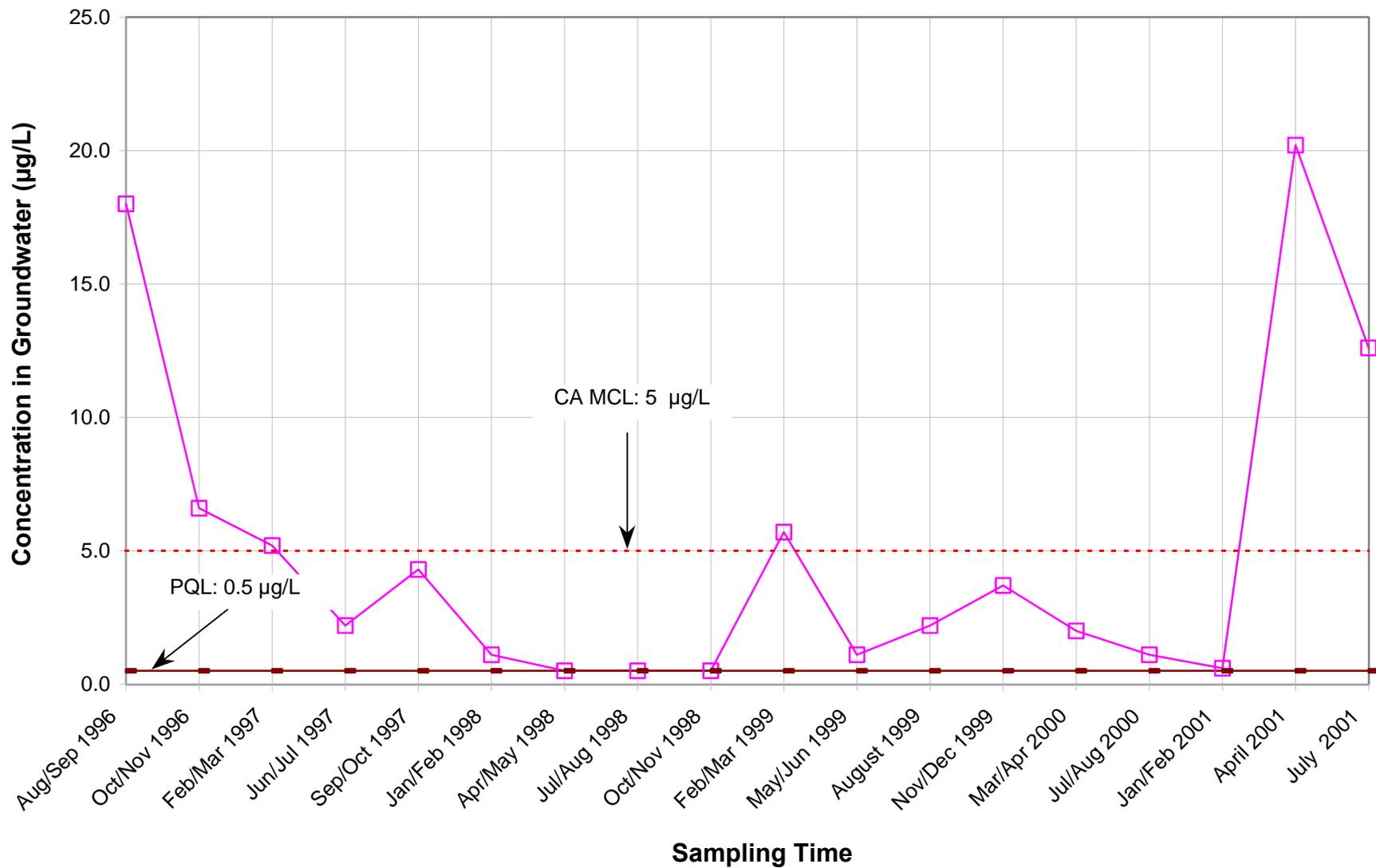


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted.
Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-26
CARBON TETRACHLORIDE DETECTED AT MW-10 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.

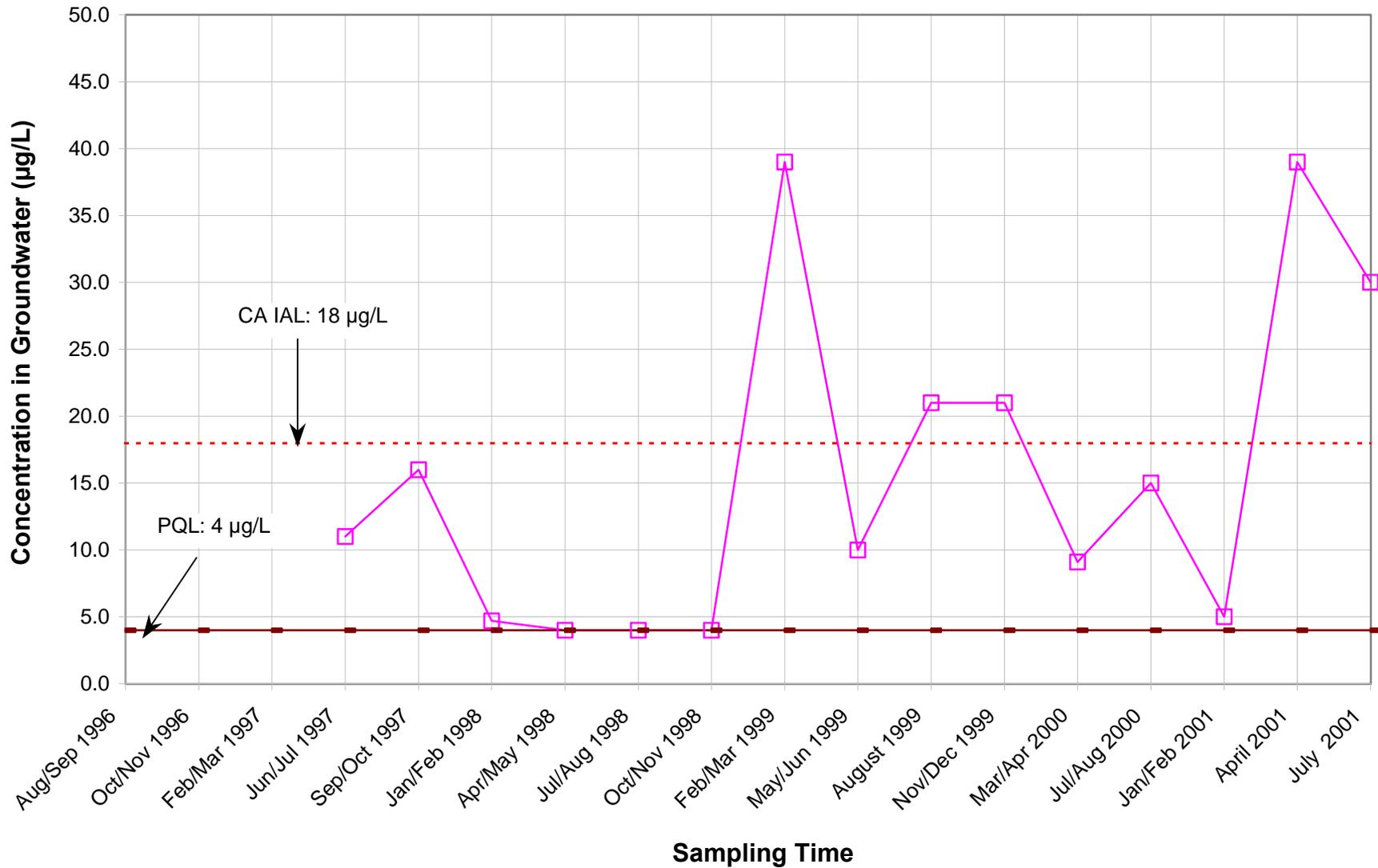


Legend

—□— Shallow Well —●— PQL - - - - CA MCL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-27
TRICHLOROETHENE DETECTED AT MW-10 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.

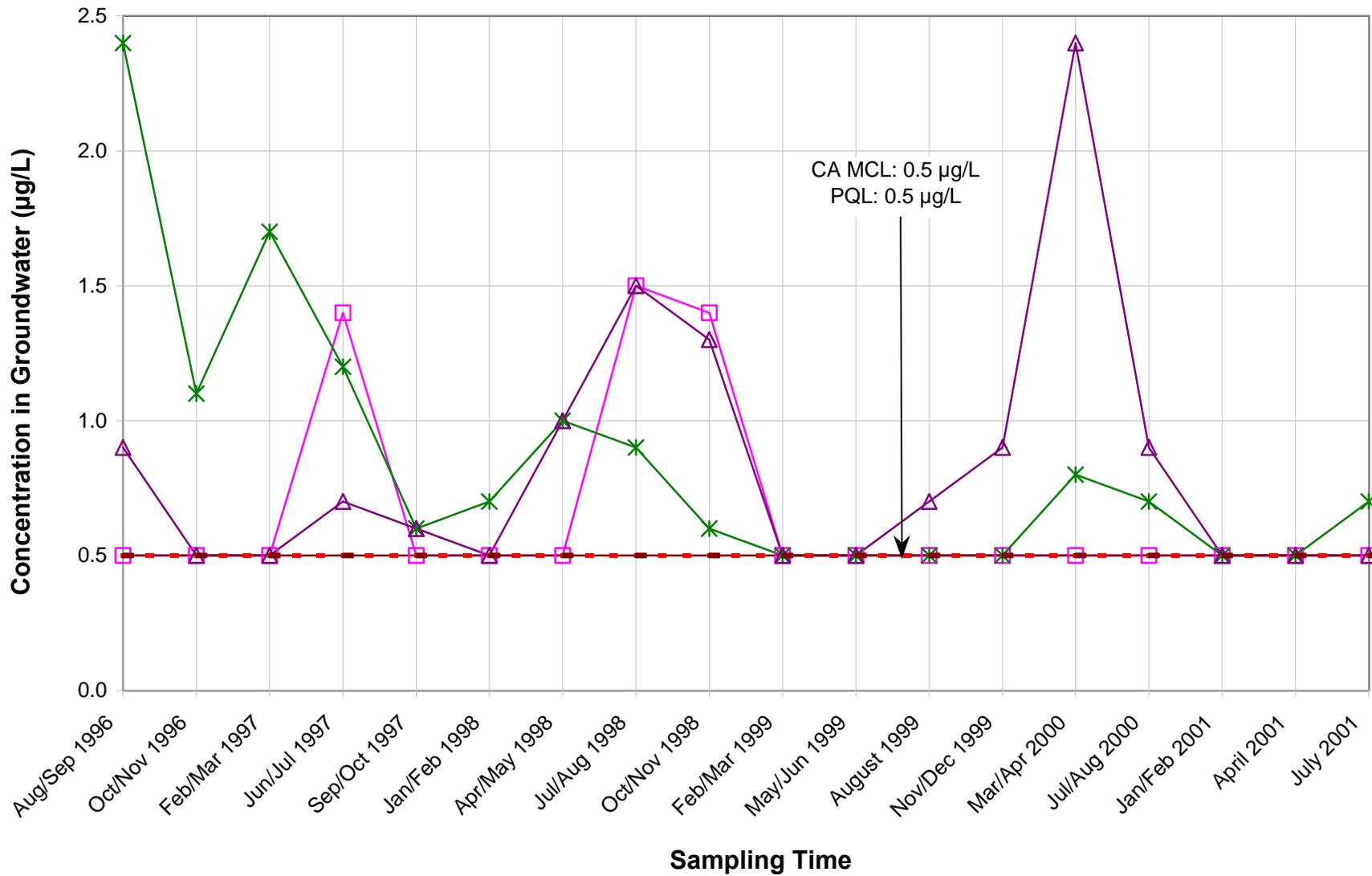


Legend

—□— Shallow Well
 —■— PQL
 - - - CA IAL

Only concentrations above PQL are plotted.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-28
PERCHLORATE DETECTED AT MW-10 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
SOTA Environmental Technology, Inc.



Legend

- Screen 1 —*— Screen 2 —△— Screen 3 —●— PQL - - - CA MCL

Only concentrations above PQL are plotted. Screen 4 concentration was below PQL. Screen 5 was not sampled in July 2001.
 Data before Jan/Feb 2001 were obtained from Foster Wheeler Reports.

FIGURE 3-29
CARBON TETRACHLORIDE DETECTED AT MW-11 FROM AUG/SEP 1996 TO JULY 2001
Jet Propulsion Laboratory Pasadena, California
 SOTA Environmental Technology, Inc.