2009 ANNUAL PROGRESS REPORT

for

Former Fairchild Buildings 1-4
515/545 Whisman Road and 313 Fairchild Drive
Middlefield-Ellis-Whisman Area
Mountain View, California

prepared for

Schlumberger Technology Corporation
225 Schlumberger Drive
Sugar Land, TX 77478

June 15, 2010

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Middlefield-Ellis-Whisman Area
Mountain View, California

Submitted to

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Weiss Associates work for Schlumberger Technology Corporation was conducted under my supervision. To the best of my knowledge, the data contained in this report are true and accurate and satisfy the scope of work prescribed by the client for this project in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents in this report.

June 15, 2010

Tess Byler, P.G. — Date
Sr. Project Geologist
(CA # 8131, expiration Nov. 2010)

CONTENTS

FIGURES

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

106 Order	Section 106 Administrative Order for Remedial Design and Remedial Action
Buildings 1 and 2	Former Fairchild facilities at 515/545 Whisman Road
Buildings 3 and 4	Former Fairchild facilities at 313 Fairchild Drive
ft	feet
ft bgs	feet below ground surface
GAC	granular activated carbon
Geosyntec	Geosyntec Consultants
Fairchild	Fairchild Semiconductor Corporation
K	hydraulic conductivity
µg/L	micrograms per liter
mg/kg	milligram per kilogram
MEW	Middlefield-Ellis-Whisman Area, acronym for three USEPA Superfund sites bounded on the south by East Middlefield Road, on the north by the Bayshore Freeway (Highway 101), on the west by Whisman Road, and on the east by Ellis Street.
MCLs	maximum contaminant levels
NASA	National Aeronautics and Space Administration
NPDES	National Pollutant Discharge Elimination System
PRPs	potentially responsible parties
PLC	Programmable Logic Controller
QA/QC	quality assurance and quality control
RAO	remedial action objective
RGRP	Regional Groundwater Remediation Program
ROD	Record of Decision
RRWs	regional recovery wells
SCRWs	source control recovery wells
System 1	Ground water treatment system located at 515 Whisman Road
System 3	Ground water treatment system located at 313 Fairchild Drive
STC	Schlumberger Technology Corporation
TCE	trichloroethene; trichloroethylene

The Site	Former Fairchild Facilities at 515 and 545 Whisman Road (Buildings 1 and 2) and 313 Fairchild Drive (Buildings 3 and 4) in Mountain View, California
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds
Water Board	California Regional Water Quality Control Board - San Francisco Bay Region
Weiss	Weiss Associates

SUMMARY

This 2009 Annual Progress Report for the former Fairchild Semiconductor Corporation (Fairchild) facilities located at 515 and 545 Whisman Road (Buildings 1 and 2) and 313 Fairchild Drive (Buildings 3 and 4) in Mountain View, California (the Site; Figures 1, 2, and 3) summarizes Site activities and data from January 1 through December 31, 2009 and monitoring data for the past five years. This report is submitted in accordance with Section XV of the 1990 Administrative Order for Remedial Design and Remedial Action (106 Order) issued by the United States Environmental Protection Agency (USEPA) and the USEPA's correspondence prescribing Annual Report contents (USEPA, 1990a and USEPA, 2005). The 2009 Annual Report Remedy Performance Checklist is included as Appendix A.

The groundwater containment and treatment system at the Site removes volatile organic compounds (VOCs) from ground water, and consists of the following components:

- A slurry wall around former Buildings 1-4 that is approximately 40 feet (ft) deep and extends into the A/B1 aquitard that is continuous beneath the Site;
- Two groundwater treatment systems, Fairchild System 1 and System 3 that remove VOCs using activated carbon under National Pollutant Discharge Elimination System (NPDES) Permit CAG912003, Order No. R2-2004-0055 during the first three quarters of 2009 and under Order No. R2-2009-0059 which became effective October 1, 2009;
- Fifteen source control recovery wells (SCRWs); and,
- 28 monitoring wells.

The treatment systems also treat groundwater from:

- Four regional recovery wells (RRWs) that are part of the Regional Groundwater Remediation Program (RGRP);
- Four SCRWs from former Fairchild Building 9;
- One SCRW from former Fairchild Building 18; and,
- A basement dewatering sump in former Fairchild Building 18.

Site activities conducted in compliance with the 106 Order during this reporting period included continued operation, monitoring and maintenance activities of the Building 1-4 groundwater remediation systems, quarterly slurry wall water level monitoring, semiannual groundwater level monitoring in March and November, annual groundwater sampling in November 2009, and submitting information related to the USEPA's Second Five-Year Remedy Review for the Fairchild Sites in May and June 2009, including a USEPA Site inspection on May 5, 2009.

Groundwater Treatment: During 2009, approximately 34.3 million gallons of groundwater were treated and 505 pounds of VOCs were removed by the Site treatments systems. From January 1 through December 31, 2009, System 1 ran 96.6% of the time, and System 3 ran 98.5% of the time. During calendar year 2009, the extraction and treatment systems operated within all effluent limits established by the discharge permits.

Groundwater Capture Evaluation: Groundwater elevation and chemical monitoring results from 2009 demonstrate that the Site extraction wells continue to achieve adequate capture compared to target capture based on converging lines of evidence, including graphical flow net analysis and chemical concentration trends. VOC concentrations in groundwater continue to remain well below historical maxima, and generally show long-term decreasing trends.

Technical Assessment: The groundwater extraction, treatment, and containment systems are functioning as intended. Since the treatment systems were installed, trichloroethene (TCE) concentrations have generally decreased by an order of magnitude or more.

Planned 2010 Activities: Schlumberger Technology Corporation (STC) will continue operating the Fairchild groundwater treatment systems and monitor their performance during 2010. Groundwater extraction rates will be optimized in 2010 in accordance with the Optimization Report, including turning back on some A-zone groundwater extraction wells (Geosyntec et al, 2008 and Geosyntec, 2010a). The 2010 Annual Progress Report will be submitted to the USEPA by June 15, 2011.

1. INTRODUCTION

This 2009 Annual Progress Report was prepared by Weiss Associates (Weiss) on behalf of Schlumberger Technology Corporation for the former Fairchild Semiconductor Corporation (Fairchild) facilities located at 515 and 545 Whisman Road (Buildings 1 and 2), and 313 Fairchild Drive (Buildings 3 and 4) in Mountain View, California (the Site; Figures 1, 2 and 3). Geosyntec Consultants (Geosyntec) assisted with the preparation of this report.

This report summarizes Site activities from January 1 through December 31, 2009, and monitoring data from the past five years. This report is submitted in accordance with Section XV of the 1990 Administrative Order for Remedial Design and Remedial Action (106 Order) issued by the United States Environmental Protection Agency (USEPA) and the USEPA's correspondence prescribing 2004 and future Annual Report contents (USEPA, 1990a and USEPA 2005).

1.1 Site Background

Former Fairchild Buildings 1 through 4 were located at 515/545 North Whisman Road and 313 Fairchild Drive, in Mountain View California (Figure 2). Buildings 1-4 functioned as facilities for chemical mixing and silicon wafer manufacturing at Fairchild Semiconductor Corporation's Linear Division from the early 1960's to 1989. The primary constituent of concern at the Site is trichloroethene (TCE) in groundwater from historical underground tanks/piping, sumps and/or surface spills. The buildings were demolished in the 1990's, and new commercial/research offices were constructed and completed by September 2000 (Jay Paul Company, 2010). The previous and current addresses of Former Fairchild Buildings 1-4 are provided below:

Previous Address	Current Address	Current Occupants
Buildings 1 and 2 515/545 North Whisman Road	515/545 North Whisman Road	515 North Whisman Road: Search for Extra Terrestrial Intelligence (SETI) Institute. 545 North Whisman: unoccupied
Buildings 3 and 4 313 Fairchild Drive	313/323 Fairchild Drive	313 Fairchild: Nokia 323 Fairchild: unoccupied

The Former Fairchild Buildings 1 through 4 Site is located within the MEW Area, as defined by USEPA (USEPA, 1989) as an approximate ¼-square mile area bounded by Middlefield Road on the south, Ellis Street on the east, Whisman Road on the west, and Highway 101 on the north (Figure 2).

Remedial Investigation and Feasibility Studies were completed in 1988 (HLA, 1987; Canonie, 1988), with the USEPA issuing a Record of Decision (ROD) in 1989. The ROD and two subsequent Explanations of Significant Differences specify the remedial actions for the MEW Area (USEPA, 1989, 1990b, 1996). Remedial actions are being conducted pursuant to the

106 Order issued to nine respondents[1] in November 1990, and the MEW Consent Decree entered into by Raytheon Company and Intel Corporation in 1991, by which they agreed to design, construct, and implement the regional remedial action portion of the remedy selected in the ROD.

Remedial actions within the MEW Area include facility-specific activities by the individual potentially responsible parties (PRPs), (such as this facility-specific Site), and a Regional Groundwater Remediation Program (RGRP) that addresses commingled volatile organic compounds (VOCs) that have migrated beyond the facility-specific areas and cannot be attributed to a single source. The primary VOC of concern is TCE.

The land use at the Site is industrial/research/commercial, with surrounding residential development.

1.2 Local Hydrology

Subsurface geology consists of interbedded sediments ranging in grain size from silty clay to sandy gravel. The water-bearing zones defined at the MEW Area are summarized below:

Groundwater Zones	Approximate Depth Interval Below Ground Surface (bgs)
A[a]	20 to 45 ft
B1[b]	50 to 75 ft
B2	75 to 110 ft
B3	120 to 160 ft
C	200 to 240 ft
Deep Aquifer	>240 ft

[a] Navy and NASA refer to this zone as A1 zone north of Highway 101.

[b] Navy and NASA refer to this zone as A2 north of Highway 101.

> = greater than

The upper groundwater zone is subdivided into two water-bearing zones, the A-zone and the B-zone, which are separated by the A/B1 aquitard. The B-zone aquifer has been further subdivided into three zones. From youngest to oldest (shallowest to deepest), these are the B1-, B2-, and B3-zones, separated by aquitards, designated as B1/B2 aquitard and the B2/B3 aquitard. The lower groundwater zones occur below the B/C aquitard, from about 200 ft bgs. The B/C aquitard is the major confining layer beneath the MEW Area. Two lower groundwater zones have been defined: the C-zone and what has been termed the Deep Aquifer, below the C-zone (HLA, 1987; Intel, 1987).

Ranges of hydraulic conductivity (K), hydraulic gradient, and transmissivity of the upper aquifer zone i.e., above the B/C aquitard, calculated from pumping tests conducted at the MEW Area from 1986 through 2005 are presented in the table below, (Canonie 1986a, 1986b, 1987, and 1988), (Geomatrix 2004), (HLA 1986 and 1987), (Locus 1998), (PRC 1991), (Navy 2005) and (Weiss 1995 and 2005).

[1] The nine 106 Order Respondents are Fairchild, Schlumberger Technology Corporation, National Semiconductor Corporation, NEC Electronics, Siltec Corporation, Sobrato Development Companies, General Instrument Corporation, Tracor X-Ray, and Union Carbide Chemicals and Plastics Company.

Water-Bearing Zone	Estimated Hydraulic Conductivity (ft/day)		Approximate Horizontal Gradient (ft/ft)	Saturated Thickness (ft)	Transmissivity (ft^2/day)	
	Low	High			Low	High
A-zone	6	480	0.004	15	44	4,400
B1-zone	20	260	0.003	25	150	2,600
B2-zone	0.4	5	0.002 to 0.005	35	2	230
B3-zone	0.5	5	0.001 to 0.002	40	5	130

Currently and historically, the horizontal component of groundwater flow beneath the Site is generally towards the north during non-pumping and pumping conditions. The Site groundwater gradients and velocities have been locally altered near source control recovery wells (SCRWs), regional recovery wells (RRWs), and the Fairchild and Raytheon slurry walls (Weiss Associates, 2009).

The vertical component of groundwater flow is generally upward from the B1- to the A-zone, but is locally downward in some areas of the Site (HLA, 1987). Groundwater extraction has likely exerted an influence on measured vertical gradients. Vertical gradients below the B1-zone are generally upward (Geosyntec et al, 2008).

1.3 Description of Remedy

As specified in the ROD, the remedy consists of groundwater extraction and treatment. The remedy is designed to protect local water supplies and to remediate or control groundwater that contains elevated concentrations of chemicals, including control of discharge of such groundwater to surface water.[2] Groundwater cleanup goals are 5 µg/L for TCE in shallow groundwater (A and B zones) and 0.8 µg/L for TCE in deep groundwater (C and Deep zones).[3] The ROD states that the chemical ratio of TCE to other chemicals found at the Site is such that achieving the cleanup goal for TCE will result in cleanup of the other Site chemicals to at least their respective federal MCLs.

In 1986, Fairchild installed subsurface slurry walls at three of its former facilities: (1) Buildings 1-4 at 515/545 Whisman Road and 313 Fairchild Drive, (2) Building 9 at 401 National Avenue, and (3) Building 19 at 369 Whisman Road. The slurry walls extend to approximately 40 ft bgs and are keyed a minimum of two ft into the A/B1 Aquitard. The groundwater cleanup standard of 5 µg/L of TCE for the shallow groundwater zones includes groundwater inside the slurry walls.

Cleanup has been addressed in two stages: initial actions and a long-term remedial phase (USEPA, 1989). Initial cleanup actions included tank removals, well sealing, soil removal and treatment, slurry wall construction, and local groundwater extraction and treatment. The Site is in the long term remedial phase that consists of extraction and treatment of groundwater by air stripping towers or liquid-phase granular activated carbon (GAC). Remedial activities are being conducted by individual MEW PRPs as well as the MEW RGRP.

[2] The objectives of the groundwater remedy design are described in the ROD and the Feasibility Study (Canonie,1988).

[3] Groundwater cleanup goals are presented in the ROD.

All soil remediation at the MEW Area was completed by 2001. The soil cleanup standards for the MEW Area are 0.5 milligram per kilogram (mg/kg) of TCE for all soils outside of the slurry walls and 1 mg/kg TCE for soil inside the slurry walls. Soil cleanup actions included *in-situ* vapor extraction with treatment by vapor-phase GAC, and excavation and treatment by aeration. In 1996, Fairchild completed soil cleanup at 515/545 Whisman Road and 313 Fairchild Drive by excavating and treating 15,000 cubic yards of soil.

An additional plume definition program for the MEW Area was completed in 1992, and between 1991 and 1995, preliminary and final design documents for soil and groundwater source control measures were developed and submitted to the USEPA (Canonie, 1993, 1994, and 1995). Fairchild first installed extraction wells and groundwater treatment systems (air strippers) at its former facilities in 1985-1986. The treatment systems were replaced with GAC systems in 2003 (RMT, 2003). The First Five-Year Remedy Review for the MEW Site was completed in 2004 (USEPA, 2004). The Second Five-Year Remedy Review was completed in October 2009 (USEPA, 2009a).

Table 1 provides construction details for groundwater wells at the Site. Currently, four SCRWs; AE/RW-9-1, AE/RW-9-2, RW-25A, and RW-4B2, and one RRW; 38B2, pump groundwater for treatment at Fairchild System 1 at 545 Whisman Road. Wells AE/RW-9-1 and AE/RW-9-2 are associated with Building 9 and RW-25A is associated with Building 18. Five SCRWs; RW-5A, RW-7A, RW-27A, RW-5B1, and RW-7B1, and RRWs; RW-9B1 and RW-9B2 pump groundwater for treatment at Fairchild System 3 at 313 Fairchild Drive.

1.4 Summary of Site Activities and Deliverables

Table 2 provides the 2009 monitoring and reporting schedule for the Site. Site activities conducted in compliance with the 106 Order (USEPA 1990a) from January through December 2009 include:

- Continuing groundwater extraction and treatment;
- Monitoring the groundwater treatment systems weekly for operation and flow rates;
- Submitting a Notice of Intent on January 21 to reauthorize the discharge and/or reuse of treated groundwater with VOCs under California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) Permit No. CAG912003;
- Sampling the treatment systems monthly January through September in compliance with National Pollutant Discharge Elimination System (NPDES) Permit CAG912003, Order No. R2-2004-0055;
- Sampling the treatment systems monthly October through December in compliance with the new general VOC permit Water Board Order No. R2-2009-0059 for Fairchild Treatment Systems 1 and 3. This permit was issued by the Water Board in August 2009 and is effective October 1, 2010 through September 2014.
- Submitting quarterly Self-Monitoring Reports for treatment system discharges and extraction and treatment quantities to the Water Board, under NPDES Permit CAG912003 by January 30, April 30, July 30, and October 30;

- Collecting quarterly groundwater elevation measurements in Site slurry wall well pairs on March 26, May 28, August 27 and November 19;
- Collecting semi-annual groundwater elevation measurements in Site monitoring and extraction wells on March 26, and November 19;
- Renewed the City of Mountain View Environmental Compliance Plans and permits on May 30, 2009 to store hazardous materials (sulfuric acid) at Systems 1 and 3. Sulfuric acid was used during 2009 to neutralize carbon following granular activated carbon replacement at the treatment systems,
- Responding to USEPA information requests for its Second Five-Year Remedy Review during April-June, and its onsite inspection on May 5;
- Distributing the 2008 Annual Progress Report to the USEPA and MEW Distribution List parties on June 15;
- Well redevelopment in RW-4B2 August 24-28;
- Collecting indoor air samples at 515 and 545 North Whisman Road in October;
- Collecting annual groundwater samples from Site monitoring and extraction wells in November-December 2009;
- Annual settlement monitoring December 9 and 10;
- Assessing the progress of remedial actions during 2009; and,
- Planning remedial actions for 2010.

Section 2 of this report provides a summary of Site groundwater remedial activities conducted during this reporting period. Sections 3-7 document additional activities, problems encountered, technical assessment, conclusions, recommendations and a summary of planned activities for 2010. Supporting data are presented in Figures 1 through 15, Tables 1 through 15, and Appendices A through D.

2. GROUNDWATER EXTRACTION AND TREATMENT

A combined total of approximately 34.3 million gallons of groundwater were treated and 505 pounds of VOCs removed by the Site treatment systems during this reporting period. Table 3 provides the target flow rates for the groundwater extraction wells. Tables 4 and 5 present the monthly average flow rates and extraction totals for System 1. Tables 6 and 7 present the monthly average flow rates and extractions totals for System 3. Analytic results for treatment system sampling are provided in Tables 8 and 9.

VOC mass removal summaries for the two Site treatment systems are presented in Tables 10 and 11. Cumulative groundwater extracted and mass removed by Systems 1 and 3 are illustrated in Figures 4 and 5, respectively.

As required by the Site discharge permit, extraction well and treatment system flow readings are recorded weekly and the Site treatment systems are sampled monthly. Results are reported quarterly to the Water Board. The analytical results of the monthly groundwater samples from Systems 1 and 3 are summarized in Tables 8 and 9, respectively. Appendix B contains the laboratory analytic reports, and Appendix C provides the quality assurance/quality control (QA/QC) evaluation for samples collected at the Site during 2009.

Treatment system discharges were within all effluent limits established by NPDES Permit CAG912003, Order No. R2-2004-0055 (January through September, 2009), and Order No. R2-2009-0059 (October through December 2009).

2.1 Treatment System Description

This section presents the status of the groundwater treatment systems at 515 and 545 Whisman Road, (former Buildings 1 and 2) and, 313 Fairchild Drive (former Buildings 3 and 4) during 2009. Containment at the Site is also provided by the Buildings 1 through 4 slurry wall enclosure that is approximately 1,100 ft long, by 500 ft wide and approximately 40 ft deep, extending a minimum of two ft into the A/B1 aquitard.

2.1.1 Extraction and Treatment at Former Buildings 1 and 2 (System 1)

During 2009, System 1 extracted and removed approximately 19.5 million gallons of groundwater and 245 pounds of VOCs. During 2009, System 1 included the following extraction and treatment components:

- One operating RRW;
- 13 SCRWs: 4 operating, 8 temporarily off-line, and 1 permanently off-line;
- One basement dewatering sump conveyed to treatment system from Fairchild Building 18, (Weiss, 2010);
- Three 5,000-pound GAC vessels in series; and,
- Electrical distribution and control panels, a programmable logic control (PLC), and an auto-dialer.

The System 1 status of the RRW and SCRWs is presented in Section 2.1.3.1.

2.1.2 Extraction and Treatment at Former Buildings 3 and 4 (System 3)

During 2009, System 3 extracted and removed approximately 14.8 million gallons of groundwater and 260 pounds of VOCs. During 2009 System 3 included the following extraction and treatment components:

- Three RRWs: 2 operating and 1 temporarily off-line;
- Nine SCRWs: 5 operating, 2 temporarily off-line, and 2 permanently off-line;
- Three 5,000-pound GAC vessels in series; and,
- Electrical distribution and control panels, a PLC, and an auto-dialer.

The status of the RRWs and SCRWs during 2009 is presented in Section 2.1.3.1 below.

2.1.3 Status of Extraction and Monitoring Wells

2.1.3.1 Extraction Wells

The status of all of the extraction wells plumbed to Systems 1 and 3 are summarized below:

2009 Well Status			
System 1 Wells		**System 3 Wells**	
Operational			
RW-4B2	AE/RW-9-1	RW-5A	RW-9B1 (RRW)
38B2 (RRW)	AE/RW-9-2	RW-5B1	RW-9B2 (RRW)
RW-25A		RW-7A	RW-27A
		RW-7B1	
Temporarily Off-line			
RW-3A	RW-16A	RW-9A (RRW)	
RW-3B1	RW-20A	RW-18A	
RW-4A	RW-21A	RW-12B1	
RW-4B1	RW-28A		
Permanently Off-line			
RW-3B2		RW-5B2	RW-7B2

Wells listed as temporarily off-line have been shut down since August 2007 with approval from the USEPA (USEPA, 2007). Extraction wells RW-3B2 and RW5-B2 have been off since 1999 and well RW-7B2 has been off since February 2000 (RMT, 2000).

Extraction well flow rates were set according to those assigned in the 2007 slurry wall evaluation (Northgate; 2006, 2007a, 2007b, and 2008a). The Optimization Evaluation Report considered previous evaluations and recommended a revised pumping scenario based on groundwater modeling to achieve greater VOC mass removal (Geosyntec, et al, 2008).

2.1.3.2. Monitoring Wells

Currently, 28 monitoring wells are used to evaluate the Building 1-4 Site. Eighteen of the monitoring wells are in the A-zone, seven monitoring wells are located in the B1-zone, and three monitoring wells are in the B2-zone. Water levels are measured quarterly in eleven slurry wall well pairs (22 wells), semi-annually in other monitoring wells, and water quality samples are collected annually in 28 monitoring wells. Monitoring and extraction well construction details are presented in Table 1 and shown in Figure 3.

2.2 Extraction and Treatment System Operation and Maintenance

From January 1 through December 31, 2009, the two Site treatment systems ran nearly continuously. System 1 ran 96.6% of the time, and System 3 ran 98.5% of the time. At System 1, a total of 17.5 tons of spent carbon was generated, and 1.6 tons of spent sediment filters were disposed as hazardous waste during 2009. At System 3, a total of 7.5 tons of spent carbon was generated, and 0.4 tons of spent sediment filters were disposed as hazardous waste.

The following table summarizes maintenance or operational activities conducted at System 1 or the wells that discharge to System 1 during 2009:

Fairchild Treatment *System 1*			
2009 Dates	**Component**	**Description**	**Regulatory Notification**
January 19 – 20	GAC Vessel	The treatment system was shut down for approximately 29 hours to replace carbon in primary GAC vessel.	Not Required
February 14 – 17	System / RW-25A	The treatment system was off approximately 16 hours between February 14, and February 17, due to vault flood alerts at RW-25A caused by a rain storm event.	Not Required
March 17 – 18	GAC Vessel	The treatment system was shut down for approximately 22 hours to replace carbon in primary GAC vessel.	Not Required
March 31	RW-4B2	The well was off less than two hours due to a low flow alert.	Not Required
April 8	System	A brief power outage caused the treatment system to go off-line for approximately two hours.	Not Required
April 12	System/ RW-4B2	The treatment system went off-line for approximately seven hours due to a vault flood at RW-4B2. The vault flood was caused by garden sprinklers in the vicinity. The vault at RW-4B2 was improved during the week of April 29 to prevent future flooding.	Not Required
April 14	System	The treatment system went off-line for approximately 10 hours due to a controller communication error.	Not Required
April 23	AE/RW-9-2	AE/RW-9-2 was off-line approximately 36 hours due to a failed pump and installation of replacement pump.	Not Required
May 5 – 6	GAC Vessel	The treatment system was off-line for approximately 28 hours between May 5 and 6 during a routine carbon change.	Not Required
June 30 – July 1	GAC Vessel	The treatment system was off-line for approximately 29 hours between June 30 and July 1 during a routine carbon change.	Not Required
June 30 – July 1	Treatment System	The treatment system was off-line due to a routine carbon change for approximately 30 hours between June 30 and July 1.	Not Required

Fairchild Treatment *System 1*			
2009 Dates	**Component**	**Description**	**Regulatory Notification**
July 5	Treatment System	The treatment system was off-line due to a power outage for approximately 9 hours on July 5.	Not Required
July 5 – July 6	RW-25A	RW-25A was off-line a total of approximately 30 hours after system power outage on July 5 and pump issues.	Not Required
July 30	Treatment System	The treatment system was off-line due to a pad flood alert for approximately 30 minutes on July 30. There was no flood, this was a flood switch problem.	Not Required
August 4	Treatment System	The treatment system was off-line for approximately 9 hours due to maintenance pipe cleaning between the treatment system and the Building 18 sump.	Not Required
August 19 – 20	Treatment System	The treatment system was off-line approximately 28 hours due to a routine carbon change.	Not Required
August 28	Extraction Wells	RW-25A, AE/RW-9-1, and AE/RW-9-1 were off-line on August 28 during the redevelopment of RW-4B2.	Not Required
August 31 – September 10	RW-4B2	Following redevelopment RW-4B2 had low flow alerts on August 31, September 1, 5, 6, and 10 while the flow settings were being adjusted. During each alert, the well was off-line for less than 24 hours.	Not Required
September 25	RW-4B2	The pump was replaced in RW-4B2 on September 25. The well was off-line for approximately 5 hours during the replacement.	Not Required
September 27	RW-4B2	RW-4B2 went off-line due to a pump time out alert on September 27, the flow rate was reset. The well was off-line for approximately 5 hours as a result of the alert.	Not Required
October 5	AE/RW-9-2	Extraction well AE/RW-9-2 was off-line for approximately 3 hours due to a communications alert. The paddlewheel switch was cleaned and the transmitter was replaced.	Not Required
October 13 – 14	Treatment System	The treatment system was off-line for approximately 27 hours for a routine carbon change.	Not Required
December 2 – 3	Treatment System	The treatment system was off-line for approximately 26 hours for a routine carbon change.	Not Required

The following table summarizes maintenance or operational activities conducted at System 3 or the wells that discharge to System 3 during this reporting period.

Fairchild Treatment *System 3*			
2009 Dates	**Component**	**Description**	**Regulatory Notification**
February 10	System	System was turned off for approximately seven hours for planned maintenance.	Not Required
February 22	System	System was turned off for approximately three hours due to treatment pad flooding from a rain event.	Not Required
February 25	System	System was turned off for approximately three hours for scheduled maintenance.	Not Required
March 19 – 20	System GAC Vessels	System was shut down on March 19, for approximately 27 hours to replace carbon in the primary GAC vessel and was restarted on March 20.	Not Required
April 8	System	A brief power outage in the afternoon on April 8 caused the treatment system to go off-line and send out alerts. The alerts were cleared and the system was restarted within approximately two hours.	Not Required
May 15	System	The treatment system turned off due to a false emergency stop alert (due to electrical surge) on May 15. The alert was cleared and the system was restarted within one hour of the alert.	Not Required
May 25 and 29	System	The treatment system turned off for a total of five hours on May 25, and May 29, due to a PLC communication problem.	Not Required
July 5	Treatment System	The treatment system went off-line due to a power outage on July 5, for approximately 6 hours.	Not Required
July 14 – 15	Treatment System	The treatment system was off-line due to a routine carbon change between July 14 and 15, for approximately 25 hours.	Not Required
July 24 – 27	Treatment System	The treatment system went off-line due to pad flood alerts on July 24 and July 27, caused by a problem with the float switch that triggered the alert and not an actual flood. The system was off-line for a combined total of 15 hours as a result of these alerts.	Not Required
November 18	Treatment System	Treatment system went off-line for less than one hour on November 18, due to a pad flood alert caused by accumulated water in the sump.	Not Required
December 2 – 3	Treatment System	Treatment system was turned off on December 2, for a routine carbon change and was off-line for approximately 26 hours.	Not Required
December 7 – 8	RW-5A	RW-5A was discovered to be off on December 7, after it began cycling over the weekend and did not cycle back on. The pump in the well needed replacement. The well was off-line for approximately 64 hours as a result of this issue.	Not Required
December 8	Treatment System	Treatment system went off-line on December 8, due to a pad flood alert cause by a clogged filter in the sump. The system was off-line for approximately 6 hours as a result of this alert.	Not Required

The USEPA and Water Board are required to be notified of extraction well and system down-time events as follows:

1. USEPA: *The owner and/or operator of the RGRP/Fairchild treatment system will make a best effort to orally notify USEPA within 24 hours of a RRW or system shutdown that occurs for more than 72 hours.*

2. Water Board: *If the treatment system is shut down for more than 120 consecutive hours after the start up period (maintenance, repair, violations, etc.) the reason(s) for shut down, proposed corrective action(s), and estimated start-up date shall be orally reported to the Water Board within five days of shut down and a written submission shall also be provided within 15 days of shut down.*

As demonstrated by system downtime events for System 1 and System 3 listed above, no notifications of well or system shut-downs were required during 2009.

2.3 Groundwater Level Monitoring

During this reporting period, groundwater elevations were recorded in all Site monitoring wells on March 26, and November 19, 2009. Water levels were measured in slurry wall well pairs quarterly from March through November 2009 (Table 12). Hydrographs of Site slurry wall well pair water levels are presented in Figures 6 through 9.

Potentiometric Surface Maps and Estimated Capture Zones for Buildings 1-4 are presented in Figures 10-15.

2.4 Groundwater Quality Monitoring

The 2009 Annual Groundwater Quality Sampling Event was conducted in November and December 2009. A summary of chemical analytic results for the previous five years (2005 through 2009) is presented in Table 13. TCE isoconcentration contour maps are presented on Figures 10-15, and are based on isoconcentration contours in all Site wells sampled in 2009 as presented in the MEW RGRP Annual Progress Report (Geosyntec, 2010b).

Time–concentration graphs for monitoring and extraction wells in the Buildings 1-4 Area are presented in Appendix D. The data presented in Table 13 and Appendix D show that for the wells sampled in 2009, TCE concentrations in groundwater in most Site wells are well below historical maximums and indicate steady to declining concentration trends. TCE increases in a few wells measured in 2009 as compared to 2008; however, 2009 results are well below historical concentrations. Cis-1,2-dichloroethene concentrations in Site wells; 127A, RW-9A, 115B1, RW-4B1, RW-12B1, and RW-3B2 outside the slurry wall, and RW-28A inside the slurry wall, appear to be increasing. These trends suggest local natural attenuation of TCE.

2.5 Hydraulic Control and Capture Zone Analysis

2.5.1 Methodology

Capture zone analysis is the process of evaluating field observations of hydraulic heads and groundwater chemistry to estimate the capture zone achieved by the groundwater extraction system, and then comparing the estimated capture zone to a "Target Capture Zone" to determine if capture is sufficient (USEPA, 2008).

Hydraulic capture from the Buildings 1 through 4 extraction wells was estimated for March and November 2009 by graphical flow net evaluation of groundwater flow streamlines drawn perpendicular to groundwater contours to derive time-dependent estimated capture zones snapshots. The graphical analysis was guided by calculated distances to the stagnation point and capture zone width based on the analytical solution of Javandel and Tsang (1986). Because the calculation method assumes a homogeneous, isotropic, two-dimensional groundwater flow zone and is dependent on a regionally estimated value of transmissivity, the calculated distances are of secondary importance compared to measured water level data and the resulting potentiometric surface.

The following six steps were used for the Buildings 1 through 4 capture evaluation:

Step 1: Review Site data, Site conceptual model, and remedy objectives.

Step 2: Define Site-specific target capture zones.

Step 3: Generate potentiometric surface maps based on interpolation of measured water levels.

Step 4: Perform capture zone width calculations.

Step 5: Evaluate concentration trends for wells outside of the target capture zone.

Step 6: Estimate capture based on steps 1-5, compare to target capture zone(s), assess uncertainties and data gaps (Section 2.5.4).

2.5.2 Comparison to Target Captures

The target capture areas for the SCRWs outside the Site slurry wall are the modeled capture zones depicted in the final remedial design document for the MEW Area South of Highway 101, (Canonie, 1994; Smith, 1996). Target capture for wells inside the slurry wall was assumed to be the width of the slurry wall since the wall provides the primary containment method. Estimated 2009 capture based on graphical flow net evaluation depicted on Figures 10 through 15 indicates that actual capture snapshots in March and November are similar to target captures for all operating extraction wells. Estimated captures in the A-2, B-1 and B-2 groundwater zones are generally larger than target captures.

2.5.3 Horizontal and Vertical Gradients

Groundwater elevations were recorded quarterly in March, May, August, and November 2009 in the following slurry wall monitoring well pairs: 76A/118A, 127A/33A, 128A/84A, 129A/121A, 130A/59A, 136A/133A, 156A/157A, 20B1/33A, 60B1/118A, 115B1/124A, and 119B1/133A (Table 12). These well pairs are used to evaluate the direction of horizontal gradient across the slurry wall and the direction of vertical gradient across the A/B aquitard. Well locations are shown in Figure 3.

Figures 6 through 9 present graphs of head difference between slurry wall well pairs at the Site grouped by upgradient, cross-gradient, downgradient and vertical gradient well pairs. Results of the well pair analysis indicate:

- Horizontal gradients were generally inward on the upgradient (south) and trans-gradient (west and east) sides of the slurry wall, and outward on the downgradient (north) side of the slurry wall.
- Inside the slurry wall, vertical gradients between the B1-zone and A-zone were consistently upward in well pairs 115B1/124A and 119B1/133A, and downward in well pairs; 20B1/33A and 60B1/118A.

The horizontal and vertical gradients recorded during this reporting period are generally consistent with historical observations.

2.5.4 Capture Assessment

A summary of the 2009 capture evaluation is presented below:

Step	2009 Status
Step 1: Review Site Data, Site Conceptual Model and Remedy Objectives	Site data, Site conceptual model, and remedy objectives were reviewed and determined to be adequate to assess capture.
Step 2: Define "Target Capture Zone(s)"	Target Capture is defined based on modeled capture developed during remedial design, and are shown in Figures 10-15. For wells within the slurry wall, target capture is the slurry wall boundaries.
Step 3a: Water Level Maps	Potentiometric surface contours are presented in Figures 10 through 15. Water levels at extraction wells were measured through piezometers constructed in the filter packs and therefore were considered reliable for use in constructing potentiometric surface maps. Water levels inside and outside the slurry wall enclosures were contoured separately. Graphical flow net analysis of the potentiometric surface contours was used in addition to the calculated capture zone widths.
Step 3b: Water Level Pairs	As shown in Table 12 and Figures 6 through 9, there are inward gradients in 5 upgradient and cross gradient slurry wall well pairs. Three well pairs at the downgradient end of the slurry wall, and one well pair at the southwest corner of the wall (up/cross-gradient) have outward gradients. Vertical gradients are both upward and downward between the A and B1 zones.
Step 4a: Perform Capture Zone Widths Calculation	Tables 14 and 15 present the results of the capture zone width calculations for March and November 2009.
Step 5: Concentration Trends	Long term trends in VOC concentrations are generally decreasing to stable based on time concentration plots in Appendix D.
Step 6: Estimate Capture Zones and Compare To Target Capture Zone(s)	Vertical and horizontal VOC plume capture in 2009 meet target captures for all groundwater zones based on converging lines of evidence, including graphical flow net analysis and relatively stable 5 µg/L isoconcentration contours since 1992 in the A/A1 and B1/A2 groundwater zones.

3. OTHER ACTIVITIES

3.1 Optimization Evaluation for Groundwater

There were no optimization activities during 2009 because the USEPA has not yet provided comments or approved the Optimization Evaluation Report for the Fairchild sites in the MEW Area that was submitted to USEPA September 3, 2008 (Geosyntec, et al, 2008 and Geosyntec, 2010a). The evaluation considered previous efficiency and slurry wall evaluations at the Site (Northgate, 2007a, 2007b, 2008a, 2008b), and recommended implementing an optimization program for the Fairchild sites in conjunction with similar optimization programs for the RGRP and other MEW facilities.

3.2 Air/Vapor Intrusion

The final *Revised Supplemental Feasibility Study for Vapor Intrusion* was issued on June 29, 2009 (Haley & Aldrich, 2009). The USEPA issued a Proposed Plan to address Vapor Intrusion in June 2009, and held a public meeting on July 23, 2009 (USEPA, 2009b).

In the Fall of 2009, indoor air samples were collected at ten commercial buildings in the MEW Area pursuant to requests from the owners of the buildings. Samples were collected in the Former Fairchild Buildings 1-4 Area at:

- 515 N. Whisman Road; and,
- 545 N. Whisman Road.

The sampling results indicated no short- or long-term potential health risk concerns from the vapor intrusion pathway under current conditions (Haley and Aldrich, 2010).

The USEPA plans to issue a ROD amendment to address vapor intrusion in 2010.

3.3 Five Year Remedy Review

The USEPA issued a Second Five-Year Remedy Review in September 2009 (USEPA, 2009a).

3.4 Well Redevelopment

Extraction well rates in well RW-4B2 declined to about 0.5 to 0.8 gpm from historic high extraction rates as high as 2 gpm. Most historic data indicates sustainable extraction rate of less than 1.2 gpm for this well. Well RW-4B2 was redeveloped in August 2009 in an effort to establish a better hydraulic connection with the water-bearing zone and improve well yield. Well redevelopment slightly improved the extraction rate to about 1 gpm, and the pump reduced cycling time.

3.5 Soil Settlement Survey

An annual soil settlement survey was performed on December 9-10, 2009. The purpose of these annual measurements is to evaluate any potential adverse effects on the Site facilities, and whether long-term remedial groundwater extraction could affect soil settlement in the MEW study area. A qualified Geotechnical Engineer reviewed the historical settlement and water level elevation data and concluded that the measured values of ground elevation change do not appear to be related to groundwater extraction. Additional information on the settlement survey can be found in the RGRP 2009 Annual Progress Report (Geosyntec, 2010b).

4. PROBLEMS ENCOUNTERED

Section 2.2 provides a summary of all non-routine Operations and Maintenance events that occurred at the System 1 and System 3 Treatment Systems. No other problems related to Buildings 1-4 Site were encountered.

5. TECHNICAL ASSESSMENT

The following assessment of the groundwater remedy performance for the Site is based on data collected through 2009.

- The Remedy is Functioning as Intended. The Building 1-4 treatment systems continue to function as planned. The 2009 Annual Report Remedy Performance Checklist for the Site, and four other former Fairchild facilities, is included as Appendix A.

- Plume Capture is Achieved. Groundwater elevation and chemical monitoring results from 2009 demonstrate that the SCRWs and RRWs at the Site continue to achieve adequate capture based on graphical flow net analysis and chemical concentration trends.

- Chemical Concentrations Are Stable to Decreasing Over Time. Chemical concentration trends in Buildings 1-4 wells within and downgradient of the slurry wall indicate stable or declining concentrations over time based on review of concentration-time plots in Appendix D and Table 13. Current concentrations are below historical VOC concentrations for this area, and TCE isoconcentrations contours indicate a stable perimeter, with an overall reduction in VOC mass.

- Vertical Gradients Are Variable. Vertical gradients between the B1-zone to the A-zone continue to be upwards at well pairs; 115B1/124A and 119B1/133A, and downward in well pairs; 20B1/33A and 60B1/118A during 2009, similar to previous years. The vertical gradients recorded during this reporting period are generally consistent with historical observations.

- Slurry Wall Horizontal Gradients Are Variable. Horizontal gradients in 2009 were consistently inward along the upgradient (southern) and cross-gradient (western and eastern) sides of the slurry walls, and outward along the downgradient (northern) side of the slurry wall. These horizontal gradients are generally consistent with historical observations.

6. CONCLUSIONS AND RECOMMENDATIONS

The Buildings 1-4 remedy is functioning as intended. Capture snapshots from March and November 2009 meet or exceed target capture areas based on converging lines of evidence, including graphical flow net analysis, capture zone width calculations and concentration trends.

Approximately 34.3 million gallons of groundwater were treated and 505 pounds of VOCs were removed by the Site treatment systems during 2009. From January 1 through December 31, 2009, Site Treatment Systems 1 and 3 operated on a nearly continuous basis (97% and 99%, respectively), and no significant problems related to system operations were noted in 2009.

Recommendations from the 2008 Optimization Evaluation for the Fairchild Sites should be implemented after receiving comments or approval from the USEPA.

7. UPCOMING WORK IN 2010 AND PLANNED FUTURE ACTIVITIES

Activities planned for 2010 include:

- Continuing groundwater extraction, treatment and monitoring in accordance with the Site monitoring and reporting schedule;
- Optimization of extraction well rates; and,
- Continuing coordination with USEPA on their ROD amendment for vapor intrusion.

The effectiveness and progress of groundwater restoration activities during 2010 will continue to be evaluated by continuing operation, maintenance, and monitoring accordance with the Site monitoring and reporting schedule. All Site-specific data, including optimization activities, will be documented in the 2010 Annual Progress Report, which will be submitted to the USEPA by June 15, 2011.

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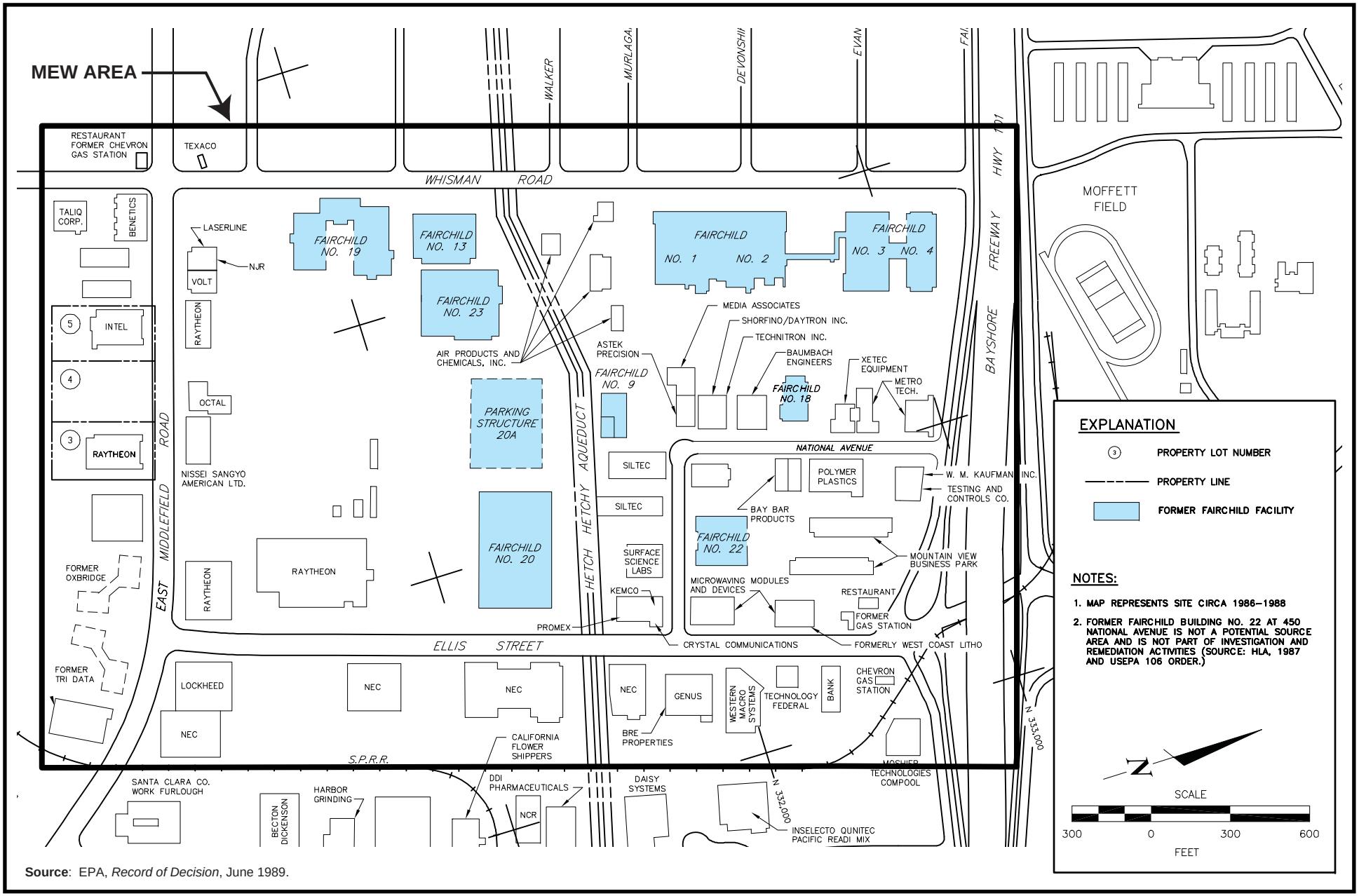
FIGURES

Figure 1. Site Location, MEW Area, Mountain View, California



Source: EPA, *Record of Decision*, June 1989.

Figure 2. Previous Building Configurations, Former Fairchild Facilities, MEW Area, Mountain View, California

MEW Area

Perimeter Rd
Bayshore Fwy/Hwy 101
Fairchild Dr
Evandale Ave
Devonshire Ave
Murlagan Ave
Sherland Ave
Flynn Ave
Bailey Rd
Dailey Rd
Ellis St

61A
11B2
156A
157A
147B1
148B2
130A
59A
RW-7(B1)
RW-7A
RW-9(B1)R
RW-7(B2)
RW-9A
RW-9(B2)
76A
118A
60B1
RW-27A
67A
RW-5(B1)
RW-5(B2)
RW-5A
Fairchild System 3
57A
124A
115B1
RGRP South
RW-4A
RW-18A
RW-12(B1)
46A
RW-25A
51A
RW-4(B1)
121A
RW-4(B2)
RW-28A
68A
129A
2B1
38B2
RW-3A
Fairchild System 1
33A
RW-3(B2)
RW-3(B1)
RW-16A
10B2
84A
127A
20B1
128A
133A
118B2
119B1
136A
AE/RW-9-1
AE/RW-9-2
RW-21A
RW-20A
Former Fairchild Building 9 Site
Fairchild System 19
Former Fairchild Building 19 Site
Raytheon Site
Raytheon System

N

0 250 500 750 Feet

Explanation

Buildings 1 through 4 Remedy Components

- Regional Recovery Well, on
- Regional Recovery Well, off
- Source Recovery Well, on
- Source Recovery Well, off
- Monitoring Well

Extraction and Monitoring Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- 515 /545 Whisman Road and 313 Fairchild Drive (Current - 515 /545 North Whisman Road and 313/323 Fairchild Drive)
- Fairchild Groundwater Treatment System 1 and 3
- Groundwater Treatment Plant
- Slurry Wall
- Building
- Road
- Treatment-System Pipeline
- Treatment-System Discharge Pipeline

Figure 3

Former Fairchild Buildings 1 through 4
Site Map and Well Network
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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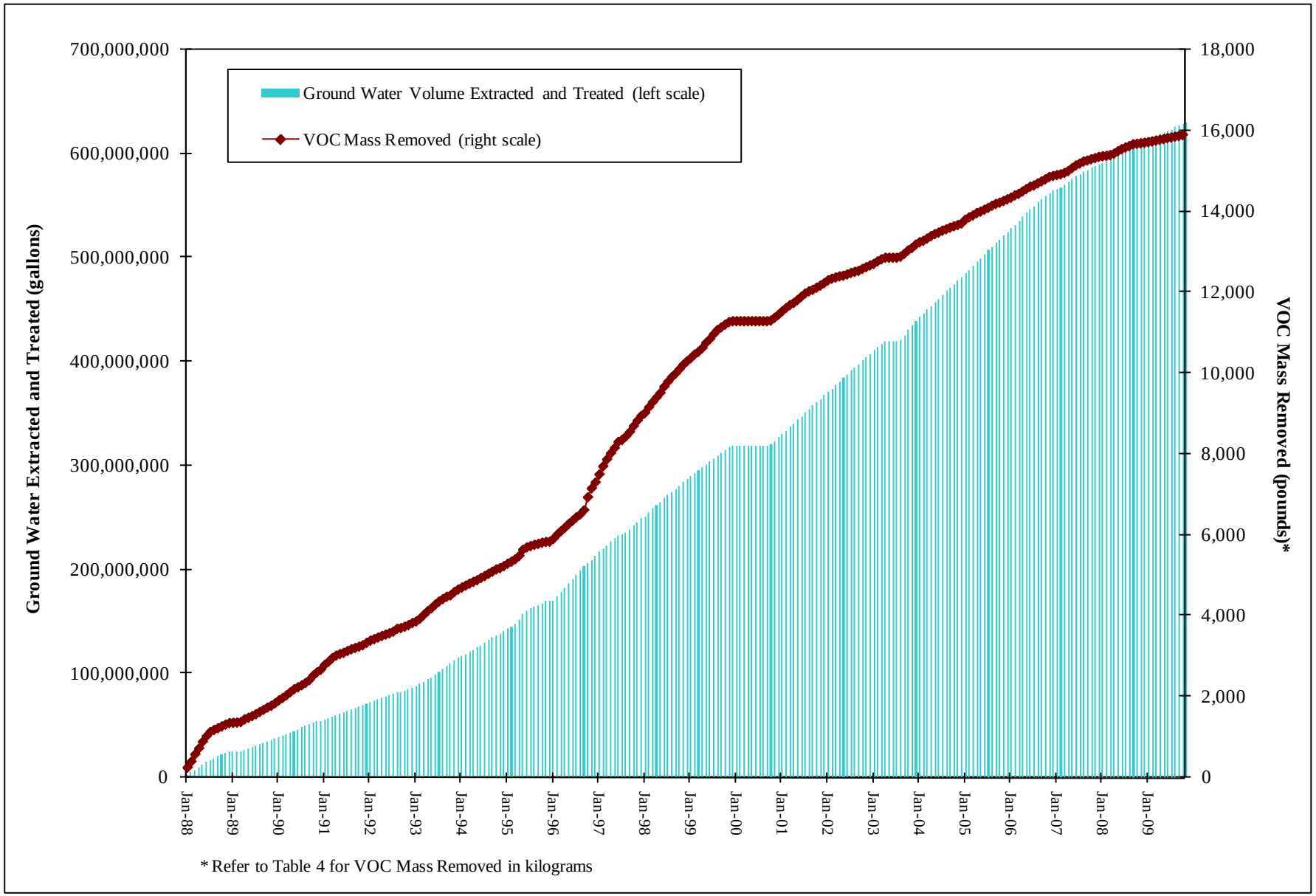


Figure 4. Cumulative Groundwater and VOC Mass Removal Summary, Fairchild System 1, 515/545 Whisman Road, Mountain View, California.

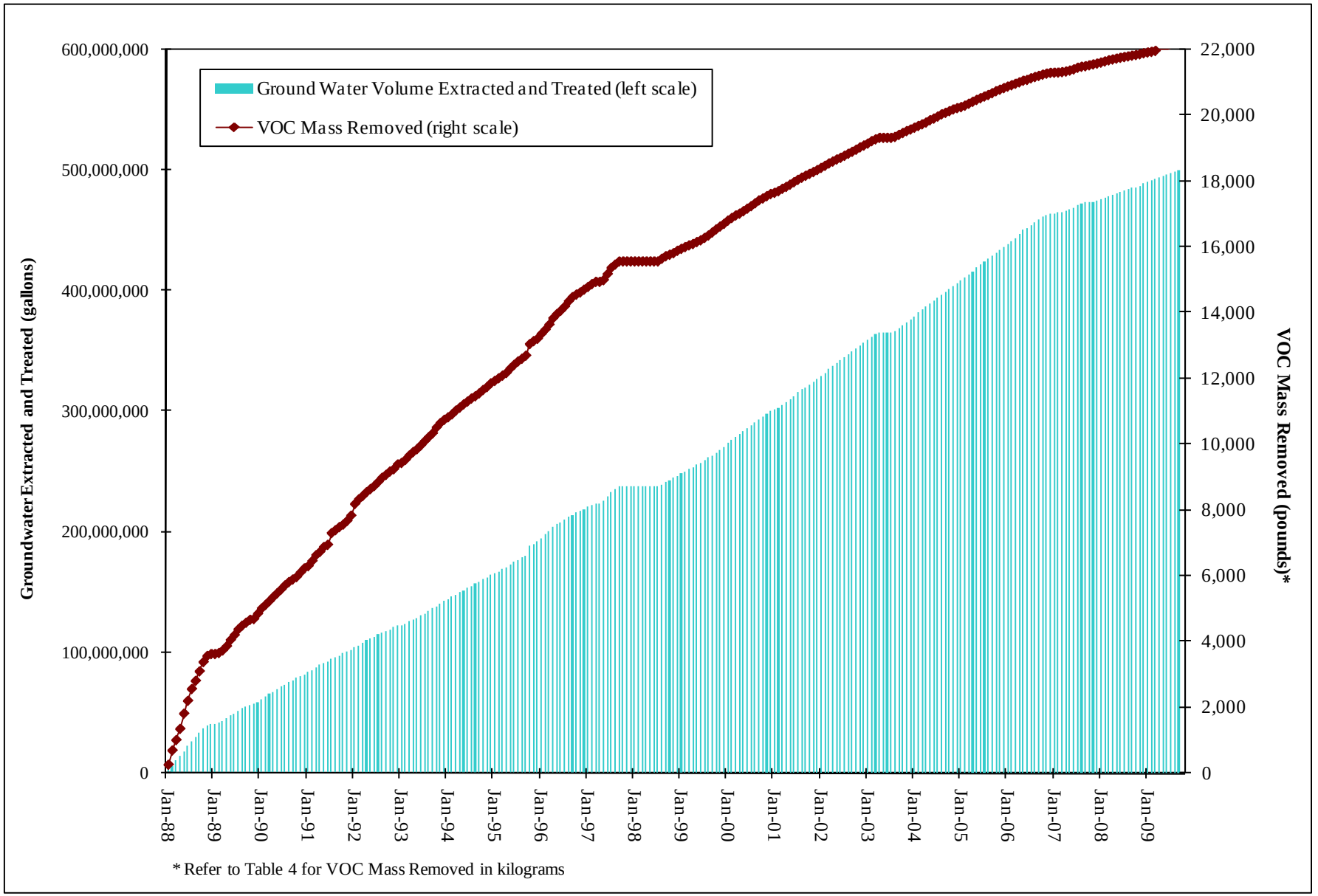
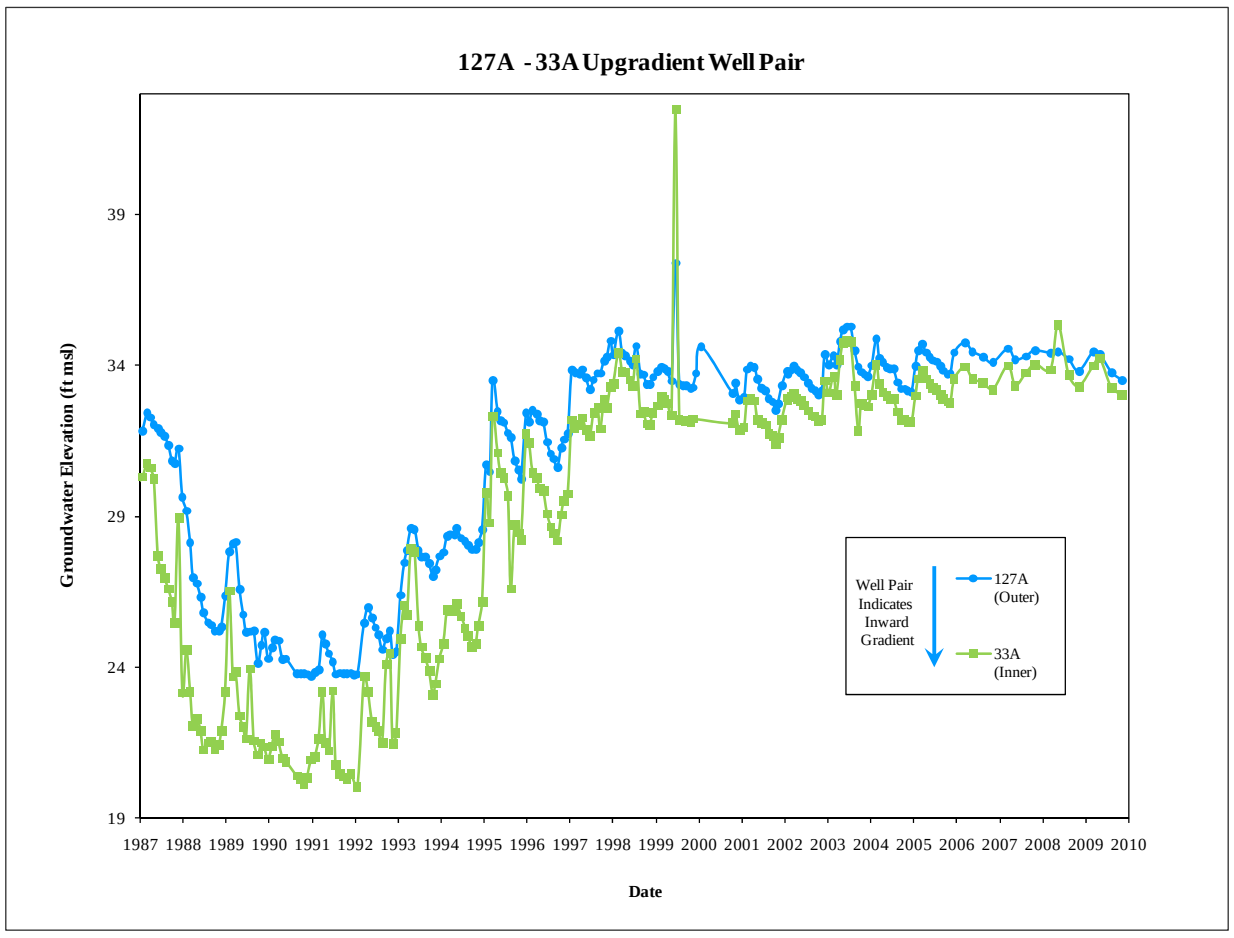
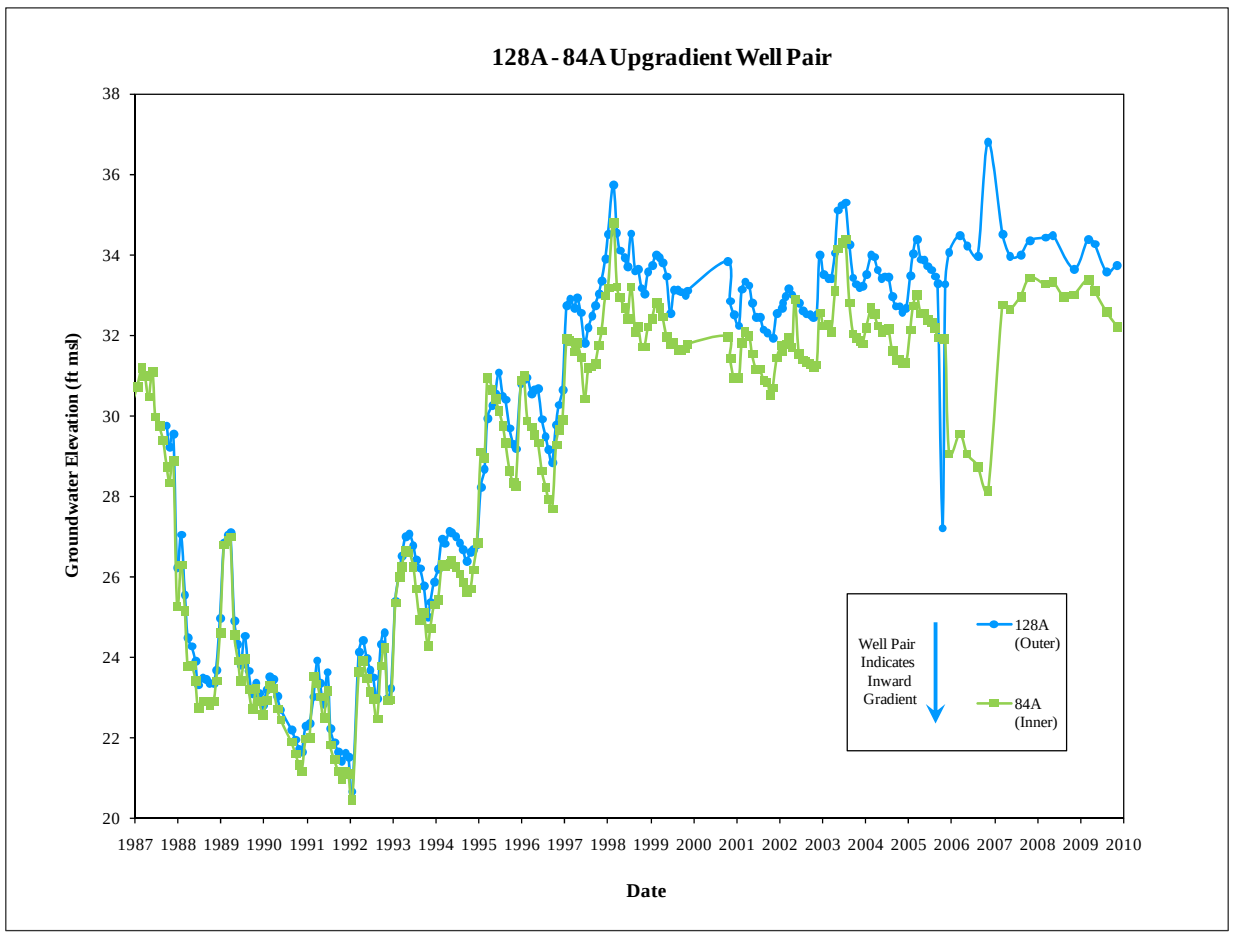


Figure 5. Cumulative Groundwater and VOC Mass Removal Summary, Fairchild System 3, 313 Fairchild Drive, Mountain View, California.





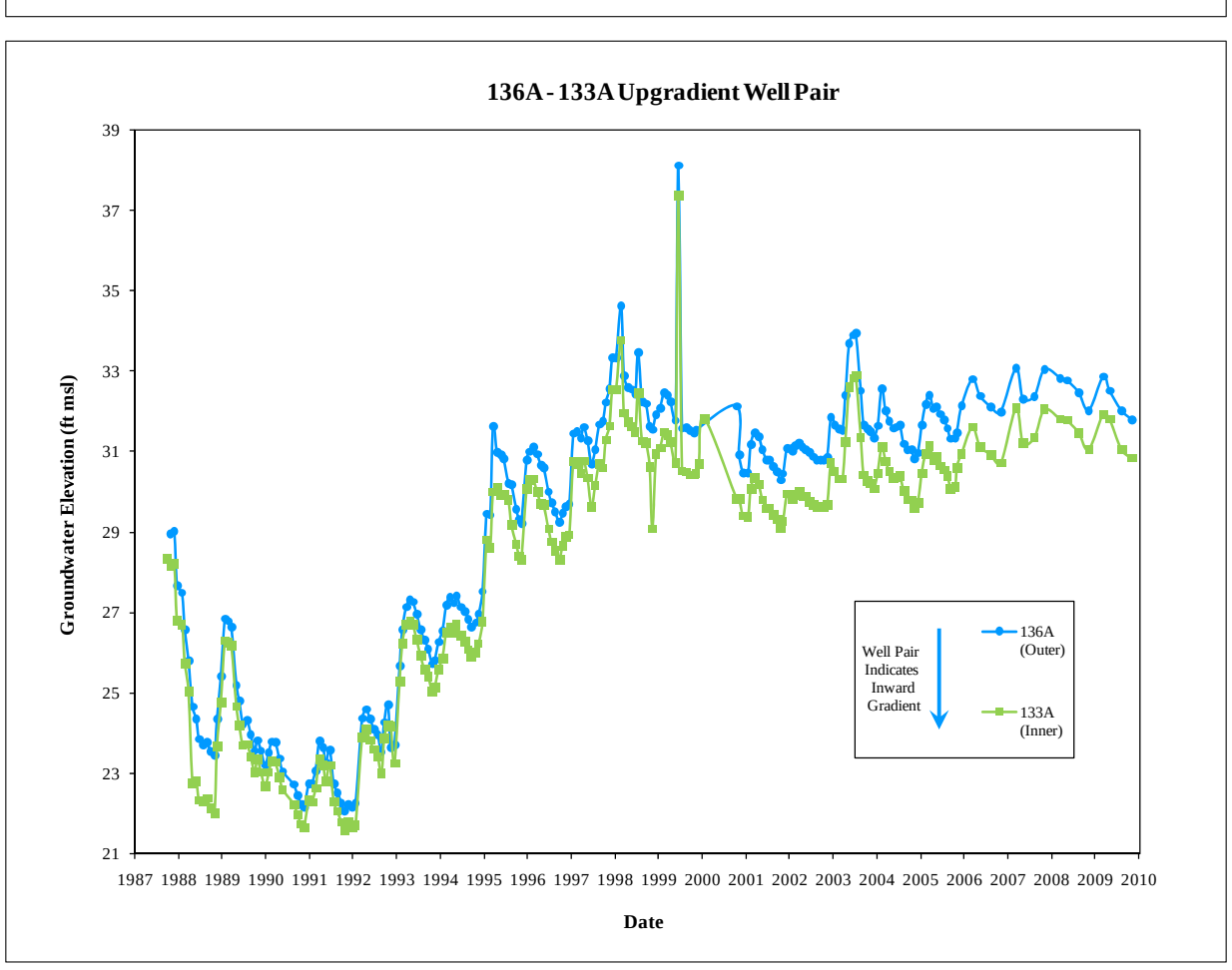
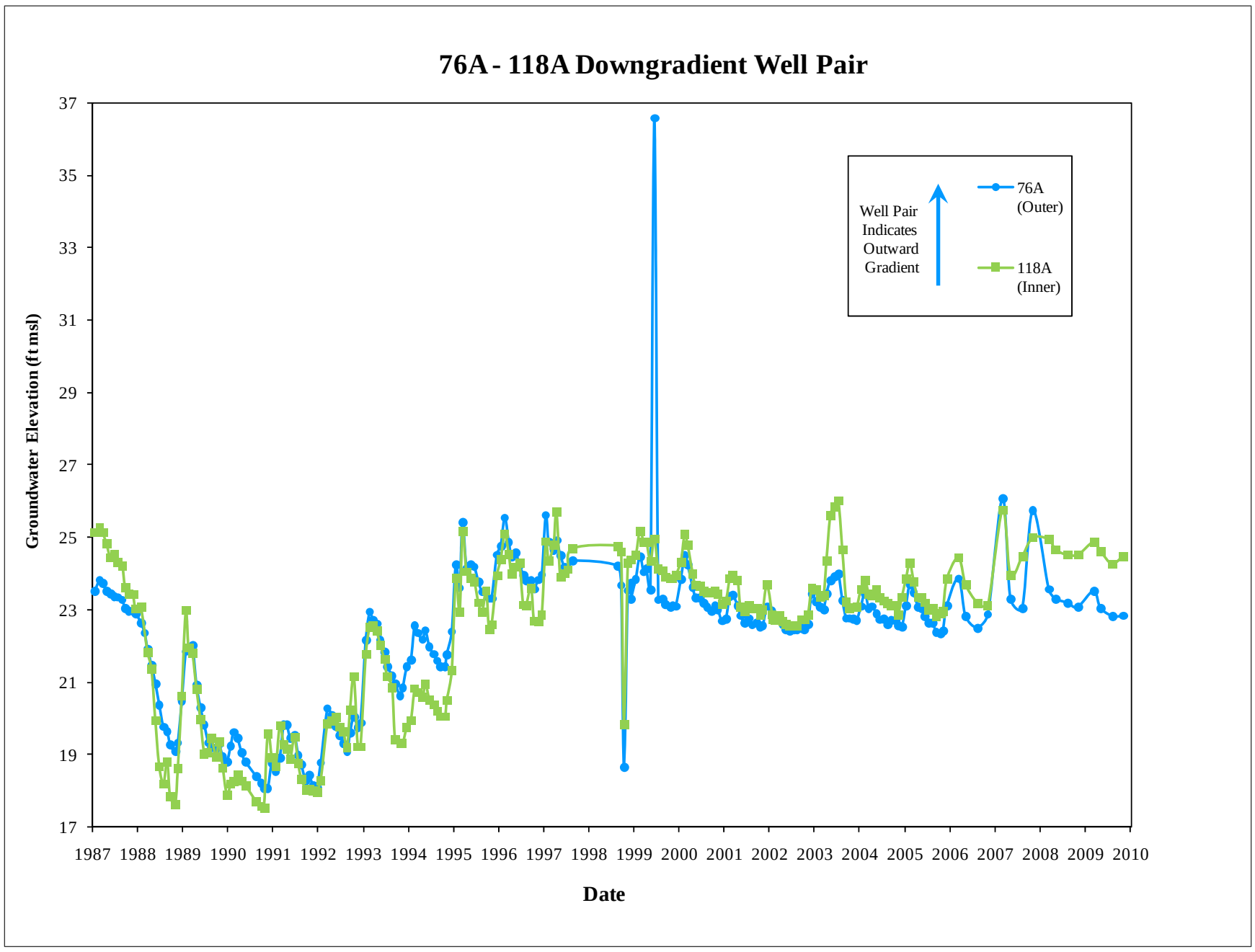


Figure 6. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Upgradient Wells, Buildings 1-4, MEW Fairchild Site, Mountain View, California



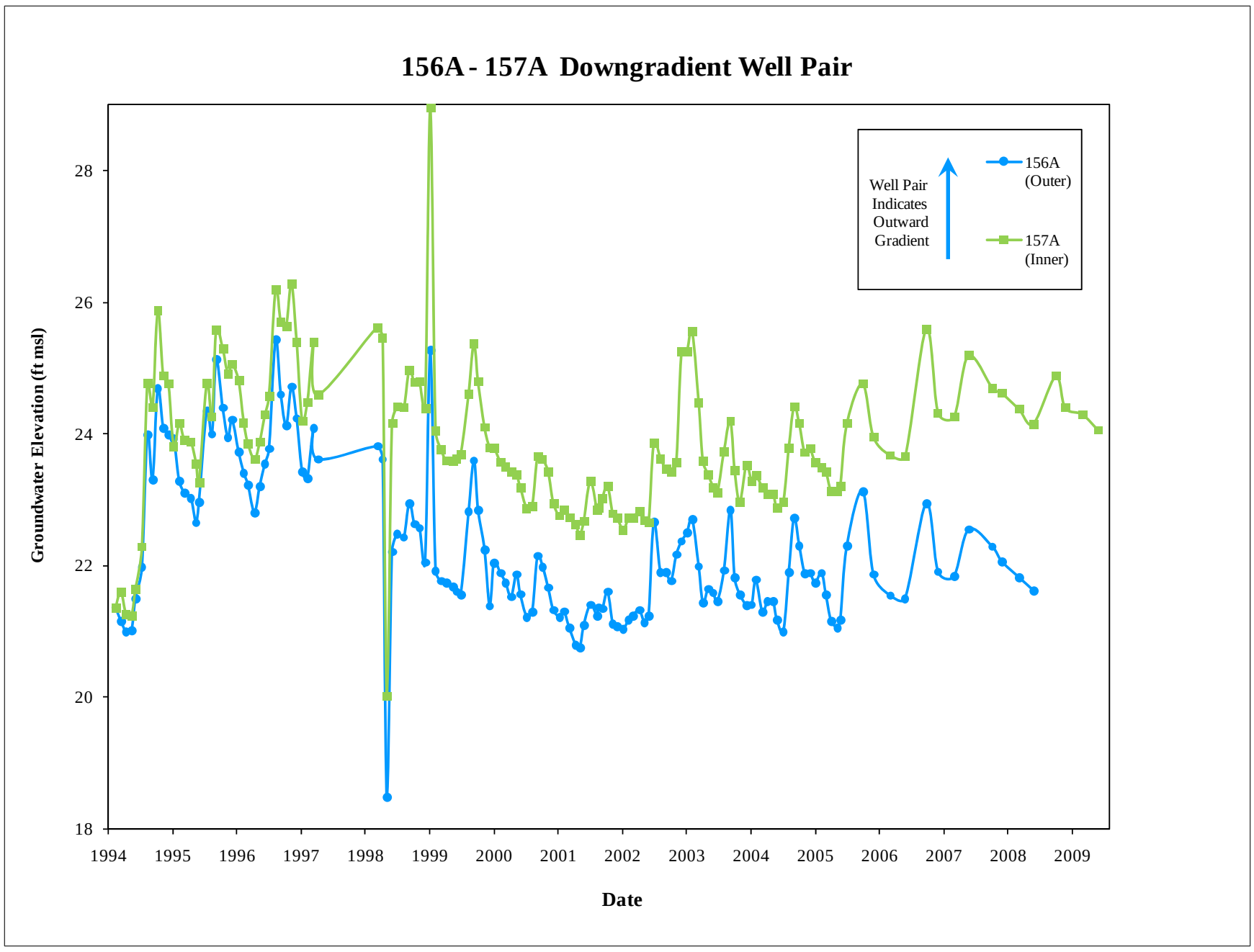
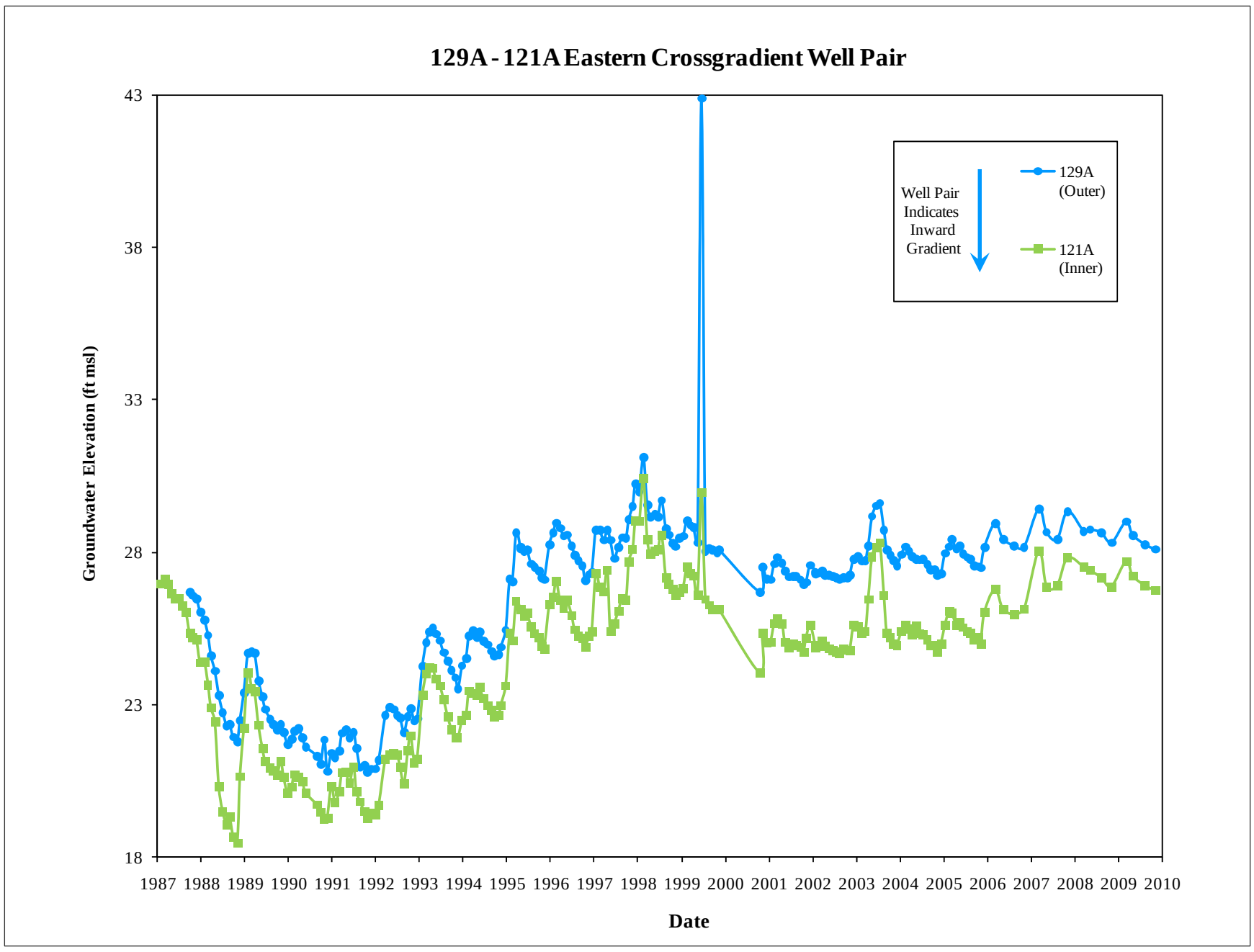


Figure 7. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Downgradient Wells, Buildings 1-4, MEW Fairchild Site, Mountain View, California



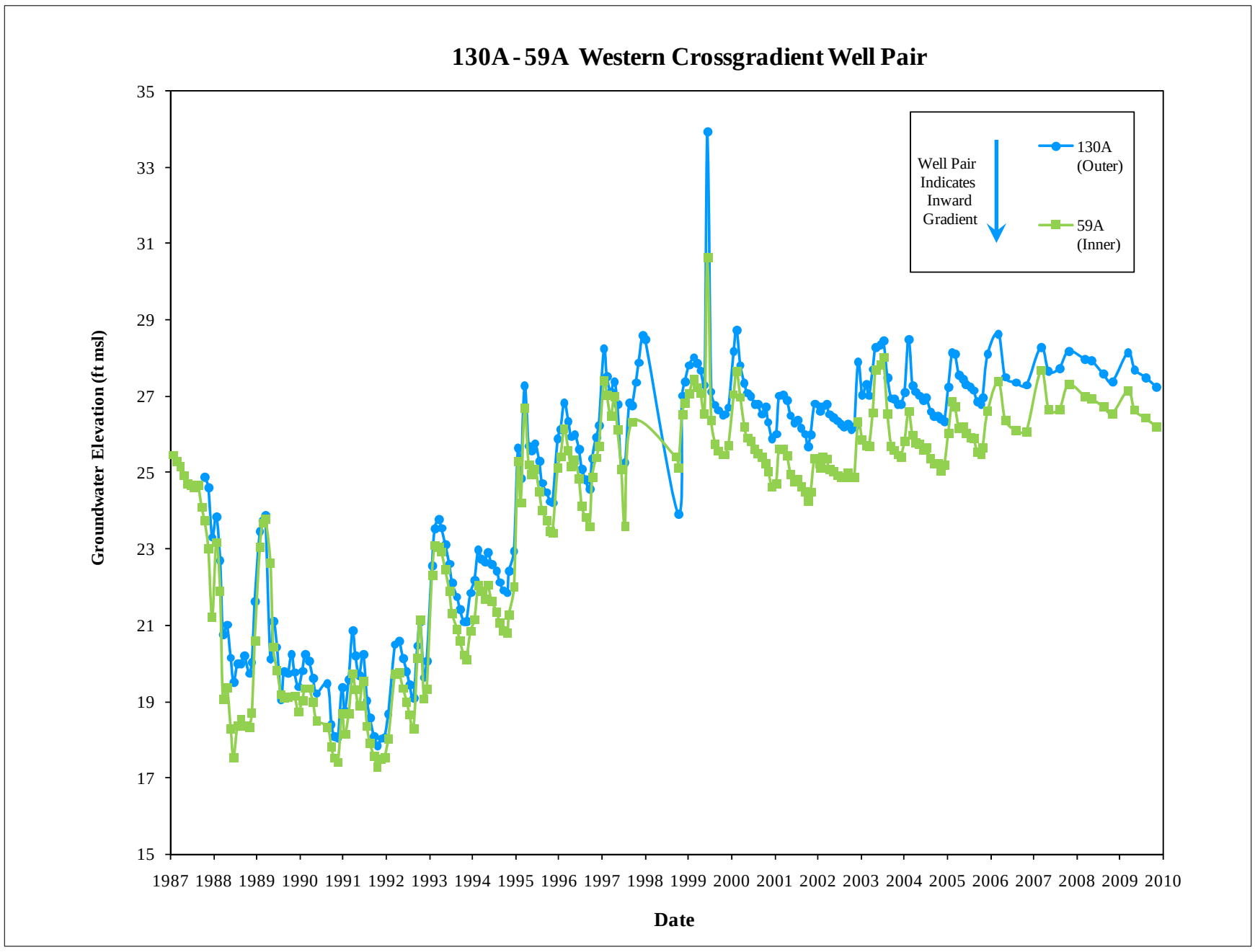
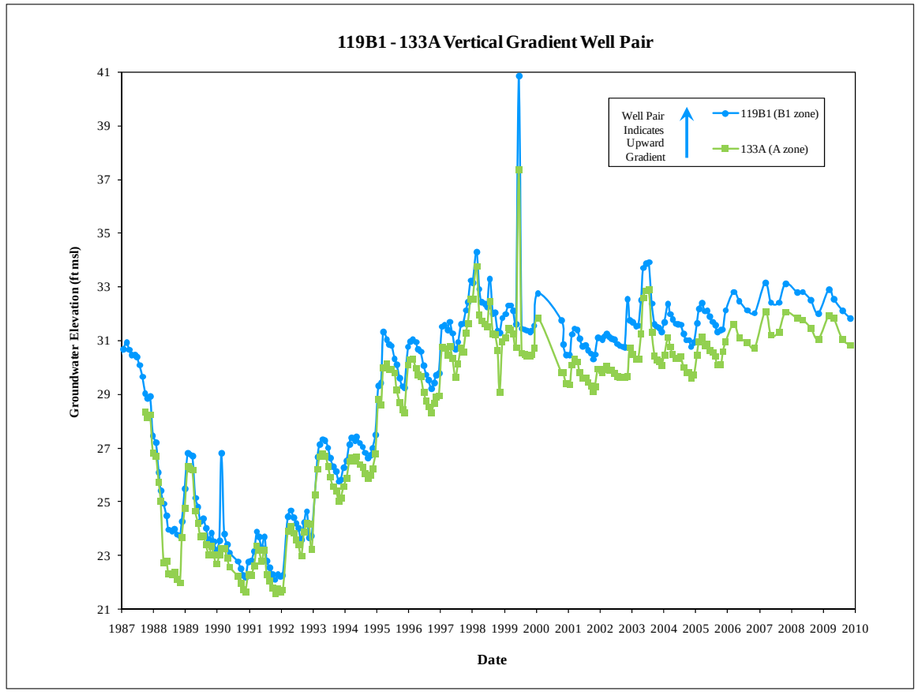
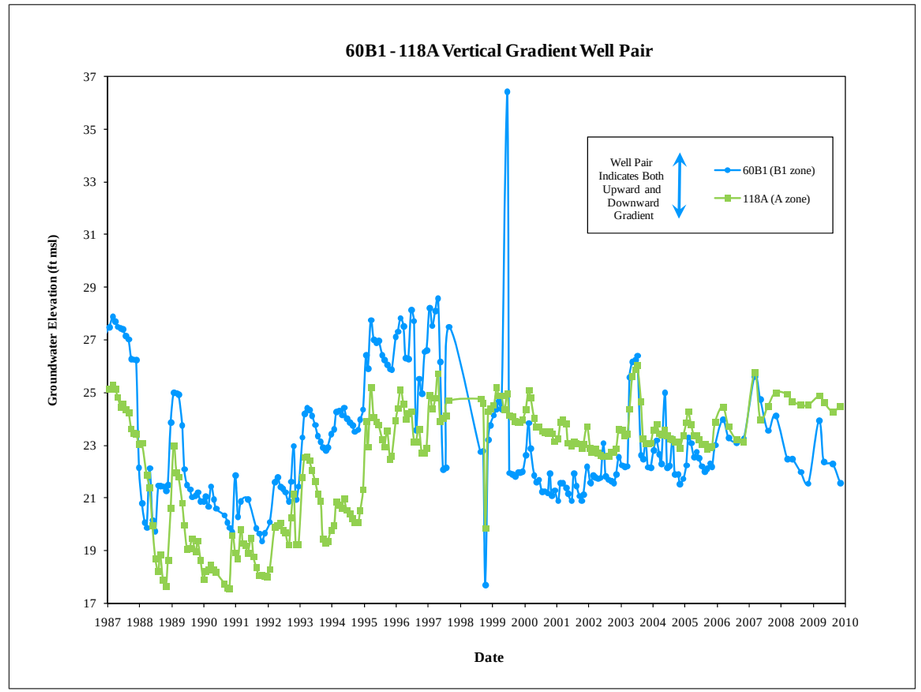
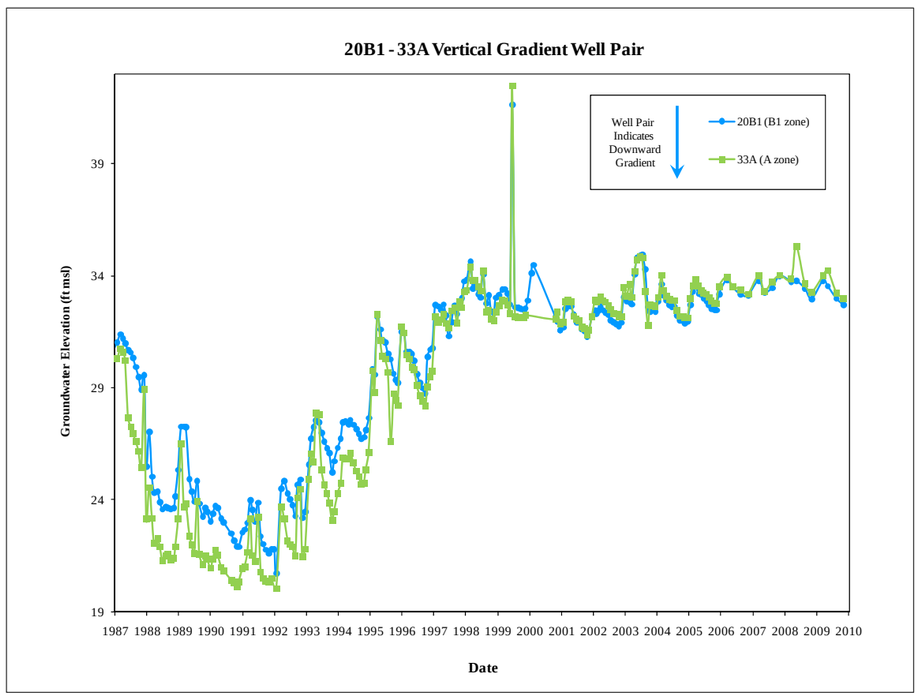


Figure 8. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Crossgradient Wells, Buildings 1-4, MEW Fairchild Site, Mountain View, California







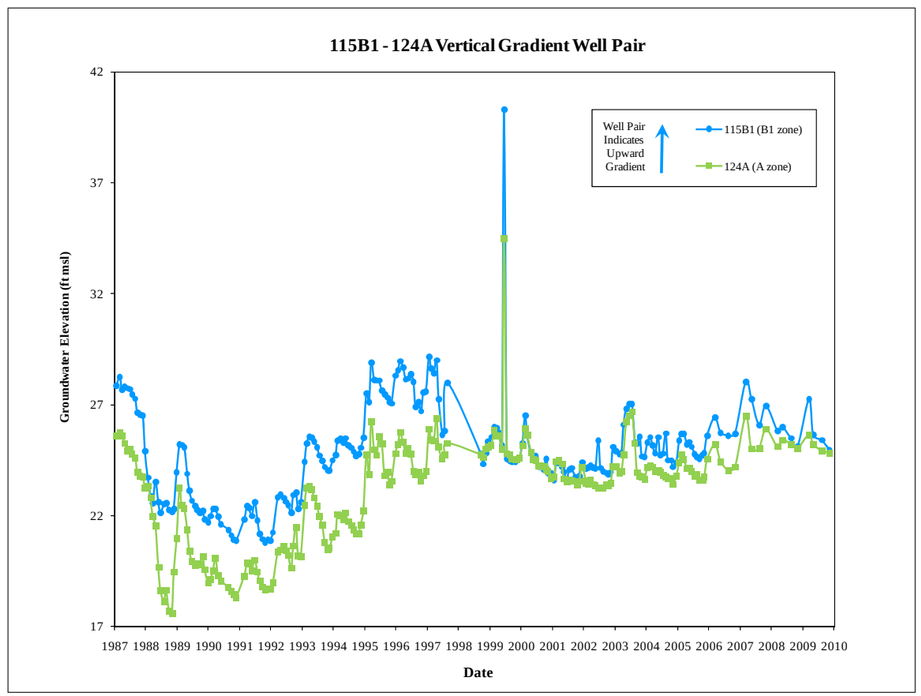


Figure 9. Hydrographs – Groundwater Elevation Measurements, Slurry Wall Well Pairs – Vertical Gradient Wells, Buildings 1-4, MEW Fairchild Site, Mountain View, California

Buildings 1 through 4 Slurry Wall

Building 9 Slurry Wall

Explanation

A/A1 Aquifer Wells for Buildings 1-4

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

A/A1 Aquifer Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- Estimated Capture zone, March 2009
- Target Capture zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

(2.11) = Average pumping rate in gallons per minute
(off) = Extraction well off with regulatory approval
(0.0)** = Extraction well temporarily off for efficiency evaluation

Notes:
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

0 100 200 300 Feet

Figure 10

Former Fairchild Buildings 1 - 4
A/A1 Groundwater Elevation Contours,
Target Capture Area and
Estimated March 26, 2009 Capture
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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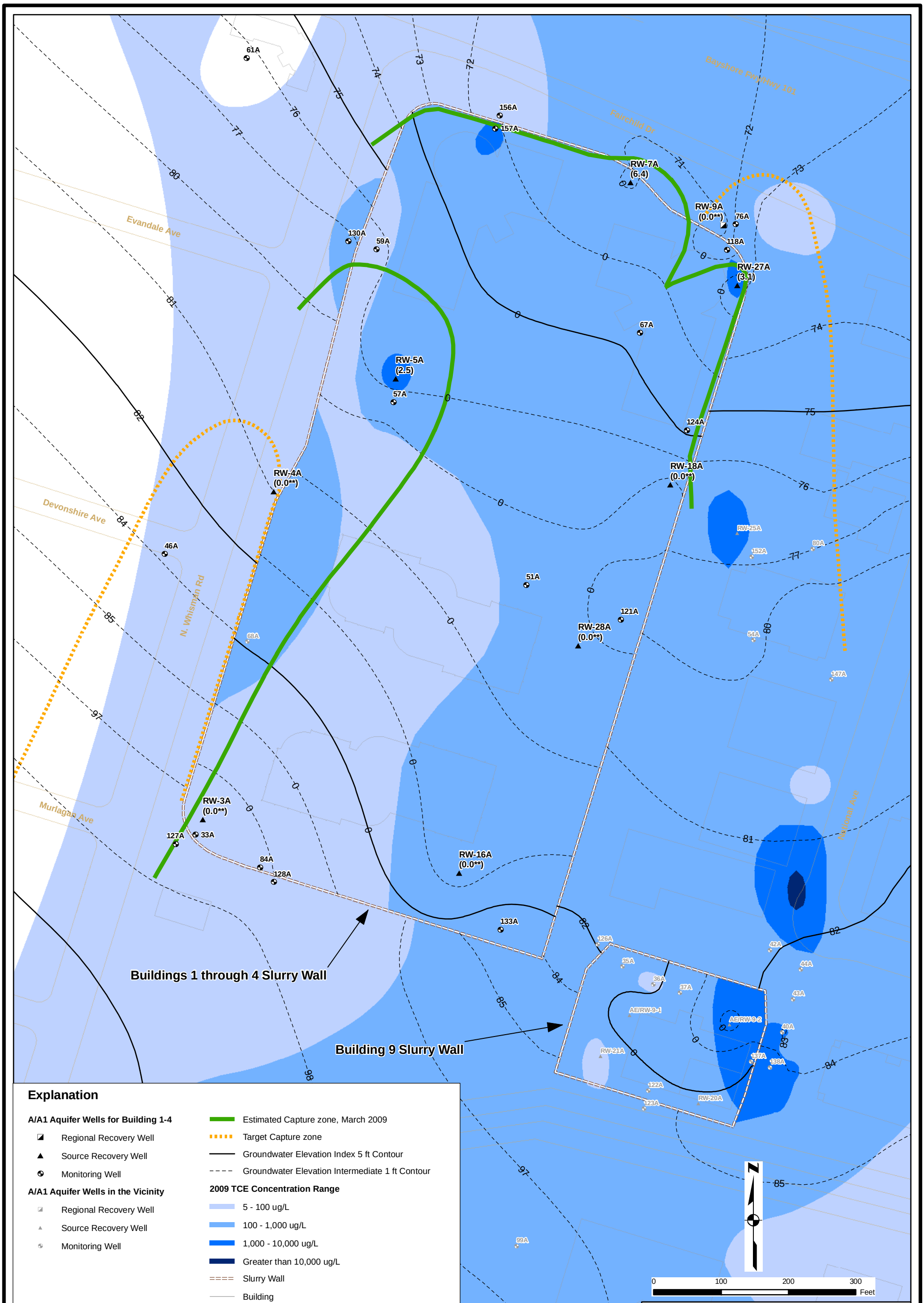
9-June-2010



Explanation

A/A1 Aquifer Wells for Building 1-4

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

A/A1 Aquifer Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- Estimated Capture zone, March 2009
- Target Capture zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour

2009 TCE Concentration Range

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L
- Slurry Wall
- Building
- Road

(1.39) = Average pumping rate in gallons per minute
(off) = Extraction well off with regulatory approval
(0.0)** = Extraction well temporarily off for efficiency evaluation

Notes:
TCE isoconcentration contours based on MEW Regional data presented in the 2009 Annual Report (Geosyntec 2010).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

Figure 11
Former Fairchild Buildings 1 - 4
A/A1 Groundwater Elevation Contours,
TCE Isoconcentration Contours,
Target Capture Area and
Estimated November 19, 2009 Capture
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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9-June-2010

Buildings 1 through 4 Slurry Wall

Building 9 Slurry Wall

RW-7(B1) (2.2)
RW-9(B1)R (6:4)
RW-5(B1) (4.6)
RW-12(B1) (0.0**)
RW-4(B1) (0.0**)
RW-3(B1) (0.0**)

147B1
60B1
115B1
2B1
20B1
119B1
69B1
91B1
92B1
110B1
145B1
156B1

Bailey Rd
Dailey Rd
Kaiser Rd
Bettio Rd
Cody Rd
Girard Rd
Perimeter Rd
Bayshore Fwy/Hwy 101
Fairchild Dr
Evandale Ave
Devonshire Ave
Murlagan Ave
National Ave
N. Whisman Rd
Ellis St
Sherland Ave

19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 16 17 50 49 48 47

N

0 200 400 600 Feet

Explanation

B1/A2 Aquifer Wells for Buildings 1-4

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

B1/A2 Aquifer Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- Estimated Capture zone, March 2009
- Target Capture zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

(5.63) = Average pumping rate in gallons per minute
(off) = Extraction well off with regulatory approval
(0.0)** = Extraction well temporarily off for efficiency evaluation

Notes:
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

Figure 12

Former Fairchild Buildings 1 - 4
B1/A2 Groundwater Elevation Contours,
Target Capture Area and
Estimated March 26, 2009 Capture
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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9-June-2010

Buildings 1 through 4 Slurry Wall

Building 9 Slurry Wall

RW-7(B1) (2.2)

RW-9(B1)R (6.1)

RW-5(B1) (3.8)

RW-12(B1) (0.0**)

RW-4(B1) (0.0**)

RW-3(B1) (0.0**)

147B1

60B1

115B1

2B1

20B1

119B1

69B1

91B1

92B1

110B1

Bailey Rd

Dailey Rd

Kaiser Rd

Bernio Rd

Cody Rd

Girard Rd

Perimeter Rd

Bayshore Fwy/Hwy 101

Fairchild Dr

Everidge Ave

Devonshire Ave

Murlagan Ave

Sherland Ave

National Ave

Ellis St

Explanation

B1/A2 Aquifer Wells for Buildings 1-4

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

B1/A2 Aquifer Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- Estimated Capture zone, March 2009
- Target Capture zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour

2009 TCE Concentration Range

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L
- Slurry Wall
- Building
- Road

(5.63) = Average pumping rate in gallons per minute
(off) = Extraction well off with regulatory approval
(0.0)** = Extraction well temporarily off for efficiency evaluation

Notes:
TCE isoconcentration contours based on MEW Regional data presented in the 2009 Annual Report (Geosyntec 2010).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

0 200 400 600 Feet

Figure 13
Former Fairchild Buildings 1 - 4
B1/A2 Groundwater Elevation Contours,
TCE Isoconcentration Contours,
Target Capture Area and
Estimated November 19, 2009 Capture
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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9-June-2010

Buildings 1 through 4 Slurry Wall

Building 9 Slurry Wall

Building 19 Slurry Wall

Raytheon Slurry Wall

RW-7(B2) (off)

RW-9(B2) (5.4)

RW-5(B2) (off)

RW-4(B2) (0.4)

RW-3(B2) (off)

RW-2(B2)

RW-1(B2)

11B2

148B2

36B2

38B2

10B2

118B2

89B2

140B2

146B2

132B2

134B2

16B2

90B2

Perimeter Rd

Bayshore Fwy/Hwy 101

Fairchild Dr

Evandale Ave

Tyrella Ave

Devonshire Ave

Murlagan Ave

Sherland Ave

Flynn Ave

N. Whisman Rd

Middlefield Road

Bailey Rd

Dalley Rd

Kaiser Rd

Bettio Rd

Edquiba Rd

Cody Rd

Girard Rd

National Ave

Ellis

Explanation

B2 Aquifer Wells for Buildings 1 through 4

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

B2 Aquifer Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- Estimated Capture zone, March 2009
- Target Capture zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour
- Slurry Wall
- Building
- Road

(0.12) = Average pumping rate in gallons per minute
(off) = Extraction well off with regulatory approval
(0.0)** = Extraction well temporarily off for efficiency evaluation

Notes:
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

N

0 300 600 900 Feet

Figure 14

Former Fairchild Buildings 1 - 4
B2 Groundwater Elevation Contours,
Target Capture Area and
Estimated March 26, 2009 Capture
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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9-June-2010

Perimeter Rd
Bayshore Fwy/Hwy 101
Fairchild Dr
Evandale Ave
Tyrella Ave
Devonshire Ave
Murlagan Ave
Sherland Ave
Flynn Ave
Middlefield Road
Bailey Rd
Dailey Rd
Kaiser Rd
Bettio Rd
Edgewood Rd
Cody Rd
Girard Rd
Ellis St
Imperial Ave
N Whisman Rd

11B2
148B2
36B2
38B2
10B2
118B2
89B2
140B2
146B2
RW-1(B2)
132B2
134B2
16B2
90B2
RW-2(B2)

RW-7(B2)
(off)
RW-9(B2)
(4.5)
RW-5(B2)
(off)
RW-4(B2)
(1.1)
RW-3(B2)
(off)

Building 9 Slurry Wall
Buildings 1 through 4 Slurry Wall
Building 19 Slurry Wall
Raytheon Slurry Wall

Explanation

B2 Aquifer Wells for Buildings 1-4

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

B2 Aquifer Wells in the Vicinity

- Regional Recovery Well
- Source Recovery Well
- Monitoring Well

- Estimated Capture zone, March 2009
- Target Capture zone
- Groundwater Elevation Index 5 ft Contour
- Groundwater Elevation Intermediate 1 ft Contour

2009 TCE Concentration Range

- 5 - 100 ug/L
- 100 - 1,000 ug/L
- 1,000 - 10,000 ug/L
- Greater than 10,000 ug/L
- Slurry Wall
- Building
- Road

(0.12) = Average pumping rate in gallons per minute
(off) = Extraction well off with regulatory approval
(0.0)** = Extraction well temporarily off for efficiency evaluation

Notes:
TCE isoconcentration contours based on MEW Regional data presented in the 2009 Annual Report (Geosyntec 2010).
Captures are shown only for wells specific to Buildings 1-4.
Slurry wall around former Buildings 1-4 is approximately 40 feet deep and extends into the A/B1 aquitard that is continuous beneath the Site.

N

0 300 600 900
Feet

Figure 15
Former Fairchild Buildings 1 - 4
B2 Groundwater Elevation Contours,
TCE Isoconcentration Contours,
Target Capture Area and
Estimated November 19, 2009 Capture
Mountain View, California

Weiss Associates
Environmental Science, Engineering and Management

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9-June-2010

TABLES

Table 1. Extraction and Monitoring Well Details, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Well Details	Date Installed	Zone	TOC Elevation (ft amsl)	Diameter (inches)	Total Well Depth (ft btoc)	Top of Screened Interval (ft btoc)	Bottom of Screened Interval (ft btoc)	Top of Sand Pack (ft btoc)	Bottom of Sand Pack (ft btoc)	Well Type
118A	09/19/86	A	39.78	4	20.5	10.5	20.5	6	21	Mon
121A	09/24/86	A	41.82	4	36	26	36	12	38	Mon
124A	09/26/86	A	38.86	4	24	14	24	19	26	Mon
127A	10/01/86	A	43.81	4	20	15	20	13	22	Mon
128A	10/07/86	A	43.38	4	28	18	28	16	30	Mon
130A	10/08/86	A	41.60	4	29	14	29	11	31	Mon
133A	10/10/86	A	43.75	4	30	15	30	13	32	Mon
156A	07/29/93	A	40.22	4	29.5	19.5	29.5	37	55	Mon
157A	07/07/93	A	40.50	4	29.5	19.5	29.5	15	30	Mon
33A	02/02/82	A	43.74	2	34	14	34	14	34	Mon
46A	04/04/82	A	42.10	2	34	14	34	14	34	Mon
51A	02/02/82	A	44.22	2	34	14	34	12	34	Mon
57A	02/02/82	A	39.21	2	35	15	35	12	35	Mon
59A	02/02/82	A	39.56	2	30	15	30	12	30	Mon
61A	04/04/82	A	37.18	2	31	486	496	10	31	Mon
67A	07/07/82	A	39.77	4	31	21	31	10	31	Mon
68A	07/07/85	A	43.26	4	31	21	31	10	31	Mon
76A	07/07/85	A	40.08	4	20	10	20	7.5	22	Mon
84A	10/10/85	A	43.38	4	28	18	28	15	30	Mon
RW-3A	---	A	43.34	6	30.5	19.6	29.6	11	32	Ext
RW-4A	---	A	42.61	6	29	18	28	11	32	Ext
RW-5A	---	A	36.86	6	30.5	19.5	29.5	11	32	Ext
RW-7A	---	A	36.29	6	36	15	35	11	37	Ext
RW-9A	---	A	37.83	6	25	13	23	10	25	Ext
RW-16A	---	A	43.89	8	33	22	32	11	33.5	Ext
RW-18A	12/12/87	A	37.53	6	36	25	35	11	37	Ext
RW-20A	---	A	43.57	8	37.5	26.5	36.5	11	38	Ext
RW-21A	---	A	43.16	6	37	21	36	11	38	Ext
RW-25A	---	A	38.38	6	31	21	31	18	32	Ext
RW-27A	---	A	38.41	6	25	15	25	12	27.5	Ext
RW-28A	---	A	42.33	6	28	18	28	15	31	Ext
AE/RW-9-1	---	A	43.15	6	33	8	33	6	36	Ext
AE/RW-9-2	---	A	43.85	6	37	8	37	6	38	Ext
115B1	09/25/86	B1	38.76	4	64	59	64	57.5	65	Mon
119(B1)	10/16/86	B1	42.96	4	62	52	62	50	34	Mon
147B1	09/05/95	B1	37.82	6	61	50	60	47	62	Mon
2B1	04/07/82	B1	43.43	4	59	47	59	47	60	Mon
20B1	05/05/85	B1	43.89	4	67	57	67	55	68	Mon
60B1	07/11/85	B1	39.64	4	73	63	73	60	75	Mon
67B1	11/11/85	B1	36.93	4	62	56	62	52	67	Mon

Table 1. Extraction and Monitoring Well Details, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Well Details	Date Installed	Zone	TOC Elevation (ft amsl)	Diameter (inches)	Total Well Depth (ft btoc)	Top of Screened Interval (ft btoc)	Bottom of Screened Interval (ft btoc)	Top of Sand Pack (ft btoc)	Bottom of Sand Pack (ft btoc)	Well Type
RW-3B(1)	---	B1	43.28	6	57	46	56	41	59	Ext
RW-4B(1)	---	B1	42.66	6	61	50	60	49	63	Ext
RW-5B(1)	---	B1	37.87	6	59	0	0	40	62	Ext
RW-7B(1)	---	B1	38.76	6	66	55	65	45	67	Ext
RW-9B(1)R	---	B1	38.59	6	69	59	69	58	72	Ext
RW-12B(1)	---	B1	40.51	6	62	52	62	49	63	Ext
10B2	03/19/85	B2	43.90	2	90	85	90	83	95	Mon
11B2	03/14/85	B2	37.19	2	92	87	92	85	92	Mon
118B2	10/13/86	B2	43.21	4	89	84	89	81	91	Mon
148B2	09/05/95	B2	37.72	6	86	75	85	72	87	Mon
38B2	08/08/85	B2	44.09	4	88	78	88	71	90	Ext
RW-3B(2)	09/23/86	B2	42.96	6	92	76	91	69	94	Ext
RW-4B(2)	10/13/86	B2	41.79	6	90.5	74.5	89.5	72	93	Ext
RW-5B(2)	03/14/85	B2	37.98	6	95	84	94	67	97.5	Ext
RW-7B(2)	09/05/95	B2	37.18	6	90	80	90	76	93	Ext
RW-9B(2)	---	B2	37.88	6	92.6	82.6	92.6	80	95	Ext

Notes and Abbreviations:

Bold wells are required wells for the Buildings 1-4 Site. Other wells are located in the vicinity, as shown in Figure 3, and are shown for completeness.

---- = date installed not available

Depth = feet below top-of-casing (ft btoc)

Diameter = inches

TOC Elevation = feet above mean sea level (ft amsl)

Top of Screened Interval = feet below top-of-casing (ft btoc)

Bottom of Screened Interval = feet below top-of-casing (ft btoc)

Top of Sand Pack = feet below top-of-casing (ft btoc)

Bottom of Sand Pack = feet below top-of-casing (ft btoc)

Well Type = extraction well (Ext), monitoring well (Mon)

Zone = A, B1, B2, or C water-bearing zone

Table 2. 2009 Monitoring and Reporting Schedule, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monitoring												
118A[9]			S		S			S			1, S	
121A			S		S			S			#, S	
124A			S		S			S			#, S	
127A			S		S			S			1, S	
128A[10]			S		S			S			S	
130A			S		S			S			1, S	
133A			S		S			S			#, S	
156A			S		S			S			1, S	
157A[9]			S		S			S			1, S	
33A			S		S			S			#, S	
46A[11]			W								1, W	
51A			W								#, W	
57A			W								#, W	
59A			S		S			S			#, S	
61A[11]			W								1, W	
67A			W								#, W	
68A[7]			W								#, W	
76A[9]			S		S			S			1, S	
84A			S		S			S			#, S	
RW-3A			W								1, 2, W	
RW-4A			W								1, 2, W	
RW-5A			W								1, 2, W	
RW-7A			W								1, 2, W	
RW-9A[7]			W								1, 2, W	
RW-16A			W								1, 2, W	
RW-18A			W								1, 2, W	
RW-20A[6]			W								1, 2, W	
RW-21A[6]			W								1, 2, W	
RW-25A[8]			W								1, 2, W	
RW-27A			W								1, 2, W	
RW-28A			W								1, 2, W	
AE/RW-9-1[6]			W								1, 2, W	
AE/RW-9-2[6]			W								1, 2, W	
115B1			S		S			S			1, S	
119B1[7]			S		S			S			1, S	
147B1			W								1, W	
2B1			W								1, W	
20B1[10]			S		S			S			S	
60B1			S		S			S			1, S	
67B1[11]			W								1, W	
RW-3B1			W								1, 2, W	
RW-4B1			W								1, 2, W	
RW-5B1			W								1, 2, W	
RW-7B1			W								1, 2, W	
RW-9B1R[7]			W								1, 2, W	
RW-12B1			W								1, 2, W	
10B2[7]			W								1, W	
11B2			W								1, W	
118B2			W								1, W	
148B2			W								1, W	
38B2[7]			W								1, W	
RW-3B2			W								1, 2, W	
RW-4B2			W								1, 2, W	
RW-5B2[7,11]			W								1, 2, W	
RW-7B2[7,11]			W								1, 2, W	
RW-9B2[7]			W								1, 2, W	

Table 2. 2009 Monitoring and Reporting Schedule, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sys1 Influent	1	1			1			1		2	1	
Sys1 Midpoint[12]	1	1	1	1	1	1	1	1	1	1	1	1
Sys1 Effluent	1	1	1	1	1,2	1	1	1	1	1,2,3,4,5	1	1
Sys3 Influent	2	1,2	2		1,2	2	2	1,2	2	2	1	
Sys3 Midpoint[12]	1	1	1	1	1	1	1	1	1	1	1	1
Sys3 Effluent	1,2	1,2	1,2	1	1,2	1,2	1,2	1,2	1,2	1,2,3,4,5	1,2	1,2
Stevens Creek[13,14]												
Reporting												
Quarterly NPDES Reports[15]	1/30/2009			4/30/2009			7/30/2009			10/30/2009		
Annual Progress Report[16]						6/15/2009						

Notes and Abbreviations:

Standard observations were recorded whenever a sample was collected for chemical analysis, as required by NPDES Permit CAG912003, Order No. R2-2004-0055 during the first three quarters of 2009 and Order No. R2-2009-0059 which became effective October 1, 2009.

MEW = Middlefield Ellis Whisman
RGRP = Regional Groundwater Recovery Program
VOCs = volatile organic compounds
S = Slurry wall water levels measured on March 26, May 21, August 27, and November 19, 2009
W = Water levels measured on March 26 and November 19, 2009
# = Wells are sampled every five years and were last sampled during 2007 sampling event
1 = USEPA Method 8260 for Halogenated VOCs using 8010 MS parameters
2 = USEPA Method 8270C for 1,4-dioxane or SVOCs
3 = 96-hour static bioassay for rainbow trout
4 = turbidity
5 = USEPA Method 200 series for Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Tl, Zi; USEPA Method SM 4500-CN for cyanide; USEPA Method 1631 for Hg; USEPA method SM 3500 for hexavalent chromium (every three years).
6 = Part of Building 9 Facility Specific wells. Data for these is discussed in the Building 9 report unless pertinent to this report.
7 = Part of the MEW RGRP S101 sampling event, but are located at the Building 1-4 Site. Data for these discussed in RGRP report unless pertinent to this report.
8 = Part of Building 18 Facility Specific wells. Data for this well is discussed in Building 18 report unless pertinent to this report.
9 = Well has been sampled annually using USEPA Method 8260 for halogenated VOCs (using 8010 MS parameters) since 2008 as part of the slurry wall evaluation.
10 = Only water level measurements taken in 2009. No sampling is required.
11 = Sampling of well is not required. Voluntary sampling was performed for slurry wall and plume monitoring.
12 = Analysis not required for regulatory compliance but being done by system management for carbon change out purposes.
13 = In cases of effluent exceedence, receiving water must be sampled upstream/downstream of treatment system within 24 hours for the exceeded compound(s) and dissolved oxygen level.
14 = In cases of Cadmium, Chromium (total), Copper, Lead, Silver, or Zinc trigger exceedences, receiving water must be sampled upstream/downstream of treatment system for hardness and salinity on the same day as one of the three required resamples is taken (Per NPDES Permit CAG912003, Order No. R2-2009-0059, effective October 1, 2009).
15 = Reports were submitted to the Water Board under NPDES Permit CAG912003, Order No. R2-2004-0055. New Permit Order No. R2-2009-0059 became effective October 1, 2009.
16 = The 2008 Annual Progress Report is distributed to the USEPA and MEW Distribution List parties.

Table 3. Extraction Well Target Flow Rates, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California.

Extraction Wells[a]	Target Flow Rate (gpm)	Average Flow Rate (2009)
----------System 1----------		
38B2 (RGRP)	7.5	6.9
RW-3A	off[a]	---
RW-3(B1)	off[a]	---
RW-3(B2)	off[b]	---
RW-4A	off[a]	---
RW-4(B1)	off[a]	---
RW-4(B2)	0.8	0.7
RW-16A	off[a]	---
RW-20A	off[a]	---
RW-21A	off[a]	---
RW-25A	5.5	5.4
RW-28A	off[a]	---
AE/RW-9-1	5.0	5.2
AE/RW-9-2	1.0	2.2

Extraction Wells[a]	Target Flow Rate (gpm)	Average Flow Rate (2009)
----------System 3----------		
RW-5A	3.0	3.1
RW-5(B1)	4.0	4.0
RW-5(B2)	off[b]	---
RW-7A	7.0	6.9
RW-7(B1)	2.0	2.2
RW-7(B2)	off[b]	---
RW-9A (RGRP)	off[a]	---
RW-9(B1) (RGRP)	7.4	6.1
RW-9(B2) (RGRP)	4.7	5.0
RW-18A	off[a]	---
RW-27A	3.0	2.9

Notes & Abbreviations:

a) The following extraction wells have been turned off based on conditional approval to implement the recommendations in the Slurry Wall System Efficiency Report, email from Alana Lee, USEPA, to L. Maile Smith, Northgate Environmental Management, Inc., August 2, 2007:
System 1 Extraction Wells: RW-3A, RW-3(B1), RW-4A, RW-4(B1), RW-16A, RW-20A, RW-21 A, RW-28A
System 3 Extraction Wells: RW-9A, RW-18A, RW-12(B1)

b) Wells turned off with full EPA approval
System 1: RW-3(B2)
System 3: RW-5(B2), RW-7(B2)
Extraction wells RW-3B2 and RW5-B2 have been off since 1999 (Five Year Review Well Flow Summary, RMT).
Well RW-7B2 has been off since February 2000 (RMT, 2000 Annual Report for Fairchild Buildings 1-4).
Target Flow rates as assigned in August 2007
--- = no data

Table 4. Monthly Average Flow Rates (gallons per minute), January through December 2009, System 1, 515/545 Whisman Road, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-3A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-3B1[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-4A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-4B1[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-4B2	0.59	0.39	0.29	0.79	0.67	0.70	0.63	0.64	0.78	1.07	1.14	1.10
RW-16A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-20A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-21A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-25A	5.16	5.56	5.53	5.65	5.57	5.26	6.02	5.18	5.43	5.14	5.07	4.85
RW-28A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AE/RW-9-1	5.14	5.19	5.11	5.20	5.14	5.36	5.25	5.11	5.44	5.23	5.36	5.12
AE/RW-9-2	2.10	2.00	1.99	1.89	3.07	3.58	2.75	2.18	1.96	1.78	1.55	1.60
38B2	6.79	6.98	6.78	6.90	6.92	7.11	6.95	6.76	7.17	6.86	7.09	7.03
RW-3B2[3]	---	---	---	---	---	---	---	---	---	---	---	---
Bldg. 18	30.41	32.95	36.17	32.17	29.75	29.19	27.96	25.22	28.67	26.50	26.85	27.40
Total[1]	36.41	40.05	40.64	39.19	38.17	38.97	35.50	34.24	35.75	34.91	36.37	35.57

Notes and Abbreviations:

Bldg. 18 = Building 18 basement dewatering sump system, located at 644 National Avenue, Mountain View, California

EPA = Environmental Protection Agency

--- = not operational

1. Total values are calculated from the system effluent meter (as reported in self-monitoring reports); therefore the sum of the wells is not equal to the total value reported.
2. Well is off with conditional approval from EPA for implementation of slurry wall evaluation recommendations.
3. Well has been turned off permanently based on EPA approval.

Table 5. Monthly Extraction Totals (gallons), January through December 2009, System 1, 515/545 Whisman Road, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-3A[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0
RW-3B1[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RW-4A[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.0	0.0
RW-4B1[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RW-4B2	23,717	15,748	14,447	32,005	27,958	34,350	26,255	31,159	31,407	43,166	57,268	46,114
RW-16A[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0
RW-20A[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RW-21A[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.0	0.0
RW-25A	207,936	224,075	278,613	227,652	232,708	257,562	251,344	253,608	218,934	207,181	255,397	202,723
RW-28A[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AE/RW-9-1	207,275	209,105	257,555	209,671	214,825	262,564	219,175	250,383	219,495	210,764	270,073	213,603
AE/RW-9-2	84,672	80,640	100,192	76,072	128,398	175,150	114,820	106,715	78,988	71,711	77,987	66,948
38B2	273,633	281,473	341,513	278,394	288,860	348,061	290,268	331,065	288,925	276,589	357,520	293,595
RW-3B2[4]	---	---	---	---	---	---	---	---	---	---	---	---
Bldg. 18[1]	1,169,263	1,328,559	1,756,408	1,297,157	1,195,124	1,429,247	1,115,578	1,180,438	1,155,818	1,024,310	1,353,281	1,106,677
Total[2]	1,467,850	1,614,850	2,048,500	1,580,025	1,593,775	1,907,800	1,482,610	1,676,510	1,441,530	1,407,500	1,832,800	1,485,600

Notes and Abbreviations:

Bldg. 18 = Building 18 basement dewatering sump system

EPA = Environmental Protection Agency

RGRP = Regional Groundwater Remediation Program

--- = not operational

1. The Building 18 monthly extraction total reported does not include the volume of water pumped to the South 101 treatment systems during carbon changes. These volumes are reported in the Building 18 and RGRP reports. The total volume pumped to S101 in 2009 was 358,352 gallons.
2. Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore the sum of the wells is not equal to the total value reported.
3. Well is off with conditional approval from EPA for implementation of slurry wall evaluation recommendations.
4. Well has been turned off permanently based on EPA approval.

Table 6. Monthly Average Flow Rates (gallons per minute), January through December 2009, System 3, 313 Fairchild Drive, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-5A	3.03	3.09	3.15	3.26	3.15	3.27	3.12	3.55	3.37	3.26	2.86	1.75
RW-5B1	4.25	4.27	4.30	4.18	3.93	3.92	3.63	4.20	4.02	4.09	3.99	3.74
RW-5B2[3]	---	---	---	---	---	---	---	---	---	---	---	---
RW-7A	7.00	6.96	6.86	7.04	7.02	6.89	6.33	7.07	6.80	6.86	6.88	6.77
RW-7B1	2.13	2.18	2.11	2.16	2.19	1.67	2.15	2.42	2.42	2.43	2.38	2.26
RW-7B2[3]	---	---	---	---	---	---	---	---	---	---	---	---
RW-9A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-9B1	4.49	5.39	6.18	6.16	6.26	6.33	5.68	6.49	6.42	6.37	6.49	7.08
RW-9B2	5.23	5.18	5.06	5.20	5.11	5.10	4.80	5.22	4.99	4.91	4.81	4.90
RW-18A[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RW-27A	2.59	2.48	2.46	3.24	2.89	3.25	2.82	2.86	3.04	2.76	2.77	3.52
RW-12B1[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total[1]	31.00	27.46	29.73	30.44	25.70	25.00	24.45	32.88	30.89	29.13	23.98	27.50

Notes and Abbreviations:

EPA = Environmental Protection Agency

--- = not operational

1. Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore the sum of the wells is not equal to the total value reported.
2. Well is off with conditional approval from EPA for implementation of slurry wall evaluation recommendations.
3. Well has been turned off permanently based on EPA approval.

Table 7. Monthly Extraction Totals (gallons), January through December 2009, System 3, 313 Fairchild Drive, Mountain View, California

Well ID	January	February	March	April	May	June	July	August	September	October	November	December
RW-5A	122,200	124,611	158,798	131,519	131,747	160,191	130,492	173,789	135,900	131,353	144,279	73,080
RW-5B1	171,336	172,128	216,515	168,679	164,136	191,701	151,457	205,466	162,250	164,717	200,866	156,092
RW-5B2[3]	---	---	---	---	---	---	---	---	---	---	---	---
RW-7A	282,207	280,635	345,596	283,796	293,129	337,418	264,281	346,071	274,279	276,710	346,701	282,562
RW-7B1	85,947	87,725	106,173	86,956	91,468	81,816	89,580	118,966	97,411	97,779	120,064	94,349
RW-7B2[3]	---	---	---	---	---	---	---	---	---	---	---	---
RW-9A[2]	0	0	0	0	0	0	0	0	0	0	1	0
RW-9B1	181,209	217,470	311,294	248,423	261,557	310,016	237,364	317,762	259,049	256,733	327,237	295,832
RW-9B2	210,744	209,026	254,780	209,802	213,555	249,453	200,625	255,574	201,055	198,093	242,283	204,812
RW-18A[2]	0	0	0	0	0	0	0	0	0	0	0	0
RW-27A	104,546	100,037	124,063	130,682	120,684	159,160	117,616	140,138	122,619	111,232	139,403	147,134
RW-12B1[2]	0	0	0	0	0	0	0	0	0	0	0	0
Total[1]	1,249,950	1,107,090	1,498,260	1,227,500	1,073,150	1,224,100	1,021,100	1,609,600	1,245,350	1,174,350	1,208,350	1,148,350

Notes and Abbreviations:

EPA = Environmental Protection Agency

1. Total values are calculated from the system effluent meter (as reported in self monitoring reports); therefore the sum of the wells is not equal to the total value reported.
2. Well is off with conditional approval from EPA for implementation of slurry wall evaluation recommendations.
3. Well has been turned off permanently based on EPA approval.

--- = not operational

Table 8. Chemical Analytic Results Summary, Fairchild System No. 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	Lab Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	bis (2-ethylhexyl) phthalate[1]
			<---------- (µg/L) ----------											---------->
Influent[1,5]	01/20/09	C&T/8260B	---	---	---	---	---	---	---	---	---	---	---	3.3J
	02/18/09	C&T/8260B	4.6	<0.5	<0.5	440	16	11	720	6.6	10	1	1208.2	---
	05/21/09	C&T/8260B	7.4	<0.5	5.2	540	6.9	10	850	11	12	1	1442.5	---
	08/21/09	C&T/8260B	6.7	<5.0	5.5	560	8.1	6.3	780	13	9.3	<10	1388.9	---
	11/20/09	C&T/8260B	<8.3	<8.3	<8.3	800	9.9	<8.3	1200	<8.3	<33	<17	2009.9	---
Midpoint 1	01/12/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	02/09/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	03/09/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	1	1	1	---
	04/15/09[2]	C&T/8260B	9	<0.5	10	840	12	15	1200	13	9.7	1	2111.9	---
	04/29/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	05/11/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	06/08/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	07/13/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	08/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	9/14/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/8/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/10/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/14/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
Midpoint 2	01/12/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	02/09/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	05/11/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	08/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	11/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
Effluent[1, 4,5]	01/20/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	<0.94
	02/18/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	03/24/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	04/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	05/21/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	06/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	07/16/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	8/21/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	9/16/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	10/21/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	---
	11/20/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/16/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---

Table 8. Chemical Analytic Results Summary, Fairchild System No. 1, 515 Whisman Road, Mountain View, California

Sample Location	Sample Date	Lab Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	Chloroform	Total VOCs	bis (2-ethylhexyl) phthalate[1]
			<---------- (µg/L) ---------->											
Travel Blank[6,7]	04/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	04/29/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	05/11/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	05/21/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	06/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	ND	---
	08/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	08/21/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	09/14/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	09/16/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	ND	---
	10/08/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	11/20/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/14/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---
	12/16/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<1.0	ND	---

Notes and Abbreviations:

1 = Bis (2-ethylhexyl) phthalate, a trigger chemical with a trigger limit of 1.8 µg/L, was detected in the SVOC analysis in October. Bis (2-ethylhexyl) phthalate was not detected at or above the trigger limit in influent or effluent samples in November, December. It was detected at 3.3 µg/L in the influent in January which is below the reporting limit but above the method detection limit and therefore is J flagged, and was not detected in the effluent. The value reported is the method detection limit as the reporting limit is 9.4 µg/L.

2 = The total VOCs concentration of 2,112 µg/L for Midpoint 1 sample is due to an incorrectly labeled sample that was sent to laboratory for analysis (influent was labeled as midpoint). Resampling was performed on 04/29/09, and VOCs were below detection limits.

3 = Duplicate sample collected. Duplicate sample results confirmed the primary sample results.

4 = Chemical concentrations in effluent stream were below the NPDES effluent limitations for the entire quarter.

5 = An SVOC analysis done using EPA method 8270C for influent and effluent samples collected October 21, 2009. No SVOCs were detected in either sample.

6 = A travel blank was collected for the June 8 Midpoint 1 samples and was placed on hold at the laboratory because there were no analytic issues.

7 = Travel blanks were analyzed for samples collected on July 13, 16, and October 21, 2009 and no VOCs were detected. July travel blank results can be found in the Fairchild System 19 report and October results can be found in the South 101 report.

< # = analyte not detected above the reported detection limit of "#" µg/L

--- = not analyzed

8260B = USEPA Method 8260 for halogenated VOCs

DCA = dichloroethane

DCE = dichloroethene

Midpoint 1 = sample collected between the primary and secondary carbon vessels

Midpoint 2 = sample collected between the secondary and tertiary carbon vessels

ND = no analytes detected above reporting limits

Shading indicates information from current quarter.

SVOC = semi-volatile organic compound

TCA = trichloroethane

TCE = trichloroethene

µg/L = micrograms per liter

VOCs = volatile organic compounds

Table 9. Chemical Analytic Results Summary, Fairchild System No. 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab - Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	PCE	Chloroform	Total VOCs	1,4-dioxane[1]
			<---------- (µg/L) ----------												---------->
Influent[2]	01/26/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	2.6
	02/18/09	C&T/8260B, 8270C-SIM	<13	<13	<13	590	39	<13	1,500	<13	23	14	<33	2,166	2.9
	03/24/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	2.3
	05/21/09	C&T/8260B, 8270C-SIM	<13	<13	<13	450	20	<13	1,300	<13	16	<13	<25	1,786	3.6
	07/16/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	2.8
	08/21/09	C&T/8260B, 8270C-SIM	<13	<13	<13	630	30	<13	1,500	<13	13	<13	<25	2,173	3.3/5.3*
	09/03/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.0/2.7*
	09/16/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	1.9/1.6*
	10/02/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4.5/3.1*
	10/15/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.7/3.2*
	11/20/09	C&T/8260B	<13	<13	<13	670	48	<13	1,600	<13	<50	<13	<25	2,318	---
Midpoint 1	01/12/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	02/09/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	03/09/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<1.0	1.4	---
	04/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	05/11/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	06/08/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	07/13/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<1.0	1.6	---
	07/16/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3
	08/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	08/21/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4
	09/03/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4
	09/14/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	09/16/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	2
	10/02/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4
	10/8/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	10/15/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4
	11/10/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<2.0	<0.5	<1.0	1.0	---
	12/14/2009[3]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
Midpoint 2	02/09/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	05/11/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	07/16/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4.0
	08/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	08/21/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4.1
	09/03/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.8
	09/16/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	2.3
	10/02/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.6
	10/15/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4.6
	11/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---

Table 9. Chemical Analytic Results Summary, Fairchild System No. 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab - Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	PCE	Chloroform	Total VOCs	1,4-dioxane[1]
			<---------- (µg/L) ----------												---------->
Effluent[4]	01/20/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	01/26/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.1
	02/18/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	4.1
	03/24/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	<1.0
	04/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	05/21/09	C&T/8260B, 8270C-SIM	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	5.7
	06/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	07/16/09	C&T/8260B, 8270C-SIM	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	<0.98
	8/21/2009[3]	C&T/8260B, 8270C-SIM	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	2.1
Effluent[4]	09/03/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.0
	9/16/2009[3]	C&T/8260B, 8270C-SIM	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	2.0
	10/02/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.6
	10/15/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4.2
	10/21/2009[5]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	ND	---
	10/26/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	4.1/4.4*
	11/11/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	2.7/2.9*
	11/20/2009[5]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	11/25/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	3.2/3.4*
	12/09/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	<0.99/<0.99*
	12/16/2009[5]	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	12/23/09	C&T/8270C-SIM	---	---	---	---	---	---	---	---	---	---	---	---	<0.94/<0.94*
Travel Blank[5]	04/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	06/15/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	08/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	08/21/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	---
	09/14/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	09/16/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	10/08/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	10/21/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	11/10/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	11/20/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	12/14/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---
	12/16/09	C&T/8260B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<1.0	ND	---

Notes:

1. Between 2003 and 2008 System influent and effluent samples were analyzed semi-annually by USEPA Method 8270C-SIM for 1,4-dioxane. Since July 2009 the system influent midpoints and effluent have been sampled monthly. Effluent samples were collected biweekly starting October 2009 as required by the new waste discharge requirements. Reference: No. R2-2009-0059 Section VI.C. All instances where the 3.0 microgram per liter trigger level was exceeded are shown **in bold**.
2. For the fourth quarter, the VOC influent sample was collected in November.
3. Duplicate sample collected for VOC analysis. Duplicate sample results confirmed the primary sample results.
4. VOC concentrations in effluent stream were below the NPDES effluent limitations for the entire quarter.
5. Duplicate effluent samples were collected on August 21, September 16, October 21, November 20, and December 16 and analyzed for VOCs. No VOCs were detected in either sample.
6. No VOCs were detected in travel blanks collected on May 11 and 21, July 13 and 16. Results are provided in the quarterly monitoring report for the Fairchild treatment system No. 1 for the May travel blanks and in the quarterly monitoring report for Fairchild treatment system No. 19 for the July travel blanks. Travel blanks were collected for the June 8 and July 13 samples and were placed on hold at the laboratory because there were no analytic issues.

Table 9. Chemical Analytic Results Summary, Fairchild System No. 3, 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab - Analytical Method	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	Vinyl Chloride	Freon 113	PCE	Chloroform	Total VOCs	1,4-dioxane[1]
			<---------- (µg/L) --------->												

Abbreviations:

< # = analyte not detected above the reported detection limit of "#" µg/L
* = duplicate 1,4-dioxane sample
--- = not analyzed
8260B = USEPA Method 8260 for halogenated VOCs
DCA = dichloroethane
DCE = dichloroethene
µg/L = micrograms per liter
Midpoint 1 = sample collected between the primary and secondary carbon vessels
Midpoint 2 = sample collected between the secondary and tertiary carbon vessels
ND = no analytes detected above reporting limits
PCE = tetrachloroethene
TCA = trichloroethane
TCE = trichloroethene
USEPA = United States Environmental Protection Agency
VOCs = volatile organic compounds

Weiss Associates

Table 10. VOC Mass Removal Summary, System 1, 515/545 Whisman Road, Mountain View, California

TOTAL GROUNDWATER EXTRACTED (gallons):	
January	1,467,850
February	1,614,850
March	2,048,500
April	1,580,025
May	1,593,775
June	1,907,800
July	1,482,610
August	1,676,510
September	1,441,530
October	1,407,500
November	1,832,800
December	1,485,600
CUMULATIVE GROUNDWATER EXTRACTED IN 2009 (gallons):	**19,539,350**
INFLUENT VOC CONCENTRATION (mg/L)[1]:	
January	1.21
February	1.21
March	1.21
April	1.44
May	1.44
June	1.44
July	1.39
August	1.39
September	1.39
October	2.01
November	2.01
December	2.01
Unit Conversion ((L H_2O/gal H_2O)*(kg VOC/mg VOC)*(2.2 pounds/kg)):	**8.33E-06**
TOTAL VOC MASS REMOVED (pounds):	
January	14.77
February	16.25
March	20.61
April	18.99
May	19.15
June	22.93
July	17.15
August	19.39
September	16.67
October	23.56
November	30.68
December	24.87
CUMULATIVE MASS REMOVED IN 2009 (pounds):	**245.0**

Notes and Abbreviations:

1 = System Influent samples are collected the second month of every quarter. These concentrations are used for the entire quarter.

gal = gallons

kg = kilogram

mg/L = milligram per liter

VOC = volatile organic compound

Table 11. VOC Mass Removal Summary, System 3, 313 Fairchild Drive, Mountain View, California

TOTAL GROUNDWATER EXTRACTED (gallons):	
January	1,249,950
February	1,107,090
March	1,498,260
April	1,227,500
May	1,073,150
June	1,224,100
July	1,021,100
August	1,609,600
September	1,245,350
October	1,174,350
November	1,208,350
December	1,148,350
CUMULATIVE GROUNDWATER EXTRACTED IN 2009 (gallons):	**14,787,150**
INFLUENT VOC CONCENTRATION (mg/L)[1]:	
January	2.17
February	2.17
March	2.17
April	1.79
May	1.79
June	1.79
July	2.17
August	2.17
September	2.17
October	2.32
November	2.32
December	2.32
Unit Conversion ((L H_2O/gal H_2O)*(kg VOC/mg VOC)*(2.2 pounds/kg)):	**8.33E-06**
TOTAL VOC MASS REMOVED (pounds):	
January	22.55
February	19.97
March	27.03
April	18.26
May	15.96
June	18.21
July	18.48
August	29.13
September	22.54
October	22.67
November	23.33
December	22.17
CUMULATIVE MASS REMOVED IN 2009 (pounds):	**260.3**

Notes and Abbreviations:

1 = System Influent samples are collected the second month of every quarter. These concentrations are used for the entire quarter.

gal = gallons

VOC = volatile organic compound

Table 12. Groundwater Elevations Slurry Wall Pairs, January 2006 through December 2009, Former Fairchild Buildings 1-4

Date	Well ID Outer/B1 Well	Groundwater Elevation (ft msl)	Well ID Inner/A Well	Groundwater Elevation (ft msl)	Difference (ft)	Inward/Outward Gradient from Slurry Wall or Upward/Downward
Southern Wall - Upgradient Well Pairs						
3/23/2006	127A	34.74	33A	33.95	0.79	Inward
5/25/2006	127A	34.46	33A	33.54	0.92	Inward
8/24/2006	127A	34.27	33A	33.41	0.86	Inward
11/16/2006	127A	34.09	33A	33.21	0.88	Inward
3/22/2007	127A	34.56	33A	33.99	0.57	Inward
5/24/2007	127A	34.18	33A	33.32	0.86	Inward
8/23/2007	127A	34.30	33A	33.73	0.57	Inward
11/15/2007	127A	34.49	33A	34.03	0.46	Inward
3/27/2008	127A	34.41	33A	33.86	0.55	Inward
5/22/2008	127A	34.46	33A	35.34	-0.88	Outward
8/28/2008	127A	34.21	33A	33.66	0.55	Inward
11/20/2008	127A	33.81	33A	33.28	0.53	Inward
3/26/2009	127A	34.46	33A	33.99	0.47	Inward
5/21/2009	127A	34.36	33A	34.24	0.12	Inward
8/27/2009	127A	33.76	33A	33.24	0.52	Inward
11/19/2009	127A	33.5	33A	33.02	0.48	Inward
3/23/2006	128A	34.49	84A	33.31	1.18	Inward
5/25/2006	128A	34.23	84A	32.8	1.43	Inward
8/24/2006	128A	33.97	84A	32.5	1.47	Inward
11/16/2006	128A	36.8	84A	31.88	4.92	Inward
3/22/2007	128A	34.52	84A	32.76	1.76	Inward
5/24/2007	128A	33.97	84A	32.64	1.33	Inward
8/23/2007	128A	34	84A	32.97	1.03	Inward
11/15/2007	128A	34.35	84A	33.44	0.91	Inward
3/27/2008	128A	34.43	84A	33.28	1.15	Inward
5/22/2008	128A	34.48	84A	33.33	1.15	Inward
11/20/2008	128A	33.64	84A	33.02	0.62	Inward
3/26/2009	128A	34.38	84A	33.38	1	Inward
5/21/2009	128A	34.27	84A	33.09	1.18	Inward
8/27/2009	128A	33.58	84A	32.58	1	Inward
11/19/2009	128A	33.74	84A	32.22	1.52	Inward
3/23/2006	136A	32.82	133A	31.62	1.2	Inward
5/25/2006	136A	32.40	133A	31.12	1.28	Inward
8/24/2006	136A	32.12	133A	30.93	1.19	Inward
11/16/2006	136A	31.99	133A	30.72	1.27	Inward
3/22/2007	136A	33.08	133A	32.09	0.99	Inward
5/24/2007	136A	32.32	133A	31.21	1.11	Inward
8/23/2007	136A	32.37	133A	31.34	1.03	Inward
11/15/2007	136A	33.06	133A	32.06	1	Inward
3/27/2008	136A	32.83	133A	31.82	1.01	Inward
5/22/2008	136A	32.78	133A	31.78	1	Inward
8/28/2008	136A	32.48	133A	31.47	1.01	Inward
11/20/2008	136A	32.02	133A	31.05	0.97	Inward
3/26/2009	136A	32.88	133A	31.93	0.95	Inward
5/21/2009	136A	32.53	133A	31.82	0.71	Inward
8/27/2009	136A	32.03	133A	31.05	0.98	Inward
11/19/2009	136A	31.8	133A	30.85	0.95	Inward

Table 12. Groundwater Elevations Slurry Wall Pairs, January 2006 through December 2009, Former Fairchild Buildings 1-4

Date	Well ID Outer/B1 Well	Groundwater Elevation (ft msl)	Well ID Inner/A Well	Groundwater Elevation (ft msl)	Difference (ft)	Inward/Outward Gradient from Slurry Wall or Upward/Downward
Western Wall - Crossgradient Well Pairs						
3/23/2006	130A	28.64	59A	27.40	1.24	Inward
5/25/2006	130A	27.51	59A	26.38	1.13	Inward
8/24/2006	130A	27.37	59A	26.10	1.27	Inward
11/16/2006	130A	27.30	59A	26.08	1.22	Inward
3/22/2007	130A	28.29	59A	27.69	0.6	Inward
5/24/2007	130A	27.67	59A	26.66	1.01	Inward
8/23/2007	130A	27.74	59A	26.67	1.07	Inward
11/15/2007	130A	28.18	59A	27.32	0.86	Inward
3/27/2008	130A	27.98	59A	27.01	0.97	Inward
5/22/2008	130A	27.94	59A	26.95	0.99	Inward
8/28/2008	130A	27.60	59A	26.74	0.86	Inward
11/20/2008	130A	27.40	59A	26.56	0.84	Inward
3/26/2009	130A	28.15	59A	27.14	1.01	Inward
5/21/2009	130A	27.7	59A	26.64	1.06	Inward
8/27/2009	130A	27.5	59A	26.44	1.06	Inward
11/19/2009	130A	27.26	59A	26.21	1.05	Inward
Northern Wall - Downgradient Well Pairs						
3/23/2006	76A	23.88	118A	24.46	-0.58	Outward
5/25/2006	76A	22.84	118A	23.71	-0.87	Outward
8/24/2006	76A	22.51	118A	23.21	-0.7	Outward
11/16/2006	76A	22.89	118A	23.14	-0.25	Outward
3/22/2007	76A	26.09	118A	25.78	0.31	Inward
5/24/2007	76A	23.30	118A	23.98	-0.68	Outward
8/23/2007	76A	23.05	118A	24.49	-1.44	Outward
11/15/2007	76A	25.75	118A	25.01	0.74	Inward
3/27/2008	76A	23.58	118A	24.95	-1.37	Outward
5/22/2008	76A	23.31	118A	24.68	-1.37	Outward
8/28/2008	76A	23.20	118A	24.53	-1.33	Outward
11/20/2008	76A	23.09	118A	24.53	-1.44	Outward
3/26/2009	76A	23.53	118A	24.88	-1.35	Outward
5/21/2009	76A	23.06	118A	24.63	-1.57	Outward
8/27/2009	76A	22.83	118A	24.28	-1.45	Outward
11/19/2009	76A	22.86	118A	24.49	-1.63	Outward
3/23/2006	156A	23.13	157A	24.76	-1.63	Outward
5/25/2006	156A	21.87	157A	23.96	-2.09	Outward
8/24/2006	156A	21.55	157A	23.68	-2.13	Outward
11/16/2006	156A	21.5	157A	23.66	-2.16	Outward
3/22/2007	156A	22.94	157A	25.59	-2.65	Outward
5/24/2007	156A	21.91	157A	24.32	-2.41	Outward
8/23/2007	156A	21.84	157A	24.26	-2.42	Outward
11/15/2007	156A	22.55	157A	25.19	-2.64	Outward
3/27/2008	156A	22.29	157A	24.69	-2.4	Outward
5/22/2008	156A	22.06	157A	24.62	-2.56	Outward
8/28/2008	156A	21.82	157A	24.38	-2.56	Outward
11/20/2008	156A	21.62	157A	24.15	-2.53	Outward
3/26/2009	156A	22.22	157A	24.88	-2.66	Outward
5/21/2009	156A	21.78	157A	24.4	-2.62	Outward
8/27/2009	156A	21.82	157A	24.3	-2.48	Outward
11/19/2009	156A	21.21	157A	24.06	-2.85	Outward

Table 12. Groundwater Elevations Slurry Wall Pairs, January 2006 through December 2009, Former Fairchild Buildings 1-4

Date	Well ID Outer/B1 Well	Groundwater Elevation (ft msl)	Well ID Inner/A Well	Groundwater Elevation (ft msl)	Difference (ft)	Inward/Outward Gradient from Slurry Wall or Upward/Downward
Eastern Wall - Crossgradient Well Pairs						
3/23/2006	129A	28.95	121A	26.78	2.17	Inward
5/25/2006	129A	28.43	121A	26.15	2.28	Inward
8/24/2006	129A	28.21	121A	25.96	2.25	Inward
11/16/2006	129A	28.17	121A	26.16	2.01	Inward
3/22/2007	129A	29.44	121A	28.05	1.39	Inward
5/24/2007	129A	28.67	121A	26.89	1.78	Inward
8/23/2007	129A	28.44	121A	26.91	1.53	Inward
11/15/2007	129A	29.35	121A	27.82	1.53	Inward
3/27/2008	129A	28.7	121A	27.52	1.18	Inward
5/22/2008	129A	28.77	121A	27.42	1.35	Inward
8/28/2008	129A	28.65	121A	27.17	1.48	Inward
11/20/2008	129A	28.33	121A	26.89	1.44	Inward
3/26/2009	129A	29.02	121A	27.72	1.3	Inward
5/21/2009	129A	28.58	121A	27.24	1.34	Inward
8/27/2009	129A	28.26	121A	26.92	1.34	Inward
11/19/2009	129A	28.11	121A	26.77	1.34	Inward
A-B1 Aquitard - Vertical Gradient Well Pairs						
3/23/2006	20B1	33.84	33A	33.95	-0.11	Downward
5/25/2006	20B1	33.51	33A	33.54	-0.03	Downward
8/24/2006	20B1	33.18	33A	33.41	-0.23	Downward
11/16/2006	20B1	33.14	33A	33.21	-0.07	Downward
3/22/2007	20B1	33.8	33A	33.99	-0.19	Downward
5/24/2007	20B1	33.28	33A	33.32	-0.04	Downward
8/23/2007	20B1	33.46	33A	33.73	-0.27	Downward
11/15/2007	20B1	33.99	33A	34.03	-0.04	Downward
3/27/2008	20B1	33.74	33A	33.86	-0.12	Downward
5/22/2008	20B1	33.79	33A	35.34	-1.55	Downward
8/28/2008	20B1	33.44	33A	33.66	-0.22	Downward
11/20/2008	20B1	32.98	33A	33.28	-0.3	Downward
3/26/2009	20B1	33.79	33A	33.99	-0.2	Downward
5/21/2009	20B1	33.55	33A	34.24	-0.69	Downward
8/27/2009	20B1	32.99	33A	33.24	-0.25	Downward
11/19/2009	20B1	32.72	33A	33.02	-0.3	Downward
3/23/2006	60B1	23.98	118A	24.46	-0.48	Downward
5/25/2006	60B1	23.29	118A	23.71	-0.42	Downward
8/24/2006	60B1	23.11	118A	23.21	-0.1	Downward
11/16/2006	60B1	23.24	118A	23.14	0.1	Upward
3/22/2007	60B1	25.61	118A	25.78	-0.17	Downward
5/24/2007	60B1	24.75	118A	23.98	0.77	Upward
8/23/2007	60B1	23.56	118A	24.49	-0.93	Downward
11/15/2007	60B1	24.13	118A	25.01	-0.88	Downward
3/27/2008	60B1	22.48	118A	24.95	-2.47	Downward
5/22/2008	60B1	22.49	118A	24.68	-2.19	Downward
8/28/2008	60B1	21.99	118A	24.53	-2.54	Downward
11/20/2008	60B1	21.55	118A	24.53	-2.98	Downward
3/26/2009	60B1	23.94	118A	24.88	-0.94	Downward
5/21/2009	60B1	22.38	118A	24.63	-2.25	Downward
8/27/2009	60B1	22.29	118A	24.28	-1.99	Downward
11/19/2009	60B1	21.56	118A	24.49	-2.93	Downward

Table 12. Groundwater Elevations Slurry Wall Pairs, January 2006 through December 2009, Former Fairchild Buildings 1-4

Date	Well ID Outer/B1 Well	Groundwater Elevation (ft msl)	Well ID Inner/A Well	Groundwater Elevation (ft msl)	Difference (ft)	Inward/Outward Gradient from Slurry Wall or Upward/Downward
3/23/2006	115B1	26.43	124A	25.22	1.21	Upward
5/25/2006	115B1	25.73	124A	24.44	1.29	Upward
8/24/2006	115B1	25.61	124A	24.04	1.57	Upward
11/16/2006	115B1	25.7	124A	24.19	1.51	Upward
3/22/2007	115B1	28.02	124A	26.46	1.56	Upward
5/24/2007	115B1	27.25	124A	25.01	2.24	Upward
8/23/2007	115B1	26.08	124A	25.03	1.05	Upward
11/15/2007	115B1	26.94	124A	25.88	1.06	Upward
3/27/2008	115B1	25.81	124A	25.11	0.7	Upward
5/22/2008	115B1	26	124A	25.41	0.59	Upward
8/28/2008	115B1	25.5	124A	25.2	0.3	Upward
11/20/2008	115B1	25.12	124A	25.04	0.08	Upward
3/26/2009	115B1	27.26	124A	25.66	1.6	Upward
5/21/2009	115B1	25.65	124A	25.21	0.44	Upward
8/27/2009	115B1	25.41	124A	24.91	0.5	Upward
11/19/2009	115B1	24.98	124A	24.81	0.17	Upward
3/23/2006	119B1	32.81	133A	31.62	1.19	Upward
5/25/2006	119B1	32.48	133A	31.12	1.36	Upward
8/24/2006	119B1	32.13	133A	30.93	1.2	Upward
11/16/2006	119B1	32.03	133A	30.72	1.31	Upward
3/22/2007	119B1	33.15	133A	32.09	1.06	Upward
5/24/2007	119B1	32.42	133A	31.21	1.21	Upward
8/23/2007	119B1	32.42	133A	31.34	1.08	Upward
11/15/2007	119B1	33.12	133A	32.06	1.06	Upward
3/27/2008	119B1	32.8	133A	31.82	0.98	Upward
5/22/2008	119B1	32.81	133A	31.78	1.03	Upward
8/28/2008	119B1	32.51	133A	31.47	1.04	Upward
11/20/2008	119B1	32.01	133A	31.05	0.96	Upward
3/26/2009	119B1	32.91	133A	31.93	0.98	Upward
5/21/2009	119B1	32.55	133A	31.82	0.73	Upward
8/27/2009	119B1	32.11	133A	31.05	1.06	Upward
11/19/2009	119B1	31.83	133A	30.85	0.98	Upward

Notes and Abbreviations:

ft = feet

ft amsl = feet above mean sea level

Well ID = well identifier used in MEW database

Weiss Associates

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
33A	11/19/07	CT/8260	<1.0	**1.2**	<0.5	**2.4**	**12**	<0.5	**8.5**	<20	<0.5	**4**	**61**	<0.5	**89**	---
46A	11/21/07	CT/8260	<1.0	**0.6**	<0.5	**1.2**	**0.6**	<0.5	<0.5	<20	<0.5	**1.2**	**3.4**	<0.5	**7**	---
46A	11/14/08	CT/8260	<1.0	**1.3**	<0.5	**2.3**	**0.7**	<0.5	**1.2**	<20	<0.5	**1.7**	**20**	<0.5	**27**	---
46A	11/12/09	CT/8260	<1.0	**1.1**	<0.5	**1.3**	<0.5	<0.5	<2.0	<20	<0.5	**1.5**	**14**	<0.5	**18**	---
51A	11/08/07	CT/8260	<20	**19**	<10	**26**	**1,300**	**34**	<10	<400	<10	<10	**11**	<10	**1,412**	---
57A	11/19/07	CT/8260	<50	**36**	<25	**31**	**4,100**	**210**	<25	<1000	<25	<25	**76**	<25	**4,583**	---
59A	11/21/07	CT/8260	<1.0	**14**	<0.5	**9.1**	**8.1**	<0.5	<0.5	<20	**0.5**	**8.1**	**37**	**0.5**	**77**	---
61A	11/21/07	CT/8260	<1.0	**1.6**	<0.5	**2.3**	**0.7**	<0.5	**0.8**	<20	<0.5	**1.6**	**19**	<0.5	**26**	---
61A	11/14/08	CT/8260	<1.0	**0.6**	<0.5	**0.8**	<0.5	<0.5	<0.5	<20	<0.5	**1.2**	**3.5**	<0.5	**6**	---
61A	11/02/09	CT/8260	<1.0	<0.5	<0.5	**1**	<0.5	<0.5	<2.0	<20	<0.5	**1.1**	**3.6**	<0.5	**6**	---
67A	11/13/07	CT/8260	<10	**7.1**	<5.0	**11**	**990**	**9.8**	**7.9**	<200	<5.0	<5.0	**200**	<5.0	**1,226**	---
68A	11/21/07	CT/8260	<7.1	**4.1**	<3.6	**5.1**	**350**	**7.6**	<3.6	<140	<3.6	**4.6**	**180**	<3.6	**551**	---
76A	12/11/08	CT/8260	<2.5	**2.4**	<1.3	**2.1**	**140**	**2.3**	**4.4**	<50	<1.3	**1.3**	**300**	<1.3	**453**	---
76A	11/04/09	CT/8260	<1.0	**3.9**	<0.5	**3.1**	**190**	**3**	**2.8**	<20	<0.5	**1.5**	**350**	<0.5	**554**	---
84A	11/19/07	CT/8260	<1.0	**3**	<0.5	**0.9**	**1.8**	<0.5	<0.5	<20	<0.5	**4.4**	**1**	<0.5	**11**	---
118A	12/11/08	CT/8260	<7.1	**18**	<3.6	**8.7**	**210**	**22**	**7.7**	<140	**4.2**	**4.7**	**970**	<3.6	**1,245**	---
118A	11/04/09	CT/8260	**3.1**	**20**	<0.5	**11**	**220**	**13**	**2.9**	<20	**3.5**	**4.9**	**740**	**1.6**	**1,020**	---
121A	11/08/07	CT/8260	<25	<13	<13	<13	**1,500**	**61**	<13	<500	<13	<13	**42**	<13	**1,603**	---
124A	11/08/07	CT/8260	<83	<42	<42	**42**	**4,400**	<42	<42	<1700	<42	<42	**240**	<42	**4,682**	---
127A	11/10/05	CT/8260	<1	<0.5	<0.5	**0.9**	**2.1**	<0.5	**2.6**	<20	<0.5	**1.8**	**46**	<0.5	**53**	---
127A	11/20/06	CT/8260	<1.0	<0.5	<0.5	**0.9**	**2.2**	<0.5	**3.1**	<20	<0.5	**1.9**	**32**	<0.5	**40**	---
127A	11/07/07	CT/8260	<1.0	**1.5**	<0.5	**3**	**19**	<0.5	**11**	<20	<0.5	**4.4**	**71**	<0.5	**110**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
127A	11/06/08	CT/8260	**0.65**	**2.5**	<0.50	**4.8**	**38**	<0.50	**18**	<0.50	<0.50	**7.1**	**95**	<0.50	**166**	---
127A	11/16/09	CT/8260	<1.0	**1.5**	<0.5	**3.1**	**45**	<0.5	**9.7**	<20	<0.5	**4**	**76**	<0.5	**139**	---
130A	11/11/05	CT/8260	<2.5	**2.7**	<1.3	**3**	**9.2**	<1.3	<1.3	<50	**7.3**	**3.1**	**150**	<1.3	**177**	---
130A	11/21/06	CT/8260	<1.0	**3.2**	<0.5	**4.4**	**12**	**0.7**	<1.3	<20	**11**	**4**	**170**	<0.5	**207**	---
130A	11/07/07	CT/8260	<2.0	**1.9**	<1.0	**2.3**	**14**	<1.0	<1.0	<40	**3.6**	**2.1**	**130**	<1.0	**156**	---
130A	11/12/08	CT/8260	<2.0	**1.9**	<1.0	**3**	**12**	<1.0	<1.0	<40	**5.5**	**2.9**	**140**	<1.0	**167**	---
130A	11/03/09	CT/8260	<2.0	**2.5**	<1.0	**2.8**	**10**	<1.0	<4.0	<40	**8.3**	**3**	**120**	<1.0	**148**	---
133A	11/08/07	CT/8260	<3.3	**3.5**	<1.7	**3.8**	**72**	**3**	**16**	<67	<1.7	**2.8**	**260**	<1.7	**361**	---
156A	11/11/05	CT/8260	<25	<13	<13	<13	**2,000**	**20**	<13	<500	<13	<13	<13	<13	**2,020**	---
156A	11/21/06	CT/8260	<17	<8.3	<8.3	**16**	**2,000**	**29**	<8.3	<330	<8.3	<8.3	**36**	<8.3	**2,081**	---
156A	11/07/07	CT/8260	<33	<17	<17	<17	**1,700**	**43**	<17	<670	<17	<17	**80**	<17	**1,823**	---
156A	11/11/08	CT/8260	<1.0	**4.7**	<0.5	**11**	**1,300**	**12**	**1**	<20	<0.5	<0.5	**61**	**0.6**	**1,391**	---
156A	11/05/09	CT/8260	<17	<8.3	<8.3	<8.3	**1,400**	**45**	<33	<330	<8.3	<8.3	**43**	<8.3	**1,488**	---
157A	11/19/07	CT/8260	<25	**51**	<13	**34**	**1,800**	**25**	**20**	<500	**13**	<13	**2,000**	<13	**3,943**	---
157A	12/11/08	CT/8260	<13	**52**	<6.3	**27**	**1,500**	**33**	**20**	<250	**6.5**	<6.3	**1,100**	<6.3	**2,739**	---
157A (DUP)	12/11/08	CT/8260	<7.1	**56**	<3.6	**18**	**1,500**	**86**	**15**	<140	**5**	<3.6	**1,200**	<3.6	**2,880**	---
157A	11/05/09	CT/8260	<1.0	**60**	<0.5	**37**	**1,800**	**11**	**20**	<20	**10**	**0.7**	**1,700**	**1**	**3,640**	---
157A (DUP)	11/05/09	CT/8260	<1.0	**55**	<0.5	**33**	**1,700**	**9**	**18**	<20	**8.5**	**0.7**	**1,600**	**0.9**	**3,425**	---
AE/RW-9-1	08/08/07	CT/8260	<33	**500**	<17	**74**	**1,000**	<17	**24**	<670	<17	**2,600**	**1,200**	**71**	**5,469**	---
AE/RW-9-1	04/22/08	CT/8260	<8.3	**47**	<4.2	**22**	**430**	**11**	**16**	<170	<4.2	**140**	**650**	**5.1**	**1,331**	---
AE/RW-9-1	11/07/08	CT/8260	<13	**54**	<6.3	**24**	**460**	**10**	**19**	<250	<6.3	**360**	**730**	<6.3	**1,668**	---
AE/RW-9-1	11/17/09	CT/8260	<2.0	**19**	<1.0	**11**	**400**	**12**	**11**	<40	**4.4**	**36**	**460**	**2.6**	**966**	---
AE/RW-9-1	11/17/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.4**
AE/RW-9-2	08/08/07	CT/8260	<100	<50	<50	<50	**5,100**	**59**	**110**	<2000	<50	**84**	**5,400**	**220**	**10,973**	---
AE/RW-9-2	11/16/07	CT/8260	<50	**58**	<25	**39**	**3,700**	**45**	**56**	<1000	<25	**74**	**2,500**	**170**	**6,642**	---
AE/RW-9-2	11/06/08	CT/8260	<100	<100	<100	<100	**3,100**	<100	<100	<100	<100	<100	**4,100**	**130**	**7,330**	---
AE/RW-9-2	11/17/09	CT/8260	<4.0	**58**	<2.0	**27**	**2,700**	**35**	**67**	<80	<2.0	**42**	**3,000**	**95**	**6,024**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
AE/RW-9-2	11/17/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.2**
BLDG-18	11/24/08	CT/8260	<7.1	<3.6	<3.6	<3.6	**300**	**12**	<3.6	<140	<3.6	<3.6	**510**	**4.8**	**827**	---
RW-3A	08/08/07	CT/8260	<1.0	**0.8**	<0.5	**1.8**	**9.4**	<0.5	**5.4**	<20	<0.5	**2.1**	**51**	<0.5	**71**	---
RW-3A	11/16/07	CT/8260	<1.0	**1.1**	<0.5	**1.7**	**16**	<0.5	**7.3**	<20	<0.5	**3.6**	**65**	<0.5	**95**	---
RW-3A	11/15/08	CT/8260	<1.0	**1.8**	<0.5	**3.5**	**28**	<0.5	**16**	<20	<0.5	**5.3**	**83**	<0.5	**138**	---
RW-3A	11/13/09	CT/8260	<1.0	**1.5**	<0.5	**3.7**	**41**	<0.5	**11**	<20	<0.5	**4.1**	**82**	<0.5	**143**	---
RW-3A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.99
RW-4A	11/11/05	CT/8260	<1	**3**	<0.5	**3.6**	**18**	<0.5	**0.9**	<20	**11**	**5.5**	**78**	**2.1**	**126**	---
RW-4A	11/21/06	CT/8260	<1.0	**2.7**	<0.5	**3.4**	**18**	**0.5**	<1.0	<20	**11**	**4.7**	**99**	**1.4**	**145**	---
RW-4A	08/08/07	CT/8260	<1.0	**2.2**	<0.5	**2.6**	**20**	<0.5	**0.7**	<20	**8.7**	**4.2**	**96**	**2.2**	**139**	---
RW-4A	11/16/07	CT/8260	<1.0	**1.9**	<0.5	**1.5**	**30**	**0.5**	<0.5	<20	**3.7**	**2.3**	**49**	**5.6**	**95**	---
RW-4A	11/15/08	CT/8260	<1.0	**1.5**	<0.5	**0.9**	**15**	**0.5**	<0.5	<20	**3.1**	**1.7**	**42**	**3.1**	**68**	---
RW-4A	11/24/09	CT/8260	<1.0	**1.6**	<0.5	**1.1**	**19**	**0.7**	<2.0	<20	**3.1**	**1.6**	**38**	**2.1**	**68**	---
RW-4A	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-5A	08/08/07	CT/8260	<25	**32**	<13	**24**	**1,100**	**110**	<50	<500	**79**	**13**	**1,400**	**15**	**2,933**	---
RW-5A	11/14/07	CT/8260	<25	**44**	<13	**30**	**1,300**	**130**	<13	<500	**81**	**21**	**1,700**	**25**	**3,501**	---
RW-5A	11/14/08	CT/8260	<14	**36**	<7.1	**26**	**980**	**100**	<7.1	<290	**85**	**17**	**1,500**	**21**	**2,935**	---
RW-5A	11/04/09	CT/8260	<20	**27**	<10	**19**	**710**	**71**	<40	<400	**76**	**15**	**1,300**	**18**	**2,396**	---
RW-5A	11/04/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**
RW-7A	08/08/07	CT/8260	<14	**16**	<7.1	**14**	**640**	**24**	**6.4**	<290	**8.9**	<7.1	**880**	<7.1	**1,606**	---
RW-7A	11/12/07	CT/8260	<17	**17**	<8.3	**16**	**750**	**18**	**8.6**	<330	<8.3	<8.3	**1,000**	<8.3	**1,823**	---
RW-7A	11/04/08	CT/8260	<13	**13**	<6.3	**17**	**500**	**20**	**7.1**	<250	**7.6**	<6.3	**890**	<6.3	**1,467**	---
RW-7A	11/05/09	CT/8260	<13	**15**	<6.3	**14**	**580**	**16**	<25	<250	**9.3**	<6.3	**870**	<6.3	**1,520**	---
RW-7A	11/05/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.7**
RW-9A	11/11/05	CT/8260	<5	**3.4**	<2.5	**3.2**	**280**	**6.3**	**4**	<100	<2.5	<2.5	**490**	<2.5	**787**	---
RW-9A	11/15/06	CT/8260	<2.5	**4.3**	<1.3	**4**	**380**	**7.2**	**6.3**	<50	<1.3	**1.9**	**540**	<1.3	**944**	---
RW-9A	08/08/07	CT/8260	<7.1	<3.6	<3.6	<3.6	**350**	**4.9**	**4.8**	<140	<3.6	<3.6	**520**	<3.6	**880**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
RW-9A	11/16/07	CT/8260	<10	**6.2**	<5.0	**7.7**	**720**	**16**	**12**	<200	<5.0	<5.0	**850**	<5.0	**1,612**	---
RW-9A	11/15/08	CT/8260	<13	<6.3	<6.3	**6.4**	**880**	**10**	**8.3**	<250	<6.3	<6.3	**410**	<6.3	**1,315**	---
RW-9A	11/17/09	CT/8260	<20	<10	<10	**18**	**2,700**	**18**	<40	<400	<10	<10	**470**	**12**	**3,218**	---
RW-9A	11/17/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**6.6**
RW-16A	08/08/07	CT/8260	<5.0	**5.8**	<2.5	**11**	**110**	<2.5	**15**	<100	<2.5	**3.4**	**430**	<2.5	**575**	---
RW-16A	11/13/07	CT/8260	<6.3	**7.5**	<3.1	**11**	**110**	<3.1	**7.9**	<130	<3.1	<3.1	**320**	<3.1	**456**	---
RW-16A	11/15/08	CT/8260	<1.4	**9.8**	<0.7	**17**	**150**	**1.2**	**7.6**	<29	<0.7	**3.8**	**280**	**1.2**	**471**	---
RW-16A	11/13/09	CT/8260	<1.0	**5.7**	<0.5	**10**	**89**	**1**	**6.9**	<20	**0.8**	**3**	**240**	<0.5	**356**	---
RW-16A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.2**
RW-18A	08/08/07	CT/8260	<10	**12**	<5.0	**13**	**610**	**9.7**	**5.2**	<200	<5.0	<5.0	**660**	<5.0	**1,310**	---
RW-18A	11/19/07	CT/8260	<8.3	**7.8**	<4.2	**9.9**	**340**	**9.3**	**6.8**	<170	<4.2	<4.2	**520**	<4.2	**894**	---
RW-18A	11/14/08	CT/8260	<6.3	**9**	<3.1	**8.9**	**380**	**13**	<3.1	<130	<3.1	<3.1	**500**	<3.1	**911**	---
RW-18A	11/03/09	CT/8260	<6.3	**8.7**	<3.1	**8.7**	**380**	**14**	<13	<130	<3.1	<3.1	**490**	<3.1	**901**	---
RW-18A	11/03/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**
RW-20A	08/08/07	CT/8260	<13	**23**	<6.3	**18**	**860**	**11**	**9.1**	<250	<6.3	**34**	**790**	**15**	**1,768**	---
RW-20A	11/16/07	CT/8260	<6.3	**83**	<3.1	**69**	**480**	**8.6**	**7.1**	<130	**8.5**	**420**	**440**	<3.1	**1,516**	---
RW-20A	11/15/08	CT/8260	<5.0	**21**	<2.5	**18**	**590**	**8.4**	**6.7**	<100	**3.1**	**48**	**360**	**4.2**	**1,063**	---
RW-20A	11/13/09	CT/8260	<1.0	**13**	<0.5	**14**	**680**	**9.7**	**8.5**	<20	**2.4**	**6.5**	**840**	**5.1**	**1,588**	---
RW-20A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.9**
RW-21A	08/08/07	CT/8260	<6.3	**8.7**	<3.1	**7.4**	**250**	**6.9**	**12**	<130	**6.3**	**8.5**	**340**	<3.1	**644**	---
RW-21A	11/16/07	CT/8260	<1.4	**8.1**	<0.7	**5**	**64**	**4.8**	**52**	<29	**3.5**	**4.9**	**71**	**1.1**	**214**	---
RW-21A	11/17/08	CT/8260	<1.0	**7.8**	<0.5	**5.8**	**68**	**8.1**	**49**	<20	<0.5	**1.7**	**58**	**1.3**	**200**	---
RW-21A (DUP)	11/17/08	CT/8260	<1.0	**8**	<0.5	**5.5**	**68**	**8.7**	**50**	<20	<0.5	**1.6**	**60**	**1.3**	**203**	---
RW-21A	11/13/09	CT/8260	<1.0	**4.9**	<0.5	**4.2**	**68**	**0.7**	**50**	<20	<0.5	**0.5**	**79**	**0.8**	**208**	---
RW-21A (DUP)	11/13/09	CT/8260	<1.0	**4.9**	<0.5	**3.9**	**65**	**0.6**	**50**	<20	<0.5	<0.5	**79**	**0.9**	**204**	---
RW-21A	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.1**
RW-25A	11/18/05	CT/8260	<25	<13	<13	<13	**920**	<13	**19**	<500	<13	<13	**1,300**	**32**	**2,271**	---
RW-25A	11/21/06	CT/8260	<40	<10	<10	**17**	**1,400**	**20**	**72**	<400	<10	<10	**1,700**	**37**	**3,246**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
RW-25A	11/16/07	CT/8260	<33	<17	<17	**24**	**2,600**	**29**	**42**	<670	<17	<17	**2,200**	**91**	**4,986**	---
RW-25A	11/07/08	CT/8260	<25	<13	<13	**20**	**2,100**	**25**	**39**	<500	<13	<13	**2,100**	**55**	**4,339**	---
RW-25A (DUP)	11/07/08	CT/8260	<40	<20	<20	**21**	**2,100**	**24**	**44**	<800	<20	<20	**2,100**	**55**	**4,344**	---
RW-25A	11/05/09	CT/8260	<33	<17	<17	**18**	**2,200**	**27**	<67	<670	<17	<17	**1,900**	**46**	**4,191**	---
RW-25A (DUP)	11/05/09	CT/8260	<1.0	**13**	<0.5	**24**	**2,100**	**32**	**31**	<20	**1.7**	**6.7**	**1,800**	**62**	**4,075**	---
RW-25A	11/05/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.5**
RW-25A (DUP)	11/05/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**3**
RW-27A	08/08/07	CT/8260	<20	**19**	<10	**18**	**590**	**21**	**6.5**	<400	<10	<10	**1,300**	<10	**1,955**	---
RW-27A	11/14/07	CT/8260	<20	**17**	<10	<10	**730**	**41**	<10	<400	<10	<10	**1,300**	<10	**2,088**	---
RW-27A	11/04/08	CT/8260	<20	**17**	<10	**16**	**580**	**14**	<10	<400	<10	<10	**1,200**	<10	**1,827**	---
RW-27A	11/04/09	CT/8260	<17	**19**	<8.3	**14**	**570**	**9.7**	<33	<330	<8.3	<8.3	**1,000**	<8.3	**1,613**	---
RW-27A	11/04/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**4.8**
RW-28A	08/08/07	CT/8260	<7.1	**10**	<3.6	**12**	**420**	**20**	**3.5**	<140	**4.2**	<3.6	**590**	<3.6	**1,072**	---
RW-28A (DUP)	08/08/07	CT/8260	<13	**12**	<6.3	**11**	**440**	**21**	**3.4**	<250	<6.3	<6.3	**610**	<6.3	**1,109**	---
RW-28A	11/13/07	CT/8260	<10	**9.5**	<5.0	**15**	**330**	**18**	<5.0	<200	**5.7**	<5.0	**740**	<5.0	**1,133**	---
RW-28A	11/15/08	CT/8260	<8.3	**9.7**	<4.2	**12**	**800**	**15**	<4.2	<170	<4.2	<4.2	**41**	**12**	**898**	---
RW-28A	11/03/09	CT/8260	<8.3	**12**	<4.2	**12**	**960**	**31**	<17	<170	<4.2	<4.2	**150**	**11**	**1,185**	---
RW-28A	11/03/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**
2B1	11/16/05	CT/8260	<3.3	**5.7**	<1.7	**4.4**	**98**	**3.6**	**4.2**	<67	<1.7	<1.7	**390**	<1.7	**506**	---
2B1	11/17/06	CT/8260	<1.0	**5.3**	<0.5	**9.9**	**100**	**0.8**	**6.9**	<20	<0.5	**1.8**	**520**	<4.2	**645**	---
2B1	11/08/07	CT/8260	<7.1	**5.3**	<3.6	**6.5**	**110**	**3.8**	**5.6**	<140	<3.6	<3.6	**500**	<3.6	**631**	---
2B1	11/06/08	CT/8260	<0.50	**5.5**	<0.50	**8.7**	**93**	**0.99**	**5.4**	<0.50	<0.50	<0.50	**470**	<0.50	**584**	---
2B1	11/17/09	CT/8260	<4.0	**3.4**	<2.0	**3.1**	**65**	**6.4**	<8.0	<80	<2.0	<2.0	**270**	<2.0	**348**	---
60B1	11/11/05	CT/8260	<50	<25	<25	<25	**340**	<25	**64**	<1000	<25	<25	**4,000**	<25	**4,404**	---
60B1	11/08/06	CT/8260	<33	<17	<17	**19**	**250**	<17	**120**	<670	<17	<17	**3,200**	<17	**3,589**	---
60B1	11/12/07	CT/8260	<50	<25	<25	<25	**160**	<25	**64**	<1000	<25	<25	**3,400**	<25	**3,624**	---
60B1	11/11/08	CT/8260	<1.0	**4.3**	<0.5	**14**	**240**	**2.8**	**56**	<20	**1.4**	**0.5**	**3,000**	<0.5	**3,319**	---
60B1	11/04/09	CT/8260	<6.3	<3.1	<3.1	<3.1	**54**	<3.1	<13	<130	<3.1	<3.1	**420**	<3.1	**474**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
67B1	08/09/05	UNK/8260	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**19**	<1.0	**19**	---
67B1	11/27/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	**0.9**	<20	<0.5	<0.5	**9.5**	<0.5	**10**	---
67B1	11/12/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	**1.1**	<20	<0.5	**0.5**	**14**	<0.5	**16**	---
67B1	11/02/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	**14**	<0.5	**14**	---
115B1	11/16/05	CT/8260	<63	<31	<31	**55**	**260**	<31	**180**	<1300	<31	<31	**8,200**	<31	**8,695**	---
115B1	11/21/06	CT/8260	<63	<31	<31	**39**	**230**	<31	**140**	<1300	<31	<31	**7,600**	<31	**8,009**	---
115B1	11/08/07	CT/8260	<50	<25	<25	<25	**220**	<25	**49**	<1000	<25	<25	**4,500**	<25	**4,769**	---
115B1	11/18/08	CT/8260	<100	<50	<50	**79**	**500**	<50	**160**	<2000	<50	<50	**7,600**	<50	**8,339**	---
115B1	11/06/09	CT/8260	<100	<50	<50	**60**	**560**	<50	<200	<2000	<50	<50	**6,300**	<50	**6,920**	---
147B1	11/11/05	CT/8260	<10	<5	<5	**5.1**	**35**	<5	**10**	<200	<5	<5	**830**	<5	**880**	---
147B1	11/21/06	CT/8260	<1.0	<0.5	<0.5	**0.5**	**50**	<0.5	<0.5	<20	<0.5	<0.5	**8.2**	<0.5	**59**	---
147B1	11/07/07	CT/8260	<13	<6.3	<6.3	<6.3	**33**	<6.3	**6.6**	<250	<6.3	<6.3	**790**	<6.3	**830**	---
147B1	11/18/08	CT/8260	<1.0	<0.5	<0.5	<0.5	**56**	<0.5	<0.5	<20	<0.5	<0.5	**16**	<0.5	**72**	---
147B1	11/03/09	CT/8260	<1.0	<0.5	<0.5	<0.5	**66**	**0.6**	<2.0	<20	<0.5	<0.5	**19**	<0.5	**86**	---
RW-3(B1)	11/10/05	CT/8260	<2.5	**1.3**	<1.3	**2.1**	**14**	<1.3	**11**	<50	<1.3	**5.5**	**250**	<1.3	**284**	---
RW-3(B1)	11/21/06	CT/8260	<4.0	<2.0	<2.0	**4.2**	**12**	<2.0	**17**	<80	<2.0	**8.3**	**300**	<2.0	**342**	---
RW-3(B1)	08/08/07	CT/8260	<3.3	<1.7	<1.7	**1.8**	**10**	<1.7	**15**	<67	<1.7	**6.7**	**270**	<1.7	**304**	---
RW-3(B1)	11/16/07	CT/8260	<5.0	<2.5	<2.5	**2.5**	**9.6**	<2.5	**13**	<100	<2.5	**5.2**	**380**	<2.5	**410**	---
RW-3(B1)	11/15/08	CT/8260	<2.0	**1.2**	<1.0	**2.9**	**15**	<1.0	**21**	<40	<1.0	**8.3**	**340**	<1.0	**388**	---
RW-3(B1)	11/13/09	CT/8260	<3.3	<1.7	<1.7	**2.8**	**23**	<1.7	**20**	<67	<1.7	**10**	**260**	<1.7	**316**	---
RW-3(B1)	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.99
RW-4(B1)	11/11/05	CT/8260	<17	<8.3	<8.3	<8.3	**270**	**89**	<8.3	<330	<8.3	<8.3	**2,100**	<8.3	**2,459**	---
RW-4(B1)	11/21/06	CT/8260	<25	<13	<13	<13	**190**	**67**	<13	<500	<13	<13	**2,000**	<13	**2,257**	---
RW-4(B1)	08/08/07	CT/8260	<33	<17	<17	<17	**230**	**110**	**9.2**	<670	<17	<17	**2,200**	<17	**2,549**	---
RW-4(B1)	11/27/07	CT/8260	<40	<20	<20	<20	**330**	<20	<20	<800	<20	<20	**2,100**	<20	**2,430**	---
RW-4(B1)	11/18/08	CT/8260	<33	<17	<17	<17	**840**	<17	<17	<670	<17	<17	**2,000**	<17	**2,840**	---
RW-4(B1)	11/06/09	CT/8260	<1.0	**1.6**	<0.5	**8.4**	**390**	**8.8**	<2.0	<20	<0.5	<0.5	**2,600**	**1.6**	**3,010**	---
RW-4(B1)	11/06/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.94

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
RW-5(B1)	11/11/05	CT/8260	<25	<13	<13	**13**	**1,800**	**180**	<13	<500	<13	<13	**1,900**	<13	**3,908**	---
RW-5(B1)	11/21/06	CT/8260	<25	<13	<13	**13**	**1,900**	**170**	<13	<500	<13	<13	**1,900**	<13	**3,998**	---
RW-5(B1)	08/09/07	CT/8260	<33	<17	<17	<17	**1,800**	**160**	<67	<670	<17	<17	**1,900**	<17	**3,860**	---
RW-5(B1)	11/14/07	CT/8260	<40	<20	<20	<20	**1,900**	**180**	<20	<800	<20	<20	**2,200**	<20	**4,280**	---
RW-5(B1)	11/13/08	CT/8260	<14	**7.2**	<7.1	**9.3**	**1,300**	**140**	<7.1	<290	<7.1	<7.1	**1,400**	<7.1	**2,870**	---
RW-5(B1)	11/04/09	CT/8260	<25	<13	<13	<13	**1,200**	**110**	<50	<500	<13	<13	**1,500**	<13	**2,823**	---
RW-5(B1)	11/04/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.9**
RW-7(B1)	11/11/05	CT/8260	<71	<36	<36	<36	**200**	<36	<36	<1400	<36	<36	**5,200**	<36	**5,400**	---
RW-7(B1)	11/21/06	CT/8260	<25	<13	<13	**17**	**320**	<13	**49**	<500	<13	<13	**4,400**	<13	**4,786**	---
RW-7(B1)	08/09/07	CT/8260	<63	<31	<31	<31	**310**	<31	**24**	<1300	<31	<31	**3,400**	<31	**3,734**	---
RW-7(B1)	11/12/07	CT/8260	<71	<36	<36	<36	**240**	<36	<36	<1400	<36	<36	**3,400**	<36	**3,640**	---
RW-7(B1)	11/04/08	CT/8260	<50	<25	<25	<25	**140**	<25	<25	<1000	<25	<25	**2,700**	<25	**2,840**	---
RW-7(B1)	11/06/09	CT/8260	<33	<17	<17	<17	**190**	<17	<67	<670	<17	<17	**2,800**	<17	**2,990**	---
RW-7(B1)	11/06/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.5**
RW-9(B1)R	11/11/05	CT/8260	<50	<25	<25	**26**	**940**	<25	**93**	<1000	<25	<25	**4,800**	<25	**5,859**	---
RW-9(B1)R	11/10/06	CT/8260	<50	<25	<25	<25	**850**	<25	**160**	<1000	<25	<25	**4,300**	<25	**5,310**	---
RW-9(B1)R	11/12/07	CT/8260	<63	<31	<31	<31	**720**	<31	**82**	<1300	<31	<31	**3,400**	<31	**4,202**	---
RW-9(B1)R	11/04/08	CT/8260	<40	<20	<20	<20	**610**	<20	**45**	<800	<20	<20	**3,000**	<20	**3,655**	---
RW-9(B1)R	11/16/09	CT/8260	<1.0	**6.3**	<0.5	**26**	**850**	**7.7**	**62**	<20	**2.3**	**0.7**	**2,300**	**0.9**	**3,256**	---
RW-9(B1)R	11/16/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.4**
RW-12(B1)	11/16/05	CT/8260	<13	**7.5**	<6.3	**6.8**	**140**	**13**	**14**	<250	<6.3	<6.3	**980**	<6.3	**1,161**	---
RW-12(B1)	11/21/06	CT/8260	<20	<10	<10	<10	**140**	<10	**13**	<400	<10	<10	**940**	<10	**1,093**	---
RW-12(B1)	08/09/07	CT/8260	<13	<6.3	<6.3	<6.3	**100**	**7.2**	**7.2**	<250	<6.3	<6.3	**780**	<6.3	**894**	---
RW-12(B1)	11/16/07	CT/8260	<20	<10	<10	<10	**190**	<10	<20	<400	<10	<10	**1,500**	<10	**1,690**	---
RW-12(B1)	11/15/08	CT/8260	<20	<10	<10	<10	**330**	<10	<10	<400	<10	<10	**1,300**	<10	**1,630**	---
RW-12(B1)	11/06/09	CT/8260	<17	<8.3	<8.3	<8.3	**54**	<8.3	<33	<330	<8.3	<8.3	**1,100**	<8.3	**1,154**	---
RW-12(B1)	11/06/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
10B2	11/10/05	CT/8260	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**0.8**	<0.5	**1**	---
10B2	11/20/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**1.7**	<0.5	**2**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
10B2	11/07/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**0.7**	<0.5	**1**	---
10B2	11/18/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**1.6**	<0.5	**2**	---
10B2	11/18/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	**1.7**	<0.5	**2**	---
11B2	11/11/05	CT/8260	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
11B2	11/21/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
11B2	11/07/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
11B2	11/11/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**0.8**	<0.5	**1**	---
11B2	11/02/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	<0.5	<0.5	ND	---
38B2	11/08/05	CT/8260	<4	<2	<2	**2.3**	<2	<2	**4.1**	<80	<2	<2	**300**	<2	**306**	---
38B2	11/10/06	CT/8260	<2.0	<1.0	<1.0	<1.0	**1.4**	<1.0	**5.5**	<40	<1.0	<1.0	**230**	<1.0	**237**	---
38B2	11/14/07	CT/8260	<3.3	<1.7	<1.7	<1.7	**1.9**	<1.7	<1.7	<67	<1.7	<1.7	**230**	<1.7	**232**	---
38B2	11/13/08	CT/8260	<2.5	<1.3	<1.3	<1.3	**1.5**	<1.3	**1.7**	<50	<1.3	<1.3	**190**	<1.3	**193**	---
38B2	11/18/09	CT/8260	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<40	<1.0	<1.0	**170**	<1.0	**170**	---
38B2	11/18/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<1.0
118B2	11/10/05	CT/8260	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**0.7**	<0.5	**1**	---
118B2	11/17/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
118B2	11/08/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**2**	<0.5	**2**	---
118B2	11/06/08	CT/8260	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.59**	<0.50	**1**	---
118B2	11/12/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	**0.8**	<0.5	**1**	---
148B2	11/11/05	CT/8260	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
148B2	11/21/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	**0.5**	<0.5	**1**	---
148B2	11/13/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
148B2	11/02/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-3(B2)	12/05/05	CT/8260	<10	<5	<5	**12**	**960**	**13**	<5	<200	<5	<5	**1,200**	<5	**2,185**	---
RW-3(B2)	11/21/06	CT/8260	<25	<13	<13	<13	**420**	**21**	<13	<500	<13	<13	**30**	**1,100**	**1,571**	---
RW-3(B2)	11/16/07	CT/8260	<14	<7.1	<7.1	**15**	**1,100**	**21**	<7.1	<290	<7.1	<7.1	**300**	**400**	**1,836**	---
RW-3(B2)	11/15/08	CT/8260	<20	<10	<10	**12**	**1,300**	**20**	<10	<400	<10	<10	**50**	**500**	**1,882**	---
RW-3(B2)	11/13/09	CT/8260	<1.0	<0.5	<0.5	**23**	**140**	**20**	<2.0	<20	<0.5	<0.5	**2,100**	**3.1**	**2,286**	---

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													
RW-3(B2)	11/13/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.99
RW-4(B2)	11/11/05	CT/8260	<140	<71	<71	<71	**8,100**	**96**	<71	<2900	<71	<71	**11,000**	<71	**19,196**	---
RW-4(B2)	11/21/06	CT/8260	<170	<83	<83	<83	**9,000**	**91**	<83	<3300	<83	<83	**14,000**	<83	**23,091**	---
RW-4(B2)	11/14/07	CT/8260	<200	<100	<100	<100	**6,800**	<100	<100	<4000	<100	<100	**11,000**	<100	**17,800**	---
RW-4(B2)	11/07/08	CT/8260	<170	<83	<83	<83	**6,900**	<83	<83	<3300	<83	<83	**10,000**	<83	**16,900**	---
RW-4(B2)	11/24/09	CT/8260	<140	<71	<71	<71	**7,200**	**86**	<290	<2900	<71	<71	**10,000**	<71	**17,286**	---
RW-4(B2)	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-5(B2)	11/11/05	CT/8260	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/21/06	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	**12**	**12**	---
RW-5(B2)	11/20/07	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/15/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/24/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-5(B2)	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-7(B2)	11/11/05	CT/8260	<14	**19**	<7.1	**17**	**800**	**17**	**9.8**	<290	**8.5**	<7.1	**1,300**	<7.1	**2,188**	---
RW-7(B2)	05/24/06	CT/8260	<1.0	<0.5	<0.5	<0.5	**3.4**	<0.5	<0.5	<20	<0.5	<0.5	**0.6**	<0.5	**4**	---
RW-7(B2)	11/21/06	CT/8260	<1.0	**1.3**	<0.5	**2.2**	**8.2**	<0.5	**1.8**	<20	<0.5	<0.5	**9.4**	**2.4**	**25**	---
RW-7(B2)	11/16/07	CT/8260	<1.0	<0.5	<0.5	<0.5	**9.7**	<0.5	**1.2**	<20	<0.5	<0.5	**12**	<0.5	**23**	---
RW-7(B2)	11/18/08	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	<0.5	<0.5	<0.5	<0.5	ND	---
RW-7(B2)	11/24/09	CT/8260	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<20	<0.5	<0.5	**3.8**	<0.5	**4**	---
RW-7(B2)	11/24/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.96
RW-9(B2)	11/11/05	CT/8260	<1	**0.9**	<0.5	**9.8**	**230**	**6**	**21**	<20	<0.5	<0.5	**810**	<0.5	**1,078**	---
RW-9(B2)	11/10/06	CT/8260	<8.3	<4.2	<4.2	**8.2**	**270**	**5.7**	**32**	<170	<4.2	<4.2	**790**	<4.2	**1,106**	---
RW-9(B2)	11/12/07	CT/8260	<8.3	<4.2	<4.2	**7.5**	**280**	**6.1**	**13**	<170	<4.2	<4.2	**610**	<4.2	**917**	---
RW-9(B2)	11/04/08	CT/8260	<5.0	<2.5	<2.5	**6**	**230**	**5.1**	**9**	<100	<2.5	<2.5	**660**	<2.5	**910**	---
RW-9(B2)	11/16/09	CT/8260	<2.0	<1.0	<1.0	**6.1**	**200**	**13**	**9.6**	<40	<1.0	<1.0	**600**	<1.0	**829**	---
RW-9(B2)	11/16/09	CT/8270	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.94

Table 13. Groundwater Sampling Results Summary January 2005 through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California

Sample Location	Sample Date	Lab/Analytical Method	Chloro-form	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	Methylene Chloride	PCE	1,1,1-TCA	TCE	Vinyl Chloride	Total VOC's	1,4-Dioxane
			< micrograms per liter (µg/L) >													

Notes and Abbreviations:
--- = sample not analyazed for particular analyte
< # = analyte not detected above the reported detection limit of "#" ug/L
8260 = USEPA Method 8260B for halogenated VOCs, for Method 8010 list of analytes
8270 = USEPA Method 8270C-SIM for SVOCs
CT = Curtis and Tompkins, Berkeley, California
DCA = Dichloroethane
DCE = Dichloroethene
DUP = duplicate sample
ND = no analytes detected above the laboratory detection limit
PCE = Tetrachloroethene
TCA = Trichloroethane
TCE = Trichloroethene
VOCs = volatile organic compounds

Table 14. Capture Zone Calculations and Analysis, March 2009, Former Fairchild Buildings 1-4, Mountain View, California

Extraction Well:		RW-27A	RW-5A	RW-7A	RW-5B1	RW-7B1	RW-9B1	RW-4B2	RW-9B2	38B2
b		15	15	15	25	25	25	35	35	35
i		0.004	0.004	0.004	0.003	0.003	0.003	0.004	0.004	0.004
K		79.200	79.200	79.200	19.584	19.584	19.584	3.168	3.168	3.168
T		1188	1188	1188	490	490	490	111	111	111
w		575	575	575	575	500	500	500	600	250
estimated well loss (ft):	$s_w = CQ^2$	0.002	0.002	0.010	0.004	0.001	0.008	0.000	0.006	0.010
extraction rate (gpm):		3.15	3.36	7.19	4.59	2.23	6.40	0.35	5.39	7.01
stagnation point (ft):	$X_0 = -Q / 2\pi Ti$	-20	-22	-46	-96	-47	-134	-24	-372	-484
capture zone width (at extraction well; ft):	$Y_{well} = \pm Q / 4Ti$	32	34	73	150	73	210	38	585	761
capture zone width (maximum; ft):	$Y_{max} = \pm Q / 2Ti$	64	68	146	301	146	419	76	1,170	1,521

LINE OF EVIDENCE	CAPTURE?	COMMENTS
Water Levels *Potentiometric surface maps*	*Adequate*	*A-zone wells were shut-downs in 2007. Potentiometric surface maps indicate complete capture in B1- and B2-zones.*
Calculations *Capture zone widths*	*Adequate*	*The calculated stagnations points are smaller than target captures. These calculated values are balanced by the observed water levels and chemical concentration data. Therefore primary weight is afforded to measured water level data and the resulting potentiometric surface to assess capture.*
Concentration Trends *Downgradient monitoring wells*	*Adequate*	*TCE increases were only detected in upgradient well 127A.*

Notes and Abbreviations:

b = aquifer or saturated thickness (ft)

C = turbulent well loss coefficient from Walton, 1962 (sec^2/ft^5); the following are coefficients and their corresponding well condition:

5 = properly designed and developed, 5 to 10 = mild deterioration, 10 to 40 = severe deterioration (40 used in the calculation)

factor = accounts for other contributions to the extraction well (a factor of 1.5 was used in the calculation)

i = regional hydraulic gradient (ft/ft)

K = hydraulic conductivity (ft/day)

Q = extraction flow rate (gallons per minute; gpm)

s_w = drawdown due to well loss

T = transmissivity (ft^2/day)

w = plume width (ft) (the modeled capture zone width is used for all wells outside the slurry wall and the slurry wall width for those inside)

X_0 = stagnation point (ft)

Y_{max} = maximum capture zone width (ft)

Y_{well} = capture zone width in-line w/ extraction well (ft)

Assumptions:

- homogeneous, isotropic, confined aquifer of infinite extent
- fully penetrating extraction well
- negligible vertical gradient
- no net recharge (or net recharge is accounted for in regional hydraulic gradient)
- no other sources of water introduced into aquifer due to extraction
- steady-state flow
- uniform regional horizontal hydraulic gradient
- uniform aquifer thickness

Table 15. Capture Zone Calculations and Analysis, November 2009, Former Fairchild Buildings 1-4, Mountain View, California

Extraction Well:		RW-27A	RW-5A	RW-7A	RW-5B1	RW-7B1	RW-9B1	RW-4B2	RW-9B2	38B2
b		15	15	15	25	25	25	35	35	35
i		0.004	0.004	0.004	0.003	0.003	0.003	0.004	0.004	0.004
K		79.200	79.200	79.200	19.584	19.584	19.584	3.168	3.168	3.168
T		1188	1188	1188	490	490	490	111	111	111
w		575	575	575	575	500	500	500	600	250
estimated well loss (ft):	$s_w = CQ^2$	0.002	0.001	0.008	0.003	0.001	0.007	0.000	0.004	0.009
extraction rate (gpm):		3.08	2.50	6.44	3.76	2.22	6.07	1.07	4.48	6.65
stagnation point (ft):	$X_0 = -Q / 2\pi Ti$	-20	-16	-42	-78	-46	-127	-74	-309	-459
capture zone width (at extraction well; ft):	$Y_{well} = \pm Q / 4Ti$	31	25	65	123	73	199	116	486	722
capture zone width (maximum; ft):	$Y_{max} = \pm Q / 2Ti$	62	51	130	246	145	398	232	972	1,443

LINE OF EVIDENCE	CAPTURE?	COMMENTS
Water Levels *Potentiometric surface maps*	*Adequate*	*A-zone wells were shut-downs in 2007. Potentiometric surface maps indicate complete capture in B1- and B2-zones.*
Calculations *Capture zone widths*	*Adequate*	*The calculated stagnations points are smaller than target captures. These calculated values are balanced by the observed water levels and chemical concentration data. Therefore primary weight is afforded to measured water level data and the resulting potentiometric surface to assess capture.*
Concentration Trends *Downgradient monitoring wells*	*Adequate*	*TCE increases were only detected in upgradient well 127A.*

Notes and Abbreviations:

b = aquifer or saturated thickness (ft)
C = turbulent well loss coefficient from Walton, 1962 (sec^2/ft^5); the following are coefficients and their corresponding well condition:
5 = properly designed and developed, 5 to 10 = mild deterioration, 10 to 40 = severe deterioration (40 used in the calculation)
factor = accounts for other contributions to the extraction well (a factor of 1.5 was used in the calculation)
i = regional hydraulic gradient (ft/ft)
K = hydraulic conductivity (ft/day)
Q = extraction flow rate (gallons per minute; gpm)
s_w = drawdown due to well loss
T = transmissivity (ft^2/day)
w = plume width (ft) (the modeled capture zone width is used for all wells outside the slurry wall and the slurry wall width for those inside)
X_0 = stagnation point (ft)
Y_{max} = maximum capture zone width (ft)
Y_{well} = capture zone width in-line w/ extraction well (ft)

Assumptions:

- fully penetrating extraction well
- homogeneous, isotropic, confined aquifer of infinite extent
- negligible vertical gradient
- no net recharge (or net recharge is accounted for in regional hydraulic gradient)
- no other sources of water introduced into aquifer due to extraction
- steady-state flow
- uniform regional horizontal hydraulic gradient
- uniform aquifer thickness

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APPENDIX A

2009 ANNUAL REPORT REMEDY PERFORMANCE CHECKLIST

2009 Annual Report Remedy Performance Checklist

I. GENERAL SITE INFORMATION

Facility Name: **Former Fairchild Facilities, Middlefield-Ellis-Whisman Study Area (MEW Site)**

Facility Address, City, State: **515/545 North Whisman Road and 313 Fairchild Drive (former Bldgs. 1-4)**
369 and 441 North Whisman Road (former Bldgs. 13 and 19 and 23)
401 National Avenue (former Bldg. 9)
644 National Avenue (former Bldg. 18)
464 Ellis Street (former Bldg. 20 and 20A)

Checklist completion date: **June 15, 2010**

EPA Site ID: **System-1: CAR000164285**
System-3: CAD095989778
System-19: CAR000164228

Site Lead: ☐ Fund ■ PRP ☐ State ☐ State Enforcement ☐ Federal Facility ☐ Other: EPA Region IX

Site Remedy Components (Include Other Reference Documents for More Information, as appropriate):

1. **Three slurry wall enclosures around former Buildings 1-4, Building 9, and Building 19. The slurry walls extend to a depth of about 40 feet below ground surface and are keyed a minimum of two feet into the A2/B1 aquitard.**
2. **Three treatment systems as detailed below:**

System 1:

- **Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.**
- **Thirteen source control recovery wells (Four wells operated during 2009).**
- **One regional recovery wells (One well operated during 2009).**

System 3:

- **Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.**
- **Seven source control recovery wells (Five wells operated during 2009).**
- **Three regional recovery wells (Two wells operated during 2009).**

System 19:

- **Three 5,000-pound GAC vessels in series, treatment pad, controls, double-contained groundwater conveyance piping, vaults, electrical distribution, controls and other appurtenances.**
- **Fifteen source control recovery wells (Ten operated during 2009).**
- **Seven regional recovery wells (Two operated during 2009).**

II. CONTACTS

List important personnel associated with the Site: Name, title, phone number, e-mail address:

	Name/Title	Phone	E-mail
RP/Facility Representative	**Du'Bois (Joe) Ferguson Schlumberger Technology Corporation**	**281-285-3692**	dferguson3@sugar-land.oilfield.slb.com
RP Consultant	**John Gallinatti Geosyntec Consultants**	**510-285-2750**	jgallinatti@geosyntec.com
RP Consultant	**Tess Byler Weiss Associates**	**650-968-7000**	tb@weiss.com

2009 Annual Report Remedy Performance Checklist

III. O&M COSTS (OPTIONAL)

What is your annual O&M cost total for the reporting year?_____
Breakout your annual O&M cost total into the following categories (use either dollars or %):

- Analytical (e.g., lab costs): _____
- Labor (e.g., site maintenance, sampling): _____
- Materials (e.g., treatment chemicals): _____
- Oversight (e.g., project management): _____
- Utilities (e.g., electric, gas, phone, water): _____
- Reporting (e.g., NPDES, progress): _____
- Other (e.g., capital improvements): _____

Describe unanticipated/unusually high or low O&M costs (go to section [fill in] to recommend optimization methods):

IV. ON-SITE DOCUMENTS AND RECORDS (Check all that apply)

■ O&M Manual ■ O&M Maintenance Logs ☐ O&M As-built drawings ■ O&M reports
■ Daily access/Security logs
■ Site-Specific Health & Safety Plan ■ Contingency/Emergency Response Plan
■ O&M/OSHA Training Records ■ Settlement Monument Records
☐ Gas Generation Records ■ Groundwater monitoring records ☐ Leachate extraction records
■ Discharge Compliance Records
☐Air discharge permit ■ Effluent discharge permit ■ Waste disposal, POTW Permit

Are these documents currently readily available? ■ Yes ☐ No If no, where are records kept?

Documents and records are available at treatment systems and/or on-site office located at 350 E. Middlefield Road Mountain View, CA.

V. INSTITUTIONAL CONTROLS (as applicable)

List institutional controls called for (and from what enforcement document):

Signs and other security measures are in place at extraction and treatment points.

Status of their implementation:

Posted signage (Health & Safety and emergency contact information). Bay Alarm Security System at the site.

Where are the ICs documented and/or reported?

ICs are being properly implemented and enforced? ☐ Yes ☐ No, elaborate below
ICs are adequate for site protection? ☐ Yes ☐ No, elaborate below

Additional remarks regarding ICs:

2009 Annual Report Remedy Performance Checklist

VI. SIGNIFICANT SITE EVENTS
Check all Significant Site events Since the Last Checklist that Affects or May Affect Remedy Performance

☐ Community Issues
☐ Vandalism
☐ Maintenance Issues
■Other:

Please elaborate on Significant Site Events:

Second Five-Year Remedy Review by USPEA September 2009.
Proposed Plan July 2, 2009 and Public Meeting July 23, 2009 on Vapor Intrusion.

VII. REDEVELOPMENT

Is redevelopment on property planned? ■ Yes ☐ No

If yes, what is planned? Please describe below.

Is redevelopment plan complete Yes, date:_____; ■ No ? ☐ Not Applicable

Redevelopment proposal in progress? ■ Yes, elaborate below
☐ No; If no, is a proposal anticipated? ☐ Yes ☐ No

☐ Is the redevelopment proposal compatible with remedy performance? ■ Yes ☐ No

Elaborate on redevelopment proposal and how it affects remedy performance:

Planned and ongoing redevelopment in the residential area over the western edge of the MEW A/A1 and B1/A2 zone plume. Planned redevelopment of apartments on Whisman Road; ongoing redevelopment of residential area on Fairchild Drive, west of Whisman Road.

Building 18, the 644 National Avenue property has been bought by Carr America National Avenue LLC; redevelopment plans include new buildings and a parking structure.

The existing treatment systems and their components (conveyance piping, extraction wells, and monitoring wells) will be maintained or modified as appropriate to accommodate redevelopment.

2009 Annual Report Remedy Performance Checklist

VIII. GROUNDWATER REMEDY (reference isoconcentration, capture zone maps, trend analysis, and other documentation to support analysis)

Groundwater Quality Data

List the types of data that are available:	What is the source report?
Potentiometric surface maps, hydrographs	**2009 Annual Fairchild Building Reports (Weiss, 2010)**
Capture zone maps, isoconcentration maps	**2009 Annual Regional Report (Geosyntec, 2010)**

■ Contaminant trend(s) tracked during O&M (i.e., temporal analysis of groundwater contaminant trends).
■ Groundwater data tracked with software for temporal analyses.
☐ Reviewed MNA parameters to ensure health of substrate (e.g., DO, pH, temperature), if appropriate?

Groundwater Pump & Treat Extraction Well and Treatment System Data

List the types of data that are available:	What is the source report?
O&M logs	**NPDES Self-Monitoring Reports**
System Influent & Effluent water samples	**2009 Annual Fairchild Building Reports**
VOC mass and groundwater removal graphs, VOC concentration trends	

■ The system is functioning adequately.
☐ The system has been shut down for significant periods of time in the past year. Please elaborate below.

Discharge Data

List the types of data that are available:	What is the source report?
System performance data such as average flow rates, totalized flow, influent/effluent chemical data, GAC removal efficiencies	**NPDES Self-Monitoring Reports**

■ The system is in compliance with discharge permits.

Slurry Wall Data

List the types of data that are available:	What is the source report?
Water level elevations in select well pairs	**2009 Annual Reports**
Analysis of inward and upward hydraulic gradients	

Is slurry wall operating as designed? ■ Yes ☐ No

If not, what is being done to correct the situation?

The slurry walls are operating as designed and are effective at impeding flow and preventing VOCs inside the wall from migrating downgradient. However, the ROD specifies that the slurry walls, "maintain inward and upward gradients." Historically, this has not been observed in all well pairs, even under maximum historical pumping scenarios. Since 2007, pumping ceased in the lower concentration/higher pumping rate extraction wells within the slurry walls. Gradients have generally maintained trends consistent with those prior to reduced groundwater extraction rates, although in some cases the magnitude of the gradient has changed.

The chemical concentration data and potentiometric surface contours from 2009 continue to demonstrate that the slurry walls are an effective means of impeding VOC migration outside of the slurry walls.

Elaborate on technical data and/or other comments

2009 Annual Report Remedy Performance Checklist

IX. AIR MONITORING/VAPOR INTRUSION PATHWAY EVALUATION (Include in Annual Progress Report and reference document)

Walk-throughs/Surveys: Yes

In the Fall of 2009, indoor air samples were collected at ten commercial buildings in the MEW area pursuant to requests from the owners of the buildings. Samples were collected at the following buildings located at the Former Fairchild Buildings:

- **515 N. Whisman Road; and,**
- **545 N. Whisman Road.**

Reference Documents:
Haley and Aldrich, 2010. ***Air Sampling Activities Conducted Fall 2009 at the Middlefield-Ellis-Whisman Vapor Intrusion Study Area, Mountain View, California, March 19.***

Haley and Aldrich 2009. ***Revised Supplemental Feasibility Study for Vapor Intrusion Middlefield-Ellis-Whisman Vapor Intrusion Study Area, Mountain View, California*** **June 29.**

Summary of Results: **The sampling results indicated no short-term or long-term potential health risk concerns from the vapor intrusion pathway under current conditions (Haley and Aldrich 2010).**

Problems Encountered: **None**

Recommendations/Next Steps: **None**

Schedule: **All work is coordinated with the USEPA.**

X. REMEDY PERFORMANCE ASSESSMENT

A. Groundwater Remedies

What are the remedial goals for groundwater? ■ Plume containment (prevent plume migration); ■ Plume restoration (attain ROD-specific cleanup levels in aquifer); ☐ Other goals, please explain:

The groundwater remedy is hydraulic remediation by extraction and treatment. The Treatment System is reliable and consistent in its operation and mass removal ability, with greater than 95% up-time. The capture zones from the extraction wells provide sufficient overlap to achieve hydraulic control over the plume based on flow net evaluation and converging lines of evidence, including stable lateral extent of TCE exceeding 5 µg/L. Remediation is also demonstrated because concentrations within the TCE plume have continued to decrease in all zones. Groundwater with TCE concentrations exceeding 5 µg/L does not discharge to surface water.

Have you done a trend analysis? ■ Yes ☐ No; If Yes, what does it show?

(Is it inconclusive due to inadequate data? Are the concentrations increasing or decreasing?) Explain and provide source document reference

Concentrations within the core of the TCE plume have continued to decrease in all zones, while the lateral extent of TCE exceeding 5 µg/L has been stable. See Annual Reports for trends in monitoring wells (Weiss 2010).

While the lateral extent of TCE concentrations exceeding 5 µg/L has not grown since 1992 and concentrations within TCE plume have generally decreased by an order of magnitude or more, the perimeter extent of TCE concentrations has largely stabilized. Optimization of the remedy may therefore be warranted (Geosyntec et al, 2008).

If plume containment is a remedial goal, check all that apply:

2009 Annual Report Remedy Performance Checklist

■ Plume migration is under control (explain basis below)
☐ Plume migration is not under control (explain basis below)
☐ Insufficient data to determine plume stability (explain below)
(Include attachments that substantiate your answers, e.g., reference plume, trend analysis, and capture zone maps in source document)

Elaborate on basis for determining that plume containment goal is being met or not being met**:**

Plume containment goal is met, slurry walls provide physical containment of sources on 369 N. Whisman Road, 401 National Avenue, 515/545 N. Whisman Road and 313 Fairchild Drive.

Groundwater elevation and chemical monitoring results from 2009 demonstrate that the Fairchild extraction wells continue to achieve adequate horizontal and vertical capture based on converging lines of evidence, including graphical flow net analysis and chemical concentration trends. VOC concentrations in groundwater continue to remain well below historical maximums, and generally show long-term decreasing trends.

If plume restoration is a cleanup objective, check all that apply:
■ Progress is being made toward reaching cleanup levels (explain basis below)
☐ Progress is not being made toward reaching cleanup levels (explain basis below)
☐ Insufficient data to determine progress toward restoration goal (explain below)

Elaborate on basis for determining progress or lack of progress toward restoration goal:

The objective is to remediate and control the plume. The groundwater extraction, treatment, and containment systems are functioning as intended and meet the Remedial Action Objectives for the Site. While concentrations within TCE plume have generally decreased by an order of magnitude or more, treatment system influent concentrations have declined and the perimeter extent of TCE concentrations has largely stabilized. Optimization of the remedy may therefore be warranted.

B. Vertical Migration

Have you done an assessment of vertical gradients? ■ Yes ☐ No; If Yes, what does it show? (Is it inconclusive due to inadequate data?

Are the concentrations increasing or decreasing? Explain and provide source document reference

In general, vertical gradients across the B and deeper water-bearing zones are upward. Upward vertical gradients are typical from the B- to A-zone, but downward vertical gradients are observed at a few locations.

Source document reference: 2009 Annual Fairchild Building Reports (Weiss, 2010)

2009 Annual Regional Report (Geosyntec, 2010)

C. Source Control Remedies

What are the remedial goals for source control?

Capture of former source areas is the goal for source control. Cleanup standards are Maximum Contaminant Level (MCLs) in upper groundwater zones; the TCE MCL is 5 µg/L.

Elaborate on basis for determining progress or lack of progress toward these goals:

Capture zone analysis in the 2009 Annual Progress Report indicate plume containment of target capture areas.

2009 Annual Report Remedy Performance Checklist

XI. PROJECTIONS

Administrative Issues
Dates of next monitoring and sampling events for next annual reporting period: Nov/Dec 2009

A. Groundwater Remedies - Projections for the upcoming year and long-term (Check all that apply)

Remedy Projections for **the upcoming year (2009)**

☐ No significant changes projected.
☐ Groundwater remedy will be converted to monitored natural attenuation. Target date:
☐ Groundwater Pump & Treat will be shut down. Target date:
☐ Groundwater cleanup standards to be modified. Target date:
☐PRP will request remedy modification. Target date of request:
☐ Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☐ Change in the number and/or types of analytes being analyzed. ☐ Increasing or ☐ decreasing? Target date:
☐ Change in groundwater extraction system. Expansion or **minimization** (i.e., number of extraction wells and/or pumping rate)? Target date:
☐ Modification on groundwater treatment? Elaborate below. Target date:
☐ Change in discharge location. Target date:
■Other modification(s) anticipated: **Optimization** Elaborate below. Target date: **2010**

During First Quarter 2010, several extraction wells were tested and new pumps were installed to support optimization of the groundwater pumping regime at Fairchild Treatment Systems 1, 3, and 19 under the jurisdiction of USEPA Region 9. Optimization of extraction rates began during the week of March 29, and extraction rates will continue to be optimized during the Second Quarter of 2010. Optimization activities will be documented in the 2010 Annual Progress Reports to USEPA for the former Fairchild Buildings 1-4, and 19.

Elaborate on Remedy Projections:

The RPs for the Former Fairchild Facilities anticipate implementing remediation optimization strategies, pending receipt of and response to EPA comments on the September 3, 2008 Optimization Evaluation Report.

Remedy Projections for **the long-term** (Check all that apply)

☐ No significant changes projected.
☐ Groundwater remedy will be converted to monitored natural attenuation. Target date:
☐ Groundwater Pump & Treat will be shut down. Target date:
☐ Groundwater cleanup standards to be modified. Target date:
☐ PRP will request remedy modification. Target date of request:
☐ Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☐Change in the number and/or types of analytes being analyzed. ☐ Increasing or ☐ decreasing? Target date:
☐ Change in groundwater extraction system. ☐ Expansion or ☐ minimization (i.e., number of extraction wells and/or pumping rate)? Target date:
☐ Modification on groundwater treatment? Elaborate below. Target date:
☐ Change in discharge location. Target date:
■ Other modification(s) anticipated: **Groundwater Feasibility Study** Elaborate below. Target date: **TBD**

Elaborate on Remedy Projections:

Minor changes to the EPA's January 15, 2009 Draft Process Framework for a site-wide Groundwater Feasibility Study were proposed January 30, 2009. The PRPs are prepared to implement the modified Framework as soon as the Draft Framework is finalized by EPA .

2009 Annual Report Remedy Performance Checklist

B. Projections – Slurry Walls (Check all that apply)

Remedy Projections for **the upcoming year**
☐No significant changes projected.
☐ PRP will request remedy modification. Target date of request:

☐Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
■ Other modification(s) anticipated: **Optimization** Elaborate below. Target date: **TBD**

Elaborate on Remedy Projections:

The slurry walls are part of the groundwater remedy. The recommendations of the Optimization Evaluation Report will be implemented upon receipt of, and response to, comments from EPA. In the interim, the system continued to operate per the August 2007 groundwater extraction scheme.

Remedy Projections for **the long-term**
☐ No significant changes projected.
☐ PRP will request remedy modification. Target date of request:
☐ Change in the number of monitoring wells. ☐ Increasing or ☐ decreasing? Target date:
☐ Other modification(s) anticipated: **Groundwater Feasibility Study** Elaborate below. Target date: TBD

Elaborate on Remedy Projections:

See above. The slurry walls are part of the groundwater remedy.

C. Projections – Other Remedial Options Being Reviewed to Enhance Cleanup

Progress implementing recommendations from last report or Five-Year Review
Has optimization study been implemented or scheduled? ■ Yes; ☐ No; If Yes, please elaborate.

An Optimization Evaluation Report was submitted September 2008.

2009 Annual Report Remedy Performance Checklist

XII. ADMINISTRATIVE ISSUES
Check all that apply:

☐ Explanation of Significant Differences in progress ■ ROD Amendment in progress
☐ Site in operational and functional ("shake down") period;
☐ Notice of Intent to Delete in progress ☐ Partial site deletion in progress ☐ TI Waivers
☐ Other administrative issues:

Proposed Plan to address vapor intrusion pathway issued in 2009, with ROD amendment to follow.

Date of Next EPA Five-Year Review: **September 30, 2009**

XII. RECOMMENDATIONS

- **Initiate Second Five-Year Review Follow-up items for Fairchild.**
- **Implement optimization strategies for Fairchild systems.**
- **Follow revised groundwater feasibility study framework.**
- **Potentially responsible parties (PRPs) requested in the 2008 Annual Progress Report for Former Fairchild Building 20 that USEPA not require further facility-specific reporting for Building 20 beginning in 2009. However, this request has not yet been acknowledged by the USEPA. The PRPs are requesting again to discontinue additional facility-specific reporting for Former Fairchild Building 20. The rationale for this request is:**
    1. **No potential source areas were identified at former Fairchild Building 20 property during Site investigations.**
    2. **Analytical results for the monitoring wells sampled in 2008 continue to indicate that VOC concentrations in groundwater are generally stable to declining. This is also reported in the Regional Annual report.**
    3. **Building 20 does not have an associated groundwater treatment system.**
    4. **There is no facility-specific capture to evaluate.**

  In summary, the groundwater monitoring data are evaluated in the Regional report, and the Building 20 report is redundant with other reports at the MEW Site since all information is covered under Raytheon Facility Specific and Regional reporting.

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APPENDIX B

ANALYTIC REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS, JANUARY THROUGH DECEMBER 2009

(THIS APPENDIX IS BEING SUBMITTED ON CD TO THE USEPA ONLY AND IS AVAILABLE UPON REQUEST)

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APPENDIX C

QA/QC REPORT, SUMMARY TABLES, AND CRITERIA

2009 QA/QC SUMMARY

The analytical laboratory data and accompanying quality assurance/quality control (QA/QC) information used in the 2009 Annual Reports for Former Fairchild Buildings 1, 2, 3, 4, 9, 13, 18, 19, 20, 20A and 23 at the Middlefield-Ellis Whisman (MEW) Area were reviewed for precision, accuracy reproducibility and completeness in accordance with the approved MEW 1991 Quality Assurance Plan.[4] In addition this data quality review is based on November 2009 Standard Operating Procedures (SOPs) for data verification and validation, and validation procedures for metals, volatile organic chemicals and semivolatile organic chemicals. The SOPs are based on the 1991 MEW "Unified" Quality Assurance Project Plan, but functionally adhere to the most recent United States Environmental Protection Agency (USEPA) data validation guidelines.

This data quality review summarizes the Level 2 and 10% Level 4 Data Quality Review for samples collected by Weiss Associates during the 2009 Annual Sampling event in accordance with the MEW Quality Assurance Project Plan (QAPP).

The analytical results for each sampling point were compared with the historical record to confirm they are representative. To assess reliability of field sampling procedures and materials, the following field QA/QC samples were collected or prepared for each sampling event by MEW parties:

- Quality Control Samples (Field Duplicate, Matrix Spike, Matrix Spike Duplicate) - Field Duplicate samples are blind duplicates that provide data to assess precision of the contract laboratory. Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples measure the accuracy and precision of the analytical methods. Field Duplicates are specified to be collected at a frequency of 5% of the field samples collected. MS/MSD samples are specified at a frequency of 5% of field samples collected. Note that only samples collected by Weiss Associates were evaluated for MS/MSD procedures.
- Rinseate Sample/Equipment Blank - Samples consisting of reagent water collected from a final rinse of sampling equipment after the decontamination procedure has been performed. The purpose of rinseate samples is to determine whether the sampling equipment is causing cross contamination of samples. Following equipment decontamination, deionized/organic-free water will be used as a final rinse and collected in appropriate bottles. Rinseate samples were specified at a frequency of 5% of the field samples collected.
- Field Blank - Samples consisting of source water used for decontamination of equipment. Field blanks will be collected at a frequency of 1 per source or lot of water being used for rinsing and submitted to the laboratory for all required analyses. Field blanks are specified at a frequency of 5% of the field samples collected.

[4] 1991, Quality Assurance Project Plan Middlefield-Ellis-Whisman Site, Mountain View, California, prepared by Canonie Environmental, Rev. 1.0, August 16, 1991.

- Trip Blank - Samples consisting of a "clean," volatile organic analysis (VOA) vial filled with deionized/organic-free water and preserved. These vials are supplied by the laboratory to the field site and returned to the laboratory for storage and analysis along with the field samples as may be required in the task planning documents. Trip blanks were submitted to the contract laboratory with each shipment (cooler) of environmental samples for volatile organic compound (VOC) analyses. Trip blanks were analyzed for all VOC analyses specified for samples in the corresponding cooler. The trip blank data demonstrate that the samples were not exposed to contamination during storage and transport to the laboratory. Trip blanks were submitted for VOC analysis, therefore the containers did not contain head space. Trip blanks are typically required for VOC sampling of: groundwater; surface water; storm water; and, rinseate.

For the 2009 annual groundwater sampling event, all sample results collected for Former Fairchild Buildings were verified for completeness by completion of a Level 2 Data Review Summary. Custody seals were used for each sample location as specified in the 1991 MEW QAPP.

The following QA/QC parameters were used to assess the laboratory analytic data via Level 2 Data Review:

- Holding time;
- Detection and reporting limits;
- Surrogate recovery (organic methods only);
- Laboratory control sample recovery;
- Matrix spike and spike duplicate recovery;
- Method blank contamination;
- Travel blank contamination (organic methods only);
- Field/rinseate blank contamination; and,
- Field sample duplicates precision.

Ten percent of all sample delivery groups underwent a stringent Level 4 data validation as required by the MEW QAPP. The samples validated via Level 4 data were placed on separate Chain(s) of Custody from the Level 2 data deliverables. Level 4 validation procedures vary by method. In addition to the verification check list provided above, the Level 4 review of organic laboratory data checks the following:

- Ion abundance;
- Minimum number of initial calibration standards analyzed;
- Relative response factors in initial and continuing calibrations;
- Percent relative standard deviations in initial calibrations;
- Percent differences in continuing calibrations;
- Internal standard retention times;
- Internal standard area counts;

- Analytical sequence carryover;
- Dilutions performed appropriately;
- Calibration blank contamination; and,
- Data package completeness for all raw data, including chromatograms and bench sheets, for calibration standards, quality control data, and samples.

The Level 4 review of inorganic (metals) data checks for the following:

- Minimum number of initial calibration standards analyzed;
- All initial calibration verification recoveries are within established limits;
- Initial calibration correlation coefficients are within established limits;
- Continuing calibration verification recoveries are within established limits;
- Analytical sequence carryover;
- Dilutions performed appropriately;
- Laboratory duplicate results are within established limits;
- Initial and continuing calibration blank contamination; and,
- Data package completeness for all raw data, including bench sheets, for calibration standards, quality control data, and sample.

Technical staff assigned qualifiers to data that were found outside control limits in the MEW QAPP. Data qualifiers, or flags, communicate data issues to end users and decision makers and are defined in the USEPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review.

A total of 233 samples were submitted to Curtis and Tompkins in Berkeley, California, a state-certified analytical laboratory for specified analyses, including Volatile Organic Compounds (VOCs), semi-VOCs, Bis(2-ethylhexyl) phthalate, metals, and 1,4-dioxane analysis. Two samples were analyzed for Acute Toxicity using EPA-821-R-02-012 and turbidity using USEPA method 180.1 by Block Environmental Services, Inc, another state-certified laboratory. In addition to the monthly treatment system samples, 96 total groundwater samples were collected from the Former Fairchild Buildings Area, including Treatment Systems 1, 3, and 19 monitoring and extraction wells as a part of MEW Annual Groundwater Sampling Event. The groundwater samples were analyzed for Halogenated Volatile Organic Compounds using EPA Method USEPA 8260B for the 8010 MS Parameters by Curtis and Tompkins. Additional wells listed on the 2009 sampling schedule (Table 2 of report) are part of either other facility-specific sampling or part of the RGRP sampling program but are located in the vicinity of Buildings 1-4.

All samples were collected, stored, transported, and managed according to USEPA protocols. Sample temperature and holding times were correctly observed.

No significant analytical issues were noted and the data are usable for their intended purposes. Table C-1 summarizes the sampling QA/QC, and Table C-2 summarizes samples for the 2009 annual groundwater sampling event at Former Fairchild Buildings 1-4.

Weiss Associates

Table C-1. Summary of Sampling QA/QC for January through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California.

Who performed sampling (Firm name/address/contact/phone):	Weiss Associates 350 East Middlefield Road, Mountain View, CA 94043 Joyce Adams (510) 450-6162
Chain of Custody forms completed for all samples?	YES
Field parameters stabilized prior to taking sample?	YES[1]
Zero headspace in sample containers (applicable to VOCs only)?	YES
Samples preserved according to analytical method?	YES
Required field QA/QC samples taken?	YES

*Explain any "NO" answers:

1. Not applicable for groundwater treatment system samples. Field parameter stabilization is not part of the standard sampling protocol for the groundwater treatment system samples. All field parameters are assumed stable when grab samples are collected from a running treatment system.

Table C-2. Summary of Analytical QA/QC for January through December 2009, Former Fairchild Buildings 1-4, 515/545 Whisman Road and 313 Fairchild Drive, Mountain View, California.

Who performed analysis (Lab name/address/contact/phone):	Curtis and Tompkins 2323 Fifth Street Berkeley, CA 94710 Anna Pajarillo (510) 486-0900 Block Environmental Services, Inc. 2451 Estand Way Pleasant Hill, CA 94523 Nanette Bradbury (925) 682-7200
Analytical methods (by method number and chemical category):	
Groundwater Treatment System Samples:	158 samples (including 26 travel blanks and 17 duplicates) analyzed by USEPA 8260B – Halogenated Volatile Organic Compounds (8010 MS Parameters) Two samples analyzed by USEPA 8270C – Semi Volatile Organic Compounds Two samples analyzed by USEPA 8270C – Bis (2-ethylhexyl) phthalate 57 samples (including 10 travel blanks) analyzed by USEPA 8270C-SIM-1,4 Dioxane Two samples analyzed by USEPA-821-R-02-012 Acute Toxicity of Effluents to Freshwater and Marine Organisms Two samples analyzed by USEPA 180.1 – Turbidity Two samples analyzed by USEPA 200.8 – Metals Two samples analyzed by USEPA 200.8 and 245.1– Zinc Two samples analyzed by USEPA 1631 – Low-Level Mercury Two samples analyzed by USEPA 7196A – Hexavalent Chromium Four samples analyzed by SM4500CN-E – Cyanide
Groundwater Well Samples[1]:	96 samples (including 3 travel blanks, 4 field blanks, 4 duplicates, and 5 rinseate blanks) analyzed by USEPA 8260B – Halogenated Volatile Organic Compounds (8010 MS Parameters) 21 samples analyzed by USEPA 8270C-SIM-1,4 Dioxane
Are the labs state-certified for the above analytical methods?	YES
Analyses performed according to standard methods?	YES
Sample holding times met?	YES
Analytical results reported for all values above MDL?	YES

QA/QC analyses run consistent with analytical methods?	YES
QA/QC results meet all acceptance criteria?	YES[2,3]
QA/QC results and acceptance criteria on file?	YES

*Explain any "NO" answers:

1. The 96 groundwater well samples include all samples collected from MEW Fairchild Systems 1, 3, and 19.

2. The Analytic Reports and Chain of Custody forms are located in Appendix B

3. Analytical issues for treatment systems samples collected during 2009 are reported in the 2009 Quarterly NPDES reports for Treatment Systems 1 and 3.

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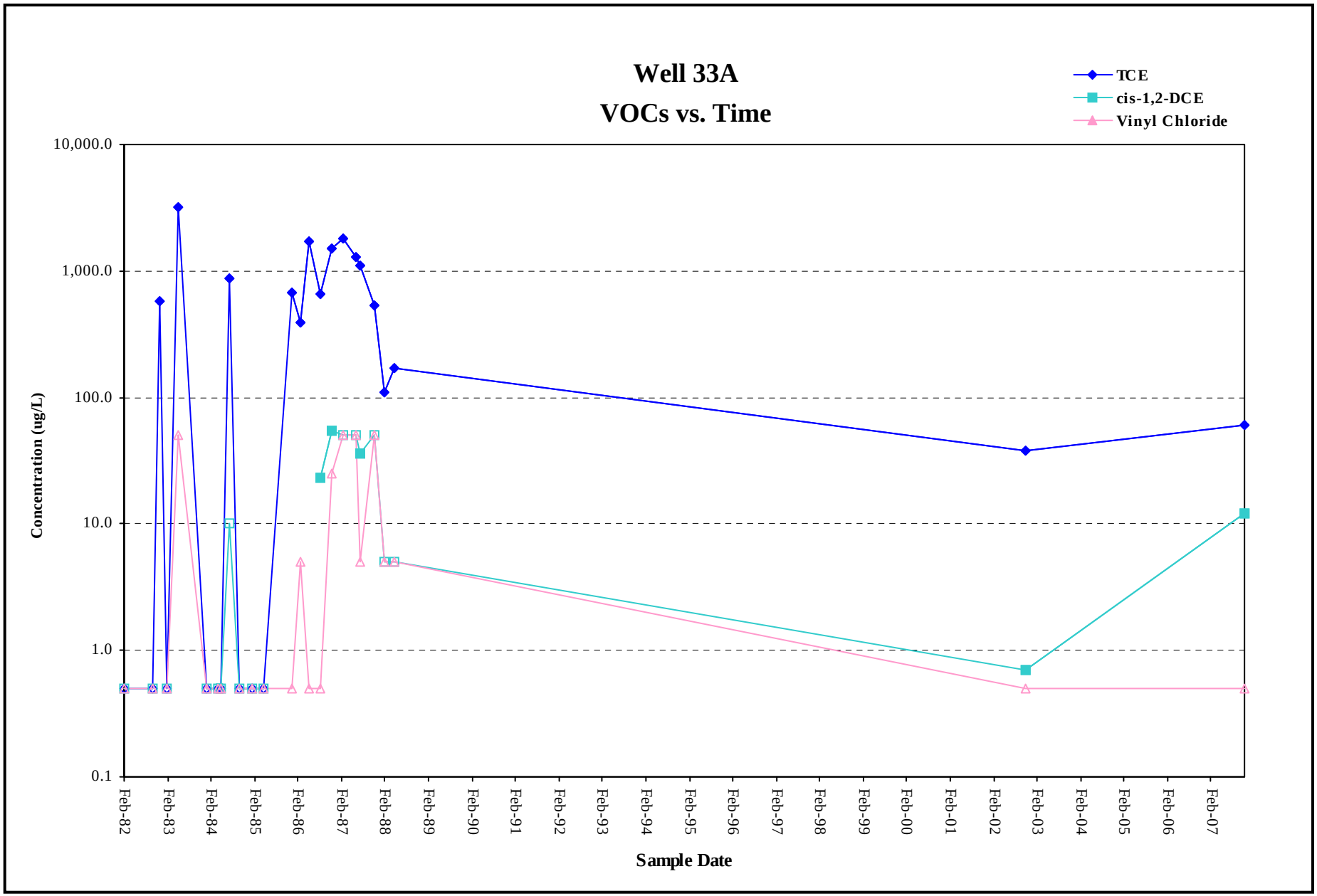
APPENDIX D

SELECTED VOC CONCENTRATION TIME-SERIES GRAPHS

Weiss Associates



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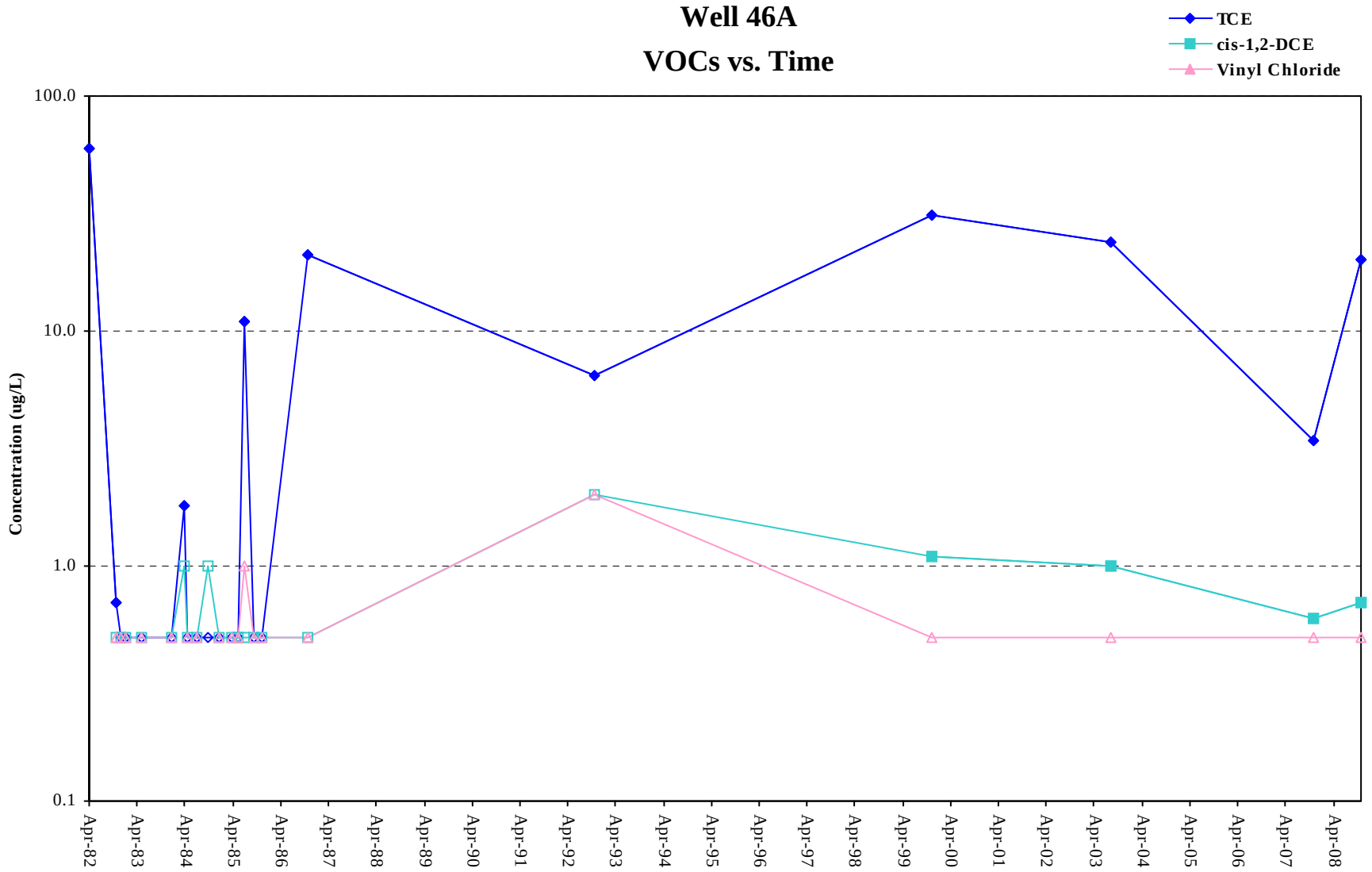
Weiss Associates

Well 46A
VOCs vs. Time



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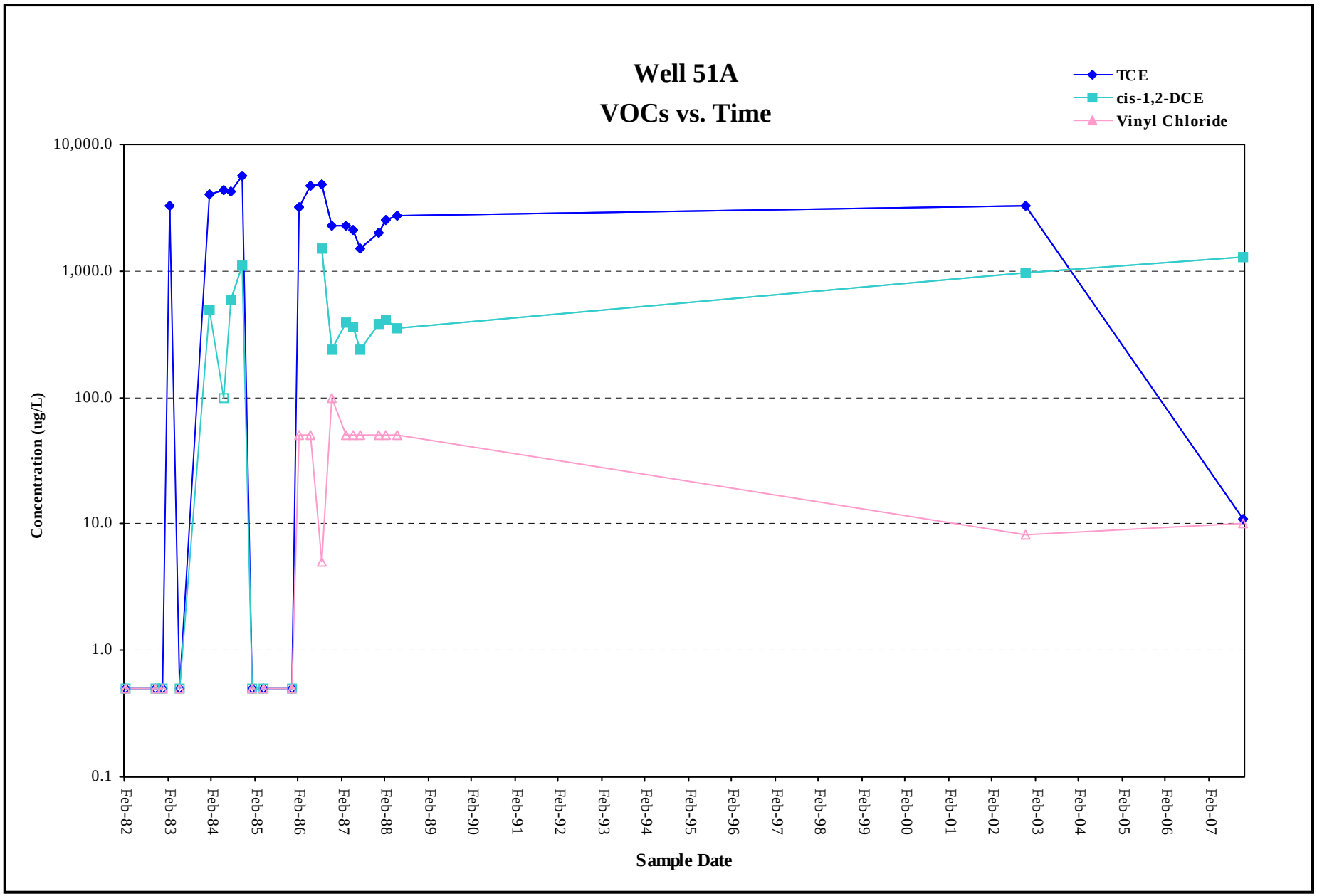
Weiss Associates



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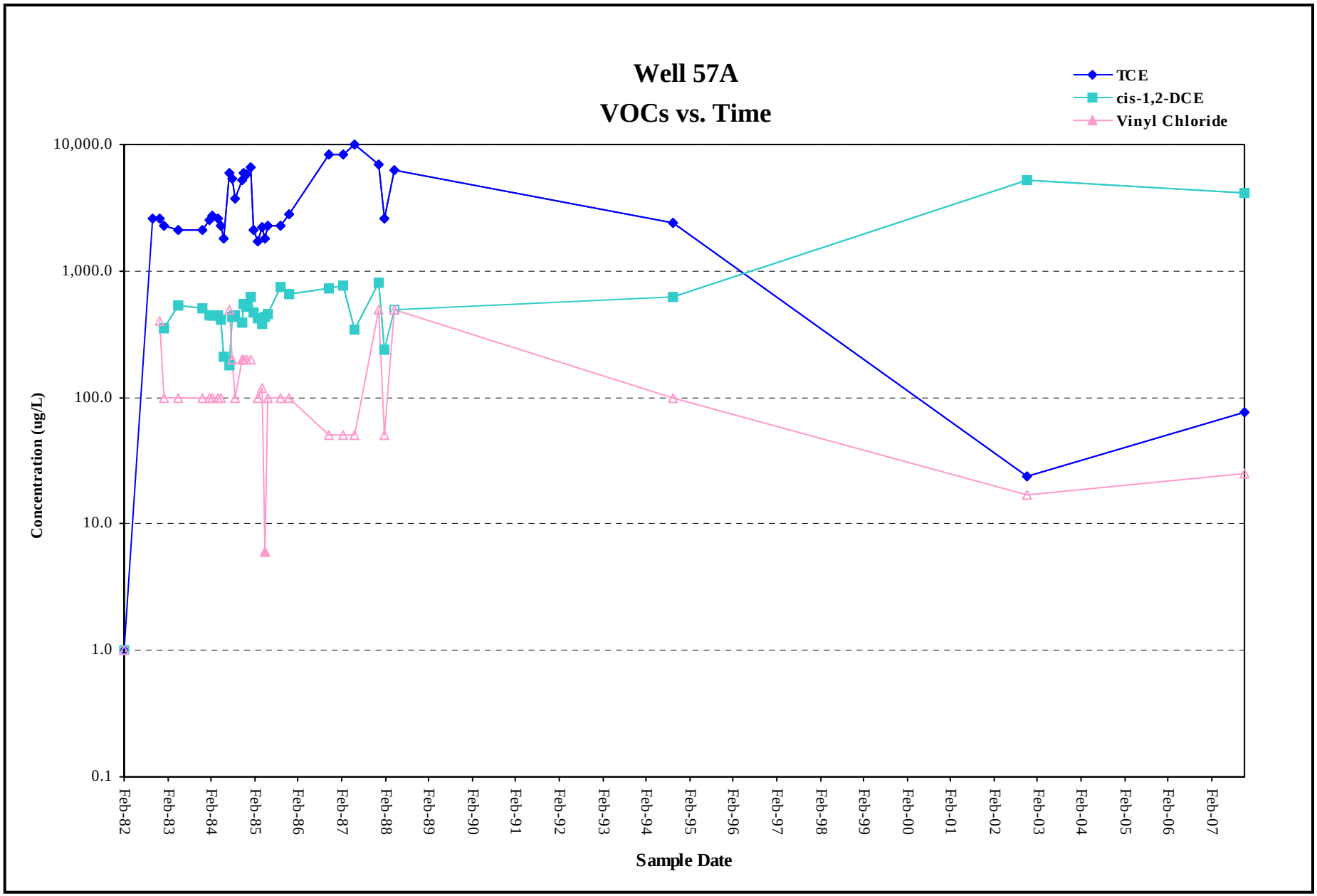
Weiss Associates



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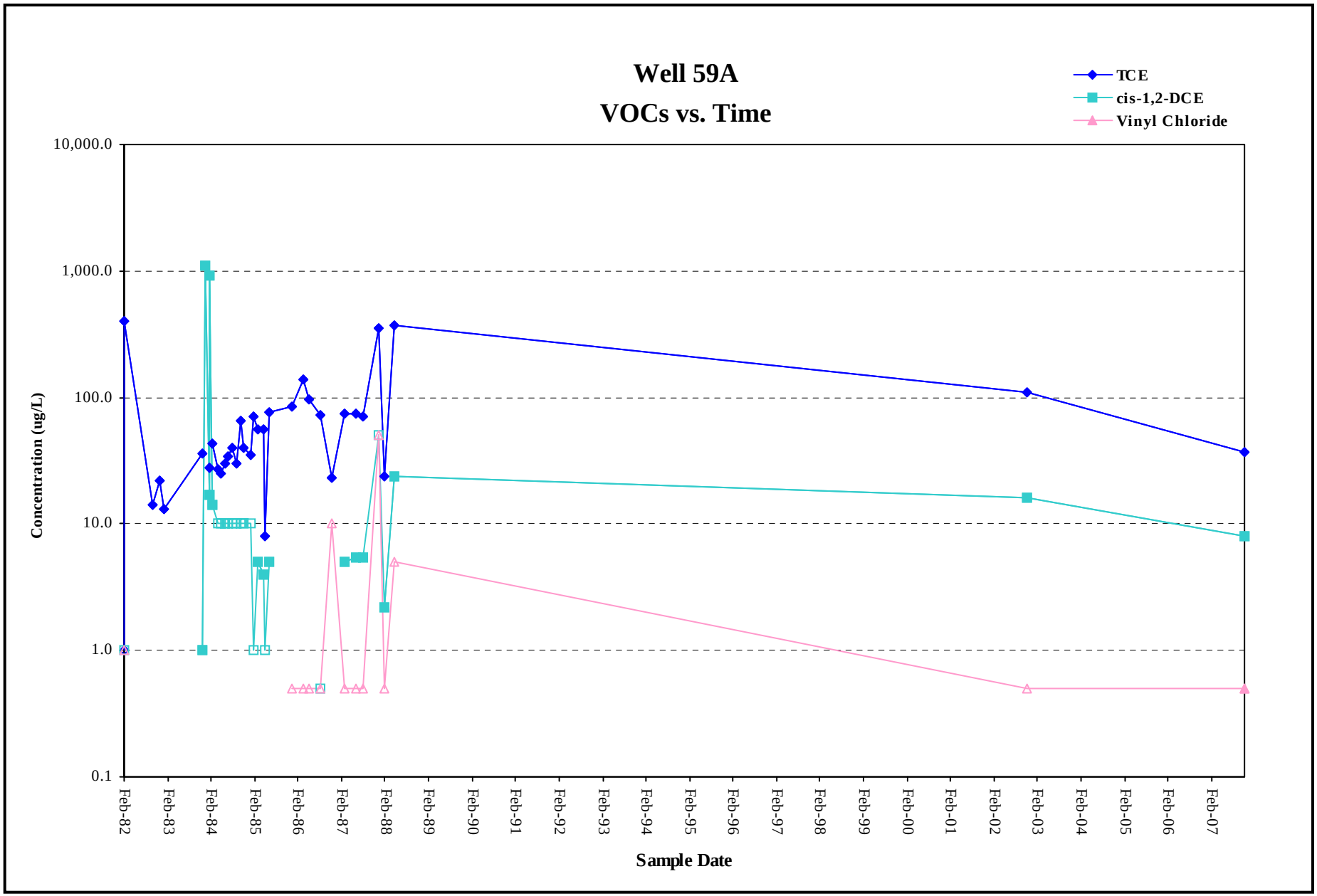
Weiss Associates



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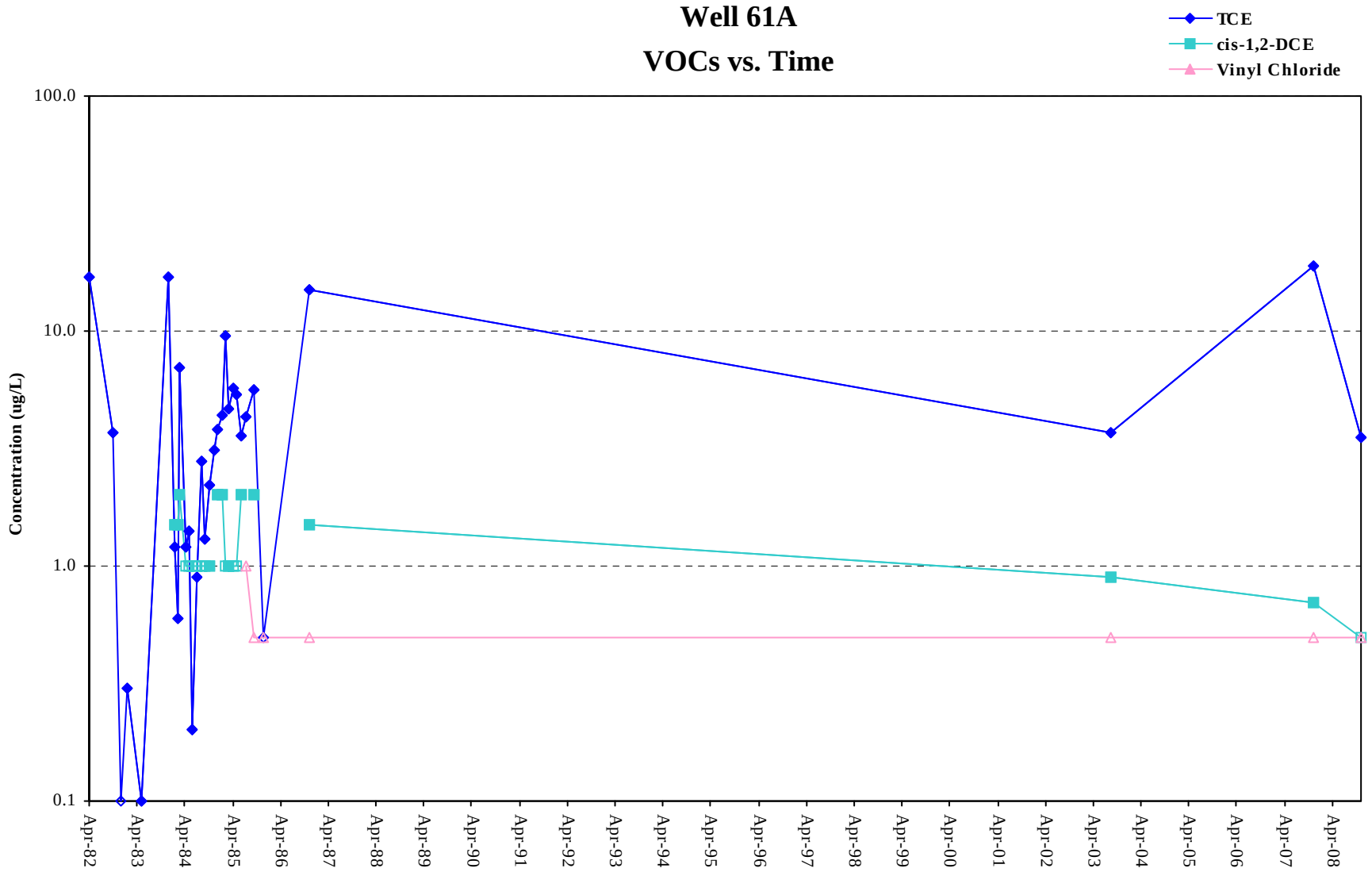
Printed: 6/4/2009 5:04:53 PM

Weiss Associates

Well 61A
VOCs vs. Time



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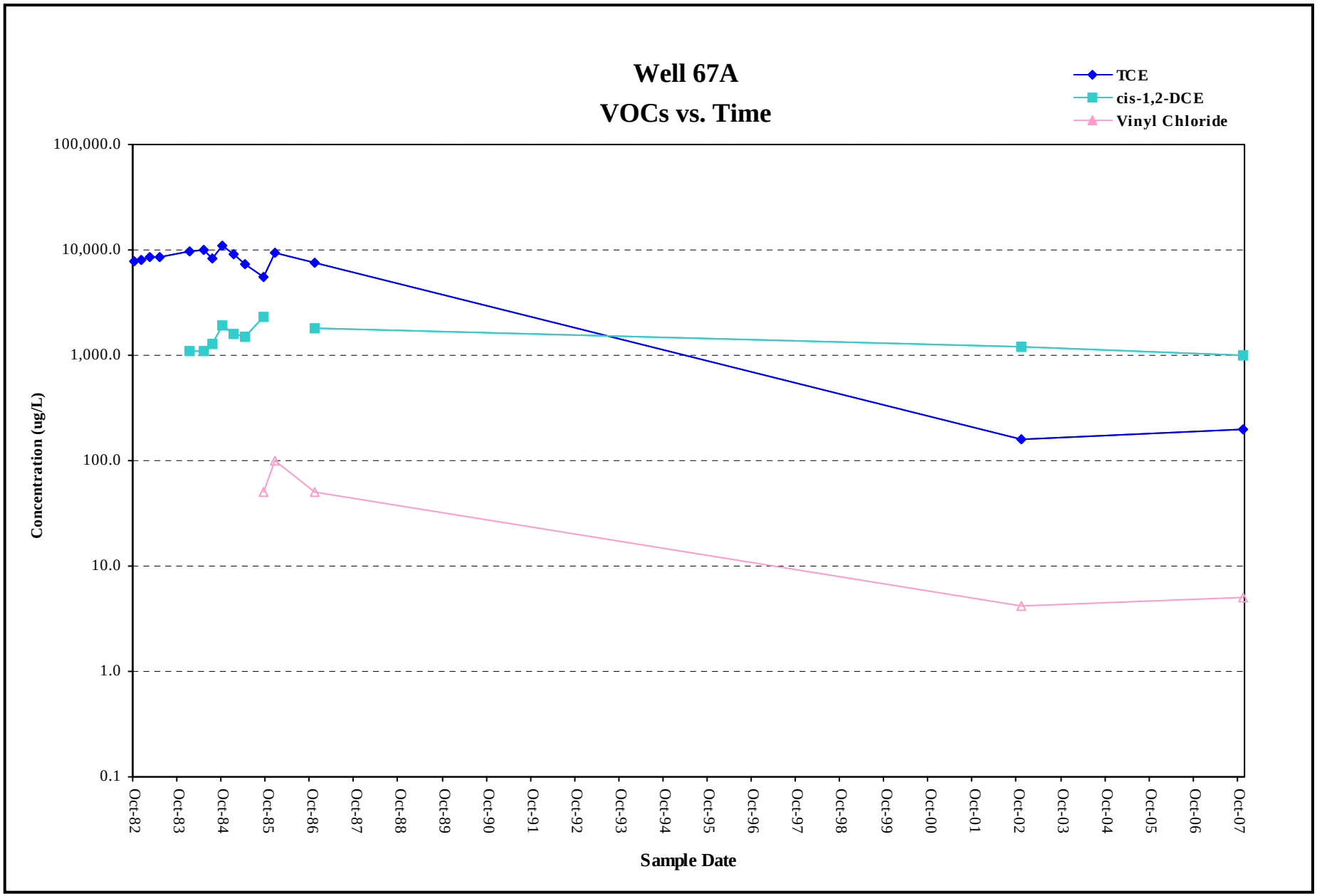
Weiss Associates



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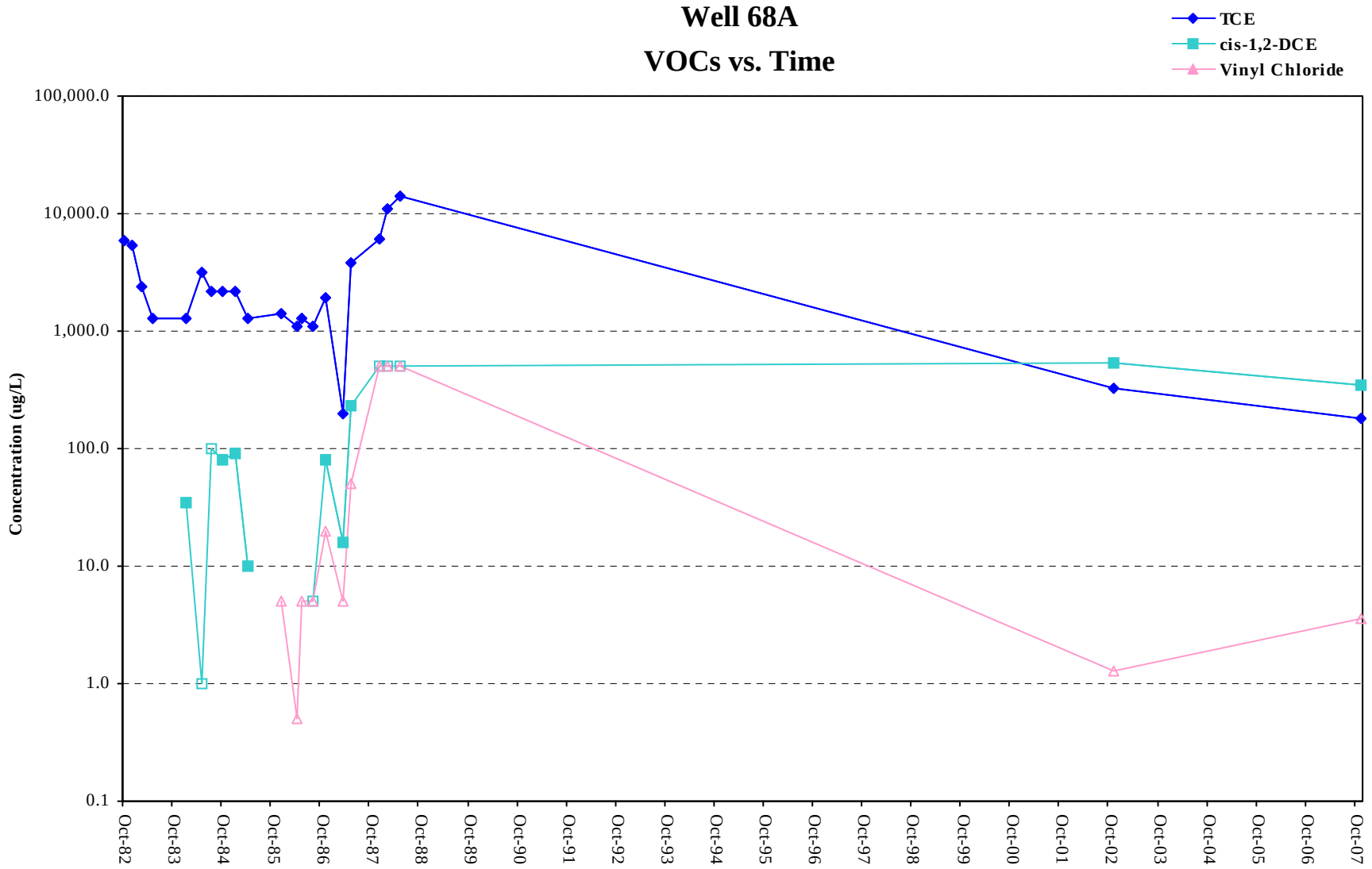
Weiss Associates

Well 68A
VOCs vs. Time



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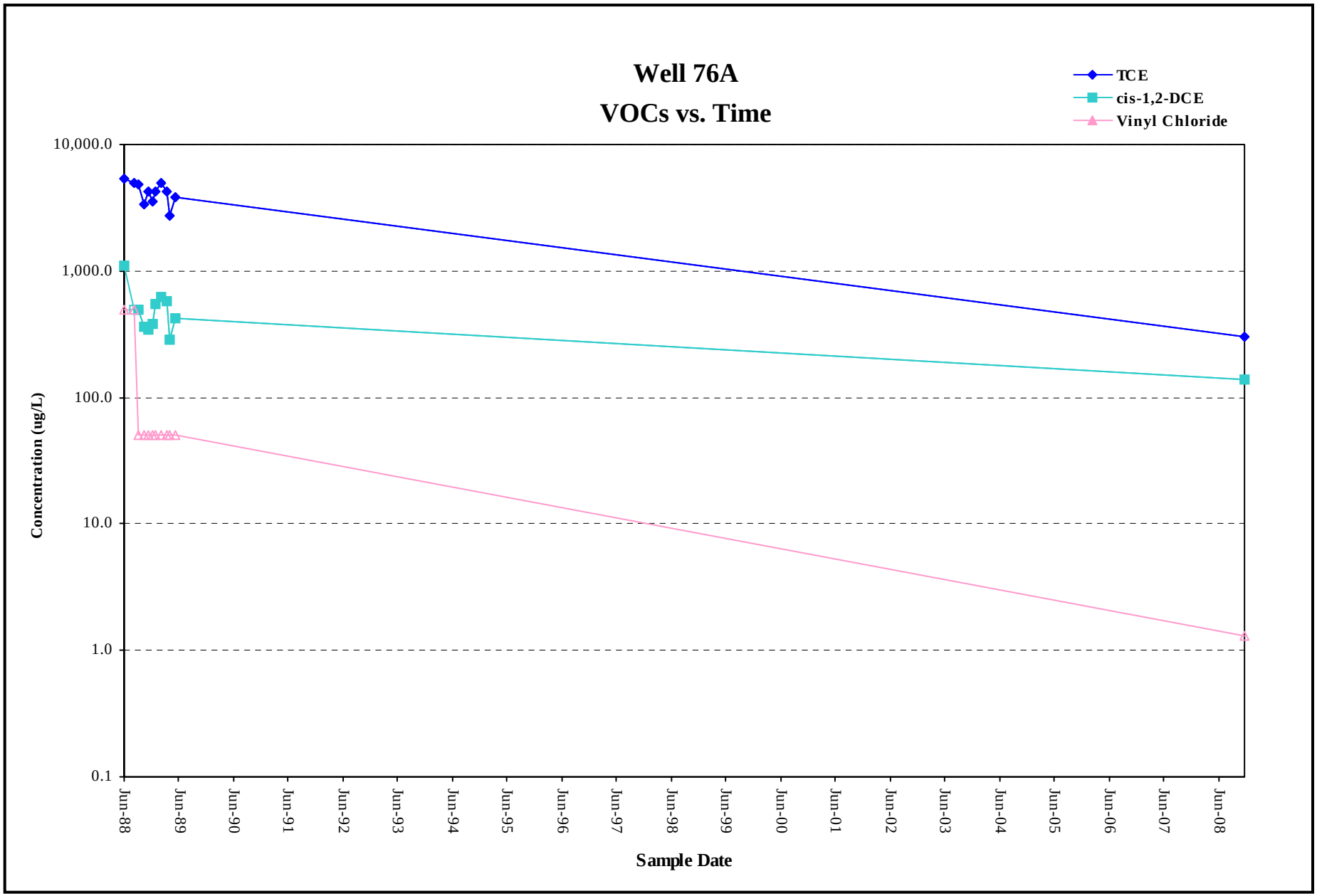

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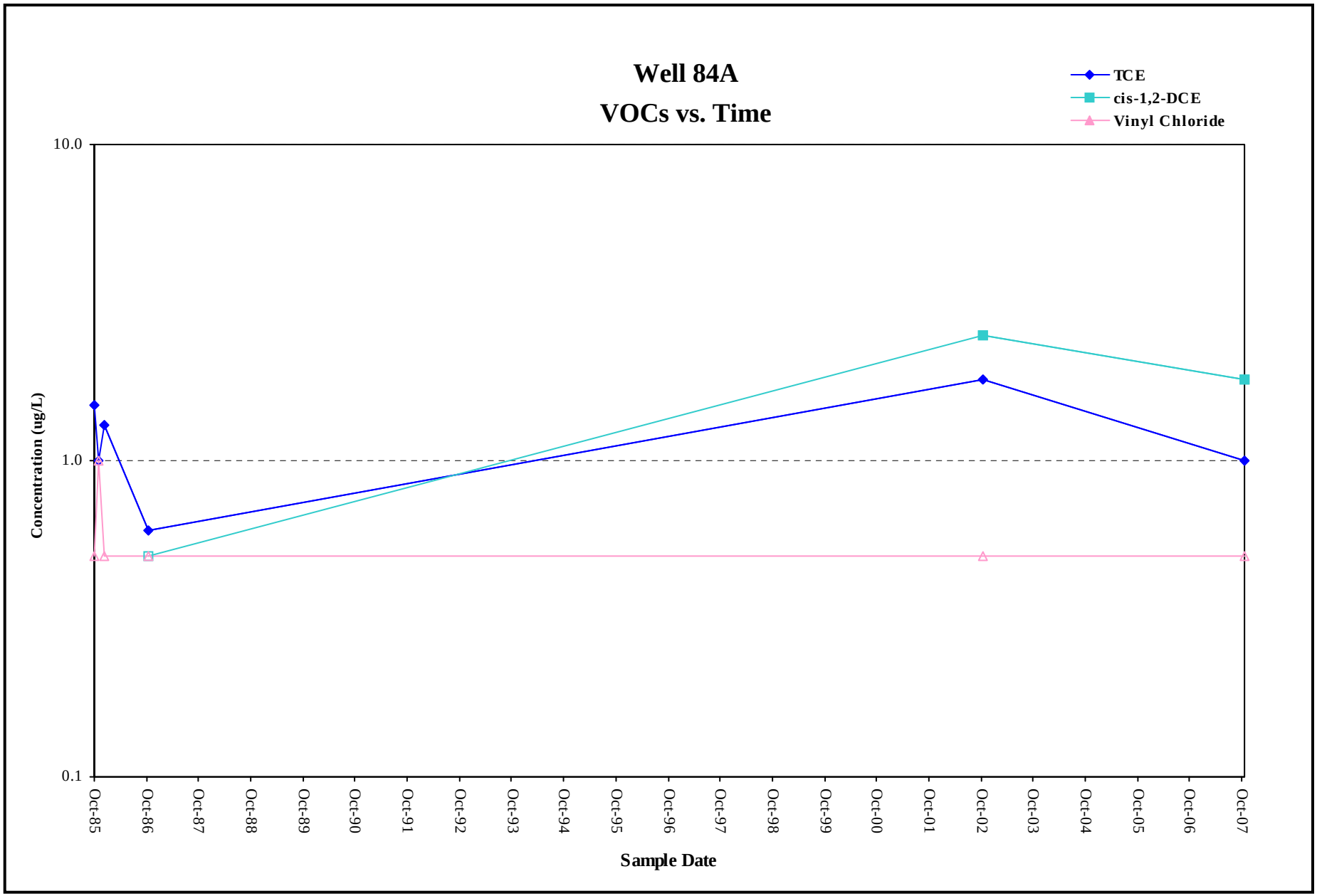

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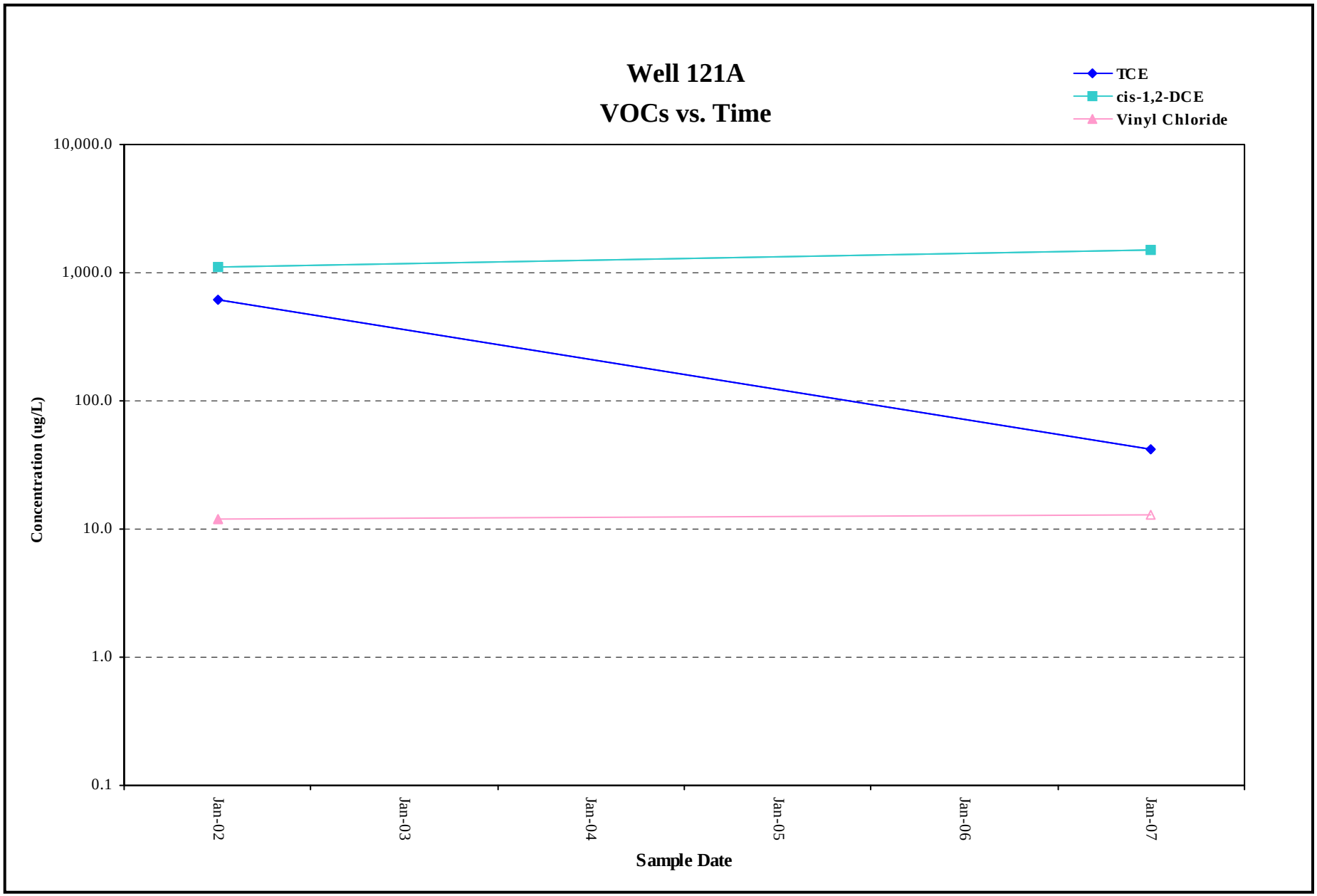

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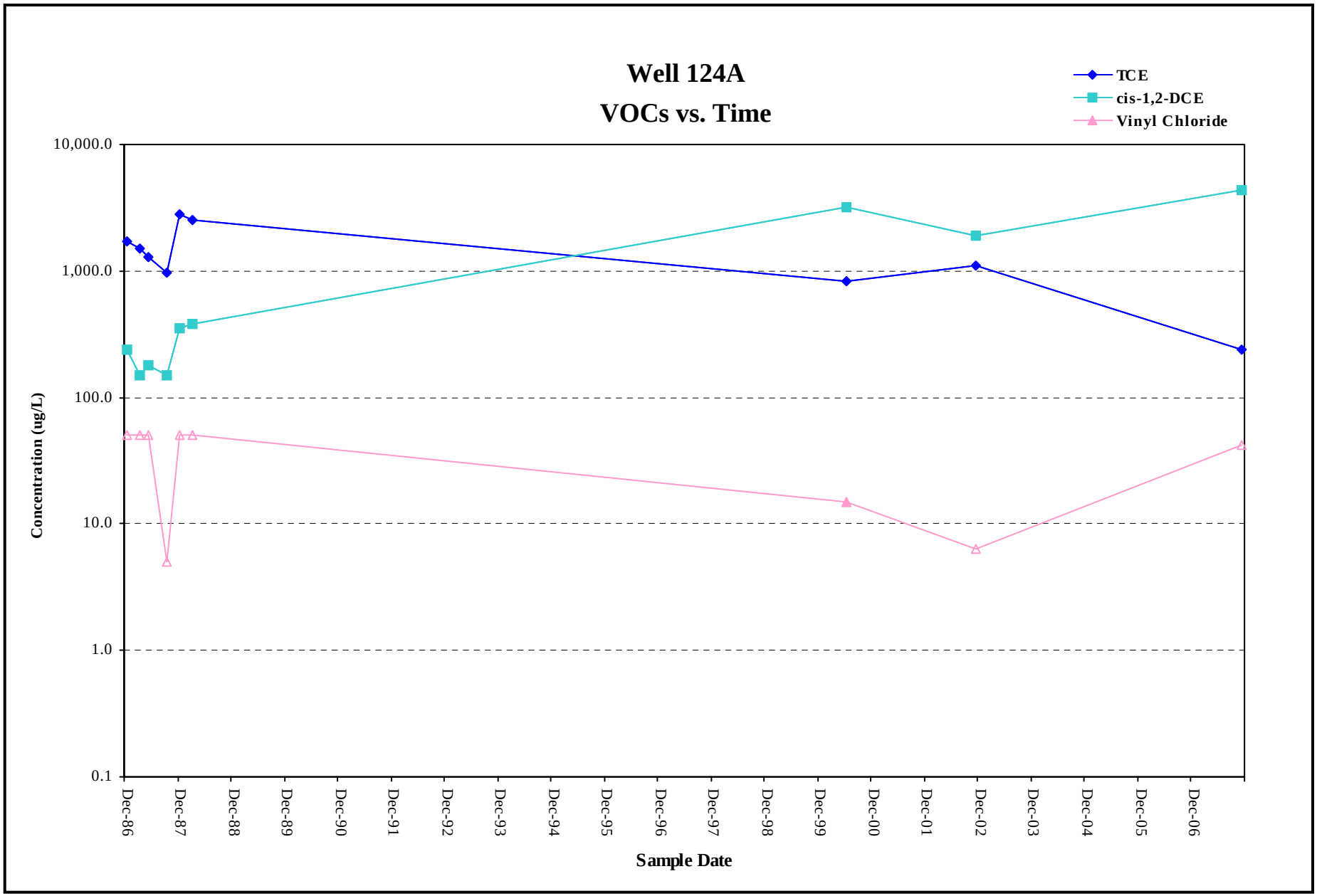

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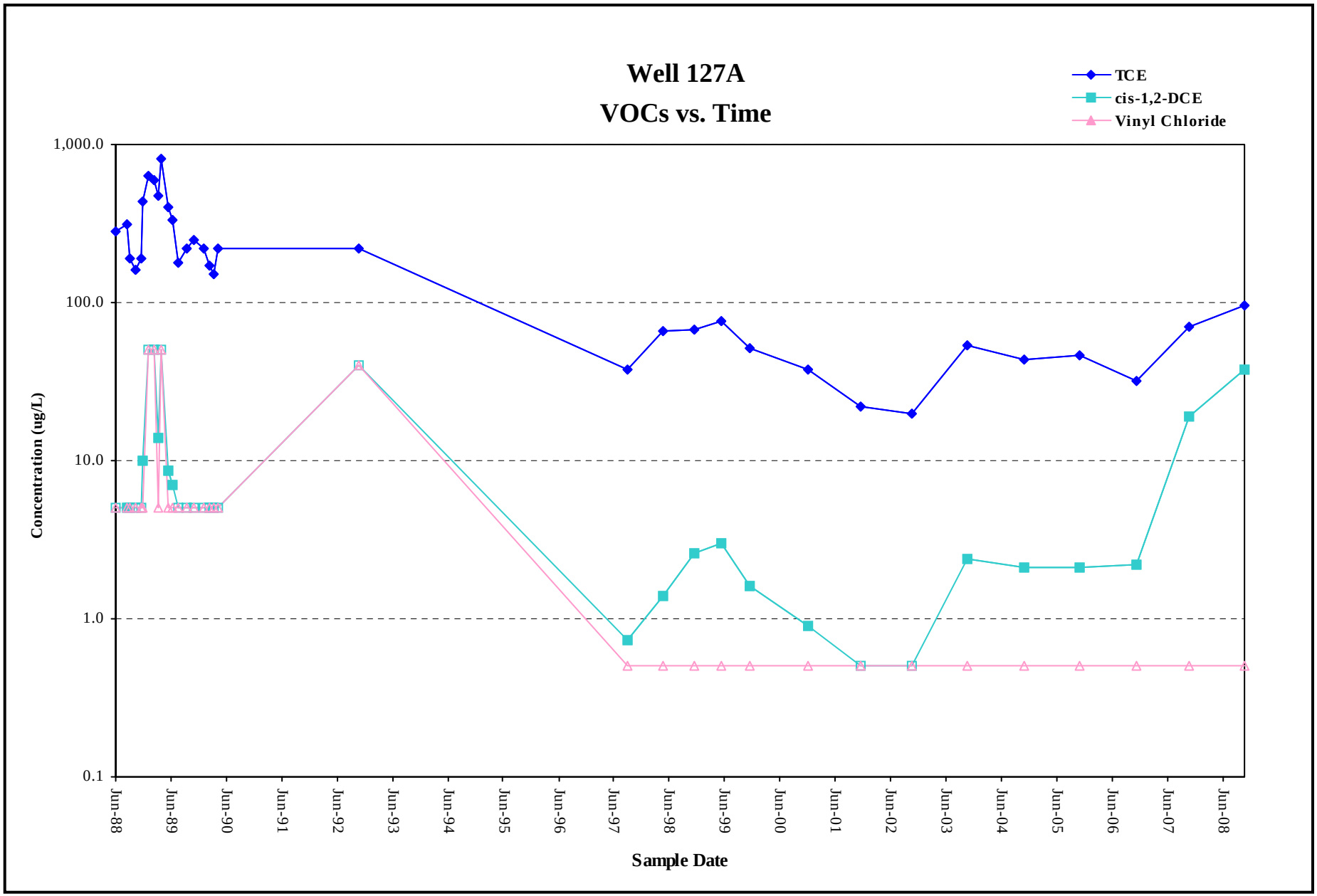

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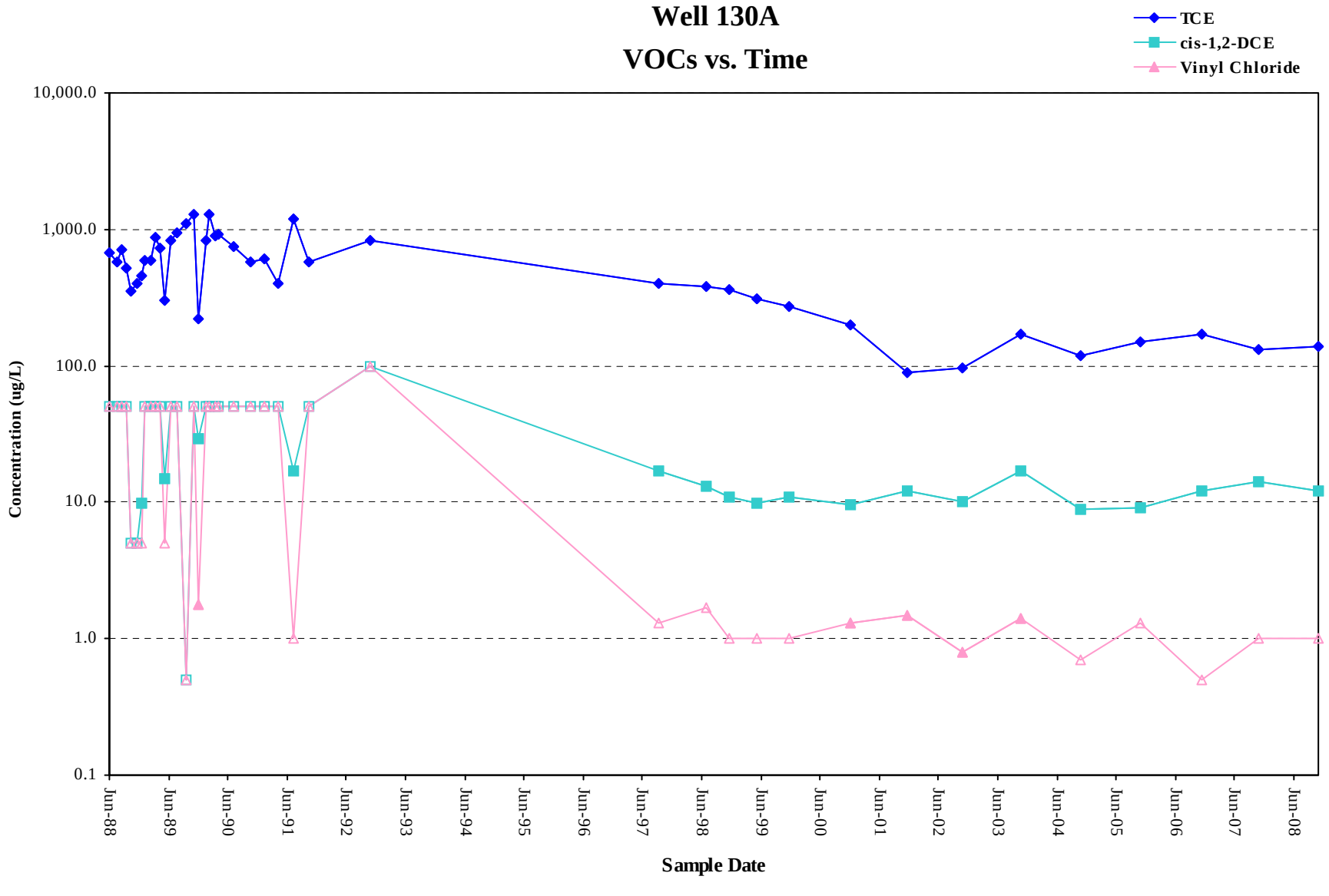
Weiss Associates

Well 130A
VOCs vs. Time



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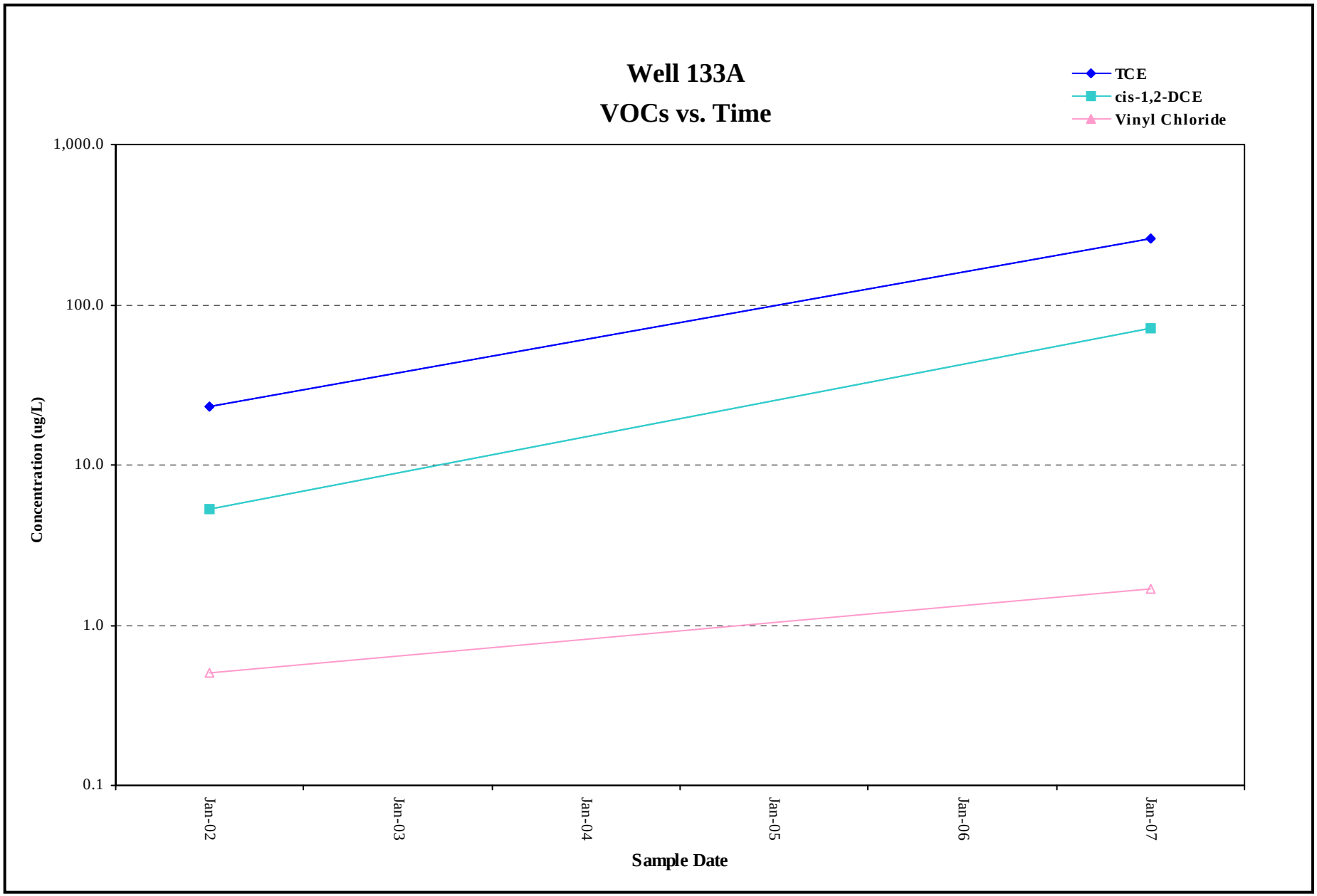
Weiss Associates



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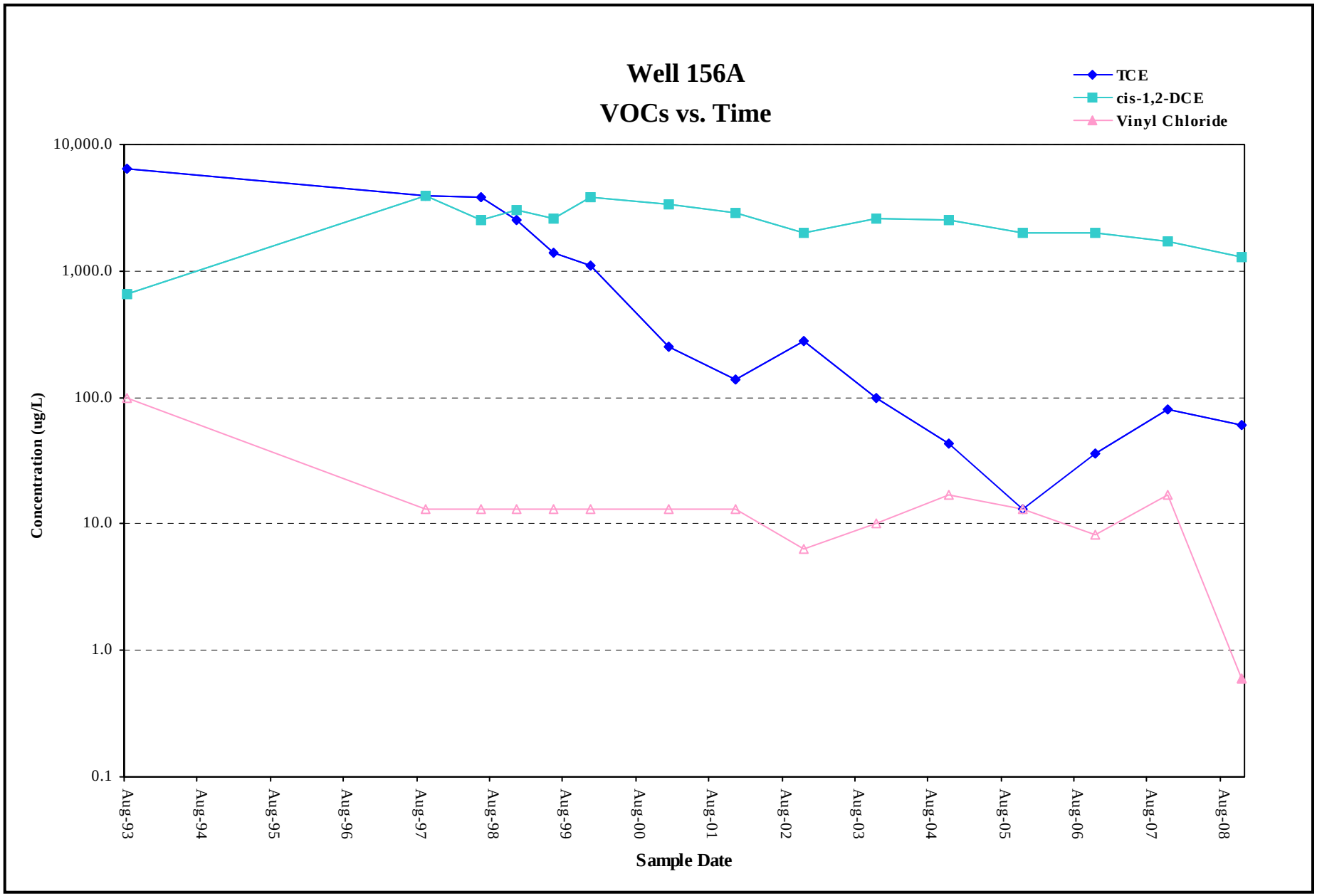
Weiss Associates



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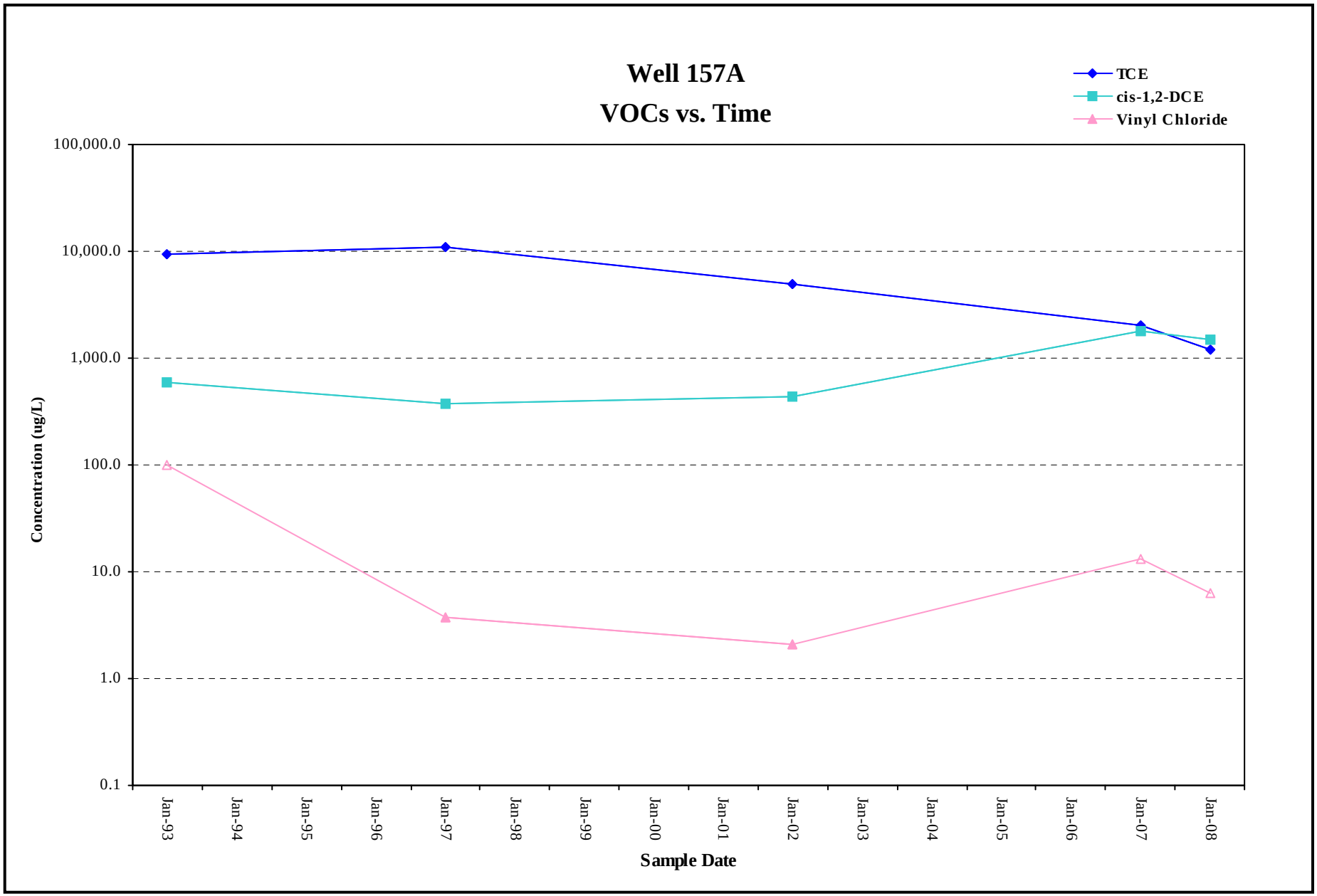
Weiss Associates



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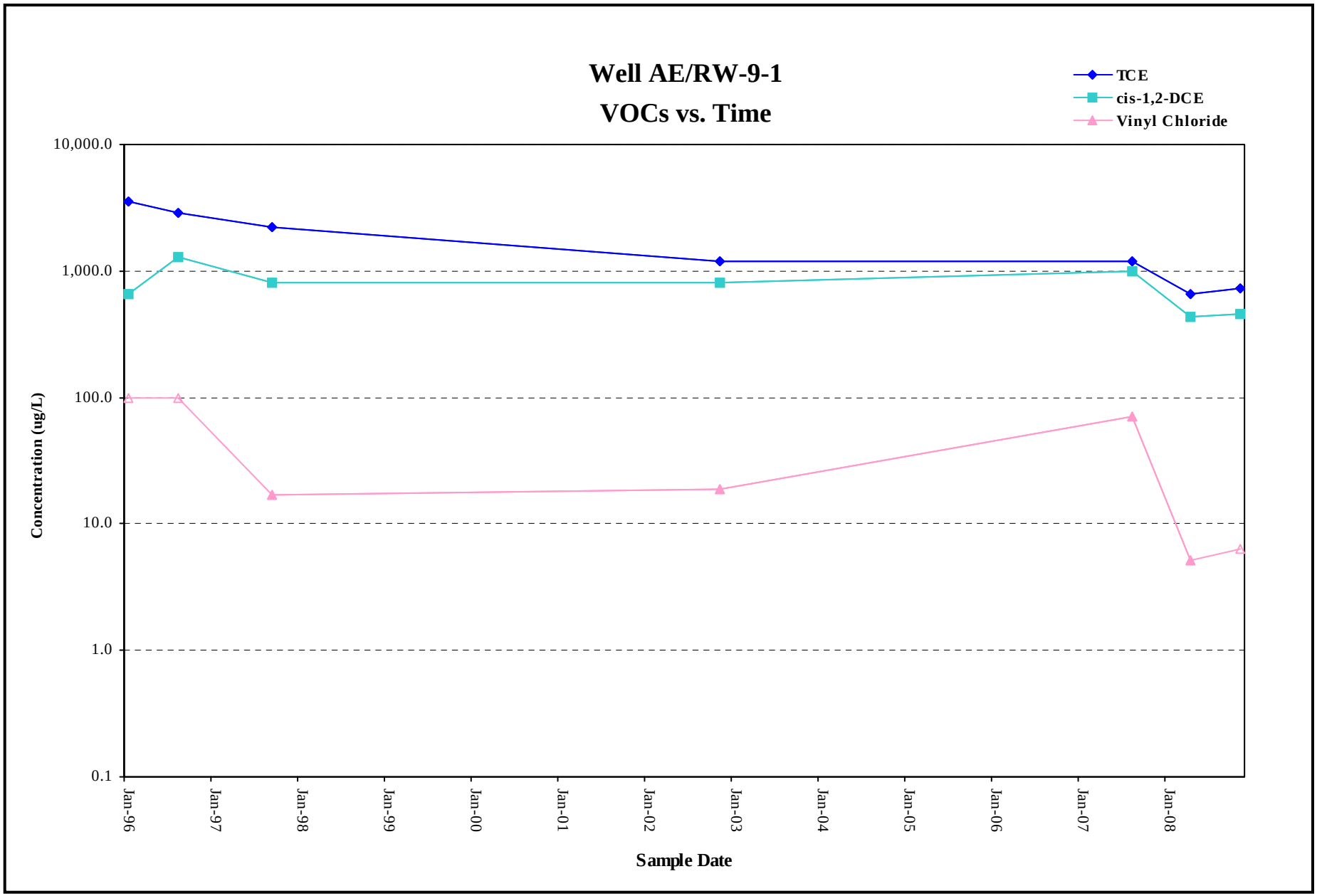

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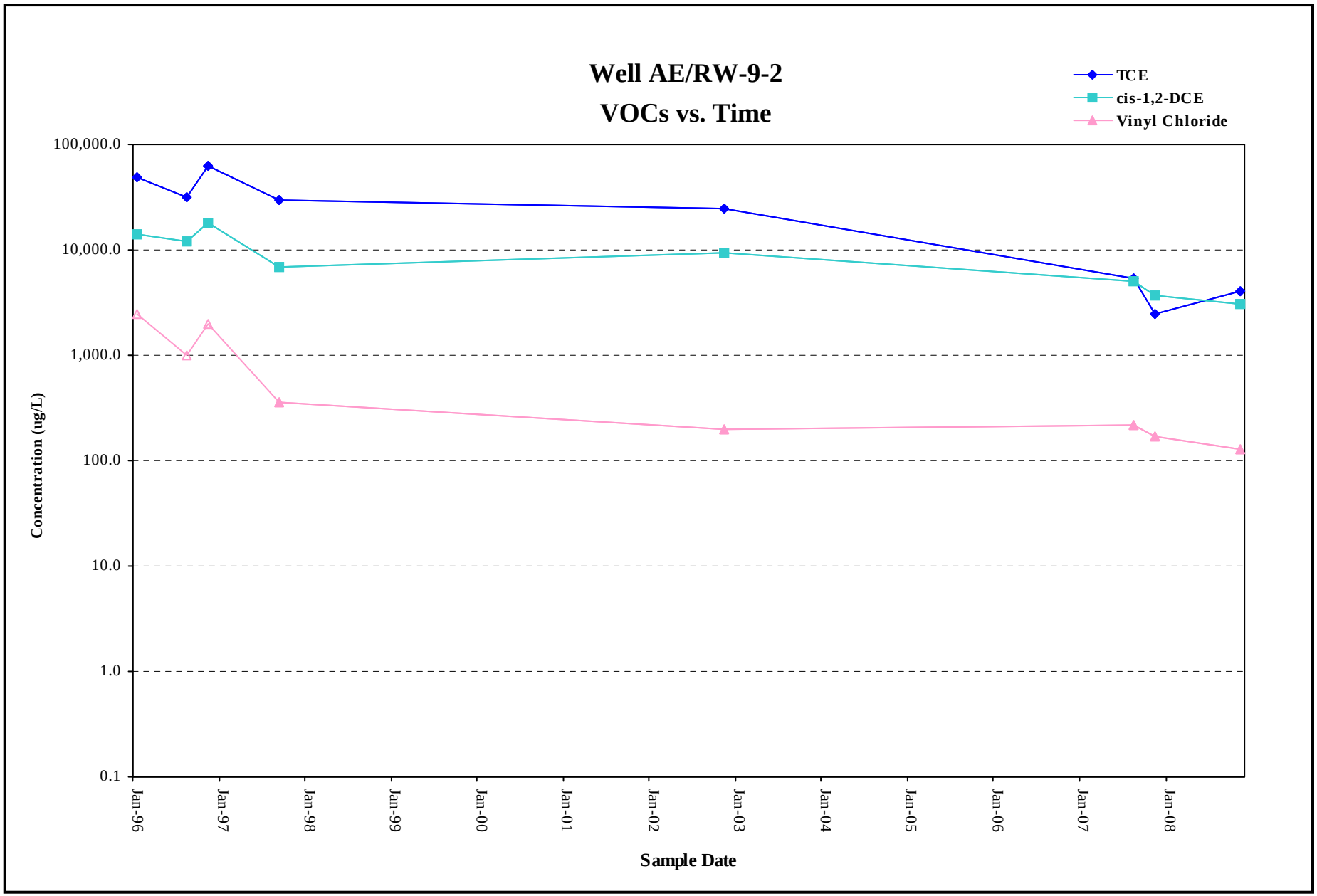

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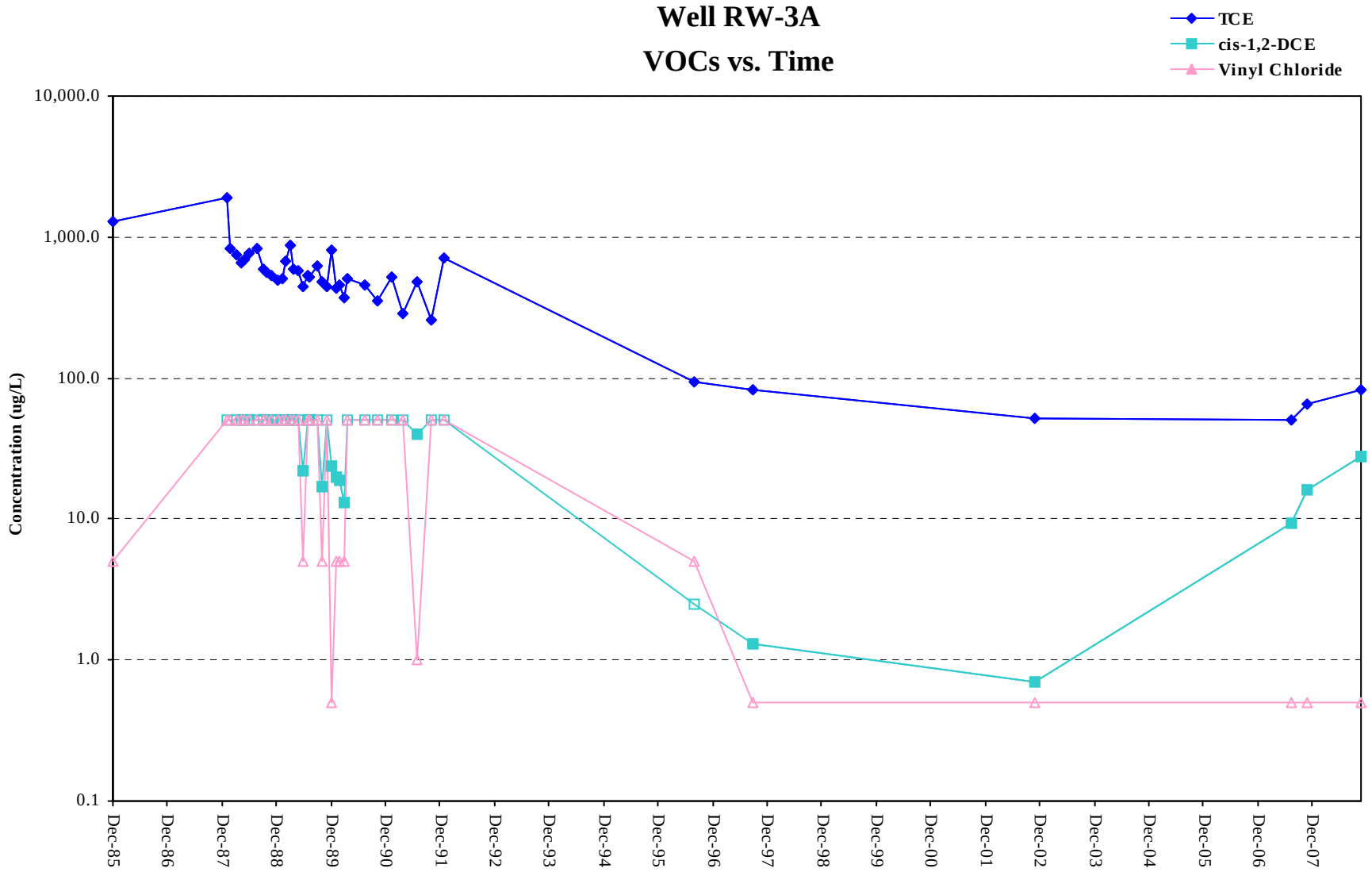
Weiss Associates

Well RW-3A
VOCs vs. Time



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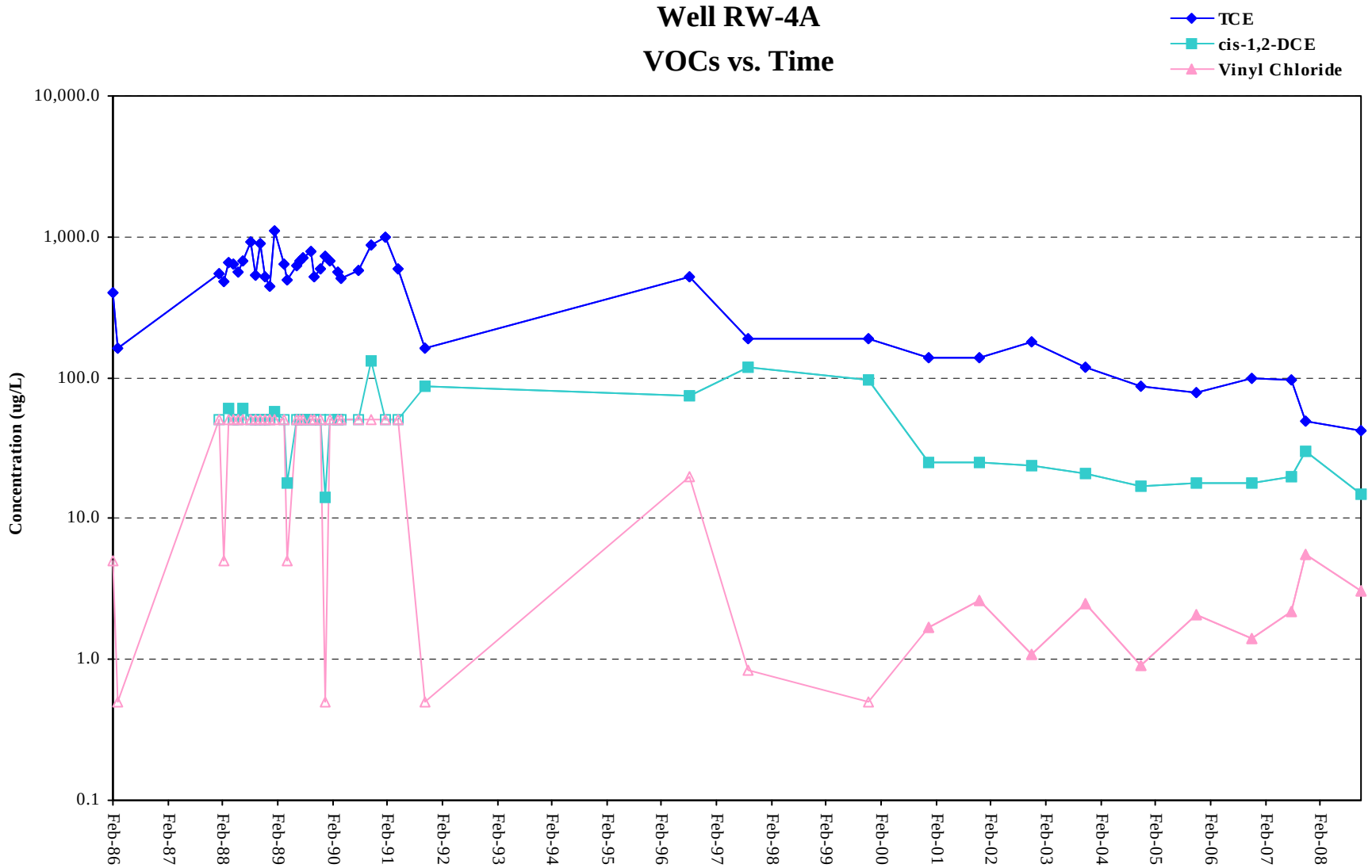
Weiss Associates

Well RW-4A
VOCs vs. Time



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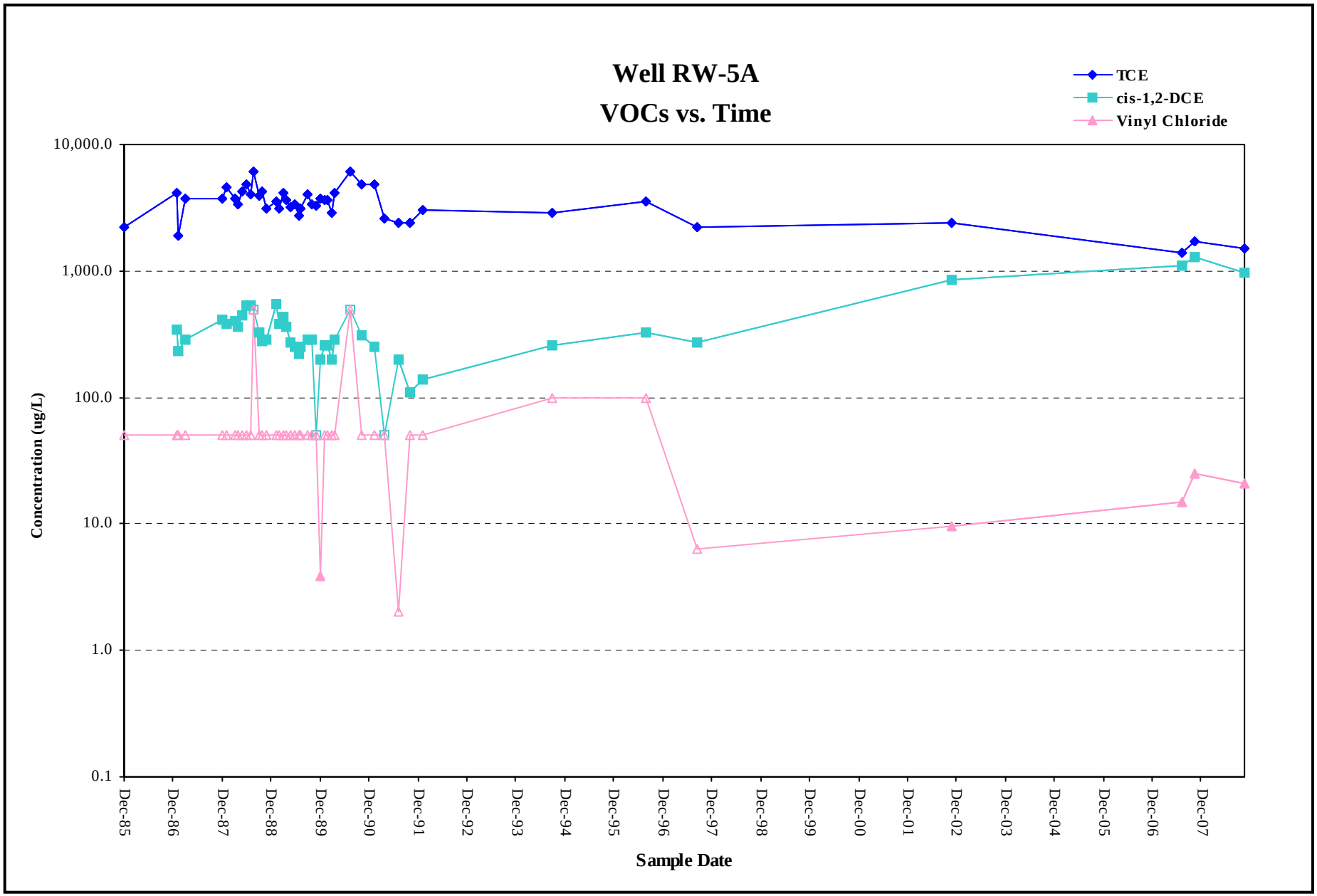
Weiss Associates



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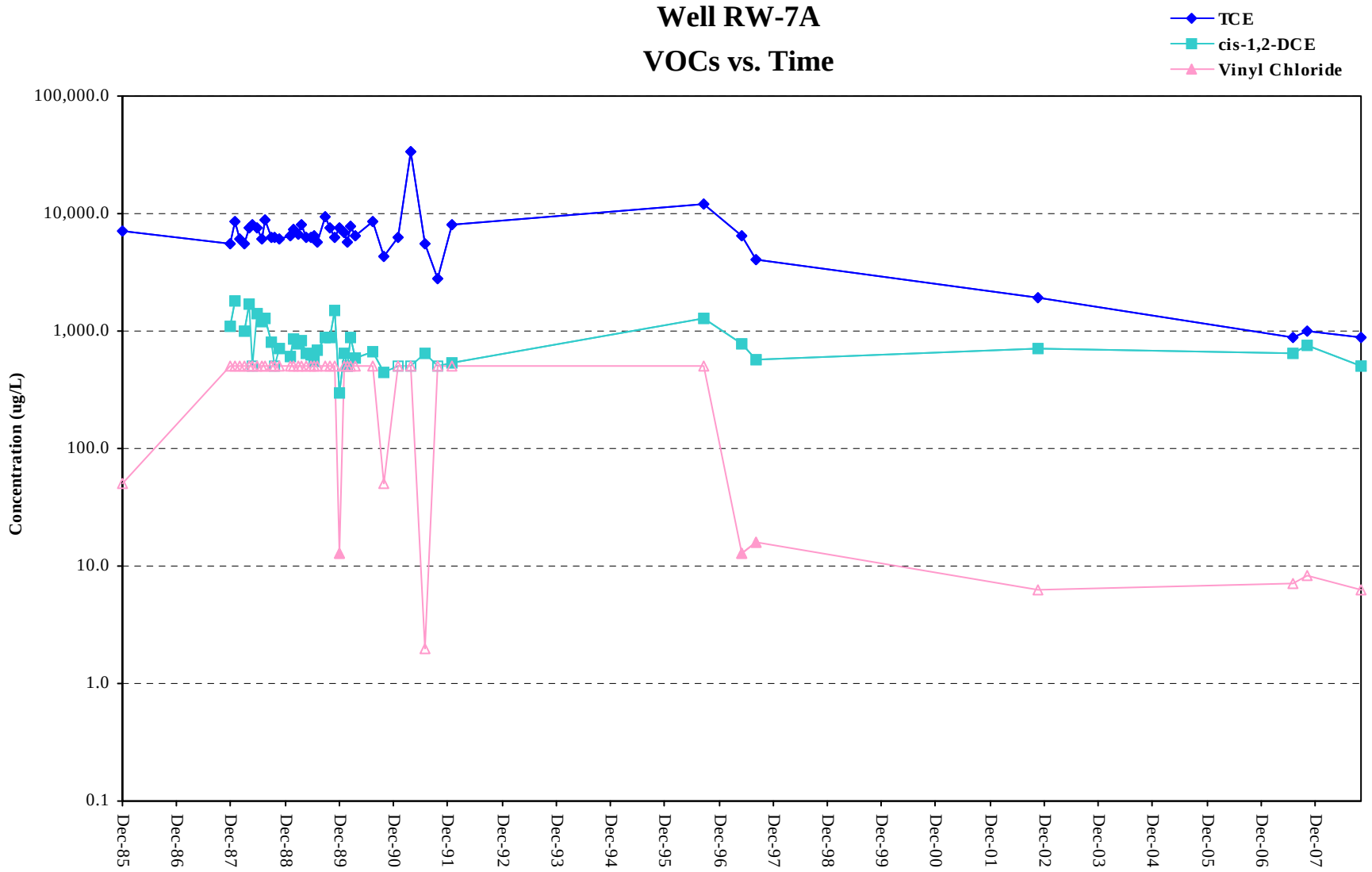
Weiss Associates

Well RW-7A
VOCs vs. Time



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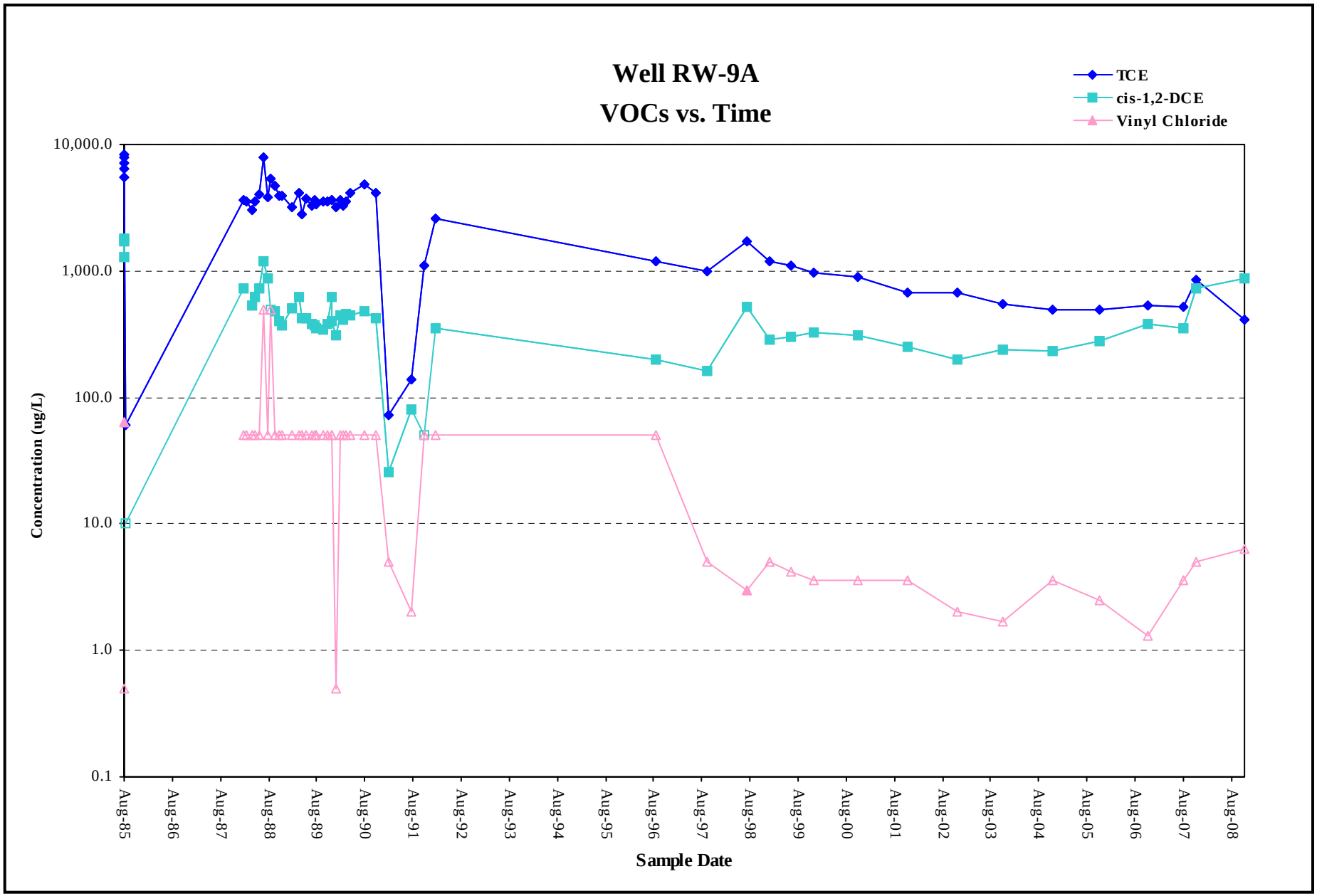
Weiss Associates



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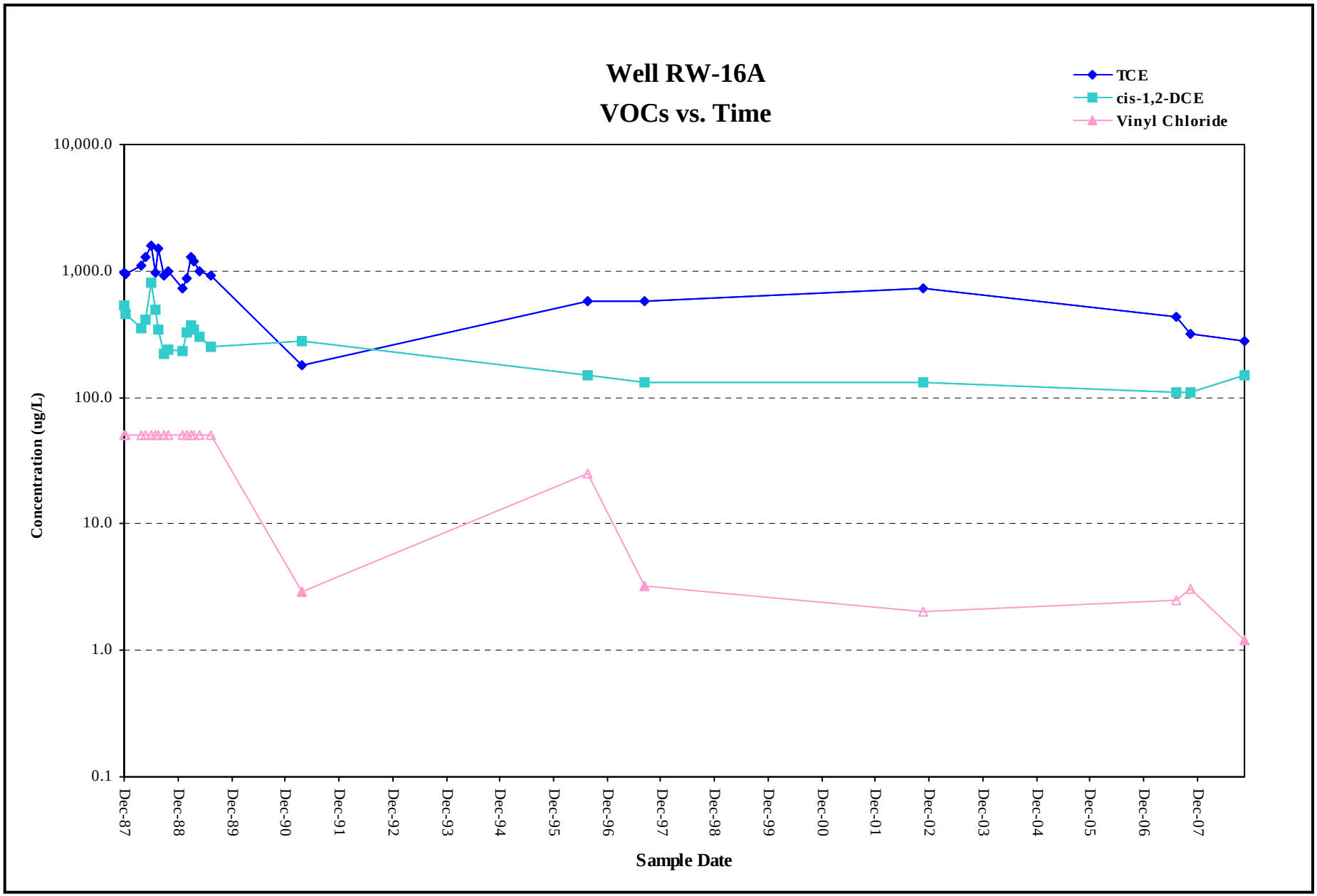
Weiss Associates



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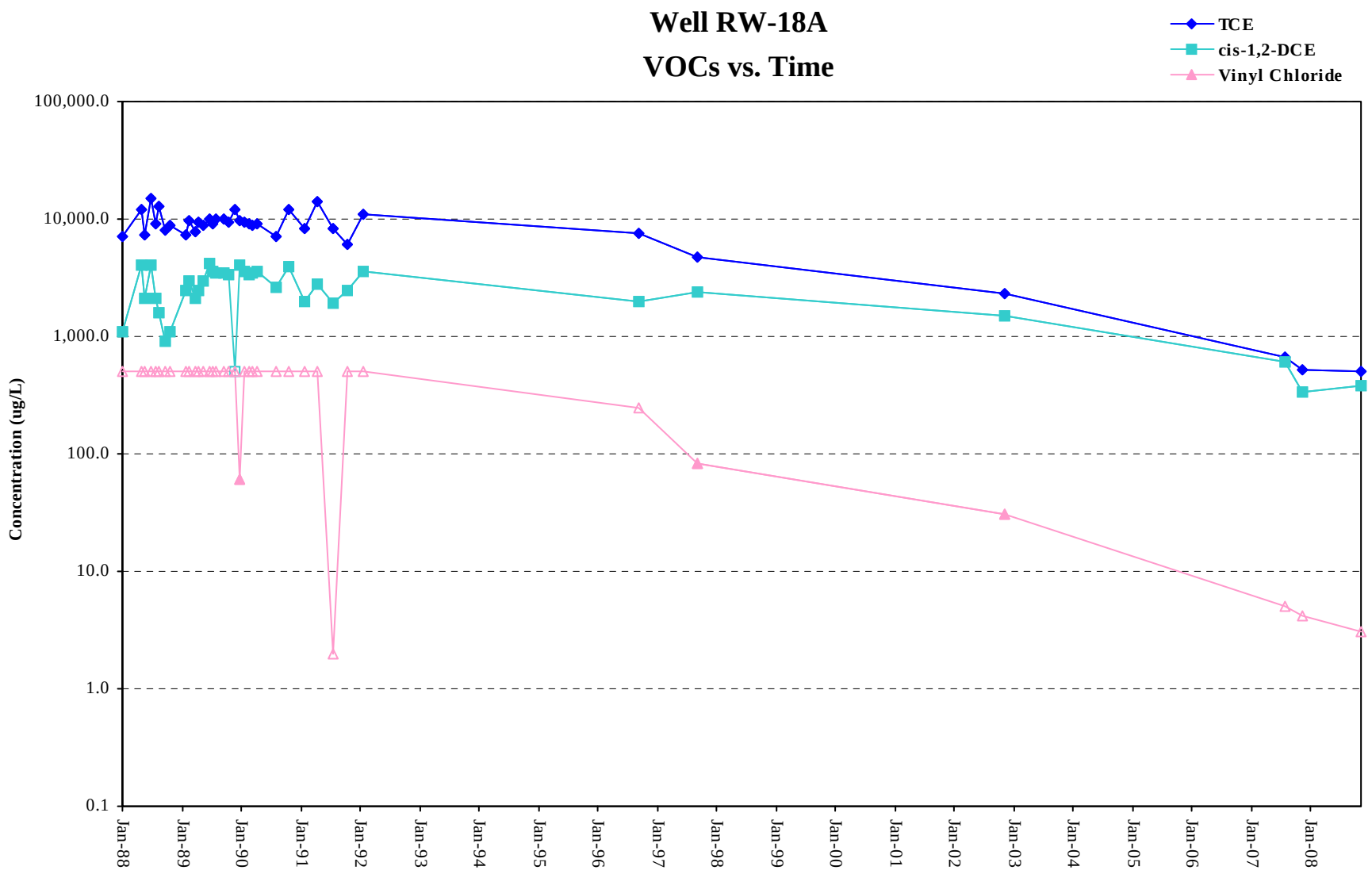
Weiss Associates

Well RW-18A
VOCs vs. Time



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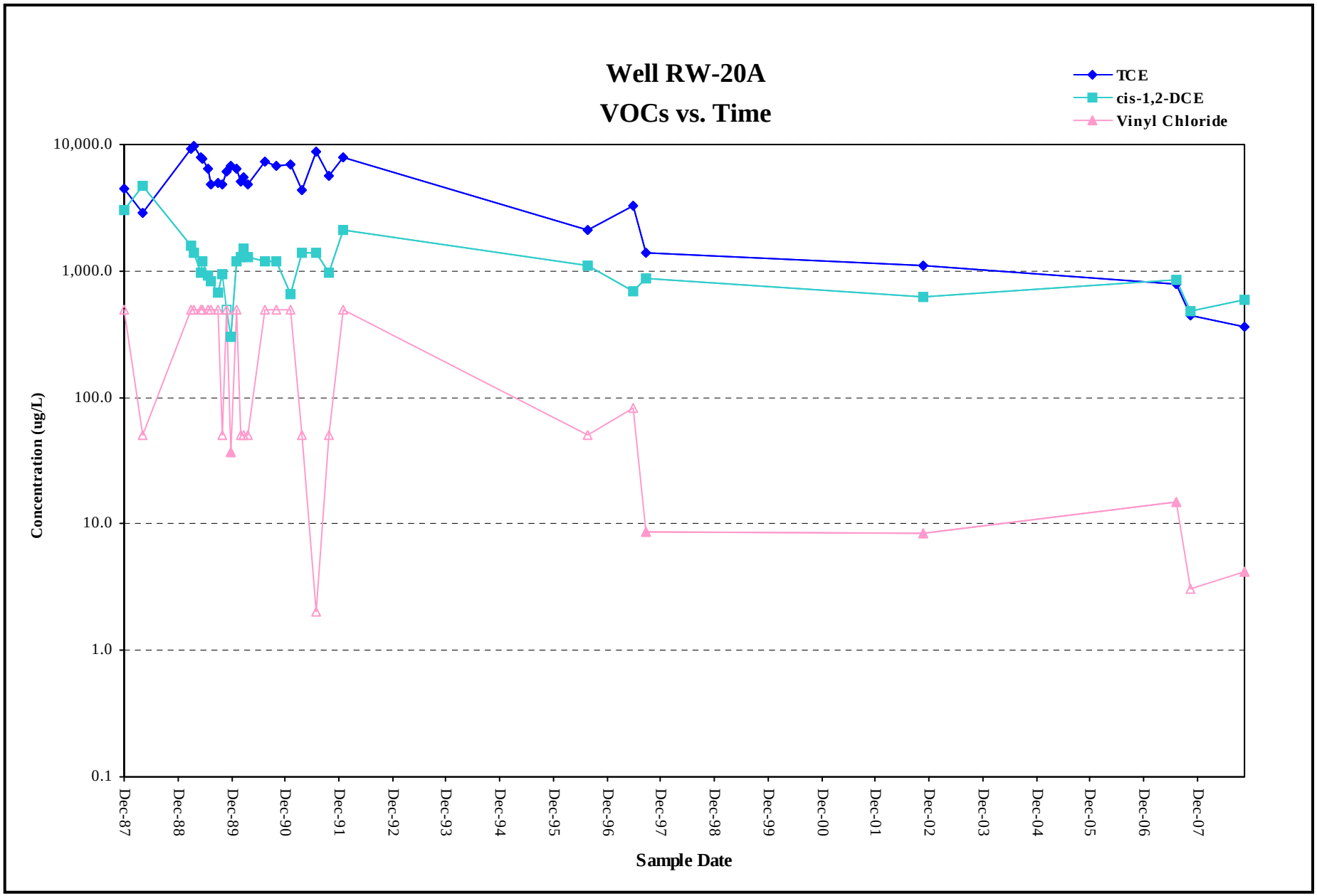
Weiss Associates



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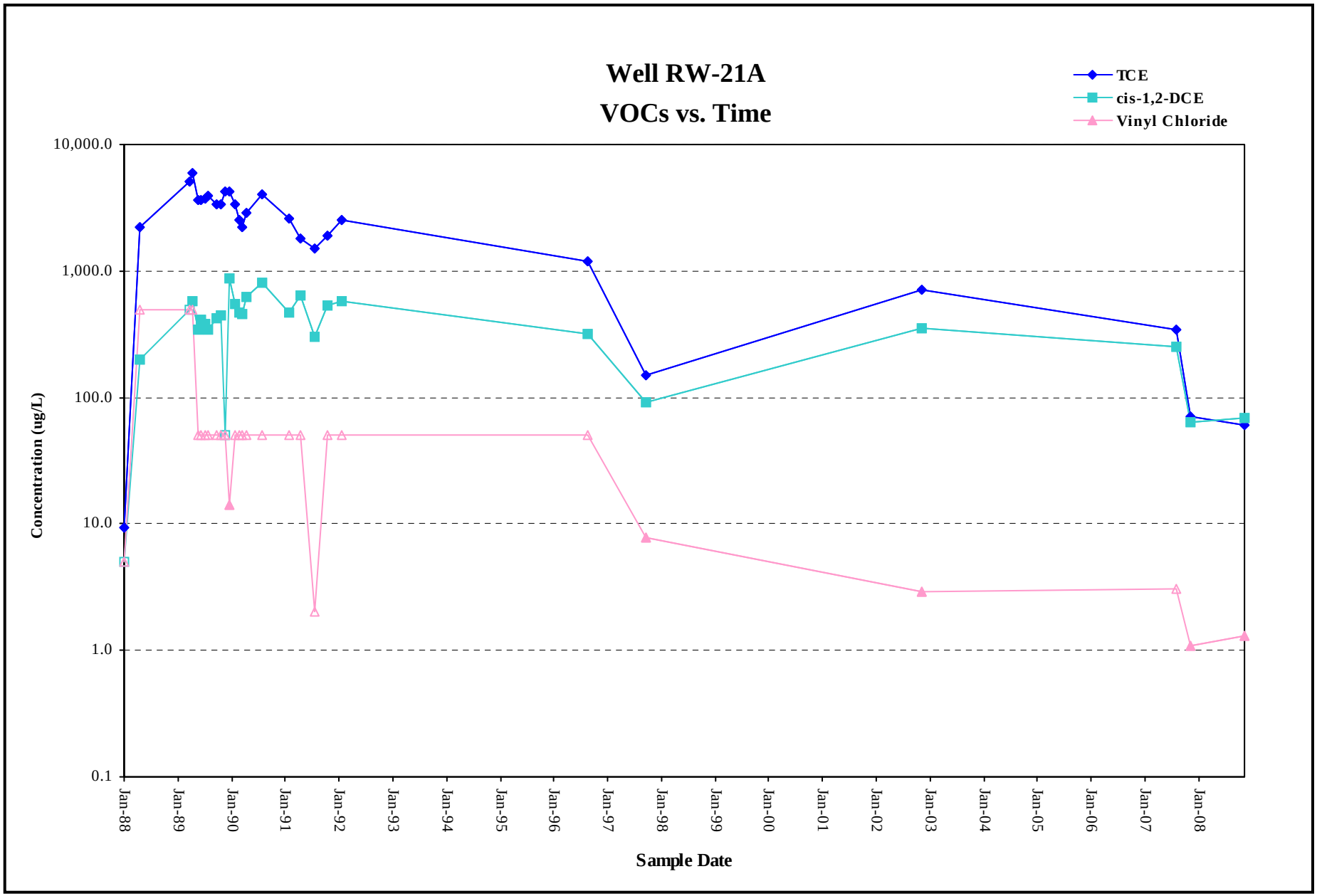
Weiss Associates



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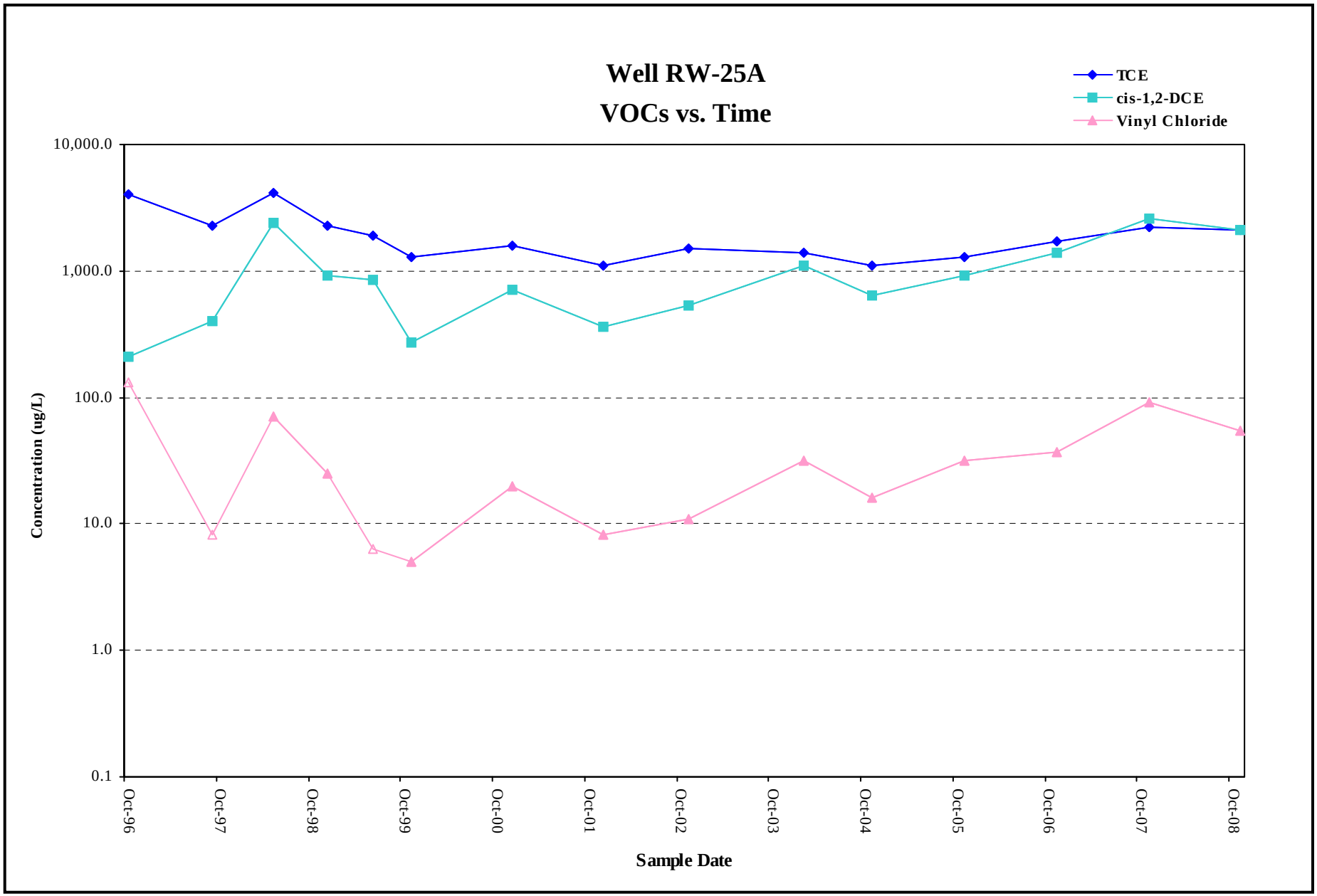
Weiss Associates



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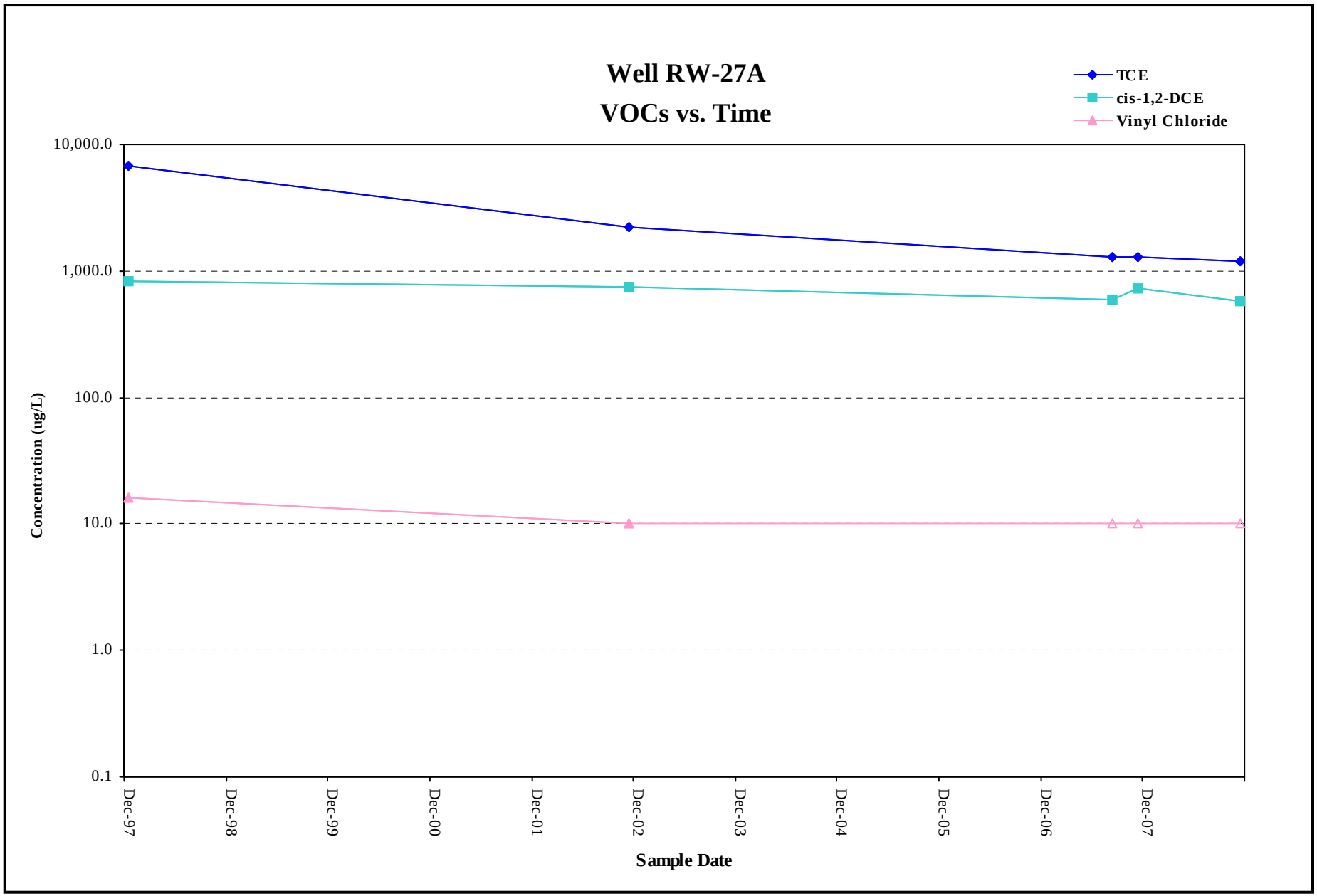
Printed: 6/4/2009 5:05:34 PM

Weiss Associates

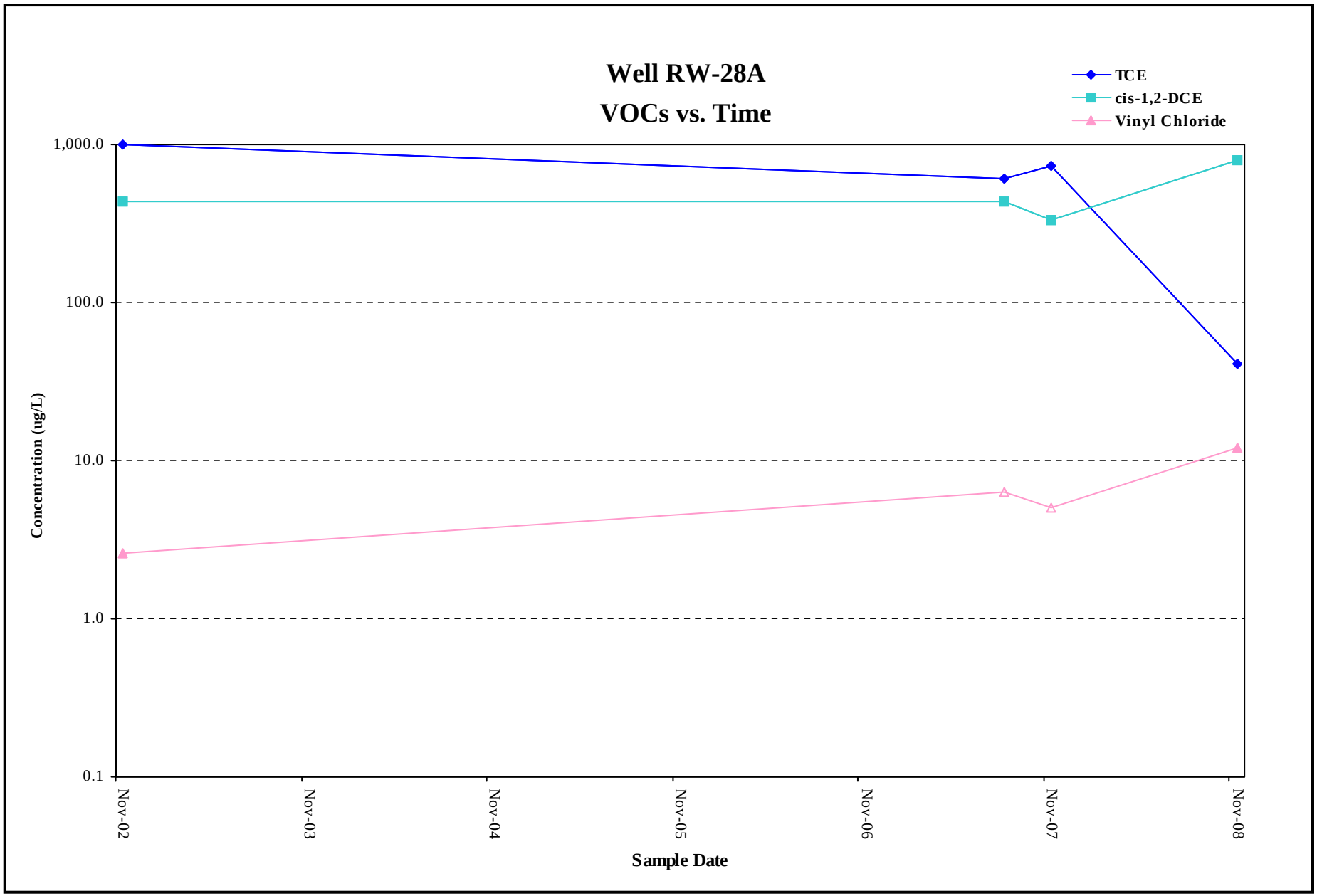


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:36 PM

Weiss Associates



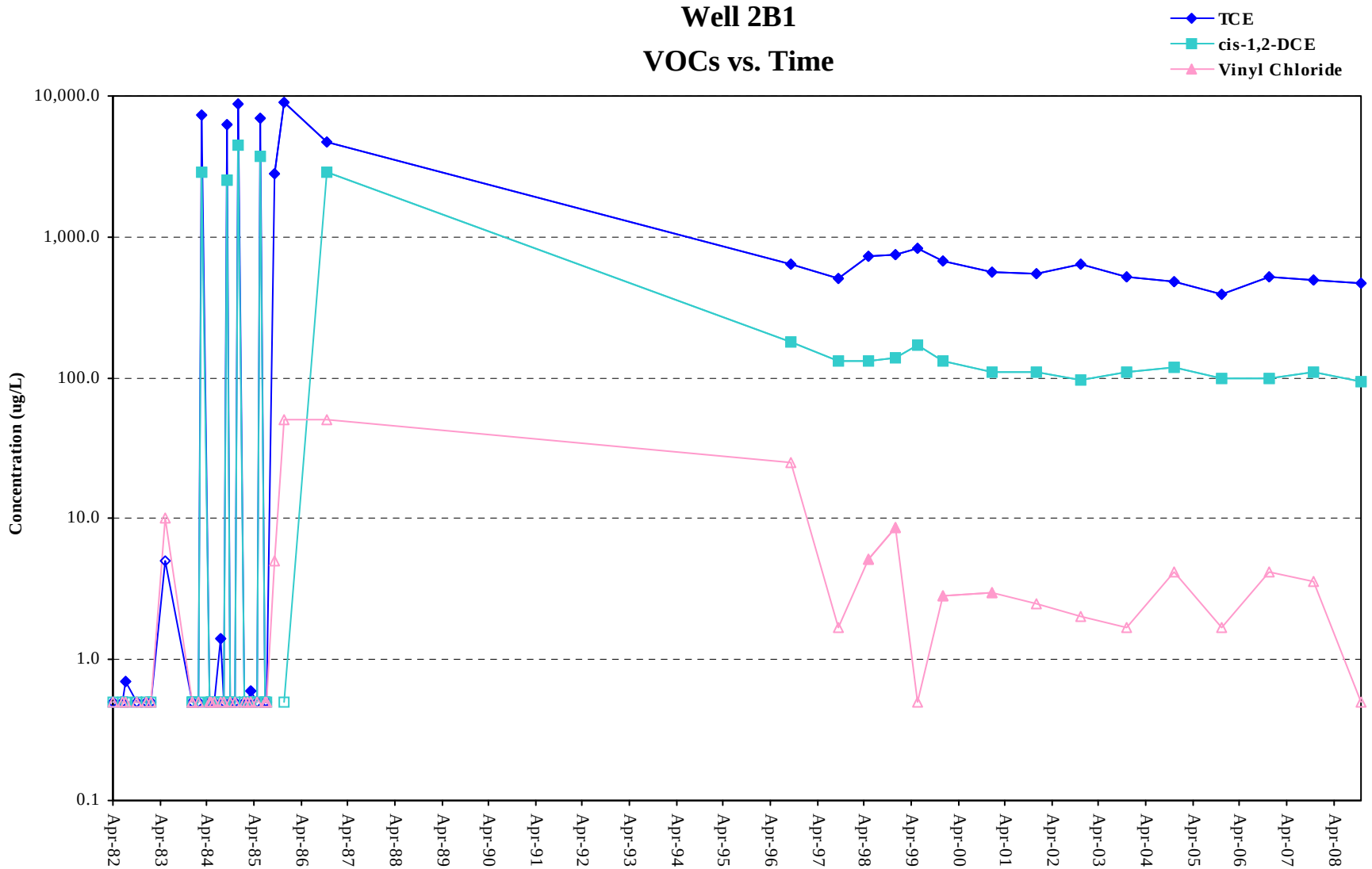
Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:37 PM

Weiss Associates

Well 2B1
VOCs vs. Time

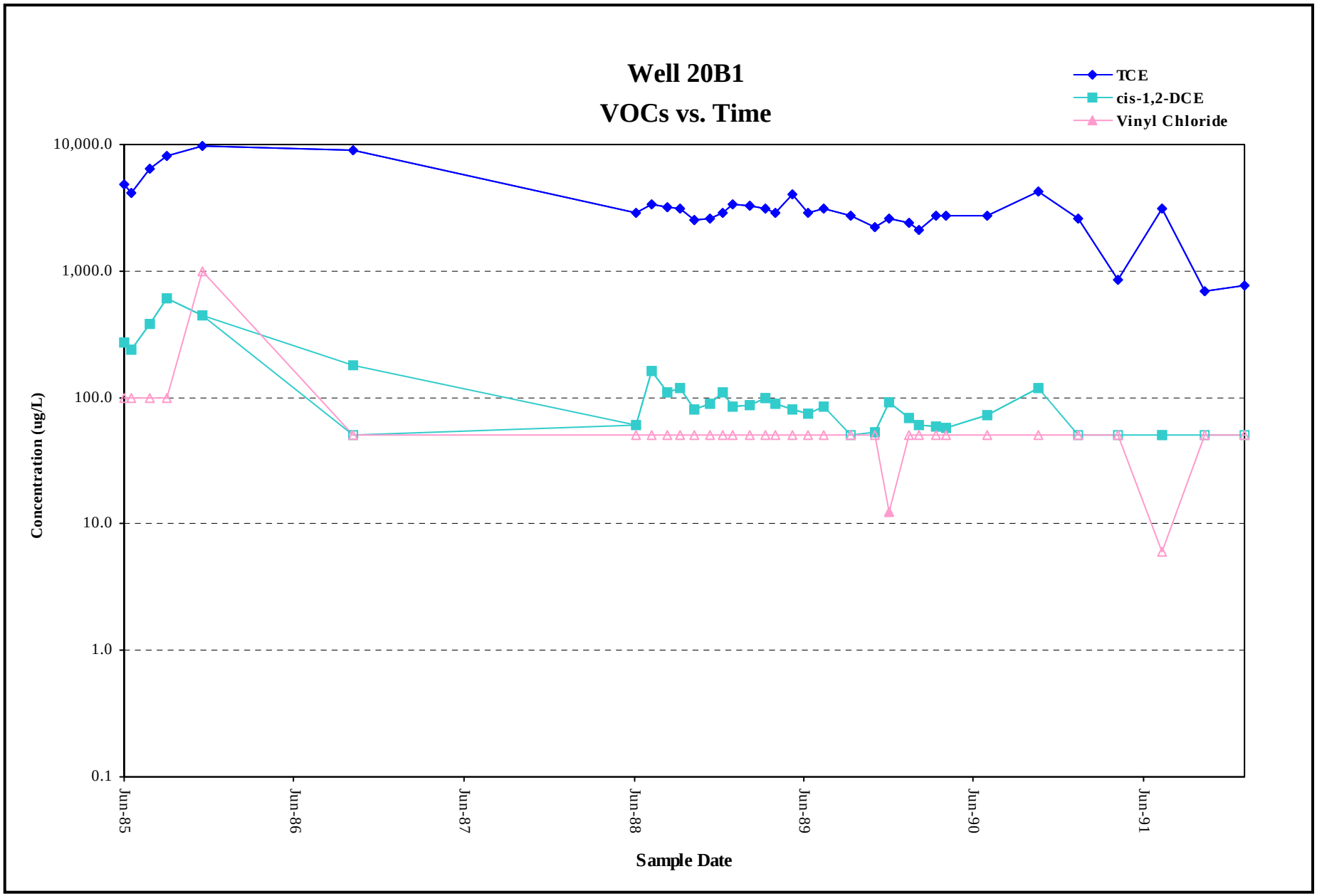


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:39 PM

Weiss Associates

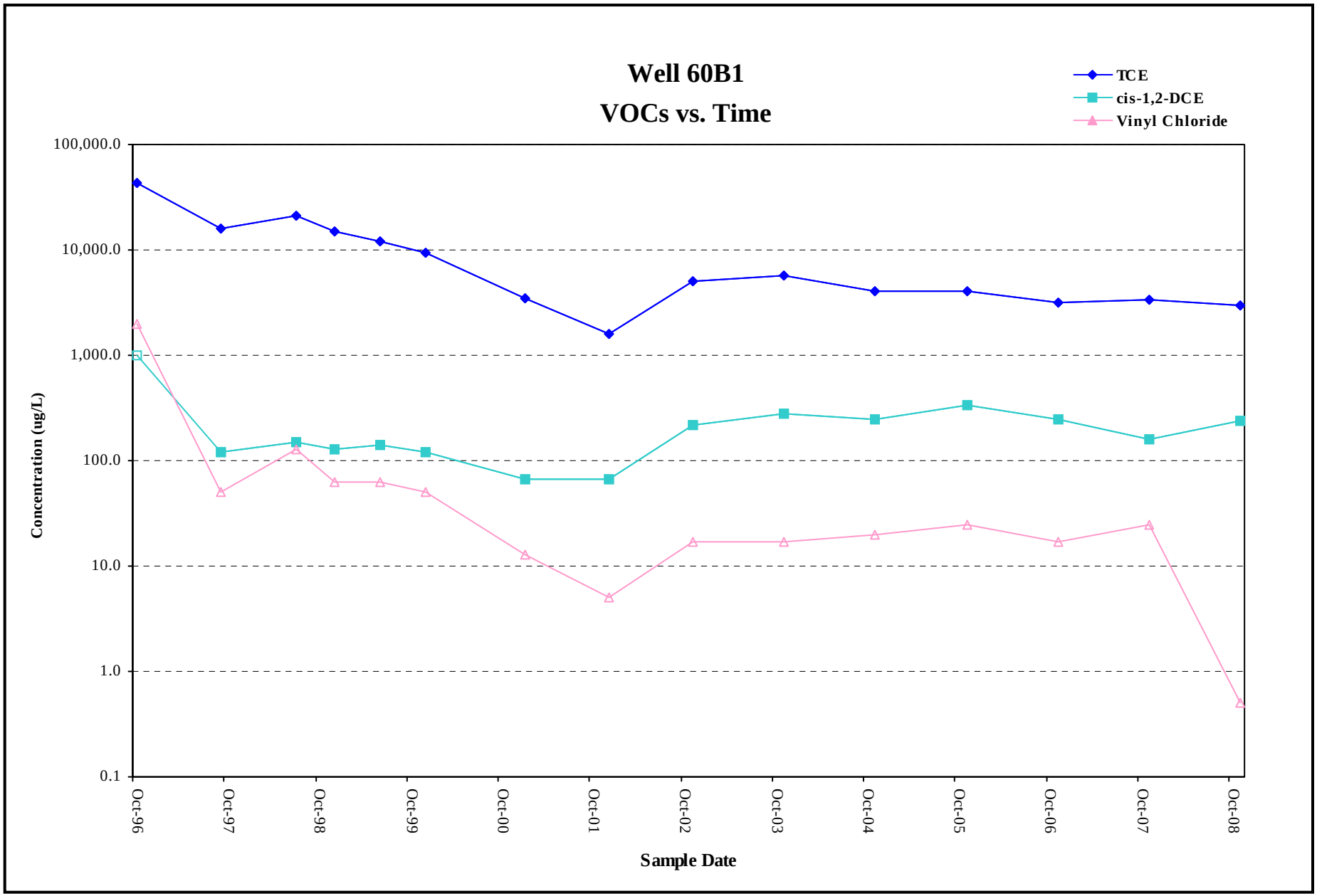


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:41 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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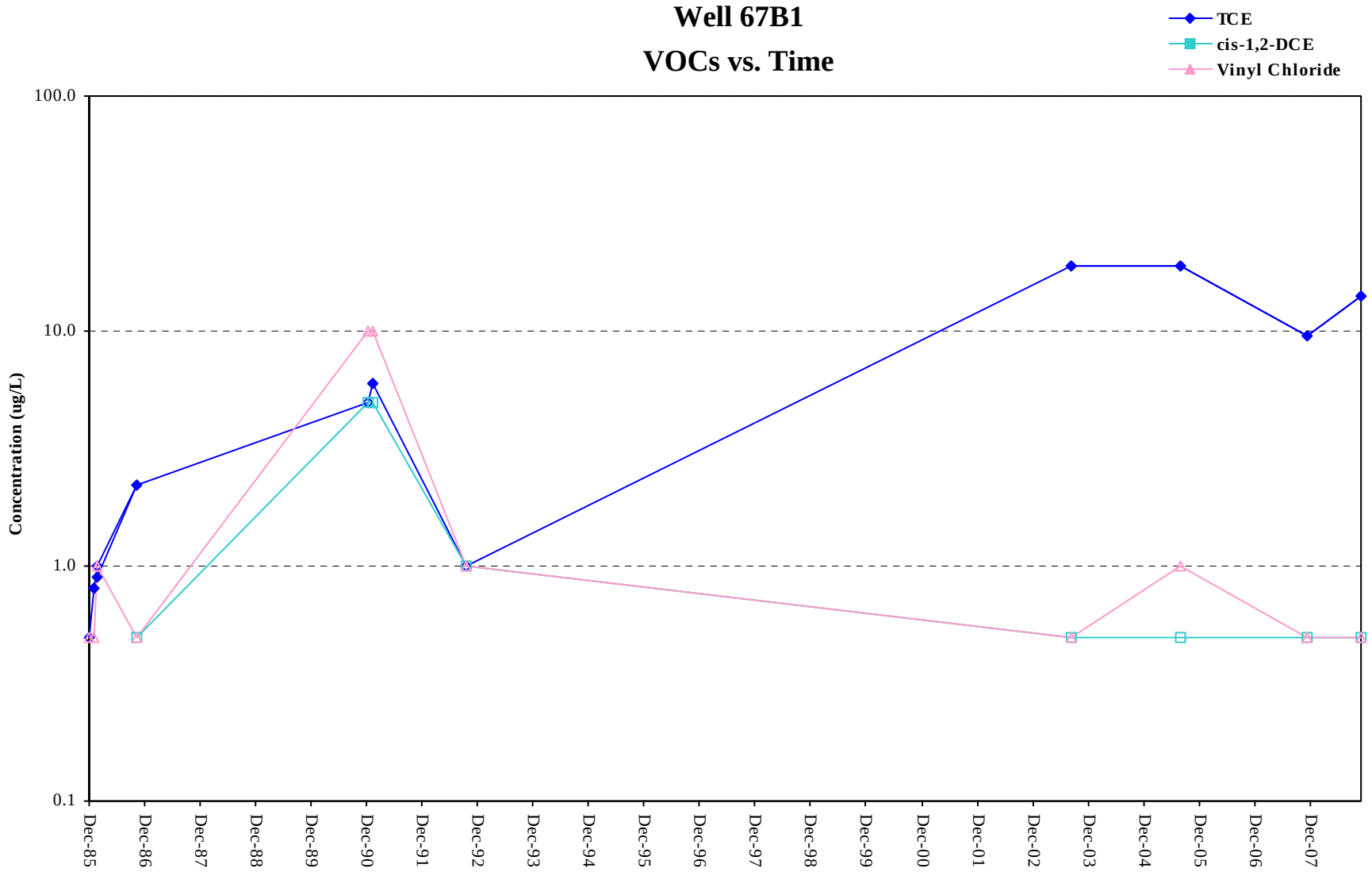
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:42 PM

Weiss Associates

Well 67B1
VOCs vs. Time

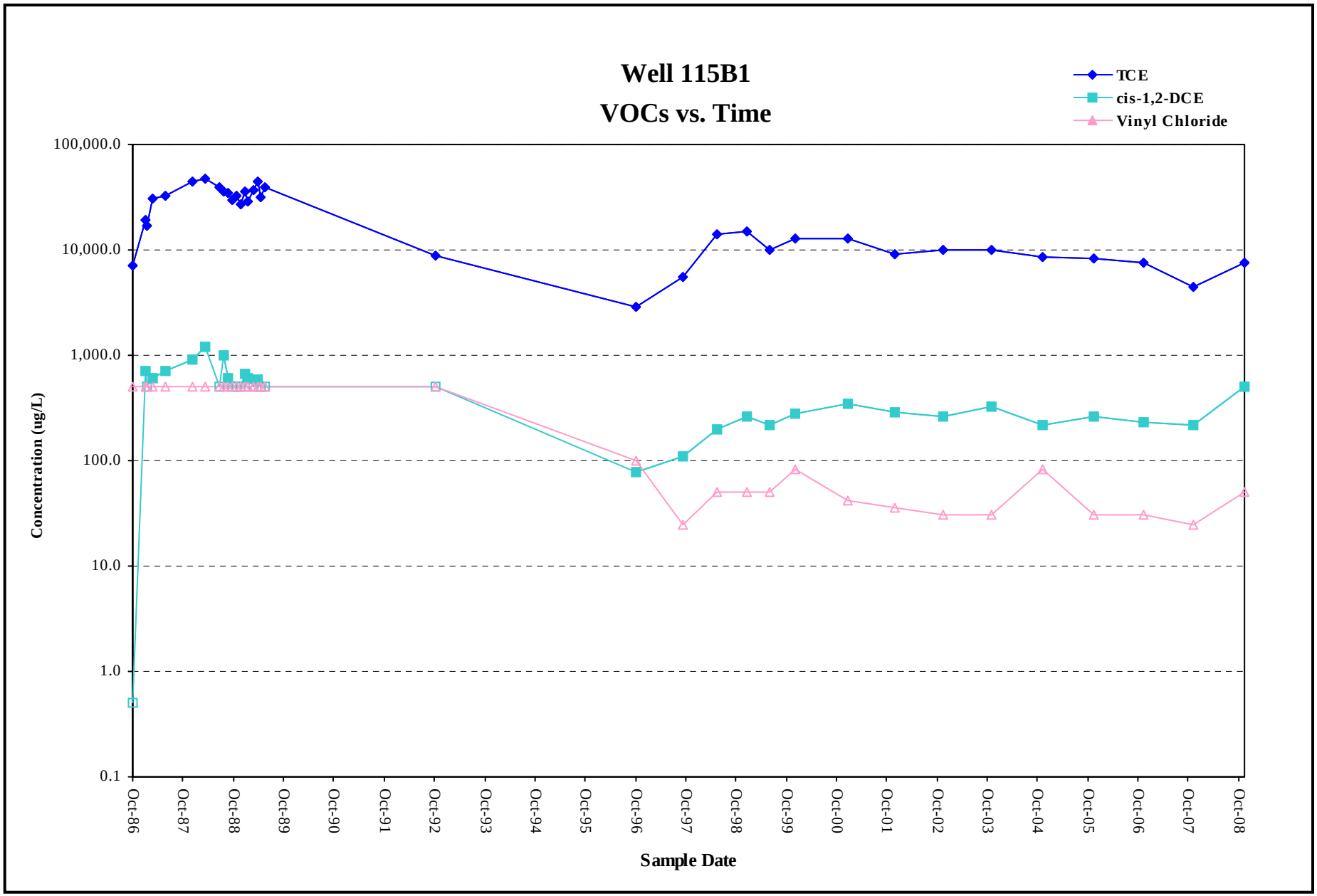


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:44 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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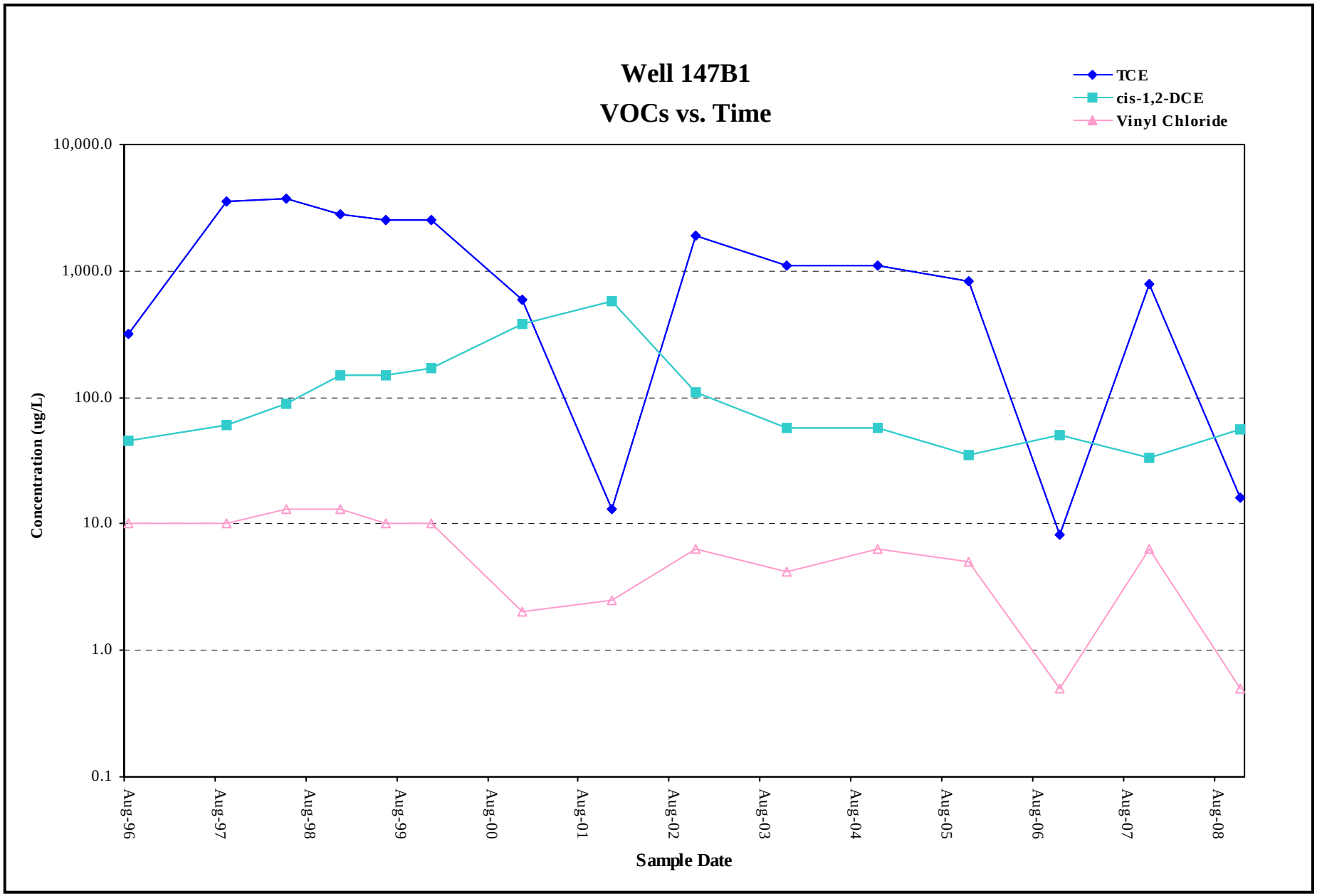
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:45 PM

Weiss Associates



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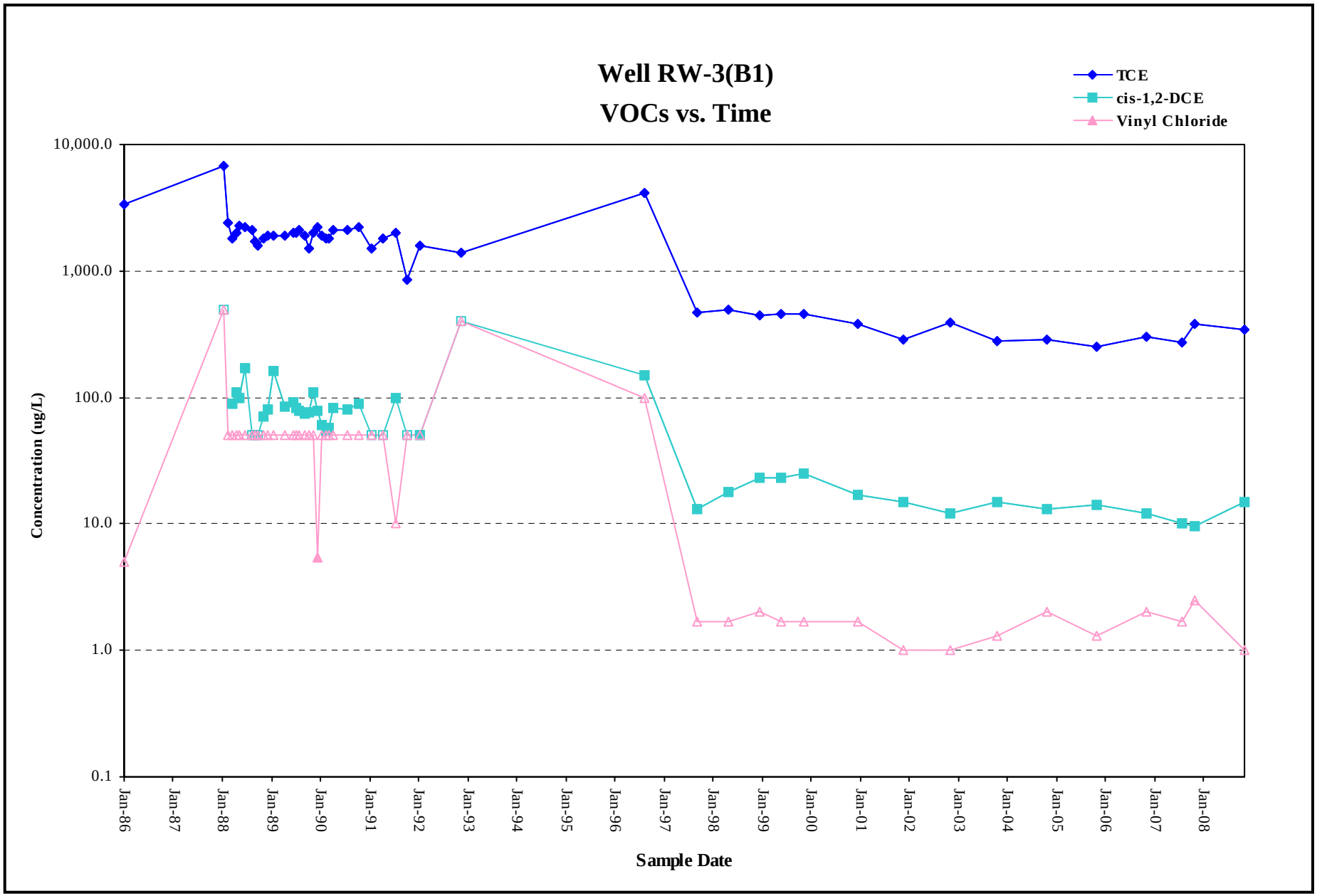
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:47 PM

Weiss Associates

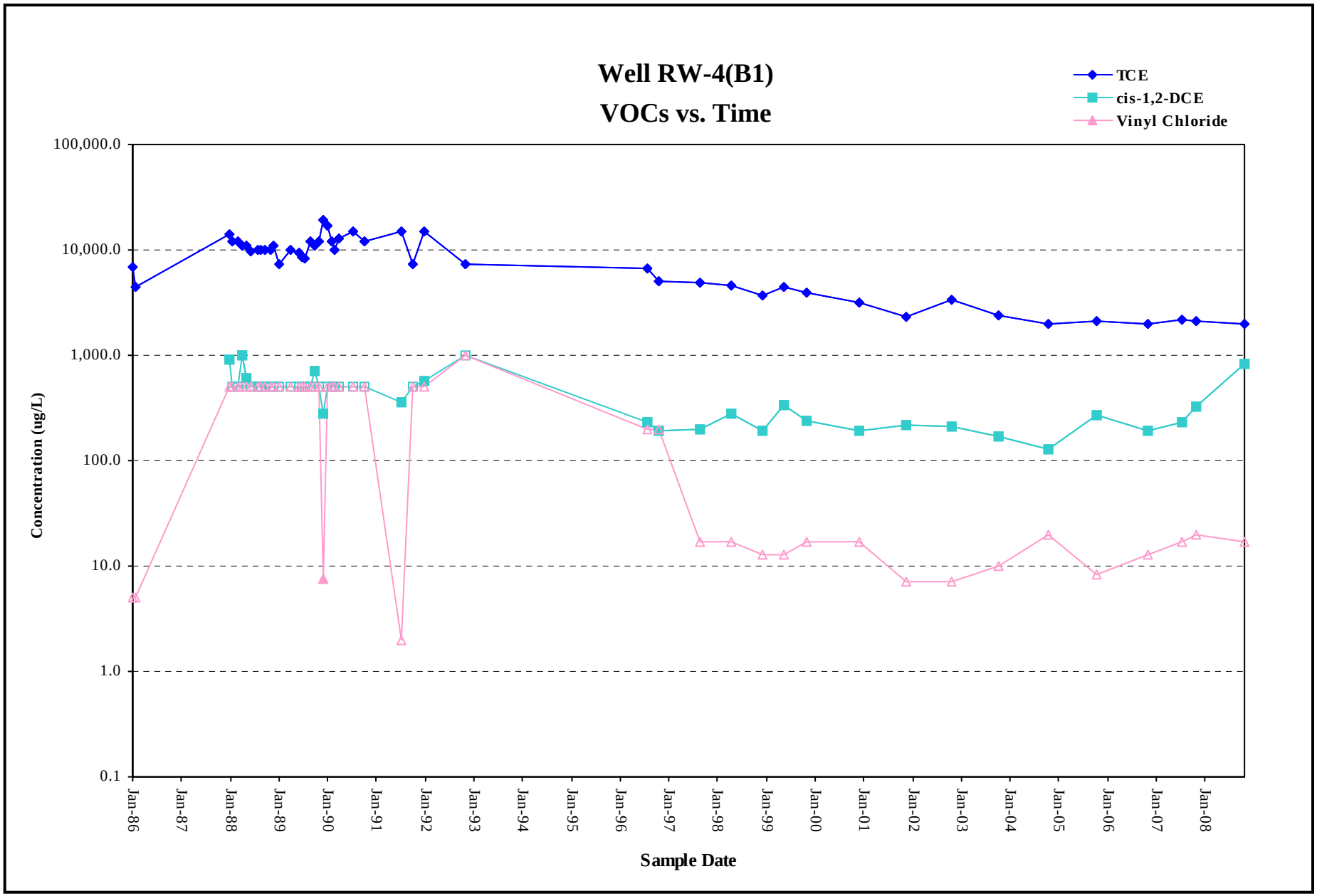


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:48 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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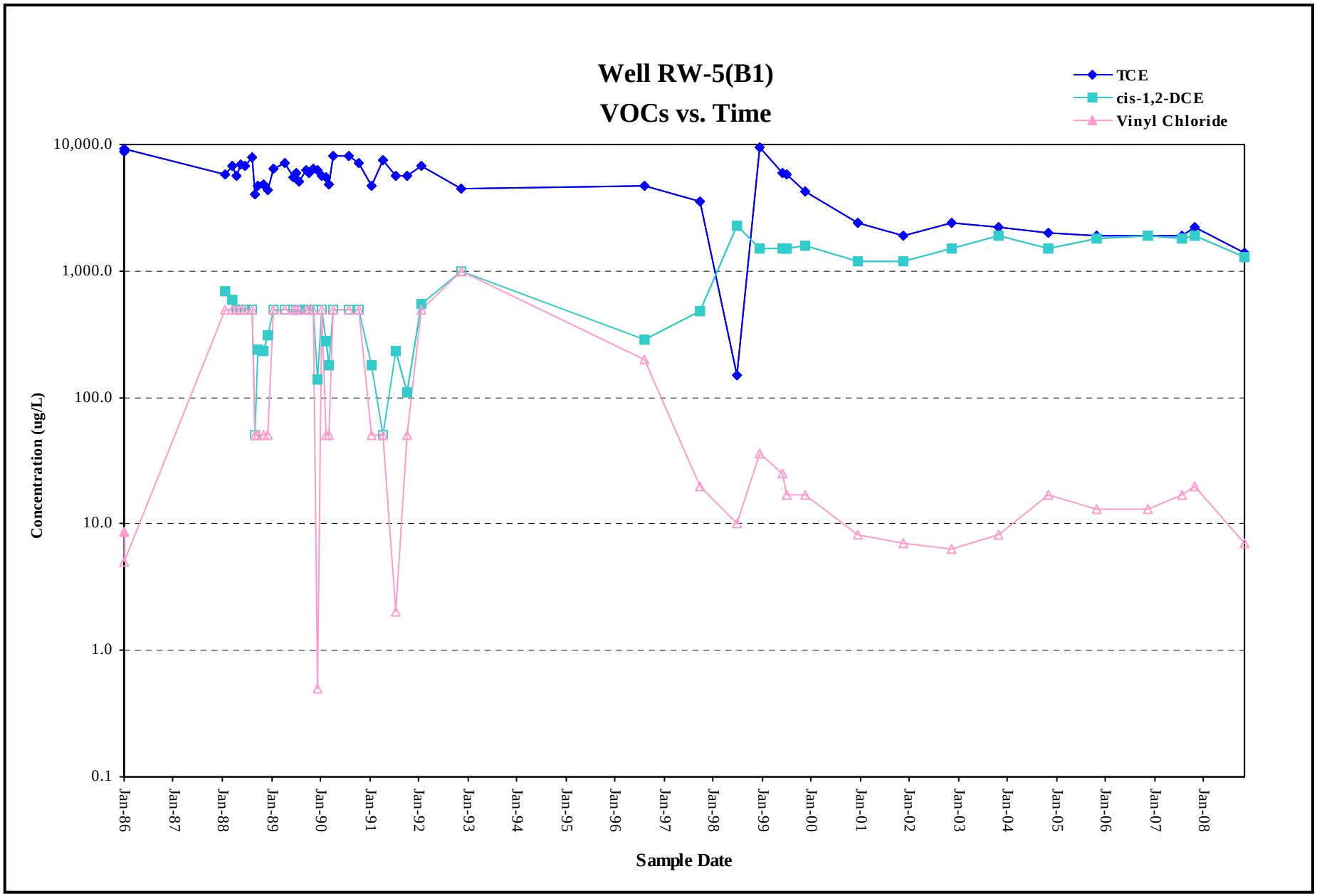
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:50 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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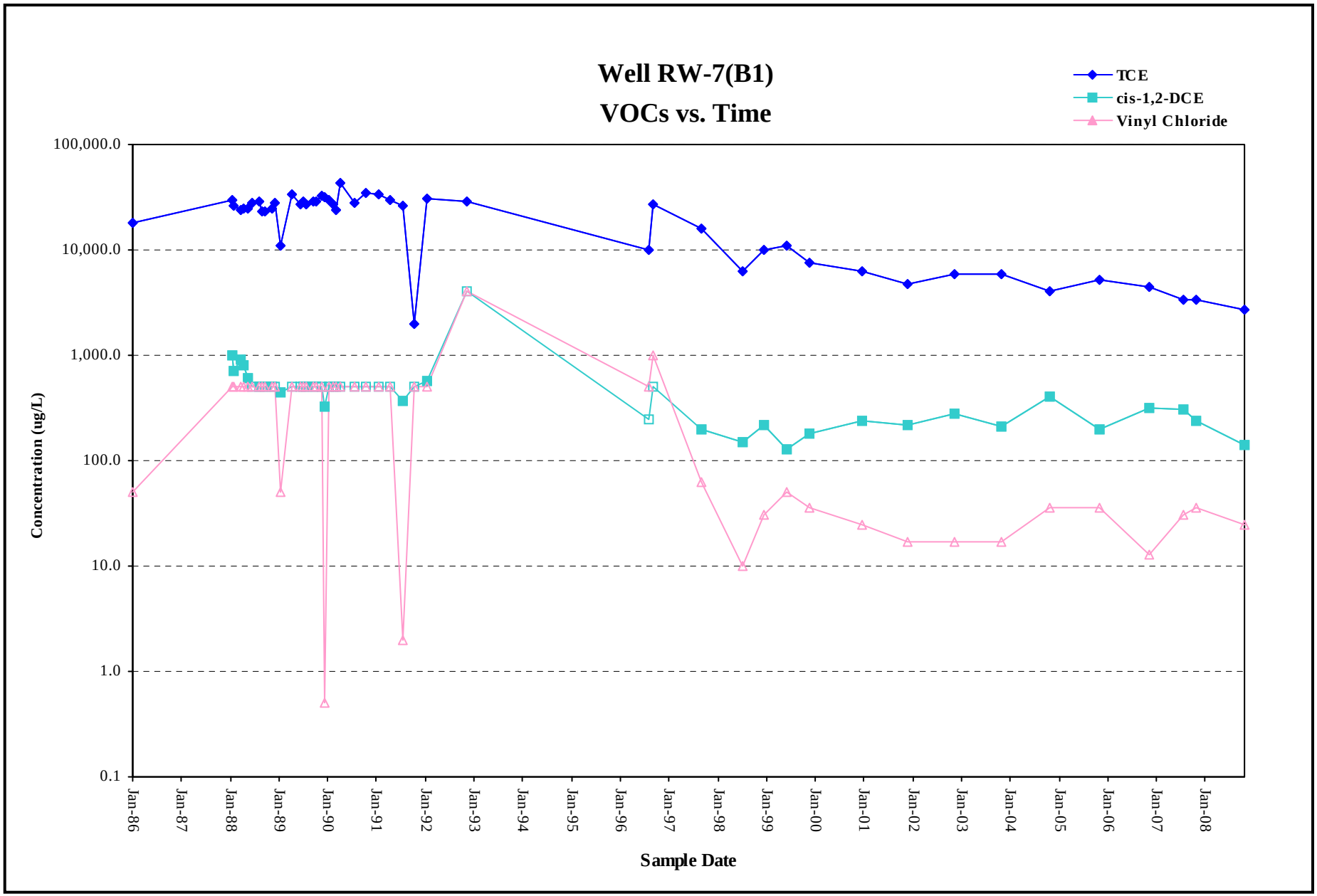
Printed: 6/4/2009 5:05:51 PM

Weiss Associates

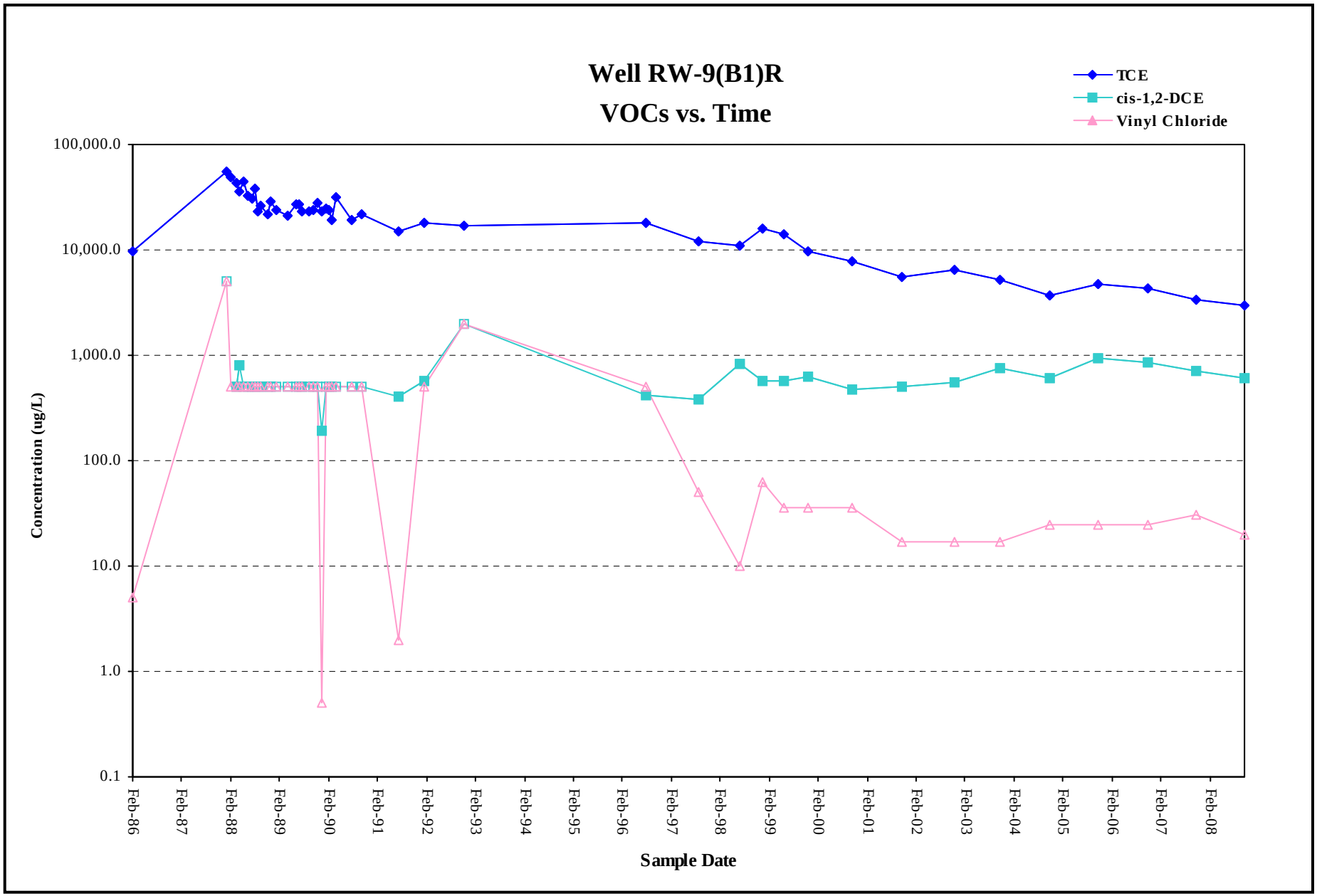


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:53 PM

Weiss Associates



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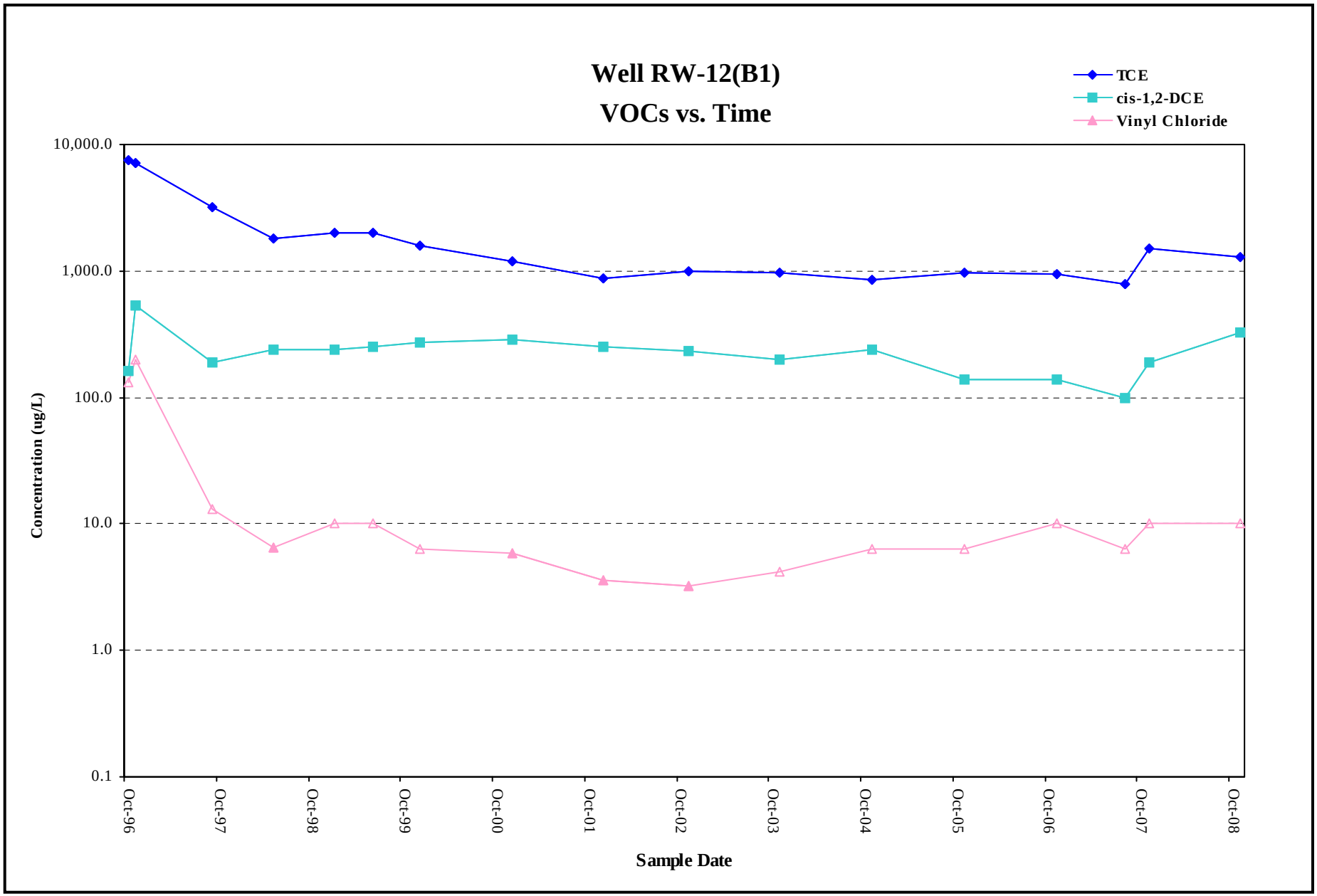
Weiss Associates



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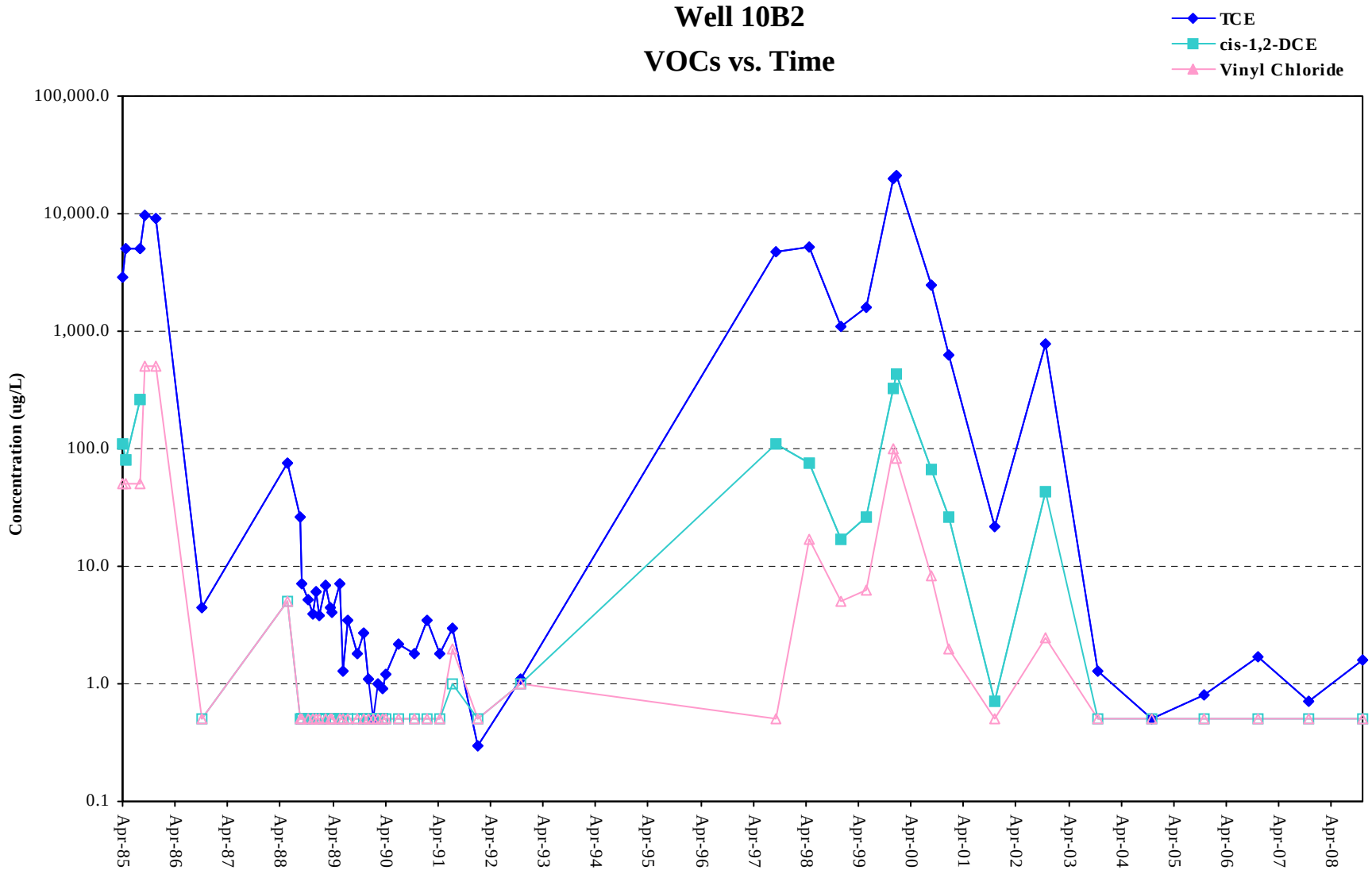
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:56 PM

Weiss Associates

Well 10B2
VOCs vs. Time



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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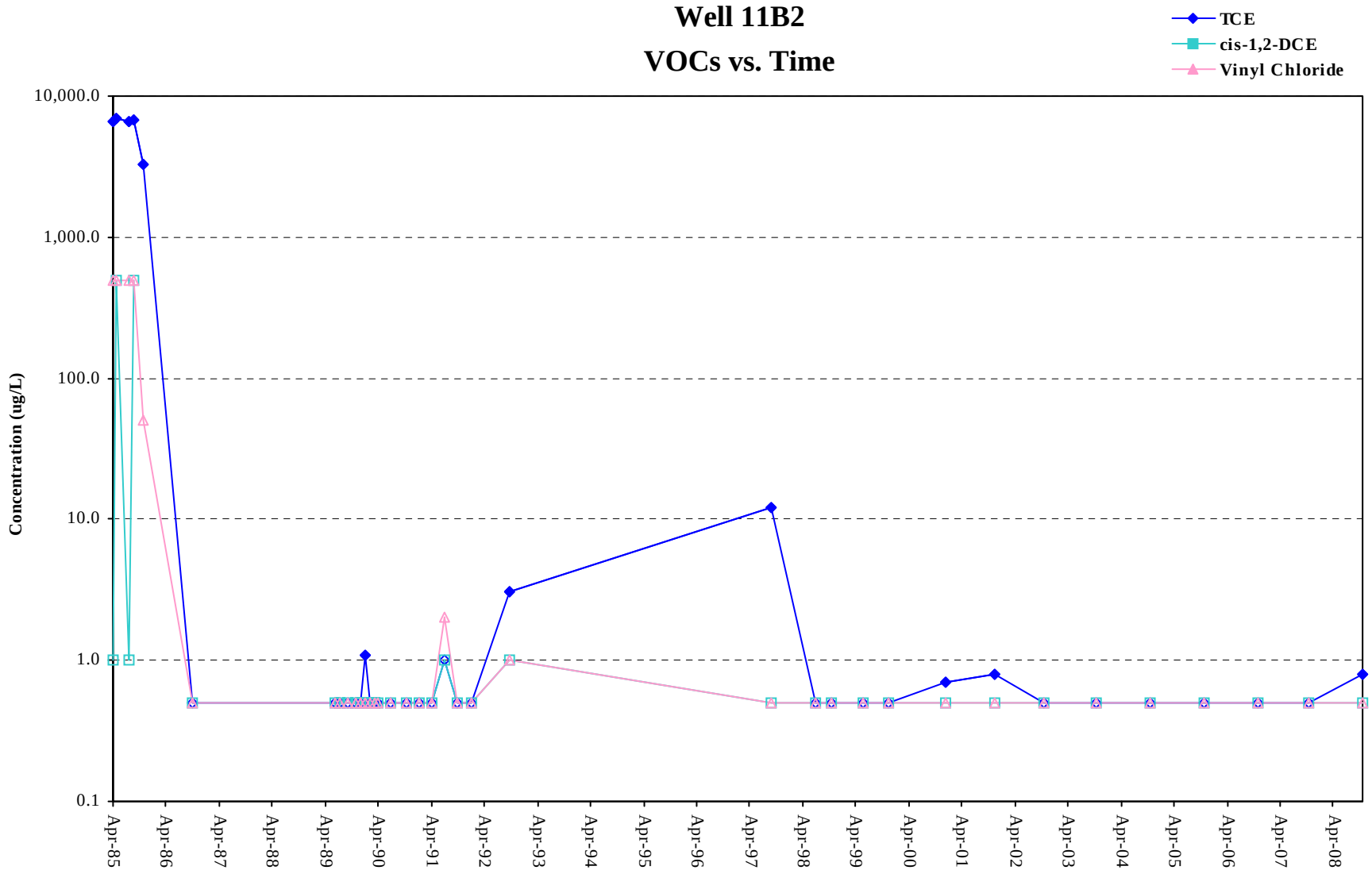
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:58 PM

Weiss Associates

Well 11B2
VOCs vs. Time



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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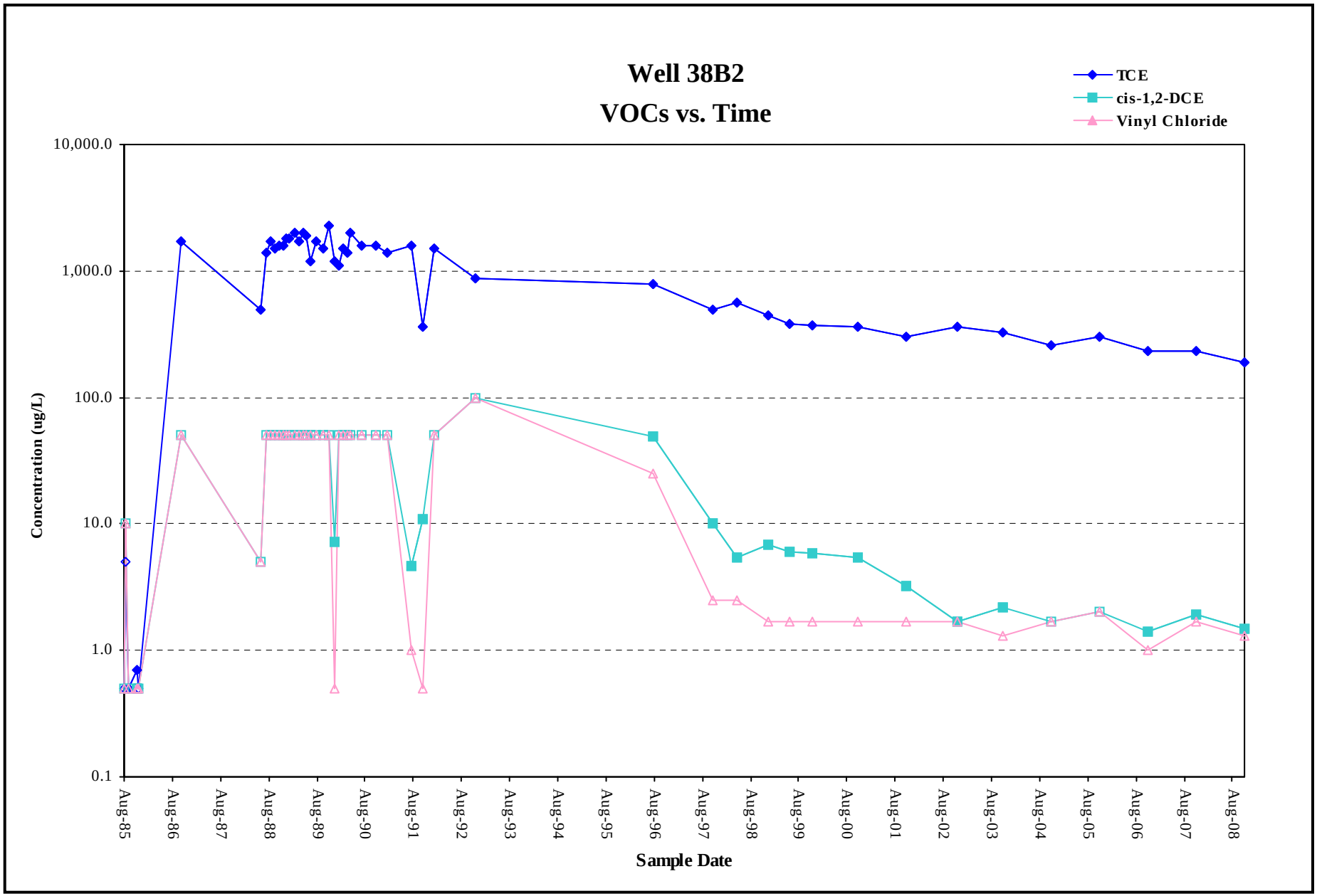
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:05:59 PM

Weiss Associates



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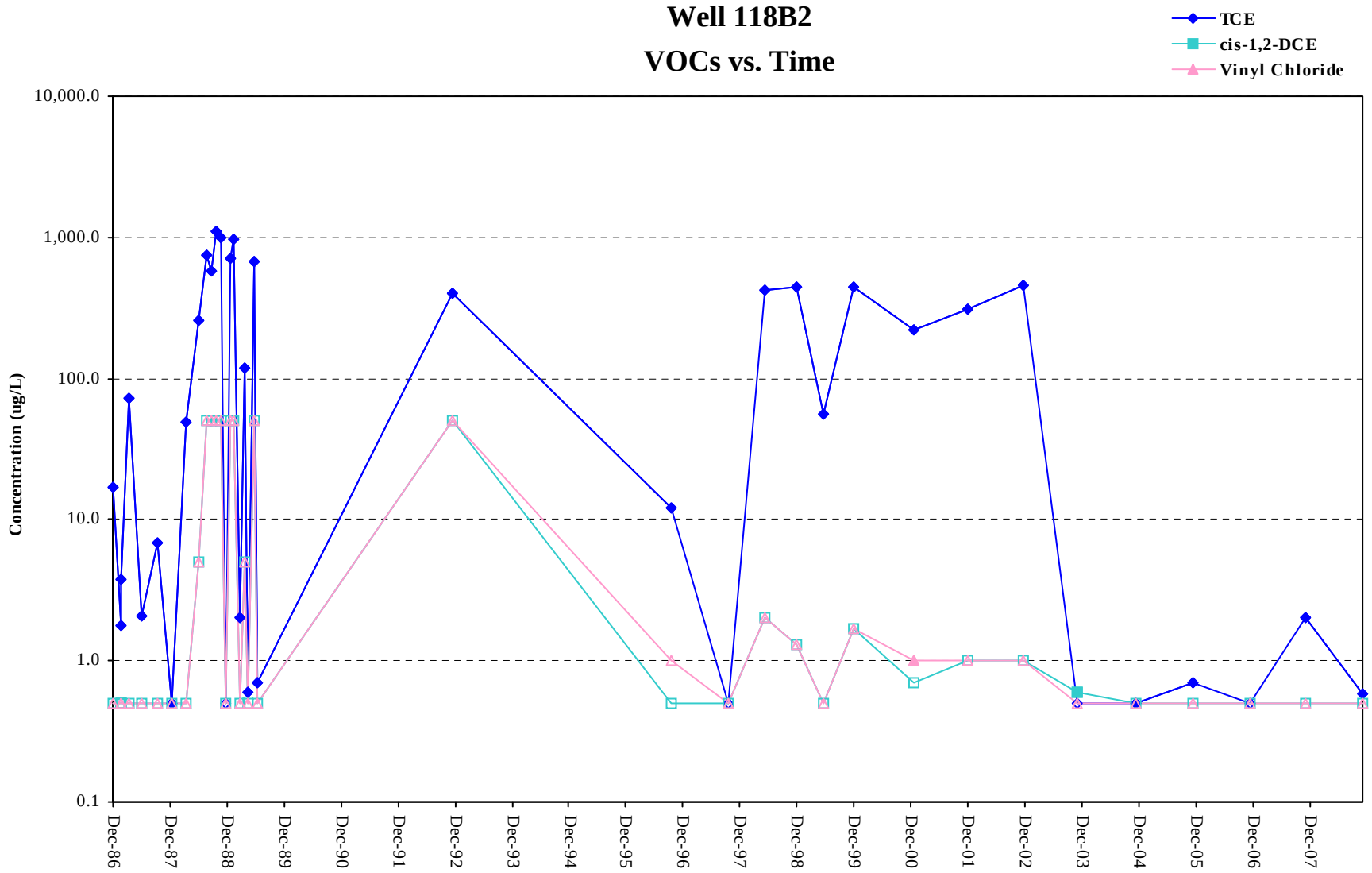
Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:06:01 PM

Weiss Associates

Well 118B2
VOCs vs. Time



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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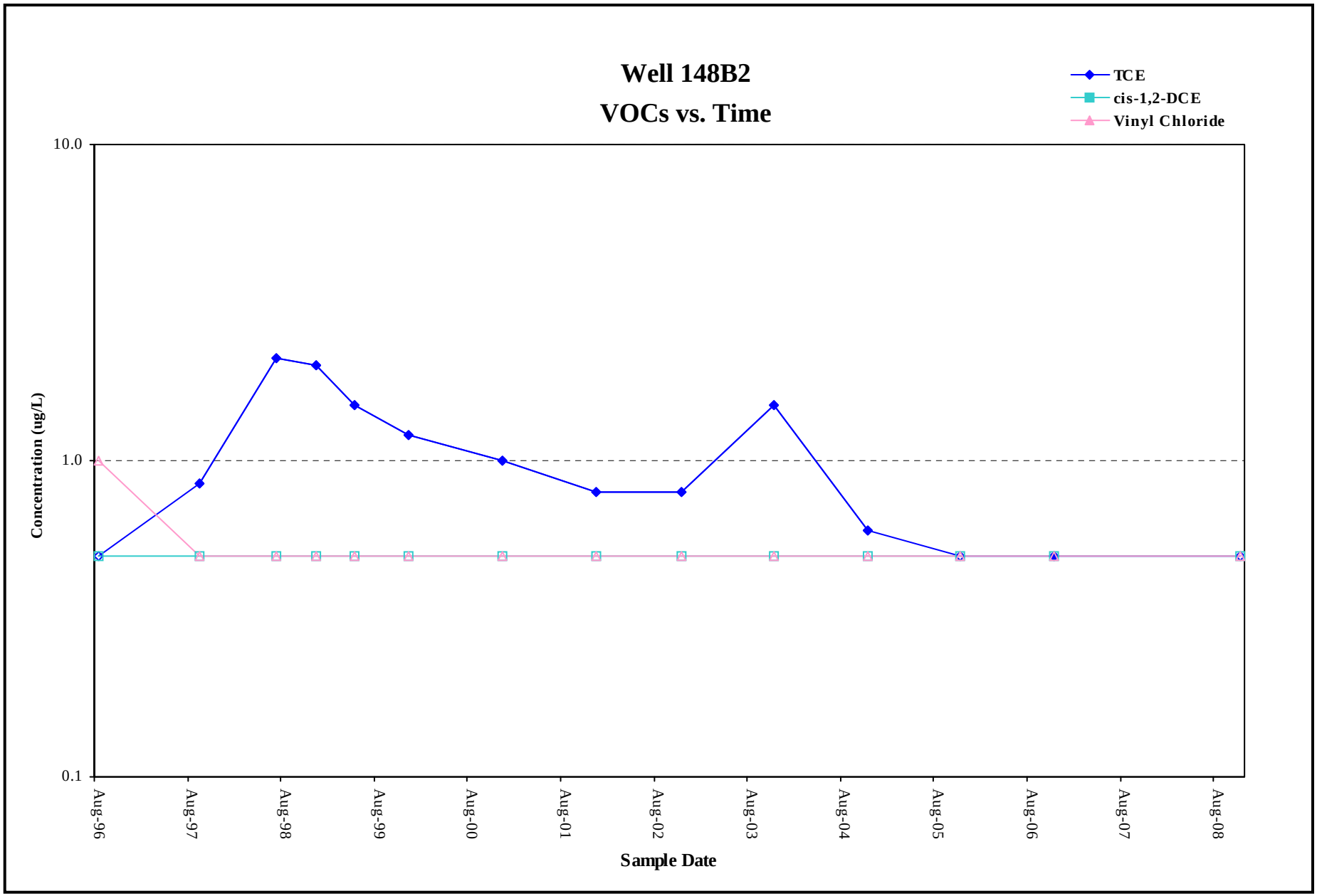
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:06:02 PM

Weiss Associates

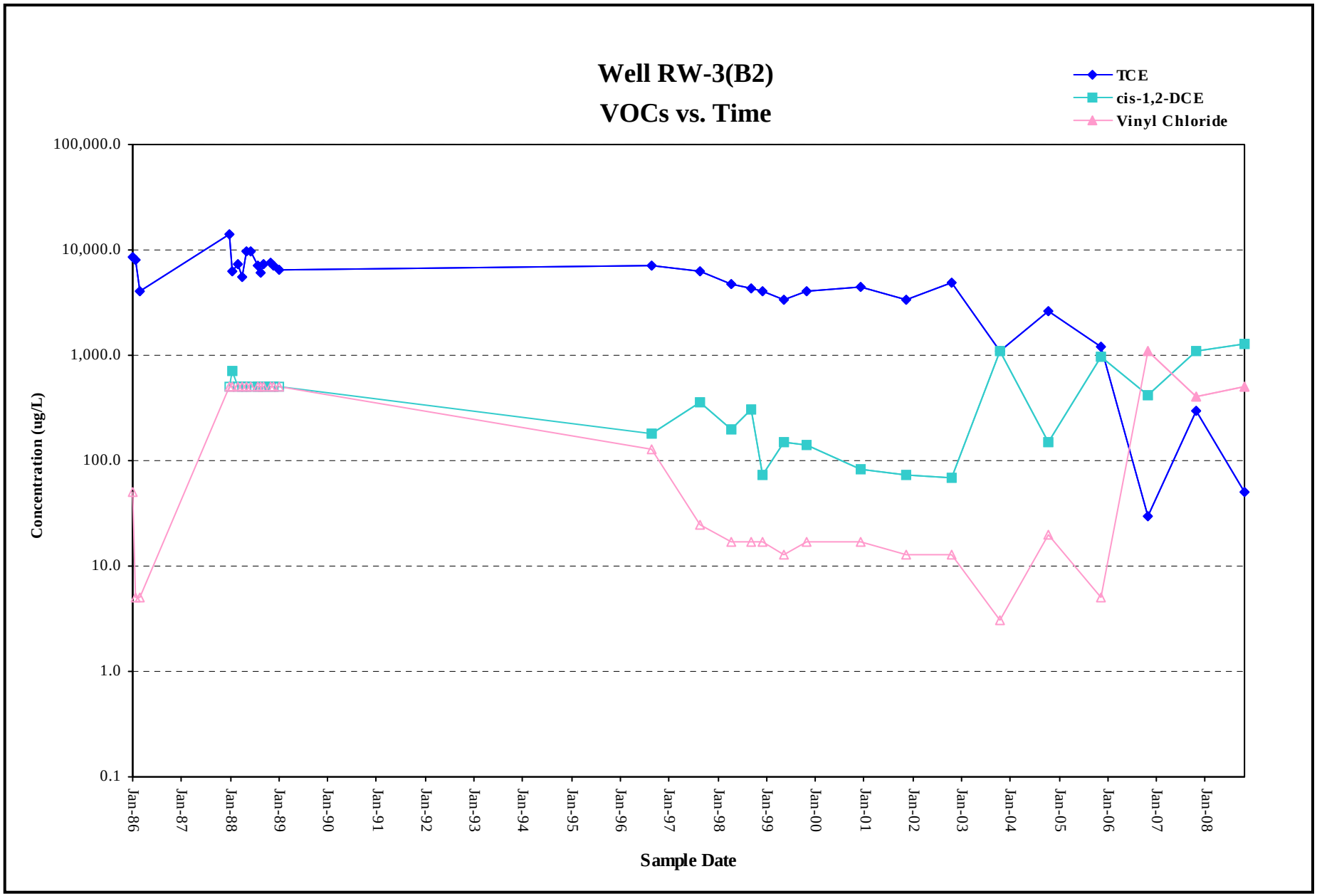


Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

Database: \\Weissfs01\data\WELLDATA\Schlumberger\Schlumberger.mdb
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:06:04 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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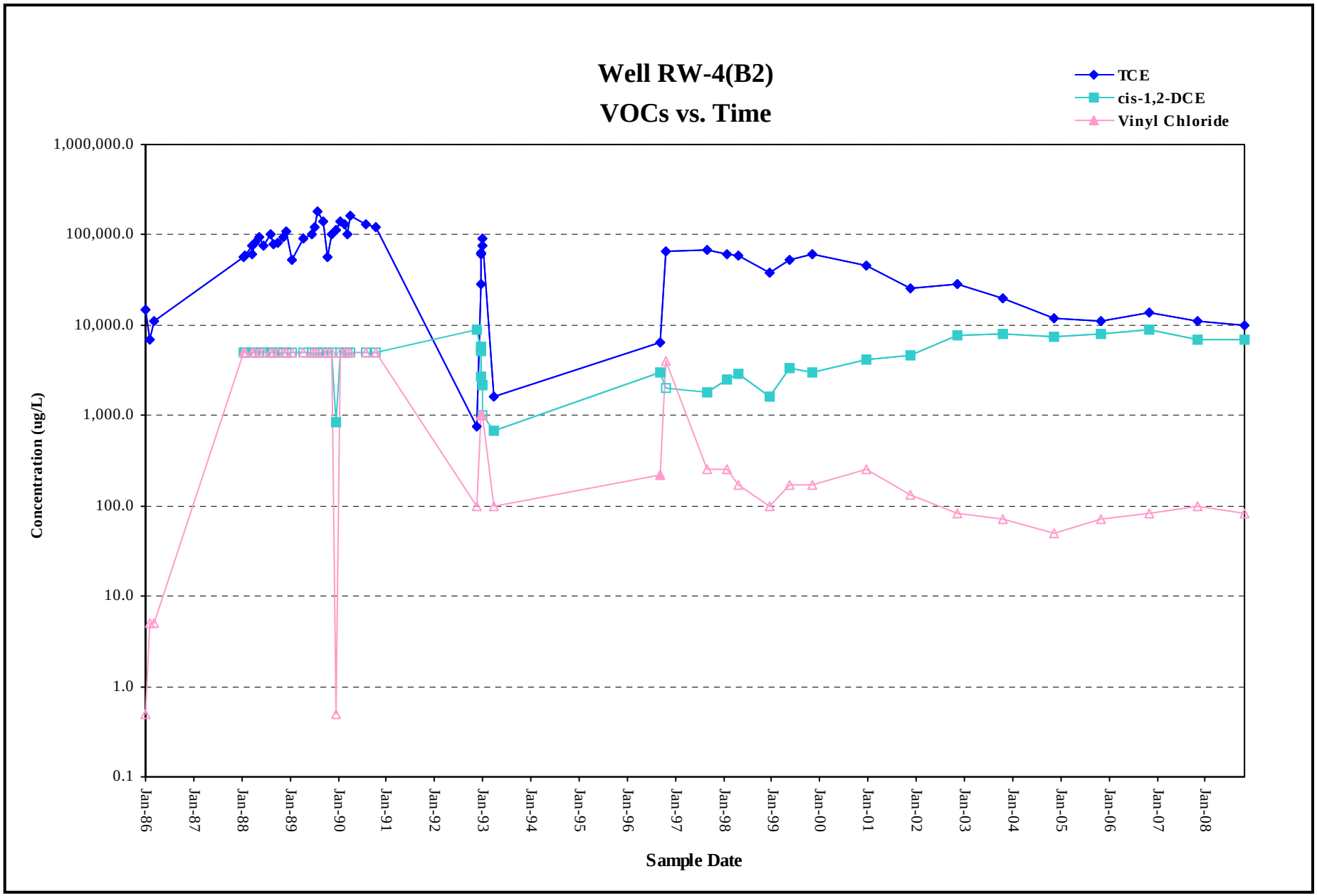
Printed: 6/4/2009 5:06:06 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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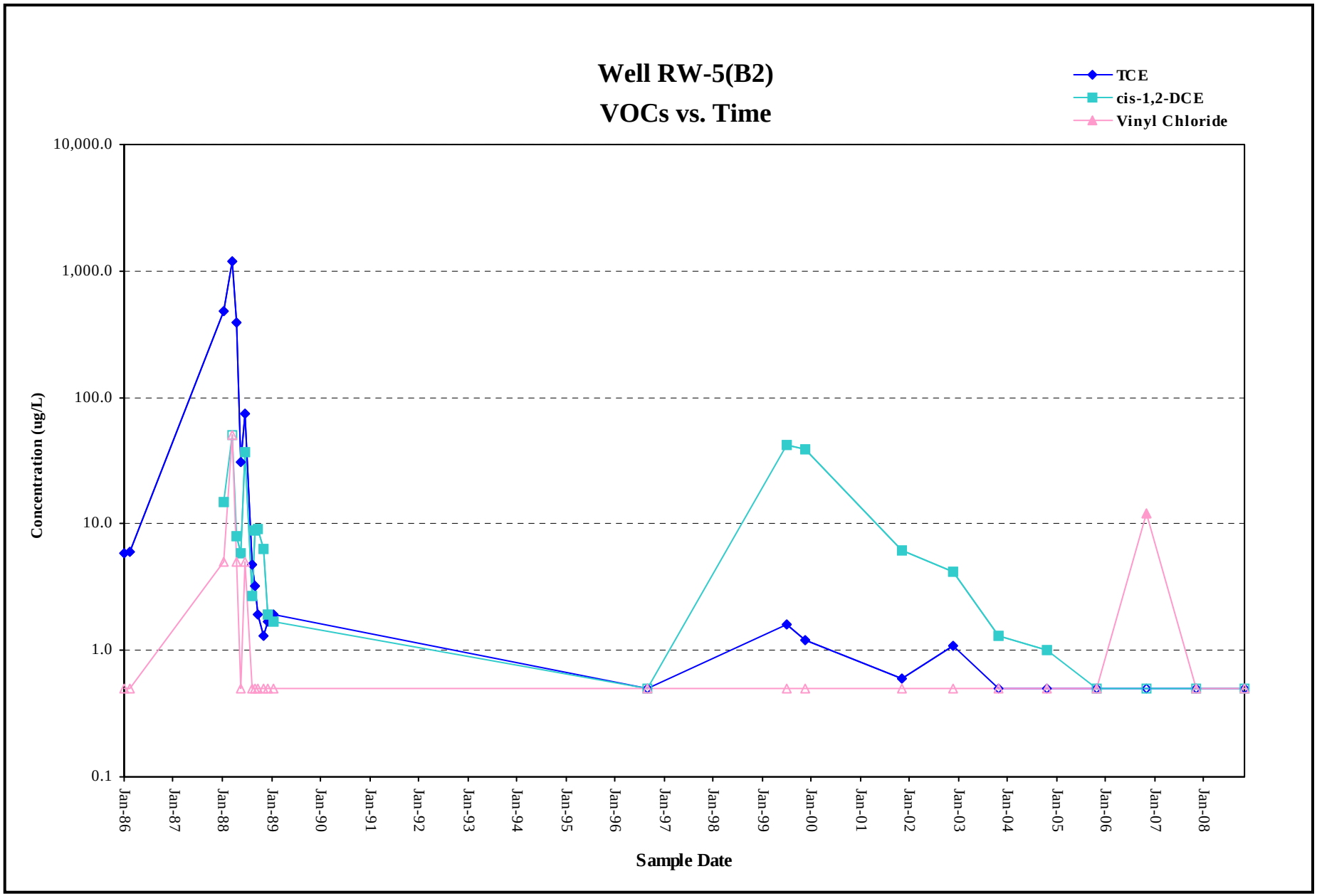
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:06:07 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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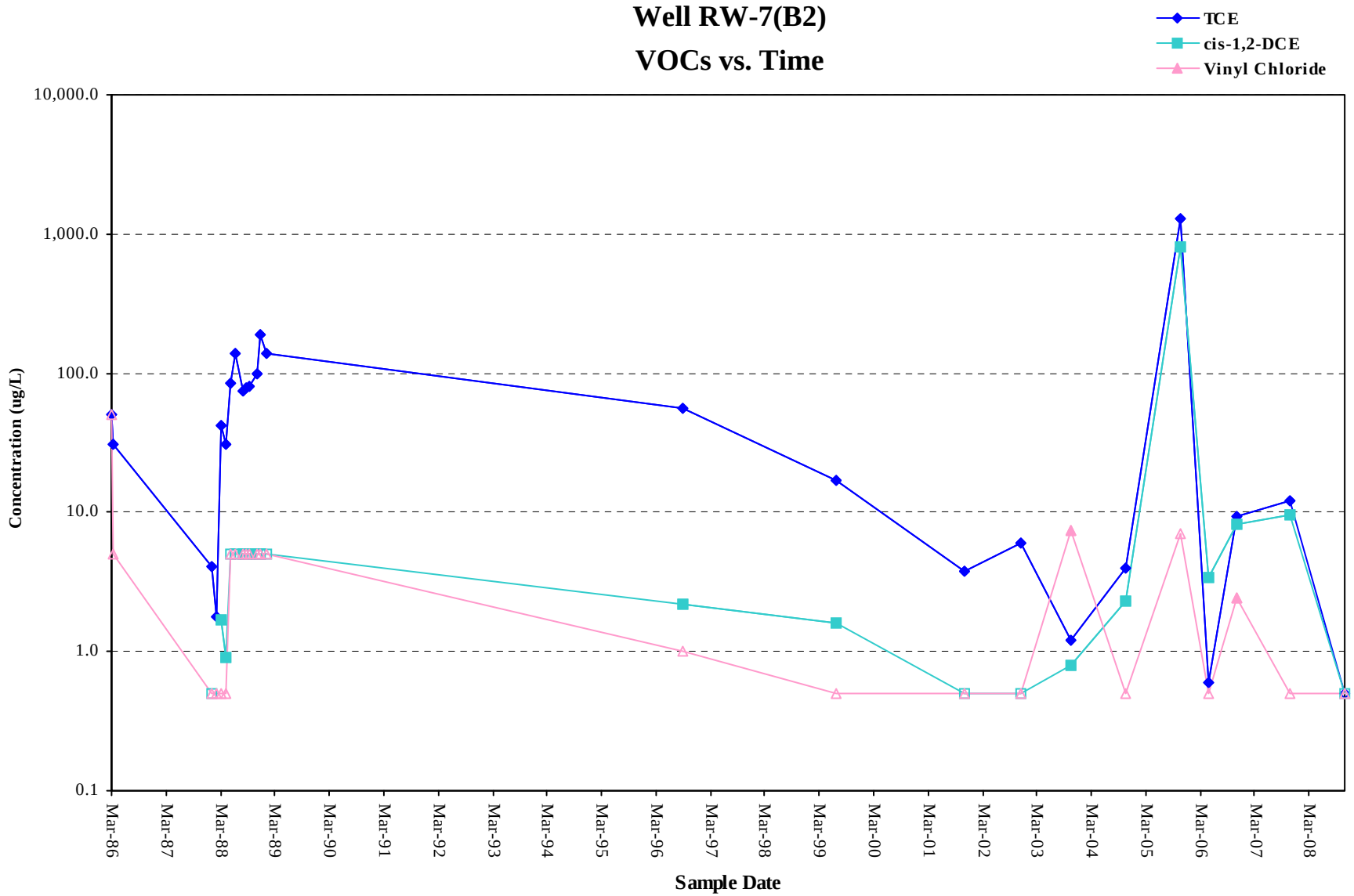
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:06:09 PM

Weiss Associates

Well RW-7(B2)
VOCs vs. Time



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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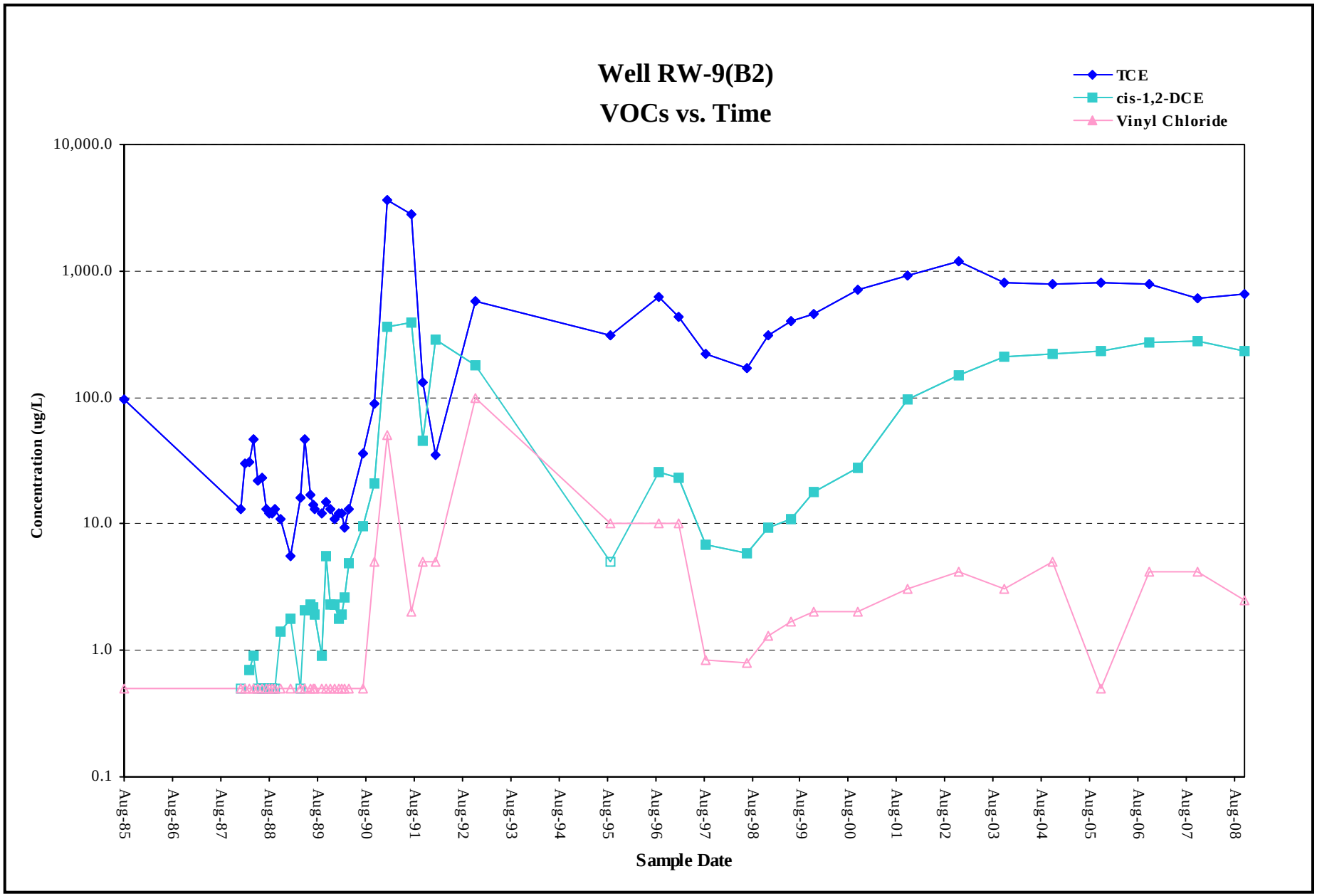
Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

Printed: 6/4/2009 5:06:10 PM

Weiss Associates



Analytes not detected above the reported detection limit (RDL) shown as open chart symbols at the RDL.

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Report: rptMvChrts2008Log2 Loc. Group: Bldg1-4

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