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VERIZON CALIFORNIA INC.
7

8 **STATE OF CALIFORNIA**

9 **STATE WATER RESOURCES CONTROL BOARD**

10
11
12 In the Matter of Los Angeles Regional
Water Quality Control Board, Section
13 13267 Order - Verizon Facility, Santa
Monica California
14

No.

**DECLARATION OF ZACHARY
FEINGOLD**

15 I, Zachary Feingold, having first been duly sworn, states the following:
16

17 1. I am a Specialist for Verizon California Inc. I offer this Declaration in support of
18 Verizon California Inc.'s ("Verizon" or "Petitioner") Petition for Review and Request for Stay of
19 the "Conditional Approval of Work Plan for Groundwater Assessment, Pursuant to California
20 Water Code Section 13267 Order - Verizon Santa Monica Plant Yard" (the "Petition"), dated
21 September 4, 2008, and issued by the Executive Officer of the California Regional Water Quality
22 Control Board, Los Angeles Region ("Regional Board") regarding the Verizon Santa Monica
23 Plant Yard, located at 2902 Exposition Blvd, Santa Monica, CA (the "Site") (the "September 4th
24 Order").

25 2. The September 4th Order requires Verizon to begin work immediately on an
26 aggressive plan to "fully assess the lateral and vertical distribution of CVOCs on and adjacent to
27 [its] property." The Order sets out a firm timetable, with several deadlines which will arise
28 during the pendency of the Petition.

DECLARATION OF ZACHARY FEINGOLD

1 3. Under the September 4th Order, Verizon is required to conduct quarterly
2 groundwater monitoring (including at sites off-site to Verizon's property). At a minimum, the
3 first three groundwater monitoring periods are likely to occur before the Petition is decided.

4 4. In order to meet these groundwater monitoring report deadlines, Verizon would be
5 required to hire an environmental consulting company, notify the Regional Board at least 10 days
6 in advance of the field work, conduct the site sampling and have the samples analyzed at a lab.
7 (September 4th Order, ¶ 1.) The Petitioner will also have to engage an appropriately certified
8 geologist or civil engineer to review all technical documents. (September 4th Order, ¶ 2.) Finally,
9 Verizon will have to engage a Certified Industrial Hygienist to complete a Health and Safety Plan
10 for the site work. (September 4th Order, ¶ 3.) Completing these tasks will involve the
11 expenditure of time, resources and money that cannot be recovered should the Petitioner be
12 successful on its Petition.

13 5. Verizon estimates having to expend approximately \$9,000 to complete each round
14 of quarterly groundwater monitoring.

15 6. In the past several years, Verizon already has spent at least \$135,000 in
16 investigation costs at this Site in response to formal and informal requests for such work from the
17 Regional Water Quality Control Board.

18 7. The work plan initially submitted by Verizon in response to the Regional Board's
19 May 19th Order proposed to conduct a single round of groundwater monitoring using eight
20 existing wells, at a total cost of approximately \$16,000.

21 8. The investigation schedule set out in the September 4th Order is so aggressive that
22 Verizon was unable to comply with it. The first groundwater monitoring period was set to end on
23 September 30, 2008, only three weeks after Verizon received the September 4th Order on
24 September 9, 2008. Verizon was unable to meet the first quarterly groundwater monitoring
25 requirement because it was not yet able to secure access to the two off-site monitoring wells
26 located on property owned by the Metropolitan Transit Authority. Verizon was able to
27 successfully obtain a short extension on this deadline from the Regional Board.

28

1 9. The September 4th Order also requires Verizon to submit a “work plan (technical
2 report) for additional groundwater assessment to fully asses the lateral and vertical distribution of
3 CVOCs in and adjacent to [its] property,” and to submit this work plan so that it is received by
4 the Regional Board no later than December 1, 2008. (September 4th Order, ¶ 6.)

5 10. In order to meet this December 1st deadline, which likely will occur before the
6 Petition is decided, Verizon will have to expend time, resources and money to begin immediate
7 preparation of this comprehensive work plan. These expenditures cannot be recovered should
8 Verizon’s Petition be successful.

9 11. Even if Verizon is not successful on its Petition, a short delay in the
10 implementation of the work plan laid out in the September 4th Order will not be significant. The
11 Regional Board’s theory is that contamination occurred during “historic aircraft operations,”
12 which could only have occurred during the years when the site was owned by McDonnell
13 Douglas (now Boeing), from 1947 to 1965 -- at least 43 years ago. The Site has been subject to
14 ongoing or intermittent investigation from 1980 through 2008. A short pause of a few months to
15 consider Verizon’s Petition will be immaterial.

16 12. Such a delay will cause no harm because there is no evidence indicating that the
17 Verizon site is a source of ongoing contamination. An extensive investigation has already been
18 conducted and the evidence developed supports a conclusion that the Verizon site is not a
19 potential source for TCE contamination. Multiple consultants have examined the site through an
20 investigation and/or documentation, including most recently Malcolm Pirnie in July 2008. A copy
21 of the report prepared by Malcolm Pirnie, entitled “Historical Site Summary,” is attached at
22 Exhibit A.

23 13. The Malcolm Pirnie report concluded that to date, the Site has been investigated
24 by at least six separate environmental consultants, who either conducted on site investigations or
25 reviewed historical records. Since 1980, more than 130 borings have been advanced and more
26 than 80 soil samples, 70 soil gas samples, and 40 groundwater samples have been collected from
27 the property. Each of the six environmental consultants, the United States Environmental
28

1 Protection Agency ("EPA") and the Regional Board have previously concluded that the Site does
2 not appear to be a potential source for the TCE contamination.

3 14. Malcolm Pirnie concluded that "[b]ased on the results of the various
4 investigations, three separate consultants have concluded that the Site does not appear to be a
5 potential source for the TCE identified in the shallow perched groundwater."

6 15. After conducting several of its own investigations of the environmental conditions
7 at the property in 1996, the EPA also concluded that the property did not contribute to the
8 regional groundwater TCE contamination. See URS, CERCLA Site Inspection, McDonnell
9 Douglas Aircraft Facility, 2909-3303 Exposition Boulevard, California, Los Angeles County,
10 October 31, 1996, a copy of which is attached at Exhibit B.

11 16. The Regional Board also concluded that the Verizon site was not a source of TCE
12 groundwater contamination. See CDM, Data Gap Technical Memorandum, Verizon Services
13 Group, Santa Monica Facility, 2902 Santa Monica, California, April 11, 2002, a copy of which is
14 attached at Exhibit C.

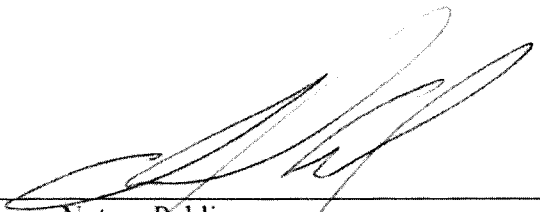
15 17. The Malcolm Pirnie report also concluded that even if the Site were impacted with
16 TCE, the facts and evidence support a conclusion that there is no risk to the nearby water supply
17 wells during a short stay period. The city wells SM-3 and SM-4 "are upgradient and cross-
18 gradient of the Site. TCE concentrations observed in the shallow perched groundwater beneath
19 and in the vicinity of the Site are not sufficient to serve as the source of contamination noted in
20 the water supply wells, given the following: 1) the perched groundwater and deep aquifer are
21 hydraulically separate; 2) the distance and direction from the Site to the water supply walls; and
22 3) the yield of the deeper aquifer versus the limited yield of the shallow perched groundwater."

23
24 Executed this 03 day of October, 2008, in Pomona, California.

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26 
27 _____
Zachary Feingold

28 Signed and sworn to me this 3rd of October, 2008.

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Notary Public
My Commission Expires *August 11th, 2011*

DC1:757850.5

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

State of California

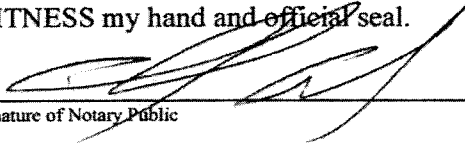
County of Los Angeles

On October 3, 2008 before me, Ismael Arias, Notary Public
(Here insert name and title of the officer)

personally appeared Zachary Daniel Feinsold

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.


Signature of Notary Public

(Notary Seal)



ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

Declaration of Zachary
(Title or description of attached document)
Feinsold
(Title or description of attached document continued)

Number of Pages 5 Document Date 10-3-08

(Additional information)

CAPACITY CLAIMED BY THE SIGNER

- Individual (s)
- Corporate Officer
(Title)
- Partner(s)
- Attorney-in-Fact
- Trustee(s)
- Other _____

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document

EXHIBIT A

Verizon California, Inc.

280 S. Locust Street • Pomona • CA

Historical Site Summary

Santa Monica Plant Yard

2902 Exposition Boulevard

Santa Monica, California

July 2008



Report Prepared By:

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510-596-3060

4563026

**MALCOLM
PIRNIÉ**

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1. Introduction and Background

Malcolm Pirnie has reviewed documents obtained from Verizon California Inc.'s (Verizon) Pomona, California office and the office of the Los Angeles Regional Water Quality Control Board (Water Board) pertaining to the Santa Monica Plant Yard site (Site) located at 2902 through 3033 Exposition Boulevard in Santa Monica, California, as well as nearby contaminated properties. A summary of the historical environmental activities conducted at the Site and vicinity (Section 3) is based on our review of approximately 120 documents (reports, letters and communications) obtained from the above sources. Section 4 of this document summarizes the Water Board's requirements for further investigation and provides information that challenges their fate and transport scenario, which is the basis of their request.

Background

Verizon received a letter from the Water Board, dated May 19, 2008, requiring submittal of a work plan to "fully assess the lateral and vertical distribution of VOCs on and adjacent to" its property located at 2902 Exposition Boulevard in Santa Monica, CA (Site), as shown on Figure 1. The work plan is to be submitted to the Water Board no later than August 1, 2008.

The Water Board's requirement for additional investigation is based on its review of: 1) documents illustrating the current and former distribution of VOCs beneath the Site; 2) historical chemical use; 3) past Site remedial activities; and 4) well construction details and history of pumping from City of Santa Monica (City) water supply wells SM-3 and SM-4. The Water Board believes that the VOCs detected beneath the Site and the adjacent Metropolitan Transit Authority (MTA) property to the north "resulted from a release of chemicals historically used on your Site, and is possibly associated with the documented historical degreasing and painting activities."

According to the Water Board, wells SM-3 and SM-4 are impacted by trichloroethene (TCE) from unknown sources. Well SM-4 is located north of the Verizon Site on Olympic Boulevard, and is screened from 200 to 570 feet below ground surface (bgs). Well SM-3 is also located on Olympic Boulevard, northeast of the Site. Well SM-3 has multiple screen intervals between 200 and 475 feet bgs. The well logs for both wells (Figure 2) indicate the presence of a thick clay layer from 50 feet bgs to 200 feet bgs.

Site Ownership

The Site was owned by McDonnell Douglas and used as an aircraft manufacturing facility from 1947 to 1985. The Site was purchased by GTE in 1985 and used as a maintenance yard. Verizon purchased GTE in 2002, acquiring this Site in the transaction.

City Water Supply Wells

Four municipal water supply wells have been reported to exist within one-half mile of the Site (Figure 3). Municipal supply wells SM-3, SM-4 and SM-7 are located on Olympic Boulevard, to the northeast, north, and northwest of the Site, respectively. Municipal supply well SM-2 is located to the west of the Site, south of Olympic Boulevard (this well is presumed to exist on City property). Municipal supply wells SM-3, SM-4 and SM-7 are screened between 200 and 550 feet bgs, and SM-2 is screened from 50 to 300 feet bgs (Figure 2). These four wells are part of the City's Olympic well field. Wells SM-3 and SM-4 were temporarily shut down in 2002 when 1,4-dioxane was detected at low concentrations in samples collected from these wells. However, the wells were quickly returned to service and are reportedly operating at their maximum safe yield. Operational status of wells SM-2 and SM-7 is unknown, however, due to the shutdown of most of the City wells that comprise the Arcadia well field in 1996, these wells are likely operating.

2. Hydrogeologic Summary

Regional Geologic Setting

The Site is located within the Sawtelle Plain subarea of the Coastal Plain of Los Angeles County (URS, 2007). The Coastal Plain is a downwarped structural basin filled with sediments up to 12,000 feet thick. There are four distinct groundwater basins that underlie the Coastal Plain; Santa Monica Basin, Hollywood Basin, West Coast Basin, and Central Basin. The Site overlies the Santa Monica Basin, which is bordered by the Santa Monica Mountains to the north, the Pacific Ocean to the west, the Ballona Escarpment to the south and the Newport-Inglewod fault zone to the east (URS, 2007).

Local Geology and Hydrogeology

The near-surface lithology consists of alternating discontinuous lenses of moderately to highly permeable (sands and gravels) and low permeable (silts and clays) unconsolidated sediments to the maximum depths explored. Immediately beneath the Site, discontinuous lenses of silty and clayey sands have been reported to depths of 70 feet bgs; however, a majority of the soils in the upper 90 feet (maximum depth explored in the vicinity of the Site) consist of lower permeability sandy silts, silty clays and lean clays. Figure 4 illustrates several generalized geologic cross-sections prepared for the Site.

Shallow groundwater beneath the Site occurs in the Semiperched Aquifer (IT Corporation, 1985), which extends from approximately 30 to 60 feet bgs and flows primarily to the south-southwest. According to DWR Bulletin 104, the Semiperched Aquifer is underlain by the Bellflower Aquiclude, a regional low-permeable clay that is commonly greater than 50 feet thick (IT Corporation, 1985). In February 2004, the hydraulic gradient beneath the Site was approximately 0.002 ft/ft to the south-southwest (Figure 5). This same general groundwater flow pattern can be seen in reports as early as 1985 (Figure 6) and as late as 2007 (Figure 7).

Based on information presented by Geomatrix in 2007, shallow wells in the vicinity of the Site (Figure 3) monitor up to five different shallow water-bearing zones. The groundwater flow direction in each of the five zones appears to be similar, ranging from west-southwest to south-southwest (Figures 8 through 10), with groundwater in the Group 2 wells (screened between 74 and 113 feet bgs) flowing to the northeast (Figure 8) beneath the City of Santa Monica Corporation Yard (Geomatrix, 2007). The reason for the localized change in flow direction is unknown.

3. Site Investigation History

The following presents a summary of the activities conducted to investigate the source and extent of the dissolved VOC plume identified beneath the Site. The information presented below was extracted from the historical reports referenced in Section 5.

3.1. Site Investigation History

1980

In 1980, the City retained Pacific Soils Engineering, Inc. (PSE) to perform a subsurface investigation (“Phase I Report; Exploratory Drilling and Sampling Ground Water Study for Presence of TCE”) in response to TCE detections in City wells SM-2 and SM-3 (Figure 3). A total of seven borings were advanced in the vicinity of the two City wells and soil and groundwater samples were collected and analyzed for TCE. Soil data was rejected as unusable based on PSE’s review of the laboratory quality control sample results (TCE recovery from the MS/MSD was outside acceptable limits). The highest reported TCE concentration in groundwater was 60 micrograms per liter ($\mu\text{g/L}$) in the sample collected from Boring 7, advanced near the intersection of Centinela Blvd. and Olympic Blvd. (east-northeast of the Site) at a depth of 40 feet bgs (CDM, 2002).

1981

As a follow-up to its initial subsurface work, PSE completed a second investigation for the City in April and May 1981 (CDM, 2002). The subsurface investigation included advancing five soil borings to shallow groundwater. Groundwater samples (depth of samples unknown) were collected from the five borings and analyzed for TCE. Results indicated that dissolved TCE concentrations were lowest near the Site and highest in the boring located furthest upgradient (CDM, 2002).

1994

In 1994, IT Corporation (on behalf of GTE) completed an Environmental Audit for the property located at 3303 Exposition Blvd (adjacent to the Site). Two locations (Figure 11) on the property (suspected waste solvent tanks and a fuel oil tank) were identified as warranting further evaluation (CDM, 2002). Additionally, the Environmental Audit identified several properties upgradient of the Site with reported releases of chemicals to the subsurface; the closest property was at least 0.2 miles from the Site (CDM, 2002).

1996

In 1996, Bechtel was retained by EPA to identify, through review of available documentation, potential contributors to the groundwater contamination in the City’s industrial area. Bechtel identified a number of potential sites that may have contributed

collectively to the VOC groundwater plume (CDM, 2002). Based on information from the Bechtel report, the Site does not appear to be identified as one of the potential sites that may have contributed to the VOC plume.

June 1996. In 1996, as a follow-up to IT's 1994 Environmental Audit, Eckland Consultants collected soil and groundwater samples from two borings in the suspected waste solvent tank area at 3303 Exposition Blvd and samples from two upgradient borings (Eckland, 1996). VOCs were not detected in the soil samples; however, TCE was detected in the four groundwater samples collected. The highest concentration of TCE was reportedly detected in furthest the upgradient boring.

October 1996. Following Bechtel's identification of potential contributors to the VOC plume, USEPA retained URS to complete a CERCLA Site Inspection at the former Douglas Aircraft facility (2902 – 3303 Exposition Boulevard). Key findings included the identification of four potential TCE sources based on a review of historical facility maps (CDM, 2006a):

- Two suspected waste solvent USTs in the southeastern portion of the facility;
- Former degreasing area located in the north-central portion of the facility between Dorchester Avenue and Yorkshire Avenue;
- Former maintenance shop located at the southern border of the facility between Stewart Street and Yorkshire Avenue; and
- Drum storage area along the northern rail spur east of Dorchester Avenue.

The four locations are illustrated on Figure 11 (URS, 1996).

URS advanced 12 soil borings to 25 feet bgs in the vicinity of the four potential sources and background areas, and collected 37 soil samples. Five groundwater samples were collected from existing monitoring wells. No VOCs were detected in the 37 soil samples collected. Dissolved VOC concentrations were reported to be less than those reported in the samples collected in 1995 (URS, 1996). URS reported that "The USEPA determined that there were no sources of uncontrolled hazardous substances at the GTE facility [Site]. EPA indicated that the shallow groundwater TCE contamination appeared to be a regional problem with no identifiable source... EPA recommended additional investigation work in the area upgradient of the GTE facility to determine the source of contamination and identify potentially responsible parties." The report concluded "that no further remedial assessment was required at the GTE facility" (CDM, 2006a). The original URS report was not made available to Malcolm Pirnie for review.

1998

In letters dated April 27, 1998 and October 16, 1998, the Water Board requested that Boeing prepare a work plan for subsurface investigations that would determine whether possible releases from the Site contributed to the TCE contamination detected in the City's water supply wells or threatened the quality of waters of the State. As part of this effort, the Water Board additionally requested a facility audit to identify possible source areas at the Site (Kennedy/Jenks, 1999).

1999

Boeing retained Kennedy/Jenks to perform a facility audit of the Site in January 1999 (CDM, 2006b). Findings of the audit were:

- The Site was occupied by a parts warehouse during Douglas operations;
- No historical manufacturing activities or use of hazardous materials occurred at the Site; and
- No potential sources of contamination were identified.

Following completion of the Audit, Kennedy/Jenks, on behalf of Boeing, finalized an investigation work plan. This multi-phase work plan included investigating the vertical and lateral extent of possible chemical releases from the Site. The investigation was to be carried out in three phases (Kennedy/Jenks, 1999):

- Phase I: review historical records and collect soil-gas samples for VOCs;
- Phase II: advance soil borings, collect soil samples, and install multi-level soil vapor wells; and
- Phase III: the work for Phase III was dependent on results of Phases I and II.

2000

In 2000, Kennedy/Jenks completed Phases I and II of the investigation. In total, 70 soil gas samples were collected from the Site (Figure 12) at a depth of 10 feet bgs (Kennedy/Jenks 2000). Samples were collected in the vicinity of:

- Maintenance shop area, west end of building 2a;
- Degreasing area/spray booth/processing areas, buildings 2 and 3;
- Flammable liquids drum storage, building 4;
- Production area, building 4a;
- Underground waste solvent tanks east of building 4a; and
- Storage building east of building 4a.

Laboratory results reported TCE in four of the 70 soil gas samples at concentrations ranging from 1 µg/L to 7 µg/L. Kennedy/Jenks concluded that “the results of the soil gas survey strongly suggest the absence of a source for the VOC contamination observed in the groundwater at the Site” (Kennedy/Jenks, 2000). “Based on the results of Boeing’s investigation the RWQCB determined that the Site was not a source of contamination to groundwater. Boeing was not required to perform further action” (CDM, 2002).

2001

In a letter dated December 4, 2001, the Water Board requested a work plan for additional investigation at the Site. The Water Board stated that: “As the property owner, GTE is responsible for the environmental condition of its property. Therefore, GTE is required to develop and submit a work plan to investigate and determine the lateral and vertical extent of TCE in the groundwater” (RWQCB, 2001).

2002

CDM, on behalf of GTE, prepared a Data Gap Technical Memorandum in April 2002 that summarized previous investigations at the Site and evaluated the applicability of the available data to satisfy the objectives of the groundwater quality investigation required by the Water Board. CDM found that the existing data was sufficient and that there were no data gaps. CDM concluded that “given the lack of on-Site sources of TCE, the fact that GTE did not historically use TCE, the lack of data gaps in the Site data, and the off-Site, upgradient nature of the TCE source, the Site does not appear to require additional groundwater investigation” (CDM, 2002).

2003/2004

Nevertheless, in July 2003, at the request of the Water Board, CDM advanced eight borings on-Site and 13 borings off-site (Figure 13). Borings SB-1 through SB-4 were advanced to total depths of 10 feet bgs and soil samples were collected at 5 feet and 10 feet bgs. Borings SM-3, SM-5 and SM-6, and monitoring well MW-45 were advanced to depths of 45 to 56.5 feet bgs. Soil samples were collected at 5 feet bgs and every 10 feet thereafter to a maximum depth of 45 feet bgs (CDM, 2006a). CDM also collected groundwater samples in July 2003 from seven locations (SM-3 and SM-7 through SM-12) at depths between 41 and 50 ft bgs using a Hydropunch™ (CDM, 2006a).

In January 2004, CDM advanced an additional four soil borings (SM-1, SM-2, MW-43, and MW-44) and collected one soil sample from 5 feet bgs from each boring (CDM, 2006a). In addition, grab groundwater samples were collected from borings SM-1 and SM-2, using temporary well points (CDM, 2006a).

Laboratory results indicated that only six soil samples contained VOCs, and only two of those six contained concentrations that were above the method reporting limit: total xylenes at 11 micrograms per kilogram ($\mu\text{g}/\text{kg}$) in SM-5 at 5 feet bgs and TCE in MW-45 at 12 $\mu\text{g}/\text{kg}$ at 45 feet bgs. Detectable concentrations of VOCs were reported in the two grab groundwater samples collected from SM-1 and SM-2. The highest concentrations of TCE were reported in the grab groundwater samples collected from borings located north of the Site (CDM, 2006a). Based on the results of the 2003/2004 investigation, CDM concluded that:

- Concentrations of TCE and other VOCs in the soil at the Site are relatively minor;
- Records show that Verizon has not used TCE at the Site, and the absence of TCE in the soil samples provides further evidence that an on-site source of subsurface TCE contamination is not present; and
- The highest TCE concentrations in groundwater samples were detected at cross-gradient, offsite locations, which provides further evidence that the source of TCE contamination is not present on Site.

February 2004. The 2004 sampling results were presented to the Water Board during a meeting on February 18, 2004. During this meeting, the Water Board agreed that the results of CDM’s investigation indicated that the Verizon facility was not the source of the TCE plume. At that time, the Water Board did not request the performance of any

further investigative work; however, a “no further action” letter was not provided by the Water Board (CDM, 2006a).

2006

In October 2006, CDM performed a Phase II ESA for the West Parcel of the Site (2902 Exposition Boulevard), as illustrated on Figure 14. This Phase II ESA included the installation of four groundwater monitoring wells to depths between 51 and 55 feet bgs. Soil samples were collected at depths between 5.5 and 10.5 feet bgs from each boring. (CDM, 2006c). The eight soil samples were reported to be non-detect for VOCs and 1,4-dioxane. (CDM, 2006c). TCE concentrations in the groundwater samples collected from the four wells ranged from non-detect (MW-49) to 15 µg/L (MW-46); 1,4-dioxane was not detected in the groundwater samples.

2007

In August 2007, Geomatrix (working on behalf of the Gillette Company) organized a coordinated, multi-site, groundwater monitoring event that included five sites¹ (Geomatrix, 2007):

- The former Paper Mate facility (1681 26th Street, Santa Monica);
- City-owned monitoring wells located along and south of Olympic Boulevard;
- The Extra Space site (1707 Cloverfield Boulevard, Santa Monica);
- The Verizon site (2902 Exposition Boulevard, Santa Monica); and
- The Westside Medical Park (12333 W. Olympic Boulevard, Los Angeles).

The locations of the above 5 sites are illustrated on Figure 3.

This sampling event included measuring depth to groundwater in 73 monitoring wells and sampling 70 wells (Figure 3). Geomatrix divided the wells into five groups, based on the depth of the screened intervals. The highest concentrations of VOCs were detected in Group 3 wells, which are screened from 127 to 143.5 ft bgs at a site west of the Verizon Site. Groundwater flow in each of the zones typically ranged between west-southwest and south (Figures 7, 8, 9, and 10). Additionally, Geomatrix analyzed the water samples from the 70 wells for 1,4-dioxane, a constituent identified in the City water wells. Results indicate that 1,4-dioxane was detected in 40 of the 70 samples collected at concentrations ranging from 0.65 to 380 ug/L. 1,4-Dioxane was detected in three of the 9 samples collected from Site wells at concentrations ranging from 0.84 µg/L to 1.6 µg/L. The highest concentration of 1,4-dioxane was detected in a sample collected from the Former Paper Mate Facility at a concentration of 380 µg/L (Geomatrix, 2007).

¹ Two sites (the New Roads School at 3131 Olympic Boulevard and an unnamed property at 1815 Stanford Street) were invited to participate in the Geomatrix-organized groundwater monitoring event and denied access (Doc 118, Geomatrix, 2007).

3.2. Summary

Historical Site documents indicate that six separate consultants have reviewed historical documentation and/or conducted site investigations at or in the vicinity of the Site. Since 1980, more than 130 borings have been advanced on or in the vicinity of the Site (Figure 15), resulting in the collection of more than 80 soil, 70 soil gas, and 40 groundwater samples for analysis of VOCs. Based on the results of the various investigations, three separate consultants have concluded that the Site does not appear to be a potential source for the TCE identified in the shallow perched groundwater. Additionally, a review of the historical Site and off-site documents indicates:

- The Semiperched Aquifer is reportedly hydraulically separated from the lower aquifers screened by the municipal supply wells by a thick clay aquiclude.
- City wells SM-3 and SM-4 are upgradient and cross-gradient of the Site. TCE concentrations observed in the shallow perched groundwater beneath and in the vicinity of the Site are not sufficient to serve as the source of the contamination noted in the water supply wells, given the following:
 - 1) the perched groundwater and deeper aquifer are hydraulically separate;
 - 2) the distance and direction from the Site to the water supply wells; and
 - 3) the yield of the deeper aquifer versus the limited yield of the shallow perched groundwater.
- 1,4-dioxane was detected in low concentrations in only three of the nine wells beneath the Site in 2007. The highest concentrations were detected in a well located on the Former Paper Mate facility.

4. Fate and Transport Discussion

In the May 19, 2008 letter to Verizon, the Water Board states that the Site is the source of the TCE plume in groundwater that is documented beneath the Site and the Metropolitan Transportation property to the north. The Water Board provides a scenario they believe explains the fate and transport of the TCE plume that has emanated from the postulated Site source. The following presents the Water Board's six fate and transport suppositions and provides Site evidence that challenges each.

Supposition No. 1: Release occurred as a result of aircraft manufacturing processes.

A majority of the site surface has been covered by concrete and asphalt since McDonnell Douglas began operations at the Site. The surface "cap" should restrict volatilization of residual VOCs and limit rainwater infiltration and the downward vertical migration of adsorbed contaminants. Hence, if Site operations resulted in a significant the release to the subsurface, residual VOC concentrations in soil and soil gas should be evident in the source area(s). Historical investigations have not identified a source area(s) through collection and analysis of more than 80 soil and 70 soil gas samples.

Supposition No. 2: Santa Monica water supply well SM-3 was actively pumping at the time of the release. Supply well SM-4 was installed in the 1980's.

City well SM-4 reportedly was not installed until the early 1980s. Well SM-3 had been pumping for at least 20 years by that time. If a release occurred in the 60's or 70's when the Site was being used by McDonnell Douglas and the supposed release would have occurred, then the contaminant plume, if affected by the pumping from City well SM-3 (see below), should have migrated to the northeast, not to the north.

Supposition No. 3: Pumping from SM-3 and SM-4 changed the groundwater gradient in the perched shallow water-bearing unit causing the TCE to migrate north.

Groundwater flow directions and gradients measure in the mid 1980's 1990's and 2000's indicate that the general groundwater flow direction in the Semiperched Aquifer is consistently to the southwest. City wells SM-3 and SM-4 were presumed to be operating at maximum safe yield during that time. Except for on-Site groundwater extraction activities that took place in the 1990's to remediate a petroleum hydrocarbon release, a north or northwest trending flow direction has not been recorded on-site. Additionally, the petroleum hydrocarbon plume that resulted from the 1985 UST leak migrated primarily to the south of the release point, indicating a primary flow direction to the south at the time of the release and thereafter. Based on the historical Site and regional data, a groundwater reversal has not been identified.

Additionally, if the City wells caused the VOCs to migrate north, the highest concentrations in groundwater, prior to the petroleum release in 1985, should have been reported in the borings advanced on-site (source area). However, each investigation conducted prior to 1985 identified the highest concentrations at the borings located furthest from the site.

Supposition No. 4: A motor fuel release occurred in 1985 and remediation (including a GWETS) was conducted and operated on-site until 1996. The presence of the petroleum hydrocarbons and operation of the GWETS effectively reduced on-site concentrations of TCE to current levels.

Co-metabolism of the TCE should result in production of cis-DCE and/or VC. These compounds can be even more recalcitrant than their parent compound, TCE. It is not uncommon for the biotransformation of TCE to stop at the cis-DCE or VC production stage, resulting in a significant increase in concentration of the daughter products. However, these daughter products are not prevalent in the subsurface beneath the Site. Operation of the GWETS would remove some of the dissolved plume, but the adsorbed compounds would remain, and results in a re-equilibration of groundwater concentrations over time, after cessation of the GWETS system. Additionally, 1,4-dioxane, which is not readily biodegradable under any condition, has not been found in significant concentrations beneath the Site, but has been detected in the City's wells.

Supposition No. 5: Wells SM-3 and SM-4 are operating at a reduced rate or not operating, allowing groundwater to resume flowing to the south-southwest (shallow regional groundwater flow direction).

Groundwater in the vicinity of well SM-4 was known/suspected to be contaminated at the time of installation, indicating that well SM-3 would have been the primary force causing TCE to migrate. Again, TCE would have migrated from the Site to the northeast not north.

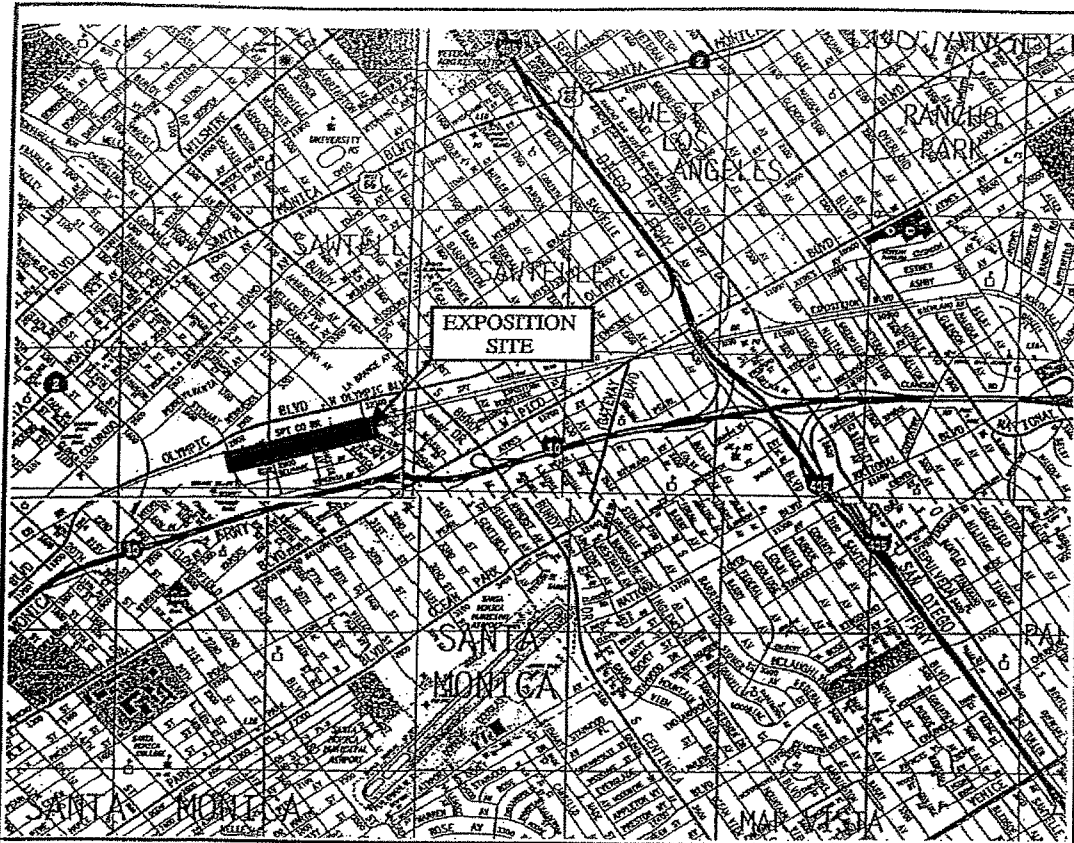
According to the City, in 2002, wells SM-3 and SM-4 were returned to their full safe yield flow rates after a short, temporary shutdown due to the detection of 1,4-dioxane in the supply water. Even though these wells operate at their full safe yield flow rates, the groundwater flow direction in the shallow water-bearing unit remains to the southwest.

5. References

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URS, 1996. *CERCLA Site Inspection, McDonnell Douglas Aircraft Facility, 2902-3303 Exposition Boulevard, Santa Monica, California, Los Angeles County.* October 31.



No Scale

Source: Basemap modified from
©1996 Thomas Bros. Maps

Kennedy/Jenks Consultants

Boeing Company
Santa Monica, California

Site Location Map
2801 Exposition Boulevard

January 1999
K/J 984011.00

Figure 1

**MALCOLM
PIRNIE**

2000 Powell St, Suite 1180
Emeryville, CA 94608

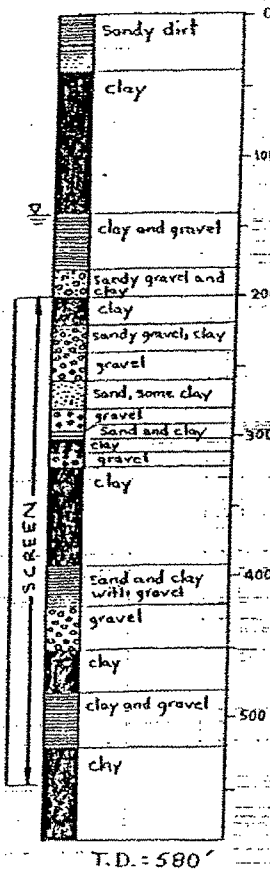
Site Location

July 2008

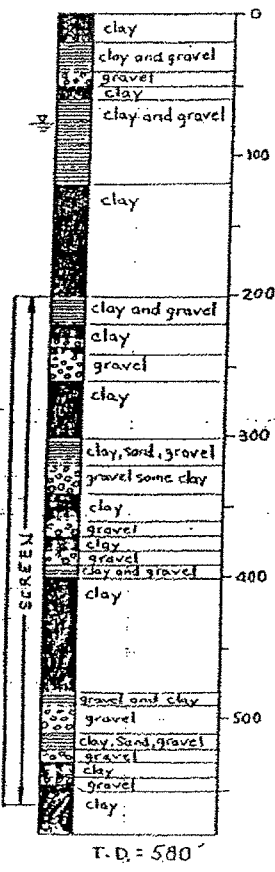
Figure 1

Source: Kennedy/Jenks, 1999

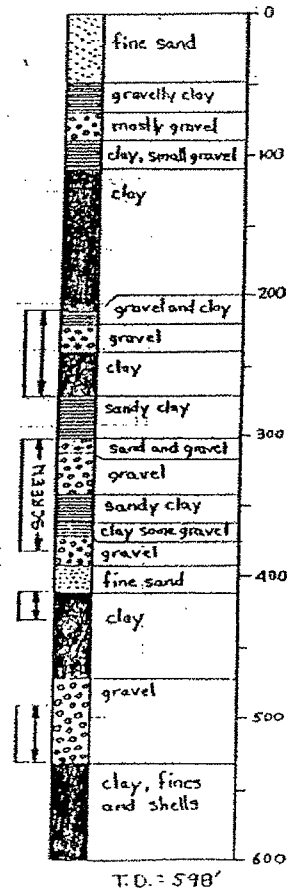
SANTA MONICA #7



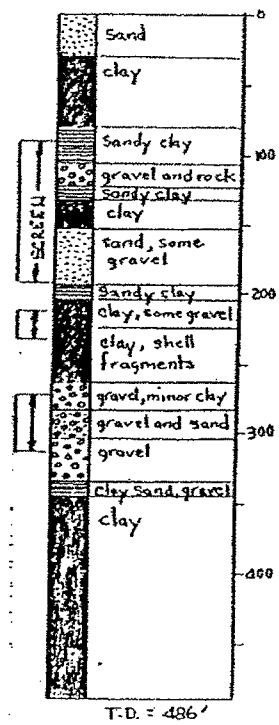
SANTA MONICA #4



SANTA MONICA #3



SANTA MONICA #2



EXPLANATION

- Relatively permeable gravel/sand
- Variable proportions of clay, sand, and gravel
- Relatively impermeable clay

Reported first encounter of water.

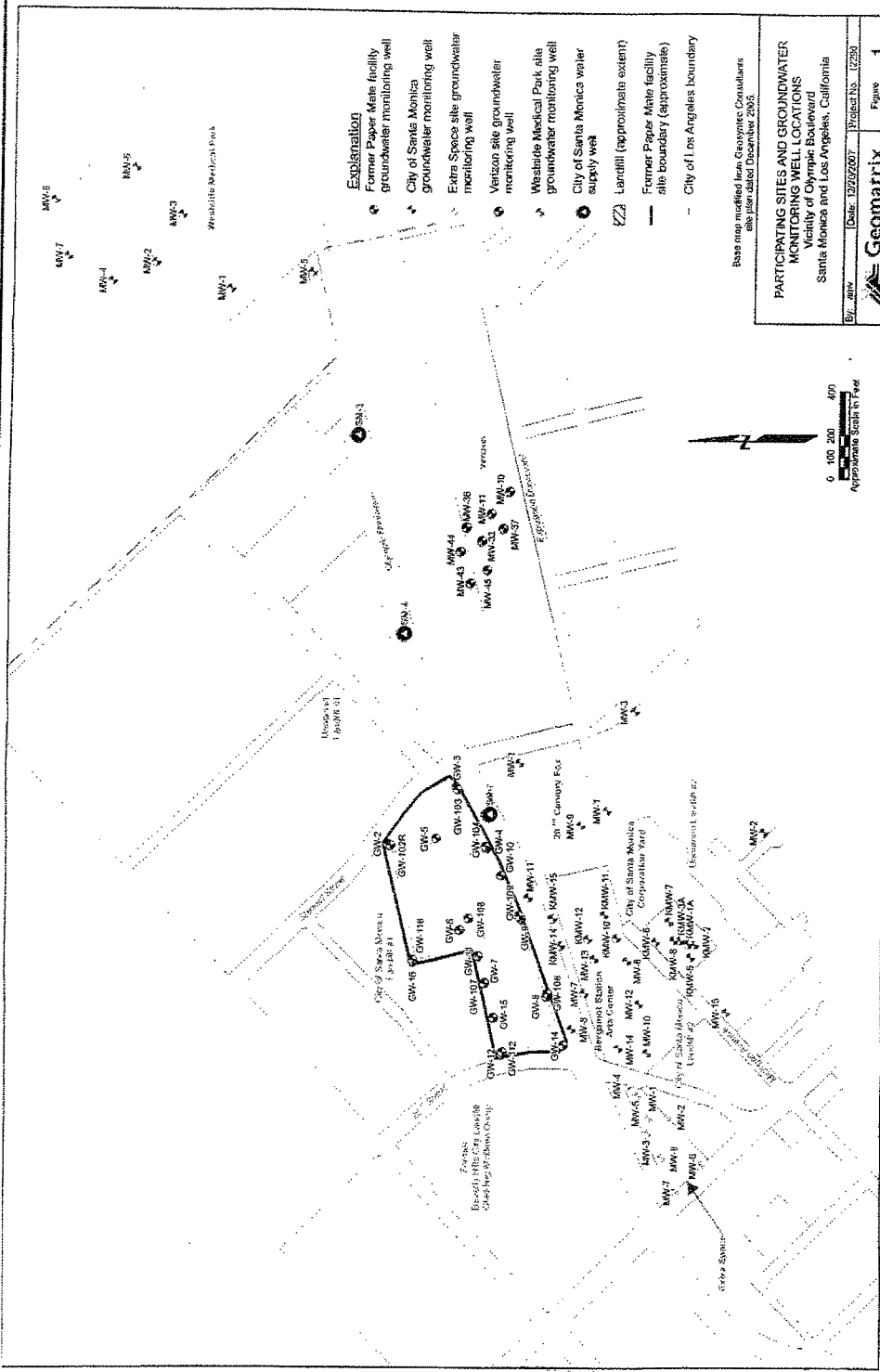
**MALCOLM
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2000 Powell St, Suite 1180
Emeryville, CA 94608

**Boring Logs for City of
Santa Monica Municipal Wells**

July 2008

Figure 2



MALCOLM PIRNIE
2000 Powell St, Suite 1180
Emeryville, CA 94608

Groundwater Wells in the Site Vicinity

July 2008

Figure 3

Source: Geomatrix, 2007