August 1997 Tank Backfill Well Destruction: On August 8, 1997, six tank backfill wells were destroyed in accordance with permit #97433 issued by the Alameda County Flood Control and Water Conservation District Zone 7 (Zone 7). One tank backfill well still exists onsite. Water was not encountered at 12 feet below grade (fbg), the maximum tank backfill well depth.

November 1997 Subsurface Investigation: On November 19, 1997, Cambria advanced four soil borings at the site to define the extent of hydrocarbons in soil and groundwater. The maximum concentrations in soil were 11 ppm TPHg, 300 ppm TPHd and 0.0051 ppm benzene in sample SB-3 from 25 fbg. The maximum MTBE concentration (by EPA Method 8020) was 0.11 ppm in sample SB-2 at 20 fbg. A groundwater sample collected from SB-2 contained 470 ppb TPHg, 4,900 ppb TPHd, 17 ppb benzene and 110 ppb MTBE. No groundwater was encountered in the other borings.

August 1998 Subsurface Investigation: On August 5, 1998, Cambria advanced two soil borings to evaluate soil and groundwater conditions in the assumed downgradient direction of the UST complex. Maximum concentrations detected in soil were 250 ppm TPHg and 2.8 ppm benzene from SB-2 at 30 fbg.

January 1999 Subsurface Investigation: On June 8 and 9, 1999, Cambria installed three onsite groundwater monitoring wells. The maximum concentration of TPHg in soil was detected in sample MW-3 at a depth of 25.5 fbg at 4.1 ppm. The maximum concentrations of TPHd and MTBE (by EPA Method 8260) were detected in MW-2 at a depth of 25.5 fbg at 103 ppm and 1.14 ppm, respectively. No hydrocarbons, BTEX or MTBE (by EPA Method 8020) were detected in soil samples collected from monitoring well MW-1 or in vadose zone soil samples collected from MW-2 and MW-3. Maximum analyte concentrations in groundwater were detected in well MW-2 at 2,600 parts per billion (ppb) TPHg, 0.699 ppb TPHd, 9,370 ppb MTBE by EPA Method 8020, 55 ppb benzene, and 59.5 ppb ethylbenzene.

Potential Receptor Survey and Conduit Study: Cambria reviewed Department of Water Resources files to locate records of municipal and private water wells within a ½ mile of the site. No municipal or drinking water wells were located in the downgradient direction of the site.

Cambria performed a conduit study to identify potential vertical and horizontal migration pathways in the site vicinity due to utility conduits and associated backfill. However, only partial utility information was obtained. More research will be done in the future. Known utility locations are shown on Figure 2.

Groundwater Depth and Flow Direction: The depth to groundwater at the site varies from 6 fbg in well MW-1 to 20 to 24 fbg in wells MW-2 and MW-3. Groundwater flow direction as determined in Cambria's *Third Quarter 1999 Monitoring Report* is to the southeast at a gradient of 0.125. The steep gradient at the site may be due to lithologic controls, possibly associated with

the nearby Calaveras Fault. Topography slopes slightly to the east, and the groundwater flow direction is to the east.

Soil Lithology: The site is underlain by a gravelly fill to approximately 2 fbg. The fill is underlain by clayey sands to the maximum explored depth of 33 fbg.

PROPOSED SCOPE OF WORK

To define the extent of the groundwater plume, Cambria proposes advancing one offsite hollow-stem auger soil boring downgradient of the site and converting it to a groundwater monitoring well (Figure 2). Soil samples will be collected from the boring at five-foot intervals and at changes in lithology. The monitoring well will be completed as described in our "Standard Field Procedures for Monitoring Wells" (included as Attachment A). Our scope of work for this investigation includes the following tasks:

Utility Location: Cambria will notify Underground Service Alert (USA) of our drilling activities. USA will identify utilities in the site vicinity.

Site Health and Safety Plan: We will prepare a comprehensive site safety plan to protect site workers. The plan will be reviewed and signed by each site worker and kept onsite during field activities.

Permits: We will obtain required permits from Zone 7 for soil boring installation and an encroachment permit from CalTrans to place the well in the sidewalk.

Monitoring Well Installation: Assuming the absence of overhead and subsurface obstructions, Cambria will advance one soil boring at the location shown on Figure 2. The boring will be advanced to an approximate depth of 30 fbg using a hollow-stem auger drill rig. We will collect soil samples at five-foot intervals primarily for lithologic description. However, only the soil groundwater interface sample(s) will be submitted for chemical analysis. Upon completion of the sampling, the boring will be completed as a 2-inch diameter PVC monitoring well. Only the soil-groundwater interface soil sample will be transported to a State-approved analytical laboratory for chemical analysis. Our "Standard Field Procedures for Monitoring Wells' is presented as Attachment A.

Monitoring Well Development and Sampling: After installation, the monitoring well will be developed by Blaine Tech Services and will be sampled along with the onsite wells following the established quarterly monitoring schedule. Analytical results will be reported in subsequent groundwater monitoring reports.

Chemical Analysis: The soil sample from the soil-groundwater interface will be analyzed by a State-approved analytical laboratory using EPA Method 8260 for TPHg, BTEX and MTBE. In addition to TPHg and BTEX, groundwater from the newly installed monitoring well will be analyzed for the five oxygenates: tert-Amyl Methyl Ether, Ethyl tert-Butyl Ether, Di-Isopropyl Ether, Tert-Butyl Alcohol, using EPA Method 8260, as requested by ACHCSA, as soon as the well is incorporated into the regular quarterly monitoring schedule.

Reporting: Upon receipt of the analytical results, we will prepare a report that, at a minimum, will contain:

- A summary of the site background and history;
- Descriptions of the drilling and sampling methods;
- Well log;
- Soil analytical results;
- Analytical reports and chain-of-custody forms;
- Additional conduit study information and
- Cambria's conclusions and recommendations.

CAMBRIA

CLOSING

Please call Barbara Jakub at (510) 420-3309 if you have any questions or comments. Thank you for your assistance.

Sincerely,
Cambria Environmental Technology, Inc.

Barbara J. Jakub
Project Geologist

Stephan A. Bork, C.E.G., C.HG.
Associate Hydrogeologist

REGISTERED PROFESSIONAL ENGINEER
DIANE M. LUNDQUIST
NO. C46725
CIVIL
STATE OF CALIFORNIA

Figures: 1 - Vicinity Map
2 - Proposed Boring Location Map

Attachment: A - Standard Field Procedures for Monitoring Wells

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, CA 91510-7869

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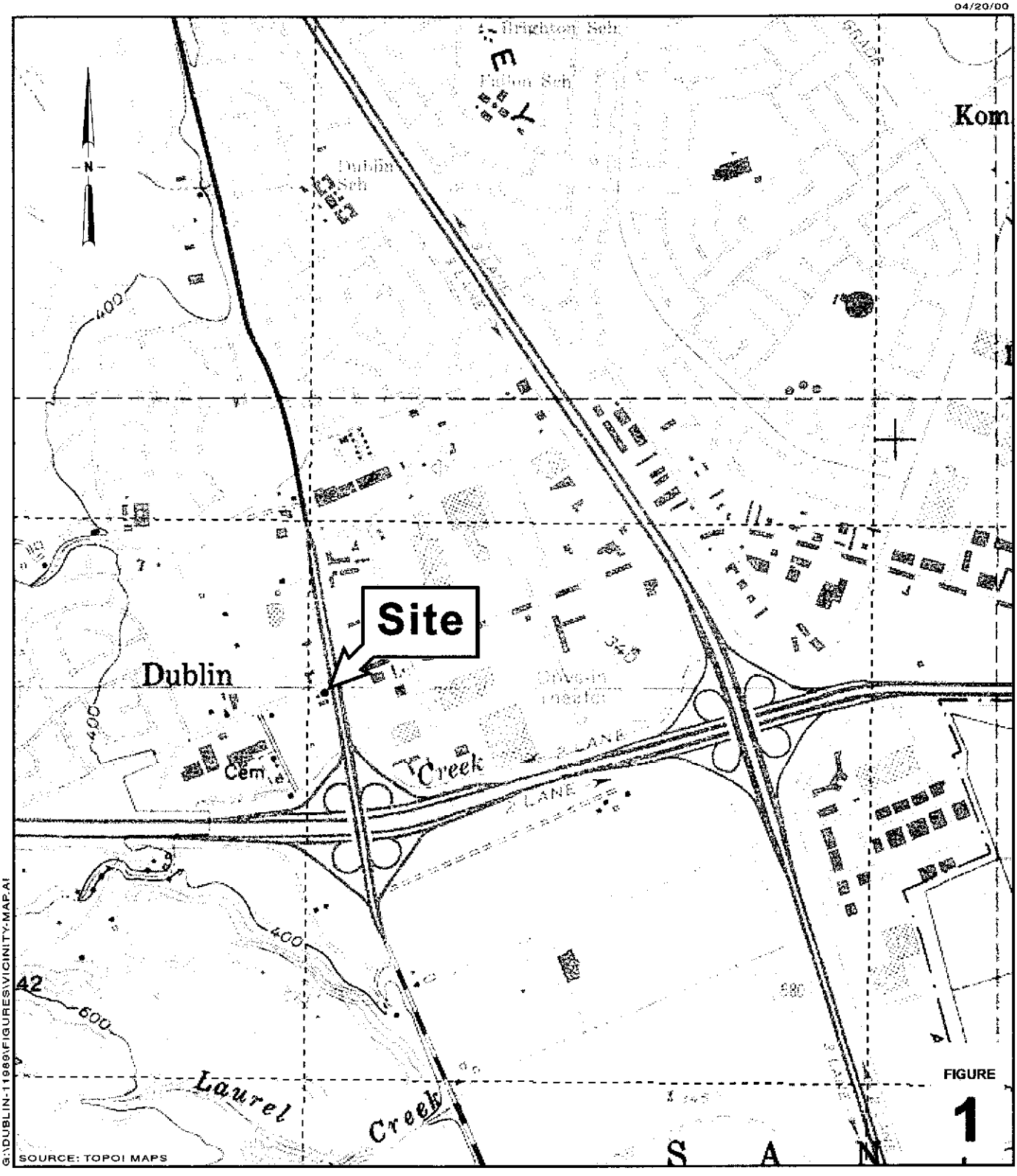

Shell-branded Service Station
11989 Dublin Boulevard
Dublin, California
Incident #98995328

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Site Vicinity Map

04/10/01

EXPLANATION

- MW-4 — Proposed monitoring well location
- MW-1 — Monitoring well location
- BW-7 — Tank backfill well
- SB-1 — Soil boring locations for November 16, 1997 investigation
- SB-1 — Soil boring locations for August 5, 1998 investigation
- MH — Manhole
- Storm drain inlet
- Sanitary sewer line
- Direction of flow

Chevron Service Station
7007 San Ramon Road

8" sanitary sewer line

MH

DUBLIN BOULEVARD

water

pt&t

cable tv

fire hydrant

MW-1

SB-1

pump islands

SB-2

USTs

BW-7

water

SB-4

SB-3

MW-2

SB-1

Shell-branded Service Station
11989 Dublin Boulevard

building

water

SB-2

MW-3

parking lot

SAN RAMON ROAD

MW-4

N

0 20 40 80

Scale (ft)

FIGURE

2

Proposed Monitoring Well Location Map

Shell-branded Service Station
11989 Dublin Boulevard
Dublin, California
Incident #98995328

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ATTACHMENT A

Standard Field Procedures for Monitoring Wells

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELLS

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling ground water monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Ground water monitoring wells are installed to monitor ground water quality and determine the ground water elevation, flow direction and gradient. Well depths and screen lengths are based on ground water depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of ground water surging and extraction. Surging agitates the ground water and dislodges fine sediments from the sand pack. After about ten minutes of surging, ground water is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of ground water are extracted and the sediment volume in the ground water is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Ground Water Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of ground water are purged prior to sampling. Purging continues until ground water pH, conductivity, and temperature have stabilized. Ground water samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

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