February 8, 2012

Alameda County Department of
Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

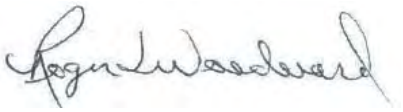
Attention: Keith Nowell

Subject: Workplan to Conduct Additional Soil and Groundwater Investigation
Corwood Car Wash UST Site, 6973 Village Parkway, Dublin, California
**ACEH RO# 0002432; Global ID: T06019701663**

Ladies and Gentlemen:

Attached please find a copy of the *Workplan to Conduct Additional Soil and Groundwater Investigation* prepared by Gribi Associates. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Very truly yours,



Roger L. Woodward
P O Box 8361
Incline Village, NV 89451

GRIBI
ASSOCIATES

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**ACEH RO# 0002432; Global ID: T06019701663**

Ladies and Gentlemen:

Gribi Associates is pleased to submit this workplan on behalf of Mr. Roger Woodward for the underground storage tank (UST) site located at 6973 Village Parkway, in Dublin, California (see Figure 1 and Figure 2). This workplan proposes: (1) The purging and sampling of groundwater monitoring well MW-1; (2) The drilling and sampling of approximately seven onsite and offsite investigative soil borings; and (3) The collection of two shallow soil gas samples at the site. This primary goal of the proposed investigation will be to provide additional site assessment data as necessary to evaluate this site for regulatory closure.

The current Corwood Car Wash owner/operator, Mr. Kewal Singh, is planning to consist of a building addition on the north side of the car wash, in the approximate location of site well MW-1. In anticipation of this construction, Mr. Singh is anxious to have the Site evaluated for closure, thus making the construction planning and financing easier.

## SITE BACKGROUND

The subject property is located on the southeast corner of the intersection of Lewis Avenue and Village Parkway in Dublin, California. Currently, the site is occupied by an automobile car wash.

Corwood Car Wash was owned and operated by Mr. Roger Woodward prior to 2000 and previously operated two unleaded gasoline USTs, located in a common excavation cavity on the northwest side of the site. The UST system was apparently installed in about 1968, and it is our understanding that diesel fuel was also stored in the USTs at some time in the distant past. In

March 1991, the UST system was completely retrofitted with state-of-the-art leak prevention and monitoring devices, including interior tank linings, overfill/overspill protection, and a sophisticated leak detection monitoring system.

Previous investigations at the site included: (1) The drilling and sampling of several borings in the early 1990s immediately adjacent to previous project site USTs; (2) The installation of three groundwater monitoring wells, MW-1, MW-2, and MW-3, at the site in 1993; and (3) Monitoring of the three project site wells in June 1993 and in October 1995. Results of these investigations indicated some residual diesel-range hydrocarbons in subsurface soils immediately surrounding the project site USTs, but only low concentrations of diesel-range hydrocarbons in groundwater in downgradient (south-southeast) well MW-2, with no significant concentrations of Benzene. Note that soil and groundwater samples from these investigations were not analyzed for MTBE. Based on results of these previous investigations, regulatory site closure was granted for this site in 1996. The three groundwater monitoring wells were subsequently decommissioned by pressure grouting.

On January 31, 2000, both project site USTs were removed from the site in accordance with Alameda County Department of Environmental Health (ACEH) requirements (see Figure 2). In addition, approximately 3,800 gallons of hydrocarbon-impacted groundwater was pumped from the excavation cavity for offsite disposal. Also, approximately 350 tons of hydrocarbon-impacted soil, primarily backfill material, was excavated and removed from the site. After backfilling with clean imported pea gravel, the UST excavation cavity and piping and dispenser excavations were re-surfaced with concrete to match existing surface grade.

Results from soil and groundwater samples collected from the UST removal cavity, together with previous results from soil and groundwater investigations conducted at the site, seem to suggest that although some releases, primarily diesel, occurred from the USTs, these releases remained in the backfill sands for the most part and did not migrate appreciably into native silts and clays surrounding the USTs (see Figure 3 and Figure 4). Two grab water samples collected from the open UST cavity contained relatively high levels of both diesel- and gasoline-range hydrocarbons, with detections of both Benzene and MTBE. However, given that these samples were collected from an open pit while excavation activities were occurring, we do not believe that these results are representative of true groundwater conditions beneath the site.

Soil samples collected adjacent to removed fuel dispensers indicated no significant releases adjacent to the former west dispenser, and moderate levels of diesel-range hydrocarbons, with no significant level of gasoline-range hydrocarbons, adjacent to the former east fuel dispenser. Given that diesel was only stored in the USTs in the distant past, as well as the apparent aged quality of the gasoline-range hydrocarbons in the east dispenser soil samples, it appears that releases associated with the project site USTs and fuel dispensers occurred in the distant past, prior to UST system upgrades, which included installing secondary containment beneath each dispenser.

On March 3, 2000, Gribi Associates drilled and sampled two soil borings, IB-1 and IB-2, at the site using direct-push coring equipment. Both soil and grab groundwater samples from IB-1, located in an expected downgradient (south-southeast) direction from the former east dispenser island, contained detectable levels of both gasoline- and diesel-range hydrocarbons (see Figure 3 and Figure 4). In addition, the grab groundwater sample from IB-2, located in an expected downgradient (south-southeast) direction from the former fuel USTs, contained detectable levels of both gasoline- and diesel-range hydrocarbons. However, the laboratory chromatograms for these samples seem to show that the gasoline-range hydrocarbon results in these samples are primarily due to interference from diesel-range hydrocarbons. Thus, soil and groundwater impacts relative the former Corwood Car Wash UST system appear to be primarily related to past diesel releases. Given that diesel was only stored in the USTs in the distant past (probably in the early to mid-1970s), it appears that the majority of releases associated with the USTs occurred in the distant past, prior to UST system upgrades which included installing interior fiberglass linings in both of the USTs.

The only exception to this appeared to be the detection of a low level (530 micrograms per liter, ug/l) of MTBE in the IB-2 grab groundwater sample. This MTBE detection was significantly lower than MTBE levels of 5,400 ug/l and 1,700 ug/l encountered in grab groundwater samples collected from the former UST excavation cavity during tank removal activities. These results seem to suggest minimal downgradient migration of MTBE.

In January 2001, Gribi Associates conducted additional investigation activities at the site that included: (1) The drilling and sampling of two soil borings, IB-3 and IB-4, on the south side of the site using direct-push coring equipment; (2) The collection of one soil vapor sample, VS-1, beneath the car wash cashier's kiosk; and (3) The drilling, installation, and sampling of one groundwater monitoring well, MW-1, at the site. Both soil and groundwater analytical results from this and previous investigations indicate that low-permeability silts and clays beneath the site have resulted in limited impacts to soil and groundwater from past UST-related hydrocarbon releases at the site (see Figure 3 and Figure 4). The only hydrocarbon constituent detected in downgradient borings IB-3 and IB-4, located near the south project site property line, was low levels of Methyl Tertiary Butyl Ether (MTBE) in grab groundwater samples from these borings. The grab groundwater sample from the easterly boring IB-3, located downgradient (south-southeast) from the former east fuel dispenser, contained 390 ug/l of MTBE. The grab groundwater sample from the west boring IB-4, located downgradient from the former project site USTs, contained 84 ug/l of MTBE. These levels of MTBE are relatively low and do not indicate a widespread MTBE problem. This conclusion is bolstered somewhat by the apparent downgradient natural attenuation of MTBE, from 1,700 ug/l and 1,800 ug/l in the respective former east dispenser and UST areas, to 390 ug/l and 84 ug/l in respective downgradient borings IB-3 and IB-4.

The soil vapor sample, VS-1, collected beneath the cashier's kiosk at about three feet in depth contained levels of gasoline constituents that are well below established Risk-Based Screening Levels (RBSLs) for vapors at three feet in depth (*Application of Risk-Based Screening Levels*

*and Decision Making at Sites With Impacted Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, August 2000, Table E-2). Vapor sample VS-1 contained only 16 micrograms per cubic meter (ug/$m^3$) of Benzene, and the RBSL for soil gas immediately below a building floor (commercial receptors, fine grained soils) is 280,000 ug/$m^3$.

The monitoring well MW-1 was sampled on January 8, 2001, July 27, 2001, and February 5, 2003. Laboratory analytical results from these sampling events show a significant decrease in gasoline-range hydrocarbons, with the MTBE concentration in the MW-1 groundwater samples falling more than 92 percent since January 2001, from 1,700 ug/l in January 2001 to 13 ug/l in February 2003. We believe that this decrease is the result of the combined effect of previous source removal (UST removal and overexcavation) activities conducted in early 2000 and subsequent natural attenuation processes. Also, these results, as well as previous soil and groundwater hydrocarbon results for the site, indicate that the original mass of hydrocarbons released was relatively small.

In May 2002, Alameda County Department of Environmental Health requested that a sensitive receptors survey be conducted as a requirement to evaluate this site for regulatory closure. Results of this survey (*Sensitive Receptor Survey*, Gribi Associates, May 17, 2002) indicate that there are no water supply wells within at least a 1,500 feet radius from the project site and that the nearest surface water body is more than 700 feet distant from the site. Our review of nearby well logs at Zone 7 Water Agency showed that there are no groundwater production wells anywhere near this site (Zone 7 production wells are miles to the south and east and are several hundred feet deep). Weighing these conditions against the limited soil and groundwater impacts, as well as the significant degree of source removal conducted during UST removal activities and the low permeability silts and clays present beneath the site, we believe that this site clearly should be designated as a low risk site and should be granted regulatory closure.

On January 31, 2003, the ACEH issued a letter directing additional investigative activities at the site, and requested that an investigative workplan be submitted by March 17, 2003. On March 7, 2003, Gribi Associates issued a quarterly groundwater monitoring report (*Report of Groundwater Monitoring Conducted On February 5, 2003*), again requesting regulatory closure for this site due to the demonstrated lack of significant soil and groundwater hydrocarbon impacts. Soil hydrocarbon impacts, as shown on Figure 3, are very limited, with the highest concentrations adjacent to the former east dispenser island and no soil hydrocarbon impacts at the downgradient (south) property boundary. Groundwater hydrocarbon impacts, as shown on Figure 4, are limited primarily to MTBE, and these MTBE impacts are clearly attenuating, both with respect to distance (decrease from WS-2 to IB-2 to IB-4) and time (92 percent decrease in MW-1 from January 2001 to February 2003).

On July 16, 2004, Gribi Associates submitted a workplan (*Workplan to Conduct Additional Site Characterization Activities*) proposing the drilling and sampling of two soil borings to about 40

feet in depth to assess both vertical and lateral MTBE impacts. On May 15, 2004, ACEH issued a letter requesting a workplan addendum to include: (1) A completed conduit/well survey; (2) A site conceptual model (SCM).

On September 6 and 7, 2006, and on December 26, 2006 , nine investigative borings (B-1 through B-9) were drilled and sampled at the site (Figure 5 through Figure 8). This investigation was reported in *SWI Summary of Findings, Corwood Car Wash UST Site* (Gribi Associates, February 23, 2007). Soils encountered in the nine soil borings generally consisted of clays with discontinuous interbedded sand and gravel layers ("Zone A") to approximately 25 feet below surface grade. A deeper and also discontinuous permeable sand layer ("Zone B") was encountered in five of the nine borings between 40 to 45 feet in depth. A relatively permeable groundwater zone was first encountered at a depth of approximately 30 feet. Fuel hydrocarbon odors and staining were only noted in shallow soil samples near the former UST excavation and dispenser island (B-1, B-8, and B-9). Fuel hydrocarbons odors or sheens were not noted in groundwater samples collected from the nine soil borings.

Shallow groundwater samples collected from the soil borings near the source area clearly indicate that previously-identified soil hydrocarbon impacts are not contributing significantly to groundwater hydrocarbon impacts beneath the site. Of the three soil borings nearest the source area (B-1, B-8, and B-9), groundwater results for B-8 and B-9 reported non-detectable levels for petroleum hydrocarbons. Shallow groundwater samples at B-1, showed elevated levels of TPH-G (2,800 ug/l) and benzene (3.1 ug/l), which exceeded their respective ESL values of 100 ug/l and 1.0 ug/l, respectively, for commercial properties where groundwater is or is a potential drinking water source (Table A-2 [prior ESL values]). But groundwater samples from downgradient soil borings were all non-detect for these compounds, indicating that the groundwater impacts are localized, and not migrating.

The groundwater ESL value of 5.0 ug/l for MTBE was exceed in shallow groundwater samples from borings B-3 (79 ug/l), B-4 (110 ug/l), B-6 (62 ug/l) and B-7 (17 ug/l). These impacts are likely a relic plume from the original UST release. None of the deeper groundwater samples showed detectable MTBE concentrations, except for boring B-4 (3.2 ug/l). Based on the results of this investigation, Gribi Associates recommended that regulatory closure for the site.

On September 5, 2008, ACEH issued a letter that included their technical comments for the entire case file, including the results for the 2006 soil and groundwater investigation. This letter did not respond to the closure recommendation, but rather provided technical comments and corresponding requests for clarification for investigations conducted several years prior, and requested issuance of a *Revised Soil and Groundwater Investigation Report*. On July 24, 2009, ACEH issued a letter requesting that well MW-1 be monitored on a semi-annual basis. On July 21, 2011, ACEH issued a letter again requesting issuance of a *Revised Soil and Groundwater Investigation Report*. In November 2011, Jim Gribi, PG, of Gribi Associates, discussed the site

and the request for revised report issuance with Mr. Paresh Khatri of ACEH. Mr. Khatri and Mr. Gribi agreed that trying to issue a revised report for technical issues that are several years past is not meaningful. Rather, they agreed that the submittal of a workplan to conduct additional investigative activities is warranted.

**WORKPLAN ELEMENTS**

A previous investigation conducted in 2006 showed that MTBE impacts had migrated from the subject site southward on to the adjacent, downgradient property occupied by a Midas automotive repair facility. In order to provide additional assessment as necessary to evaluate this site for regulatory closure, this workplan proposes: (1) The purging and sampling of groundwater monitoring well MW-1; (2) The drilling and sampling of approximately seven onsite and offsite investigative soil borings (B-10 through B-16); and (3) The collection of two shallow soil gas samples (SG-1 and SG-2) at the Site.

The proposed investigation will include the following workplan elements. All activities will be conducted in accordance with the approved workplan and with applicable State and Federal guidelines and statutes.

**Pre-field Activities**

Prior to implementing this workplan, written approval will be obtained from ACEH. Also, an access agreement will be arranged with the offsite property owners. In addition, drilling permits will be obtained from Alameda County Zone 7 Water Agency, and 48-hour notification will be given to Alameda County Zone 7 Water Agency prior to implementing field activities.

Proposed boring and soil gas locations will be marked with white paint, and Underground Services Alert (USA) will be notified at least 48 hours prior to drilling. Also, a private underground utility locator will be retained to provide independent clearance of the boring locations. Prior to initiating drilling activities, a Site Safety Plan will be prepared, and a tailgate safety meeting will be conducted with all site workers.

**Location of Investigative Soil Borings and Soil Gas Samples**

The proposed soil boring and soil gas sample locations are shown on Figure 9. Seven soil borings, B-10 through B-16, will be drilled and sampled. Borings B-10, B-11, and B-12 will be drilled near previous 2006 borings B-1, B-3, and B-6, down the median of the MTBE plume, to assess changes in the plume over the intervening years since 2006. Borings B-13 and B-14 will be sited near the expected edge of the 2006 groundwater MTBE plume to assess lateral MTBE groundwater impacts, and borings B-15 and B-16 will be sited approximately 300 feet southeast from the former UST source area to assess downgradient MTBE impacts.

The two soil gas samples, SG-1 and SG-2 will be collected just outside the Site building, between the building and the former UST system.

**Drilling and Sampling of Soil Borings**

The soil borings will be drilled using direct-push hydraulically-driven soil coring equipment. For each boring, continuous soil cores will be collected in a clear plastic acetate tube, nested inside a stainless steel core barrel. After each four-foot core barrel is brought to the surface and exposed, the core will first be sliced open lengthwise along the length of the acetate tube, allowing full examination and logging of the soil core prior to sampling. Soil samples will then be collected from specific zones of interest in an acetate liner, which will be cut to the desired length (typically four to six inches), capped with teflon tape and plastic end caps, labeled and placed in cold storage pending transport to a laboratory under formal chain-of-custody.
One grab groundwater sample will be collected from each boring at first encountered groundwater (expected at approximately 25 to 30 feet in depth). An additional deeper hydropunch groundwater sample will also be attempted in borings B-11, B-13, B-15, and B-16. The shallow grab groundwater samples will be collected from the open boring, and the deeper groundwater samples will be collected using a hydropunch-type sampler. The open hole grab groundwater sample will be collected by placing 3/4-inch diameter well casing in the boring. The hydropunch-type groundwater sampling method involves pushing a four-foot screened section sheathed in an outer casing to the desired depth, expected to be approximately 48 feet in depth, and then retracting the outer casing to expose the screened interval. With both sampling methods, groundwater will then be sampled using a clean small diameter bailer, and poured directly into laboratory-supplied containers. Each sample container will then be tightly sealed, labeled, and placed in cold storage for transport to the laboratory under formal chain-of-custody.

All coring and sampling equipment will be thoroughly cleaned and decontaminated between each sample collection by triple rinsing first with water, then with dilute tri-sodium phosphate solution, and finally with distilled water. Following completion, the investigative borings will be grouted to match existing surface grade using a cement slurry.

Drilling cuttings will be stored onsite in DOT-approved 55-gallon drums pending analytical results; and will be disposed of offsite in accordance with all applicable State and Federal guidelines and statutes.

**Laboratory Analysis of Soil and Water Samples**

Approximately 20 soil samples (two to three per boring) and 12 groundwater samples (one to two per boring and MW-1) will be analyzed for the following parameters:

USEPA 8260B Total Petroleum Hydrocarbons as Gasoline (TPH-G)
USEPA 8260B Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
USEPA 8260B Oxygenates (TAME, TBA, DIPE, ETBE, MTBE)

In addition, soil samples from near-source borings B-10 and B-11 and shallow groundwater samples from near source borings B-10, B-11, and B-12 and from well MW-1 will be analyzed for the following parameters:

USEPA 8015 Total Petroleum Hydrocarbons as Diesel (TPH-D)

All samples will be analyzed by a state-certified laboratory with standard turn around on laboratory results.

**Soil Gas Sampling**

Soil vapor sampling will be conducted in accordance with *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC, December 14, 2004, revised February 7, 2005) and with GPP guidance.

Two soil gas samples will be collected at the approximate locations shown on Figure 9. These locations are chosen to provide assessment of both indoor and outdoor vapor exposure concerns.

Soil gas sampling will generally include: (1) Installing a temporary vapor well to approximately 5.0 feet in depth;(2) Collecting one soil gas sample using an evacuated Summa canister; and (3) Repairing the ground surface to match existing conditions. A schematic diagram showing the approximate soil vapor sampling apparatus is depicted in Figure 10. Specific vapor sampling procedures are summarized as follows:

- Soil vapor samples will not be collected within 72 hours following a significant (>0.5 inches rain) precipitation event.

- A soil boring will be hand augered to approximately 5.5 feet in depth (exact depth dependant on logged soils and need to sample in permeable to semi-permeable layer). The temporary well will be constructed using 1/4-inch diameter PVC tubing with a porous vapor point. The vapor point will be placed in the well boring at about 5.0 feet and filter sand will be placed around the point to about 4.5 feet in depth. Bentonite will then be placed from about 4.5 feet to 0.5 feet in depth.

- A "T" valve will be placed in line at the ground surface to allow for system purging and for pressure testing of the above ground portion of the sampling train. The sampling tubing will be attached to a 200-milliliter per minute maximum flow controller, then a three-liter laboratory-supplied Summa Canister™ (evacuated to 29 inches mercury vacuum) with vacuum pressure valve.

- After retracting the vapor probe approximately 3 inches, a surface seal will be placed around the probe using granular bentonite and hydrated slightly. A laboratory supplied purge/pressure test Summa Canister™ (evacuated to 29 inches mercury) will then be

used to test vacuum pressure in the above ground portion of the sampling train. Sampling train vacuum pressure will be maintained for at least 10 minutes; if pressure drops occur, the system connections will be tightened and the pressure testing continued.

- The vapor probe will be allowed to equilibrate for approximately 30 minutes, and will then be purged of approximately three purge volumes using a low-flow pump or vacuum syringe.

- The entire probe and sampling train will be placed under a shroud with pliable weather stripping at its base to maintain a tracer gas atmosphere inside the shroud

- The vapor sample will then be collected by opening the Summa canister and allowing the vapor to fill the canister until the vacuum pressure in the canister reaches approximately 20 percent of initial (approximately 5 to 6 inched mercury). The flow controller will be used so that the Summa Canister will fill slowly to insure a representative soil vapor sample. Prior to and during sampling, a surrogate chemical, isopropyl alcohol, will be dosed into the shroud to provide a tracer gas to assess possible sample equipment leaks. Prior to, at start time, and during sampling, periodic vacuum measurements will be recorded on a field data sheet, and initial and final vacuum pressures will be noted on chain-of-custody records.

- The vapor wells will be temporarily sealed pending lab results, and then the tubing will be removed and the surface restored. Between sampling events, the sampling equipment will be cleaned and decontaminated as described previously in this workplan.

After completion of sampling activities, the vapor samples (filled Summa Canisters) will be sealed, labeled, and transported under chain-of-custody to a California-certified laboratory for analysis. The vapor samples will be analyzed for BTEX and isopropyl alcohol using USEPA Method TO-15, which provides for relatively low detection levels.

**Preparation of Summary Report**

A report summarizing investigative activities will be prepared for submittal to ACEH. This report will describe all investigative methods and results, and will include tabulated laboratory results and graphical depictions of result, as well soil boring logs and laboratory data reports.

**PROJECT SCHEDULE**

Subject to ACEH approval, completion of proposed activities can be completed within approximately eight to twelve weeks.

We appreciate this opportunity to provide this report for your review. Please contact us if there are questions or if additional information is required.

Very truly yours,

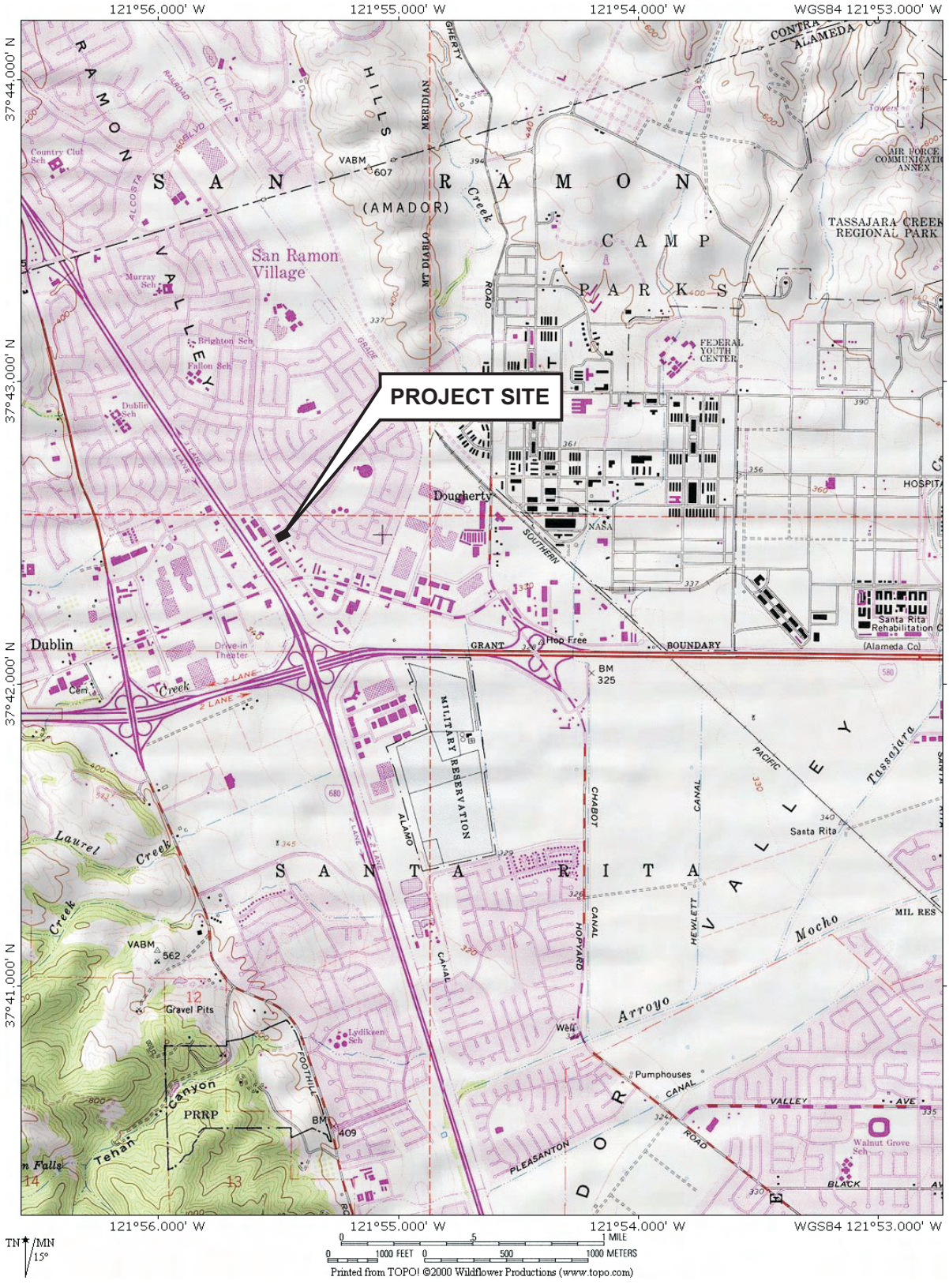
Matthew A. Rosman
Project Engineer

James E. Gribi
Registered Geologist
California No. 5843

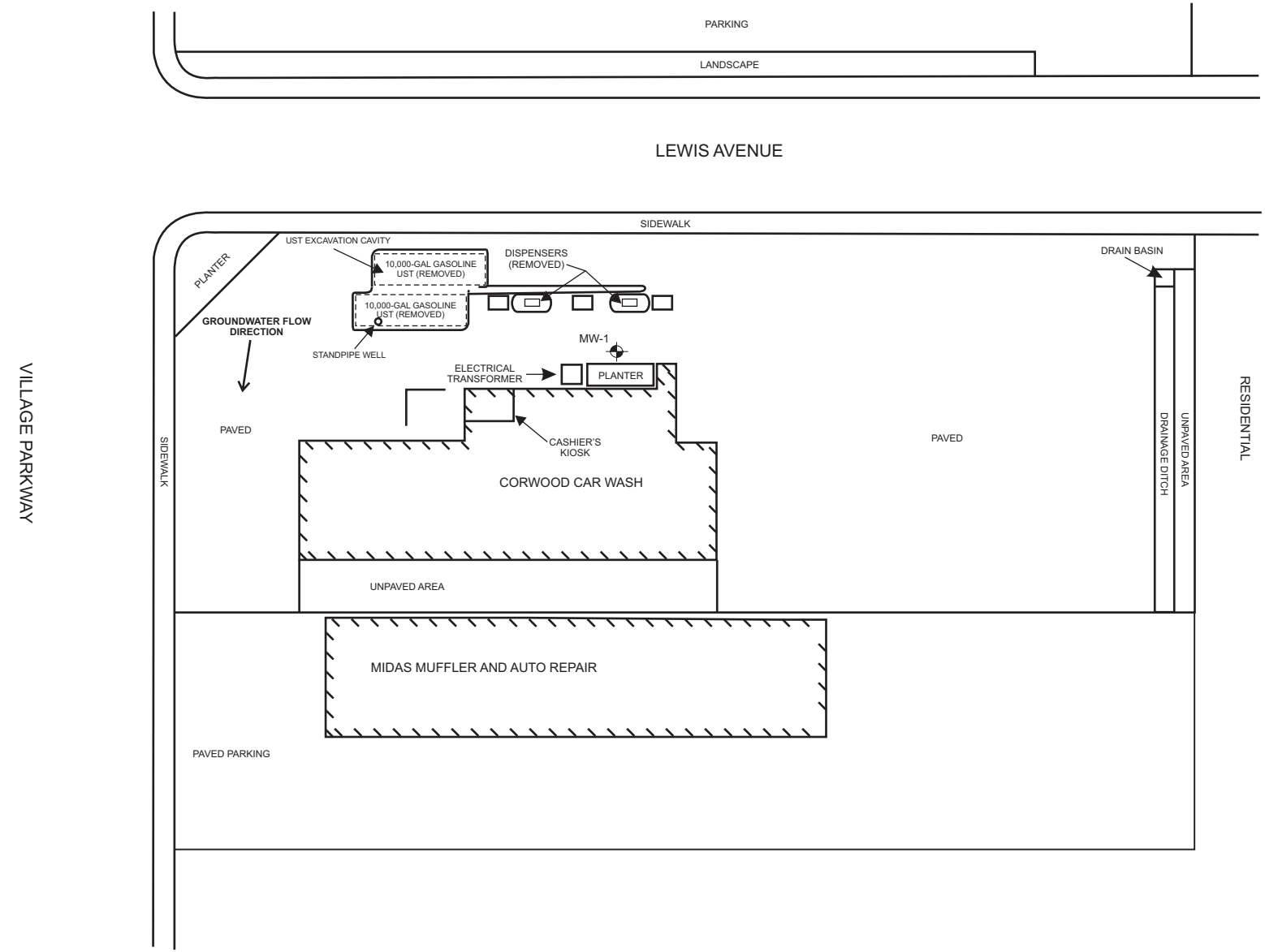

Enclosure

c: Mr. Roger Woodward

**FIGURES**




| | | | | |
|---|---|---|---|---|
| DESIGNED BY: | CHECKED BY: | **SITE VICINITY MAP** | DATE: 02/07/2012 | FIGURE: **1** |
| DRAWN BY: MAR | SCALE: | CORWOOD CAR WASH<br>6973 VILLAGE PARKWAY<br>DUBLIN, CALIFORNIA | GRIBI | |
| PROJECT NO: | | | | |




0 30 60

APPROXIMATE SCALE IN FEET

N

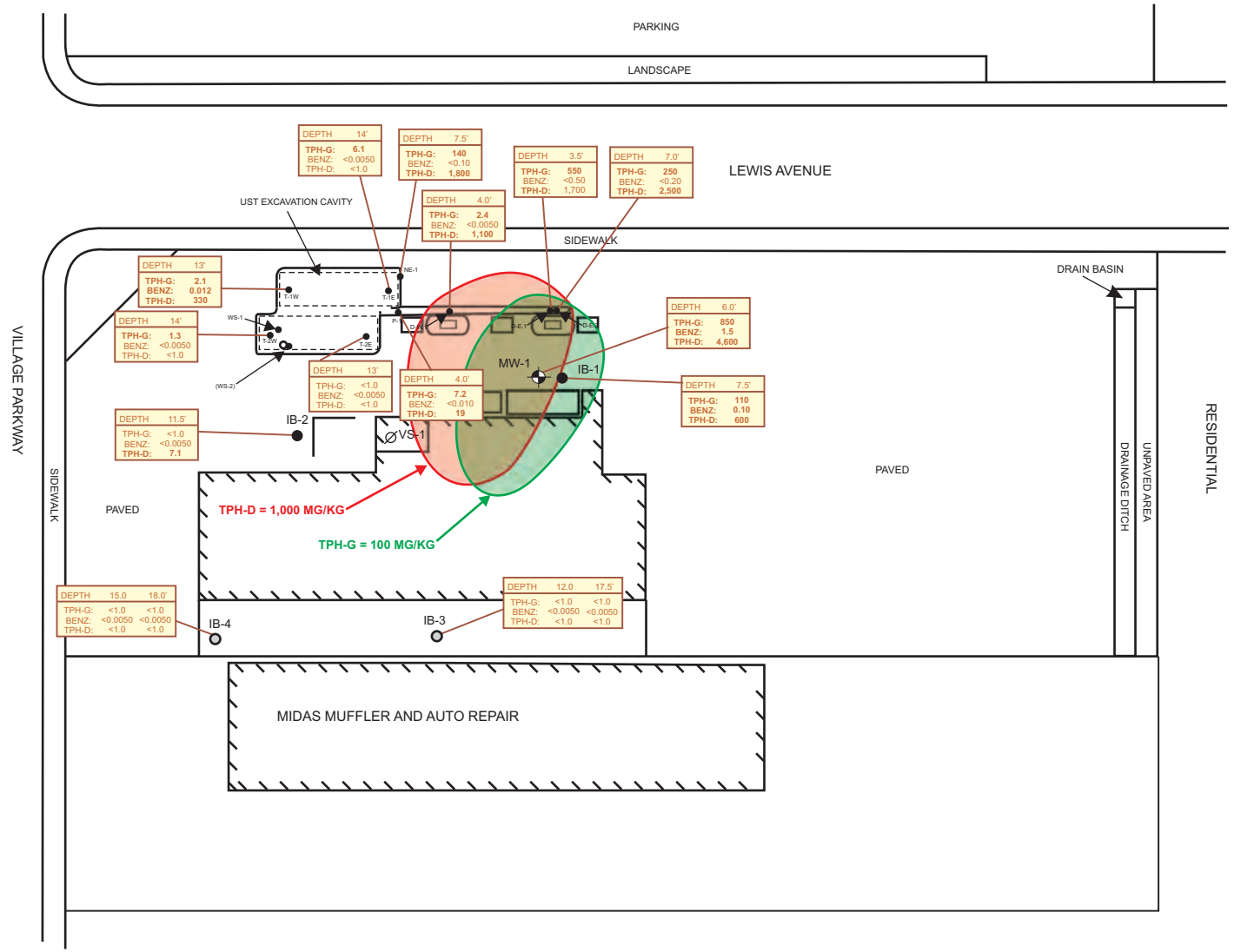
| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: JEG | SCALE: |
| PROJECT NO: 106-02-04 | |

**SITE PLAN**

CORWOOD CAR WASH
6973 VILLAGE PARKWAY

DATE: 02/07/12 | FIGURE: **2**

GRIBI




- SOIL VAPOR SAMPLE LOCATION
- INVESTIGATIVE BORING (GRIBI, 01/2003)
- INVESTIGATIVE BORING (GRIBI, 03/2000)
- UST REMOVAL SAMPLE (GRIBI, 01-02/2000)
- GROUNDWATER MONITORING WELL (GRIBI, 01/2003)

0 40 80

APPROXIMATE SCALE IN FEET

LABORATORY ANALYTICAL DATA IN MG/KG (PARTS PER MILLION).

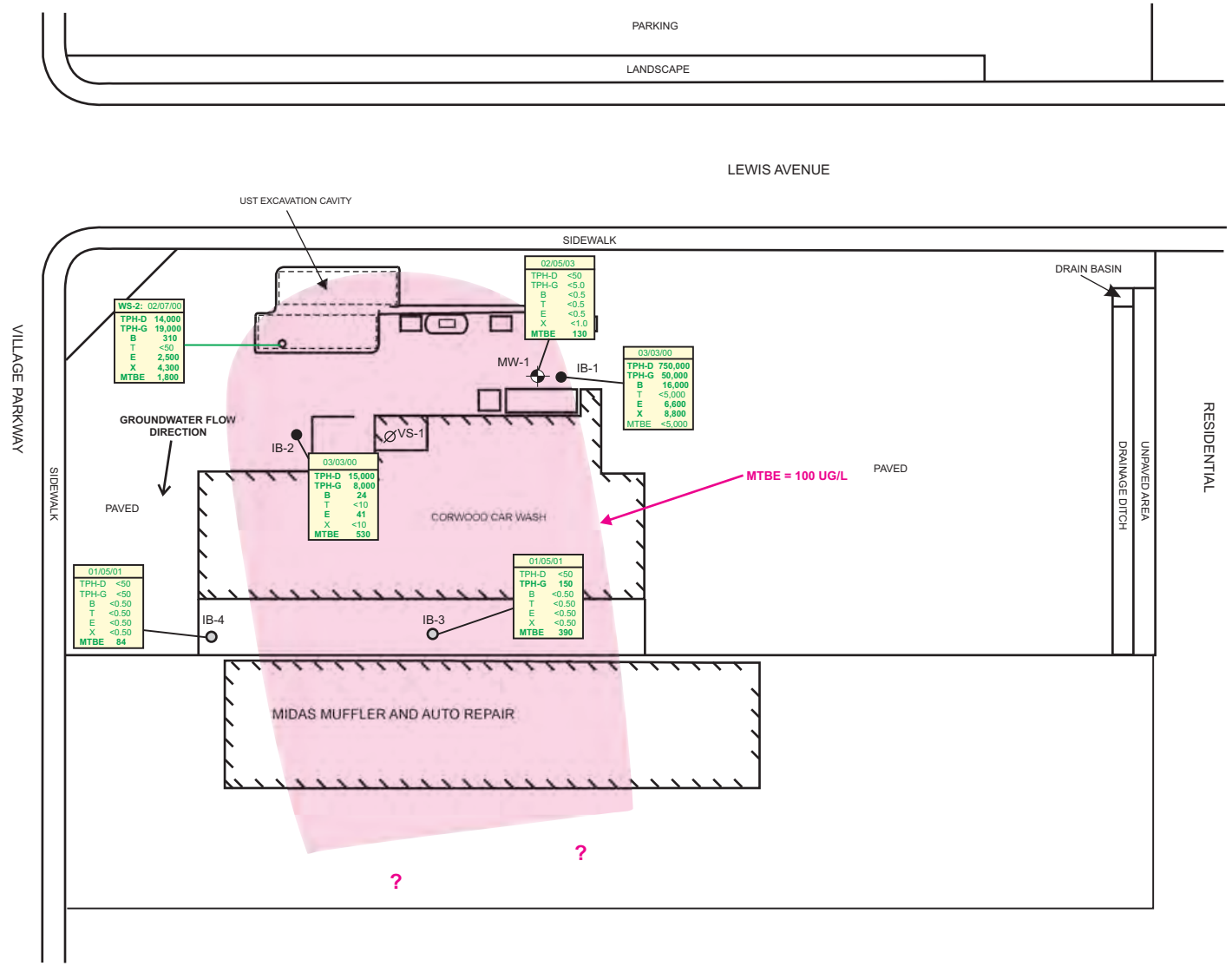
| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: JEG | SCALE: |
| PROJECT NO: 106-02-04 | |

**HISTORIC SOIL TPH-G, BENZENE, & TPH-D RESULTS, 200-2003**

CORWOOD CAR WASH
6973 VILLAGE PARKWAY

DATE: 02/07/12 FIGURE: 3

GRIBI




Ø - SOIL VAPOR SAMPLE LOCATION

○ - INVESTIGATIVE BORING (GRIBI, 01/2003)

● - INVESTIGATIVE BORING (GRIBI, 03/2000)

○ - UST REMOVAL SAMPLE (GRIBI, 01-02/2000)

⊕ - GROUNDWATER MONITORING WELL (GRIBI, 01/2003)

0 40 80

APPROXIMATE SCALE IN FEET

N

**LABORATORY ANALYTICAL DATA IN UG/LITER (PARTS PER MILLION).**

| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: JEG | SCALE: |
| PROJECT NO: 106-02-04 | |

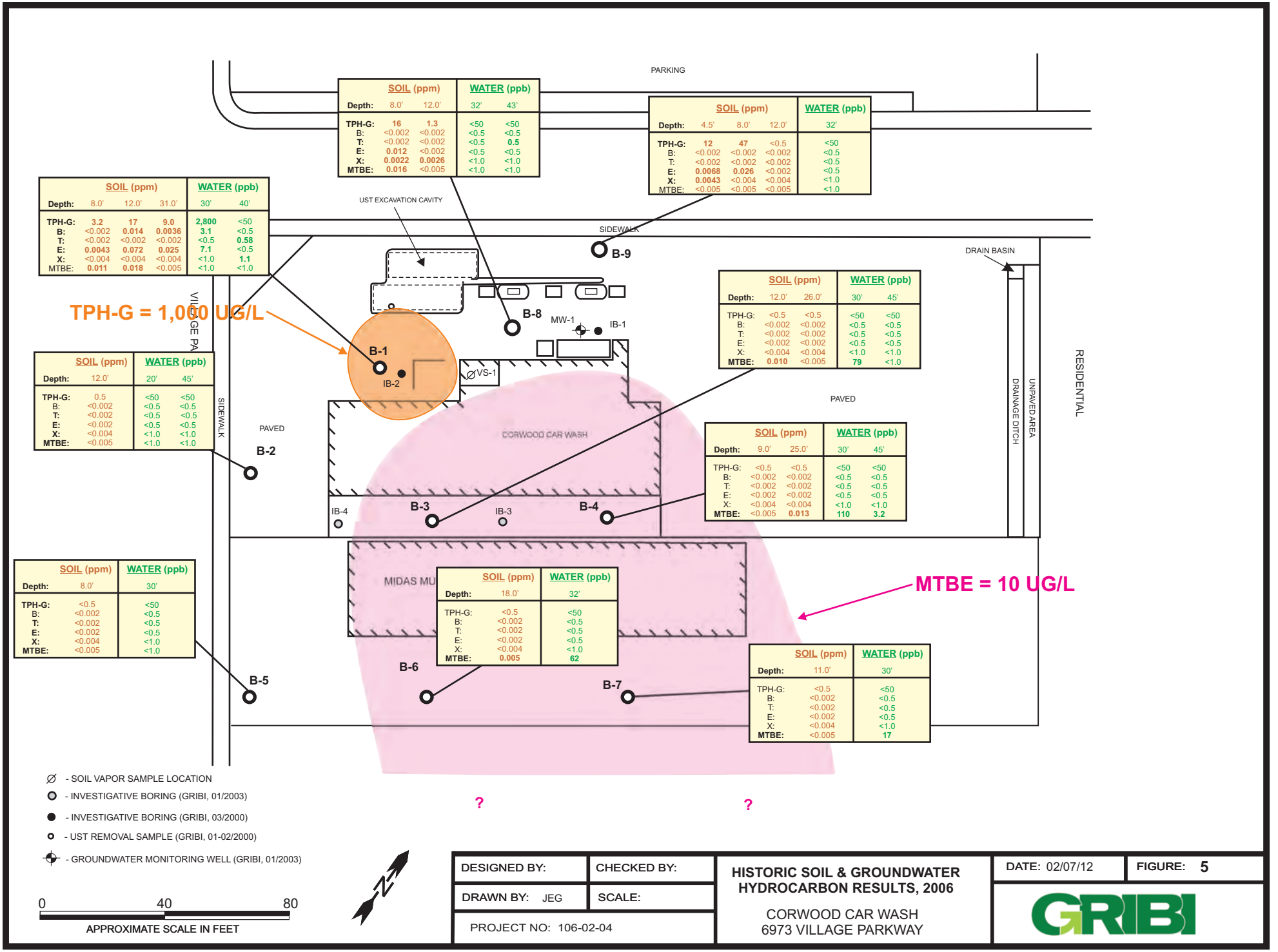
**HISTORIC GROUNDWATER HYDROCARBON RESULTS, 2000-2003**

CORWOOD CAR WASH
6973 VILLAGE PARKWAY

DATE: 02/07/12

FIGURE: 4

GRIBI




| | SOIL (ppm) | | WATER (ppb) | |
|---|---|---|---|---|
| Depth: | 8.0' | 12.0' | 32' | 43' |
| TPH-G: | 16 | 1.3 | <50 | <50 |
| B: | <0.002 | <0.002 | <0.5 | <0.5 |
| T: | <0.002 | <0.002 | <0.5 | 0.5 |
| E: | 0.012 | <0.002 | <0.5 | <0.5 |
| X: | 0.0022 | 0.0026 | <1.0 | <1.0 |
| MTBE: | 0.016 | <0.005 | <1.0 | <1.0 |

| | SOIL (ppm) | | | WATER (ppb) | |
|---|---|---|---|---|---|
| Depth: | 4.5' | 8.0' | 12.0' | 32' | |
| TPH-G: | 12 | 47 | <0.5 | <50 | |
| B: | <0.002 | <0.002 | <0.002 | <0.5 | |
| T: | <0.002 | <0.002 | <0.002 | <0.5 | |
| E: | 0.0068 | 0.026 | <0.002 | <0.5 | |
| X: | 0.0043 | <0.004 | <0.004 | <1.0 | |
| MTBE: | <0.005 | <0.005 | <0.005 | <1.0 | |

| | SOIL (ppm) | | | WATER (ppb) | |
|---|---|---|---|---|---|
| Depth: | 8.0' | 12.0' | 31.0' | 30' | 40' |
| TPH-G: | 3.2 | 17 | 9.0 | 2,800 | <50 |
| B: | <0.002 | 0.014 | 0.0036 | 3.1 | <0.5 |
| T: | <0.002 | <0.002 | <0.002 | <0.5 | 0.58 |
| E: | 0.0043 | 0.072 | 0.025 | 7.1 | <0.5 |
| X: | <0.004 | <0.004 | <0.004 | <1.0 | 1.1 |
| MTBE: | 0.011 | 0.018 | <0.005 | <1.0 | <1.0 |

| | SOIL (ppm) | | WATER (ppb) | |
|---|---|---|---|---|
| Depth: | 12.0' | 26.0' | 30' | 45' |
| TPH-G: | <0.5 | <0.5 | <50 | <50 |
| B: | <0.002 | <0.002 | <0.5 | <0.5 |
| T: | <0.002 | <0.002 | <0.5 | <0.5 |
| E: | <0.002 | <0.002 | <0.5 | <0.5 |
| X: | <0.004 | <0.004 | <1.0 | <1.0 |
| MTBE: | 0.010 | <0.005 | 79 | <1.0 |

| | SOIL (ppm) | WATER (ppb) | |
|---|---|---|---|
| Depth: | 12.0' | 20' | 45' |
| TPH-G: | 0.5 | <50 | <50 |
| B: | <0.002 | <0.5 | <0.5 |
| T: | <0.002 | <0.5 | <0.5 |
| E: | <0.002 | <0.5 | <0.5 |
| X: | <0.004 | <1.0 | <1.0 |
| MTBE: | <0.005 | <1.0 | <1.0 |

| | SOIL (ppm) | | WATER (ppb) | |
|---|---|---|---|---|
| Depth: | 9.0' | 25.0' | 30' | 45' |
| TPH-G: | <0.5 | <0.5 | <50 | <50 |
| B: | <0.002 | <0.002 | <0.5 | <0.5 |
| T: | <0.002 | <0.002 | <0.5 | <0.5 |
| E: | <0.002 | <0.002 | <0.5 | <0.5 |
| X: | <0.004 | <0.004 | <1.0 | <1.0 |
| MTBE: | <0.005 | 0.013 | 110 | 3.2 |

| | SOIL (ppm) | WATER (ppb) |
|---|---|---|
| Depth: | 8.0' | 30' |
| TPH-G: | <0.5 | <50 |
| B: | <0.002 | <0.5 |
| T: | <0.002 | <0.5 |
| E: | <0.002 | <0.5 |
| X: | <0.004 | <1.0 |
| MTBE: | <0.005 | <1.0 |

| | SOIL (ppm) | WATER (ppb) |
|---|---|---|
| Depth: | 18.0' | 32' |
| TPH-G: | <0.5 | <50 |
| B: | <0.002 | <0.5 |
| T: | <0.002 | <0.5 |
| E: | <0.002 | <0.5 |
| X: | <0.004 | <1.0 |
| MTBE: | 0.005 | 62 |

| | SOIL (ppm) | WATER (ppb) |
|---|---|---|
| Depth: | 11.0' | 30' |
| TPH-G: | <0.5 | <50 |
| B: | <0.002 | <0.5 |
| T: | <0.002 | <0.5 |
| E: | <0.002 | <0.5 |
| X: | <0.004 | <1.0 |
| MTBE: | <0.005 | 17 |

| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: JEG | SCALE: |
| PROJECT NO: 106-02-04 | |

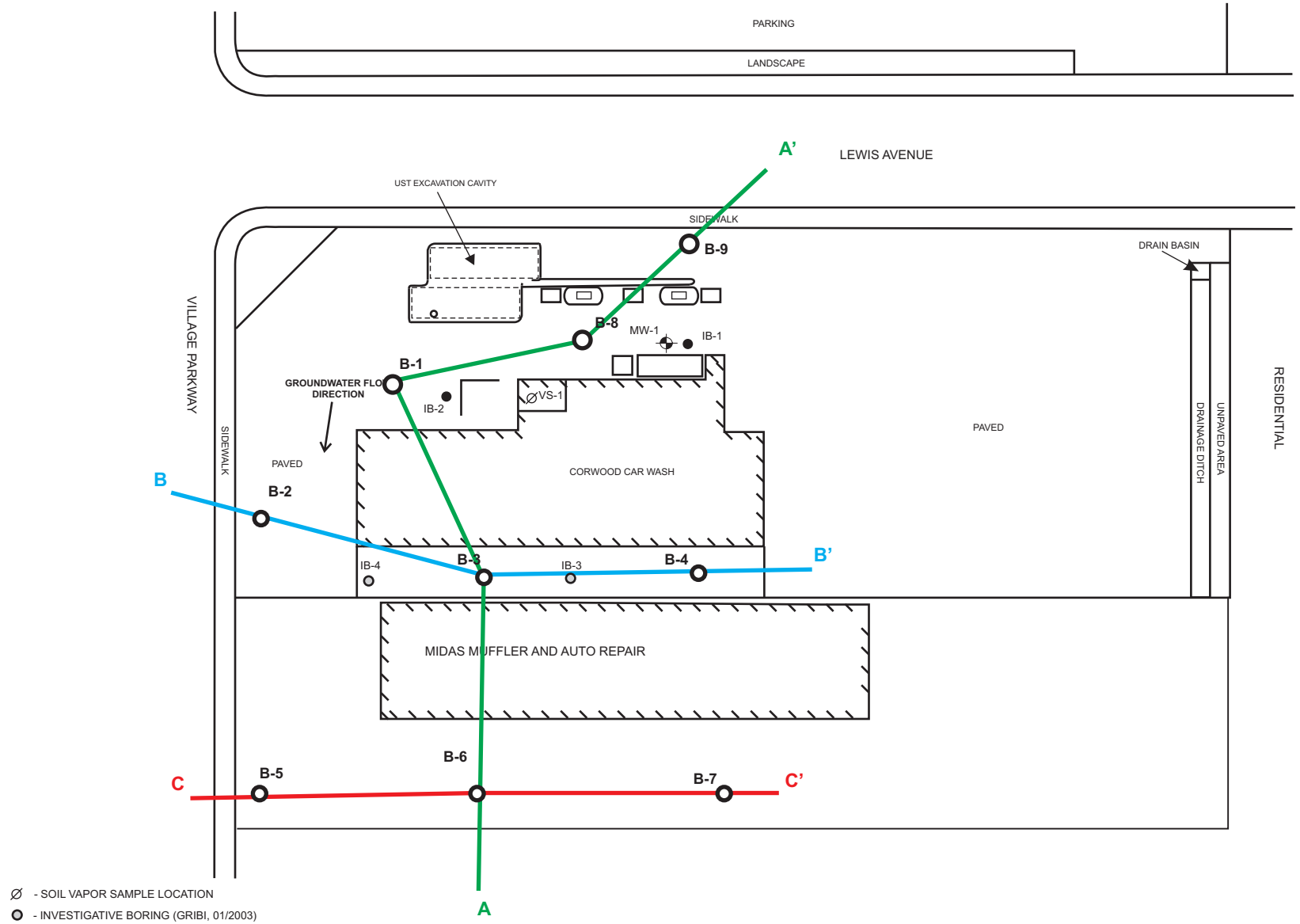
**HISTORIC SOIL & GROUNDWATER HYDROCARBON RESULTS, 2006**

CORWOOD CAR WASH
6973 VILLAGE PARKWAY

DATE: 02/07/12

FIGURE: 5

GRIBI




| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: JEG | SCALE: |
| PROJECT NO: 106-02-04 | |

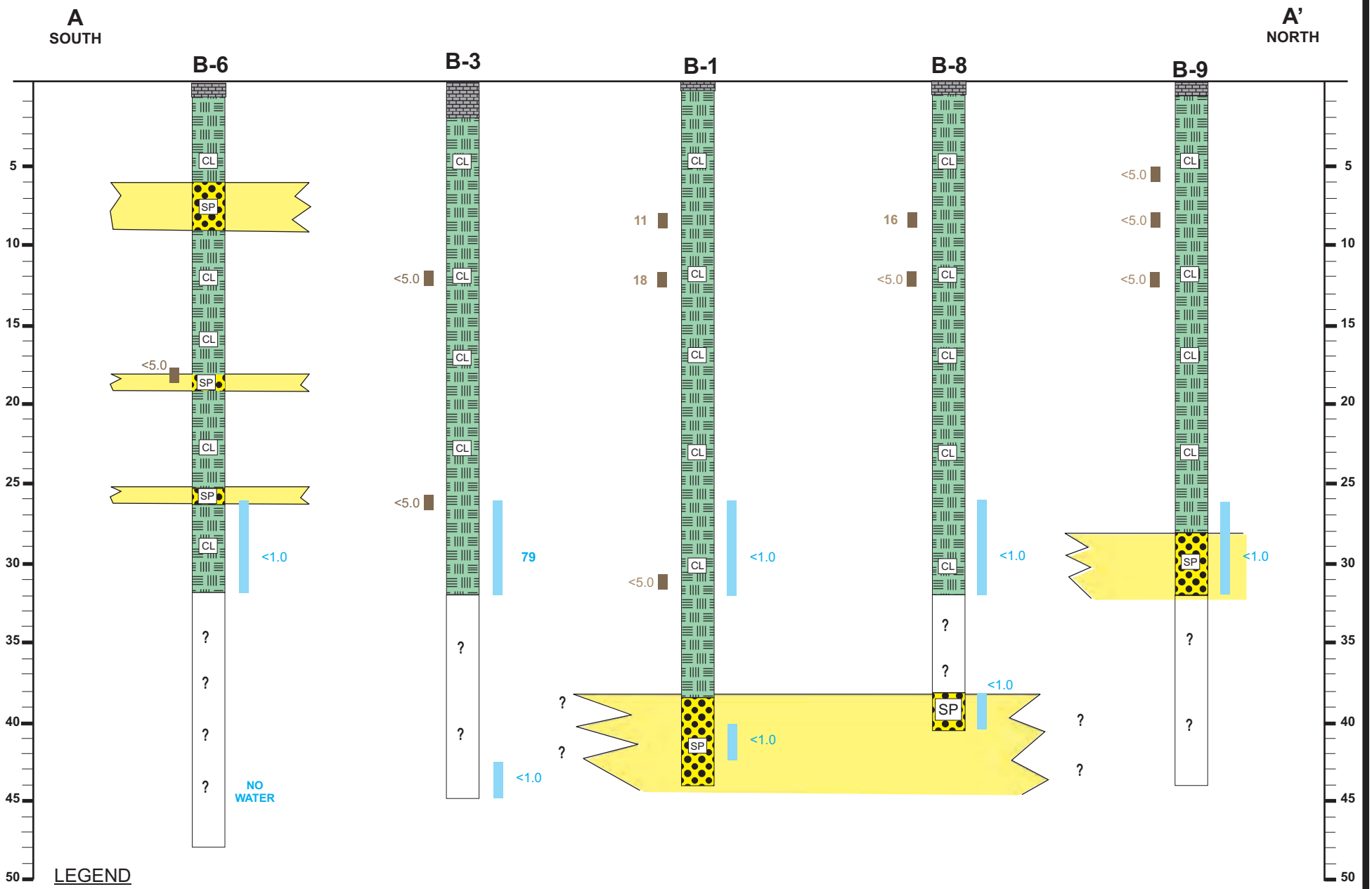
**CROSS SECTION LOCATION MAP**

CORWOOD CAR WASH
6973 VILLAGE PARKWAY

DATE: 02/07/12

FIGURE: 6

GRIBI




## LEGEND

<5.0 - SOIL SAMPLE LOCATION & MTBE CONCENTRATION IN MICROGRAMS PER KILOGRAM (UG/KG).

<1.0 - GROUNDWATERL SAMPLE LOCATION & MTBE CONCENTRATION IN MICROGRAMS PER LITER (UG/L).

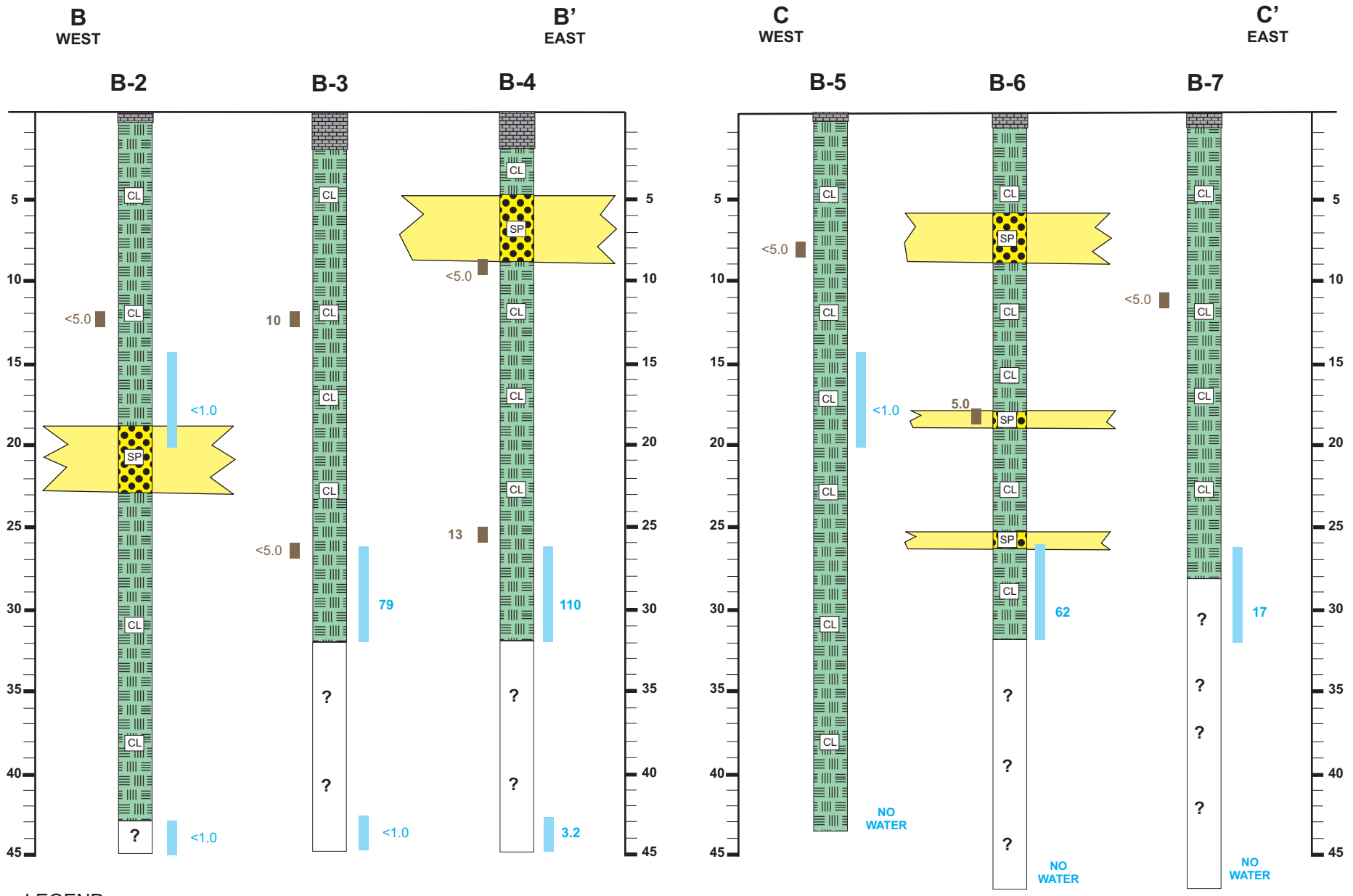
| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: MAR | SCALE: |
| PROJECT NO: 147-01-03 | |

**NORTHT-SOUTH CROSS SECTION**

CORWOOD CAR WASH UST SITE
DUBLIN, CALIFORNIA

DATE: 02/06/12 | FIGURE: 7

GRIBI




## LEGEND

<5.0 - SOIL SAMPLE LOCATION & MTBE CONCENTRATION IN MICROGRAMS PER KILOGRAM (UG/KG).

<1.0 - GROUNDWATERL SAMPLE LOCATION & MTBE CONCENTRATION IN MICROGRAMS PER LITER (UG/L).

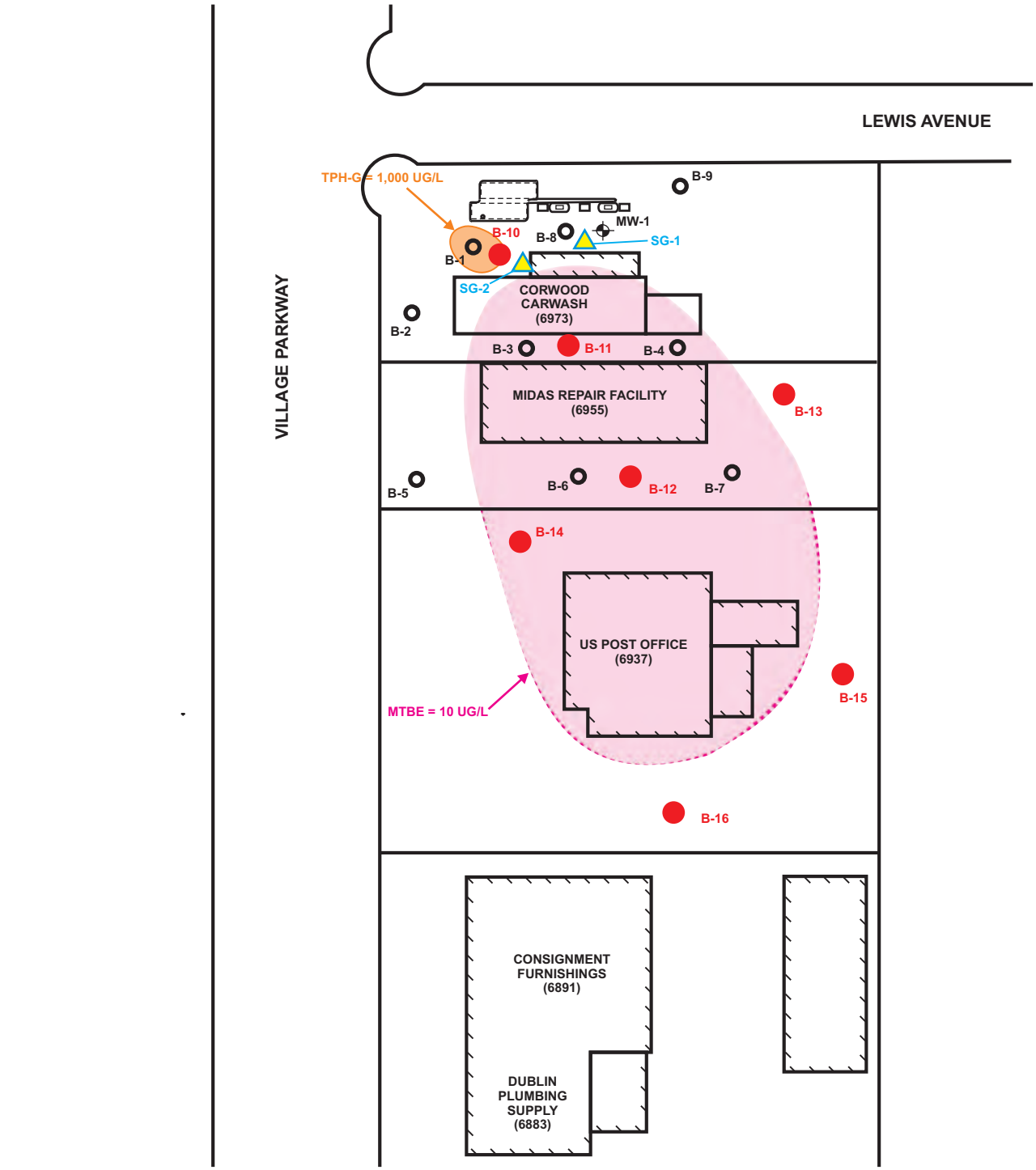
| | |
|---|---|
| DESIGNED BY: | CHECKED BY: |
| DRAWN BY: MAR | SCALE: |
| PROJECT NO: 147-01-03 | |

**EAST-WEST CROSS SECTIONS**

CORWOOD CAR WASH UST SITE
DUBLIN, CALIFORNIA

DATE: 02/06/12 | FIGURE: 8

GRIBI



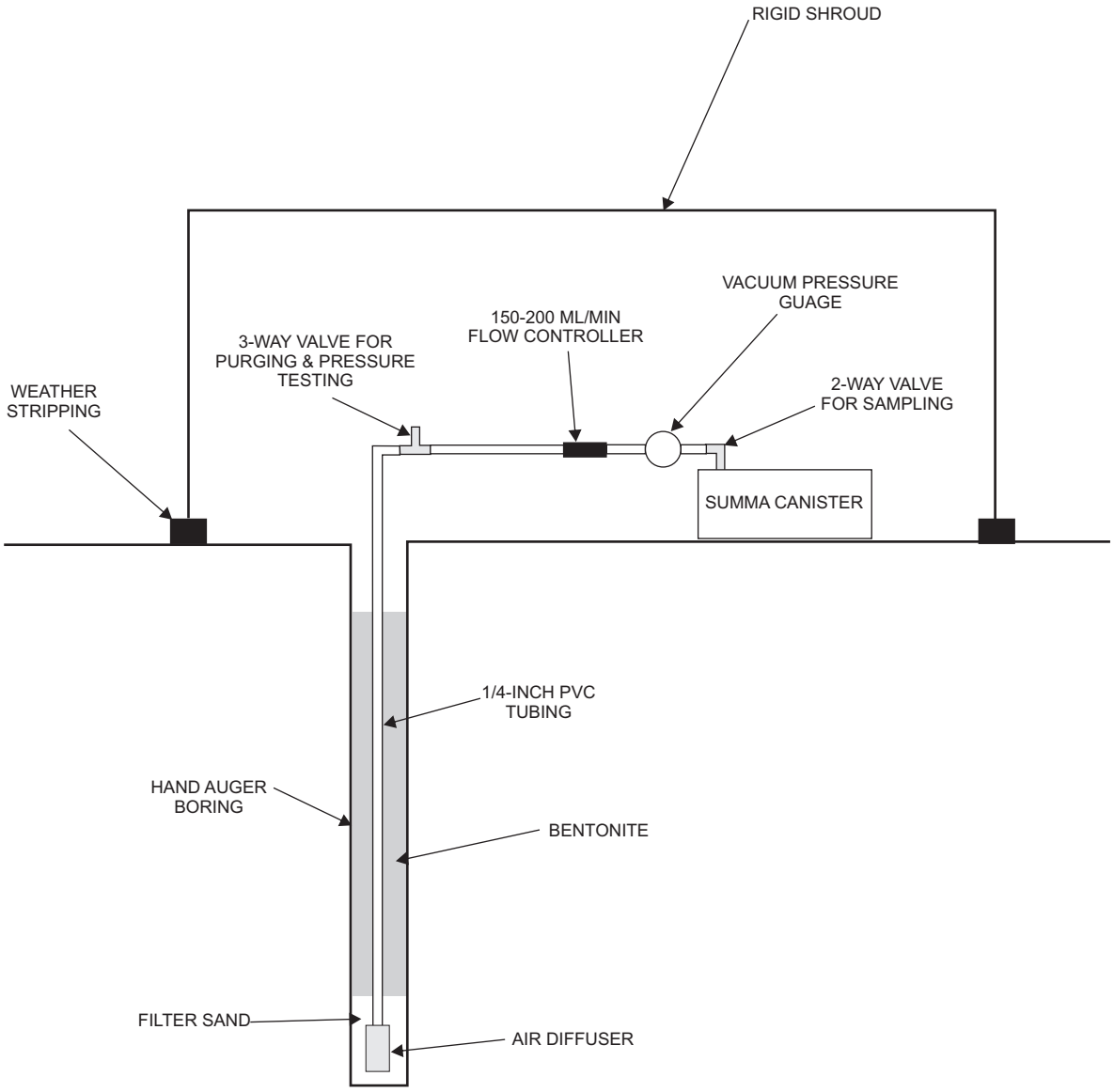

- PROPOSED SOIL GAS SAMPLE LOCATION
- PROPOSED SOIL BORING LOCATION
- SOIL BORING LOCATION, GRIBI ASSOCIATES, 2006.
- GROUNDWATER MONITORING WELL LOCATION

0 80 160

APPROXIMATE SCALE IN FEET

N

| | | | | |
|---|---|---|---|---|
| DESIGNED BY: | CHECKED BY: | **PROPOSED BORING LOCATIONS** | DATE: 02/07/2012 | FIGURE: **9** |
| DRAWN BY: MAR | SCALE: | CORWOOD CAR WASH<br>6973 VILLAGE PARKWAY<br>DUBLIN, CALIFORNIA | GRIBI | |
| PROJECT NO: | | | | |




NOT TO SCALE

| | | | | |
|---|---|---|---|---|
| DESIGNED BY: | CHECKED BY: | **SOIL VAPOR SAMPLING SCHEMATIC DIAGRAM**<br><br>CORWOOD CAR WASH<br>6973 VILLAGE PARKWAY<br>DUBLIN, CALIFORNIA | DATE: 02/07/2012 | FIGURE: **10** |
| DRAWN BY: MAR | SCALE: | | | GRIBI |
| PROJECT NO: | | | | |