REVISED ADDITIONAL INVESTIGATION AND SOIL REMOVAL WORK PLAN

Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

RECEIVED
By Alameda County Environmental Health at 3:13 pm, Aug 28, 2014

Prepared for:

Crown Chevrolet
Dublin, California

Prepared by:

AMEC Environment & Infrastructure, Inc.
180 Grand Ave, Suite 1100
Oakland, California 94612

August 2014

Project No. OD10160070

August 27, 2014

Ms. Dilan Roe
Site Cleanup Program Manager
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501-6577

Subject: **Revised Additional Investigation and Soil Removal Work Plan**
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California
Site Cleanup Program Case No. RO0003014

Dear Ms. Roe:

Enclosed please find the *Revised Additional Investigation and Soil Removal Work Plan* for the Crown Chevrolet Cadillac Isuzu site at 7544 Dublin Boulevard, in Dublin, California (Site Cleanup Program Case No. RO0003014, GeoTracker Global ID T10000001616). This work plan was prepared by AMEC Environment & Infrastructure, Inc. (AMEC), on behalf of Crown Chevrolet.

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.

Please contact me at (925) 984-1426 or Avery Whitmarsh of AMEC at 510-663-4154 if you have any questions regarding this report.

Sincerely yours,

Terri Costello
Betty J. Woolverton Trust

Attachment: Revised Additional Investigation and Soil Removal Work Plan

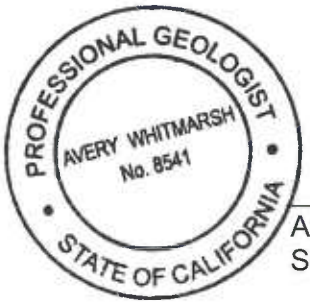
cc: Tondria Hendrix, Zurich North American Insurance
Thomas L. Vormbrock, Rimkus Consulting Group, Inc.
Avery Whitmarsh, AMEC Environment & Infrastructure, Inc.

REVISED ADDITIONAL INVESTIGATION AND SOIL REMOVAL WORK PLAN
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

Project OD10160070

This work plan was prepared by the staff of AMEC Environment & Infrastructure, Inc., under the supervision of the Geologist whose seal and signature appear hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.



August 27, 2014

Avery Whitmarsh, PG #8541 Date
Senior Geologist

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REVISED ADDITIONAL INVESTIGATION AND SOIL REMOVAL WORK PLAN

Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (AMEC), has prepared this *Revised Additional Investigation and Soil Removal Work Plan* (Work Plan) on behalf of the Betty J. Woolverton Trust and Crown Chevrolet Cadillac Isuzu (collectively, Crown) for the property located at 7544 Dublin Boulevard in Dublin, California (the site; Figure 1). This Work Plan has been prepared at the request of Alameda County Environmental Health (ACEH).[1]

The purpose of this Work Plan is to describe environmental activities that will be performed prior to, during, and following the planned demolition of the existing buildings and hardscape at the site. The demolition activities will be performed by others in order to allow for planned site redevelopment. The work includes the following activities:

- Destruction of existing groundwater monitoring wells and vapor probes and installation of new monitoring wells;
- Confirmation soil sampling beneath slabs and piping following demolition of site buildings; and
- Additional excavation of impacted soil near a former Front End Alignment Pit (former F.E. Pit) and a former sump within Building B.

This work was proposed in the *Revised Draft Feasibility Study and Corrective Action Plan* that was submitted to ACEH on March 25, 2013 (AMEC, 2013) and acknowledged by ACEH in a letter to Crown dated August 16, 2013 (ACEH, 2013). The *Final Feasibility Study and Corrective Action Plan* was submitted to ACEH on May 1, 2014 (FS/CAP; AMEC, 2014).

2.0 BACKGROUND

The site was developed in 1968 as Crown Chevrolet, a car dealership with auto body shops, on land that appears to have been previously used for agricultural purposes. At that time, the three main site buildings (Buildings A, B, and C) were constructed (Figure 2). Building A was later expanded. Building D was reportedly constructed in 1994. Buildings B and C were used

[1] A previous version of this work plan was submitted to ACEH on June 12, 2014; this version is revised based on comments that Dilan Roe of ACEH provided to Avery Whitmarsh of AMEC via telephone on August 1, 2014.

for vehicle maintenance and auto body activities, while Buildings A and D were only used as offices and showrooms. Operations as a car dealership and auto body shop continued from 1968 through 2013. The buildings are still present, but no operations are being conducted at the site at this time.

The site is planned to be redeveloped as multi-level mixed residential and commercial space, and all existing site buildings will be demolished. Multiple investigations have been conducted at the site from 2009 to 2014 (as summarized in AMEC, 2012); these investigations have been performed to address regulatory concerns as well as in support of transactional and potential redevelopment activities. The investigations have identified two main environmental issues at the site. First, groundwater beneath the site is impacted by volatile organic compounds (VOCs) from an unknown, off-site source. Second, releases of chlorobenzene and related compounds occurred at the former F.E Pit and former sump. Soil removal was conducted at the F.E. Pit and former sump in 2011; limited impacted soil remains in place beneath building walls (AMEC, 2011c).

Soil, groundwater, and/or soil vapor sampling have also been performed at other locations within the site buildings, including several former and existing hydraulic lifts, a second former sump, a drain line in Building B, and a possible former sump in Building C (Figure 2). No significant impacts have been identified at these features, although there have been limited hydraulic oil impacts identified at one former hydraulic lift (AMEC, 2011a).

The FS/CAP summarizes remedial actions to be performed in order to protect future site residents from potential impacts related to the VOC-impacted soil and groundwater (AMEC, 2014). Residual impacted soil beneath the building walls will be removed following building demotion. Potential adverse effects from the VOC plume will be mitigated by installation of a vapor barrier and sub-slab depressurization system beneath future site buildings. Installation of a permeable reactive barrier (PRB) near the upgradient site boundary will treat impacted groundwater migrating on to the site, reducing the potential for an ongoing source of contamination.

3.0 APPROACH

The environmental activities to be conducted as part of this scope of work are described in the following three sections of this report, as outlined below:

Section 4.0	Monitoring Well and Vapor Probe Destruction and Replacement Well Installation
Section 5.0	Soil Sampling During Demolition
Section 6.0	Additional Soil Removal near Former F.E. Pit and Sump

It will be necessary to conduct the environmental activities in coordination with the demolition of the site buildings and hardscape, which will be performed by others. A general schedule and outline of responsibilities is provided below.

The destruction of the existing monitoring wells will be performed prior to the site demolition activities, so that the existing wells are not damaged during demolition and re-grading, potentially creating a conduit from the surface to groundwater. The installation of the replacement monitoring wells will not occur until site redevelopment is mostly complete, also in order to avoid damage to the wells. It is likely that there will be a time period of 6 to 12 months between destruction of the existing groundwater monitoring wells and installation of the replacement wells; however, the approximately 1.5 years of quarterly groundwater monitoring data collected to date indicate that VOC concentrations in groundwater are stable.

General observations and soil sampling will be conducted during demolition of the site buildings and hardscape; associated activities will involve surveying site features prior to demolition, observing some of the soil exposed during demolition, and collecting soil samples at known and other possible features following demolition. It is assumed that routine demolition activities, including removal of drain lines and hydraulic lifts, will be performed by others. If previously unidentified environmental impacts are identified during the demolition activities, ACEH will be notified, and any remediation will be addressed separately in accordance with the site demolition plan.

The additional soil removal near the former F.E. Pit and sump in Building B will be conducted following completion of the demolition activities in the vicinity of Building B (it is possible that this work will be conducted concurrently with the demolition activities in other portions of the site).

4.0 MONITORING WELL AND VAPOR PROBE DESTRUCTION AND REPLACEMENT WELL INSTALLATION

Seven groundwater monitoring wells and four soil vapor probes are currently present at the site (Figure 2) and are monitored on a quarterly basis. Four of the groundwater monitoring wells are three-port continuous-multichannel-tubing (CMT) wells, and three are 1-inch-diameter pre-pack monitoring wells. In order to avoid damage to them during redevelopment, the seven existing groundwater monitoring wells will be destroyed prior to site redevelopment. Following site redevelopment, new wells will be installed at different locations within the site. The vapor monitoring wells were installed as part of a 2012 investigation. They are no longer needed for assessment and will be destroyed prior to redevelopment. The monitoring well destruction and installation methods and the vapor probe destruction methods are described in the following sections.

Additionally, a forthcoming work plan for an investigation related to the installation of the PRB will propose installation of several piezometers in order to better understand the groundwater flow direction at the site. It will likely be necessary to destroy these piezometers at the same time as the destruction of the existing monitoring wells.

Prior to the well or vapor probe destruction or installation activities, appropriate permits will be obtained from Zone 7 Water Agency and a site-specific health and safety plan will be prepared. Additionally, at least two business days prior to sampling, the anticipated boundaries of the areas to be sampled will be marked with white paint and Underground Service Alert (USA) will be contacted, as required by law, to identify public utilities, if any, that may be in the vicinity of the wells.

4.1 MONITORING WELL DESTRUCTION

The existing groundwater monitoring wells (and the piezometers that are proposed to be installed in association with the PRB pre-design investigation) will be destroyed by grouting and/or overdrilling. The work will be performed in accordance with the appropriate state (California Department of Water Resources, 1991) and Zone 7 Water Agency requirements by a California-licensed C-57 contractor under the supervision of a California-licensed Professional Geologist.

Prior to destroying each well or piezometer, the concrete well pad will be broken up using a pneumatic jack hammer and the traffic-rated well vault will be removed, with care taken not to damage the PVC casing.

The CMT wells will be destroyed by grouting each of the individual well chambers in the well from total depth to top of casing via tremie, using a peristaltic pump and new polyethylene tubing. Grout will be pumped until it surfaces at the well head and will continue while the tremie pipe is removed. The planned site development includes site grading, which may extend to a depth of up to 5 feet below ground surface (bgs). Therefore, following the grouting of the CMT wells, the top approximately 5 feet of the each well will be destroyed by overdrilling and the resulting borehole will be backfilled with bentonite. Each CMT well was installed within a 6-inch-diameter borehole. Therefore, hollow-stem auger drilling technology with at least 6-inch-diameter augers will be used to overdrill the top 5 feet of the well.

The 1-inch pre-pack monitoring wells and the 2-inch piezometers will be destroyed by overdrilling. Hollow-stem auger drilling technology will be used to overdrill the well borehole to total depth and remove the surface completion, casing, screen, and well materials (Table 1). Each pre-pack well was installed in a 3.25-inch-diameter borehole. The 2-inch piezometers will likely be installed in a larger-diameter hollow-stem auger borehole. Hollow-stem auger drilling technology with augers of a greater diameter than each original borehole will be used to

overdrill each well, After overdrilling, the borehole will then be backfilled by placing neat cement grout from the bottom of the boring to approximately 5 feet bgs using a tremie pipe. In order to facilitate grading, the top 5 feet of each well will be backfilled with bentonite and/or native soil.

The well construction details for the existing wells are presented in Table 1.

4.2 MONITORING WELL INSTALLATION

After site redevelopment, five shallow groundwater monitoring wells will be installed at the site in order to resume groundwater monitoring. The monitoring wells will be installed throughout the northern portion of the site in order to evaluate concentrations trends for constituents of concern in the first water-bearing zone. The locations of the proposed groundwater monitoring wells are shown on Figure 3, based on current redevelopment plans; however, the final number and location of the replacement wells will be determined in consultation with ACEH. Additionally, the timing of the well replacement will be coordinated with ACEH and will be dependent on the redevelopment schedule (the replacement wells will not be installed until site redevelopment is mostly complete, so that they are not damaged).

It should also be noted that the following additional piezometers and monitoring wells will be installed at the site, but are not detailed in this Work Plan:

- Three piezometers will be installed during an investigation to support the design of a permeable reactive barrier (PRB) that will treat impacted groundwater as it enters the site. The piezometer installation is discussed in the *Permeable Reactive Barrier Pre-Design Investigation Work Plan*, dated August 14, 2014 (AMEC, 2014)
- Seven additional groundwater monitoring wells are planned be installed in association with the PRB. Four wells will be located just west and hydraulically upgradient of the PRB and three wells will be located within the PRB. The installation of these wells will be discussed further in a forthcoming PRB basis of design document.

The five shallow groundwater monitoring wells will be constructed in accordance with the appropriate state (California Department of Water Resources, 1991) and Zone 7 Water Agency requirements by a California-licensed C-57 contractor under the supervision of a California-licensed Professional Geologist. The monitoring wells will be installed using hollow-stem auger drilling technology.

A continuous core of soil will be collected at each well location for lithologic logging. Lithology will be described using the visual-manual procedures of the ASTM International Standard D 2488 for guidance, which is based on the Unified Soil Classification System. Recovered soil will be screened for the presence of VOCs using a photoionization detector (PID). The PID

readings will be recorded on the lithologic logs prepared for each boring. Field observations of the presence of any staining or odor will also be recorded.

The monitoring wells will be constructed within an up to 8.25-inch-diameter borehole using up to 2-inch-diameter, schedule 40 polyvinyl chloride (PVC) blank well casing and 5 feet of 0.010 inch slotted well screen. The monitoring wells will be screened within the first-encountered water-bearing unit. Based on previous depth-to-groundwater data, we anticipate that the wells will be installed to total depths between 15 and 22 feet bgs. The annular space between the well screen and borehole in each well will be backfilled with an appropriately sized sand filter pack. The filter pack sand in each well will be placed such that the top of the filter pack sand is approximately 1 foot above the screened interval. Approximately 2 feet of bentonite chips will then be placed above the filter pack sand and will be allowed to hydrate in place. The remaining annular space above the hydrated bentonite chips will be sealed using neat cement or a cement/bentonite grout mixture. The wells will be completed at the surface using flush-mounted, traffic-rated boxes set into concrete. A locking, watertight plug will be placed in the top of the casing at each well.

The groundwater monitoring wells will be developed no sooner than 48 hours after the construction of the wells. The monitoring wells will be developed by a combination of bailing, surging, and purging until the water is relatively visibly clear and field parameters (e.g., dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance) are relatively stable and the water becomes relatively clear and free of solids. The quarterly groundwater monitoring program at the site will resume once the wells have been installed and developed.

4.3 VAPOR PROBE DESTRUCTION

The four existing vapor probes, installed to a depth of approximately 8.3 feet bgs, will be destroyed in accordance with the California Environmental Protection Agency (Cal/EPA) *Advisory, Active Soil Gas Investigations* (Cal/EPA, 2012). The work will be performed by AMEC staff under the supervision of a California-licensed Professional Geologist.

The probes will then be destroyed using the following methodology:

- Remove as much bentonite as possible from within the well box (the well box will be left in place due to the planned re-grading of the site in the near future);
- Fill the exposed tubing with neat cement grout or caulk until the entire tubing is filled with material;
- Cut the tubing as close to the bottom of the open hole as possible; and
- Fill the open hole with asphalt patch to match the existing surface.

5.0 SOIL SAMPLING DURING DEMOLITION

Site redevelopment will involve demolition of all of the existing site buildings. While sampling previously conducted at building features has not indicated significant impacts other than those at the former F.E. Pit and former sump, it is possible that there are impacts beneath the site buildings or hardscape that have not yet been identified. In order to address potential unidentified impacts, an environmental professional will be on site on a full-time basis during facility demolition activities that result in ground disturbance or the removal of hardscape, slabs, foundations, subsurface piping, or other similar features.

The following subsections describe general soil sampling procedures to be performed before, during, and following site demolition, including at specific features within and near Buildings B and C.

5.1 PRE-DEMOLITION ACTIVITIES

Soil sampling will occur during and following site demolition, once the existing site features have been removed in each area selected for observation. In order to facilitate location of former site features (e.g., slab locations, drain lines, and former sump locations) following demolition, the proposed sampling locations will be will be surveyed by a licensed surveyor prior to demolition. Following demolition, the surveyor will return to the site to stake the former building outlines and other selected site features and planned sample locations.

Prior to the soil sampling and demolition oversight activities, a site-specific health and safety plan will be prepared for the soil sampling activities and appropriate permits will be obtained from the Zone 7 Water District. Additionally, at least two business days prior to sampling, the anticipated boundaries of the areas to be sampled will be marked with white paint and USA will be contacted, as required by law, to identify public utilities, if any, that may be in the vicinity of the excavations. Finally, a private underground utility locator will mark below-grade building utilities in the vicinity of the proposed sample locations.

5.2 GENERAL SOIL SAMPLING

AMEC staff will be present during demolition activities ground disturbance or the removal of hardscape, slabs, subsurface piping, or other similar features. Specific features that will be targeted for sampling are discussed below; however, soil samples also will be collected where field observations (e.g., odor or staining) indicate potentially impacted soil, and at or beneath any other unanticipated features that may be encountered in the field (e.g., previously unidentified sumps, product lines). For example, during the 2012 excavation two underground storage tanks (USTs) to the south of Building B, the stubs of three pipes were observed adjacent to one of the USTs. These pipes were not connected to the UST, but may previously

have connected to another former UST at that location. Samples will likely be collected along the pipes, although their locations beneath Building B are not currently known.

If previously unidentified drain lines or other features are encountered and removed, soil samples will be collected from 0.5 foot below the bottom of the excavated surface. Soil samples will be collected at a rate of one sample per 20 linear feet of utility, with samples targeted at joints, elbows, or areas where field observations indicate potential impacted soil.

Soil samples collected for analysis of volatile constituents will immediately be collected from the ground surface using laboratory-supplied 5-milligram plungers in accordance with U.S. Environmental Protection Agency (U.S. EPA) Method 5035, a field preservation method. Soil samples collected for analysis of non-volatile or semi-volatile constituents will be collected using a trowel and placed into clean, laboratory-supplied glass jars or stainless steel tubes. The trowel will be decontaminated prior to use at each location using an Alconox or Liquinox solution. The samples will be labeled with unique identifiers and the sample collection time, and then stored in an ice-chilled cooler pending transport to a California Department of Public Health−certified analytical laboratory under AMEC chain-of-custody procedures.

5.3 SUB-SLAB SAMPLING

Soil sampling will be conducted beneath the slabs of Buildings B and C immediately following slab removal. Due to the historical use of Buildings A and D as offices and showrooms,[2] sampling is not planned beneath those buildings; however, samples will be collected if potentially affected soils are observed upon removal of the slabs.

Six soil samples are planned to be collected beneath each slab at the locations shown on Figure 2. The sample locations have been distributed beneath the slabs to provide a general assessment of the soil beneath the slabs. However, if field observations (including odor or staining) indicate areas of potentially impacted soil following slab removal, the planned sample locations will be moved to target such locations (if within 5 feet of the originally planned location), or additional samples will be collected (if farther away). Additionally, a sample will be collected beneath the locations of the known and suspected former sumps in Buildings B and C, respectively (Figure 2).

[2] In August and September 2011, an investigation performed by a third party identified high PCE concentrations in groundwater just north of Building A. Based on the results of that investigation, it appeared possible that there was a PCE source related to Building A. A follow-up investigation was conducted in August and September 2012 that identified higher PCE concentrations at the western, hydraulically upgradient property boundary. At that time the site conceptual model was updated with the understanding that PCE and its breakdown products are present in groundwater in the northern portion of the site due to an unknown, off-site source. The data do not indicate that there is a source near or related to Building A.

Each sample will be collected at a depth of 1 foot below the slab or former sump (and base rock, if present). The soil samples will be collected, labeled, and stored using the methodology described above, in Section 5.2, with the exception that the samples for non-volatile analysis will be collected using a hand auger. The hand auger will be decontaminated prior to use at each location using an Alconox or Liquinox solution.

5.4 SAMPLING AT HYDRAULIC LIFT LOCATIONS IN BUILDING B

Fourteen existing, historical, or possible hydraulic lift locations have been identified in Building B (Figure 4). Following removal of the concrete slab, all sub-grade portions of any remaining hydraulic lifts will be excavated and removed and one soil sample will be collected from the base of each excavation. Each soil sample will be collected from the bucket of the backhoe and placed directly into sample containers, labeled, and stored using the methodology described above, in Section 5.2. If, following slab removal, no evidence of a former hydraulic lift is identified at a particular suspected hydraulic lift location, no soil sample will be collected at that location.

5.5 SAMPLING OF DRAIN LINE IN BUILDING B AND SEWER LINE

A drain line located beneath the slab in Building B formerly connected the former sump to an existing sanitary sewer line located west of Building B (Figures 2 and 4). Both the drain line and sanitary sewer line will be removed as part of site demolition. Following removal of the sanitary sewer and drain line, one soil sample will be collected for every 20 linear feet of utility drain or sewer line, as shown on Figures 4 and 5. Each sample will be collected at a depth of approximately 0.5 foot beneath the bottom of the excavated utility trench. Each sample will be collected, labeled, and stored using the methodology described above, in Section 5.2. Sampling equipment will be decontaminated prior to use at each location using an Alconox or Liquinox solution.

5.6 LABORATORY ANALYSES

Each soil sample will be submitted to TestAmerica Laboratories, Inc., a California Department of Public Health–certified laboratory, and analyzed for the following constituents:

- VOCs and total petroleum hydrocarbons (TPH) quantified as gasoline (TPHg) using U.S. EPA Method 8260B;
- TPH quantified as diesel (TPHd) and TPH quantified as motor oil (TPHmo) by U.S. EPA Method 8015 following a silica gel preparation procedure in accordance with U.S. EPA Method 3630B;
- Polychlorinated biphenyls (PCBs) by U.S. EPA Method 8082A (samples collected from former hydraulic lift locations only);
- Semi-volatile organic compounds (SVOCs) by U.S. EPA Method 8270C; and

- CA LUFT-5 Metals (cadmium, chromium, lead, nickel, and zinc) by U.S. EPA Method 6010B.

5.7 DATA EVALUATION

The sample results will be compared against their respective Environmental Screening Levels (ESLs), published by the California Regional Water Quality Control Board, San Francisco Bay Region for shallow soil in a residential land use setting, where groundwater is considered a current or potential drinking water source (Regional Water Board, 2013). Should sample results exceed their respective ESLs, a separate work plan (or work plans) for additional characterization and, if needed, remedial action will be submitted to ACEH for review and approval.

6.0 ADDITIONAL SOIL REMOVAL NEAR FORMER F.E. PIT AND SUMP

Chlorobenzenes and related constituents were historically released to the subsurface at the former sump and former F.E. Pit within Building B (Figure 6). Remedial activities were performed in October 2011 at the former sump and F.E. Pit, and included removing 432 tons of VOC-affected soil, concrete, and pea gravel from the former sump and F.E. Pit excavations and approximately 5,600 gallons of VOC-affected water from the former sump excavation. However, it was not possible to excavate beneath the existing building walls and foundations, and some impacted soil remains beneath them and at other sides of the excavations, as documented in AMEC's *Remediation Report* (AMEC, 2011c).

Following the demolition of Building B and the resulting accessibility of the soil beneath the former building walls, additional excavation will be performed at the former sump and F.E. Pit to remove the residual affected soil. The proposed excavation limits are presented on Figure 6. The horizontal excavation limits are estimated based on the locations of soil samples where VOC and TPH concentrations were less than residential ESLs; the actual horizontal extents will be based on the results of confirmation sample analyses, as discussed further below. The vertical extent of the excavation is anticipated to be the same as that during the prior remedial activities (i.e., 16 feet bgs at the former sump and 12 feet bgs at the former F.E. Pit).

6.1 PERMITTING

Prior to the start of excavation work, a soil excavation permit will be obtained from the City of Dublin and an excavation notification form will be submitted to the Bay Area Air Quality Management District. Additionally, an industrial wastewater discharge permit will be obtained from the Dublin San Ramon Services District (DSRSD) for the discharge of groundwater removed from the sump excavation to their wastewater treatment plant; a publicly owned treatment works (POTW).

6.2 UTILITY CLEARANCE

At least two business days prior to beginning the excavation activities, the anticipated boundaries of the excavations will be marked with white paint and USA will be contacted, as required by law, to identify public utilities, if any, that may be in the vicinity of the excavations. A private underground utility locator will mark below grade building utilities in the vicinity of the proposed excavation areas.

6.3 SOIL EXCAVATION

Excavation and removal of soil will be performed by a California-licensed contractor (with Hazardous Waste Operations and Emergency Response [HAZWOPER] training;

29 CFR 1910.120). The excavation work will be conducted under the same health and safety

protocols set forth in the previously submitted *Environmental Health and Safety Plan, Sump Remediation and Soil Excavation and Disposal* (AMEC, 2011b). The estimated volume of soil to be removed at the former sump is approximately 60 cubic yards (in place) and the estimated volume of soil to be removed at the former F.E. Pit is approximately 40 cubic yards (in place). The soil will be excavated using a backhoe or other suitable equipment and will be conducted using a slot-cutting method similar to that used during the previous excavation effort (AMEC, 2011c). It is currently anticipated that the excavations will extend to 16 feet bgs and 12 feet bgs for the former sump and F.E. Pit, respectively.

During the soil removal activities, the soil will be screened for the presence of VOCs using a PID and visual observations for soil discoloration will be conducted. Excavation will proceed laterally until no significant staining is observed and the results of confirmation sidewall samples indicate that concentrations of petroleum-related constituents and VOCs are below their respective residential ESLs.

Confirmation samples will also be collected from the bottom of each slot trench. However, it should be noted that some of the slot trench bottom samples may be collected from saturated soils and the soil sample results may therefore reflect concentrations in impacted groundwater. The bottom sample results will be compared to ESLs and also evaluated with respect to nearby groundwater concentrations immediately following the confirmation sampling. The confirmation sampling procedures are described further below in Section 6.5.

Slot cutting will allow for removal of soil in thin slices to minimize the amount of exposed vertical surface and avoid the need to install traditional shoring. The maximum width of each vertical excavation trench will be 1.5 feet. As during the previous work, each trench will be backfilled with a controlled density fill (CDF; a sand and cement slurry) and allowed to cure for a minimum of 24 hours before adjacent slots can be excavated (if needed). At the former sump, it is anticipated that one 1.5-foot-wide slot excavation will be advanced along each of

the north, east, and south sides of the former excavation. At the F.E. Pit, it is anticipated that one 1.5-foot-wide slot excavation will be advanced along each of the north and east sides, and two 1.5-foot-wide slot excavations will be advanced along south side of the former excavation.

The excavated soil will be temporarily stockpiled on site and subsequently disposed of offsite at an approved facility as described below (Section 6.6). Due to the proposed depth of the sump excavation, groundwater will most likely be encountered during the remedial activities.

6.4 SOIL AND WATER HANDLING AND SOIL STOCKPILING

The soil removed from the excavation will be placed on plastic sheeting prior to being transferred to a suitable on-site storage area. Stockpiles, if utilized, will be constructed on plastic sheeting and covered with plastic sheeting at the end of each work day. Alternatively, the soil may be placed into soil bins for temporary on-site storage, pending waste characterization and approval, or loaded directly onto trucks for transport to the approved disposal facility. Soil handling procedures, including stockpile management and dust control, are further described in Appendix A.

Groundwater encountered during the excavation will be removed during excavation activities, to the extent possible, from the open excavation trench prior to backfilling. The extracted groundwater will be containerized on site in a water storage tank with secondary containment pending disposal (see Section 6.7 below). Storm water controls will be implemented, if needed, to direct storm water away from the excavation. Storm water pollution controls may include hay bales or straw wattles placed around the perimeter of the excavation.

6.5 CONFIRMATION SAMPLING

One confirmation soil sample will be collected from each slot trench sidewall as excavation activities are completed in that slot trench (the sidewalls are anticipated to be up to 25 feet long). The sidewall soil confirmation sample locations will be biased based on observations (staining, odor, etc.) made during excavation. If no indications of soil impacts are observed, a sample will be collected from the approximate vertical and horizontal midpoint of each sidewall. One sample will also be collected from the bottom of each slot trench, near the portion of the base that is closest to the former sump or F.E. Pit. Six slot trench sidewall samples and six slot trench bottom samples are anticipated. Each soil sample will be collected from the bucket of the backhoe and placed directly into laboratory-provided sample containers.

Soil samples collected for analysis of non-volatile or semi-volatile constituents will be placed into clean, laboratory-supplied glass jars or stainless steel tubes. Soil samples collected for analysis of volatile constituents will be collected using a field preservation method in accordance with U.S. EPA Method 5035.

The samples will be immediately labeled with unique identifiers and the sample collection time, and then stored in an ice-chilled cooler pending transport to a California Department of Public Health−certified analytical laboratory under AMEC chain-of-custody procedures.

6.6 SOIL CHARACTERIZATION AND DISPOSAL

In order to allow for waste characterization for disposal purposes and to obtain landfill approval, composite soil samples will be collected from the stockpiled soil (or soil in bins, if used). The number of samples to be collected will be evaluated based on the volume of soil generated. It is assumed that the excavated soil will qualify for off-site disposal at a Class II (non-hazardous waste) facility, based on the waste profile from prior remedial activities.

An appropriately licensed transportation company will be utilized to transport the soil to the selected landfill site. Loaded trucks heading towards the landfill will exit the site onto Dublin Boulevard, and proceed approximately 1 mile on Dublin Boulevard. The trucks will then turn right onto Dougherty Road, then bear right onto eastbound Highway 580. Left turns will be avoided.

6.7 WATER CHARACTERIZATION AND DISPOSAL

Containerized water generated during excavation activities will be sampled from the holding tank. The extracted groundwater will be profiled and it is expected to meet discharge requirements set forth in the previously issued Industrial Waste Discharge Permit No. 11012 used during the previous groundwater disposal event. Permit No. 11012 will be renewed, or a new permit will be obtained from the DSRSD, as necessary, and the extracted groundwater discharged to the DSRSD POTW. If necessary, the water will be treated, by filtering it to remove particulates and then passing it through two appropriately sized activated carbon vessels in series, before disposal to the POTW. Details of the treatment system, if needed, will be provided to ACEH prior to implementation. Alternatively, water may be transported with or without treatment to an appropriately licensed treatment/disposal facility. Solids or sludge generated by the filtering or tank cleaning activities will be disposed of at an appropriately licensed treatment/disposal facility.

6.8 LABORATORY ANALYTICAL METHODS

The excavation confirmation soil samples, soil stockpile samples, and samples of the extracted groundwater stored in the holding tank will be submitted to TestAmerica Laboratories, Inc., a California Department of Public Health–certified laboratory, and analyzed for the following constituents:

- VOCs using U.S. EPA Method 8260B;
- TPHg using U.S. EPA Method 8260B; and

- TPHd and TPHmo using U.S. EPA Method 8015, following a silica gel preparation procedure in accordance with U.S. EPA Method 3630B.

7.0 REPORTING AND SCHEDULE

Following completion of the well destruction, demolition sampling, and additional excavation activities, AMEC will prepare a report that documents the results of these activities to ACEH. The report will include tables and figures, as needed, showing the locations and analytical laboratory results of the confirmation samples. The report will also include copies of the analytical laboratory reports and sample chain-of-custody records. Copies of the soil and water disposal manifests will be included in an appendix to the report. Because the new well installations will be performed at a future time, a separate report or report addendum documenting the replacement well installations will be submitted to ACEH at a later date.

We anticipate that field work can commence within approximately 1 to 2 months of approval of this Work Plan by ACEH, dependent on the schedule for demolition of the existing site buildings. This time will be required to obtain the required permits, retain and schedule subcontractors, and perform the pre-field activities, including surveying of existing site features. We anticipate that field activities will take approximately 3 to 6 weeks to complete. The report documenting the remedial activities will be submitted to ACEH approximately 8 weeks following completion of all of the site work and receipt of the laboratory results described in this work plan, with the exception of the replacement well installation.

8.0 REFERENCES

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AMEC Environment & Infrastructure, Inc. (AMEC), 2012, Soil, Groundwater, and Soil Vapor Investigation Report, Crown Chevrolet Cadillac Isuzu, 7544 Dublin Boulevard and 6707 Golden Gate Drive, Dublin, California, October 19.

AMEC, 2013, Revised Draft Feasibility Study and Corrective Action Plan, Crown Chevrolet Cadillac Isuzu, 7544 Dublin Boulevard and 6707 Golden Gate Drive, Dublin, California, March 25.

AMEC, 2014, Permeable Reactive Barrier Pre-Design Investigation, Crown Chevrolet Cadillac Isuzu, 7544 Dublin Boulevard, Dublin, California, August 14.

AMEC, 2014, Feasibility Study and Corrective Action Plan, Crown Chevrolet Cadillac Isuzu, 7544 Dublin Boulevard and 6707 Golden Gate Drive, Dublin, California, May 1.

California Department of Water Resources, 1991, California Well Standards, Bulletin 74-90, June.

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TABLE

TABLE 1

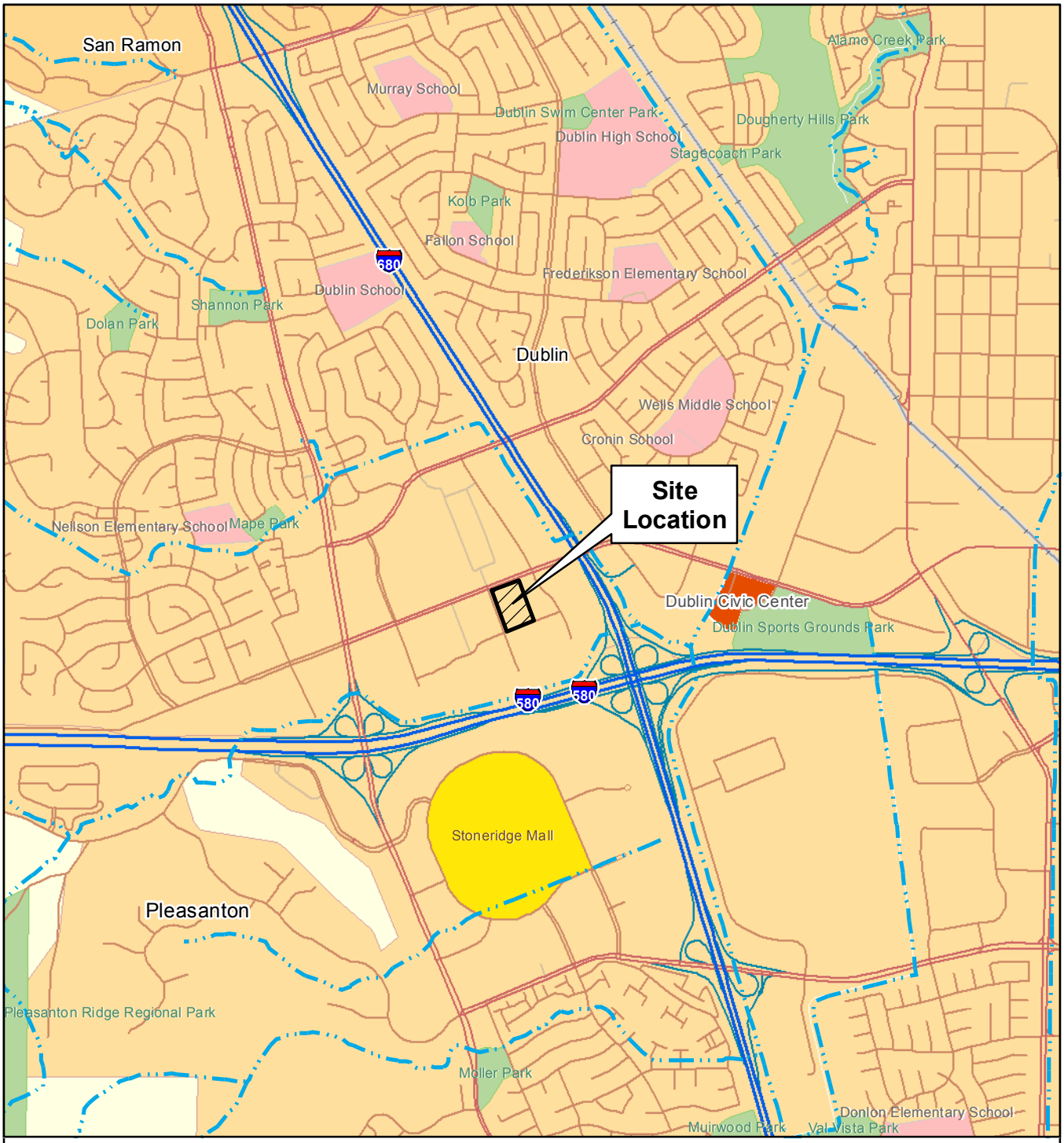
WELL CONSTRUCTION DETAILS
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

Well Type	Monitoring Well ID	Port	Date Installed	Survey Data					Construction Information[1]						
				Ground Surface Elevation (feet)	Top Of Casing Surveyed Elevation (feet)	Northing	Easting	Datum	Depth Drilled (feet bgs)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Well Depth (feet bgs)	Casing Diameter (inches)	Well Screen Slot Size (inches)	Filter Pack
Pre-pack groundwater well	MW-01	--	8/30/2012	344.58	344.24	2081925.24	6148339.55	NAD 83/NGVD 88	22	16.2	20.9	21.17	0.75	0.010	#20/40 and 2/12 sand
	MW-02	--	8/30/2012	340.41	340.24	2082055.96	6148450.40	NAD 83/NGVD 88	20.2	15.2	19.9	19.92	0.75	0.010	#20/40 and 2/12 sand
	MW-03	--	8/31/2012	343.95	343.77	2081890.72	6148566.71	NAD 83/NGVD 88	20	14.4	19.1	19.35	0.75	0.010	#20/40 and 2/12 sand
CMT multi-port groundwater well	MP-01	MP-01-1	8/29/2012	343.37	343.20	2081915.18	6148233.76	NAD 83/NGVD 88	60	17.3	17.6	59.3	0.375	0.010	#2/12 sand
	MP-01	MP-01-2						NAD 83/NGVD 88		43.2	43.5		0.375	0.010	#2/12 sand
	MP-01	MP-01-3						NAD 83/NGVD 88		58.1	58.4		0.375	0.010	#2/12 sand
	MP-02	MP-02-1	8/30/2012	341.32	341.15	2082008.13	6148472.05	NAD 83/NGVD 88	60	12.6	12.9	59.7	0.375	0.010	#2/12 sand
	MP-02	MP-02-2						NAD 83/NGVD 88		36.4	36.7		0.375	0.010	#2/12 sand
	MP-02	MP-02-3						NAD 83/NGVD 88		57.5	57.8		0.375	0.010	#2/12 sand
	MP-03	MP-03-1	8/30/2012	342.31	342.21	2081948.36	6148500.44	NAD 83/NGVD 88	60	14.3	14.6	59.8	0.375	0.010	#2/12 sand
	MP-03	MP-03-2						NAD 83/NGVD 88		42.9	43.2		0.375	0.010	#2/12 sand
	MP-03	MP-03-3						NAD 83/NGVD 88		57.8	58.1		0.375	0.010	#2/12 sand
	MP-04	MP-04-1	8/31/2012	341.48	341.22	2081993.43	6148600.32	NAD 83/NGVD 88	60.5	15.4	15.7	60.5	0.375	0.010	#2/12 sand
	MP-04	MP-04-2						NAD 83/NGVD 88		41.4	41.7		0.375	0.010	#2/12 sand
	MP-04	MP-04-3						NAD 83/NGVD 88		58.3	58.6		0.375	0.010	#2/12 sand

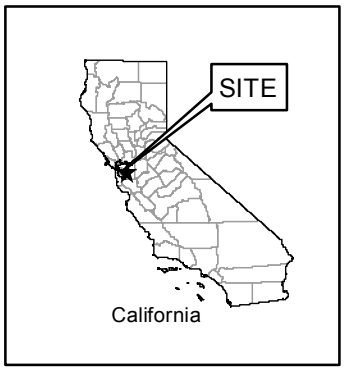
Notes
1. Pre-pack well casing materials are Schedule 40 PVC. The multi-port well casing materials are Solinst 3-channel CMT.

Abbreviations
-- = not applicable
bgs = below ground surface
CMT = continuous multi-channel tubing
NAD = North American Datum
NGVD = National Geodetic Vertical Datum

FIGURES



Street map from ESRI, 2007.



0 2,000 4,000 Feet

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SITE LOCATION MAP
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

By: GFS	Date: 04/17/2014	Project No. OD10160070
amec		Figure 1

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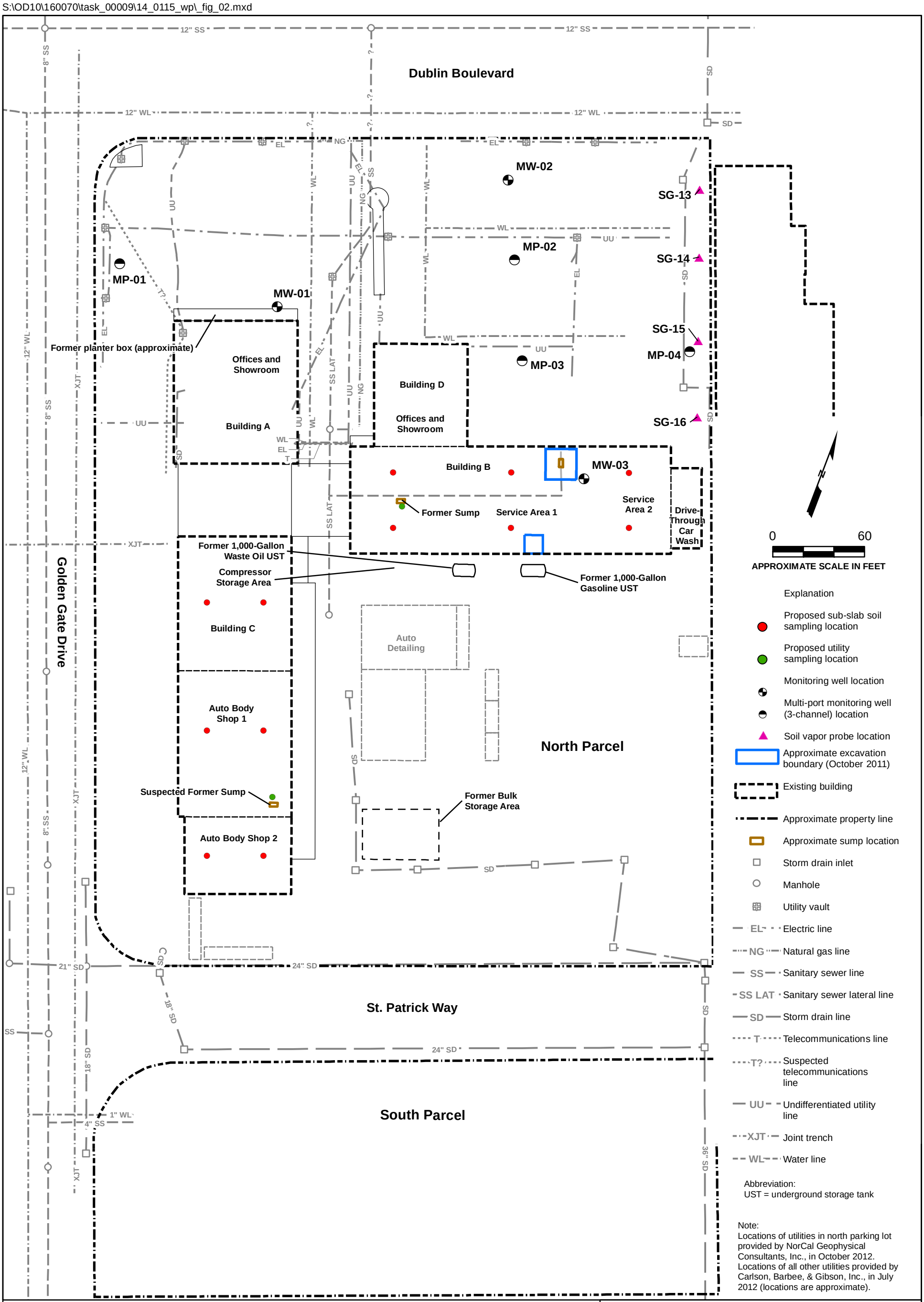

SITE PLAN WITH PROPOSED SUB-SLAB SOIL SAMPLING LOCATIONS
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

By: AWW	Date: 05/13/2014	Project No. OD10160070
amec		Figure 2

Dublin Boulevard

Golden Gate Drive

Retail (ground level) with apartments above

Driveway

MW-02

Retail (ground level) with apartments above

Fire lane

MP-01

MP-02

Parking

MW-01

Driveway

MP-04

MP-03

Parking

Building A

Building D

Parking structure

Apartments

MW-03

Building B

Courtyard

Building C

Explanation

- Proposed shallow groundwater monitoring well location (approximate)
- Existing monitoring well (to be destroyed)
- Approximate redevelopment property line
- Proposed buildings
- Approximate existing property line
- Existing buildings

0 40

APPROXIMATE SCALE IN FEET

Source: Proposed development plans provided by Architects Orange, of Orange, California, on October 19, 2012.

PROPOSED GROUNDWATER MONITORING WELL LOCATIONS
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

By: AWW	Date: 05/06/2014	Project No. OD10160070
amec		Figure 3

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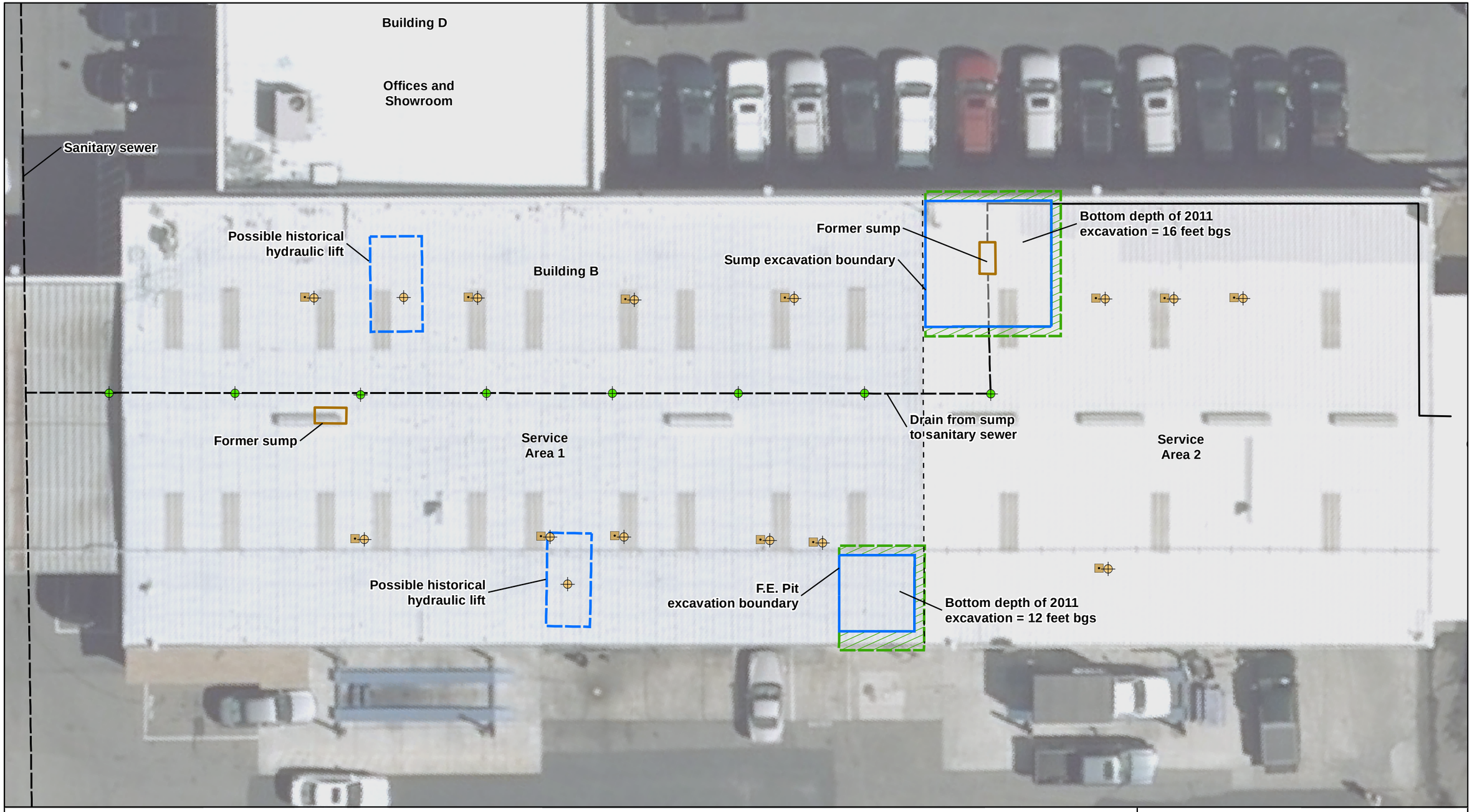

Explanation

- Proposed drain line confirmation soil sample location
- Proposed hydraulic lift confirmation soil sample location
- Approximate location of current or historical hydraulic lift
- Proposed soil excavation area
- Approximate excavation boundary (2011)
- Interior building wall
- Approximate location of above-ground drain line
- Approximate location of below-ground drain line

Abbreviations:
bgs = below ground surface
F.E. Pit = Front end alignment pit

0 15 Feet

PROPOSED HYDRAULIC LIFT AND DRAIN LINE CONFIRMATION SOIL SAMPLING LOCATIONS
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

By: AWW	Date: 05/01/2014	Project No. OD10160070
amec		Figure 4

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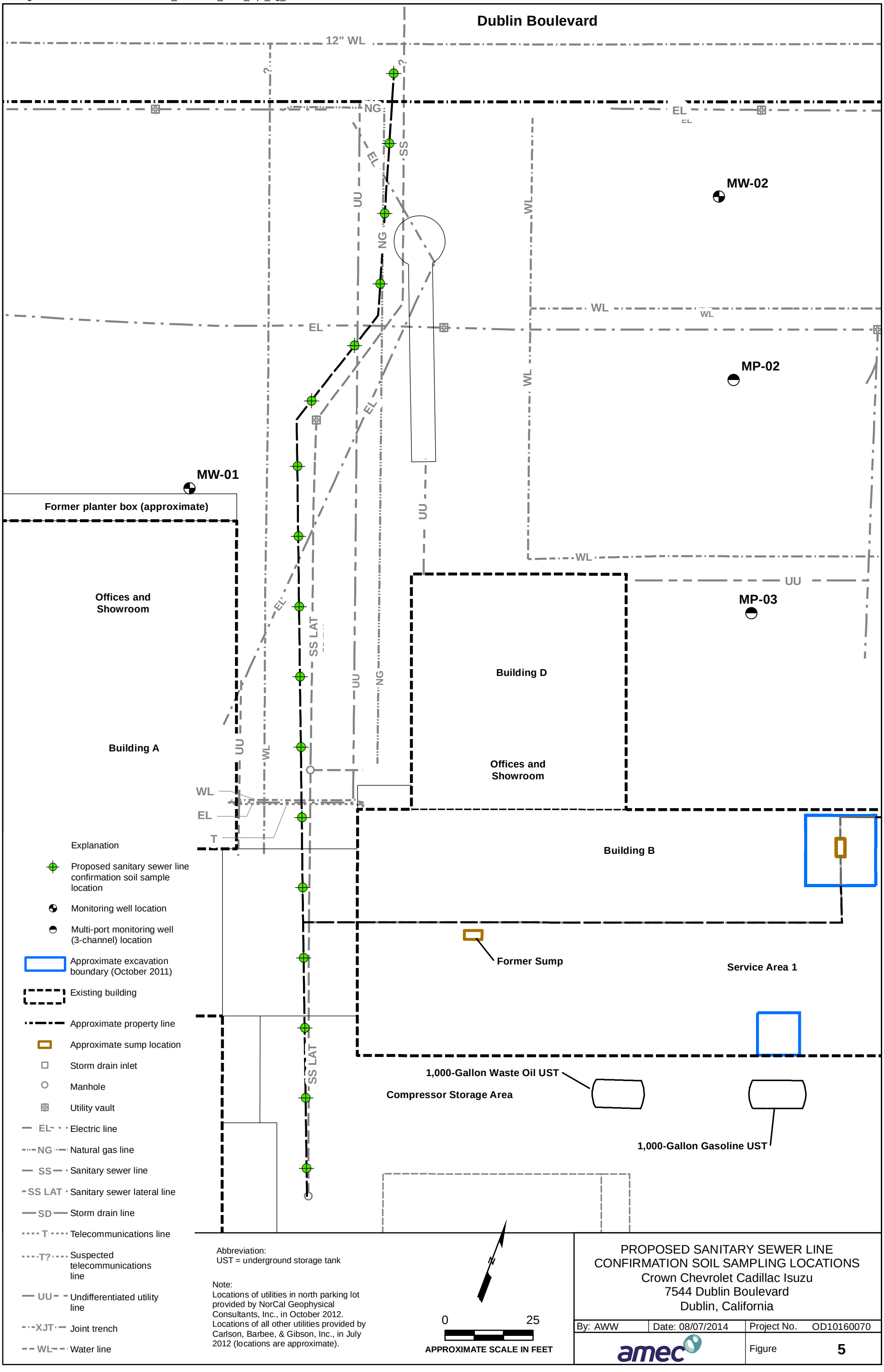

PROPOSED SANITARY SEWER LINE
CONFIRMATION SOIL SAMPLING LOCATIONS
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

By: AWW	Date: 08/07/2014	Project No. OD10160070
amec		Figure 5

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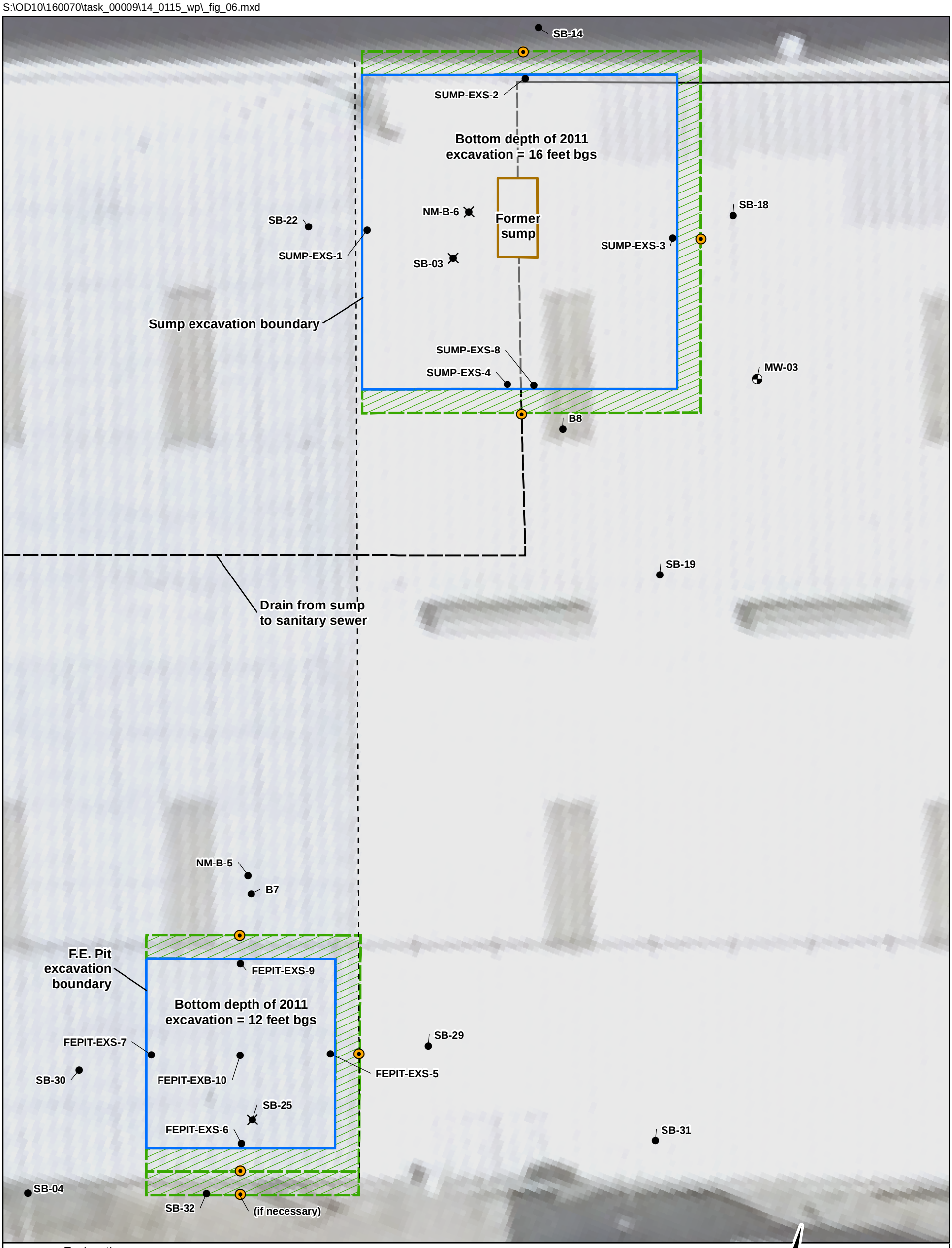

Explanation

- Proposed excavation confirmation sample location
- Monitoring well location
- Soil and/or grab groundwater location
- Sample collected from soil that was subsequently removed during excavation
- Proposed soil excavation area
- Approximate excavation boundary (2011)
- Interior building wall
- Approximate location of above-ground drain line
- Approximate location of below-ground drain line

Abbreviations:
bgs = below ground surface
F.E. Pit or FEPIT = Front end alignment pit

0 6 Feet

Notes:
1. Proposed soil excavations are planned to extend to a depth equal to that of the 2011 excavations (i.e., 16 feet bgs at the former sump and 12 feet bgs at the former F.E. Pit).
2. For clarity, borings not advanced adjacent to the 2011 excavation areas, or with samples not analyzed for target constituents, are not shown on this figure.

PROPOSED SOIL EXCAVATION AREAS
Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

By: AWW	Date: 05/01/2014	Project No. OD10160070
amec		Figure 6

APPENDIX A

Soil Management Procedures

APPENDIX A

SOIL MANAGEMENT PROCEDURES

Crown Chevrolet Cadillac Isuzu
7544 Dublin Boulevard
Dublin, California

1.0 DUST CONTROL

During any excavation project, dust control measures shall be used when handling soil, fill, and soil-covered debris. Engineering controls are the preferred methods of controlling on-site and off-site exposures to dust generated through construction activities. Currently, the majority of the site is covered with pavement, which minimizes dust generation during periods of time when no intrusive activities are occurring. The generation of dust during intrusive activities shall be minimized with the goal of preventing visible dust emissions that could cross the property line by the following acceptable industry practices:

- Unpaved areas subject to vehicle traffic must be stabilized by adequate wetting.
- It is recommended that vehicles and equipment should travel no more than 5 miles per hour to prevent vehicles from generating visible dust.
- Prior to any ground disturbance, sufficient water must be applied to the area to be disturbed to prevent visible dust from crossing the property line. Water used for dust suppression shall be potable water.
- Equipment must be dry decontaminated, washed down, or subjected to one or more of the following track-out prevention measures before being moved from the property onto a paved public road:
  - a gravel pad designed using good engineering practices to clean the tires of exiting vehicles;
  - a tire shaker;
  - a wheel-wash system;
  - pavement extending for not less than fifty (50) consecutive feet into the site from the intersection with the paved public road; or
  - any other measure as effective as the measures listed above.
- Activities must be conducted so that no track-out from the excavation project is visible on any paved roadway open to the public. Visible track-out on a paved or public road must be cleaned within 24 hours using wet sweeping or a high efficiency particulate air (HEPA) filter-equipped vacuum device.
- Limit activities during periods of unfavorable meteorological conditions such as high winds, unfavorable wind direction, or high temperatures.

Any load-out of soil or debris from the site must comply with the following procedures:

- Trucks will be maintained such that no spillage can occur from holes or other openings in cargo compartments.
- Drop heights will be minimized while loading soil into trucks.
- Trucks will be properly tarped prior to leaving site.

If visible dust is observed, the following measures will be implemented:

- Increase the magnitude of dust control measures.
- Increase the frequency of implementation of dust control measures.
- Use approved dust suppressant additives in the water.

2.0 SOIL STOCKPILING

Excavated soil may be temporarily stockpiled on site prior to off-site disposal. Alternatively, roll-off bins with sealable tops may be used. Soil stockpiles will be protected as necessary from the adverse effects of rainfall (runoff) and/or wind (dust). All soil stockpiles shall be watered, as needed, and securely covered with a suitable tarp to prevent wind erosion and dust generation. To limit public access to stockpiled soil, stockpiled soil areas should be fenced or otherwise protected and should be located in a contained area with no direct connection to storm drains or the shoreline.

3.0 SITE ACCESS AND SECURITY

Vehicle and personnel access to areas where soil will be disturbed shall be controlled. Caution tape, cones, fencing, steel plates, or other measures shall be used to clearly designate the active work area and to prevent access by the public.