



August 16, 2018

Pacific Gas & Electric Company
3401 Crow Canyon Road
San Ramon, CA 94583
Attn.: Anne Conner (*Sent via electronic mail to apb1@pge.com*)

Subject: Conditional Report Approval, Site Cleanup Program Case No. RO0003196 and GeoTracker Global ID T1000008040, CNG Station, 205 Brush Street, Oakland, CA 94607 (APN 1-111-5-2)

Dear Ms. Conner:

Alameda County Department of Environmental Health (ACDEH) staff has reviewed the case file in conjunction with the documents entitled *Soil Import Management Plan (SIMP)*, dated May 4, 2018, *Construction Soil and Groundwater Management Plan (CSGMP)*, dated May 11, 2018, and *Corrective Action Implementation Plan (CAIP)* dated June 11, 2018. The aforementioned documents were prepared by Environmental Resources Management (ERM) on your behalf.

ACDEH staff met with you and your redevelopment team on January 24, 2018 to review the project status and to determine a path forward to meet your proposed redevelopment schedule. We understand that site demolition activities have been delayed and that the pipeline installation to service the project is on schedule.

ACDEH understands that proposed redevelopment activities include the demolition of existing site structures, identified as Buildings 412, 413 and 414, and construction of a gas regulator facility, designated as Station S-018. Two underground storage tanks (USTs) used for the storage of gasoline and diesel fuels were previously removed in 2003. As described to our agency, the gas regulator station will consist of piping and appurtenances, mainly below grade but some above grade, and a small aboveground shed along the eastern portion of the property. The site will be surfaced with aggregate base material. There will be no occupied buildings or any full-time employees at the facility.

Soil, soil vapor, and groundwater samples have been collected at the site and analyzed for one or more of the following: metals, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and organochlorine pesticides (OCPs). Elevated metals concentrations (most commonly lead) are present in soil across the site at concentrations exceeding the 2016 San Francisco Bay Regional Water Quality Control Boards (the "Regional Water Board") Environmental Screening Levels (ESLs); TPH, VOCs, SVOCs, PCBs, and OCPs are present at elevated concentrations in soil in the vicinity of the location of two former fuel USTs at the site; VOCs are present in soil vapor in the paved portion of the site closest to Building 413; and TPH and VOCs are present in groundwater adjacent and downgradient of the former USTs. SVOCs may also be present but several concentrations are masked by laboratory reporting limits exceeding their respective regulatory threshold values.

Environmental investigations have been conducted at the Site though May, 2018 to delineate the vertical and lateral extent of the potential chemicals of concern (PCOCs) in the subsurface on the property and evaluate the associated risk to potential sensitive receptors in association with the proposed site redevelopment activities.

1. Soil Import Management Plan

As presented in the SIMP, ERM proposes to evaluate environmental conditions of the import borrow site in accordance with the guidelines for import material selection as presented in the October 2001 California Department of Toxic Substances Control's (DTSC's) *Information Advisory Clean Imported Fill Material* (the

“DTSC Advisory”). The Advisory includes provisions for acceptable borrow areas based on historic and current land use and prescribes sampling frequency and scope of analyses based on former/current land use.

Based on our experience with import fill, ACDEH has developed a guidance document for the selection of suitable fill material for proposed import. Our document, entitled *Fill Material Characterization Guidance* (FMCG), dated August 1, 2018, is included as an attachment to this letter. The FMCG present requirements for the evaluation and documentation of imported fill materials at sites under the regulatory oversight of ACDEH. ACDEH requires compliance with the FMCG at sites under our jurisdiction.

To obtain a determination from ACDEH that a proposed fill material is suitable, ACDEH requires submittal of a Fill Material Characterization Report (FMCR) documenting the characterization of the proposed fill material. The FMCR and supporting documentation must be submitted to ACDEH via electronic mail, Attention: Keith Nowell, at keith.nowell@acgov.org and uploaded to the State Water Board's GeoTracker database. ACDEH will review the FMCR and make a determination if the proposed fill material (a) is suitable for import; (b) requires additional characterization to determine if the proposed fill material is suitable for import; or (c) is not suitable for import.

2. Construction Soil and Groundwater Management Plan

As presented in the Construction Soil and Groundwater Management Plan (CSGMP), ERM proposes to perform remediation prior to site redevelopment to address potential health risks to construction workers, expedite soil remediation to mitigate risks to site workers, and remove potential sources of impact to groundwater. The ERM CSGMP addresses identified areas of PCOC impacts above remedial goals within the vadose zone which will be addressed through excavation and off-site disposal of surficial and shallow contaminated soil. Groundwater associated with construction dewatering will be removed and disposed off-site. ERM reports the depth to water (dtw) is currently at a depth of approximately five to six feet below ground surface (bgs), that excavation will not occur below the depth of the dewatered groundwater level, and that a chemical oxidation reagent will be applied to selected area(s) excavated to the groundwater table.

As outlined, ERM states the primary objectives of the CSGMP are to notify the owner and their contractors about the presence of contaminants in soil and groundwater at the site; and communicate the owners' and contractors' responsibility to comply with applicable laws and regulations and the procedures to follow related to the disturbance and handling of these materials as specified in the CSGMP and the Feasibility Study/ Remedial Action Plan (FS/RAP), also prepared by ERM, and dated February 8, 2018. Prior to commencement of any site activities that disturb the ground surface, the owner and their contractors will read this CSGMP and sign the Agreement and Acknowledgement Statement certifying that they have read, understood and agreed to abide by its provisions.

In addition to presenting soil and groundwater management practices, ERM states dust level monitoring of air will be conducted to evaluate the potential exposure to site personnel and to off-site downwind receptors. As described, the presence of airborne dust will be evaluated through the use of real time personal sampling equipment and perimeter air sampling. Dust control measures will be based on “Best Management Practices” (BMPs) and will be used throughout the remediation and redevelopment activities. Air sampling equipment utilized for perimeter site monitoring will include photoionization detectors (PIDs); SUMMA canisters equipped with metered flow regulators; and dust monitors.

BMPs will be implemented for storm water management controls should a sizable rain event occur during remediation activities and/or if remediation is conducted during the rainy season. Water management procedures will be implemented including, but not limited to bermed site boundaries of the remediation area to prevent storm water from entering or leaving the remediation area, storm water entering the remediation area will be pumped to settlement tanks and treated prior to discharge under permit. Efforts will be made to prevent haul trucks from tracking wet soil off site using such methods as plastic sheeting at the loading area, a tire wash at site egress path(s), and/or a stabilized gravel construction entrance.

Based on ACDEH staff review of the CSGMP, we generally concur with the proposed scope of work, provided that the modifications requested below are addressed and incorporated during the field implementation.

- a. **Excavation Contingencies-** ERM states remediation or redevelopment activities may reveal unexpected conditions such as previously unidentified areas of contamination or underground structures. The CSGMP does not address what actions should be taken if these structures are encountered. ACDEH requests that, should unanticipated conditions be encountered during subsurface activities, the contractor shall immediately cease work in this area and notify the Owner and ACDEH of the unanticipated conditions. If applicable, other agencies, e.g. the ACDEH Certified Unified Program Agency (CUPA), should be contacted for further instructions. Work shall proceed in other areas of the site until the owner has cleared the area for continuation of work and has notified the contractor that the unanticipated conditions have been evaluated and mitigated, as necessary.
- b. **Soil Reuse-** Stockpile soil sampling for a re-use determination should be made using the attached import fill criteria for composite sampling of stockpiles –e.g. no more than 4-point sample composites and analyze as discrete samples in the event that a composite sample concentration exceed 25% of the applicable screening level.
- c. **Street Sweeping-** The traffic plan does not include criteria for use of ‘wet’ street sweepers on the traffic route, only for use internal to site. Please conduct periodic traffic route monitoring to ensure that off haul spoils are not deposited along the traffic route. At minimum, please conduct daily wet sweeping of the roadway in the vicinity of the site both at midday and at the end of each day during which soil and groundwater removal activities occur.
- d. **Confirmation Soil Sampling-** The February 8, 2018 FS/RAP prepared by ERM states that “a few samples will be collected from the base of the shallow soil excavation in the area of TPH and VOC soil impacts to provide a reference level of impacted material remaining below the water table...”. The 2018 FS/RAP states that confirmation samples will not be required as soil exceeding the COCs will be excavated to the dewatered groundwater table. In order to document the residual PCOC concentrations, ACDEH requests the recovery and analyses of soil samples from the excavation(s) be collected at every 20-linear-feet along the excavation sidewalls from in-situ soils prior to the placement of fill material. Whenever possible, sidewall samples from areas of metals, PAH and OCP contamination should be collected at a depth of approximately 12- to 18 inches bgs, and from within the capillary fringe for TPH, VOC and SVOC impacted areas. Additionally, please recover and analyze excavation bottom samples on a 1-sample per 150- square-foot basis.
- e. **Air Monitoring-** Please prepare and submit an Air Monitoring Addendum (AMA) report outlining the decision matrix for determining the number of air monitoring stations as the CSGMP states one up-wind and one down-wind station monitoring station is proposed, with the possibility of an additional downwind station. Include the air and fugitive dust monitoring standard operating procedures (SOPs) as an attachment to the AMA.

As presented in the CSGMP, ERM will perform collection of air samples during the first day of slab removal, soil removal, pipe trench excavation and backfilling operations in the upwind and downwind locations for laboratory analysis of BTEX, PAHs, PCBs, lead and dust. In the AMA, please identify the methodology, e.g. sample collection duration, type of analyses and container type, for sample collection. Outline the contingency procedures for sample collect on days other than the first day should evidence of airborne contamination become evident.

ACDEH requests that commencement of air monitoring activities should occur prior to the start of soil disturbance activities, e.g. on-site truck traffic in addition to demolition/excavation/backfill activities.

Please submit the AMA to ACDEH via electronic mail, Attention: Keith Nowell, and to GeoTracker.

3. Corrective Action Implementation Plan

The corrective action implementation plan (CAIP) presents the methods and results of the pre-construction sampling, completing the delineation of the surficial soil remediation excavation to the remedial goals set up in the FS/RAP. The CAIP provides guidance for PG&E and its subcontractors by defining the limits and depths of the remedial excavation, as well as the soil handling procedures, and documents specific procedures for the application of the ISCO/enhanced aerobic degradation reagent Kloxur CR in excavations and trenches.

The CAIP presents the scope of sequencing of remediation activities, including designating access routes through the site, remediation work areas, decontamination areas for equipment, waste storage area(s), import fill storage area(s), and access controls for remediation areas. The CAIP also references the CSGMP for instructions for determining locations of upwind and downwind perimeter air monitoring stations, excavating impacted soil with PCOC concentrations above remedial goals as modified in this CAIP, trenching for station construction, placing Kloxur CR in the base of the excavation/trenches near the area of impacted groundwater, stockpiling or direct-loading for disposal of excavated impacted soil, and separately stockpiling soil excavated from trenches outside the impacted areas, collecting, storing, characterizing and disposing of groundwater associated with site dewatering, and importing clean fill material.

4. Monitoring Well and Soil Vapor Probe Destruction Workplan

Five on-site groundwater monitoring wells and six soil vapor probes were present prior to the start of the site demolition/ remedial action implementation. As discussed in the *Monitoring Well and Soil Vapor Probe Destruction Workplan*, dated March 14, 2018 and prepared by ERM, these wells were to be destroyed and subsequently replaced following completion of station construction. Two of the six vapor probes will be reinstalled in areas previously identified to contain elevated VOC concentrations. Replacement locations have been proposed but actual locations may be dependent of the final configuration of the regulator station. ACDEH notes that the groundwater contaminant plume has not been defined. As such, ACDEH requests preparation of a work plan for contaminant plume delineation. Please provide the work plan by the date specified below. Please include a figure depicting the final locations of the replacement wells and probes and the proposed investigation bore/wells relative to the station configuration.

ERM postulates ground water monitoring is expected to be conducted quarterly for one year, semiannually for two years, and then annually for two years and that groundwater monitoring reports will be prepared and submitted after each monitoring event. ACDEH notes that groundwater monitoring and contaminant plume delineation may result in modifications to the ERM schedule. Based on the findings of the monitoring events, additional groundwater treatment may be required to further reduce contaminant concentrations in groundwater in order to achieve remedial action goals.

ERM is of the opinion their low-threat closure policy evaluation determined that the TPH- and VOC-impacted groundwater is anticipated to be managed under the State Water Board's Low Threat Underground Storage Tank Case Closure Policy (LTCP) for petroleum impacts resulting from UST releases. ACDEH notes the LTCP only addresses petroleum hydrocarbon contamination, not non-petroleum contamination, e.g. VOCs and metals. Additionally, the LTCP addresses petroleum hydrocarbon contamination conditions for closure to existing land use and may not provide guidance for addressing residual contamination for redevelopment sites.

With the provision that the information provided to this agency is accurate and representative of currently known Site conditions, at this juncture, ACDEH is of the opinion that implementation of the proposed excavation will minimize risk to on- and off-site receptors from exposure to residual subsurface contamination, ACDEH has no objection to you proceeding with the proposed site redevelopment activities presented in the documents referenced above provided PG&E submits the requisite documents listed below and implements ACDEH approved corrective actions.

DELIVERABLES

Please submit the following deliverables to ACDEH in accordance with the compliance schedule provided below and the *Responsible Party (ies) Legal Requirement/Obligations Instructions*, included as Attachment 1. ACDEH requests electronic mail notification verifying the requested deliverables have been uploaded to GeoTracker (electronic mail preferred, Attention: keith.nowell@acgov.org).

Prior to the start of all site construction activities including grading, and remedial excavation and construction dewatering the following documents must be submitted to ACDEH for review and approval:

1. Revised Baseline Project Schedule – ACDEH understands that delays during site demolition have impacted the schedule for regulator station construction. ACDEH requests submittal of a revised project schedule providing details of the sequencing of corrective actions and site demolition and redevelopment activities. The schedule must also include dates for submittal of requisite documents including at a minimum the following: a copy of City of Oakland approved building department permits, Remedial Soil Excavation Documentation, Soil Importation Documentation (if required), Corrective Action Completion Report for Soil Excavation and Construction Groundwater Dewatering, and Trench Dam Maintenance Plan (if required). The schedule must include appropriate ACDEH review and response times for document submittals in addition to a 72-hour notification to ACDEH prior to implementation of each phase of corrective actions. The Baseline Project Schedule must be updated as necessary to reflect the current status of the project and must be submitted to ACDEH for review and approval. Changes to the schedule for document submittals to ACDEH as communicated in our January 24, 2018 meeting will likely result in delays to the construction start date.

2. Construction SGMP Certification Form - A copy of the Construction SGMP Certification Form signed by PG&E and all their environmental professionals and contractors associated with implementation of corrective actions at the Site must be submitted to ACDEH prior to the start of construction activities.

Prior to the start of pipeline and utility installation, soil importation and backfilling of excavations - the following documents must be submitted to ACDEH for review and approval:

3. Air Monitoring Addendum Report (Addendum) – In the air monitoring addendum report discussed above, ACDEH requests clarification regarding the number and locations of perimeter monitoring stations, sample collection and analyses methodologies associated with slab removal, soil removal, pipe trench excavation and backfilling operations, and potential sampling contingencies associated with fugitive dust/vapor traveling off-site. The Addendum should include your dust/vapor monitoring SOPs as an attachment.

4. Planning Approvals and Building Permit Plans – A copy of the City of Oakland approved construction drawings for site redevelopment. ACDEH must be notified if the project proponents or the City Planning or Building Departments propose changes to the site development presented in the in the FS/RAP. Any substantial changes made to the plans without review by ACDEH may invalidate the conclusions of the protectiveness of the proposed redevelopment of the site with respect to potential residual contamination.

5. Remedial Soil Excavation Documentation – Submittal of soil excavation documentation for excavation, confirmation sampling and analytical results must be submitted prior to the start of pipeline installation, trench and excavation backfilling. The submittal must include but not be limited to scaled figures (plan views and cross-sections) showing sampling locations and extents of excavation, volume of soil excavated and final disposition, waste manifests if disposed of off-site, tabulated analytical results and environmental screening levels, and laboratory analytical reports. The data should be initially submitted to ACDEH via electronic mail correspondence to facilitate quick review and backfill approval. Subsequent to ACDEH approval to backfill the data must be incorporated into the Corrective Action Completion Report of Soil Excavation and Construction Groundwater Dewatering.

6. Soil Import Documentation (if required for backfill) - Submittal of requisite documentation to ACDEH for review and approval prior to import of fill material per the ACDEH approved SIMP protocols. Information must include but not be limited to proposed sources, sampling and profiling protocols (in accordance with the FMCG), analytical laboratory reports, and tables with analytical results and applicable environmental screening levels. The data should be initially submitted to ACDEH via electronic mail correspondence to facilitate quick review and backfill approval. Subsequent to ACDEH approval to backfill the data must be incorporated into the Corrective Action Completion Report of Soil Excavation and Construction Dewatering.

Prior to issuance of a No Further Action Letter the following documents must be submitted to ACDEH prior to closure for review and approval:

7. Corrective Action Completion Report for Soil Excavation and Construction Groundwater Dewatering - A comprehensive report documenting the soil corrective action activities and construction groundwater dewatering activities, field instrumentation maintenance and calibration information observations and findings during implementation. The report must include as-built drawings and photo documentation and must include a certification by the remediation design engineer that the remedial measures were implemented in accordance with the approved CAIP. The report must also include copies of all permits and must document at a minimum the following:

- Description of soil excavation activities, including but not limited to volume of soil excavated, waste manifests for off-site disposal, waste disposal tables summarizing the source and fate of exported soil, figures (plan view and cross sections) depicting the excavation extents and locations of confirmation sampling, tabulated analytical results with ESLs and delineation and/or over-excavation samples, and laboratory analytical reports including pre-characterization results of in-situ sampling and/or stockpiling sampling;
- Description of final clean fill importation in accordance with the ACDEH approved SIMP and import documentation submitted to ACDEH for approval prior to import. The documentation must also include manifests documenting source of material transported to site, and figures (plan view and cross sections) depicting the soil import backfill extents,
- Description of construction groundwater dewatering activities with supporting documentation including but not limited to tables, figures, laboratory analytical reports, copies of discharge reports, and corrective actions associated with unauthorized releases during construction activities; and
- Certification of compliance with the CSGMP protocols during implementation of remedial measures including but not limited to agency notification and reporting requirements, pre-field activities (site security and access, traffic control, excavation permits, notification and utility clearance), waste management, soil and groundwater management, storm water management, dust and odor emission control, and contingency measures for discovery of unexpected underground structures.

8. Groundwater Delineation and Monitoring – Documentation demonstrating contaminant plume delineation and demonstration of plume stability following completion of remedial actions.

9. Land Use Covenant (LUC) – Recordation of institutional controls consisting of a Land Use Covenant.

At each phase of redevelopment and corrective action implementation, all environmental site data and reports for the site submitted for ACDEH review or approval must comply with the following State Water Resources Control Board's electronic submittal information requirements:

10. GeoTracker Database Compliance – Site data and documents are maintained in the State Water Board's GeoTracker website. The database acts as repositories for Portable Document Format (PDF) files of regulatory directives and reports and has the functionality to store electronic compliance data in

Electronic Deliverable Format (EDF) including analytical laboratory data for soil, vapor, and groundwater samples, monitoring well depth-to-water measurements, and surveyed location and elevation data for sampling locations.

All historical environmental documents related to the subject site including but not limited to the missing soil and groundwater analytical data, documents and reports, maps, and boring logs must be uploaded to GeoTracker prior to receiving ACDEH approval for the related redevelopment or corrective action component. See Attachment 1 regarding electronic submittal requests to GeoTracker. Notification of, and a list of, the documents uploaded to GeoTracker can be provided via electronic mail, Attention: Keith Nowell.

TECHNICAL REPORTS/WORK SCHEDULE

Please perform the requested work and submit technical reports to ACDEH (Attention: Keith Nowell) in accordance with Attachment 1 and the schedule below. The technical reports may be combined as appropriate. Dates will be determined based on revised baseline project schedule.

- **Revised Baseline Project Schedule** – August 24, 2018
File to be named: RO3196_DEV_SCHD-yyyy-mm-dd
- **Air Monitoring Addendum Report** – August 31, 2018
File to be named: RO3196_MISC_R_YYYY-mm-dd
- **Construction SGMP Certification Form** – Date to be Determined
File to be named: RO3196_SGMP_CERT-yyyy-mm-dd
- **Planning Approvals and Building Permit Plans** – Date to be Determined
File to be named: RO3196_DEV_PLAN_YYYY-mm-dd
- **Remedial Soil Excavation Documentation** – Date to be Determined
File to be named: RO3196_SOIL_EXPORT_YYYY-mm-dd
- **Soil Import Documentation(if required for backfill)** – Date to be Determined
File to be named: RO3196_SOIL_IMPORT_YYYY-mm-dd
- **Corrective Action Completion Report for Soil Excavation and Construction Groundwater Dewatering**– Date to be Determined
File to be named: RO3196_CACR_YYYY-mm-dd
- **Groundwater Contaminant Plume Delineation Work Plan** – Date to be Determined
File to be named: RO3196_WP_YYYY-mm-dd
- **Groundwater Monitoring Completion Report** – Date to be Determined
File to be named: RO3196_GWM_YYYY-mm-dd
- **Land Use Covenant** – Date to be Determined
File to be named: RO3196_LUC_YYYY-mm-dd
- **GeoTracker Database Compliance** – ongoing as investigation and reports are conducted

Thank you for your cooperation. ACDEH looks forward to working with you and your redevelopment team to advance the case toward closure. If you have any questions, please call me at (510) 567-6764 or send me an electronic mail message at keith.nowell@acgov.org.

Ms. Conner
RO0003196
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Sincerely,

Keith Nowell
Hazardous Materials Specialist

Encl.: Attachment 1 – Responsible Party (ies) Legal Requirement/Obligations Instructions
Attachment 2 – Fill Material Characterization Guidance

cc:

John Lucio, Project Manager, Environmental Resources Management (ERM), 1277 Treat
Boulevard, Suite 500, Walnut Creek, CA john.lucio@erm.com

Dilan Roe, ACDEH, Chief Land, and Water Division (*Sent via electronic mail to:*
dilan.roe@acgov.org)

Paresh Khatri, ACDEH (*Sent via electronic mail to:* paresh.khatri@acgov.org)

Keith Nowell, ACDEH (*Sent via electronic mail to:* keith.nowell@acgov.org)

Electronic File, GeoTracker

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	REVISION DATE: December 14, 2017
	ISSUE DATE: July 25, 2012
	PREVIOUS REVISIONS: September 17, 2013, May 15, 2014, December 12, 2016
SECTION: ACDEH Procedures	SUBJECT: Responsible Party(ies) Legal Requirements / Obligations

REPORT & DELIVERABLE REQUESTS

Alameda County Department of Environmental Health (ACDEH) Cleanup Oversight Programs, Local Oversight Program (LOP) and Site Cleanup Program (SCP) require submission of all reports in electronic form to the State Water Board's (SWB) GeoTracker website in accordance with California Code of Regulations, Chapter 30, Division 3, Title 23 and Division 3, Title 27.

Leaking Underground Fuel Tank (LUFT) Cases

Reports and deliverable requests are pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party (RP) in conjunction with an unauthorized release from a petroleum underground storage tank (UST) system.

Site Cleanup Program (SCP) Cases

For non-petroleum UST cases, reports and deliverables requests are pursuant to California Health and Safety Code Section 101480.

ELECTRONIC SUBMITTAL OF REPORTS

A complete report submittal includes the PDF report and all associated electronic data files, including but not limited to GEO_MAP, GEO_XY, GEO_Z, GEO_BORE, GEO_WELL, and laboratory analytical data in Electronic Deliverable Format™ (EDF). Additional information on these requirements is available on the State Water Board's website (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

- Do not upload draft reports to GeoTracker
- Rotate each page in the PDF document in the direction that will make it easiest to read on a computer monitor.

GEOTRACKER UPLOAD CERTIFICATION

Each report submittal is to include a GeoTracker Upload Summary Table with GeoTracker valid values¹ as illustrated in the example below to facilitate ACDEH review and verify compliance with GeoTracker requirements.

GeoTracker Upload Table Example

Report Title	Sample Period	PDF Report	GEO_MAPS	Sample ID	Matrix	GEO_Z	GEO_XY	GEO_BORE	GEO_WELL	EDF
2016 Subsurface Investigation Report	2016 S1	✓	✓	Effluent	SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
2012 Site Assessment Work Plan	2012	✓	✓			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2010 GW Investigation Report	2008 Q4	✓	✓	SB-10	W	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
				SB-10-6	SO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
				MW-1	WG	✓	✓	✓	✓	✓
				SW-1	W	✓	✓	✓	✓	✓

¹ GeoTracker Survey XYZ, Well Data, and Site Map Guidelines & Restrictions, CA State Water Resources Control Board, April 2005

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	REVISION DATE: NA
	ISSUE DATE: December 14, 2017
	PREVIOUS REVISIONS: September 17, 2013, May 15, 2014, December 12, 2016
SECTION: ACDEH Procedures	SUBJECT: Responsible Party(ies) Legal Requirements / Obligations

ACKNOWLEDGEMENT STATEMENT

All work plans, technical reports, or technical documents submitted to ACDEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to the State Water Board's GeoTracker website." This letter must be signed by the Responsible Party, or legally authorized representative of the Responsible Party.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6731, 6735, and 7835) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately licensed or certified professional and include the professional registration stamp, signature, and statement of professional certification. Additional information is available on the Board of Professional Engineers, Land Surveyors, and Geologists website at: <http://www.bpelsg.ca.gov/laws/index.shtml>.

UNDERGROUND STORAGE TANK CLEANUP FUND

For LUFT cases, RP's non-compliance with these regulations may result in ineligibility to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse the cost of cleanup. Additional information is available on the internet at: https://www.waterboards.ca.gov/water_issues/programs/ustcf/

AGENCY OVERSIGHT

Significant delays in conducting site assessment/cleanup or report submittals may result in referral of the case to the Regional Water Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

ATTACHMENT 2

Fill Material Characterization Guidance

ALAMEDA COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH LOCAL OVERSIGHT PROGRAM	Revision Date: NA
	ISSUE DATE: August 1, 2018
	Previous Revisions: NA
SUBJECT: Fill Material Characterization Guidance	

INTRODUCTION:

This document has been prepared by Alameda County Department of Environmental Health (ACDEH) to provide guidance regarding the characterization of fill materials to determine: (a) the suitability of the fill material for import to sites within Alameda County, including but not limited to agricultural lands, redevelopment sites, and environmental cleanup sites, and (b) the suitability of the fill material for export from environmental cleanup sites regulated by ACDEH and re-use at other locations.

The use of imported fill material has recently come under scrutiny in Alameda County due to the identification of agricultural properties in rural portions of the county that have been importing large volumes of fill material. These areas have a diverse natural environment including biological habitats, aquatic environments, wetlands, and critical groundwater basins, which require protection and have the potential to be adversely impacted from contaminated fill material.

There are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. However, regulatory guidance documents have been developed by the California Environmental Protection Agency (CalEPA), Department of Toxic Substances Control (DTSC) and the San Francisco Regional Water Quality Control Board (the “Regional Water Board”) regarding the characterization and sourcing of imported fill material. The CalEPA guidance documents were prepared to address fill material being imported to active environmental cleanup sites, however, are also applicable to other sites where imported fill material may pose a risk to sensitive receptors and the environment.

This guidance document has been prepared by ACDEH to ensure that unsuitable fill material is not introduced onto properties with sensitive land uses and to provide clarification of the process of evaluating the suitability of fill material. This document addresses both human health and ecological risk associated with exposure pathways to fill material and identifies fill sources which are unsuitable for use as fill material based on current and historic land use activities as discussed in the CalEPA guidance documents and as required by other authorities specific to Alameda County. The protocols and criteria presented in this document are intended to be sufficiently conservative to be applicable to all sites regardless of land use or other site characteristics. Alternative criteria for fill characterization and suitability may be proposed for consideration by ACDEH via submittal of a site-specific soil import management plan and associated supporting technical documents.

This guidance document was prepared based on the following:

- (1) Regulatory guidance documents adopted by the DTSC and Regional Water Board;
- (2) Applicable risk based screening levels;
- (3) Regional background levels;
- (4) Other criteria provided to ACDEH by designated Groundwater Basin Managers within Alameda County; and
- (5) Accepted industry practices.

FILL MATERIAL CHARACTERIZATION GUIDANCE

August 1, 2018

Section 1 of this guidance document discusses criteria for assessing and identifying potentially suitable fill material sources. **Section 2** discusses the evaluation of the suitability of potential fill material. **Section 3** discusses ACDEH's fill material import suitability determination process. **Section 4** describes the conditions and reporting requirements for importing suitable fill material.

1. ASSESSMENT OF POTENTIALLY SUITABLE FILL MATERIAL SOURCES

Suitable fill materials are materials that will not have an adverse effect on human health or the environment when imported. Prior to collecting analytical data to confirm suitability of potential fill material, potential source areas should be screened based on historical land use and material composition.

Historic and current land use at, and in the vicinity of, the parcel containing the proposed fill material should be evaluated for environmental impacts to determine the applicable laboratory analysis that should be conducted to characterize the fill material. This assessment consists of the review of historical records and typically consists of conducting a phase one environmental site assessment (Phase I ESA) or preliminary environmental assessment (PEA) within six months of the assessment. The assessment should be sufficient to identify Recognized Environmental Conditions (RECs). RECs are typically associated with the production, use, storage, transport, recycling, or disposal of hazardous materials or waste at or in the vicinity of the parcel being evaluated and are used to determine what potential contaminants may be present and therefore should be analyzed for.

Fill material from parcels with the following conditions are not suitable for use as a proposed fill material source without additional evaluation and approval from ACDEH beyond what is required in this guidance:

- a. Regulated environmental cleanup sites; or
- b. Unaddressed or insufficiently addressed RECs; or
- c. Current or historic industrial land uses; or
- d. Current or historic unacceptable commercial land uses. Unacceptable commercial land uses are operations that generate revenue through, or that significantly involve:
 - i. Manufacturing, repairing, or restoring operations; or
 - ii. Providing maintenance services; or
 - iii. The use, storage, transport, or disposal of hazardous materials or waste.
- e. Materials containing animal or human waste or debris such as lumber, metal, or refuse

2. EVALUATION OF FILL MATERIAL SUITABILITY

Proposed fill material source areas that are considered potentially suitable based on the initial screening of historic and current land use must be sampled, analyzed, and meet applicable environmental and human health risk levels before a final determination of the suitability of the proposed fill material can be made. Sampling protocols and strategies, and laboratory analyses vary based on conditions at the location being sampled, the type of compounds that are being evaluated, and the volume of fill material. Samples must be collected and analyzed in a manner sufficient to characterize the lateral and vertical extents of the proposed fill material source area. Minimum sampling and analysis requirements to evaluate the suitability of a proposed fill material source area are derived from various regulatory guidance documents, industry best practices, and requirements from designated Groundwater Basin Managers within Alameda County which are described in further detail below.

2.1. Minimum Analytical Requirements

Minimum analytical requirements for characterization of potentially suitable fill material proposed for import to a destination (a) outside of the jurisdiction of Zone 7 Water Agency (Zone 7); or (b) within the jurisdiction of Zone 7

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are provided in Table 1a and Table 1b, respectively. Sampling and laboratory analysis must be conducted in accordance with the following requirements:

- A. All analysis must be performed in accordance with the United States Environmental Protection Agency's (USEPA's) SW-864 Compendium;
- B. Analysis of samples must be completed and reported by an analytical laboratory accredited by the California State Environmental Laboratory Accreditation Program and the National Environmental Laboratory Accreditation Program;
- C. The laboratory reporting limits must not exceed the screening levels adopted by ACDEH as described in Section 2.4 below;
- D. The laboratory reporting limits must be reported on a dry-weight basis; and
- E. The results of the laboratory analysis must be reported in a standard laboratory data package, including a summary of the quality control and quality assurance sample results and chain of custody documentation.

2.2. Minimum Sampling Requirements

Sampling for the characterization of potentially suitable fill material must be conducted under the direct charge of a professional engineer or geologist licensed in the state of California and in accordance with industry best practices including, but not limited to those discussed in the subsections below.

2.2.1. Vapor Forming Compounds

Vapor forming compounds consist of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) that readily form a vapor when exposed to air. In order to minimize volatilization of VOCs and SVOCs during sample collection, and ensure that analytical results are representative of the proposed fill material, discrete samples must be collected and analyzed in accordance with United States Environmental Protection Agency (USEPA) Method 5035. Composite sampling is not acceptable for the evaluation of VOCs and SVOCs.

2.2.2. Composite Sampling

Composite sampling is acceptable under the following conditions:

1. Analysis is for non-vapor forming chemicals;
2. The composite sample is comprised of no more than 4 discrete samples;
3. The composite sample is comprised of roughly equivalent masses of each of the discrete samples;
4. Sufficient mass of discrete samples from each of the composited locations are submitted so as to allow for analysis of the discrete samples; and
5. Each of the discrete samples that comprise the composite sample must be analyzed in the event that the composite sample exceeds 25% of the applicable screening level.

2.2.3. In Situ Characterization

Pre-excavation (e.g., In Situ) characterization of potentially suitable fill materials must meet the minimum requirements for provided in Table 2a (for import to a destination outside of the jurisdiction of Zone 7 Water Agency's jurisdiction) and Table 2b (for import to a destination within the Zone 7 Water Agency's jurisdiction). Additional requirements include:

- Characterization of soil lithology in the proposed source area using the Unified Soil Classification System from the ground surface to the total depth of the proposed excavation for the fill material. The

characterized soil lithology at each sample location must be presented as a soil boring log and must be reviewed and stamped by a registered geologist.

- Collection and analysis of at least one sample from each sample location for every five feet below ground surface that the proposed fill area extends.
- Characterization of layers of proposed fill material that exhibit significantly different geological characteristics or lithologies as separate sources. For example, if soil at a site generally consists of clay from the ground surface to a depth of 3 feet below ground surface with interbedded silts and sands beyond, the clay layer should be characterized and managed one source and the interbedded silts and sands should be characterized as a second source.
- Use of direct push technology for sample collection and analyses for VOCs and SVOCs. Samples collected for analysis of non-vapor forming compounds may be collected using direct push technology, augers, or from a bucket, sidewall, or base sample from “pot hole” excavations.

2.2.4. Stockpile Characterization

The minimum sample quantities for the characterization of potentially suitable fill materials that have been excavated and stockpiled are based on the total volume of the stockpiled fill material and are summarized in Table 3. Stockpiles must be generated from the same source area, must be segregated by fill material composition, and be located on the parcel generating the proposed fill material. Samples being analyzed for VOCs and SVOCs must be collected from at least 1 foot below the exposed surface of the stockpile.

2.3. Conditions Requiring Additional Sampling and Analysis

In addition to the minimum sampling requirements identified above, the following conditions, if present, require additional sampling and analysis as indicated:

1. **Evidence of Contamination** – Samples must be collected and analyzed from any locations where there is evidence of contamination such as strong odors, staining, observable sheen or free product, stressed vegetation, and/or elevated responses from field screening instruments such as a photoionization detector.
2. **Contaminants Associated with Surface Deposition** – When characterization for contaminants associated with surface deposition (e.g., pesticides, herbicides, fungicides, asbestos, and lead) are required for fill material characterization, representative samples must be collected from surface and near surface soils in accordance with the following:
 - For in situ characterization, one sample should be collected from each of the following intervals from each sample location: 0 to 6 inches below ground surface; 6 inches to 2 feet below ground surface; and 2 feet to 3 feet below ground surface; and
 - For stockpiled fill materials, fill material from the surface and near surface (0 to 3 feet below ground surface) must be segregated from other fill material and characterized as a separate potential fill source.
3. **Groundwater and Saturated Soil** – If groundwater or saturated soil is encountered during fill characterization or excavation, the following additional samples must be collected and analyzed:
 - One soil sample per sample location from immediately above the saturated soil (i.e., the capillary fringe); and
 - One groundwater sample from each soil boring, excavation, or dewatering well in which groundwater is encountered.

4. **Dewatering** – If dewatering is conducted to support excavation of potentially suitable fill material, characterization of the fill material must be conducted after dewatering has been implemented and soil is no longer saturated.

2.4. Screening Levels

To be considered suitable fill material, analytical results of the fill characterization sampling must be less than applicable environmental and human health risk based screening levels.

2.4.1. Default Screening Levels

ACDEH has adopted the Regional Water Board's Tier 1 Environmental Screening Levels dated February 2016 (ESLs) as default screening levels for all constituents with the following exception:

- **Arsenic:** the screening level for arsenic adopted by ACDEH is 11.00 milligrams of arsenic per kilogram of sample. This concentration based on the upper estimate (99th percentile) for regional background levels of arsenic in the urbanized San Francisco bay region³.

The use of Tier 1 ESLs as a default screening level is applicable to all sites regardless of land use or other site characteristics.

2.4.2. Alternative Screening Levels

In the event that fill characterization fails the default screening levels, alternative screening levels may be proposed for consideration by ACDEH via submittal of a site-specific soil import management plan. The soil import management plan must include a site-specific risk assessment for the receiving location and associated supporting technical documents.

The use of hazardous waste characteristic of toxicity levels (California Code of Regulations Title 22 Section 66261.24) as a screening level to evaluate the suitability of the import of soils is unacceptable for all sites except for appropriately designed and permitted treatment, storage, disposal, or recycling facilities.

3. ACDEH FILL MATERIAL IMPORT SUITABILITY DETERMINATION PROCESS

To obtain a determination from ACDEH that a proposed fill material is suitable, ACDEH requires submittal of a technical report (the "Fill Material Characterization Report") documenting the characterization of the proposed fill material. This technical report must contain, at a minimum, the following element:

- A. A cover letter from the owner of the proposed fill source material with the following statement: "I have read and acknowledge the content, recommendations, an/or conclusions contained in the attached document or report submitted on my behalf to ACDEH". This cover letter must be signed by the owner of the proposed fill source material or a legally authorized representative of the owner of the proposed fill source material;
- B. A statement that fill material characterization was conducted under the responsible charge of a registered professional with licensure in the state of California. This statement must be accompanied by the signed and dated seal of the licensed registered professional with responsible charge;
- C. Narrative identifying and summarizing the following elements:
 - a. The location, assessor's parcel number, and physical address of the proposed fill material source area;
 - b. A summary of historical land uses and operations conducted at and in the vicinity of the proposed fill material source area with citations for supporting documentation;

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- c. Identification and description of any identified RECs;
 - d. A summary of fill material characterization efforts conducted, including a description of sampling and analysis and applicable geology and hydrogeology within the proposed fill material source area;
 - e. A summary of the results of analytical sampling; and
 - f. Recommendations and conclusions for the suitability of proposed fill material.
- D. Tables summarizing the site characterization analytical data;
- E. A completed Proposed Fill Material Source Characterization Summary Form. A copy of this form is provided in pdf in Attachment A. An excel spreadsheet of this form is available on request;
- F. Figure(s) depicting the following elements:
- a. Sample locations;
 - b. Parcel lines and parcel numbers;
 - c. Lateral extent(s) and depth(s) of the proposed fill material source area(s);
 - d. Location of any identified RECs;
 - e. Location of known current and historic infrastructure including structures, roadways, utilities, and any above ground or below ground storage tanks.
- G. Boring logs depicting the geology, sample depths, and any encountered groundwater from each sample location;
- H. Copies of laboratory analytical data;
- I. Copies of supporting environmental documents such as Phase I ESA, PEA, or historic subsurface investigation reports.

The Fill Material Characterization Report and supporting documentation must be submitted to ACDEH via email to deh.loptoxic@acgov.org and upload to the State Water Board's GeoTracker database. ACDEH will review the Fill Material Characterization Report and will issue a directive letter that (a) determines that the proposed fill material is suitable for import; (b) requests additional characterization; or (c) determines that the proposed fill material is not suitable for import. ACDEH's determination will include conditions described in Section 4 and may include additional conditions or requirements.

4. CONDITIONS OF ACDEH FILL MATERIAL IMPORT SUITABILITY DETERMINATION

As a condition of import, a technical report be submitted to ACDEH via email and uploaded to GeoTracker documenting the import of soil (the "Soil Import Summary Report"). The report must be uploaded to the GeoTracker information repositories for both the fill material source area and the destination. Please note that for locations importing soil from multiple sources, a single report can be submitted that documents import from multiple sources. For locations in which soil import activities last more than one year, a Soil Import Summary Report must be submitted on a semi-annual basis for the duration of import activities. The Soil Import Summary Report must contain the following elements at a minimum:

- A. A cover letter from the owner of the proposed fill source material that states, at a minimum, the following: "I have read and acknowledge the content, recommendations, and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH." This cover letter must be signed by the

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owner of the proposed fill source material or a legally authorized representative of the owner of the proposed fill source material;

- B. The technical report must include a statement that fill material characterization was conducted under the responsible charge of a registered professional with licensure in the state of California. This statement must be accompanied by the signed and dated seal of the licensed registered professional with responsible charge;
- C. Summary tables of soil import logs. These logs must include the following information for each delivery of fill material: arrival date, manifest number or truck tag, quantity of fill material delivered, originating facility, and profile number;
- D. A figure depicting the location and depth of imported soil. If fill material from multiple sources has been imported, the location and depth of imported soil from each source must be distinguished;
- E. Copies of all manifests or other documentation of soil import as an appendix; and
- F. Copies of all fill characterization profiles as an appendix.

5. CLOSING

If you have questions or comments regarding the requirements and guidance presented in this document, please do not hesitate to contact ACDEH. This document was prepared by, or under the direction of, the undersigned.



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ENCLOSURES

Tables

Table 1a	Minimum Required Analyses for Characterization of Fill Material for Off-Site Reuse for Receiving Facilities Located outside of Zone 7 Water Agency Jurisdictional Boundaries
Table 1b	Minimum Required Analyses for Characterization of Fill Material for Off-Site Reuse for Receiving Facilities Located within Zone 7 Water Agency Jurisdictional Boundaries
Table 2a	Minimum Required Sample Density and Spacing for In Situ (Pre-excavation) Characterization of Proposed Fill Material Sources for Receiving Facilities Located outside of Zone 7 Water Agency's Jurisdictional Boundaries
Table 2b	Minimum Required Sample Density and Spacing for In Situ (Pre-excavation) Characterization of Proposed Fill Material Sources for Receiving Facilities Located within Zone 7 Water Agency's Jurisdictional Boundaries
Table 3	Minimum Required Sample Density and Spacing for Stockpile (Post-Excavation) Characterization of Proposed Fill Material Sources

Appendices

Appendix A	Proposed Fill Material Source Characterization Summary Form
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REFERENCES

1. DRAFT Technical Reference Document: Characterization and Reuse of Petroleum Hydrocarbon Impact Soil as Inert Waste. San Francisco Bay Regional Water Quality Control Board. October 2006.
2. Environmental Screening Levels (ESLs) revision 3. San Francisco Bay Regional Water Quality Control Board. February 2016.
3. Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region. Duverge. December 2011
4. Information Advisory: Clean Imported Fill Material. Department of Toxic Substances Control (DTSC). October 2001.
5. Interim Guidance for Sampling Agricultural Properties revision 3. Department of Toxic Substances Control. August 7, 2008.
6. Preliminary Endangerment Assessment Guidance Manual. Department of Toxic Substances Control. January 1994. Revised October 2015.

TABLES

Table 1a
Minimum Required Analyses for Characterization of Fill Material for Off-Site Reuse
for Receiving Facilities Located outside of Zone 7 Water Agency Jurisdictional Boundaries

Laboratory Analysis ⁽¹⁾	Analytical Method	Current and Historic Land Use At or Within 500 Feet of Fill Source Area			Current and Historic Land Use at Parcel(s) Containing Fill Source Area			
		Major Roadway or Freeway	Mining Area or Rock Quarry	Regulated Cleanup Site and RECs	Agricultural	Residential / Acceptable Commercial ⁽²⁾	Existing Historic Engineered Fill ⁽³⁾	Industrial / Unacceptable Commercial
California Title 22 Metals ⁽⁴⁾	USEPA 6010B <u>and/or</u> USEPA 7471A	X (Lead Only)	X	Additional As Required	X	X	X ⁽⁵⁾	N/A
Asbestos	PLM <u>or</u> OSHA 191		X (PLM)	Additional As Required		X (OSHA 191)	X ⁽⁵⁾	N/A
pH	USEPA 9045D		X	Additional As Required			X ⁽⁵⁾	N/A
Pesticides	USEPA 8141A; and USEPA 8151A; and USEPA 8081A <u>or</u> 8080A			Additional As Required	X		X ⁽⁵⁾	N/A
VOCs	USEPA 8260B with collection by USEPA 5035			Additional As Required		X	X ⁽⁵⁾	N/A
SVOCs & PAHs	USEPA 8270C SIM	X (PAHs Only)		Additional As Required		X	X ⁽⁵⁾	N/A
TPH	USEPA 8015M	X ⁽⁵⁾	X ⁽⁵⁾	Additional As Required	X ⁽⁵⁾	X	X ⁽⁵⁾	N/A
PCBs	USEPA 8082 <u>or</u> 8080A			Additional As Required		X	X ⁽⁵⁾	N/A

Adapted from Department of Toxic Substances Control's Information Advisory Clean Imported Fill Material dated October 2001.

Notes:

- (1) All analysis should be performed in accordance with USEPA SW-846 methods. A standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results must accompany all analytical reports;
- (2) Acceptable commercial land use excludes any commercial use that generates revenue from manufacturing, repair/restoration, maintenance/cleaning, or the storage/transport of hazardous materials;
- (3) Existing homogeneous engineered fill. Fill containing waste or debris or that is heterogeneous is not acceptable for off-site reuse.
- (4) Include when Hexavalent Chromium analysis required by USEPA method 7199
- (5) Analysis required by Alameda County Department of Environmental Health;

Abbreviations:

USEPA -United States Environmental Protection Agency
N/A – Not Acceptable for off-site re-use
PLM – Polarized Light Microscopy
OSHA – Occupational Safety and Health Administration Testing Method Number
SIM – Selected Ion Monitoring
VOCs – Volatile Organic Compounds
SVOCs – Semi-Volatile Organic Compounds
PAHs – Poly Aromatic Hydrocarbons
TPH – Total Petroleum Hydrocarbons as reported for gasoline range, diesel range, and motor oil range
PCBs – Polychlorinated Biphenyls;

Table 1b
Minimum Required Analyses for Characterization of Fill Material for Off-Site Reuse
for Receiving Facilities Located within Zone 7 Water Agency Jurisdictional Boundaries

Laboratory Analysis ⁽¹⁾	Analytical Method	Current and Historic Land Use At or Within 500 Feet of Fill Source Area			Current and Historic Land Use at Parcel(s) Containing Fill Source Area			
		Major Roadway or Freeway	Mining Area or Rock Quarry	Regulated Cleanup Site and RECs	Agricultural	Residential / Acceptable Commercial ⁽²⁾	Existing Historic Engineered Fill ⁽³⁾	Industrial / Unacceptable Commercial
California Title 22 Metals ⁽⁴⁾	USEPA 6010B <u>and/or</u> USEPA 7471A	X (Lead Only)	X	Additional As Required	X	X	X ^(5, 6)	N/A
Asbestos	PLM <u>or</u> OSHA 191		X (PLM)	Additional As Required		X (OSHA 191)	X ^(5, 6)	N/A
pH	USEPA 9045D		X	Additional As Required			X ^(5, 6)	N/A
Pesticides	USEPA 8141A; and USEPA 8151A; and USEPA 8081A <u>or</u> 8080A	X ⁽⁶⁾	X ⁽⁶⁾	Additional As Required	X	X ⁽⁶⁾	X ^(5, 6)	N/A
VOCs	USEPA 8260B with collection by USEPA 5035			Additional As Required		X	X ^(5, 6)	N/A
SVOCs & PAHs	USEPA 8270C SIM	X (PAHs Only)		Additional As Required		X	X ^(5, 6)	N/A
TPH	USEPA 8015M	X ^(5, 6)	X ^(5, 6)	Additional As Required	X ^(5, 6)	X	X ^(5, 6)	N/A
PCBs	USEPA 8082 <u>or</u> 8080A			Additional As Required		X	X ^(5, 6)	N/A

Adapted from Department of Toxic Substances Control's Information Advisory Clean Imported Fill Material dated October 2001.

Notes:

- (1) All analysis should be performed in accordance with USEPA SW-846 methods. A standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results must accompany all analytical reports;
- (2) Acceptable commercial land use consist excludes any commercial use that generates revenue from manufacturing, repair/restoration, maintenance/cleaning, or the storage/transport of hazardous materials;
- (3) Existing homogeneous engineered fill. Fill containing waste or debris or that is heterogeneous is not acceptable for off-site reuse.
- (4) Include when Hexavalent Chromium analysis required by USEPA method 7199
- (5) Analysis required by Alameda County Department of Environmental Health;
- (6) Analysis required by Zone 7 Water Agency

Abbreviations:

USEPA - United States Environmental Protection Agency

N/A – Not Acceptable for off-site re-use

PLM – Polarized Light Microscopy

OSHA – Occupational Safety and Health Administration Testing Method Number

SIM – Selected Ion Monitoring

VOCs – Volatile Organic Compounds

SVOCs – Semi-Volatile Organic Compounds

PAHs – Poly Aromatic Hydrocarbons

TPH – Total Petroleum Hydrocarbons as reported for gasoline range, diesel range, and motor oil range

PCBs – Polychlorinated Biphenyls;

Table 2a

Minimum Required Sample Density and Spacing for In Situ (Pre-excavation) Characterization of Proposed Fill Material Sources for Receiving Facilities Located outside of Zone 7 Water Agency's Jurisdictional Boundaries

Requirements	Size of Contiguous Fill Source	Minimum Lateral Sample Distribution	Minimum Vertical Sample Distribution
<p>(1) Additional lateral sample locations may be required to address identified RECs;</p> <p>(2) Additional samples must be collected from fill material that exhibits signs of potential contamination (e.g., strong odor, staining, presence of sheen or free product, stressed vegetation in the vicinity, elevated response from photo-ionization detector);</p> <p>(3) Fill source area cannot be located on parcel(s) with historic industrial or unacceptable commercial land uses or parcel(s) associated with regulated environmental cleanup sites unless approved by regulatory oversight agency;</p>	<p>≤2.0 acres</p>	<p>4 sample locations.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>1 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>
<p>(4) Samples that are collected, but not planned for analysis must be submitted with the samples planned for analysis under chain of custody to an appropriately certified analytical laboratory. The samples that are not planned for analysis must remain on hold with the laboratory until ACDEH has issued a determination regarding the suitability of fill material for import and released the un-analyzed samples for disposal;</p> <p>(5) When contaminants associated with surface deposition (e.g. pesticides, asbestos, and lead) are required to be evaluated, ACDEH requires the following additional samples be collected from each sample location: One sample from 0 to 6 inches bgs, One sample from 6 inches to 2 feet bgs, One sample from 2 feet to 3 feet bgs. One of these samples must be selected for analysis for each sample location;</p>	<p>≥2.0 acres <4.0 acres</p>	<p>1 sample location per 0.5 acre.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>1 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>
<p>(6) If groundwater is encountered, ACDEH requires the following additional samples be collected and analyzed: One sample per Sample Location from immediately above the saturated fill material (i.e., the capillary fringe); One groundwater samples must be collected and analyzed for each boring, excavation, or dewatering well in which groundwater is encountered.</p>	<p>≥4 acres <10.0 acres</p>	<p>8 sample locations.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>1 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>
<p>(7) If dewatering will be conducted to support excavation below an existing water table, ACDEH requires that, historically saturated fill material be samples after dewatering is in effect.</p> <p>(8) Composite sampling may or may not be appropriate, depending on the quality and homogeneity of the source/borrow area and compounds of concern.</p>	<p>≥10.0 acres</p>	<p>8 sample locations.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>4 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>

Table 2b

Minimum Required Sample Density and Spacing for In Situ (Pre-excitation) Characterization of Proposed Fill Material Sources for Receiving Facilities Located within Zone 7 Water Agency’s Jurisdictional Boundaries

Requirements	Size of Contiguous Fill Source	Minimum Lateral Sample Distribution	Minimum Vertical Sample Distribution
<p>(1) Additional lateral sample locations may be required to address identified RECs</p> <p>(2) Additional samples must be collected from fill material that exhibits signs of potential contamination (e.g., strong odor, staining, presence of sheen or free product, stressed vegetation in the vicinity, elevated response from photo-ionization detector)</p> <p>(3) Fill source area cannot be located on parcel(s) with historic industrial or unacceptable commercial land uses or parcel(s) associated with regulated environmental cleanup sites unless approved by regulatory oversight agency;</p>	<p>≤2.0 acres</p>	<p>8 sample locations.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>1 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>
<p>(4) Samples that are collected, but not planned for analysis must be submitted with the samples planned for analysis under chain of custody to an appropriately certified analytical laboratory. The samples that are not planned for analysis must remain on hold with the laboratory until ACDEH has issued a determination regarding the suitability of fill material for import and released the un-analyzed samples for disposal;</p> <p>(5) When contaminants associated with surface deposition (e.g. pesticides, asbestos, and lead) are required to be evaluated, ACDEH requires the following additional samples be collected from each sample location: One sample from 0 to 6 inches bgs; One sample from 6 inches to 2 feet bgs; and One sample from 2 feet to 3 feet bgs. One of these samples must be selected for analysis for each sample location;</p>	<p>≥2.0 acres <4.0 acres</p>	<p>1 sample location per 0.25 acre.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>1 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>
<p>(6) If groundwater is encountered, ACDEH requires the following additional samples be collected and analyzed: One sample per Sample Location from immediately above the saturated fill material (i.e., the capillary fringe); One groundwater samples must be collected and analyzed for each boring, excavation, or dewatering well in which groundwater is encountered.</p>	<p>≥4 acres <10.0 acres</p>	<p>16 sample locations.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>1 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>
<p>(7) If dewatering will be conducted to support excavation below an existing water table, ACDEH requires that, historically saturated fill material be samples after dewatering is in effect.</p> <p>(8) Composite sampling may or may not be appropriate, depending on the quality and homogeneity of the fill material and compounds of concern.</p>	<p>≥10.0 acres</p>	<p>16 sample locations.</p> <p>AND</p> <p>Sample Locations must be distributed throughout the fill material source area.</p>	<p>4 sample collected and analyzed per sample location.</p> <p>AND</p> <p>1 sample collected and analyzed for every 5 feet bgs.</p> <p>AND</p> <p>1 sample collected from each layer exhibiting different geological characteristics or lithology encountered.</p>

Table 3

**Minimum Required Sample Density and Spacing for Stockpile (Post-Excavation)
Characterization of Proposed Fill Material Sources for Receiving Facilities**

Requirements	Size of Fill Source	Minimum Number of Fill Material Samples to be Collected
<p>(1) Top Soil (0 to 6 inches bgs) and near surface soil (6 inches to 3 feet bgs) must be stockpiled separately if sampling for contaminants associated with surface deposition (e.g. pesticides, asbestos, and lead) (0-6 inches below ground surface) is required;</p> <p>(2) 4-point composite samples may be used in lieu of discrete samples for analysis other than VOCs and SVOCs, however, the total number of samples must be preserved;</p> <p>(3) VOC and SVOC samples are to be collected from fill material at least 1 foot into the stockpile;</p>	<p>≤1,000 yd³</p>	<p>1 sample collected and analyzed per 250 cubic yards of stockpiled fill material.</p>
	<p>>1,000 yd³ & <5,000 yd³</p>	<p>4 samples collected and analyzed for first 1,000 cubic yards AND 1 sample for each additional 500 cubic yards.</p>
	<p>≥5,000 yd³</p>	<p>12 samples collected and analyzed for first 5,000 cubic yards AND 1 sample for each additional 1,000 cubic yards.</p>

ATTACHMENT A

Proposed Fill Material Source Characterization Summary Form

Proposed Fill Material Source Characterization Summary Form

Associated APN	Phase 1 ESA or PEA Conducted Undeveloped Agricultural Residential Acceptable Commercial ⁽¹⁾ Unacceptable Commercial ⁽²⁾ Industrial Existing Historic Fill Regulated Environmental Cleanup Site ⁽³⁾ Major Roadway / Freeway ⁽³⁾ Mining Area or Rock Quarry ⁽³⁾	Cell ID	Excavation Width (feet)	Excavation Length (feet)	Excavation Depth (feet)	Number of Soil Layers Identified	Stockpile ID	Stockpile Volume (yd ³)	Soil Pit Quarry Construction Site Stockpile Yard Recycling Facility	Soil Aggregate (sand and/or gravel) Crushed Asphalt Crushed Concrete Construction Debris	Unknown Property within jurisdiction of Zone 7 Property within jurisdiction of ACWD Property outside Zone 7 or ACWD jurisdiction Permitted TSDF	Minimum Required Sampling ⁽⁴⁾ / Actual Number of samples collected							
												California Title 22 Metals	Asbestos	pH	Pesticides	VOCs	SVOCs	PAHs	TPH
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Are RECs, CRECs, or HRECs associated with any parcels? If so, what parcels, and what are the associated COCs?	
If Fill Source Area is a regulated environmental cleanup site, provide case identification information and regulatory oversight agency soil export requirements	

- Notes:
- (1) Commercial activities that do not meet the Unacceptable Commercial critier. Typically, Acceptable Commercial facilities are retail, restaurants or service providers (professional, legal, integrated technology, ect.).
 - (2) Commercial activities that generate revenue through or that significantly involve manufacturing, repairing, restoring, or providing maintenance services or the transport, storage, and disposal of hazardous materials.
 - (3) Land use at, or within 500 feet of the parcel(s) containing the fill source
 - (4) Does not include additional sampling that may be required by the regulatory oversight agency overseeing the environmental cleanup site where the fill source is located
 - * Fill inappropriate or not proposed for off-site reuse at this time and must be disposed of at a permitted TSDF. Please consult with a permitted TSDF for sampling requirements for acceptance by the TSDR.
- ACWD Alameda County Water District
 APN Assesors Parcel Number
 AR As required by accepting permitted TSDR
 CRECs Controlled Recognized Environmental Condition as defined in ASTM E1527-13
 HREC Historic Recognized Environmental Condition as defined in ASTM E1527-13
 REC Recognized Environmental Condition as defined in ASTM E1527-13
 TSDF Treatment, Storage, or Disposal Facility, deinfed as a "Designated Facility" inTitle 22, Section 66260.10 of the California Code of Regulations.
 Zone 7 Zone 7 Water Agency