



Soil and Groundwater Management Plan

REPORT DATE: December 12, 2022

REVISION DATE: February 6, 2023

SITE INFORMATION

Proposed Blue Lake Multi-Family Housing Development

APNs: 312-161-015-000 & 312-161-018-000

Taylor Way, Blue Lake, California 95525

PROJECT INFORMATION

AEI Project No. 472118

PREPARED FOR

Danco Group

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Arcata, California 95521

PREPARED BY

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February 6, 2023

McKenzie Dibble
Danco Group
5251 Ericson Way, Suite A
Arcata, California 95521

Subject: Soil and Groundwater Management Plan
APNs: 312-161-015-000 and 312-161-018-000
Taylor Way, Blue Lake, California 95525
AEI Project No. 472118

Dear Ms. Dibble,

AEI Consultants has prepared this Soil and Groundwater Management Plan (SGMP) for the proposed Site redevelopment taking place at the proposed Blue Lake Multi-Family Housing Development, located on Taylor Way, in Blue Lake, California (the Site). The SGMP includes a summary of planned development and earthwork, summary of known and potential environmental conditions, and measures to address environmental impacts that may be encountered. The SGMP also includes provisions for health and safety, proper handling of soil, contingency measures, and construction best practices as they relate to potentially impacted soil. Groundwater is anticipated at a depth of 17 to 20 feet below ground surface (bgs) and is not anticipated to be encountered as part of the construction activities. Groundwater management measures, should groundwater be encountered, are included in the SGMP. This SGMP was prepared in general accordance with the scope of services outlined in our proposal dated November 9, 2022 (AEI Proposal Number 82796), which was subsequently authorized on November 17, 2022.

AEI appreciates the opportunity to support this important project. If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gary Reynolds".

Gary Reynolds
Business Development Manager
970.568.2596
greynolds@aeiconsultants.com

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1.0 INTRODUCTION

AEI Consultants (AEI) has prepared this Soil and Groundwater Management Plan (SGMP) on behalf of Danco Group for the proposed development at the real property located at Taylor Way, in Blue Lake, California assigned to the assessor parcel numbers (APNs) 312-161-015-000 and 312-161-018-000 hereafter referred to within this document as “the Site”. This SGMP applies to subsurface disturbances at the Site related to the planned redevelopment activities. The purpose of this SGMP is to:

- Assess and communicate the presence of contaminants of potential concern (COPCs) that are known or may potentially exist in Site soils.
- Provide protocols for appropriate soil management procedures, as they relate to the COPCs.
- Provide measures to mitigate any potential exposure risks to on-site workers, nearby residents, and pedestrians by potential exposure to hazardous substances that may be encountered during on-Site soil intrusive activities such as excavation and grading.
- Provide for the proper management of previously unknown environmental conditions if identified during redevelopment activities at the Site.

The preparation of this SGMP and its review by the North Coast Regional Water Quality Control Board (NCRWQCB) has been requested by the City of Blue Lake as part of the application submittal for the proposed project. The implementation of this SGMP will be required by the City as a condition of approval of the project.

This SGMP is not intended to replace federal, state, or local regulations dictating the handling of contaminated media or regulations addressing worker exposure including Federal and California Occupational Safety and Health Administration (OSHA) training and worker protection rules and regulations, Code of Federal Regulations (CFR) Title 29, Part 1910.120 and California Code of Regulations (CCR) Title 8, § 5192.

2.0 BACKGROUND

2.1 Current Site Description

The Site is approximately 4.21 acres and is located within an area zoned for mixed-use development (residential, commercial, and light manufacturing), located north of Taylor Way, and west of Monda Way, within the City of Blue Lake, California. The Site consists of two undeveloped parcels, APN numbers 312-161-015-000 and 312-161-018-000. A Site Location Map is included as Figure 1, and a Site Map is included as Figure 2.

2.2 Geology and Hydrogeology

Previous investigations conducted by SHN Consulting Engineers & Geologist, Inc. (SHN) identified encountered fill material consisting of rounded gravel with sand and silt and clay to a depth of approximately 8 to 10 feet below ground surface (bgs) with debris consisting of wood and metal fragments. Groundwater was encountered in temporary wells at depths ranging from 17 to 20 feet bgs in the 2013 investigation. Groundwater flow was assumed to be toward the south, toward the Mad River, located approximately 1,000 feet south of the Site (SHN, 2013).

2.3 Historical Site Use

Based on the findings of a Phase I Environmental Site Assessment (ESA) prepared by SHN, the Site was generally vacant land or used as farmland from at least approximately 1941. By 1948, the McIntosh Lumber Mill was developed primarily on adjacent offsite parcels to the southeast. In approximately 1979 the mill was shut down and the associated facilities were removed. The facility included sawmill, planer mill, truck shop, a log pond, log and lumber storage, and teepee burners. Reportedly, the mill did not use wood treatment chemicals, and there were no dip tanks or spray systems (SHN, 2011).

Currently, the Site is vacant land owned by the City of Blue Lake, with adjacent parcels to the southeast used as a business park, including a City corporation yard, a power plant (non-operational), a carbon generating facility (non-operational), wood working facilities, a brewing company, and light industry and business with rental space available for non-retail use (SHN, 2011).

2.4 Previous Environmental Investigation Activities

The Phase I ESA identified the Site contained a former log pond which was filled with rock, soil, asphalt, woody debris, and ash from the former teepee burners. The fill material was considered a recognized environmental condition that may have impacted the soil and groundwater at the Site. Therefore, an additional soil and groundwater investigation was recommended.

In 2013, SHN completed eight (8) test pits (TP-1 through TP-8) at the Site and advanced two soil borings (WP-1 and WP-2) to depths of 26 and 25 feet bgs, respectively. Soil samples were collected from the test pits at depths ranging from 1.0 to 3.75 feet bgs, and one soil sample was collected from each boring at depths 14 and 18 feet bgs, respectively. Groundwater samples were collected from the two borings. The soil and groundwater samples were each analyzed for total petroleum hydrocarbons as diesel (TPHd) and motor oil (TPHmo) using EPA Testing Method 8015M, and the metals arsenic, cadmium, total chromium, nickel, lead, and zinc, using EPA Testing Method 6010B (SHN, 2013).

The investigation data to date has been summarized in Tables 1 through 5 (Appendix A), with a brief summary of the investigation findings below. For purposes of providing context to the data, the results were screened against San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) environmental screening levels (ESLs; SFBRWQCB, 2019) based on human health risk levels for the direct exposure construction worker use scenario ESLs and maximum background concentrations for soil, maximum contaminant level (MCL) for groundwater (SHN, 2013).

Soil

- Soil samples collected from the two boring locations and eight test pits at locations throughout the Site are depicted on Figure 3, Appendix B.
 - TPHd and TPHmo were either detected at concentrations below their respective current construction worker screening levels, or not detected above their respective laboratory reporting limits.
 - The maximum TPHd concentration was 15 mg/kg in TP-06, below the current construction worker ESL of 1,100 mg/kg.

- The maximum TPHmo concentration was 82 mg/kg in TP-06, below the current construction worker ESL of 54,000 mg/kg.
- Metals were either detected at concentrations below their respective construction worker screening levels, or at concentrations typical of background concentrations.

Groundwater

- Grab groundwater samples were collected from two boring locations (WP-1 and WP-2; see Figure 3, Appendix B) and analyzed for TPHd, TPHmo, and the metals arsenic, cadmium, total chromium, nickel, lead, and zinc.
 - TPHd and TPHmo were not detected at or above their respective laboratory reporting limits in the groundwater samples collected and analyzed.
 - With the exception of nickel and zinc, metals were not detected above their respective laboratory reporting limits in the groundwater samples collected and analyzed. Maximum concentrations of nickel and zinc detected in groundwater were below their respective MCLs.

Soil Vapor

- Soil vapor samples have not been collected at the Site. VOCs were not analyzed in soil or groundwater samples at the Site. VOCs were analyzed in one groundwater sample from the adjacent property at WP-03, and were not detected above laboratory detection limits.

3.0 CONTAMINANTS AND AREAS OF POTENTIAL CONCERN

3.1 Contaminants of Potential Concern

Based on their detections above laboratory detection limits and for the purposes of this SGMP, TPHd, TPHmo, and metals are considered the COPCs for the Site. No other COPCs have been identified at the Site.

3.2 Areas of Potential Concern

The areas of potential concern at the Site include the area of the former log pond which has apparently been backfilled with fill material. Other specific areas of known potential concern have not been identified for the Site. Additionally, it is possible that localized areas of impact above referenced screening levels are present at the Site and as of yet unidentified impacts could be revealed during forthcoming earthwork that could pose a risk to construction workers.

4.0 PROPOSED REDEVELOPMENT

The property is slated for mixed-use development (residential, commercial, and light manufacturing). The redevelopment is anticipated to include two buildings, paved parking areas, and landscaped areas. As part of the construction activities, the upper 5-feet of soil across the Site is anticipated to be graded for foundation elements and utilities. The depth to groundwater at the Site has been measured at 17 to 20 feet bgs or greater, therefore groundwater is not expected to be encountered during development activities. Select development plans are provided in Appendix C.

5.0 RISK MANAGEMENT MEASURES

5.1 SGMP Applicability

This SGMP presents protocol for the following construction activities that may encounter COPCs, including the following:

- Removal of existing foundations, utility lines, and other surfacing;
- General earthwork;
- Targeted and mass excavation activities;
- Installation of utility corridors; and
- Rough grading.

Contractors and their subcontractors shall follow the protocols presented in this SMP while performing the above activities at the Site. Contractors and their subcontractors are responsible for the health and safety of their employees.

5.2 Pre-Construction Planning and Notification

Prior to the start of any construction activity that involves below ground work (e.g., foundation removal, subsurface utility removal, or excavating), the Developer shall provide information regarding Site risk management procedures (i.e., a copy of this SGMP) to the General Contractor and the General Contractor shall provide this SGMP to all relevant subcontractors for their review and acknowledgement, likewise for subsequent tier subcontractors.

5.3 Health and Safety

A written health and safety plan (HSP) may be necessary for Site activities in accordance with California OSHA Construction Safety Orders within Title 8 of the CCR, following a review of this SMP. The General Contractor is to review the information provided within this SMP and determine whether an HSP is necessary for the proposed construction activities. If deemed necessary, the HSP will be prepared by the General Contractor and/or their subcontractor for their work. At a minimum, the HSP should include:

- A description of proper entry to the Site and all work activities to be conducted at the Site.
- A list of project contacts including the Health and Safety Officer.
- A list of hazardous materials information.
- Emergency information, including the location of the nearest emergency hospital location.
- Identification of on-site health and safety hazards and hazard analysis.
- Exposure prevention, safety requirements, hazard exposure guidelines, and safe work practices.
- Safety training procedures and guidelines.
- Levels of personal protective equipment (PPE) needed.
- Waste handling procedures.

The purpose of a HSP is to inform all field personnel of proper safety procedures and potential health risks while on-site. All project personnel should familiarize themselves with the HSP and adhere to its established procedures and recommendations. A copy of the HSP should be kept on-site and made available to all personnel. The HSP should be updated if on-site conditions change. The General Contractor will be responsible for preparing and implementing the safety procedures identified in the HSP. Implementing the HSP will minimize potential health risks to on-site construction workers and the general public.

Each contractor shall be responsible for the health and safety of their own workers, as required by CAL-OSHA, including but not limited to preparation of their own HSP and injury and illness prevention plan. The purpose of these documents is to provide general guidance relating to the work hazards that may be encountered during each phase of Site construction activities. Contractors are also required to determine the requirements for worker training, based on the level of expected contact to potentially impacted soil and/or groundwater associated with the contractor's activities and locations with respect to COPCs described in Section 3.1. The HSP(s) will contain provisions for limiting and monitoring chemical exposure to construction workers, chemical and non-chemical hazards, emergency procedures, and standard safety protocols.

5.4 Soil Management

5.4.1 General Soil Handling Procedures

The proposed construction activities, including grading, will disturb on-site soils and will create soils that will need to be exported off-site. Surplus soil excavated from the Site slated for off-site disposal will be handled as described in Section 5.4.4 below.

On-site soils disturbed during the proposed construction activities, if to be re-used on-site, will only be retained on-site if contaminant levels are below applicable residential ESLs, the Human Health Risk Assessment (HHRA) Notes 3 and 5, and/or regional background concentrations. Soils identified as impacted shall not be re-used on-site.

5.4.2 Field Screening

Soil may be field screened by the Environmental Consultant in areas of potential environmental impact during demolition and excavation work on an as needed basis to assess whether petroleum hydrocarbon impacted soil may be present. At this time, field screening is not anticipated; however, the Environmental Consultant will be notified if potentially petroleum hydrocarbon impacted soil or other previously unidentified conditions as detailed in Section 5.7 are identified through visual and olfactory observation. Should any field screening or inspections performed by the Environmental Consultant identify potentially petroleum hydrocarbon impacted soil or other previously unidentified conditions, analytical testing will be performed. Significantly impacted soils (i.e., above applicable construction worker ESLs or HHRA Notes 3 and 5 identified as such by analytical testing performed by the Environmental Consultant, shall be handled and managed in conformance with and by OSHA Hazardous Waste Operations and Emergency Response trained personnel. Soils identified as impacted shall not be re-used on-site.

5.4.3 Soil Segregation and Stockpile Management

Excavated soils from the Site will either be loaded directly into trucks and removed from the Site for off-site disposal based on existing pending soil analytical data or stockpiled on-site for

further testing if required by the appropriately licensed receiving facility. If needed, the Environmental Consultant will perform sampling of stockpiled soil as appropriate for acceptance for off-site disposal.

If stockpiled on-site, all excavated soils will be stockpiled at the Site in a secure location, segregated as appropriate, maintained to prevent excessive dust and to prevent off-site soil migration due to wind and rain erosion, and placed away from storm drains and surface-water drainage courses to prevent potential runoff. Stockpiles will be moistened or covered with 10-mil polyethylene sheeting (e.g., in compliance with North Coast County Air Quality Management District [NCAQMD] Rule 104D) as needed for purposes of dust mitigation.

Stockpiles of potentially petroleum hydrocarbon impacted soil, or soils with impacts from other previously unidentified conditions as detailed in Section 5.7 identified through visual and olfactory observation, will be segregated from other stockpiled soils and additionally placed on top of as well as covered with 10-mil polyethylene sheeting.

5.4.4 Off-site Soil Disposal

Soil to be disposed off-site will be profiled for waste characterization based on samples already collected and supplemented with additional sampling data as needed by the appropriately licensed receiving facility.

Soil profiled as non-hazardous will be transported and disposed at a licensed Class II/III landfill. Soil classified as California hazardous waste will be transported either out of state to an appropriate licensed facility or to a Class I facility in California. Soil classified as Federal hazardous waste, if any, will be transported to a Class I RCRA facility. Additional segregation of excavated soil may be conducted by the excavation contractor (e.g., "clean" soil), depending upon off-site receiving facility acceptance criteria. Soil transporters and specific disposal locations will be identified prior to construction and summarized in the SMP Implementation Report (see Section 7.0).

5.4.5 Import Criteria

If import materials are needed, an evaluation of import materials brought to the Site will be conducted to ensure such fill meets the geotechnical and environmental requirements for the Site. To minimize the potential introduction of impacted fill onto the Site, all selected sources of import fill shall have adequate documentation or certification to verify that the fill source is appropriate for the Site prior to delivery of such soil to the Site. Acceptable documentation would include detailed information on previous land use of the fill source, any Phase I ESAs performed and the findings, and the results of any analytical testing performed. If no documentation is available, the documentation is inadequate, or if no analytical testing has been performed, samples of the potential fill material will be collected and analyzed prior to delivery of such soil to the Site. The analyses will be based on the fill source and knowledge of the previous land use. The sample frequency for potential fill material will be conducted in accordance with that outlined in the *Information Advisory on Clean Imported Fill Material* by the DTSC dated October 2001, included herein as Appendix D. Sampling will be conducted as described in Section 5.5. No fill material will be accepted if contaminant levels exceed applicable residential ESLs, HHRA Notes 3 and 5, and/or regional background concentrations.

5.5 Soil Sampling

5.5.1 General Methodology

When samples are needed, the Environmental Consultant will collect soil samples utilizing a slide hammer fitted with 2-inch diameter 6-inch stainless steel sleeves to obtain a sample, or alternative industry accepted sampling practices. Soil intervals saved for analysis will be immediately kept in the stainless-steel sampling tubes, with each end covered with polyethylene sheeting and tight-fitting plastic caps, labeled, placed in re-sealable plastic bags. Samples will be placed in a pre-chilled insulated container and prepared for transport and analysis using standard chain of custody protocol. Soil samples collected for analysis will be sealed and cooled as soon as feasible to minimize potential volatilization. All samples will be maintained in a locked vehicle or in direct observation at all times. The Environmental Consultant will generally follow regulatory methods for collecting the soil samples and preparing them for analysis and will submit all soil samples to a California certified laboratory.

5.5.2 Soil Profiling for Off-haul

Soil profiling criteria depends on the proposed receiving facility location. These procedures should be established by the excavation contractor and coordinated with the proposed receiving facility prior to initiating soil excavation. Typical soil profiling requirements are one four-point composite sample per 500 to 750 cubic yards to be disposed.

If needed, the Environmental Consultant will perform sampling of stockpiled soil as appropriate for acceptance at appropriate off-site "fill sites" or for landfill disposal. Soil samples for waste characterization purposes will be collected and analyzed according to the profiling requirements of the fill site or disposal facility. The profiling of the waste and surplus soil is typically required by all facilities considering acceptance of "clean" soil and for impacted soil to determine proper disposal methods, verify that the waste meets all acceptance criteria of the facility, and ensure compliance with all federal, state, and local regulations. Characterization information will be documented on profile forms provided by the off-site facility. The General Contractor will coordinate with the Environmental Consultant regarding all off-site soil disposal activities.

5.5.3 Groundwater Management

The planned redevelopment does not include a subterranean component, and therefore no large excavations are proposed. However, grading operations, trenching, and small excavations to depths of approximately 3 to 5 feet bgs for planned foundational elements such as footings, grade beams, utilities, etc. are expected. The measured depth to groundwater at the Site is greater than 17 feet bgs, therefore groundwater is not anticipated to be encountered during construction activities. However, if groundwater is encountered in quantities that need to be pumped and removed from excavations, such groundwater would need to be profiled for proper off-site disposal or discharged under permit to the local sanitary sewer system and/or storm sewer in accordance with best practices and applicable regulations. A settling tank, or other treatment as necessary, may be used to achieve the necessary discharge requirements. All permitting and regulatory requirements shall be followed prior to discharge or off-site disposal.

5.5.4 Unknown Conditions

If a UST, UST related piping, former wells, significantly impacted soils (indicative by soil staining and suspicious odors), sumps, or underground vaults are discovered during soil excavation the following work shall be conducted:

- Stop all activities in proximity to the subsurface structure or condition of concern.
- Cover the area with plastic sheeting and segregate the work area with safety cones or safety tape.
- Notify the superintendent and Environmental Consultant for inspection and follow up procedures.

5.6 Construction Impact Minimization Measures

During construction activities, measures will be taken by contractors to minimize construction related impacts. The construction impact minimization measures are described below.

5.6.1 Site Control

The General Contractor shall implement Site control procedures to prevent unwanted public access and control the flow of personnel, vehicles, and materials in and out of the Site while working with potentially contaminated materials. In addition, Site control measures will help control the spread of COPCs from the Site, if they are present. Site control measures to be implemented by the General Contractor include, but are not limited to:

- Fencing the Site perimeter, including installation of construction fence screen.
- Controlling access and egress at selected locations.
- Posting signs at all Site entrances.
- Instructing visitors to sign in at the project support area.

5.6.2 Equipment Decontamination

The General Contractor shall establish and implement decontamination procedures to reduce the potential for construction equipment and vehicles to release potentially impacted soil onto public roadways or other inadvertent off-site transfer. At a minimum, contractors shall place gravel at all Site access points and remove excess soil from construction equipment using dry methods (e.g., brushing or scraping) prior to moving the equipment to off-site locations.

5.6.3 Personal Protective Equipment

Contractors shall use PPE, including appropriate clothing, to isolate workers from COPCs and physical hazards. The appropriate contractor shall evaluate the level of PPE and modify the level of PPE, if warranted, based upon conditions encountered at the Site and/or type of work activity in accordance with their own HSP (see Section 5.3). The minimum level of protection for workers coming into direct contact with potentially contaminated materials is Level D, as described below:

- Coveralls or similar construction work clothing;
- Reflective safety vests;
- Steel-toed boots;
- Hard hat;
- Work gloves, as necessary;

- Safety glasses, as necessary; and
- Hearing protection, as necessary.

5.6.4 Storm Water Pollution Prevention

The National Pollutant Discharge Elimination System (NPDES) EPA Construction General Permit (CGP) authorizes the discharge of stormwater from construction sites that disturb one or more acres of land. A Construction Storm Water Pollution Prevention Plan (SWPPP) is required under the CGP and will be prepared for this project. Contractors and their subcontractors shall comply with the provisions and protocols of the SWPPP. Storm water pollution prevention procedures may include, but are not limited to the following:

- Constructing temporary berms or erecting silt fences around exposed soil;
- Placing straw bale barriers or sediment traps around catch basins or other entrances to storm drains;
- Covering soil stockpiles with plastic sheeting or tarps during rainfall events; and
- Implementing other appropriate best management practices (BMPs) as identified in the SWPPP.

5.6.5 Dust Control

Dust control measures to minimize the creation and dispersion of dust during soil handling and earthwork activities at the Site will include, but not be limited to, the following measures:

- Exposed on-site soils to be moistened twice a day or more as required to prevent visible airborne dust.
- Moistening of all soils during truck loading for disposal or off-haul purposes.
- Application of water while grading, excavating, and loading, as needed.
- If visible dust is present, conducting dust suppression activities such as soil moistening.
- Covering stockpiles with 10-mil polyethylene sheeting (or equivalent).
- Limiting vehicle speeds to five miles per hour on unpaved portions of the Site.
- Covering all disposal trucks and/or off haul trucks with a tarpaulin.
- Sweeping excess soil off disposal trucks and/or off haul trucks and rinsing of truck tires before leaving the Site.
- Minimizing drop heights while loading/unloading soil.
- On-site soil disturbance and/or loading activities will be suspended if winds exceed 20 miles per hour.
- Dust suppression shall not produce excess water and runoff.
- Dewatered groundwater may not be used for dust control unless previously sampled and analyzed for the Site COPCs, and COPCs are identified as below the applicable screening levels.

6.0 NOTIFICATIONS

6.1 Notifications

The Developer, Property Owner, the General Contractor, and Environmental Consultant shall be notified immediately of the discovery of COPCs (via field screening, observations, or analytical results) or other conditions of potential environmental concern. If analytical testing

identifies COPCs above applicable residential screening levels, the Environmental Consultant shall notify the Developer and General Contractor. If such discovery or conditions require notification to other contractors or subcontractors, the General Contractor shall make such notifications.

6.2 Project Contacts

Relevant project contacts for notifications, including in the case of discovery of COPCs or other conditions of potential environmental concern, include the following:

- **Developer:**
Danco Group
Attn: McKenzie Dibble
5251 Ericson Way
Arcata, California 95521
Phone: 707.672.4002
Email: mdibble@danco-group.com
- **Environmental Consultant:**
AEI Consultants, Attn: David Smith
2500 Camino Diablo
Walnut Creek, California 94597
Phone: 925.746.6000
Email: dsmith@aeiconsultants.com
- **Property Owner:**
City of Blue Lake
Attn: Amanda Mager, City Manager
111 Greenwood Road/P.O. Box 458
Blue Lake, California 95525
Phone: 707.668.5655
Email: citymanager@bluelake.ca.gov
- **Regulator:**
North Coast Regional Water Quality Control Board, Attn: To be Determined
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403-1072
- **General Contractor:**
To Be Determined

7.0 COMPLETION REPORTING

The Environmental Consultant will prepare a SGMP Implementation Report upon completion of excavation and earthwork performed per the SGMP. The report will include a summary of the work conducted, tables summarizing any analytical data generated as part of the work, and a Site map showing areas of excavation/fill and sample locations, if any. The report will include appendices with copies of permits, including any dewatering permits, manifests or bills of lading for impacted soil and/or groundwater removed, and laboratory reports for soil and water profiling not previously submitted. The report will also include a certification statement that indicates the activities were performed in accordance with this SGMP. The report will be submitted to the NCRWQCB for review and approval.

8.0 REFERENCES

Department of Toxic Substances Control (DTSC), 2001. *Information Advisory on Clean Imported Fill Material*. October.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), 2019. Environmental Screening Levels, dated July 2019, revision 2.

SHN Consulting Engineers & Geologists, Inc. (SHN), 2011. *Phase I Environmental Site Assessment Blue Lake Business Park Blue Lake, Humboldt County, California (APNs: 025-201-002; 025-201-006; 025-201-009; 025-201-019; and 312-161-015, and -018)*. June 23.

SHN, 2013. Site Investigation Report of Findings, Blue Lake Business Park, Blue Lake, California. December.

9.0 REPORT LIMITATIONS AND RELIANCE

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, subject to scope of work for which AEI was retained and limitations inherent in this type of work, but it cannot be assumed that they are representative of areas not sampled. This report should not be regarded as a guarantee that no further contamination beyond that which could have been detected within the scope of this investigation is present beneath the Site. Undocumented, unauthorized releases of hazardous material, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation.

Any conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work. No other warranty, either expressed or implied, has been made.

This investigation was prepared for the sole use and benefit of Danco Group. Both verbal and written, whether in draft or final, are for the benefit of Danco Group. Danco will be leasing the property from the City and the City will be relying on this SGMP to ensure there are not adverse impacts from redevelopment of the Site. Additionally, this SGMP will be relied upon by the City of Blue Lake for review of the development application for the proposed project and implementation of the SGMP will be required as a condition of approval of the entitlements being requested by the applicant (Danco). This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms & Conditions executed by McKenzie Dibble. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

10.0 SIGNATURES

This document was prepared by, or under the direction of, the undersigned.



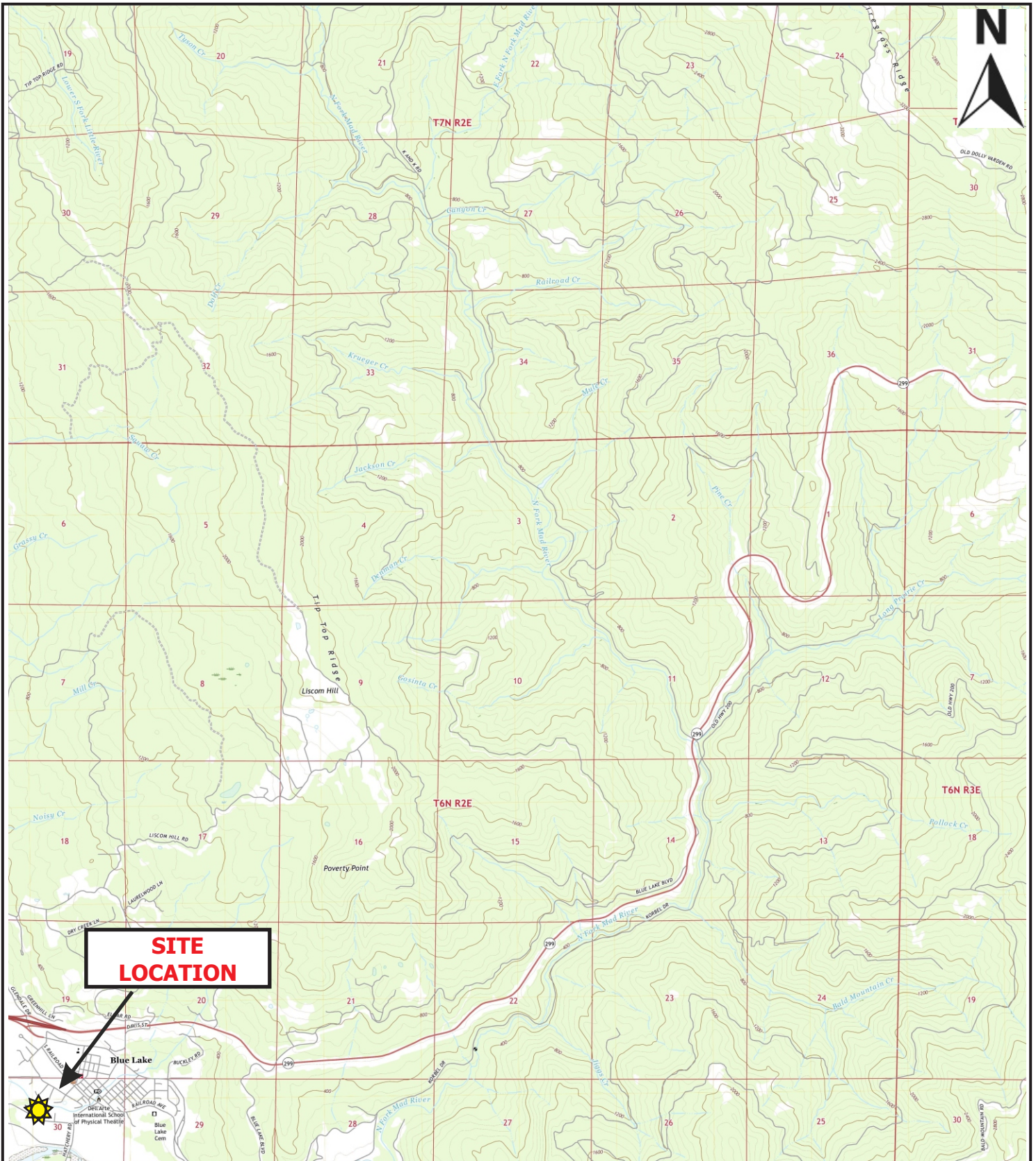
Nicole DiBiase
Staff Engineer



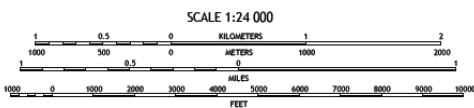
Trent A. Weise, P.E.
Vice President



FIGURES



LEGEND



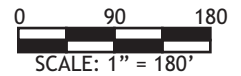
Map: Blue Lake, California Quadrangle
 Date: 2022
 Source: USGS

SITE LOCATION MAP



APNs: 312-161-015-000 &
 312-161-018-000
 Taylor Way, Blue Lake,
 California 95525

FIGURE 1
 Project No. 472118



LEGEND

 Approximate Site Boundary

SITE MAP



APNs: 312-161-015-000 &
312-161-018-000
Taylor Way, Blue Lake,
California 95525

FIGURE 2
Project No. 472118

APPENDIX A
Historical Analytical Tables 1 through 5

Table 1
Soil Analytical Results: Petroleum Hydrocarbons, September and October 2013
Blue Lake Business Park, Blue Lake, California
(in mg/kg)¹

Sample Location	Depth (feet BGS) ²	TPHMO ³	TPHD ³	Sample Location	Depth (feet BGS)	TPHMO	TPHD
WP-1	15.0	<10 ⁴	<1.0	WP-4	15.5	<10	<1.0
WP-2	18.0	<10	<1.0	WP-5	12.0	<10	<1.0
WP-3	12.0	2,800	1,600	WP-6	12.0	<10	<1.0
WP-3	19.0	<10	<1.0				
TP-01	1.5	<10	<1.0	TP-11	1.0	22⁵	5.7⁶
TP-01	3.0	<10	<1.0	TP-11	3.0	110	<1.0
TP-02	1.0	47	4.4⁶	TP-12	1.0	490	19⁶
TP-02	3.0	<10	<1.0	TP-12	3.0	<10	<1.0
TP-03	1.0	<10	<1.0	TP-13	1.0	160	7.4⁶
TP-03	3.0	<10	<1.0	TP-13	3.0	<10	<1.0
TP-04	1.0	<10	1.1⁶	TP-14	1.0	23	1.1⁶
TP-04	3.75	<10	<1.0	TP-14	3.0	<10	<1.0
TP-05	1.0	<10	<1.0	TP-14	3.0 (FD) ⁷	<10	<1.0
TP-05	3.0	<10	<1.0	TP-15	1.0	1,300	36⁶
TP-06	1.5	39	15⁶	TP-15	3.0	22	<1.0
TP-06	1.5 (FD)	40	7.7	TP-16	1.0	120	4.1¹⁰
TP-06	3.5	82	15⁶	TP-16	3.0	<10	<1.0
TP-07	1.5	<10	<1.0	TP-17	1.0	27	1.3⁶
TP-07	3.5	<10	<1.0	TP-17	3.0	<10	<1.0
TP-08	1.5	18	<1.0	TP-18	8.0	110	5.4⁶
TP-08	3.0	<10	<1.0	TP-18	10.0	28	<1.0
TP-09	1.0	<10	<1.0	TP-19	4.5	20	1.0⁶
TP-09	3.0	<10	<1.0	TP-19	6.0	32	<1.0
TP-10	1.0	1,000	19⁶	TP-20	1.0	<10	<1.0
TP-10	3.0	<10	<1.0	TP-20	1.0 (FD)	<10	<1.0
TP-10	3.0 (FD)	<10	<1.0	TP-20	3.0	<10	<1.0
Soil screening levels⁸		2,500	83	Soil screening levels		2,500	83

1. mg/kg: milligrams per kilogram
2. BGS: below ground surface
3. Total petroleum hydrocarbons as motor oil (TPHMO) and as diesel (TPHD) analyzed in general accordance with EPA Method No. 8015B. Samples containing material were passed through a silica gel column.
4. <: "less than" the stated method reporting limit
5. The sample does not have the typical pattern of fresh motor oil. However, the result reported represents the amount of material in the motor oil range.
6. The sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.
7. FD: field duplicate collected in the field
8. Soil screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

One soil sample collected during site investigation activities from test pit TP-09 at a depth of one-foot below grade was additionally analyzed for VOCs and SVOCs. The results showed that all VOCs were below laboratory detection limits, and the SVOCs identified included naphthalene and phenanthrene, at concentrations of 0.029 milligrams per kilogram (mg/kg) and 0.024 mg/kg, respectively.

Table 2
Soil Analytical Results: Metals¹, September and October 2013
Blue Lake Business Park, Blue Lake, California
(in mg/kg)²

Sample Location	Depth (feet BGS) ³	Arsenic	Cadmium	Chromium	Lead	Nickel	Zinc
WP-1	15.0	3.7	<1.0 ⁴	38	4.7	49	40
WP-2	18.0	3.0	<1.0	47	5.9	51	48
WP-3	12.0	3.0	<1.0	36	16	49	49
WP-3	19.0	2.3	<1.0	59	5.5	57	47
WP-4	15.5	4.7	<1.0	39	5.3	49	46
WP-5	12.0	3.9	<1.0	41	5.8	50	47
WP-6	12.0(FD) ⁵	4.3	<1.0	40	6.3	52	48
TP-01	1.5	5.0	<1.0 ⁵	52	6.8	61	51
TP-01	3.0	4.2	<1.0	47	5.5	58	51
TP-02	1.0	4.3	<1.0	45	5.2	40	42
TP-02	3.0	4.6	<1.0	49	5.7	56	51
TP-03	1.0	3.7	<1.0	54	5.9	63	50
TP-03	3.0	4.3	<1.0	63	5.6	76	54
TP-04	1.0	3.0	<1.0	41	4.3	40	41
TP-04	3.75	3.5	<1.0	47	5.6	56	47
TP-05	1.0	3.1	<1.0	35	4.9	38	45
TP-05	3.0	3.7	<1.0	50	5.9	60	48
TP-06	1.5	3.5	<1.0	38	6.3	38	42
TP-06	1.5 (FD)	3.3	<1.0	35	4.7	36	38
TP-06	3.5	2.9	<1.0	35	5.7	37	42
TP-07	1.5	3.4	<1.0	44	5.3	49	46
TP-07	3.5	4.7	<1.0	71	6.2	78	55
TP-08	1.5	5.0	<1.0	53	9.0	5.8	61
TP-08	3.0	4.3	<1.0	56	5.7	56	50
TP-09	1.0	5.1	<1.0	48	6.0	58	50
TP-09	3.0	6.0	<1.0	54	9.4	64	59
TP-10	1.0	4.1	<1.0	43	14	49	73
TP-10	3.0	3.8	<1.0	47	6.1	62	51
TP-10	3.0 (FD)	5.0	<1.0	50	6.7	61	50
TP-11	1.0	3.8	<1.0	56	5.9	52	46
TP-11	3.0	5.2	<1.0	54	7.2	64	57
TP-12	1.0	3.4	<1.0	34	19	33	42
TP-12	3.0	4.7	<1.0	46	6.1	55	50
TP-13	1.0	4.5	<1.0	63	23	64	89
TP-13	3.0	5.1	<1.0	59	6.6	63	54
TP-14	1.0	5.2	<1.0	93	22	93	78
TP-14	3.0	6.1	<1.0	61	6.8	79	56
TP-14	3.0 (FD)	5.7	<1.0	65	7.5	75	55
TP-15	1.0	4.8	<1.0	46	93	61	110
TP-15	3.0	3.7	<1.0	43	8.9	52	61
TP-16	1.0	5.7	<1.0	46	15	46	54
TP-16	3.0	4.9	<1.0	40	5.6	47	50
TP-17	1.0	4.1	<1.0	45	8.0	51	52

Table 2
Soil Analytical Results: Metals¹, September and October 2013
Blue Lake Business Park, Blue Lake, California
(in mg/kg)²

Sample Location	Depth (feet BGS) ³	Arsenic	Cadmium	Chromium	Lead	Nickel	Zinc
TP-17	3.0	4.3	<1.0	46	5.9	59	46
TP-18	8.0	5.7	<1.0	52	20	59	68
TP-18	10.0	6.1	<1.0	57	8.6	62	53
TP-19	4.5	4.5	<1.0	54	15	62	71
TP-19	6.0	3.9	<1.0	48	11	49	61
TP-20	1.0	5.0	<1.0	52	5.4	59	48
TP-20	1.0 (FD)	3.9	<1.0	46	5.3	57	48
TP-20	3.0	5.0	<1.0	41	6.0	52	46
Soil screening levels⁶		1.5	7.4	1,400	750	150	600

1. Metals analyzed in general accordance with EPA Method No. 6010B
2. mg/kg: milligrams per kilogram
3. BGS: below ground surface
4. <: "less than" the stated method reporting limit
5. FD: field duplicate collected in the field
6. Soil screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

Soil samples with constituents above applicable waste standards for total metal concentrations were additionally subjected to leachability testing. Five soil samples collected during the site investigation were analyzed by waste extraction test (WET) using deionized water for either chromium and lead for comparison to soluble threshold limit concentrations (STLCs).

Table 3
Soil Analytical Results: Soluble Metals, September and October 2013
Blue Lake Business Park, Blue Lake, California

Sample Location	Depth (feet BGS) ¹	Total Chromium ² (mg/kg) ³	STLC Chromium ⁴ (mg/L) ⁵	Total Lead ² (mg/kg)	STLC Lead ⁴ (mg/L)
WP-3	12.0	36	<0.200 ⁶	16	-- ⁷
TP-03	3.0	63	<0.200	5.6	--
TP-07	3.5	71	<0.200	6.2	--
TP-14	1.0	93	<0.200	22	--
TP-15	1.0	46	--	93	4.1
Soil screening levels⁸		50⁹	5.0	50⁹	5.0

1. BGS: below ground surface
2. Total metals analyzed using EPA Method No. 6010B
3. mg/kg: milligrams per kilogram
4. STLC: soluble threshold limit concentration, extracted as described in Title 22, CCR 66261.126 Appendix II (CAM WET), analyzed using EPA Method No. 6010B
5. mg/L: milligrams per liter
6. <: "less than" the stated method reporting limit
7. --: not analyzed
8. Soil screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)
9. STLC extraction required if total metal concentration is greater than or equal to the stated limit

3.2 Groundwater Analytical Results

Laboratory analytical results from groundwater samples collected during September 2013 site investigation activities are presented in Tables 4 and 5. Dioxin results from the groundwater sample collected from well point location WP-3 are presented in Table 6.

Table 4 Well Point-Groundwater Analytical Results, September 26, 2013 Blue Lake Business Park, Blue Lake, California (in ug/L)¹					
Sample ID	TPHMO ²	TPHD ²	TPHG ³	VOCs ³	SVOCs ⁴
WP-1	<170 ⁵	<50	NA ⁶	NA	NA
WP-2	<170	<50	NA	NA	NA
WP-3	<170	<50	<50	ND ⁷	ND
WP-4	<170	<50	NA	NA	NA
WP-5	<170	<50	NA	NA	NA
WP-6 (FD) ⁸	<170	<50	NA	NA	NA
Screening levels⁹	170	100	100	Varies	Varies

1. ug/L: micrograms per liter
 2. Total petroleum hydrocarbons as motor oil (TPHMO) and as diesel (TPHD) analyzed in general accordance with EPA Method No. 3511/8015B. Samples containing material were passed through a silica gel column.
 3. Total petroleum hydrocarbons as gasoline (TPHG) and volatile organic compounds (VOCs) analyzed in general accordance with EPA Method No. 8260B Modified. See the laboratory report for a full list of constituents and reporting limits.
 4. Semi-volatile organic compounds (SVOCs) analyzed in general accordance with EPA Method No. 8270C SIM. See the laboratory report for a full list of constituents and reporting limits.
 5. < : "less than" the stated method reporting limit
 6. NA: not analyzed
 7. ND: not detected
 8. FD: field duplicate collected in the field
 9. Groundwater screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

Table 5 Well Point-Groundwater Analytical Results: Metals¹, September 26, 2013 Blue Lake Business Park, Blue Lake, California (in ug/L)²						
Sample ID	Arsenic	Cadmium	Chromium	Lead	Nickel	Zinc
WP-1	<2.0 ³	<1.0	<1.0	<1.0	5.8	7.9
WP-2	<2.0	<1.0	<1.0	<1.0	<5.0	8.3
WP-3	<2.0	<1.0	<1.0	<1.0	<5.0	<5.0
WP-4	<2.0	<1.0	<1.0	<1.0	5.4	<5.0
WP-5	<2.0	<1.0	<1.0	<1.0	<5.0	5.4
WP-6 (FD) ⁴	<2.0	<1.0	<1.0	<1.0	<5.0	<5.0
Screening levels⁵	5	5	50	15	100	5,000

1. Dissolved metals analyzed in general accordance with EPA Method No. 200.8 Rev 5.4
 2. ug/L: micrograms per liter
 3. < : "less than" the stated method reporting limit
 4. FD: field duplicate collected in the field
 5. Groundwater screening levels proposed in the *Site Investigation Work Plan and Sampling and Analysis Plan Revision 2* (SHN, August 2013)

APPENDIX B
Figure 3 - SHN Phase II

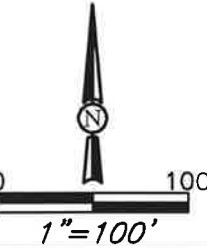
\\Eureska\Projects\2013\0130066-FL-brownfield\Drawings\11/15/2013 9:27 AM CLONG, PLOTTED: 11/15/2013 9:28 AM, CODY LONG



EXPLANATION

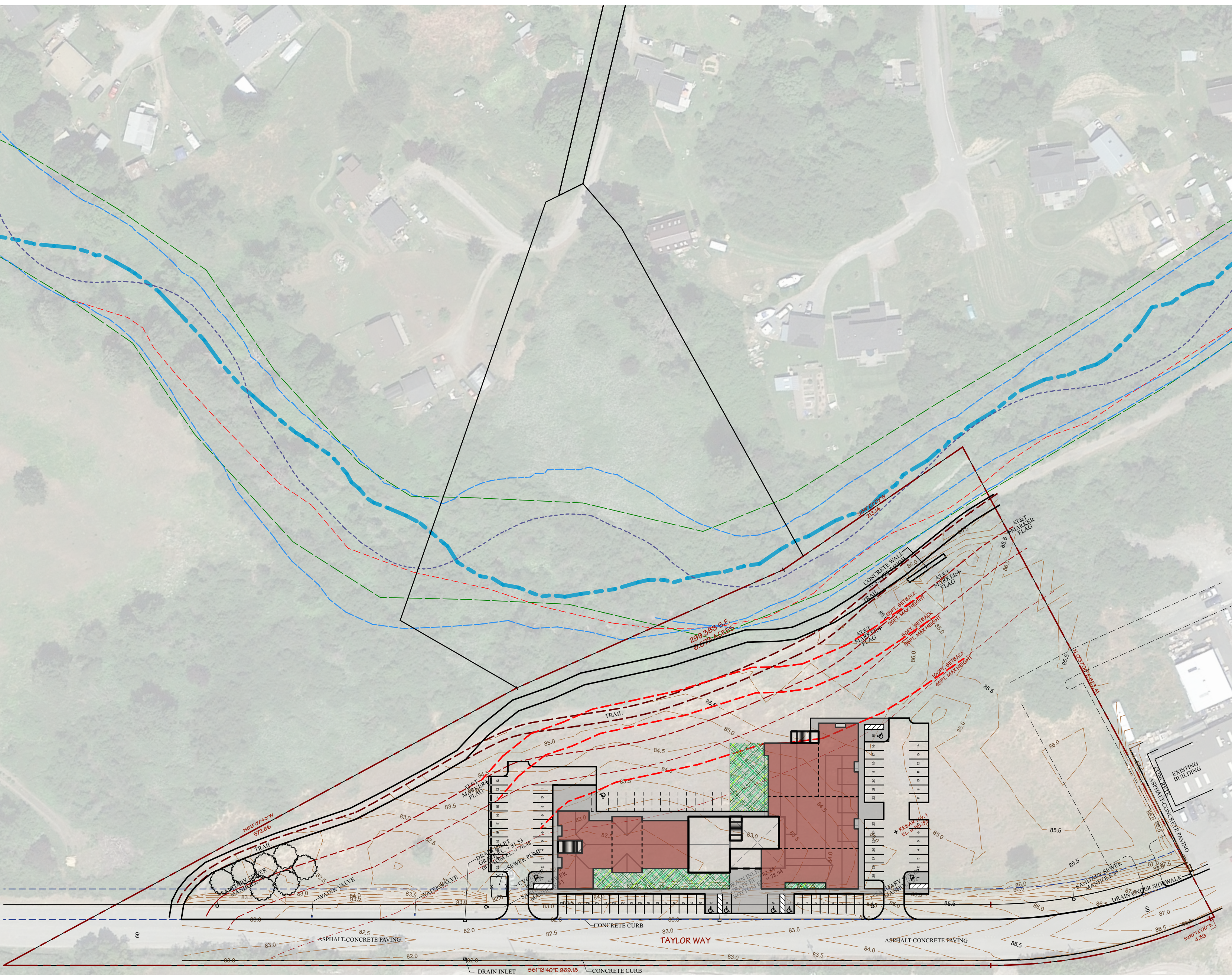
- SOUTHERN BOUNDARY OF INVESTIGATION AREA (PARCELS 312-161-018 & -015)
- WP-2 SOIL BORING/TEMPORARY WELL POINT LOCATION AND DESIGNATION
- ▾ TP-10 TEST PIT LOCATION AND DESIGNATION
- FORMER SUPPLY WELL (STATUS UNKNOWN)

NOTE: ALL LOCATIONS ARE APPROXIMATE

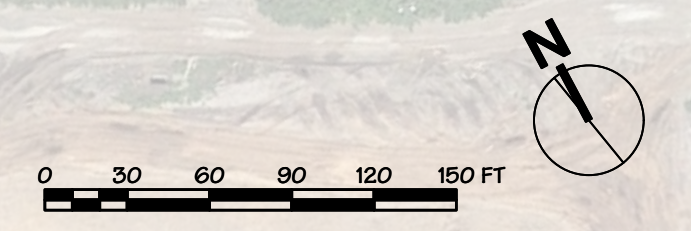


 Consulting Engineers & Geologists, Inc.	City of Blue Lake Blue Lake Business Park Blue Lake, California	Investigation Locations Phase II ESA SHN 013066
	November 2013	013066-INVEST-LCTN

APPENDIX C
Site Development Plans



CONCEPTUAL SITE PLAN



APPENDIX D

Information Advisory on Clean Imported Fill Material

(DTSC, October 2001)

Information Advisory

Clean Imported Fill Material



October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed.

It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contami-

nation and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area

Sampling Requirements

2 acres or less

Minimum of 4 samples

2 to 4 acres

Minimum of 1 sample every 1/2 acre

4 to 10 acres

Minimum of 8 samples

Greater than 10 acres

Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile

Samples per Volume

Up to 1,000 cubic yards

1 sample per 250 cubic yards

1,000 to 5,000 cubic yards

4 samples for first 1000 cubic yards + 1 sample per each additional 500 cubic yards

Greater than 5,000 cubic yards

12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary

to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all com-

pounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.