FINAL
ENVIRONMENTAL IMPACT REPORT

WARING'S DUMP SOIL CAP PROJECT
SACRAMENTO, CALIFORNIA
SCH #2012122041

Prepared for

CalRecycle

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June 2013

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List of Acronyms and Abbreviations

AB	Assembly Bill
ac-ft	acre-foot/feet
ADT	average daily traffic
APE	Area of Potential Effect
BMP	Best Management Practice
CAAQS	California Ambient Air Quality Standards
Cal-ARP	California Accidental Release Prevention
CalEEMod	California Emissions Estimator Model
Cal EMA	California Environmental Management Agency
Cal EPA	California Environmental Protection Agency
CalRecycle	California Department of Recycle and Recovery
Caltrans	California Department of Transportation
CAR	California Climate Action Reserve
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCAT	California Climate Action Team
CCCC	California Climate Change Center
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDWR	California Department of Water Resources
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CHP	California Highway Patrol
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalent
CR	California Register
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act

dB	decibel(s)
dBA	A-weighted decibel(s)
DNL	day/night noise level
DWR	Department of Water Resources
EIR	Environmental Impact Report
ESA	Endangered Species Act
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	Global Warming Potential
HEC	Hydrologic Engineering Center
HFC	hydrofluorocarbon
HFE	hydrofluorinated ethers
HOV	high occupancy vehicle
NMP	Hazardous Materials Business Plan
Hz	Hertz
I	Interstate
kV	kilovolt(s)
kW	kilowatt(s)
kWh/kgal	kilowatt-hours of power per thousand gallons of water produced
L_{dn}	day/night noise level
LEA	Lead Enforcement Agency
L_{eq}	equivalent noise level
LOS	level of service
LS	less than significant
LTSM	less than significant with mitigation
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric ton(s)
MSDS	material safety data sheet
MT	metric ton(s)
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Planning
NCCPA	Natural Community Conservation Planning Act
NCIC	North Central Information Center
NF_3	nitrogen trifluoride
NFIP	National Flood Insurance Program

NHPA	National Historic Preservation Act
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Act/Administration
PFC	perfluorocarbon
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PPV	Peak Particle Velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
RCTS	Remediation, Closure and Technical Services
RMS	Root Mean Square
ROG	reactive organic compound
RT	Sacramento Regional Transit District
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulphur dioxide
SR	State Route
SU	significant and Unavoidable
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	total dissolved solid
UBC	Uniform Building Code
UP	Union Pacific
URS	URS Corporation
U.S./US	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VOC	volatile organic compound

1. EXECUTIVE SUMMARY

1.1 Project Background

The Waring's Dump site was initially excavated as a soil borrow source during the construction of California State Highway 99 in the late 1930s. Permission to fill the borrow pit was granted by the City of Sacramento in the late 1940s with the understanding that the fill was to consist of rubbish and construction waste. During the next decade waste materials were accepted and disposed of at the project site, much of which had been burned prior to disposal. In the mid-1960s, the adjacent Morrison Creek was widened, deepened and channelized as part of Sacramento County's flood control "Drainage Bond Project."

In response to a proposed development of the dump site in 2002, the Sacramento County Environmental Management Department (EMD), as the Lead Enforcement Agency (LEA), requested that the Remediation, Closure and Technical Services (RCTS) Branch of the California Integrated Waste Management Board, now known as CalRecycle, perform Phase I and Phase II site investigations to determine appropriate remedial measures necessary to protect public health and safety and the environment (included in Appendix G of this report). CalRecycle has determined that the former Waring's Dump does not meet State Minimum Standards, including Title 27 of the California Code of Regulations (CCR) Division 2, Solid Waste, Chapter 3, Criteria for All Waste Units, Facilities and Disposal Sites, Subchapter 4, Criteria for Landfills and Disposal Sites, Article 1 Recycle Operating Criteria at §20650 (grading of fill surfaces), §20790 (leachate control), and §20820 (drainage and erosion control). Recommended CalRecycle actions to improve these deficiencies were to properly cover the former dump site with selected fill soils in accordance with state minimum standards, and to limit exposure of the waste materials to the public and the environment.

1.2 Project Description and Alternatives

1.2.1 Project Location and Description

The project site is located in the south portion of the city of Sacramento, California, and is bounded by Morrison Creek to the north; 63rd Street to the west; and parcels fronting Elder Creek Road to the south and 65th Street Expressway to the east. The proposed project is located on 5.04 acres of privately held property comprising Assessor's Parcel Numbers (APNs) 38 182 005 (0.89 acre), 38 182 006 (0.67 acre), 38 182 007 (0.91 acre), 38 182 010 (0.67 acre), and 38 202 001 (1.9 acres).

The proposed project would result in grading and compaction of the existing hummocky terrain and the importation of select fill soils for placement as a compacted soil cap over the existing waste footprint. Existing ground elevations vary from 29 feet to 33 feet above mean sea level (MSL). Preliminary surface grading and compaction would be conducted to stabilize the project site into a uniform surface, graded to drain stormwater off the waste mound. The depth to which preliminary grading would occur would be minimized so as to leave buried wastes undisturbed and in place to the extent possible. Any debris unearthed during the grading would be reburied such that no materials protrude from the graded surface. No debris or soil is intended to be exported offsite. However, if there are some bulky items, such as car bodies, drums or refrigerators, etc., unearthed that cannot be graded within the proposed waste mound, they would be removed and either recycled or disposed of at a proper disposal site.

Approximately 8,370 cubic yards (CY) of clean, imported soil (free of contamination from petroleum products or organics and construction debris, and not containing solely rock or solely clay material, hereafter referred to as "select soil") and 17,400 square yards (sq yd) of erosion control seed mix would be required to provide a 15-inch thick select-soil cap and vegetation. The select soil fill would be placed and compacted on top of the compacted, graded waste materials to create the finished grade. The proposed finished select soil-capped waste mound would have side slopes varying between 1.0 percent and 3.0 percent over the area containing waste, and have a maximum elevation of 34.5 feet above MSL. An erosion control mat and hydroseed mix would be then placed/applied to the compacted soil cap. The source of select soils for the soil cap has not as yet been determined, but would likely be trucked to the project site by a hauler. Assuming a 16 CY load by each haul truck, there would be no more than 525 truck trips within a three-week soil-delivery period. A one-month project completion schedule is estimated.

The proposed project would substantially improve existing drainage patterns onsite by diverting stormwater off the soil-capped mound and into a perimeter trapezoidal bioswale. The bioswale would drain, store, and provide eventual groundwater infiltration and evaporation outside of the Waring's Dump debris footprint. The bottom of the retention swale would be one foot wide and side-slopes would be at a 2:1 ratio. The proposed retention swales would be graded (~0.35 percent) to flow from the southeast corner of the project site and around both sides of the mound to a common low point at the northwest side. The retention swales would be designed to have a storage capacity of ~1.0 acre-feet (ac ft). Water depth at this storage capacity would be approximately three feet at a common low point adjacent, but not connected, to the existing culvert within the Morrison Creek south levee. During extreme rain events, the northern edge of the retention swale rim would function as an emergency release into the existing ditch on the upland side of the levee and release stormwater into Morrison Creek.

A culvert connecting the proposed retention swales would be placed at the southwest corner of the property, beneath the existing driveway, providing controlled access to the project site. To avoid impact to existing or future fence or levee, all earthworks would be conducted outside the creek right-of-way, and storm water would be retained on-site during most rain events. Except for a culvert beneath the existing access driveway (described above), no structures are proposed for this proposed project.

1.2.2 Project Objectives

The Solid Waste Disposal and Codisposal Site Cleanup Program (Program) was created for the cleanup of solid waste disposal sites throughout California where the responsible party either cannot be identified or is unable or unwilling to pay for timely remediation. In light of the limited availability of State funding, CalRecycle must prioritize projects for cleanup in order to maximize such use of available funds. In prioritizing projects for cleanup CalRecycle may consider, among other factors, the actual or potential degree of risk to public health and safety and/or the environment posed by conditions at the site as determined by a comparison with state minimum standards (27 CCR, Chapter 3, Subchapter 4, commencing with section 20510 and Subchapter 5, commencing with section 21099) and the ability of CalRecycle to perform a timely and efficient site cleanup which adequately addresses state minimum standards using available funds and maximizing such use of available funds (Public Resources Code Section 48021(a), 14 CCR 18903-04). CalRecycle is thus constrained in its ability to conduct a remediation that goes beyond bringing the site into compliance with state minimum standards, in that any endeavor exceeding this objective would be inconsistent with its prioritization mandate. Within this legal framework, the project objectives are as follows:

- Achieve adequate compliance with state minimum standards for closed sites relating to grading, leachate control, drainage and erosion control and other violations at the project location in a timely and efficient manner utilizing and maximizing available funds as required by law.
- Minimize the exposure of the public and the environment to potentially hazardous materials.

1.2.3 Project Alternatives

The Draft EIR analyzes the following alternatives to the proposed project:

- Alternative 1: Site Clean Closure Alternative
- Alternative 2: No Project Alternative.

Because the project is specific to the project location, an offsite alternative is not possible. No other alternatives were identified.

While Alternative 1, the Site Clean Closure Alternative, achieves the project objective of minimizing exposure of the public and the environment to potentially hazardous materials, it does not meet the project objective of consistency with CalRecycle's prioritization mandate. In addition, all the impacts of this alternative were greater than for the proposed project. Alternative 2, the No Project Alternative, does not meet either project objective. An environmentally superior alternative was not identified for the proposed project.

1.3 Public Involvement

CalRecycle circulated the Notice of Preparation (NOP) for the proposed project to local, state, and federal agencies and other interested parties on December 18, 2012, pursuant to CEQA Guidelines Section 15082. An extended public review period was set from December 15, 2012 to February 01, 2013. The NOP provided a description of the proposed project and its location, and identified potential environmental effects of the proposed project that would be evaluated in this EIR. Comments on the NOP were received from the California Department of Toxic Substances Control (DTSC) and the City of Sacramento Planning Department.

This Draft EIR will be available for public and agency comment for a 45-day period, beginning on April 8, 2013, and concluding on May 22, 2013. CEQA requires a 45-day public review period for Draft EIRs submitted to the State Clearinghouse for review. During the public comment period, written comments on the adequacy of the Draft EIR must be submitted by all interested public agencies, organizations, community groups, and individuals to:

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Electronic copies of the Draft EIR are available on the CalRecycle website Public Notices homepage at http://www.calrecycle.ca.gov/Actions. The Draft EIR will be available for public review during the 45-day comment period at the following locations:

- Sacramento Public Library, Southgate Branch, 6132 66th Avenue, Sacramento
- CalRecycle Offices, 1001 I Street, Sacramento.

1.4 Areas of Controversy

CEQA Guidelines at Section 15123(b) requires that the EIR identify areas of controversy including issues raised by agencies or the public. The owner of the property has expressed opposition to the project. The issues he has raised in communications to the Sacramento County EMD (the LEA) are as follows:

- Whether the LEA has authority to authorize the proposed project
- Potential for flooding in the neighborhood caused by the proposed project
- Potential for contamination of Morrison Creek by the proposed project.

No other opposition to the project is known at the time of publication of this Draft EIR.

1.5 Summary of Impacts and Mitigation Measures

The impacts and mitigation measures identified for the proposed project including the level of significance after mitigation are presented in Table 1-1, Summary of Impacts and Mitigation Measures, below. No significant and unavoidable impacts were identified for the proposed project.

Table 1-1 Summary of Impacts and Mitigation Measures

	Mitigation Measures	Level of Significance after Mitigation
Air Quality		
Impact 4.1-1: The proposed project could potentially conflict with an applicable air quality plan and result in a cumulatively considerable net increase in any criteria air pollutants.	None Required	Less than Significant
Impact 4.1-2: Construction activities from the proposed project would generate emissions of criteria pollutants on a short-term basis; these emissions could potentially result in violations of air quality standards.	None Required	Less than Significant
Impact 4.1-3: The proposed project could potentially generate GHG emissions that would have a significant impact on the environment or would otherwise conflict with an applicable GHG reduction plan, policy, or regulation.	None Required	Less than Significant
Biological Resources		
Impact 4.2-1: Proposed project activities may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species.	**Mitigation Measure 4.2-1a:** Ground clearing or vegetation removal activities shall occur outside of the nesting season (September 1 through February 1), if feasible. However, if ground clearing or vegetation removal activities occur during the nesting season (February 15 through August 31), then pre-construction surveys	Less than Significant

	for nesting birds shall be conducted in all area suitable for nesting that are located within 250 feet of the project area to be impacted. Surveys shall be conducted no more than 15 days prior to the beginning of ground disturbance. If an active nest is located, a 250-foot buffer shall be delineated and maintained around the nest until a qualified biologist has determined that fledging has occurred. Alternatively, CDFW may be consulted to determine if the protective buffer can be reduced based upon individual species responses to disturbance. **Mitigation Measure 4.2-1b:** No more than 30 days prior to the beginning of ground disturbance, a pre-construction survey for burrowing owls shall be conducted by a qualified biologist within the areas to be impacted in general accordance with the Burrowing Owl Survey Protocol and Mitigation Guidelines by the California Burrowing Owl Consortium. Should the surveys be scheduled to occur during the period extending from February 1 through May 1, then surveys shall be conducted no more than 15 days prior to the start of ground disturbance. Surveys shall be conducted from two hours before sunset to one hour after sunset, or from one hour before sunrise to two hours after sunrise, and shall be conducted during weather conducive to observing owls outside of their burrows. No surveys shall occur during heavy rain, high winds, or dense fog. If occupied burrows are found, mitigation for potential impacts shall follow the guidelines outlined by the Burrowing Owl Survey Protocol and Mitigation Guidelines, including passive relocation.	
Impact 4.2-4: The proposed project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	**Mitigation Measure 4.2-4:** ~~Prior to issuance of grading permits for any~~ For any activities that would remove one or more trees subject to City of Sacramento Ordinance 12.64.040, the applicant shall prepare and submit a tree removal and replacement plan to the City of Sacramento for review and approval including the removal fee which would go towards planting replacement tree in the City.	Less than Significant

Cultural Resources		
Impact 4.3-1: Implementation of the proposed project would not cause a substantial adverse change in the significance of a known historical or unique archaeological resource.	None Required	Less than Significant
Impact 4.3-2: Implementation of the proposed project could cause a substantial adverse change in the significance of an as-yet undiscovered/unrecorded historical resource or unique archaeological resource.	**Mitigation Measure 4.3-2:** If potentially significant archaeological resources are encountered during subsurface excavation activities, all construction activities within a 50-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. CalRecycle shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. If the resource is determined to be significant under CEQA, CalRecycle and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the North Central Information Center, and provide for the permanent curation of the recovered materials.	Less than Significant
Impact 4.3-3: Implementation of the proposed project could cause a substantial adverse change in the significance of an as-yet undiscovered/unrecorded paleontological resource or unique archaeological resource.	**Mitigation Measure 4.3-3:** In the event that plant or animal fossils are discovered during subsurface excavation activities for the proposed project, all excavation within 50 feet of the fossil shall cease until a qualified paleontologist has determined the significance of the find and provides recommendations in accordance with Society of Vertebrate Paleontology standards. If the find is determined to be significant and CalRecycle determines that avoidance is not feasible, the paleontologist	Less than Significant

	shall design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan shall be incorporated into the project.	
Impact 4.3-4: Implementation of the proposed project may cause disturbance to human remains, including those interred outside of formal cemeteries.	**Mitigation Measure 4.3-4:** If human remains are encountered, work should halt in the vicinity of the remains and, as required by law, the Sacramento County Coroner should be notified immediately. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of that determination. Pursuant to California Public Resources Code 5097.98, the NAHC, in turn, will immediately contact an individual who is most likely descended from the remains (aka: a Most Likely Descendent, MLD). The MLD has 48 hours to inspect the site and recommend treatment of the remains. CalRecycle is obligated to work with the MLD in good faith to find a respectful resolution to the situation and entertain all reasonable options regarding the descendants' preferences for treatment.	Less than Significant
Geology and Soils		
Impact 4.4-1: The proposed project could result in substantial soil erosion or the loss of topsoil.	None Required	Less than Significant
Hydrology and Water Quality		
Impact 4.5-1: Construction activities associated with the proposed project have the potential to degrade water quality due to the release of sediments and contaminants.	**Mitigation Measure 4.5-1:** If applicable, CalRecycle shall prepare a Notice of Intent (NOI) to be submitted to the Central ~~Coast~~ Valley Regional Water Quality Control Board, which indicates the intent to comply with the Statewide NPDES General Construction Permit (Order No. 2009-0009-DWQ) prior to construction being initiated. Prior to submittal of the NOI, CalRecycle shall prepare a Stormwater Pollution Prevention Plan (SWPPP) to comply with the Statewide NPDES General Construction Permit. The SWPPP shall include but will not be limited to the following elements: • Temporary erosion control measures shall be employed for disturbed areas. • No disturbed surfaces shall be left without erosion control measures in place	Less than Significant

	during the winter and spring months. • Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures. • The construction contractor shall prepare a plan for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains. • BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure. • In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season. If the NOI and SWPPP are not applicable to the Project, CalRecycle will implement standard erosion control and water pollution control best management practices during construction. Construction best management practices, will include those activities listed above under the SWPPP and will also include but will not be limited to the following types of measures: scheduling of activities, prohibitions of certain practices, general good housekeeping practices, pollution prevention and education practices, construction procedures, and other management practices to prevent or reduce to the maximum extent practicable the discharge of pollutants directly or indirectly to waters of the United States. Best management practices also include treatment requirements, operating procedures, and practices to control construction site runoff, spillage or leaks, sludge or waste disposal, and drainage from materials storage areas.	

Impact 4.5-2: The proposed project would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or result in substantial erosion or siltation or flooding on- or off-site, or which could exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff.	None Required	Less than Significant
Noise		
Impact 4.6-1: The construction of the proposed project would not expose persons to or generate noise levels in excess of local standards, or create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	**Mitigation Measure 4.6-1:** ~~Prior to grading permit issuance, the~~ The Construction Contractor shall implement, to the satisfaction of the City of Sacramento and to the greatest extent feasible, the following measures to ensure that, during construction, construction noise would be reduced by the greatest extent feasible when within 100 feet of a residential use or sensitive receptor: • Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices. • All construction equipment shall use available noise suppression devices and properly maintained mufflers. All internal combustion engines used in the project area shall be equipped with the type of muffler recommended by the vehicle manufacturer. In addition, all equipment shall be maintained in good mechanical condition to minimize noise created by faulty or poorly maintained engine, drive-train, and other components. • Construction noise reduction methods (i.e., shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment) shall be employed where feasible. Staging of construction equipment and unnecessary idling of equipment shall be avoided whenever feasible. "Feasible," as used here, means that the implementation of this	Less than Significant

	measure would not have a notable effect on construction operations or schedule. • Property owners and occupants located within 100 feet of the project construction site shall be sent a notice, at least 15 days prior to commencement of construction, regarding the construction schedule of the proposed project. A sign, legible at a distance of 25 feet shall also be posted at the project construction site. All notices and signs shall be reviewed and approved by the City, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints. • During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors. • During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors.	
Transportation/Traffic		
Impact 4.7-1: The proposed project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, or an applicable congestion management program.	**Mitigation Measure 4.7-1:** Prior to the commencement of construction activities, CalRecycle shall prepare a Traffic Control Plan that would need to be approved by the City of Sacramento Public Works Department. The Traffic Control Plan shall include the following: • Construction-related truck traffic shall be scheduled to travel during non-peak hours (8:30 a.m. to 4:00 p.m.) on surrounding roadways. • Proposed routing for all delivery and haul trucks shall be identified. To the extent feasible, truck routing shall avoid or minimize travel through residential areas. • Notification shall be sent to all neighboring property owners two working days in advance of beginning work. The notice shall describe the anticipated duration of construction, and the name and daytime telephone number of the person performing the work, as well as the CalRecycle project manager.	Less than Significant

Cumulative Impacts		
Impact 6-1: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	None Required	Less than Significant
Impact 6-2: The proposed project together with cumulative development, including past, present and future development in the project area would not result in significant biological resources impacts.	None Required	Less than Significant
Impact 6-3: The proposed project together with cumulative development, including past, present and future development would not result in significant cultural resources impacts.	**Mitigation Measures 4.3-2, 4.3-3, and 4.3-4**, above.	Less than Significant
Impact 6-4: The proposed project together with cumulative development, including past, present and future development could result in significant soil erosion impacts.	None Required	Less than Significant
Impact 6-5: The proposed project together with cumulative development, including past, present and future development could result in substantial erosion or siltation or flooding on- or off-site, or which could exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff.	None Required	Less than Significant
Impact 6-6: The proposed project together with past, present, and future projects could create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	**Mitigation Measure 4.6-1**, above.	Less than Significant
Impact 6-7: The proposed project together with present and future projects could result in construction traffic impacts.	**Mitigation Measure 4.7-1**, above.	Less than Significant

2. INTRODUCTION

The California Department of Resources Recycling (CalRecycle) is the Lead Agency and has prepared this Draft Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines, to evaluate the potential environmental effects of the proposed Waring's Dump Soil Cap Project (proposed project).

The proposed project would implement CalRecycle-recommended site remediation actions within the approximately 5.04-acre former Waring's Dump site located on private property within the southern portion of the City of Sacramento, Sacramento County, California. The proposed project would consist of surface grading and compaction of the abandoned dump surface materials followed by the placement of a compacted, sloped soil cap and a surrounding surface-water runoff retention bioswale. The proposed site improvements would be designed to divert surface runoff from the Waring's Dump footprint to surrounding retention swales, substantially reducing the existing amount of surface water percolating downward through the buried waste toward the underlying groundwater, and to prevent the exposure of the public and the environment to potentially hazardous substances.

2.1 Purpose of the EIR

The EIR is an informational document that is required to: (1) identify the potentially significant environmental effects of the proposed project on the environment; (2) indicate the manner in which those significant effects can be avoided or significantly lessened via the implementation of potentially feasible mitigation measures; (3) identify a reasonable range of potentially feasible alternatives to the proposed project that would eliminate or substantially lessen any significant environmental effects; and (4) identify any significant and unavoidable adverse impacts that cannot be mitigated or otherwise reduced. According to the State CEQA Guidelines, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. The EIR provides the decision-makers and the public with information about the potential effects of the proposed project on the site and the surrounding environment.

CEQA requires the Lead Agency to consider the information in the EIR, and, if they choose to approve the proposed project, to make findings regarding each significant effect identified in the EIR. Under CEQA, a lead agency's decision-making process includes more than one step. The first step is to consider whether to "certify" the Final EIR for a proposed project. Notably, "certification" does not, by itself, indicate that decision makers are intending to approve the proposed project. Rather, although certification is a necessary precondition to project approval, it is possible for a decision-making body to certify a Final EIR and then deny a project.

Certification of a Final EIR involves a three-part finding: first, that the "Final EIR has been completed in compliance with CEQA"; second that the "Final EIR was presented to the decision-making body of the lead agency and that the decision-making body reviewed and considered the information contained in the Final EIR"; and third, that the "Final EIR reflects the lead agency's independent judgment and analysis." (CEQA Guidelines, Section 15090.)

After certifying a Final EIR, Lead Agency decision makers are in a position to approve a proposed project, if they so choose. In doing so, as described in CEQA and the CEQA Guidelines, they will be subject to the statutory duty to avoid or substantially lessen significant environmental effects, where feasible. This duty is effectuated through the adoption of statutorily-mandated findings adopted as part of the actions approving the project. These findings must address how agency decision-makers have dealt with each of the significant effects of a proposed project. Possible findings are (i) that the agency has adopted mitigation measures or alternatives to avoid or substantially lessen the significant effects; (ii) that the effects can be, or have been, mitigated by other public agencies, which should adopt, or have adopted, measures to address the effects; or (iii) that proposed mitigation measures or alternatives are infeasible. Even after imposing all feasible means of avoiding or substantially lessening such effects, however, a public agency may still approve a project with unmitigated significant effects, provided that the Lead Agency decision-makers issue a "statement of overriding considerations" that identifies what decision-makers believe to be the project's economic, social, technological, legal, and other benefits, including any regional or statewide benefits, that render the unmitigated effects "acceptable."

CalRecycle, as Lead Agency, must certify the Final EIR prior to making the decision to approve, deny, or modify the proposed project. Other agencies, known as Responsible Agencies, may also use this EIR in their permit review and/or approval processes.

2.2 EIR Review Process

This EIR provides a project-level analysis of the proposed project. The CEQA Guidelines indicate that a "project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (Section 15355). The Guidelines also indicate that reasonably foreseeable probable future projects or future project phases should also be evaluated (Sections 15355 and 15165, respectively). The environmental review process for this EIR is further described below.

Scoping

CalRecycle circulated the Notice of Preparation (NOP) for the proposed project to local, state, and federal agencies and other interested parties on December 18, 2012, pursuant to CEQA Guidelines Section 15082. An extended public review period was set from December 15, 2012 to February 1, 2013. The NOP provided a description of the proposed project and its location, and identified potential environmental effects of the proposed project that would be evaluated in this EIR. A copy of the NOP and comments received in response to the NOP are included in

Appendix A, Scoping Report. The following comments were received in response to the NOP and have been addressed in this EIR:

- **Project Description:** The EIR should include a discussion on sampling and analysis conducted to identify the nature and extent of soil contamination. The proposed project should include some form of land use control after cleanup to preclude sensitive land use for areas where waste is left in place.

  A Site Investigation Report prepared for the site which discusses sampling and analysis is included in Appendix G. The need for restrictions on development on the property is addressed in Chapter 3, Section 3.5, Land Use Designations.

- **Air Quality and Greenhouse Gas Emissions:** The EIR should analyze hazardous substance releases via dust and vehicular tracking.

  Hazardous substance releases is addressed under subsection *Toxic Air Contaminants* in Chapter 4, Section 4.1, Air Quality and Greenhouse Gas Emissions.

- **Hydrology and Water Quality:** The EIR should analyze storm water runoff during construction.

  Storm water runoff during construction is addressed in Chapter 4, Section 4.5, Hydrology and Water Quality. A Conceptual Grading and Drainage Plan and Hydrologic and Hydraulic Evaluation prepared for the proposed project is included in Appendix E.

- **Alternatives:** The EIR should establish for each action alternative, concentration specific cleanup goals for contaminants of concern to ensure that above background, health risk based, or other enforceable regulatory thresholds are not excluded from the cleanup.

  The Site Clean Closure Alternative which ensures that all contaminants are removed from the project site is the only action alternative for the proposed project. This alternative is discussed in Chapter 5, Section 5.4.1, Site Clean Closure Alternative.

Draft EIR

This Draft EIR ~~will be~~ was available for public and agency comment for a 45-day period, beginning on April 8, 2013, and concluding on May 22, 2013. CEQA requires a 45-day public review period for Draft EIRs submitted to the State Clearinghouse for review. During the public comment period, written comments on the adequacy of the Draft EIR ~~must be~~ were submitted by all interested public agencies, organizations, community groups, and individuals to:

Mr. Mustafe Botan
Waste Management Engineer
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance and Mitigation Division
1001 I Street, P.O. Box 4025
Sacramento, CA 95812-4025

Email: Mustafe.Botan@CalRecycle.ca.gov

Electronic copies of the Draft EIR ~~are~~ were available on the CalRecycle website Public Notices homepage at http://www.calrecycle.ca.gov/Actions. The Draft EIR ~~will be~~ was available for public review during the 45-day comment period at the following locations:

- Sacramento Public Library, Southgate Branch, 6132 66th Avenue, Sacramento
- CalRecycle Offices, 1001 I Street, Sacramento.

CalRecycle ~~encourages~~ encouraged public agencies, organizations, and all other interested persons to provide written comments on the Draft EIR prior to the end of the 45-day public review period. Section 15204(a) of the State CEQA Guidelines provides guidance on the focus of review of Draft EIRs as follows:

"In reviewing Draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR."

Final EIR

Following the close of the public and agency comment period on the ~~this~~ Draft EIR, written responses ~~will be~~ were prepared for all significant environmental issues raised in comments received during the public review period. The comments, responses and changes to the Draft EIR document as a result of comments and responses ~~will be~~ are published in this Final EIR document. ~~The Draft EIR and Final EIR documents will constitute the Final EIR.~~ Changes that have been made to the EIR since publication of the Draft EIR are notated in this Final EIR as follows: deleted text is in ~~strikethrough~~ font and new text is in double underlined font. As required by CEQA, written response to comments submitted by public agencies will be provided to those agencies for review at least 10 days prior to the CalRecycle's consideration of certification of the Final EIR. The Final EIR will also be available in advance of consideration of EIR certification at the locations identified above and on the CalRecycle website.

Mitigation Monitoring and Reporting Program

A program to monitor and report on mitigation measures will be adopted by the Lead Agency as part of the project approval process. This program, included as Appendix I of this Final EIR, will be adopted at the time the CalRecycle determines whether to carry out this project to ensure that mitigation measures identified in the EIR are implemented.

Lead Agency Actions

The Final EIR will be considered for certification by CalRecycle at a public meeting, and certified if it is determined to be in compliance with CEQA. Upon certification of the EIR, CalRecycle will subsequently consider the proposed project for approval. If the proposed project will result in significant effects that cannot be avoided or reduced to less-than-significant levels, CalRecycle will state in writing the specific reasons to support their action based on the Final EIR, and/or other information in the record. This Statement of Overriding Considerations shall be supported by substantial evidence in the record.

2.3 EIR Organization

The ~~Draft~~ EIR is organized as described below.

~~Section~~ Chapter 1, Executive Summary: provides a Draft EIR summary, including an overview of the proposed project, impacts, mitigation measures, and levels of significance after mitigation, a summary of project alternatives, areas of controversy, and issues to be resolved.

~~Section~~ Chapter 2, Introduction: provides a description of the environmental review process, including public scoping process, the Draft EIR public review, the Final EIR preparation process, lead agency actions, and a description of the EIR organization.

~~Section~~ Chapter 3, Project Description: provides a detailed description of the proposed project, including information about the project objectives, project location, technical characteristics of the project, construction details, operational and maintenance details, and required permits and approvals.

~~Section~~ Chapter 4, Environmental Setting, Impacts, and Mitigation: discusses the existing conditions for environmental topic areas that have the potential for significant impacts, describes the methodology for significance determination, identifies environmental impacts associated with the proposed project and their level of significance before mitigation, recommends potentially feasible mitigation measures to reduce the significance of impacts, and identifies any significant and unavoidable impacts that cannot be mitigated. Topic areas that were determined to have no impacts are discussed in Chapter 7, Impact Overview and Growth Inducement, Effects Found Not to be Significant. The environmental topics discussed in this Draft EIR are listed below by subsection:

- Section 4.1, Air Quality and Greenhouse Gas Emissions
- Section 4.2, Biological Resources

- Section 4.3, Cultural Resources
- Section 4.4, Geology and Soils
- Section 4.5, Hydrology and Water Quality
- Section 4.6, Noise
- Section 4.7, Transportation/Traffic

~~Section~~ Chapter 5, Alternatives to the Proposed Project: describes the alternatives to the proposed project and their potential feasibility and briefly analyzes their environmental impacts and ability to achieve project objectives compared to the proposed project.

~~Section~~ Chapter 6, Cumulative Impacts: provides an analysis of the project's contribution to cumulative impacts, which are the effects that may occur as a result of the proposed project together with other projects causing related impacts.

~~Section~~ Chapter 7, Impact Overview and Growth Inducement: identifies the significant and unavoidable environmental impacts, significant irreversible environmental effects, and effects found not to be significant and provides a discussion of growth-inducing impacts of the project.

~~Section~~ Chapter 8, Report Preparers and Organizations and Persons Consulted: identifies the Lead Agency, the persons who prepared the Draft EIR, and all federal, state, and local agencies and other organizations and individuals who were consulted during its preparation.

~~Section~~ Chapter 9, References: identifies reference sources used for the Draft EIR.

Chapter 10, Comments on the Draft EIR: lists the commenters on the Draft EIR, provides all comments submitted on the Draft EIR, and includes written responses to the comments.

Appendices: includes documentation of the environmental review process and provides technical studies that support the project description and analysis of impacts in this EIR. The appendices included in this Draft EIR are listed below:

- **Appendix A, Scoping Report:** provides all of the documentation developed during the scoping process, including the NOP/IS, mailer, advertisements, scoping meeting materials, and all agency and public comments received during the scoping period.
- **Appendix B, Air Quality and Greenhouse Gas Emissions Calculations:** provides the CalEEMod data sheets used in the air quality and GHG analysis.
- **Appendix C, Biological Resources Assessment:** provides the Biological Resources Assessment that was prepared for the project site and used for the analysis of impacts to biological resources.
- **Appendix D, Cultural Resources Assessment:** provides the Cultural Resources Assessment that was prepared for the project site and used for the analysis of impacts to cultural resources.

- **Appendix E, Conceptual Grading and Drainage Plan and Hydrologic and Hydraulic Evaluation:** provides the Conceptual Grading and Drainage Plan and Hydrologic and Hydraulic Evaluation prepared for the proposed project.

- **Appendix F, Noise Data:** provides the background information used for the analysis of the proposed project's noise impacts.

- **Appendix G, Site Investigation Report:** provides the Site Investigation Report prepared for the project site.

- **Appendix H, Notice of Availability:** provides the Notice of Availability for the Draft EIR and the proof of publication of the Notice of Availability.

- **Appendix I, Mitigation and Monitoring Reporting Program:** provides the MMRP for the proposed project.

3. PROJECT DESCRIPTION

This section provides a detailed description of the proposed project and includes information about project objectives, project location, technical characteristics, construction details, and required permits and approvals.

3.1 Background

The subject site was initially excavated as a soil borrow source during the construction of California State Highway 99 in the late 1930s. Approximately four acres within the five-acre project area adjacent to Morrison Creek were used at that time to extract sand, gravel and topsoil, creating a borrow pit of up to 50 feet in depth. With population growth in the area during the 1940s, two sewage treatment facilities were constructed that discharged treated effluent into Morrison Creek.

The resulting increase in creek flow, along with subsurface seepage, resulted in water discharge into the borrow pit. Records indicate that water levels in the bowl-shaped pit stood 20 to 30 feet deep at its center. At the request of the property owners, permission to fill the borrow pit was granted by the City in the late 1940s with the understanding that the fill was to consist of rubbish and construction waste. During the next decade waste materials were accepted and disposed of at the project site, much of which had been burned prior to disposal. No permits were issued for the dump activity; however, complaints from local residents were later received regarding the burning of wastes at Waring's Dump. In the mid-1960s, the adjacent Morrison Creek was widened, deepened, and channelized as part of Sacramento County's flood control "Drainage Bond Project." A two-foot high, engineered berm and subsurface lining now provide a hydrologic barrier between the creek and the dump site.

In response to a proposed development of the dump site in 2002, the Sacramento County Environmental Management Department (EMD) requested that the Remediation, Closure and Technical Services (RCTS) Branch of the California Integrated Waste Management Board, now known as CalRecycle, perform a Phase I and Phase II site investigation to determine appropriate remedial measures necessary to protect public health and safety and the environment. A Final Site Investigation Work Plan of the Waring's Dump (Phase 1) was completed in January 2004, and a Final Site Investigation Report (Phase 2) prepared in March 2004. The Final Site Investigation Report including appendices to that report, are included in Appendix G, Site Investigation Report, of this EIR. Trench excavations found that considerable household refuse, as well as construction waste, demolition debris and cannery waste, were disposed of at the site. The investigation also verified that the former dump site had no soil cap. The average depth of the waste in the center of the pit was estimated to be approximately 23 feet and the project site is estimated to contain approximately 86,000 cubic yards of contaminated waste (CIWMP 2004).

CalRecycle has determined that the former Waring's Dump does not meet State Minimum Standards, including 27 California Code of Regulations (CCR) Division 2, Solid Waste, Chapter 3, Criteria for All Waste Units, Facilities and Disposal Sites, Subchapter 4, Criteria for Landfills and Disposal Sites, Article 1 Recycle Operating Criteria at Section 20650 (grading of fill surfaces), Section 20790 (leachate control), and Section 20820 (drainage and erosion control). Recommended CalRecycle actions to improve these deficiencies were to properly cover the former dump site with selected fill soils in accordance with state minimum standards, and to limit exposure of the waste materials to the public and the environment.

3.2 Project Objectives

The Solid Waste Disposal and Codisposal Site Cleanup Program (Program) was created for the cleanup of solid waste disposal sites throughout California where the responsible party either cannot be identified or is unable or unwilling to pay for timely remediation. In light of the limited availability of State funding, CalRecycle must prioritize projects for cleanup, in order to maximize such use of available funds. In prioritizing projects for cleanup CalRecycle may consider, among other factors: (1) the actual or potential degree of risk to public health and safety and/or the environment posed by conditions at the site as determined by a comparison with state minimum standards (27 CCR, Chapter 3, Subchapter 4, commencing with section 20510 and Subchapter 5, commencing with section 21099) and (2) the ability of CalRecycle to perform a timely and efficient site cleanup which adequately addresses state minimum standards using available funds and maximizing such use of available funds (Public Resources Code Section 48021(a), 14 CCR 18903-04).

CalRecycle is thus constrained in its ability to conduct a remediation that goes beyond bringing the site into compliance with state minimum standards, in that any endeavor exceeding this objective would be inconsistent with its prioritization mandate. Within this legal framework, the project objectives are as follows:

- Achieve adequate compliance with state minimum standards for closed sites relating to grading, leachate control, drainage and erosion control and other violations at the project location in a timely and efficient manner utilizing and maximizing available funds as required by law.
- Minimize the exposure of the public and the environment to potentially hazardous materials.

3.3 Project Location

Waring's Dump is located in the south portion of the city of Sacramento, California, and is bounded by Morrison Creek to the north; 63rd Street to the west; and parcels fronting Elder Creek Road to the south and 65th Street Expressway to the east. Waring's Dump is located on 5.04 acres of privately held property comprising Assessor's Parcel Numbers (APNs) 38-182-005 (0.89 acre), 38-182-006 (0.67 acre), 38-182-007 (0.91 acre), 38-182-010 (0.67 acre), and

38-202-001 (1.9 acres). The dump is on the United States Geological Survey (USGS) "Sacramento East" 7.5'quadrangle within the southeast ¼ of the southeast ¼ of Section 28, Township 8 North, Range 5 East. **Figures 1 and 2** provide the project's regional and vicinity location.

As of July 2012, approximately 70 percent of the five-acre project site was disked (plowed). Vegetation in this area is non-native annual grassland dominated by invasive grass and forb (i.e., herbaceous) species. The dominant plant species include wild oat, yellow star thistle, Bermuda grass, bull thistle, chicory, and bindweed; however, the quality of the vegetation is highly degraded due to disking, debris dumping, and fire. Areas that were not disked include bare soil and exposed debris piles of "modern" refuse and construction waste. Photographs of the project site are provided in **Figures 3a and 3b**.

The City of Sacramento currently possesses easements to the project site and owns the adjacent 80-foot-wide Morrison Creek and its levees to the north. Residences and a church are present beyond the abandoned remnants of 63rd Avenue to the west. A private, undeveloped parcel fronting the four-lane 65th Avenue divided expressway is immediately to the east, with residential development farther to the east. A private, undeveloped parcel fronting the Elder Creek Road is to the south, with a mix of residences and undeveloped land further south.

3.4 Proposed Project

The proposed project would result in grading and compaction of the existing hummocky terrain and the importation of select fill soils for placement as a compacted soil cap over the existing waste footprint. Existing ground elevations vary from 29 feet to 33 feet above mean sea level (MSL). Preliminary surface grading and compaction would be conducted to stabilize the project area into a uniform surface, graded to drain stormwater off of the waste mound. However, the depth to which preliminary grading would occur would be minimized so as to leave buried wastes undisturbed and in place to the extent possible. Any debris unearthed during the grading would be reburied such that no materials protrude from the graded surface. No debris or soil is intended to be exported offsite. However, if there are some bulky items, such as refrigerators, drums, car bodies, etc., unearthed that cannot be graded within the proposed waste mound, they would be removed and either recycled or disposed of at a proper disposal site. Using backhoes, front-end loaders, bull dozers and dump trucks, the soil and debris would be graded and compacted to create a mound graded to drain to the edges of the waste footprint and ready to receive a uniform compacted soil cap.

Approximately 8,370 cubic yards (CY) of clean, imported soil (free of contamination from petroleum products or organics and construction debris, and not containing solely rock or solely clay material, hereafter referred to as "select soil") and 17,400 square yards (sq yds) of erosion control seed mix would be required to provide for a 15-inch thick select-soil cap and vegetation.

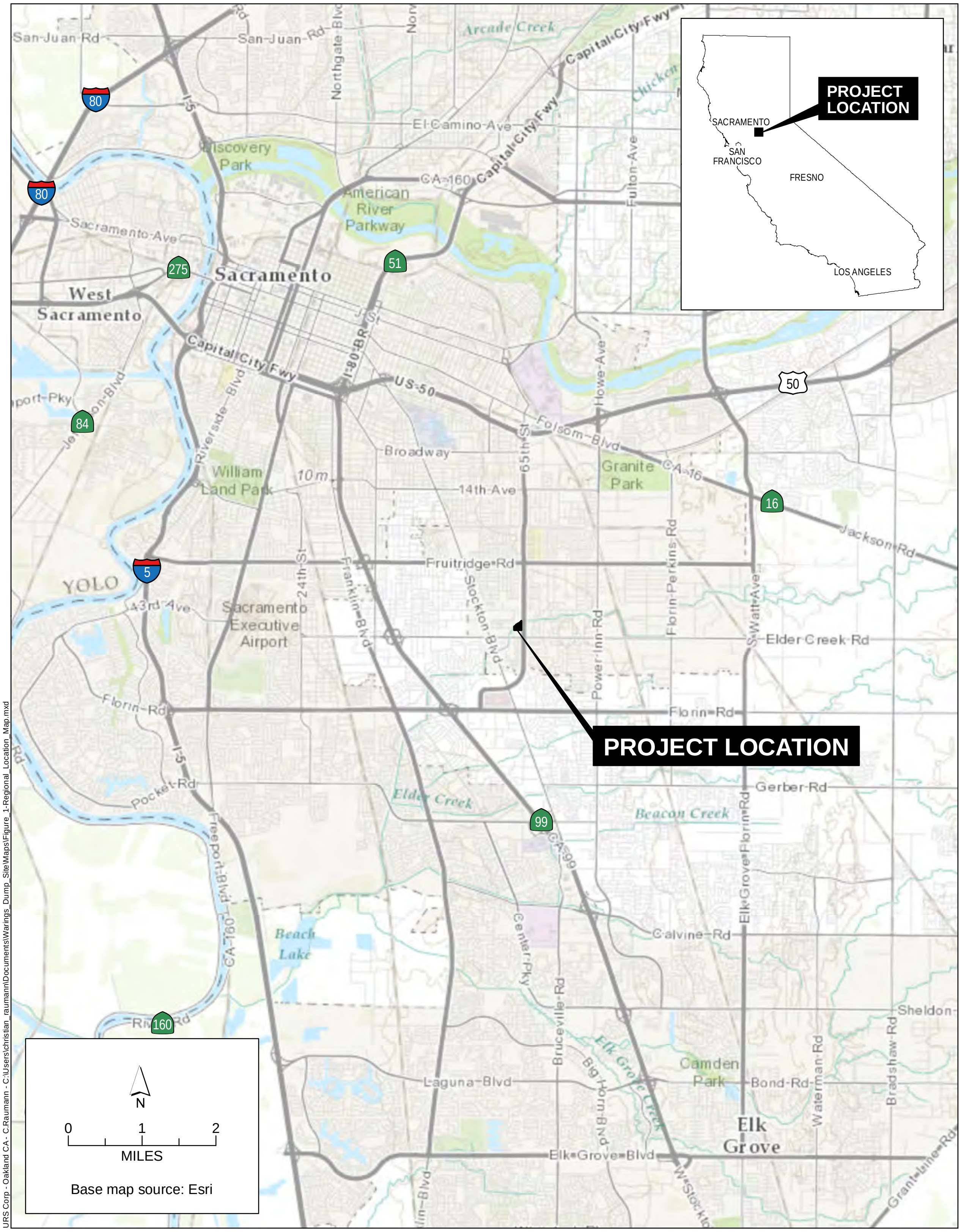

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Figure 1: Regional Location Map

Figure 2: Vicinity Map

Figure 3a: Photograph Looking West-Southwest at Project Site

Figure 3b: Photograph Looking North-Northeast at Project Site

The select soil fill would be placed and compacted on top of the compacted, graded waste materials to create the finished grade. The proposed finished select soil capped waste mound would have side slopes varying between 1.0 percent and 3.0 percent, over an area of approximately 3.6 acres, and have a maximum elevation of 34.5 feet above MSL (see **Figure 4: Conceptual Grading and Drainage Plan**). An erosion control mat and hydroseed mix would be then placed/applied to the compacted soil cap. The source of select soils for the soil cap has not as yet been determined, but would likely be trucked to the project site by a hauler. Assuming a 16-CY load by each haul truck, there would be no more than 525 truck trips within a three-week soil-delivery period. A one-month project completion schedule is estimated.

The proposed project would substantially improve existing drainage patterns onsite by diverting stormwater off of the waste materials, capping those materials with a 15-inch select-soil cap, and diverting the stormwater into a perimeter trapezoidal bioswale for drainage, storage and eventual groundwater infiltration and evaporation outside of the Waring's Dump debris footprint. The bottom of the retention swale would be one foot wide and side-slopes would be at a 2:1 ratio. The proposed retention swales would be graded (~0.35 percent) to flow from the southeast corner of the project site and around both sides of the mound to a common low point at the northwest side. The retention swales would be designed to have a storage capacity of ~1.0 acre-foot (ac-ft). Water depth at this storage capacity would be approximately three feet at a common low point adjacent, but not connected, to the existing culvert within the Morrison Creek south levee. During extreme rain events, the northern edge of the retention swale rim would function as an emergency release into the existing ditch on the upland side of the levee and stormwater release into Morrison Creek.

A culvert, connecting the proposed retention swales, would be placed at the southwest corner of the property beneath the existing driveway providing controlled access to the project site. To avoid impacts to existing or future fences or levees, all earthwork would be conducted outside the creek right-of-way, and storm water would be retained on-site during most rain events. Except for a culvert beneath the existing access driveway (described above), no structures are proposed for this proposed project.

The proposed project is expected to have an approximately one-month construction period, and would be implemented within four to six weeks after the project is approved.

3.5 Land Use Designations

The City of Sacramento General Plan identifies the project site as a "Traditional Neighborhood Low Density" land use. The Sacramento Zoning Ordinance includes the project site in "Standard Single Family (R-1)" and a "Single Family Alternative (R-1A)" zones. The project site is within the City of Sacramento's Fruitridge Broadway Community Plan area.

Insert

URS Corp - Oakland CA - C.Raumann - C:\Users\christian_raumann\Documents\Warings_Dump_Site\Maps\Figure 3-Conceptual_Grading_and_Drainage_Plan.mxd

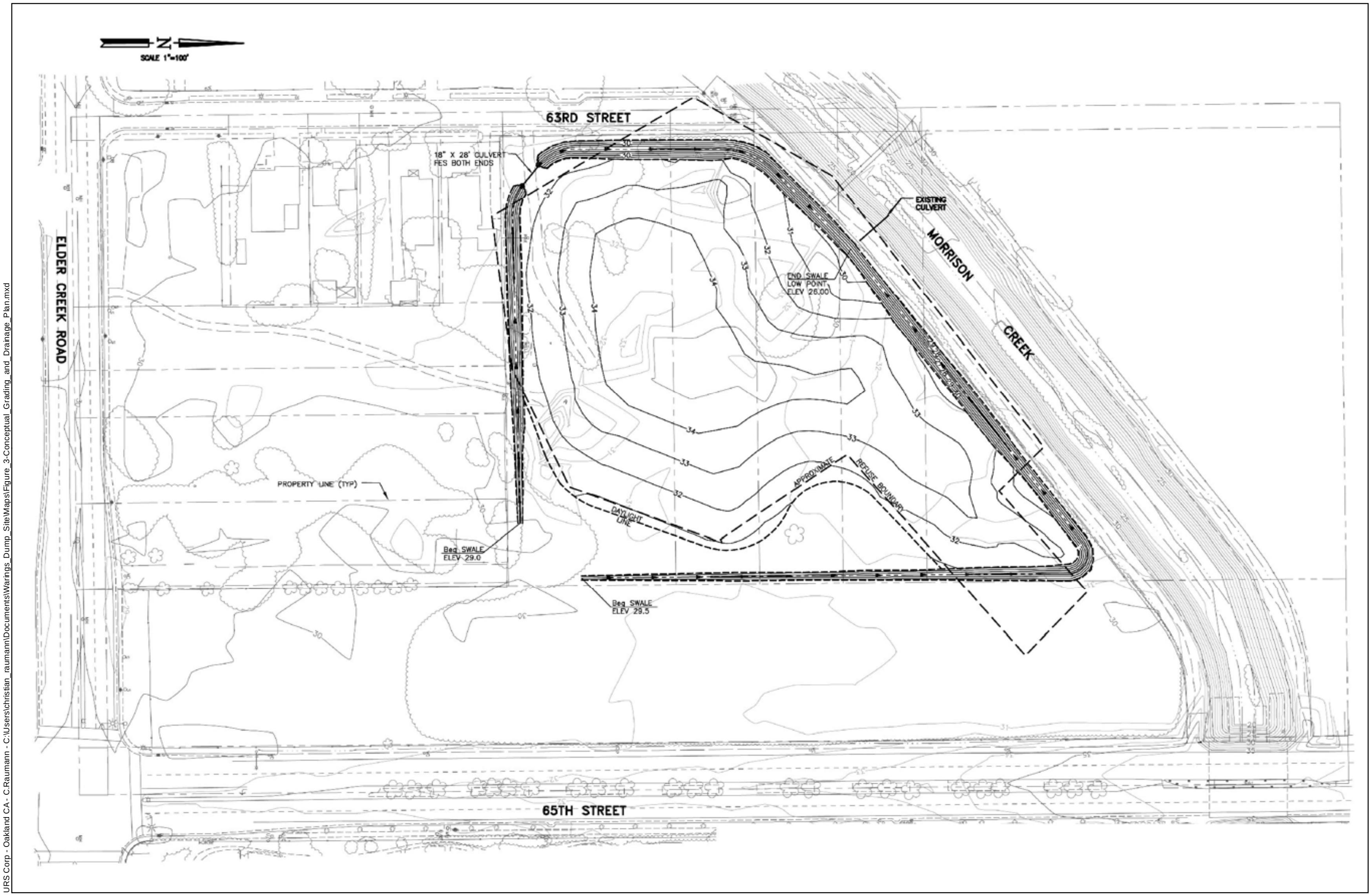

Figure 4: Conceptual Grading and Drainage Plan

As an existing solid waste disposal site, all proposed changes in post-remediation land uses for the Waring's Dump site would be submitted to the Local Enforcement Agency and other regulatory agencies that have jurisdiction over the site for review and approval and may include deed restrictions or other form of land use control.

3.6 Other Agencies

The proposed project may require review and approval by other public agencies that have jurisdiction over specific actions. These agencies may use this EIR in their decision-making process. These approvals may include, but are not limited to the following:

- City of Sacramento: A tree removal permit for removal of any trees with a trunk circumference greater than or equal to 100 inches
- ~~City of Sacramento: A grading permit~~
- State Water Resources Control Board: A General Construction Stormwater Permit
- Department of Toxic Substances Control: Compliance with state regulations for the disposal of hazardous wastes
- California Air Resources Board: Compliance with CARB's Airborne Toxic Control Measures and Off-Road Diesel Vehicle Regulation emission reduction programs
- Sacramento Metropolitan Air Quality Management District: Air District permits for construction site preparation and grading activities.

4. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Introduction

This Draft EIR has been prepared in accordance with CEQA, as amended (Public Resources Code Section 21000 through 21177), and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3 Section 15000 through 15387).

This chapter analyzes the environmental topics considered under CEQA for the proposed project. For each topic the existing setting and the regulations governing the topic are described. The CEQA thresholds of significance are listed and the proposed project's potential impacts for each threshold are discussed and analyzed. For any significant impacts that could result from the proposed project, appropriate mitigation measures are identified that would reduce those impacts to less-than-significant levels.

Environmental Topics

The following topics are discussed in detail in this EIR:

4.1 Air Quality and Greenhouse Gas Emissions
4.2 Biological Resources
4.3 Cultural Resources
4.4 Geology and Soils
4.5 Hydrology and Water Quality
4.6 Noise
4.7 Transportation/Traffic

The proposed project, the construction of a clean soil cap over a former dump site, is a short-term construction project with no operational use after construction is complete. Therefore, the following topics were determined not to be significant for the proposed project and are discussed briefly in Chapter 7, Impact Overview and Growth Inducement, subsection 7.4, Effects Found Not to be Significant:

7.4.1 Aesthetics
7.4.2 Agriculture and Forestry Resources
7.4.3 Hazards and Hazardous Materials
7.4.4 Land Use and Planning
7.4.5 Mineral Resources
7.4.6 Population and Housing
7.4.7 Public Services
7.4.8 Recreation
7.4.9 Utilities and Service Systems

Thresholds of Significance and Impact Classifications

CEQA determines a significant effect as a substantial or potentially substantial adverse change in the environment (Public Resources Code, Section 21068). For each topic discussed in detail, standards of significance for determining the significance of an impact are outlined at the beginning of the Impacts and Mitigation Measures discussion. The standards of significance used in this Draft EIR are based on CEQA Guidelines Sections 15064, 15064.4, 15064.5, 15064.7, and 15382, and CEQA Appendix G, Environmental Checklist Form.

Impacts are classified as follows:

No Impact: The proposed project would not have an adverse impact on the environment.

Less than significant: The impact of the proposed project does not reach or exceed the threshold of significance.

Potentially significant: The impact of the proposed project may reach or exceed the threshold of significance, but with the implementation of best management practices or mitigation measures, the impact can be reduced to a less-than-significant level.

Significant and Unavoidable: The impact of the proposed project is anticipated to reach or exceed the threshold of significance. Mitigation measures are identified to reduce the impact to the maximum extent possible, but the impact would not be reduced to less-than-significant levels. The significant impact is considered unavoidable.

Environmental Baseline

CEQA Guidelines at Section 15125 requires that the impacts of the proposed project be compared to existing conditions at the project site and vicinity at the time the NOP for this Draft EIR was published (December 18, 2012). The baseline is typically described within the Existing Setting for each topic and is discussed in a regional as well as local context.

Further, the policy and planning context in which the project is proposed is discussed, particularly with regard to applicable general plans and regional plans. However, it should be noted that when compared to a plan, the analysis examines the existing conditions at the time the NOP was published, as opposed to the conditions anticipated at the time of plan buildout, which are unknown at this time.

4.1 Air Quality and Greenhouse Gas Emissions

4.1.1 Introduction

This section describes the climate and existing air quality for the project site and surrounding region, and evaluates whether the proposed project would result in adverse effects to air quality and climate change. Specifically, this evaluation focuses on whether the proposed project would conflict with the implementation of the applicable air quality plan, violate any air quality standards or contribute to an air quality violation, result in a cumulative net increase of any criteria pollutant for which the region is nonattainment, expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors.

The analysis also considers the current scientific understanding and relevant regulations related to global climate change, and evaluates whether the project would result in a considerable contribution to climate change effects. Specifically, the evaluation focuses on whether the project would: (1) generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment or (2) conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The information in this section is based on data from the California Air Resources Board (CARB) and U.S. Environment Protection Agency (USEPA), and on anticipated project emissions obtained by applying emission models (i.e., California Emissions Estimator Model [CalEEMod]) and emission factors. Appendix B, Construction Emissions and Assumptions, provides details regarding these emissions estimates.

The following comment related to air quality and GHG emissions was received during the public scoping period in response to the NOP:

- The EIR should analyze hazardous substance releases via dust and vehicular tracking.

4.1.2 Environmental Setting

The topography and climate of the region affects how air pollutants are formed, dispersed, and trapped. The following subsections describe the regional setting and climate, the project area setting that is relevant to the subsequent evaluation of air quality and climate impacts. The project area setting also addresses global climate change and greenhouse gas emissions.

Regional Setting

The project area is located in the Sacramento Valley Air Basin (Basin), which consists of Shasta, Tehama, Glenn, Butte, Colusa, Yuba, Sutter, Placer, Yolo, Solano, and Sacramento counties. For those pollutants that could have local effects, such as pollutants associated with construction emissions, the study area for the proposed project includes the project site and project area. For those pollutants that could have regional effects, the study area corresponds to the Basin. The

Basin is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is flat with Sacramento County typically described as a bowl shaped valley (SMAQMD 2011).

The Basin maintains a Mediterranean climate, characterized by hot dry summers and mild rainy winters. During the year, temperatures may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is typically 20 inches with snowfall being very rare. Prevailing winds are moderate in strength and vary from moist breezes from the south to dry land flows from the north.

The Basin's surrounding mountains create a barrier to airflow which can trap air pollutants in the Basin. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods along with the reduced vertical air flow allows air pollutants to become concentrated close to the surface. The surface concentration of pollutants is highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground.

From May to October, the ozone season[1], is characterized by stagnant morning air or light winds with the Delta sea breeze arriving in the afternoon from the southwest. Typically the evening breeze transports airborne pollutants to the north out of the Basin, however a phenomenon called the "Schultz Eddy" prevents this from occurring. In the Sacramento Valley, interaction between the northward marine inflow and the nocturnal down-valley flow often leads to the formation of a counterclockwise local eddy to the north or northwest of Sacramento, known as the Shultz Eddy. The Schultz Eddy causes the wind pattern and pollutants to circle back southwards instead of allowing prevailing wind patterns to move north. The Schultz Eddy recirculates pollution within the Sacramento area and increases their concentration, potentially leading to a violation of federal and state air quality standards. In summer, the prevailing daytime wind in the Basin is generally from the southwest due to marine breezes flowing through the Carquinez Straight, a major corridor for air moving into the Basin from the west. Incoming airflow strength varies daily with a pronounced diurnal cycle. Influx strength is weakest in the morning and increases in the evening hours.

Ambient air quality is influenced by climatological conditions, the meteorology, and the quantity and type of pollutants released. The annual temperature in the City of Sacramento (City) averages approximately 60 degrees Fahrenheit, with monthly averages that can consistently reach as high as 100 degrees Fahrenheit in July and August, and as low as 20 degrees Fahrenheit

[1] The ozone season is the time of year when temperatures start to warm up along with more sunshine due to the lengthening of days. Ground level ozone is at its worst during the middle of the summer. The combination of warm temperatures and more sunlight interact and chemically mix with other pollutants producing ground level ozone (ABC 2009).

in December and January. Summertime temperatures are normally moderated by airflow through the Carquinez Strait in the evening hours. Summaries of temperature and precipitation data from the climatological station in the City are presented in Table 4.1-1, Average Monthly Temperature and Precipitation for Sacramento City.

Table 4.1-1 Average Monthly Temperature and Precipitation for Sacramento

Month	Average Maximum Temperature (degrees Fahrenheit)	Average Minimum Temperature (degrees Fahrenheit)	Average Total Precipitation (inches)
January	53.5	39.6	3.66
February	59.7	43.1	3.20
March	64.9	45.7	2.67
April	71.1	48.4	1.41
May	78.3	52.5	0.62
June	85.9	56.9	0.16
July	91.7	59.2	0.01
August	90.6	58.7	0.03
September	86.3	57.0	0.30
October	76.7	51.6	0.94
November	64.1	44.5	1.98
December	54.1	39.9	3.17
Annual	73.1	49.8	18.15

Source: WRCC 2013.

Notes: period of record is from 7/11/1877 to 9/30/2012; Station Name: Sacramento 5 ESE (COOP ID 047633); Station Location: East of California State University of Sacramento; Northeast of College Town Drive and State University Drive E intersection.

Proposed Project Setting

Existing air quality conditions are described in detail below. Greenhouse gases and factors influencing climate change are also described in this section.

Existing Air Quality

Criteria Air Pollutants

Criteria air pollutants are constituents for which national and state ambient air quality standards have been established. Table 4.1-2, Ambient Air Quality Standards, provides these national and state standards. The basis for these standards is described in Section 4.1.3, Regulatory Framework, below. The criteria air pollutants evaluated for the proposed project include ozone

(O_3), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Although lead is a criteria pollutant, it was not evaluated in this EIR because fuel containing lead would not be used during construction of the proposed project. Criteria air pollutants which are designated as in attainment did not exceed the established ambient air quality standards. A nonattainment designation indicates that a pollutant concentration has exceeded the established ambient air quality standards.

Criteria air pollutant concentrations are measured at a number of monitoring stations throughout the Basin. The stations that are most representative of the existing air quality conditions near the project area are the following stations. The "T" street station is located at 1309 T Street, in Sacramento, approximately seven miles to the northwest; the Health Department station is located at 2221 Stockton Boulevard, Sacramento, CA 95817, approximately 3.5 miles to the northwest; and the El Camino and Watt station is located at El Camino and Watt Avenue, Sacramento, CA 95814, approximately 9.5 miles to the northeast; and the Del Paso Manor station is located at 2701 Avalon Drive, Sacramento, CA 95821, approximately 10 miles to the northeast of the project site. The Health Department station is the closest station to the project area, and it monitors PM_{10} and $PM_{2.5}$ pollutants. The "T" street station monitors O_3 and NO_2. The El Camino and Watt station monitors CO. And the Del Paso Manor station monitors SO_2. Table 4.1-3, Existing Air Monitoring Data Summary for Project Area (2007-2011), summarizes the last five years of published data from these monitoring stations for O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2. The Basin is in nonattainment for the federal and state ozone standards and is in nonattainment for the state PM_{10} and $PM_{2.5}$ standards, and nonattainment for federal PM_{10} standards. The Basin is in attainment for state PM_{10} standards and all other criteria pollutants. A description of each criteria air pollutant is presented below.

Table 4.1-2, Ambient Air Quality Standards

Contaminant	Averaging Time	State Standards[1]	Primary Federal Standards[2]	Secondary Federal Standards[2]
Ozone	1 hour	0.09 ppm	-	-
	8 hour	0.070 ppm	0.075 ppm	0.075 ppm
Particulate Matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	150 µg/m^3
	Annual arithmetic mean	20 µg/m^3	-	-
Particulate Matter ($PM_{2.5}$)	24 hour	-	35 µg/m^3	35 µg/m^3
	Annual arithmetic mean	12 µg/m^3	12.0 µg/m[4]	15.0 µg/m^3
Carbon Monoxide	8 hour	9.0 ppm	9 ppm	-
	1 hour	20 ppm	35 ppm	-

Table 4.1-2, Ambient Air Quality Standards

Contaminant	Averaging Time	State Standards[1]	Primary Federal Standards[2]	Secondary Federal Standards[2]
Nitrogen Dioxide	Annual arithmetic mean	0.030 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	0.1 ppm	-
Sulfur Dioxide	Annual arithmetic mean	-	0.03 ppm	
	24 hour	0.04 ppm	0.14 ppm	-
	3 hour	-	-	0.5 ppm
	1 hour	0.25 ppm	75 ppb	-
Lead	30 day average	1.5 µg/m³	-	-
	Calendar quarter	-	1.5 µg/m³	1.5 µg/m³
Visibility reducing particles	8 hour	See footnote 3	-	-
Sulfates	24 hour	25 µg/m³	-	-
Hydrogen Sulfide	1 hour	0.03 ppm	-	-
Vinyl Chloride	24 hour	0.01 ppm	-	-

Source: California Air Resources Board Ambient Air Quality Standards Chart. (CARB 2012)

ppm – parts per million by volume

ppb – parts per billion by volume

µg/m³ – micrograms per cubic meter

PM10 – particulate matter less than 10 microns in diameter

- – No standard available.

Notes:

1. California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter – PM_{10}, and visibility reducing particles (VRP) are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average then some measurements may be excluded. In particular, measurements that the Air Resources Board determines would occur less than once per year on average are excluded.
2. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once per year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m³. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m³. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially averaged across officially designed clusters of sites falls below the standard.
3. Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent.
4. Based on EPA Final Rule regarding National Ambient Air Quality Standards for Particulate Matter, 40 CFR pts 50-53 and 58 (CFR 2013).

Table 4.1-3, Existing Air Monitoring Data Summary for Project Area (2007-2011)

Pollutant	Units	Standard		Monitoring Data, by Year					Station
Averaging Time		Federal	State	2007	2008	2009	2010	2011	
Ozone (O_3)									
Highest 1-Hour Average	ppm	--	0.09	0.109	0.107	0.102	0.092	0.100	1
Highest 8-Hour Average	ppm	0.075	0.07	0.090	0.092	0.088	0.074	0.087	1
Particulate Matter (PM_{10})									
Highest 24-Hour Average	µg/m^3	150	50.0	60.0	92.4	48.0	50.0	73.5	2
Particulate Matter ($PM_{2.5}$)									
Highest 24-Hour Average	µg/m^3	35.0	--	53.0	64.8	42.4	29.0	50.7	2
Carbon Monoxide (CO)									
Highest 8-Hour Average	ppm	9.00	9.00	3.20	2.84	2.84	1.89	2.83	3
Nitrogen Dioxide (NO_2)									
Highest 1-Hour Average	ppm	0.10	0.18	0.064	0.065	0.068	0.066	0.057	1
Sulfur Dioxide (SO_2)									
Highest 24-Hour Average	ppm	0.14	0.04	0.004	0.002	0.002	0.001	0.001	4

Source: CARB 2011a; CARB 2011b

Notes: ppm = parts per million; µg/m3 = micrograms per cubic meter; -- = standard does not exist. Data accessed January 16, 2013.

Monitoring Station Locations: (1) 1309 T Street, Sacramento, CA 95814; (2) 2221 Stockton Blvd, Sacramento, CA 95817; (3) El Camino & Watt Avenue, Sacramento, CA 95814; (4) 2701 Avalon Drive, Sacramento, CA 95821

Ozone (O_3). O_3, commonly referred to as smog, is formed in the lower atmosphere as a secondary pollutant rather than being directly emitted into the air. O_3 forms as a result of volatile organic compounds (VOCs) and nitrogen oxides (NO_X) reacting in the presence of sunlight. VOCs and NO_X are termed "ozone precursors" with their emissions regulated in order to control the creation of O_3. These precursors are emitted over a large area from a variety of sources causing O_3 to impact an entire region rather than a localized area. Due to a dependency upon sunlight to drive the reaction, O_3 levels are the highest in warm-weather months.

Primary sources of VOCs and NO_X are the combustion of fuels, and the evaporation of solvents, paints, and fuels. O_3 is a public health concern because it is a respiratory irritant that increases susceptibility to respiratory infections and diseases. O_3 can cause chest discomfort, coughing nausea, respiratory tract and eye irritation, decreased pulmonary functions, and other health effects. In addition, O_3 can cause substantial damage to leaf tissue of crops and natural vegetation and damage other materials such as rubber, fabric, and plastics.

Particulate Matter (PM_{10} and $PM_{2.5}$). Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. PM_{10} refers to particulate matter with an aerodynamic diameter less than or equal to 10 micrometers, and $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers. Particulates smaller than 10 micrometers (both PM_{10} and $PM_{2.5}$) represent that portion of particulate matter thought to represent the greatest hazard to public health. PM_{10} and $PM_{2.5}$ can accumulate in the respiratory system and are associated with a variety of negative health effects. Exposure to particulates can aggravate existing respiratory conditions, increase respiratory symptoms and disease, decrease long-term lung function, and possibly cause premature death. The segments of the population that are most sensitive to the negative effects of particulate matter in the air are the elderly, individuals with cardiopulmonary disease, and children. Aside from adverse health effects, particulate matter in the air can cause a reduction of visibility, and damage to building materials.

A portion of the particulate matter in the air comes from natural sources such as windblown dust and pollen. Manmade sources of particulate matter include fuel combustion, automobile exhaust, field burning, factories, and vehicle movement or other manmade disturbances of unpaved areas. Secondary formation of particulate matter may occur in some cases where gases such as sulfur and nitrogen oxides (SO_X and NO_X) interact with other compounds in the air to form particulate matter. Fugitive dust generated by construction activities is a source of suspended particulate matter.

Carbon Monoxide (CO). CO is an odorless, colorless gas that is toxic. It is formed by the incomplete combustion of fuels. The primary sources of this pollutant in Sacramento County are automobiles and other mobile vehicles. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Nitrogen Dioxide (NO_2). NO_2 is a poisonous, reddish-brown to dark brown gas with an irritating odor. NO_2 forms when nitric oxide (NO) reacts with atmospheric oxygen. Most sources of NO_2 are manmade; the primary source of NO_2 is high-temperature combustion such as in automobiles or power plants. NO_2 may produce adverse health effects such as nose and throat irritation, coughing, choking, headaches, nausea, stomach or chest pains, and lung inflammation (e.g., bronchitis, pneumonia).

Sulfur Dioxide (SO_2). SO_2 is formed when fuel containing sulfur (typically, coal and oil) is burned, and during other industrial processes. High SO_2 concentrations are found in the vicinity of large industrial facilities. This type of industrial facility is not common in the project area. Low concentrations of SO_2 can also be found in the vicinity of diesel motor engines, which are common. The physical effects of high concentrations of SO_2 include temporary breathing impairment, respiratory illness, and aggravation of existing cardiovascular disease. Children and the elderly are most susceptible to the negative effects of exposure to SO_2.

Volatile Organic Compounds (VOCs). VOCs are gaseous chemical compounds that contain the element carbon, with some exceptions. VOCs are composed of hydrocarbons that may contribute to the formation of smog. They are sometimes also referred to as non-methane organic compounds or reactive organic gas (ROG).

Toxic Air Contaminants

Toxic air contaminants (TACs) are not considered criteria air pollutants because the federal and California Clean Air Acts do not address them specifically through the setting of ambient air quality standards (see Section 4.1.3, Regulatory Framework for additional information). However, TACs are regulated by the State and the Sacramento Metropolitan Air Quality Management District (SMAQMD). The TACs relevant to the proposed project are diesel particulate matter.

Diesel Particulate Matter. Diesel exhaust contains over 40 different substances identified by the CARB as toxic air contaminants that may pose a threat to human health. The particulate matter in diesel exhaust has been identified as a toxic air contaminant by CARB, and it has been linked to lung cancer.

Sensitive Receptors

Some locations or populations are considered to be particularly sensitive to adverse effects from air pollution, and these are commonly termed sensitive receptors. The SMAQMD defines a sensitive receptor as any residence; education resources such as preschools and kindergarten through grade twelve (K-12) schools; daycare centers; health care facilities such as hospitals, hospices, retirement and nursing homes; and prisons. Consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas. Sensitive receptors in proximity to air pollution sources, toxic air contaminants, or odors are of particular concern.

Climate Change and Greenhouse Gases

Climate Change

Climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere (Office of Planning and Research [OPR] 2008).

Gases that trap heat in the atmosphere are often called GHGs. This layer of gases functions much the same as glass in a greenhouse (i.e., both prevent the escape of heat), which is why this phenomenon is known as the "greenhouse effect". The greenhouse effect helps to regulate the temperature of the Earth and is essential for life and other natural processes. The greenhouse effect is the result of absorption by GHGs of the Earth's long-wave radiation, and the re-radiation downward in the form of heat. The concern is not with the fact that we have a greenhouse effect, but whether human activities are leading to an acceleration of the greenhouse effect. This process may be caused by the emission of GHGs through fossil fuel combustion and/or reductions in the natural sequestration of GHG through deforestation. A large body of evidence, accumulated over several decades from hundreds of studies, supports the conclusion that human activity is the primary driver of a relatively recent acceleration in climatic warming (National Climatic Data Center [NCDC] 2012).

With respect to California, climate change impacts include changes in temperature, precipitation patterns, availability of water, rise in sea levels, and altered coastal conditions (California Climate Action Team [CCAT] 2010). Over the past century, sea levels along the California coast have risen as much as seven inches increasing erosion and straining the states infrastructure, water supplies, and natural resources (California Natural Resources Agency [CNRA] 2009). As a result of climate change, California has seen an increase in temperatures primarily occurring at night and during the winter (California Department of Water Resources [CDWR] 2009), shifts in the water cycle, longer growing seasons, and snowmelt and rainwater runoff occurring earlier than normal (CNRA 2009). The snowpack in the Sierra Nevada has decreased by approximately 10 percent, a 1.5 million acre-feet of water in storage reduction, in the last century as a result of climate change (CDWR 2009).

Climate change models project California's mean temperature rising 3.5 to 11 degrees Fahrenheit by the year 2100, the Sierra Nevada snowpack decreasing by 25 to 40 percent by 2050, and a possible global sea level rise of 7 to 55 inches by the year 2100 (CDWR 2009). Projections also suggest that substantial sea level rise may occur even faster than historical rates over the next century (California Climate Change Center [CCCC] 2006). The mean sea level rise along the California coast is projected to be 1.0 to 1.4 meters by the year 2100 under medium to medium-high GHG emission scenarios; with sea level rise estimates along the California coast being roughly the same as global estimates (CCCC 2009).

Carbon Dioxide and Other GHG Emissions

The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon flux among these various sources and sinks are roughly in balance. Since the Industrial Revolution, which began in about 1750, global atmospheric concentrations of CO_2 have risen about 36 percent, principally due to the combustion of fossil fuels (USEPA 2012c).

Some GHGs such as carbon dioxide occur naturally and are emitted to the atmosphere through processes such as volcanoes, forest fires, and biological processes. However, identical GHG constituents, like CO_2, can also be emitted through a variety of human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities are CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The sources of these emissions associated with human activities are described below:

Carbon Dioxide – CO_2 can also enter the atmosphere through the burning of fossil fuels, solid waste, trees and wood products, and as a result of other chemical reactions (e.g., manufacture of cement).

Methane –CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide – N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Synthetic GHGs –HFCs, PFCs, and SF_6 are synthetic, powerful GHGs that are emitted from a variety of industrial processes. For example, SF_6 is used in magnesium processing, semiconductor manufacturing, and electrical transmission equipment (circuit breakers), as well as a tracer gas for leak detection. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high Global Warming Potential (GWP) gases (USEPA 2012a).

The GWP of each GHG is the ability of that gas to trap heat in the atmosphere relative to CO_2. Total GHG emissions are expressed as carbon dioxide equivalent (CO_2e) and are the sum of the GWP-weighted emissions of each GHG.

To understand the scale of the emissions from the proposed project, it is useful to understand the extent of GHG emissions as reflected in the GHG emission inventory data for different locations. Table 4.1-4, Greenhouse Gas Inventory Data presents GHG emissions for the United States, the State of California, Sacramento County, and the City of Sacramento for the year 2005. In 2005, the majority of the GHG emissions in the City come from transportation (48%), commercial/industrial (24%), and residential (18%) uses and activities (City of Sacramento 2012).

In California, approximately 25 percent of all GHG emissions come from electricity generation, 37 percent from transportation, 22 percent commercial/industrial activities, and 6 percent from residential uses and activities. Nationally, approximately 33 percent of all GHG emissions come from electricity generation, about 25 percent from transportation, 15 percent commercial/industrial, and 5 percent from residential uses and activities.

Table 4.1-4, Greenhouse Gas Inventory Data

Emission Source	Total CO2e Emissions	Year
USA	7,061,100,000 (tonnes/year)	2008
California	482.54 (million tonnes/year)	2005
County of Sacramento	13,938,537 (million tons/year)	2005
City of Sacramento	4,553,051 (million tons/year)	2005

Sources: USEPA 2012c; CARB 2011c; City 2012

Notes:

Total GHG emissions are expressed as carbon dioxide equivalent (CO2e) and are the sum of the Global Warming Potential-weighted emissions of each GHG.

4.1.3 Regulatory Framework

Criteria Air Pollutants

Federal

The Federal Clean Air Act (FCAA) and associated amendments have established the National Ambient Air Quality Standards (NAAQS). As required by the FCAA, NAAQS have been established for six major air pollutants, known as criteria pollutants (see Table 4.1-2 above). The primary standards have been established to protect public health. The secondary standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

The FCAA defines nonattainment areas as geographic regions that have been designated as not meeting one or more of the NAAQS. It requires that a state implementation plan (SIP) be prepared for each nonattainment area, and a maintenance plan be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. The SIP, developed at the state level and approved by the USEPA, is a state's plan for ways it will meet the NAAQS under the deadlines established by the FCAA. Under federal standards, the Basin is in non-attainment for ozone, PM_{10}, and $PM_{2.5}$ pollutants and in attainment for all other pollutants. California has a SIP related to ozone, carbon monoxide, and particulate matter. The USEPA is responsible for overseeing compliance with the FCAA.

State

The State of California has also established ambient air quality standards, known as the California Ambient Air Quality Standards (CAAQS), which are generally more stringent than the corresponding federal standards, and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles (see Table 4.1-2 above). Under the state standards, the Basin is in non-attainment for O_3 and $PM_{2.5}$ pollutants and in attainment for all other pollutants including PM_{10}.

CARB is responsible for administering and ensuring implementation of the California Clean Air Act (CCAA), meeting state requirements of the FCAA, and establishing the CAAQS. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities for controlling emission sources at the regional and county levels.

Local

Sacramento Metropolitan Air Quality Management District (SMAQMD)

The SMAQMD is the regional agency responsible for comprehensive air pollution control in the Basin, which includes the counties of Shasta, Tehama, Glenn, Butte, Colusa, Yuba, Sutter, Placer, Yolo, Solano, and Sacramento. The SMAQMD adopts rules and regulations for stationary sources of air pollution, establishes permitting requirements, inspects emission sources, and enforces compliance with such measures. The SMAQMD produces plans for complying with ambient air quality standards within its jurisdiction every three years and provides an annual progress report yearly.

The SMAQMD issued its *2009 Triennial Report and Plan Revision* in December of 2009, which identifies "all feasible measures" the SMAQMD would study or adopt over the ensuing three years to make progress toward attainment of state ozone standards. The measures include additional control programs for mobile and stationary sources, land use and transportation programs, community education programs, and ozone transport mitigation in order to reduce NO_X and ROG emissions in order to achieve the state ozone standard. The SMAQMD anticipates an additional reduction in NO_X and ROG emissions of 1.68 tons per day and 1.32 tons per day, respectively, with the implementation of the *2009 Triennial Report and Plan Revision* (SMAQMD 2010). In addition to the Triennial Report, CARB requires the SMAQMD to prepare an annual progress report. The *2011 Annual Progress Report*, the most recent, provides updates for all the proposed SMAQMD control programs, the schedule for adopting control measure commitments, and the evaluation of further study measures (SMAQMD 2012).

The proposed project requires air quality permits from the SMAQMD for construction-site preparation and grading activities. The proposed project is subject to the following SMAQMD rules and regulations (SMAQMD 2013):

Rule 201: General Permitting Requirements. This rule provides the general procedure for the review of new sources of air pollution and the modification and operation of existing sources through the issuance of permits. The proposed project may be required to apply for construction permits.

Rule 403: Fugitive Dust. This rule regulates operations, such as construction activities, which periodically emit fugitive dust emissions. The proposed project consists of earthmoving construction activities which has the potential to emit fugitive dust emissions.

City of Sacramento General Plan 2030

Goal ER 6.1 Improved Air Quality. Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that affect climate change.

Policy ER 6.1.1: Maintain Ambient Air Quality Standards. The City shall work with the California Air Resources Board and the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet State and Federal ambient air quality standards.

Policy ER 6.1.2: New Development. The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides and particulate matter (PM_{10} and $PM_{2.5}$) through project design.

Policy ER 6.1.3: Emissions Reduction. The City shall require development projects that exceed SMAQMD ROG and NO_X operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

Policy ER 6.1.5: Development near TAC Sources. The City shall ensure that new development with sensitive uses located adjacent to toxic air contaminant sources, as identified by the California Air Resources Board (CARB), minimizes potential health risks. In its review of these new development projects, the City shall consider current guidance provided by and consult with CARB and SMAQMD.

Policy ER 6.1.6: Sensitive Uses. The City shall require new development with sensitive uses located adjacent to mobile and stationary toxic air contaminants (TAC) be designed with consideration of site and building orientation, location of trees, and incorporation of appropriate technology for improved air quality (i.e., ventilation and filtration) to lessen any potential health risks. In addition, the City shall require preparation of a health risk assessment, if recommended by Sacramento Metropolitan Air Quality Management

District, to identify health issues, reduce exposure to sensitive receptors, and/or to implement alternative approached to development that reduces exposure to TAC sources.

Policy ER 6.1.11: Coordination with SMAQMD. The City shall coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures if not already provided for through project design.

Policy ER 6.1.14: Zero-Emission and Low-Emission Vehicle Use. The City shall encourage the use of zero-emission vehicles, low emission vehicles, bicycles and other non-motorized vehicles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities in residential developments and employment centers to accommodate these vehicles.

City of Sacramento City Code

Section 15.40.050 Control of Dust and Mud.

- Any person who has been issued a permit for any work covered by this code shall take reasonable precautions to prevent and control the movement of dust created by work activities to adjoining public or private property. Such dust shall be immediately settled by wetting the same. Work activities shall be stopped during periods of high winds that may carry dust from the job site before it can be settled by wetting.
- The permittee shall be responsible for maintaining clean public streets, sidewalks and alleys in the immediate vicinity of the job site during and after the period of work activity. The permittee shall remove all mud and dust from any public property which was deposited there by any activity related to the work. In order to prevent mud and other material from entering any public sewer, the permittee shall properly pond any affected gutter to permit such material to settle and shall remove such material from public property. This procedure shall be in accordance with the requirements and policies of the city water and sewer division. The permittee shall obtain any necessary permits for water from the manager of said division. See Section15.44.170 of this title for additional requirements.

Chapter 15.88, Grading and Erosion and Sediment Control

The purpose of this ordinance is for regulating grading on property to safeguard life, limb, health, property and the public welfare; to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff; to comply with the city's national pollution discharge elimination system (NPDES) permit issued by the California Regional Water Quality Control Board (RWQCB); and to ensure that the intended use of a graded site within the city limits is consistent with the city general plan, any specific plans adopted thereto and all applicable city ordinances and regulations. The grading ordinance is intended to control all aspects of grading operations within the city.

Toxic Air Contaminants

The California Health and Safety Code (Section 39655) defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." Substances identified in California as TACs are those listed in Title 17 of the California Code of Regulations (Sections 93000 and 93001). The majority of those TACs listed are also listed as hazardous air pollutants under the FCAA.

Project construction equipment would be required to comply with CARB's Airborne Toxic Control Measures and Off-Road Diesel Vehicle Regulation emission reduction programs, which are focused on reducing diesel emissions.

Greenhouse Gases

Federal

USEPA requires mandatory reporting of GHG emissions from large sources (facilities that emit 25,000 metric tons of or more per year of GHGs) in the U.S (USEPA 2011). The gases covered by the Mandatory Reporting Rule are CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and other fluorinated gases including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFE). This will affect electrical generation sources that contribute to the California electric grid, and may affect the state SIP, but will not directly apply to the proposed project as direct GHG emissions from the project would be less than 25,000 tonnes per year.

The Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the FCAA (USEPA 2012b) states that current and projected concentrations of the six key well-mixed GHGs in the atmosphere—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—threaten the public health and welfare of current and future generations. Furthermore, it states that the combined emissions of these well-mixed GHGs from new motor vehicle engines contribute to GHG pollution which threatens public health and welfare.

USEPA has moved forward under the endangerment finding by developing vehicle emission standards under the FCAA. The USEPA and the Department of Transportation's National Highway Traffic Safety Administration have issued a joint proposal to establish a national program consisting of new emission standards for light-duty vehicles, model year 2012 through 2016, that will reduce GHG emissions and improve fuel economy. This new regulation marks the first GHG standards adopted under the FCAA as a result of the "endangerment" and "cause or contribute" findings.

State

Assembly Bill 1493 (Pavley). In 2002, with the passage of AB 1493, California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. The standards were adopted by CARB in 2004. When fully phased in, the 2009-2012 near-term standards will result in a 22-percent reduction in GHG emissions, as compared to 2002 GHG emissions. The 2013-2016 mid-term standards will result in a 30-percent reduction in GHG emissions. Although litigation was filed challenging these regulations and USEPA initially denied California's related request for a waiver, the waiver request has now been granted by the USEPA.

Executive Order S 3 05. On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S 3 05. The goal of this executive order is to reduce California's GHG emissions to year 2000 levels by 2010; 1990 levels by 2020; and 80 percent below the 1990 levels by 2050. Executive Order S 3 05 also calls for CalEPA's Climate Action Team (CAT) to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. The CAT members also work to coordinate statewide efforts to implement global warming emission reduction programs and the state's Climate Adaptation Strategy. The CAT members are state agency secretaries and the heads of agency, boards and departments, led by the Secretary of Cal/EPA.

The first Climate Action Team Report to the Governor and the legislature was released in March 2006. This report laid out specific emission reduction strategies for reducing GHG emission and reaching the targets established by the Executive Order and further defined under the Global Warming Solutions Act of 2006 (Assembly Bill 32). The most recent report was released in December 2010.

Assembly Bill 32. In 2006, the goal of Executive Order S 03 05 was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets overall GHG emissions reduction goals. Similar to Executive Order S-3-05, AB 32 requires that GHG emissions be reduced to 1990 levels by 2020. AB 32 further mandates that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S 20 06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team (CARB 2011c). The scoping plan, prepared by CARB on December 12, 2008, provides the outline for future actions to reduce GHG emissions in California via regulations, market mechanisms and other measures (CARB 2008). The key elements of the Scoping Plan for reducing GHG emissions to 1990 levels by 2020 include the following:

- Expanding and strengthening existing energy efficiency programs (e.g., green building design) as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent. This program has now been enacted under Executive Order S-14-08 (see further description below).

- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system. This program has now been enacted and covers major sources of GHG emissions in the State contributing 85 percent of California's GHG emissions, such as refineries, power plants, industrial facilities, and transportation fuels. The regulation includes an enforceable GHG cap that will decline over time. ARB will distribute allowances, which are tradable permits, equal to the emission allowed under the cap.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard. This program has now been enacted under Executive Order S-1-07 (see description below).
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long term commitment to AB 32 implementation.

2020 Emissions Limit - Identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020 (HSC Section 38550). In December 2007, the CARB approved the 2020 emission limit of 427 million tonnes CO_2e of GHG.

Mandatory Reporting Requirements - Adopt a regulation requiring the mandatory reporting of GHG emissions (HSC Section 38530). In December 2007, CARB adopted a regulation requiring the largest industrial sources to report and verify their GHG emissions. The reporting regulation serves as a solid foundation to determine GHG emissions and track future changes in emission levels.

Executive Order S-1-07 (Low carbon fuel standard). Executive Order S-1-07 was issued on January 18, 2007. The purpose of this regulation is to implement a low carbon fuel standard, which will reduce GHG emissions by reducing the full fuel-cycle, carbon intensity of the transportation fuel pool used in California by at least 10 percent by 2020 (COOG 2007). The low carbon fuel standard applies to refiners, blenders, producers and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emission using the most economically feasible methods. All fuel sold in California must comply with this standard.

Senate Bill 97. In 2007, the California legislature passed Senate Bill 97, to amend the CEQA statute to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. The Natural Resources Agency adopted the amendments in January 2010, which went into effect in March of the same year. CEQA does not define the thresholds of significance against which an impact should be judged. In keeping with this approach, the amendments to the

CEQA Guidelines do not identify a threshold of significance for GHGs, methods of analyses, or specific mitigation measures. Rather, the amendments reinforce the discretion provided to lead agencies under CEQA to make their own determinations based on substantial evidence. See Section 4.1.4, Impacts and Mitigation Measures for additional information about the amended CEQA Guidelines related to GHG emissions and global climate change.

Executive Order S-14-08 (Renewable Energy Executive Order). On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S 14 08 that raised California's renewable energy goals to 33 percent by 2020 and improved processes for licensing renewable projects. The following year, Executive Order S-21-09 directed the CARB under its AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020. The same legislation was also signed in April 2011, in Senate Bill X1 2, codifying this 33 percent renewable energy goal for the state (CEC 2011). This order requires that all retail suppliers of electricity in California serve 33 percent of their electrical load with renewable energy by 2020. This requirement applies to PG&E, the supplier that would provide electricity for the proposed project.

Local

Climate Action Plan. The City has developed the Sacramento Climate Action Plan (CAP) adopted on February 14, 2012. The CAP has the goals of reducing GHG emissions in the region 15 percent by 2020 and 83 percent by 2050, compared to 2005 levels (City 2012).

The CAP presents seven strategies to reduce GHG emissions to meet CAP GHG reduction goals. Each strategy presents a series of measures which define the programs, policies, and regulations that the city would implement to achieve its climate action objectives. These strategies are as follows:

Strategy 1: Sustainable Land Use: Anticipated 202 GHG reduction is four percent (51,507 MMT CO_2e). Measures include promoting sustainable growth and infill development, creating complete neighborhoods, encouraging mixed-use development projects, requiring sustainable development practices, and ensuring quality development and design.

Strategy 2: Mobility and Connectivity: Anticipated 2020 GHG reduction is eight percent (107,894 MMT CO_2e). Measures include promoting multi-modal travel options, improving pedestrian environment, increased bicycle and transit mode share, low emission vehicles and efficient goods movement, a connected transportation system, and implementing transportation demand management.

Strategy 3: Energy Efficiency and Renewable Energy: Anticipated 2020 GHG reduction is 32 percent (445,590 MT CO_2e). Measures include energy demand management and conservation, increasing existing and new building energy efficiency, and increasing renewable energy generation and use within the City.

Strategy 4: Waste Reduction and Recycling: Anticipated 2020 GHG reduction is six percent (79,404 MMT CO_2e). Measures to promote this strategy include implementing sustainable production and consumption programs, reduce, divert, recycle, and reuse waste, and encourage greenwaste and composting.

Strategy 5: Water Conservation and Water Efficiency: Anticipated 2020 GHG reduction is one percent (17,267 MT CO_2e). Increasing the efficiency of water distribution and reducing consumption will help reduce the energy needed to treat and transport water. While conservation measures will encourage the use of water-efficient appliances, landscaping, and practices that will improve the water quality in the region's water supplies.

Strategy 6: Climate Change Adaptation: Anticipated GHG reduction was not measured and is unknown. This strategy recognizes the importance of preparing for the expected impacts of climate change and creating a more climate-resilient community. Measures include preparing for an increase in average temperatures, preserving water sources, responding to energy demands, protecting the public from health risks and safety hazards, promoting a climate-resilient economy, respond to potential impacts on public infrastructure, and protecting the natural ecosystems and migration routes.

Strategy 7: Community Involvement and Empowerment: Anticipated GHG reduction was note measured and is unknown. Measures include engaging and educating the community and public to actively participate in planning a more sustainable future, build business and community organization partnerships.

4.1.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines; applicable agency plans, policies, and/or guidelines; and agency and professional standards, the proposed project would have a significant impact on air quality and greenhouse gas emissions if it would:

Air Quality

a. Conflict with or obstruct implementation of the applicable air quality plan;
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state

ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d. Expose sensitive receptors to substantial pollutant concentrations; and

e. Create objectionable odors affecting a substantial number of people.

Greenhouse Gas Emissions

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Analysis Methodology

The above standards of significance are assessed as the basis for determining the significance of impacts related to air quality and climate change. Additional detail about the implementation of the above standards of significance and methodology for the evaluation is provided below, based on guidance from the SMAQMD (SMAQMD 2011). If necessary, mitigation measures are proposed to reduce impacts to less-than-significant levels.

Impact Significance

The SMAQMD has established quantitative significance thresholds for both construction and operational phases of projects. Applicable to the proposed project are the established construction thresholds which are further described below. Projects that exceed these thresholds are considered significant because the emissions could significantly impact the attainment and/or maintenance of applicable AAQS as they could impact regional air quality.

The SMAQMD has established construction thresholds, which for the proposed project include thresholds established for NO_X, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2. Table 4.1-5, Thresholds of Significance for Construction Impacts, identifies construction thresholds. The SMAQMD has established mass emissions thresholds for ozone precursors because the Sacramento Region does not meet federal and state ozone ambient air quality standards. A "substantial" contribution means one that exceeds the mass emissions threshold levels. The construction and operational mass emissions thresholds approximately correlate to the NO_X reductions from heavy-duty vehicles and land use project emission reduction requirements committed to in the 2004 Ozone Attainment Plan for the Sacramento Federal Ozone Nonattainment Area. For all other criteria pollutants, "substantial" is defined as exceeding an existing exceedance of a state ambient air quality standard by five percent.

The SMAQMD does not expect construction activity to generate high concentrations of other criteria air pollutants, such as NO_2, SO_X, CO, and, therefore, does not recommend evaluation of the concentrations (SMAQMD 2011). The SMAQMD does not expect that at the local level, criteria air pollutants other than particulate matter would expose nearby sensitive receptors to substantial pollutant concentrations that would violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Table 4.1-5, Thresholds of Significance for Construction Impacts

Pollutant	Threshold
NO_X	85 pounds/day
ROG	None
PM_{10}	50 µg/m^3 24-hour standards; 20 µg/m^3 Annual Arithmetic Mean
$PM_{2.5}$	12 µg/m^3 Annual Arithmetic Mean
CO	20 ppm 1-hour standard; 9 ppm 8-hour standard
NO_2	0.18 ppm 1-hour standard; 0.03 ppm Annual Arithmetic Mean
SO_2	0.25 ppm 1-hour standard; 0.04 ppm 24-hour standard

Source: SMAQMD 2011.

Notes: The SMAQMD Board of Directors adopted the air quality thresholds of significance on March 28, 2002, via resolution AQMD2002018.

A project is considered significant if emissions exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS.

A substantial contribution is considered an emission that is equal or greater than five percent of a CAAQS.

The SMAQMD's CEQA Guide (SMAQMD 2011) provides screening criteria for determining the significance of NO_X emissions from construction projects. The construction screening levels are represented by the development size of land uses at which typical construction activities would not exceed the SMAQMD's threshold of significance for NO_X. Construction of projects below the screening levels presented would be considered to have a less-than-significant impact on air quality for NO_X. All projects, including those that would be below the screening levels, are required to implement the SMAQMD's Basic Construction Emission Control Practices. However, the screening criteria for NO_X shall not be used to evaluate construction projects that import or export soil materials that would require a considerable amount of haul truck activity; and cut-and-fill operations (involving moving earth with haul trucks and/or flattening or terracing hills).

The SMAQMD's CEQA Guide (SMAQMD 2011) provides a screening criterion for determining the significance of particulate matter emissions generated by construction activities. The screening criterion is based on two criteria: the application of control measures; and the maximum area of soil disturbance at any one time. This screening criterion is as follows:

- The project would implement all Basic Construction Emission Control Practices, and

- The maximum daily disturbed area (i.e., grading, excavation, cut and fill) would not exceed 15 acres.

Projects that meet the above two conditions are considered by the SMAQMD to not have the potential to exceed or contribute to the SMAQMD's concentration-based threshold of significance for PM_{10} and $PM_{2.5}$ at an off-site location. Thus the particulate matter emission concentrations generated by construction projects that meet the above criteria shall be considered a less-than-significant impact to air quality.

Greenhouse Gas Emissions

Greenhouse gas emissions have the potential to adversely affect the environment because they contribute, on a cumulative basis, to global climate change. The SMAQMD has not established thresholds of significance for GHG emissions. The SMAQMD recommends a discussion of emissions and impacts be included in the environmental document with a commitment to implementing the SMAQMD's GHG construction best management practices (BMPs) (Hurley 2013).

Air Quality and Climate Evaluation Methodology

Criteria Air Pollutants

Construction criteria pollutant emissions were calculated using CalEEMod. The model calculates emissions for different types of sources and construction phases. Details regarding the model used and outputs are available in Appendix B, Construction Emissions and Assumptions. Also included in Appendix B are the equipment inventory, assumptions, and all data used to calculate construction-related criteria air pollutant emissions.

No operational emissions were calculated as the project only proposes construction and grading activities. There would be no structure or building built. The proposed project does not include an operational use upon completion.

Greenhouse Gases and Climate Change

Construction GHG emissions were calculated by using the emission model CalEEMod. Details regarding the source types and model used are available in Appendix B, Construction Emissions and Assumptions. Also included in Appendix B, is the equipment inventory, assumptions, and all data used to calculate construction-related GHG emissions.

Construction GHG emissions would be generated by construction equipment and construction vehicles. Similar to the construction analysis for criteria air pollutants, the evaluation of construction GHG emissions is based on worst-case construction emissions.

As discussed above, no operational emissions are associated with the proposed project. The project proposes construction activities and does not propose an operational use.

Impacts and Mitigation

This section provides a detailed evaluation of air quality and climate change. The air quality impact analysis addresses the proposed project's consistency with the applicable air quality plan and potential for exposing sensitive receptors to substantial pollutant concentrations, and the potential for creating objectionable odors. The climate change impact analysis addresses the generation of GHG emissions and conflicts with applicable GHG reduction plan, policy, or regulation.

The proposed project as outlined in Chapter 3, Project Description, does not include the construction of any structures and involves only the placement of a clean soil cap over what is now a potentially unsafe site. The proposed project would not result in impacts relating to the following criteria as stated below, and these topics will not be discussed further in this EIR:

d. Expose sensitive receptors: The proposed project does not propose any structure or a use that would locate sensitive receptors in a location where they would be subjected to substantial pollution concentrations.

e. Create objectional odors: Although the project proposes one month of construction activities, potential odors from would be temporary and minimal. The proposed project would not create objectional odors that would affect a substantial number of people.

CONFLICTS WITH AIR QUALITY PLAN	
Impact 4.1-1:	The proposed project could potentially conflict with an applicable air quality plan and result in a cumulatively considerable net increase in any criteria air pollutants.
Significance:	Less than significant.
Mitigation:	None required.

General Discussion

Construction generated NO_X emissions are evaluated on a daily mass emission basis because as an ozone precursor, the pollutant is of regional concern. The construction mass emissions thresholds approximately correlate to the NO_X reductions from heavy-duty vehicles emission reduction requirements committed to in the 2004 Ozone Attainment Plan for the Sacramento

Federal Ozone Nonattainment Area. Thus, the proposed project would be in compliance with the applicable air quality plan if ozone precursor emissions (NO_X) are below the SMAQMD's established threshold (85 lbs/day).

Construction emissions were calculated using the CalEEMod. The project proposes grading and import of soils with completion of all construction activities within a one-month period. NO_X emissions from construction activities are presented in Table 4.1-6, Ozone Precursor Emissions. Table 4.1-6 presents the daily construction emissions of NO_X and ROG during the one-month construction schedule.

Table 4.1-6, Ozone Precursor Emissions

Construction Phase	Maximum Emissions	
	NO_X	ROG
Earth Moving Activities		
Construction Emissions	12.04 lbs/day	1.86 lbs/day
SMAQMD CEQA Threshold	85 lbs/day	--
Would Project Exceed Threshold and Require Mitigation?	no	--

Notes:

Emissions were calculated using CalEEMod. Emission values shown are those calculated after implementation of required construction control measures such as dewatering; see Required Construction Control Measures, below.

lbs/day = pounds per day; --= not applicable/no threshold

Based on CalEEMod Summer Results, see Appendix B, Air Quality and Greenhouse Gas Emissions Calculations.

As the SMAQMD has established mass emissions thresholds for ozone precursors, exceedence of these thresholds could contribute to an existing exceedance of the ozone standards. The proposed project would emit 12.04 pounds per day (lbs/day) of NO_X which is below the SMAQMD's established threshold of 85 lbs/day. The proposed project would emit 1.86 lbs/day of ROG. No mitigation measures are required. However, per the SMAQMD's CEQA Guide (SMAQMD 2011), all construction projects are required to implement the SMAQMD's Basic Construction Emission Control Practices, see Required Construction Control Measures, below. Thus the proposed project would not contribute to an existing exceedance of the ozone standards and this impact would be less-than-significant.

SMAQMD Required Construction Control Measures:

Basic Construction Emission Control Practices

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

VIOLATION OF AIR QUALITY STANDARDS (PROJECT IMPACTS)

Impact 4.1-2: Construction activities from the proposed project would generate emissions of criteria pollutants on a short-term basis; these emissions could potentially result in violations of air quality standards.

Significance: Less than significant.

Mitigation: None required.

General Discussion

Construction-related activities would generate fugitive dust, measured in terms of PM_{10} and $PM_{2.5}$, from earthmoving, grading, and travel on unpaved roads. The term fugitive dust refers to particulate matter emitted from an open area. Particulate emissions from fugitive dust tend to vary with the level and type of activity, the silt and moisture content of the soil, and the prevailing weather conditions. Particulate emissions can also be generated by construction equipment exhaust.

Construction emissions were calculated using the CalEEMod. The project proposes grading and import of soils with completion of all construction activities within a one-month period. Emissions from construction activities are presented in Table 4.1-7, Construction Emissions. Table 4.1-7 presents the daily construction emissions during the one-month construction schedule.

Table 4.1-7 Construction Emissions

Construction Phase	Maximum Emissions (lbs/day)			
	PM_{10}	$PM_{2.5}$	CO	SO_2
Earth Moving Activities				
Construction Emissions	16.92	1.92	14.95	0.06

Notes:

Construction Emissions were calculated using CalEEMod. Emission values shown are those calculated after implementation of required construction control measures such as dewatering. The Required Construction Control Measures are described in Section 4.5, Hydrology and Water Quality.

lbs/day = pounds per day

Based on CalEEMod Summer Results, see Appendix B, Air Quality and Greenhouse Gas Emissions Calculations.

The proposed project would emit 16.92 lbs/day of PM_{10} and 1.92 lbs/day of $PM_{2.5}$. The proposed project would implement the SMAQMD's Basic Construction Emission Control Practices (refer to Impact 4.1-1, Required Construction Control Measures, above) and disturb a maximum daily area of 3.6 acres (refer to Section 4.1.4, Analysis Methodology). Therefore, the proposed project does not have the potential to exceed or contribute to the SMAQMD's concentration-based threshold of significance for particulate matter (PM_{10} and $PM_{2.5}$).

According to the SMAQMD's CEQA Guide (SMAQMD 2011), construction activities would not generate high concentrations of other criteria air pollutants (CO or SO_2) and does not recommend evaluation of the concentrations. At the local level, criteria air pollutants other than particulate matter would not expose nearby sensitive receptors to substantial pollutant concentrations that would violate an air quality standard or contribute substantially to an existing or projected air quality violation. The proposed project as outlined in Chapter 3, Project Description, does not include the construction of any structures and involves the placement of a clean soil cap through construction grading activities. Therefore, the proposed project would not generate emissions of criteria pollutants that would result in violations of air quality standards and the impact would be less than significant.

GHG EMISSIONS AND PLAN CONFLICTS

Impact 4.1-3: The proposed project could potentially generate GHG emissions that would have a significant impact on the environment or would otherwise conflict with an applicable GHG reduction plan, policy, or regulation.

Significance: Less than significant.

Mitigation: None required.

General Discussion

The project proposes grading a former dump site and capping the area with soil. The project includes construction activities and proposes no operational use. The proposed project's construction activities are anticipated to occur over a one-month time frame. Construction activities include earth moving activities such as grading and soil hauling. Table 4.1-8, Project GHG Emissions, identifies GHG emissions the proposed project would emit throughout its one-month duration.

Table 4.1-8, Project GHG Emissions

Construction Phase	Maximum Emissions (MT/yr)			
	CO_2	CH_4	N_2O	CO_2e
Earth Moving Activities				
Construction Emissions	60.29	0.00	0.00	60.38

Notes:
Construction Emissions were calculated using CalEEMod.
MT/yr = million tonnes per year
CO_2 emissions includes biological and non-biological CO_2 emissions.
Based on CalEEMod Annual Results, see Appendix B, Air Quality and Greenhouse Gas Emissions Calculations.

Impacts associated with GHG construction emissions are minimal as the emissions are temporary in nature. The project does not propose an operational use and therefore would not have additional GHG emissions upon construction completion. Upon construction completion, the project would be completed. As recommended by the SMAQMD, the following BMPs would be implemented to further reduce GHG emissions during construction.

Best Management Practices

BMP 4.1-1

- Improve fuel efficiency from construction equipment:
  - Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
  - Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
  - Train equipment operators in proper use of equipment.
  - Use the proper size of equipment for the job.
  - Use equipment with new technologies (repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.)
- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.
- Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).
- Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option.
- Produce concrete on-site if determined to be less emissive than transporting ready mix.
- Use SmartWay[2] certified trucks for deliveries and equipment transport.
- Develop a plan to efficiently use water for adequate dust control.

The proposed project would not generate GHG emissions that would have a significant impact on the environment and would not conflict with an applicable GHG reduction plan, policy, or regulation. The impact would be less than significant.

[2] SmartWay is an EPA program that reduces transportation-related emissions by creating incentives to improve supply chain fuel efficiency (http://www.epa.gov/smartway/).

4.2 Biological Resources

4.2.1 Introduction

This section describes the current regulatory framework of federal, State, and local regulations that would apply to the proposed project. This section also establishes the existing biological setting and potential effects from project implementation on the site and its surrounding area and how these impacts relate to the regulatory framework. The potential for special-status species and sensitive habitats to occur in the project area or to be affected by the proposed project was evaluated in a Biological Resources Assessment conducted for the project site in November 2012, and included in its entirety in **Appendix C, Biological Resources Assessment**, of this EIR. The Biological Resources Assessment was based on a field survey of the proposed project site and surrounding area as well as a review of the California Department of Fish and Wildlife's (CDFW's) (formerly California Department of Fish and Game [CDFG]) California Natural Diversity Database (CNDDB) (CDFG 2012a) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPS 2012) databases for reported species occurrences.

No public or agency comments related to biological resources were received during the scoping period in response to the NOP.

4.2.2 Environmental Setting

Regional Setting

The bulk of the City of Sacramento is currently developed with residential, commercial, and other urban development. Natural habitats are located primarily outside the city boundaries in the northern, southern and eastern portions, and also occur along river and stream corridors and on a number of undeveloped parcels within the City. Habitats that are present include annual grasslands, riparian woodlands, oak woodlands, riverine (rivers and streams), ponds, freshwater marshes, seasonal wetlands, and vernal pools.

Proposed Project Setting

The project site is located on 5.04 acres of property that has recently been subjected to disking (plowing). The quality of the vegetation in the project area is highly degraded due to disking, debris dumping, and burning. Areas that were not disked were bare of soil, and exposed piles of refuse and construction waste. Morrison Creek occurs adjacent to the site and is considered a jurisdictional water of the U.S., but the bed and bank of the creek are outside the area of potential ground disturbance.

Vegetation and Wildlife

Vegetation in the project area is a non-native annual grassland dominated by non-native invasive grass and forb (i.e., herbaceous) species. The dominant plant species include wild oat, yellow star thistle, Bermuda grass, bull thistle, chicory, and bindweed. A list of plant and wildlife species observed, including their common names, scientific names, and native/non-native status is provided in **Appendix C**.

Special-Status Species and Sensitive Habitats

The project area contains potentially suitable habitat for special-status bird species that nest within non-native annual grassland. Grassland nesting bird species with potential to occur include burrowing owl, which may occupy mammal burrows or cavities in debris piles. A focused search for mammal burrows and debris pile cavities during the field survey found no evidence of occupation by burrowing owls, such as owl feathers, whitewash, or pellets.

Bird nesting activity was not observed in trees on or adjacent to the project area during the field survey. Large stature trees in the project vicinity (within ¼ mile) have potential to support nesting raptors and other special-status bird species protected under the Migratory Bird Treaty Act (MBTA) or state Fish and Game Code. The urbanized setting of the project area includes noise, lighting, ground disturbance (e.g., disking) and other ongoing habitat disturbances.

Morrison Creek runs adjacent to the project site and is considered a jurisdictional water of the U.S., but the bed and bank of the creek are outside the area of potential ground disturbance. As a straightened concrete channel, it supports no riparian or wetland associated vegetation community and provides little natural habitat value.

A heritage tree, as defined by the Sacramento Municipal Code Chapter 12.64, was observed in the project area. This tree is a non-native, multi-stem eucalyptus with a cumulative trunk circumference of 175 inches. It occurs along the fence line on the southern edge of the proposed project area. Two special-status bird species, a red-tail hawk and a loggerhead shrike, were observed in flight over the project area. Nesting habitat for these species does not occur in the project area, but may occur in the vicinity. No other special-status species were observed in the project area. The results of CNDDB and CNPS database searches for special-status species and sensitive habitats with potential to occur in the project area are described in **Appendix C**.

4.2.3 Regulatory Framework

Federal Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (ESA) (16 USC 1531-1544) provides protection for endangered and threatened species and requires conservation of the critical habitat for those species. An "endangered" species is a species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become "endangered" in the foreseeable future without further protection. Other special-status species include "proposed" and "candidate" species, and "species of concern." Proposed species are those that have been officially proposed (in the *Federal Register*) for listing as threatened or endangered. Candidate species are those for which enough information is on file to propose listing as endangered or threatened. A "delisted" species is one whose population has reached its recovery goal and is no longer in jeopardy.

Section 9 of the ESA prohibits the "take" of listed species. As defined in the ESA [Section 3(19)], take means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Under Federal regulations, take is defined further to include habitat modification or degradation where it actually results, or is reasonably expected to result, in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain authorization from any federal agency including the U.S. Fish and Wildlife Service (USFWS) through either Section 10 (a) (incidental take permit) or Section 7 (Interagency Consultation) of ESA, depending on whether the federal government is involved in permitting or funding the project. The Section 10(a) process allows a person to obtain the right to engage in "incidental take" of listed species or their habitat with respect to non-federal activities. Section 7 requires a federal agency contemplating an action that may affect a listed species to undertake formal consultation with the USFWS. The USFWS must then determine whether the proposed action will jeopardize the listed species, or destroy or adversely modify designated critical habitat.

Federal Migratory Bird Treaty Act (MBTA)

Migratory birds and their occupied nests are protected by the MBTA (16 U.S.C. Section 703 Supp. I 1989). This applies to all wild birds except the house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), and some game species. The MBTA specifically prohibits the take of birds or active bird nests. "Take" is defined in 50 CFR 10.12 as means to pursue or attempt to pursue to hunt, shoot, wound, kill, trap, capture, or collect. Only "collect" applies to nests (USFWS 2003). Recent case law from January 2012 "United States v. Brigham Oil & Gas L.P." appears to limit the scope of the MBTA to not impose criminal liability for legal activities that incidentally result in bird deaths.

According to the MBTA, if a construction activity will directly result in the take of an active nest, a depredation permit will be required, or legal action could be invoked. However, an applicant will only receive a permit if they have demonstrated "every effort" to avoid having to take the nest (or birds). The decision to issue a permit is subjective and is evaluated on a "case by case" basis. Mitigation (such as habitat improvement in adjacent areas) for the take of the nest can be proposed but does not ensure the issuance of a permit.

State

California Endangered Species Act (CESA)

The State of California considers an "endangered" species as one whose prospects of survival and reproduction are in immediate jeopardy. The State considers a "threatened" species as one present in such small numbers throughout its range that it is considered likely to become an endangered species in the near future in the absence of special protection or management. A "rare" species is considered as present in such small numbers throughout its range that it may become endangered if its present environment worsens. The designation "rare species" applies only to California native plants. State threatened and endangered species include both plants and wildlife (not including invertebrates) and are legally protected against "take" as this term is defined in the CESA (California Fish and Game Code Section 2050, et seq.). In addition to listed species, the CDFW also maintains a list of "Species of Special Concern," most of which are species whose breeding populations in California may face extirpation (local extinction). To avoid the future need to list these species as endangered or threatened, the CDFW recommends consideration of these species, which do not as yet have any legal status, during analysis of the impacts of proposed projects.

Sections 1600–1616 of the State Fish and Game Code

The CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes under the authority of the Lake and Streambed Alteration Agreement, Section 1600 of the Fish and Game Code. In riparian areas, CDFW jurisdictional limits are usually delimited by the tops of the stream bank or the outer edge of contiguous riparian vegetation, whichever is wider. A Lake or Streambed Alteration Agreement with the CDFW is necessary when a project will alter the flow, bed, channel, or bank of a stream or lake.

Sections 2080 and 2081 of the State Fish and Game Code

Section 2080 of the State Fish and Game Code states that no person shall import into this state (California), export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act, or the California Desert Native Plants Act. Under Section 2081 of the Code, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if (1) the take is incidental to an otherwise lawful activity, (2) impacts of the authorized take are minimized and fully mitigated, (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (4) the applicant ensures adequate funding to implement the measures required by CDFW. CDFW shall make this determination based on the best scientific and other information that is reasonably available and shall include consideration of the species' capability to survive and reproduce.

Natural Community Conservation Planning Act

The goal of the Natural Community Conservation Planning Act (NCCPA) (Fish & Game Code Section 2800 et seq.) is to provide long-term protection of species and habitats through regional, multi-species planning; the intent is that such planning will obviate the need to list species under CESA. The Natural Community Conservation Planning (NCCP) program is broader in its orientation and objectives than the California and federal Endangered Species Acts, and is designed to identify and protect individual species that have already declined in number significantly. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process. A NCCP program identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. Under 2011 legislation (SB 618), the incidental take of "fully protected species" can occur under an approved NCCPA that treats such species as "covered species."

Native Plant Protection Act

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The definition of "rare and endangered" differs from those contained in CESA. However, the list of native plants afforded protection pursuant to this act includes those listed as rare and endangered under the CESA. The Native Plant Protection Act provides limitations on take as follows: "No person shall import into this state, or take, possess, or sell within this state" any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

CEQA Guidelines Section 15380

As indicated previously, Section 15380 of the CEQA Guidelines defines "endangered" and "rare" animal and plant species for purposes of CEQA. Species are considered rare or endangered if it can be demonstrated that the species meets the specific criteria established in the CEQA Guidelines Section 15380(b) for a rare or endangered species. Listed species qualify per se, but some unlisted species also come within the definitions. **Appendix C** describes the various categories and lists of species that qualify as special status that may potentially occur in the project area.

Local

City of Sacramento Heritage Tree Ordinance (Title 12.64.040)

The City of Sacramento Tree Service Division reviews project plans and works with the City of Sacramento Public Works during the construction process to minimize impacts to street trees in the city. Heritage trees defined by the City of Sacramento include any tree of any species with a single or cumulative circumference trunk circumference of 100 inches or more, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species.

4.2.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines; applicable agency plans, policies and/or guidelines; and agency and professional standards, the proposed project would have an impact on biological resources if it would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service;

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Analysis Methodology

The above standards of significance are assessed as the basis for determining the significance of impacts related to biological resources. If necessary, mitigation measures are proposed to reduce significant impacts to less-than-significant levels. Potential impacts to biological resources in the project area are evaluated based on review of existing information relevant to the project site and a field survey. The potential for special-status species and sensitive habitats to occur in the project area or be affected by the project was evaluated by conducting a search of the most recent versions (as of July 2012) of the CDFW's CNDDB (CDFG 2012a) and the CNPS Electronic Inventory (CNPS 2012) databases for reported species occurrences in the USGS topographic quad covering the project area (i.e., *Sacramento East*) and eight adjacent quads (*Carmichael, Florin, Sacramento West, Taylor Monument, Citrus Heights, Clarksburg, Elk Grove, Florin,* and *Rio Linda*).

The project area was surveyed on July 23, 2012 by a URS Biologist. The entire project area was surveyed on foot in a zig-zag transect such that the entire ground surface was observed within 10 meters. Focused searches for potential special-status species, including nesting birds, was conducted where woody vegetation or uneven ground was encountered that may provide habitat for nesting birds or burrowing animals. In addition, sensitive communities were considered which represent rare vegetation types or have limited distribution statewide or within a county or region. These communities are often vulnerable to the environmental effects of projects, and include riparian and wetland associated vegetation types associated with streams, wetlands, vernal pools, and other jurisdictional waters of the U.S. as defined under the federal Clean Water Act.

The proposed project would not result in impacts related to the following criteria as stated below, and will not be discussed further in this EIR.

b. and c. Riparian Habitat or Other Sensitive Natural Community, and Federally Protected Wetlands: Morrison Creek, a jurisdictional water of the U.S., runs adjacent to the site along a straightened concrete channel. It supports no riparian vegetation community and provides little natural habitat value. In addition, project activities such as trenching, grading, excavation, and fill would occur on the landside of the existing earthen levee. Therefore, the proposed project would have no impact on riparian habitat or other sensitive natural community, and would have no impact on federally protected wetlands.

d. Movement of Fish or Wildlife Species, Migratory Wildlife Corridors, or Native Wildlife Nursery Sites: Morrison Creek does not support any fish species and none were observed during the field survey. The project site is located in an urban area surrounded by development that precludes movement of any wildlife. While the project site could potentially provide suitable habitat for grassland nesting bird species, a focused search found no evidence of that species. Therefore, the proposed project would have no impact on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

f. Habitat Conservation Plan: The project site does not lie within a Habitat Conservation Plan as no such plan has been adopted by the County of Sacramento. The County of Sacramento is in the process of developing a South Sacramento Habitat Conservation Plan; however, the project site is outside of the plan's geographic boundaries. Therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts and Mitigation

IMPACTS ON SPECIAL-STATUS SPECIES	
Impact 4.2-1:	Proposed project activities may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measures 4.2-1a and 4.2-1b below.
Significance after Mitigation:	Less than significant.

General Discussion

During the biological field survey, no sensitive species were observed within the areas to be impacted by the proposed project, and the project area does not contain suitable habitat for most potential species. The project area is isolated from other natural areas due to the surrounding urban development. The project site does not have designated critical habitat. However, several sensitive raptor species have the potential to use the project area for foraging. Mitigation Measures 4.2-1a and 4.2-1b require pre-construction surveys for these species. In the event that these species are observed to be onsite, avoidance measures must be implemented. Therefore, with the implementation of mitigation, impacts would be less than significant.

Mitigation

Mitigation Measure 4.2-1a: Ground clearing or vegetation removal activities shall occur outside of the nesting season (September 1 through February 1), if feasible. However, if ground clearing or vegetation removal activities occur during the nesting season (February 15 through August 31), then pre-construction surveys for nesting birds shall be conducted in all areas suitable for nesting that are located within 250 feet of the project area to be impacted. Surveys shall be conducted no more than 15 days prior to the beginning of ground disturbance. If an active nest is located, a 250-foot buffer shall be delineated and maintained around the nest until a qualified biologist has determined that fledging has occurred. Alternatively, CDFW may be consulted to determine if the protective buffer can be reduced based upon individual species responses to disturbance.

Mitigation Measure 4.2-1b: No more than 30 days prior to the beginning of ground disturbance, a pre-construction survey for burrowing owls shall be conducted by a qualified biologist within the areas to be impacted in general accordance with the Burrowing Owl Survey Protocol and Mitigation Guidelines by the California Burrowing Owl Consortium. Should the surveys be scheduled to occur during the period extending from February 1 through May 1, then surveys shall be conducted no more than 15 days prior to the start of ground disturbance. Surveys shall be conducted from two hours before sunset to one hour after sunset, or from one hour before sunrise to two hours after sunrise, and shall be conducted during weather conducive to observing owls outside of their burrows. No surveys shall occur during heavy rain, high winds, or dense fog. If occupied burrows are found, mitigation for potential impacts shall follow the guidelines outlined by the Burrowing Owl Survey Protocol and Mitigation Guidelines, including passive relocation.

CONFLICTS WITH LOCAL BIOLOGICAL POLICIES OR ORDINANCES	
Impact 4.2-4:	The proposed project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.2-4 below.
Significance after Mitigation:	Less than significant.

General Discussion

A heritage tree, as defined by Sacramento Municipal Code Chapter 12.64, was observed in the project area. This tree is a non-native, multi-stem eucalyptus with a cumulative trunk circumference of 175 inches. It occurs along the fence line on the southern edge of the proposed project area. Since the tree meets the definition of a heritage tree under the City of Sacramento's Municipal Code 12.64, removal of the tree would be a potentially significant impact and would require mitigation. Mitigation Measure **4.2-4** would require a tree removal permit. With adherence to the permit conditions and restrictions, the impact would be less than significant.

Mitigation

Mitigation Measure 4.2-4: ~~Prior to issuance of grading permits for~~ For any activities that would remove one or more trees subject to City of Sacramento Ordinance 12.64.040, the applicant shall prepare and submit a tree removal and replacement plan to the City of Sacramento for review and approval including the removal fee which would go towards planting replacement tree in the City.

4.3 Cultural Resources

4.3.1 Introduction

This section describes the existing cultural resources setting and potential effects from project implementation on the project site and the surrounding area that are based on a Cultural Resources Assessment report prepared for the project site. The report is included in its entirety in **Appendix D, Cultural Resources Assessment**.

No public or agency comments related to cultural resources were received during the scoping period in response to the NOP.

4.3.2 Environmental Setting

Regional Setting

The project site is located at the southern end of the Sacramento Valley of California, approximately seven miles south of the confluence of the American and Sacramento rivers. The Sacramento Valley is a wide, flat valley, which, together with the San Joaquin Valley, forms what is commonly referred to as the Great or Central Valley. The province is bounded on the east by the Sierra Nevada Mountains and on the west by the Coast Ranges. The landscape in the region is characterized by a wide valley floor plain.

Proposed Project Setting

The natural topography of the project area would be virtually flat. Morrison Creek, which forms the northern boundary of the project area, has been heavily modified from its natural state. The creek was widened, deepened and realigned for flood control purposes in the mid-1960s and an engineered levee now separates it from the project site (CIWMB 2004). The natural environment in the project vicinity has undergone significant alteration as a result of modern encroachment. Industrial and multifamily residential development and appurtenant infrastructure characterize the project area at present.

The project site is adjacent to Morrison Creek. Although the creek has been channelized, it can be deduced that fluvial deposits are present in the project area. The Final Site Investigation Report prepared for the proposed project site and included in Appendix E states that the project area was a borrow site during the 1930s construction of State Route (SR) 99 and described the extracted material as "sand and gravel and topsoil" (CIWMB 2004). The site investigation also identified a dense clay layer at which delimits the vertical extent of the borrow area. The presence of clay suggests the possibility of land surface stability during some point in the past, and therefore has potential to harbor archaeological deposits. Up to 24 feet of disposal deposit now overlay this clay layer in the project area (CIWMB 2004).

Prehistoric Context

Sacramento County and the surrounding Central Valley contain evidence of human use and occupation that spans the known periods of prehistory. The earliest sites are from the Paleo-Indian period (approximately 11,550 B.C. to 8,550 B.C.). Most of the evidence for the earliest occupation is in the Tulare Basin of San Joaquin Valley, although one fluted projectile point has been recovered in the Sacramento Valley near Thomes Creek. The Lower (8,550 B.C. to 5,550 B.C.), Middle (5,550 B.C. to 550 B.C.), and Upper Archaic (550 B.C. to 1,100 A.D.) periods followed the Paleo-Indian period. The beginnings of a unique Central Valley adaptation occurred during the Middle Archaic period. During late prehistory in central California, the Emergent Occupation period (1,000 A.D. to the 1770s) was a time of technological development. Groups migrating west from eastern desert areas to California introduced technological advances that included ceramics, bows and arrows, projectile points, and the cremation of remains. This period saw the introduction of the bow and arrow, population growth, more complex settlement and political traditions, and the development of much larger permanent villages.

Ethnographic Context

The project area is located in the central portion of Sacramento County and south of the American River on the border of the historical territory of the Nisenan people, and the northern territory of the Plains (Eastern) Miwok people.

The Nisenan lived in permanent villages along the American, Sacramento, Feather, Bear, and Yuba rivers. It is unclear which villages exercised the greatest influence in the region, but it is reported that the Nisenan village of Pusune, located at the mouth of the American River, was dominant in the project area. The closest village to the project site was the village of Sama. The larger villages, with populations of up to 500, exercised political control over the smaller surrounding villages. Villages were constructed on rises near rivers or streams.

The Eastern Miwok village of Hulpumne, on the left bank of the Sacramento River, was closest to the project area (Levy 1978: 399). The Plains Miwok exhibited the highest population density of any other Native Californian tribe with approximately 400 persons per village and perhaps as many as 11,000 people in total (Levy 1978: 402).

Historic-era Context

The mid-sixteenth century saw the first European contact with indigenous groups throughout Southern California, and additional explorers had moved northward into the Sacramento region by 1772. Spanish missionaries and military personnel began to arrive in what was then called Alta California during the late eighteenth century. Between the founding of the first mission in northern California, Mission San Francisco de Asis (Mission Dolores) in 1776, and the last mission, the Sonoma Mission in 1834, the indigenous population in the region dwindled as the Spanish military and religious presence became permanent. California became part of Mexico in 1821 and missions were secularized in 1833.

During the Mexican period, large tracts of land were granted to Mexican individuals, and the rancho system was established. The downtown Sacramento area is rich in historic features and includes portions of the old New Helvetia Land grant deeded to John Sutter by the Mexican government in 1841. Nearby historical features include Sutter's Fort, travel routes, canneries, and various houses.

During this period, cattle ranching superseded agricultural enterprises, restricting native tribal groups' access to traditional hunting and gathering areas. The Mexican period was officially ended at the conclusion of the Mexican-American War in 1848. A profusion of European and American immigrants began to arrive in the region in 1849 as a result of the Gold Rush. After California became part of the Union in 1850, ranching, farming, and dairy activities became the mainstay of the California economy. The area around Sutter's Fort and along the waterfront of the Sacramento River quickly urbanized in the 1850s. Sacramento eventually became the seat of state government in 1854 and has grown to merge with other cities and towns including that of the project area.

4.3.3 Regulatory Framework

Federal Regulations

National Historic Preservation Act (NHPA)

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 CFR 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

State

California Register of Historical Resources (CR)

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (CR). The CR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or state level.

California Native American Graves Protection and Repatriation Act (California Health & Safety Code Section 8010 et seq.)

The California Native American Graves Protection and Repatriation Act establishes a state repatriation policy consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The act strives to ensure that all California Native American human remains and cultural items are treated with dignity and respect, and asserts intent for the state to provide mechanisms for aiding California Native American tribes, including non-federally recognized tribes.

Local

City of Sacramento General Plan 2030

Goal HCR 2.1 Identification and Preservation of Historic and Cultural Resources: Identify and preserve the city's historic and cultural resources to enrich our sense of place and our understanding of the city's prehistory and history.

> **Policy HCR 2.1.3:** Consultation. The City shall consult with the appropriate organizations and individuals (e.g., Information Centers of the California Historical Resources Information System (CHRIS), the Native American Heritage Commission (NAHC), and Native American groups and individuals) to minimize potential impacts to historic and cultural resources.
>
> **Policy HCR 2.1.15:** Archaeological Resources. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to archaeological, historic, and cultural resources including prehistoric resources.

City of Sacramento Historic Preservation Ordinance (Title 12.64.040)

City of Sacramento has a historic preservation ordinance. This ordinance provides for the protection, enhancement, and perpetuation of significant cultural resources within the City. The ordinance provides the statutory framework for local preservation decisions. In particular, Municipal Code Section 17.134.280 states that no permit shall be issued for, and no person shall commence construction of, or otherwise undertake, a development project as defined in this Municipal Code Section unless and until an application for preservation review of the proposed project is reviewed and approved or conditionally approved as required.

4.3.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines; applicable agency plans, policies and/or guidelines, and agency and professional standards, the proposed project would have a significant impact on cultural resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and
d. Disturb any human remains, including those interred outside of formal cemeteries.

CEQA Guidelines Section 15064.5(b) defines a "substantial adverse change" to a historical resource as: "physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. The significance of an historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CR or in registers meeting the definitions in Public Resources Code 5020.1(k) or 5024.1(g).

Analysis Methodology

This section is based on the information contained in the Cultural Resources Assessment prepared for the project site and included in this EIR as Appendix D. The Area of Potential Effect (APE) for the Cultural Resources Assessment included the entire project site (see Figure 2). Below is a summary of the investigations performed for the Cultural Resources Assessment:

Native American Consultation

On August 27, 2012, URS sent a letter to the NAHC to request their review of the Sacred Lands File. The NAHC responded August 28, 2012, stating no sacred lands had been identified in the project area. The NAHC also provided a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Correspondence with the NAHC is included in Appendix D of this document.

Archival Research

An archival records search was conducted at the NCIC, an affiliate of the California Historical Resources Information System, located at California State University, Sacramento. The records search was performed July 19, 2012. The results of the records search are included Appendix D.

Pedestrian Survey

An intensive pedestrian survey of the entire APE was conducted July 23, 2012, by URS archaeologists Ben Elliott and Christopher Peske. The APE was surveyed using 15-meter transect intervals. During the survey, the ground surface was inspected for evidence of prehistoric and historic-era use, including evidence of topographic disturbance, soil discoloration, charcoal, modified bone or stone, and exotic materials.

Impacts and Mitigation

IMPACTS TO KNOWN HISTORICAL OR ARCHAEOLOGICAL RESOURCES	
Impact 4.3-1:	Implementation of the proposed project would not cause a substantial adverse change in the significance of a known historical or unique archaeological resource.
Significance:	Less than significant.
Mitigation:	None required.

General Discussion

Review of the records and literature indicated that the project area had not been surveyed previously. The search did not identify any previously recorded cultural resources with the APE. One recorded prehistoric isolate had been previously identified within a¼-mile of the APE which is a single stone tool production waste flake also known as debitage.

The features and artifacts at the project site do not meet the eligibility criteria for listing on the CR. The site does not have any structures and fill material lack association with events that have made a significant contribution to the broad patterns of the history of Sacramento County, California, or the United States. Though the fill material is temporally discrete it appears to consist of debris typical of small communities. Use of the project site as a dump site appears to have ended prior to urbanization of this portion of the City of Sacramento and would have been on the City's outskirts (CIWMB 2004). Such dump sites were most often located in areas considered to be of little value.

While small solid waste dump sites were more common before the 20th century, use of the project site for dumping is of a relatively recent date. It is therefore not associated with the early pioneer period of Sacramento County. The artifacts that occur within the project site were imported from various locales within the southern Sacramento area and are not associated with any particular family or event. The site is not clearly associated with the lives of persons important to our past. The artifacts deposited within the project site represent numerous households and businesses within the southern Sacramento area; however, given the burning and extensive mixing, there is no way to directly associate any of the materials with a particular person or place.

The project site does not include features or artifacts that would yield information important in history. Though there are artifacts deposited within the dump that are older than 50 years, they consist primarily of typical domestic refuse and do not represent unique types of artifacts. In addition, much of the deposited materials lack physical integrity, having been incinerated to reduce volume and subsequently crushed by the dumping of used road construction material such as asphalt and concrete. Furthermore, the depth of disturbance at the dump (depth of 24 feet) suggests that any prehistoric deposits that may have once been present in the current APE were destroyed during use of the location as a dump site, and such subsurface materials likely no longer exist intact in the immediate project site.

The project site does not meet eligibility requirements for listing on the CR given its lack of integrity. No further cultural resources consideration or treatment is recommended for the project site and impacts to any known historical or archaeological resources would be less than significant.

IMPACTS TO UNKNOWN HISTORICAL OR ARCHAEOLOGICAL RESOURCES

Impact 4.3-2:	Implementation of the proposed project could cause a substantial adverse change in the significance of an as-yet undiscovered/unrecorded historical resource or unique archaeological resource.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.3-2 below.
Significance after Mitigation:	Less than significant.

General Discussion

While the cultural resources survey did not identify any known cultural resources, there is always the possibility that ground-disturbing activities during project development could potentially impact previously unknown prehistoric or historic archaeological resources. Prehistoric materials will most likely include obsidian and chert flaked-stone tools (e.g., projectile points, knives, choppers), toolmaking debris, or milling equipment, such as mortars and pestles. Historic-era materials might include remains of agricultural implements; stone or concrete footings and walls; and deposits of metal, glass, and/or ceramic refuse. As such, Mitigation Measure 4.3-2 requires standard inadvertent discovery procedures to be implemented in the event that subsurface archaeological resources are encountered during construction. With the implementation of mitigation, impacts would be reduced to a less-than–significant level.

Mitigation

Mitigation Measure 4.3-2: If potentially significant archaeological resources are encountered during subsurface excavation activities, all construction activities within a 50-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. CalRecycle shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. If the resource is determined to be significant under CEQA, CalRecycle and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the North Central Information Center, and provide for the permanent curation of the recovered materials.

IMPACTS TO UNKNOWN PALEONTOLOGICAL RESOURCES	
Impact 4.3-3:	Implementation of the proposed project could cause a substantial adverse change in the significance of an as-yet undiscovered/unrecorded paleontological resource or unique archaeological resource.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.3-3 below.
Significance after Mitigation:	Less than significant.

General Discussion

Although a record search for paleontological resources was not conducted for this project, impacts to significant paleontological resources in undisturbed surface or subsurface Pleistocene sediments are considered nominal, due to the floodplain conditions associated with the project area. In addition, no paleontological resources were discovered during the course of the field survey. Nonetheless, the possibility exists that subsurface construction activities may encounter previously undiscovered paleontological resources. Therefore, this would be a potentially significant impact. As such, Mitigation Measure 4.3-3 requires standard inadvertent discovery procedures to be implemented in the event that subsurface paleontological resources are encountered during construction. With the implementation of mitigation, impacts would be reduced to a less-than–significant level.

Mitigation

Mitigation Measure 4.3-3: In the event that plant or animal fossils are discovered during subsurface excavation activities for the proposed project, all excavation within 50 feet of the fossil shall cease until a qualified paleontologist has determined the significance of the find and provides recommendations in accordance with Society of Vertebrate Paleontology standards. If the find is determined to be significant and CalRecycle determines that avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan shall be incorporated into the project.

IMPACTS TO HUMAN REMAINS	
Impact 4.3-4:	Implementation of the proposed project may cause disturbance to human remains, including those interred outside of formal cemeteries.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.3-4 below.
Significance after Mitigation:	Less than significant.

General Discussion

There are no known burial sites within the project area. The pedestrian survey did not find any evidence of human remains or burial goods within the project area. However, the possibility exists that ground disturbance activities may encounter previously undiscovered human remains. Accordingly, this is a potentially significant impact. As such, Mitigation Measure 4.3-4 requires standard inadvertent discovery procedures to be implemented in the event that human remains are encountered during construction. With the implementation of mitigation, impacts would be reduced to a less-than–significant level.

Mitigation

Mitigation Measure 4.3-4: If human remains are encountered, work should halt in the vicinity of the remains and, as required by law, the Sacramento County Coroner should be notified immediately. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of that determination. Pursuant to California Public Resources Code 5097.98, the NAHC, in turn, will immediately contact an individual who is most likely descended from the remains (aka: a Most Likely Descendent, MLD). The MLD has 48 hours to inspect the site and recommend treatment of the remains. CalRecycle is obligated to work with the MLD in good faith to find a respectful resolution to the situation and entertain all reasonable options regarding the descendants' preferences for treatment.

4.4 Geology and Soils

4.4.1 Introduction

This section describes the existing geology and soils setting of the project site, and evaluates whether the proposed project would result in adverse effects related to earthquakes, seismic ground shaking, landslides, liquefaction, soil erosion, or loss of topsoil. The analysis also determines whether the project site is located on unstable or expansive soils.

No public or agency comments related to geology and soils were received during the scoping period in response to the NOP.

4.4.2 Environmental Setting

Regional Setting

Geology

The City of Sacramento lies within the Great Valley in central California. Surrounded by the Sierra Nevada to the east, the Tehachapi Mountains to the south, coastal range to the west, and the Cascade Range to the north, the northern portion of the valley, the Sacramento Valley, is drained by the Sacramento River, and the southern portion, the San Joaquin Valley, is drained by the San Joaquin River. The topography is mostly flat with a gradual slope that rises from almost sea level in the south to about 75 feet above sea level in the north.

Seismicity

While the entire state of California is typically seismically active, there are no known faults within the greater Sacramento region (City of Sacramento 2009a). Thus, the Sacramento Valley typically does not experience strong groundshaking from earthquakes. However, there are some isolated areas in the city of Sacramento that, because of their soils or other conditions, may result in damage caused by seismic activity. The City has experienced groundshaking from the faults in the Foothills fault zone which runs through El Dorado and Amador Counties and includes the Bear Mountain and New Melones faults to the east, and the Midland fault to the west. The Dunnigan Hills fault, located roughly 25 miles northwest of Sacramento, is another fault that may potentially affect the Sacramento area. Seismic-induced dam failure resulting in flooding could also be a concern in the Sacramento area. Section 4.5 Hydrology and Water Quality discusses the potential for this type of hazard.

Proposed Project Setting

Geology and Topography

The proposed project site is underlain with soils designated San Joaquin Urban land complex, 0 to 2 percent slopes by the Natural Resource Conservation Service. These soils are moderately well drained soils that are moderately deep over a cemented hardpan (USDA 2013a; 2013b). An abandoned quarry that subsequently was used as a burn and dump site, the project site has been filled over time with undetermined soils and refuse. The project site is level, as is the area around the site.

Expansive Soils

Expansive soils increase in volume when saturated with water and shrink when dried. Building foundations that are exposed to constant shrink-swell movement can crack or distort resulting in an unsafe structure. There are no structures on the project site.

Geologic Hazards

Soil Erosion

Soil erosion takes place when soil and rock are worn away by weather, wind, or water. Building foundations and infrastructure can be damaged by excessive soil erosion. The project site is currently exposed and bare of structures. Typically, once the soils are graded and vegetated such as would be done for the project, the potential of soil erosion is significantly reduced.

Landslides

Landslides are the rapid downward or outward movement of rock, earth, or artificial fill on a slope. Typically, landslides can be a potentially significant hazard where slopes exceed a gradient of about 50 percent. Slope instability can sometimes occur on less steep slopes, but the risk is typically much lower. Landslides are unlikely on level ground such as area in and around the project site.

Ground Surface Rupture Due To Faulting

Earthquakes are caused by slippage along faults, or cracks, in the earth's crust. Where the fault intersects the ground surface, this slippage causes offset of the ground surface that can damage or destroy structures placed over the fault. There are no faults in the project area, therefore the potential for ground surface rupture on the project site is remote.

Seismic Shaking Hazard

Seismic shaking occurs as a result of an earthquake and could result in the damage or collapse of buildings and other structures depending upon the distance from the epicenter and the magnitude of the earthquake. There are no known earthquake faults in the project area, and there are no structures on the project site. Seismic shaking hazards on the project site are unlikely.

Liquefaction

Liquefaction is caused by water-saturated sediment which temporarily loses strength and becomes fluid. It is most commonly caused by ground shaking due to earthquakes.

Lateral Spread

Lateral spread is the movement of near-surface soil, generally along a near-surface liquefiable layer. It can occur on flat to gently sloping ground, and is particularly common near the free surface of gullies or channels, or where groundwater is shallow. The lower ground surface in a channel provides a point of release for the increased pressure of liquefaction, causing the surface layer to move laterally toward the channel.

4.4.3 Regulatory Framework

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed by the State of California in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The purpose of the act is to prevent the construction of buildings used for human occupancy over the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults, and to issue appropriate maps. Local agencies must regulate most development projects within the zones. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault, and must be set back from the fault (generally 50 feet), although local agencies can be more restrictive than State law requires (Bryant and Hart, 2007). There are no Alquist-Priolo fault zones in the project area.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed to address non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction, and seismically induced landslides, in order to mitigate seismic hazards, thereby protecting public health and safety. In accordance with the SHMA, the State Department of Conservation provides local governments with seismic hazard zone maps that identify areas susceptible to various seismic hazards; for example, amplified shaking, liquefaction, and earthquake-induced landslides or other ground failures. Site-specific geotechnical hazard investigations are required by SHMA when construction projects fall within these areas. No part of the project area is located in a currently designated State Seismic Hazard Mapping Program zone (California Geological Survey, 2007).

California Building Code

Title 24 of the California Code of Regulations, formerly known as the Uniform Building Code and now known as the California Building Code (CBC), sets forth minimum requirements for building design and construction for public buildings and for a large percentage of private buildings. In the context of earthquake hazards, the CBC design standards have a primary objective of ensuring public safety and a secondary goal of minimizing property damage and maintaining function during and following a seismic event. The CBC prescribes seismic design criteria for different types of structures, and provides methods to obtain ground motion inputs. The CBC also requires analysis of liquefaction potential, slope instability, differential settlement, and surface displacement due to faulting or lateral spreading for various categories of construction. Recognizing that the risk of severe seismic ground motion varies from place to place, the CBC seismic code provisions vary depending on location (Seismic Zones 0, 1, 2, 3, and 4—with 0 the least stringent and 4 the most stringent). The City of Sacramento is located in Seismic Zone 3.

Local

Sacramento County Multi-Hazard Mitigation Plan

The overall purpose of this plan is to reduce or eliminate long-term risk to people and property from natural hazards and their effects. It functions as the Floodplain Management Plan for the County as well as the City of Sacramento. It identifies hazards and assesses risk for all hazards that could impact the County and recommends action items for reducing impacts from potential disasters.

City of Sacramento General Plan 2030

Goal EC 1.1 Hazards Risk Reduction: Protect lives and property from seismic and geologic hazards and adverse soil conditions.

> **Policy EC 1.1:** Review Standards. The City shall regularly review and enforce all seismic and geologic safety standards and require the use of best management practices (BMPs) in site design and building construction methods.
>
> **Policy EC 1.1.2:** Geotechnical Investigations. The City shall require geotechnical investigations to determine the potential for ground rupture, ground-shaking, and liquefaction due to seismic events, as well as expansive soils and subsidence problems on sites where these hazards are potentially present.

City of Sacramento City Code

Chapter 15.20, California Building Code

This chapter adopts the California Building Code and includes local amendments specific to the City of Sacramento. All construction projects are required to comply with the Code and the Amendments to the Code.

Chapter 15.88, Grading and Erosion and Sediment Control

The purpose of this ordinance is for regulating grading on property to safeguard life, limb, health, property and the public welfare; to avoid pollution of watercourses with nutrients, sediments, or other materials generated or caused by surface water runoff; to comply with the city's national pollution discharge elimination system (NPDES) Permit issued by the California regional water quality control board; and to ensure that the intended use of a graded site within the City limits is consistent with the city general plan, any specific plans adopted thereto and all applicable city ordinances and regulations. The grading ordinance is intended to control all aspects of grading operations within the City.

4.4.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines; applicable agency plans, policies, and/or guidelines; and agency and professional standards, the proposed project would cause a significant impact related to geology and soils if it would:

a. Expose people or structures to potential substantial adverse effects, including substantial risk of loss, injury, or death involving:

    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;

    ii. Strong seismic ground shaking;

    iii. Seismic-related ground failure, including liquefaction; or

    iv. landslides

b. Result in substantial soil erosion or the loss of topsoil;

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; and

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Analysis Methodology

The project site's soil characteristics determine the potential for geological impacts that could occur. The City of Sacramento General Plan (City of Sacramento 2009b), publicly available maps and reports prepared by the California Geological Survey (California Geological Survey 2013), and the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) (USDA 2013a; 2013b) were reviewed to determine the proposed project's potential for geological impacts.

The proposed project does not include the construction of any structures and involves only the placement of a clean soil cap over what is now a potentially unsafe site. The proposed project would not result in impacts related to the following criteria as stated below, and these topics will not be discussed further in this EIR:

a.i. Fault Rupture: There are no active faults that have experienced surface displacement in the project area. Therefore, the potential for fault rupture to affect the proposed project site is remote.

a.ii. Strong Seismic Ground Shaking: The proposed project does not propose any structure or a use that would expose people to ground shaking hazards. Therefore, the proposed project would not have the potential for substantial adverse effects on structures or people, including substantial risk of loss, injury, or death from strong seismic ground shaking.

a.iii and iv. Liquefaction or Landslides: The project site and surrounding area is level therefore, the potential for landslides and liquefaction is low. Further, the project does not propose any structures or a use that would expose people to liquefaction or landslides. Therefore, the proposed project would not have the potential for substantial adverse effects on structures or people, including substantial risk of loss, injury, or death from liquefaction or landslides.

c and d. Unstable or Expansive Soils: The soils mapped in the project area are San Joaquin series soil that exhibit shrink-swell and expansive characteristics that make them unsuitable for urban uses such as building foundations (USDA 2013a; 2013b). The proposed project would not construct any structures on the project site. The project would grade the existing soils to create a low mound with a five-foot rise, and place a 15-inch-thick clean soil cap over the existing soils. Therefore, the proposed project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse of the project and would not create substantial risks to life or property.

e. Soils incapable of supporting septic tanks or wastewater disposal systems: The project does not propose the use of septic tanks or wastewater disposal systems. Therefore, the proposed project would not have an impact on this topic.

Impacts and Mitigation

SOIL EROSION	
Impact 4.4-1:	The proposed project could result in substantial soil erosion or the loss of topsoil.
Significance:	Less than significant.
Mitigation:	None required.

General Discussion

Soil erosion in the context of Geology and Soils focuses on the potential for excessive or accelerated erosion to damage building foundations. Erosion could occur during the construction phase of the project when the project site is graded.

Because the project site is larger than one acre, it would require a General Construction Stormwater Permit (General Construction Permit), also referred to as the General Permit, from the State Water Resources Control Board (SWRCB). This permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which would include best management practices (BMPs) to control erosion associated with grading and other ground disturbing activities. With implementation of the BMPs required by the permit, the potential for soil erosion is significantly reduced.

The proposed project when completed would be a pervious mound on the project site that improves drainage and prevents soil erosion compared to the existing conditions. The proposed project would not result in substantial soil erosion or loss of topsoil and the impact would be less than significant.

4.5 Hydrology and Water Quality

4.5.1 Introduction

This section describes the hydrology and water quality currently existing at the project site and the potential effects from project implementation on the project site and its surrounding area. A report that includes a Conceptual Grading and Drainage Plan and Hydrologic and Hydraulic Evaluation for the proposed project was conducted in November 2012 and is included in **Appendix E** of this report.

The following comment related to hydrology and water quality was received during the public scoping period in response to the NOP:

- The EIR should analyze storm water runoff during construction.

4.5.2 Environmental Setting

Climate

The City of Sacramento lies in the northern portion of California's Central Valley and enjoys a Mediterranean climate characterized by damp to wet, mild winters and hot, dry summers. Precipitation occurs mostly as rain during the months of November through March. Average annual precipitation is approximately 17.4 inches, with the majority of the precipitation falling between November and March. The average temperature varies between approximately 46 degrees Fahrenheit (°F) in January and December to 76°F in the July. Table 4.5-1, Summary of Climatological Data for Sacramento, summarizes the climatological data for the region.

Table 4.5-1. Summary of Climatological Data for Sacramento, CA

	Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Temperature (°F)	61	46	51	54	59	65	71	76	75	72	64	53	46
Average Precipitation (Inches)	17.4	3.7	2.8	2.6	1.2	0.4	0.1	---	0.1	0.3	0.9	2.2	2.8

(Source: Weatherbase 2013)

Watershed and Surface Water Features

The project site is located within the 27,000-square-mile Sacramento River Watershed. The Sacramento River Basin is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Sacramento – San Joaquin Rivers Delta to the southeast. Six small tributaries of the Sacramento River pass through and provide drainage for the city of Sacramento. These tributaries are Dry Creek, Magpie Creek, and

Arcade Creek in the northern portion of the city (north of the American River), and Morrison Creek, Elder Creek, and Laguna Creek in the southern portion of the city (south of the American River). Forty miles south of the Sacramento area, the Sacramento River joins the San Joaquin River, which drains into the San Francisco Bay (City of Sacramento 2009a).

The project site is located in the south portion of the City of Sacramento, California and is bounded by Morrison Creek to the north; 63rd Street to the west; parcels fronting Elder Creek Road to the south, and 65th Street Expressway to the east. The project site is on the United States Geological Survey (USGS) "Sacramento East" 7.5' quadrangle within the southeast ¼ of Section 28, Township 8 North, Range 5 East.

Drainage

The project site is relatively flat open ground covered in wild grass and miscellaneous debris. Under existing conditions, the stormwater collects in numerous small depressions on the site. Any infiltration that happens under existing conditions passes through the waste area. During extreme events, it is likely that some runoff flows into the ditch along the south side of Morrison Creek.

Flooding

The Flood Insurance Rate Map (FIRM Map Number 06067C0195H, effective date August 16, 2012) indicates that the entire project site is currently designated as Zone X. Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain, areas of 100-year sheet flow flooding where average depths are less than one foot, areas of 100-year stream flooding where the contributing drainage area is less than one square mile, or areas protected from the 100-year flood by levees. Morrison Creek is located to the north of the project site and functions primarily as a lined drainage canal managed by the City of Sacramento.

Watershed and Surface Water Features

The Sacramento River has been classified by the Central Valley Regional Water Quality Control Board (CVRWQCB) as having numerous beneficial uses, including providing municipal, agricultural, and recreational water supply. Other beneficial uses include freshwater habitat, spawning grounds, wildlife habitat, and navigation. Morrison Creek is one of six creeks that provides drainage for the City of Sacramento and drains into the Sacramento River. Ambient water quality in the Sacramento River is influenced by numerous natural and artificial sources, including soil erosion, discharges from industrial and residential wastewater plants, stormwater runoff, agriculture, recreation activities, mining, timber harvesting, and flora and fauna.
The reaches of the Sacramento River that flows through the Sacramento urban area are considered impaired for certain fish consumption and aquatic habitat and are listed on the EPA approved 2006 section 303(d) list of water quality limited segments. The Sacramento River is listed as impaired under the 303(d) list for mercury and unknown toxicity.

Groundwater

The project site lies within the South American Subbasin, which is part of the Sacramento Valley Groundwater Basin. The South American Subbasin has a surface area of 388 square miles. The subbasin is drained by the San Joaquin River and several of its major tributaries, including the Stanislaus, Calaveras, and Mokelumne rivers. Waterbearing formations of significance in this subbasin include younger alluvium, older alluvium, and Miocene/Pliocene volcanics (DWR 2004).

Groundwater underlying the City's service area generally meets primary and secondary drinking water standards for municipal water use, and is described as being calcium–magnesium-bicarbonate type water, with minor fractions of sodium-magnesium-bicarbonate. However, the South American Subbasin has higher concentrations of iron, manganese, and total dissolved solids (TDS) than the North American Subbasin (City of Sacramento 2009a). As described in DWR Bulletin 118, groundwater elevations within the entire South American Subbasin have, in general, consistently declined by approximately 20 feet from the mid-1960's to about 1980, but recovered by about 10 feet from 1980 to 1983, where water levels remained stable until the 1987 to 1992 drought. During the drought, water levels declined by about 15 feet, but recovered to levels higher than those observed prior to the drought by 2000 (City of Sacramento 2006). At the project site, water was encountered throughout the site at approximately 12 to 15 feet (CIWMB 2004).

4.5.3 Regulatory Framework

Federal Regulations

Clean Water Act and NPDES Permits

The Clean Water Act (CWA) is the primary surface water protection legislation in the nation. The CWA employs a variety of regulatory and non-regulatory tools to restore and maintain the chemical, physical, and biological integrity of surface waters. Tools include establishing water quality standards, issuing permits, monitoring discharges, and managing polluted runoff.

Section 402 of the CWA mandates that certain types of construction activity comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater permit program. The Phase II Rule, issued in 1999, requires that construction activities that disturb land equal to or greater than one acre require permitting under the NPDES program. In California, permitting occurs under the General Permit for Stormwater Discharges Associated with Construction Activity, issued to the State Water Resources Control Board (SWRCB), implemented and enforced by the nine Regional Water Quality Control Boards (RWQCBs). Effective July 1, 2010, all dischargers whose projects includes clearing, grading or stockpiling activities expected to disturb one or more acres of soil are required to obtain compliance under the NPDES Construction General Permit Order 2009-0009-DWQ.

This General Permit requires all dischargers, where construction activity disturbs one or more acres, to take the following measures:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to include a site map(s) of existing and proposed building and roadway footprints, drainage patterns and storm water collection and discharge points, and pre- and post-project topography;
- Describe types and placement of Best Management Practices (BMPs) in the SWPPP that will be used to protect storm water quality.
- Provide a visual and chemical (if non-visible pollutants are expected) monitoring program for implementation upon BMP failure; and
- Provide a sediment monitoring plan if the area discharges directly to a water body listed on the 303(d) list for sediment.

National Flood Insurance Program

FEMA is responsible for determining flood elevations and floodplain boundaries and distributing FIRMs, which are used in the National Flood Insurance Program (NFIP). Areas of special flood hazard (those subject to inundation by a 100-year flood) are identified by FEMA FIRMs. The NFIP mandates that development cannot occur within the regulatory floodplain (typically the 100-year floodplain) if that development results in an increase of more than one foot in flood elevation. In addition, development is not allowed in delineated floodways within the regulatory floodplain.

State

California Department of Water Resources (DWR)

The Department of Water Resources is a state agency that constructs and operates regional-scale flood protection systems in partnership with US Army Corp of Engineers (USACE) and local agencies. DWR provides technical, financial, and emergency response assistance related to flood hazard and safety to local agencies and evaluates maintenance of federal project levees by local reclamation and levee districts. On February 24, 2006, Governor Arnold Schwarzenegger declared a state of emergency for California's levee system. Soon after, he signed Executive Order S-01-06 directing DWR, with the assistance of the USACE, to develop a State Levees Team that would identify and repair eroded levee sites on the state-federal project levee system to prevent catastrophic flooding and loss of life. A total of 33 critical erosion sites were identified on the levee systems in the northern Central Valley. The 29 identified critical erosion sites were located in six counties: Colusa, Sacramento, Solano, Sutter, Yolo, and Yuba. These critical erosion sites were repaired in 2007 to achieve regional flood damage reduction levels. As part of its mission, DWR has responded to requests from various local agencies to survey and document erosion damage at a number of additional proposed sites. DWR has committed to assisting local agencies in determining the best way to accomplish any needed repairs, the funding mechanisms available, and the responsible agency to take the lead.

Local

City of Sacramento Municipal Code

The City of Sacramento Municipal Code includes several measures regarding stormwater management, flood protection, and water quality. The most relevant measures to the proposed project are summarized below:

Stormwater Management and Discharge Control

The City Stormwater Management and Control Code (City Code Section 13.28.020) establishes protection and promotion of the health, safety and general welfare of the citizens of the city by controlling non-stormwater discharges to the stormwater conveyance system; by eliminating discharges to the stormwater conveyance system from- spills, dumping, or disposal of materials other than stormwater; and by reducing pollutants in urban stormwater discharges to the maximum extent practicable. The Code is intended to assist in the protection and enhancement of the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Federal Water Pollution Control Act (Clean Water Act, 33 USC Section 1251 et seq.), Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) and NPDES Permit No. CAS082597, as such permit is amended and/or renewed. (Ord. 2004-042 § 1; Ord. 98-007 § 1; prior code § 87.01.102).

Section 13.16.120 encourages any business in the city engaged in activities that may result in a non-stormwater discharge to develop and implement an SWPPP that must include an employee training program. Business activities that may require a stormwater pollution prevention plan include, but are not limited to, maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading or fueling, and cleanup procedures that are carried out partially or wholly outdoors.

4.5.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines, applicable agency plans, policies, and/or guidelines, and agency and professional standards, the proposed project would impact hydrology and water quality if it would:

a. Violate any water quality standards or waste discharge requirements;
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

f. Otherwise substantially degrade water quality;

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;

j. Inundate by seiche, tsunami, or mudflow.

Analysis Methodology

The proposed project as outlined in Chapter 3, Project Description, does not include the construction of any structures and involves only the placement of a clean soil cap over what is now a potentially unsafe site. The proposed project would not result in impacts related to the following criteria as stated below, and these topics would not be discussed further in this EIR:

b. Groundwater Recharge: The proposed project would not result in impervious surfaces and therefore, would not change existing groundwater recharge conditions. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

g. and h. Place Housing/Structures Within 100-year Flood: The proposed project does not include construction of any structures. Therefore, the proposed project would not expose people to flood risk or impede or redirect flood flows.

i. Failure of Levee or Dam: The project site lies within the Folsom Dam inundation area (County of Sacramento, 2011). However, the proposed project does not include construction of any structures. Therefore, the proposed project would not expose people or structures to significant risk of loss, injury or death as a result of dam or levee failure.

j. Inundate by Seiche, Tsunami, or Mudflow: Morrison Creek lies to the north of the project site and functions primarily as a lined drainage canal. This precludes the possibility of a seiche inundating the project site. The project area is more than 80 miles east of the Pacific Ocean, a condition that rules out the possibility of inundation by tsunami. There are no steep slopes that would be susceptible to a mudflow in the project vicinity, nor are there any volcanically active features that could produce a mudflow in the City of Sacramento. No impacts would occur.

Impacts and Mitigation

CONSTRUCTION AND MAINTENANCE IMPACTS	
Impact 4.5-1:	Construction activities associated with the proposed project have the potential to degrade water quality due to the release of sediments and contaminants.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.5-1 below.
Significance after Mitigation:	Less than significant.

General Discussion

Construction activities have the potential to directly introduce sediment and other pollutants into surface water and Morrison Creek, potentially degrading water quality. Temporary stockpiles of sediment or other materials also have the potential to erode and be carried into the stormwater system and waterways. Construction activities would likely involve the use of gasoline and diesel-powered vehicles and equipment that pose a potential risk of accidental fuel and related chemical releases that could enter the drainage system and degrade water quality. BMPs would need to be implemented and maintained just before and during any project construction activities to protect surface water in the drainages and Morrison Creek during all earthwork activities. Any construction project that would result in the disturbance of more than one acre is required by the SWRCB to obtain a NPDES Construction General Permit Order 2009-0009-DWQ permit prior to project initiation. As part of the NPDES permit, the project applicant must prepare and implement a SWPPP (see Mitigation Measure 4.5-1 below). The SWPPP must identify potential sources of pollution that are reasonably expected to affect the quality of stormwater discharges and identify, locate, and implement BMPs to ensure reduction of these pollutants during storm events. The SWPPP must include a monitoring plan for either visual or chemical monitoring depending upon the types of pollutants expected. The implementation of the SWPPP would avoid or mitigate runoff pollutants at the construction sites to the "maximum extent practicable." The impact related to construction-phase water quality degradation would be less than significant with mitigation.

Mitigation

Mitigation Measure 4.5-1:

If applicable, CalRecycle shall prepare a Notice of Intent (NOI) to be submitted to the Central ~~Coast~~ Valley Regional Water Quality Control Board, which indicates the intent to comply with the Statewide NPDES General Construction Permit (Order No. 2009-0009-DWQ) prior to construction being initiated. Prior to submittal of the NOI, CalRecycle shall prepare a SWPPP to comply with the Statewide NPDES General Construction Permit. The SWPPP shall include but will not be limited to the following elements:

- Temporary erosion control measures shall be employed for disturbed areas.
- No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.
- Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures.
- The construction contractor shall prepare a plan for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains.
- BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.
- In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season.

If the NOI and SWPPP are not applicable to the Project, CalRecycle will implement standard erosion control and water pollution control best management practices during construction. Construction best management practices, will include those activities listed above under the SWPPP and will also include but will not be limited to the following types of measures: scheduling of activities, prohibitions of certain practices, general good housekeeping practices, pollution prevention and education practices, construction procedures, and other management practices to prevent or reduce to the maximum extent practicable the discharge of pollutants directly or indirectly to waters of the United States. Best management practices also include treatment requirements, operating procedures, and practices to control construction site runoff, spillage or leaks, sludge or waste disposal, and drainage from materials storage areas.

DRAINAGE IMPACTS

Impact 4.5-2:	The proposed project would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or result in substantial erosion or siltation or flooding on- or off-site, or which could exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff.
Significance:	Less than significant.
Mitigation:	None required.

General Discussion

Currently the stormwater collects in numerous small depressions throughout the project area. Any onsite infiltration under existing conditions passes through the waste area below. During extreme precipitation events, it is likely that excess runoff would flow from the bioswales into the drainage ditch along the south side of Morrison Creek levee. The proposed drainage design would not substantially alter the existing drainage pattern, and therefore would not create a condition that would result in erosion, or a violation of water quality standards, or discharges requirements. Stormwater would sheet flow to the perimeter of the capped waste area and collect in the sloped bioswales at the perimeter of the proposed soil cap and flow to the northwest portion of the project area. This design would reduce the potential for groundwater contamination since any post-project infiltration would occur outside the Waring's Dump waste area.

The 100-year, 24-hour event was used as the proposed project's design storm to apply the U.S. Army Corps of Engineers, Sacramento District, Hydrologic Engineering Center (HEC) Flood Hydrograph Program (HEC-1). The HEC-1 analysis performed for the conceptual design yields a peak flow of 8.8 cubic feet per second (cfs) and a total volume of 0.9 acre-feet (ac-ft) for the proposed project area (see Appendix E). The proposed retention swales would have a storage capacity of 1.0 ac-ft. Water depth at this storage level is approximately three feet at the common low point which would be adjacent to the existing culvert through the Morrison Creek levee. The northern edge of the retention swale rim would act as an emergency release into the ditch on the upland side of the levee. In an event the retention swales ever overflow, runoff would sheet flow over a length of the rim into the existing ditch. The existing ditch and culvert would have adequate capacity to convey any amount of projected runoff coming from the retention swales. During more typical storm events for this area, stormwater would collect in the retention swales and then infiltrate and evaporate. The proposed project would result in less than significant impacts to existing drainage patterns and stormwater runoff capacity.

4.6 Noise

4.6.1 Introduction

This section describes the existing noise and vibration setting of the project area and surrounding areas, and evaluates whether the proposed project would result in adverse noise and vibration. Specifically, the evaluation focuses on whether the proposed project would generate noise or ground borne vibration levels in excess of established standards, create a substantial permanent increase in ambient noise, or create a substantial temporary or periodic increase in ambient noise levels.

The information in this section is based on data from the City of Sacramento 2030 General Plan and 2030 General Plan Master Environmental Impact Report, the City's Municipal Ordinance, and the Federal Highway Administration (FHWA) guidelines for roadway construction noise.

No public and agency comments related to noise were received during the public scoping period in response to the NOP.

4.6.2 Environmental Setting

Fundamentals of Environmental Noise and Vibration

Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table 4.6-1, Definition of Acoustical Terms.

Table 4.6-1, Definition of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hertz [Hz])	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.

Table 4.6-1, Definition of Acoustical Terms

Term	Definitions
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L01, L10, L50, L90	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level (L_{dn} or DNL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-weighted levels measured from various noise sources are shown in Table 4.6-2, Typical Noise Levels in the Environment.

Table 4.6-2, Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 1,000 feet		Rock concert
	110 dBA	

Table 4.6-2, Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
Pile driver at 100 feet	100 dBA	
		Night club with live music
	90 dBA	
Large truck pass by at 50 feet		
	80 dBA	Noisy restaurant
Freeway at 100 feet		Garbage disposal at 3 feet
Gas lawn mower at 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial/Urban area daytime		Normal speech at 3 feet
Suburban expressway at 300 feet	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
Most quiet remote areas	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: ASI 2013

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources creating a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L01, L10, L50, and L90, are commonly used. They are the A-weighted noise levels equaled or exceeded during 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period. A single number descriptor called the Leq is also widely used. The Leq is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, it is important to account for the difference in response that people have to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, Ldn or DNL (day/night average sound level), was developed. The DNL divides the 24 hour day into the daytime of 7:00 a.m. to 10:00 p.m. and the nighttime of 10:00 p.m. to 7:00 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The community noise equivalent level (CNEL) is another 24-hour average that includes both an evening and nighttime weighting.

Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV) and another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. In this section, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction generated vibration for building damage and human complaints. Table 4.6-3, Human Reaction and Building Damage from Vibration, describes the reactions of people and the effects on buildings that continuous vibration levels produce, based on a vibration guidance manual prepared by the California Department of Transportation (Caltrans 2004). The perception levels shown in Table 4.6-3 are to be used as a guide as vibrations approaching the threshold of perception levels depend on the level of sensitivity of individuals.

Table 4.6-3, Human Reaction and Building Damage from Vibration

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Caltrans 2004.

Low level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Regional Setting

Roadway Traffic Noise

The City of Sacramento General Plan 2030 EIR provides an overview of existing sources of noise in the area (City of Sacramento 2009). The most significant source of noise is vehicular traffic on the roadway network of the City. The noise level produced by a roadway is a function of the traffic volume and speed. Several major freeways are within the City; these are Interstate 5 (I-5), Interstate 80 (I-80), Capital City Freeway (Interstate 80 Business), US 50, State Route 99 (SR 99), and State Route 160 (SR 160). There are also local roads that experience high traffic volumes and contribute to traffic noise. Some noise receptors, such as residences, built near these high-traffic corridors have some level of noise attenuation such as a sound wall or barrier. All noise receptor structures also have built-in interior noise attenuation as a result of building construction and insulation.

Railroad Noise

There are three Union Pacific (UP) railway routes within the City. The three routes include a north/south route past California State University at Sacramento, a north/south route through downtown Sacramento, and the east/west route through West Sacramento and to North Sacramento. These UP railway routes transport freight trains and Amtrak passenger trains. In addition to noise generated by the trains themselves, noise is generated where trains intersect roadways by the warning bells used to alert motorists of a train's arrival.

Light Rail Noise

The City's Sacramento Regional Transit light rail is a major component of the City's transit system and runs through the City along three routes. These routes run approximately 69 light rail trips on weekdays and between 56 and 63 trips on weekend days. As will heavy rail, warning bells at intersections where light rail crosses a street contribute to ambient noise as well.

Aircraft Noise

The City is served by five airports, the Sacramento International Airport, Executive Airport, Mather Airport, McClellan Air Field, and Rio Linda Airport. Of these airports, the Sacramento

International Airport provides the majority of commercial passenger flights. McClellan Airfield serves military civilian, and public agency aircraft operators. Mather Airport is used for air cargo and military purposes as well as for civilian and public agency general aviation operations. The Executive Airport is a public use airport owned and operated by the County of Sacramento that primarily services smaller, private planes. The Rio Linda Airport is a small airport located just north of the City's Robla Focused Opportunity Area in North Sacramento.

Other Sources of Noise

Other sources of noise include stationary sources including outdoor equipment, landscaping maintenance activities, shipping and loading facilities, industrial facilities such as concrete crushing facilities and recycling centers, and outdoor sporting facilities that attract large numbers of spectators such as university and high school football stadiums.

Project Area Setting

Project Area

The land uses sensitive to noise identified in the project area include residential areas, schools, daycare facilities, religious facilities, and passive recreational areas. The proposed project is located to the north of Elder Creek Road, to the west of 65th Street, east of 63rd Street, and directly south of Morrison Creek. The project site is zone residential and the project area is generally zoned residential as well. The project site is vacant and undeveloped. Surrounding land uses include residential homes to the south, north, west and east, with religious uses (churches) located to the north, east, and west of the project site.

No noise measurements were taken for the proposed project. Existing roadway noise along Elder Creek Road, directly south of the project site, is approximately 65 CNEL at the centerline with the noise contours going out as low as 60 CNEL (City of Sacramento 2009a). Typically in residential-use areas, the ambient nighttime and daytime noise levels range from 35-55 dBA (ASI 2013).

4.6.3 Regulatory Framework

Federal

Federal Noise Control Act of 1972

The basic motivating legislation for noise control in the U.S. was provided by the Federal Noise Control Act (1972), which addressed the issue of noise as a threat to human health and welfare, particularly in urban areas. In response to the Noise Control Act, the Environmental Protection Agency (EPA) published Information on Levels of Environmental Noise Requisite to Protect

Public Health and Welfare with an Adequate Margin of Safety (EPA 1974). In summary, EPA findings were that sleep, speech, and other types of essential activity interference could be avoided in residential areas if the Ldn did not exceed 55 dBA outdoors and 45 dBA indoors. The EPA intent was not that these findings necessarily be considered as mandatory standards, criteria, or regulatory goals, but as advisory exposure levels below which there is no reason to suspect that the general population would be at risk from any of the identified health or welfare effects of noise. The EPA Levels report also identified 5 dBA as an adequate margin of safety before an increase in noise level would produce a significant increase in the severity of community reaction (i.e., increased complaint frequency, annoyance percentages, etc.) provided that the existing baseline noise exposure did not exceed 55 dBA Ldn.

State

California Standards for Noise-Compatible Land Uses

The State of California *2003 General Plan Guidelines* (Guidelines) promotes use of Ldn or CNEL for evaluating noise compatibility of various land uses with the expected degree of noise exposure (OPR 2011). The California Office of Planning and Research has begun its 2013 update of the General Plan Guidelines (OPR 2011). The designation of a level of noise exposure as "normally acceptable" for a given land use category implies that the expected interior noise would be acceptable to the occupants without the need for any special structural acoustic treatment. The Guidelines identify the suitability of various types of building construction relative to the range of customary outdoor noise exposures. The Guidelines provide each local community some leeway in setting local noise standards that allow for the variability in individual perceptions of noise in that community. Findings presented in EPA's 1974 information paper, as described above, have had an obvious influence on the content of the State Guidelines, most importantly in the latter's choice of noise exposure metrics and in the upper limits for the "normally acceptable" exposure of noise-sensitive uses (i.e., no higher than 60 dBA Ldn or CNEL for low-density residential, which is just at the upper limit of the 5 dBA "margin of safety" defined by the EPA for noise-sensitive land use categories).

Local

City of Sacramento General Plan 2030

Goal EC 3.1 Noise Reduction: Minimize noise impacts on human activity to ensure the health and safety of the community.

> **Policy EC 3.1.1:** Exterior Noise Standards. The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1 [see Table 4.6-4] to the extent feasible.

Table 4.6-4, Exterior Noise Compatibility Standards for Various Land Uses

Land Use Type	Highest level of Noise Exposure That is Regarded as "Normally Acceptable" (Ldn or CNEL)
Residential – Low Density Single Family, Duplex, Mobile Homes	60 dBA
Residential – Multi-Family	65 dBA
Urban Residential Infill and Mixed-Use Projects	70 dBA
Transient Lodging – Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings – Business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Source: City 2009b.
Notes:
As defined in the Guidelines, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."
Ldn or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.
CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.
dBA or A-weighted decibel scale is a measurement of noise levels.
The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.
With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High), Urban Corridor (Low or High).
All mixed-use projects located anywhere in the City of Sacramento.
Reference:
City of Sacramento (City). 2009b. *City of Sacramento 2030 General Plan*. March 3, 2009.

Policy EC 3.1.2: Exterior Incremental Noise Standards. The City shall require noise mitigation for all development that increases existing noise levels by more than the allowable increment shown in Table EC 2 [see Table 4.6-5 below], to the extent feasible.

Table 4.6-5, Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and Buildings where people normally sleep (1)		Institutional land uses with primarily daytime and evening uses (2)	
Existing Ldn	Allowable Noise Increment	Existing Peak Hour Ldn	Allowable Noise Increment
45	8	45	12

50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: City 2009b.
Notes:
(1) This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
(2) This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.
Reference: City of Sacramento (City). 2009b. *City of Sacramento 2030 General Plan*. Adopted March 3, 2009.

Policy EC 3.1.3: Interior Noise Standards. The City shall require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA L_{dn} for residential, transient lodgings, hospitals, nursing homes, and other uses where people usually sleep; and 45 dBA L_{dn} (peak hour) for office buildings and similar uses.

Policy EC 3.1.5: Interior Vibration Standards. The City shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on the current City or Federal Transit Administration (FTA) criteria.

Policy EC 3.1.7: Vibration. The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in close proximity to historic buildings and archaeological sites and require all feasible mitigation measures be implemented to ensure no damage would occur.

Policy EC 3.1.10: Construction Noise. The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses to the extent feasible.

City of Sacramento City Code

City's Noise Ordinance, City Code Chapter 8.68, Noise Control, sets limits for exterior noise levels on designated residential property and interior noise levels pertaining to multiple dwelling units. The ordinance states that exterior noise shall not exceed 55 dBA during any cumulative 30-minute period in any hour during the day (7 a.m. to 10 p.m.) and 50 dB during any cumulative 30-minute period in any hour during the night (10 p.m. to 7 a.m.). The ordinance sets somewhat higher noise limits for time intervals of shorter duration; however, noise in residential areas must never exceed 75 dB during the day and 70 dB at night.

Section 8.68.080.E (Exemptions) states that noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of 7 a.m. and 6 p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between 9 a.m. and 6 p.m. on Sunday are exempt; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days.

Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work. It should be noted that the following activities are specifically exempted from the provisions of the City of Sacramento Noise Ordinance (Section 8.68.080.E (Exemptions)):

- School bands, school athletic and school entertainment events. School entertainment events shall not include events sponsored by student organizations.
- Outdoor gatherings, public dances, shows and sporting and entertainment events provided said events are conducted pursuant to a discretionary license or permit by the City or County.
- Activities conducted on parks and public playgrounds, provided such parks and public playgrounds are owned and operated by a public entity.
- Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work.
- Noise sources due to the construction (including excavation), demolition, alteration or repair of any building or structure between the hours of 7 a.m. and 6 p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between 9 a.m. and 6 p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work.

- Noise sources associated with agricultural operations provided such operations take place between the hours of 6 a.m. and 8 p.m.; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order.
- Any mechanical device, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during period of adverse weather conditions or when the use of mobile noise sources is necessary for pest control; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order.
- Noise sources associated with maintenance of street trees and residential area property provided said activities take place between the hours of 7 a.m. and 6 p.m.
- Tree and park maintenance activities conducted by the city department of parks and community services; provided, however, that use of portable gasoline-powered blowers within 200 feet of residential property shall comply with the requirements of Section 8.68.150 of this chapter.
- Any activity to the extent provisions of Chapter 65 of Title 42 of the United States Code, and Articles 3 and 3.5 of Chapter 4 of Division 9 of the Public Utilities Code of the state of California preempt local control of noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas, any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States, any other activity to the extent regulation thereof has been preempted by state or federal law or regulation.
- Any noise sources associated with the maintenance and operation of aircraft or airports which are owned or operated by the United States. (Prior code § 66.02.203).

4.6.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines, applicable agency plans, policies, and/or guidelines, and agency and professional standards, the proposed project would have a noise impact if it would:

a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels;

c. Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d. Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

Analysis Methodology

The above standards of significance are analyzed in this section as the basis for determining the significance of project impacts related to noise. Additional detail about the implementation of the above standards of significance and methodology for the analysis is provided below, based on local general plans and ordinances, as described in Section 4.6.3 Regulatory Framework, and based on other information described below. If necessary, mitigation measures are proposed to reduce impacts to acceptable levels.

The proposed project as outlined in Chapter 3, Project Description, does not include the construction of any structures and involves only the placement of a clean soil cap over what is now a potentially unsafe site. The proposed project would not result in impacts related to the following criteria as stated below, and these topics would not be discussed further in this EIR:

b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels: The project does not propose the use of groundborne vibration construction equipment or activities such as pile driving. Construction equipment and activities would be limited to grading activities, import of soils, and constructing culverts to assist in diverting water runoff. Construction activities would cease after one month. Therefore, the proposed project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

c. Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project: The project proposes the placement of a clean soil cap and does not include the construction of any structure or operational uses. There would be no permanent increase due to an operational use. Upon construction completion, the proposed project would be complete. Therefore, the proposed project would not create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels: The proposed project is not located within an airport land use plan or within two miles of a public or public use airport (Sacramento Area Council of Governments [SACOG] 2013).

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels: The proposed project is not located within the vicinity of a private airstrip (SACOG 2013).

Impact Significance

Construction Noise Impacts

Impacts would be considered significant under noise standard a. and d. above if noise-generating construction activities occur outside the allowed hours of 7 a.m. and 6 p.m., on Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday; or between 9 a.m. and 6 p.m. on Sunday (City Zoning Code).

Impacts and Mitigation

This section provides a detailed evaluation of potential noise impacts. The noise impact analysis addresses exceedance of existing noise level standards established within the local general plan or noise ordinance and creating a substantial temporary increase in ambient noise levels (noise standard a. and d.).

CONSTRUCTION NOISE IMPACTS (PROJECT IMPACTS)	
Impact 4.6-1:	The construction of the proposed project would not expose persons to or generate noise levels in excess of local standards, or create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.6-1, below.
Significance after Mitigation:	Less than significant.

General Discussion

During the project, noise from construction activities would add to the noise environment in the immediate project area. During construction, anticipated equipment that would be used includes backhoes, front-end loaders, bull dozers, and dump trucks. Construction activities include grading and site preparation work occurring over a one-month period. Table 4.6-6, Construction Equipment Noise Levels, identifies noise levels for the project's construction equipment.

Table 4.6-6, Construction Equipment Noise Levels

Construction Equipment	Actual Lmax (dBA) at 50 feet
Backhoe	78
Front End Loader	79
Dozer	82
Dump Truck	76
Source: FHWA 2006	

Activities involved in construction would generate maximum noise levels ranging from 82.5 dBA to 87.7 dBA at a distance of 25 feet (**Appendix F, Noise Data**). In addition, noise would be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of soil materials to the construction, including earthmoving activities. This noise increase would be of limited duration (one month) and, because construction activities would occur during daytime hours established within the City's Noise Ordinance at Section 8.68, construction activities would be exempt from the provisions of the City of Sacramento Noise Ordinance (Section 8.68.080 Exemptions). However, as there are residences located within a quarter mile of the project site, the mitigation measure below is recommended to further reduce potential construction noise impacts to surrounding sensitive receptors. With implementation of Mitigation Measure 4.6-1 below, noise impacts would be less than significant.

Mitigation

Mitigation Measure 4.6-1

~~Prior to grading permit issuance, the~~ The Construction Contractor shall implement, to the satisfaction of the City of Sacramento and to the greatest extent feasible, the following measures to ensure that, during construction, construction noise would be reduced by the greatest extent feasible when within 100 feet of a residential use or sensitive receptor:

- Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.
- All construction equipment shall use available noise suppression devices and properly maintained mufflers. All internal combustion engines used in the project area shall be equipped with the type of muffler recommended by the vehicle manufacturer. In addition, all equipment shall be maintained in good mechanical condition to minimize noise created by faulty or poorly maintained engine, drive-train, and other components.
- Construction noise reduction methods (i.e., shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment) shall be employed where feasible. Staging of construction equipment and unnecessary idling of equipment shall be avoided whenever feasible. "Feasible," as used here, means that the implementation of this measure would not have a notable effect on construction operations or schedule.
- Property owners and occupants located within 100-feet of the project construction site shall be sent a notice, at least 15 days prior to commencement of construction, regarding the construction schedule of the proposed project. A sign, legible at a distance of 25 feet shall also be posted at the project construction site. All notices and signs shall be reviewed and approved by the City, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors.
- During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors.

4.7 Transportation/Traffic

4.7.1 Introduction

This section describes the existing traffic and transportation setting of the project area and surrounding areas, and evaluates whether the proposed project would result in adverse traffic and transportation impacts. Specifically, the evaluation focuses on whether the proposed project would result in significant traffic impacts to surrounding land uses during construction.

The description of the existing setting is based on information in the *City of Sacramento 2030 General Plan Master Environmental Impact Report* (City of Sacramento 2009a), and Transportation Concept reports prepared by the California Department of Transportation (Caltrans) for highways in the project area. The evaluation of impacts is based on estimates of increased roadway traffic generated by construction trips to and from the project.

No Public and agency comments related to transportation/traffic were received during the public scoping period in response to the NOP.

4.7.2 Environmental Setting

Regional Setting

The project site is within the City of Sacramento. The major access routes into the project area are described below. The project site is generally bounded by 65th Expressway on the east, Elder Creek Road on the south, and 63rd Street on the west.

State Highways

State highways that go through the study area or provide access into the project site include segments of US Highway 50 (US 50) and State Route 99 (SR 99). These highways are described below.

US Highway 50 is a major east/west route in the City extending from downtown Sacramento to the Tahoe Basin. US 50 is an eight-lane freeway within the City. Accidents, events, and other incidents in the corridor can further increase congestion related delays in either direction, on any day, including weekends (City of Sacramento 2005).

State Route 99 (SR 99) is a four- to six-lane highway extending south from Business 80 to South Sacramento, Elk Grove, and into the Central Valley. Within the City, SR 99 has high occupancy vehicle (HOV) lanes in each direction to encourage carpooling during peak commute periods. SR 99 is a major commute route between South Sacramento, Elk Grove, and downtown Sacramento (City of Sacramento 2005).

Local Roadways (see Figure 1)

65th Expressway is a major four-lane north-south arterial from Folsom Boulevard to Florin Road located east of the project site.

Elder Creek Road is a four-lane east-west arterial from Stockton Boulevard to Florin Perkins Road located south of the project site. Farther east of Florin Perkins Road, Elder Creek Road is a two-lane roadway. West of Stockton Bolulevard it becomes 47th Avenue.

Stockton Boulevard is a four-lane, northwest-southeast roadway located west of the project site. Stockton Boulevard provides access to and from US 50, and extends southerly through South Sacramento.

63rd Street is a two-lane north-south local street that provides direct access to the site. The street terminates at Morrison Creek to the north and is not a through street.

Transit Service

The Sacramento Regional Transit District (RT) provides bus service near the project site. Two bus routes operate in the project area: Bus Route 81 (65th Expressway), and Route 51 (Stockton Boulevard) provides both weekday and weekend service in the project area. RT also provides light rail service in the Sacramento area. However, there is currently no light rail station in the project vicinity (RT 2013).

Bikeways

A Sacramento City/County Bicycle Task Force developed a 2010 Bikeway Master Plan for the region. The Master Plan, adopted in 1995, is a policy document that was prepared to coordinate and develop a bikeway system that will benefit and serve the recreational and transportation needs of the public (City, County, 2010). Based on the Master Plan, the City has developed an extensive bikeway network in the study area consisting of primarily Class II and Class III bikeways and limited Class I bikeways. A Class I bikeway (bike path) provides a separated right-of-way for exclusive use by bicycles and pedestrians. A Class II bikeway (bike lane) provides a striped lane for one-way travel on a street or highway. A Class III bikeway is a facility shared with motorists and identified only by signs, and has no pavement markings or lane stripes. Within the study area, 65th Expressway and Elder Creek Road contain existing Class II bike lanes. In addition, Class II bike lanes also exist along Stockton Boulevard (City, 2013a).

4.7.3 Regulatory Framework

State Regulations

California Department of Transportation

Caltrans is responsible for all state-owned roadways and provides for planning, design, construction, operation, and maintenance of all of its facilities. Any improvements or modifications that would extend into the rights-of-way for a state highway or other state facility within the study area would need to be approved by Caltrans via an encroachment permit.

Caltrans seeks to maintain a target level of service (LOS) at the transition between LOS C and D on state highways. However, Caltrans acknowledges that this may not always be feasible and recommends that the Lead Agency consult with Caltrans to determine the appropriate target LOS

(Caltrans, 2002). If an existing state highway facility is operating at less than the appropriate target LOS, the existing LOS should be maintained (Caltrans, 2002).

The existing LOS for both US 50 and SR 99 is LOS F. In accordance with the Caltrans Guide for the Preparation of Traffic Impact Studies (Caltrans, 2002), the existing LOS for these two state highways should be maintained. Thus, the target LOS for US 50 in the project area is LOS F (Caltrans 2010a), and the target LOS for SR 99 is LOS F (Caltrans 2010b).

Local

City of Sacramento

The City of Sacramento Department of Transportation is responsible for maintaining City-owned roads, bridges and related facilities. The 2009 General Plan provides policies for achieving a balanced transportation system. As defined in Policy M 1.2.2 of the Mobility Element, LOS A-D should be maintained on all roads and intersections at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.

4.7.4 Impacts and Mitigation Measures

Standards of Significance

Based on Appendix G of the CEQA Guidelines, applicable agency plans, policies, and/or guidelines, and agency and professional standards, the proposed project would have an impact on transportation and/or traffic if it would:

a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
c. Result in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks;
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
e. Result in adequate emergency access; and

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Analysis Methodology

The standards of significance above are assessed as the basis for determining the significance of impacts related to traffic and transportation systems. If necessary, mitigation measures are proposed to reduce significant impacts to less than significant.

As indicated in Section 4.7.3, Regulatory Framework, the City considers LOS D or better to be acceptable for signalized intersections (Policy M 1.2.2). A significant impact would result if the level of service dropped below LOS D. The Caltrans target levels of service for the state highways are also provided above in Section 4.7.3, Regulatory Framework. The target level of service for both US 50 and SR 99 is LOS F. The approach for the evaluation of construction and operational effects of the proposed project is further described below.

The proposed project would not result in transportation/traffic impacts related to the following criteria as stated below, and will not be discussed further in this EIR.

c. Air Traffic Patterns: The nearest airport to the project site is the Sacramento Executive Airport, located approximately three miles to the west. This distance precludes the possibility of the proposed project altering aviation patterns or creating aviation hazards. No impacts would occur.

d. and e. Roadway Safety and Emergency Access: The proposed project would not result in changes to the existing circulation patterns or require road closures that may impact pedestrian safety or emergency access. The project site is located at the terminus of 63rd Street, a discontinuous roadway, and therefore, does not allow for any through traffic. No impacts would occur.

f. Public Transit, Bicycles, and Pedestrians: The project would not disrupt existing or planned transit services or facilities or create an inconsistency with applicable policies related to transit. Similarly, the project would not result in need for additional pedestrian or bicycle facilities. No impacts would occur.

Project Construction

Construction of project components would have temporary effects on segments of the roadway network in the project area by increasing traffic on roads that provide access to the project site. Most of the construction-related trips would likely occur between 6:00 A.M. to 7:00 A.M. and 3:00 P.M. to 4:00 P.M., which are outside of the typical A.M. and P.M. peak hours within the project area.

Project Operations

The proposed project would put a soil cap over an existing dump and would not result in any new land uses. No operational trips would generate post project completion. The City establishes the following criteria for preparing a Traffic Study:

- The project will generate more than 100 new trips during the peak traffic hours of the adjacent roadways (a.m., p.m., or Midday).
- The project will generate more than 50 new peak hour trips, and if a transportation facility (i.e., a roadway and/or intersection) located on a main access route to the site is currently operating at an unacceptable Level of Service.
- The project may have a potential to create a hazard to public safety.
- The project could substantially change the off-site transportation system (including facilities for vehicles, buses, light rail, pedestrians, bikes, etc.) or connections to it.

The final determination regarding the need for traffic study is based on the potential for creating significant traffic and circulation related impacts together with the above-mentioned aspects. Since the project would not result in any operational trips the transportation analysis is devoted to the potential impacts during the construction phase (City of Sacramento, 2013b).

Impacts and Mitigation

TRAFFIC IMPACTS	
Impact 4.7-1:	The proposed project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, or an applicable congestion management program.
Significance before Mitigation:	Potentially significant.
Mitigation:	See Mitigation Measure 4.7-1, below.
Significance after Mitigation:	Less than significant.

General Discussion

The project site would not generate any operational vehicle trips traffic and would not impact existing or future levels of service at any intersections, or conflict with any applicable policy or congestion management program. No operational traffic impacts would occur. The analysis below is for construction period traffic impacts.

The proposed project would be constructed within a one-month period. Implementation of the proposed project would include import of clean soil cap to the project site. Approximately 8,370 cubic yards (CY) of clean, imported soil (free of contamination from petroleum products or organics and construction debris, and not containing solely rock or solely clay material, hereafter referred to as "select soil") and 17,400 square yards (sq yds) of erosion control seed mix would be required to provide for a 15-inch thick select-soil cap and vegetation. The source of select soils for the soil cap has not as yet been determined. There would likely be multiple sources for this material. Therefore, it is likely that different quantities of material would be imported at different times. Assuming a 16-CY load by each haul truck, there would be no more than 525 truck trips over a three-week soil-delivery period.

The likeliest route to deliver the material would be Southbound 99 (or Northbound 99), exiting 47th Avenue/Elder Creek Road and traveling east, then making a left onto 63rd Street Loop and immediately entering the site to the east. Another alternative route could be travelling east or west on US 50, exiting 65th Expressway and traveling south, then making a right turn onto Elder Creek Road, and finally turning right on 63rd Street to enter the site from the east.

All construction activity, including a staging area, would occur within the project site. The trucks scheduled for soil delivery to the project site are expected to depart immediately after delivering the soil, thereby, not requiring long-term parking on surface streets. However, the presence of large and slow-moving vehicles and construction equipment in the project vicinity may cause delays and inconvenience for motorists. Accordingly, Mitigation Measure 4.7-1 is proposed, which would require implementation of a Construction Traffic Control Plan during construction activities to minimize impacts on surrounding roadways and nearby parking areas. The implementation of this mitigation measure would reduce potential impacts to a less-than-significant level.

Mitigation

Mitigation Measure 4.7-1: Prior to the commencement of construction activities, CalRecycle shall prepare a Traffic Control Plan that would need to be approved by the City of Sacramento Public Works Department. The Traffic Control Plan shall include the following:

- Construction-related truck traffic shall be scheduled to travel during non-peak hours (8:30 a.m. to 4:00 p.m.) on surrounding roadways.
- Proposed routing for all delivery and haul trucks shall be identified. To the extent feasible, truck routing shall avoid or minimize travel through residential areas.
- Notification shall be sent to all neighboring property owners two working days in advance of beginning work. The notice shall describe the anticipated duration of construction, and the name and daytime telephone number of the person performing the work, as well as the CalRecycle project manager.

5. ALTERNATIVES TO THE PROPOSED PROJECT

5.1 Introduction

CEQA requires an EIR to describe and evaluate a reasonable range of alternatives to the proposed project that could feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening any significant impacts (State CEQA Guidelines Section 15126(a)). This section describes the range of alternatives considered, and compares the merits of the alternatives.

The following comment related to alternatives was received during the public scoping period in response to the NOP:

- The EIR should establish for each action alternative concentration specific cleanup goals for contaminants of concern to ensure that above background, health risk based, or other enforceable regulatory thresholds are not excluded from the cleanup.

5.2 Project Alternatives

CalRecycle has identified two alternatives to the proposed project:

Alternative 1: Site Clean Closure Alternative—Complete removal of all waste and waste residuals, including contaminated soils, to a level where any remaining contaminant concentrations are at or below background levels or levels established by relevant regulatory agencies.

Alternative 2: No Project Alternative—Assumes existing conditions, with the project site remaining in its present state. People and animals in the project area would be exposed to airborne contaminants through inhalation, ingestion, and direct skin contact resulting in adverse health effects.

An off-site alternative is not considered because the proposed project is specific to the project site.

5.3 Project Objectives

The Solid Waste Disposal and Codisposal Site Cleanup Program (Program) was created for the cleanup of solid waste disposal sites throughout California where the responsible party either cannot be identified or is unable or unwilling to pay for timely remediation. In light of the limited availability of State funding, CalRecycle must prioritize projects for cleanup, in order to maximize such use of available funds. In prioritizing projects for cleanup CalRecycle may consider, among other factors: (1) the actual or potential degree of risk to public health and safety and/or the environment posed by conditions at the site as determined by a comparison with state minimum standards (27 CCR, Chapter 3, Subchapter 4, commencing with section 20510 and Subchapter 5, commencing with section 21099) and (2) the ability of CalRecycle to perform a timely and efficient site cleanup which adequately addresses state minimum standards using available funds and maximizing such use of available funds (Public Resources Code Section 48021(a), 14 CCR 18903-04).

CalRecycle is thus constrained in its ability to conduct a remediation that goes beyond bringing the site into compliance with state minimum standards, in that any endeavor exceeding this objective would be inconsistent with its prioritization mandate. Within this legal framework, the project objectives are as follows:

- Achieve adequate compliance with state minimum standards for closed sites relating to grading, leachate control, drainage and erosion control and other violations at the project location in a timely and efficient manner utilizing and maximizing available funds as required by law.
- Minimize the exposure of the public and the environment to potentially hazardous materials.

5.4 Significant Impacts

All potentially significant impacts of the proposed project as discussed in Chapter 4, with mitigation incorporated, are less than significant. The proposed project would not result in significant and unavoidable impacts that would need to be avoided or lessened in consideration of the alternatives to the proposed project.

5.5 Alternatives Analysis

CEQA Guidelines at Section 15126.6(d) allows the impacts of the alternatives to be discussed at a sufficient level of detail, but not as detailed as for the proposed project, to provide the public, other public agencies, and decision-makers enough information to evaluate the alternatives.

5.5.1 Site Clean Closure Alternative

Description

The Site Clean Closure Alternative would involve the complete removal of all waste and waste residuals, including contaminated soils, to the point where remaining contaminant concentrations are at or below background levels or clean up levels established by the relevant regulatory agencies. While CalRecycle has not adopted regulations governing clean closure of solid waste sites, they have developed guidelines for overseeing a clean closure. Clean closure is a multi-step process that includes, but is not limited to, the following:

1. Site characterization
2. Clean closure plan preparation

3. Review and approval
4. Actual clean closure; and
5. Verification and approval of the clean closure.

Because the project site was not a permitted solid waste disposal site, advance notification to the appropriate regulatory agencies (RWQCB, Sacramento County Department of Environmental Management, and possibly SMAQMD and/or DTSC) would be required under this alternative to allow review and approval of the proposal as well as observation of the site prior to, during, and after clean closure to verify that the site has been properly clean closed.

The project site is estimated to contain approximately 86,000 cubic yards of contaminated waste (CIWMB 2004). The contaminated fill would be removed and replaced with select clean soil. The surface would be compacted and graded and then hydroseeded to minimize erosion. The construction portion of this project alternative would take about four to seven weeks to complete. Assuming that 16-cubic-yard-capacity trucks are used for hauling the waste away and returning with clean soil to fill in the resulting pit, the project alternative would generate approximately 10,750 truck trips spread out during an approximately seven-week period. As with the proposed project, there would be no operations under this alternative, and therefore, there would be no operational impacts.

In addition to CalRecycle who would oversee the Clean Closure activity, the RWQCB and Sacramento County Department of Environmental Management must both make a final determination that a solid waste disposal site has been properly clean closed. This determination ensures that the potential threats to public health and safety and the environment due to the disposal of solid waste at the site have been mitigated by the clean closure process.

Clean closure of the project site would ensure that waste materials and residuals are removed and disposed of in a safe and environmentally sound manner. Further, it provides the advantage of postclosure land uses for the site. While there is the potential for the site to be used for future development, this alternative only considers clean closure of the site and does not consider development of any kind or construction of any structures.

It should be noted that the Site Clean Closure Alternative is not a feasible alternative because clean closure of the site could not be conducted under the Solid Waste Disposal and Codisposal Site Cleanup Program. Clean closure would go beyond bringing the site into compliance with state minimum standards that the program is designed to achieve. CalRecycle is constrained in its ability to conduct a remediation that goes beyond bringing the site into compliance with state minimum standards. Therefore, this alternative would not achieve the project objectives, as described in Section 5.3 above.

Impacts Compared to the Proposed Project

Resource Topics with No Impacts under the Proposed Project

As with the proposed project, because the location is the same, the project proposes no structures, and the project is a short-term construction project, the following resource topics would have no impact under the Site Clean Closure Alternative:

- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

Hazards and Hazardous Materials

This alternative would differ from the proposed project in that the waste and contaminated soil would be hauled off site to be recycled or disposed of at an approved waste disposal or treatment facility. Handling of wastes and contaminated soil under this alternative would be in keeping with the regulations governing the transport, treatment, storage, and disposal of hazardous wastes. Likewise, OSHA safety standards would be maintained for workers and the haulers. As this alternative would adhere to all federal, state, and local laws regulating hazards and hazardous materials, impacts would be less than significant.

Compared to the proposed project which would have no impact, the Site Clean Closure Alternative would have less-than-significant impacts from hazards and hazardous materials.

Resource Topics with Less-than-Significant Impacts under the Proposed Project

For the following topics, the Site Clean Closure Alternative would require the same mitigation measures and would result in the same less-than-significant impacts with the implementation of identified measures as the proposed project:

- Biological Resources
- Cultural Resources
- Geology and Soils
- Hydrology and Water Quality

Air Quality and GHG Emissions

This alternative would generate approximately 10,750 truck trips. As can be seen from the table above, this alternative would not exceed the SMAQMD threshold for NOx emissions, as shown in Table 5-1 below. The SMAQMD does not expect construction activity to generate high concentrations of other criteria air pollutants, such as NO_2, SO_X, CO, and, therefore, does not recommend evaluation of these pollutants. The Site Clean Closure Alternative would have a less-than-significant construction emissions impact.

Because the SMAQMD has not established thresholds of significance for GHG emissions, this alternative would be required to abide by the best management practices for GHG during construction, as would be done for the proposed project. This alternative would have a less-than-significant impact related to GHG emissions.

Although this alternative would generate more truck trips and would have a longer construction period than the proposed project, construction activities under this alternative would not exceed significance thresholds for criteria pollutants as shown in Table 5-1 below. Similar to the proposed project, with implementation of the mitigation measures and best management practices, air quality and greenhouse gas emissions impacts under this alternative would be less than significant.

Table 5-1 Estimated Emissions for the Site Clean Closure Alternative

Construction Phase	Criteria Air Pollutant Emissions						GHG Emissions			
	NO_X	PM_{10}	$PM_{2.5}$	CO	SO_2	ROG	CO_2	CH_4	N_2O	CO_2e
Earth Moving Activities										
Construction Emissions (lbs/day)	135.96	262.04	6.06	111.53	2.19	15.14	4,458.39	0.30	0.00	4,464.72
SMAQMD CEQA Threshold	85 lbs/day	n/a	n/a	n/a	n/a	--	--	--	--	--
Would Project Exceed Threshold and Require Mitigation?	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:

Construction Emissions were calculated using CalEEMod. Emission values shown are those calculated after implementation of required construction control measures such as dewatering.

lbs/day = pounds per day

Maximum Emissions based on CalEEMod Summer Results
GHG Emissions based on CalEEMod Annual Results
-- = no threshold; lbs/day = pounds per day; n/a = not applicable

Noise

Although this alternative would generate more construction activity, and for a longer period of time, the construction equipment noise levels would not increase significantly. The project site is comparatively small at 3.6 acres and is therefore limited in the number of construction equipment that can operate at any one time. Construction activities would generate maximum noise levels ranging from 82.5 dBA to 87.7 dBA at a distance of 25 feet (see Appendix F), similar to the proposed project. The increased number of truck trips would create an additional source of noise on area roadways; however, the increase would be temporary. As with the proposed project, the noise increase would be of short duration and because construction activities would occur during daytime hours established within the City's Noise Ordinance at Section 8.68, construction activities would be exempt from the provisions of the City of Sacramento Noise Ordinance (Section 8.68.080 Exemptions). However, as there are residences located in close proximity to the project site, similar to the proposed project, Mitigation Measure 4.6-1 is recommended to further reduce potential construction noise impacts to surrounding sensitive receptors. Similar to the proposed project, construction noise impacts under the Site Clean Closure Alternative would be less than significant.

Transportation/Traffic

This alternative would result in construction traffic impacts similar to the proposed project. As with the proposed project, this alternative would be subject to Mitigation Measure 4.7-1 which requires implementation of a Construction Traffic Control Plan. Even though this alternative would generate approximately 10,750 truck trips, the trips would be spread out over a longer construction period (roughly up to seven weeks).

Similar to the proposed project, with implementation of Mitigation Measure 4.7-1, construction traffic impacts under the Site Clean Closure Alternative would be less than significant.

5.5.2 No Project Alternative

Description

The No Project Alternative assumes that the existing conditions would remain. The project site would continue to pose a health hazard to people and pets in the project area from airborne contamination through inhalation, ingestion, and direct skin contact. The project site is zoned for residential use. However, because the Site Investigation Report has identified hazardous wastes at the project site, no residential development could occur under this alternative. Similar to the Site Clean Close Alternative, it is assumed that there would be no future development on the project site.

It should be noted that the No Project Alternative is not a feasible alternative because the Site Investigation Report identified hazardous wastes at the project site, a former burn dump site. CalRecycle is mandated by California Code of Regulations, Title 27 Section 21100(d) to apply closure regulations to former burn dump sites, such as the project site, that pose a threat to public health.

Impacts Compared to the Proposed Project

Resource Topics with No Impacts under the Proposed Project

Because the No Project Alternative would occur at the project site, and no structures would be constructed, the following resource topics would have no impact under this alternative:

- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

Hazards and Hazardous Materials

Under the No Project Alternative, the project site would remain as is. The Site Investigation Report prepared for the project site found contaminant concentrations exceeding the soluble threshold limit concentration (STLC) and evidence of waste exposure caused by erosion (CIWMB 2004).This alternative could create a significant hazard to the public by exposing people to airborne contamination, and could create a significant hazard to the environment from the potential for toxic substances to leach into the underlying water table because of the lack of a drainage system. Compared to the proposed project which had no impacts, the No Project Alternative, which would leave the contaminants in their present state, would create a significant and unavoidable impact exposing people and the environment to hazards and hazardous materials.

The mitigation measures required to reduce this significant effect would be to abide by the recommendations of the Site Investigation Report which recommends a cover be placed on the site to meet state minimum standards and to prevent exposure to the public and the environment, which is the proposed project.

Hydrology and Water Quality

Under the No Project Alternative, as discussed under Hazards and Hazardous Materials above, the hazardous waste identified at the project site has the potential to leach into the underlying water table. The lack of good drainage on the site has also resulted in evidence of waste exposure caused by erosion. Therefore, the No Project Alternative has the potential to provide a source of polluted runoff and to degrade water quality. As described above, this alternative assumes existing conditions with no actions to improve existing conditions. Therefore, compared to the proposed project, the No Project Alternative would have potentially significant and unavoidable impacts on hydrology and water quality.

Resource Topics with Less-than-Significant Impacts under the Proposed Project

Under the No Project Alternative the following resources would have no impacts because there would be no construction activities and the assumption is that the site would remain undeveloped and vacant.

- Air Quality and Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology and Soils
- Noise
- Transportation/Traffic

5.6 Alternatives Conclusion

Table 5-2, Summary Comparison of Impacts for Proposed Project and Alternatives, below, summarizes the impacts of the proposed project and the two project alternatives.

As shown in Table 5-2, Alternative 1, the Site Clean Closure Alternative, has greater environmental impacts compared to the proposed project. This alternative achieves the project objective of minimizing exposure of the public and the environment to potentially hazardous materials; however, it does not meet the project objective of consistency with CalRecycle's prioritization mandate. The Site Clean Closure Alternative far exceeds the state minimum standards and is not feasible for CalRecycle to implement, as previously described in Section 5.5.1.

Alternative 2, the No Project Alternative, compared to the project results in significant and unavoidable impacts regarding exposing people and the environment to hazardous materials, and degrade water quality. However, the No Project Alternative does not meet either project objective. Further, the No Project Alternative is infeasible because CalRecycle is mandated to protect human health and the environment in accordance with Title 27 California Code of Regulations (Chapter 3, Subchapter 4, commencing with section 20510 and Subchapter 5, commencing with section 21099).

An off-site alternative was not identified because the project is site-specific. Apart from the two alternatives discussed above, no other alternatives were identified for this project. Of the two alternatives identified, neither met both objectives of the project.

CEQA Guidelines at Section 15126.6 requires that an environmentally superior alternative be identified, which reduces or avoids to the greatest extent the environmental impacts identified for the project. As stated above, the No Project Alternative had fewer overall impacts than the proposed project, but it would result in significant and unavoidable impacts and did not meet the objective of protecting people and the environment which is the reason for the project. The Site Clean Closure Alternative did not reduce any of the proposed project impacts. Therefore, an environmentally superior alternative was not identified for the proposed project.

Table 5-2 Summary Comparison of Impacts for Proposed Project and Alternatives

	Proposed Project	Site Clean Closure Alternative	No Project Alternative
Air Quality and Greenhouse Gas Emissions			
Impact 4.1-1: The proposed project could potentially conflict with an applicable air quality plan and result in a cumulatively considerable net increase in any criteria air pollutants.	LS	LS↑	**N**
Impact 4.1-2: Construction activities from the proposed project would generate emissions of criteria pollutants on a short-term basis; these emissions could potentially result in violations of air quality standards.	LS	LS↑	**N**
Impact 4.1-3: The proposed project could potentially generate GHG emissions that would have a significant impact on the environment or would otherwise conflict with an applicable GHG reduction plan, policy, or regulation.	LS	LS↑	**N**
Biological Resources			
Impact 4.2-1: Proposed project activities may have a substantial adverse effect, either directly or through habitat modifications, on special-status wildlife species	LSM	LSM↑	**N**
Impact 4.2-4: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	LSM	LSM	**N**
Cultural Resources			
Impact 4.3-1: Implementation of the proposed project would not cause a substantial adverse change in the significance of a known historical or unique archaeological resource.	LS	LS	**N**
Impact 4.3-2: Implementation of the proposed project could cause a substantial adverse change in the significance of an as-yet undiscovered/unrecorded historical resource or unique archaeological resource	LSM	LS↑	**N**
Impact 4.3-3: Implementation of the proposed project could cause a substantial adverse change in the significance of an as-yet undiscovered/unrecorded	LSM	LS↑	**N**

Table 5-2 Summary Comparison of Impacts for Proposed Project and Alternatives

	Proposed Project	Site Clean Closure Alternative	No Project Alternative
paleontological resource or unique archaeological resource			
Impact 4.3-4: Implementation of the proposed project may cause disturbance to human remains, including those interred outside of formal cemeteries.	LSM	LSM↑	**N**
Geology and Soils			
Impact 4.4-1: The proposed project could result in substantial soil erosion or the loss of topsoil.	LS	LS↑	**N**
Hazards and Hazardous Materials			
Impact: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	N	N	**SU**
Hydrology and Water Quality			
Impact 4.5-1: Construction activities associated with the proposed project have the potential to degrade water quality due to the release of sediments and contaminants.	LSM	LSM↑	**SU**
Impact 4.5-2: The proposed project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or result in substantial erosion or siltation or flooding on- or off-site, or which could exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff	LS	LS↑	**N**
Noise			
Impact 4.6-1: The construction of the proposed project would not create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	LSM	LSM↑	**N**
Transportation/Traffic			
Impact 4.7-1: The proposed project's construction related vehicle trips would result in disruption of transportation system or cause inconvenience to neighboring land uses.	LSM	LSM↑	**N**
Cumulative Impacts			
Impact 6-1: The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality	LS	LS↑	**N**

Table 5-2 Summary Comparison of Impacts for Proposed Project and Alternatives

	Proposed Project	Site Clean Closure Alternative	No Project Alternative
standard.			
Impact 6-2: The proposed project together with cumulative development, including past, present and future development in the project area would not result in significant biological resources impacts.	LS	LS↑	**N**
Impact 6-3: The proposed project together with cumulative development, including past, present and future development would not result in significant cultural resources impacts.	LSM	LSM↑	**N**
Impact 6-4: The proposed project together with cumulative development, including past, present and future development could result in significant soil erosion impacts.	LS	LS↑	**N**
Impact 6-5: The proposed project together with cumulative development, including past, present and future development could result in substantial erosion or siltation or flooding on- or off-site, or which could exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff.	LS	LS↑	**N**
Impact 6-6: The proposed project together with past, present, and future projects could create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	LSM	LSM↑	**N**
Impact 6-7: The proposed project together with present and future projects could result in construction traffic impacts.	LSM	LSM↑	**N**

Key:

N No Impact
LS Less than Significant
LSM Less than Significant with Mitigation
SU Significant and Unavoidable

↑↓ Impact is greater or lesser than the proposed project

Changes from the proposed project impact are in **bold** text.

6. CUMULATIVE IMPACTS

6.1 Introduction

CEQA requires that in addition to project impacts, an EIR must discuss cumulative impacts. According to Section 15355 of the CEQA Guidelines:

'Cumulative impacts' refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Section 15130(a) of the CEQA Guidelines clarifies a number of issues with respect to cumulative impacts, as follows:

- An EIR should not discuss cumulative impacts to which the project would not contribute.
- If the combined cumulative impact (impacts from other projects combined with the impact from the proposed project) is not significant, then the EIR should briefly indicate why the impact is not significant, and no further evaluation is necessary.
- If the combined cumulative impact is significant, the EIR also must indicate whether the project's contribution to that significant cumulative impact will or will not be cumulatively considerable.
- An EIR may determine that the project's contribution is rendered less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

6.2 Analytical Approach

Section 15130(b) of the CEQA Guidelines provides additional guidance with respect to how an adequate cumulative impact analysis might be completed and notes that this may be based on:

A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the Lead Agency, or

A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.

To evaluate the cumulative impacts of the proposed project, the analysis in this EIR uses the City of Sacramento 2030 General Plan to ascertain cumulative impacts, as appropriate for the resource topic being evaluated. The cumulative context and the geographical area considered for each topic area are not necessarily the same. For example, because all development in an air basin contributes to regional emissions of criteria pollutants, the cumulative air quality discussion would consider emissions in the entire air basin. In contrast, because use and transport of hazardous materials are localized to the project site and access routes, the cumulative hazards and hazardous materials discussion would consider only other projects in the project area.

The following resource topics are not discussed in the cumulative impact analysis because the proposed project would not impact these areas as discussed in Chapter 7, Impact Overview and Growth Inducement: aesthetics, agriculture and forestry resources, land use and planning, hazards and hazardous materials, mineral resources, population and housing, public services, recreation, and utilities and service systems.

Resource topics for which the proposed project has the potential to have an impact, and for which the proposed project can potentially contribute an incremental impact that would be cumulatively considerable are discussed briefly in the impact analysis below.

6.3 Impact Analysis

Air Quality and Greenhouse Gas Emissions

The proposed project's cumulative geographic context for air quality and greenhouse gas emissions is the Sacramento Valley Air Basin which includes the project site and surrounding area.

Greenhouse gas emissions are by their nature, a cumulative impact. As discussed in Chapter 4, the proposed project would have a less-than-significant impact with respect to greenhouse gas emissions.

CRITERIA POLLUTANTS	
Impact 6-1:	The proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
Significance:	Less than significant.

Mitigation:	None required.

General Discussion

As discussed in the Air Quality and Greenhouse Gas Emissions section, the proposed project would not contribute to an existing exceedance of the ozone standards. Further, all projects in the Sacramento Valley Air Basin are required to implement the SMAQMD's Basic Construction Emissions Control Practices. According to the SMAQMD CEQA Guide, if an individual project's emissions would not exceed the significance thresholds, then it would not be expected to result in a cumulatively considerable contribution and the impact would be less than significant (SMAQMD 2011).

Biological Resources

The geographic context for cumulative impacts on biological resources is the project site and the area surrounding the project site.

BIOLOGICAL RESOURCES	
Impact 6-2:	The proposed project together with cumulative development, including past, present and future development in the project area would not result in significant biological resources impacts.
Significance:	Less than significant.
Mitigation:	None required.

General Discussion

The project area is designated a low density traditional neighborhood in the Fruitridge Broadway Community Plan (City of Sacramento 2009b). The project site and the surrounding area are not in an opportunity area identified in the Community Plan. The project site is surrounded by developed and disturbed areas occupied by single-family homes, mobile homes and some multi-family two-story residential buildings. Morrison Creek, which is adjacent to the site is channelized and does not support riparian habitat. The project site is the only undeveloped lot in the immediate vicinity.

The proposed project could impact sensitive raptor species that may use the project area for foraging. The impact would be less than significant with implementation of Mitigation Measures 4.2-1a and 4.2-1b. The impact and mitigation measures are confined to the project site and would not combine with potential projects in other parts of the neighborhood. The proposed project would not result in significant cumulative impacts on biological resources.

Cultural Resources

The geographic context for cumulative impacts on cultural resources is the project site and the area surrounding the project site.

	CULTURAL RESOURCES
Impact 6-3:	The proposed project together with cumulative development, including past, present and future development would not result in significant cultural resources impacts.
Significance:	Potentially significant.
Mitigation:	Mitigation Measures 4.3-2, 4.3-3, and 4.3-4.
Significance after Mitigation	Less than significant.

General Discussion

The proposed project does not have any historic resources, therefore, it would not contribute to a cumulative impact on historic resources. The proposed project together with past, present, and future development could potentially have a significant impact on an archaeological resource or could potentially disturb human remains, resulting in a cumulative significant impact. However, it is reasonable to assume that all projects would be required to comply with federal, state, and local laws to protect cultural resources similar to the proposed project. The implementation of Mitigation Measures 4.3-2, 4.3-3, and 4.3-4 would ensure that the proposed project's contribution to the potential cumulative impact is less than significant.

Geology and Soils

The geographic context for cumulative impacts from geology and soils is the project site. Although the entire State is a seismically active region, the specific conditions at individual project sites vary and can have different impacts. The project site does not have any seismic features that would result in potentially significant seismic impacts. Potential cumulative geological impacts are typically confined to specific areas and do not necessarily combine to create a cumulative impact.

SOIL EROSION	
Impact 6-4:	The proposed project together with cumulative development, including past, present and future development could result in significant soil erosion impacts.
Significance:	Less than Significant.
Mitigation	None required.

General Discussion

Soil erosion impacts are confined to the project site, and all projects, past, present and future, are required to abide by local laws and building codes to prevent soil erosion impacts during construction. The proposed project has a less-than-significant impact on soil erosion and would not contribute to a significant cumulative impact related to soil erosion.

Hydrology and Water Quality

The cumulative geographic context for hydrology and water quality impacts is the Morrison Creek watershed, which includes the project site and the surrounding area, within the larger Sacramento River watershed.

DRAINAGE IMPACTS	
Impact 6-5:	The proposed project together with cumulative development, including past, present and future development could result in substantial erosion or siltation or flooding on- or off-site, or which could exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff.
Significance:	Less than significant.
Mitigation:	None required.

General Discussion

Present and future projects are required to comply with local standards and requirements for controlling runoff and regulating water quality. All construction projects require National Pollution Discharge Elimination System (NPDES) permits from the Regional Water Quality Control Board which requires implementation of best management practices that reduce impacts to water quality. The proposed project would comply with all state and local regulations regarding water quality and would result in a less-than-significant impact on drainage patterns and stormwater runoff. Therefore, the cumulative contribution of the proposed project to water quality impacts together with other past, present, and future project would be less than significant.

Noise

The cumulative geographic context for construction noise impacts is the project site and immediate vicinity. The analysis includes noise from construction activities as well as noise generated by construction traffic on access roads.

CONSTRUCTION NOISE IMPACTS (PROJECT IMPACTS)	
Impact 6-6:	The proposed project together with past, present, and future projects could create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
Significance before Mitigation:	Potentially significant
Mitigation	Mitigation Measure 4.6-1.
Significance after Mitigation:	Less than significant

General Discussion

If there are other construction projects that would be constructed simultaneously with the proposed project, a potentially significant cumulative noise impact could occur. However, any project in the vicinity would be subject to the local noise ordinance which regulates the hours of construction activities to avoid significant noise impacts to sensitive receptors. The proposed project with implementation of Mitigation Measure 4.6-1 would have a less-than-significant noise impact on nearby sensitive receptors. Further, the proposed project is short term and no projects in the immediate vicinity of the project site have been identified. Therefore, the proposed project would not contribute to a cumulatively significant noise impact.

Transportation/Traffic

The cumulative geographic context for construction traffic impacts is the project site and on access roads.

CONSTRUCTION TRAFFIC IMPACTS	
Impact 6-7:	The proposed project together with present and future projects could result in construction traffic impacts.
Significance before Mitigation:	Potentially significant.
Mitigation	Mitigation Measure 4.7-1.
Significance after Mitigation:	Less than significant.

General Discussion

If there are other construction projects that would be constructed simultaneously with the proposed project, a potentially significant cumulative traffic impact could occur. The proposed project with implementation of Mitigation Measure 4.7-1 would have a less-than-significant construction traffic impact. A review of the General Plan and the Fruitridge Broadway Community Plan do not identify any potential projects or opportunity sites in the vicinity of the project site. The Sacramento City Unified School District has improvements planned for Camellia Elementary School, within 0.5 mile of the project site. However, a conversation with the District indicated that the District does not anticipate implementing any of the proposed improvements within the next six to eight months, which is the anticipated period for the proposed project to be implemented. Because the proposed project is limited to one-month duration and no projects in the immediate vicinity of the project site have been identified, it is anticipated that the proposed project would not contribute to a cumulatively significant construction traffic impact.

7. IMPACT OVERVIEW AND GROWTH INDUCEMENT

7.1 Significant and Unavoidable Impacts

Significant and unavoidable impacts would result if a project reaches or exceeds the defined threshold of significance and no feasible mitigation measure is identified to reduce the significant impact to a less-than-significant level. While the proposed project is anticipated to have potentially significant impacts, mitigation measures were identified that would reduce the impacts to less-than-significant levels as detailed in Chapter 4 of this EIR. The proposed project would not result in significant and unavoidable impacts.

7.2 Growth Inducing Impacts

This section discusses how the proposed project "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" as required under CEQA Guidelines Section 15126.2(d).

The proposed project is on private property. The project site is unused and devoid of structures. The current use of the property would not change as a result of the proposed project. The proposed project would not add infrastructure, utilities, or recreation areas or create jobs that would result in an increased population. Therefore, the proposed project would not result in growth inducing impacts.

7.3 Significant Irreversible Environmental Effects

This section discusses any significant irreversible environmental changes that could result from the proposed project. CEQA Guidelines Section 15126.2(c) requires that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. The CEQA Guidelines identify three distinct categories of significant irreversible changes: (1) changes in land use that would commit future generations; (2) irreversible changes from environmental actions; and (3) consumption of non-renewable resources.

The proposed project would not change the current use of the project site. Therefore, it would not commit future generations to significant changes in land use.

The proposed project is an approximately one-month construction effort that is intended to enhance public safety. No significant irreversible environmental changes due to the proposed actions are anticipated.

The proposed project is located in an urban developed area. The construction of the proposed project would use energy produced from nonrenewable resources, however, the project duration is one month and would not consume significant amounts of energy.

7.4 Effects Found Not to be Significant

A Notice of Preparation (NOP) was circulated on December 18, 2013, to solicit comments on the project from interested agencies and the public. Comments were received from the California Department of Toxic Substances and the City of Sacramento (see Appendix A). An Initial Study was not prepared for the proposed project.

The NOP indicated that there would be temporary construction-period impacts on air quality, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise and traffic, and would incorporate the findings of cultural resources and biological resources studies. On further analysis it was determined that the proposed project would not have any impacts related to hazards and hazardous materials. All other topics have been fully analyzed in this EIR.

The NOP further indicated that no impacts were anticipated on agricultural and forestry resources, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems. During the EIR analysis, it was determined that the proposed project would not have an impact on aesthetics and hazards and hazardous materials. The rationale for these topics that were not discussed fully because the proposed project would not have any impacts, are presented below.

7.4.1 Aesthetics

The project site is a privately owned parcel surrounded by a mix of multi-family and single-family residences up to two stories tall. The project site is level as is the surrounding area. With the exception of a few trees along the project boundary, the project site is devoid of structures or tall features. The project site is visible from 63rd Street on the west, 65th Street Expressway on the east, and Elder Creek Road on the south. Morrison Creek runs along the north edge of the project site. The proposed project would construct a soil cap mound on the project site with 1.0 to 3.0 percent slopes resulting in a gentle rise of about five feet in the center. The finished soil cap would be vegetated with hydroseed. No structures are proposed under the project. There are no scenic views, scenic highways, or historic buildings in the project area. The proposed project would not have a substantial adverse effect on a scenic vista, nor would it substantially damage scenic resources, including, trees, rock outcroppings, and historic buildings within a state scenic highway.

Although the project site is essentially level, it is uneven with discarded objects protruding through the surface. The proposed project when completed would be a smooth mound that is vegetated, significantly improving the visual character of the project site. The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.

The proposed project would create a new natural vegetated surface. It would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Based on the above, the proposed project would not have an impact on aesthetics.

7.4.2 Agriculture and Forestry Resources

The project site and the surrounding area are designated by the California Department of Conservation's Farmland Mapping and Monitoring Program as Urban and Built-Up Land (Department of Conservation, 2013). Therefore, the proposed project would not convert prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use, would not conflict with existing zoning for agricultural use or a Williamson Act contract, and would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use. The proposed project would have no impact on agricultural resources.

7.4.3 Hazards and Hazardous Materials

A Site Investigation Report (CIWMB 2004) completed for the project site and included in Appendix G of this EIR, determined that the project site is not a hazardous materials site as defined in Government Code Section 65962.5.

Although some hazardous waste has been identified at the site, the proposed project would not transport contaminated soil off the project site. No treatment of the wastes at the project site would occur. The project site would be graded with minimal disturbance to of the buried wastes to accommodate a new compacted clean soil cap. If any large discarded objects, such as refrigerators or washing machines, are close to the surface and provide an impediment to grading, they would be removed and transported to a recycling facility or an approved waste facility for disposal. It is anticipated that the number of items to be removed would be minimal to none. The new soil cap would be graded to inhibit any surface water infiltration into the existing wastes and to create better drainage to the perimeter of the waste footprint. Clean soil would be transported to the project site from an off-site location. Therefore, the proposed project would not create a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

There are no schools within a quarter mile of the project site. Camellia Elementary School is approximately 0.3 mile to the southeast, and Will C. Wood Middle School is approximately 0.5 mile to the north. The nearest airport to the proposed site is Sacramento Executive Airport, approximately three miles to the west. The proposed project is not located within an area covered by the Sacramento Executive Airport Comprehensive Land Use Plan or, within two miles of a public airport or public use airport. The proposed project would not emit hazardous materials emissions near a school and would not result in a safety hazard for people residing or working in the project area.

The proposed project would not change the existing street access or result in road closures. Therefore, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The proposed project is located within an urban area. There are no wildlands in the project vicinity. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

The proposed project would have no hazards and hazardous material impacts.

7.4.4 Land Use and Planning

The proposed project would take place within the boundaries of existing parcels in the City of Sacramento. The proposed project would not physically divide an established community.

The proposed project is within the City of Sacramento General Plan's "Traditional Neighborhood Low Density" land use. The project site is zoned "Standard Single Family" (R-1) and "Single Family Alternative" (R-1A). The project site consists of undeveloped parcels that were originally used as a borrow pit and was later filled in with rubbish and used as a burn site and illegal dumping area. The parcels within the project site are currently undeveloped. The proposed project would not construct any structures on the site. Therefore, there would be no conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan because none of these types of plans exist for the proposed project site and the surrounding area. The proposed project would have no impact on land use and planning.

7.4.5 Mineral Resources

The California Department of Conservation, Division of Mines and Geology has classified lands into Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act (SMARA) of 1974. The project area is mapped as MRZ-3, area containing mineral deposits, the significance of which cannot be evaluated from available data. The project site is a former quarry site which has been used as a burn site and an illegal dump site. The proposed project covers the site with a clean soil cap. Thus, the proposed project would not result in the loss of availability of a mineral resource that would be of value to the region and the residents of the state; and would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The proposed project would have no impact on mineral resources.

7.4.6 Population and Housing

The proposed project would not construct residential or commercial structures, nor would it construct roads or improve utilities. Therefore, the project would not induce substantial population growth in the area, either directly (e.g., new homes or businesses) or indirectly (e.g., through extension of roads or other infrastructure). Further, the proposed project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere, and would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. The proposed project would have no impact on population and housing.

7.4.7 Public Services

The project does not propose any structures. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities. The proposed project would have no impact on public services.

7.4.8 Recreation

The project does not propose any structures or create a use that would increase population. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated. Further, the proposed project would not include recreational facilities or require the construction or expansion of recreation facilities which might have an adverse physical effect on the environment. The proposed project would have no impact on recreation.

7.4.9 Utilities and Service Systems

The project does not propose any structures or create a use that would increase population. Therefore, the proposed project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; and would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed project would not create a need for water and would therefore not affect water supplies or water treatment.

The project would generate minimal solid waste in the form of any large discarded and partially buried items, such as refrigerators or washing machines, which cannot be graded during the construction period of the project. These items would be disposed of at an approved facility that complies with federal, state, and local statutes and regulations related to solid waste.

The proposed project would have no impact on utilities and service systems.

8. REPORT PREPARERS AND ORGANIZATIONS AND PERSONS CONSULTED

8.1 Introduction

CEQA Guidelines at Section 15129 require that an EIR identify all federal, State, or local agencies, other organizations, and private individuals consulted in preparing the draft EIR, and the persons, firm, or agency preparing the draft EIR, by contract or other authorization.

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10. COMMENTS ON THE DRAFT EIR

10.1 Comments Received

The Draft EIR was made available for public review from April 8, 2013 through May 22, 2013. Comments were accepted via mail or electronic mail. The State Clearinghouse Document Details Report indicates the agencies that were sent the Draft EIR for review. Only one comment letter was received from the Central Valley RWQCB.

The State Clearinghouse letter including the Document Details Report and the Central Valley RWQCB letter is provided at the end of this section. The State Clearinghouse does not comment on the Draft EIR and a response is neither required nor appropriate. Each comment within the Central Valley RWQCB letter is designated a number. Responses to the numbered comments are provided below.

10.2 Responses to Comments

Central Valley Regional Water Quality Control Board

Response to Comment 1: Construction Storm Water General Permit

This comment refers to a general description of the requirements for obtaining the Storm Water General Permit for projects that disturb more than one acre of soil. Section 4.5.3, Hydrology and Water Quality, Regulatory Framework, in the Draft EIR discusses the requirements for a Storm Water General Permit under the Clean Water Act. Mitigation Measure 4.5-1, outlined in Section 5.4.4, Hydrology and Water Quality, Impacts and Mitigation Measures, would ensure that the proposed project would obtain an NPDES Construction General Permit prior to construction activities. No change to the Draft EIR is required.

Response to Comment 2: Phase I and II Municipal Separate Storm Sewer System (MS4) Permit

This comment refers to the MS4 Permit that is required for new development or redevelopment projects. The proposed project as described in Chapter 3, Project Description of the Draft EIR, is a remediation project that does not involve construction of any structures on the project site, and does not propose a sewer system. Therefore, the MS4 Permit does not apply to the proposed project.

Response to Comment 3: Industrial Storm Water General Permit

This comment refers to the Industrial Storm Water General Permit that is required for industrial sites. The proposed project as described in Chapter 3, Project Description of the Draft EIR, is a remediation project on a currently undeveloped site. The proposed project does not propose an industrial or any other use for the project site. Therefore, the Industrial Storm Water General Permit does not apply to the proposed project.

Response to Comment 4: Clean Water Act Section 404 Permit

This comment refers to a Clean Water Act (CWA) Section 404 Permit that is applicable to projects that would impact navigable waters. As described in the Draft EIR in Chapter 3, Project Description, Section 3.1, Background, and Section 4.5.4, Hydrology and Water Quality, Impacts and Mitigation Measures, the project site is adjacent to Morrison Creek, which has a two-foot-high engineered berm and subsurface lining that provides a hydrologic barrier between the creek and the project site. As described in the Draft EIR Section 3.4, Proposed Project, all earthwork would be conducted outside the creek right-of-way and stormwater would be retained onsite during most rain events. During extreme rain events, the northern edge of the retention swale rim would function as an emergency release into the existing ditch on the upland side of the levee and stormwater release into Morrison Creek. Therefore, the proposed project would not directly or indirectly impact Morrison Creek, and would not require a CWA Section 404 Permit.

Response to Comment 5: Clean Water Act Section 401 Permit

This comment refers to water quality certification under CWA Section 401. As discussed in the response to Comment A-4, above, the project would not directly or indirectly impact Morrison Creek. Therefore, the proposed project would not require a CWA Section 401 Permit.

Response to Comment 6: Waste Discharge Requirements

This comment refers to discharges into waters of the State. As discussed above, Morrison Creek is separated from the project site by a two-foot-high engineered berm. The proposed project would not directly or indirectly impact Morrison Creek. The proposed project does not propose any use for the project site after project completion. Therefore, the proposed project would not require a Waste Discharge Requirement permit.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

May 21, 2013

Mustafe Botan
California Department of Resources Recycling and Recovery
1001 I Street, P.O. Box 4025
Sacramento, CA 95812-4025

Subject: Waring's Dump Soil Cap Project
SCH#: 2012122041

Dear Mustafe Botan:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on May 20, 2013, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan

Scott Morgan
Director, State Clearinghouse

RECEIVED
MAY 23 2013
By T.I /M.B

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# **2012122041**
Project Title Waring's Dump Soil Cap Project
Lead Agency Resources Recycling and Recovery, Department of

Type **EIR** Draft EIR

Description The proposed project would result in grading and compaction of the existing hummocky terrain and the importation of select fill soils for placement as a compacted soil cap over the existing waste footprint. Existing ground elevations vary from 29 feet to 33 feet above mean sea level (MSL). Preliminary surface grading and compaction would be conducted to stabilize the project site into a uniform surface, graded to drain stormwater off the waste mound. The depth to which preliminary grading would occur would be minimized so as to leave buried wastes undisturbed and in place to the extent possible. Any debris unearthed during the grading would be reburied such that no materials protrude from the graded surface. No debris or soil is intended to be exported offsite. However, if there are some bulky items, such as car bodies or refrigerators, unearthed that cannot be graded within the proposed waste mound, they would be removed and either recycled or disposed of at a proper disposal site.

Lead Agency Contact

Name Mustafe Botan
Agency California Department of Resources Recycling and Recovery
Phone (916) 341-6367 ***Fax***
email
Address 1001 I Street, P.O. Box 4025
City Sacramento ***State*** CA ***Zip*** 95812-4025

Project Location

County Sacramento
City Sacramento
Region
Lat / Long
Cross Streets 63rd Street and Elder Creek Road
Parcel No. 38-182-005, 006, 007, 010; 38-202-001
Township 8 ***Range*** 5E ***Section*** 28 ***Base***

Proximity to:

Highways Hwy 99
Airports No
Railways Southern Pacific
Waterways Morrison Creek
Schools No
Land Use GPD: Traditional Neighborhood Low Density
ZD: Standard Single Family (R-1) and Single Family Alternative (R-1A) zones

Project Issues Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Geologic/Seismic; Noise; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Water Quality; Water Supply; Cumulative Effects; Soil Erosion/Compaction/Grading

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 2; Office of Historic Preservation; Department of Parks and Recreation; Central Valley Flood Protection Board; Department of Water Resources; California Highway Patrol; Caltrans, District 3 S; CA Department of Public Health; State Water Resources Control Board, Divison of Financial Assistance; Regional Water Quality Control Bd., Region 6 (So Lake Tahoe); Department of Toxic Substances Control; Native American Heritage

Commission

Date Received 04/05/2013 ***Start of Review*** 04/05/2013 ***End of Review*** 05/20/2013

Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

RECEIVED

MAY 16 2013

STATE CLEARING HOUSE

clear 5/20/13 l

15 May 2013

Mustafe Botan
CalRecycle
Department of Resources Recycling and Recovery
1001 I Street, P.O. Box 4025
Sacramento, CA 95812

CERTIFIED MAIL
7012 0470 0000 9904 4991

COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, WARING'S DUMP SOIL CAP PROJECT, SCH NO. 2012122041, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 5 April 2013 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environmental Impact Report* for the Waring's Dump Soil Cap Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). 1

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA 2
process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

3

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage 4
realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water 5
Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

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[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. 6

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.

Elizabeth M. fr

fr Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

Appendix A Scoping Report

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Waring's Dump Soil Cap Project

Lead Agency: Department of Resources Recycling and Recovery — Contact Person: Mustafe Botan

Mailing Address: 1001 I Street, P.O. Box 4025 — Phone: (916) 341-6367

City: Sacramento — Zip: 95812-4025 — County: Sacramento

Project Location: County: Sacramento — City/Nearest Community: Parkway-South Sacramento

Cross Streets: 63rd Street and Elder Creek Road — Zip Code: 95812

Longitude/Latitude (degrees, minutes and seconds): ___° ___' ___" N / ___° ___' ___" W — Total Acres: 5.04

Assessor's Parcel No.: See below — Section: 28 — Twp.: 8 — Range: 5 East — Base: Sacramento East

Within 2 Miles: State Hwy #: 99 — Waterways: Morrison Creek

Airports: None — Railways: Southern Pacific — Schools: None

Assessor's Parcel Nos.: 38-182-005, 38-182-006, 38-182-007, 38-182-010, and 38-202-001

Document Type:

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ______ Other:

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other: ______

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan ☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan ☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.) ☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other: Grading Permit

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Development Type:

☐ Residential: Units ______ Acres
☐ Office: Sq.ft. ______ Acres ______ Employees ______
☐ Commercial: Sq.ft ______ Acres ______ Employees ______
☐ Industrial: Sq.ft. ______ Acres ______ Employees ______
☐ Educational: ______
☐ Recreational: ______
☐ Water Facilities: Type ______ MGD ______
☐ Transportation: Type ______
☐ Mining: Mineral ______
☐ Power: Type: ______ MW ______
☐ Waste Treatment: Type: ______ MGD ______
☐ Hazardous Waste: Type: ______
☒ Other: Solid Waste Dump Site

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Agricultural Land ☒ Air Quality ☒ Archaeological/Historical ☒ Biological Resources ☐ Coastal Zone ☒ Drainage/Absorption ☐ Economics/Jobs ☐ Fiscal ☐ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☐ Public Services/Facilities ☐ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☐ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation ☐ Vegetation ☒ Water Quality ☒ Water Supply/Groundwater ☐ Wetland/Riparian ☐ Growth Inducement ☐ Land Use ☒ Cumulative Effects ☐ Other: ______

Present Land Use/Zoning/General Plan Designation:

General Plan Designation: *Traditional Neighborhood Low Density*; Zoning Ordinance: *Standard Single Family* (R-1) and *Single Family Alternative* (R-1A) zones

---

Project Description: *(please use a separate page if necessary)*

Please see enclosed Notice of Preparation of an EIR for a detailed project description.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X". If you have already sent your document to the agency please denote that with an "S".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency		Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District # 3		Public Utilities Commission
	Caltrans Division of Aeronautics	S	Regional WQCB # 5
	Caltrans Planning		Resources Agency
X	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy	X	S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
X	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	X	SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
X	Fish & Game Region # 2		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	S	Toxic Substances Control, Department of
	Forestry and Fire Protection, Department of		Water Resources, Department of
	General Services, Department of		
X	Health Services, Department of	S	Other: City of Sacramento, Environmental Planning
	Housing & Community Development	S	Other: Sacramento County Environmental Mgmt. Dept.

Local Public Review Period (to be filled in by Lead Agency)

Starting Date: December 18, 2012 Ending Date: February 1, 2013

Lead Agency (Complete if applicable):

Consulting Firm: URS Corporation
Address: 100 W San Fernando Street, Suite 200
City/State/Zip: San Jose, CA 95113
Contact: Reema Mahamood
Phone: (408) 297-9585

Applicant: Same as Lead Agency above
Address:
City/State/Zip:
Phone:

Signature of Lead Agency Representative: **Date:** 12/13/2012

Authority cited: Section 21083, Public Resources Code, Reference: Section 21161, Public Resources Code.

CalRecycle

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • WWW.CALRECYCLE.CA.GOV • (916) 322-4027
P.O. BOX 4025, SACRAMENTO, CALIFORNIA 95812

December 14, 2012

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

RE: Warings Dump Soil Cap Project, Sacramento

TO: Interested Agencies and Persons:

CalRecycle will be the Lead Agency for this project and will prepare an Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA) for the Waring's Dump Soil Cap project described below. Please respond with written comments regarding the scope and the content of the EIR as it may relate to your agency's area of statutory responsibility or your areas of concern or expertise. Your agency may need to use the EIR prepared by our agency when considering your permit or other approval for the project, if any is required. **Responses are due by Friday February 1, 2013**. The review period of December 18, 2012 to February 1, 2013 constitutes an extended scoping period, beyond the 30-day review period provided by State law. Comments should be sent to:

Mr. Mustafe Botan
Waste Management Engineer
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance and Mitigation Division
1001 I Street, P.O. Box 4025
Sacramento, CA 95812-4025

Email: Mustafe.Botan@CalRecycle.ca.gov

1. Project Location

Waring's Dump is located in the south portion of the City of Sacramento, California, and is bounded by Morrison Creek to the north; 63rd Street to the west; parcels fronting Elder Creek Road to the south and 65th Street Expressway to the east. Waring's Dump is located on 5.04 acres of privately held property comprising Assessor's Parcel Numbers (APNs) 38-182-005 (0.89 acre), 38-182-006 (0.67 acre), 38-182-007 (0.91 acre), 38-182-010 (0.67 acre), and 38-202-001 (1.9 acres). The dump is on the United States Geological Survey (USGS) "Sacramento East" 7.5'quadrangle within the southeast ¼ of the southeast ¼ of Section 28, Township 8 North, Range 5 East (see **Figure 1**: Project Site Location Map and **Figure 2**: Vicinity Map).

2. Project Description

Background

The project site was initially excavated as a soil borrow source during the construction of California State Highway 99 in the late 1930s. At the request of the property owners, permission to fill the borrow pit was granted by the City in the late 1940s with the understanding that the fill was to consist of rubbish and construction waste. During the next decade waste materials were accepted and disposed of at the project site, much of which had been burned prior to disposal. In the mid-1960s, the adjacent Morrison Creek was widened, deepened and channelized as part of Sacramento County's flood control "Drainage Bond Project." A two-foot

(CONTINUED ON NEXT PAGE)

high, engineered berm and subsurface lining now provide a hydrologic barrier between the creek and the dump site.

In response to a proposed development of the dump site in 2002, the Sacramento County Environmental Management Department (EMD) requested that the Remediation, Closure and Technical Services (RCTS) Branch of the California Integrated Waste Management Board, now known as CalRecycle, perform a Phase I and Phase II site investigation to determine appropriate remedial measures necessary to protect public health and safety and the environment. CalRecycle has determined that the former Waring's Dump does not meet State Minimum Standards, including 27 California Code of Regulations (CCR) Division 2, Solid Waste, Chapter 3, Criteria for All Waste Units, Facilities and Disposal Sites, Subchapter 4, Criteria for Landfills and Disposal Sites, Article 1 Recycle Operating Criteria at §20650 (grading of fill surfaces), §20790 (leachate control), and §20820 (drainage and erosion control). Recommended CalRecycle actions to improve these deficiencies were to properly cover the former dump site with selected fill soils in accordance with state minimum standards, and to limit exposure of the waste materials to the public and the environment.

Proposed Project

The proposed project would result in grading and compaction of the existing hummocky terrain and the importation of select fill soils for placement as a compacted soil cap over the existing waste footprint. Existing ground elevations vary from 29 feet to 33 feet above mean sea level (MSL). Preliminary surface grading and compaction would be conducted to stabilize the project site into a uniform surface, graded to drain stormwater off the waste mound. The depth to which preliminary grading would occur would be minimized so as to leave buried wastes undisturbed and in place to the extent possible. Any debris unearthed during the grading would be reburied such that no materials protrude from the graded surface. No debris or soil is intended to be exported offsite. However, if there are some bulky items, such as car bodies or refrigerators, unearthed that cannot be graded within the proposed waste mound, they would be removed and either recycled or disposed of at a proper disposal site.

Approximately 8,370 cubic yards (CY) of clean, imported soil (free of contamination from petroleum products or organics and construction debris, and not containing solely rock or solely clay material, hereafter referred to as "select soil") and 17,400 square yards (sq yd) of erosion control seed mix would be required to provide a 15-inch thick select-soil cap and vegetation. The select soil fill would be placed and compacted on top of the compacted, graded waste materials to create the finished grade. The proposed finished select soil-capped waste mound would have side slopes varying between 1.0 percent and 3.0 percent, over an area of approximately 3.6 acres, and have a maximum elevation of 34.5 feet above MSL (see **Figure 3**: Conceptual Grading and Drainage Plan). An erosion control mat and hydroseed mix would be then placed/applied to the compacted soil cap. The source of select soils for the soil cap has not as yet been determined, but would likely be trucked to the project site by a hauler. Assuming a 16 CY load by each haul truck, there would be no more than 525 truck trips within a three-week soil-delivery period. A one-month project completion schedule is estimated.

The proposed project would substantially improve existing drainage patterns onsite by diverting stormwater off the soil-capped mound and into a perimeter trapezoidal bioswale. The bioswale would drain, store, and provide eventual groundwater infiltration and evaporation outside of the Waring's Dump debris footprint. The bottom of the retention swale would be one foot wide and side-slopes would be at a 2:1 ratio. The proposed retention swales would be graded (~0.35 percent) to flow from the southeast corner of the project site and around both sides of the mound to a common low point at the northwest side. The retention swales would be designed to have a storage capacity of ~1.0 acre-feet (ac-ft). Water depth at this storage capacity would be approximately three feet at a common low point adjacent, but not connected, to the existing culvert within the Morrison Creek south levee. During extreme rain events, the northern edge of the retention swale rim would function as an emergency release into the existing ditch on the upland side of the levee and release stormwater into Morrison Creek.

A culvert, connecting the proposed retention swales, would be placed at the southwest corner of the property, beneath the existing driveway, providing controlled access to the project site. To avoid impact to existing or future fence or levee, all earthworks would be conducted outside the creek right-of-way, and storm water would be retained on-site during most rain events. Except for a culvert beneath the existing access driveway (described above), no structures are proposed for this proposed project.

3. Probable Environmental Effects of the Project

The EIR will focus on the evaluation of potentially significant impacts that may occur with the implementation of the proposed project, as described below.

The proposed project would include the placement of a soil cap over existing exposed dump site waste materials and create a new open space area with no structures. The newly contoured and capped dumpsite would also significantly limit the quantity of stormwater currently infiltrating through the waste materials in the currently unprotected state. Based on these proposed improvements, it is anticipated that there would be no long-term significant or unavoidable impacts resulting from the proposed project.

The proposed project would be expected to have temporary construction period impacts on air quality, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise and traffic from ground disturbance due to site grading and the impact of placement, and compaction of the clean soil on the project site to create the new soil cap. The EIR will evaluate these temporary effects.

The proposed project would be expected to have less-than-significant impacts with mitigation incorporated on biological resources related to trees and vegetation that have the potential to support nesting birds, and the potential for damage to mature trees from ground disturbing activities. The EIR will report on these impacts based on a biological resources report prepared for the proposed project.

The proposed project would be expected to have less-than-significant impacts with mitigation incorporated on cultural resources from temporary construction-related ground-disturbing work that has the potential to unearth prehistoric, historic, or unearthing human remains and/or disturbing human burial sites. The EIR will report on these impacts based on a cultural resources report prepared for the proposed project.

The project site does not contain protected farmland or mineral resources. The proposed project would not result in the demolition or construction of any buildings or the extension of any utilities. The proposed project would create new open space, but would not require new or expanded police, fire, school, or recreational services.

Therefore, it is anticipated that there would be no impacts on agricultural and forestry resources, mineral resources, land use and planning, population and housing, public services, recreation, and utilities and service systems.

Because the proposed project would create a new smooth graded and mildly sloping mound of open space area in contrast to the existing uneven and potentially dangerous surface, it is expected that the project would have beneficial impacts on aesthetics.

4. Alternatives

In compliance with CEQA, the EIR will evaluate a reasonable range of alternatives to the proposed project that could feasibly attain all or most of the basic objectives of the project and avoid or reduce any significant environmental effects of the project. As required under CEQA, the EIR will evaluate the No Project Alternative, which will describe the conditions that will likely occur if the proposed project is not implemented. Based on currently available information, other alternatives may include clean close of the dump site. Additional alternatives could be added to the analysis, or the above-referenced tentatively identified alternative may be changed, based on input during the EIR scoping process and in response to environmental effects that may be identified during the preparation of the EIR.

Please provide your comments regarding scope and content of the EIR at the earliest possible date, but no later than **Friday, February 1, 2013**. Although the CEQA Guidelines require only a 30-day period for responding to NOPs, the lead agencies have decided to keep their comment period on the NOP open for a longer time period in order to maximize agency and public input. All agency comments should be submitted in writing either by mail or email to:

Mr. Mustafe Botan
Waste Management Engineer
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance and Mitigation Division
1001 I Street, P.O. Box 4025
Sacramento, CA 95812-4025

Email: Mustafe.Botan@CalRecycle.ca.gov

Please include the name, phone number, and email of a contact person at your agency in your response.

Sincerely,

Wes Mindermann, P.E
Senior Waste Management Engineer
Solid Waste and Tire Cleanup Unit
Engineering Support Branch (MS 10A-18)

Attachments:

1. Notice of Completion & Environmental Document Transmittal
2. Figures 1, 2 and 3

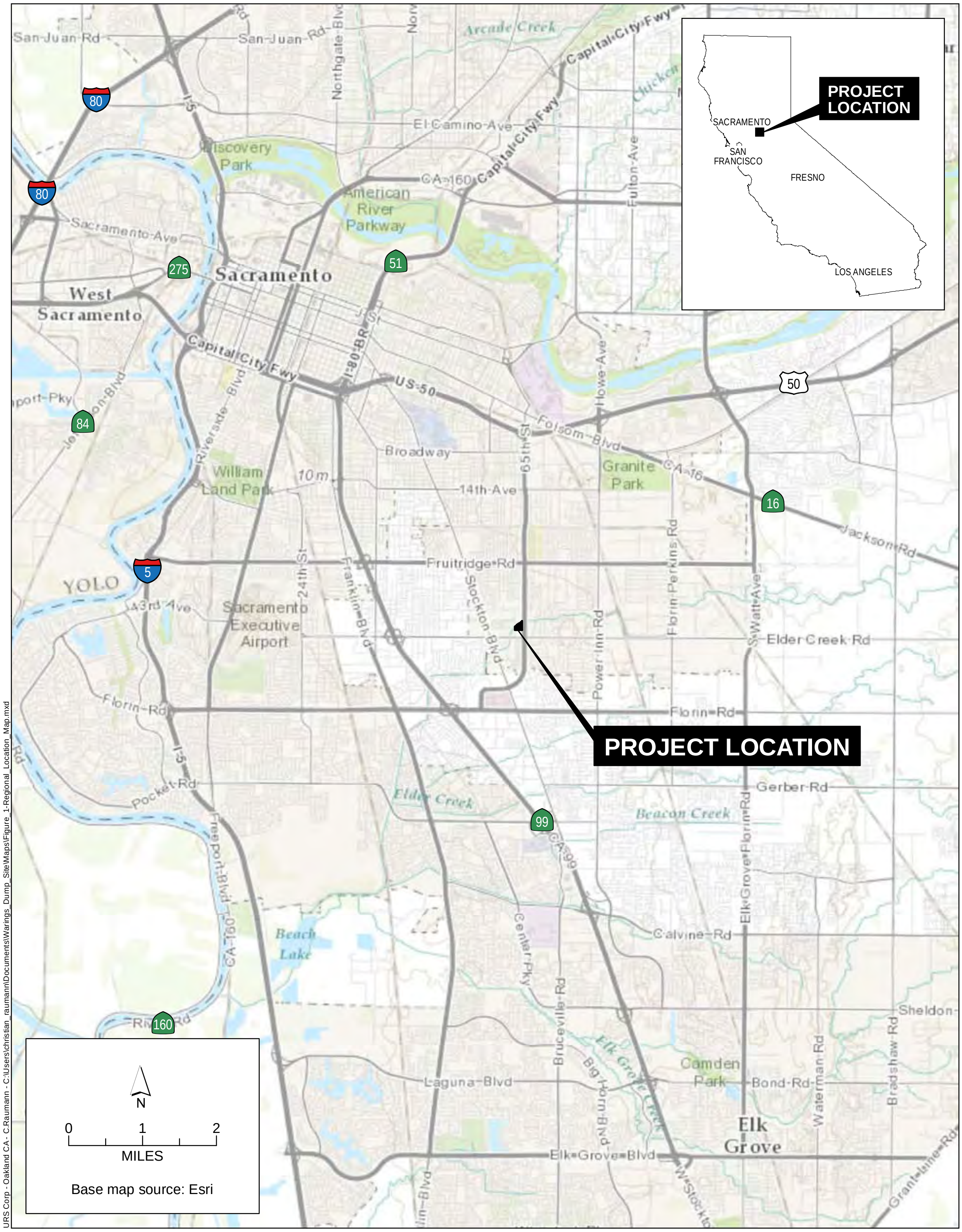

Figure 1: Regional Location Map

Figure 2: Vicinity Map

URS Corp - Oakland CA - C.Raumann - C:\Users\christian_raumann\Documents\Warings_Dump_Site\Maps\Figure_3-Conceptual_Grading_and_Drainage_Plan.mxd

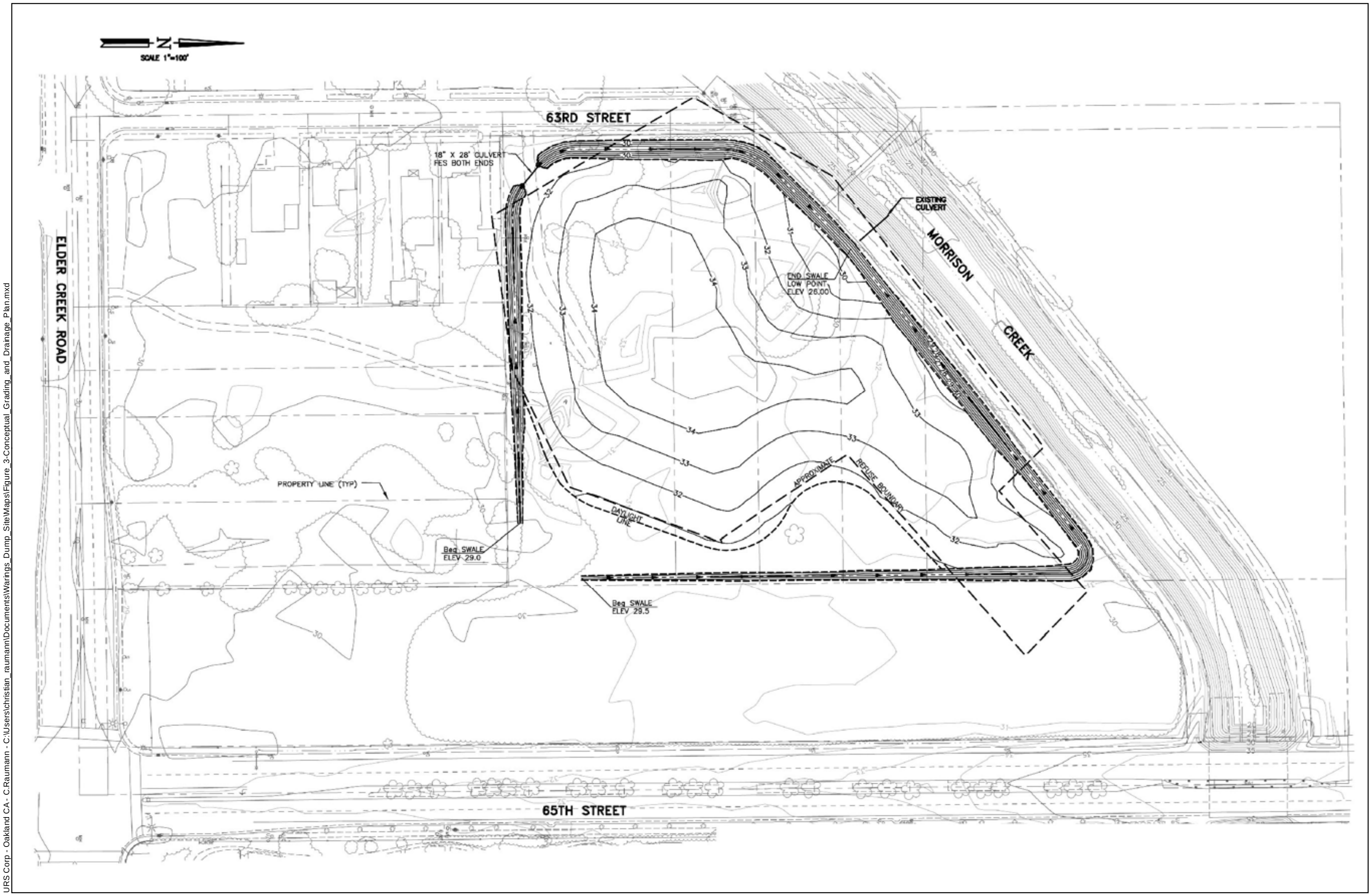

Figure 3: Conceptual Grading and Drainage Plan

Mahamood, Reema

From:	Botan, Mustafe <Mustafe.Botan@CalRecycle.ca.gov>
Sent:	Thursday, January 24, 2013 10:49 AM
To:	Mahamood, Reema
Subject:	FW: Warings Dump Soil Cap Project
Follow Up Flag:	Follow up
Flag Status:	Flagged

From: Tom Buford [mailto:TBuford@cityofsacramento.org]
Sent: Monday, December 17, 2012 1:38 PM
To: Botan, Mustafe
Cc: Bill Busath; Dana Allen; Jeffrey Heeren
Subject: Warings Dump Soil Cap Project

Mustafe:

Thank you for your advance call on the Warings Dump project. I received the Notice of Preparation.

Dana Allen will be your contact in environmental review for the City. I've copied Bill Busath in Department of Utilities as well.

Based on review of the NOP and my conversation with Mr. Busath, it does not appear the City would issue a permit for the project, and any actions the City would take appear to be limited and would simply follow-up on your agency's actions. Under those circumstances it does not appear we would take actions subject to CEQA, and would not be a Responsible Agency.

Please include Ms. Allen on the mailing list for future CEQA notices:

Dana Allen, Associate Planner
City of Sacramento
Community Development Department
300 Richards Boulevard, Third Floor
Sacramento, CA 95811

Thanks.

Tom

Tom Buford, Senior Planner
Environmental Planning Services
300 Richards Blvd., Third Floor
Sacramento, CA 95811
Phone: (916) 808-7931
Cell: (916) 541-5396
Email: tbuford@cityofsacramento.org

Mahamood, Reema

From:	Botan, Mustafe <Mustafe.Botan@CalRecycle.ca.gov>
Sent:	Monday, February 04, 2013 8:20 AM
To:	Mahamood, Reema
Cc:	Healy, Bob; Sansevero, Ann
Subject:	FW: Waring's Dump NOP SCH# 2012122041

Reema,

Please see below email from DTSC. It was sent to me on Friday, the comments due date. Please take a look and let us discuss.

Regards,
M

From: Patenaude, Tim@DTSC [mailto:Tim.Patenaude@dtsc.ca.gov]
Sent: Friday, February 01, 2013 4:50 PM
To: Botan, Mustafe
Cc: Beckman, William@DTSC; Lewis, Jr., McKinley@DTSC
Subject: Waring's Dump NOP SCH# 2012122041

Mr Botan,
I have read the subject Document and have the following comments

1. **2. Project Description,** *Proposed Project*: The project description does not include a discussion of the presence and distribution of soil contamination. Since burn dumps are known to contain various hazardous contaminants, it seems the Project Description would include a discussion on sampling and analysis conducted to identify the nature and extent of any soil contamination.
2. **3.0 Probable Environmental Effects of the Project**: Environmental effects could include hazardous substances releases via dust, vehicular tracking, and storm water run-off during construction.
3. **5.0 Alternatives**: The proposed project and alternative evaluation should include some form of land use control after cleanup (e.i. land use covenant, deed restriction, etc) to preclude sensitive land use for areas where waste is left in place.
4. The EIR should establish concentration specific cleanup goals for contaminants of concern. Lead is a typical contaminant found at burn dumps. It also seems that several alternatives would require confirmation sampling to ensure that contaminates; above background, health risk based or other enforceable regulatory thresholds, are not excluded from the cleanup.

Appendix B Air Quality and Greenhouse Gas Emissions Calculations

CalEEMod Assumptions/Inputs

Model Run on February 4, 2013. Model is CalEEMod v.2011.1.1

Notes: project file was not saved as file was too large. To recreate model, use the following assumptions/inputs identified below. Unless identified below, default settings were utilized.

Project Characteristics

PROJECT NAME	Waring's Dump Soil Cap Project
PROJECT LOCATION	Sacramento Metropolitan Air Quality Management District
CLIMATE ZONE	6
LAND USE SETTING	Urban
OPERATIONAL YEAR	2013
POLLUTANTS SELECTED	All

Land Use

Land Use Type	None Selected

REMARKS: The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction

Construction Phase

CONSTRUCTION PHASE	PHASE TYPE	START DATE	END DATE	DAYS/WEEK	TOTAL DAYS	CONSTRUCTION PHASE DESCRIPTION
Earthmoving Activities	Grading	7/1/2013	7/31/2013	5 days/week	23 days	Earthmoving activities include preliminary surface grading and compaction prior to soil hauling and soil cap placement.

REMARKS: A one-month project completion schedule is estimated. The soil delivery is anticipated to be over a three-week period. Preliminary surface grading and compaction would occur prior to placement of soil-cap.

Off Road Equipment

For the following phases, no construction equipment is required or necessary for the project:

Site preparation, building construction, paving, architectural coating, and demolition.

Phase Name: Earthmoving Activities

EQUIPMENT TYPE	UNIT AMOUNT	HOURS/DAY
Off-Highway Trucks	40	8
Rubber Tired Dozers	1	8
Tractors/Loaders/Backhoes	2	8

REMARKS: Anticipated construction equipment usage as 8/hrs per day is a conservative estimate as it assumes all construction equipment will be used all day daily. Actual construction equipment usage would not be as intensive as assumptions made here.

Dust From Material Movement

Phase Name: Earth Moving Activities

Material Imported: 8,370 Cubic Yards

No Material Exported

Material Import/Exported Phased: Yes.

Area of Impact: 3.6 acres

REMARKS: Project impact area is 3.6 acres.

Demolition

Not applicable to the proposed project.

Trips and VMT

PHASE NAME	TOTAL # TRIPS HAULING
Earthmoving Activities	525

Notes: Other input areas are default values.

REMARKS: Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 525 truck trips to import soil to the project site during a 3-week period.

On-Road Fugitive Dust

Default values

Architectural Coatings

Not Applicable to the proposed project.

Operational

Not applicable to the proposed project

Vegetation

Land Use Change

Vegetation Land Use Type	Vegetation Land Use Subtype	Initial Acres	Final Acres	Annual CO2 accumulation per acre (tonnes CO2/year)
Others	Others	0	3.6	0

REMARKS: The project includes adding 17,400 square yards of erosion control seed mix to reduce erosion of the newly placed soil-cap.

Sequestration

Not applicable to proposed project – no trees on site or proposed.

Mitigation

Construction

Off-Road Equipment

Equipment Type	# of Equipment Mitigated
Rubber Tired Dozer	1
Tractors/Loaders/Backhoes	2
Off-Highway Trucks	40

Fugitive Dust

Soil Stabilizer for Unpaved Roads. Checked

Water Exposed Area. Frequency: 2 times per day

Replace Ground Cover of Area Disturbed. Checked

Traffic

Not Applicable to proposed project as there are no operational uses proposed.

Waring's Dump Soil Cap Project

Sacramento Metropolitan AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Utility Company**
Climate Zone	6	**Precipitation Freq (Days)**	58	

1.3 User Entered Comments

Project Characteristics -

Land Use - The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction Phase - A one-month project completion schedule is estimated. The soil delivery is anticipated to be over a three-week period. Preliminary surface grading and compaction would occur prior to placement of soil-cap.

Off-road Equipment - No demolition proposed.

Off-road Equipment - Anticipated construction equipment usage as 8/hrs per day is a conservative estimate as it assumes all construction equipment will be used all day daily. Actual construction equipment usage would not be as intensive as assumptions made here.

Off-road Equipment - No site preparation proposed.

Off-road Equipment - No building construction proposed.

Off-road Equipment - No Paving proposed.

Off-road Equipment - No architectural coatings proposed.

Grading - The project impact area is 3.6 acres.

Trips and VMT - Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 525 truck trips to import soil to the project site during a 3-week period.

Land Use Change - The project includes adding 17,400 square yards of erosion control seed mix to reduce erosion of the newly placed soil-cap.

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.06	0.47	0.37	0.00	0.20	0.02	0.22	0.04	0.02	0.06	0.00	60.29	60.29	0.00	0.00	60.38
Total	**0.06**	**0.47**	**0.37**	**0.00**	**0.20**	**0.02**	**0.22**	**0.04**	**0.02**	**0.06**	**0.00**	**60.29**	**60.29**	**0.00**	**0.00**	**60.38**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.02	0.14	0.17	0.00	0.16	0.00	0.16	0.02	0.00	0.02	0.00	60.29	60.29	0.00	0.00	60.38
Total	**0.02**	**0.14**	**0.17**	**0.00**	**0.16**	**0.00**	**0.16**	**0.02**	**0.00**	**0.02**	**0.00**	**60.29**	**60.29**	**0.00**	**0.00**	**60.38**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					0.00
Total					**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.7 Earthmoving Activities - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.33	0.20	0.00		0.02	0.02		0.02	0.02	0.00	30.68	30.68	0.00	0.00	30.75
Total	**0.04**	**0.33**	**0.20**	**0.00**	**0.07**	**0.02**	**0.09**	**0.04**	**0.02**	**0.06**	**0.00**	**30.68**	**30.68**	**0.00**	**0.00**	**30.75**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.13	0.10	0.00	0.11	0.00	0.12	0.00	0.00	0.00	0.00	19.30	19.30	0.00	0.00	19.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.31	10.31	0.00	0.00	10.32
Total	**0.02**	**0.14**	**0.17**	**0.00**	**0.12**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**29.61**	**29.61**	**0.00**	**0.00**	**29.64**

3.7 Earthmoving Activities - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	30.68	30.68	0.00	0.00	30.75
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.03**	**0.02**	**0.00**	**0.02**	**0.00**	**30.68**	**30.68**	**0.00**	**0.00**	**30.75**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.13	0.10	0.00	0.11	0.00	0.12	0.00	0.00	0.00	0.00	19.30	19.30	0.00	0.00	19.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.31	10.31	0.00	0.00	10.32
Total	**0.02**	**0.14**	**0.17**	**0.00**	**0.12**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**29.61**	**29.61**	**0.00**	**0.00**	**29.64**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

5.0 Energy Detail

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Others	0 / 3.6					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Waring's Dump Soil Cap Project

Sacramento Metropolitan AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Utility Company**
Climate Zone	6	**Precipitation Freq (Days)**	58	

1.3 User Entered Comments

Project Characteristics -

Land Use - The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction Phase - A one-month project completion schedule is estimated. The soil delivery is anticipated to be over a three-week period. Preliminary surface grading and compaction would occur prior to placement of soil-cap.

Off-road Equipment - No demolition proposed.

Off-road Equipment - Anticipated construction equipment usage as 8/hrs per day is a conservative estimate as it assumes all construction equipment will be used all day daily. Actual construction equipment usage would not be as intensive as assumptions made here.

Off-road Equipment - No site preparation proposed.

Off-road Equipment - No building construction proposed.

Off-road Equipment - No Paving proposed.

Off-road Equipment - No architectural coatings proposed.

Grading - The project impact area is 3.6 acres.

Trips and VMT - Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 525 truck trips to import soil to the project site during a 3-week period.

Land Use Change - The project includes adding 17,400 square yards of erosion control seed mix to reduce erosion of the newly placed soil-cap.

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	5.53	41.13	31.94	0.06	19.95	1.93	21.88	3.36	1.90	5.26	0.00	5,883.96	0.00	0.45	0.00	5,893.31
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	1.86	12.04	14.95	0.06	16.51	0.42	16.92	1.53	0.38	1.92	0.00	5,883.96	0.00	0.45	0.00	5,893.31
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.7 Earthmoving Activities - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.26	0.00	6.26	3.32	0.00	3.32						0.00
Off-Road	3.67	29.09	16.99	0.03		1.51	1.51		1.51	1.51		2,941.28		0.33		2,948.20
Total	**3.67**	**29.09**	**16.99**	**0.03**	**6.26**	**1.51**	**7.77**	**3.32**	**1.51**	**4.83**		**2,941.28**		**0.33**		**2,948.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.14	11.42	8.04	0.02	12.28	0.38	12.66	0.02	0.35	0.37		1,853.82		0.05		1,854.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.72	0.62	6.90	0.01	1.41	0.04	1.45	0.02	0.03	0.05		1,088.86		0.06		1,090.14
Total	**1.86**	**12.04**	**14.94**	**0.03**	**13.69**	**0.42**	**14.11**	**0.04**	**0.38**	**0.42**		**2,942.68**		**0.11**		**2,945.11**

3.7 Earthmoving Activities - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.82	0.00	2.82	1.49	0.00	1.49						0.00
Off-Road	0.00	0.00	0.00	0.03		0.00	0.00		0.00	0.00	0.00	2,941.28		0.33		2,948.20
Total	**0.00**	**0.00**	**0.00**	**0.03**	**2.82**	**0.00**	**2.82**	**1.49**	**0.00**	**1.49**	**0.00**	**2,941.28**		**0.33**		**2,948.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.14	11.42	8.04	0.02	12.28	0.38	12.66	0.02	0.35	0.37		1,853.82		0.05		1,854.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.72	0.62	6.90	0.01	1.41	0.04	1.45	0.02	0.03	0.05		1,088.86		0.06		1,090.14
Total	**1.86**	**12.04**	**14.94**	**0.03**	**13.69**	**0.42**	**14.11**	**0.04**	**0.38**	**0.42**		**2,942.68**		**0.11**		**2,945.11**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

5.0 Energy Detail

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00					0.00	0.00		0.00	0.00						0.00
Unmitigated	0.00					0.00	0.00		0.00	0.00						0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Waring's Dump Soil Cap Project

Sacramento Metropolitan AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Utility Company**
Climate Zone	6	**Precipitation Freq (Days)**	58	

1.3 User Entered Comments

Project Characteristics -

Land Use - The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction Phase - A one-month project completion schedule is estimated. The soil delivery is anticipated to be over a three-week period. Preliminary surface grading and compaction would occur prior to placement of soil-cap.

Off-road Equipment - No demolition proposed.

Off-road Equipment - Anticipated construction equipment usage as 8/hrs per day is a conservative estimate as it assumes all construction equipment will be used all day daily. Actual construction equipment usage would not be as intensive as assumptions made here.

Off-road Equipment - No site preparation proposed.

Off-road Equipment - No building construction proposed.

Off-road Equipment - No Paving proposed.

Off-road Equipment - No architectural coatings proposed.

Grading - The project impact area is 3.6 acres.

Trips and VMT - Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 525 truck trips to import soil to the project site during a 3-week period.

Land Use Change - The project includes adding 17,400 square yards of erosion control seed mix to reduce erosion of the newly placed soil-cap.

Construction Off-road Equipment Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	5.60	41.47	32.09	0.05	19.95	1.94	21.89	3.36	1.90	5.26	0.00	5,729.63	0.00	0.45	0.00	5,738.98
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	1.94	12.38	15.09	0.05	16.51	0.42	16.93	1.53	0.39	1.92	0.00	5,729.63	0.00	0.45	0.00	5,738.98
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.7 Earthmoving Activities - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.26	0.00	6.26	3.32	0.00	3.32						0.00
Off-Road	3.67	29.09	16.99	0.03		1.51	1.51		1.51	1.51		2,941.28		0.33		2,948.20
Total	**3.67**	**29.09**	**16.99**	**0.03**	**6.26**	**1.51**	**7.77**	**3.32**	**1.51**	**4.83**		**2,941.28**		**0.33**		**2,948.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.22	11.71	8.91	0.02	12.28	0.39	12.66	0.02	0.35	0.38		1,846.62		0.06		1,847.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.72	0.67	6.18	0.01	1.41	0.04	1.45	0.02	0.03	0.05		941.73		0.06		942.91
Total	**1.94**	**12.38**	**15.09**	**0.03**	**13.69**	**0.43**	**14.11**	**0.04**	**0.38**	**0.43**		**2,788.35**		**0.12**		**2,790.78**

3.7 Earthmoving Activities - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.82	0.00	2.82	1.49	0.00	1.49						0.00
Off-Road	0.00	0.00	0.00	0.03		0.00	0.00		0.00	0.00	0.00	2,941.28		0.33		2,948.20
Total	**0.00**	**0.00**	**0.00**	**0.03**	**2.82**	**0.00**	**2.82**	**1.49**	**0.00**	**1.49**	**0.00**	**2,941.28**		**0.33**		**2,948.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.22	11.71	8.91	0.02	12.28	0.39	12.66	0.02	0.35	0.38		1,846.62		0.06		1,847.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.72	0.67	6.18	0.01	1.41	0.04	1.45	0.02	0.03	0.05		941.73		0.06		942.91
Total	**1.94**	**12.38**	**15.09**	**0.03**	**13.69**	**0.43**	**14.11**	**0.04**	**0.38**	**0.43**		**2,788.35**		**0.12**		**2,790.78**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

5.0 Energy Detail

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00					0.00	0.00		0.00	0.00						0.00
Unmitigated	0.00					0.00	0.00		0.00	0.00						0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

6.2 Area by SubCategory

<u>Mitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

CalEEMod Assumptions/Inputs

Model Run on January 30, 2013. Model is CalEEMod v.2011.1.1

Notes: project file was not saved as file was too large. To recreate model, use the following assumptions/inputs identified below. Unless identified below, default settings were utilized.

Project Characteristics

Project Name	Waring's Dump Soil Cap Project - Alternatives
Project Location	Sacramento Metropolitan Air Quality Management District
Climate Zone	6
Land Use Setting	Urban
Operational Year	2013
Pollutants Selected	All

Land Use

Land Use Type	None Selected

REMARKS: The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction

Construction Phase

Construction Phase	Phase Type	Start Date	End Date	Days/Week	Total Days	Construction Phase Description
Earthmoving Activities	Grading	7/1/2013	8/31/2013	5 days/week	45 days	Earthmoving Activities includes excavation of existing waste, hauling of waste and importing new clean soil, surface grading and soil compaction

REMARKS: A two-month project completion schedule is estimated. Soil/waste excavation and export, soil delivery and import are anticipated to be over a seven-week period. Surface grading and soil compaction would occur during and at the end of the construction period.

Off Road Equipment

Phase Name: Earthmoving Activities

Equipment Type	Unit Amount	Hours/Day
Off-Highway Trucks	100	8
Rubber Tired Dozers	1	8
Tractors/Loaders/Backhoes	2	8
Excavators	2	8

REMARKS: Conservatively assumes each piece of equipment runs all day daily. Soil/debris exported and imported would entail approximately 8,125 total truck trips over the course of the construction period.

For the following phases, no construction equipment is required or necessary for the project:

Site preparation, building construction, paving, architectural coating, and demolition.

Dust From Material Movement

Phase Name: Earthmoving Activities

Material Exported: 65,000 cubic yards

Material Imported: 65,000 Cubic Yards

Material Import/Exported Phased: Yes.

Area of Impact: 3.6 acres

REMARKS: Project impact area is 3.6 acres.

Demolition

Not applicable to the proposed project.

Trips and VMT

Input areas are default values.

REMARKS: Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 8,125 truck trips to import soil to the project site during a 7-week period.

On-Road Fugitive Dust

Default values

Architectural Coatings

Not Applicable to the proposed project.

Operational

Not applicable to the proposed project

REMARKS: This portion of the model is not applicable to the proposed project as there is no operational use proposed.

Vegetation

Land Use Change

Vegetation Land Use Type	Vegetation Land Use Subtype	Initial Acres	Final Acres	Annual CO2 accumulation per acre (tonnes CO2/year)
Others	Others	3.6	3.6	0

REMARKS: The project includes adding erosion control seed mix to reduce erosion.

Sequestration

Not applicable to proposed project – no trees on site or proposed.

Mitigation

Construction

Off-Road Equipment

Equipment Type	# of Equipment Mitigated	Fuel Type	
Rubber Tired Dozer	1	Diesel	
Tractors/Loaders/Backhoes	2	Diesel	
Off-Highway Trucks	100	Diesel	
Excavators	2	Diesel	

Fugitive Dust

Soil Stabilizer for Unpaved Roads. Checked

Water Exposed Area. Frequency: 2 times per day

Replace Ground Cover of Area Disturbed. Checked

Traffic

Not Applicable to proposed project as there are no operational uses proposed.

Waring's Dump Soil Cap Project - Alternatives

Sacramento Metropolitan AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Utility Company**
Climate Zone	6	**Precipitation Freq (Days)**	58	

1.3 User Entered Comments

Project Characteristics -

Land Use - The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction Phase - A two-month project completion schedule is estimated. Soil/waste excavation and export, soil delivery and import are anticipated to be over a seven-week period. Surface grading and soil compaction would occur during and at the end of the construction period.

Off-road Equipment - Conservatively assumes each piece of equipment runs all day daily. Soil/debris exported and imported would entail approximately 8,125 total truck trips over the course of the construction period.

Grading - Project impact area is 3.6 acres.

Trips and VMT - Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 8,125 truck trips to import soil to the project site during a 7-week period.

Vehicle Trips - This portion of the model is not applicable to the proposed project as there is no operational use proposed.

Land Use Change - The project includes adding erosion control seed mix to reduce erosion.

Construction Off-road Equipment Mitigation -

Off-road Equipment - There is no Site Preparation Phase

Off-road Equipment - There is no Building Construction Phase

Off-road Equipment - There is no paving phase.

Off-road Equipment - There is no architectural coating phase.

Off-road Equipment - No demolition is proposed.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	4.05	33.03	12.34	0.04	0.21	1.19	1.41	0.08	1.19	1.27	0.00	4,571.04	4,571.04	0.33	0.00	4,577.86
Total	**4.05**	**33.03**	**12.34**	**0.04**	**0.21**	**1.19**	**1.41**	**0.08**	**1.19**	**1.27**	**0.00**	**4,571.04**	**4,571.04**	**0.33**	**0.00**	**4,577.86**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.04	0.04	0.35	0.04	0.13	0.00	0.13	0.04	0.00	0.04	0.00	4,571.04	4,571.04	0.33	0.00	4,577.86
Total	**0.04**	**0.04**	**0.35**	**0.04**	**0.13**	**0.00**	**0.13**	**0.04**	**0.00**	**0.04**	**0.00**	**4,571.04**	**4,571.04**	**0.33**	**0.00**	**4,577.86**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
Vegetation Land Change					0.00
Total					**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.7 Earthmoving Activities - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.15	0.00	0.15	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	4.01	32.99	11.99	0.04		1.19	1.19		1.19	1.19	0.00	4,521.93	4,521.93	0.32	0.00	4,528.70
Total	**4.01**	**32.99**	**11.99**	**0.04**	**0.15**	**1.19**	**1.34**	**0.08**	**1.19**	**1.27**	**0.00**	**4,521.93**	**4,521.93**	**0.32**	**0.00**	**4,528.70**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.04	0.04	0.35	0.00	0.06	0.00	0.07	0.00	0.00	0.00	0.00	49.11	49.11	0.00	0.00	49.17
Total	**0.04**	**0.04**	**0.35**	**0.00**	**0.06**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**49.11**	**49.11**	**0.00**	**0.00**	**49.17**

3.7 Earthmoving Activities - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.04		0.00	0.00		0.00	0.00	0.00	4,521.93	4,521.93	0.32	0.00	4,528.70
Total	**0.00**	**0.00**	**0.00**	**0.04**	**0.07**	**0.00**	**0.07**	**0.03**	**0.00**	**0.03**	**0.00**	**4,521.93**	**4,521.93**	**0.32**	**0.00**	**4,528.70**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.04	0.04	0.35	0.00	0.06	0.00	0.07	0.00	0.00	0.00	0.00	49.11	49.11	0.00	0.00	49.17
Total	**0.04**	**0.04**	**0.35**	**0.00**	**0.06**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**49.11**	**49.11**	**0.00**	**0.00**	**49.17**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

5.0 Energy Detail

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

9.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Others	3.6 / 3.6					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Waring's Dump Soil Cap Project - Alternatives

Sacramento Metropolitan AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Utility Company**
Climate Zone	6	**Precipitation Freq (Days)**	58	

1.3 User Entered Comments

Project Characteristics -

Land Use - The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction Phase - A two-month project completion schedule is estimated. Soil/waste excavation and export, soil delivery and import are anticipated to be over a seven-week period. Surface grading and soil compaction would occur during and at the end of the construction period.

Off-road Equipment - Conservatively assumes each piece of equipment runs all day daily. Soil/debris exported and imported would entail approximately 8,125 total truck trips over the course of the construction period.

Grading - Project impact area is 3.6 acres.

Trips and VMT - Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 8,125 truck trips to import soil to the project site during a 7-week period.

Vehicle Trips - This portion of the model is not applicable to the proposed project as there is no operational use proposed.

Land Use Change - The project includes adding erosion control seed mix to reduce erosion.

Construction Off-road Equipment Mitigation -

Off-road Equipment - There is no Site Preparation Phase

Off-road Equipment - There is no Building Construction Phase

Off-road Equipment - There is no paving phase.

Off-road Equipment - There is no architectural coating phase.

Off-road Equipment - No demolition is proposed.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	180.14	1,468.12	549.94	1.98	10.14	53.06	63.19	3.45	53.05	56.50	0.00	224,248.60	0.00	15.94	0.00	224,583.37
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	1.76	1.50	16.81	1.98	6.45	0.09	6.54	1.58	0.08	1.66	0.00	224,248.60	0.00	15.94	0.00	224,583.37
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.7 Earthmoving Activities - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.70	0.00	6.70	3.40	0.00	3.40						0.00
Off-Road	178.38	1,466.61	533.12	1.95		52.97	52.97		52.97	52.97		221,597.02		15.79		221,928.66
Total	**178.38**	**1,466.61**	**533.12**	**1.95**	**6.70**	**52.97**	**59.67**	**3.40**	**52.97**	**56.37**		**221,597.02**		**15.79**		**221,928.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	1.76	1.50	16.81	0.03	3.43	0.09	3.52	0.05	0.08	0.13		2,651.58		0.15		2,654.70
Total	**1.76**	**1.50**	**16.81**	**0.03**	**3.43**	**0.09**	**3.52**	**0.05**	**0.08**	**0.13**		**2,651.58**		**0.15**		**2,654.70**

3.7 Earthmoving Activities - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.02	0.00	3.02	1.53	0.00	1.53						0.00
Off-Road	0.00	0.00	0.00	1.95		0.00	0.00		0.00	0.00	0.00	221,597.0 2		15.79		221,928.6 6
Total	**0.00**	**0.00**	**0.00**	**1.95**	**3.02**	**0.00**	**3.02**	**1.53**	**0.00**	**1.53**	**0.00**	**221,597.0 2**		**15.79**		**221,928.6 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	1.76	1.50	16.81	0.03	3.43	0.09	3.52	0.05	0.08	0.13		2,651.58		0.15		2,654.70
Total	**1.76**	**1.50**	**16.81**	**0.03**	**3.43**	**0.09**	**3.52**	**0.05**	**0.08**	**0.13**		**2,651.58**		**0.15**		**2,654.70**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

5.0 Energy Detail

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00					0.00	0.00		0.00	0.00						0.00
Unmitigated	0.00					0.00	0.00		0.00	0.00						0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Waring’s Dump Soil Cap Project - Alternatives

Sacramento Metropolitan AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Utility Company**
Climate Zone	6	**Precipitation Freq (Days)**	58	

1.3 User Entered Comments

Project Characteristics -

Land Use - The project site is currently undeveloped. The project does not propose the construction of new buildings or future operational uses. The project site will remain vacant with vegetation growth.

Construction Phase - A two-month project completion schedule is estimated. Soil/waste excavation and export, soil delivery and import are anticipated to be over a seven-week period. Surface grading and soil compaction would occur during and at the end of the construction period.

Off-road Equipment - Conservatively assumes each piece of equipment runs all day daily. Soil/debris exported and imported would entail approximately 8,125 total truck trips over the course of the construction period.

Grading - Project impact area is 3.6 acres.

Trips and VMT - Anticipating a total capacity of 16 cubic yard per haul truck, there would be no more than 8,125 truck trips to import soil to the project site during a 7-week period.

Vehicle Trips - This portion of the model is not applicable to the proposed project as there is no operational use proposed.

Land Use Change - The project includes adding erosion control seed mix to reduce erosion.

Construction Off-road Equipment Mitigation -

Off-road Equipment - There is no Site Preparation Phase

Off-road Equipment - There is no Building Construction Phase

Off-road Equipment - There is no paving phase.

Off-road Equipment - There is no architectural coating phase.

Off-road Equipment - No demolition is proposed.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	180.14	1,468.25	548.18	1.98	10.14	53.06	63.19	3.45	53.05	56.50	0.00	223,890.30	0.00	15.93	0.00	224,224.82
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	1.75	1.64	15.05	1.98	6.45	0.09	6.54	1.58	0.08	1.66	0.00	223,890.30	0.00	15.93	0.00	224,224.82
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.7 Earthmoving Activities - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.70	0.00	6.70	3.40	0.00	3.40						0.00
Off-Road	178.38	1,466.61	533.12	1.95		52.97	52.97		52.97	52.97		221,597.02		15.79		221,928.66
Total	**178.38**	**1,466.61**	**533.12**	**1.95**	**6.70**	**52.97**	**59.67**	**3.40**	**52.97**	**56.37**		**221,597.02**		**15.79**		**221,928.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	1.75	1.64	15.05	0.02	3.43	0.09	3.52	0.05	0.08	0.13		2,293.28		0.14		2,296.15
Total	**1.75**	**1.64**	**15.05**	**0.02**	**3.43**	**0.09**	**3.52**	**0.05**	**0.08**	**0.13**		**2,293.28**		**0.14**		**2,296.15**

3.7 Earthmoving Activities - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.02	0.00	3.02	1.53	0.00	1.53						0.00
Off-Road	0.00	0.00	0.00	1.95		0.00	0.00		0.00	0.00	0.00	221,597.02		15.79		221,928.66
Total	**0.00**	**0.00**	**0.00**	**1.95**	**3.02**	**0.00**	**3.02**	**1.53**	**0.00**	**1.53**	**0.00**	**221,597.02**		**15.79**		**221,928.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	1.75	1.64	15.05	0.02	3.43	0.09	3.52	0.05	0.08	0.13		2,293.28		0.14		2,296.15
Total	**1.75**	**1.64**	**15.05**	**0.02**	**3.43**	**0.09**	**3.52**	**0.05**	**0.08**	**0.13**		**2,293.28**		**0.14**		**2,296.15**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

5.0 Energy Detail

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00					0.00	0.00		0.00	0.00						0.00
Unmitigated	0.00					0.00	0.00		0.00	0.00						0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.00**					**0.00**	**0.00**		**0.00**	**0.00**						**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Appendix C Biological Resources Assessment

TECHNICAL REPORT

BIOLOGICAL RESOURCES ASSESSMENT FOR THE PROPOSED WARING'S DUMP SOIL CAP PROJECT

SACRAMENTO COUNTY, CALIFORNIA

November 2012

Prepared by:

URS

Prepared for:

CalRecycle

Department of Resources
Recycling and Recovery
1001 I Street
P.O. Box 4025
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Table of Contents

List of Acronyms and Abbreviations

APN	Assessor's Parcel Number
CalRecycle	California Department of Resources Recycling and Recovery
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CWA	Clean Water Act
ESA	Endangered Species Act (federal)
GPS	Global Positioning System
MBTA	Migratory Bird Treaty Act
U.S.	United States
USGS	United States Geological Survey

1 Introduction

1.1 Project Location

Waring's Dump is located in the south portion of the city of Sacramento, California and is bounded by Morrison Creek to the north; 63rd Street to the west; parcels fronting Elder Creek Road to the south, and 65th Street Expressway to the east. The Project area is located on a total of 5.04 acres of privately held property, comprising Assessor's Parcel Numbers (APNs) 38-182-005 (0.89 acre), 38-182-006 (0.67 acre), 38-182-007 (0.91 acre), 38-182-010 (0.67 acre), and 38-202-001 (1.9 acres). The dump is on the United States Geological Survey (USGS) "Sacramento East" 7.5'quadrangle within the southeast ¼ of the southeast ¼ of Section 28, Township 8 North, Range 5 East (Figure 1).

1.2 Project Description

The proposed Project would implement remediation actions at the abandoned Waring's Dump by surface grading and soil capping of the former dump site with compacted soil. The California Department of Resources Recycling and Recovery (CalRecycle) is proposing to grade and place a soil cap over the former dump known as Waring's Dump.

The Project area was largely undeveloped until its use as a rock and gravel borrow site for the construction of State Route 99 in the 1930s. At a depth of approximately 50 feet, the borrow pit eventually received water overflow from Morrison Creek, rising to a depth of 20 to 30 feet at its center. A request by former owners Albert and Frances Waring to fill the pit with rubbish and construction waste was granted by the City in the late 1940s. Over a decade or more, the dump received domestic refuse that appears to have been burned on-site. It is now classified as a Closed Illegal and Abandoned disposal site.

A Final Site Investigation Work Plan and Final Site Investigation Report were prepared by the California Integrated Waste Management Board (now referred to as CalRecycle) in 2004. Deposits were found to be up to 24 feet in depth in the middle of the site. The deposit is bowl shaped, deepest in the middle and trending upwards in elevation towards the margins. CalRecycle also determined the amount of cover overlying waste material, the horizontal and vertical extent of waste material, and the chemical characteristics of Waring's Dump. CalRecycle concluded that the most appropriate method of site remediation would be to cap the dump wastes in place. Some surface grading would be required to re-contour the Project area to control stormwater run-off. The depth to which grading will occur will be minimized as the objective is to leave wastes undisturbed and in place.

The purpose of this Biological Resources Technical Report is to provide information on the existing biological resources in the Project area that may be affected by the proposed Project.

2 Methods

2.1 Field Survey

Trevor A. Burwell, Ph.D. conducted a biological field survey of the proposed project area on July 23, 2012. Dr. Burwell conducted the survey by walking the extent of the area of potential ground disturbance and by describing and recording plant and wildlife species observed. Dr. Burwell walked the project area in a zig-zag transect such that the entire ground surface was observed within 10 meters. Focused searches for potential special-status species, including nesting birds, was conducted where woody vegetation or uneven ground was encountered that may provide habitat for nesting birds or burrowing animals.

The biological field survey was conducted while CalRecycle project engineer Mustafe Botan, PE and Lea Gibson, an Environmental Specialist from Sacramento County Environmental Management Department (Local Enforcement Agency), were present on site to confirm the extent of the area of potential ground disturbance. Dr. Burwell took photographs from representative viewing locations throughout the Project area (see Figures section). Photograph locations, viewing direction, and potential special-status species occurrences were marked by hand on a high-resolution aerial image of the Project area. A global positioning system (GPS) receiver was available but not used during the survey due to the lack of special-status species or sensitive habitats (defined below in Section 2.2) observed in the Project area. The survey was completed within 4 hours. Weather conditions were calm winds, clear skies, and temperatures between 95 and 100 degrees F.

2.2 Special-Status Species and Sensitive Habitat

The potential for special-status species and sensitive habitats to occur in the Project area or be affected by the Project was evaluated by conducting a search of the most recent versions (as of July 2012) of the California Department of Fish and Game's (CDFG's) California Natural Diversity Database (CNDDB) (CDFG 2012a) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPS 2012) databases for reported species occurrences in the USGS topographic quad covering the Project area (i.e., Sacramento East) and eight adjacent quads (Carmichael, Florin, Sacramento West, Taylor Monument, Citrus Heights, Clarksburg, Elk Grove, Florin, and Rio Linda).

For the purposes of this technical report, special-status species include:

- Plants and animals listed under the federal Endangered Species Act of 1973 (federal ESA)
- Actively nesting birds protected under the Migratory Bird Treaty Act (MBTA) (U.S.C. Sections 703 to 712)
- Plants and animals listed under the California Endangered Species Act (CESA)
- Plants listed under the California Native Plant Protection Act (CNPPA)

URS

- Plants and animals protected under California Fish and Game Code
- Plants and animnals protected under other regulations, such as those species that meet the definitions of rare, threatened, or endangered under California Environmental Qualty Act (CEQA) Guidelines Sections 15380 and 15125, including heritage trees as defined under City of Sacramento Municipal Code Chapter 12.64, Heritage Trees.

Heritage trees defined by the City of Sacramento include any tree of any species with a single or cumulative circumference trunk circumference of 100 inches or more, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species.

Sensitive communities were considered which represent rare vegetation types (CDFG 2012a) or have limited distribution statewide or within a county or region. These communities are often vulnerable to the environmental effects of projects (CDFG 2000, 2009), and include riparian and wetland associated vegetation types associated with streams, wetlands, vernal pools, and other jurisdictional waters of the U.S. as defined under the federal Clean Water Act (CWA).

3 Results

3.1 Vegetation and Wildlife

Vegetation in the Project area is a non-native annual grassland dominated by non-native invasive grass and forb (i.e., herbaceous) species. The dominant plant species include wild oat, yellow star thistle, Bermuda grass, bull thistle, chicory, and bindweed. A list of plant species observed, including their common names, scientific names, and native/non-native status is provided in Table 3-1. Wildlife species observed are listed in Table 3-2.

The quality of the vegetation in the Project area is highly degraded due to disking, debris dumping, and fire. At the time of field surveys in July 2012, approximately 70% of the proposed Project area was disked. Areas that were not disked include soil and debris piles, and areas adjacent to fences. Figure 1 is an aerial image of the Project area with photopoint locations and viewing directions. Figures 2 through 13 are representative photographs of the Project area.

Table 3-1: Plant Species Observed in the Project Area

Common Name	Scientific name	Native
scarlet pimpernel	*Anagallis arvensis*	
giant reed	*Arundo donax*	
Indian milkweed	*Asclepias eriocarpa*	X
narrow-leaved milkweed	*Asclepias fascicularis*	X
wild oat	*Avena fatua*	
common oat	*Avena sativa*	
mustard	*Brassica nigra*	
ripgut brome	*Bromus diandrus*	
soft brome	*Bromus hordeaceus*	
foxtail brome	*Bromus madritensis*	
yellow starthistle	*Centaurea solstitialis*	
chickory	*Cichorium intybus*	
bull thistle	*Cirsium vulgare*	
bindweed	*Convolvulus arvensis*	
Bermuda grass	*Cynodon dactylon*	
orchard grass	*Dactylis glomerata*	
filaree	*Erodium botrys*	
eucalyptus	*Eucalyptus* sp.	

Table 3-1: Plant Species Observed in the Project Area

Common Name	**Scientific name**	**Native**
Italian rye grass	*Festuca perennis*	
fig	*Ficus carica*	
fennel	*Foeniculum vulgare*	
ash (ornamental)	*Fraxinus* sp.	
English walnut	*Juglans regia*	
prickly lettuce	*Lactuca serriola*	
glossy privet	*Ligustrum lucidum*	
cheeseweed	*Malva parviflora*	
plantain	*Plantago major*	
valley oak	*Quercus lobata*	X
cork oak	*Quercus suber*	
wild radish	*Raphanus sativus*	
Himalayan blackberry	*Rubus discolor*	
dock	*Rumex crispus*	
tumbleweed	*Salsola tragus*	
sow thistle	*Sonchus asper* ssp. *asper*	
Chinese elm	*Ulmus parvifolia*	
vetch	*Vicia sativa*	
wild grape	*Vitis californica*	X

Table 3-2: Wildlife Species Observed In The Project Area

Common Name	**Scientific Name**
Western fence lizard	*Sceloporus occidentalis*
House sparrow	*Passer domesticus*
Red-tail hawk	*Buteo jamaicensis*
Mourning dove	*Zenaida macroura*
Barn swallow	*Hirundo rustica*
American robin	*Turdus migratorius*
Anna's hummingbird	*Calypte anna*
Loggerhead shrike	*Lanius ludovicianus*
California quail	*Callipepla californica*
Mockingbird	*Mimus polyglottos*

3.2 Special-Status Species and Sensitive Habitats

A heritage tree, as defined by Sacramento Municipal Code Chapter 12.64, was observed in the Project area. This tree is a non-native, multi-stem eucalyptus with a cumulative trunk circumference of 175 inches. It occurs along the fenceline on the southern edge of the proposed Project area. Two special-status bird species, a red-tail hawk and a loggerhead shrike, were observed in flight over the Project area. Nesting habitat for these species does not occur in the Project area, but may occur in the vicinity. No other special-status species were observed in the Project area. The results of CNDDB and CNPS database searches for special-status species and sensitive habitats with potential to occur in the Project area are described in Appendix A.

The Project area contains potentially suitable habitat for special-status bird species that nest within non-native annual grassland. Grassland nesting bird species with potential to occur include burrowing owl, which may occupy mammal burrows or cavities in debris piles. A focused search for mammal burrows and debris pile cavities found no evidence of occupation by burrowing owls, such as owl feathers, whitewash, or pellets.

Bird nesting activity was not observed in trees on or adjacent to the Project area. Large stature trees in the Project vicinity (within ¼ mile) have potential to support nesting raptors and other special-status bird species protected under the MBTA or state Fish and Game Code. The urbanized setting of the Project area includes noise, lighting, ground disturbance (e.g., disking) and other ongoing habitat disturbances, but there is a small potential for construction-related activities to disturb special-status bird nesting activities in the Project vicinity.

No sensitive habitats occur in the Project area. Morrison Creek occurs adjacent to the site and is considered a jurisdictional water of the U.S., but the bed and bank of the creek are outside the area of potential ground disturbance. As a straightened concrete channel, it supports no riparian or wetland associated vegetation community and provides little natural habitat value. The proposed Project is expected to avoid direct and indirect impacts to Morrison Creek as trenching, grading, excavation, and fill are expected to occur on the landside of the existing earthen levee.

4 Conclusions and Recommendations

Habitat in the Project area is non-native annual grassland. The Project area is isolated from other natural areas due to the surrounding urban development. A concrete-lined segment of Morrison Creek is located immediately to the north of the Project area. The creek is separated from the Project area by a low earthen levee, and the Project includes no activities in the bed or bank of the creek. No other potentially jurisdictional areas or other sensitive communities were observed in the Project area or vicinity.

Project implementation is expected to include grading, trenching, excavation and fill. The finished cap is expected to be planted with grassland species. Grassland vegetation cover would potentially be restored within 1 year of seeding.

Although no active nesting was observed during field surveys, non-native grassland in the Project area and trees in the vicinity (within ¼ mile) have potential to support special-status nesting bird species. Potential impacts to nesting bird species can be avoided by either:

- Initiating ground disturbance, vegetation removal, and other construction activities outside of the nesting season (i.e., generally August 15 through February 1)
- Conducting a pre-construction nesting bird survey in the Project area and trees in the Project area's immediate vicinity (i.e., within ¼ mile).

If special-status bird species are actively nesting at the time of construction initiation, impact avoidance, minimization, or mitigation measures may include delaying construction until the cessation of nesting activities or consulting with CDFG to establish adequate non-disturbance buffer areas until the young have fledged.

Burrowing owls have potential to occupy the Project area outside of the nesting season. Therefore, it is recommended that pre-construction surveys for burrowing owls be conducted any time of the year using methods consistent with CDFG guidelines (CDFG 2012b, Appendix D).

The Project area contains a multi-stem eucalyptus tree that meets the definition of a heritage tree under the City of Sacramento's Municipal Code 12.64. If the Project proposes to remove the tree or conduct ground-disturbing work within the dripline area of the tree (including trenching, excavation, fill, vehicle or equipment storage, root cutting, or pruning), the Project applicant will be required to obtain a permit from the City of Sacramento.The permit application is a single page form, and requires a $50 application fee.

5 References

CDFG 2000 — California Department of Fish and Game. 2000. *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities*. Sacramento, CA.

CDFG 2009 — California Department of Fish and Game. 2009. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. State of California, California Natural Resources Agency, November 24, 2009. Sacramento, CA.

CDFG 2012a — California Department of Fish and Game. 2012a. *California Natural Diversity Database (CNDDB)*. RareFind query of the USGS 7½-minute quads nine-quad review area. RareFind Version 3.0.5. Wildlife and Habitat Data Analysis Branch. January 2012 version. Sacramento, CA. (Accessed July 2012).

CDFG 2012b — California Department of Fish and Game. 2012b. *Staff Report on Burrowing Owl Mitigation*. State of California, Natural Resources Agency, Department of Fish and Game. March 7, 2012. Sacramento, CA.

CNPS 2012 — California Native Plant Society. 2012. Inventory of Rare and Endangered Plants. http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi. (Accessed July 2012).

FIGURES

Figure 1. Aerial Image of Project Area, Photopoint Locations, and Viewing Direction.

Figure 2. Photopoint Location 1, Looking East from the Southwest Corner.

Figure 3. Photopoint Location 2, Looking Northeast from the Southwest Corner.

Figure 4. Photopoint Location 3, Looking North from the Southwest Corner.

Figure 5. Photopoint Location 4, Looking West from the Southeast Corner.

Figure 6. Photopoint Location 5, Looking Northwest from the Southeast Corner.

Figure 7. Photopoint Location 6, Looking North from the Southeast Corner.

Figure 8. Photopoint Location 7, Looking South from the Northeast Corner.

Figure 9. Photopoint Location 8, Looking Southwest from the Northeast Corner.

Figure 10. Photopoint Location 9, Looking West-Southwest from the Northeast Corner.

Figure 11. Photopoint Location 10, Looking East-Northeast from the Northwest Corner.

Figure 12. Photopoint Location 11, Looking Southeast from the Northwest Corner.

Figure 13. Photopoint Location 12, Looking South from the Northwest Corner.

APPENDICES

APPENDIX A: Special-Status Species and Sensitive Communities with Potential to Occur in the Waring's Dump Project Area.

Scientific Name	Common Name	Listing Status[1]		Potential To Occur In Project Area Or Be Affected By The Project
		Federal	State	
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	FE	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Branchinecta mesovallensis	midvalley fairy shrimp	-	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Linderiella occidentalis	California linderiella	-	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Lepidurus packardi	vernal pool tadpole shrimp	FE	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Dumontia oregonensis	hairy water flea	-	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	-	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Reptiles				
Emys marmorata	western pond turtle	-	SSC	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Thamnophis gigas	giant garter snake	FT	ST	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Amphibians				
Spea hammondii	western spadefoot	-	SSC	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.

Scientific Name	Common Name	Listing Status[1]		Potential To Occur In Project Area Or Be Affected By The Project
		Federal	State	
Birds				
Phalacrocorax auritus	double-crested cormorant	-	WL	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Ardea herodias	great blue heron	-	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Ardea alba	great egret	-	-	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected to occur or be affected by the Project.
Egretta thula	snowy egret	-	-	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected to occur or be affected by the Project.
Nycticorax nycticorax	black-crowned night heron	-	-	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Elanus leucurus	white-tailed kite	-	FP	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Accipiter cooperii	Cooper's hawk	-	WL	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected to occur or be affected by the Project.
Buteo swainsoni	Swainson's hawk	-	ST	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Buteo regalis	ferruginous hawk	-	WL	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Aquila chrysaetos	golden eagle	-	FP, WL	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.

Scientific Name	Common Name	Listing Status[1]		Potential To Occur In Project Area Or Be Affected By The Project
		Federal	State	
Falco columbarius	merlin	-	WL	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	C	SE	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Athene cunicularia	burrowing owl	-	SSC	Not observed during field work. The Project area has potential nesting habitat for this species in ground squirrel burrows and debris piles. A focused search did not identify any potentially active burrows. Suitable burrow habitat occurs in the Project area, and burrowing owls may occupy the site in the future. Consequently, pre-construction surveys consistent with methods in CDFG 2012b, Appendiix D, are recommended.
Progne subis	purple martin	-	SSC	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Riparia riparia	bank swallow	-	ST	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Vireo bellii pusillus	least Bell's vireo	FE	SE	Not observed during field work. The Project area does not contain suitable nesting habitat for this species, and it is not expected to occur or be affected by the Project.
Agelaius tricolor	tricolored blackbird	-	SSC	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected be affected by the Project.
Xanthocephalus xanthocephalus	yellow-headed blackbird	-	SSC	Not observed during field work. The Project area does not contain suitable nesting habitat for this species, and it is not expected to occur or be affected by the Project.
Fish				
Oncorhynchus tshawytscha	chinook salmon - Central Valley spring-run ESU	FT	ST	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.

Scientific Name	Common Name	Listing Status[1]		Potential To Occur In Project Area Or Be Affected By The Project
		Federal	State	
Oncorhynchus tshawytscha	chinook salmon - Sacramento River winter-run ESU	FE	SE	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Pogonichthys macrolepidotus	Sacramento splittail	-	SSC	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Archoplites interruptus	Sacramento perch	-	SSC	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Mammals				
Lasiurus cinereus	hoary bat	-	-	Not observed during field work. The Project site has low quality foraging habitat but does not contain suitable nesting habitat for this species, and it is not expected to occur or be affected by the Project.
Taxidea taxus	American badger	-	SSC	Not observed during field work. The Project site has potential nesting habitat for this species in ground squirrel burrows and debris piles. A focused search did not identify any potentially active burrows, and active nests or occupied burrows are not expected to occur or be affected by the Project.
Sensitive Communities				
Northern Hardpan Vernal Pool		-	-	Not observed during field work and it is not expected to occur or be affected by the Project.
Northern Claypan Vernal Pool		-	-	Not observed during field work and it is not expected to occur or be affected by the Project.
Northern Volcanic Mud Flow Vernal Pool		-	-	Not observed during field work and it is not expected to occur or be affected by the Project.
Great Valley Cottonwood Riparian Forest		-	-	Not observed during field work and it is not expected to occur or be affected by the Project.
Great Valley Valley Oak Riparian Forest		-	-	Not observed during field work and it is not expected to occur or be affected by the Project.
Elderberry Savanna		-	-	Not observed during field work and it is not expected to occur or be affected by the Project.

Scientific Name	Common Name	Listing Status[1]		Potential To Occur In Project Area Or Be Affected By The Project
		Federal	State	
Plants				
Carex comosa	bristly sedge	-	2.1	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Centromadia parryi ssp. rudis	Parry's rough tarplant		4.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	-	2.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Downingia pusilla	dwarf downingia	-	2.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Fritillaria agrestis	stinkbells	-	4.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Gratiola heterosepala	Boggs Lake hedge-hyssop	-	SE, 1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Hesperevax caulescens	hogwallow starfish		4.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	-	1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Juglans hindsii	Northern California black walnut	-	1B.1	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Juncus leiospermus var. ahartii	Ahart's dwarf rush	-	1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Legenere limosa	legenere	-	1B.1	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.

Scientific Name	Common Name	Listing Status[1]		Potential To Occur In Project Area Or Be Affected By The Project
		Federal	State	
Lepidium latipes var. heckardii	Heckard's pepper-grass	-	1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Lilaeopsis masonii	Mason's lilaeopsis	-	Rare, 1B.1	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Orcuttia tenuis	slender Orcutt grass	FT	SE	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Orcuttia viscida	Sacramento Orcutt grass	FE	CE, 1B.1	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Plagiobothrys hystriculus	bearded popcornflower	-	1B.1	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Sagittaria sanfordii	Sanford's arrowhead	-	1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Symphyotrichum lentum	Suisun Marsh aster	-	1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.
Trifolium hydrophilum	saline clover	-	1B.2	Not observed during field work. The Project area does not contain suitable habitat for this species, and it is not expected to occur or be affected by the Project.

Sources: CDFG 2012a, CNPS 2012.

1. Listing Status

"—" signifies "no status designation, but potential impacts should be described under CEQA Guidelines Sections 15380 and 15125."

Federal

FE: Listed as endangered under the federal ESA.
FT: Listed as threatened under the federal ESA.
C: A candidate for listing under the federal ESA.

State

SE: Listed as endangered under the California Endangered Species Act.
ST: Listed as threatened under the California Endangered Species Act.
SSC: A California Species of Special Concern.
Rare: Listed as rare under the CNPPA.
WL: Watch list.

California Rare Plant Rank:

1B: Rare, threatened, or endangered in California and elsewhere.
2: Rare, threatened, or endangered in California, but more common elsewhere.
3: More information is needed.
4: Limited distribution or infrequent throughout California:
0.1: Seriously endangered in California.

0.2: *Fairly endangered in California.*
0.3: *Not very endangered in California*

Appendix D Cultural Resources Assessment

TECHNICAL REPORT

CULTURAL RESOURCES ASSESSMENT FOR THE PROPOSED WARING'S DUMP SOIL CAP PROJECT

SACRAMENTO COUNTY, CALIFORNIA

November 2012

Prepared by:

URS

Prepared for:

CalRecycle
Department of Resources
Recycling and Recovery
1001 I Street
P.O. Box 4025
Sacramento, CA 95812-4025

This report contains confidential cultural resources location information; report distribution should be restricted to those with a need to know. Cultural resources are non-renewable, and their scientific, cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism, artifact hunting, and other activities that can damage cultural resources, the locations of cultural resources should be kept confidential. The legal authority to restrict cultural resources information is in California Government Code 6254.1 and the National Historic Preservation Act of 1966, as amended, Section 304.

Executive Summary

The California Department of Resources Recycling and Recovery (CalRecycle) is proposing to grade and place a soil cap over a former dump that operated for approximately a decade during the 1940s and 50s, known as Waring's Dump. Waring's Dump is located in the south portion of the city of Sacramento, California, on privately held property identified by Assessor's Parcel Numbers (APN) 38-182-005, 38-182-006, 38-182-007, 38-182-010, and 38-202-001. The approximately 5-acre dump site is bounded by Morrison Creek to the north, 63rd Street to the west; parcels fronting Elder Creek Road to the south, and 65th Street Expressway to the east. The Project area is on the United States Geological Survey (USGS) 1968 "Sacramento East" 7.5'quadrangle within the southeast ¼ of the southeast ¼ of Section 28, Township 8 North, Range 5 East (Figure 1).

This cultural resource assessment is being conducted because the proposed project would require soil grading and capping of disposal wastes in place. The cultural resources study was conducted in accordance with the Guidelines for the Implementation of the California Environmental Quality Act (CEQA) of 1970, as amended. According to Article 5, Section 15064.5 of the CEQA guidelines, a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Lead agencies are required to identify any historic resources that may be affected by any undertaking involving state or county lands, funds, or permitting.

The cultural resources assessment consisted of (1) a literature review to identify any previously recorded archaeological sites that could be affected by the proposed Project, and (2) a field survey to locate the recorded sites and any other sites that may exist but have not yet been recorded. No prehistoric cultural resources were identified during the assessment. Evidence of Waring's Dump was observed in the Project area. Historic-era refuse related to the operating period of the dump was assessed for its eligibility for listing in the California Register of Historical Resources. Waring's Dump is recommended "ineligible" for listing on the California Register given its lack of research potential; therefore, archaeological clearance is recommended for the proposed grading and capping of Waring's Dump.

Table of Contents

List of Acronyms and Abbreviations

APE	Area of Potential Effect
APN	Assessor's Parcel Number
ARMR	Archaeological Resource Management Reports
CEQA	California Environmental Quality Act
CIWMB	California Integrated Waste Management Board
MLD	Most Likely Descendant
NCIC	North Central Information Center
NAHC	Native American Heritage Commission
RPA	Registered Professional Archaeologist
SR	State Route
USGS	United States Geological Survey

1 Introduction

1.1 Project Location

The former Waring's Dump is located in the south portion of the city of Sacramento, California and is bounded by Morrison Creek to the north; 63rd Street to the west; parcels fronting Elder Creek Road to the south and 65th Street Expressway to the east. Waring's Dump is comprise of a total of 5.04 acres of privately held property, comprising Assessor's Parcel Numbers (APNs) 38-182-005 (0.89 acre), 38-182-006 (0.67 acre), 38-182-007 (0.91 acre), 38-182-010 (0.67 acre), and 38-202-001 (1.9 acres). The dump is on the United States Geological Survey (USGS) "Sacramento East" 7.5'quadrangle within the southeast ¼ of the southeast ¼ of Section 28, Township 8 North, Range 5 East (Figure 1).

1.2 Project Description and Area of Potential Effect

A Final Site Investigation Work Plan and Final Site Investigation Report were prepared by California Integrated Waste Management Board (now referred to as CalRecycle) in 2004 to determine the amount of cover overlying waste material, the horizontal and vertical extent of waste material, and the chemical characteristics of the Waring's Dump site. Based on the results of the Final Site Investigation Report it was determined that the most appropriate method of site remediation would be to cap the dump wastes in place. Some surface grading may be required to re-contour the Project area in order to control run off. The depth to which grading will occur will be minimized as the objective is to leave wastes undisturbed and in place.

The Area of Potential Effect (APE), depicted in Figure 2, includes all of the approximately 5-acre Waring's Dump site located in APNs 38-182-005, 38-182-007, 38-182-010, 38-182-006, and 38-202-001. The vertical APE will likely be approximately 2 feet, and likely less in some areas of the site. Clean fill is to be placed on top of the site subsequent to grading.

1.3 Regulatory Setting and Need for Study

This cultural resources study was conducted in accordance with the Guidelines for the Implementation of the California Environmental Quality Act (CEQA) of 1970, as amended. According to Article 5, Section 15064.5 of CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Lead agencies are required to identify any historic resources that may be affected by any undertaking involving state or county lands, funds, or permitting.

The significance of such resources that may be affected by the undertaking must be evaluated using the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852). The criteria for significance are as follows:

> (1) is associated with events that have made a significant contribution to the broad patterns of history or the cultural heritage of California or the United States;

(2) is associated with the lives of persons important in our past;

(3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

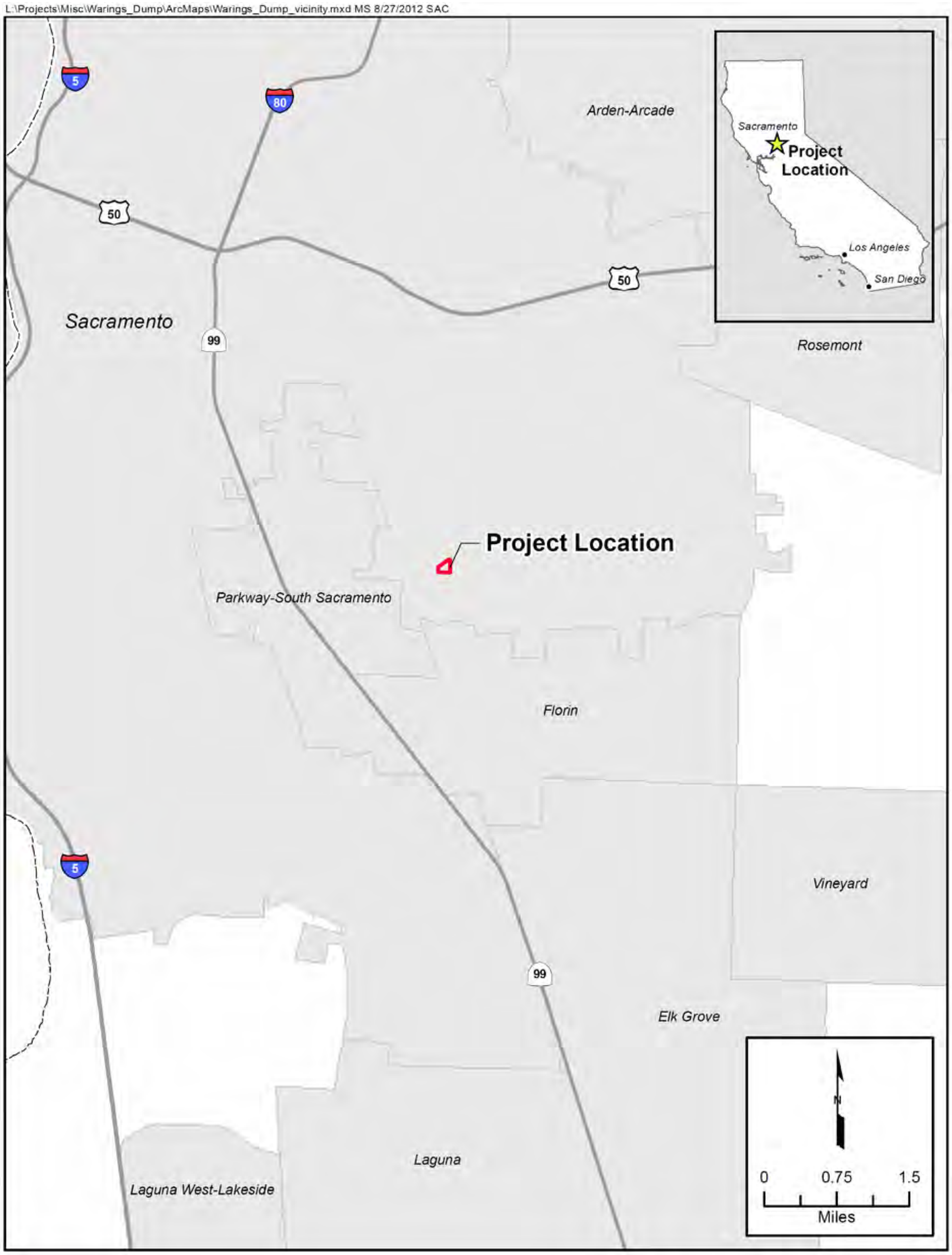
(4) has yielded, or may be likely to yield, information important in prehistory or history.

Furthermore, it is recommended under CEQA guidelines that all cultural resources be preserved in-situ whenever possible by avoidance. Whenever a historical resource or unique archaeological resource (Public Resources Code SS21083.2) cannot be avoided by project activities, effects shall be addressed and mitigated as outlined in SS15126.4 and SS15331 of CEQA.

1.4 Personnel

The fieldwork, analysis, and reporting was directed by professionals who meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 C.F.R. § 44716 [1983]). The following personnel contributed to the assessment:

- Janis Offermann, Registered Professional Archaeologist (RPA), acted as Principal Investigator for the cultural resources assessment. She has a B.A. in anthropology from Sonoma State University (California) and an M.A. in anthropology from the University of California, Davis. She has 37 years of experience in California archaeology and cultural resource management.
- Ben Elliott, RPA, authored this document and directed the research and field efforts of the assessment. He has a B.A. in anthropology from University of California, Santa Cruz and an M.A. in cultural resources management from Sonoma State University (California). He has 11 years of experience in archaeology and cultural resource management in California and the Great Basin.
- Christopher Peske assisted with research, field and reporting efforts. He has a B.A. in anthropology from the University of California, Davis. He has one year of experience in California archaeology and cultural resource management.



Cultural Resources Assessment
Warings Dump
Sacramento County, California

Figure 1: Project Vicinity

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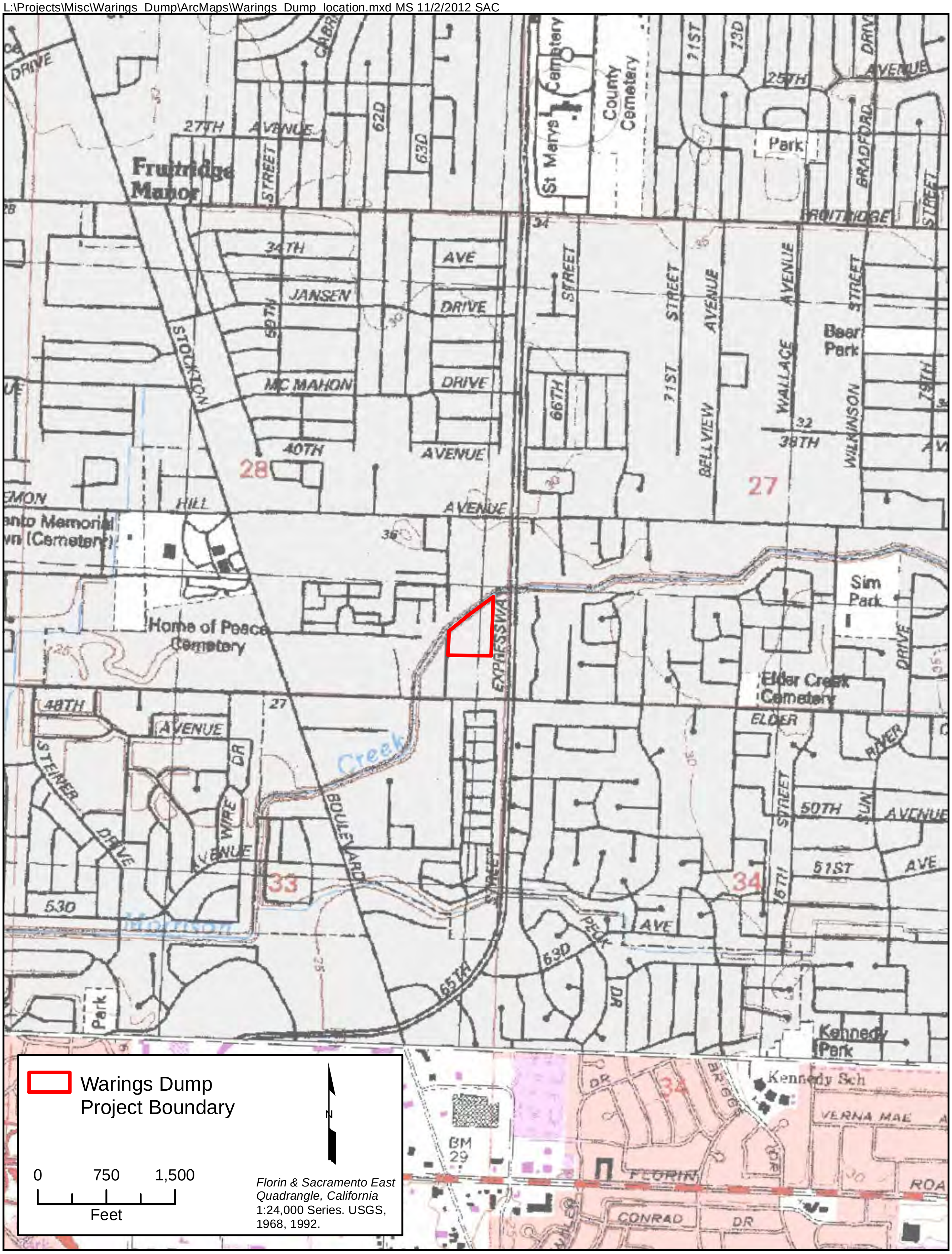

Class III Cultural Resources Inventory
Warings Dump
Sacramento County, California

URS

Figure 2: Project Location

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2 Project Context

2.1 Environmental Setting

The Project is located at the southern end of the Sacramento Valley of California, approximately 7 miles south of the confluence of the American and Sacramento rivers. The Sacramento Valley is a wide, flat valley, which, together with the San Joaquin Valley, forms what is commonly referred to as the Great or Central Valley. The province is bounded on the east by the Sierra Nevada Mountains and on the west by the Coast Ranges. The landscape in the region is characterized by a wide valley floor plain. The natural topography of the Project area would be virtually flat. Morrison Creek, which forms the northern boundary of the Project area, has been heavily modified from its natural state. The creek was widened, deepened and realigned for flood control purposes in the mid-1960s and an engineered levee now separates it from the former Waring's dump (CIWMB 2004). The natural environment in the project vicinity has undergone significant alteration as a result of modern encroachment. Industrial and multifamily residential development and appurtenant infrastructure characterize the area at present.

2.2 Geomorphic Setting

The Project area is adjacent to Morrison Creek. Although the creek has been channelized, it can be deduced that fluvial deposits are present in the Project area. The Final Site Investigation Report prepared by CalRecycle states the Project area was a borrow site during the 1930s construction of State Route (SR) 99 and described the extracted material as "sand and gravel and topsoil" (CalRecycle 2004). The site investigation also identified a dense clay layer at which delimits the vertical extent of the borrow area. The presence of clay suggests the possibility of land surface stability during some point in the past, and therefore has potential to harbor archaeological deposits. Up to 24 feet of disposal deposit now overlay this clay layer in the Project area (CIWMB 2004).

2.3 Prehistoric Context

The following sections are adapted from Dexter 2010.

Sacramento County and the surrounding Central Valley contain evidence of human use and occupation that spans the known periods of prehistory. The earliest sites are from the Paleo-Indian period (approximately 11,550 B.C. to 8,550 B.C.). Artifacts from this earliest period primarily consist of large, fluted, stone projectile points and crescentic objects of indeterminate use. Most of the evidence for the earliest occupation is in the Tulare Basin of San Joaquin Valley, although one fluted projectile point has been recovered in the Sacramento Valley near Thomes Creek. The Lower (8,550 B.C. to 5,550 B.C.), Middle (5,550 B.C. to 550 B.C.), and Upper Archaic (550 B.C. to 1,100 A.D.) periods followed the Paleo-Indian period. Archaic sites are recognized by ground stone implements associated with food processing. In addition, Archaic artifacts include projectile (atlatl) points, large bifacial and core tools. Archaic sites are typically homogenous and indicate a subsistence economy focused on hunting and gathering. The beginnings of a unique Central Valley adaptation occurred during the Middle Archaic period. During late prehistory in central California, the Emergent

Occupation period (1,000 A.D. to the 1770s) was a time of technological development. Groups migrating west from eastern desert areas to California introduced technological advances that included ceramics, bows and arrows, projectile points, and the cremation of remains. This period saw the introduction of the bow and arrow, population growth, more complex settlement and political traditions, and the development of much larger permanent villages.

2.4 Ethnographic Context

The Project area is located in the central portion of Sacramento County and south of the American River on the border of the historical territory of the Nisenan people, and the northern territory of the Plains (Eastern) Miwok people. The Nisenan people are from the Penutian language family. Their territory extended from between the American and Cosumnes rivers northward to Marysville, and was bounded by the Sacramento and Feather rivers on the west and the Sierra crest on the east. The Plains Miwok people speak a different language from the Utian branch of the Penutian family. Their territory extended south from Sacramento towards the Sacramento-San Joaquin Delta and the Cosumnes River, and east into the foothills of the Sierra Nevada.

Traditionally, the Plains (Eastern) Miwok were divided into smaller groups called tribelets, which were politically distinguished and exhibited cultural and linguistic variation from other tribelets within the larger Miwok culture. Each tribelet was led by a single person who inherited the position through the male lineage. On occasion, when there was no male heir, the position would pass to the daughter of the former leader or, when the designee was too young, the duties would pass to the former leader’s widow.

The Nisenan lived in permanent villages along the American, Sacramento, Feather, Bear, and Yuba rivers. Each village was led by a headman. It is unclear which villages exercised the greatest influence in the region, but it is reported that the Nisenan village of *Pusune*, located at the mouth of the American River, was dominant in the Project area. The closest village to the project site was the village of *Sama*. The larger villages, with populations of up to 500, exercised political control over the smaller surrounding villages. Villages were constructed on rises near rivers or streams, varied in size from 3 to 50 homes, and typically contained a dance house and acorn granary. Houses were dome shaped, 10 to 15 feet in width, and covered with earth or marsh plants called tule.

The Eastern Miwok village of *Hulpumne*, on the left bank of the Sacramento River was closest to the Project area total (Levy 1978: 399). The Plains Miwok exhibited the highest population density of any other Native Californian tribe with approximately 400 persons per village and perhaps as many as 11,000 people in total (Levy 1978: 402). Residential structures were similar of that of the Nisenan, but an Eastern Miwok village typically included two types of assembly houses, a sweat house, acorn granaries, grinding huts and small conical hut occupied by women during menses (Levy 1878:409).

Local subsistence for both groups included animal sources and seasonally available plant sources. Typical fauna hunted or collected by the Miwok and Nisenan included deer, mussels, fish, rabbit, and fowl. Some examples of plant resources were the all-important acorn; nuts such as hazelnut, buckeye, and pine; seeds; roots; mushrooms; and plants used as greens, such as columbine and milkweed. Bear also played an important dietary and ceremonial function on the Nisenan way of life.

Contact between the Nisenan, Miwok, and Europeans began in 1772. A major malaria epidemic that raged in the Central Valley decimated large portions of the native population in 1833. The Nisenan and Miwok cultures were severely impacted by Spanish colonization. Their socio-political structure was drastically disrupted beginning with the Spanish Mission period and again during the Gold Rush of 1849.

By the end of the nineteenth century, most Nisenan and Miwok had been disenfranchised from their lands and were relegated to reservations. Those who lived amongst Euro-American society tended to live in rural areas or the edges of small towns on less-desirable land. Employment opportunities were few. Most were poorly paid and labored in mines, on ranches, or in towns, although some survived by incorporating traditional subsistence strategies. Both the Nisenan and Miwok are now politically active and their tribal governments are working to preserve elements of their traditional society and culture.

2.5 Historic-era Context

The mid-sixteenth century saw the first European contact with indigenous groups throughout Southern California, and additional explorers had moved northward into the Sacramento region by 1772. Spanish missionaries and military personnel began to arrive in what was then called Alta California during the late eighteenth century. The Northern California missions closest to the Project area included the Mission San Francisco de Asis (Mission Dolores); Mission San Jose, Mission San Rafael Arcangel, and the Mission San Francisco Solano (or Sonoma Mission). Between the founding of the Mission San Francisco de Asis (Mission Dolores) in 1776 and the last mission, the Sonoma Mission in 1834, the indigenous population in the region dwindled as the Spanish military and religious presence became permanent. California became part of Mexico in 1821 and missions were secularized in 1833.

During the Mexican period, large tracts of land were granted to Mexican individuals, and the rancho system was established. The downtown Sacramento area is rich in historic features and includes portions of the old New Helvetia Land grant deeded to John Sutter by the Mexican government in 1841. Nearby historical features include Sutter’s Fort, travel routes, canneries, and various houses. During this period, cattle ranching superseded agricultural enterprises, restricting native tribal groups’ access to traditional hunting and gathering areas. The Mexican period was officially ended at the conclusion of the Mexican-American War in 1848. A profusion of European and American immigrants began to arrive in the region in 1849 as a result of the Gold Rush. After California became part of the Union in 1850, ranching, farming, and dairy activities became the mainstay of the California economy. The area around Sutter’s Fort and along the waterfront of the Sacramento River quickly urbanized in the 1850s. Sacramento eventually became the seat of state government in 1854 and has grown to merge with other cities and towns including that of the Project area.

2.6 Waring’s Dump

The Project area was largely undeveloped until its use as a rock and gravel borrow site for the construction of SR 99. At a depth of approximately 50 feet, the borrow pit received overflows from Morrison Creek and seepage to a depth of 20 to 30 feet. A request by former owners Albert and

Frances Waring to fill the excavated area with rubbish and construction waste was granted by the City in the late 1940s. The dump received domestic refuse that appears to have been burned on-site. Waring's Dump functioned as a waste disposal dump for approximately a decade from the late 1940s to late 1950s before being closed under a City of Sacramento order. It is now classified as a Closed Illegal and Abandoned disposal site. Illegal disposal of waste continues at the site present day, as evidenced during the field investigation. Deposits initially thought to be 6 to 8 feet in depth were found to be up to 24 feet in depth in the middle of the site during the site investigation. The deposit is bowl shaped, deepest in the middle and trending upwards in elevation towards the margins. Household and industrial waste, construction debris, and cannery refuse was deposited and burned on-site during the period of operation of Waring's Dump (CIWMB 2004).

3 Inventory Methods

The goals of this cultural resources inventory were to identify and completely document the location, qualities, and condition of all potential historical resources in the Project area. Methods employed to achieve these goals follow.

3.1 Native American Consultation

A request for a review of the Sacred Lands File was sent to the Native American Heritage Commission (NAHC) on August 27, 2012. The response to this request is discussed in Section 4.1 of this document.

3.2 Archival Research

An archival records search was conducted at the North Central Information Center (NCIC), an affiliate of the California Historical Resources Information System, located at California State University, Sacramento. The records search was performed July 19, 2012, by Mr. Ben Elliott of URS. The records and literature generated as a result of the search are summarized in Section 4.2 of this document. The results of the records search are included Appendix B.

3.3 Pedestrian Survey

An intensive pedestrian survey of the entire APE as conducted July 23, 2012, by URS Corporation archaeologists Ben Elliott and Christopher Peske. The APE was surveyed using 15-meter transect intervals. During the survey, the ground surface was inspected for evidence of prehistoric and historic-era use, including evidence of topographic disturbance, soil discoloration, charcoal, modified bone or stone, and exotic materials. Results of the pedestrian survey are summarized in Section 4.3 of this document.

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4 Inventory Results

4.1 Native American Consultation

The NAHC responded August 28, 2012, stating no sacred lands hand been identified in the Project area. The NAHC also provided a list of Native American individuals/organizations that may have knowledge of cultural resources in the Project area. Correspondence with the NAHC is included in Appendix A of this document.

4.2 Archival Research

Review of the records and literature completed by Mr. Ben Elliott July 19, 2012, indicated the Project area had not been surveyed previously. The search did not identify any previously recorded cultural resources with the APE. One recorded prehistoric isolate had been previously identified within a ¼-mile of the APE.

Five previous studies have been conducted within a 1/4-mile of the APE:

NCIC S-88	Johnson, Jerald J., 1974. Reconnaissance Archaeological Survey of the Morrison Stream Group in Sacramento County, California. U.S. Army Corps of Engineers, Sacramento District, 650 Capitol Mall, Sacramento, CA 95814.
NCIC S-3314	Derr, Eleanor H., Cultural Resources Unlimited, 1993. Stockton Boulevard Development Plan (930201A). Submitted to Environmental Science Associates, Inc., Sacramento, CA.
NCIC S-8687	Green, Julia and Kyle Johnson of ECORP Consulting Inc., 2005. Cultural Resources Inventory Lemon Hill, Sacramento County, California Project 2005-101. Submitted to Advanced Development and Investing, Inc.
NCIC S-10113	Historic Resource Associates, 2007. SMUD Cingular Colocation Project Sprint PCS Site SF0XC529-B. Submitted to Ramaker & Associates, Inc.
NCIC S-10571	Billat, Lorna of Earth Touch Inc., 2010. Elder Creek SMUD – CA-SAC0569A. Submitted to Clearwire Wireless Broadband.

One previous cultural resource was identified in the record search area:

P-34-1681	Cultural resource P-34-1681 is a single stone tool production waste flake also known as *debitage*.

4.3 Pedestrian Survey

Much of the ground surface of the APE was obscured by vegetation. Approximately half of the APE was covered by both non-native, invasive grass and forb plant species while the other half had been recently disk plowed, which provided excellent ground visibility. Evidence of the mid-century-era landfill was observed on the surface in several portions of the APE. Various individual artifact loci were recorded using a global position system receiver capable of sub-meter accuracy and documented in accordance with the California Office of Historic Preservation guidelines (Archaeological Resource Management Reports [ARMR]: Recommended Contents and Format). Most of the debris observed on-site was composed of modern construction/demolition material including concrete, brick, polyvinyl chloride pipe, plastics, sheet metal, and asphalt. For further information regarding the recorded historic-era constituents of the resource refer to the Department of Parks and Recreation form in Appendix C.

No materials related to Native American occupation of the area were identified during the APE survey. Given that dump activities caused soil disturbance to a depth of 24 feet, it is unlikely that any prehistoric remains that may have once been present currently exist intact, if at all.

No evidence of human remains were identified during the APE survey.

5 Evaluation Statement

5.1 Evaluation Statement

The features and artifacts at the former Waring's Dump do not meet the eligibility criteria for listing on the California Register. Under Criterion 1, the dump's structures and deposit lack association with events that have made a significant contribution to the broad patterns of the history of Sacramento County, California, or the United States. Though the deposit is temporally discrete it appears to be an ordinary dump typical of small communities. Use of the dump appears to have ended prior to urbanization of this portion of the City of Sacramento and would have been on the City's outskirts (CIWMB 2004). Such dumps were most often located in areas considered to be of little value.

While small solid waste dumps were more common before the 20th century, Waring's Dump is of a relatively recent date. It is therefore not associated with the early pioneer period of Sacramento County. The artifacts that occur within Waring's Dump were imported from various locales within the southern Sacramento area and are not associated with any particular family or event. As stated in Criterion 2, the site is not clearly associated with the lives of persons important to our past.

The artifacts deposited within the dump represent numerous households and businesses within the southern Sacramento area; however, given the burning and extensive mixing, there is no way to directly associate any of the materials with a particular person or place. Waring's Dump is, therefore, not eligible under Criterion 3.

Under Criterion 4, Waring's Dump does not include features or artifacts that would yield information important in history. Though there are artifacts deposited within the dump that are older than 50 years, they consist primarily of typical domestic refuse and do not represent unique types of artifacts. In addition, much of the deposited materials lack physical integrity, having been incinerated to reduce volume and subsequently crushed by the dumping of used road construction material such as asphalt and concrete. Furthermore the depth of disturbance at the dump (24 feet) suggests that any prehistoric deposits that may have once been present in the current APE were destroyed during use of the location as a dump site, and such subsurface materials likely no longer exist intact in the immediate Project area.

Waring's Dump does not appear to meet eligibility requirements for listing on the CRHR given its lack of research potential. No further cultural resources consideration or treatment is recommended for Waring's Dump.

6 Summary and Recommendations

6.1 Summary

CalRecycle proposes to remediate APNs: 38-182-005, 38-182-007, 38-182-010, 38-182-006 and 38-202-001, formerly known as Waring's Dump, located in the southern portion of the City of Sacramento. Remediation activities would include surface grading of the Project area and soil capping of the dump wastes. A cultural resources assessment of the Waring's Dump Project area was completed and identified evidence of the former Waring's Dump, a dump operated during the late 1940s to late 1950s. The resource was thoroughly documented to California Office of Historic Preservation (ARMR) standards and the resource's eligibility for listing in the CRHR was assessed. The resource appears ineligible for listing in the CRHR and no further cultural resources treatment or consideration of the resource is recommended.

There is a possibility that other archaeological resources are present. Archaeological sites may be buried with no surface manifestation. If prehistoric or historic-era materials unrelated to the former Waring's Dump are encountered, it is recommended that all work in the vicinity halt until a qualified archaeologist can evaluate the discovery and make recommendations. Prehistoric materials will most likely include obsidian and chert flaked-stone tools (e. g., projectile points, knives, choppers), tool-making debris, or milling equipment, such as mortars and pestles. Historic-era materials might include remains of agricultural implements; stone or concrete footings and walls; and deposits of metal, glass, and/or ceramic refuse.

The possibility of encountering human remains cannot be discounted. In accordance with Section 7050.5 of the California Health and Safety Code, it is a misdemeanor to knowingly disturb a human burial. If human remains are encountered, work should halt in the vicinity of the remains and, as required by law, the Sacramento County Coroner should be notified immediately. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of that determination. Pursuant to California Public Resources Code 5097.98, the NAHC, in turn, will immediately contact an individual who is most likely descended from the remains (aka: a Most Likely Descendent, MLD). The MLD has 48 hours to inspect the site and recommend treatment of the remains. The landowner is obligated to work with the MLD in good faith to find a respectful resolution to the situation and entertain all reasonable options regarding the descendants' preferences for treatment.

7 References

CIWMB 2004	California Integrated Waste Management Board 2004. Final Site Investigation Report, Waring's Dump, 63rd and Morrison Creek, Sacramento, CA 95819.
Dexter 2010	Dexter, Sean 2010. D4 Cultural Resources. In Dudek, Final Environmental Impact Report, Sacramento Natural Gas Storage Project, Volume 2, Final Environmental Impact Report, CPCN Application No. A. 07-04-013; SCH No. 2007112089. Prepared for California Public Utilities Commission.
Levy 1978	Levy, Richard, 1978. Eastern Miwok. In *Handbook of North American Indians*, Volume 8, California, edited by Robert F. Heizer, pp. 4398-413. Smithsonian Institution, Washington, D. C.

Appendix A

Native American Heritage Commission Correspondence

URS

August 27, 2012

Ms. Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, California 95814

Subject: California Department of Department of Resources Recycling and Recovery – Waring's Dump Project

Dear Ms. Pilas-Treadway:

URS Corporation is conducting a cultural resources study on behalf of the California Department of Resources Recycling and Recovery (CalRecycle). CalRecycle is preparing to remediate waste associated with a burn dump that operated for approximately a decade during the 1940s and 50s, known as Waring's dump. Waring's Dump is located in the south portion of the City of Sacramento, California at Assessor's Parcel Numbers 38-182-5, 38-182-7 and 38-202-1. The area is bounded by Morrison Creek to the north and west; Elder Creek Road to the south; and 65th Expressway to the east. The dump is depicted on the United States Geological Survey (USGS) "Sacramento East" 7.5'quadrangle within the southeast ¼of the southeast ¼of Section 28, Township 8 North, Range 5 East (Figure 1).

The current assessment is being conducted because the CalRecycle project may include grading and capping the dump wastes in place. Please notify me if any areas of concern are within or in close proximity to the Project area. Early identification of Native American cultural resources will ensure their consideration during the Project planning phase. You may fax your response to me at (916) 679-2900 or send your response to the address provided below.

Thank you for giving this matter your prompt attention.

Sincerely,

Ben Elliott, MA, RPA
Senior Archaeologist
ben.elliott@urs.com

URS Corporation
Crown Corporate Center
2870 Gateway Oaks Drive, Suite 150
Sacramento, CA 95833
Tel: 916.679.2000
Fax: 916.679.2900

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390

August 28, 2012

Ben Elliott
URS Corporation
2870 Gateway Oaks Drive, Suite 150
Sacramento, CA 95833

Sent by Fax: 916-679-2900
Number of Pages: 3

Re: California Department of Department of Resources Recycling and Recovery—Waring's Dump Project, Sacramento County.

Dear Mr. Elliott:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Sacramento County
August 28, 2012

Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
honortraditions@mail.com
(916) 421-1600
(916) 601-4069-cell

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.com
916 491-0011
916 491-0012 - fax

Colfax-Todds Valley Consolidated Tribe
Judith Marks
1068 Silverton Circle Miwok
Lincoln , Cali 95648 Maidu
916-670-5714
916-434-7876 - home

Colfax-Todds Valley Consolidated Tribe
Pamela Cubbler
PO Box 734 Miwok
Foresthill , Cali 95631
530-320-3943
530-367-2093 home

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
PO Box 699 Miwok
Plymouth , CA 95669
(209) 274-6753
(209) 274-6636 Fax

Ione Band of Miwok Indians
Tina Reynolds, Executive Secretary
PO Box 699 Miwok
Plymouth , CA 95669
tina@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

Ione Band of Miwok Indians Cultural Committee
Ms Billie Blue, Chairperson
604 Pringle Ave, #42 Miwok
Galt , CA 95632
beblue sky@softcom.net
(209) 745-7112

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
PO Box 580986 Miwok
Elk Grove , CA 95758
valdezcom@comcast.net
916-429-8047 voice
916-429-8047 fax

Shingle Springs Band of Miwok Indians
Sam Daniels, Vice Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
(530) 676-8010
(530) 676-8033 Fax

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
nfonseca@ssband.org
(530) 676-8010
(530) 676-8033 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed CA Department of Resources Recycling and Recovery-Waring Dump Project, Sacramento County

Native American Contacts
Sacramento County
August 28, 2012

Shingle Springs Band of Miwok Indians
Daniel Fonseca
P.O. Box 1340 — Miwok
Shingle Springs , CA 95682 — Maidu
(530) 676-8010
(530) 676-8033 Fax

United Auburn Indian Community of the Auburn Rancheria
David Keyser, Chairperson
10720 Indian Hill Road — Maidu
Auburn , CA 95603 — Miwok
530-883-2390
530-883-2380 - Fax

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Preservation Committee
10720 Indian Hill Road — Maidu
Auburn , CA 95603 — Miwok
mguerrero@auburnrancheria.com
530-883-2364
530-883-2320 - Fax

Wilton Rancheria
Andrew Franklin, Chairperson
9300 W. Stockton, Suite 200 — Miwok
Elk Grove , CA 95758
916-683-6000
916-683-6015

Wilton Rancheria
Steven Hutchason, Director of Cultural Preservation
9300 W. Stockton, Suite 200 — Miwok
Elk Grove , CA 95758
miwoksteve@gmail.com
916-683-6000
916-683-6015

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed CA Department of Resources Recycling and Recovery-Waring Dump Project, Sacramento County

Appendix B

North Central Information Center Record Search Results

NORTH CENTRAL INFORMATION CENTER Record Search Number: **SAC-12-60**
CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM County: **SACRAMENTO**

In Cooperation with:

State of California - The Resources Agency
Department of Parks and Recreation
Office of Historic Preservation

AGREEMENT TO CONFIDENTIALITY AND RECORD SEARCH STATEMENT

I, the undersigned, have been granted access to the Archaeological Site Record data at the North Central Information Center at California State University, Sacramento, 6000 'J' Street, Sacramento, CA 95819 for the purpose of:

☐ scientific research ☒ project planning ☐ other: ________________

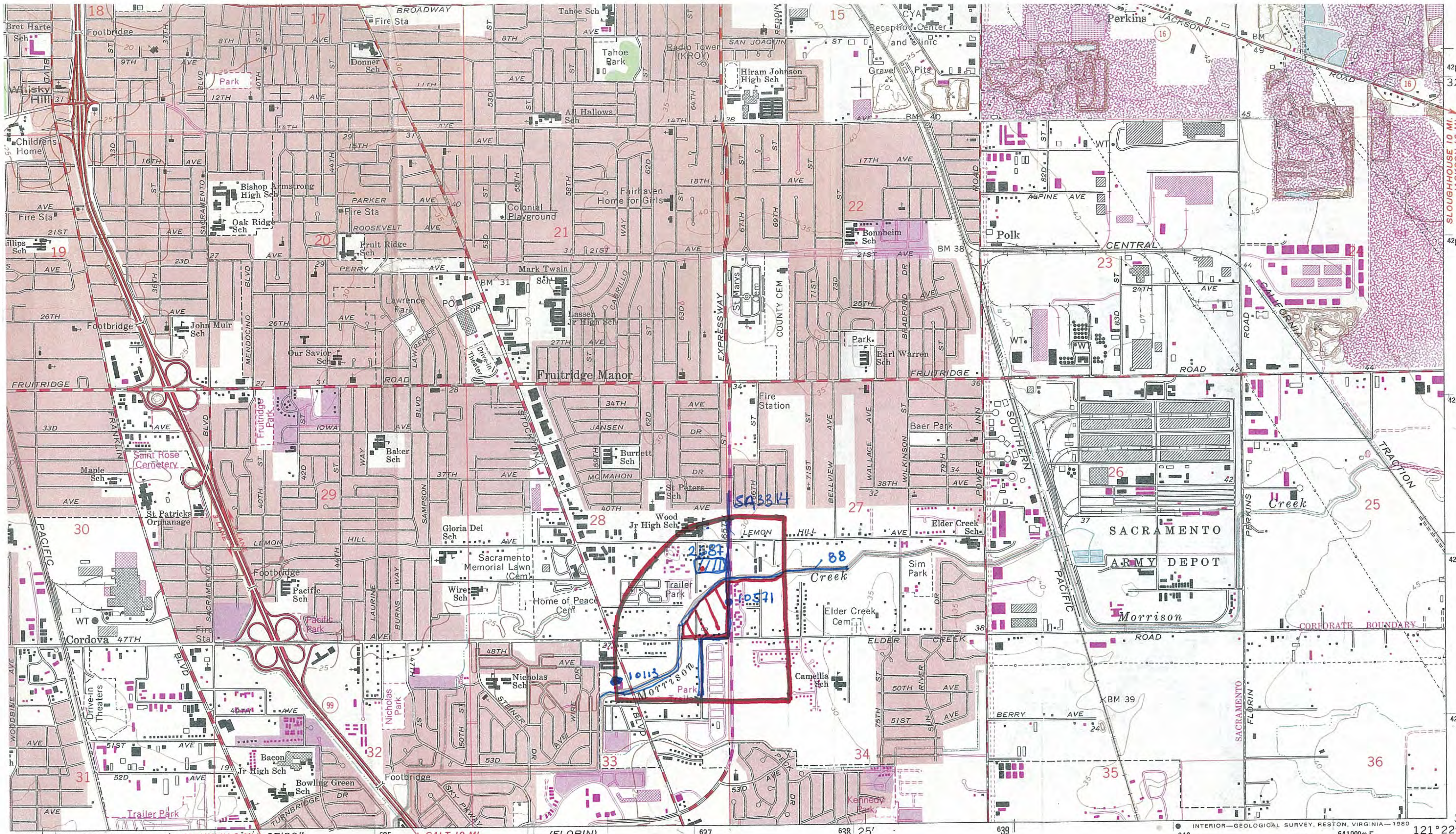
I fully understand the confidential nature of the information contained in these records, and I agree to respect that confidentiality.

I will attempt to ensure that specific site location is not distributed in public documents or made available to unauthorized individuals within my institution or agency. I also understand that prior written consent of the Information Center Coordinator or State Historic Preservation Officer is required for any exceptions to the above stipulations.

Furthermore, I agree to forward to the appropriate Information Center, no later than 30 days after completion of field reconnaissance and investigation, any preliminary reports and complete site records for any sites that are identified or dealt with. I also agree to forward to the appropriate Information Center or Centers all subsequent reports on these sites, which are pertinent to archaeological resource management.

I understand that failure to comply with any of the above agreement is grounds for denial of subsequent access to the archaeological site data.

This agreement is based on State access policy. ______________________, ______________
Signature of Researcher Date
Printed Name of Researcher Ben Elliott Phone 9166-679-2284
Firm: URS Corporation
Address 9400 Amber Glen Blvd., Austin, Texas Zip 78729
Method of contact: Phone___ In person X Letter ____Fax____ E-mail ____________ Date: July 19 , 2012
Title of Project or Research: Warings Dump/#26845384.20002
Contact person/agency for which work conducted ________________
Address ________________ Phone ________
USGS 7.5' Quad(s) consulted: Sacramento East
Site Record(s) consulted: All pertinent resources.
Site Record(s) copied: All pertinent resources.
Reports/manuscripts consulted: All pertinent resources.
Reports/manuscripts copied: All pertinent resources.
Staff Researcher Sally Torpy Date: July 19, 2012
No. of Hours -Records Search 1 ½ Hours Use Fee charged $ 150.00
No. of Copies @ .15¢ each 99 Copies Copy Charge $ 14.85
(Payment Instructions) **Total Fee charged: $ 164.85**
Make check payable to: University Enterprises, Inc.
Forward to: North Central Information Center CSU – Sacramento
6000 J Street, Adams Bldg., Suite #208
Sacramento, CA 95819-6100



1681 (P#)

Surveys

SCALE 1:24 000

1 MILE

1000 FEET

1 KILOMETER

CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1980 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

0°58' 17 MILS

17° 302 MILS

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092

A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Heavy-duty ... Light-duty

Medium-duty ... Unimproved dirt

Interstate Route | U. S. Route | State Route

QUADRANGLE LOCATION

Revision shown in purple and woodland compiled by the County of Sacramento from aerial photographs taken 1978 and other source data

SACRAMENTO EAST, CALIF.

SW/4 FAIR OAKS 15' QUADRANGLE

N3830—W12122.5/7.5

1967

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-34-1681
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

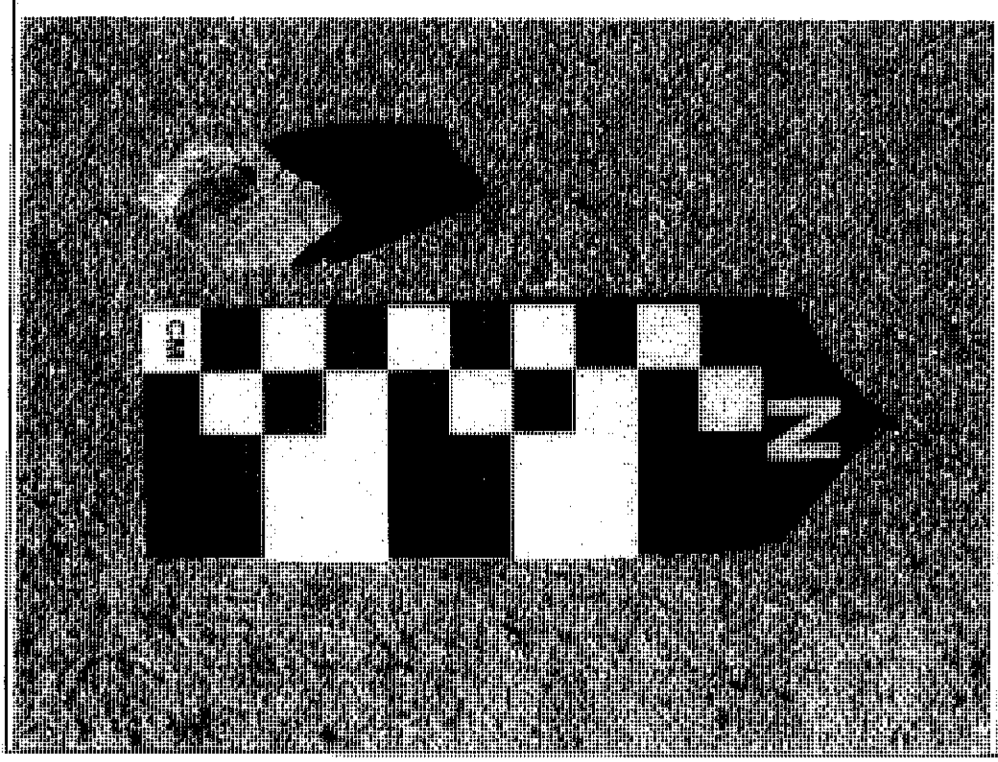
 *Resource Name or #: ISO 1

P1. Other Identifier:
***P2. Location:** ☒ Not for Publication ☐ Unrestricted
***a. County:** Sacramento **and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Sacramento, East **Date:** Photo revised 1992 T8N; R5E; SW¼ of SW¼ of **Sec:** 28; M.D. **B.M.**
c. Address: City: Zip:
d. UTM: Zone: 10; 637017 mE/ 4263836 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 30 msl

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
One gray chert flake measuring 3 x 2 x 1cm

***P3b. Resource Attributes:** (List attributes and codes) AP2 Lithic Scatter
***P4. Resources Present:** ☐Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☒Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
Top view of chert flake. Photo taken 5/26/05. Digital image DSCN 1247

***P6. Date Constructed/Age and Sources:** ☐Historic ☒Prehistoric ☐Both

***P7. Owner and Address:**
Advanced Development, Inc.
1008 Second Street, 2nd floor
Sacramento, California 95814

***P8. Recorded by:** (Name, affiliation, and address)
Kyle Johnson
ECORP Consulting, Inc.
2260 Douglas Blvd., Suit e160
Roseville, California 95661

***P9. Date Recorded:** 5/24/05
***P10. Survey Type:** (Describe)
Intensive, 15 meter transects.

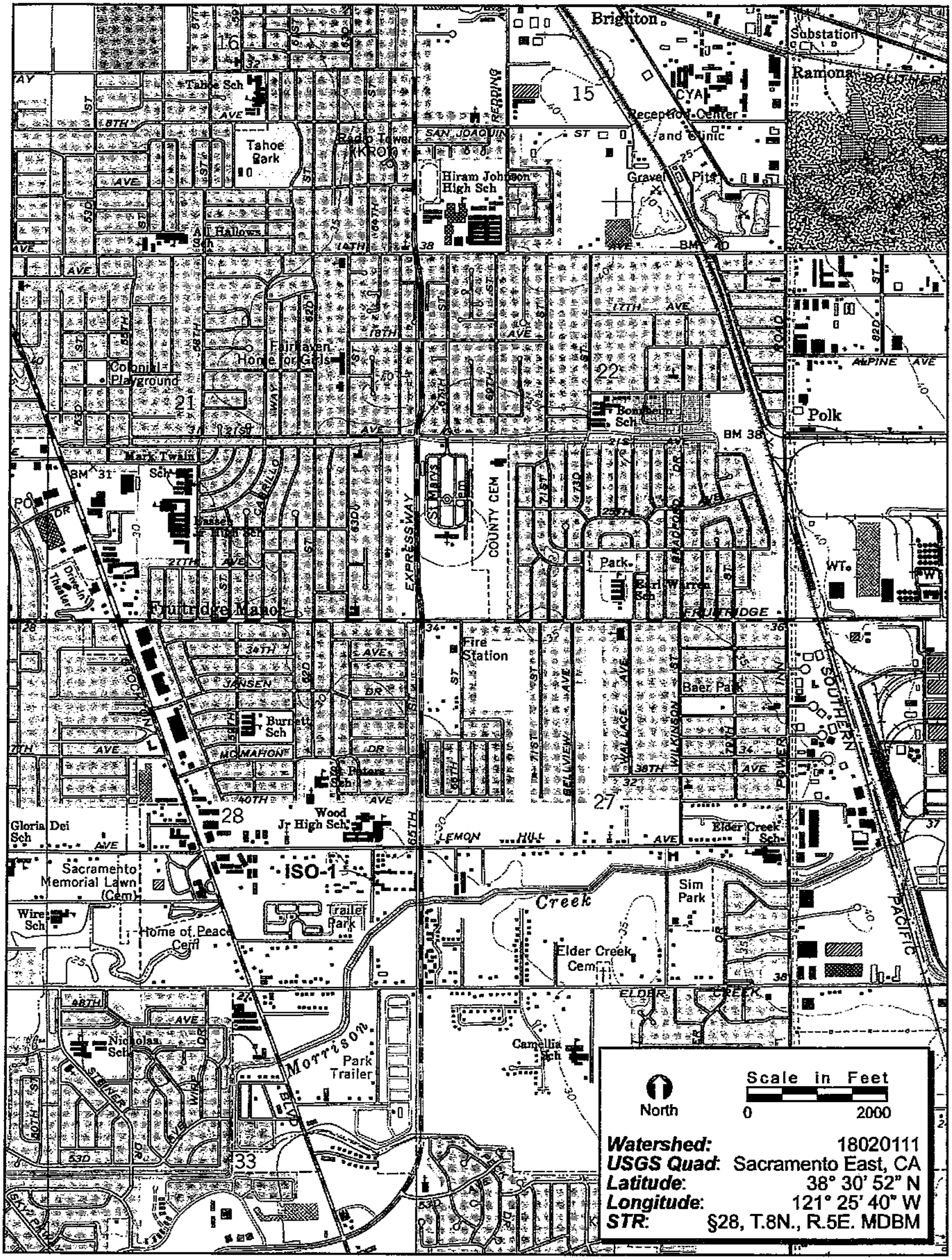
***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") : Cultural Resource Inventory, Lemon Hill, Sacramento, California 2005-101

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

DPR 523A (1/95) *Required information

8687

p-34-1681



Page 2 of 2. *Confidential* Isolate Location Map

2005-101 Lemon Hill

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
©2005

North Central Information Center Report Detail Record: 10113

Citation Information

Authors: Historic Resource Associates
Year: 2007
Title: SMUD Cingular Colocation Project Sprint PCS Site SF0XC529-B
Affiliation: Historic Resource Associates
Client: Ramaker & Associates, Inc.
No. Pages:
Report Type(s): Archaeological survey
Inventory Size:
No.Sites:
No. Informal:
Collections: Unknown
Disclosure: Not for publication

Associated Resources

Notes

Location Info

County(ies): Sacramento
USGS 7.5' Quads: SACRAMENTO EAST
PLSS:

Township/range	*Sections*	*BLM*	*or Land Grant*
T 8N R 5E	33	MDBM	

Address:

Address	*City*	*Assessor's parcel no.*
6450 Stockton Blvd	Sacramento	

Database Record Metadata

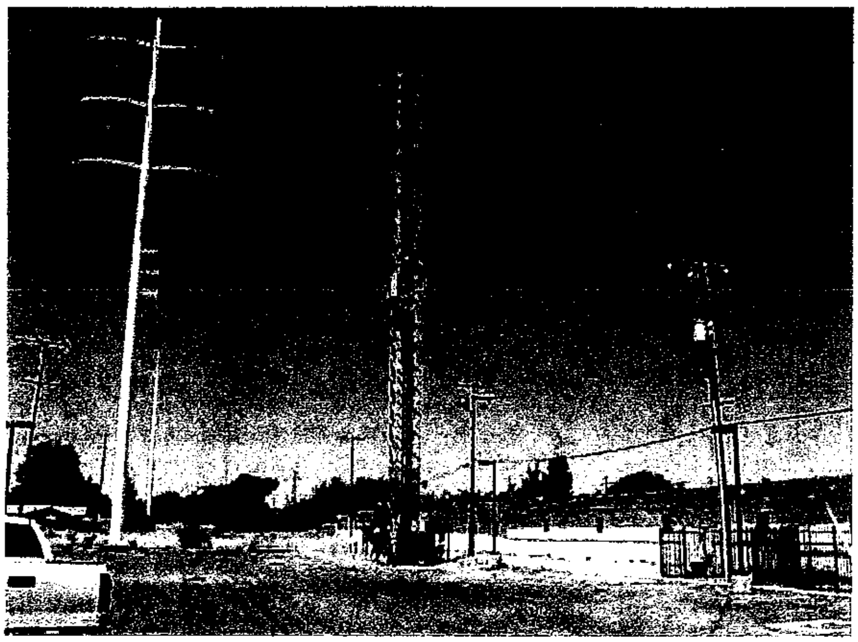
	Date	*User*
Entered:	4/30/2009	aisha
Last Modified:	4/30/2009	aisha
IC Actions:		

SAC-07-68

SAC East

CULTURAL RESOURCES STUDY OF THE SMUD CINGULAR COLOCATION PROJECT SPRINT PCS SITE NO. SF70XC529-B 6450 STOCKTON BOULEVARD, SACRAMENTO SACRAMENTO COUNTY, CALIFORNIA 95817

JULY 2007



Submitted To:

Ramaker & Associates. Inc.

1120 Dallas Street

Sauk City. WI 53583

Submitted By:

Historic Resource Associates

2001 Sheffield Drive

El Dorado Hills. CA 95762-5905

APR 17 2009

10113

North Central Information Center Report Detail Record: 10571

Citation Information

Authors: Lorna Billat
Year: 2010
Title: Elder Creek SMUD - CA-SAC0569A
Affiliation: EarthTouch, Inc.
Client: Clearwire Wireless Broadband
No. Pages:
Report Type(s): Archaeological survey
Inventory Size:
No.Sites: 0
No. Informal:
Collections: Unknown
Disclosure: Not for publication

Associated Resources

Notes

Location Info

County(ies): Sacramento
USGS 7.5' Quads: SACRAMENTO EAST
PLSS:

Township/range	*Sections*	*BL/M*	*or Land Grant*
T 8N R 5E	29	MDBM	

Address:

Database Record Metadata

	Date	*User*
Entered:	9/29/2010	Monica
Last Modified:	9/29/2010	Monica
IC Actions:		

(3314) SAC-9357

CULTURAL RESOURCES UNLIMITED
Eleanor H. Derr
2614 Aramon Drive
Rancho Cordova, CA 95670
(916) 363-8774

October 14, 1993

Environmental Science Associates, Inc.
1930 9th Street, Suite 220
Sacramento, CA 95814-7044
Attn: Tom Lagerquist

RE: STOCKTON BOULEVARD REDEVELOPMENT PLAN (930201A)

Dear Tom:

In response to your request of October 5, 1993 I hereby submit the results of the Record Search from the North Central Information Center of the California Archaeological Inventory at CSU, Sacramento, as well as my own research data for the above-referenced project. Recommendations for future cultural resource investigations and mitigations are also included.

Record Search/Literature Review

The Record Search indicated that no cultural resource surveys have yet been performed within the project area itself. (Although Paula Boghosian of Historic Environment Consultants has previously performed an historical overview of part of this area). The only archaeological survey for this area was done along Morrison Creek, in the extreme southern portion (Johnson 1974). No archaeological sites were located within a mile of the current project at that time.

Listings of the National Register (1992) show no entries for this area. The closest listings in the California Historical Landmarks (1990) are the site of Sutterville (#593), a community laid out by John Sutter in 1844, and Camp Union (#666) of the 5th Infantry Regiment in 1861, both in the vicinity of Sutterville Road and Land Park Drive approximately two miles west of the northern portion of the current study area. The California Inventory of Historic Resources (1976) also lists the Sutterville site.

This area is located in the Sutter Township of Sacramento County (Thompson and West 1880). The earliest official land surveys were performed by the United States Land Office in 1855-1865 (U.S. Government 1855-65). At that time, houses, fences and roads (including the 'upper' and 'lower' Stockton Roads--now Franklin and Stockton Boulevards, respectively--were in place, as were the now-named 47th Avenue/Elder Creek Road and Florin Road. Several large landowners were known for the township by 1880, some having settled there by 1851-1852 (Thompson and West 1880:236).

The review of historic maps and records for this area shows purchases of land to have occurred as early as 1866, with five parcels of 160 acres each being recorded in Sections 20, 28, 29 and 33 to Gilbert C. Hall and Alexander Williams, Samuel Rich, John Geisel, and Simon P. Page, respectively; and 120 acres to Friedrich Appel in Section 20. Railroad Grant #2 in Section 21 (and other sections) also was awarded to the Central Pacific Railroad on 12/19/1866. In 1870 two recordings of property acquisition occurred, with Henry Geisel and Hiram P. Willard each purchasing 160 acres in Section 28. Two more parcels were purchased in 1871 with George E. Duden homesteading 80 acres in Section 28 and Henry O. Morgan purchasing 160 acres in Section 29. The Western Pacific Railroad also acquired Grant #7 in Section 21 in that year (Bureau of Land Management files). Historic streets in the redevelopment area shown on the 1911 U.S.G.S. Brighton quad map include Upper Stockton Road, (current Stockton Boulevard, also the original route of Highway 99--this road appears on the 1855/65 maps of the Surveyor General's Office), Elder Creek Road, Fruitridge Road, Sampson Street, Sacramento Boulevard, Parker and Roosevelt Avenues, and 14, 15th and 23rd Avenues, and 44th Street (see attached map)(U.S. Government, 1911)

Possible areas of prehistoric use appear as raised areas along Morrison Creek and its tributaries in Sections 28, and 33 and the eastern portion of Section 29. Unfortunately, these places have been graded and built upon so surface inspection was not possible and more recent deposits have likely been destroyed. However, it is possible that deeper deposits may be intact and could be disturbed by subsurface excavation for basements, foundations and utility construction. It would be well to have these areas monitored when such work is being performed. INFORMATION AS TO THESE POTENTIAL SITE AREAS SHOULD NOT BE RELEASED TO THE GENERAL PUBLIC.

Drive-by Survey

Historic buildings primarily appear in the northernmost portion of the redevelopment area, from Perry Avenue north to 14th Avenue. This reflects early settlement in the area closest to the Oak Park district and other older urban areas of Sacramento. Areas along Stockton Boulevard that have not recently been developed for commercial use contain older homes and commercial structures, most notably early auto courts and motels. These structures are found on the east side of Stockton north of Fruitridge, primarily on the west side south of Fruitridge, and near Lemon Hill Avenue and Elder Creek Road/47th Avenue. A few scattered buildings occur south of Elder Creek/47th. Other significant features are the two cemeteries south of Lemon Hill: Sacramento Memorial Lawn and the Jewish Home of Peace Cemetery. Sacramento Memorial Lawn was opened at this site in 1939, having originally operated at 8th and O Streets in Sacramento. The Home of Peace opened at this Stockton Boulevard location in 1924. It was originally located at 3230 J Street , and that location is listed in California Historical

Landmarks (#654 - first Jewish cemetery in California, 1850). A list of noted properties is attached to this report. This can not be considered a complete listing of all resources, but is an indicator of historic neighborhoods and includes the remains of some of the earlier commercial activity on historic Highway 99/ Stockton Boulevard

More in-depth research is required to determine the actual significance of the above-referenced buildings, as well as others from the historic (pre-1945) period. It will be necessary to do an intensive survey of all sensitive areas in the target area as indicated above, identify all historic buildings, and perform archival research to determine their ages and any historical associations in order to assess their potential significance per CEQA guidelines (Appendix K).

The above would best be accomplished as individual properties or blocks are considered for development/redevelopment. While no evidences of prehistoric use were observed during this field overview, the potential for prehistoric resources does exist, as indicated above, even with the extensive disturbance this area has been subjected to. There is still a possibility for buried deposits, as well as surface deposits in residential garden areas. The project area overlaps the presumed boundary of the Nisenan Maidu/Plains Miwok tribal areas according to Bennyhoff (1977:Maps 2,3). Little is known about this border area, or even its exact boundaries, thus any sites located could offer significant information to the archaeological record. This land was adjacent to Morrison Creek in late prehistoric times, and possibly to larger river channels in earlier times. Even with the flood sedimentation of the Sacramento Valley, it may be possible to encounter a previously-unknown site.

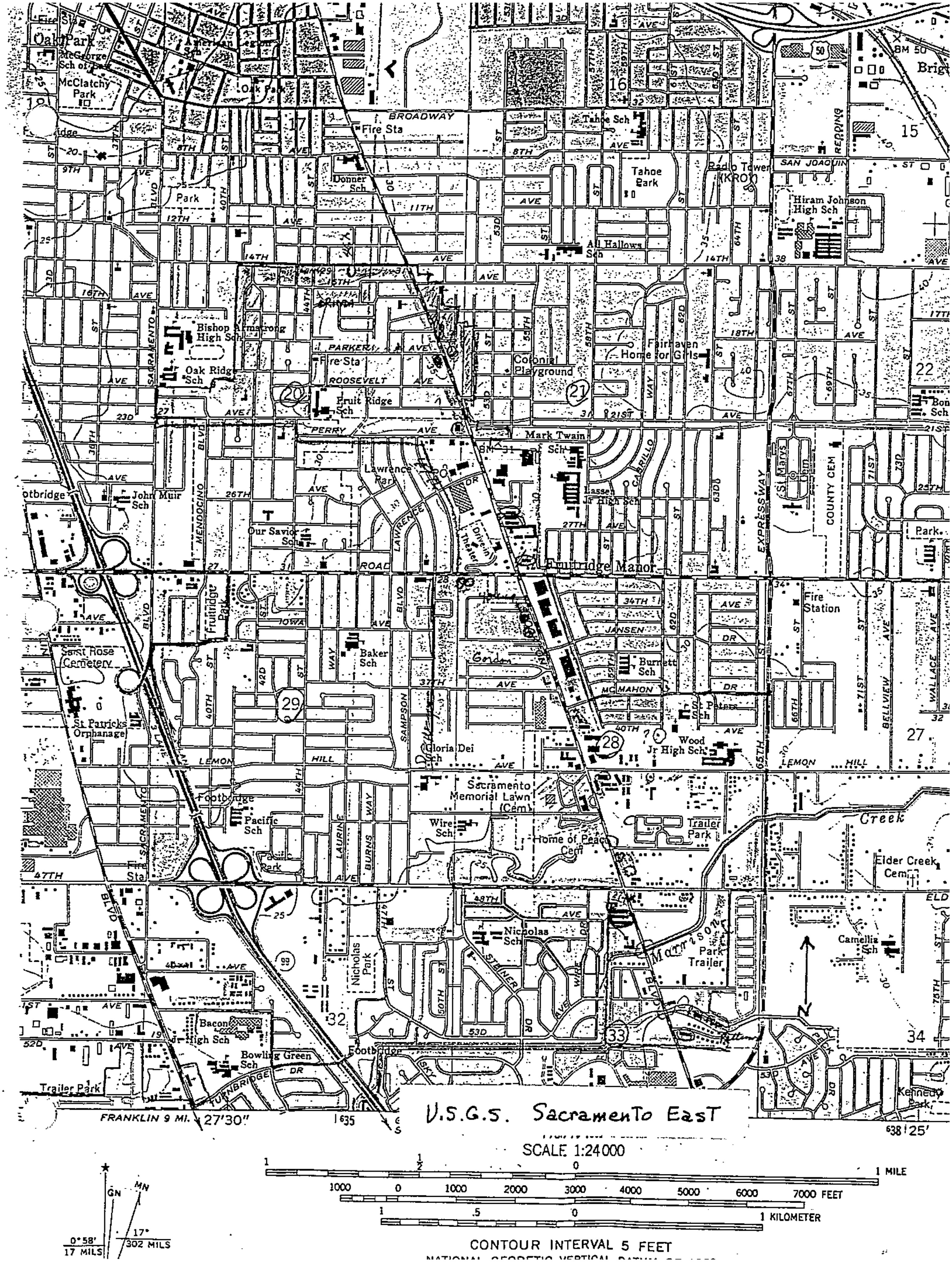
If potentially significant structures are identified, or if any prehistoric deposit encountered, recommendations should be made to acquire adequate information to determine the significance of all such resources.

If you have any questions or comments, please feel free to contact me at your earliest convenience.

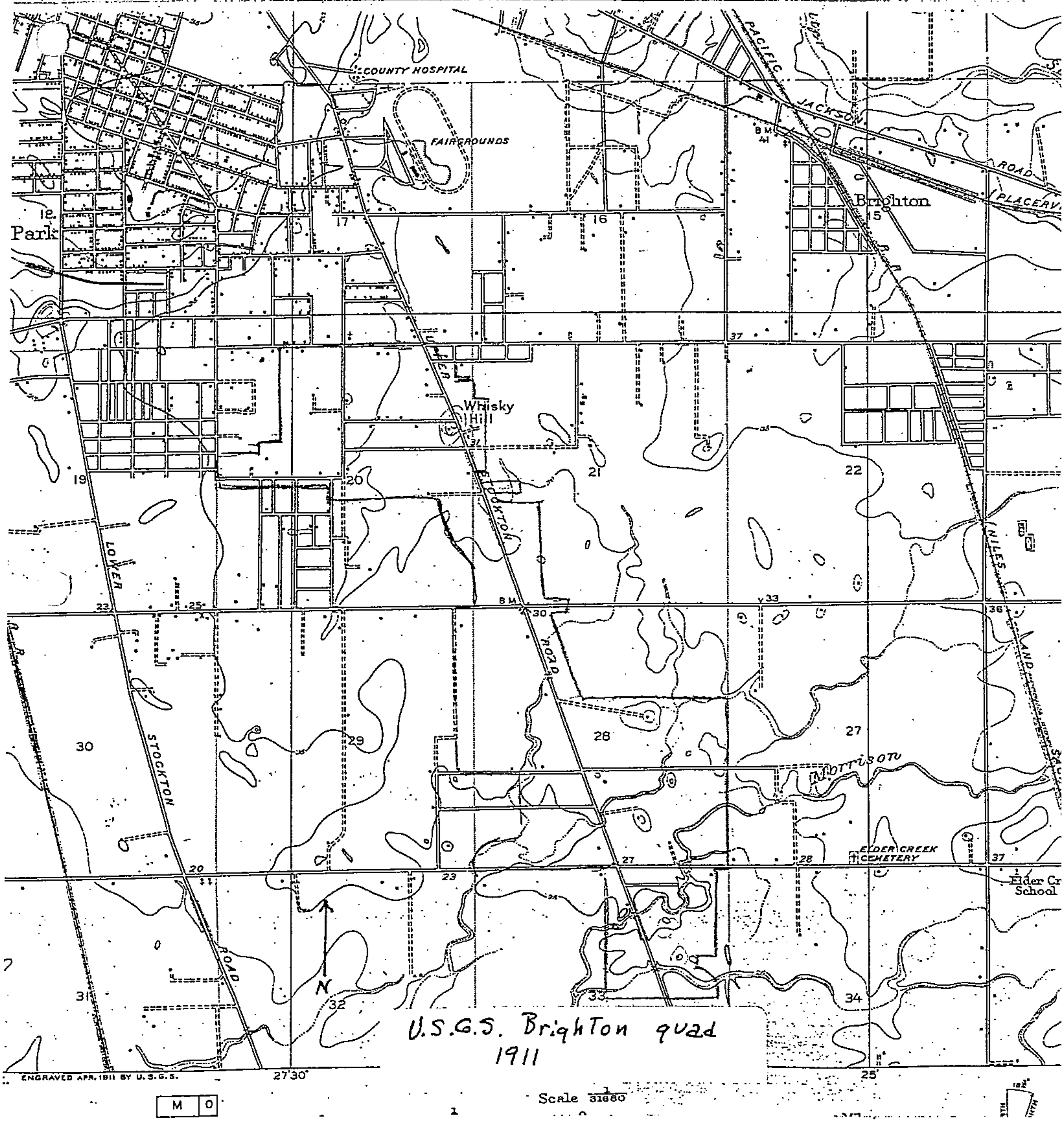
Sincerely,

Eleanor H. Derr

Eleanor H. Derr
Archaeologist



V.S.G.S. SacramenTo EasT
Oak Park
McGeorge Sch of Law
McClatchy Park
American Legion
Broadway
Fire Sta
Tahoe Sch
Tahoe Park
Radio Tower (KROY)
San Joaquin
Hiram Johnson High Sch
Donner Sch
All Hallows Sch
Bishop Armstrong High Sch
Oak Ridge Sch
Fruit Ridge Sch
Roosevelt
Parker
Colonial Playground
Fairhaven Home for Girls
Mark Twain Sch
Lawrence Park
Lassen Jr High Sch
John Muir Sch
Our Savior Sch
Drive-in Theater
Fruitridge Manor
St Marys Cem
County Cem
Expressway
Fruitridge Park
Fire Station
Baker Sch
Burnett Sch
St Rose Cemetery
St Patricks Orphanage
St Peters Sch
Gloria Dei Sch
Wood Jr High Sch
Lemon Hill Ave
Sacramento Memorial Lawn (Cem)
Footbridge
Pacific Sch
Pacific Park
Wire Sch
Home of Peace Cem
Trailer Park
Creek
Elder Creek Cem
Nicholas Sch
Nicholas Park
Camellia Sch
Morrison Park Trailer
Bacon Jr High Sch
Bowling Green Sch
Turnbridge Dr
Trailer Park
Kennedy Park
FRANKLIN 9 MI.
27'30"
38°25'
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
GN
MN
0°58'
17 MILS
17°
302 MILS
CONTOUR INTERVAL 5 FEET



U.S.G.S. Brighton quad
1911

NOTED RESOURCES WITH POTENTIAL HISTORICAL SIGNIFICANCE

Stockton Boulevard - west side
- 14th Avenue to south
  - Houses at 4020, 4060, 5060, 4400 (on large hilly lot with retaining wall--currently undergoing renovation or removal)
  - Houses at 4510, 4520, 4540; 4630.
  - River City Motel (4700)
- Young Street to south
  - San Juan Motel (5700); Victoria Motel (5716 - well kept old auto court)
  - Southside Trailer Court (5820 - old auto court)
- 37th Avenue to south
  - Old auto court (no number visible, south of Maxim's Restaurant at 6010)
- Lemon Hill to south
  - Sacramento Memorial Lawn Cemetery
  - Home of Peace Cemetery
  - Bridge at tributary to Morrison Creek
  - Royal 8 Inn (6448)
  - Bridge at Morrison Creek (#24-10)

Stockton Boulevard - east side
- Patterson Street to south
  - El Rey Motel
- Patterson Street to north
  - Bridge at Elder Creek (#24-11)
- Fowler Avenue to north
  - Bridge at Morrison Creek (#24-10)
- Elder Creek Road to north
  - Modified older building, with house in rear (6331)
  - Norms Garage (6303 -older commercial building)
- Dias Avenue to north
  - Paris Restaurant (6107 - rehabbed older building)
- Lemon Hill to north
  - Best Six Motel (5969 - old auto court)
  - C&M Auto Repair (no #) - older commercial building
  - Advanced Smog and Tune UP - (no #) - old gas station
- McMahon Drive to north
  - A1 God's Automotive (5889 - rehabed older commercial)
- Fruitridge Road to north
  - Star Motel (5303)
  - Automotive Sales (5261)
  - Twin Mobil Home Park (5101 - possibly late '40s)

22nd Avenue to north
Johnson's Motel (4331 - older motel)
4391 - older house at north end of Werner Mercedes
Houses at 4311, 4014, 4005

14th Avenue, to west (general neighborhood of older wooden houses)
Houses at 4616, 4524, 4422, 4420, 4416
4558 - old auto court

15th Avenue
4506, 4510 - older small wooden houses, detached 1-car garages in rear

44th Street
4330 - older brick commercial
Houses at 4320, 4310, 4230
Fruit Ridge Elementary School (1950s ?)
4000, 3960 - older houses

42nd Street
Older buildings, some rehabed poorly

41st Street
Older houses, mixed condition

West Nichols
4008, 4101 (in rear, two-story) small workers' housing, fair to poor condition

East Nichols, 23rd, and Parker Avenues - late '40s, early '50s

Parker Avenue
4761 - two story bungalow; 4505, 4409, 4329, 4204?, 2 small cottages, ; 4140, 4138 - old wooden houses; 4103 - older brick

Roosevelt Avenue
4620 - older house

Lemon Hill Avenue
Old auto court/apartments, south side of street east of Salvation Army facility
6046 - Camellia House (Salvation Army home) - older home
6100 - older residence

Elder Creek Road
6124 - older house; 6210 may be old

Dewey Boulevard
5878, 5872, 5852 - older houses; older houses north of 36th Avenue, some rehabed.

Fruitridge Road
5150 - white bungalow
5140 - beige rehabed, old pumphouse in rear--appears unaltered

Young Street - may have some 40's houses; mostly 50's
Houses at 5204, 5216, 5228, 5309, 5310

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NORTH CENTRAL INFORMATION CENTER
CALIFORNIA ARCHEOLOGICAL INVENTORY
In Co-operation with:

Record Search Number 93-57
County SAC

State of California - The Resources Agency
Department of Parks and Recreation
Historic Preservation Office

AGREEMENT TO CONFIDENTIALITY AND RECORD SEARCH STATEMENT

I, the undersigned, have been granted access to the Archeological Site Record data at the North Central Information Center at California State University, Sacramento, 6000 "J" Street, Sacramento, CA 95819 for the purpose of:

☐ academic research ☒ project planning ☐ other ______

I fully understand the confidential nature of the information contained in these records, and I agree to respect that confidentiality.

I will attempt to ensure that specific site location is not distributed in public documents or made available to unauthorized individuals within my institution or agency. I also understand that prior written consent of the Information Center Coordinator or State Historic Preservation Officer is required for any exceptions to the above stipulations.

Furthermore, I agree to forward to the appropriate Information Center, no later than 30 days after completion of field reconnaissance and investigation, any preliminary reports and complete site records for any sites that are identified. I also agree to forward to the appropriate Information Center or Centers all subsequent reports on the identified sites.

I understand that failure to comply with any aspect of the above agreement is grounds for denial of subsequent access to the archeological site data.

This agreement is based on State access policy. Eleanor H. Derr 10/11/93
Signature of Researcher Date

Printed name of researcher Eleanor H. Derr Phone 363-8774

Firm Cultural Resources Unlimited

Address 2614 Aramon Drive City Rancho Cordova, CA Zip 95670

Method of contact: Phone ____ In person X Letter ____ Date/Time Oct. 11, 1993

Title of Project or Research Stockton Blvd. Overview

Contact person/agency for which work conducted Tom Lagerquist, Environmental Science Assoc.

Address 1920 9th St. Suite 220, Sacramento, CA 95814-7044 Phone 325-9344

USGS Quad(s) consulted Sacramento East 7.5'

Site record(s) consulted none

Site record(s) copied none

Reports/manuscripts consulted 88

Reports/manuscripts copied library card only

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Citation Information

Authors: Julia Green
Kyle Johnson
Year: 2005
Title: Cultural Resources Inventory Lemon Hill, Sacramento County, California Project 2005-101
Affiliation: ECORP Consulting Inc.
Client: Advanced Development and Investing, Inc.
No. Pages:
Report Type(s): Archaeological survey
Inventory Size: 3.75 acres
No. Sites: 1
No. Informal:
Collections:
Disclosure: Not for publication

Associated Resources

Primary No.	*HRI No.*	*Trinomial*	*Name*
P-34-001681			

Notes

Location Info

County(ies): SA
USGS 7.5' Quads: SACRAMENTO EAST
PLSS:

Township/renge	*Sections*	*BL/M*	*or Land Grant*
T 8N R 5E	28	MDBM	

Address:

Database Record Metadata

	Date	*User*
Entered:	6/19/2007	erin
Last Modified:	6/19/2007	erin

IC Actions:

#8687

Cultural Resources Inventory
Lemon Hill
Sacramento County, California
Project 2005-101

Inventory Prepared by:
ECORP Consulting
2260 Douglas Blvd., Suite 160
Roseville, CA 95661
916-782-9100

Prepared for:
Advanced Development and Investing, Inc.
Mitch Abdallah
1008 Second Street, 2nd Floor
Sacramento, California, 95814

Keywords: cultural resources assessment, archaeology, Section 106,
No historic properties, Sacramento County, USGS Sacramento East, California
7.5 minute quadrangle, T8N, R5E, Section 28, 3.75-acres

October 2005

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

8687

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Cultural Resources Inventory

Lemon Hill

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1.0 MANAGEMENT SUMMARY

The subject of this assessment report is the Cultural Resource Inventory of the Lemon Hill project. This survey examined an estimated 3.75-acre parcel on the south side of Lemon Hill Avenue, between the 65th Street Expressway and 63rd Street, Sacramento County, California.

ECORP Consulting, Inc. prepared this cultural resource inventory report to assist Advanced Development and Investment, Inc., developer of the Lemon Hill project, in complying with the National Environmental Policy Act (NEPA) and Section 106 the National Historic Preservation Act (NHPA), as required by Section 404 of the Clean Water Act. The Lemmon Hill project consists of a planned, multi-family residential complex and associated infrastructure, set in a suburban environment.

Cultural resource properties located within the project area include 1 prehistoric isolate. Isolates are *a priori* considered not significant, and are ineligible for inclusion on the National Register of Historic Places (NHRP), thus requiring no protective measures.

2.0 INTRODUCTION

The *Lemon Hill* project area is southeast of Sacramento, California, in Sacramento County. After doing a search of the existing records and literature regarding prior archaeological work done in and around the proposed development, ECORP Consulting, Inc. employee Kyle Johnson, accomplished an archaeological survey of the project area May 24, 2005. The work was performed to comply with Section 106 of the National Historic Preservation Act (NHPA), as required by Section 404 of the Clean Water Act. This report is a summary of the scope and results of this inventory project.

2.1 Project Locations and Descriptions

The *Lemon Hill* project is located south of Lemon Hill Avenue, north of Elder Creek Road, between the 65th Street Expressway and 63rd Street (Figure 1 – Project Site and Vicinity). The

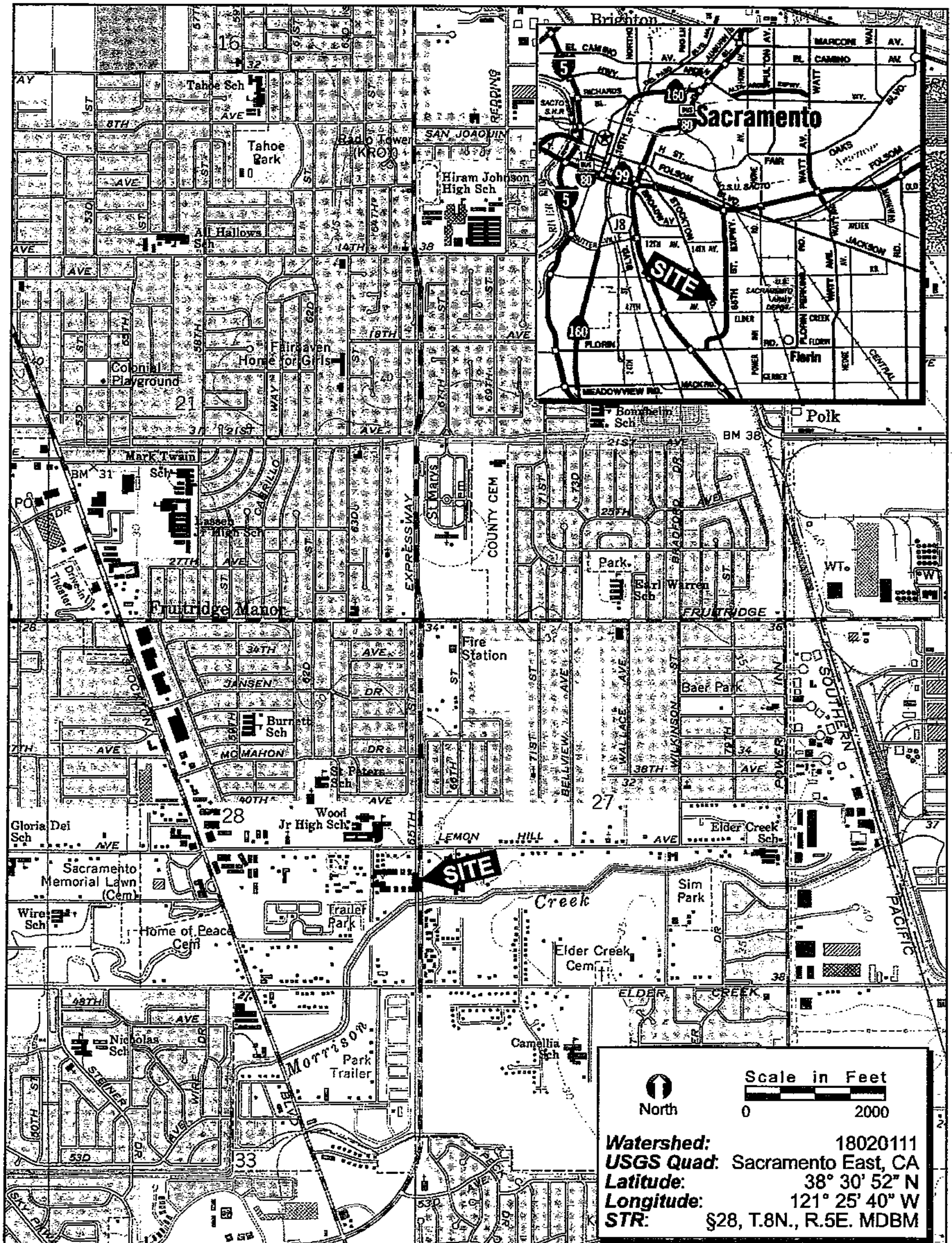

FIGURE 1. Project Site and Vicinity Map

site corresponds to a portion of section 28 of Township 8 North, and Range 5 East of the "Sacramento East, California" 7.5-minute quadrangle (U. S. Department of the Interior, Geological Survey, photorevised 1992).

2.2 Regulatory Framework

This project will require the issuance of a federal permit by the Army Corps of Engineers (Corps) under the federal Clean Water Act. Therefore, the project is considered a federal undertaking and requires compliance with Section 106 of the National Historic Preservation Act.

The Section 106 process has five general steps: 1) Identification and evaluation of historic properties; 2) Assessment of the effects of the project activities on properties that are eligible for the National Register; 3) Consultation with the responsible agency and the State Historic Preservation Office (SHPO) about adverse effects on the properties, followed by the development of a memorandum of agreement (MOA) that addresses the treatment of historic properties; 4) Submission of the MOA to the Advisory Council on Historic Preservation; and 5) Proceeding with the project according to the conditions of the MOA.

3.0 SETTING

3.1 Natural Setting

Morrison Creek, which is located immediately south of the project, flows into the Sacramento River, in the Sacramento Valley, along the eastern edge of the Great Valley of California (Norris and Webb 1976). The foothills of the Sierra Nevada Range begin about 30 miles to the east. Elevation in the project area is 30 feet above mean sea level.

Geologically, the project area is composed of Quaternary alluvium overlying Tertiary sedimentary rock (Norris and Webb 1976).

A single soil type exist in the Lemmon Hill project area, San Joaquin-Urban Land Complex fine sandy loam soil on 0 to 3% slopes, formed in alluvium from mixed granitic rock sources.

Prior to its conversion to agricultural production by European settlers, the Great Valley supported a diversity of habitats made up of vast grasslands, valley oak savannahs, riparian woodlands, and marshes (Baumhoff 1978). Although today, vegetation in the Lemon Hill project area is typical mixed urban, in the past it can likely be placed within the Valley Oak Woodland (Ritter 1988), the Valley Foothill Riparian (Grenfell 1988), and the Annual Grassland (Kie 1988) habitat zones. Today, the dominant grassland species are introduced, non-native grasses such as wild oats and barley, foxtail fescue, and red brome. Before the arrival of Europeans, native grasses most likely consisted of climax stands of perennial bunchgrasses such as purple needlegrass (*Stipa pulchra*), and others including triple-awned grasses (*Aristida sp.*), blue grasses (*Poa sp.*), and rye grasses (*Elymus sp.*) (Kie 1988; Shoenherr 1992). Trees in the area today are dominated by non-native species such as European Black Walnut and a variety of hardwoods planted ornamentally or as wind-breaks. Prehistorically, it is likely that away from riparian zones, woodlands in the area consisted almost exclusively of savannah-like stands of valley oak (*Quercus lobata*), with a sprinkling of black walnut (*Juglans nigra*) (Ritter 1988). Along drainages, the riparian community included cottonwoods (*Populus deltoides*), California sycamore (*Planatus racemosa*), and valley oak (*Quercus lobata*), with an understory of alder (*Alnus sp.*), box elder (*Acer negundo*), and Oregon ash (*Fraxinus latifolia*). Shrubs include California blackberry (*Rubus vitifolius*), wild grape, wild rose, blue elderberry, and willow. Rushes, sedges and grasses composed the herbaceous layer (Grenfell 1988).

Fauna in the project area included mule deer (*Odocoileus hemionus*), black-tailed jackrabbit, (*Lepus californicus*), rabbit (*Sylviligus*, sp.), gray squirrel (*Sciurus griseus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*). Avifauna included red-tailed hawks (*Buteo jamaicensis*), prairie falcons (*Falco mexicanus*), burrowing owls (*Speotyto cunicularia*), California quail (*Callipepla californica*), mourning doves (*Zenaidura macroura*), and California (*Aphelocoma coerulescens*) jays. Rattlesnakes (*Crotalus viridus*) and various frogs (*Rana*, sp.), toads (*Bufo*, sp.), and lizards (*Sceloperus*, sp., e.g.) were/are also present (Shoenherr 1992).

3.2 Cultural Setting

3.2.1 Prehistory

Pre-Archaic Period (10,000-8,500 B.C.) The earliest occupants of California were generally believed to be reliant for their subsistence on the hunting of big game – the Pleistocene mega-fauna such as mammoths and giant sloths, a strategy that kept them constantly on the move. Although tools for grinding are occasionally found on these early sites, the gathering of plant material appears to have been only a small part of their subsistence strategy. Evidence for this wide-ranging, highly nomadic occupation has been found all over the West, from sites at what are today deserts, but were then inland lakes with resource-rich marshlands, to the vast expanses of the Great Plains, to the high elevations of the Rocky Mountains. Few sites from this period have been found in California, suggesting a small, widely dispersed population. A dearth of sites at higher elevations is probably due to the climate. The final Ice Age of the Pleistocene was just ending, glaciers still existed in the Sierra Nevada, and conditions in general were much cooler and wetter than today, making the mountains an inhospitable habitat for humans. Most of the sites dating to this period have been found in the vicinity or on the ancient shorelines of the large, pluvial lakes that were common during this time (Chartkoff and Chartkoff 1984).

Early to Middle Archaic Period (8,500-4,000 B.C.) With the end of the Pleistocene, the climate began a warming and drying trend that lasted for several thousand years. The great inland lakes that had covered large areas of the Great Basin began to dry up, and the megafauna – the mainstay of Pre-Archaic Period subsistence – suffered mass extinction. People adapted to these changes by shifting their foraging emphasis away from hunting and increasing their use of plant resources, as evidenced by a marked increase in the presence of plant processing tools on archaeological sites dated to this time period. More manos and metates suggest that people had begun to rely on food based on the grinding of hard seeds and grains. This, combined with a greater reliance on local tool stone sources, too, suggests that groups also largely abandoned the wide-ranging nomadism of the Pre-Archaic and began to concentrate their foraging efforts on smaller territories using a seasonal round, scheduled to coincide with the appearance of various resources as they became available. Though the lakes were shrinking, use of their many resources became an integral part of Early to Middle Archaic subsistence strategies. It is during this time period, too, that people began a more intensive use of the coastal regions, with their rich marine resources.

Late Archaic Period (4,000-2,000 B.C.) A major change in subsistence came in the Late Archaic Period with the discovery of a method to remove the tannins from acorns, allowing this nearly ubiquitous nut to become a staple food for the indigenous people of California. In addition to providing a rich and essentially inexhaustible source of nutrition, it allowed people to gather and store large surpluses of food to carry them through lean seasons. Concomitant with this was an increase in group size and population densities. Sedentarism increased, and sophisticated cultures developed comparable to those found in farming areas in other parts of North America. It has been suggested that agriculture never took root in the Pacific west because the richness of the natural environment provided all that the people needed to survive and a good deal more (Chartkoff and Chartkoff 1984). Trade also increased during this period, bringing in goods – and, presumably, ideas – from afar. One item, or idea, was probably the atlatl, or spear-thrower. Hunting of a diverse range of large and small game, fishing, and gathering of wild plant resources besides acorns remained important elements of overall subsistence strategies.

Early and Middle Pacific Periods (2,000 B.C.-A.D. 500) By 2,000 B.C., acorn meal had become the most important food for California Indians, much as corn was for people elsewhere. An increase in the number of archaeological sites dating to this period suggests an increase in population that was probably the result of this reliable and widely available food resource. People moved into environmental zones that had previously been used only marginally, such as the middle and high Sierras. In addition, societies began to become more complex, socially and politically.

Late Pacific Period (A.D. 500-1400) With the introduction of the bow and arrow, prehistoric weapons technology in California took a quantum leap forward at about this time. Lighter, more accurate, and with a significantly longer range, the bow and arrow changed hunting and warfare forever. Another major shift in technology at this time is the movement away from portable manos and metates and the increased use of bedrock mortars and milling stations (Moratto 1984). The increasing complexity of societies witnessed at the end of the Middle Pacific Period continues to be seen in archaeological sites throughout this period, as does the widening of trade networks, development of food storage and redistribution system, the increasing intricacy of ceremonial and funerary patterns, and more marked territoriality. In addition, elevated levels of fishing equipment and fish and shellfish remains indicate use of riverine resources. This may have been an adaptation to a warm, dry interval that set in about A.D. 1500 and would have affected hydrologic and vegetation patterns (Davy 2001).

Final Pacific Period (A.D. 1400-1769) Sedentarism intensified during this period, with people becoming ever more reliant on staples to support them. Societies, along with economies and political systems continued to become more complex. During this period, visits from Europeans began, culminating with the establishment of permanent settlements in A.D. 1789.

3.2.1.1 Regional Prehistory

The earliest evidence of the prehistoric inhabitants of the region surrounding the Lemon Hill project area comes from a single, deeply buried site in the bank of Arcade Creek, north of Sacramento, containing grinding tools and large, stemmed projectile points. The points and grinding implements suggest an occupation date of some time between 6000 and 3000 B.C. (Wallace 1978). However, it was not until after about 3500 B.C., in the Late Archaic Period, that people began to move into the San Joaquin and Sacramento valleys in any significant numbers (Chartkoff and Chartkoff 1984). This earliest permanent settlement of the Delta region of the Sacramento River is called the Windmiller Tradition, and is known primarily from burial sites containing relatively elaborate grave goods, in or near the floodplain (Chartkoff and Chartkoff 1984; Ragir 1972; Wallace 1978). The Windmiller Tradition reflects the amplification of cultural trends begun in the Middle Archaic, as seen in the proliferation of finished artifacts such as projectile points, shell beads and pendants, and highly polished charmstones. Stone mortars and pestles, milling stones, bone tools such as fishhooks, awls, and pins are also present. It is probable that these people subsisted on deer and other game, salmon, and hard seeds. They also were apparently the first Californians to discover the process for leaching the tannins out of acorns, thus making them edible by humans (Chartkoff and Chartkoff 1984). Based on linguistic evidence, it has been suggested that the Windmiller culture was ancestral to several historic tribes in the Central Valley, including the Penutian speaking Nisenan (Chartkoff and Chartkoff

1984; Elsasser 1978). The Windmiller Tradition lasted until about 1000 B.C. (Chartkoff and Chartkoff 1984).

Around 1000 B.C., subsistence strategies in the Delta region became noticeably more "focal," with a clear increase in the reliance on acorns and salmon (Chartkoff and Chartkoff 1984; Elsasser 1978). Culturally, this has been dubbed the Cosumnes Tradition (1700 B.C. to A.D. 500), and appears to be an outgrowth of the Windmiller Tradition (Ragir 1972). These people continued to occupy knolls or similar high spots above the floodplain of the Sacramento River and the terraces of tributaries such as the Cosumnes and American rivers, flowing out of the foothills of the Sierra Nevadas to the east. Populations increased, and villages became more numerous than before, with more milling tools, and specialized equipment for hunting and fishing. Trade appears to have increased, with burials containing larger amounts of seashell and obsidian. Burial styles, too, became more varied, with the addition of flexed interments along with the extended ones of the Windmiller period. Projectile points found embedded in the bones of excavated skeletons suggest that warfare was on the rise, possibly as a result of increased competition over available resources and trade (Beardsley 1954; Lillard, Heizer, and Fenenga 1939; Ragir 1972).

The next, and final, discrete prehistoric culture is the Hotchkiss Tradition (A.D. 500 to 1769) that persisted until the arrival of European settlers in central California (Beardsley 1954; Ragir 1972). During this period, use of acorns and salmon reached its peak, with hunting of deer. Diet was supplemented with the addition of waterfowl, hard seeds, and other resources. Large sedentary villages along the lower Sacramento and San Joaquin rivers, and their tributaries and delta were common. The size and density of these settlements suggests a further increase in population from Cosumnes times. Trade goods were plentiful, and burials exhibit a marked stratification of society with wide differences in the amount and variety of grave goods. Cremation of the dead appears, along with the flexed inhumations of the previous period (Chartkoff and Chartkoff 1984; Ragir 1972). While ornamental or ritual artifacts, such as large, fragile projectile points and trimmed bird bone increase during this period, milling tools are rare or absent. Shell beads continue in large numbers, and there are numerous utilitarian artifacts of bones such as awls, needles, and barbed harpoon points. Polished charmsotnes are rarer, but ground stone pipes become more abundant. In addition, fired and unfired clay objects begin to appear (Chartkoff and Chartkoff 1984).

3.2.2 Ethnography

Ethnographically, the Penutian speaking Nisenan in the southwestern portion of the territory occupies the project area. The territory extended from above the junction of the Feather and Sacramento rivers on the north, to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and in the east, it extended to somewhere near Lake Tahoe. As a language, Nisenan (meaning "from among us" or "of our side") has three main dialects – Northern Hill, Southern Hill, and Valley Nisenan, with three or four subdialects (Kroeber 1976; Placer County 1992; Shipley 1978). The Valley Nisenan lived primarily in large villages with populations of several hundred each, along the Sacramento River. Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups (Placer County 1992). Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged (Kroeber 1976; Wilson and Towne 1978; 1982). Residence was generally patrilocal, but couples actually had a choice in the matter (Wilson and Towne 1978; 1982).

Politically, the Nisenan were divided into "tribelets," made up a primary village and a series of outlying hamlets, presided over by a more-or-less hereditary chief (Kroeber 1976; Wilson and Towne 1978; 1982). Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The chief had no authority on his or her own (females could become chief, if no competent male relative could be found). Authority came from the support of the shaman and the villagers, but with this the word of the chief become virtually the law. Pushune (also Pusune), a dominant village located at the mouth of the American River, was most likely the major village in the region of the Vineyard Creek project area (Wilson and Towne 1978; 1982).

Subsistence activities centered around the gathering of acorns (tan bark oak and black oak were preferred), seeds, and other plant resources, the hunting of animals such as deer and rabbits, and fishing. Large predators such as mountain lions and wildcats were hunted for their skins, as well as their meat, and bears were hunted ceremonially. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion and "Indian potato," which were eaten raw, steamed, baked, or dried and processed into flour cakes to be stored for winter use (Wilson and Towne 1978). Wild garlic was used as soap/shampoo, and wild carrots were used medicinally (Littlejohn 1928). Seeds from grasses were parched, steamed dried, or ground and made into a mush. Berries, too, were collected, as were other native fruits and nuts. They prepared game by roasting, baking, or drying. In addition, salt was obtained from a spring near Rocklin (Wilson and Towne 1978; 1982).

Hunting of deer often took the form of communal drives, involving several villages, with killing done by the best marksmen from each village. Snares, deadfalls, and decoys were used, too. Fish were caught by a variety of methods including use of hooks, harpoons, nets, weirs, traps, poisoning, and the hands (Wilson and Towne 1978; 1982).

Trade was important with goods traveling from the coast and valleys up into the Sierra Nevada, and vice versa. Items like shell beads, salmon, salt, and digger pine nuts went up, and things such as bows and arrows, deerskins, and sugar pine nuts came down. In addition, obsidian was traded in from the north (Wilson and Towne 1978; 1982).

The Spanish moved into the Central Valley around 1769, and by 1776, the Miwok territory bordering the Nisenan on the south had been explored by José Canizares. In 1808, Gabriel Moraga crossed Nisenan territory, and in 1813, a major battle was fought between the Miwok and the Spaniards near the mouth of the Cosumnes River. Though the Nisenan appear to have escaped being removed to missions by the Spanish, they were not spared the ravages of European-spread disease. In 1833, an epidemic – probably malaria – raged through the Sacramento Valley, killing an estimated 75% of the native population. When John Sutter erected his fort at the future site of Sacramento, he had no problem getting the few Nisenan survivors to settle nearby. The discovery of gold in 1848, near the Nisenan village of Colluma (also Coloma), drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Nisenan culture. By the Great Depression, no Nisenan remained who could remember the days before the arrival of the Whites (Wilson and Towne 1978; 1982).

3.2.3 History

Although the Spanish had made forays into the Central Valley since about 1769, it was not until 1808 that Capitán Gabriel Moraga explored, and named, the Sacramento area (Lawson 2001). Other than fighting with the Indians, as in 1813 when Luis A. Arguello fought a major battle with the Miwok near the mouth of the American River, the Spanish took little interest in the area (Wilson and Towne, 1978). In 1827, American trapper Jedidiah Smith traveled up the Sacramento River and into the San Joaquin Valley to meet other trappers of his company he had left encamped there, but no permanent settlements were established (Peak & Associates 1997).

Then, in August of 1839, a European immigrant, John A. Sutter, arrived at the confluence of the American and Sacramento rivers, armed with expectations of a land grant from the Mexican government, and dreams of an agricultural empire. He and his party erected a fort. Originally called New Helvetia, it later came to be known as Sutter's Fort. In 1841, Sutter received his land grant - some 97 square miles – and proceeded to set up fisheries, a flour mill, and a lumber mill. The fort attracted other businesses, and after gold was discovered in a flume at Sutter's lumber mill near the Nisenan village of Culloma, a store established on the Sacramento River waterfront by Samuel Brannan soon became the heart of the new settlement of Sacramento. Sutter's son, John, Jr., laid out the town in 1849. By 1850, the population of Sacramento had grown to about 9000 (History 2001; Lawson 2001). Statehood was granted in 1850, and by 1854, Sacramento had been chosen as the permanent site of the Capitol. The transcontinental railroad was completed in May of 1869, providing the rapid transport necessary for California's burgeoning agricultural industry, and contributing to an economic and population boom in the 1880s, especially in the southern part of the state.

During the gold rush, numerous claims were worked along the American River. The Lemon Hill project area, however, was not particularly impacted by the gold rush, since streams in the area did not run through any gold-bearing geologic deposits. Today, Sacramento, as the State Capitol, is a growing metropolitan area with commerce, industry, and expanding suburbs.

4.0 METHODS

4.1 Archival Research

A literature and records search for the above location (USGS Sacramento East, CA 7.5' Quad. T8N R5E Section 28) using files at the North Central Information Center, California State University-Sacramento).

In addition to the official records and maps for archaeological sites and surveys in Sacramento County, the following historic references will also be reviewed: *The National Register of Historic Places- Listed properties* (2005); *California Historical Landmarks* (1996 and updates); *California Points of Historical Interest* (1992 and updates); *Gold Districts of California* (1979); *California Gold Camps* (1975); *California Place Names* (1969); *Survey of Surveys (Historic and Architectural Resources)* (1989); *Directory of Properties in the Historical Resources Inventory* (1999); *Caltrans Local Bridge Survey* (1989); *Caltrans State Bridge Survey* (1987); *Historic Spots in California* (1990), 1907 Geologic Land Office Plat map and Handbook of North American Indians Volume 8 (1978).

4.2 Field Survey

Due to the small size of the project area and close proximity to Morrison Creek, close intervals are necessary. Transects widths between members of the survey crew will be a maximum of 15 meters apart.

5.0 RESULTS

5.1 Archival Research Results

Archival research (Appendix A- Literature Search Results) indicated that one previous cultural resource survey has been completed within the Lemon Hill project area. Eleanor Derr for the Stockton Boulevard Redevelopment Plan did this survey. The previous investigation does not meet the current regulations required by the Corp of Engineers for archaeological survey. The records indicate that no historic or prehistoric sites are known to be located within or near the Lemon Hill project.

5.2 Field Survey Results

On May 24, 2005 a systematic archaeological survey, designed to identify historic and prehistoric sites and artifacts within the Lemon Hill project area was conducted by ECORP Consulting, Inc. employee, Kyle Johnson (Appendix B – Resumes). Kyle surveyed the project using 15-meter intervals (Figure 2 – Area of Potential Effect and Coverage Map). The terrain within the Lemon Hill project area is flat and being disked during survey. The survey was conducted to the standards set by the Secretary of the Interior (Guidelines 1990; National Park Service 1983). One isolated gray chert flake was discovered during this survey (Appendix C-Isolate Record).

5.3 Native American Consultation Results

We have consulted with the Native American Heritage Commission (NAHC) concerning potential areas of Native American concern regarding the Lemon Hill project area. We have mail letters to extend necessary consideration to all Native Americans on the contact list provided by the NAHC on the proposed undertaking. All information sent and received is included in the record of consultation (Appendix D- Native American Consultation).

6.0 CONSIDERATIONS AND RECOMMENDATIONS

6.1 Special Management Considerations and Recommendations

Although only one isolate was discovered on the surface of the project area, this does not preclude the possibility of a buried habitation or special activity site somewhere within the boundaries of the Lemon Hill project area. In the Sacramento Valley, prehistoric sites are often located near rivers and creeks. Although no further work is required, it is recommended that should any previously unidentified prehistoric or historic archaeological resources be

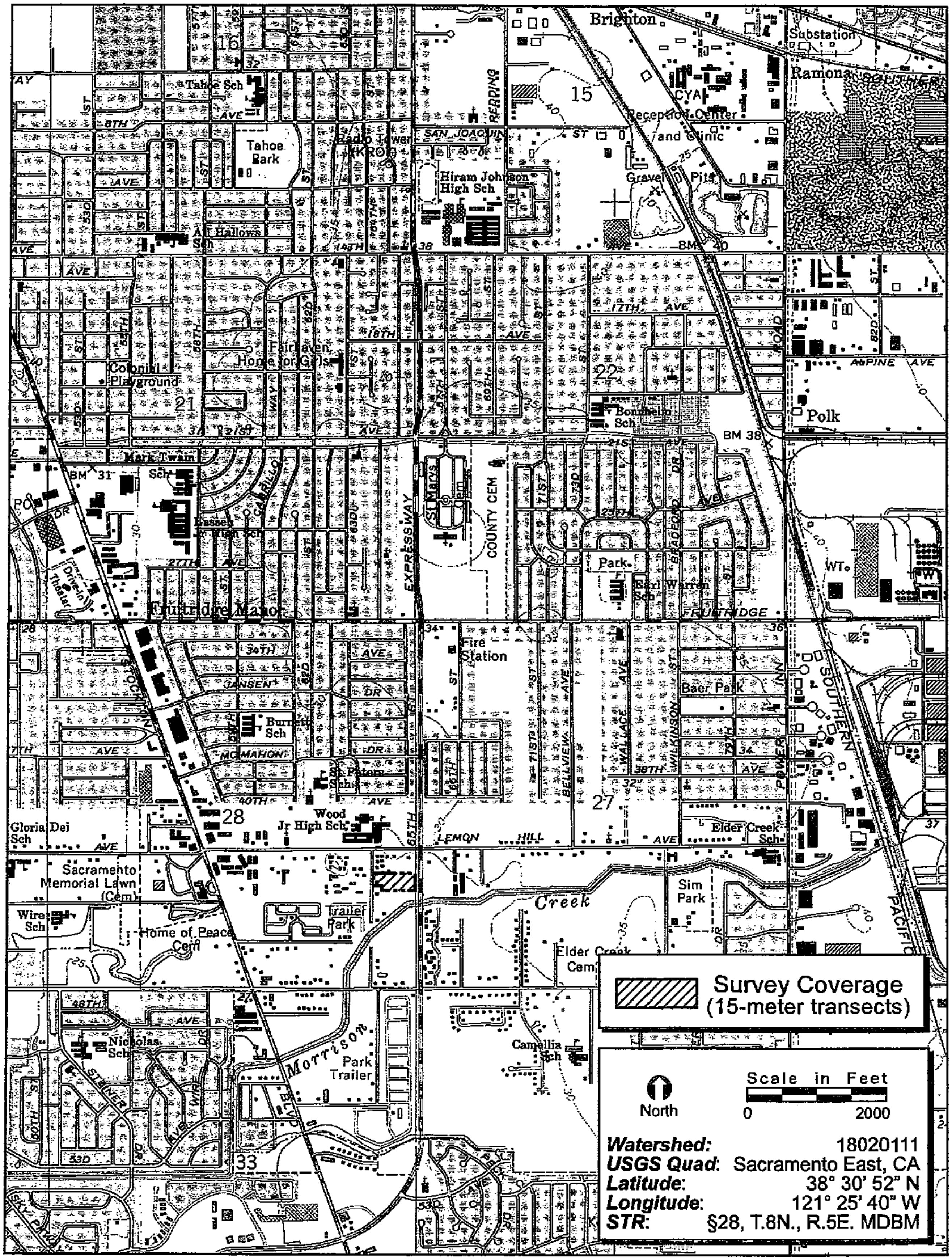

FIGURE 2. Area of Potential Effect and Coverage Map

2005-101 Lemon Hill

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ENVIRONMENTAL CONSULTANTS
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encountered during the course of project activities, all work within 100 feet of the find shall halt, and a qualified archaeologist consulted for an on-site evaluation to assess the significance of the find. And if the find is determined to be significant all reasonable efforts will be made to avoid/minimize those effects to the resource.

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North Central Information Center Report Detail Record: 88

Citation Information

Authors: Johnson, Jerald J.
Year: 1974
Title: Reconnaissance Archeological Survey of the Morrison Stream Group in Sacramento County, California.
Affiliation:
Client: U.S. Army Corps of Engineers, Sacramento District, 650 Capitol Mall, Sacramento, CA 95814.
No. Pages:
Report Type(s): Archaeological survey
Inventory Size: Approx. 75-90 miles linear and 950+ acres
No.Sites:
No. Informal:
Collections:
Disclosure:

Associated Resources

Primary No.	*HRI No.*	*Trinomial*	*Name*
P-34-000048		CA-SAC-21	Hollister Mound
P-34-000075		CA-SAC-48	Azevedo Mound
P-34-000077		CA-SAC-50	Facunes Mound
P-34-000083		CA-SAC-56	Mosher
P-34-000084		CA-SAC-57	
P-34-000085		CA-SAC-58	
P-34-000086		CA-SAC-59	Edinger
P-34-000087		CA-SAC-60	
P-34-000088		CA-SAC-61	
P-34-000089		CA-SAC-62	Robinson
P-34-000090		CA-SAC-63/H	Bloom Mound
P-34-000091		CA-SAC-64	Stone Lake Mound
P-34-000092		CA-SAC-65/H	
P-34-000098		CA-SAC-71	Green
P-34-000099		CA-SAC-72	Herzog Mound
P-34-000110		CA-SAC-83	
P-34-000111		CA-SAC-84	
P-34-000112		CA-SAC-85	Nicholaus Mound
P-34-000113		CA-SAC-86	
P-34-000114		CA-SAC-87/H	
P-34-000115		CA-SAC-88	Elliott Mound
P-34-000116		CA-SAC-89	
P-34-000117		CA-SAC-90	
P-34-000172		CA-SAC-145	South Stone Lake
P-34-000215		CA-SAC-188	
P-34-000229		CA-SAC-202	Mooney Site
P-34-000350		CA-SAC-323	
P-34-000351		CA-SAC-324	
P-34-000352		CA-SAC-325/H	
P-34-000353		CA-SAC-326	
P-34-000354		CA-SAC-327	

Notes

no clear project area USGS map

Location Info

County(ies): Sacramento
USGS 7.5' Quads: BRUCEVILLE
CARMICHAEL
CLARKSBURG
COURTLAND
ELK GROVE
FLORIN
SACRAMENTO EAST

Johnson, Jerald J
1974

A.S.C.

Reconnaissance Archeological Survey of the Morrison Stream Group in Sacramento County, California

The archeological survey described below was completed as part of the environmental assessment of the Morrison Stream Group in Sacramento County, California under Purchase Order No. DACW05-74-P-1822. The purpose of this project was to field check the proposed 11,000 acre-foot Vinyard Reservoir 25.8 miles of levees, 66.3 miles of channel work and a proposed 7,800 acres of land for a flood retardation basin. During the course of this project 10 sites on or in the vicinity of Beach Lake, 10 sites on or near North Stone Lake, one site on the north fork of Franklin Creek and 11 sites on or near South Stone Lake were investigated. An evaluation of the significance and extent of the sites was made and the degree they will be effected by levee, reservoir, road and trail construction and proposed recreation use is presented below. Finally recommendations for protection and or further investigation of the sites were made.

The Corps of Engineers provided: a. Two blue print project maps and b. Three copies of A Preliminary Draft Environmental Impact Statement on the Morrison Creek Stream Group California dated 1972.

Acknowledgments

The archeological investigations described in the following report could not have been completed without the cooperation of many individuals. Mr. and Mrs. Kirtland and Mr. Kirtland's brother Frederick, of the Beach Lake Preserve allowed access to the entire Beach Lake portion of the project while Mrs. Kirtland provided the information that Mr. John Porter, the librarian at Sacramento City College, knew a lot about the Indian sites around the lake. Mr. Mike Pilliken, of Franklin, allowed access to his collection of artifacts from both North and South Stone lakes and provided information on an important previously unrecorded site near the southern end of North Stone Lake (Site No. 4). He also had a collection of artifacts from the Thorpe Site (Sac-165) on the northern branch of Franklin Creek and the Huth Site (Sac-64) on South Stone Lake. Mr. William J. Lange and his lessee Mr. George Fogg allowed access to their land on the east side of South Stone Lake. Mr. Peter Schulz, of the Department of Anthropology at the University of California at Davis, provided important information on the California State Department of Parks and Recreation's surveys and excavations on the south and west side of South Stone Lake. Mr. Galen Whitney (owner), Mr. Wayne Long (Environmental Consultant) and Mr. Steve Hyde (Manager) provided access to and information about the Stone Lake Preserve on the northwest side of South Stone Lake, while Mr. Whitney also introduced the author to members of the Walnut Grove Rotary Club, many of which have artifact collections of note. I would like to particularly thank Mr. L.C. Bloom, owner of archeological sites Sac-63 and Sac-64, who was very cooperative and provided considerable information about the

early history of South Stone Lake. Mr. Len Williams, of the Department of Anthropology at the University of California at Davis, provided access to the archeological site files and Mr. Francis Riddell, of the California Department of Parks and Recreation's Cultural Resources Section allowed use of their maps and files on the archeological resources in Sacramento County. Additional information was provided from the archeological site files and collections at the Department of Anthropology at California State University at Sacramento.

Previous Research

Prior to the beginning of field work a thorough search was made of previous historic, archeologic and ethnographic work. The National Register of Historic Places, the Register of California Historic Landmarks, and the publication "Historic Spots in California (Third Edition) were also consulted. No sites previously recognized as historically significant will be affected by the project. Additional research might establish whether the locations of the early settlements on Beach and South Stone Lake should be accorded such recognition. Files at the University of California at Davis, California State University at Sacramento and the California State Department of Parks and Recreation were checked and all previously recorded archeological sites were marked on the appropriate United States Geological Survey 7.5' quadrangle. In addition the available published literature and numerous unpublished manuscripts and field notes were also consulted.

Historic Background

Man has always been interested in what has gone on in the past and the Indians were no exception. Later inhabitants picked up tools and raw materials from previously occupied sites and incorporated them into their own activities. The stone mortars, that have been occasionally found in the Morrison Creek Basin, were used for processing acorns and other foods and they were apparently manufactured and used before 300 A.D. The Indians living within the project boundaries historically claimed they did not make the mortars even though they sometimes found one and used it. Instead the mythical being "Coyote" made them and the Indians occasionally found and used them. These artifacts were obviously from older sites and since the later Indians did not know who had manufactured them they explained their presence with the myth described above.

As the lower Sacramento Valley was settled by Euro-Americans this interaction and sometimes fascination for the past continued. Virtually every early homestead or barn was built on an Indian site because they were the highest available ground. This included the settlers on Beach Lake and Mr. William Henry Harrison Bloom who initially settled on South Stone Lake in 1853. The old Nicholaus ranch buildings were on a site and an old barn stood on Sac-48 in 1934. Few Indian sites exist in the lower Sacramento Valley which do not have a few square iron nails, old glass or other historic debris in their upper levels. Unfortunately none of the buildings presently within the boundaries of the present proposed project are of significant architectural styles or contain other unique features that would warrant their inclusion as historical monuments or landmarks. Most of the existing buildings date after 1910 or have been removed. According to Mr. and Mrs. Kirtland a relative has a collection of documents about the early settlement of Beach Lake and plans to assemble them in the future into a book for publication. Mr. L.C. Bloom knows much of the early history of the South Stone Lake area and the Bloom family is mentioned in The History of Sacramento County, California by Thompson and West (1880).

Ethnographic Background

The entire project area was occupied by the Plains Miwok Indians except for perhaps the extreme northern part of the Morrison Creek drainage. Several early Spanish expeditions, after 1812, depleted many of the villages of inhabitants, numerous Indians died during the epidemic of 1832-33 and John Sutter fought many of the remaining Plains Miwok in 1840, 1841 and 1846 (Belcher 1843: 125; Bancroft 1883; Cutter 1950; Moraga 1957; Cook 1954; and Bennyhoff 1961). When ethnographers attempted to collect information after 1900 A.D. they found that most of the Plains Miwok were no longer in existence. Therefore the works of Kroeber (1906: 652-663; 1908; 1957: 215-217; Merriam (n.d.; 1907: 338-357), Powers (1877), Schenck (1926: 123-146) and others contain very little information on the culture of these Indians. Bennyhoff (1961) brought together most of the available information from the early Spanish, Mexican, Euro-American and ethnographic records in his Ph.D. dissertation on the "Ethnogeography of the Plains Miwok."

Bennyhoff's report contains a detailed analysis of the historical, ethnographical and archeological sources which he used to determine where the various Plains Miwok tribelets had lived (1961: 25-83). His discussion of the Hulpumne suggests they lived near Freeport and he suggests archeological sites Sac-85 and 86 on lower Beach Lake contain mission period glass beads and could well have been the tribelet center (Figures 1 and 2).

No tribelet is known to have existed specifically on North Stone Lake and Bennyhoff suggests archeological site Sac-56 to the northwest along the Sacramento River might have been the tribelet center. No mission type trade beads are known from the four sites on North Stone Lake and even though at least Sac-88 and Sac-89 may have been in Gualacomne territory they may not have been occupied during recent times. The Mosher Site (Sac-56) is almost completely gone with only a small remnant under the Sacramento River levee. It contained a full range of mission period beads and other trade items.

The Chupumne tribelet lived south of the Gualacomne and Bennyhoff has tentatively identified site Sac-62 as their probable center (1961: 111-113). Unfortunately the site has not been excavated and he could not be certain of this. Information has recently become available on archeological site Sac-64, 2 miles to the south of Sac-62, which clearly indicates it too was utilized into the mission period. Whether this was a subsidiary of the Chupumne tribelet or the main center is not known. Immediately across an arm of South Stone Lake the Wilcox Site is located and it contained numerous late burials and assorted bead types. The Thorpe Site (Sac-165), on the northern branch of Franklin Creek, also contains a large number of bead types which suggest a very late occupation and it too may have been utilized by the Chupumne.

The picture is further confused by the location of Sites Sac-21 on the east bank of Snodgrass Slough and Site Sac-70 on the Sacramento River. Sac-21 is 2-1/2 miles south of the supposed Chupumne tribelet center at Sac-62 and a little over 2-1/2 miles northeast of Sac-70 which is suggested as the possible tribelet center of the Ochejamne (Bennyhoff 1961: 117-120). It is not certain therefore which tribelet used all or part of South Stone Lake. Since site Sac-165 is removed over 3-1/4 miles east-northeast of Sac-64 it is likely it was a satelite village of the Chupumne tribelet. What is inferred from Bennyhoff is that all of the tribelet centers were on or near the Sacramento River and seldom on the lakes and sloughs east of the river. It seems likely, however, that since this view was based on those sites which had been excavated and were known to have mission beads, particularly on the record of Fr. Narcisco Duran's trip with Luis Arguello in 1817 and on Sutter's records, that their information is incomplete and that Sac-64, the Wilcox Mound and the Thorpe Site might have been important centers as well. What is clear is that Beach Lake was probably utilized mainly by the Hulpumne tribelet, North Stone Lake was probably shared by the Gualacomne and Chupumne tribelets and South Stone Lake may have been used by both the Chupumne and Ochejamne tribelets of the Plains Miwok. Unless additional historic or ethnographic data becomes available it will be impossible to further define the various tribelets territory without detailed archeological investigations.

Archeological Background

The Indian mounds south of Sacramento have been the collecting grounds for pot hunters and amateur archeologists for years (Bennyhoff 1961). An incredible amount of digging was done in the 1920's and 30's by Anthony Zallio of the Sacramento Junior College and by Benjamin Hathaway who was the first curator of the California State Indian Museum. The former's collection was donated to the California State University at Sacramento by Mr. Zallio's daughter in the early 1950's and the latter's collections are under the jurisdiction of the California State Department of Parks and Recreation (Figures 1 and 2). Organized archeological work began in the area in southern Sacramento County in 1933 by the junior college. Robert F. Heizer, then a student at the college and currently a professor of Anthropology and director of the Archeological Research Facility at the University of California at Berkeley, and H.W. Gibbs recorded 24 sites in 1934, Lillard recorded the Thorpe Site in the 1930's, one site was recorded in 1949, one in 1952, another in 1954 and six additional sites were recorded in July 1974 as a result of the current investigation (Lillard, Heizer, and Fenenga 1939; Beardsly 1954).

The 15 sites now known inside the project boundaries and the additional 18 nearby probably still do not represent all of those which will ultimately be known. L.C. Bloom, for example, said that a major washout of the River levee 4/5 mile south-southwest of the warehouse on the levee at Hood exposed a "wagon load" of human skeletons at an unrecorded Indian Site. It is apparent that additional sites such as the Kirtland Site and the Beacon Site may yet be buried under the alluvial deposition that occurred regularly before the construction of the various levees and that any project which necessitates the removal of earth should be viewed carefully for possible archeological remains.

Controlled excavations have been conducted at eight of the 32 sites and only Sac-85, Sac-86 and Sac-145 are within the project boundaries. The Mosher Site, Sac-56, was investigated in the 1930's by the Junior College and again in 1958-59 by California State University, Sacramento prior to levelling. The Hicks Mound, Sac-60,; Herzog Site, Sac-72, Nicholaus Mound, Sac-85,; Sac-86; and the Hollister Site, Sac-21, were investigated between 1934 and 1939 by the Junior College. Sac-21, Sac-65, and Sac-145 were investigated by the California State Department of Parks and Recreation. The excavations at the former two sites was in the Spring of 1974 and at the latter site in the Spring of 1971. A brief summary of the excavations at the Hollister mound was published by the Junior College (Lillard, Heizer, and Fenenga 1939:49-54), while only brief mention of the remaining sites and artifacts have been reported elsewhere (Heizer 1937,; Heizer and Fenenga 1939; Beardsley 1954; Gifford 1940 and 1947; and Bennyhoff 1950). Several manuscripts have also been prepared on the Shultz Martine Collection (Bennyhoff and Riddell 1948 No. 40), on the Herzog Mound (Heizer, McKee and Ristow 1934 No. 60), on the excavations at the Mosher Site (Fenenga 1939 No. 215), the original field notes on site Ca-Sac-85 and Ca-Sac-86 (Fenenga 1939 No. 216), and a burial plan for the Hick's Site (Fenenga 1938 No. 240). Field notes and photographs of the California State University excavations at the Mosher Site are on file at the Department of Anthropology, while the originals and copies of the Junior College field notes are on file at the University of California at Berkeley Archeological Research Facility, at California State University at Sacramento Department of Anthropology and at the California

State Department of Parks and Recreation's Cultural Resources Section. The field notes and other data from the 1974 Sac-21, Sac-65 and 1971 Sac-145 investigations are in the possession of Peter Schulz who is preparing the site reports.

Current Investigations (1974 Archeological Reconnaissance)

Methodology

After consulting the available archeological records, field notes, manuscripts and published literature all previously known sites were recorded on the United States Geological Survey's 7.5' quadrangles. Initially 3-1/2 days were spent surveying on foot all of the channel improvement, levee and proposed Vinyard Reservoir Area. Most of this work was done by driving to a crossing over the proposed channel or portion of the levee, then leaving one individual to start surveying from that point to the next place of intersection. At the latter location a vehicle was left while a second investigator continued on to the next point of intersection. All of the drainage channels and most of the levees were covered in this leap frog manner.

The proposed Vinyard Reservoir was covered on foot by two investigators. South Stone Lake and vicinity and the Beach Lake area were covered on foot from most places of access where the permission of the landowners had been obtained in advance. The new interstate 5 right-of-way allowed access to much of the area and since the carpenters were on strike there was no construction activity to interfer with the use of the alignment. Finally landowners and artifact collectors were interviewed about archeological sites on their own and adjacent property.

Reconnaissance Results

Nothing of historic or prehistoric value was encountered in the proposed Vinyard Reservoir, or the channel improvement and proposed levee construction areas. Five previously recorded sites (Sac-83, Sac-84, Sac-85, Sac-86 and Sac-202) and one new site were visited on Beach Lake and one previously recorded Site between Beach Lake and North Stone Lake was also noted. Three sites on North Stone Lake had been previously recorded and one new site, through the help of Mike Pilliken was located. At South Stone Lake three previously listed sites were revisited and three new sites were found. The remaining 13 sites are adjacent to the western limits of the project and some of them could be affected by increased recreation and urban development as a result of the project.

Sites within the proposed project boundaries from north to south:

Site No. 5, Kirtland Site CA-SAC-327

This site was reported by Mr. Kirtland to consist of a large number of burials which were uncovered during land levelling. The destruction was stopped by the equipment operator who did not wish to disturb any additional graves. The site area is not exactly known but the location shown on Map-2 should be a close approximation. The site area was under safflower when visited and could not be carefully checked. A large amount of material is probably still buried. This site should be checked carefully when the ground has been freshly plowed.

Sac-84

The deposit at Sac-84 is not characteristic of a late occupation. In color it differs very little from the surrounding soils. Very little artifactual material was noted on the surface of the site. A few long bone fragments from an adult burial, an obsidian point fragment and a worked bone fragment and a few obsidian flakes constituted the entire collection observed. This site had been pot hunted as early as 1934 and other human graves are known. Because of the light color of the midden and scarcity of artifacts it might be an older site. The remaining deposit has been disturbed extensively by agricultural work and except for deeply buried graves there is little left to investigate.

Sac-85, Nicholaus Site

Apparently this was the main late village on Beach Lake and if Bennyhoff was right it and nearby Sac-86 were the tribelet center for the Hulpumne Plains Miwok. This once extensive mound was well known to collectors in the Sacramento area and had already been extensively damaged before the Sacramento Junior College investigations. Numerous skeletons are known from the site and the artifacts in the Zallio Collection suggest a very late occupation for at least a portion of the midden. The site contained both early and late mission trade beads and a wide variety of decorative objects of shell, stone and bone which suggests the village was one of the wealthier along the river (Figures 1 and 2). Any remnants of this site should be preserved if at all possible because of its past importance.

Sac-86

Like Sac-85 this site has not faired too well over the last 40 years. It was extensively pothunted and has been modified by agricultural work. It was estimated to be only 10 meters in diameter when visited by H.C. Gibbs in 1934. It may have been, as suggested by Bennyhoff (1961), a satellite village to Sac-85. The contemporanuity evident in the artifacts also indicates a close relationship between the two sites.

Site Sac-87

This site like Sac-86 was quite small. Since it is located closer to Sac-85 and Sac-86 than to Sac-56 on the Sacramento River and Sac-88 on North Stone Lake it probably was another auxiliary village for the Hulpumne tribelet. It was approximately 20 meters in diameter when recorded in 1934, had a fairly deep deposit and had several housepits on the surface. This latter condition clearly indicated that at least the upper part of the site was occupied quite late in time.

Sac-88, Elliott Site

The Elliott mound probably was occupied by members of the Gualacomne tribelet who according to Bennyhoff (1961) had their center at the Mosher Site (Sac-56). This is the major site on North Stone Lake and is very long and narrow. In 1934 the site was estimated to be 150 meters north-south by 25 meters east-west. As with Sac-85 this former village has been pothunted extensively and altered from its original shape.

Sac-89

The close proximity of this site with the Elliott Mound suggests the latter might have been a satellite village. It was only about one third the size of Sac-88. No excavations from these two sites are available so it is unknown what time period they belonged to or what possible role they might have in the reconstruction of the prehistory of North Stone Lake.

Sac-90

The lack of excavated specimens makes it nearly impossible to comment on the extent, complexity or importance of this site. It was over twice as large as Sac-89 and though not large enough to be a tribelet center it might have functioned as a major secondary village.

Site No. 4, Pilliken CA-SAC-326

As with the other sites on North Stone Lake this former village has been disturbed through time. Mr. Pilliken has a human skull and some obsidian projectile points from the site. He says, however, that the yield is quite low compared to Sac-64 and Sac-165. This low yield of specimens is usually associated with considerably older sites. The bone in Mr. Pilliken's possession is not light in weight, chalky and yellow in color as is the case with recent skeletal material. Instead it is heavier, hard and stained a brownish color. The projectile points from the site suggest an antiquity of at least 1500 or more years ago.

Site Sac-165, Thorpe Mound

This site was known to the Junior College in the 1930's but was not officially recorded until 1951. It is the remnant of a mound which has been pot hunted extensively over the years. The ashy friable midden is characteristic of late sites. The large number of clamshell disc beads and other artifacts recovered by Mr. Pilliken places the main occupation of the site between 1200 to 1810 A.D. The presence of mission trade beads indicates it was contemporaneous with the last occupation of Sac-85, Sac-56, and Sac-64. Whether this site belonged to the Gualacomne or Chupumne Tribelet is not certain.

Sac-63, Bloom Mound

At the present time the Bloom house, which was built before 1930, sits along with other out buildings on a natural sand mound 11.5 feet above the surrounding flood plain. Even though Heizer in 1934 said two feet had been removed from the top of the mound and that burials and artifacts were present, Mr. L.C. Bloom indicated that to his knowledge no archeological materials have ever been found on the site. It is possible a few graves might have been located on the natural mound but like the natural knolls under the present Whitney house and an old barn even further west they apparently were too far removed from the edge of South Stone Lake and therefore not favored for occupation. There were no artifacts present in July of 1974 and it is unlikely much data if any is contained in the present deposit.

Sac-64, Huth Mound

Why this site is called the Huth mound is not known. It is the major site on the Bloom property and should have been known by the latter rather than the former designation. Since the site was recorded in 1934 it has been modified almost into non-existence in certain areas. The center of the mound still exists and is 80 meters east-west by 40 meters north-south. It too has been modified by agricultural work. Mr. Bloom said that large numbers of burials have been plowed up at the site over the years and an almost complete skeleton was visible in a ditch when the site was visited in July 1974. The artifacts shown in Plates 2 through 5 and Figure 3 indicate the site was utilized from about 3,000 years ago up to the mission period. An intense occupation apparently took place from about 3000 to 2,500 years ago and from about 300 A.D. to just after 1800. The remnant of the site should be preserved if possible as it represents a long time span and a major village.

Site No. 1, Wilcox Mound CA-SAC-323

Like the Huth Site this mound is relatively rich in artifacts and contained a large number of inhumations. The primary occupation, however, appears to be late as many of the skeletons had complete Haliotis shells over the head which is a late characteristic at other lower Sacramento Valley mounds. In addition the dark ashy and friable midden is also similar to other late sites such as the Mosher mound. The site also has been extensively damaged over the years and any remnants left should be preserved.

Site No. 3, Stone Lake Preserve Mound CA-SAC-325

This large sand mound has evidence of Indian utilization. It is not a well developed midden and the bulk of the deposit is apparently natural. Even though extensive areas of the top of the site was clearly visible in early July 1974 only a few obsidian flakes, two obsidian projectile point fragments and scattered historic debris was present. According to Mr. Bloom various dairies operated on the knoll for several years and that an adobe was the first house built on the mound in the 1870's. The adobe was one of the first permanent structures built within the project boundaries and some of the glass and porcelain fragments are from this early occupation.

Site No. 2, Whitney Mound CA-SAC-324

Unlike Site No. 3 and Sac-63 this former village is on the end of a long relatively narrow and elevated ridge which extends south 3/16 of a mile to the edge of South Stone Lake. This site consists of a dark greyish-black, ashy, and friable midden. Baked clay and obsidian is frequent and burials are known to exist in the site. The south end of the midden has been cut off and a dirt road cuts across the deposit. The color, texture, and other characteristics of the midden clearly indicate this site was occupied relatively late in time and was at least in part contemporaneous with the utilization of Sac-64 and the Wilcox Mound.

Sac-145

This is the furtherest south, most intensively and most recently investigated site within the project boundaries. It was first recorded in 1949 at which time it was supposed to be destroyed in the near future. Fortunately this was not the case. It was investigated in 1971 by the California State Department of Parks and Recreation because it again was supposed to be destroyed. This time the destruction was supposed to be by the proposed Delta Peripheral Canal. The alignment of the canal has been subsequently moved further west outside the project boundaries and thus Sac-145 is still in existence.

The site report is in preparation at the University of California at Davis under the direction of Peter Schulz. Thus far the following generalizations about the site have been suggested: it was utilized between 1,000 B.C. and 1,700 A.D., it was not a permanent village but rather a seasonal fishing camp (based on the predominance of fish bone and fishing equipment), the secondary economic activities involved the processing of plant materials in wooden mortars, and occasional burial and cremation took place, the burials were not of important individuals since few burial offerings were present, baked clay net weights and cooking stones, two coyote and one badger burial and a variety of arrow and spear points were also present. Artifacts of bone were scarce and almost no freshwater clam was recovered. This site represents a very specialized type of economic activity which thus far was not evident at the other sites about which some information was available.

Recommendations

All of the 15 archeological sites located within the proposed project boundaries have been extensively modified by agricultural activities, pot hunting and/or excavation by professional archeologists. Only sites Sac-85 and Sac-145 have received attention from archeologists. Little information is available on the investigations at Sac-85 while a major monograph is nearing completion on the 1971 excavations at Sac-145. This latter site represents a specialized fishing community and does not reflect the full range of cultural evidence noted at other nearby sites. It is known the sites in the Beach and Stone Lake areas were occupied at least as early as 1,000 B.C. and that utilization of the region by the Indians continued until after the 1850's (Bennyhoff 1961; Schultz 1974 personal communication; Bloom 1974 personal communication; field observations). Every attempt should be made to preserve any archeological resources that remain within the project boundaries.

The historic resources of this area is even less well preserved. All of the earliest homesteads and ranching activities have been removed or modified beyond recognition. The nearest known pioneer graves of persons of note are in the Franklin Cemetery on the eastern periphery of the project. The location of the early Bloom, Beach, Stone and other residences could be marked but nothing remains to be seen. There is evidence of historic debris associated with the adobe, which used to exist on the sandy knoll at Site No. 3, but the structure itself has long since disappeared. It is apparent that any additional information to be obtained about the history of the project area will have to come from the Bloom's, Kirtland's, Whitney's and any other current or former residents who had relatives who were early settlers in the region.

The Stone Lake Preserve and Whitney sites are shown as near proposed access areas and roads. It would be very easy to considerably alter either of these sites with a bulldozer during construction of the suggested facilities. It is recommended that the proposed point of access be located on the sandy ridge between the two sites thus subjecting neither to construction activities. The suggested access road could follow the present Stone Lake Preserve Road to the northern end of the sandy hill, on which Site No. 3 is located, and then skirt it on the northwest edge to the proposed point of access. If the currently existing buildings and remains of the dairy are to be removed from the Stone Lake Preserve Site this should be done with great care to minimize disturbance to the remainder of the site. If these sites are dealt with carefully they could be preserved at a minimum of expense.

None of the sites are located under or near any of the proposed levees and since their locations are known they should not inadvertently be used as borrow sites for construction purposes. The possibility does exist that buried archeological materials could be discovered. This is particularly true on the north side of Beach Lake and where Morrison, Unionhouse and Laguna Creeks come together. If during levee construction buried archeological remains are found work should be stopped and a professional archeologist consulted to determine the significance and possible importance of the finds. If it is determined the materials are of importance the construction project should be modified to alleviate any further disturbance. If that is not possible then additional archeological investigations should be made before work proceeds in that area.

Perhaps the greatest affect on the known archeological resources is the location of the proposed recreation trail. Sites No. 5, Sac-84, Sac-85, Sac-86, Sac-88, Sac-89, Sac-90 and Site No. 4 are either directly on or very near the trail. If this is to be a foot and/or paved bicycle path which will involve little or no excavation it would probably damage the archeological sites very little. Care would need to be exercised by the equipment operators constructing the trail to insure a minimum of damage occurred. If proper care is taken no additional archeological work should be necessary. Horse trails might do a substantially greater amount of damage and their location should be carefully planned around the edges of the sites.

If areas along the recreation trails are provided for picnic and rest areas and if they will have developed facilities, such as fire pits and rest rooms they should be located away from the known archeological sites to alleviate potential damage.

It is further recommended that the archeological sites in the project area be included in the California History Plan as representing a time period from the early Indian era prior to 1. A.D. through the American Era 1848 to 1900. The sites also might be considered for possible inclusion in the National Register of Historic Places as a point of local interest.

Finally it is recommended that consideration be made for a specific outdoor archeological exhibit at the site of Sac-145. A short side branch could be constructed from the proposed recreation trail to the location of the site where a group of exhibits could be developed to explain the prehistory of the project area as well as the specialized use of the mound. This would further enhance the educational value of the project.

The proposed Morrison Creek Stream Group Project will have a beneficial impact on the archeological sites if the above recommendations are followed. None of the sites need to be modified more than superficially by proposed construction activities and instead they can be protected from random digging and additional land levelling.

The two sites (Sac-83 and Sac-202), to the east of the proposed flood retardation basin could be adversely affected if increased urbanization occurs as a result of the project. How intensive urbanization might be and how the existing sites outside the project might be effected can not be determined at this time, but there is the potential for future adverse impact on the archeological sites to the west of the proposed project. The potential adverse impact will probably occur, however, whether or not the project is developed unless land use remains in its present agricultural status.

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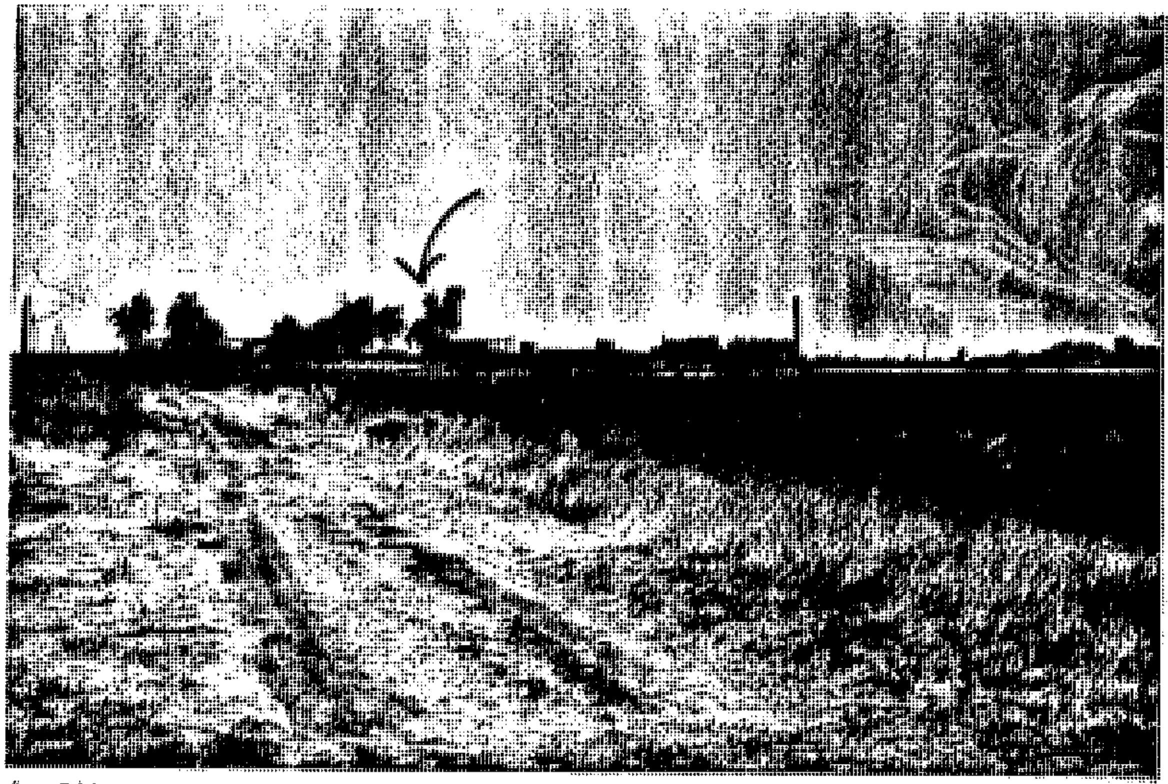
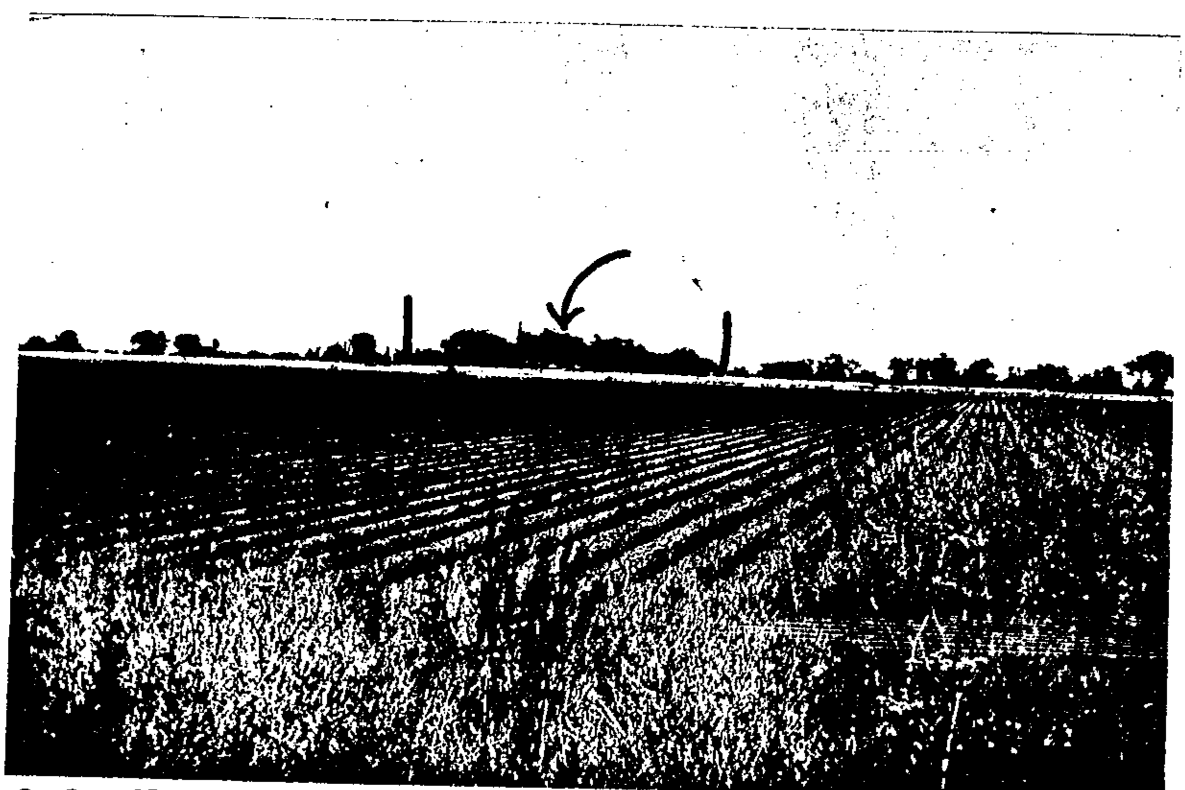
Maps, Plates and Figures

Figure 3 A. Silicate crescent from Sac-64, B. and C. Gambling bones from Sac-64, D. Quartz crystals from Sac-64, E. Burned and perforated Olivella bead from Sac-64 which dates from 800 to 1200 A.D., F and G. projectile points from over 500 B.C. from Sac-64, H. Projectile Point after 1200 A.D. from Sac-64.

Table-1 General Characteristics of the 33 sites mentioned in the text.



A. Site No. 3, Stone Lake Preserve looking north

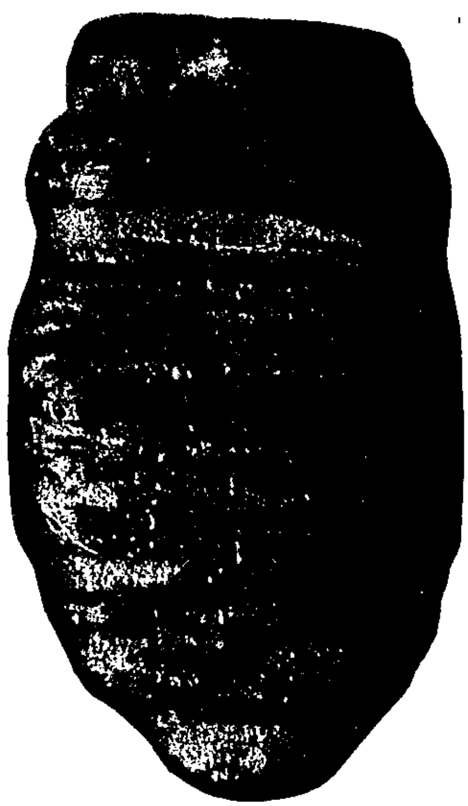


B. Sac-63 looking northeast from Stone Lake Preserve

A.

B.

C.

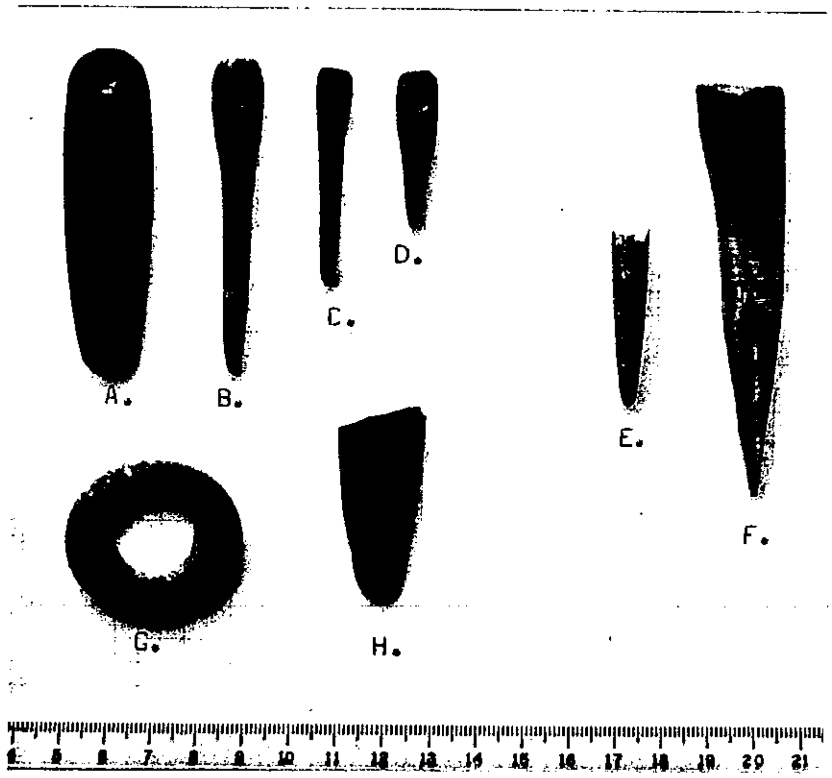


D.

E.

F.

Plate 2



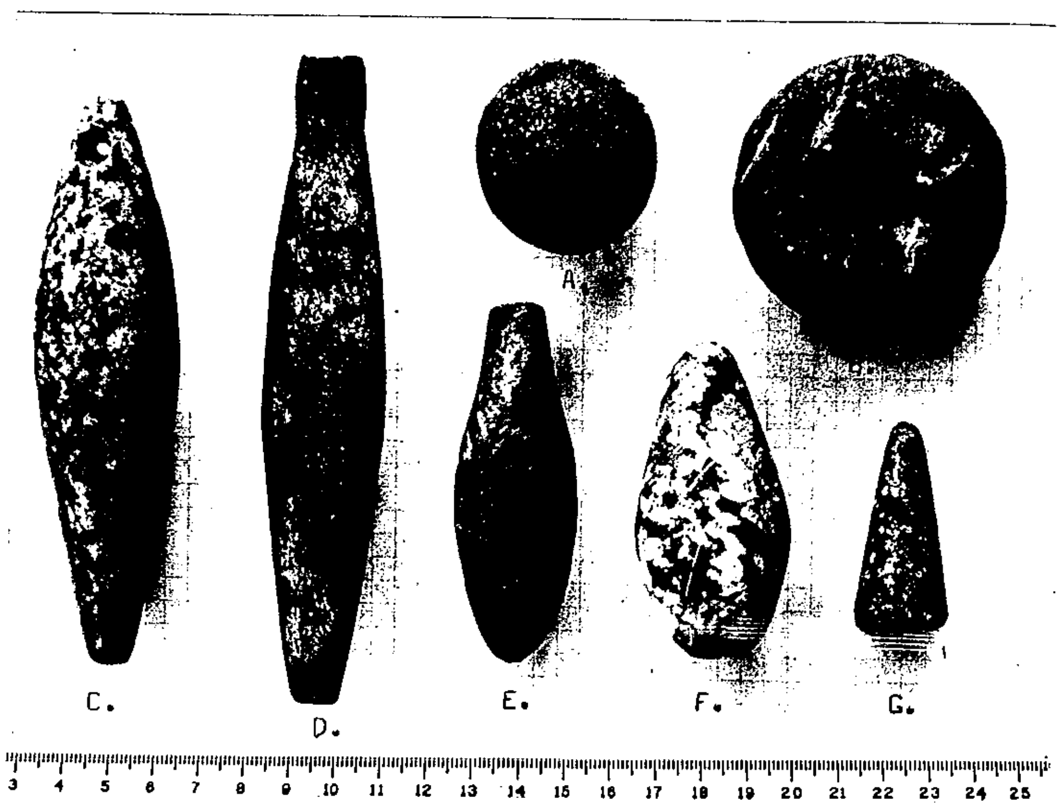


Plate 3

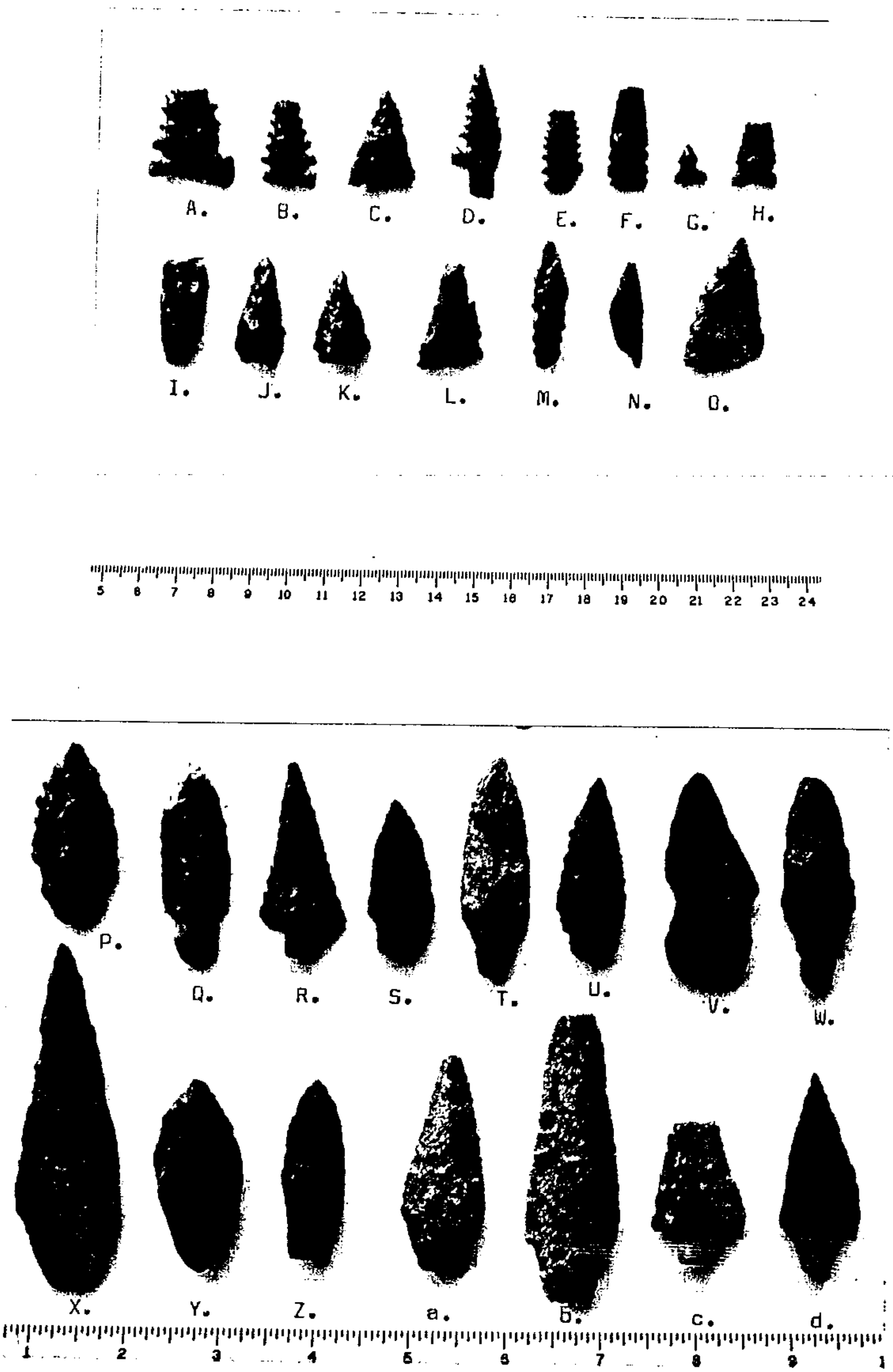
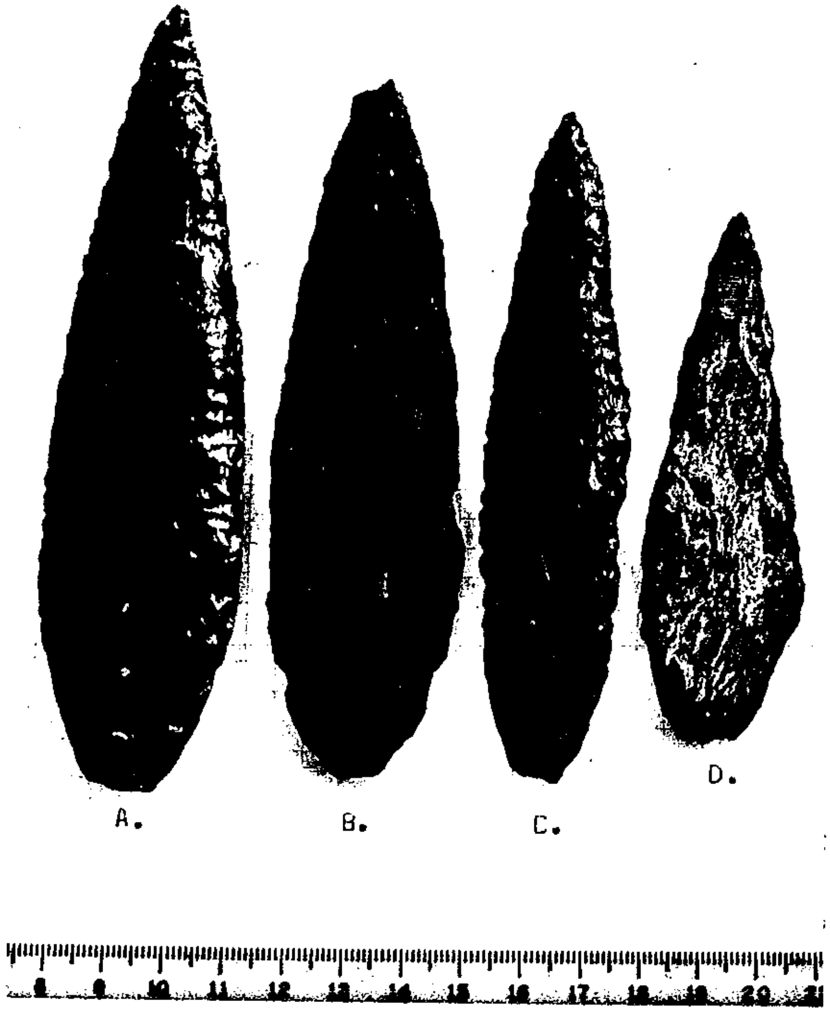

A. B. C. D. E. F. G. H.
I. J. K. L. M. N. O.
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
P. Q. R. S. T. U. V. W.
X. Y. Z. a. b. c. d.
1 2 3 4 5 6 7 8 9 1

Plate 4



A. B. C. D.

E. F. G. H. I J. K.

Plate 5

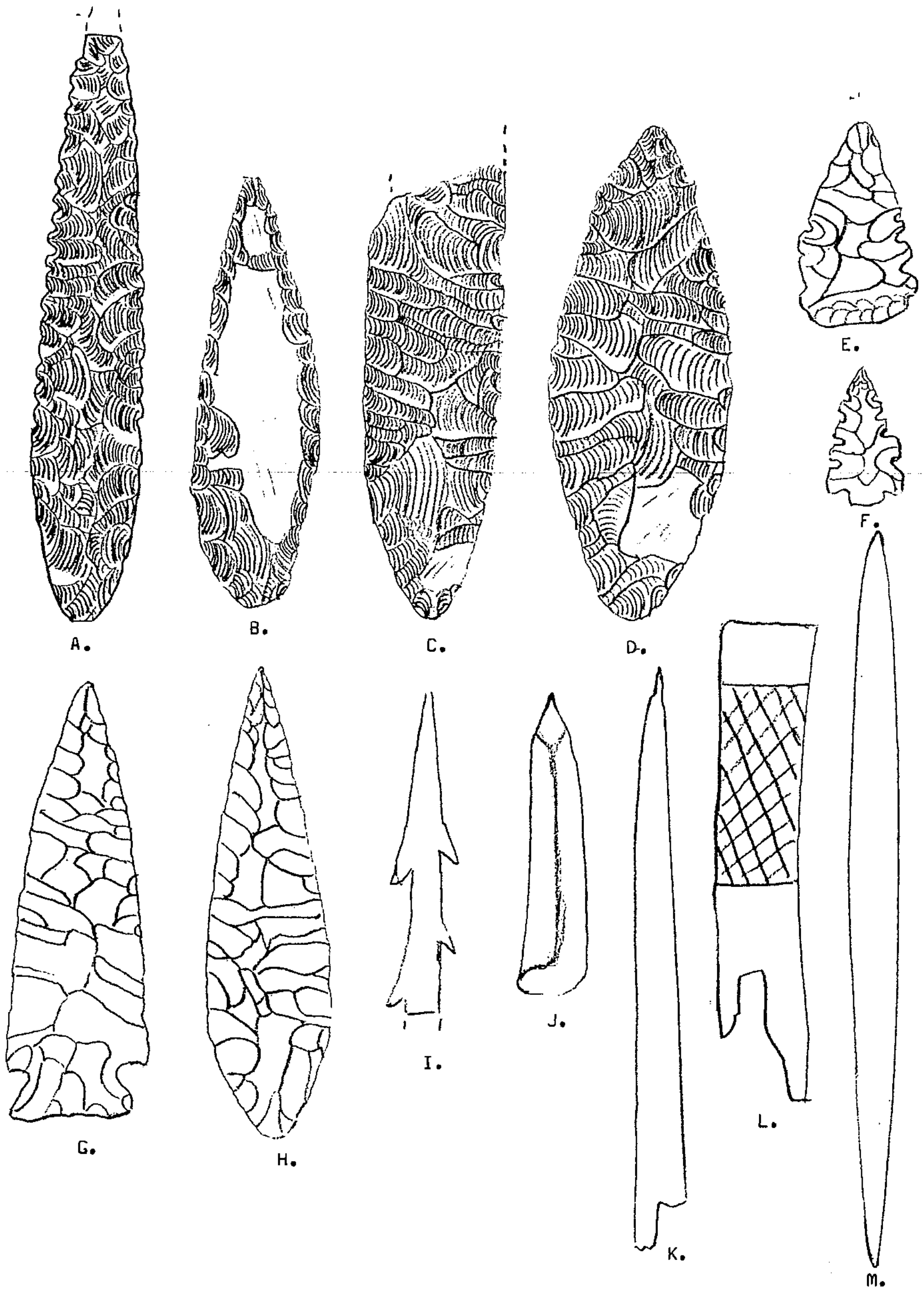


Figure 1

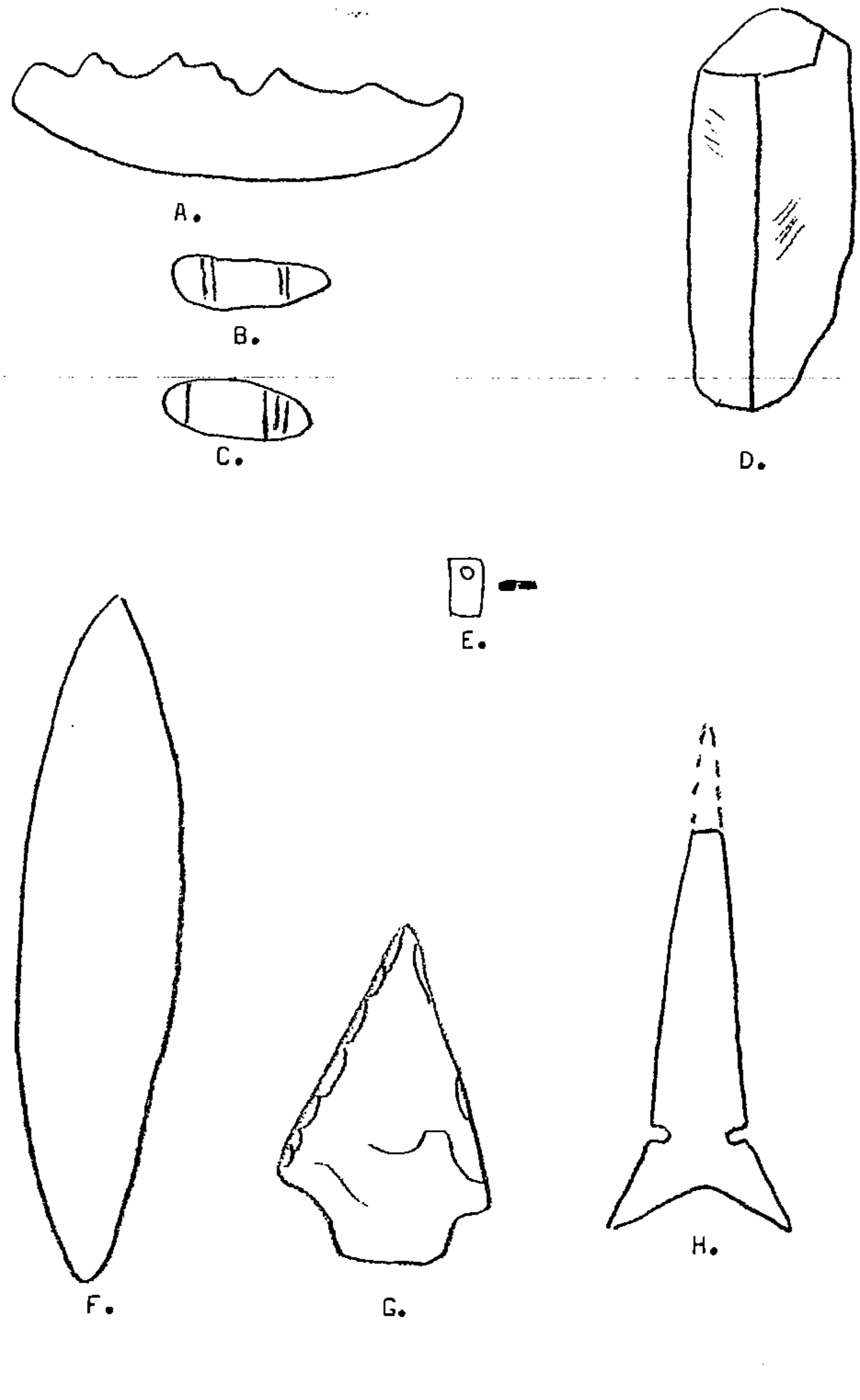


Figure 3

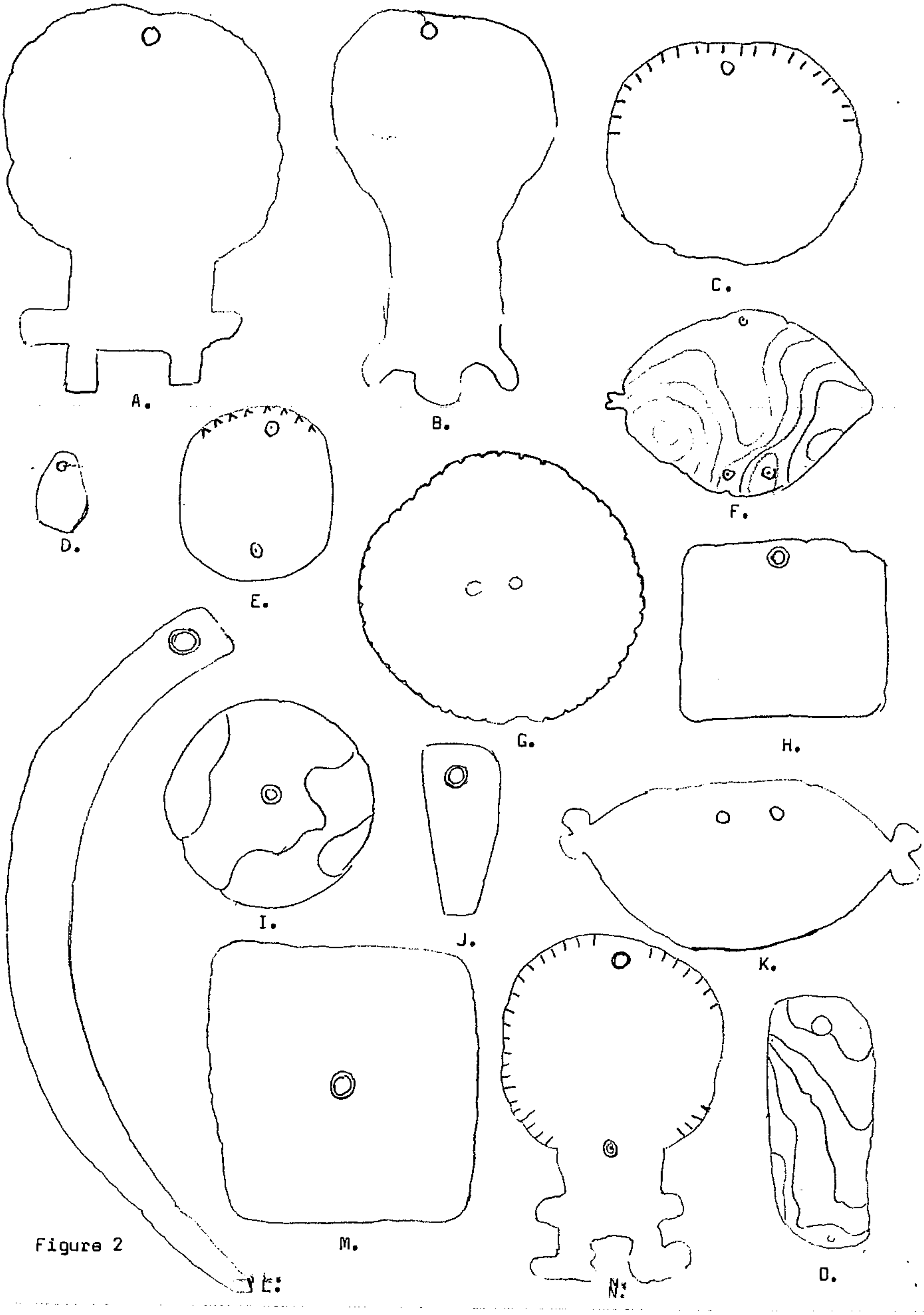


Figure 2

Table 1
General Characeteristics of the 33
Sites Mentioned in the text

Site Number	Levelling	Cultivation	Pot Hunted	Arch. Excav.	500 to 1000BC	300AD to 500	300 to 1200AD	1200 to 1800	Length	Width	Depth	Burials	Structures	Remarks
No. 5	+		?						50					Still Exists
Sac-84		+	+			+	?		100	25		+		Midden Present
Sac-85	+	+	+	+		+	+	+	100	25		+		Midden Present
Sac-86		+	+	+		?	+	+	10			?		Midden Present
Sac-87		+	?				?	+					+	Should be Preserve
Sac-88		+	+						150	25		?		Midden Present
Sac-89		+							30			?		Midden Present
Sac-90		+							60			?		Midden Present
No. 4		+	+				+	?	?			+		Midden Present
Sac-63	+								130	100	?	+		May Not Be Site
Sac-64	+	+	+		+	?	+	+	80	40		+		Midden Present
Sac-145	+			+	+	+	+	+	160	75	180	+		Midden Present
No. 1	+	+	+			?	+	+	?	?	?	+		Midden Present
NO. 2	+	+	?				+	+	?	?	?	+		Midden Present
No. 3	+					?	+	?	150	125	?	+		Midden Present
Sites Outside Project Boundaries														
Sac-48	+		?						50					Still Exists
Sac-202		+					?	+						Surface Scatter
Sac-83		+							50		?	?		Badly Disturbed
Sac-50		?	?						60			?		
Sac-188	+	+				?	+	+	100	66	?	+		
Sac-56	+	+	+	+	+	+	+	+	400	100	240	+	+	Some Under Levee
Sac-57									Small					
Sac-58	+													Destroyed
Sac-59		+							50					
Sac-60		+	+	+	?	+	?	+	110	37		+		Midden Present
Sac-61									30					
Sac-62	?	+												Midden Present
Sac-165		+	+	?		?	+	+				+		Midden Present
Sac-21	+	+	+	+	?	+	+	+				+		Midden Present
Sac-65		+	+	+			?	+				+		Midden Present
Sac-71									68					Under Cultivation
Sac-72		+	+	+			?	+	500			+		
No. 6												+		Buried Deposit
33	13	23	13	8	3	7	11	15				18	2	

Sites discovered on this project

CA-SAC-21
CA-SAC-48
CA-SAC-50
CA-SAC-56
CA-SAC-57
CA-SAC-58
CA-SAC-59
CA-SAC-60
CA-SAC-61
CA-SAC-62
CA-SAC-63
CA-SAC-64
CA-SAC-65
CA-SAC-71
CA-SAC-72
CA-SAC-83
CA-SAC-84
CA-SAC-85
CA-SAC-86
CA-SAC-87
CA-SAC-88
CA-SAC-89
CA-SAC-90
CA-SAC-145
CA-SAC-165
CA-SAC-188
CA-SAC-202
CA-SAC-323
CA-SAC-324
CA-SAC-325
CA-SAC-326
CA-SAC-328 ← 327

ALL OTHERS MENTIONED.

Check site files for SACRAMENTO County

Appendix A

Archeological Sites Inside the Project Boundaries

1 – 5

87
67
77

52
54
145

✓ ✓ E.I.R. SACTO COUNTY

CALIFORNIA STATE UNIVERSITY, SACRAMENT

6000 J STREET, SACRAMENTO, CALIFORNIA 95819

January 20, 1975

Mr. Al Doyle
J.B. Gilbert Associates
1101 R Street
Sacramento, California 95814

Dear Mr. Doyle:

The following information is relevant in regard to the archelogical reconnaissance performed by me for your company. In November or earlier I received a call from the California State Department of Beaches and Parks in regard to their evaluation of the enviornmental impact report on the city interceptor line. At that time I told them that a later survey in July 1974 for the Sacramento Office of the Army Corps of Engineers on the Morrison Creek drainage and Beach Lake showed that the site locations and records at California State University for Sac-83, 84, 85, 86, 87, 88, and 89 were mislocated and that I could not find any evidence of Sac-83 during the on foot survey of the city interceptor line because it in reality is located south of Beach Lake near the new Interstate 5 Highway right of way and not near the existing sewer plant.

In July 1974 three individuals, including myself, completely surveyed the Morrison Creek drainage and the vicinity of Beach Lake for the Army Corps of Engineers. We found that no sites were located to the north of Beach Lake or along lower Morrison Creek but instead all of the sites near Morrison Creek and Beach Lake, on the map I included with the report sent to J.B. Gilbert, are mislocated. My earlier recommendation is therefore still valid. There are no archeological sites on the proposed sewer system and therefore there is nothing to make recommendations about in regard to the National Register of Historic Places. The enclosed map has the proper locations of the sites as found in the field in July.

I would also like to point out for the benefit of the reviewers in the California State Department of Parks and Recreation that I did walk the proposed right of way, that I could see the ground surface in many areas, particularly were ground squirrel activity was evident, and that I pulled up grass and used a trowel where the ground was obscured. If Sac-83 had been located where the faulty records showed it to be I would have found it. I think the negative results of the original survey would preclude the necessity for evaluating something for the National Register of Historic Places that quite clearly did not exist.

For further information the report "Reconnaissance Archeological Survey of the Morrison Stream Group in Sacramento County, California" for the Sacramento District of the Army Corps of Engineers was submitted August 13, 1974. It includes 11 pages of text, 4 maps, 5 pages of plates, 3 pages of figures and 17 pages of detailed site records.

I agree that in the letters authorizing projects, or in contracts, a statement requiring an evaluation of the significance of sites, affected by the proposed project, in regard to the National Register of Historic Places should be included. In the case of Sac-83 it is obvious that since the site was not located in the right place in the site files that nothing existed on the swer interceptor and that subsequently a later survey located the site in the proper place completely removed from the project in question. It would seem therefore that no recommendation concerning the National Register of Historic Places is necessary.

Thank you for your time and patience. I hope this letter clarifies the issue beyond doubt.

Sincerely,

Jerald J. Johnson

Jerald Jay Johnson
Associate Professor

ROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS............	NAMES............................	CITY.NAME........	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
048744	34-003672	912 E ST		SACRAMENTO	U	1895	HIST.RES.	NPS-84000929-0004	01/26/84	1D	AC
							HIST.SURV.	5813-0329-0000	01/06/76	3S	
048745	34-003673	916 E ST		SACRAMENTO	U	1870	HIST.RES.	NPS-84000929-0005	07/26/84	1D	AC
							HIST.SURV.	5813-0330-0000	01/06/76	3S	
048746		918 E ST		SACRAMENTO	P	1868	HIST.RES.	NPS-84000929-0006	07/26/84	1D	AC
							HIST.SURV.	5813-0971-0006			
048747		922 E ST		SACRAMENTO	P	1910	HIST.RES.	NPS-84000929-0007	07/26/84	1D	AC
							HIST.SURV.	5813-0971-0007			
048460	34-003189	1001 E ST	ANTON WAGENER - GROCER, TRU-VALUE	SACRAMENTO	P	1868	HIST.SURV.	5813-0757-0000		5S2	
047982	34-002743	1008 E ST		SACRAMENTO	U	1877	HIST.SURV.	5813-0331-0000		7R	
048784	34-003674	1100 E ST		SACRAMENTO	U	1895	HIST.RES.	NPS-84000929-0045	07/26/84	1D	AC
							HIST.SURV.	5813-0332-0000	01/06/76	3S	
048785	34-003675	1104 E ST		SACRAMENTO	U	1910	HIST.RES.	NPS-84000929-0046	07/26/84	1D	AC
							HIST.SURV.	5813-0333-0000	01/06/76	3S	
048786	34-003676	1110 E ST		SACRAMENTO	U	1893	TAX.CERT.	537.9-34-0023	07/31/86	2D3	
							HIST.RES.	NPS-84000929-0047	07/26/84	1D	AC
							HIST.SURV.	5813-0334-0000	05/10/76	3S	
047983	34-002744	1212 E ST		SACRAMENTO	U	1896	HIST.SURV.	5813-0335-0000		7R	
047984	34-002745	1214 E ST		SACRAMENTO	U	1896	HIST.SURV.	5813-0336-0000		7R	
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047986	34-002747	1310 E ST		SACRAMENTO	U	1893	HIST.SURV.	5813-0338-0000		7R	
047987	34-002748	1315 E ST		SACRAMENTO	U	1893	HIST.SURV.	5813-0339-0000		7R	
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047996	34-002757	1915 E ST		SACRAMENTO	U	1890	HIST.SURV.	5813-0348-0000		7R	
048461	34-003190	1917 E ST	UNK, TOOTSIES BARBER SHOP	SACRAMENTO	P	1925	HIST.SURV.	5813-0758-0000		5S2	
047997	34-002758	2015 E ST		SACRAMENTO	U	1910	HIST.SURV.	5813-0349-0000		7R	
047999	34-002760	2112 E ST		SACRAMENTO	U	1908	HIST.SURV.	5813-0351-0000		7R	
048000	34-002761	2219 E ST		SACRAMENTO	U	1910	HIST.SURV.	5813-0352-0000		7R	
185111		2308 E ST		SACRAMENTO	P	1936	PROJ.REVW.	HUD100823J	09/14/10	6Y	
048001	34-002762	2403 E ST		SACRAMENTO	U	1914	HIST.SURV.	5813-0353-0000		7R	
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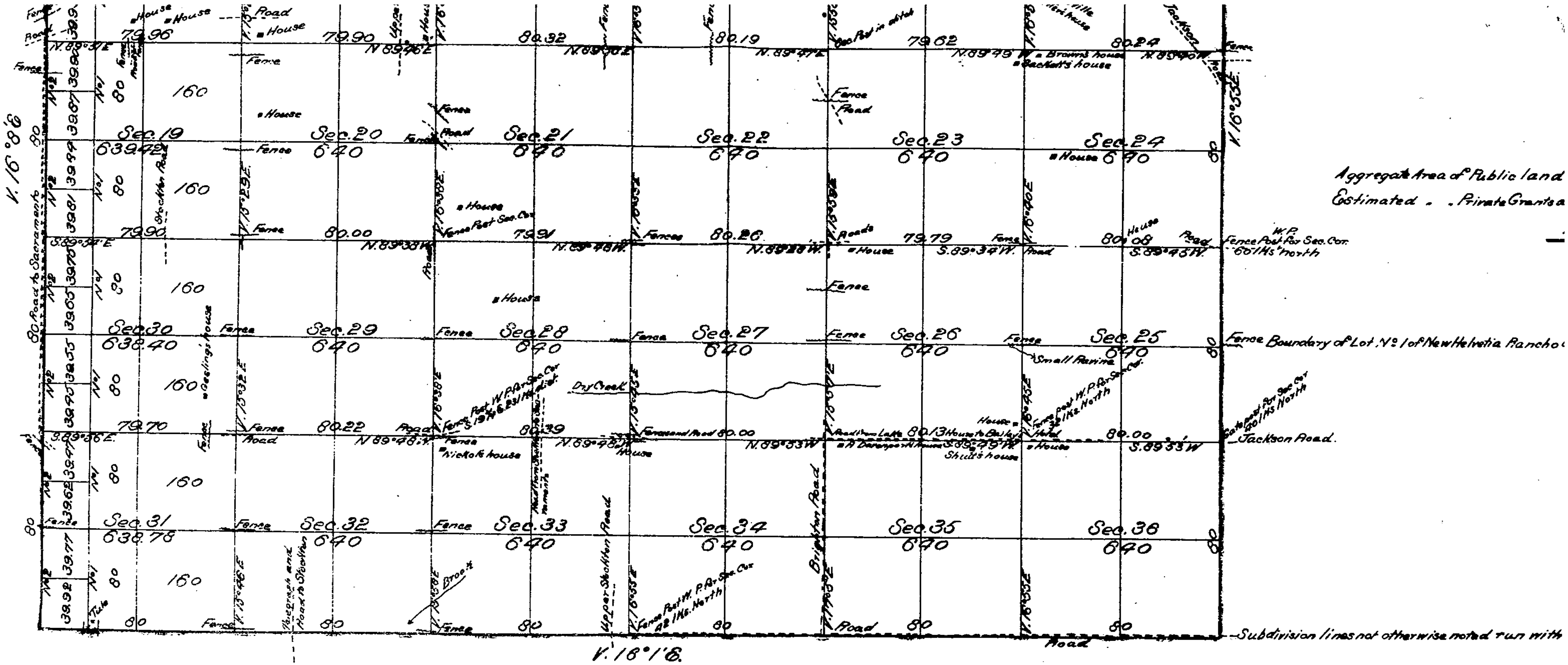
048003	34-002764	3021 E ST		SACRAMENTO	U	1913	HIST.SURV.	5813-0355-0000		7R	
094092		2170 EDGEWATER RD	UNITED TRANSPORT LINE	SACRAMENTO		1925	HIST.RES.	DOE-34-94-0023-0000	12/21/94	6Y	
							PROJ.REVW.	FHWA941013A	12/21/94	6Y	
094091		2209 EDGEWATER RD	FOREMAN HOUSE	SACRAMENTO		1940	HIST.RES.	DOE-34-94-0022-0000	12/21/94	6Y	
							PROJ.REVW.	FHWA941013A	12/21/94	6Y	
181422		866 EDGEWOOD AVE		SACRAMENTO	P	1950	PROJ.REVW.	HUD101119F	11/29/10	6Y	
162778		2805 EL CAMINO AVE	EL CAMINO BAPTIST CHURCH	SACRAMENTO	P	1958	PROJ.REVW.	FCC060626H	07/15/06	6Y	
094087		1301 EL MONTE AVE	HARVEY WOOD HOUSE	SACRAMENTO		1910	HIST.RES.	DOE-34-94-0018-0000	12/21/94	6Y	
							PROJ.REVW.	FHWA941013A	12/21/94	6Y	
094093		1429 EL MONTE AVE	HACKEN PROPERTY	SACRAMENTO	U	1920	HIST.RES.	DOE-34-94-0024-0000	12/21/94	6Y	
							PROJ.REVW.	FHWA941013A	12/21/94	6Y	
094097		1524 EL MONTE AVE	REASE HOUSE	SACRAMENTO		1922	HIST.RES.	DOE-34-94-0027-0000	12/21/94	6Y	
							PROJ.REVW.	FHWA941013A	12/21/94	6Y	
084359		8726 ELDER CREEK RD		SACRAMENTO	P	1940	PROJ.REVW.	HUD930831J	09/28/93	6Y	
116480		9197 ELDER CREEK RD		SACRAMENTO	P	1964	HIST.RES.	DOE-34-97-0007-0000	04/09/97	6Y	
							PROJ.REVW.	COE970311A	04/09/97	6Y	
084360		1609 ELDRIDGE AVE		SACRAMENTO	P	1930	PROJ.REVW.	HUD930831I	09/28/93	6Y	



Surveys Designated	By Whom Surveyed	Date of Contract	Amount of Surveys	When Surveyed
Township lines not Colored	A. H. Jones	April 17th 1855	——	1855
" " Colored red	E. Dyer	September 13th 1864	14 miles 70 chs 90 lks	1865
Boundaries of Lot No 37	D. C. Cage	Instructions January 27th 1857	——	1857
" " " " 1, New Helvetia Ran.	A. W. Von Schmidt	" July 25th 1859	——	1859
Section lines	E. Dyer	September 13th 1864	40 " 51 " 35 "	1865
Meanders	" "	" " "	2 " 15 " 30 "	April 11th 1865

The above Map of Township No 8 North Range No 5 E
is strictly conformable to the field notes of the Surveys
which have been examined and approved.
Surveyor General's Office,
San Francisco, California
April 22nd. 1865

L S

DEPARTMENT O
GENERAL L
Washington, D. C.
I hereby certify that
a true and literal exampl
plat of survey to which it

41 642

Appendix C

California Department of Parks and Recreation 523 Series Form for Warings Dump

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**		Primary # HRI # **Trinomial** not yet assigned **NRHP Status Code:** 7
	Other Listings Review Code	Reviewer	Date

 ***Resource Name or #:** Waring's Dump

P1. Other Identifier: not applicable

***P2. Location:** ■ **Not for Publication** ☐ **Unrestricted** ***a. County:** Sacramento

***b. USGS 7.5' Quad:** Sacramento East, Calif. **Date:** 1968 **T** 8N; **R** 5E; SE **¼ of** SE **¼ of Sec** 28**;** M.D.B.M.

c. Address: not applicable

d. UTM: Zone: 11N; north: mE 636948, mN 426379, east: mE 63996, mN 4263839, south mE 636940, mN 4263778, west: mE 636895, mN 4263825 (GPS; NAD 83)

e. Other Locational Data: Waring's Dump is occupies land northwest of the intersection of Elder Creek Road and 65th Expressway between said intersection and Morrison Creek near the southeastern limits of the City of Sacramento, California. Access to the property must be acquired by the property owner. Ingress/egress is from 63rd Street.

Elevation: average elevation is approximately 31 feet amsl

***P3a. Description:** Warings Dump is a Closed Illegal and Abandoned (CIA) waste disposal site located in the southern portion of the City of Sacramento. It occupies an approximately 8-acrea area comprised of several privately owned parcels. The surface of the site is littered with modern refuse, construction debris, and demolition waste. Two discrete loci of historic period material were identified by URS archaeologists during a pedestrian survey conducted July 23, 2012. The material dates to the operating years of the dump. Warings dump operated as a burn dump for approximately a decade between the late 1940s and late 1950s. The dump received household refuse as well as industrial and construction waste.

***P3b. Resource Attributes:** AH4.

***P4. Resources Present:** ☐Building ☐Structure ☐Object ■Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: Overview of Warings Dump; view towards the South.

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Krishna Living Trust
P.O. Box 162783
Sacramento, California 95824

***P8. Recorded by:**
B. Elliott and C. Peske
URS Corporation
2870 Gateway Oaks Drive, 150
Sacramento, California 95833

***P9. Date Recorded:**
07/23/12

***P10. Survey Type:**

Pedestrian survey at 15 m intervals

***P11. Report Citation:** URS Corporation, 2012
Cultural Resources Assessment of Warings Dump, Sacramento County, California.

***Attachments:** ☐NONE ■Location Map ■Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ■Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary #
Trinomial

ARCHAEOLOGICAL SITE RECORD

 ***Resource Name or #:** CA-KER-774H

***A1. Dimensions: a. Length:** 335 feet (north-south) × **b. Width:** 325 feet (east-west)
Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ■ Other: GPS
Method of Determination (Check any that apply.): ■ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☐ Other (Explain):
Reliability of Determination: ■ High ☐ Medium ☐ Low Explain:
Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined ☐ Disturbances ■ Vegetation ☐ Other (Explain): Dense stands of both ruderal and native vegetation obscured ground surface over approximately 50% of the area occupied by Warings Dump.
A2. Depth: from 6 to 8 feet BGS to 24 feet BGS at center ☐ None ☐ Unknown Method of Determination:

***A3. Human Remains:** ☐ Present ☐ Absent ☐ Possible ■ Unknown (Explain):
The presence of remains is unlikely based upon land-use history at the dump site and nature of operations at the dump.

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
F1: One concrete slab was recorded in the southern portion of the site.

***A5. Cultural Constituents (**Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):
See attached Artifact Record (DPR 523C; page 3).

***A6. Were Specimens Collected?** ■ No ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)
***A7. Site Condition:** ☐ Good ■ Fair ☐ Poor (Describe disturbances.):
***A8. Nearest Water** (Type, distance, and direction.)**:** Morrison Creek at north and west boundaries of the site.
***A9. Elevation:** approximately 30 to 35 feet amsl

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.)**:** The site is located on flat terrain immediately southeast of Morrison Creek which feeds into Stone Lake west of Interstate 5 in the vicinity of Franklin, California. The natural geomorphic setting of the immediate Project area included fluvial deposits deposited by Morrison Creek. 3-ares of these deposits were removed from the Project area (at depths of up to 50 feet BGS) during construction of what is now SR 99. Site investigations conducted in 2004 by the California Integrated Waste Management Board (CIWMB) identified a layer of dense clay below dump wastes (CIWMB 2004). This clay layer would presumably have underlain the sand and gravels removed as barrow. The site is in a now urbanized environment. On-site vegetation includes both ruderal and native species though ruderal grasses and plants predominate.

A11. Historical Information: Warings Dump received domestic refuse from the late 1940s to late 1950s. The refuse was placed in a low area created by the extraction of borrow material used in construction of SR-99. The refuse was burned to reduce volume. The dump was closed under a City order in the late 1950s. The City of Sacramento had grown into the area by this time and residents had begun filing complaints (CIWMB 2004). Since the area remained unmodified, undeveloped and unsecured, illegal dumping has continued to present day.

***A12. Age:** ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945 ■ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations):
A14. Remarks: Much of the historic-period waste is not visible on the ground surface as it has been concealed by episodes of subsequent, modern-era disposal as well as overgrowth.
A15. References:
California Integrated Waste Management Board 2004, Site Investigation Report: Warings Dump, 63rd and Morrison Creek, Sacramento, California 95819. Sacramento.
A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.): See attached photo record
Original Media/Negatives Kept at:
***A17. Form Prepared by:** Ben Elliott **Date:** 08/29/2012

Affiliation and Address: URS Corporation
2870 Gateway Oaks Dr., Suite 150
Sacramento, California 95833

State of California — The Resources Agency
Department of Parks and Recreation

Primary #
Trinomial

ARTIFACT RECORD

Resource Name or #: Waring's Dump

Location Where Collected Specimens are Curated: No artifacts were collected.

A1 **– is an isolated iron wheel of indeterminate age.**

Locus **1 – consists of diffuse scatter historic-era material including broken "Coca-Cola" bottles; a milk glass threaded top cold cream jar; canning jar fragments; an Owens graduated medicinal bottle; a green bottle with DURAGLASS makers mark of a style that dates to 1940-1963; a clear medicinal bottle with possible Reed Glass Company maker's mark (1927-1956); and amber Clorox bottle fragments.**

Locus **2 – consists of burned wood fragments that may or may not have been historic in age as well as modern –era refuse.**

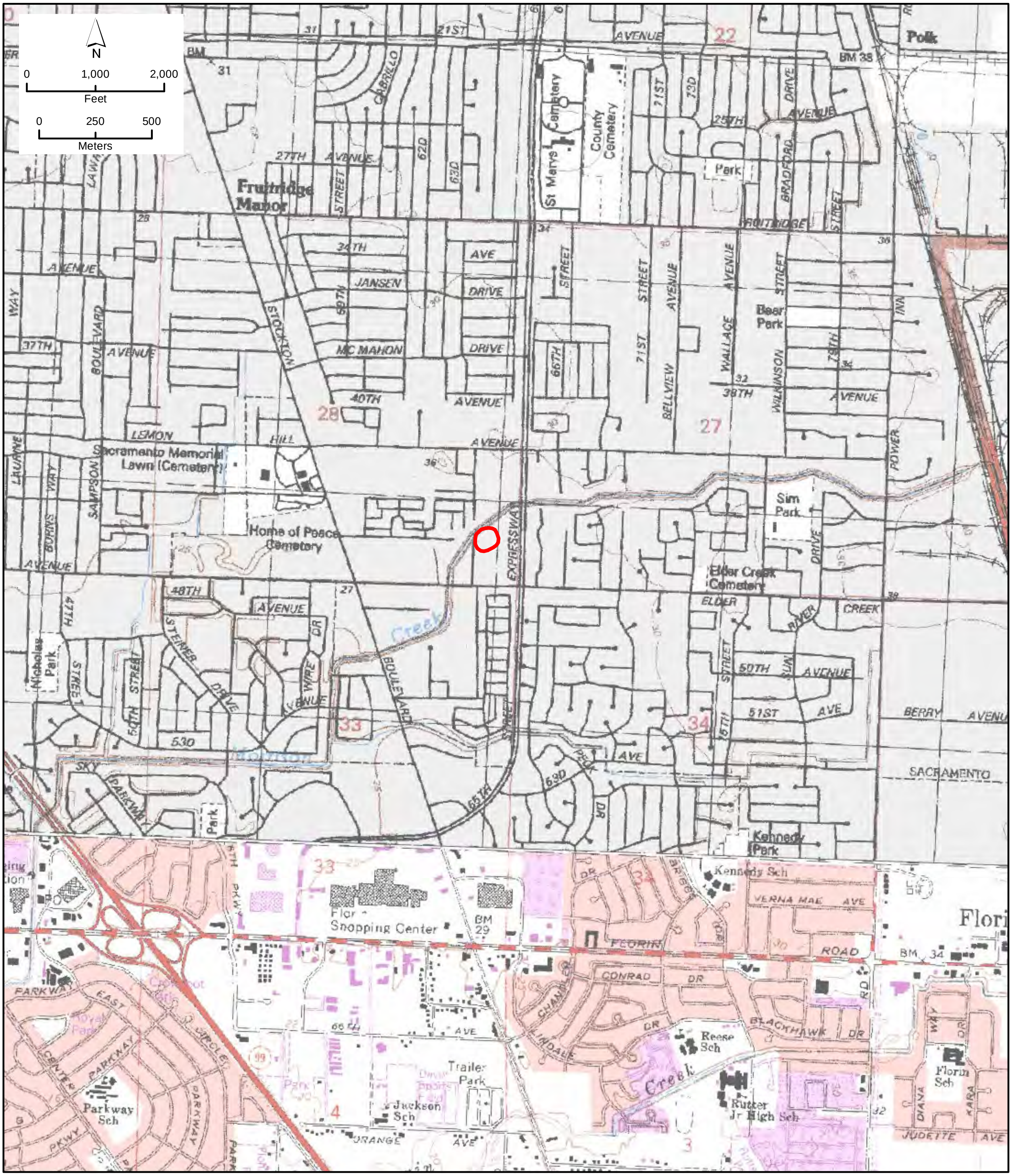
Concentration 1 **– consists of brown and clear bottle glass with Maywood Bottle & Glass Company (1930-1961) and Owens Illinois (1929-1954) maker's marks.**

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # ______________________
HRI # ______________________
Trinomial ______________________

Page 4 **of** 6 ***Resource Name or #:** Waring's Dump

***Map Name(s):** Florin, Sacramento East ***Scale:** 1:24,000 ***Date of Map:** 1968, 1992



DPR 523J (1/95) *Required Information

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI #
Trinomial

***Resource Name or #:** Waring's Dump

***Map Name(s):** NA ***Scale:** 1:2,400 ***Date of Map:** NA

***Recorded by**: B. Elliott and C. Peske of URS Corporation ***Date**: 07/23/12 ■ Continuation ☐ Update

***A5. Cultural Constituents (cont.):**

Artifacts at Locus 1

Artifacts at Concentration 1

Appendix E Conceptual Grading and Drainage Plan and Hydrologic and Hydraulic Evaluation

TECHNICAL MEMORANDUM

CONCEPTUAL GRADING AND DRAINAGE PLAN AND HYDROLOGIC AND HYDRAULIC EVALUATION OF THE PROPOSED WARING'S DUMP SOIL CAP PROJECT

SACRAMENTO COUNTY, CALIFORNIA

November 2012

Prepared by:

URS

Prepared for:

CalRecycle
Department of Resources
Recycling and Recovery
1001 I Street
P.O. Box 4025
Sacramento, CA 95812-4025

TECHNICAL MEMORANDUM

This technical memorandum presents a Conceptual Grading and Drainage Plan for the proposed soil capping project (the Project) at the former Waring's Dump site in the south portion of the city of Sacramento, California. This technical memorandum also provides an evaluation of the proposed project's effects upon local hydrology and hydraulics, in support of subsequent review under the California Environmental Quality Act (CEQA).

1. Project Location

Waring's Dump is located in the south portion of the city of Sacramento, California and is bounded by Morrison Creek to the north; 63rd Street to the west; parcels fronting Elder Creek Road to the south, and 65th Street Expressway to the east. The Project area comprises 5.04 acres of privately held property, and is defined by Assessor's Parcel Numbers (APNs) 38-182-005 (0.89 acre), 38-182-006 (0.67 acre), 38-182-007 (0.91 acre), 38-182-010 (0.67 acre), and 38-202-001 (1.9 acres). The dump is on the United States Geological Survey (USGS) "Sacramento East" 7.5' quadrangle within the southeast ¼ of Section 28, Township 8 North, Range 5 East (Figure 1).

2. Project Description

The California Department of Resources Recycling and Recovery (CalRecycle) proposes to implement remediation actions at the former Waring's Dump through surface grading and soil capping of the former dump site waste materials. The Project area was largely undeveloped until its use as a rock and gravel borrow site for the construction of State Route 99 in the 1930s. At a depth of approximately 50 feet, the borrow pit eventually received water overflow from Morrison Creek, rising to a depth of 20 to 30 feet at its center. A request by former owners Albert and Frances Waring to fill the pit with rubbish and construction waste was granted by the City in the late 1940s. Over a decade or more, the dump received domestic refuse that appears to have been burned on-site. It is now classified as a Closed Illegal and Abandoned disposal site.

A Final Site Investigation Work Plan and Final Site Investigation Report were prepared by the California Integrated Waste Management Board (now referred to as CalRecycle) in 2004. Deposits were found to be up to 24 feet in depth in the middle of the site. The deposit is bowl shaped, deepest in the middle and trending upwards in elevation towards the margins. CalRecycle also determined the amount of cover overlying waste material, the horizontal and vertical extent of waste material, and the chemical characteristics of Waring's Dump. CalRecycle concluded that the most appropriate method of site remediation would be to cap the dump wastes in place. Some surface grading would be required to re-contour the Project area to control stormwater run-off. The depth to which grading will occur will be minimized as the objective is to leave wastes undisturbed and in place.

There are several residences on 63rd Street immediately west of the Project area. To the north, the adjacent Morrison Creek functions primarily as a lined drainage canal managed by the City of Sacramento. The creek channel is approximately 12-feet deep and 80-feet wide when measured from the top of the levees. The levees rise approximately 2 feet above the surrounding terrain; there is a small ditch on the upland side of the south levee that collects runoff from that levee. A culvert conveys levee runoff from the ditch into the creek. A fence separates the ditch from the dump property.

It is the intent of the proposed project to avoid direct or indirect effects upon Morrison Creek and to retain the 100-year 24-hr storm event on-site. As in the existing condition, any overflow over the 100-year storm capacity would discharge to the existing culvert through the Morrison Creek levee. Other than a planned culvert beneath the access driveway, no structures are proposed for this Project.

3. Design Personnel

Contributions to this Technical Memorandum, and attached Conceptual Grading and Drainage Plan, were made by Mr. Matthew Korve, PE, and Mr. Huey Nham, PE, of URS Corporation.

Mr. Korve has 12 years of experience specializing in roadway design, drainage design, traffic control plans, and utility coordination. He is technically proficient in preparing comprehensive plans, specifications, and estimates (PS&E) packages, as well as project approval documents and planning studies. He is adept at utilizing a variety of software, including MicroStation, AUTOTURN, and InRoads. He has been a California Professional Civil Engineer, certification number 63248, since 2001.

Mr. Nham has 19 years of engineering experience, including hydraulic and hydrologic analysis and drainage design, traffic signal design, intersection design, and capacity and level of service analysis for various transportation facilities. He has experience with various design application software programs such as HYDRAIN, HEC-2, HEC-12, HEC-RAS, Highway Capacity Manual (HCM), MicroStation, and Inroads. He has been a California registered engineer, certification number 65138, since 2003.

4. Grading and Drainage

This section describes the Conceptual Grading and Drainage Plan prepared by URS Corporation and presented in Attachment 1. This conceptual design is not intended for construction purposes, but is for planning and analysis of preferred remediation actions proposed at the former Waring's Dump site. Attachment 1 depicts the conceptual finished surface grade and does not include or represent subgrade conditions or cross-sections indicating waste depth.

Grading

Existing ground elevation at the Project area is generally at 30 feet above mean sea level (MSL), and varies between 29 and 33 feet MSL. Approximately 3.8 acres within the 5-acre Project area would be graded and compacted, and capped with a 15 inch thick select-soil cap and vegetation. Any debris unearthed during grading would be reburied such that no material is protruding from the graded surface.

A 15-inch thick soil cap consisting of select, imported fill would be placed and compacted on top of the graded waste materials to the finished grade shown in Attachment 1. The proposed mound would have side-slopes varying between 1.0% and 3.0% within an approximately 3.8 acre area and reach a maximum elevation of 34.5 feet MSL. Sloped trapezoidal bioswales with a 1-foot bottom width and 2:1 side-slopes would be placed around the perimeter of the mound. The bioswales will be graded (at ~0.35%) to flow from the southeast corner of the subject property around each side of the soil-capped waste mound to a common low point at the northwest corner.

A culvert will be placed beneath an existing driveway at the southwest corner of the Project Area to allow vehicle access over the bioswale. Approximately 8,370 cubic yards (CY) of import borrow and 17,400 square yards of erosion control will be required for this Project. For erosion control, a seed mix (to be determined during final design) would be applied and maintained for growth. Large construction equipment that may be used to complete this Project include: dump trucks, front-end loaders, back-hoes, and bull dozers. Construction would be completed outside the rainy season, or as specified by the CalRecycle, and applicable construction best management practices (BMPs) will be employed.

Drainage

Currently, stormwater collects in numerous small depressions throughout the Project area. Any on-site infiltration under existing conditions passes through the waste area below. During extreme precipitation events, it is likely that excess runoff would flow from the bioswales into the drainage ditch along the south side of Morrison Creek levee. The proposed design would not substantially alter the existing drainage pattern, and therefore would not create a condition that would result in erosion, or a violation of water quality standards, or discharges requirements.

Stormwater will sheet flow to the perimeter of the capped waste area and collect in the sloped bioswales at the perimeter of the proposed soil cap and flow to the northwest portion of the Project Area. This design would reduce the potential for groundwater contamination since any post-project infiltration would occur outside the Waring's Dump waste area.

The 100-year, 24-hour event was used as the Project's design storm to apply the U.S. Army Corps of Engineers, Sacramento District, Hydrologic Engineering Center (HEC) Flood Hydrograph Program (HEC-1). The HEC-1 analysis performed by URS Corporation for the conceptual design yields a peak flow of 8.8 cubic feet per second (cfs) and a total volume of 0.9 acre-feet (ac-ft) for the proposed Project area (see Table 1). The proposed retention swales would have a storage capacity of 1.0 ac-ft.

Table 1: Sacramento Method Results - 100-year, 24-hour Event

Location	Peak flow (cfs)	Time of peak (hours)	Watershed area (ac)	Peak stage (feet)	Peak storage (ac-ft)	Diversion volume (ac-ft)
Warings Dumpsite	8.8	12:27	6.4	N/A	0.9	0.0

Water depth at this storage level is approximately 3 feet at the common low point which would be adjacent to the existing culvert through the Morrison Creek levee. The northern edge of the retention swale rim would act as an emergency release into the ditch on the upland side of the levee. Should the retention swales ever overflow, runoff will sheet flow over a length of the rim into the existing ditch. The existing ditch and culvert should have adequate capacity to convey any amount of projected runoff coming from the retention swales. During more typical storm events for this area, stormwater would collect in the retention swales and then infiltrate and evaporate.

5. Hydrology and Water Quality

Implementation of the Conceptual Grading and Drainage Plan has been evaluated for hydrology and water quality effects as enumerated in the CEQA Checklist. Based on the proposed conceptual design, a thoughtful assessment of the project, and its anticipated BMPs, the Project is not expected to result in significant adverse effects to water resources when considering the following criteria:

- Degrade water quality and/or violate any water quality standards
- Result in substantial erosion
- Substantially increase the rate or amount of surface runoff resulting in flooding
- Exceed the capacity of existing or planned stormwater drainage systems
- Place structures within 100-year floodplain or expose people or structures to a significant risk of injury or death involving flooding, including failure of a levee.

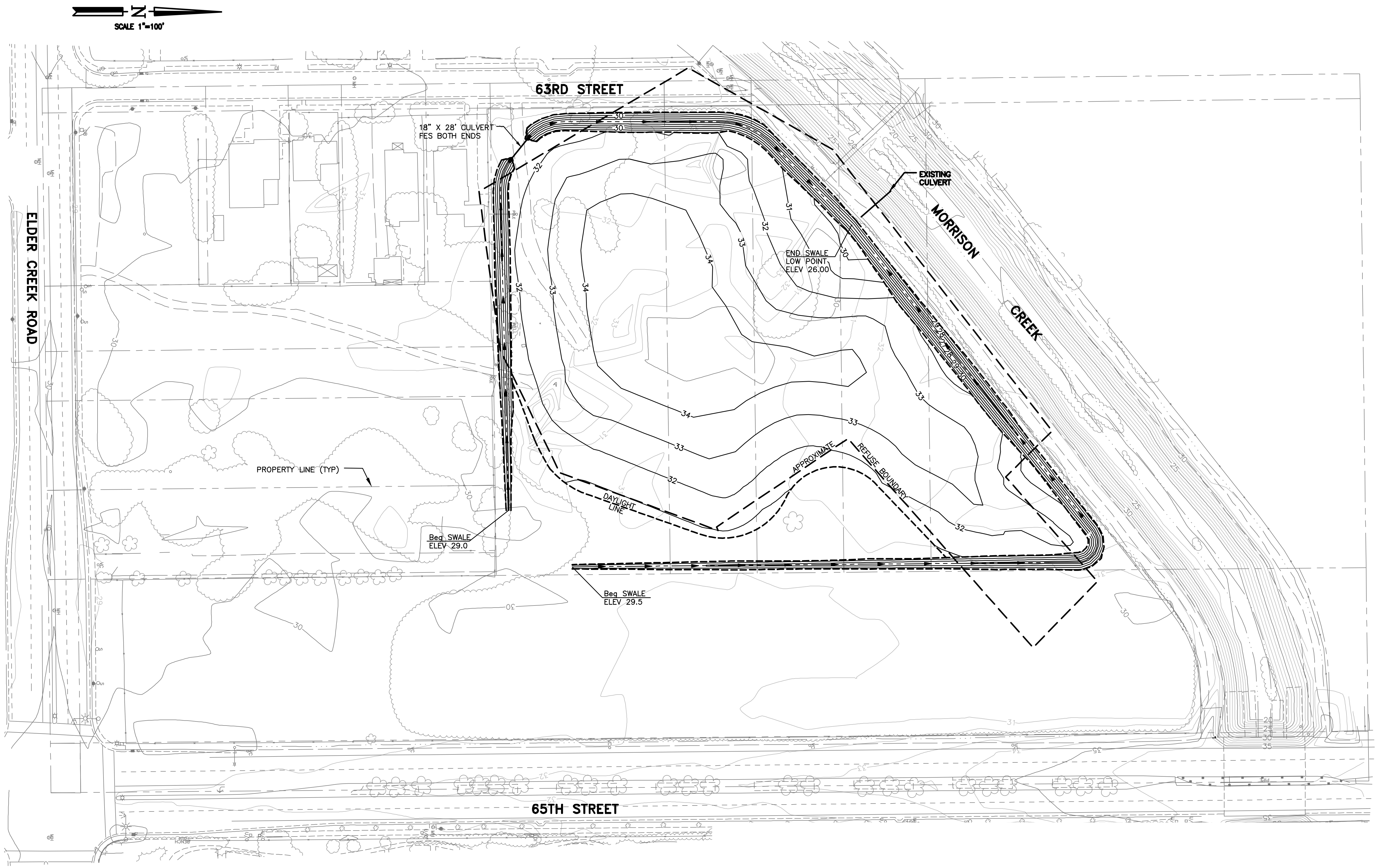
6. List of Attachments

The following are attached to this memorandum:

- Attachment 1: Conceptual Grading and Drainage Plan

Attachment 1:

Conceptual Grading and Drainage Plan



WARINGS DUMP SITE ENVIRONMENTAL REVIEW Sacramento, California	CONCEPTUAL GRADING AND DRAINAGE PLAN	ATTACHMENT 1
Project No.: 28645384 September 17, 2012 URS		

PLOT BY: SERGIO AVILES – 9/18/2012 1:56:17 PM DRAWING: P:\28645384-CALRECYCLE WRNGS\03-RPLANS\MASTERS\FIGURES\WRNGS_FIG-01_ALT4.DWG

Appendix F Noise Data

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 1/24/2013
Case Descr Waring's Dump Soil Cap Project

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
East	Residential	55	45	35

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	25	0
Front End Loader	No	40		79.1	25	0
Dozer	No	40		81.7	25	0
Dump Truck	No	40		76.5	25	0

			Results											
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	85.1	81.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	87.7	83.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	82.5	78.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	87.7	87.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

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e Model (RCNM),Version 1.1

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al	Receptor Distance (feet)	Estimated Shielding (dBA)
)		
77.6	25	0
81.7	25	0
76.5	25	0
80.7	25	0
80.7	25	0
77.6	25	0

e Limits (dBA)				Noise Limit Exceedance (dBA)					
Evening		Night		Day		Evening		Night	
Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix G Site Investigation Report

M BOTAN'S COPY

California Integrated Waste Management Board

Final
Site investigation Report

Warings Dump
63^{rd} and Morrison Creek
Sacramento, CA 95819

March 2004 **SWIS 34-CR-5017**

Prepared By:
California Integrated Waste Management Board
P.O. Box 4025
1001 "I" Street
Sacramento, California 95812-4025

Contents

1. Introduction

The California Integrated Waste Management Board (CIWMB) Closed, Illegal and Abandoned Site (CIA) program investigates solid waste disposal sites and provides site data and documentation to quantify requirements for both enforcement and potential clean-up activities by the CIWMB Solid Waste Cleanup Program (AB 2136). Depending on the types of wastes at the site, intrusive investigation and environmental sampling may be necessary to determine if hazardous materials are present for the purpose of scoping enforcement and remediation work or referral to either the Regional Water Quality Control Board (RWQCB) or the Department of Toxic Substances Control (DTSC).

Statutory Authority for investigating solid waste disposal sites is in California Public Resources Code (PRC) Section 45013, ET seq.

1.1 Site Location, Description and History

Warings Dump is located in a once-rural sector of south Sacramento. It is bounded on the northwest side by Morrison Creek and lies north of Elder Creek Road, between 65th Street and old 23rd Avenue. Appendix A, **Plate 2** shows its approximate location on a map of Sacramento County Assessor Parcel Nos. 38-182-5, 38-182-7, and 38-202-1.

The CIA site originally was a soils' borrow during the construction of California State Highway 99 in the late 1930s. Approximately three acres of sand and gravel and topsoil in and along the creek channel were excavated and removed from this location, to depths of up to 50 feet, according to records. In the 1940s, with population growth that followed in the area, two new sewage treatment facilities were constructed that discharged into Morrison Creek. With the stream's increased flow that resulted, seepage and overflows then began to fill the old borrow. During the late 1940s water in the pit stood 20 to 30 feet deep.

During the next decade waste was accepted and disposed of at Warings, much of which was burned. Recent trench excavations show that considerable household refuse, as well as construction waste, demolition debris and even cannery waste all was disposed of at the site. Complaints from residents in the growing community eventually resulted in the dump's closure under city order. Today, a hummocky surface exposes more recent illegal dumping and fill in the area. Beneath this broader irregular surface, the old borrow contents, part still immersed in water and resting on a bottom of dense native clay, lie covered 6 to 9 feet of mixed soil and concrete and demolition debris.

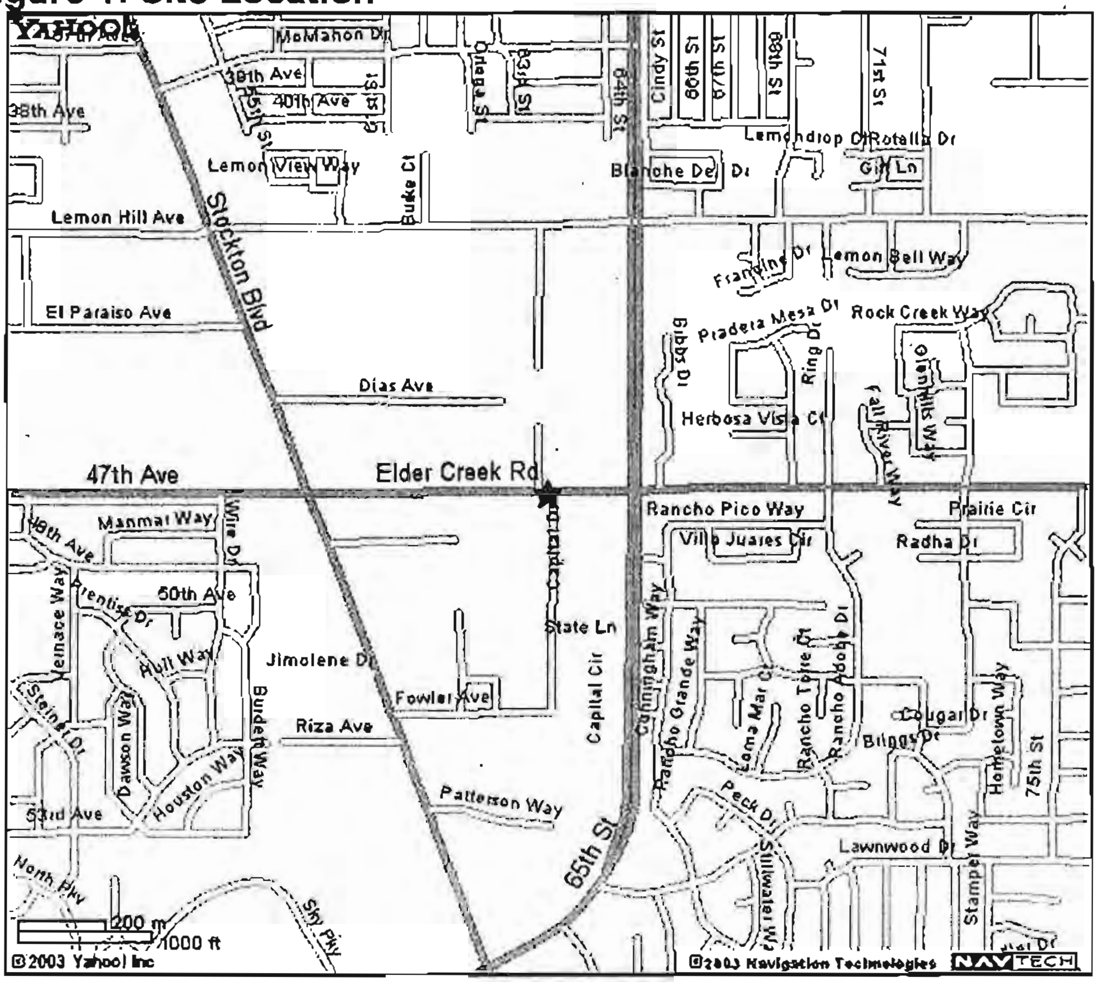
In the mid-1960s, Morrison Creek's channel was widened, deepened and realigned as part of Sacramento County's flood control "Drainage Bond Project", and an engineered berm now separates it from the disposal site.

Under authority of the Calderone Act, during the 1980s solid waste assessment tests (SWATs) were conducted at a number of old waste disposal sites in the area, including Warings Dump. As a result, the site's owner retained Koelzer Engineering Services (KES) to sample the site and conduct the SWAT ("Calderon Gas Monitoring Report, 1988"). KES subsequently installed two 7-foot landfill gas probes and a gas stream characterization well at the site. Follow-up reports of gas monitoring activities have not been found, but it seems unlikely that either of these probes were set deep enough to penetrate the main body of waste.

In 1990, the Sacramento County Environmental Health Department received a complaint regarding an abandoned well found beneath a residence at 6325 63rd Street, on a property adjacent to Warings Dump. The county investigated and monitored the well for possible landfill gas and any radiation, with negative results. It was determined the well was unrelated to the dump, and the well was sealed. No other complaints of landfill gas possibly migrating from the site have been found.

The Morrison Creek channel and easements on properties adjoining the site today are owned by the City of Sacramento. The site itself remains under private ownership.

Figure 1: Site Location



1.2 Project Purpose

The Remediation, Closure and Technical Services (RCTS) Branch, was requested by the Sacramento County Local Enforcement Agency (LEA) to perform a Phase I and a Phase II investigation to determine appropriate remedial measures necessary to protect public health and safety and the environment.

The investigation was conducted in order to: 1) determine the thickness of cover material placed over the waste material at the site; 2) determine the horizontal and vertical extent of waste, and 3) perform sampling and analysis of waste and soil to determine the site's chemical characteristics. The objective of the investigation was to provide site data that will allow the LEA to determine if additional cover or reconfiguration of the waste is required to protect public health and safety.

A characterization of the horizontal and vertical extent of the disposal area was provided by this site investigation. This data is based on background information and information gathered from the intrusive investigation, which was accomplished using a tracked excavator for trenching, and a eight inch hollow-stem auger for the installation of three gas monitoring wells. The site investigation was conducted from March 15-18, 2004. The results are presented in this report.

2. Project Objective

The objective of this investigation was to determine the horizontal and vertical extent of the waste and identify waste characteristics. A tracked excavator was used to excavate through the waste at specified locations (see trench location map page 13). Soil samples were taken to conduct a laboratory analysis to determine possible contamination. After the samples were taken, the trenches were back-filled. Representative samples were collected during and following completion of excavation activities and submitted for analytical testing. The samples were collected directly into the Teflon™-lined, clean, laboratory-supplied glass jars by directly coring the jar into the relatively intact soil masses brought to the surface by the excavator bucket. Sample depths and locations were based on visual observations of subsurface materials. Burned material, was sampled.

A drill rig was mobilized to drill and install three probes consisting of one dual completion and two single completion probes. Gas samples were taken in 1 liter Tedlar bags and sent to the lab for analysis.

2.1 Project Tasks

During the investigation of Warings dump, a sampling location reference grid was established and tied to an established benchmark at the site. Relocation of planned sampling locations was needed due to field conditions and authorative sampling protocol was implemented. Sampling entailed the use of the excavator, which dug down to native soil beneath the old fill.

Under the authoritative sampling protocol, the CIWMB field engineer may change individual sampling locations based on site-specific field conditions (including unforeseen obstructions, visible signs of contaminated soils or other factors). Site conditions required the relocation of trenches and increasing sampling locations throughout the old dump: approximately 37-40 samples were taken from twenty trenches, required to adequately define the horizontal and vertical extent of the waste and to characterize the waste stream. Soil/gas samples were screened using a GMI 442 Gas Surveyor instrument. Trenches and spoils were screened for radioactivity using portable radiation detection equipment. Each trench created by the excavator was screened using a GMI 442 Gas Surveyor instrument, capable of measuring concentrations of methane, hydrogen sulfide, oxygen and carbon monoxide. The trenches were back-filled with excavated material from the trench.

Three landfill gas wells (one dual depth and two single completion) were installed. The probes were constructed off the fill area between residences and the landfill footprint.

DRILLING PROCEDURES

The landfill gas monitoring wells were drilled and constructed by Woodward Drilling, a bonded, C-57-licensed, drilling contractor with the appropriate current certificates, experience, and training. Borings were drilled using 8-3/4-inch diameter, hollow-stem, continuous-flight auger. The borings were continuously logged by the N&M registered geologist.

WELL CONSTRUCTION

The landfill gas monitoring wells were installed pursuant to CCR Title 27, Section 20925 specifications:

a. The wells were installed on the southwestern, northeastern and southeastern perimeter of the landfill away from the refuse. **b.** The depth of the probes are: PG-1 (10 ft and 18 ft), PG-6 (12.3 ft) and PA-7 (12 ft). For boring logs and well construction details (see Appendix D).

In addition, the probes were installed above perched ground water. Each gas probe was completed with a 1/4-inch brass labcock and brass ID tags. During drilling, extruded soils were observed and classified in accordance with the Unified Soil Classification System (USCS) in general accordance with ASTM D 2499-93, recorded on the boring logs, photographed, and bagged for reference. Soil classification is indicated on the boring logs. (See Appendix D).

3. Sampling Plan and Results

The sampling plan is intended to document the procedural and analytical requirements for this and any subsequent sampling events performed to collect soil and waste samples and to characterize areas of potential contamination from the Warings Dump. This plan was compiled after reviewing the US Environmental Protection Agency's, Region 9, guidance document "Instructions for the One-time Sampling Event Sampling and Analysis Plan" dated March 1998. A copy of the final site investigation work plan is located in (Appendix B).

3.1 Sampling Methodology

Discrete sampling was used to assess the fill area and the surrounding soils. The sampling was conducted by using an excavator to sample locations shown on the sampling grid (see trench map page 13). Authoritative sampling protocol was necessary due to unforeseen field conditions. This is discussed in the findings section (page15). Trench and sampling locations were modified from the original sampling plan. The revised sampling map is located in (Appendix A).

The excavator dug the trenches at pre-designated locations and modified locations, digging down through the waste until the native soil was encountered. Representative samples were collected during and/or following completion of excavating activities and were submitted for analytical testing. The burn ash and soil samples were collected using a hand trowel and glass jars. Soil samples were taken from a location off-site and used as a background sample. The samples were collected into the glass jars by directly coring the jar into the relatively intact soil masses that were brought to the surface. Selection of sample depths and locations were chosen based on visual observations of subsurface materials. Burned material was sampled. Each soil sample was classified and logged by CIWMB staff. Samples collected into glass jars were capped. Once capped, the samples were sealed, labeled and logged and packaged and shipping back to CIWMB's certified laboratory contractor, ExcelChem.

Gas samples were taken using a pump into two one-liter tedlar bags. Gas samples were taken the day following the installation of the probe. Reusable sampling equipment was decontaminated between each sampling event by CIWMB staff. Personnel who collected samples were required to change their gloves between each sampling event.

3.2 Sampling Procedures

Burn-ash and soil samples were collected using an excavator to dig the trench and a hand trowel to collect the samples. At each sample location, 2 soil samples were collected from the trench spoils using a hand trowel and glass jars. The glass sampling jars are in two sizes 16 oz and 9 oz. Subsurface waste and soil samples were collected by manually inserting the soil from the spoils piles into the jars and screwing the cap on the jar tightly. Upon completion of sampling at a location the trench was screened using a GMI 442 Gas Surveyor for CH4, CO2, H2S, CO and O2, a Ludlum Survey Meter with 42-2 Scintlator and 44-9 Detector. The hole was filled with trench spoils and compacted with a compacting wheel. Gas samples were taken using a pump into two one-liter tedlar bags.

After each sample was collected it was placed in a laboratory-supplied container, labeled, logged on the chain-of-custody document, screened for radioactivity, sealed, and stored in an ice chest cooled to 4 degrees Fahrenheit. The coolers were picked up via currier by Excel Chem Laboratory after completion of each day of the investigation. A total of 40 soil, 6 water (3 VOA's and 3 1 liter bottles), and 8 gas samples were taken. (Results are located in Appendix E)

Sampling Data and Analysis

Soil samples were taken and sent to the lab for analysis (see Site Investigation Work Plan Appendix B) throughout the investigation to gain an understanding of the waste characteristics of the site. Table 1 represents the results from EPA 6010B and EPA 7471A (Hg) Metals Lab Analysis. Total Threshold Limit Concentrations (TTLC) were run on soil samples results indicated elevated levels of lead and zinc in some soil samples (indicated in green). Tables 2 and 2A show the statistical analysis of those data used to determine the average concentrations of lead and zinc. Table 3 represents Title 22 Waste Extraction Test (WET) & EPA 6010 the soluble threshold limit concentration of the samples that exceeded the TTLC for lead and zinc (exceedences are represented in green) to determine the possiblity of leachable material into the ground water. Table 4 provides the statistical basis of the results that were used to determine the average concentration of the lead and zinc. Additional results anaylitical results are found in (Appendix E)

Table 1: Metals Lab Analysis Results: EPA 6010B and EPA 7471A (Hg)

EPA 6010b									
	TTLC	Trench Locations							
Analyte		D-3 (9')	C-3 (9.5')	F-4 (3.5')	F-4 (9.5')	B-4 (1) 9'	F-3 (12.5')	C-6 (3')	D-6C (10')
Antimony	500	2.1	8.3	2.9	6.1	23	2.8	ND	6.3
Arsenic	500	4.4	9.2	6.4	14	55	3.2	ND	13
Barium	10,000	160	390	140	580	410	130	120	310
Beryllium	75	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	100	3	3.4	2	5.1	13	1.8	ND	4.8
Chromium	500	32	110	42	44	68	36	31	51
Cobalt	8,000	11	18	12	13	20	7.9	16	17
Copper	2,500	70	84	60	150	380	120	23	230
Lead	1,000	180	[redacted]	220	980	[redacted]	130	49	540
Mercury	20	0.091	0.042	0.06	0.12	0.052	0.08	0.11	0.29
Molybdenum	3,500	ND	ND	ND	ND	3.2	ND	ND	ND
Nickel	2,000	26	45	29	40	76	22	16	45
Selenium	100	ND	ND	ND	ND	ND	ND	ND	ND
Silver	500	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	700	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	2,400	38	38	45	30	36	31	51	44
Zinc	5,000	450	1400	840	[redacted]	1400	370	79	840

EPA 6010b									
	TTLC	Trench Locations							
Analyte		D-6c 20'	E-1 (5')	E-1 (9')	A-7	B-5	G-5 (5')	G-5 (9.5')	B-5 (10')
Antimony	500	7.4	66	3.5	1.8	3.5	ND	13	5
Arsenic	500	7.6	5.9	8.1	4.2	5	3.4	4	6.2
Barium	10,000	150	570	190	190	210	98	280	200
Beryllium	75	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	100	2.9	3.6	1.8	4.5	3.1	ND	2.5	2.2
Chromium	500	37	54	38	29	31	28	51	48
Cobalt	8,000	8.1	9.2	15	10	8.9	11	9.3	12
Copper	2,500	66	140	85	100	87	18	61	98
Lead	1,000	190	[redacted]	300	760	400	24	360	270
Mercury	20	0.031	0.031	0.062	0.032	0.048	0.050	0.069	0.054
Molybdenum	3,500	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	2,000	30	32	32	24	27	19	25	32
Selenium	100	ND	ND	ND	ND	ND	ND	ND	ND
Silver	500	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	700	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	2,400	34	40	44	29	36	44	42	45
Zinc	5,000	840	1800	540	[redacted]	1500	99	780	1300

ND = Non-detected Compounds may be present at Concentrations below the reporting limit.
R/L= Reporting Limit
Soil Samples reported in mg/kg
[redacted]

Table 1: Metals Lab Analysis Results: EPA 6010B and EPA 7471A (Hg)

EPA 6010b	TTLC	Trench Locations						
Analyte		D-7 (7')	D-7 (8')	D-7 (13')	B-4	B-42	A-5	D-2 (8')
Antimony	500	7.4	5.5	4.7	4	5	1.2	2.5
Arsenic	500	30	8.1	4.1	6.9	12	2.7	8
Barium	10,000	270	190	190	150	330	130	160
Beryllium	75	ND	ND	ND	ND	ND	ND	ND
Cadmium	100	12	1.4	1	2.4	3.3	1.1	2.3
Chromium	500	54	55	41	42	60	32	34
Cobalt	8,000	15	14	13	12	20	11	11
Copper	2,500	98	61	49	120	240	45	75
Lead	1,000	[redacted]	210	83	290	705	220	170
Mercury	20	0.02	0.039	0.022	0.054	0.043	0.03	0.07
Molybdenum	3,500	ND	ND	ND	ND	1.9	ND	ND
Nickel	2,000	43	35	36	35	100	21	31
Selenium	100	ND	ND	ND	ND	ND	ND	ND
Silver	500	ND	ND	ND	ND	ND	ND	ND
Thallium	700	ND	ND	ND	ND	ND	ND	ND
Vanadium	2,400	38	52	53	42	36	47	31
Zinc	5,000	[redacted]	300	230	450	1100	460	910

EPA 6010b	TTLC	Trench Locations				
Analyte		G-2 (2')	G-2 (5')	G-2 (10')	G-2 (15')	G-2 (18')
Antimony	500	180	13	17	11	ND
Arsenic	500	10	4	9	15	ND
Barium	10,000	700	310	490	280	220
Beryllium	75	ND	ND	ND	ND	ND
Cadmium	100	12	5.8	3.2	5.7	ND
Chromium	500	65	46	41	54	30
Cobalt	8,000	15	11	8.8	47	9.7
Copper	2,500	610	66	200	330	17
Lead	1,000	[redacted]	470	[redacted]	770	5.8
Mercury	20	0.028	0.064	0.11	0.18	0.012
Molybdenum	3,500	ND	ND	4.5	ND	ND
Nickel	2,000	110	26	29	2700	21
Selenium	100	ND	ND	ND	ND	ND
Silver	500	2.2	ND	ND	ND	ND
Thallium	700	ND	ND	ND	ND	ND
Vanadium	2,400	33	28	19	19	48
Zinc	5,000	[redacted]	2400	1500	[redacted]	34

ND = Non-detected Compounds may be present at Concentrations below the reporting limit.
R/L= Reporting Limit
Soil Samples reported in mg/kg
[redacted]

Table's 2 and 2A: Statistical Analysis of Total Threshold Limit Concentration (TTLC) for Lead and Zinc

Based on the results from the 28 soil samples run for CAM 17 metals. The statistical analysis below shows that the average mean for the reported lead concentration was 677 mg/kg with a confidence interval of +/- 259 mg/kg based on a 90 percent confidence interval. Trench E-1 (5') had a reported level of 8400 mg/kg lead and was therefore considered an outlier and was not used in this calculation. Therefore, this analysis indicates that there is a 90 percent chance that the average soil contaminate concentration at Warings dumpsite has not exceeded the Total Threshold Limit Concentration of 1000 mg/kg

Based on the results from the 28 soil samples run for CAM 17 metals. The statistical analysis below shows that the average mean for the reported Zinc concentration was 2507 mg/kg with a confidence interval of +/- 1269 mg/kg based on a 90 percent confidence interval. Therefore, this analysis indicates that there is a 90 percent chance that the average soil contaminate concentration at Warings dumpsite has not exceeded the Total Threshold Limit Concentration of 5000 mg/kg

Table 2

Statistics for Lead	
Mean	677.6357143
Standard Error	152.2182154
Median	330
Mode	220
Standard Deviation	805.4630857
Sample Variance	648770.7824
Kurtosis	2.696157647
Skewness	1.817275696
Range	2900
Minimum	0
Maximum	2900
Sum	18973.8
Count	28
Confidence Level(90.0%)	259.2714649

Table 2A

Statistics for Zinc	
Mean	2507.928571
Standard Error	745.4152086
Median	875
Mode	840
Standard Deviation	3944.366531
Sample Variance	15558027.33
Kurtosis	4.204044436
Skewness	2.235147783
Range	14966
Minimum	34
Maximum	15000
Sum	70222
Count	28
Confidence Level(90.0%)	1269.656806

Table 3: Metals Lab Analysis Results: Title 22 WET & EPA 6010

EPA 6010 & Title 22 WET (Citrate Buffer)						
	STLC	Trench Locations				
Analyte		C-9 (9.5')	F-4 (9.5')	B-4 (9')	E-1 (5')	A-7
Cadmium	1	ND	ND	ND	ND	0.2
Chromium	5	0.2	0.5	ND	0.2	ND
Lead	5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Nickel	20	0.6	0.9	0.9	0.5	0.5
Zinc	250	80	120	32	38	[redacted]

EPA 6010 & Title 22 WET (Citrate Buffer)						
	STLC	Trench Locations				
Analyte		D-7 (7')	B-42	G-2 (2')	G-2 (10')	G-2 (15')
Cadmium	1	0.4	ND	0.3	ND	ND
Chromium	5	0.2	ND	ND	1.3	0.3
Lead	5	[redacted]	[redacted]	[redacted]	[redacted]	ND
Nickel	20	0.6	1	1.1	1.1	1.1
Zinc	250	56	23	[redacted]	85	85

ND = Non-detected Compounds may be present at Concentrations below the reporting limit.
R/L= Reporting Limit
Soil Samples reported in mg/L
[redacted]

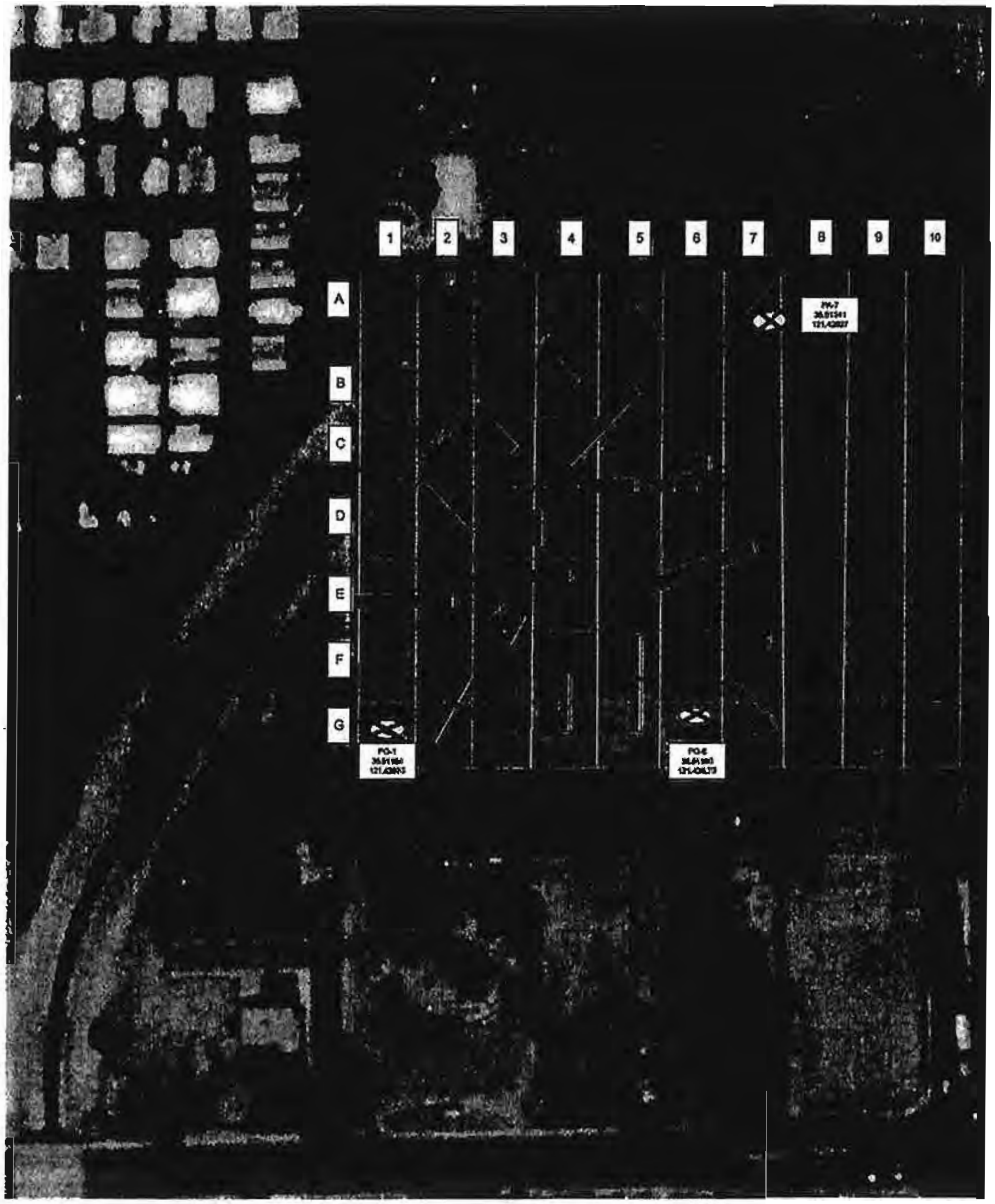
Table 4: Statistical Analysis of Reported Soluble (STLC) Lead and Zinc Levels in mg/l.

Soluble levels were run using EPA 6010 & Title 22 WET (Citrate Buffer) on 10 soil samples, which exceeded the Total Limit Concentration of 1000 mg/kg of Lead. A statistical analysis was run on Lead and Zinc using a 90 percent confidence interval. The statistical results for the lead determined that the mean of the samples was 24.63 mg/L with a confidence interval of +/- 9.10 mg/l therefore exceeding the regulatory solubility threshold limit for lead of 5 mg/L.
The statistical results for the zinc determined that the mean of the samples was 142.9 mg/L with a confidence interval of +/- 104.6 mg/l therefore exceeding the regulatory solubility threshold limit for zinc of 250 mg/L. The Based on this information, there is a 90 percent confidence that the representative samples for the Warings dump have exceeded regulatory thresholds for soluble lead and zinc. Complete laboratory analysis and results are located in (Appendix E).

Zinc	
Mean	142.9
Standard Error	57.08462529
Median	82.5
Mode	85
Standard Deviation	180.5174353
Sample Variance	32586.54444
Kurtosis	4.911881671
Skewness	2.23417427
Range	577
Minimum	23
Maximum	600
Sum	1429
Count	10
Confidence Level(90.0%)	104.6426176

Lead	
Mean	24.63
Standard Error	4.964900133
Median	24
Mode	24
Standard Deviation	15.70039278
Sample Variance	246.5023333
Kurtosis	0.8803976
Skewness	0.488872958
Range	56
Minimum	0
Maximum	56
Sum	246.3
Count	10
Confidence Level (90.0%)	9.101227229

Sampling locations were modified due to site conditions and visual observations. Sample locations were recorded in the field logbook; GPS'd and photographed in the field when sampling was completed. Copies located in Appendix A



Trenches

Boring/Probe location

Warings Dump SWIS# 34-CR-5017
63rd and Morrison Creek, Sacramento CA

California Integrated Waste Management Board
1001 I Street
Sacramento, CA 95812

Notes:
Grid dimentions are
1" = 100yds

North

Figure 2: As-Built Trench Map and Probe Locations

4. Results and Findings

The original trench plan was modified based on site conditions. The above map represents the modified locations. A total of 18 trenches were dug at various depths and lengths. The goal was to find the perimeter of the pit by visually recognizing native soils vs. waste. The original thought was to try to get a depth of the pit by using a drill rig and boring down until native soil was encountered. This was unnecessary, however, due to the ability of the tracked excavator to reach native clays that identified the bottom of the pit (at a depth of approximately 24 ft in the center). The pit appears to be bowl-like in shape with the clay that forms the outer boundary at depth approximately 18 feet bgs. Water was encountered throughout the site at approximately 12-15 feet, a matter that influenced the depth of the probes that were installed.

The trenches were sampled at various depths, as noted in the laboratory results, trench logs and field logs. Waste was found in all the trenches, including in fill that might appear native but was not on further investigation, above or adjacent to undisturbed native soil contacts. Waste types included: burned material, metals, concrete, asphalt, wood waste, cannery waste, glass, plastics, some household waste, oil residue, transformers, insulators, car parts, tires. Water was encountered at all trenches at depths varying from 12-15 feet. The water was oily and appeared grayish black and locally smelled strongly of petroleum and/or hydrocarbon products. Waste is further described and nominally quantified in the trench logs (Appendix C). Limits of the contained waste are identified in Appendix A

Day 1

The first day of the trenching phase operation, eight trenches were excavated, beginning with B-4 on the northeast side. B-4 was found to contain burn ash; construction and demolition debris at a depth of two feet below the surface. Samples were taken and sent to the lab for analysis. All lab results for trench sampling are provided in Appendix E. The northeastern side of the site was thoroughly investigated and logged in this manner. Each trench contained some level of waste, but as the trench was being dug, it was the procedure to either move forward or backward to define the native soil and waste boundary contacts. Soil samples were taken in each trench at various depths. Water was encountered at approximately12 feet below surface in the trenches that were located closest to the center of the fill (see trench location map page 13). Samples were taken from of the excavator's bucket as well as from the spoils pile. By the end of the day the north and northeastern lateral extent of the deposit was thus defined. A sample location map is provided in Appendix A

Day 2

The second day of trenching began with G-2 on the southwestern side of the site, near the gate on 63rd street. Burn material was uncovered two feet below the surface at this location. The trench was excavated from southwest to northeast. Burn material was observed throughout the trench, with waste types including melted glass, metals, partially burned wood materials and plastics. At approximately 12-14 feet, what appeared to be several high voltage transformers were uncovered along with dozens of broken glass insulators. A photo ionization detector was used to screen for VOC's and a soil sample was taken from the inside of the transformer and tested for PCB's. At 13-15 feet grayish black and oily was encountered. The spoils from this trench in general also were black and oily and carried a gas fuel-like odor. The transformers were rusted and not wholly intact. Because of the likelihood they represented hazardous waste, the Sacramento County Local Environmental Health Agency (LEA) was contacted and was asked to come to the site. The Regional Water Quality Control Board (RWQCB) also was contacted and agreed to conduct water sampling. At the RWQCB's suggestion, we also contacted the Sacramento Municipal Utility District (SMUD) to verify that the rusted canisters were transformer remains. The transformers were verified by SMUD. The RWQCB drew samples from trench G-2 and F-3, as both of these trenches had strong hydrocarbon odors and appeared oily. No transformers were found in F-3 but the trench did contain numerous oilcans and discarded auto parts. Trench D-2 also smelled of oil and hydrocarbon, although the odor was not as strong as in the previous two trenches. D-2 also contained dark and oily-appearing water, and this was encountered in most of the other trenches throughout the site, as well.

Lab results indicate a presence of oil on samples: D-6c (10'), E-1 (9'), trench G-2, D-2 (8'), C-3 (9.5'), F-4 (3.5') and F-3 (12.5'). Diesel was found in G-2 (15'), D-2 (8'), C-3 (9.5'), F-4 (3.5') and F-3 (12.5'). Under EPA 8270c for semi-volatiles, sample F-4 (3.5') contained Phenanthrene, Fluoranthene, Pyrene, Benzo [a] anthracene, Chrysene and Benzo [a] pyrene. Additional results from the lab analyses are provided in Appendix E.

The last phase of this investigation was the placement of one dual completed probe and two single completion probes located on three side of the property between the waste and the residences (see Well Logs in Appendix D). The dual well probe (PG-1) was drilled in native soil down to 30 feet through the clay layer to confirm that the clay was the native bottom and to see if the water that had been encountered, went below the clay. The borehole was left open for several hours while the next probe was completed to see if any water would seep through the soil in. After several hours, it was confirmed that the water had not seeped into the borehole and that the water was not below the clay. The probe was filled with bentonite from 30 to 18 feet below ground surface the deep probe was screened from 11.5 feet to 18 feet and the shallow from 5 feet to 10 feet below ground surface (bgs). PG-6 was completed as a single probe screened at 5 to 10 feet bgs and to a depth of 12.3ft. PA-7 was completed as a single probe down to 12 feet bgs. and screened at 5 to10 feet. The probes were set at 12 feet due to the depth of the perched water in the waste pit. The probes were allowed to reach equilibrium over night and were sampled the following day, Friday March 19, 2004. Initial readings indicated methane was present but at ppm levels well below the regulatory threshold of 5% v/v at the facility perimeter boundary. Samples were taken and sent to the lab for analysis. Samples were analyzed for TO15 and fixed gases. Results came back non-detect for TO15 and for methane (Appendix E). Monthly monitoring on the probes should be continued for a period of at least one year.

4.1 Findings

As an overall characterization of the Warings Dump, the investigation found that the site is very similar to other burn sites and old disposal sites located throughout California. A total of 20 trenches were dug over the 3-acre parcel. The investigation verified that the site has no cap. It is estimated that the average depth of the waste in the center of the pit is approximately 23 feet.

Based upon the analytical results obtained during this investigation and the statistical analyses performed on the results, CIA staff concluded that the material within the fill area of the Warings Dump would likely be classified as a California hazardous waste site based on contaminant concentrations exceeding the Soluble Threshold Limit Concentration (STLC). The material sampled contains elevated concentrations of metals compared to background values (see Appendix E). The outer and inner perimeters of the waste were determined by trenching through the native soil/waste contacts on enough centers around the deposit to confidently extrapolate it approximate dimensions. The tracked excavator was able to dig 25 feet deep and more in a few places, which in the deeper portions of the pit was below the depth of the waste, in native clay. The pit's depth varies throughout the site, partly as a function of the hummocky surface and variable elevation, but the deepest waste was found at about 25 feet bgs, in D-3. The lateral boundary is oval in shape and generally conforms on the north and northwest side to the Morrison Creek channel, then south along the 63rd street property fence line to the corner gate. It continues from there due east along the fence line and curves northeastward toward the 65th Street Expressway.

Warings Dump is estimated to contain approximately 86,000 cubic yards. The core area (main deep waste area) is the most contaminated and contains approximately 65,000 cubic yards of waste. The exterior area around the core contains approximately 19,000 cubic yards. The outer area extends 50 feet or more beyond the core area and comprises a shallower deposit that is less obviously contaminated by hydrocarbons. A map showing core and outer zone is provided in Appendix A.

5. Recommendations

Based on the field data and findings from this investigation, CIWMB staff has determined that Warings Dump does not meet state minimum standards for closed disposal sites:

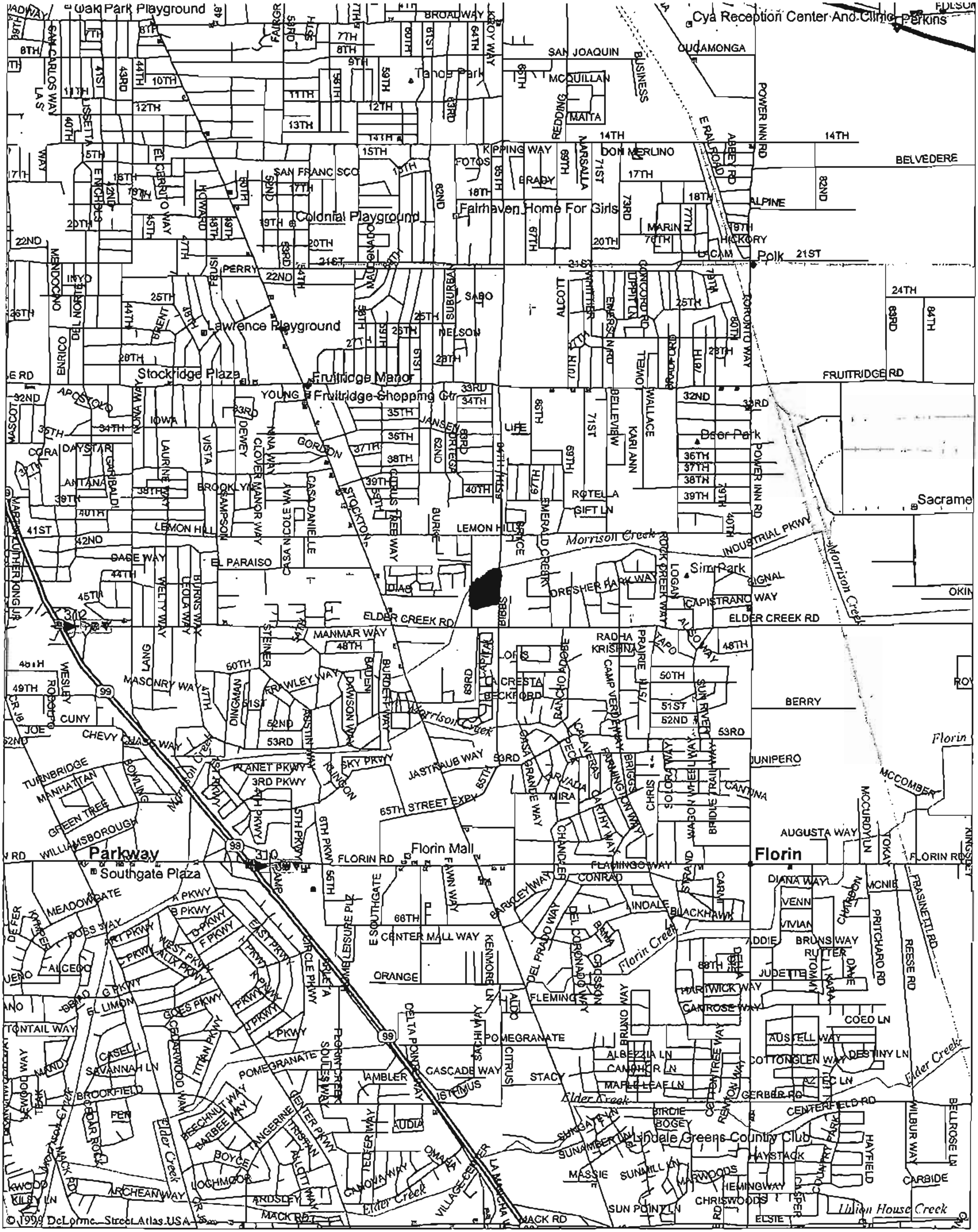
A. The waste disposal area is not covered.
B. The site is not graded for drainage.
C. There is evidence of waste exposure caused by erosion.

CIWMB staff concurs with Sacramento County LEA's observations that the site does not meet State Minimum Standards, 27 CCR §20650 (grading of fill surfaces), §20790 (leachate control), and §20820 (drainage and erosion control). CIWMB staff recommends that this report be forwarded to the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Boards (RWQCB) for review based on analytical results and sensitive receptors in the proximity of the disposal site.

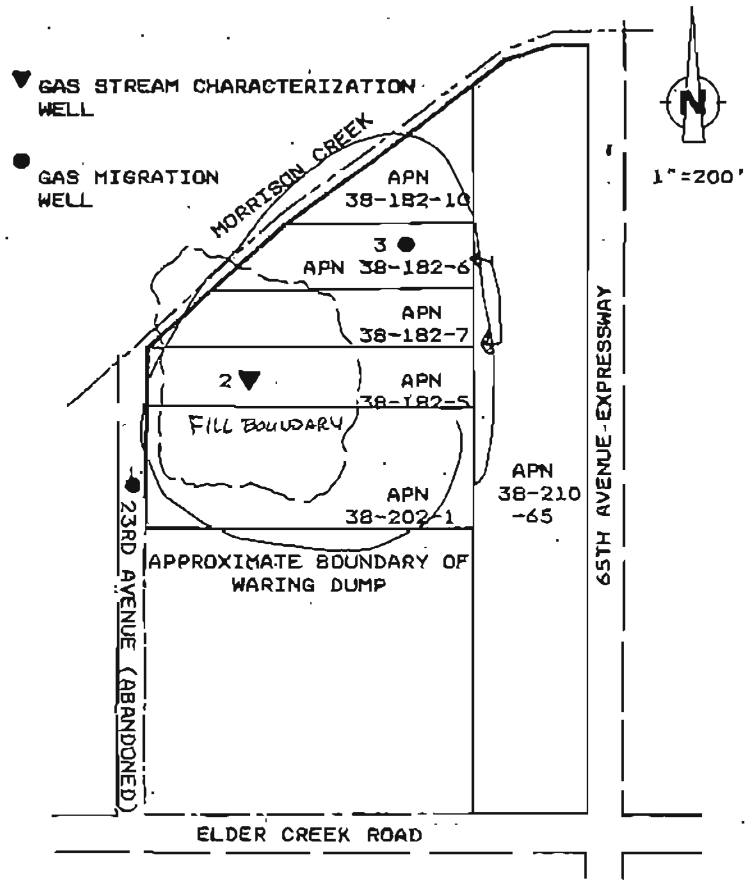
Staff recommends that a cover be placed on the site to meet state minimum standards and to prevent exposure to the public, and the environment. One time sampling events are not sufficient to prove that the site has no gas migration occurring. We recommend monthly monitoring on the newly constructed probes for a period of at least one year. After one year of monitoring results, further recommendations can be discussed. Since landfill gas production typically follows a temporal cycle (normally associated with local hydrologic conditions), data collected from the new gas monitoring wells should be reported to the Sacramento County LEA to be analyzed and to determine if future actions are necessary.

Appendix A Figures and Maps

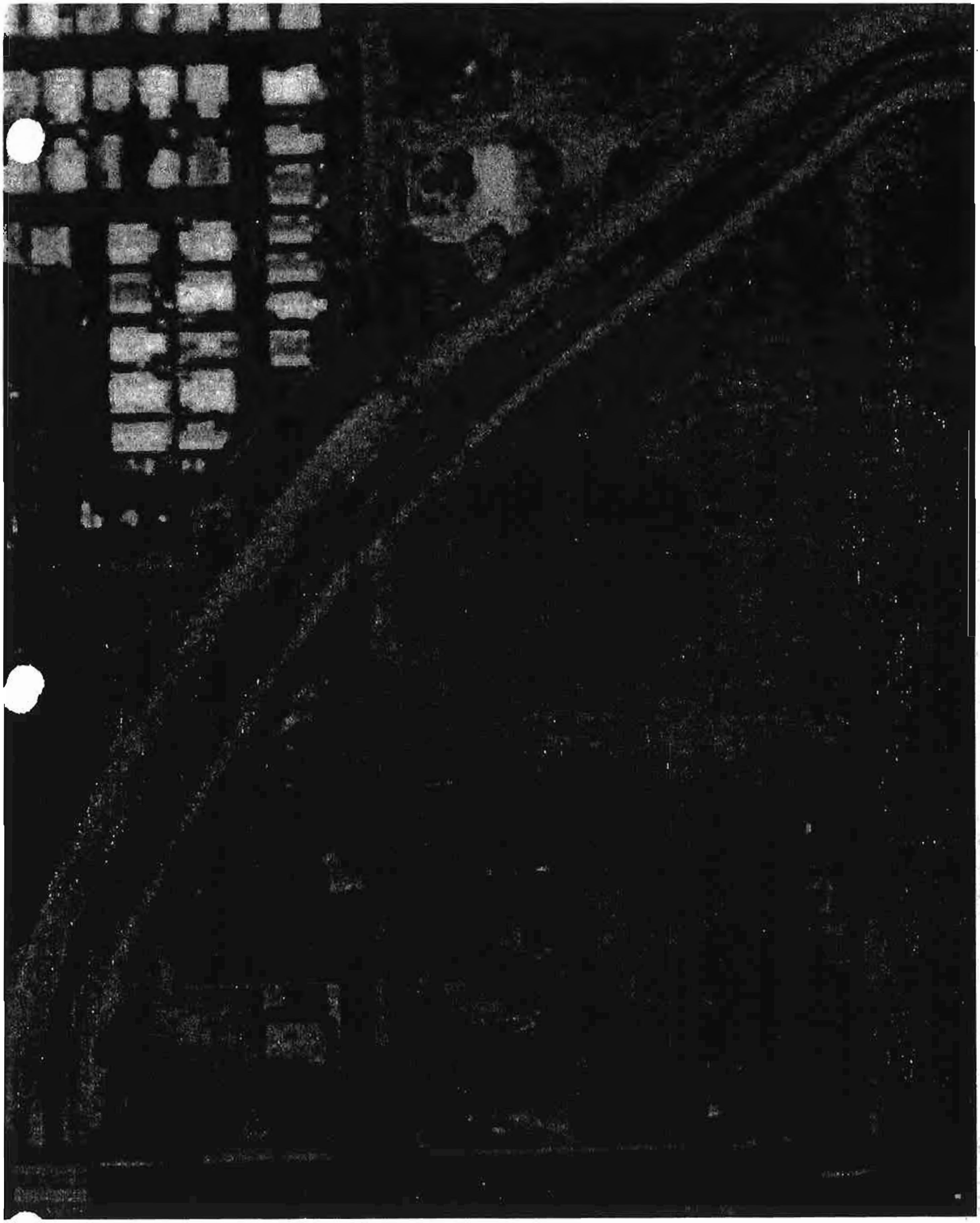
SITE LOCATION: 63rd + Morrison Creek, Off of Elder Creek RD.

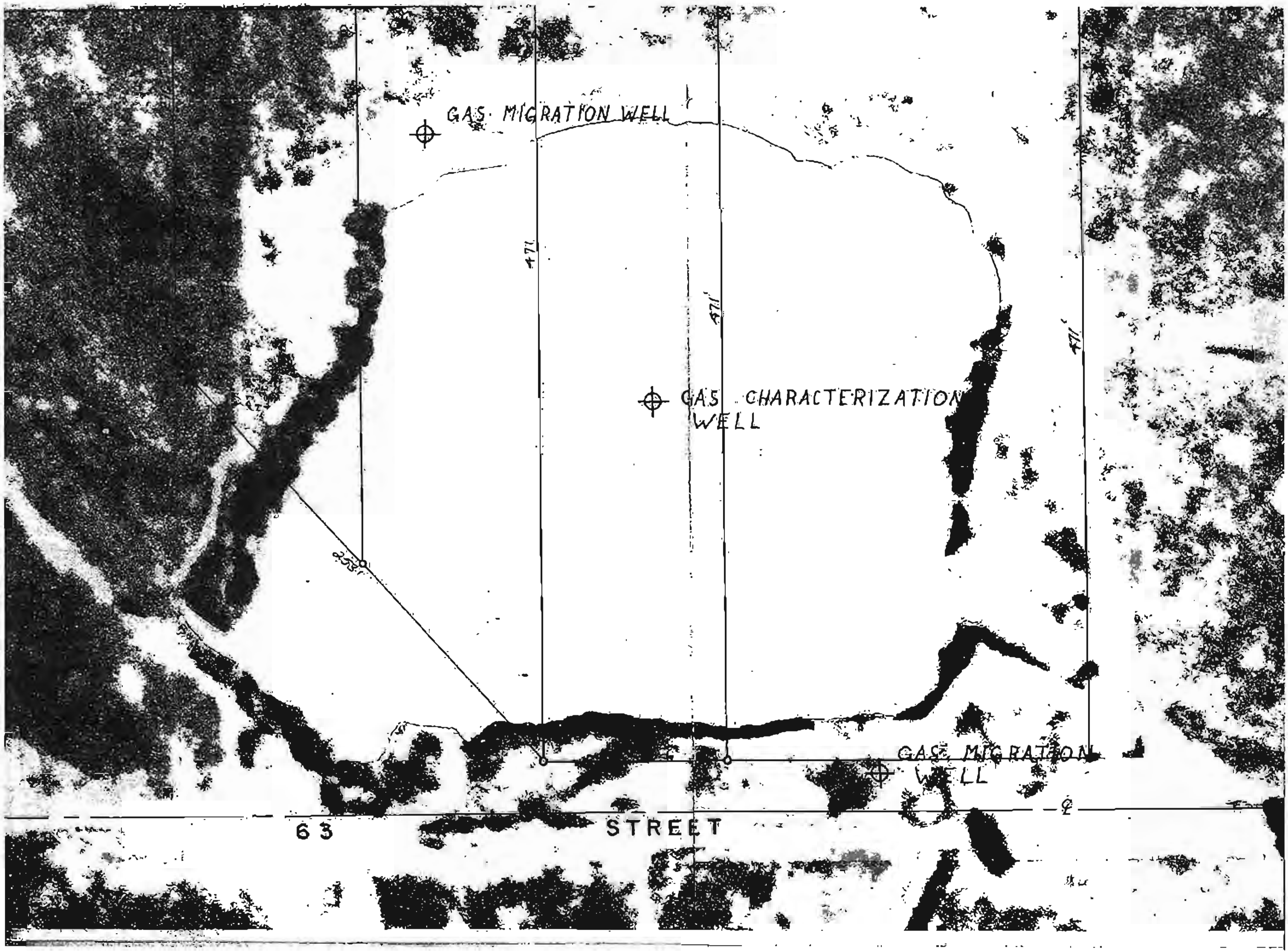


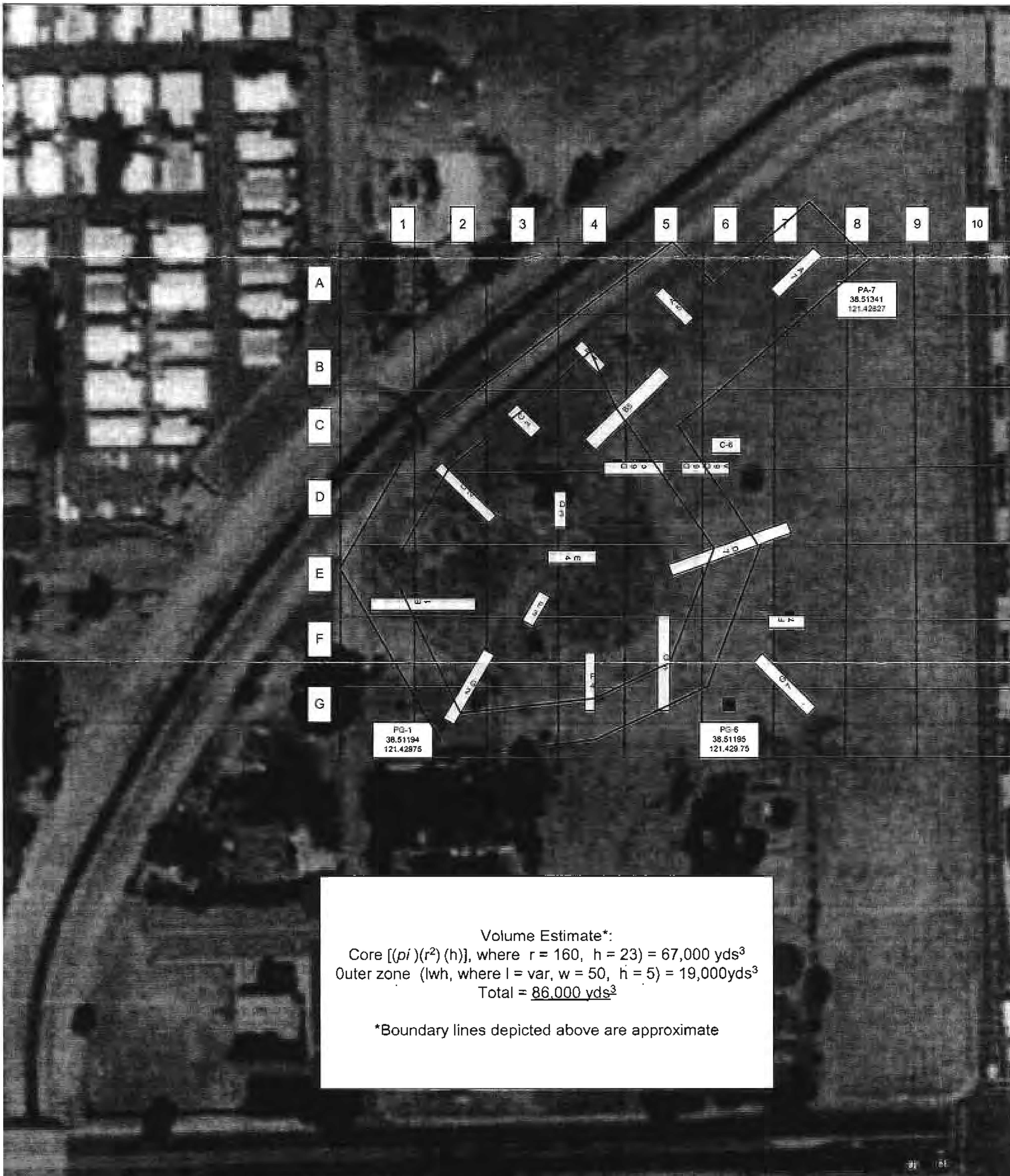
Site Location: 63rd + Morrison Creek, off of Elder Creek RD.



KOELZER ENGINEERING SERVICES	SITE PLAN Waring Dump Sacramento, California	PLATE 2
FILE NO. 1012.01		




GAS MIGRATION WELL
471'
471'
471'
GAS CHARACTERIZATION WELL
GAS MIGRATION WELL
63 STREET



Trenches

Boring/Probe location

Warings Dump SWIS# 34-CR-5017
63rd and Morrison Creek, Sacramento CA

California Integrated Waste
Management Board
1001 I Street
Sacramento, CA 95812

Notes:
Grid dimentions are
1" = 100yds

North

Appendix B Site Investigation Work Plan

California Integrated Waste Management Board

Final

Site Investigation Work Plan
Warings Dump
63rd and Morrison Creek
Sacramento, CA

Prepared By:
California Integrated Waste Management Board
P.O. Box 4025
1001 "I" Street
Sacramento, California 95812-4025

January 27, 2004

Contents

1. Introduction

The California Integrated Waste Management Board (CIWMB) Closed, Illegal and Abandoned Site (CIA) program investigates solid waste disposal sites and provides site data and documentation to quantify requirements for both enforcement and potential clean-up activities by the CIWMB Solid Waste Cleanup Program (AB 2136). Depending on the types of wastes at the site, intrusive investigation and environmental sampling may be necessary to determine if hazardous materials are present for the purpose of scoping enforcement and remediation work or referral to either the Regional Water Quality Control Board (RWQCB) or the Department of Toxic Substances Control (DTSC).

Statutory Authority for investigating solid waste disposal sites is in California Public Resources Code (PRC) Section 45013, ET seq.

1.1 Site Location and Description

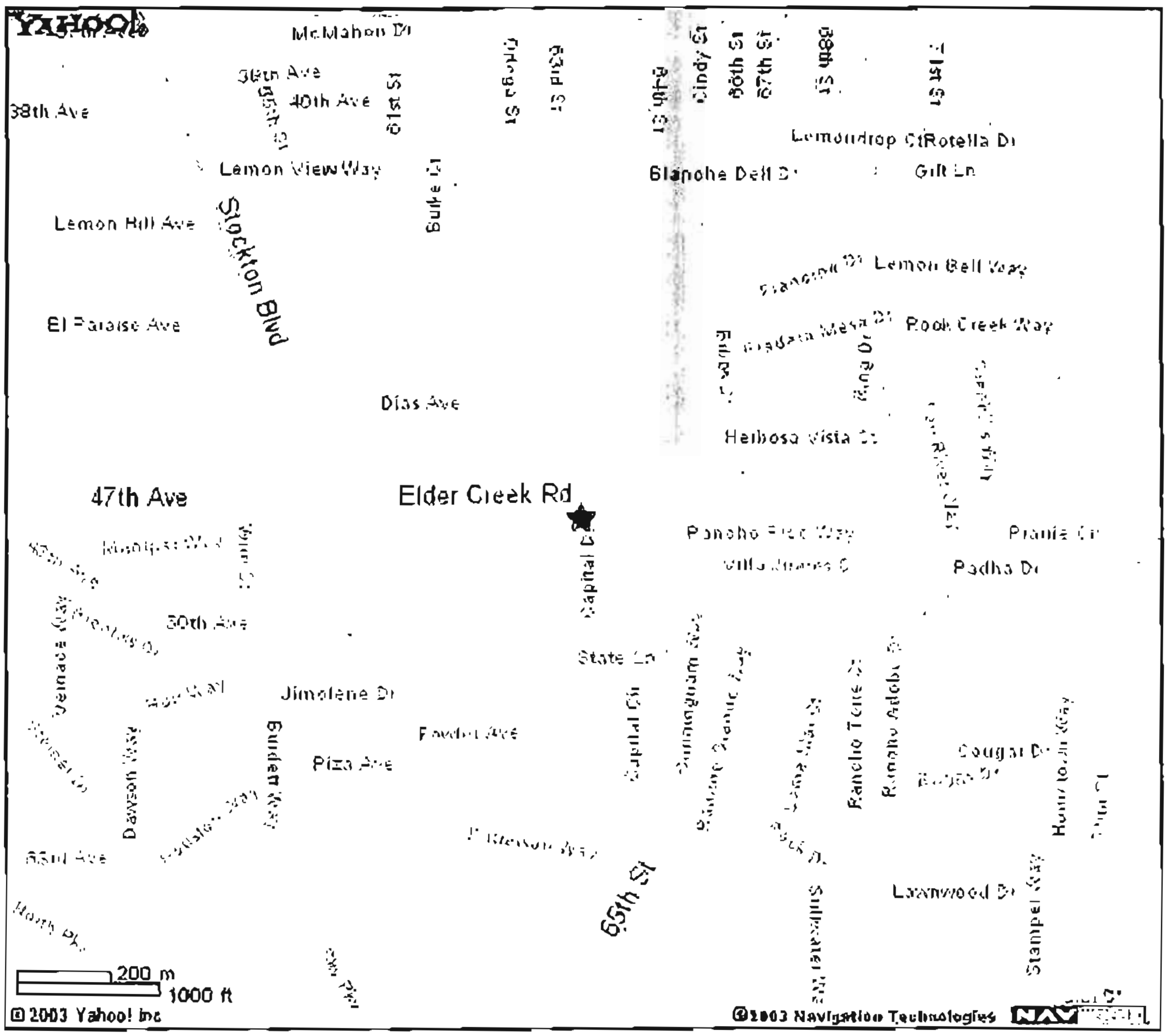
The Warings Dump is located at 63rd and Morrison Creek in Sacramento California. The properties are further identified by County of Sacramento Assessor's Parcel Numbers (APNs) 38-182-5, 38-182-6, 38-182-7 and 38-202-1.

The original Warings dump site was excavated as a borrow pit for used in the late 1930's as construction materials for highway 99. According to records, the pit was excavated to a depth of approximately 50 feet and covering approximately three acres. The site is bordered on the northern side by Morrison Creek. The flow to Morrison Creek increased upon completion of 2 sewage disposal plants that channeled into Morrison creek. The seepage from Morrison Creek filled the excavation pit with 20-30ft of water, which caused a hazardous condition. A request from Mr. Waring to fill this pit was granted; the fill materials were to be rubbish and construction waste. Many complaints were received from the residents, regarding burning of the waste, which indicates that this site may be a burn dump. There was no permit issued to Mr. Waring and he was told by the city to close the pit because it was filled. In the middle to late sixties, as part of a bond measure called "The Drainage Bond Project", Morrison Creek was channelized making it wider and deeper as part of a county-wide flood control project. The City of Sacramento now owns the easements and the adjacent property that includes the channelized creek.

During the middle to late 1980's Under the Calderone act, Solid Waste assessment Tests (SWAT) were completed on many of the old dumps in the surrounding area. Warings dump was included in these evaluations. The owners were instructed to provide Solid Waste Assessment Questionnaires on their perspective parcels and provide any historical information they may possess. One of the Owners hired a consultant by the name of Koelzer Engineering Services to conduct a site assessment called, "Calderon Gas Monitoring Report". The report addressed the potential gas issues by installing two 7 ft. gas probes and a gas stream characterization well and conducting a one-time sampling event.

In 1990 a complaint was received by the Sacramento County Environmental health regarding an abandoned well underneath the complainants house. The complainant found a 6 inch-wide well casing unrelated to the Landfill. Allegations of Methane emitting from the old well was never substantiated. The well was monitored for methane and radiation and none was found. The well was sealed under permit and the house became unoccupied. The site is covered with weeds and illegally dumped materials as well as some metals.

Site Location



1.2 Project Background

The Remediation, Closure and Technical Services (RCTS) Branch, was requested by the County of Sacramento's Environmental Health Agency to perform a Phase 1 and II site investigation to determine appropriate remedial measures necessary to protect public health and safety and the environment, and quantify requirements to bring site conditions into compliance with state minimum standards.

1.3 Project Purpose

To quantify disposal site conditions and to determine compliance of the site with State minimum standards for gas, cover, drainage, erosion control and site security.

The objective of this investigation is to determine the vertical and horizontal extent of the waste and identify waste characteristics. A tracked excavator will be utilized to excavate through the waste to native soil at specified locations (see sampling location map). During trenching activities of specified locations, waste/soil samples will be taken to conduct an analysis to determine possible contamination. After samples have been taken, the trenches will be back filled until results have been analyzed. A drill rig will be mobilized to drill two to three borings in the center of the fill to assess the depth of the pit and to install one dual depth 40-50 ft gas probe. Based on the results of the analysis, further actions will be determined as needed.

1.4 Responsible Agency

The CIWMB will be responsible for preparing the site investigation and sampling plan, coordinating investigation objectives with the County of Sacramento's Department of Environmental Health and coordinating the field investigation and sampling activities with CIWMB contractors. CIWMB staff will oversee field investigation activities, preparation and coordination of the site investigation and sampling and analysis final report and providing the report to the County of Sacramento's Department of Environmental Health for further action. CIWMB will also place both the sampling report and site investigation report in Board Files and update the site's Solid Waste Information System (SWIS) database.

1.5 Project Organization

The intrusive investigation and work plan will be prepared and conducted by CIWMB's CIA Section Staff. The CIA Section Senior Engineer, Mr. Glenn K. Young, P.E. will oversee preparation of the work plan and the intrusive investigation (which includes a sampling and analysis plan), soil sampling and analysis activities and preparation of the draft and final intrusive investigation report. The CIWMB's Health and Safety Section will be responsible for preparing a site specific health and safety plan and monitor onsite health and safety issues. As lead on the project Mr. Young may be reached at The California Integrated Management Board 1001 "I" Street, P.O. Box 4025, CA 95812-4025 or by calling (916) 341-6696, FAX: (916) 319-7528. CIWMB's contractor, Ninyo & Moore will assume responsibility of subcontracting to provide a tracked excavator and a 40 hour hazwoper trained operator to trench specified areas as indicated In the work plan and a water truck for dust suppression. CIWMB staff will perform sampling packaging, labeling, and shipping to the CIWMB contracted laboratory. The sampling containers and laboratory analysis for the soil samples will be through CIWMB Contract IWM-C9037 with ExcelChem Environmental Laboratories, Inc. in Roseville, CA.

1.6 Previous Investigations

A Solid Waste Assessment Test (SWAT) investigation report was conducted May 19 and 20, 1987 by Koelzer Engineering Services. As required by the Calderon Act and the Sacramento County Air Pollution Control District. The investigation was limited in scope and provided an approximation of the lateral extent of the waste footprint. Two perimeter gas probes were installed to approx 7 feet in depth and 1 well in the center of the fill, also at 7 feet. A one time sampling event took place and the samples were taken to Eureka Laboratories Inc. for analysis. The samples were tested for fixed gasses and Volatile organics ARB Method ADDL002. Insignificant levels of Methane at 15ppm and low levels of Dichloromethane and Perchloroethylene were detected raising no significant threat.

Prior to this investigation was the channelization of Morrison Creek in the mid to late sixties by the City of Sacramento Flood Control District. Maps and aerials show the possibility that a portion of the landfill was excavated in order to proceed with the project. However, no mention of the fill encountered was on any of the proposed drawings nor specs of the project.

2. Project Objective

2.1 Data Collection

The objective of this portion of the investigation is to determine the horizontal and vertical extents of the waste, and to determine if gas generation is occurring. In order to provide an accurate map of the limits of the landfill, an excavator and a drill rig will be utilized to excavate through the cover and waste into native soil at specified locations (see Sample Location Map). After the extents have been determined, the trenches will be backfilled, making sure to, as much as possible, cover all wastes that were unearthed. The drilling will not take place until the trenching activities have been completed after which several exploratory borings with two probes will be completed to access the need for further gas investigation at a later date. The trench data will assist in the determination of compliance with State Minimum Standards for gas control, adequacy of cover material, drainage, erosion control, and site security. In addition, the data collected will allow the CIWMB to determine the footprint of the waste pit boundary.

CIWMB staff will be responsible for preparing the trenching plan and coordinating investigation objectives with the Sacramento County LEA, and CIWMB's environmental consultant, Ninyo & Moore. CIWMB staff will prepare and coordinate the site investigation, oversee field investigation activities, and prepare the final site investigation report. Copies of the draft site investigation report will be provided to Sacramento County LEA for review and comments. All parties will receive copies of the final site investigation report. CIWMB staff will also place both the site investigation work plan and final report in CIWMB files and update the Solid Waste Information System (SWIS) database.

2.2 Project Organization

The project will be coordinated and managed by the CIWMB project manager, Ms. Dawn Owen. The CIWMB's Health and Safety Section will coordinate on-site Health and Safety under the direction of Dawn Owen. As lead on the project, Ms. Owen may be reached at the California Integrated Waste Management Board, 1001 "I" Street, P.O. Box 4025, Sacramento, CA 95812 or by calling (916) 341-6723.

The CIWMB's CIA Section Environmental Services Consultant, Ninyo and Moore will notify Underground Service Alert (USA) of the investigation and subcontract for an excavator, drill rig and 40-hour Hazardous Waste Operations (HAZWOPER) trained operator and provide a field geologist to direct excavating. CIWMB's geologist will be responsible for; documenting trench activities, soil classification and trench logging; and to provide final trench logs location map, trench log figures and cross section maps.

The CIWMB's CIA Section and the Environmental Services Consultant, Ninyo and Moore reserve the right to relocate trenches based on site conditions.
An excavator and a drill rig will be used to determine: 1) the horizontal and vertical (if

refusal is not an issue) extent of the waste, 2) the need for further gas exploration, 3) the physical and chemical characteristics of the waste for comparison to regulatory thresholds. Sampling will be conducted under the California Code of Regulations, Title 22, section 66261.10 et seq. for characterizing hazardous waste. The CIWMB will use regulatory limits established from the California Department of Toxic and Substance Control and federal levels for evaluating the soil/ash. Detailed analytical procedures are specified in section 3.9 of this plan.

Since a portion of the fill may need to be disposed of to a municipal solid waste landfill under clean-closure or waste reconfiguration remedial alternatives, it will be necessary to determine if the soil is considered hazardous for the purpose of handling and disposition. The data from these procedures will be used to identify contaminate concentrations in surface and subsurface soils.

Representative samples will be collected during and/or following completion of excavating activities and submitted for analytical testing. The samples will be collected directly into the Teflon™-lined, clean, laboratory-supplied glass jars by directly coring the jar into the relatively intact soil masses brought to the surface by the excavator bucket. Sample depths and locations will be based on visual observations of subsurface materials. If the wastes in the trench excavations are observed to be debris or municipal solid wastes not conducive to sampling and analytical testing, then soil samples will be collected from layers (if present) within these wastes and/or a soil sample will be collected directly underlying these wastes. Burned material, if encountered will be sampled. After the exploratory probes are installed, they will be sampled for methane concentrations. Sampling will be performed by CIWMB field personnel. Following completion of trench-related activities, the excavated materials will be placed back into the trench in approximately the reverse order that they were removed.

2.3 Project Tasks

During the investigation of Warings dump, a sampling location reference grid will be established and tied to an established benchmark at the site. Relocation of planned sampling locations may be performed and the location referenced to the reference grid. Sampling at a location will entail use of the excavator, which will trench down to native soil beneath the old fill.

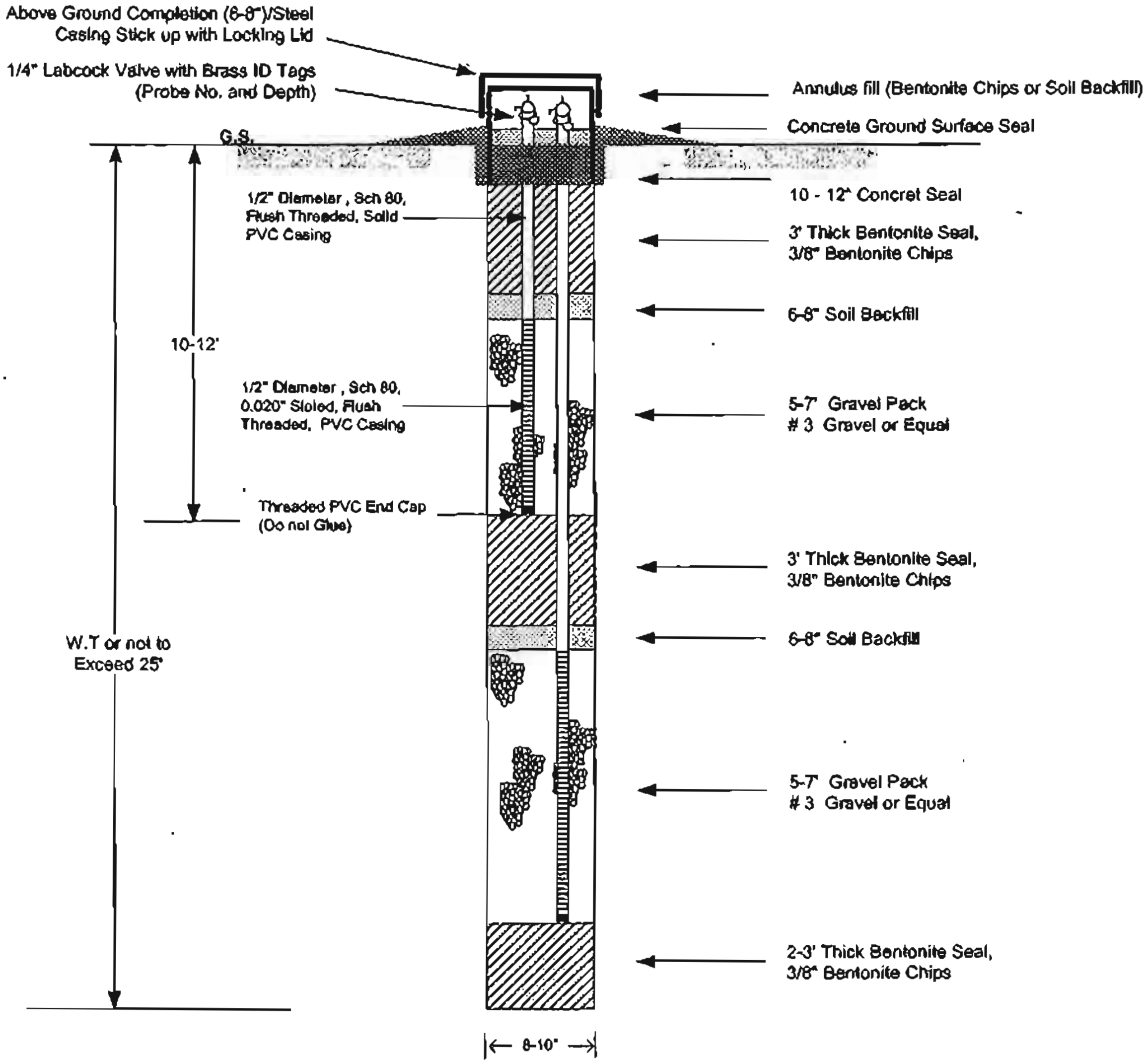
Under the authoritative sampling protocol, the CIWMB field engineer may change individual sampling locations based on site-specific field conditions (including unforeseen obstructions, visible signs of contaminated soils or other factors). CIWMB anticipates that approximately 20-25 sampling locations will be required to adequately define the horizontal and vertical extent of the waste (see sampling location map). Soil and gas samples will be screened using a GMI 422 Gas Surveyor instrument. Soil samples will also screened for radioactivity using portable radiation detection equipment and then sent to a State of California certified hazardous waste laboratory for analysis. The trench created by the backhoe will be screened using a GMI 422 Gas Surveyor instrument capable of measuring concentrations of methane, hydrogen sulfide, carbon dioxide, oxygen and carbon monoxide. The trenches will be back-filled with native soil.

After the lateral limits have been determined, a drill rig will be used to determine the vertical extent of the fill by boring through the waste to the native bottom estimated to be between 40 and 50 feet. Several of these borings may be necessary to determine the vertical extent. One exploratory gas probe will be installed in the center of the fill and one will be constructed off the fill area between residences and the landfill footprint.

Gas monitoring well probe will be constructed of flush-jointed, threaded, 1/2-inch inside-diameter (I.D), schedule 80 PVC. Well screens will be constructed of machine slotted (0.020-inch), 1/2-inch I.D., schedule 80 PVC pipe. The proposed well screen intervals for the gas monitoring wells are shown on Figure 4. Upon installation of the well screens, the filter pack consisting of 3/8-inch gravel or equivalent will be placed in the annulus between the well casing and the boring wall to just above the top of the screened interval. After the filter pack is placed, a 5-foot thick seal will be placed in the annulus above the filter pack. This well seal from bottom to top will generally consist of a relatively thin soil layer, (cobble-free and obtained from the borehole), overlain by a granular bentonite seal, overlain by a bentonite chip seal, and overlain by another relatively thin soil layer. The bentonite seals will be saturated and allowed to hydrate. The filter pack and depth of the seals will be measured to monitor the depth and to locate assure that bridging between the well casing and the boring wall does not occur. Each gas probe will be completed with a 1/4-inch brass labcock and brass ID tags.

During drilling, extruded soils will be observed and classified in accordance with the Unified Soil Classification system (USCS) in general accordance with ASTM D 2499-93, recorded on the boring logs, photographed, and bagged for reference. Soil classification will be indicated on the boring logs. Drill cuttings accumulated from the probe outside of the waste in native soils will be left on site. Drill cuttings from the borings and exploratory probe in the waste will be screened using a PID and a Gem 2000, then reserved onsite until analytical testing results are received. After these results are received, the appropriate action for disposal will commence.

Typical Landfill Gas Probe Design
Dual Completion



TYPICAL LFG MONITORING WELL CONTRUCTION

63rd St At Elder Creek Rd
Sacramento, CA 95828

Note:

1. 1/2" Diameter pipe is preferred, if available.
2. Above Ground Completion required.
3. Not to Scale

California Integrated Waste Management Board 1001 I Street - Sacramento, CA 95814	
Date 1/22/04	Gas Monitoring Well Construction Warings Dump Sacramento, CA
Prepared By: AMC	

2.4 Expected Data

Chemical constituent concentration data obtained during this investigation will be evaluated to determine if additional sampling is necessary. Additional sampling may be performed if it is found that specific constituent levels exceed hazardous levels specified in 22 CCR, e.g. STLC for Lead is much greater than 5 mg/l. Based on information known about the site the following is expected:

1. Residual concentrations of heavy metals from the burning of solid waste (<1000 mg/kg) and other deposited chemical constituents. Metals detected most likely include lead, copper, nickel, zinc and chrome. Iron and aluminum also may be present.
2. Low-level Radioactive material may be present.
3. Waste throughout the site is day lighting from the surface of the disposal site at varied elevations.
4. Waste thickness may extend to 50 feet.

3.0 Sampling Plan

This sampling plan is intended to document the procedural and analytical requirements for this and any subsequent sampling events performed to collect soil and waste samples and to characterize areas of potential contamination from the Warings Dump. This plan was compiled after reviewing the US Environmental Protection Agency's, Region 9, guidance document "Instructions for the One-time Sampling Event Sampling and Analysis Plan" dated March 1998.

3.1 Sampling Methodology

Discrete sampling will be used to assess the fill area and surrounding soils. The sampling will be conducted by using an excavator to sample locations shown on the sampling grid (see sampling map). Authoritative protocol may be used to allow the investigator the flexibility to move sampling locations, as necessary, to accommodate unforeseen field conditions. The following outline describes the proposed sampling:

The excavator will dig trenches at pre-designated locations, digging down through the waste until native soil is encountered. (Could exceed the arm length of the excavator if the fill is deeper than 24 feet.). Representative samples will be collected during and/or following completion of excavating activities and submitted for analytical testing. Burn ash (if present) and soil samples will be collected using a hand trowel and glass jars. An estimated total of 50 samples will be collected from the spoils of the trenches. From each individual trench 2 samples will be collected: 1 as a discrete and 1 to be combined as a composite with other trench locations. Two samples will be taken off-site to be used as a background sample. The samples will be collected into the glass jars by directly coring the jar into the relatively intact soil masses brought to the surface. Sample depths and locations will be based on visual observations of subsurface materials. If the wastes in the trench excavations are observed to be debris or municipal solid wastes not conducive to sampling and analytical testing, then soil samples will be collected from layers (if present) within these wastes and/or a soil sample will be collected directly underlying these wastes. Burned material, if encountered will be sampled. Areas will be defined for composite samples for more extensive analysis.

Each soil sample will be classified and logged by the CIWMB staff. Samples collected into glass jars will be capped. Once capped, the samples will be sealed, labeled and logged and packaged for shipping back to CIWMB laboratory contractor, ExcelChem.

Gas samples will be taken using a pump into two one-liter tedlar bags. Gas sampling will take place if an exploratory probe reads levels of methane above 1% BV, or if while screening a trench, methane above 1% BV is also detected. The cuttings from the exploratory probe will be sampled and sent to the lab under the same protocol listed during trenching sampling events. The material will be stored until results are returned then appropriate measure of disposal will commence.

Reusable sampling equipment will be decontaminated between each sampling event by the CIWMB consultant or their subcontractor. Decontamination will follow the procedures outlined in Section 3.5 of this sampling plan. Personnel who collect samples will be required to change their gloves between each sampling event.

3.2 Sampling Equipment

The following equipment will be necessary to perform the sampling:

- Excavator, Drill rig
- Dosimeter
- GMI 422 Gas Surveyor Instrument
- Ludlum Survey Meter with 44-2 Scintlator and 44-9 Detector
- 16 and 8 oz glass jars and caps, 1 liter tedlar bags
- Chain of custody forms and custody seals Hand Trowels
- Field log book
- Survey laths
- First aid kit and eye wash
- Mailing labels and markers
- Cooler and ice or blue ice
- Packing and duct tape
- Decontamination equipment (2 ½ -gallon sprayer, non-phosphate detergent, disposable brush, paper towels, cotton towels, polyethylene sheeting)

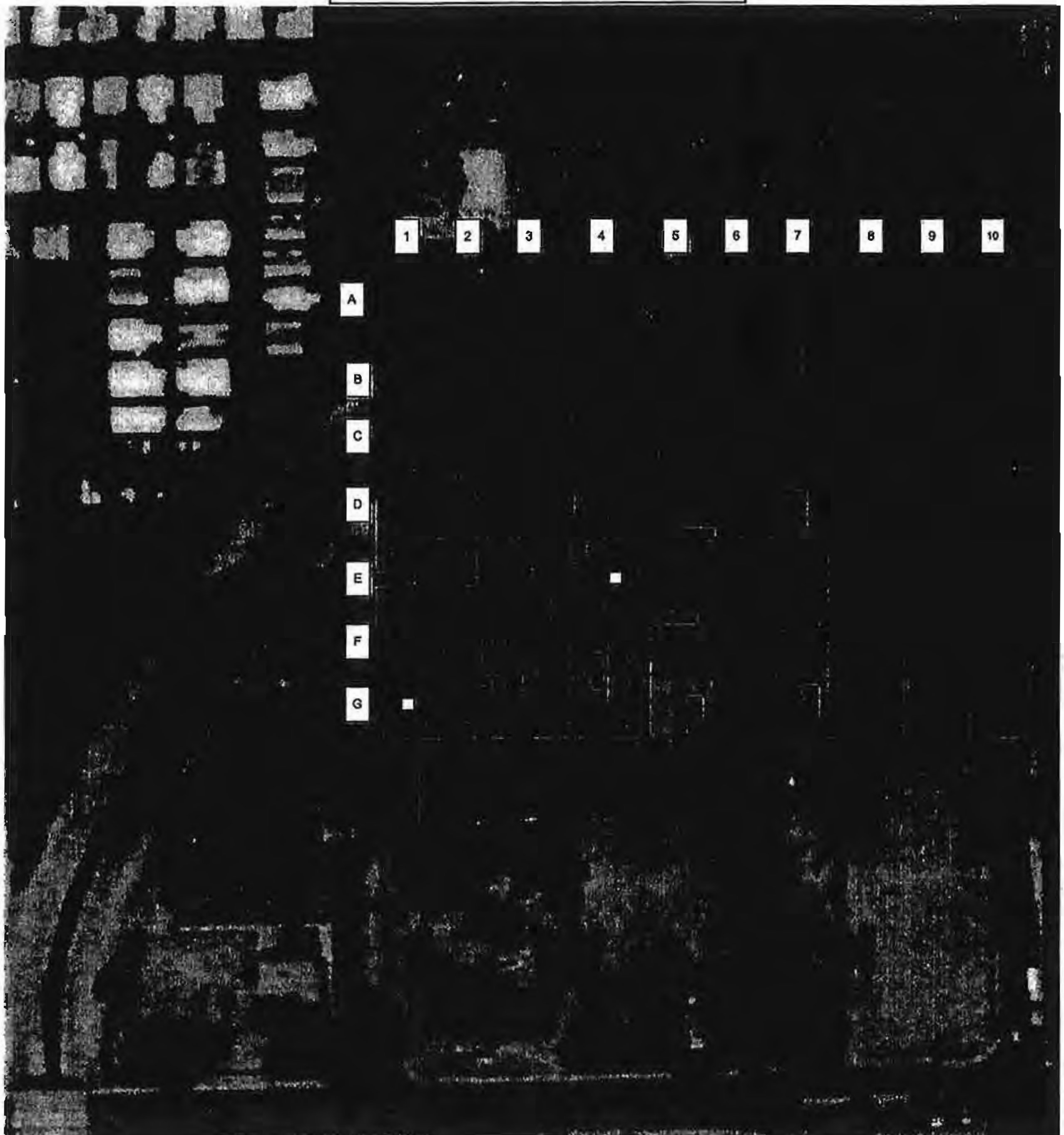
3.3 Sampling Procedures

Burn-ash (if present) and soil samples will be collected using an excavator to dig the trench and a hand trowel to collect the samples. At each sample location, 2 soil samples will be collected from the trench spoils using a hand trowel and glass jars. The glass sampling jars are in two sizes 16oz and 9oz. The 16 oz jar will be used for the composite sample and the 9oz jar will be used for the discrete sample. Subsurface waste and soil samples will be collected by visually identifying debris and manually inserting the soil from the spoils piles into the jars and screwing the cap on the jar tightly. Upon completion of sampling at a location the trench will be screened using a GMI 422 Gas Surveyor measurement taken for CH_4, CO_2, H_2S, CO and O_2, a Ludlum Survey Meter with 44-2 Scintlator and 44-9 Detector. The hole will then be filled with trench spoils and compacted with a compacting wheel.

Gas samples will be taken using a pump into two one-liter tedlar bags. Gas sampling will take place if an exploratory probe reads levels of methane above 1% BV, or if while screening a trench, methane above 1% BV is also detected.

After each sample is collected it will be placed in a laboratory-supplied container, labeled, logged on the chain-of-custody document, screened for radioactivity, sealed, and stored in an ice chest that is cooled to 4 degrees Fahrenheit. The coolers will be picked up via currier by Excell Chem Laboratory after completion of each day of the investigation.

Investigation site map
Warings Dump



Trenches

Boring/Probe location

Composite sample locations

Composite #1: A4, C3, B5, B7, C4
Composite #2: D2, E1, E2, F2, G2
Composite #3: D3, E4, F3, F4
Composite #4: D5, D7, F5, F7, G5, G7

Warings Dump SWIS# 34-CR-5017
63rd and Morrison Creek, Sacramento CA

Notes:
Grid dimentions are 1"x 1"
1" = 100yds
Lined boxes are composite areas for soil sampling

3.4 Sample Locations

Although sampling locations are proposed in the sampling grid, exact sampling locations will be determined in the field based on accessibility, the presence of unforeseen impedances or other factors. Final sample locations will be recorded in the field logbook and staked in the field when sampling is completed. The map will be provided in a final site investigation and sampling and analysis report.

Composite Locations

Composite 1: A4, C3, B5, B7, C4
Composite 2: D2, E1, E2, F2, G2
Composite 3: D3, E4, F3, F4
Composite 4: D5, D7, F5, F7, G5, G7

3.5 Decontamination Procedures

All equipment that comes into contact with potentially contaminated soil/burn ash will be decontaminated in a predesignated area. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment. All sampling devices used, including trowels and augers, will be decontaminated by CIWMB staff.

The following decontamination procedures for primary contaminant, inorganic (metals):

1. Non-phosphate detergent and tap-water (bottled water) wash, using a brush if necessary
   1. Tap-water rinse
   2. 0.1 N nitric acid rinse
   3. Deionized/distilled water rinse 2x

3.6 Sample Containers and Preservation

Pre-cleaned containers will be supplied by the laboratory and will not be rinsed prior to sample collection. No preservative will be added to the containers.

3.7 Disposal of Residual Materials

In the process of collecting environmental samples at the Brown's Fill Disposal site, the CIWMB sampling team will generate different types of potentially contaminated investigation-derived waste (IDW) that may include:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Decontamination fluids

The U.S. EPA's National Contingency Plan requires management of IDW generated during sampling comply with all applicable or relevant and appropriate requirements to the extent practicable. The IDW will contain minor residual amount of the soil/burn ash. These wastes are not considered hazardous and will be disposed of at a municipal landfill. Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster. Any PPE and disposable equipment that is to be disposed of which can still be used will be rendered inoperable before disposal. Decontamination fluids that will be generated during sampling will consist of nitric acid, deionized water, residual contaminants, and water with non-phosphate detergent. The volume and concentration of the decontamination fluid will be sufficiently low to allow disposal at the site or sampling area. This minimal volume of decontamination fluid will be disposed of to the sanitary sewer system.

If hazardous or radioactive material are found during sampling screening activities, appropriate level of notification and response procedures will be implemented in accordance with the Site Specific Health and Safety Plan.

3.8 Analytes of Concern

Analytes of concern at this site are residual heavy metals from burning solid waste and any unburned organic materials left in the soil matrix and hazardous construction and demolition debris such as asbestos, and other chemical constituents disposed of in the waste mass.

3.9 Analytical Procedures

An additional sample will be collected in a ziplock bag, allowed to volatize. Then the headspace will be tested using the GMI 422 Gas Surveyor. After field screening the sample containers will be capped, sealed and labeled (see packaging procedures), and sent to CIWMB's contract laboratory, ExcelChem, where composite samples will be analyzed for CAM 17 metals by the Total Test procedure, pH, reactivity, ignitability, TPH BTEX/Diesel (EPA Method 602/8020/8015m), organochlorine pesticides/PCBs (EPA Method 608/8080), organophosphorous compounds (EPA Method 8141), chlorinated herbicides (EPA Method 8151), Volatiles (EPA Method 8260) and (if TTLC is exceeded) WET (to determine if STLC is exceeded).

Discrete samples will be analyzed for California Assessment Manual (CAM) 5 metals by the Total Test procedure using EPA Method 6010/7000. Samples with the highest concentrations of lead will also be analyzed for CAM-5 metals using the Waste Extraction Test (WET) procedure (EPA Method 6010) to determine if Soluble Threshold Limit Concentration (STLC) limits are exceeded. If the WET results for any other metal not in the CAM-5 analysis exceed by 10 times the STLC regulatory level, a separate WET analysis for that metal will be performed. Selected burn ash samples (if present) will also be tested for semivolatiles (EPA method 8270C), Dioxins (EPA 8280A and PAHs (EPA 4035).

3.10 Anticipated Cost

Based on discussions with ExcelChem Analytical Laboratory the following sampling costs are presented:

	PARAMETER	UNIT COST	# SAMPLES	COST
6010	CAM 5 Metals	$45	25	$1125
6010/7417	CAM 17 Metals	$110	4	$440
22CCR WET	STLC (>10X)	$50	4	$200
608/8080	O-pest/PCBs	$80	4	$320
602/8020/8015m	TPH/BTEX/d	$70	4	$280
8270 full list	Semi-Volatiles	$300	4	$1200
8280A	Dioxins/Furans	$600	1	$600
8140	Organo-phosphorous compounds	$80	4	$320
8150	Chlorinated Herbicides	$180	4	$720
8260	Volatiles	$180	4	$720
ASTM D1946 TO15	Methane	$60 $140	4 4	$240 $560
			Total Amount	$6725

3.11 Field Quality Control

One field duplicate sample will be collected simultaneously with a standard sample from the same source under identical conditions into a separate sample container. The duplicated sample is treated independently of its counterpart in order to assess laboratory performance through comparison of the results.

The duplicate samples will be collected at a random location that demonstrates elevated levels of metals based on field screening results. Sufficient soil will be collected from the sample location to prepare a primary and duplicate sample from a single batch of soil. The soil sample will be homogenized with a trowel in a sample-dedicated one-gallon disposable pail or a decontaminated stainless steel mixing bowl, and then transferred to each sample container for both regular and duplicate sample analyses.

3.12 Laboratory Quality Control

The analytical laboratory will perform Quality Control (QC). The QC will include project specific QC, method blank results, laboratory control spike, and matrix spike results.

1. Project Specific QC – No project specific QC has been requested by the CIWMB

2. Method Blank Results – A method blank is a laboratory-generated sample that assesses the degree to which laboratory operations and procedures cause false-positive analytical results for the CIWMB samples. The method blank results associated with the samples will be included with the analytical results.

3. Laboratory Control Spike – A Laboratory Control Spike (LCS) is a sample that is spiked with known analyte concentrations, and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The LCS results associate with CIWMB samples will be attached on the LCS and LCS Duplicated Analysis Report.

4. Matrix Spike Results – A matrix spike is a sample that is spiked with known analyte concentrations and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The matrix spike results associated with CIWMB samples will be attached on the Matrix Spike and Matrix Spike Duplicate Analysis Report.

5. Accuracy – Accuracy will be measured by percent recovery as defined by:

$$\% \text{ Recovery} = \frac{(\text{measured concentration}) \times 100}{(\text{Actual concentration})}$$

4. Documenting and Reporting

4.1 Field Notes

A field logbook will be used to document the vital project and sample information. At a minimum, the following sample information will be recorded:

- Sample location and description
- Site or sample area sketch showing sample location and measured distances
- Sampler's name(s)
- Date and time of sample collection
- Designation of sample as composite or grab
- Type of sample (soil, sediment or water)
- Type of sampling equipment used
- Field instrument reading, if applicable
- Field observations and details related to analysis or integrity of samples (e.g., weather conditions, noticeable odors, colors, etc.)
- Preliminary sample descriptions
- Sample preservation
- Sample identification numbers and explanatory code
- Name of recipient laboratory

In addition to the sampling information, the following specific information will also be recorded in the logbook:

- Team members and their responsibilities
- Time of arrival and departure
- Deviations from the sampling plan
- Level of health and safety protection

4.2 Photographs

Photographs will be taken at the sampling location and at surrounding areas. The photos will verify information entered in the field logbook. Each photo taken will be written in the logbook with the approximate time, date, and location.

4.3 Labeling

All samples collected will be labeled in a clear and precise way for proper identification for tracking in the laboratory. Each sample will reference the sample date, the type of sample (S – surface; B – subsurface), and the sample point identification as shown on the pin flag.

4.4 Chain-of-Custody

A chain-of-custody record will accompany all sample shipments. Shipped samples will have a custody seal placed across the lid of each sample container. All custody seals will be signed and dated.

4.5 Packaging and Shipment

All sample containers will be placed in a strong-outside shipping container and will have the drain plug sealed, if applicable, to prevent melted ice from leaking out of the cooler. If ice is used to cool the samples, the ice will be packed in a double zip-lock bag. Special care will be provided to secure and prevent damage to the sample containers.

4.6 Reporting

Once the analytical results are received and evaluated, CIWMB will prepare a sampling report describing the nature of the waste and discuss the analytical results. The CIWMB anticipates submitting the sampling report to the LEA within 60 days after receipt of the analytical results.

Appendix C Field Notes and Trench Logs

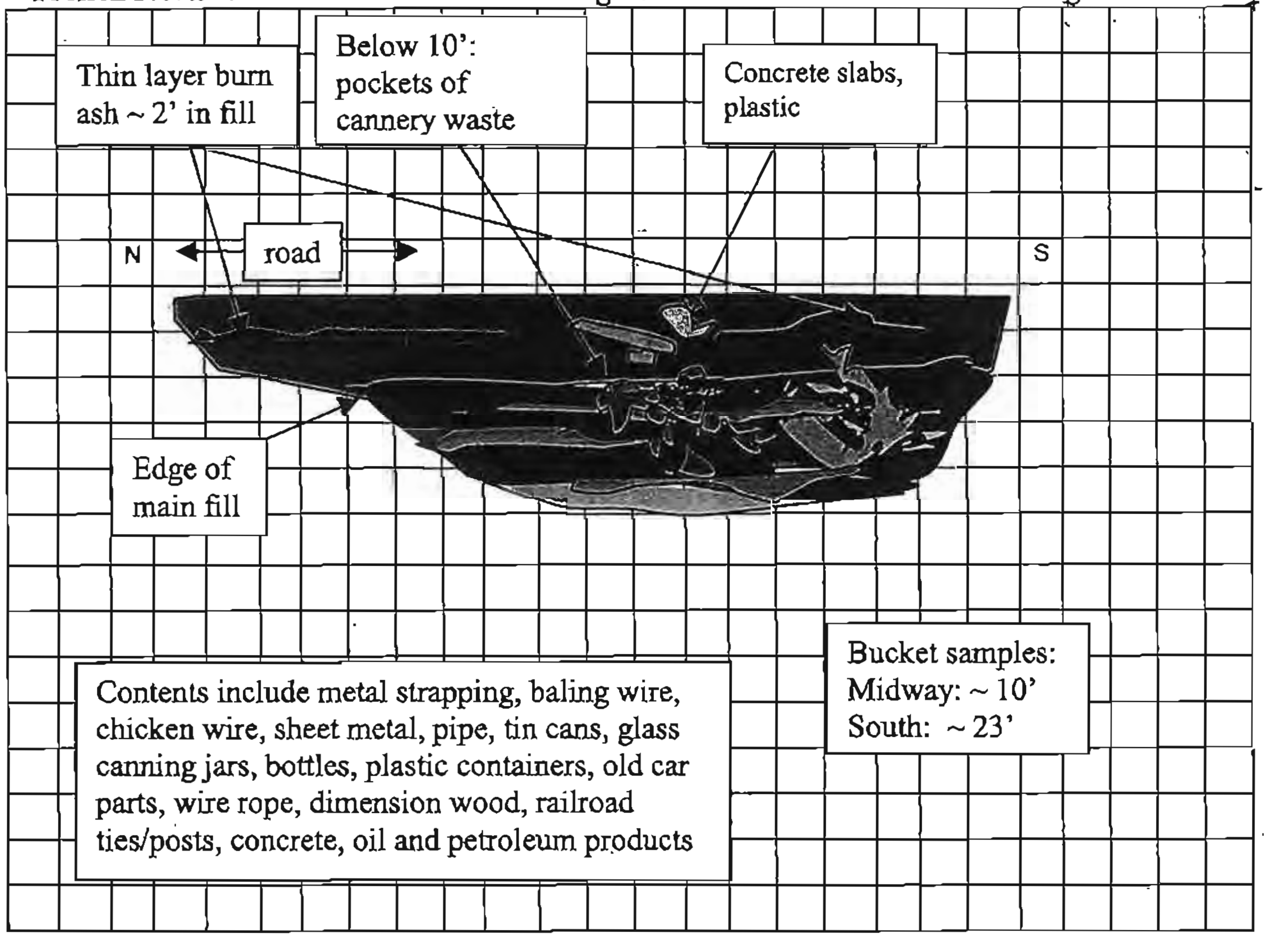
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 1135
Weather: 85°, light NW wind
Scale: H: ¼" = 2' V: ¼" = 4'

Trench No. B-4 Looking NE Bearing: N30W



Field Notes

N-S (NW-SE): 33' L, 6'-24' D
(North end cuts 5' dirt road)

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 20:1; @ 10' main ~ 1:8; submerged, fluid to soil and solids ~ 3:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

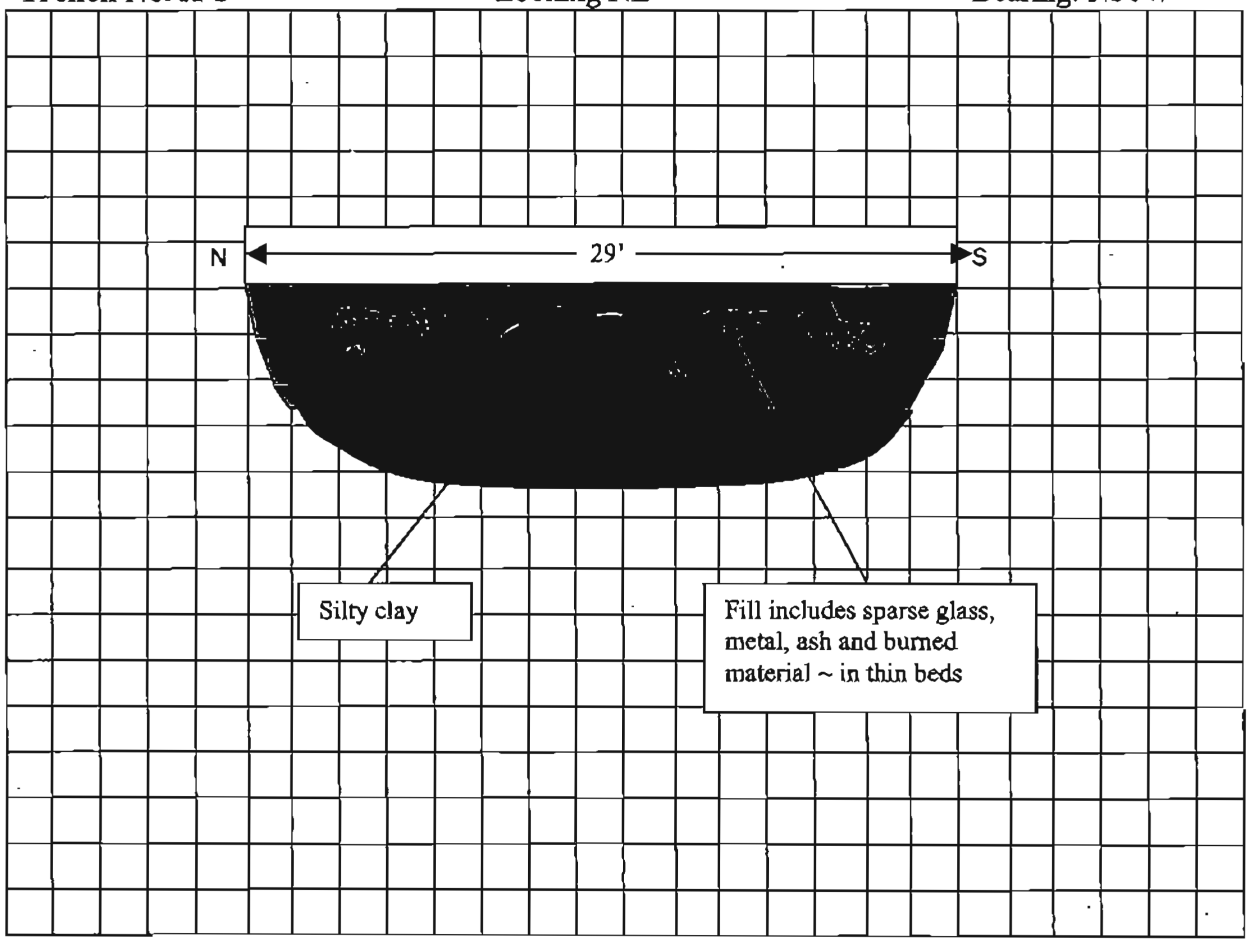
California Integrated Waste Management Board

CIA Site Trench Log
Waring's Fill Project

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 0955
Weather: clear, light NW wind
Scale: ¼" = 2'

Trench No. A-5 Looking NE Bearing: N30W



Field Notes

N-S: 29' L (long) x 9 D (Deep)

Native soil: Thick-bedded dry, brown clayey silt 4' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally contains pockets and thin layers of rubble and waste material.

C&D: Sparse concrete, trace asphalt

MSW: Sparse glass, ash and burn material

Clay: As above in soil

Fill to C&D/MSW = 20:1

Radiation: Bkgrd

Landfill gas (CH_4): Nil

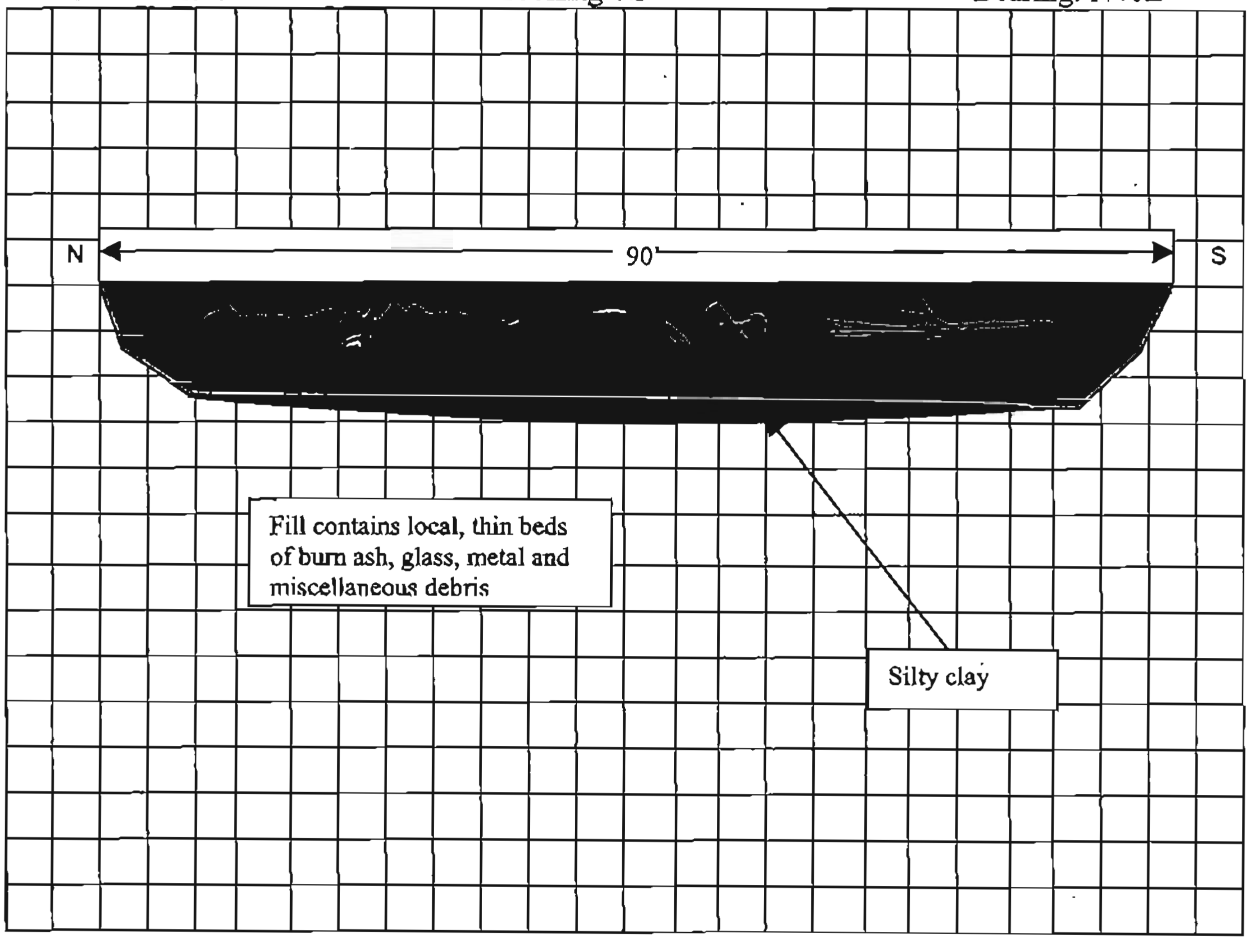
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1030
Weather: clear, light NW wind
Scale: ¼" = 4'

Trench No. A-7 Looking SE Bearing: N40E



Field Notes

NW-SE: 90' L x 5' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally layered, mixed with waste

C&D: Trace concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface

Clay: As above in soil

Fill to C&D/MSW = 20:1

Radiation: Bkgrd

Landfill gas (CH_4): NIL

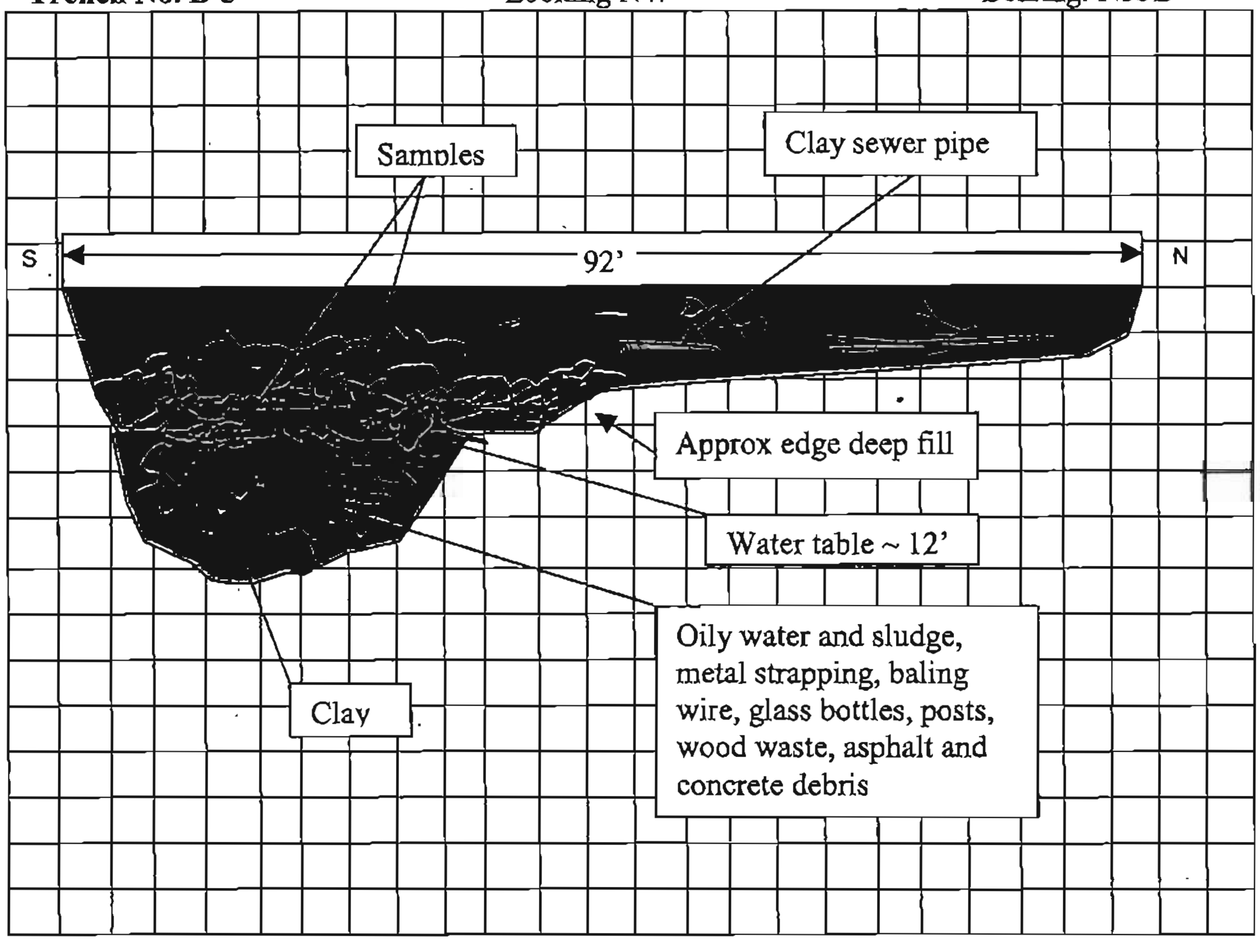
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1030
Weather: clear, light NW wind
Scale: ¼" = 4'

Trench No. B-5 Looking NW Bearing: N55E



Field Notes

SW-NE: 92' L, 25'-3' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 20:1; @ 10' main ~ 1:8; submerged, Fluid to Solids ~ 6:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

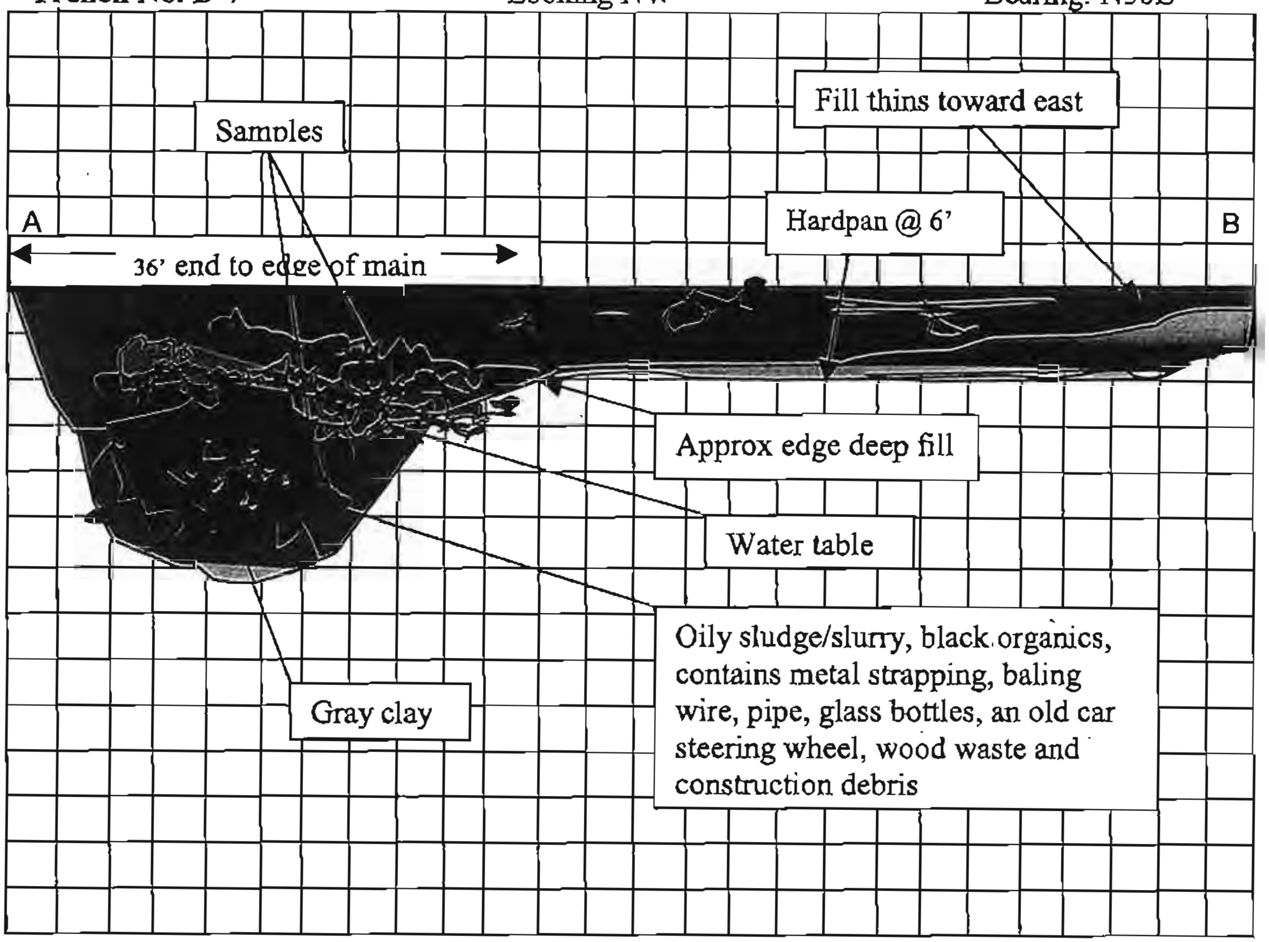
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1205
Weather: 75°, light NW wind
Scale: ¼" = 4'

Trench No. D-7 Looking NW Bearing: N50E



Field Notes

A-B (SW-NE): 108' L, 25'-3' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 20:1; @ 10' main ~ 1:8; submerged, Fluid to Solids ~ 6:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

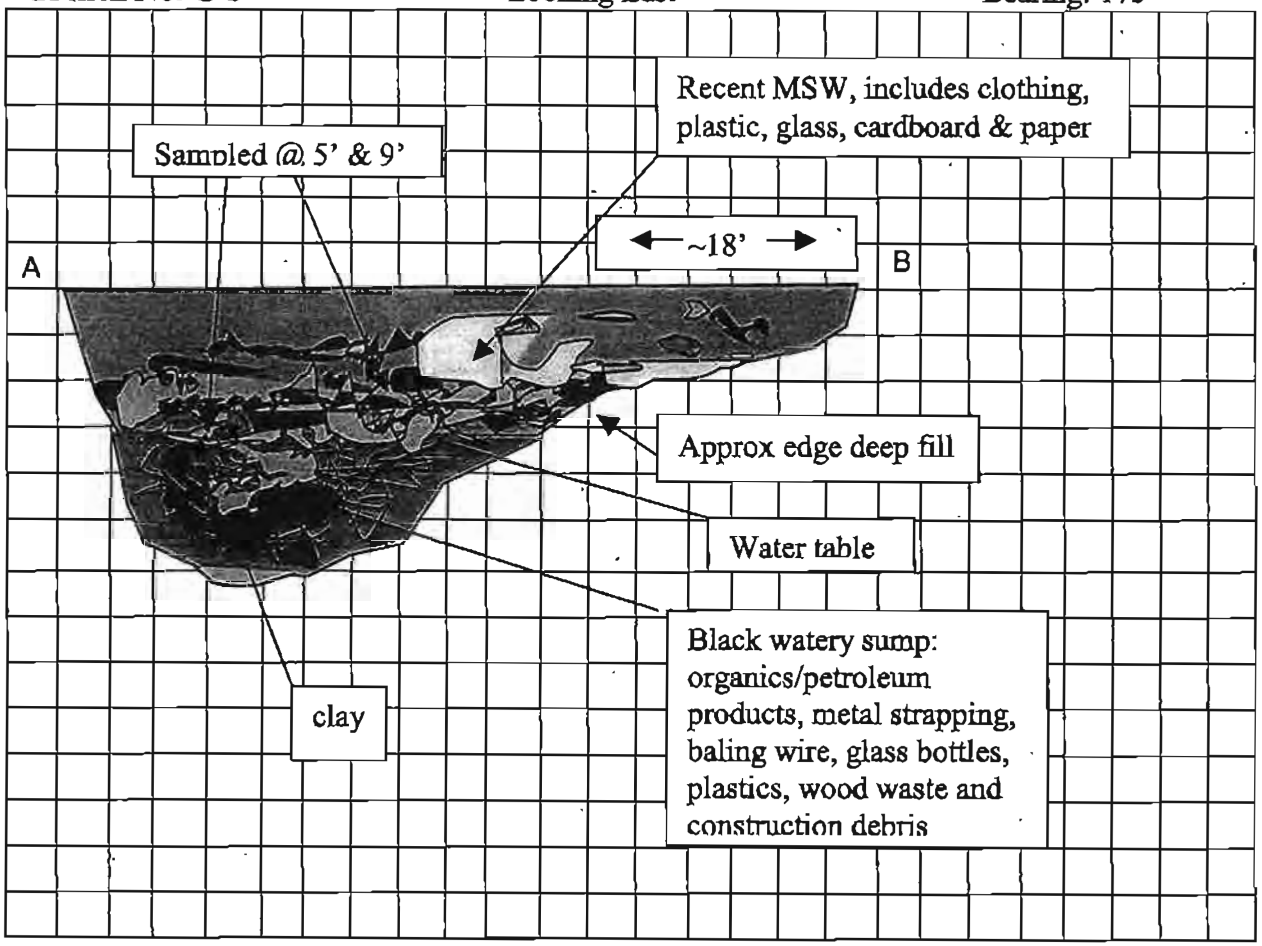
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1500
Weather: light NW wind, 80°
Scale: ¼" = 4'

Trench No. G-5 Looking East Bearing: 175°



Field Notes

A-B (N-S): 65' L, 25'-2.5' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 3:8; @ 10' main ~ 5:8; submerged, Fluid to Solids ~ 5:8

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

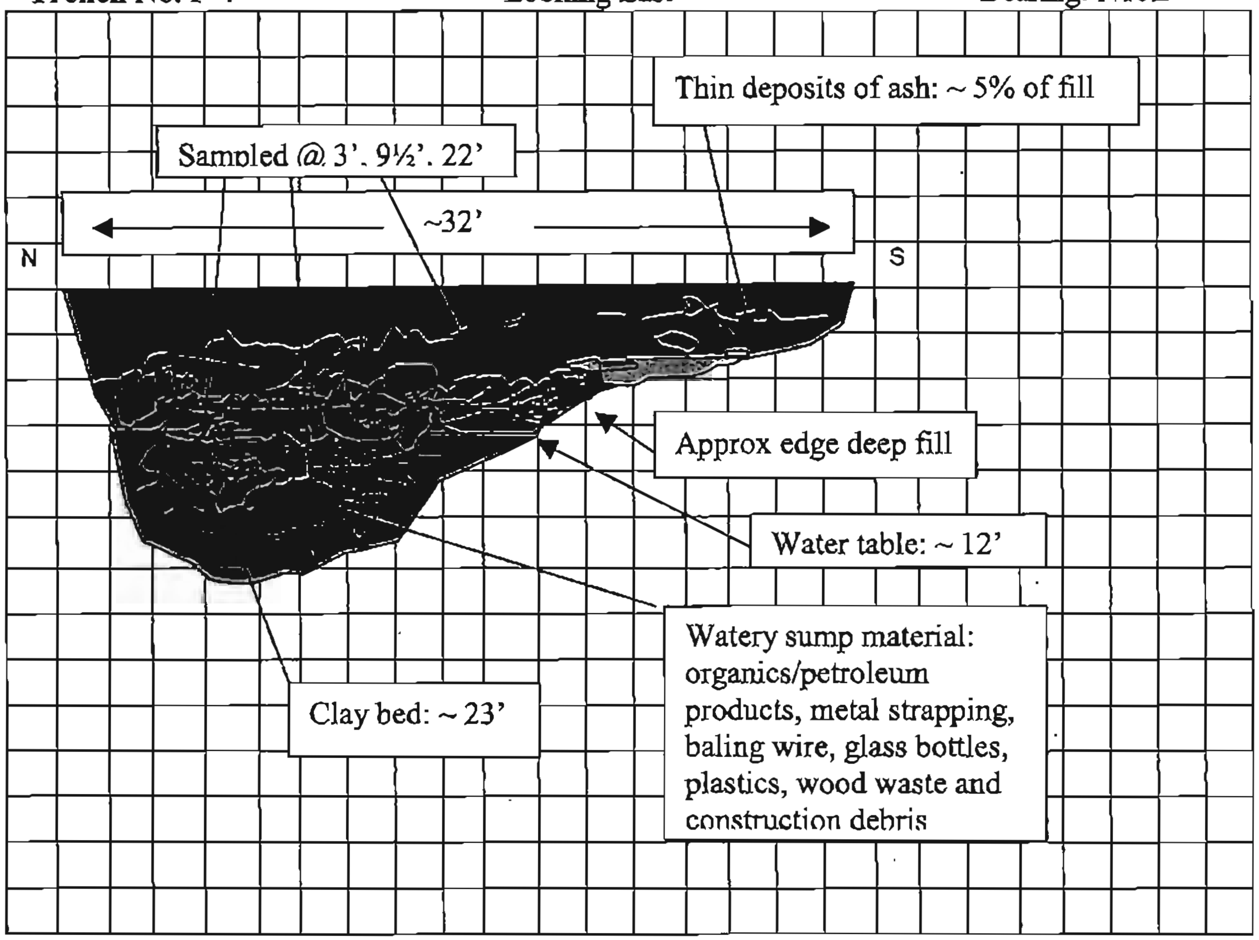
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1530
Weather: gusty NW wind, 80°
Scale: H: ¼" = 2' V: ¼" = 4'

Trench No. F-4 Looking East Bearing: N15E



Field Notes

N-S: 32' L, 23'-2½' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, contains ash, sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 3:8; @ 10' main ~ 5:8; submerged, Fluid to Solids ~ 5:8

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

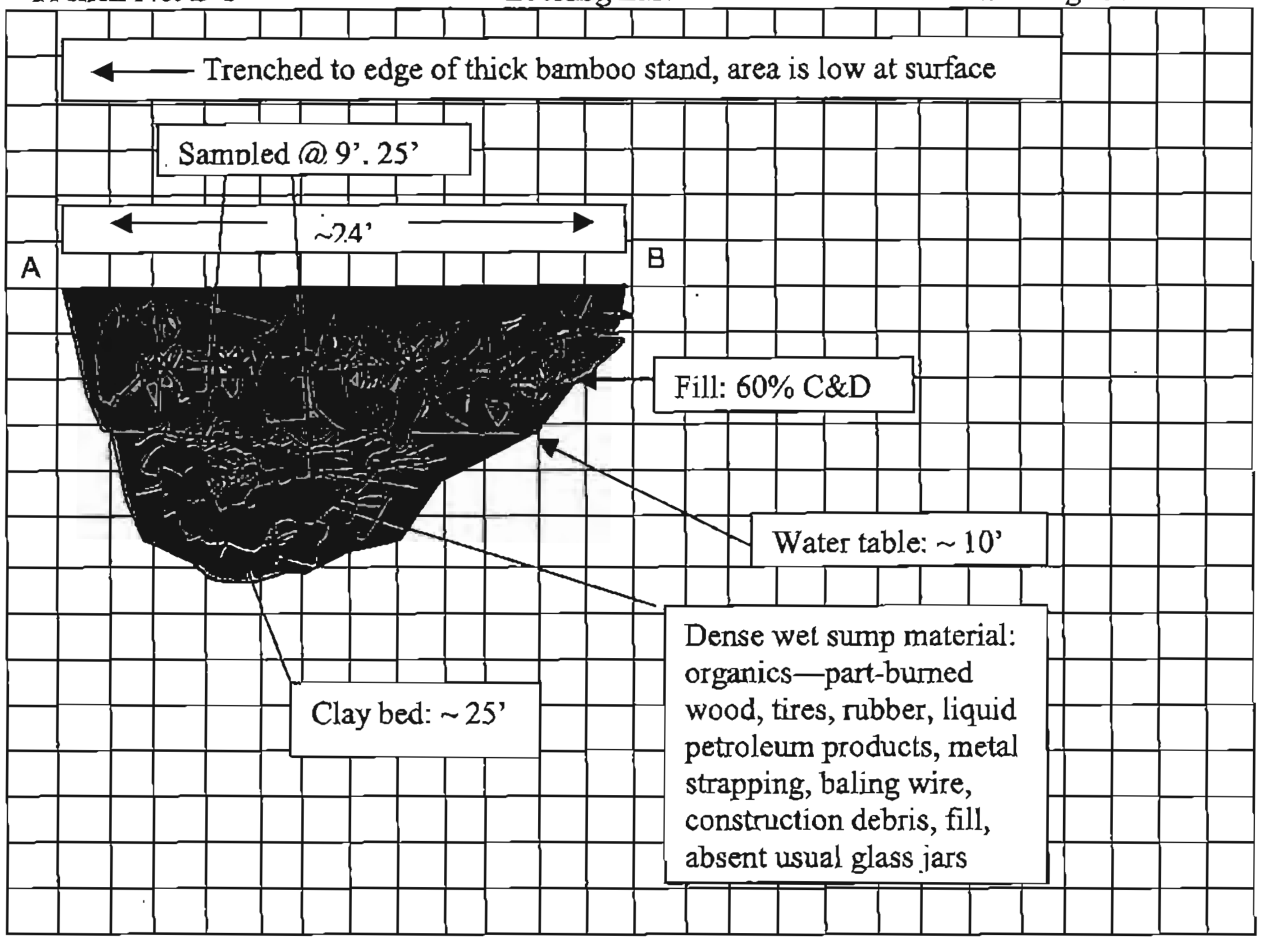
California Integrated Waste Management Board

CIA Site Trench Log
Waring's Fill Project

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1635
Weather: NW wind, ~ 80°
Scale: H: ¼" = 2' V: ¼" = 4'

Trench No. D-3 Looking East Bearing: South



Field Notes

A-B (N-S): 32' L, 23'-2.5' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, contains ash, sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 3:5; @ 10' main ~ 5:8; submerged, Fluid to Solids ~ 3:8

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

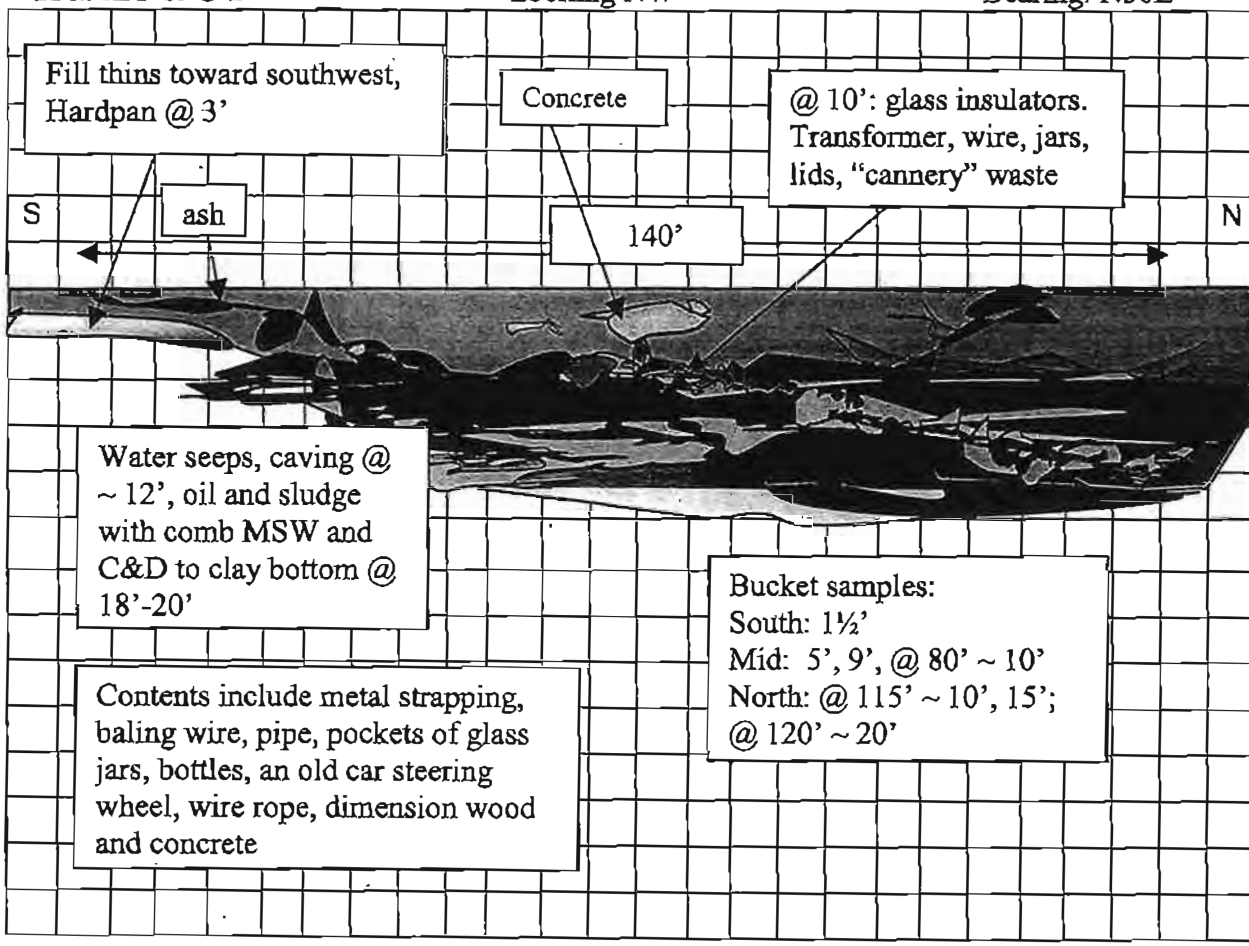
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 0920
Weather: 70°, light NW wind
Scale: ¼" = 5'

Trench No. G-2 Looking NW Bearing: N30E



Field Notes

S-N (SW-NE): 140' L, 3'-25' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes—wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 15:1; @ 10' main ~ 1:8; submerged, fluid to soil and solids ~ 3:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

California Integrated Waste Management Board

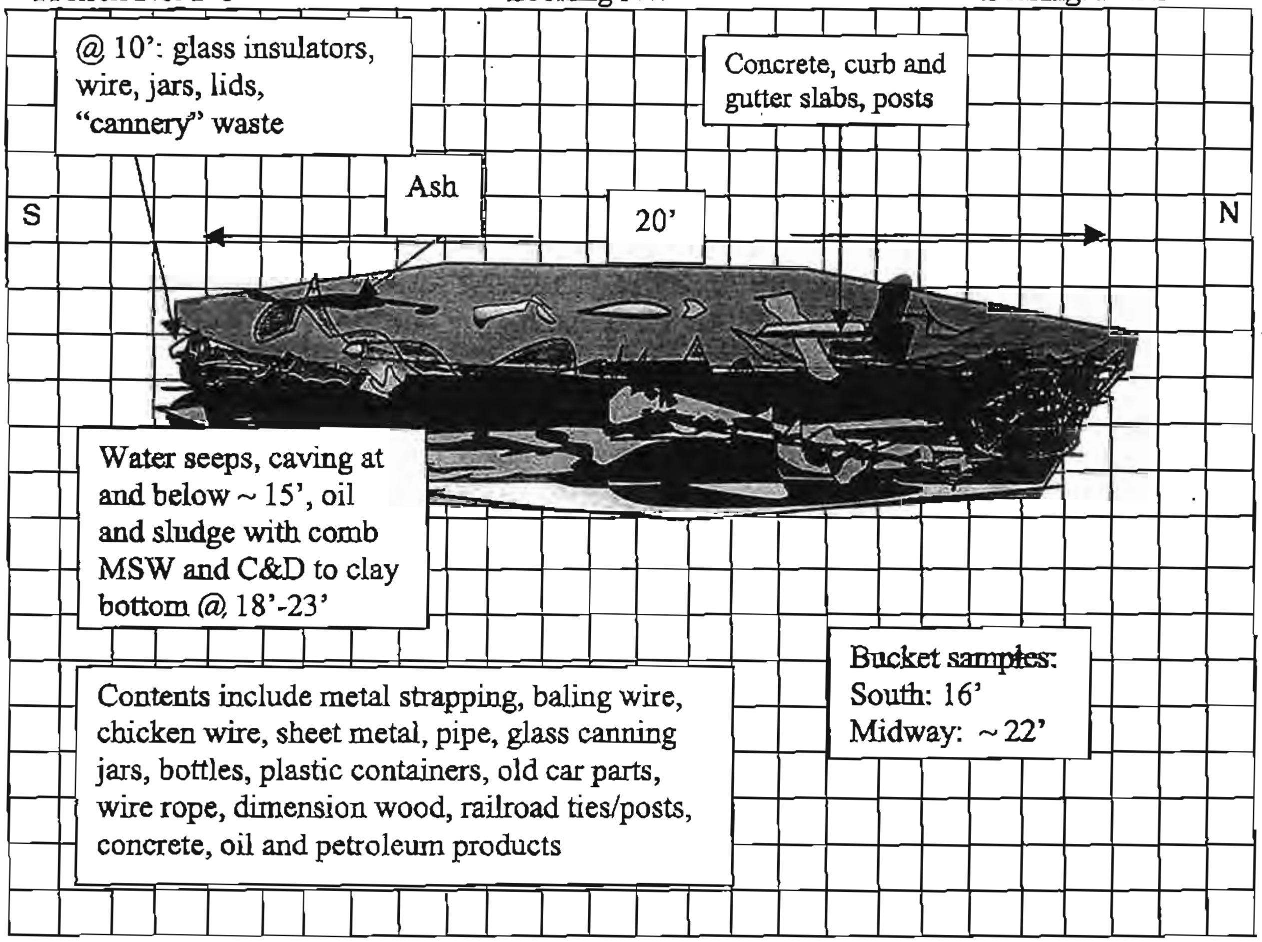
CIA SITE TRENCH LOG

WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 0935
Weather: 70°, light NW wind
Scale: H: ¼" = 1' V: ¼' = 4'

Trench No. F-3 Looking NW Bearing: N25E



Field Notes

SW-NE: 20' L, 18'-23' D
(Extension of G-2, cuts hummock)

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes–wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 8:1; @ 10' main ~ 1:8; submerged, fluid to soil and solids ~ 3:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

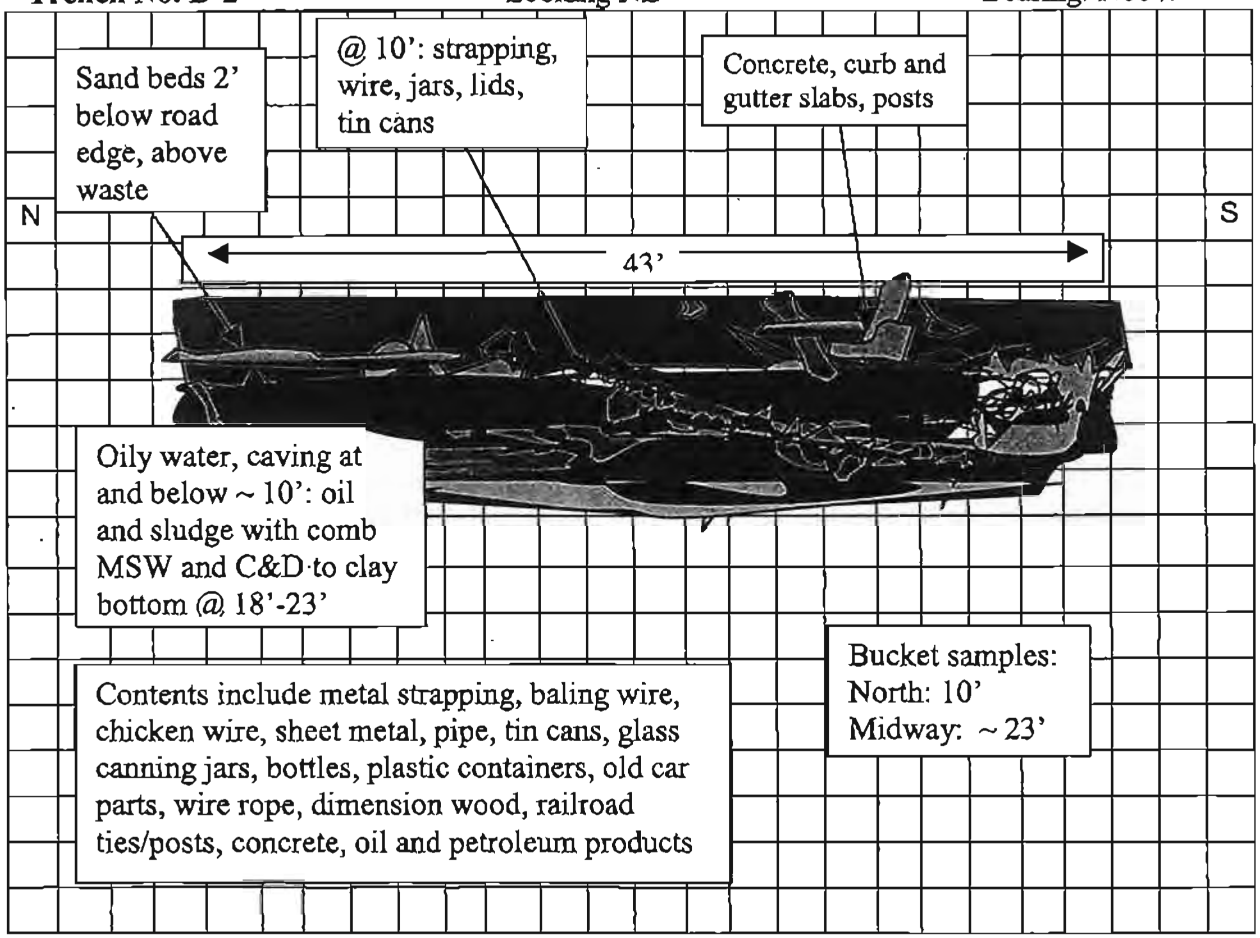
California Integrated Waste Management Board

CIA Site Trench Log
Waring's Fill Project

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 1035
Weather: 80°, light NW wind
Scale: H: ¼" = 2' V: ¼' = 4'

Trench No. D-2 Looking NE Bearing: N60W



Field Notes

N-S (NW-SE): 43' L, 6'-24' D
(North end cuts 5' dirt road)

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 8:1; @ 10' main ~ 1:8; submerged, fluid to soil and solids ~ 3:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

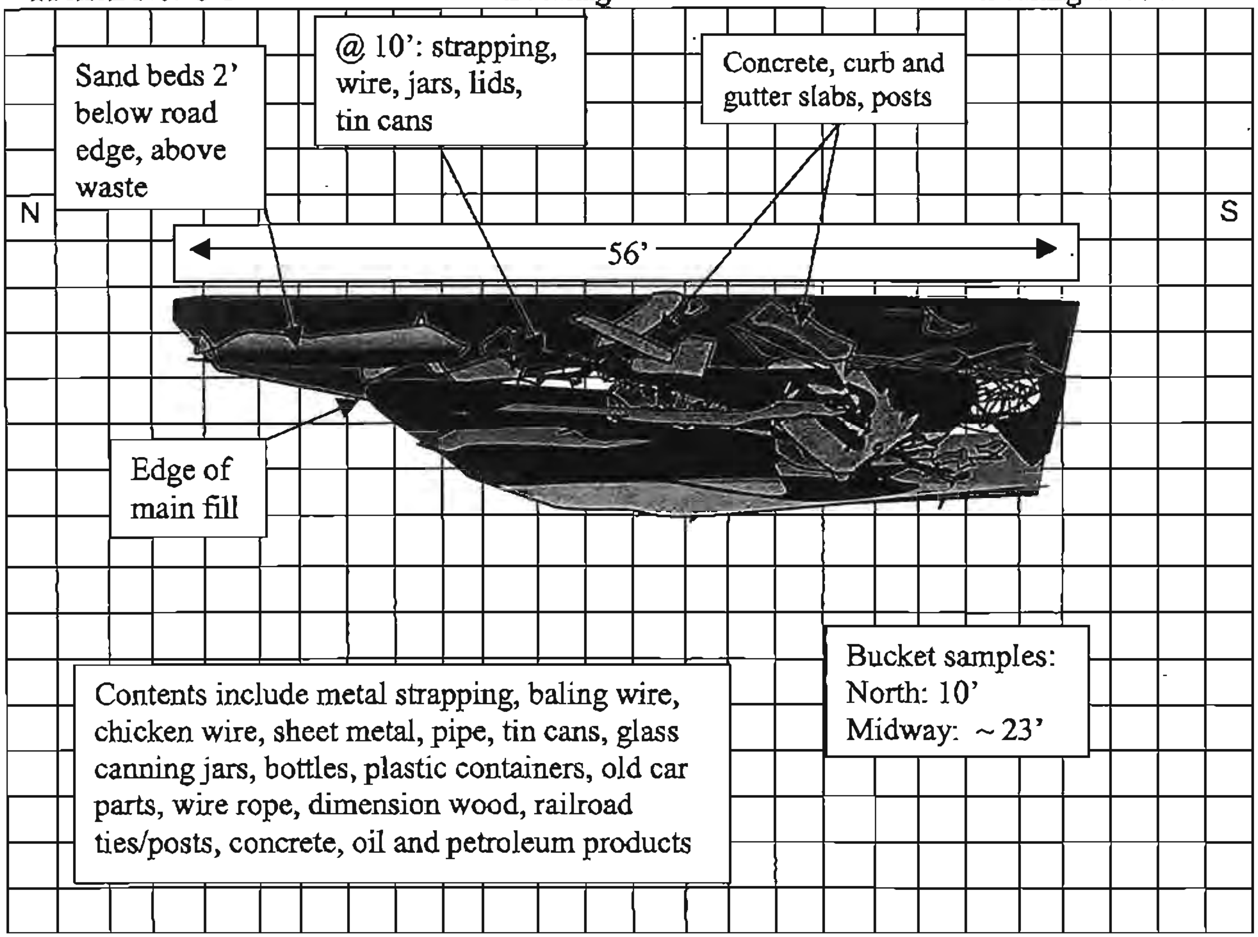
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 1115
Weather: 85°, light NW wind
Scale: H: ¼" = 2' V: ¼' = 4'

Trench No. C-3 Looking NE Bearing: N60W



Field Notes

NW-SE: 56' L, 6'-24' D
(North end cuts 5' dirt road)

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 8:1; @ 10' main ~ 1:8; submerged, fluid to soil and solids ~ 3:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

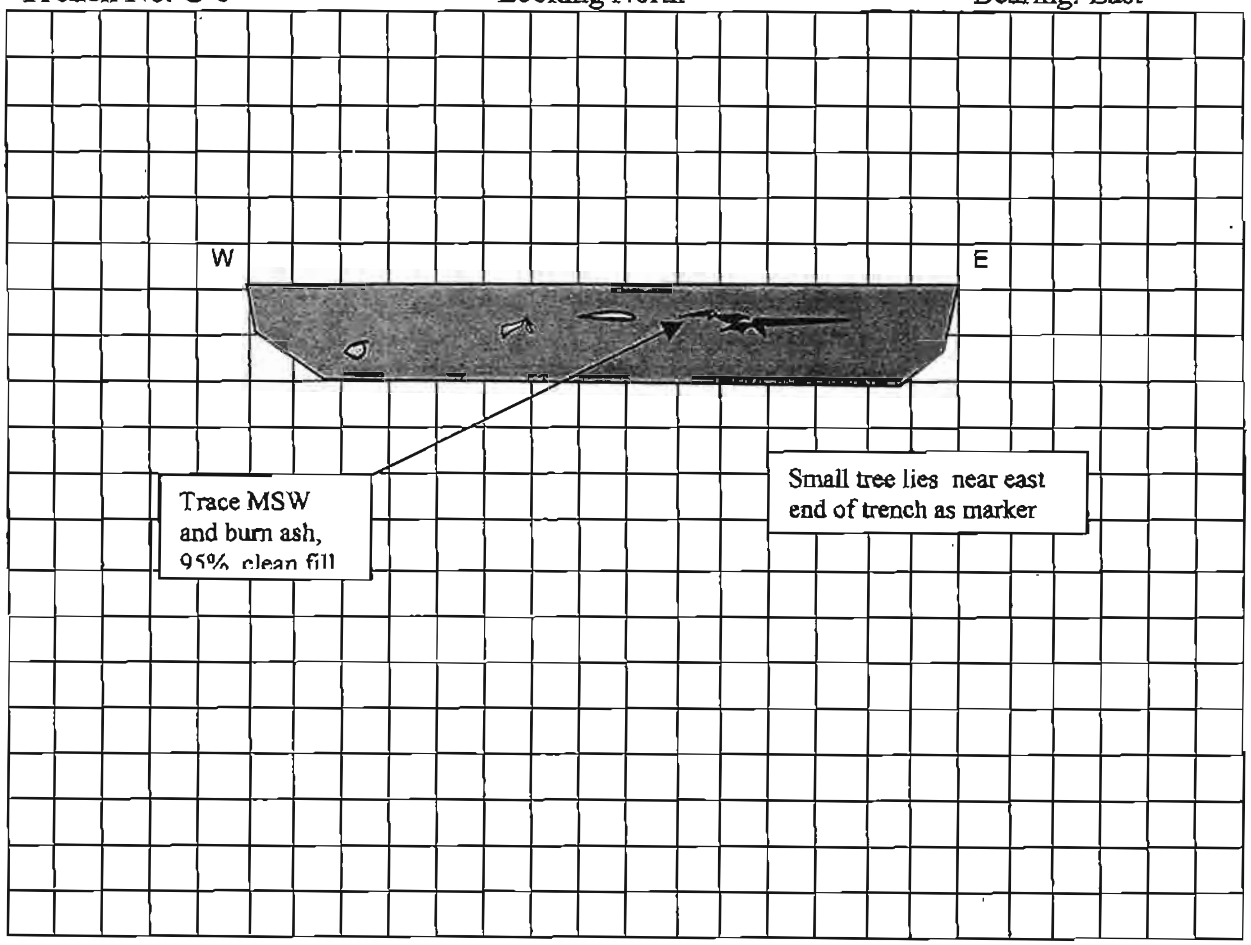
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 1450
Weather: 90°, light NW wind
Scale: ¼" = 2'

Trench No. C-6 Looking North Bearing: East



Field Notes

W-E: 34' L (long) x 4' D

Native soil: Thick-bedded dry, brown clayey silt 4' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally contains pockets and thin layers of rubble and waste material.

C&D: Sparse concrete, trace asphalt

MSW: Sparse glass, ash and burn material

Clay: As above in soil

Fill to C&D/MSW = 9:1

Radiation: Bkgrd

Landfill gas (CH_4): NIL

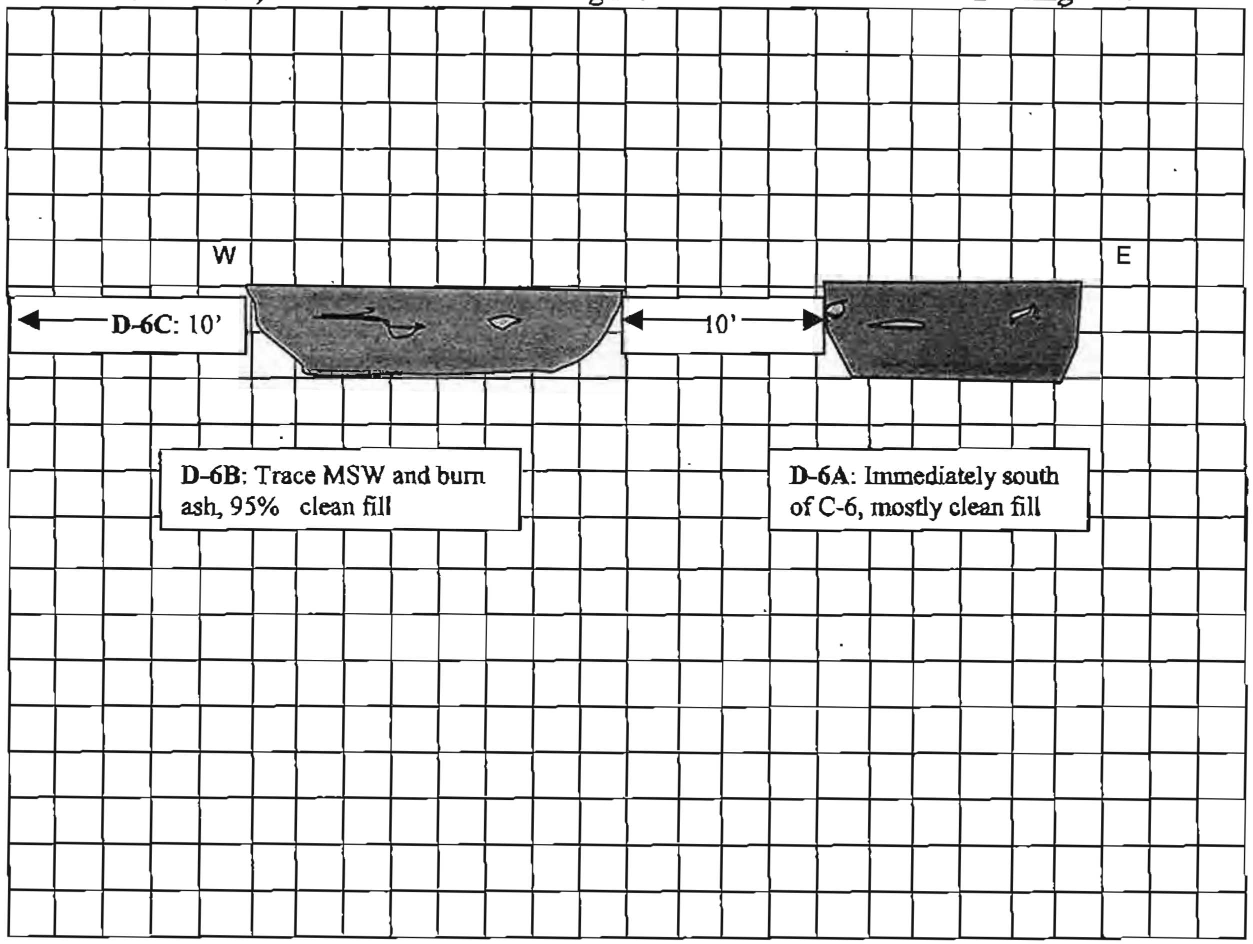
California Integrated Waste Management Board

CIA Site Trench Log
Waring's Fill Project

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 1500
Weather: 90°, light NW wind
Scale: ¼" = 2'

Trench No. D-6A, B Looking North Bearing: East



Field Notes

W-E: 34' L (long) x 4' D

Native soil: Thick-bedded dry, brown clayey silt 4' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally contains pockets and thin layers of rubble and waste material.

C&D: Sparse concrete, trace asphalt

MSW: Sparse glass, ash and burn material

Clay: As above in soil

Fill to C&D/MSW = 9:1

Radiation: Bkgrd

Landfill gas (CH_4): Nil

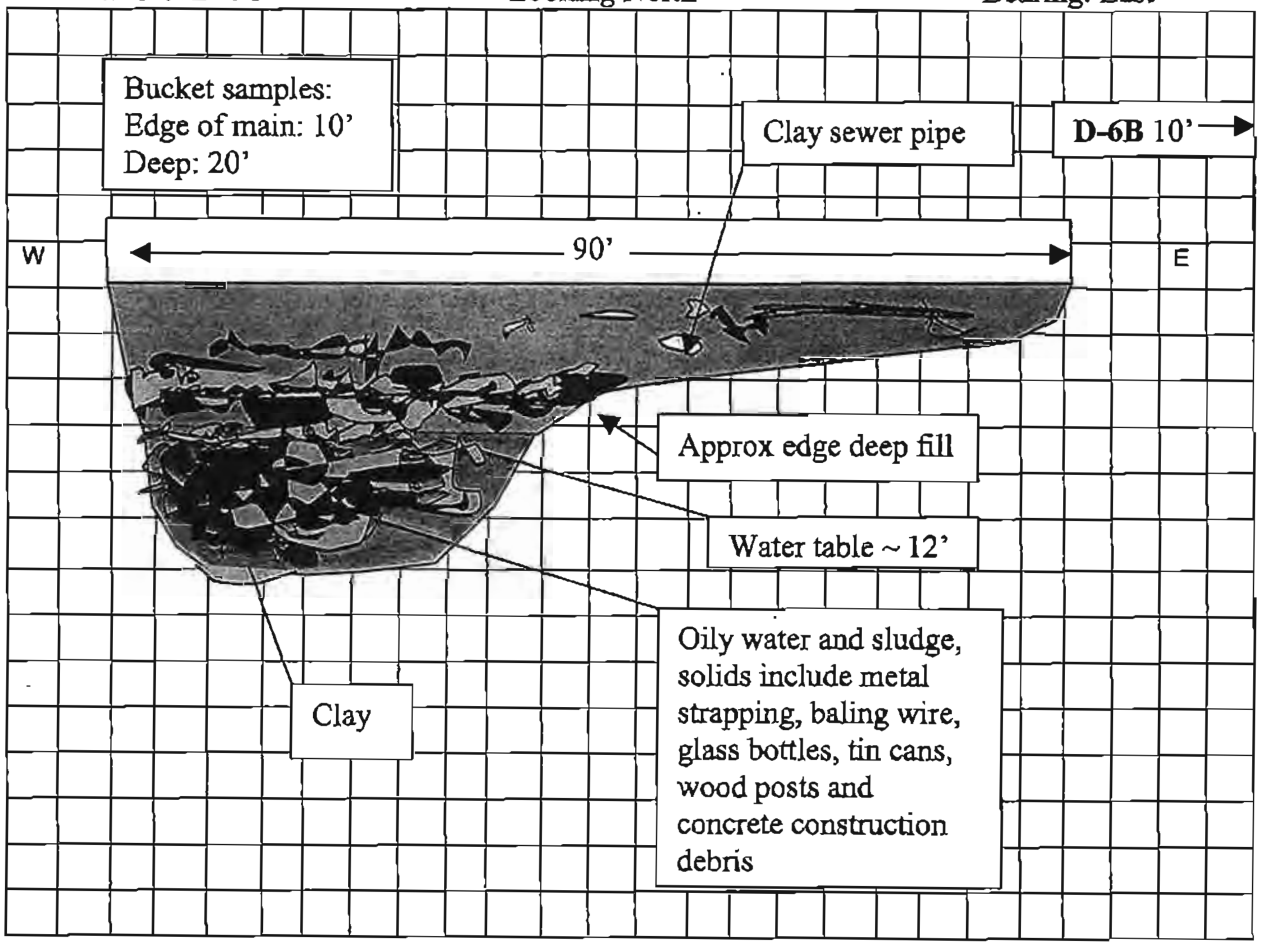
California Integrated Waste Management Board

CIA Site Trench Log
Waring's Fill Project

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 15, 2004
Time: 1510
Weather: hot, light NW wind
Scale: H: ¼" = 4' V: ¼" = 4

Trench No. D-6C Looking North Bearing: East



Field Notes

W-E: 90' L, 25'-4' D

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes–wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 20:1; @ 10' main ~ 1:8; submerged, Fluid to Solids ~ 6:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

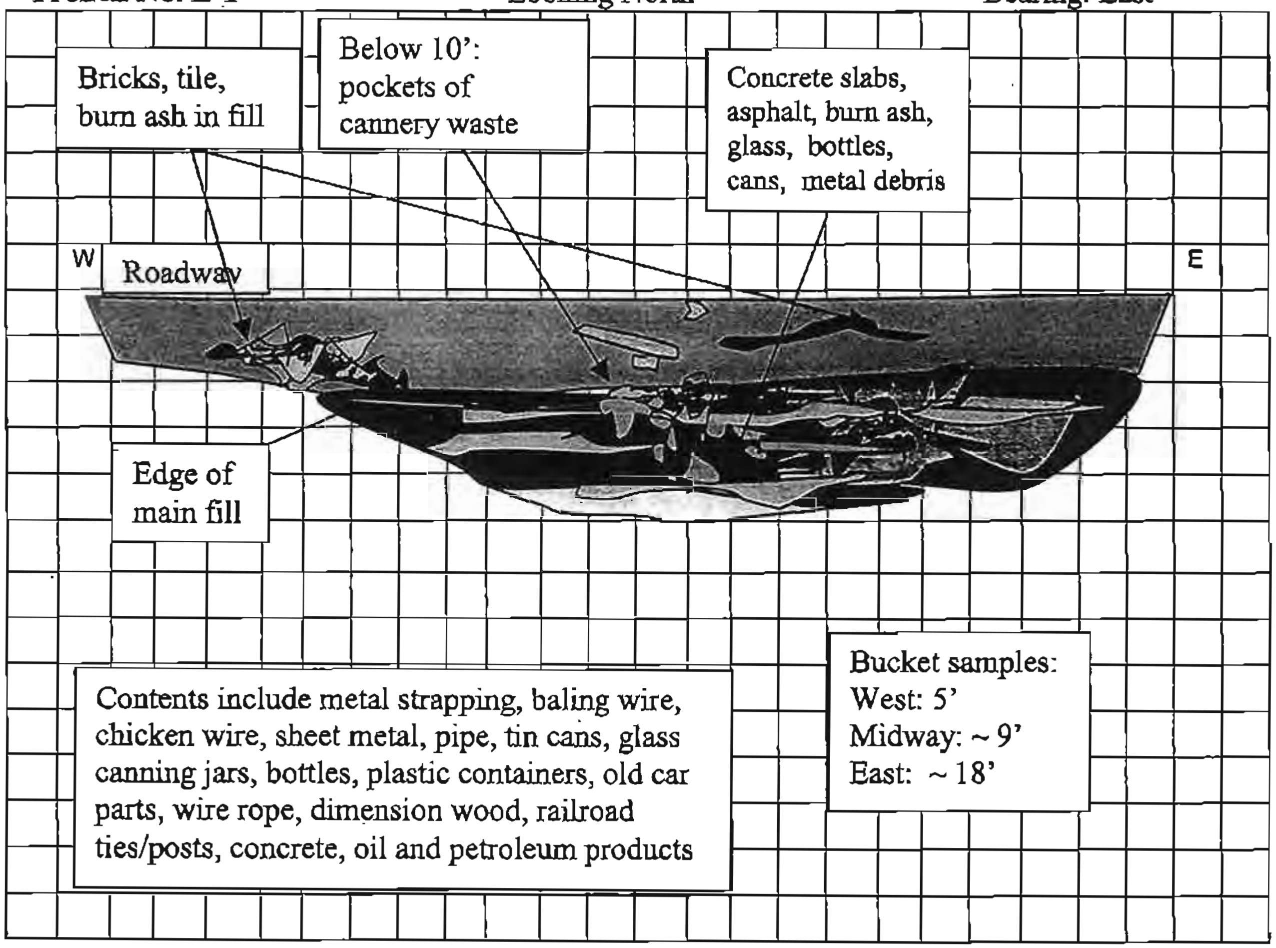
California Integrated Waste Management Board

CIA SITE TRENCH LOG
WARING'S FILL PROJECT

Project Engineer: Glenn Young
Project Manager: Dawn Owen
Geologist: Alan Berry

Date: March 16, 2004
Time: 1510
Weather: 90°, light NW wind
Scale: H: ¼" = 2' V: ¼' = 4'

Trench No. E-1 Looking North Bearing: East



Field Notes

W-E: 48' L, 6'-24' D
(North end cuts 5' dirt road)

Native soil: Thick-bedded dry, brown clayey silt 5' below surface

Fill: Reddish-brown top soils, fine to medium-grained, silty-sandy, clayey, locally mixed with sparse C&D, MSW

C&D: Wood, concrete, asphalt

MSW: Thin layer burn ash, glass, tire remnants ~ 1½ ' below surface; main deposit cannery waste—wire, metal strapping, cans, jars, bottles, piping, organic constituents—oil, odorous petroleum wastes--wood

Clay: As above in soil; at base of deposit, brown to light bluish green, smooth kaolin-like texture

Fill to C&D/MSW: Cap ~ 20:1; @ 10' main ~ 1:8; submerged, fluid to soil and solids ~ 3:10

Radiation: Bkgrd

Landfill gas (CH_4): VOCs measured

California Integrated Waste Management Board
1001 I Street - Sacramento, CA 95814
Permitting & Enforcement
(Closed Illegal & Abandoned Site Investigation Unit)

Soil-Sampling (Trenches)
Warings Dump
Sacramento

Sample ID (Grid No.)	Location Latitude (N) Deg	Min	Longitude (W) Deg	Min	Sample Depth (ft)	Date mm/dd/yy	Time (military)	Sample Taken for Analysis (Y/N)	Photo No.	Field Observations (e.g., sampling equipment, location (brief description), noticeable odors, colors, odor, texture, etc.)
B-4	38	51156	121	43008	2ft	3/15/2004	9a	Y		Burn Ash , C&D
B-42	38		121		6ft	3/15/2004	9.30a	Y		Back ground Radiation is (11 micro rad)
A-5	38	51310	121	42883	1ft	3/15/2004	10a	Y		Burn Material, Melted Glass , C& D
A-7	38	51307	121	42883	1.5ft	3/15/2004	10.30a	Y		Burn at 1.5ft tires, C&D, glass
B-5	38	51268	121	42879	1.5ft	3/15/2004	10.45a	Y		Lat and Long taken at the center of the trench
B-5	38		121		12 ft	3/15/2004		Y		Water hit at 12.5ft
B-5	38	15128	121	42867	24'	3/15/2004	11.45a	Y		A hold was placed on analysis of the clay at the bottom
D-7	38	51232	121	42848	7ft	3/15/2004	12.05p	Y		middle of trench
-7	38	51228	121	42888	8ft	3/15/2004		Y		east end of trench
D-7	38		121		13ft	3/15/2004		Y		
G-5	38	51193	121	42892	5ft	3/15/2004	15.00p	Y		south end of trench
G-5	38	51207	121	42894	9.5	3/15/2004				
F-4	38	51205	121	42923	9.5ft	3/15/2004	15.30p	Y		north end
F-4	38	51197	121	42921		3/15/2004				south end

California Integrated Waste Management Board
1001 I Street - Sacramento, CA 95814
Permitting & Enforcement
. (Closed Illegal & Abandoned Site Investigation Unit)

Soil-Sampling (Trenches)

Warings Dump
Sacramento

Sample ID (Grid No.)	Location Latitude (N) Deg	Min	Longitude (W) Deg	Min	Sample Depth (ft)	Date mm/dd/yy	Time (military)	Sample Taken for Analysis (Y/N)	Photo No.	Field Observations (e.g., sampling equipment, location (brief description), noticeable odors, colors, odor, texture, etc.)
D-3	38	51244	121	42921	9ft	3/15/2004	4:10p	Y		near the bushes
D-3	38		121		25ft	3/15/2004		Y		clay
G-2	38	51192	121	42903	2ft	3/16/2004	8.20a	Y		Burn Material
G-2	38	51205	121	42989	5ft	3/16/2004	8.44a	Y		Moer Burn material
G-2	38	51231	121	42757	10ft	3/16/2004		Y		North end of the trench , found burried transformers, Oil smell and color
F-3	38	51231	121	42940	12ft	3/16/2004		Y		North side, Sample of water burn material and debris, VOC odor, 90% burn material and debris
F-3	38	51226	121	42944	22ft	3/16/2004		Y		South side, clean soil at 22ft below waste
D-2	38	51264	121	42963	8ft	3/16/2004	10.30a	Y		
-2	38	51261	121	42952	22ft	3/16/2004	11am	Y		more oil smell
C-3	38		121		9ft	3/16/2004	11.15a	Y		
C-3	38		121		19ft	3/16/2004		Y		
C-6	38	51183	121	42960	3ft	3/16/2004	2.20p	Y		clean , used as the back ground sample
D-6A	38	51250	121	42852		3/16/2004	2.30p	Y		
D-6B	38	51250	121	42862		3/16/2004	2.30pm	Y		
D-6C	38	51250	121	42870	10ft	3/16/2004		Y		

California Integrated Waste Management Board
1001 I Street - Sacramento, CA 95814
Permitting & Enforcement
(Closed Illegal & Abandoned Site Investigation Unit)

Soil-Sampling (Trenches)
Warings Dump
Sacramento

Sample ID (Grid No.)	Location Latitude (N) Deg	Min	Longitude (W) Deg	Min	Sample Depth (ft)	Date mm/dd/yy	Time (military)	Sample Taken for Analysis (Y/N)	Photo No.	Field Observations (e.g., sampling equipment, location (brief description), noticeable odors, colors, odor, texture, etc.)
D-6C	38	51250	121	42870	20ft	3/16/2004	2.45p	Y		West side of trench : Just above clay
E-1	38	51222	121	42969	9ft	3/16/2004	3.15p	Y		West side of trench
E-1	38		121		5ft	3/16/2004		Y		
E-1	38	51230	121	42961	19ft	3/15/2004	3.30p	Y		East side

Appendix D Well Logs and Well Design

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED 03/18/04 BORING NO. PG-1 GROUND ELEVATION ___ SHEET 1 OF 2 METHOD OF DRILLING 8" Diameter Hollow Stem Auger DRIVE WEIGHT N/A DROP N/A SAMPLED BY N/A LOGGED BY KML REVIEWED BY BAB DESCRIPTION/INTERPRETATION
0							ML	FILL: Red brown, moist, sandy SILT with fine sand.
							CL	ALLUVIUM: Light brown, moist, stiff, sandy CLAY with fine sand. Dark brown; with silt.
5								
							ML	Red brown, moist, sandy SILT with fine sand.
							CL	Red brown, moist, stiff, silty CLAY with fine sand.
10								
								Increased fine sand.
15								
								Brown.

Ninyo & Moore

BORING LOG WARINGS DUMP 63RD & MORRISON CREEK, SACRAMENTO, CALIFORNIA		
PROJECT NO.	DATE	FIGURE
104690009	04/04	A-1

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED 03/18/04 BORING NO. PG-1 GROUND ELEVATION ___ SHEET 2 OF 2 METHOD OF DRILLING 8" Diameter Hollow Stem Auger DRIVE WEIGHT N/A DROP N/A SAMPLED BY N/A LOGGED BY KML REVIEWED BY BAB DESCRIPTION/INTERPRETATION
20							CL	ALLUVIUM: (Continued) Brown, moist, stiff, silty CLAY with fine sand.
								Increased clay.
25								Increased fine sand.
30								Total Depth = 30 feet. Groundwater not encountered during drilling. Soil gas monitoring well constructed on 03/18/04.
35								

Ninyo & Moore

BORING LOG

WARINGS DUMP
63RD & MORRISON CREEK, SACRAMENTO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104690009	04/04	A-2

DATE DRILLED	03/18/04	BORING NO.	PG-6
GROUND ELEVATION		SHEET 1 OF 1	
METHOD OF DRILLING	8" Diameter Hollow Stem Auger		
DRIVE WEIGHT	N/A	DROP	N/A
SAMPLED BY N/A	LOGGED BY KML	REVIEWED BY	BAB

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ML	FILL: Red brown, moist, sandy SILT with fine sand.
							CL	ALLUVIUM: Light brown, dry, silty CLAY.
5								Red brown; moist; with sand.
10								
								Total Depth = 12.3 feet. Groundwater not encountered during drilling. Soil gas monitoring well constructed on 03/18/04.
15								

Ninyo & Moore

BORING LOG

WARINGS DUMP

63RD & MORRISON CREEK, SACRAMENTO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104690009	04/04	A-3

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ML	FILL: Red brown, moist, sandy SILT with fine sand.
							CL-ML	Light brown, moist, sandy silty CLAY/clayey SILT.
5								
							CL	ALLUVIUM: Red brown, moist, sandy CLAY with fine sand.
10								
								Total Depth = 12 feet. Groundwater not encountered during drilling. Soil gas monitoring well constructed on 03/18/04.
15								

DATE DRILLED 03/18/04 BORING NO. PA-7

GROUND ELEVATION ______ SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger

DRIVE WEIGHT N/A DROP N/A

SAMPLED BY N/A LOGGED BY KML REVIEWED BY BAB

Ninyo & Moore

BORING LOG

WARINGS DUMP

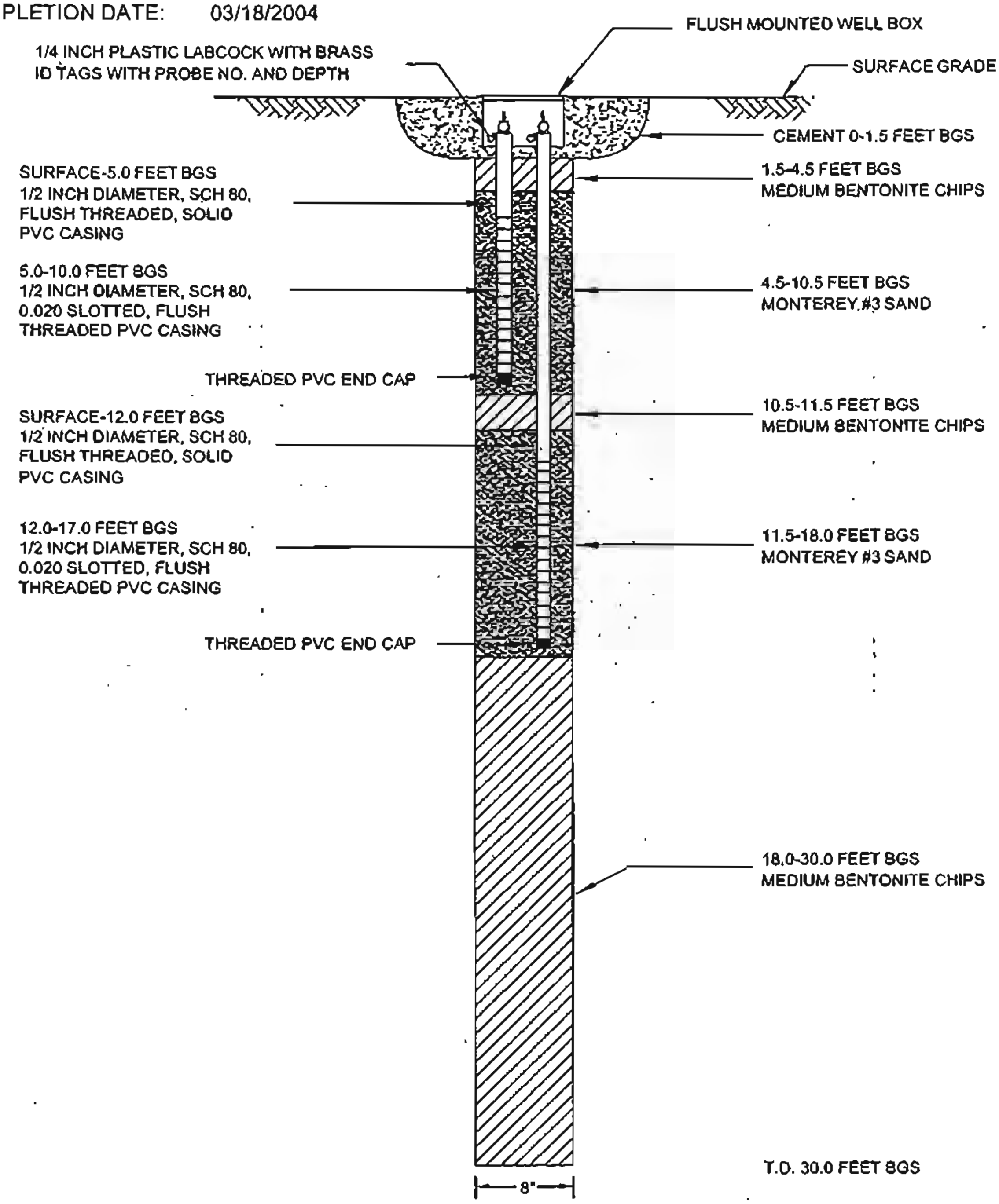
63RD & MORRISON CREEK, SACRAMENTO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104690009	04/04	A-4

LANDFILL GAS MONITORING WELL
CONSTRUCTION SCHEMATIC

WELL ID: PG-1 (DUAL COMPLETION)

COMPLETION DATE: 03/18/2004



NOT TO SCALE

104690009 r gas well PG-1

Ninyo & Moore

GAS MONITORING WELL CONSTRUCTION-PG-1

WARINGS DUMP
63RD AND MORRISON CREEK
SACRAMENTO, CALIFORNIA

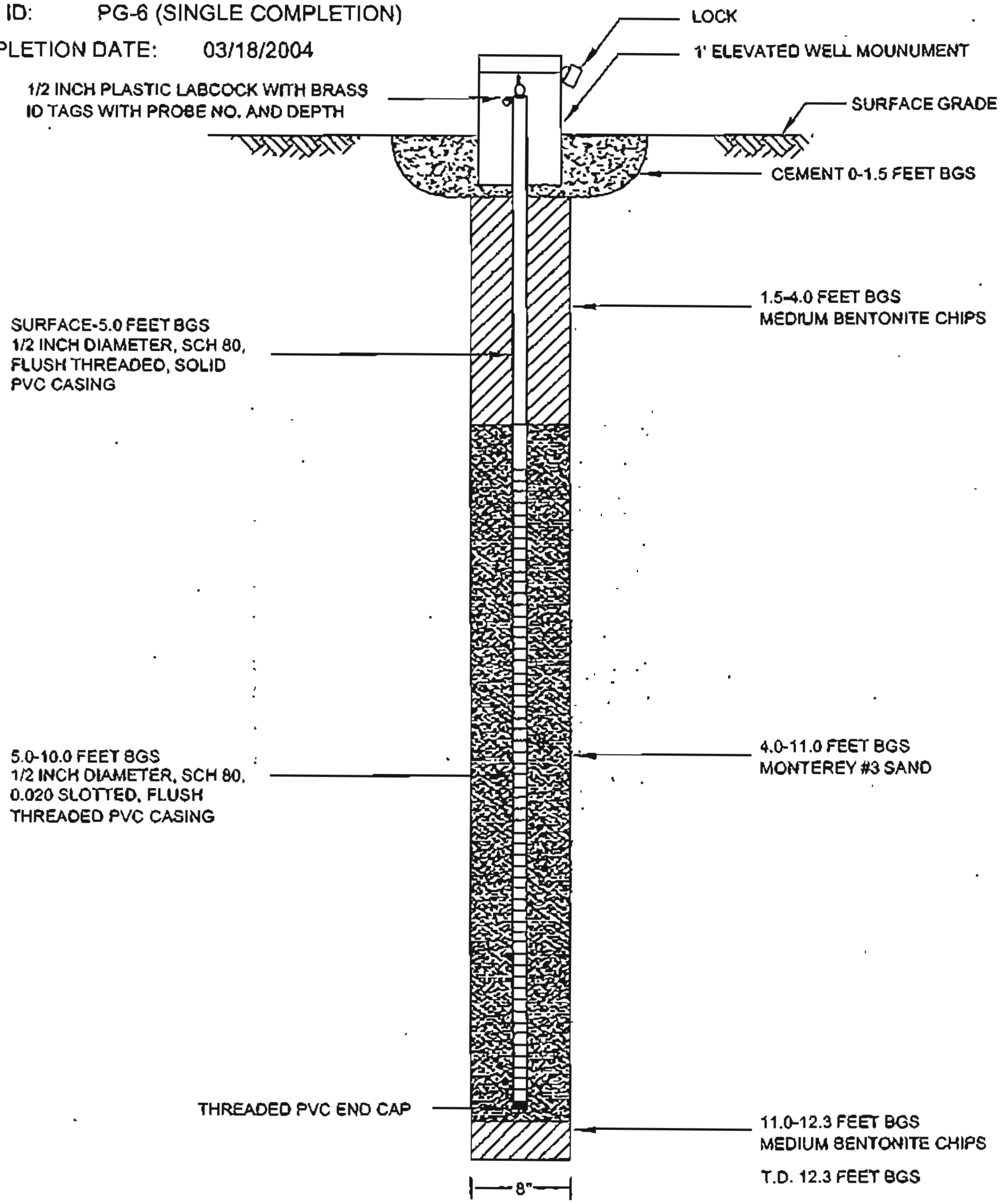
PROJECT NO.	DATE
104690009	4/04

FIGURE 1

LANDFILL GAS MONITORING WELL
CONSTRUCTION SCHEMATIC

WELL ID: PG-6 (SINGLE COMPLETION)

COMPLETION DATE: 03/18/2004



NOT TO SCALE

Ninyo & Moore

GAS MONITORING WELL CONSTRUCTION-PG-6

WARINGS DUMP
63RD AND MORRISON CREEK
SACRAMENTO, CALIFORNIA

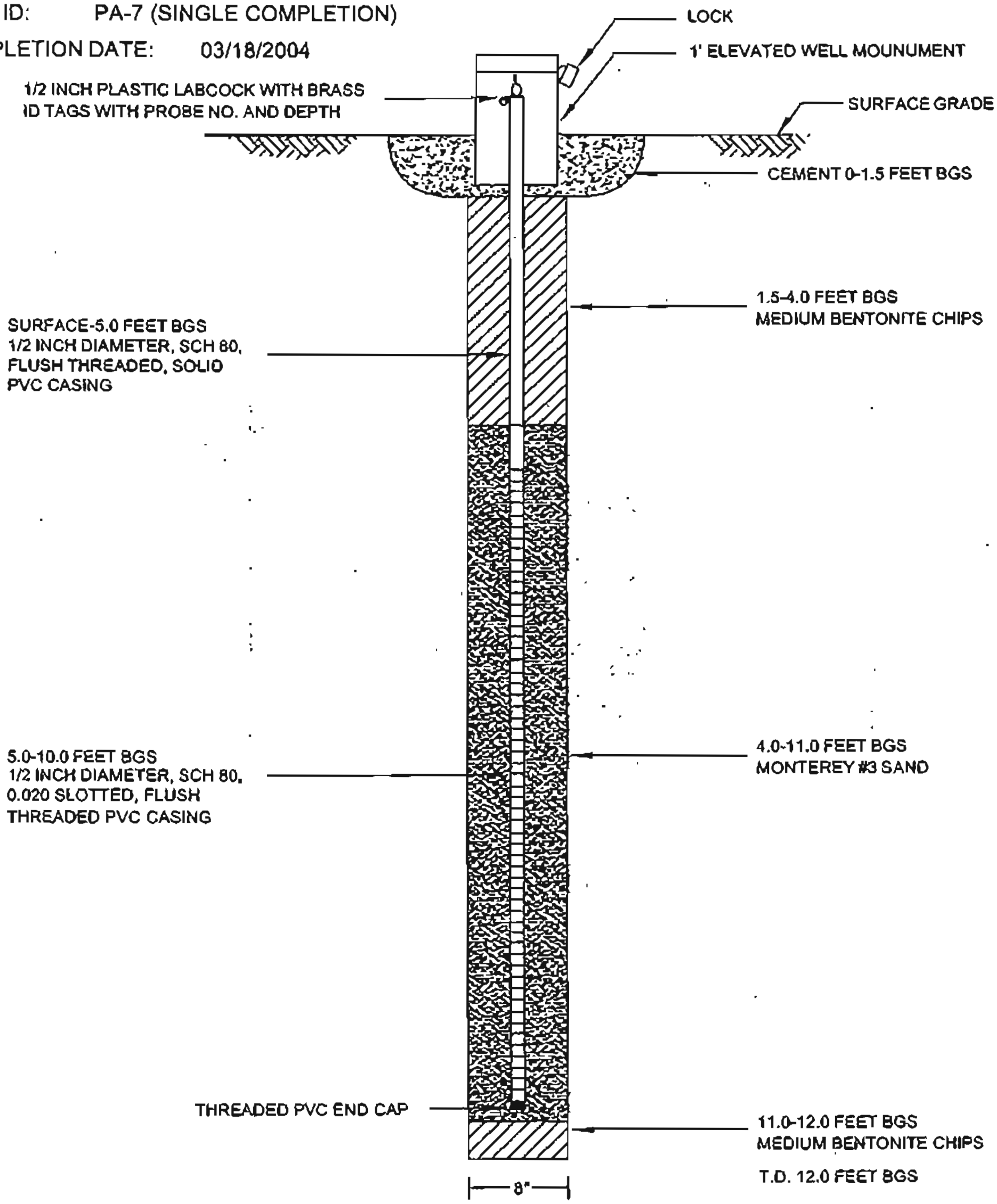
PROJECT NO.	DATE
104690009	4/04

FIGURE
2

LANDFILL GAS MONITORING WELL
CONSTRUCTION SCHEMATIC

WELL ID: PA-7 (SINGLE COMPLETION)

COMPLETION DATE: 03/18/2004



NOT TO SCALE

104690009 F gas well PA-7

Ninyo & Moore

GAS MONITORING WELL CONSTRUCTION-PA-7

WARINGS DUMP
63RD AND MORRISON CREEK
SACRAMENTO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
104690009	4/04	3

Appendix E Lab Results

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Ph: 916-773-3664 Fx: 916-773-4784

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen	Phone #: 341-6723	Electronic Data Deliverables Request: Global I.D.#: COC #: 304066 Location I.D.#: Email Address: dawnO@ciwmb
Company/Address: 1001 I Street Sacto CA 95812	Fax #: 319-7552	
Project Number/P.O#:	Project Name: Warings	
Project Location: Sacto	Sampler Signature: J. Oe	

ANALYSIS REQUEST

Page 1 of 3 Sa.901

Bin# 64

Due Date: 3/16 3/22

Wet: CAM 17 Metals X; Cd, Cr, Pb, Zn, Ni (CAM 5) X
Total: CAM 17 Metals X; Cd, Cr, Pb, Zn, Ni (CAM 5) X

Sample ID	Sampling Date	Sampling Time	Container	Method Preserved	Matrix	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A) 8080	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	8140 Organo Phos	8150 Cl Herb	Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
B-5 10'	3-15		GLASS	NONE	SOIL	X		X			X						X	X			X	X		S0304477
B-5 D 10'	↓		↓	↓	↓															X				S0304478
B-5 24'	↓		↓	↓	↓	X		X			X						X	X			X	X		S0304479
B-5 D 24'	↓		↓	↓	↓															X				S0304480
D-7 7'	↓		↓	↓	↓	X		X			X						X	X			X	X		S0304481
D-7 D 7'	↓		↓	↓	↓															X				S0304482
D-7 8'	↓		↓	↓	↓	X		X			X						X	X			X	X	24H	S0304483
D-7 D 8'	↓		↓	↓	↓															X				S0304484
D-7 13'	↓		↓	↓	↓	X		X			X						X	X			X	X	24	S0304485
D-7 D 13'	↓		↓	↓	↓															X				S0304486

Relinquished by:	Date	Time	Received by:
J. Oe	3-15	335	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/15	3:35	[signature]

Remarks/Condition of Sample:
WET IF > 10X (STLC).
24 Hr turn around on (D-7 @ 8') and (D-7 @ 13')

Cancel CAM 5 per Dawn Owen 3/19/03

Bill To:

Hold B5-24'

Excelchem
Environmental Labs
500 Giuseppe Court, Suite 3
Roseville, CA 95678
Ph: 916-773-3664 Fx: 916-773-4784

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen
Phone #: 341-6723
Company/Address: 1001 I Street Sacto, CA 95812
Fax #: 319-7552
Project Number/P.O#:
Project Name: Warings
Project Location: Sacto
Sampler Signature: [signature]

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#: 304066
Email Address: dawnO@ciwmb.ca.gov

ANALYSIS REQUEST

Page 2 of 3

Bin# 64
Due Date: 3/22

Sample ID	Sampling Date	Sampling Time	VOA	SLEEVE	GLASS	PLASTIC		HCl	HNO3	ICE	NONE		WATER	SOIL	AIR		BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A) 8080	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals (Wet X, Total X)	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5) (Wet X, Total X)	8140 organo phos	8150 chl herb					Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
B-4	3-15				X									X			X		←	X		X						X	X			X	X						S0304487
B-4D																															X								S0304488
B-42																	X		←	X		X						X	X			X	X						S0304489
B-42D																															X								S0304490
A-5																	X		←	X		X						X	X			X	X						S0304491
A-5D																															X								S0304492
A-7																	X		←	X		X						X	X			X	X						S0304493
A-7D																															X								S0304494
B-5																	X		←	X		X						X	X			X	X						S0304495
B-5D																															X								S0304496

Relinquished by:	Date	Time	Received by:
[signature]	3/15	340	
Relinquished by:	Date	Time	Received by:
Relinquished	Date	Time	Received by Laboratory:
	3/15	346	[signature]

Remarks/Condition of Sample:
WET IF) AX (STLC)
TPH as Diesel NOT Oil — sorry
cancel CAM 5 [illegible] 3/16 [illegible]

Bill To:

Excelchem
Environmental Labs

EXCELCHEM LABS
500 Giuseppe Ct., #3
Roseville, CA 95678
Phone: (916)-773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen | 341-6723

Company/Address: 1001 I Street, Sacto, CA 95612

Fax #: 319-7552

Electronic Data Deliverables Request:
Global I.D.#: 304066
COC #:
Location I.D.#:
Email Address: dawnO@ciwmb.ca.gov

Project Number/P.O#:

Project Name: Warings.

Project Location: Sacto.

Sampler Signature: [signature]

ANALYSIS REQUEST

Page 3 of 3

Bin# 64

Due Date: 3/22

Sample ID	Sampling Date	Sampling Time	Container: VOA	Container: SLEEVE	Container: GLASS	Container: PLASTIC	Container	Method Preserved: HCl	Method Preserved: HNO3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved	Matrix: WATER	Matrix: SOIL	Matrix: AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals (Wet / Total)	Lead (Wet / Total)	Cd, Cr, Pb, Zn, Ni (CAM 5)	8141D organo Phos	8150 chl. Herb					Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
D-7 24'	3/15	330			X					X				X		X		X			X						X	X			X	X						S0304497
D-7D 24'	↓	↓			↓					↓				↓																X								S0304498
G-5 5'	↓	↓			↓					↓				↓		X		X			X						X	X			X	X						S0304499
G-5d 5'	↓	↓			↓					↓				↓																X								S0304500
G-5 9.5'	↓	↓			↓					↓				↓		X		X			X						X	X			X	X						S0304501
G-5D 9.5'	↓	↓			↓					↓				↓																X								S0304502

Relinquished by:	Date	Time	Received by:
[signature]	3/15	335	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/15	3:35	[signature]

Remarks/Condition of Sample:
WET IF >10X (STLC)
Hold D7 24'
Cancel CAM 5 per Dawn Owen 3/14/02

Bill To:

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8020/8015m

Date Sampled: 03/15/04
Date Received: 03/15/04
BTEX/TPHg Analyzed: 03/16/04
TPHd Analyzed: 03/16/04

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
Benzene	0.005	ND	0.005	ND
Toluene	0.005	ND	0.005	ND
Ethylbenzene	0.005	ND	0.005	ND
Total Xylenes	0.005	ND	0.005	ND
TPH as Gasoline	1.0	ND	1.0	ND
TPH as Diesel	1.0	ND	1.0	ND

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	91	101
Toluene	89	99
Ethylbenzene	91	102
Total Xylenes	89	99
TPH as Diesel	90	80

QA/QC Analyzed: 03/16/04
TPHd QA/QC Analyzed: 03/17/04

Joseph Tallo
Laboratory Representative

03/16/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/16/04

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
Alpha-BHC	0.10	ND	0.05	ND
Beta-BHC	0.10	ND	0.05	ND
Gamma-BHC	0.10	ND	0.05	ND
Delta-BHC	0.10	ND	0.05	ND
Heptachlor	0.10	ND	0.05	ND
Aldrin	0.10	ND	0.05	ND
Heptachlor epoxide	0.10	ND	0.05	ND
Gamma-Chlordane	0.10	ND	0.05	ND
Endosulfan I	0.10	ND	0.05	ND
Alpha-Chlordane	0.10	ND	0.05	ND
4,4'-DDE	0.10	ND	0.05	ND
Dieldrin	0.10	ND	0.05	ND
Endrin	0.10	ND	0.05	ND
Endosulfan II	0.10	ND	0.05	ND
4,4'-DDD	0.10	ND	0.05	ND
Endrin aldehyde	0.10	ND	0.05	ND
Endosulfan sulfate	0.10	ND	0.05	ND
4,4'-DDT	0.10	ND	0.05	ND
Endrin ketone	0.10	ND	0.05	ND
Methoxychlor	0.10	ND	0.05	ND
SURROGATE %RECOVERY				
Decachlorobiphenyl	*		72	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

* Surrogate not recovered due to sample dilution.

Laboratory Representative

03/17/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

QA/QC %RECOVERY		
	LCS	LCSD
gamma-BHC	*	*
Heptachlor	*	*
Aldrin	*	*
Dieldrin	*	*
Endrin	*	*
4,4'-DDT	*	*

QA/QC Analyzed:

*QA/QC to follow

Laboratory Representative

03/17/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/15/04
	CIWMB	Date Received:	03/15/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	03/16/04
	Sacramento, CA 95812		
Project:	Warings		
Method:	EPA 8270C		

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
N-Nitrosodimethylamine	0.7	ND	0.1	ND
Aniline	0.7	ND	0.1	ND
bis (2-Chloroethyl) ether	0.7	ND	0.1	ND
Phenol	0.7	ND	0.1	ND
2-Chlorophenol	0.7	ND	0.1	ND
1,3-Dichlorobenzene	0.7	ND	0.1	ND
1,4-Dichlorobenzene	0.7	ND	0.1	ND
1,2-Dichlorobenzene	0.7	ND	0.1	ND
Benzyl alcohol	0.7	ND	0.1	ND
bis (2-Chloroisopropyl) ether	0.7	ND	0.1	ND
2-Methylphenol	0.7	ND	0.1	ND
Hexachloroethane	0.7	ND	0.1	ND
N-Nitroso-di-n-propylamine	0.7	ND	0.1	ND
4-Methylphenol	0.7	ND	0.1	ND
Nitrobenzene	0.7	ND	0.1	ND
Isophorone	0.7	ND	0.1	ND
2-Nitrophenol	0.7	ND	0.1	ND
2,4-Dimethylphenol	0.7	ND	0.1	ND
bis (2-Chloroethoxy) methane	0.7	ND	0.1	ND
Benzoic acid	0.7	ND	0.1	ND
2,4-Dichlorophenol	0.7	ND	0.1	ND
1,2,4-Trichlorobenzene	0.7	ND	0.1	ND
Napthalene	0.7	ND	0.1	ND
4-Chloroaniline	0.7	ND	0.1	ND
Hexachlorobutadiene	0.7	ND	0.1	ND
4-Chloro-3-methylphenol	0.7	ND	0.1	ND
2-Methylnaphthalene	0.7	ND	0.1	ND
Hexachlorocyclopentadiene	0.7	ND	0.1	ND
2,4,6-Trichlorophenol	0.7	ND	0.1	ND
2,4,5-Trichlorophenol	0.7	ND	0.1	ND
2-Chloronaphthalene	0.7	ND	0.1	ND
2-Nitroaniline	0.7	ND	0.1	ND
Acenaphthylene	0.7	ND	0.1	ND
Dimethylphthalate	0.7	ND	0.1	ND
2,6-Dinitrotoluene	0.7	ND	0.1	ND
Acenaphthene	0,7	ND	0.1	ND

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/16/04

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
3-Nitroaniline	0.7	ND	0.1	ND
2,4-Dinitrophenol	0.7	ND	0.1	ND
Dibenzofuran	0.7	ND	0.1	ND
2,4-Dinitrotoluene	0.7	ND	0.1	ND
4-Nitrophenol	0.7	ND	0.1	ND
Fluorene	0.7	ND	0.1	ND
4-Chlorophenyl-phenylether	0.7	ND	0.1	ND
Diethylphthalate	0.7	ND	0.1	ND
4-Nitroaniline	0.7	ND	0.1	ND
Azobenzene	0.7	ND	0.1	ND
4,6-Dinitro-2-methylphenol	0.7	ND	0.1	ND
Nitrosodiphenylamine	0.7	ND	0.1	ND
4-Bromopheny-phenylether	0.7	ND	0.1	ND
Hexachlorobenzene	0.7	ND	0.1	ND
Pentachlorophenol	0.7	ND	0.1	ND
Phenanthrene	0.7	ND	0.1	ND
Anthracene	0.7	ND	0.1	ND
Carbazole	0.7	ND	0.1	ND
Di-n-butylphthalate	0.7	ND	0.1	ND
Fluoranthene	0.7	ND	0.1	ND
Benzidine*	0.7	ND	0.1	ND
Pyrene	0.7	ND	0.1	ND
Butylbenzylphthalate	0.7	ND	0.1	ND
3,3'-Dichlorobenzidine	0.7	ND	0.1	ND
Benzo [a] anthracene	0.7	ND	0.1	ND
Chrysene	0.7	ND	0.1	ND
bis (2-Ethylhexyl) phthalate	0.7	ND	0.1	ND
Di-n-octylphthalate	0.7	ND	0.1	ND
Benzo [b] fluoranthene	0.7	ND	0.1	ND
Benzo [k] fluoranthene	0.7	ND	0.1	ND
Benzo [a] pyrene	0.7	ND	0.1	ND
Indeno [1,2,3-cd] pyrene	0.7	ND	0.1	ND
Dibenz [a,h] anthracene	0.7	ND	0.1	ND
Benzo [g,h,i] perylene	0.7	ND	0.1	ND

* Estimated Value

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ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/16/04

Client Sample I.D.	D-7 8'	D-7 13'
LAB. NO.	S0304483	S0304485
SURROGATE %RECOVERY		
Fluorophenol	68	75
Phenol-d5	75	80
Nitrobenzene-d5	74	79
2-Fluorobiphenyl	79	83
2,4,6-Tribromophenol	94	80
Terphenyl-d14	85	85

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/Kg

QA/QC %RECOVERY		
	LCS	LCSD
Phenol	78	74
2-Chlorophenol	74	69
1,4-Dichlorobenzene	72	67
N-Nitroso-di-n-propylamine	76	72
1,2,4-Trichlorobenzene	77	70
4-Chloro-3-methylphenol	87	81
Acenaphthene	82	76
2,4-Dinitrotoluene	89	79
4-Nitrophenol	88	78
Pentachlorophenol	88	75
Pyrene	96	88

QA/QC Analyzed: 03/16/04

Laboratory Representative

03/16/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/16/04

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
Antimony	1.0	5.5	1.0	4.7
Arsenic	2.0	8.1	2.0	4.1
Barium	2.0	190	2.0	190
Beryllium	0.3	ND	0.3	ND
Cadmium	0.5	1.4	0.5	1.0
Chromium	1.0	55	1.0	41
Cobalt	5.0	14	5.0	13
Copper	2.0	61	2.0	49
Lead	1.0	210	1.0	83
Mercury	0.010	0.039	0.010	0.022
Molybdenum	1.0	ND	1.0	ND
Nickel	1.0	35	1.0	36
Selenium	2.0	ND	2.0	ND
Silver	1.0	ND	1.0	ND
Thallium	2.0	ND	2.0	ND
Vanadium	2.0	52	2.0	53
Zinc	2.0	300	2.0	230

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/16/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

QA/QC %RECOVERY				
	LCS	LCSD	MS	MSD
Antimony	85	88	83	84
Arsenic	95	93	93	91
Barium	100	101	98	*
Beryllium	95	93	96	98
Cadmium	99	98	96	98
Chromium	95	95	89	89
Cobalt	99	98	97	97
Copper	93	91	108	97
Lead	93	91	*	96
Mercury	95	98	100	111
Molybdenum	96	93	94	95
Nickel	98	96	97	87
Selenium	95	92	93	100
Silver	94	92	96	97
Thallium	96	94	93	96
Vanadium	96	95	89	95
Zinc	97	96	*	*

QA/QC Analyzed: 03/16/04

* Recovery out of QA/QC limits due to matirx interference.

Laboratory Representative

03/16/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8140

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/18/04

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
Azinophos Methyl	5.0	ND	5.0	ND
Bolstar	5.0	ND	5.0	ND
Coumaphos	5.0	ND	5.0	ND
Demeton	5.0	ND	5.0	ND
Diazinon	5.0	ND	5.0	ND
Dichlorvos	5.0	ND	5.0	ND
Disulfoton	5.0	ND	5.0	ND
Dursban (Chlorpyrifos)	5.0	ND	5.0	ND
Ethoprop	5.0	ND	5.0	ND
Fensulfothion	10	ND	10	ND
Fenthion	5.0	ND	5.0	ND
Gardona (Stirophos)	5.0	ND	5.0	ND
Merphos	5.0	ND	5.0	ND
Methyl Parathion	5.0	ND	5.0	ND
Mevinphos	5.0	ND	5.0	ND
Naled	5.0	ND	5.0	ND
Phorate	5.0	ND	5.0	ND
Ronnel	5.0	ND	5.0	ND
Tokuthion	5.0	ND	5.0	ND
Trichloronate	5.0	ND	5.0	ND
SURROGATE %RECOVERY				
Tributylphosphate	62		65	

ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in µg/kg

Joseph Balb
Laboratory Representative

03/24/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8140

QA/QC %Recovery			
	LCS	MS	MSD
Diazinon	106	102	93
Methyl Parathion	104	112	112
Dursban (Chlorpyrifos)	93	93	87
Gardona (Stirophos)	113	116	112

QA/QC Analyzed: 03/18/04

Laboratory Representative

03/24/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen CIWMB P.O. Box 4025 / 1001 I Street Sacramento, CA 95812	Date Sampled: Date Received: Date Analyzed:	03/15/04 03/15/04 03/22/04
Project:	Warings		
Method:	EPA 8150		

Client Sample I.D.	D-7 8'		D-7 13'	
LAB. NO.	S0304483		S0304485	
ANALYTE	R/L	Results	R/L	Results
2,4,5-TP	1.0	ND	1.0	ND
2,4-DB	5.0	ND	5.0	ND
2,4-D	1.0	ND	1.0	ND
Dalapon	0.5	ND	0.5	ND
Dicamba	0.6	ND	0.6	ND
Dichloroprop	0.8	ND	0.8	ND
Dinoseb	1.1	ND	1.1	ND
MCPA	200	ND	200	ND
MCPP	150	ND	150	ND
4, Nitrophenol	5.0	ND	5.0	ND
Pentachlorophenol	0.5	ND	0.5	ND
Silvex	1.0	ND	1.0	ND
SURROGATE %RECOVERY				
DCAA	70		72	

ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in µg/kg

QA/QC %Recovery		
	LCS	LCSD
2,4-D	81	80
2,4,5-TP (Silvex)	111	113
2,4,5-T	95	95

QA/QC Analyzed: 03/22/04

Laboratory Representative

03/24/04
Date Reported

EXCELCHEM

ENVIRONMENTAL LABS

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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/15/04
	CIWMB	Date Received:	03/15/04
	P.O. Box 4025 / 1001 I Street	BTEX/TPHg Analyzed:	03/16/04
	Sacramento, CA 95812	TPHd Analyzed:	03/16,19/04
Project:	Warings		
Method:	EPA 8020/8015m		

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Toluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Ethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Total Xylenes	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
TPH as Gasoline	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
TPH as Diesel	1.0	ND	1.0	ND	4.0	ND	1.0	ND	1.0	ND

Client Sample I.D.	A-7		B-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Toluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Ethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Total Xylenes	0.005	ND	0.005	ND	0.005	ND	0.005	ND
TPH as Gasoline	1.0	ND	1.0	ND	1.0	ND	1.0	ND
TPH as Diesel	4.0	ND	1.0	ND	4.0	ND	4.0	ND

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	101	101
Toluene	95	95
Ethylbenzene	95	95
Total Xylenes	96	97
TPH as Diesel	90	80

QA/QC Analyzed: 03/17/04
TPHd QA/QC Analyzed: 03/17/04

QA/QC %RECOVERY		
	LCS	LCSD
TPH as Diesel	85	78

TPHd QA/QC Analyzed: 03/19/04

Joseph Balla
Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Project: Warings
Method: EPA 8081A - Pesticides

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/16,22,23/04

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L**	Results	R/L	Results	R/L**	Results
Alpha-BHC	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Beta-BHC	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Gamma-BHC	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Delta-BHC	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Heptachlor	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Aldrin	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Heptachlor epoxide	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Gamma-Chlordane	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Endosulfan I	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Alpha-Chlordane	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
4,4'-DDE	0.05	ND	0.05	ND	0.25	ND	0.1	0.3	0.1	ND
Dieldrin	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Endrin	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Endosulfan II	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
4,4'-DDD	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Endrin aldehyde	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Endosulfan sulfate	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
4,4'-DDT	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Endrin ketone	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
Methoxychlor	0.05	ND	0.05	ND	0.25	ND	0.1	ND	0.1	ND
SURROGATE %RECOVERY										
Decachlorobiphenyl	80		80		*		89		90	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg
*Surrogate not recovered due to sample dilution.
**Elevated sample reporting limits due to matrix interferences.

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed:

Project: Warings
Method: EPA 8081A - Pesticides

Client Sample I.D.	A-7		B-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L**	Results	R/L	Results	R/L**	Results	R/L**	Results
Alpha-BHC	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Beta-BHC	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Gamma-BHC	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Delta-BHC	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Heptachlor	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Aldrin	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Heptachlor epoxide	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Gamma-Chlordane	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Endosulfan I	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Alpha-Chlordane	0.1	ND	0.1	ND	0.1	ND	0.1	ND
4,4'-DDE	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Dieldrin	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Endrin	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Endosulfan II	0.1	ND	0.1	ND	0.1	ND	0.1	ND
4,4'-DDD	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Endrin aldehyde	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Endosulfan sulfate	0.1	ND	0.1	ND	0.1	ND	0.1	ND
4,4'-DDT	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Endrin ketone	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Methoxychlor	0.1	ND	0.1	ND	0.1	ND	0.1	ND
SURROGATE %RECOVERY								
TCMX	*		69		*		*	
Decachlorobiphenyl	*		98		*		*	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg
*Surrogate not recovered due to sample dilution.
**Elevated sample reporting limits due to matrix interferences.

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

QA/QC %RECOVERY		
	LCS	LCSD
gamma-BHC	77	89
Heptachlor	70	78
Aldrin	75	86
Dieldrin	75	85
Endrin	66	76
4,4'-DDT	63	71

QA/QC Analyzed: 03/22/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
N-Nitrosodimethylamine	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Aniline	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
bis (2-Chloroethyl) ether	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Phenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2-Chlorophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
1,3-Dichlorobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
1,4-Dichlorobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
1,2-Dichlorobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzyl alcohol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
bis (2-Chloroisopropyl) ether	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2-Methylphenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Hexachloroethane	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
N-Nitroso-di-n-propylamine	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Methylphenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Nitrobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Isophorone	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2-Nitrophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,4-Dimethylphenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
bis (2-Chloroethoxy) methane	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzoic acid	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,4-Dichlorophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
1,2,4-Trichlorobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Napthalene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Chloroaniline	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Hexachlorobutadiene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Chloro-3-methylphenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2-Methylnaphthalene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Hexachlorocyclopentadiene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,4,6-Trichlorophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,4,5-Trichlorophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2-Chloronaphthalene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2-Nitroaniline	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Acenaphthylene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Dimethylphthalate	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,6-Dinitrotoluene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Acenaphthene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
3-Nitroaniline	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,4-Dinitrophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Dibenzofuran	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
2,4-Dinitrotoluene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Nitrophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Fluorene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Chlorophenyl-phenylether	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Diethylphthalate	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Nitroaniline	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Azobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4,6-Dinitro-2-methylphenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Nitrosodiphenylamine	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
4-Bromopheny-phenylether	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Hexachlorobenzene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Pentachlorophenol	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Phenanthrene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Anthracene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Carbazole	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Di-n-butylphthalate	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Fluoranthene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzidine*	9.3	ND	4.7	ND	9.3	ND	0.5	ND	0.5	ND
Pyrene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Butylbenzylphthalate	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
3,3'-Dichlorobenzidine	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzo [a] anthracene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Chrysene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
bis (2-Ethylhexyl) phthalate	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Di-n-octylphthalate	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzo [b] fluoranthene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzo [k] fluoranthene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzo [a] pyrene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Indeno [1,2,3-cd] pyrene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Dibenz [a,h] anthracene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND
Benzo [g,h,i] perylene	1.3	ND	0.7	ND	1.3	ND	0.1	ND	0.1	ND

* Estimated Value

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Client Sample I.D.	B5 10'	D-7 7'	B-4	B-42	A-5
LAB. NO.	S0304477	S0304481	S0304487	S0304489	S0304491
SURROGATE %RECOVERY					
Fluorophenol	71	75	73	79	67
Phenol-d5	78	80	72	88	78
Nitrobenzene-d5	78	84	80	84	74
2-Fluorobiphenyl	84	90	85	95	92
2,4,6-Tribromophenol	80	88	79	110	111
Terphenyl-d14	87	86	84	103	99

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/Kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Client Sample I.D.	A-7		B-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
N-Nitrosodimethylamine	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Aniline	1.3	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Chloroethyl) ether	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Phenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2-Chlorophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
1,3-Dichlorobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
1,4-Dichlorobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
1,2-Dichlorobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzyl alcohol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Chloroisopropyl) ether	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2-Methylphenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Hexachloroethane	1.3	ND	0.1	ND	1.3	ND	1.3	ND
N-Nitroso-di-n-propylamine	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Methylphenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Nitrobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Isophorone	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2-Nitrophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dimethylphenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Chloroethoxy) methane	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzoic acid	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dichlorophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
1,2,4-Trichlorobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Napthalene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Chloroaniline	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Hexachlorobutadiene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Chloro-3-methylphenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2-Methylnaphthalene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Hexachlorocyclopentadiene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,4,6-Trichlorophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,4,5-Trichlorophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2-Chloronaphthalene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2-Nitroaniline	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Acenaphthylene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Dimethylphthalate	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,6-Dinitrotoluene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Acenaphthene	1.3	ND	0.1	ND	1.3	ND	1.3	ND

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Project: Warings
Method: EPA 8270C

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Client Sample I.D.	A-7		B-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
3-Nitroaniline	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dinitrophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Dibenzofuran	1.3	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dinitrotoluene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Nitrophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Fluorene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Chlorophenyl-phenylether	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Diethylphthalate	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Nitroaniline	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Azobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4,6-Dinitro-2-methylphenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Nitrosodiphenylamine	1.3	ND	0.1	ND	1.3	ND	1.3	ND
4-Bromopheny-phenylether	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Hexachlorobenzene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Pentachlorophenol	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Phenanthrene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Anthracene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Carbazole	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Di-n-butylphthalate	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Fluoranthene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzidine*	9.3	ND	0.5	ND	9.3	ND	9.3	ND
Pyrene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Butylbenzylphthalate	1.3	ND	0.1	ND	1.3	ND	1.3	ND
3,3'-Dichlorobenzidine	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [a] anthracene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Chrysene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Ethylhexyl) phthalate	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Di-n-octylphthalate	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [b] fluoranthene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [k] fluoranthene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [a] pyrene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Indeno [1,2,3-cd] pyrene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Dibenz [a,h] anthracene	1.3	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [g,h,i] perylene	1.3	ND	0.1	ND	1.3	ND	1.3	ND

* Estimated Value

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Project: Warings
Method: EPA 8270C

Client Sample I.D.	A-7	B-5	G-5 5'	G-5 9.5'
LAB. NO.	S0304493	S0304495	S0304499	S0304501
SURROGATE %RECOVERY				
Fluorophenol	89	88	83	87
Phenol-d5	91	96	83	88
Nitrobenzene-d5	101	92	89	89
2-Fluorobiphenyl	104	100	96	96
2,4,6-Tribromophenol	104	118	94	94
Terphenyl-d14	104	102	96	98

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/Kg

QA/QC %RECOVERY		
	LCS	LCSD
Phenol	75	79
2-Chlorophenol	70	74
1,4-Dichlorobenzene	69	72
N-Nitroso-di-n-propylamine	73	77
1,2,4-Trichlorobenzene	73	78
4-Chloro-3-methylphenol	83	88
Acenaphtlene	78	82
2,4-Dinitrotoluene	71	80
4-Nitrophenol	68	80
Pentachlorophenol	57	66
Pyrene	80	89

QA/QC Analyzed: 03/22/04

QA/QC %RECOVERY		
	LCS	LCSD
Phenol	77	74
2-Chlorophenol	72	69
1,4-Dichlorobenzene	70	67
N-Nitroso-di-n-propylamine	75	73
1,2,4-Trichlorobenzene	76	73
4-Chloro-3-methylphenol	88	84
Acenaphtlene	81	79
2,4-Dinitrotoluene	89	86
4-Nitrophenol	86	87
Pentachlorophenol	83	81
Pyrene	93	91

QA/QC Analyzed: 03/19/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed:

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Antimony	1.0	5.0	1.0	7.4	1.0	4.0	1.0	5.0	1.0	1.2
Arsenic	2.0	6.2	2.0	30	2.0	6.9	2.0	12	2.0	2.7
Barium	2.0	200	2.0	270	2.0	150	2.0	330	2.0	130
Beryllium	0.3	ND	0.3	ND	0.3	ND	0.3	ND	0.3	ND
Cadmium	0.5	2.2	0.5	12	0.5	2.4	0.5	3.3	0.5	1.1
Chromium	1.0	48	1.0	54	1.0	42	1.0	60	1.0	32
Cobalt	5.0	12	5.0	15	5.0	12	5.0	20	5.0	11
Copper	2.0	98	2.0	98	2.0	120	2.0	240	2.0	45
Lead	1.0	270	1.0	1600	1.0	290	1.0	705	1.0	220
Mercury	0.010	0.054	0.010	0.020	0.010	0.054	0.010	0.043	0.010	0.030
Molybdenum	1.0	ND	1.0	ND	1.0	ND	1.0	1.9	1.0	ND
Nickel	1.0	32	1.0	43	1.0	35	1.0	100	1.0	21
Selenium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Silver	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Thallium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Vanadium	2.0	45	2.0	38	2.0	42	2.0	36	2.0	47
Zinc	2.0	1300	2.0	1500	2.0	450	2.0	1100	2.0	460

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/23/04

Client Sample I.D.	A-7		B-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Antimony	1.0	1.8	1.0	3.5	1.0	ND	1.0	13
Arsenic	2.0	4.2	2.0	5.0	2.0	3.4	2.0	4.0
Barium	2.0	190	2.0	210	2.0	98	2.0	280
Beryllium	0.3	ND	0.3	ND	0.3	ND	0.3	ND
Cadmium	0.5	4.5	0.5	3.1	0.5	ND	0.5	2.5
Chromium	1.0	29	1.0	31	1.0	28	1.0	51
Cobalt	5.0	10	5.0	8.9	5.0	11	5.0	9.3
Copper	2.0	100	2.0	87	2.0	18	2.0	61
Lead	1.0	760	1.0	400	1.0	24	1.0	360
Mercury	0.010	0.032	0.010	0.048	0.010	0.050	0.010	0.069
Molybdenum	1.0	ND	1.0	2.3	1.0	ND	1.0	ND
Nickel	1.0	24	1.0	27	1.0	19	1.0	25
Selenium	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Silver	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Thallium	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Vanadium	2.0	29	2.0	36	2.0	44	2.0	42
Zinc	2.0	8700	2.0	1500	2.0	99	2.0	780

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Project: Warings

Method: EPA 6010B and EPA 7471A (Hg)

QA/QC %RECOVERY				
	LCS	LCSD	MS	MSD
Antimony	106	100	88	87
Arsenic	111	106	95	96
Barium	109	104	96	81
Beryllium	108	102	97	98
Cadmium	111	103	92	95
Chromium	114	107	101	91
Cobalt	112	104	94	94
Copper	110	102	82	46
Lead	107	100	50	1
Mercury	95	98	100	111
Molybdenum	108	102	95	95
Nickel	111	105	93	89
Selenium	108	101	97	98
Silver	103	98	101	101
Thallium	108	100	92	94
Vanadium	109	103	90	87
Zinc	112	105	5	-57

QA/QC Analyzed: 03/23/04

QA/QC %RECOVERY		
	LCS	LCSD
Mercury	92	91

QA/QC Analyzed: 03/24/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8150

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/26/04

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
2,4,5-TP	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
2,4-DB	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
2,4-D	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Dalapon	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Dicamba	0.6	ND	0.6	ND	0.6	ND	0.6	ND	0.6	ND
Dichloroprop	0.8	ND	0.8	ND	0.8	ND	0.8	ND	0.8	ND
Dinoseb	1.1	ND	1.1	ND	1.1	ND	1.1	ND	1.1	ND
MCPA	200	ND	200	ND	200	ND	200	ND	200	ND
MCPP	150	ND	150	ND	150	ND	150	ND	150	ND
4, Nitrophenol	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Pentachlorophenol	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Silvex	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
SURROGATE %RECOVERY										
DCAA	125		87		90		82		73	

ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in µg/kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8150

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/26/04

Client Sample I.D.	A-7		B-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
2,4,5-TP	1.0	ND	1.0	ND	1.0	ND	1.0	ND
2,4-DB	5.0	ND	5.0	ND	5.0	ND	5.0	ND
2,4-D	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Dalapon	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Dicamba	0.6	ND	0.6	ND	0.6	ND	0.6	ND
Dichloroprop	0.8	ND	0.8	ND	0.8	ND	0.8	ND
Dinoseb	1.1	ND	1.1	ND	1.1	ND	1.1	ND
MCPA	200	ND	200	ND	200	ND	200	ND
MCPP	150	ND	150	ND	150	ND	150	ND
4, Nitrophenol	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Pentachlorophenol	0.5	ND	0.5	ND	0.5	ND	0.5	ND
Silvex	1.0	ND	1.0	ND	1.0	ND	1.0	ND
SURROGATE %RECOVERY								
DCAA	112		81		88		94	

ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in µg/kg

QA/QC %Recovery			
	LCS	MS	MSD
2,4-D	81	90	90
2,4,5-TP (Silvex)	111	103	101
2,4,5-T	95	127	123

QA/QC Analyzed: 03/26/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 2119)

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed: 03/26/04

Project: Warings
Method: EPA 8140 - Organophosphate Pesticides

Client Sample I.D.	B5 10'		D-7 7'		B-4		B-42		A-5	
LAB. NO.	S0304477		S0304481		S0304487		S0304489		S0304491	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Azinophos Methyl	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Bolstar	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Coumaphos	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Demeton	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Diazinon	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Dichlorvos	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Disulfoton	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Dursban (Chlorpyrifos)	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Ethoprop	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Fensulfothion	10	ND	10	ND	10	ND	10	ND	10	ND
Fenthion	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Gardona (Stirophos)	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Merphos	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Methyl Parathion	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Mevinphos	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Naled	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Phorate	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Ronnel	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Tokuthion	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Trichloronate	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
SURROGATE %RECOVERY										
Tributylphosphate	71		66		80		68		74	

ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in µg/kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Date Sampled: 03/15/04
Date Received: 03/15/04
Date Analyzed:

Project: Warings
Method: EPA 8140 - Organophosphate Pesticides

Client Sample I.D.	A-7		8-5		G-5 5'		G-5 9.5'	
LAB. NO.	S0304493		S0304495		S0304499		S0304501	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Azinophos Methyl	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Bolstar	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Coumaphos	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Demeton	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Diazinon	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Dichlorvos	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Disulfoton	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Dursban (Chlorpyrifos)	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Ethoprop	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Fensulfothion	10	ND	10	ND	10	ND	10	ND
Fenthion	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Gardona (Stirophos)	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Merphos	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Methyl Parathion	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Mevinphos	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Naled	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Phorate	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Ronnel	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Tokuthion	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Trichloronate	5.0	ND	5.0	ND	5.0	ND	5.0	ND
SURROGATE %RECOVERY								
Tributylphosphate	66		58		59		55	

ND = Not Detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in µg/kg

QA/QC %Recovery			
	LCS	MS	MSD
Diazinon	106	102	93
Methyl Parathion	104	112	112
Dursban (Chlorpyrifos)	93	93	87
Gardona (Stirophos)	113	116	112

QA/QC Analyzed: 03/19/04

Laboratory Representative

03/29/04
Date Reported

Excelchem
Environmental Labs

300 Broadway Street
Eureka, CA 95501
Ph: 707-444-0120 Fx: 707-444-0560

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Davon Owen
Phone #: 341-6723
Company/Address: 1001 I Street Sacto CA 95812
Fax #: 319-7552
Project Number/P.O#:
Project Name: Warings
Project Location: Sacto –
Sampler Signature: [signature]

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: davono@ciwmb.ca.gov

ANALYSIS REQUEST 304067

Page 1 of 4

Wet: X
Total: X

Bin# A-8
Due Date: 3/23

Sample ID	Date	Time	VOA	SLEEVE	GLASS	PLASTIC	HCl	HNO3	ICE	NONE	WATER	SOIL	AIR	BTEX/~~TPH as Gasoline (602/8020/8015)~~	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	Extended TPH	Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
G-2 2'	3/16				X				X			X		X					X	X	X				X	X			X		S0304620
G-2D																															S0304621
G-2 5'														X					X	X	X				X	X			X		S0304622
G-2d 5'																															S0304623
G-2 18'														X					X	X	X				X	X			X		S0304624
G-2d 18'																															S0304625
G-2 15'														X					X	X	X				X	X			X		S0304626
G-2d 15'																															S0304627
G-2 10'														X					X	X	X				X	X			X		S0304628
G-2d 10'																															S0304629

Relinquished by:	Date	Time	Received by:
[signature]	3/16	130	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/16/04	1:30p	Shannon Beale

Remarks/Condition of Sample:
Wet > 10x STLC.
Please Run TPH extended Range C7-C44
Report = C7-C13 C14-C28 C28-C44.

Bill To:

Excelchem
Environmental Labs

300 Broadway Street
Eureka, CA 95501
Ph: 707-444-0120 Fx: 707-444-0560

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen
Phone #: 341-6723
Company/Address: 1001 I street Sacto, CA 95812
Fax #: 319-7552
Project Number/P.O#:
Project Name: Warings
Project Location: Sacto
Sampler Signature:

Electronic Data Deliverables Request:
Global I.D.#:
Email Address:
COC #:
Location I.D.#: dawno@ciwmb.ca.gov

ANALYSIS REQUEST 304067

Page 2 of 4

Bin# A-8
Due Date: 3/23

Sample ID	Sampling Date	Sampling Time	Container VOA	Container SLEEVE	Container GLASS	Container PLASTIC	Method Preserved HCl	Method Preserved HNO3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL	Matrix AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals (Wet X / Total X)	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	8150	8150	TPH extended range			Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
D-2 8'	3/16				X							X		X					X	X					X	X					X	Burn		-	S0304630
D-2d 8'																												~~Pb~~							S0304631
D-3 9'														X					X	X					X	X		~~Pb~~				Burn			S0304632
D-3d 9'																																			S0304633
D-3 25'																																clay (Hold)			S0304634
D-3d 25'																																			S0304635
C-3 9.5'														X					X	X					X	X					X	burn		-	S0304636
C-3d 9.5'																																			S0304637
D-2 24'																																clay			S0304638
D-2d 34'																																			S0304639

Relinquished by: Dave
Date: 3/16
Time: 1:30
Received by:

Relinquished by:
Date
Time
Received by:

Relinquished by:
Date: 3/16/04
Time: 1:30
Received by Laboratory: Shannon Pagliaro

Remarks/Condition of Sample:
Hold - D-3 25',
D-2 24'

Wet > x10 STLC -
Standard TAT

Bill To:

Excelchem
Environmental Labs

300 Broadway Street
Eureka, CA 95501
Ph: 707-444-0120 Fx: 707-444-0560

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen
Phone #: 341-6723
Company/Address: 1001 I Street Sacto CA 95812
Fax #: 319-7552
Project Number/P.O#:
Project Name: Waring.
Project Location: Sacto.
Sampler Signature:

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: dawno@owmb.ca.gov

ANALYSIS REQUEST

304067

Page 3 of 4

Bin# A-8
Due Date: 3/23

Sample ID	Sampling Date	Sampling Time	Container: VOA	SLEEVE	1L GLASS	PLASTIC	Method Preserved: HCl	HNO3	ICE	NONE	Matrix: WATER	SOIL	AIR	BTEX/TPH as Gasoline (8021B/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals (Wet X / Total X)	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	8140	8150	TPH Extended Range			Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
F-4 3.5'	3/15													X					X	X					X	X					X	Burn			S0304640
F-4d 3.5'																																			S0304641
F-4 9.5'														X											X	X						Burn			S0304642
F-4d 9.5'																																			S0304643
F-4 22'																											S0304644					clay			hold -
F-4d 22'																											S0304645								0 ↓

Relinquished by:	Date	Time	Received by:
[signature]	3/16	1:30	
Relinquished by:	Date	Time	Received by:
Relinquished	Date	Time	Received by Laboratory:
	3/16/04	1:30	Shannon Bonilla

Remarks/Condition of Sample: Hold - F-4 (22').

To:

Excelchem
Environmental Labs

300 Broadway Street
Eureka, CA 95501
Ph: 707-444-0120 Fx: 707-444-0560

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen
Phone #: 341-6723
Company/Address: 1001 I street Sacto, CA 95812
Fax #: 317-2552

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: dawno@ erwmb.ca.gov

Project Number/P.O#:
Project Name: Naringo.
Project Location: Sacto
Sampler Signature: [signature]

ANALYSIS REQUEST 304067 Page 4 of 4

Wet: X
Total: X

Bin# A-8
Due Date: 3/23

Sample ID	Date	Time	VOA	SLEEVE	GLASS	PLASTIC	HCl	HNO3	ICE	NONE	WATER	SOIL	AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	TPH Extended Range	Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
B-4 (1') Reop	3/16				X				X			X		X					X		8260				X	X			X		S0304646
B-4d 9'																												8260			S0304647
B-4 23'																										(Hold)				clay	trans S0304648
B-4d 23'																														clay	S0304649
G-2																				X	X				out of transformer						S0304650
F-3 12.5'														X					X		8260				X	X			X		S0304651
F-3 D 12.5'																															S0304652
F-3 22'																													(Hold)	clay	S0304653
F-3D 22'																														clay	~~S0304654~~
																															S0304654

Relinquished by:	Date	Time	Received by:
[signature]	3/16	1:30	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/16/04	1:30	Shannon Bonito

Remarks/Condition of Sample:
(G-2 – PCB + Vol 8260B) wet > 10% + cc.
PCB → 8082
Hold (B-4d 23'). F-3 (22').

Bill To:

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen CIWMB P.O. Box 4025 / 1001 I Street Sacramento, CA 95812	Date Sampled: Date Received: BTEX/TPHg Analyzed: TPHd Analyzed:	03/16/04 03/16/04 03/24,25/04 03/24/04
Project:	Warings	TPHo Analyzed:	03/24/04
Method:	EPA 8020/8015m	TPHk Analyzed:	03/29/04

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		D-2 8'	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304630	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Toluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Ethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Total Xylenes	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
TPH as Diesel	1.0	ND	1.0	ND	1.0	ND	4.0	7.0	4.0	ND	4.0	12
TPH as Oil	10	18	10	10	10	14	40	95	40	330	40	190
TPH as Kerosene	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	100	ND
High Range TPH		*		*		*		*		*		*

Client Sample I.D.	D-3 9'		C-3 9.5'		F-4 3.5'		F-4 9.5'		B-4(1) 9'		F-3 12.5'	
LAB. NO.	S0304632		S0304636		S0304640		S0304642		S0304646		S0304651	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Toluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Ethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Total Xylenes	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
TPH as Diesel	1.0	NR	1.0	2.5	4.0	41*	1.0	NR	4.0	ND	4.0	12
TPH as Oil	10	NR	10	95	40	79	10	NR	40	ND	40	1300
TPH as Kerosene	5.0	NR	5.0	ND	20	ND	5.0	NR	20	ND	20	ND
High Range TPH		NR		*		*		NR		*		*

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

* There were no petroleum Hydrocarons present beyond C38. The C28-C40 range was reported based on Motor Oil Calibration.

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8020/8015m

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	97	99
Toluene	92	9
Ethylbenzene	92	93
Total Xylenes	93	93
TPH as Diesel	77	83
TPH as Oil	71	70
TPH as Kerosene	86	82

QA/QC Analyzed: 03/24/04
TPHd QA/QC Analyzed: 03/24/04
TPHo QA/QC Analyzed: 03/24/04
TPHk QA/QC Analyzed: 03/29/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen CIWMB P.O. Box 4025 / 1001 I Street Sacramento, CA 95812	Date Sampled: Date Received: Date Analyzed:	03/16/04 03/16/04 03/23/04
Project:	Warings		
Method:	EPA 8081A - Pesticides		

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		D-2 8'	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304630	
ANALYTE	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results
Alpha-BHC	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Beta-BHC	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Gamma-BHC	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Delta-BHC	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Heptachlor	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Aldrin	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Heptachlor epoxide	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Gamma-Chlordane	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Endosulfan I	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Alpha-Chlordane	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
4,4'-DDE	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Dieldrin	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Endrin	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Endosulfan II	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
4,4'-DDD	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Endrin aldehyde	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Endosulfan sulfate	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
4,4'-DDT	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Endrin ketone	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
Methoxychlor	0.05	ND	0.05	ND	0.05	ND	0.1	ND	0.05	ND	0.5	ND
SURROGATE %RECOVERY												
TCMX	**		88		88		**		83		86	
Decachlorobiphenyl	**		108		107		**		109		**	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg
* Elevated reporting levels are due to matrix interferenc
** Surrogate not recovered due to sample dilution.

Laboratory Representative — 03/29/04 Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/23/04

Client Sample I.D.	D-3 9'		C-3 9.5'		F-4 3.5'		B-4(1) 9'		F-3 12.5'	
LAB. NO.	S0304632		S0304636		S0304640		S0304646		S0304651	
ANALYTE	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results
Alpha-BHC	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Beta-BHC	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Gamma-BHC	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Delta-BHC	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Heptachlor	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Aldrin	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Heptachlor epoxide	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Gamma-Chlordane	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Endosulfan I	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Alpha-Chlordane	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
4,4'-DDE	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Dieldrin	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Endrin	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Endosulfan II	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
4,4'-DDD	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Endrin aldehyde	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Endosulfan sulfate	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
4,4'-DDT	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Endrin ketone	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
Methoxychlor	0.05	ND	0.05	ND	0.1	ND	0.1	ND	0.5	ND
SURROGATE %RECOVERY										
TCMX	89		89		91		88		**	
Decachlorobiphenyl	113		105		**		**		**	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

* Elevated reporting levels are due to matrix interferenc
** Surrogate not recovered due to sample dilution.

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

QA/QC %RECOVERY		
	LCS	LCSD
gamma-BHC	77	89
Heptachlor	87	98
Aldrin	75	86
Dieldrin	75	85
Endrin	66	76
4,4'-DDT	63	71

QA/QC Analyzed: 03/22/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8082 - PCBs

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/23/04

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		D-2 8'	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304630	
ANALYTE	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results
Aroclor 1016	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
Aroclor 1221	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
Aroclor 1232	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
Aroclor 1242	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
Aroclor 1248	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
Aroclor 1254	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
Aroclor 1260	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	20	ND
SURROGATE %RECOVERY												
Decachlorobiphenyl	**		108		107		**		109		**	

Client Sample I.D.	D-3 9'		C-3 9.5'		F-4 3.5'		G-2	
LAB. NO.	S0304632		S0304636		S0304640		S0304650	
ANALYTE	R/L*	Results	R/L*	Results	R/L*	Results	R/L*	Results
Aroclor 1016	4.0	ND	2.0	ND	8.0	ND	8.0	ND
Aroclor 1221	4.0	ND	2.0	ND	8.0	ND	8.0	ND
Aroclor 1232	4.0	ND	2.0	ND	8.0	ND	8.0	ND
Aroclor 1242	4.0	ND	2.0	ND	8.0	ND	8.0	ND
Aroclor 1248	4.0	ND	2.0	ND	8.0	ND	8.0	ND
Aroclor 1254	4.0	ND	2.0	ND	8.0	ND	8.0	ND
Aroclor 1260	4.0	ND	2.0	ND	8.0	ND	8.0	ND
SURROGATE %RECOVERY								
Decachlorobiphenyl	113		105		**		**	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

QA/QC %RECOVERY		
	LCS	LCSD
Aroclor 1260	83	87

QA/QC Analyzed:
* Elevated reporting levels are due to matrix interferenc
** Surrogate not recovered due to sample dilution.

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/16/04
	CIWMB	Date Received:	03/16/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	03/26/04
	Sacramento, CA 95812		
Project:	Warings		
Method:	EPA 8260B		

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		G-2	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304650	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Dichlorodiflouromethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Chloromethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Vinyl chloride	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Bromomethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Chloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Trichlorofluoromethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Acetone	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	0.57
1,1-Dichloroethene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Iodomethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Methylene chloride	0.05	ND	0.005	ND	0.05	ND	0.005	ND	0.005	ND	0.005	ND
Carbon disulfide	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	0.006
trans-1,2-Dichloroethene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,1-Dichloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
2-Butanone	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	0.076
2,2-Dichloropropane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
cis-1,2-Dichloroethene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Bromochloromethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Chloroform	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,1,1-Trichloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Carbon tetrachloride	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,1-Dichloropropene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Benzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2-Dichloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Trichloroethene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2-Dichloropropane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Dibromomethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Bromodichloromethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
cis-1,3-Dichloropropene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
4-Methyl-2-pentanone	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND
Toluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
trans-1,3-Dichloropropene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,1,2-Trichloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Tetrachloroethene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,3-Dichloropropane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
2-Hexanone	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND
Dibromochloromethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2-Dibromoethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/16/04
	CIWMB	Date Received:	03/16/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	
	Sacramento, CA 95812		
Project:	Warings		
Method:	EPA 8260B		

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		G-2	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304650	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Chlorobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,1,1,2-Tetrachloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Ethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
m,p-Xylene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
o-Xylene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Styrene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Bromoform	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Isopropylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Bromobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,1,2,2-Tetrachloroethane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2,3-Trichloropropane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
n-Propylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
2-Chlorotoluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
4-Chlorotoluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,3,5-Trimethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
tert-Butylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2,4-Trimethylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
sec-butylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,3-Dichlorobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
4-Isopropyltoluene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,4-Dichlorobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2-Dichlorobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
n-Butylbenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2-Dibromo-3-chloropropane	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2,4-Trichlorobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Hexachlorobutadiene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Naphthalene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
1,2,3-Trichlorobenzene	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
SURROGATE %RECOVERY												
Dibromofluoromethane	99		96		97		94		94		88	
Toluene-d8	95		93		96		96		98		94	
4-Bromofluorobenzene	110		103		97		103		106		107	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8260B

QA/QC %RECOVERY		
	LCS	LCSD
1,1-Dichloroethene	94	97
Benzene	109	112
Trichloroethene	81	85
Toluene	90	100
Chlorobenzene	94	98

QA/QC Analyzed: 03/26/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/16/04
	CIWMB	Date Received:	03/16/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	03/19/04
	Sacramento, CA 95812		
Project:	Warings		
Method:	EPA 8270C		

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		D-2 8'	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304630	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
N-Nitrosodimethylamine	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Aniline	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Chloroethyl) ether	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Phenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2-Chlorophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
1,3-Dichlorobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
1,4-Dichlorobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
1,2-Dichlorobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzyl alcohol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Chloroisopropyl) ether	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2-Methylphenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Hexachloroethane	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
N-Nitroso-di-n-propylamine	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Methylphenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Nitrobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Isophorone	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2-Nitrophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dimethylphenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Chloroethoxy) methane	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzoic acid	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dichlorophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
1,2,4-Trichlorobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Napthalene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Chloroaniline	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Hexachlorobutadiene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Chloro-3-methylphenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2-Methylnaphthalene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Hexachlorocyclopentadiene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,4,6-Trichlorophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,4,5-Trichlorophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2-Chloronaphthalene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2-Nitroaniline	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Acenaphthylene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Dimethylphthalate	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,6-Dinitrotoluene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Acenaphthene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/16/04
	CIWMB	Date Received:	03/16/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	03/19/04
	Sacramento, CA 95812		
Project:	Warings		
Method:	EPA 8270C		

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		D-2 8'	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304630	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
3-Nitroaniline	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dinitrophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Dibenzofuran	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dinitrotoluene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Nitrophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Fluorene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Chlorophenyl-phenylether	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Diethylphthalate	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Nitroaniline	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Azobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4,6-Dinitro-2-methylphenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Nitrosodiphenylamine	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
4-Bromopheny-phenylether	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Hexachlorobenzene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Pentachlorophenol	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Phenanthrene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Anthracene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Carbazole	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Di-n-butylphthalate	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Fluoranthene	0.3	0.6	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzidine*	2.3	ND	0.5	ND	0.5	ND	9.3	ND	9.3	ND	9.3	ND
Pyrene	0.3	0.7	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Butylbenzylphthalate	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
3,3'-Dichlorobenzidine	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [a] anthracene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Chrysene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Ethylhexyl) phthalate	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Di-n-octylphthalate	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [b] fluoranthene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [k] fluoranthene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [a] pyrene	0.3	0.4	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Indeno [1,2,3-cd] pyrene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Dibenz [a,h] anthracene	0.3	0.4	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [g,h,i] perylene	0.3	ND	0.1	ND	0.1	ND	1.3	ND	1.3	ND	1.3	ND

* Estimated Value

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/19/04

Client Sample I.D.	G-2 2ft	G-2 5ft	G-2 18'	G-2 15'	G-2 10'	D-2 8'
LAB. NO.	S0304620	S0304622	S0304624	S0304626	S0304628	S0304630
SURROGATE %RECOVERY						
Fluorophenol	76	64	67	76	77	75
Phenol-d5	83	71	78	87	82	80
Nitrobenzene-d5	80	71	74	85	83	75
2-Fluorobiphenyl	86	76	81	93	89	80
2,4,6-Tribromophenol	84	94	104	79	78	74
Terphenyl-d14	93	87	95	95	93	81

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/Kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen CIWMB P.O. Box 4025 / 1001 I Street Sacramento, CA 95812	Date Sampled: Date Received: Date Analyzed:	03/16/04 03/16/04 03/19/04
Project:	Warings		
Method:	EPA 8270C		

Client Sample I.D.	D-3 9'		C-3 9.5'		F-4 3.5'		F-4 9.5'		B-4(1) 9'		F-3 12.5'	
LAB. NO.	S0304632		S0304636		S0304640		S0304642		S0304646		S0304651	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
N-Nitrosodimethylamine	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Aniline	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Chloroethyl) ether	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Phenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2-Chlorophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
1,3-Dichlorobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
1,4-Dichlorobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
1,2-Dichlorobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzyl alcohol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Chloroisopropyl) ether	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2-Methylphenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Hexachloroethane	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
N-Nitroso-di-n-propylamine	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Methylphenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Nitrobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Isophorone	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2-Nitrophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dimethylphenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
bis (2-Chloroethoxy) methane	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzoic acid	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dichlorophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
1,2,4-Trichlorobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Napthalene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Chloroaniline	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Hexachlorobutadiene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Chloro-3-methylphenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2-Methylnaphthalene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Hexachlorocyclopentadiene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,4,6-Trichlorophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,4,5-Trichlorophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2-Chloronaphthalene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2-Nitroaniline	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Acenaphthylene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Dimethylphthalate	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,6-Dinitrotoluene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Acenaphthene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed:

Project: Warings
Method: EPA 8270C

Client Sample I.D.	D-3 9'		C-3 9.5'		F-4 3.5'		F-4 9.5'		B-4(1) 9'		F-3 12.5'	
LAB. NO.	S0304632		S0304636		S0304640		S0304642		S0304646		S0304651	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
3-Nitroaniline	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dinitrophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Dibenzofuran	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
2,4-Dinitrotoluene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Nitrophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Fluorene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Chlorophenyl-phenylether	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Diethylphthalate	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Nitroaniline	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Azobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4,6-Dinitro-2-methylphenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Nitrosodiphenylamine	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
4-Bromopheny-phenylether	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Hexachlorobenzene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Pentachlorophenol	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Phenanthrene	1.3	ND	1.3	ND	1.3	1.4	1.3	ND	1.3	ND	1.3	ND
Anthracene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Carbazole	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Di-n-butylphthalate	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Fluoranthene	1.3	ND	1.3	ND	1.3	3.2	1.3	ND	1.3	ND	1.3	ND
Benzidine*	9.3	ND	9.3	ND	9.3	ND	9.3	ND	9.3	ND	9.3	ND
Pyrene	1.3	ND	1.3	ND	1.3	3.5	1.3	ND	1.3	ND	1.3	ND
Butylbenzylphthalate	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
3,3'-Dichlorobenzidine	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [a] anthracene	1.3	ND	1.3	ND	1.3	1.8	1.3	ND	1.3	ND	1.3	ND
Chrysene	1.3	ND	1.3	ND	1.3	2.1	1.3	ND	1.3	ND	1.3	ND
bis (2-Ethylhexyl) phthalate	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Di-n-octylphthalate	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [b] fluoranthene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [k] fluoranthene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [a] pyrene	1.3	ND	1.3	ND	1.3	1.7	1.3	ND	1.3	ND	1.3	ND
Indeno [1,2,3-cd] pyrene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Dibenz [a,h] anthracene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND
Benzo [g,h,i] perylene	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND

* Estimated Value

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Client Sample I.D.	D-3 9'	C-3 9.5'	F-4 3.5'	F-4 9.5'	B-4(1) 9'	F-3 12.5'
LAB. NO.	S0304632	S0304636	S0304640	S0304642	S0304646	S0304651
SURROGATE %RECOVERY						
Fluorophenol	63	59	65	50	59	49
Phenol-d5	73	72	74	62	68	51
Nitrobenzene-d5	71	72	74	60	62	50
2-Fluorobiphenyl	82	82	83	70	74	54
2,4,6-Tribromophenol	86	71	75	69	61	41
Terphenyl-d14	98	85	88	85	81	56

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/Kg

QA/QC %RECOVERY		
	LCS	LCSD
Phenol	77	74
2-Chlorophenol	72	69
1,4-Dichlorobenzene	70	67
N-Nitroso-di-n-propylamine	75	73
1,2,4-Trichlorobenzene	76	73
4-Chloro-3-methylphenol	88	84
Acenaphthene	81	79
2,4-Dinitrotoluene	89	86
4-Nitrophenol	86	78
Pentachlorophenol	83	81
Pyrene	93	91

QA/QC Analyzed: 03/19/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/23,25/04

Client Sample I.D.	G-2 2ft		G-2 5ft		G-2 18'		G-2 15'		G-2 10'		D-2 8'	
LAB. NO.	S0304620		S0304622		S0304624		S0304626		S0304628		S0304630	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Antimony	1.0	180	1.0	13	1.0	ND	1.0	11	1.0	17	1.0	2.5
Arsenic	2.0	10	2.0	4.0	2.0	ND	2.0	15	2.0	9.0	2.0	8.0
Barium	2.0	700	2.0	310	2.0	220	2.0	280	2.0	490	2.0	160
Beryllium	0.3	ND	0.3	ND	0.3	ND	0.3	ND	0.3	ND	0.3	ND
Cadmium	0.5	12	0.5	5.8	0.5	ND	0.5	5.7	0.5	3.2	0.5	2.3
Chromium	1.0	65	1.0	46	1.0	30	1.0	54	1.0	41	1.0	34
Cobalt	5.0	15	5.0	11	5.0	9.7	5.0	47	5.0	8.8	5.0	11
Copper	2.0	610	2.0	66	2.0	17	2.0	330	2.0	200	2.0	75
Lead	1.0	2900	1.0	470	1.0	5.8	1.0	770	1.0	2900	1.0	170
Mercury	0.010	0.028	0.010	0.064	0.010	0.012	0.010	0.180	0.010	0.110	0.010	0.070
Molybdenum	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	4.5	1.0	ND
Nickel	1.0	110	1.0	26	1.0	21	1.0	2700	1.0	29	1.0	31
Selenium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Silver	1.0	2.2	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Thallium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Vanadium	2.0	33	2.0	28	2.0	48	2.0	30	2.0	19	2.0	31
Zinc	2.0	8500	2.0	2400	2.0	34	2.0	13000	2.0	1500	2.0	910

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Joseph Balla
Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/23,25/04

Client Sample I.D.	D-3 9'		C-3 9.5'		F-4 3.5'		F-4 9.5'		B-4(1) 9'		F-3 12.5'	
LAB. NO.	S0304632		S0304636		S0304640		S0304642		S0304646		S0304651	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Antimony	1.0	2.1	1.0	8.3	1.0	2.9	1.0	6.1	1.0	23	1.0	2.8
Arsenic	2.0	4.4	2.0	9.2	2.0	6.4	2.0	14	2.0	55	2.0	3.2
Barium	2.0	160	2.0	390	2.0	140	2.0	580	2.0	410	2.0	130
Beryllium	0.3	ND	0.3	ND	0.3	ND	0.3	ND	0.3	ND	0.3	ND
Cadmium	0.5	3.0	0.5	3.4	0.5	2.0	0.5	5.1	0.5	13	0.5	1.8
Chromium	1.0	32	1.0	110	1.0	42	1.0	44	1.0	68	1.0	36
Cobalt	5.0	11	5.0	18	5.0	12	5.0	13	5.0	20	5.0	7.9
Copper	2.0	70	2.0	84	2.0	60	2.0	150	2.0	380	2.0	120
Lead	1.0	180	1.0	1400	1.0	220	1.0	980	1.0	2100	1.0	130
Mercury	0.010	0.091	0.010	0.042	0.010	0.060	0.010	0.120	0.010	0.052	0.010	0.080
Molybdenum	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	3.2	1.0	ND
Nickel	1.0	26	1.0	45	1.0	29	1.0	40	1.0	76	1.0	22
Selenium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Silver	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Thallium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Vanadium	2.0	38	2.0	38	2.0	45	2.0	30	2.0	36	2.0	31
Zinc	2.0	450	2.0	1400	2.0	840	2.0	5400	2.0	1400	2.0	370

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

QA/QC %RECOVERY				
	LCS	LCSD	MS	MSD
Antimony	106	100	88	87
Arsenic	111	106	95	96
Barium	109	104	96	81
Beryllium	108	102	97	98
Cadmium	111	103	92	95
Chromium	114	107	101	91
Cobalt	112	104	94	94
Copper	110	102	82	*
Lead	107	100	50	*
Mercury	90	91	96	87
Molybdenum	108	102	95	95
Nickel	111	105	93	89
Selenium	108	101	97	98
Silver	103	98	101	101
Thallium	108	100	92	94
Vanadium	109	103	90	87
Zinc	112	105	*	*

QA/QC Analyzed: 03/23,25/04

* Spike recovery not calculated due to matrix interferences.

Laboratory Representative

03/29/04
Date Reported

Excelchem
Environmental Labs

EXCELCHEM LABS
500 Giuseppe Ct., #3
Roseville, CA 95678
Phone: (916)-773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen. 341-6723

Company/Address: 1001 I Street Sacto, CA 95812

Fax #: 319-7552

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: dawno@ciwmb.ca.gov.

Project Number/P.O#:

Project Name: Waring

Project Location: Sacto

Sampler Signature: [signature]

ANALYSIS REQUEST

304068

Page 1 of 1

Bin# 71

Due Date: 3/24

Sample ID	Sampling Date	Sampling Time	Container	Method Preserved	Matrix	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals (Wet / Total)	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	TPH extended range		Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
C-6 3'	3-16		1L GLASS X	ICE X	SOIL X	X					X	X	X				X	X			X			S0304659
C-6d 3'																								S0304660
D-6C 10'						X					X	X					X	X			X			S0304661
D-6C 20'																		X			X	chg.		S0304662
E-1 5'						X						X					X	X			X			S0304663
E-1 9'						X					X						X	X			X			S0304664
E-1 18'																					X			S0304665

Container: VOA, SLEEVE, 1L GLASS, PLASTIC. Method Preserved: HCl, HNO3, ICE, NONE. Matrix: WATER, SOIL, AIR.

Relinquished by:	Date	Time	Received by:
Dawn	3/17	1130	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/17	11:30	Shannon Koalo

Remarks/Condition of Sample: wet @ >10X STLC.

Bill To:

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/16/04
	CIWMB	Date Received:	03/16/04
	P.O. Box 4025 / 1001 I Street	BTEX/TPHg Analyzed:	03/24/04
	Sacramento, CA 95812	TPHd Analyzed:	03/25/04
Project:	Warings	TPHo Analyzed:	03/25/04
Method:	EPA 8020/8015m	TPHk Analyzed:	03/29/04

Client Sample I.D.	C6 3'		D-6C 10'		D-6C 20'		E-1 5'		E-1 9		E-1 18'	
LAB. NO.	S0304659		S0304661		S0304662		S0304663		S0304664		S0304665	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	0.005	ND	0.005	ND	0.005	NR	0.005	ND	0.005	ND	0.005	NR
Toluene	0.005	ND	0.005	ND	0.005	NR	0.005	ND	0.005	ND	0.005	NR
Ethylbenzene	0.005	ND	0.005	ND	0.005	NR	0.005	ND	0.005	ND	0.005	NR
Total Xylenes	0.005	ND	0.005	ND	0.005	NR	0.005	ND	0.005	ND	0.005	NR
TPH as Diesel	1.0	ND	1.0	ND	4.0	ND	1.0	ND	4.0	ND	1.0	*
TPH as Oil	10	ND	10	ND	40	77	10	ND	40	100	10	*
TPH as Kerosene	5.0	ND	5.0	ND	5.0	ND	20	ND	20	ND	20	ND
High Range TPH		*		*		*		*		*		*

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg
NR = Not Requested

QA/QC %RECOVERY	LCS	LCSD
Benzene	97	99
Toluene	92	93
Ethylbenzene	92	93
Total Xylenes	93	93
TPH as Diesel	77	83
TPH as Oil	71	70
TPH as Kerosene	86	82

QA/QC Analyzed: 03/24/04
TPHd QA/QC Analyzed: 03/24/04
TPHo QA/QC Analyzed: 03/24/04
TPHk QA/QC Analyzed: 03/29/04

QA/QC %RECOVERY	LCS	LCSD
TPH as Diesel	74	73
TPH as Oil	74	77

TPHd QA/QC Analyzed: 03/25/04
TPHo QA/QC Analyzed: 03/25/04

* There were no petroleum Hydrocarons present beyond C38. The C28-C40 range was reported based on Motor Oil Calibration.

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/25/04

Client Sample I.D.	C6 3'		D-6C 10'		E-1 9	
LAB. NO.	S0304659		S0304661		S0304664	
ANALYTE	R/L*	Results	R/L*	Results	R/L*	Results
Alpha-BHC	0.1	ND	0.1	ND	0.25	ND
Beta-BHC	0.1	ND	0.1	ND	0.25	ND
Gamma-BHC	0.1	ND	0.1	ND	0.25	ND
Delta-BHC	0.1	ND	0.1	ND	0.25	ND
Heptachlor	0.1	ND	0.1	ND	0.25	ND
Aldrin	0.1	ND	0.1	ND	0.25	ND
Heptachlor epoxide	0.1	ND	0.1	ND	0.25	ND
Gamma-Chlordane	0.1	ND	0.1	ND	0.25	ND
Endosulfan I	0.1	ND	0.1	ND	0.25	ND
Alpha-Chlordane	0.1	ND	0.1	ND	0.25	ND
4,4'-DDE	0.1	ND	0.1	ND	0.25	ND
Dieldrin	0.1	ND	0.1	ND	0.25	ND
Endrin	0.1	ND	0.1	ND	0.25	ND
Endosulfan II	0.1	ND	0.1	ND	0.25	ND
4,4'-DDD	0.1	ND	0.1	ND	0.25	ND
Endrin aldehyde	0.1	ND	0.1	ND	0.25	ND
Endosulfan sulfate	0.1	ND	0.1	ND	0.25	ND
4,4'-DDT	0.1	ND	0.1	ND	0.25	ND
Endrin ketone	0.1	ND	0.1	ND	0.25	ND
Methoxychlor	0.1	ND	0.1	ND	0.25	ND
SURROGATE %RECOVERY						
TCMX	112		98		102	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

*Elevated reporting limit due to matrix interference.

Laboratory Representative

03/29/04
Date Reported

// EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8081A - Pesticides

QA/QC %RECOVERY		
	LCS	LCSD
gamma-BHC	77	89
Heptachlor	87	98
Aldrin	75	86
Dieldrin	75	85
Endrin	66	76
4,4'-DDT	63	71

QA/QC Analyzed: 03/22/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen CIWMB P.O. Box 4025 / 1001 I Street Sacramento, CA 95812	Date Sampled: Date Received: Date Analyzed:	03/16/04 03/16/04 03/25/04
Project:	Warings		
Method:	EPA 8082 - PCBs		

Client Sample I.D.	C6 3'		D-6C 10'		E-1 5'	
LAB. NO.	S0304659		S0304661		S0304663	
ANALYTE	R/L*	Results	R/L*	Results	R/L*	Results
Aroclor 1016	8.0	ND	8.0	ND	10	ND
Aroclor 1221	8.0	ND	8.0	ND	10	ND
Aroclor 1232	8.0	ND	8.0	ND	10	ND
Aroclor 1242	8.0	ND	8.0	ND	10	ND
Aroclor 1248	8.0	ND	8.0	ND	10	ND
Aroclor 1254	8.0	ND	8.0	ND	10	ND
Aroclor 1260	8.0	ND	8.0	ND	10	ND
SURROGATE %RECOVERY						
Decachlorobiphenyl	**		**		**	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

*Elevated reporting limit due to matrix interference.
** Surrogate not recovered due to sample dilution.

QA/QC %RECOVERY		
	LCS	LCSD
Aroclor 1260	83	87

QA/QC Analyzed: 03/23/04

Laboratory Representative

03/29/04
Date Reported

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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8260B

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/26/04

Client Sample I.D.	C6 3'	
LAB. NO.	S0304659	
ANALYTE	R/L	Results
Dichlorodiflouromethane	0.005	ND
Chloromethane	0.005	ND
Vinyl chloride	0.005	ND
Bromomethane	0.005	ND
Chloroethane	0.005	ND
Trichlorofluoromethane	0.005	ND
Acetone	0.05	ND
1,1-Dichloroethene	0.005	ND
Iodomethane	0.005	ND
Methylene chloride	0.05	ND
Carbon disulfide	0.005	ND
trans-1,2-Dichloroethene	0.005	ND
1,1-Dichloroethane	0.005	ND
2-Butanone	0.05	ND
2,2-Dichloropropane	0.005	ND
cis-1,2-Dichloroethene	0.005	ND
Bromochloromethane	0.005	ND
Chloroform	0.005	ND
1,1,1-Trichloroethane	0.005	ND
Carbon tetrachloride	0.005	ND
1,1-Dichloropropene	0.005	ND
Benzene	0.005	ND
1,2-Dichloroethane	0.005	ND
Trichloroethene	0.005	ND
1,2-Dichloropropane	0.005	ND
Dibromomethane	0.005	ND
Bromodichloromethane	0.005	ND
cis-1,3-Dichloropropene	0.005	ND
4-Methyl-2-pentanone	0.05	ND
Toluene	0.005	ND
trans-1,3-Dichloropropene	0.005	ND
1,1,2-Trichloroethane	0.005	ND
Tetrachloroethene	0.005	ND
1,3-Dichloropropane	0.005	ND
2-Hexanone	0.05	ND
Dibromochloromethane	0.005	ND
1,2-Dibromoethane	0.005	ND

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ANALYSIS REPORT

Attention:	Dawn Owen CIWMB P.O. Box 4025 / 1001 I Street Sacramento, CA 95812	Date Sampled:	03/16/04
		Date Received:	03/16/04
		Date Analyzed:	03/26/04
Project:	Warings		
Method:	EPA 8260B		

Client Sample I.D.	C6 3'	
LAB. NO.	S0304659	
ANALYTE	R/L	Results
Chlorobenzene	0.005	ND
1,1,1,2-Tetrachloroethane	0.005	ND
Ethylbenzene	0.005	ND
m,p-Xylene	0.005	ND
o-Xylene	0.005	ND
Styrene	0.005	ND
Bromoform	0.005	ND
Isopropylbenzene	0.005	ND
Bromobenzene	0.005	ND
1,1,2,2-Tetrachloroethane	0.005	ND
1,2,3-Trichloropropane	0.005	ND
n-Propylbenzene	0.005	ND
2-Chlorotoluene	0.005	ND
4-Chlorotoluene	0.005	ND
1,3,5-Trimethylbenzene	0.005	ND
tert-Butylbenzene	0.005	ND
1,2,4-Trimethylbenzene	0.005	ND
sec-butylbenzene	0.005	ND
1,3-Dichlorobenzene	0.005	ND
4-Isopropyltoluene	0.005	ND
1,4-Dichlorobenzene	0.005	ND
1,2-Dichlorobenzene	0.005	ND
n-Butylbenzene	0.005	ND
1,2-Dibromo-3-chloropropane	0.005	ND
1,2,4-Trichlorobenzene	0.005	ND
Hexachlorobutadiene	0.005	ND
Naphthalene	0.005	ND
1,2,3-Trichlorobenzene	0.005	ND
SURROGATE %RECOVERY		
Dibromofluoromethane	104	
Toluene-d8	97	
4-Bromofluorobenzene	104	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/29/04
Date Reported

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Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8260B

QA/QC %RECOVERY		
	LCS	LCSD
1,1-Dichloroethene	94	97
Benzene	109	112
Trichloroethene	81	85
Toluene	90	100
Chlorobenzene	94	98

QA/QC Analyzed: 03/26/04

Laboratory Representative

03/29/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/19/04

Client Sample I.D.	C6 3'		D-6C 10'		E-1 5'		E-1 9	
LAB. NO.	S0304659		S0304661		S0304663		S0304664	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
N-Nitrosodimethylamine	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Aniline	0.1	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Chloroethyl) ether	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Phenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2-Chlorophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
1,3-Dichlorobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
1,4-Dichlorobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
1,2-Dichlorobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzyl alcohol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Chloroisopropyl) ether	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2-Methylphenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Hexachloroethane	0.1	ND	0.1	ND	1.3	ND	1.3	ND
N-Nitroso-di-n-propylamine	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Methylphenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Nitrobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Isophorone	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2-Nitrophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dimethylphenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Chloroethoxy) methane	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzoic acid	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dichlorophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
1,2,4-Trichlorobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Napthalene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Chloroaniline	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Hexachlorobutadiene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Chloro-3-methylphenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2-Methylnaphthalene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Hexachlorocyclopentadiene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,4,6-Trichlorophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,4,5-Trichlorophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2-Chloronaphthalene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2-Nitroaniline	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Acenaphthylene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Dimethylphthalate	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,6-Dinitrotoluene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Acenaphthene	0.1	ND	0.1	ND	1.3	ND	1.3	ND

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed:

Client Sample I.D.	C6 3'		D-6C 10'		E-1 5'		E-1 9	
LAB. NO.	S0304659		S0304661		S0304663		S0304664	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
3-Nitroaniline	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dinitrophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Dibenzofuran	0.1	ND	0.1	ND	1.3	ND	1.3	ND
2,4-Dinitrotoluene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Nitrophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Fluorene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Chlorophenyl-phenylether	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Diethylphthalate	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Nitroaniline	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Azobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4,6-Dinitro-2-methylphenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Nitrosodiphenylamine	0.1	ND	0.1	ND	1.3	ND	1.3	ND
4-Bromopheny-phenylether	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Hexachlorobenzene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Pentachlorophenol	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Phenanthrene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Anthracene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Carbazole	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Di-n-butylphthalate	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Fluoranthene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzidine*	0.5	ND	0.5	ND	9.3	ND	9.3	ND
Pyrene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Butylbenzylphthalate	0.1	ND	0.1	ND	1.3	ND	1.3	ND
3,3'-Dichlorobenzidine	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [a] anthracene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Chrysene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
bis (2-Ethylhexyl) phthalate	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Di-n-octylphthalate	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [b] fluoranthene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [k] fluoranthene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [a] pyrene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Indeno [1,2,3-cd] pyrene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Dibenz [a,h] anthracene	0.1	ND	0.1	ND	1.3	ND	1.3	ND
Benzo [g,h,i] perylene	0.1	ND	0.1	ND	1.3	ND	1.3	ND

* Estimated Value

Laboratory Representative

03/29/04
Date Reported

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ENVIRONMENTAL LABS

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Client Sample I.D.	C6 3'	D-6C 10'	E-1 5'	E-1 9
LAB. NO.	S0304659	S0304661	S0304663	S0304664
SURROGATE %RECOVERY				
Fluorophenol	22	19	51	63
Phenol-d5	37	31	62	65
Nitrobenzene-d5	21	19	56	69
2-Fluorobiphenyl	52	38	69	72
2,4,6-Tribromophenol	92	66	45	71
Terphenyl-d14	96	68	76	73

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/Kg

QA/QC %RECOVERY		
	LCS	LCSD
Phenol	77	74
2-Chlorophenol	72	69
1,4-Dichlorobenzene	70	67
N-Nitroso-di-n-propylamine	75	73
1,2,4-Trichlorobenzene	76	73
4-Chloro-3-methylphenol	88	84
Acenaphtlene	81	79
2,4-Dinitrotoluene	89	86
4-Nitrophenol	86	78
Pentachlorophenol	83	81
Pyrene	93	91

QA/QC Analyzed: 03/19/04

Laboratory Representative

03/29/04
Date Reported

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ENVIRONMENTAL LABS

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/25/04

Client Sample I.D.	C6 3'		D-6C 10'		D-6C 20'		E-1 5'		E-1 9	
LAB. NO.	S0304659		S0304661		S0304662		S0304663		S0304664	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Antimony	1.0	ND	1.0	6.3	1.0	7.4	1.0	66	1.0	3.5
Arsenic	2.0	ND	2.0	13	2.0	7.6	2.0	5.9	2.0	8.1
Barium	2.0	120	2.0	310	2.0	150	2.0	570	2.0	190
Beryllium	0.3	ND	0.3	ND	0.3	ND	0.3	ND	0.3	ND
Cadmium	0.5	ND	0.5	4.8	0.5	2.9	0.5	3.6	0.5	1.8
Chromium	1.0	31	1.0	51	1.0	37	1.0	54	1.0	38
Cobalt	5.0	16	5.0	17	5.0	8.1	5.0	9.2	5.0	15
Copper	2.0	23	2.0	230	2.0	66	2.0	140	2.0	85
Lead	1.0	49	1.0	540	1.0	190	1.0	8400	1.0	300
Mercury	0.010	0.110	0.010	0.290	0.010	0.031	0.010	0.031	0.010	0.062
Molybdenum	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Nickel	1.0	16	1.0	45	1.0	30	1.0	32	1.0	32
Selenium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Silver	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
Thallium	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Vanadium	2.0	51	2.0	44	2.0	34	2.0	40	2.0	44
Zinc	2.0	79	2.0	840	2.0	860	2.0	1800	2.0	540

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Soil samples reported in mg/kg

Laboratory Representative

03/29/04
Date Reported

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ENVIRONMENTAL LABS

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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 6010B and EPA 7471A (Hg)

QA/QC %RECOVERY				
	LCS	LCSD	MS	MSD
Antimony	105	99	89	80
Arsenic	108	104	107	99
Barium	108	104	85	81
Beryllium	107	98	104	100
Cadmium	109	101	100	98
Chromium	112	107	103	89
Cobalt	109	103	114	105
Copper	106	101	80	27
Lead	104	99	67	81
Mercury	90	91	96	87
Molybdenum	105	99	101	94
Nickel	111	106	143	97
Selenium	107	103	95	94
Silver	98	95	98	97
Thallium	103	100	87	83
Vanadium	107	101	93	92
Zinc	110	104	90	116

QA/QC Analyzed: 03/25/04

Laboratory Representative

03/29/04
Date Reported

Excelchem
Environmental Labs

300 Broadway Street
Eureka, CA 95501
Ph: 707-444-0120 Fx: 707-444-0560

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen	Phone #: 341-6723
Company/Address: 1001 I street Sac, CA 95812	Fax #: 319-7552
Project Number/P.O#:	Project Name: Warings
Project Location: Sncto	Sampler Signature: [signature]

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: dawn@ciwmb.ca.gov

304065

ANALYSIS REQUEST

Page 1 of 1

Bin#: 90
Due Date: 03/23

Sample ID	Sampling Date	Sampling Time	Container: VOA	SLEEVE	1L GLASS	PLASTIC	Method Preserved: HCl see note	HNO3	ICE	NONE	Matrix: WATER	SOIL	AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	Wet / Total: CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	Requested TAT: 12hr/24hr/48hr/72hr/wk	LAB USE ONLY:
T-B4	3/16/04		X																		X									W0304617
T-B4					X															X					X	X				
T-D2			X																		X									W0304618
T-D2					X															X										
T-G2			X																		X									W0304619
T-G2					X															X					X	X				

Relinquished by:	Date	Time	Received by:
[signature]	3/16/04	12:30	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/16/04	12:30	Shannon Beale

Remarks/Condition of Sample:
- Please analyze for CAM 17 metals only if have adequate sample volume. PCBs (8082) only if have adequate volume
- Use low detection limits for VOCs
- Some VOAs may have not been preserved.

Samples T-B4 & T-G2 were recd w/a amount of head space in VOAs - SB

EXCELCHEM
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ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8260B

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/22/04

Client Sample I.D.	T-B4		T-D2		T-G2	
LAB. NO.	W0304617		W0304618		W0304619	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Dichlorodiflouromethane	0.5	ND	0.5	ND	0.5	ND
Chloromethane	0.5	ND	0.5	ND	0.5	ND
Vinyl chloride	0.5	ND	0.5	ND	0.5	ND
Bromomethane	0.5	ND	0.5	ND	0.5	ND
Chloroethane	0.5	ND	0.5	ND	0.5	ND
Trichlorofluoromethane	0.5	ND	0.5	ND	0.5	ND
Acetone	5.0	ND	15	ND	10	ND
1,1-Dichloroethene	0.5	ND	0.5	ND	0.5	ND
Iodomethane	0.5	ND	0.5	ND	0.5	ND
Methylene chloride	5.0	ND	5.0	ND	5.0	ND
Carbon disulfide	0.5	ND	0.5	ND	0.5	ND
trans-1,2-Dichloroethene	0.5	ND	0.5	ND	0.5	ND
1,1-Dichloroethane	0.5	ND	0.5	ND	0.5	ND
2-Butanone	5.0	ND	5.0	ND	5.0	ND
2,2-Dichloropropane	0.5	ND	0.5	ND	0.5	ND
cis-1,2-Dichloroethene	0.5	ND	0.5	ND	0.5	ND
Bromochloromethane	0.5	ND	0.5	ND	0.5	ND
Chloroform	0.5	ND	0.5	ND	0.5	ND
1,1,1-Trichloroethane	0.5	ND	0.5	ND	0.5	ND
Carbon tetrachloride	0.5	ND	0.5	ND	0.5	ND
1,1-Dichloropropene	0.5	ND	0.5	ND	0.5	ND
Benzene	0.5	ND	0.5	ND	0.5	ND
1,2-Dichloroethane	0.5	ND	0.5	ND	0.5	ND
Trichloroethene	0.5	ND	0.5	ND	0.5	ND
1,2-Dichloropropane	0.5	ND	0.5	ND	0.5	ND
Dibromomethane	0.5	ND	0.5	ND	0.5	ND
Bromodichloromethane	0.5	ND	0.5	ND	0.5	ND
cis-1,3-Dichloropropene	0.5	ND	0.5	ND	0.5	ND
4-Methyl-2-pentanone	5.0	ND	5.0	ND	5.0	ND
Toluene	0.5	ND	0.5	ND	0.5	ND
trans-1,3-Dichloropropene	0.5	ND	0.5	ND	0.5	ND
1,1,2-Trichloroethane	0.5	ND	0.5	ND	0.5	ND
Tetrachloroethene	0.5	ND	0.5	ND	0.5	ND
1,3-Dichloropropane	0.5	ND	0.5	ND	0.5	ND
2-Hexanone	5.0	ND	5.0	ND	5.0	ND
Dibromochloromethane	0.5	ND	0.5	ND	0.5	ND
1,2-Dibromoethane	0.5	ND	0.5	ND	0.5	ND

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8260B

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/22/04

Client Sample I.D.	T-B4		T-D2		T-G2	
LAB. NO.	W0304617		W0304618		W0304619	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Chlorobenzene	0.5	ND	0.5	ND	0.5	ND
1,1,1,2-Tetrachloroethane	0.5	ND	0.5	ND	0.5	ND
Ethylbenzene	0.5	ND	0.5	ND	0.5	ND
m,p-Xylene	0.5	ND	0.5	ND	0.5	ND
o-Xylene	0.5	ND	0.5	ND	0.5	ND
Styrene	0.5	ND	0.5	ND	0.5	ND
Bromoform	0.5	ND	0.5	ND	0.5	ND
Isopropylbenzene	0.5	ND	0.5	ND	0.5	ND
Bromobenzene	0.5	ND	0.5	ND	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND	0.5	ND	0.5	ND
1,2,3-Trichloropropane	0.5	ND	0.5	ND	0.5	ND
n-Propylbenzene	0.5	ND	0.5	ND	0.5	ND
2-Chlorotoluene	0.5	ND	0.5	ND	0.5	ND
4-Chlorotoluene	0.5	ND	0.5	ND	0.5	ND
1,3,5-Trimethylbenzene	0.5	ND	0.5	ND	0.5	ND
tert-Butylbenzene	0.5	ND	0.5	ND	0.5	ND
1,2,4-Trimethylbenzene	0.5	ND	0.5	ND	0.5	ND
sec-Butylbenzene	0.5	ND	0.5	ND	0.5	ND
1,3-Dichlorobenzene	0.5	ND	0.5	ND	0.5	ND
4-Isopropyltoluene	0.5	ND	0.5	ND	0.5	ND
1,4-Dichlorobenzene	0.5	ND	0.5	ND	0.5	ND
1,2-Dichlorobenzene	0.5	ND	0.5	ND	0.5	ND
n-Butylbenzene	0.5	ND	0.5	ND	0.5	ND
1,2-Dibromo-3-chloropropane	0.5	ND	0.5	ND	0.5	ND
1,2,4-Trichlorobenzene	0.5	ND	0.5	ND	0.5	ND
Hexachlorobutadiene	0.5	ND	0.5	ND	0.5	ND
Naphthalene	0.5	ND	0.5	ND	0.5	ND
1,2,3-Trichlorobenzene	0.5	ND	0.5	ND	0.5	ND
SURROGATE %RECOVERY						
Dibromofluoromethane	107		103		103	
Toluene-d8	97		97		100	
4-Bromofluorobenzene	106		110		100	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Water samples reported in ug/L

Laboratory Representative

03/31/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8260B

QA/QC %RECOVERY		
	LCS	LCSD
1,1-Dichloroethene	90	92
Benzene	92	87
Trichloroethene	86	85
Toluene	87	89
Chlorobenzene	90	89

QA/QC Analyzed: 03/22/04

Laboratory Representative

03/31/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/25/04

Client Sample I.D.	T-B4		T-G2	
LAB. NO.	W0304617		W0304619	
ANALYTE	R/L	Results	R/L	Results
N-Nitrosodimethylamine	2.0	ND	2.0	ND
Aniline	2.0	ND	2.0	ND
bis (2-Chloroethyl) ether	2.0	ND	2.0	ND
Phenol	2.0	ND	2.0	ND
2-Chlorophenol	2.0	ND	2.0	ND
1,3-Dichlorobenzene	2.0	ND	2.0	ND
1,4-Dichlorobenzene	2.0	ND	2.0	ND
1,2-Dichlorobenzene	2.0	ND	2.0	ND
Benzyl alcohol	2.0	ND	2.0	ND
bis (2-Chloroisopropyl) ether	2.0	ND	2.0	ND
2-Methylphenol	2.0	ND	2.0	ND
Hexachloroethane	2.0	ND	2.0	ND
N-Nitroso-di-n-propylamine	2.0	ND	2.0	ND
4-Methylphenol	2.0	ND	2.0	ND
Nitrobenzene	2.0	ND	2.0	ND
Isophorone	2.0	ND	2.0	ND
2-Nitrophenol	2.0	ND	2.0	ND
2,4-Dimethylphenol	2.0	ND	2.0	ND
bis (2-Chloroethoxy) methane	2.0	ND	2.0	ND
Benzoic acid	2.0	ND	2.0	ND
2,4-Dichlorophenol	2.0	ND	2.0	ND
1,2,4-Trichlorobenzene	2.0	ND	2.0	ND
Napthalene	2.0	ND	2.0	ND
4-Chloroaniline	2.0	ND	2.0	ND
Hexachlorobutadiene	2.0	ND	2.0	ND
4-Chloro-3-methylphenol	2.0	ND	2.0	ND
2-Methylnaphthalene	2.0	ND	2.0	ND
Hexachlorocyclopentadiene	2.0	ND	2.0	ND
2,4,6-Trichlorophenol	2.0	ND	2.0	ND
2,4,5-Trichlorophenol	2.0	ND	2.0	ND
2-Chloronaphthalene	2.0	ND	2.0	ND
2-Nitroaniline	2.0	ND	2.0	ND
Acenaphthylene	2.0	ND	2.0	ND
Dimethylphthalate	2.0	ND	2.0	ND
2,6-Dinitrotoluene	2.0	ND	2.0	ND
Acenaphthene	2.0	ND	2.0	ND

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8270C

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/25/04

Client Sample I.D.	T-B4		T-G2	
LAB. NO.	W0304617		W0304619	
ANALYTE	R/L	Results	R/L	Results
3-Nitroaniline	2.0	ND	2.0	ND
2,4-Dinitrophenol	2.0	ND	2.0	ND
Dibenzofuran	2.0	ND	2.0	ND
2,4-Dinitrotoluene	2.0	ND	2.0	ND
4-Nitrophenol	2.0	ND	2.0	ND
Fluorene	2.0	ND	2.0	ND
4-Chlorophenyl-phenylether	2.0	ND	2.0	ND
Diethylphthalate	2.0	ND	2.0	ND
4-Nitroaniline	2.0	ND	2.0	ND
Azobenzene	2.0	ND	2.0	ND
4,6-Dinitro-2-methylphenol	2.0	ND	2.0	ND
Nitrosodiphenylamine	2.0	ND	2.0	ND
4-Bromopheny-phenylether	2.0	ND	2.0	ND
Hexachlorobenzene	2.0	ND	2.0	ND
Pentachlorophenol	2.0	ND	3.0	ND
Phenanthrene	2.0	ND	2.0	ND
Anthracene	2.0	ND	2.0	ND
Carbazole	2.0	ND	2.0	ND
Di-n-butylphthalate	5.0	ND	3.0	ND
Fluoranthene	2.0	ND	2.0	ND
Benzidine*	10	ND	10	ND
Pyrene	2.0	ND	2.0	ND
Butylbenzylphthalate	2.0	ND	2.0	ND
3,3'-Dichlorobenzidine	2.0	ND	2.0	ND
Benzo [a] anthracene	2.0	ND	2.0	ND
Chrysene	2.0	ND	2.0	ND
bis (2-Ethylhexyl) phthalate	3.0	ND	2.0	ND
Di-n-octylphthalate	2.0	ND	2.0	ND
Benzo [b] fluoranthene	2.0	ND	2.0	ND
Benzo [k] fluoranthene	2.0	ND	2.0	ND
Benzo [a] pyrene	2.0	ND	2.0	ND
Indeno [1,2,3-cd] pyrene	2.0	ND	2.0	ND
Dibenz [a,h] anthracene	2.0	ND	2.0	ND
Benzo [g,h,i] perylene	2.0	ND	2.0	ND

* Estimated Value

Laboratory Representative

03/31/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	03/16/04
	CIWMB	Date Received:	03/16/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	03/25/04
	Sacramento, CA 95812		
Project:	Warings		
Method:	EPA 8270C		

Client Sample I.D.	T-B4	T-G2
LAB. NO.	W0304617	W0304619
SURROGATE %RECOVERY		
Fluorophenol	86	40
Phenol-d5	84	30
Nitrobenzene-d5	105	52
2-Fluorobiphenyl	109	52
2,4,6-Tribromophenol	146	68
Terphenyl-d14	133	62

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Water samples reported in µg/L

QA/QC %RECOVERY		
	LCS	LCSD
Phenol	18	27
2-Chlorophenol	42	64
1,4-Dichlorobenzene	40	51
N-Nitroso-di-n-propylamine	46	68
1,2,4-Trichlorobenzene	45	58
4-Chloro-3-methylphenol	59	82
Acenaphtlene	54	76
2,4-Dinitrotoluene	61	86
4-Nitrophenol	24	32
Pentachlorophenol	53	79
Pyrene	60	85

QA/QC Analyzed: 03/25/04

Joseph Baker
Laboratory Representative

03/31/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA 8082 - PCBs

Date Sampled: 03/16/04
Date Received: 03/16/04
Date Analyzed: 03/31/04

Client Sample I.D.	T-D2	
LAB. NO.	W0304618	
ANALYTE	R/L	Results
Aroclor 1016	4.0	ND
Aroclor 1221	4.0	ND
Aroclor 1232	4.0	ND
Aroclor 1242	4.0	ND
Aroclor 1248	4.0	ND
Aroclor 1254	4.0	ND
Aroclor 1260	4.0	ND
SURROGATE %RECOVERY		
Decachlorobiphenyl	61	

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Water samples reported in µg/L

QA/QC %RECOVERY		
	LCS	LCSD
Aroclor 1260	85	88

QA/QC Analyzed: 03/31/04

Laboratory Representative

03/31/04
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

Excelchem
Environmental Labs

EXCELCHEM LABS
500 Giuseppe Ct., #3
Roseville, CA 95678
Phone: (916)-773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen

Company/Address: 1001 I Street Sacto, CA 9581?

Fax #: 319-7552

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: dawno@ciwmb.ca.gov

Project Number/P.O#:

Project Name: Warings

Project Location: Sacto

Sampler Signature: [signature]

ANALYSIS REQUEST inv# 404013 Page ___ of ___

Bin#: 4-8,64
Due Date: 4/13/04

Lead: Wet [X] / Total

Sample ID	Sampling Date	Sampling Time	VOA	SLEEVE	1L GLASS	PLASTIC	HCl	HNO3	ICE	NONE	WATER	SOIL	AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	Requested TAT: 12hr/24hr/48hr/72hr/1wk	LAB USE ONLY:
C-3 9.5'	4/6	1100			X																							X		S0304636
F-4 9.5'																														S0304642
B-4(1) 9'																														S0304646
E-1, 5'																														S0304663
A-7'																														S0304493
D-7 7'																														S0304481
B-42																														S0304489
G-2 2'																														S0304620
G-2 15'																														S0304626
G-2 10'																														S0304628

Relinquished by:	Date	Time	Received by:
[signature]	4/6/04	2308	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:

Remarks/Condition of Sample: Please Run WET For Cam 5

Bill To:

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Dawn Owen	Date Sampled:	04/06/04
	CIWMB	Date Received:	04/06/04
	P.O. Box 4025 / 1001 I Street	Date Analyzed:	04/15/04
	Sacramento, CA 95812		
Project:	Warings		
Method:	Title 22 WET & EPA 6010		

Client Sample I.D.	C-3 9.5'		F-4 9.5'		B-4 (1) 9'		E-1 5'		A-7	
LAB. NO.	S0304636		S0304642		S0304646		S0304663		S0304493	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Cadmium	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	0.2
Chromium	0.2	0.2	0.2	0.5	0.2	ND	0.2	0.2	0.2	ND
Lead	0.2	8.3	0.2	24	0.2	24	0.2	27	0.2	33
Nickel	0.2	0.6	0.2	0.9	0.2	0.9	0.2	0.5	0.2	0.5
Zinc	0.4	80	0.4	120	0.4	32	0.4	38	0.4	600

Client Sample I.D.	D-7 7'		B-42		G-2 2'		G-2 15'		G-2 10'	
LAB. NO.	S0304481		S0304489		S0304620		S0304626		S0304628	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Cadmium	0.1	0.4	0.1	ND	0.1	0.3	0.1	ND	0.1	ND
Chromium	0.2	0.2	0.2	ND	0.2	ND	0.2	1.3	0.2	0.3
Lead	0.2	56	0.2	15	0.2	38	0.2	ND	0.2	21
Nickel	0.2	0.6	0.2	1.0	0.2	1.1	0.2	1.5	0.2	1.1
Zinc	0.4	56	0.4	23	0.4	310	0.4	41	0.4	85

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Results given in mg/L

QA/QC %RECOVERY				
	LCS	LCSD	MS	MSD
Cadmium	110	106	107	110
Chromium	107	103	104	106
Lead	105	102	94	102
Nickel	109	107	99	104
Zinc	108	105	96	113

QA/QC Analyzed: 04/15/04

Joseph Baller
Laboratory Representative

04/15/04
Date Reported

Excelchem
Environmental Labs

EXCELCHEM LABS
500 Giuseppe Ct., #3
Roseville, CA 95678
Phone: (916)-773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Dawn Owen 341-6723

Company/Address: 1001 I Street Sacto CA

Fax #: 319-7552

Project Number/P.O#:

Project Name: Warings.

Project Location: Sacto.

Sampler Signature: [signature]

Electronic Data Deliverables Request:
Global I.D.#:
COC #:
Location I.D.#:
Email Address: dawno@ciwmb.ca.gov

ANALYSIS REQUEST

Page 1 of 1

Bin# NA
Due Date: 3/26

Sample ID	Sampling Date	Sampling Time	Container: VOA	SLEEVE	1L GLASS	PLASTIC	Tedlar	Method Preserved: HCl	HNO3	ICE	NONE	Matrix: WATER	SOIL	AIR	BTEX/TPH as Gasoline (602/8020/8015)	MTBE (8020/8260B)	TPH as Diesel (8015m)	TPH as Oil (8015m)	Total Oil & Grease (SM-18th Ed 5520B,F)/166	Pesticides (608/8081A)	PCBs (8082)	VOC Full list (8260B)	5 Oxygenates (8260B)	Methanol/Ethanol (8015/8260)	Lead Scavengers DCA/EDB (8260B)	Semi VOC Full List (8270C)	CAM 17 Metals (Wet/Total)	Lead	Cd, Cr, Pb, Zn, Ni (CAM 5)	TO15	Fixed gas (methane)			Requested TAT: 12hr/24hr/48hr/72hr/(1wk)	LAB USE ONLY:
PG-1 Dup	3/19	1000					X				X			X																	X				AB04735
Pg-1 Sh.																																			AB04736
Pg-1 D																																			AB04737
Pg-1 Sh.																																			AB04738
Pg-6																														X					AB04739
Pg-6																														X					AB04740
PA-7																														X					AB04741
PA-7																														X					AB04742

Relinquished by:	Date	Time	Received by:
[signature]	3/19	1030.	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	3/19	10:30	[signature]

Remarks/Condition of Sample:
Run 1 bag for TO15, Run 1 bag for Fixed gasses per Dawn Owen 3/19/04 [initials]

Bill To:

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA TO15

Date Sampled: 03/19/04
Date Received: 03/19/04
Date Analyzed: 03/23/04

Client Sample I.D.	PG-1 Deep		PG-1 Sh		PG-6		PA-7	
LAB. NO.	A0304735		A0304736		A0304739		A0304741	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Dichlorodifluoromethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Chloromethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Vinyl chloride	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Bromoethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Chloroethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Trichlorofluoromethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,1-Dichloroethene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Carbon disulfide	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Acetone	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Methylene chloride	2.0	ND	2.0	ND	2.0	ND	2.0	ND
trans-1,2-Dichloroethene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,1-Dichloroethene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Vinyl acetate	0.2	ND	0.2	ND	0.2	ND	0.2	ND
cis-1,2-Dichloroethene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
2-Butanone	2.0	ND	2.0	ND	2.0	ND	2.0	ND
2,2-Dichlorophopane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Chloroform	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,1,1-trichloroethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Carbon Tetrachloride	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Benzene	0.2	0.2	0.2	ND	0.2	ND	0.2	ND
1,2-Dichloroehane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Trichloroethene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,2-Dichloropropane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Debromomethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Dibromomethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
cis-1,3-Dichloropropene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
4-Methyl-2-pentanone	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Toluene	0.2	0.2	0.2	ND	0.2	ND	0.2	ND
trans-1,3-Dichloropropene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,1,2-Trichloroethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Tetrachloroethene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
2-Hexanone	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Dibromochloromethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,2-Dibromoethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Chlorobenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND

Joseph Balto
Laboratory Representative

04/07/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: EPA TO15

Date Sampled: 03/19/04
Date Received: 03/19/04
Date Analyzed: 03/23/04

Client Sample I.D.	PG-1 Deep		PG-1 Sh		PG-6		PA-7	
LAB. NO.	A0304735		A0304736		A0304739		A0304741	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Ethylbenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
m,p-Xylene	0.2	0.2	0.2	ND	0.2	ND	0.2	ND
o-Xylene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Styrene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Bromoform	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,1,2,2-Tetrachloroethane	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,3,5-Trimethylbenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,2,4-Trimethylbenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,3-Dichlorobenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,4-Dichlorobenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,2-Dichlorobenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
1,2,4-Trichlorobenzene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
Hexachlorobutadiene	0.2	ND	0.2	ND	0.2	ND	0.2	ND
SURROGATE %RECOVERY								
Dibromofluoromethane	97		103		96		101	
Tuluene-d8	95		96		93		95	
4-Bromofluorobenzene	105		104		105		107	

QA/QC %RECOVERY		
	LCS	LCSD
1,1-Dichloroethene	95	105
Benzene	97	99
Trichloroethene	102	107
Toluene	89	98
Chlorobenzene	90	99

QA/QC Analyzed: 03/23/04

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Air samples reported in mg/m^3

Joseph Ball
Laboratory Representative

04/07/04
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 3
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Dawn Owen
CIWMB
P.O. Box 4025 / 1001 I Street
Sacramento, CA 95812
Project: Warings
Method: ASTDM D1946

Date Sampled: 03/19/04
Date Received: 03/19/04
Date Analyzed: 03/24/04

Client Sample I.D.	PG-1 Deep		PG-1 Sh		PG-6		PA-7	
LAB. NO.	A0304735		A0304736		A0304739		A0304741	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Oxygen / Argon	0.50	20	0.50	20	0.50	16	0.50	19
Nitrogen	1.0	79	1.0	80	1.0	82	1.0	82
Methane	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Carbon Dioxide	0.010	0.93	0.010	0.22	0.010	1.8	0.010	1.1

QA/QC %RECOVERY		
	LCS	LCSD
Oxygen / Argon	97	95
Nitrogen	102	100
Methane	111	110
Carbon Dioxide	96	95

QA/QCAnalyzed: 03/24/04

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
R/L = Reporting Limit
Samples reported in % v/v

Laboratory Representative

04/07/04
Date Reported

Appendix F Photographic Logs

Photographic Log for Warings Dump
63rd and Morrison Creek, Sacramento, California

Trench B-4

Trench A-5

Ash

Trench A-7

Trench B-5

Spoils from B-5

Trench D-7

Trench G-5

Trench F-4

Trench D-3

Trench G-2


03.16.04

Trench G-2 Transformers

Trench G-2 Incilators

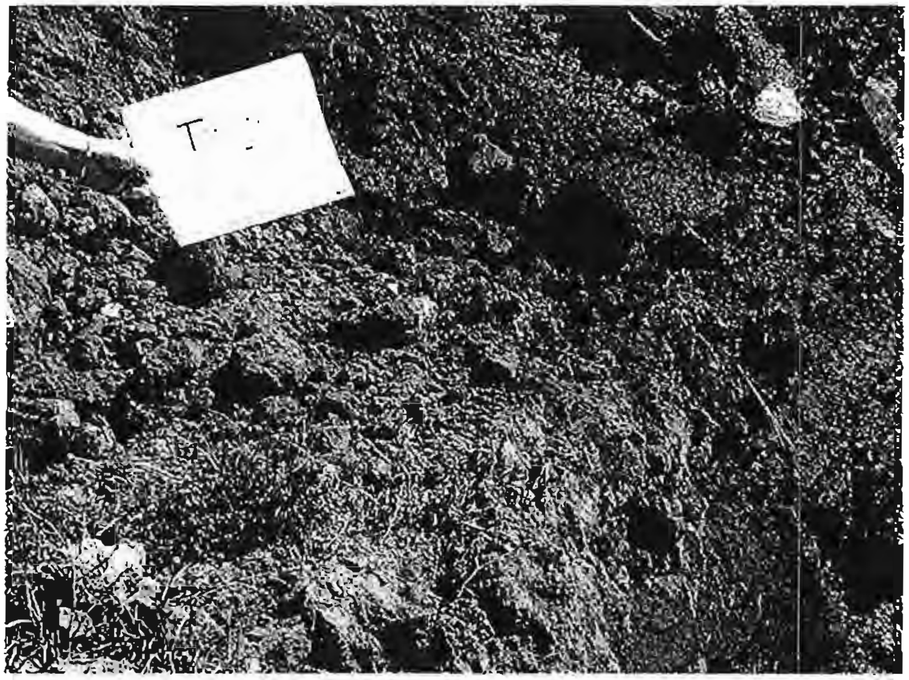
Rob Busby (RWQCB) Water Sampling

Trench F-3

F-3 Spoils

Trench D-2 Spoils

Trench D-2



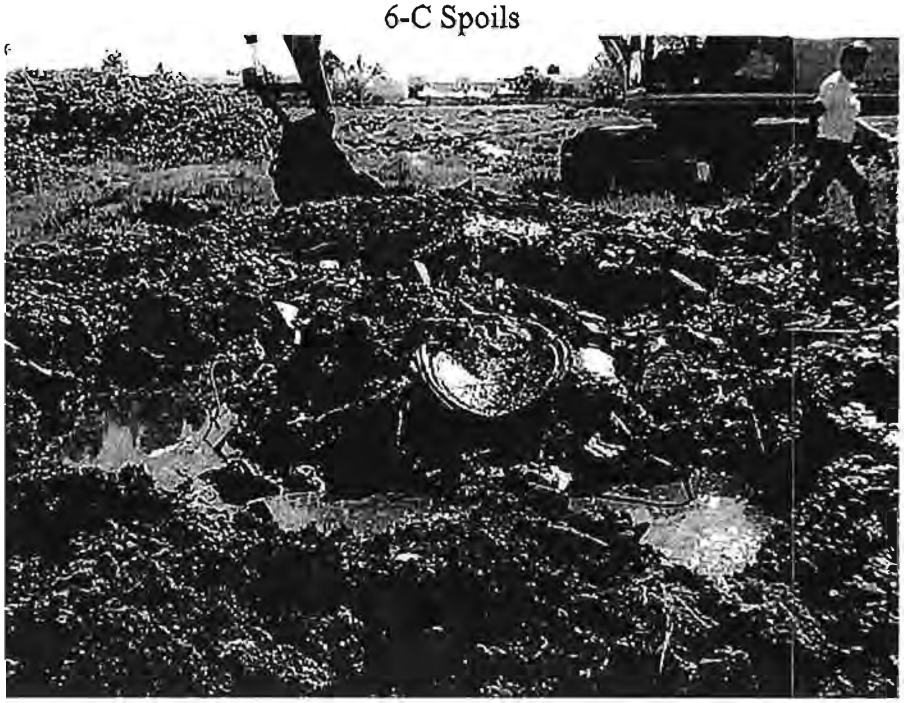
Trench C-3

Trench C-6

Trench D-6A

Trench D-6B

6-C Spoils

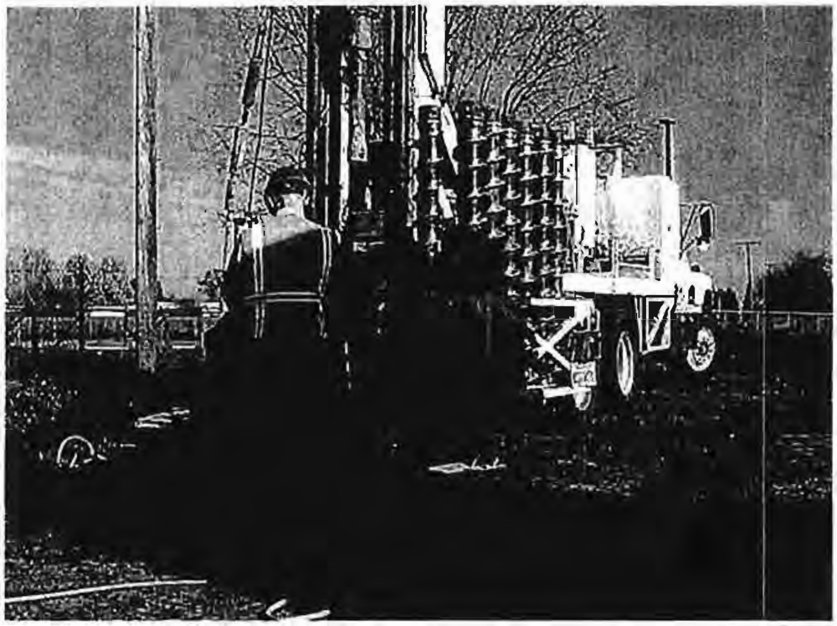


D-6C

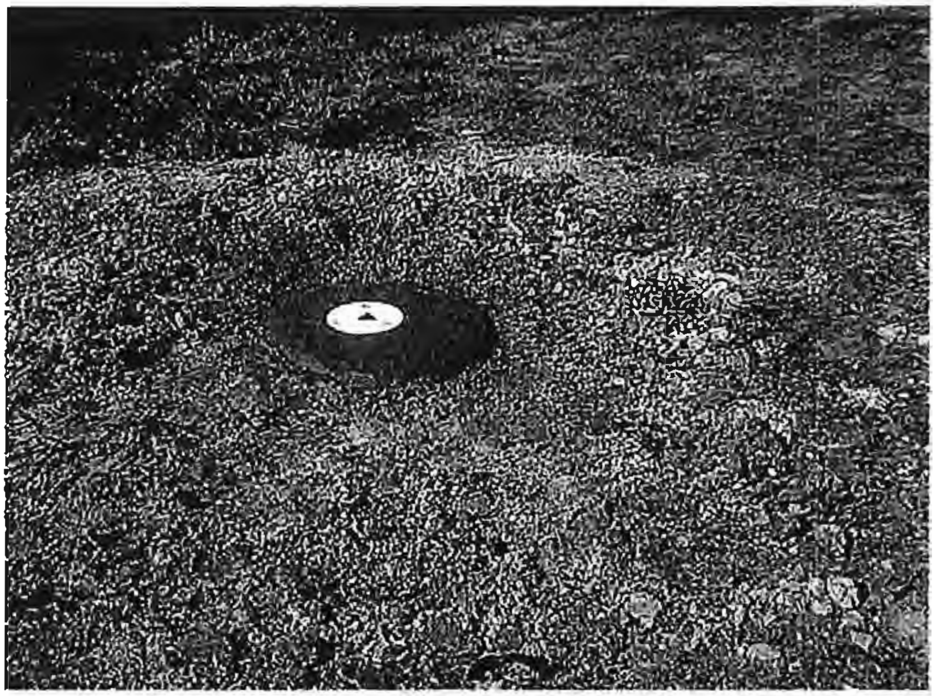
Trench E-1

Probe Construction and Drilling

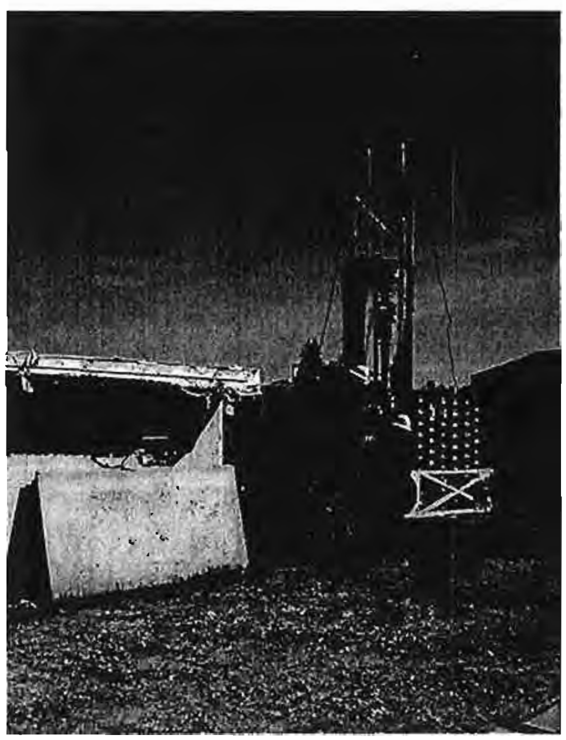
Probe PG-1



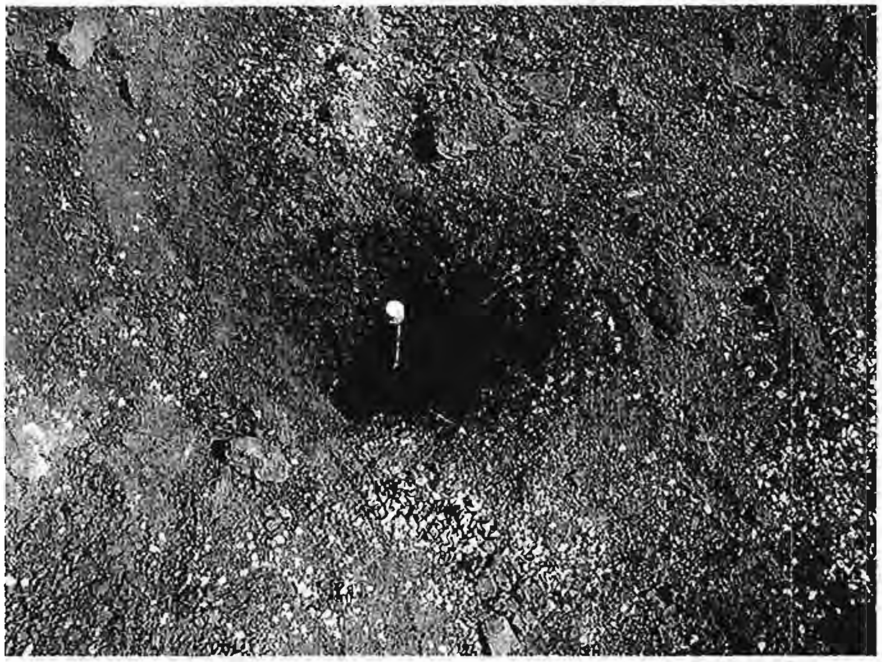
Probe PG-1

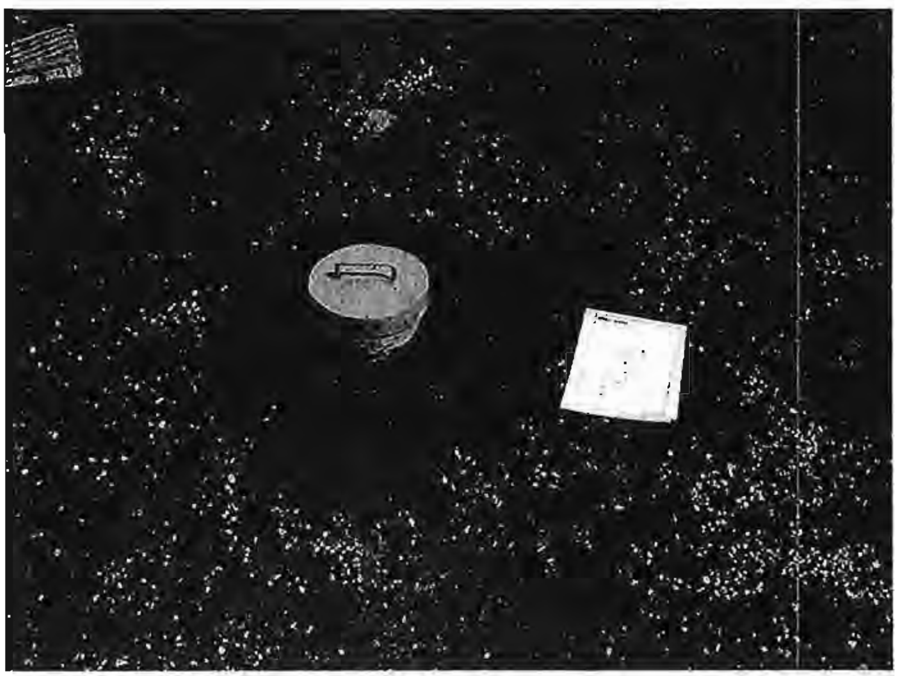


Probe PG-6



Probe PG-6





Probe PA-7

Probe PA-7

Appendix G Site Specific Health and Safety Plan

California Integrated Waste Management Board
Site Safety and Health Plan

Waring's Dump

63rd and Morrison Creek
Sacramento, California

February 2004

TABLE OF CONTENTS

1. Introduction

The California Integrated Waste Management Board (CIWMB) recognizes that employees performing field duties may be exposed to hazardous environments. The purpose of this document is to provide CIWMB staff with a Site Safety and Health Plan (SSHP) for the investigation of solid waste disposal sites required for enforcement and potential clean-up activities. This SSHP addressed health and safety policy and procedures for CIWMB staff to follow when performing soil sampling at Closed, Illegal and Abandoned Sites (CIA).

The purpose of this SSHP is to prevent occupationally related accidents, exposures and illness for personnel performing work activities related to this site. This SSHP provides guidance for employees when performing fieldwork when dealing with toxic, hazardous and infectious materials/wastes and physical hazards. The policies set forth in this SSHP are:

- Provide a safe and healthful work environment,
- Comply with applicable government regulation,
- Prevent accidents, injury and illness,
- Ensure communication of all hazards associated with the site, and
- Establish mandatory safety procedures and personal protection standards.

2. Facility Background

Location

The Waring's Dump is located at 63rd and Morrison Creek in Sacramento California. The properties are further identified by County of Sacramento Assessor's Parcel Numbers (APNs) 38-182-5, 38-182-6, 38-182-7 and 38-202-1.

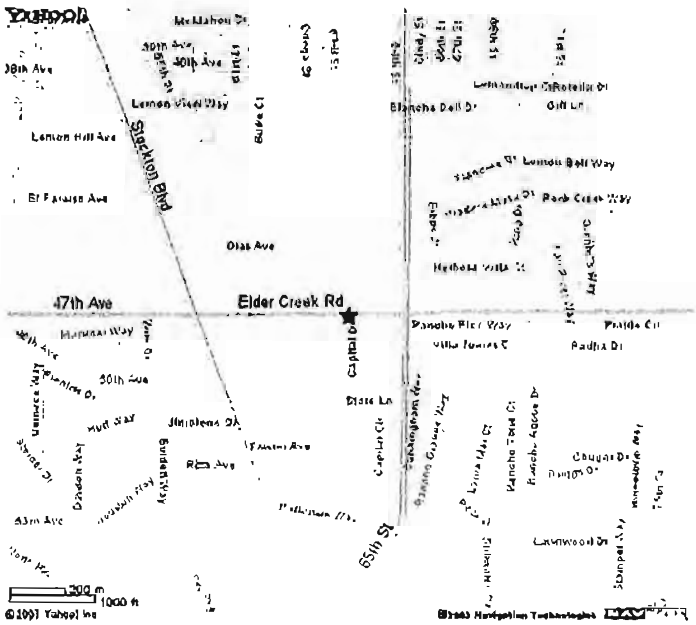
Site Description

The original Waring's Dumpsite was excavated for use as a borrow pit in the late 1930's as construction materials for Highway 99. According to records, the pit was excavated to a depth of approximately 50 feet and covered approximately three acres. The site is bordered on the northern side by Morrison Creek. The flow to Morrison Creek increased upon completion of two sewage disposal plants that channeled into Morrison creek. The seepage from Morrison Creek filled the excavation pit with 20-30 feet of water. A hazardous condition resulted. A request from Mr. Waring to fill this pit was granted; the fill materials used included solid waste and construction and demolition waste. However, residents in the surrounding area complained about the burning of waste. The City of Sacramento instructed Mr. Waring to close the pit because there was no permit to operate the site. Sometime in the late 1960's, as part of a bond measure called "The Drainage Bond Project", Morrison Creek was channelized making it wider and deeper as part of a county-wide flood control project. The City of Sacramento now owns the easements and the adjacent property that includes the channelized creek.

During the middle to late 1980's under the Calderone Act, Solid Waste Assessment Tests or SWAT's were completed on many of the old dumps in the surrounding area. Warings Dump was included in these evaluations. The owners were instructed to provide SWAT questionnaires on their perspective parcels and provide any historical information. One of the owners hired Koelzer Engineering Services to conduct a site assessment called, "Calderon Gas Monitoring Report". The report addressed the potential gas issues by installing two 7 ft. gas probes and a gas stream characterization well and conducting a one-time sampling event.

In 1990, a complaint was received by the Sacramento County Environmental Health Department regarding an abandoned well underneath the complainants house. The complainant found a six inch-wide well casing unrelated to Waring's Dump. An allegation of methane emitting from the old well was never substantiated. Furthermore, the well was monitored for methane and radiation; neither was found. The well was sealed under permit and the house became unoccupied. Today, the site is covered with weeds as well as illegally dumped materials including some metals.

Figure 1.



3. Scope of Work

The Remediation, Closure & Technical Services (RCTS) Branch, was requested by the County of Sacramento Environmental Health Department's Local Enforcement Agency (LEA) to perform a Phase I and II investigation to determine appropriate remedial measures necessary to protect public health and safety and the environment, and to bring site conditions into compliance with state minimum standards.

The goal of the investigation is to assess current site conditions and to determine compliance with state minimum standards for gas, cover, drainage, erosion control and site security, and determine the vertical and horizontal extent of the waste and identify waste characteristics.

The objective of this investigation is to determine the vertical and horizontal extent of the waste and identify waste characteristics. A tracked excavator will be utilized to excavate through the waste to native soil at specified locations. During trenching activities at predetermined locations, waste and soil samples are taken and sent to a laboratory to determine possible contamination. After samples are collected, the trenches will be back filled until results have been analyzed. A drill rig will be used to drill two or three borings at the center of the fill in order to assess the depth of the pit and install one dual depth 40-50 foot gas probe. The laboratory analysis will determine if further action is needed.

4. Key Personnel & Responsibilities

It is the policy of the CIWMB to provide safe and healthful working conditions for employees when performing field activities. All CIWMB personnel on-site during the waste characterization investigation are responsible and accountable to adhere to standard safety policies. Each employee is responsible for reporting any injuries, incidents, and safety infractions to the Site Safety and Health Officer (SSHO) so treatment can be obtained and/or corrective action taken.

KEY PROJECT PERSONNEL

Project Manager:	Glenn Young, PE Senior Engineer CIWMB/CIA Section (916) 341-6696
Onsite Project Lead:	Dawn Owen, WMS CIWMB/CIA Section (916) 341-6723
Project Safety & Health Officer:	Diane Kihara, CIH, CSP CIWMB/Health & Safety Section (916) 341-6392
Site Safety & Health Officer:	Diane Vlach, AIH CIWMB/Health & Safety Section (916) 341-6393

Project Manager/Onsite Project Lead

The Project Manager/Onsite Project Lead is ultimately responsible for site safety and health, and will provide the materials and maintenance of equipment necessary to enhance and maintain safe site and work conditions. Responsibilities of the Project Manager/Onsite Project Lead include project scheduling, cost updating, and overall project direction and overseeing site safety. In addition, the Project Manager/Onsite Project Lead is responsible for determining the extent and level of input required for technical issues that arise during the tenure of the project. The CIWMB Project Manager/Onsite Project Lead will serve as the primary point of contact. In the event that the Site Safety & Health Officer is not present at the site the Project Manager/Onsite Project Lead will assume all Safety and Health responsibility of the site.

Project Health & Safety Officer

The Project Safety and Health Officer will be responsible for review and approval of the Site Safety and Health Plan (SSHP), and will assist and advise the Site Safety and Health Officer (SSHO). He/she has the authority to stop unsafe operations, recommended the removal of unqualified personnel from the work area, and approve changes to the site SSHP.

The Project Safety and Health Officer will have responsibility for integrating all aspects of the Site Safety and Health Plan. His/her duties include advising the SSHO on all related Health and Safety aspects, reviewing any Site Specific Plans for compliance and completeness, and establishing and monitoring all related Health and Safety procedures through site safety audits.

The Project Safety and Health Officer will coordinate with the SSHO to ensure overall compliance with the SSHP. The SSHO will provide ongoing communication with Project Safety and Health Officer on issues related to site operations.

Site Safety and Health Officer (SSHO)

The SSHO is responsible for overseeing work areas and identifying conditions that may pose a hazard to personnel or the public. The SSHO is required to conduct regular safety inspections and implement and enforce the project safety program and procedures. The SSHO will work closely with the Project Manager/Onsite Project Lead to ensure that all site personnel review and comply with the terms of the SSHP. The SSHO performs duties such as confirming the personnel have appropriate training, coordinating emergency medical care, conducting a daily site safety inspection (if required), and inspecting health and safety equipment. In addition, the SSHO is responsible for maintaining safety equipment, posting air monitoring results, providing site orientation safety training for all personnel actively involved in site work, and other site safety documentation.

The SSHO takes the following action(s) when appropriate:

- Orders the immediate shutdown of site activities in the case of a medical emergency or unsafe practice.
- Ensures protective clothing and equipment are properly stored, used, and maintained.
- Ensures that the environmental and personnel monitoring operations are ongoing and in accordance with technical specifications and required procedures.
- Restricts visitors from areas of potential exposure to harmful substances.

The SSHO will maintain the safety log for all activities at the site. This log will include any daily safety meeting topics, training given, air monitoring information, first aid administered, visits of all outside personnel and any incidents of a health and safety nature. The SSHO will investigate all accidents and prepare an accident investigation report that will be forwarded to the Project Manager/Onsite Project Lead.

Subcontractor Management and Personnel

Subcontractor management is responsible for the compliance of their personnel with this SSHP. Since subcontractors are hired for their specific expertise, they must assume primary responsibility for the health and safety of their personnel. The subcontractor's Field Supervisor will also be responsible for performing regular safety inspections of their operations. Subcontractors must supply health and safety related training and medical surveillance documentation to CIWMB for each onsite worker prior to commencing work at the project site if requested by the Project Manager/Onsite Project Lead.

Subcontractors must also:

- Comply with all applicable Occupational Safety and Health Administration (OSHA) regulations as defined in CCR, Title 8 and Hazwoper certified.
- Perform all work in accordance with this SSHP.
- Conduct weekly toolbox safety meeting and submit the minutes to the SSHO or the Project Manager/Onsite Project Lead.

5. Logs, Reports and Record keeping

The following logs, reports, and records will be developed and maintained for this site by the SSHO.

- Daily Safety Meetings (if the project requires more than one day to complete)
- Site Specific Health and Safety Plan
- Injury and Illness Prevention Program Records

6. Hazard Assessment

This section addresses the potential hazards identified with waste characterization investigation of the site, which includes but is not limited to chemical, physical, and environmental hazards. Hazard characterization of the site and selection of worker protection methods has been determined from previous waste characterizations investigations at other sites and site history.

HAZARD ASSESSMENT

To provide protection for personnel on-site, the following potential hazards have been identified at the Waring's Dump Site related to the waste characterization investigation: chemical hazards and, physical safety hazards. This determination is based on information provided related to the contaminants identified at the site and based on the work tasks performed.

CHEMICAL HAZARDS

A number of chemical hazards of concern that may be present in the soil, groundwater, leachate and landfill gas at the site are discussed below. The information that follows provides a discussion of the hazard concerns that may be present at the site. This SSHP includes the OSHA permissible exposure limits (PELs), which are the regulatory exposure limits for workplace safety. The PELs are time-weighted average (TWA) exposure concentration. When applicable, the short-term exposure limits (STELs), and concentrations in the air that would be immediately dangerous to life or health (IDLH), are also provided. STELs are TWA 15-minute exposure concentrations that should not be exceeded at any time during a workday, even if the 8-hour exposure limit is not exceeded.

A. Heavy Metals

Burn ash sample analysis obtained from previous waste characterization investigations from other sites indicate that non-hazardous household or municipal waste contains various heavy metals. Test results indicate the predominant metals of concern in burn ash are not readily soluble in water; therefore, not readily leachable into ground water.[1] However, burn ash can pose a risk if it becomes airborne and is inhaled, ingested, or in direct contact with the skin. The predominant heavy metal associated with burn ash can be found in Table 1 – Heavy Metals; the metals of primary concern include: antimony, arsenic, barium, beryllium, cadmium, total chromium, copper, lead, mercury nickel, selenium, and thallium.

[1] Draft Health & Safety Plan-Statewide Burn Dump Investigation, May 2001

Table 1
HEAVY METALS[2]

Chemical Name	Exposure Limit	Health Hazard	Route of Entry
Inorganic lead	PEL: 0.05 mg/m^3	Cumulative neurological effects, cumulative blood effects, kidney, reproductive	Ingestion/inhalation
Mercury	PEL: 0.025 mg/m^3 Ceiling: 0.1 mg/m^3	Central nervous system, kidney, reproductive, "Skin"	Ingestion/inhalation
Beryllium	PEL: 0.002 mg/m^3 STEL: 0.05 mg/m^3 Ceiling: 0.025 mg/m^3	Cumulative lung damage, carcinogen	Ingestion/inhalation
Antimony	PEL: 0.5 mg/m^3	Irritation, lung,	Ingestion/inhalation
Arsenic	PEL: 0.2 mg/m^3	Cumulative systemic poison, carcinogen	Ingestion/inhalation
Cadmium	PEL: 0.005 mg/m^3	Cumulative kidney and lung damage, suspected carcinogen	Ingestion/inhalation
Copper	PEL: 1 mg/m^3	Mild irritant	Ingestion/inhalation
Cobalt	PEL: 0.02 mg/m^3	Cumulative lung changes, dermatitis	Ingestion/inhalation
Selenium	PEL: .2 mg/m^3	Irritation	Ingestion/inhalation
Zinc	PEL: 10 mg/m^3	Mild irritant, lung	Ingestion/inhalation
Total chromium	PEL: 0.5 mg/m^3	Cumulative lung damage, carcinogen	Ingestion/inhalation
Barium	PEL: 0.5 mg/m^3	Acute lung and gastrointestinal effects	Ingestion/inhalation
Thallium	PEL: 0.1 mg/m^3	"Skin", cumulative systemic toxicity, CNS effects	Ingestion/inhalation
Nickel	PEL: 1 mg/m^3	Cumulative lung damage, suspected carcinogen	Ingestion/inhalation
Vanadium	PEL: 0.05 mg/m^3	Irritation of mucous membranes, acute and chronic bronchial damage	Ingestion/inhalation

[2] Permissible exposure limits, California Code of Regulations, Title 8, General Industry Safety Orders, Airborne Contaminants, §5155

B. Landfill Gas Constituents

Landfill gas is generated as a result of the waste breakdown at a landfill. Typically, landfill gas constituents contain, by volume:

LANDFILL GAS CONSTITUENTS[3]
38-58% methane gas
0.2-1% oxygen
2-10% nitrogen
30-48% carbon dioxide
0-1% hydrogen
<1% non-methane organic carbons (NMOC) NMOC constituents: benzene, ethyl benzene, toluene, vinyl chloride, dichloromethane, trichloroethylene, 1,2,-cis-dichloroethylene, tetrachloroethylene

Methane is the major component of gas generated during biodegradation of solid waste buried in landfills. It is an odorless and colorless gas. It does not chemically react with the body, but may cause asphyxiation by displacing the oxygen in the air. The primary concern is its flammability. Because of its classification as simple asphyxiant methane has no established exposure limits, however, a threshold concentration or TWA of 1000 ppm is commonly assumed.

It is uncertain if methane is present at the site; however, waste decomposition is known to produce various landfill gas constituents. Staff should continue to use precaution when excavating and trenching landfill areas. Personnel protective equipment requirements combined with the requirement to wash arms, face, and hands before eating, drinking, smoking and prior to leaving the site will help prevent exposure through absorption and ingestion pathways.

The following summary, Table 2 – Landfill Gas, provides exposure information for landfill gas.

[3] CIWMB Landfill Gas Characterization Study

Table 2
LANDFILL GAS[4]

Chemical Name	Exposure Limit	IDLH	Relative Response	LEL	Route of Entry
Benzene	PEL: 1 ppm	500 ppm	Irritation eyes, skin, nose, respiratory; dizziness; headache;	1.2 %	Inhalation, Absorption, Ingestion, skin/eye
Ethyl benzene	PEL: 100 ppm STEL: 125 ppm	800 ppm	Irritation eyes, skin, mucous membrane; headache	0.8%	Inhalation, Ingestion, skin/eye
Hydrogen sulfide	PEL: 10 ppm STEL: 15 ppm Ceiling: 15 ppm	100 ppm	Irritation eyes, respiratory; apnea, coma, convulsions	4.0%	Inhalation, Ingestion, skin/eye
Toluene	PEL: 50 ppm STEL: 150 ppm Ceiling: 500 ppm "skin"	500 ppm	Irritation eyes, nose; weakness, confusion, euphoria, dizziness	1.1%	Inhalation, Absorption, Ingestion, skin/eye
Vinyl Chloride	PEL: 1 ppm "skin"		Weakness, abdominal pain, gastrointestinal bleeding	4.0%	Inhalation, skin/eye
Dichloromethane (methylene chloride)	PEL: 25 ppm STEL: 125 ppm	2300ppm	Irritation eyes, skin; weakness, drowsiness dizziness	13%	Inhalation, Absorption, Ingestion, skin/eye
Trichloroethylene	PEL: 25 ppm STEL: 100 ppm Ceiling: 300ppm	1000ppm	Irritation eyes, skin; headache, visual disturbance	8%	Inhalation, Absorption, Ingestion, skin/eye
1,2-Dichloroethylene	PEL: 200ppm	1000ppm	Irritation eyes, skin; headache, visual disturbance	5.6%	Inhalation, Ingestion, skin/eye
Tetrachloroethylene (perchloroethylene)	PEL: 25 ppm STEL: 100 ppm Ceiling: 300 ppm	150ppm	Irritation eyes, nose, throat; flush face, neck;	NA	Inhalation, skin absorption, ingestion, skin and/or eye contact
Methane	None		At high concentrations methane acts as an asphyxiant without other adverse effects.	5.5%	Inhalation
Xylene	100 ppm	900 ppm	Irritation eyes, skin; headache, visual disturbance	1%	Inhalation, skin absorption, ingestion, skin and/or eye contact

[4] Permissible exposure limits, California Code of Regulations, Title 8, General Industry Safety Orders, Airborne Contaminants, §5155

C. Pesticides

At the Waring's Dump site, organochlorine pesticides may be present and a potential contaminant of the soil. Inhalation and skin contact are primary concern and work practice precautions should be taken to prevent exposure.

Name	Name	Exposure Limit	Health Hazard	Route of Entry
Aldrin	1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-endo-1,2-exo-5,8-dimethanonaphthalene	PEL: 0.25 mg/m^3 skin	Cumulative liver damage; suspected carcinogen; "skin"; CNS depression	Inhalation/Absorption
Endrin	1,2,3,4,10,10-hexachloro-6,7 epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo5,8-dimethanonaphthalenh; Hexadrin	PEL: 0.1 mg/m^3 skin	Cumulative liver damage; suspected carcinogen; "skin"; CNS	Inhalation/Absorption
Dieldrin	1,2,3,4,10,10-hexachloro-6,7 epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, exo-5,8-dimethanonaphthalene	PEL: 0.25 mg/m^3 skin	Cumulative liver damage; suspected carcinogen; "skin"; CNS	Inhalation/Absorption
DDT	1,1,1-trichloro-2,2-bis-(p-chlorophenyl) ethane	PEL: 1 mg/m^3 skin	Chronic and cumulative toxicity; mutagen; suspected carcinogen; "skin"	Inhalation/Absorption
Toxaphene	Chlorinated camphene	PEL: 0.5 mg/m^3	Cumulative liver damage; "skin"; suspected carcinogen	Inhalation/Absorption

D. Other Potential Chemical Hazards

Gasoline is a mixture of petroleum-derived chemicals. Benzene, toluene, xylene and ethylbenzene are the airborne contaminants of most concern. Health hazards associated with gasoline exposure are mild irritation and effects on the central nervous system. It is an **explosive** hazard!

Diesel is a fuel oil and a refined petroleum solvent that is mixture of paraffins and aromatics. Health hazards associated with diesel exposure are mild irritation to the eyes, skin, and throat.

Polynuclear Aromatic Hydrocarbons (PNA) form a class of diverse organic compounds each containing two or more fused aromatic rings of carbon and hydrogen atoms. Most PNAs enter the environment via the atmosphere from a variety of combustion processes and pyrolysis sources.

Evidence that mixtures of PNAs are carcinogenic to humans comes primarily from occupational studies of workers following inhalation and dermal exposure. Data is unavailable for the oral route of exposure for humans [5].

Polynuclear Aromatics (PNAs)					
Chemical Name	Exposure Limit	IDLH	Relative Response	LEL	Route of Entry
Anthracene	PEL = 0.2 mg/m³		Bronchitis, Dermatitis Potential Carcinogen		Contact/inhalation
Benzopyrene	PEL = 0.2 mg/m³	IDLH = 80 mg/m³	Bronchitis, Dermatitis Potential Carcinogen		Contact/inhalation
Chrysene	PEL = 0.2 mg/m³	IDLH = 80 mg/m³	Bronchitis, Dermatitis Potential Carcinogen		Contact/inhalation
Naphthalene	PEL = 10 ppm STEL = 15 ppm		Irritant eyes, confusion, Malaise, nausea, vomiting	0.90%	Contact/inhalation Absorption, inhalation
Phenanthrene	PEL = 0.2 mg/m³	IDLH = 80 mg/m³	Bronchitis, Dermatitis Potential Carcinogen		Contact/inhalation
Pyrene	PEL = 0.2 mg/m³	IDLH = 80 mg/m³	Bronchitis, Dermatitis Potential Carcinogen		Contact/inhalation

Polychlorinated Biphenyl (PCB) is mixtures of synthetic organic chemicals with the same basic chemical structure and similar physical properties ranging from oily liquids to waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics and rubber products; in pigments, dyes and carbonless copy paper and many other applications. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to cessation of production in 1977. Concern over the toxicity and persistence in the environment of Polychlorinated Biphenyls (PCBs) led Congress in 1976 to enact §6(e) of the Toxic Substances Control Act (TSCA) that included among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs.

This substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion. Repeated or prolonged contact with skin may cause dermatitis and the substance may have effects on the liver.

[5] Permissible exposure limits, California Code of Regulations, Title 8, General Industry Safety Orders, Airborne Contaminants, §5155

Asbestos

- Asbestos is a naturally occurring group of minerals that can only be identified under a microscope. There are several types of these flexible, fire-resistant fibers.
- In the past, asbestos was added to a variety of products to strengthen them and provide heat insulation and fire resistance. In most products, asbestos is combined with a binding material so that it is not readily released into the air.
- If asbestos fibers should become airborne and is inhaled, it can remain in the lungs for a long period of time, producing the risk for severe health problems that do not appear until many years later.
- Asbestos fibers can have serious effects on health if inhaled. There is no known safe exposure level to asbestos. Increased exposure to asbestos will increase the risk of developing an asbestos-related disease.
- The amount of time between exposure to asbestos and the first signs of disease can be as much as 30 years. It is known that smokers exposed to asbestos have a much greater chance of developing lung cancer than just from smoking alone.
- Asbestos can cause asbestosis, a scarring of the lungs that leads to breathing problems and heart failure. Workers who manufacture or use asbestos products and have high exposures to asbestos are often affected with asbestosis.
- Inhalation of asbestos can also cause lung cancer and mesothelioma, a rare cancer of the lining of the chest and abdomen lining. It may be linked to cancer of the stomach, intestines, and rectum, as well.

The regulatory occupational exposure limit or permissible exposure limit (PEL) of airborne concentration to asbestos of which there are two types: Serpentine and Amphibole. Serpentine includes Chrysotile (white) while Amphibole includes Amosite (brown), Crocidolite (blue), Anthophylite, Tremotile, and Actinolite is 0.1 fibers/cc (cubic centimeter) of air as an eight (8) hour time-weighted average. Work practices that minimize the disturbance of asbestos containing materials should be used whenever possible to control dust emissions. If asbestos containing materials are encountered, and must be disturbed, an initial exposure assessment consistent with the requirements of Title 8, CCR, Section 5208 shall be performed. If asbestos containing materials is encountered it should be immediately reported to the SSHO. The SSHO shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (0.1 f/cc) of air as an eight (8) hour time weighted average (TWA). The SSHO shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

More than 3,000 products in use today contain asbestos. Most of these are materials used in heat and acoustic insulation, fireproofing, and roofing and flooring. Some of the more common products that may contain asbestos include:

Pipe and duct insulation, building insulation, wall and ceiling panels, carpet underlays, roofing materials, artificial fireplaces and materials, patching and spackling compounds, brake pads and linings, pot holders and ironing board pads, hair dryers, floor tiles, electrical wires, textured paints, cements, toasters and other household appliances, furnaces and other furnace door gaskets.

Methods of compliance

The SSHO shall institute engineering controls and practices to reduce and maintain employee exposure to or below the permissible exposure limit (PEL) and/or excursion limit prescribed. Where the PEL and/or excursion limit is exceeded, the SSHO shall establish and implement a written program to reduce employee exposure to or below the PEL and comply with Title 8 requirements.

PHYSICAL HAZARDS

A. Physical Safety Hazards

There are numerous physical hazards associated with this project which, if not identified and addressed, could present operational problems as well as accidents and personal injury to the work force. In order to minimize physical hazards, standard safety protocols have been developed and will be followed at all times. The SSHO will observe the general work practices of all personnel and enforce safe procedures to minimize physical hazards.

1. Tripping, Slipping, and Falling Hazards

CIWMB personnel will be reminded daily to maintain sure footing on all surfaces. In order to minimize tripping hazards caused by debris, job supplies, and equipment, material will be removed daily from the work areas and stockpiled in their respective storage areas. This "housekeeping" effort will be enforced by the SSHO throughout the day.

2. Head and Back Injuries

As a minimum requirement, hard hats will be donned and worn while performing any site activities. This will prevent minor injuries that may be caused by overhead obstructions. Personnel are to use proper lifting techniques whenever they lift heavy objects.

3. Heavy Equipment and Traffic

The use of heavy equipment for trenching, debris removal, excavation, and lifting presents a potential safety hazard for personnel. ALL SITE PERSONNEL WILL WEAR VISABLE PROTECTIVE CLOTHING. Only qualified personnel will operate heavy equipment. All other on-site personnel shall remain a safe distance from heavy equipment.
Personnel needing to approach heavy equipment while operating will observe the following protocols:

a. Make eye contact with the operator (and spotter),
b. Signal the operator to cease heavy equipment activity,
c. Approach the equipment and inform the operator of intentions.

All equipment must be in good working condition when in use at the Site. Equipment that does not appear to be in good repair or appears to be unsafe will not be put into service until all necessary repairs are made.

B. Excavations

Excavation as defined by CCR, Title 8 Section 1540 is "any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Hazards associated with excavations are cave-ins; striking of underground utilities; falling tools, materials, and equipment; and hazardous air contaminants or oxygen deficient environments.

Prior to any trenching or excavation onsite all underground utility lines shall be clearly identified. It is the responsibility of the project manager to ensure all underground lines have been identified through a Regional Notification Center, such as Underground Service Alert (USA) - (800) 227-2600. Notify all underground utility owners who are not members on the Regional Notification Center. Underground utilities lines shall be color-coded following California marking guidelines for prospective excavation site delineation.

Color	Demarcation
White	excavation boundary
Blue	water line
Orange	communication line
Purple	reclaimed water line
Red	electric line
Yellow	gas line
Green	sewer line

While the excavation is open, the underground utilities must be protected, supported, or removed as necessary.

OSHA has very specific requirements that may require an entry permit, for employees entering into anything defined as an excavation over 5 feet in or 4 feet if hazardous air contaminants or oxygen-deficient environments may be present.
If an employee enters any excavation over 4 feet in depth, the Health and Safety Officer must grant prior approval.

C. Confined Space

Confined space as defined by CCR, Title 8 Section 5157 means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and

(3) Is not designed for continuous employee occupancy.

Entry means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry permit means the written or printed document that is provided by the employer to allow and control entry into a permit space.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

(1) Contains or has a potential to contain a hazardous atmosphere;

(2) Contains a material that has the potential for engulfing an entrant;

(3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

(4) Contains any other recognized serious safety or health hazard.

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit system means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

D. Heat Stress

With the possible combination of ambient factors such as high air temperature, low air movement, high radiant heat, and protective clothing, the potential for heat stress is a concern. All on-site personnel will be made familiar with the symptoms of heat stress and the conditions during which they may occur. Heat stress symptoms may include elevated heart rate, nausea, headache, lightheadedness, and lack of coordination or decreased job performance or slurred speech.

Heat Stress Condition	Causes & Symptom
Heat rash	Also known as prickly heat, skin remains wet as sweat does not evaporate.
Heat cramps	Painful muscle spasms that are caused by lack of salt in the body. Usually a result from sweating heavily and drinking large amount of water without replacing the body's salt loss
Heat exhaustion	Continues loss of fluids and salt from sweating can cause hat exhaustion. Symptoms include heavy sweating, cool and moist skin, and a weak pulse. Possible fainting, weakness, dizziness, nausea, diarrhea, blurred vision and a normal or slightly high body temperature. Advanced stages can cause vomiting or loss of consciousness.
Heat stroke	Most serious heat illness – when sweating no longer helps the body regulate its internal temperature. Skin is hot, may or may not be dry. Often red or spotted. Individual is slightly confused & disoriented, delirium, convulsions, or even unconsciousness may occur. Body temperature may be 105 degrees F or higher.

Currently, Cal/OSHA does not have a regulatory standard for heat stress. The American Conference of Governmental Industrial Hygienists (ACGIH) provides recommendations on heat stress situation, which this SSHP will follow.

At 75 degrees Fahrenheit ambient temperature, the SSHO will become keenly aware of the effects of heat stress on project personnel, and will alert the crew to become aware of any symptoms. The SSHO shall be responsible for performing all heat related monitoring for his employees in accordance with this document. The symptoms of heat-related disorders and preventive measures will be discussed during a safety "tailgate" meeting. Workers are encouraged to increase consumption of water and electrolyte-containing beverages such as Gatorade during warm weather.

If a heat stress condition develops the SSHO shall monitor for heat stress. Site personnel shall follow the appropriate work practices and monitor their potential heat stress condition. At a minimum, workers will break every 2 hours for 10 to 15 minute rest periods. In addition, workers are encouraged to take rests whenever they feel any adverse effects, especially those effects that may be heat-related. The frequency of breaks may need to be increased upon worker recommendation to the SSHO. Also, if resting pulse rates exceed 110 beats after a 3-minute waiting period, then additional breaks will be taken. Workers are encouraged to drink small volumes of cool water about every 20 minutes for rehydration. Other possible monitoring methods include core temperature and ambient conditions.

E. Noise Hazards

Employees may not be exposed to noise greater than the levels established by Cal/OSHA (90 dBA TWA for an 8 hour day). If levels are higher than this, engineering, administrative, or work practice controls are required. When the noise levels cannot be controlled through these methods hearing protection will be provided. The SSHO will monitor employee noise exposure and take appropriate action. Hearing protection will be provided. Go above 85 dBA institutes a hearing protection program. As a general rule, keep everything below 85 dBA.

BIOLOGICAL HAZARDS

The following table summarizes the potential biological hazards:

Hazard	Avoidance
Animal and insect bites or stings: ➢ Bees ➢ Wasps ➢ Ticks ➢ Snakes ➢ Spiders	Animal and insect bites and stings can cause localized swelling, itching, and minor pain that can be handled by first aid treatment. In sensitive individuals, however, effects can be more serious such as anaphylactic shock that can lead to severe reactions in the circulatory, respiratory, and central nervous system, and in some cases, even death. Do not attempt to capture any wild or semi-wild animals such as cats, rats or snakes due to the possibility of a bite or parasitic infestation.
Poison Oak	Three leaflet plant whose sap and crushed leaves contain a chemical, which if absorbed into the skin cause an allergic reaction. Recognize and avoid the plant. If exposed, wash the affected area as quickly as possible with soap and cold water.

RADIOGICAL HAZARDS

Radiation Monitoring

Undocumented or illegal burn dumps typically contain unclassified wastes that may include radioactive materials. The following sections describe methods and equipment that will be used to detect radioactive materials in the field and measure radiation emissions. A contingency plan is included that describes the course of action to be followed if high-level radioactivity materials are discovered. The action level for this

removal is set at three times (3x) background radiation, while the maximum allowable level is set at 2 milliroentgen per hour (2 mR/hr) at one foot.
Radiation monitoring is discussed in Section 12.

Radiation Type	Properties
Alpha Particle	2 protons/2 neutrons Travels 2-4 inches in air Not a serious external hazard Serious internal hazards Shielding: Stopped by a sheet of paper
Beta Particle	Electrons released from the nucleus Travels up to 50 feet in air External and internal hazard Shielding: Stopped by a thick sheet of aluminum Distance: Inverse square law applies
Gamma Rays	Waves of electromagnetic energy or photons released from the nucleus Travels up to 1 mile in air External and internal hazard Shielding: Varies with shielding materials (Up to 3 feet of concrete or 1 foot of lead) Distance: Inverse square law applies

7. Safety Inspections

The SSHO and/or his designee will perform daily safety inspections. A report including results of the inspection and any corrective actions taken will be filed in the project files, with a copy to the CIWMB Project Manager/Onsite Project Lead. Identified safety and occupational health deficiencies and corrective measures shall be recorded.

8. Standard Field Activity Procedures

To ensure the safety of personnel in the work area, the following field activity procedures:

- Stay upwind and a safe distance away from the source of the hazard (i.e., active face) whenever possible.
- Do not touch or attempt to collect samples of soil, leachate, waste material or debris of any kind without appropriate personal protective equipment.
- Avoid all heavy equipment or machinery operations that can pose a safety hazard. If heavy equipment or other vehicles are present, stay out of traffic routes. If staff need to remain in a traffic area advise equipment operators of your presence. Make sure they see you and stop the equipment before you approach them.
- Never put notebooks or other equipment down in waste areas.
- Avoid wet or muddy areas.
- Avoid dust clouds and dusty operations. Stand upwind and out of the dust plume area. Leave dusty areas immediately and reenter only after dust has settled or after dust control is in effect. Avoid being splashed by the water truck or entering freshly sprayed areas.
- Avoid loud or sustained high noise levels. If you cannot hear the person next to you or the sound is loud enough to be uncomfortable leave the area immediately and do not reenter without adequate hearing protection.
- Do not enter enclosed areas, including buildings, sumps, drains or any low areas where gas may collect without closely monitoring, continuously, air quality at all times.
- Avoid low or partially enclosed or covered areas where landfill decomposition gas may collect, both known or suspected, that may be detected by either instrumentation or by observation. This includes ground water wells, storm drains or other sub-grade conduits.
- Avoid walking in the waste, near or on the active face, and near operating equipment.
- Always be alert and watch for sharp objects such as medical syringes, nails and broken glass, which may penetrate your boots or your hands, should you fall. Examine your boots and clothing after walking through waste to determine if you have been contaminated. Keep in mind that not all contamination is visible! Make sure all PPE is disposed of properly. If it hazardous, everything should go in hot

trash (including PPE). If it is not hazardous, throw it into the municipal waste and there will be zero liability.

- Stay clear of steep slopes. Slopes greater than 10% should be avoided altogether.

- Driving with your boots on can be hazardous and may cause lose of control of the vehicle.

- Avoid contaminating the interior of vehicles. Whenever possible, do not enter the vehicle with contaminated boots or clothing.

- Remember to use all personal protective equipment according to manufacturer's instructions.

- Observe site conditions and wind direction. Note traffic patterns, work areas, unusual activities.

- Keep vehicles away and upwind of all hazards including: traffic, dust, active areas, landfill gas collection, venting or flame-off areas, etc.

<u>Personal Hygiene</u>

- Always practice good personal hygiene.

- Avoid hand or body contact with waste materials or any dirty or contaminated surfaces.

- Application of makeup is prohibited at the work area.

- Avoid touching eyes, nose or mouth with or without gloved hands. Hands and face should be washed with a disinfectant soap, immediately after leaving the work site. Always wash up thoroughly before leaving the site or as soon as possible thereafter.

- Be sure to containerize all contaminated materials in a plastic bag until you can properly dispose of them.

- Disposable gloves may not be reused.

- Always carry boots in plastic bags separately from other personal clothing.

- Water from sealed containers or coolers may be consumed if done carefully and away from contaminant sources. If possible, remove all personal protection equipment before entering any office to get drinking water.

- Eating and smoking are prohibited while on a solid waste facility, except in designated areas.

- Wash hands before eating or using the restroom. Partial or complete personal decontamination may be required to prevent transfer of contaminants to yourself or facilities.

- Always double check to insure that no uncontrolled contaminants leave the site with you.

- Whenever possible dispose of all collected waste materials you may have generated contaminated or not.

9. Work and Support Areas

To prevent migration of contamination caused by tracking of personnel or equipment, work areas and personal protective equipment will be clearly specified prior to beginning operations. CIWMB has designated work areas or zones as suggested by the NIOSH/OSHA/USCG/EPA's document titled, "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities."

Upon entrance into the site, Team members will control access to site work zones. The project site, each work area will be designated into one of three zones: exclusion or "hot" zone, a contamination reduction zone (CRZ), and a support zone.

EXCLUSION ZONE

The exclusion zone is considered the zone of contamination and is the areas where inhalation, oral contact, or dermal contact with contaminants will be possible.

CONTAMINATION-REDUCTION ZONE

The contamination-reduction zone CRZ or transition zone will be established between the exclusion zone and support zone. In this area, personnel will perform decontamination of personnel and equipment to remove any contamination.

SUPPORT ZONE

The support zone will consist of a clearly marked area where the support equipment and personnel not donned in the appropriate level of personal protective equipment will be located. Smoking, drinking, and eating will be allowed only in designated areas in the support zone. Location of support zone may be changed in the event of a sustained change in the prevailing wind direction or other unpredictable events.

ACCESS CONTROLS

The SSHO shall establish the physical boundaries of each zone and shall instruct all workers and visitors on the limits of the restricted areas. No one shall be allowed to enter the restricted area without the required personal protective equipment for that area. The SSHO shall ensure compliance with all restricted area entry and exit procedures.

The SSHO shall also designate a decontamination point for personnel to exit from the contaminated area and enter into the clean area where personnel may rest and drink.

VISITOR ACCESS

Visitors should check in immediately upon arrival with the SSHO. Only authorized visitors will be allowed access to the contaminated areas. Each Team member will be required to provide and wear the appropriate level of personal protective equipment. Other site visitors will not be admitted to the exclusion and contamination reduction zones.

Failure to comply with this site entry procedure will result in expulsion from the site. A visitor's log will be kept by the SSHO.

10. Personal Protective Equipment

All personnel entering the exclusion or contamination reduction zone must wear th appropriate level of protection as designated by this SSHP. It has been determin personal protective equipment will be used by personnel when performing activiti related to waste characterization sampling of this site. When personnel can contro exposure through engineering or administrative controls they shall do so.

The level of protection required shall be upgraded or downgraded based on the re of personal air monitoring, action levels from direct reading instruments or a chan site conditions. Changes in protection levels must be determined by the SSHO an approved by the Project Manager/Onsite Project Lead and Project Health and Sa Officer.

<u>LEVELS OF PROTECTION</u>

Personnel at the site will use the following levels of protection:

- Level C: Used when criteria for using air-purifying respirators are m a lesser level of skin protection is required.
- Level D: Used only as a work uniform and in an area where no skin protection is required.

<u>LEVELS OF PROTECTION WORN IN THE EXCLUSION ZONE</u>

Level C Is required only when collecting the sample

Respiratory Protection: Full face piece air purifying respirator /combination cartrid protection against chemical/organic vapors, pesticides/fertilizers with HEPA filter
Protective Clothing: Visible protective clothing
Head: Hardhat if overhead hazard exists
Hand: Outer (Nitrile) and inner gloves are available
Boots: Steel toe boot
Hearing: Earplugs if necessary

Level D is required for all personnel in the exclusion zone

Protective Clothing: Visible protective clothing
Head: Not required
Hand: Not required
Foot: Steel toe boot
Hearing: Earplugs if necessary
Eye: Safety glasses

SUPPORT ZONE

Personnel working in the support zone will use the following personal protective equipment:

Foot: Steel Toe Work Shoes
Head: Not required

RESPIRATORY PROTECTIVE EQUIPMENT

All CIWMB personnel using respiratory protective equipment shall follow CIWMB po... and procedures. The following issues covered below should be followed when us... respiratory protection for this site.

Cartridge Changes
All cartridges will be changed a minimum of once daily. However, water saturation ... HEPA filter or dusty conditions may necessitate more frequent changes. Changes ... occur when personnel begin to experience increased inhalation resistance, or breakthrough of a chemical with warning properties.

Inspection And Cleaning
Respirators will be checked periodically by the SSHO and inspected before each u... the wearer. All respirators and associated equipment will be decontaminated and hygienically cleaned after use.

Facial Hair
No personnel who have facial hair, which interferes with the respirator's sealing su... will be permitted to wear a respirator to collect samples.

Corrective Lenses
Normal eyeglasses cannot be worn under full-face respirators because the temple b... interfere with the respirator's sealing surfaces. For workers requiring corrective lens... special spectacles designed for use with respirators will be used.

Medical Certification
Only workers who have been certified by a physician, as being physically capable o... respirator usage will be issued a respirator.

11. Decontamination Procedures

All personnel and equipment must be free from contamination when they leave the work site.

PERSONNEL DECONTAMINATION

Decontamination of personnel shall be accomplished to ensure that any material, which personnel may have contacted in the exclusion zone, is removed in the contamination-reduction zone. Decontamination of personnel shall utilize the following steps as appropriate to the specific work area:

Step 1: Wash down boots with sprayer.

Step 2: Remove OUTER gloves

Step 3: Remove the hard hat, decontaminate as needed

Step 4: Remove respirators and suitably store while on breaks and during lunch. At the end of shift, discard the cartridges (note: respirator should be disinfected after use by wiping down and allowing to air dry.)

Step 5: Remove INNER gloves

Step 6: Wash hands, face and neck before breaks, lunch, and site departure.

EQUIPMENT DECONTAMINATION

Any equipment and vehicles that come in contact with contaminated soil will undergo decontamination. Each party will be responsible for final decontamination of their equipment.

WASTE HANDLING

Contaminated clothing will be bagged and disposed of at the end of the waste characterization project. Wastewater generated on site will be disposed of onsite. Solid wastes will be disposed of in temporary waste storage areas set up within the exclusion zone. Wastes will be removed from the site at the end of the day, and disposed of in municipal waste dumpsters.

12. Air Monitoring

AIR MONITORING

Air monitoring shall be performed to evaluate air emissions at the site. The SSHO shall determine if industrial hygiene or additional sampling is needed to assess health and safety at the site. The SSHO will assist the Project Manager/Onsite Project Lead on determining when monitoring shall be performed to ensure site health and safety.

Air monitoring to determine the presence of combustible gas (monitoring shall be on-going) or oxygen deficiency shall be performed with an appropriate air monitoring instrumentation, such as a GMI 422 Gas Surveyor or Scott scout.

If combustible gas readings are greater than 20% of the lower explosive limit (LEL) of methane (1% by volume) is encounter work will stop and an assessment will made to determine the potential risk of explosion.

Colorimetric tubes will be used intermittently to determine the presence of benzene and vinyl chloride. The "mini RAE" will be used to help determine constituents present. In addition, a windsock shall be used to identify wind direction.

RADIATION MONITORING

The decision to monitor for radioactive materials shall be at the discretion of the CIWMB project engineer or his designee. It is recommended that all solid waste sites be surveyed for radioactive material especially old municipal burn dumps. At a minimum, it is recommend that sampling team implement the following:

1. Don personal radiation monitoring devices (radiation dosimeter);
2. Perform a general survey of the waste area(s) using an instrument capable of detecting alpha, beta, and gamma radiation; Use gamma probe.
3. Spot survey the sampling locations;
4. Survey each sample in the field for radioactivity using a Geiger Mueller detector; and
5. Survey all equipment and personnel for radioactive contamination prior to leaving the work zone.

Personal Radiation Monitoring

At the beginning of the sampling event, each person working in the waste area will don a personal radiation dosimeter. Dosimeters shall be digital, "pager-type" dosimeters, such as the model PD-10i personal dosimeter manufactured by Science Applications International Corporation (SAIC), of San Diego, California. The dosimeters must be capable of detecting gamma radiation to the nearest 1 microroentgen per hour (mR/hr).

At the start of the project, all personnel shall provide their dosimeters to the designated Site Health and Safety Officer (SSHO), who will maintain personal radiation exposure records. At the beginning of each working day, the designated Site Health and Safety

Officer will "zero-out" each dosimeter, and assign one to each person working in the waste area. At the end of each day, personal dosimeters will be returned to the SSHO who will record the daily exposure for each site worker.

Radiation Surveying

Radiation surveying will be conducted using approved and calibrated survey equipment capable of measuring gamma radiation emissions of at least 1 mR. Approved radiation survey equipment includes the Digital Ratemeter manufactured by Ludlum Instruments and the MHV Surveyor 2000 manufactured by Bicron/Saint Gobain. Other equipment may be approved after a consultation with the CIWMB project engineer. These instruments must be calibrated at least once each year by the manufacturer or at a designated service center to ensure field accuracy.

At the beginning of each survey, background radiation will be measured using each instrument that will be used to conduct subsequent surveys. Background radiation will be measured on relatively flat, open areas exposed to native soils or bedrock. The background radiation reading will be recorded for each instrument, and used during waste/burn ash surveys for comparison.

The sampling team will be responsible for conducting radiation surveys. Each survey will be performed by slowly walking back and forth over the proposed or exposed work area with an approved radiation survey instrument. If elevated radiation is detected prior to or during he course of the work, the "hot" area will be flagged in the field and excluded from the work zone.

In addition to field radiation surveys, each sample will be scanned for radioactivity using an approved survey instrument prior to being shipped to the laboratory. Under no circumstance will a sample be shipped if it contains elevated radiation. If a sample is found to contain elevated radiation, it will be contained and characterized and disposed of properly which may include drumming it and leaving it on site. It will not be dumped into the environment.

Site Action Levels

Radiation action levels for CIWMB sampling are set at 3x average background levels. If at any time levels exceed 3x average background the sampling team will mark the location and vacate the elevated area. 2 millirancon levels per hour. 2 mR/hr

Radiation Detection Contingency Plan

The following section of the radiation plan identifies methods for handling incidences where the action level has been exceeded. This section was prepared in accordance with the guidance provided to CIWMB by the California Radiological Health Branch (RHB), Department of Health Services, dated August 3, 2001. The RHB contact is Mr. Robert Greger who can be reached at (916) 323-2756. If unable to reach RHB contact for immediate notifications, call the Office of Emergency Services 24-hour number: (800) 852-7550.

A radioactive action level of three times (3x) the average background level has been established for this project, while the maximum allowable radiation field for CIWMB personnel, consultants, and contractors is 2 mR/hr at one foot. In the event that radioactive materials exceeding the action level are detected at the site, the following procedures are to be followed:

GENERAL PLAN

1. If radiation sources are identified, and radiation levels are less than 2 mR/hr at one foot as measured by CIWMB equipment, then the investigator shall handle the source in accordance with the above procedures.

2. If a radiation source exceeds 2 mR/hr at one foot and is less than 10 mR/hr at one foot, then the investigator shall cordon off area and notify CIWMB project engineer. The CIWMB project engineer shall then verify the reading and determine the course of action. Depending on site conditions the source may be either removed in accordance with the above procedure or left in-place and secured. The CIWMB project engineer should notify the RHB and U. S. EPA's Emergency Response Team aka the EPA's Region 9 Emergency Response Section within one day. Questions? Call the spill phone at 1-800-300-2193.

3. If a radiation source exceeds 10 mR/hr at one foot, then the investigator shall immediately cordon off the area and notify the CIWMB project engineer. The CIWMB project engineer shall immediately notify the RHB and the U.S. EPA Emergency Response Team. At no time shall any site personnel attempt to remove/handle any such item.

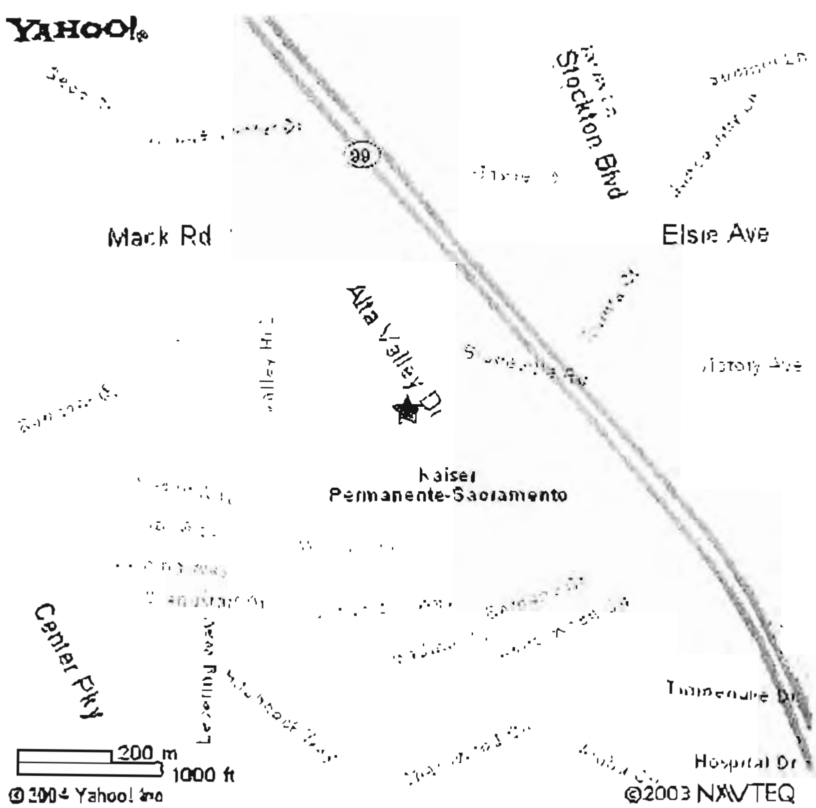
Always minimize handling time of radioactive materials. When handling radioactive materials, always use gloves and six-inch or longer tongs or other engineering controls such as shovels, broom handles, or telescoping rods to maintain distance from hands/body to radioactive material. Radioactive material items should be placed in a ziplock (or similar closed) bags, along with any contaminated PPE and sample containers. All radioactive materials collected from the project shall be properly labeled and secured in approved containers for appropriate handling and disposal.

13. Emergency Response

Prior to field activities, all personnel shall review emergency egress routes for the site. All personnel shall follow direction of the Project Manager/Onsite Project Lead and/or SSHO when an emergency situation arises.

EMERGENCY ASSISTANCE INFORMATION

Emergency Contact	Telephone Number
Fire/Police/Ambulance	911
Kaiser Permanente Medical Center 6600 Bruceville Road, Sacramento, CA 95823	(916) 688-2086
Cal-OSHA **Sacramento** 2424 Arden Way, Ste. 165, Sacramento 95825	(916) 263-2800 Fax (916) 263-2798



Directions to Kaiser Permanente Medical Center

1. Start on **STOCKTON BLVD** (at **47TH AVE & STOCKTON BLVD** in **SACRAMENTO)** going towards **48TH AVE** - go **2.6** mi
2. Bear R on a local road - go **< 0.1** mi
3. Bear R on **MACK RD** - go **0.2** mi
4. Continue on a local road - go **0.1** mi
5. Turn L on **ALTA VALLEY DR** - go **0.2** mi
6. Turn L on **BRUCEVILLE RD** - go **< 0.1** mi
7. Arrive at **6600 BRUCEVILLE RD, SACRAMENTO**

EMERGENCY SERVICES

All personnel shall be provided concise and clear directions and accessible transportation to local emergency services. Emergency equipment will be kept in contamination reduction zone when field activities are performed. A map showing directions to the nearest hospital will be posted on site. Fire extinguishers and an industrial first aid kit shall be present on the site at all times.

MEDICAL EMERGENCY PROCEDURES

The following procedures should be observed if an accident occurs:

Minor Injury

- Notify the SSHO.
- Have qualified first aid personnel treat injury.
- Record injury and include name of injured person, nature of injury, and treatment given.

Serious or Major Injury

In the event of a medical emergency when actual or suspected serious injury occurs, the following procedures shall be implemented:

- Survey the scene and evaluate whether the area is safe for entry.
- Remove the exposed or injured person(s) from immediate danger.
- Render first aid if necessary. Decontaminate affected personnel after critical first aid is given.

- Obtain paramedic services or ambulance transport to local hospital. This procedure shall be followed even if there is no visible injury.
    1. Call 911.
    2. Identify location, request medical assistance, provide name and telephone number.
    3. Request assistance from emergency medical service and/or additional assistance.

- Other personnel in the work area shall be evacuated to a safe distance until the SSHO determines that it is safe for work to resume. If there is any doubt regarding the condition of the work area, work shall not commence until all hazard control issues are resolved.
- Fill out accident reporting forms and associated documents.

If a fatal injury occurs, the following additional steps will be followed:

- Notify immediate supervisor.
- Notify Project Health and Safety Manager.
- CIWMB will initiate contact with Cal/OSHA and other appropriate agencies.
- All work activities on the project must be stopped on the project for 24 hours
- Assist Cal/OSHA as directed.

FIRST AID

Qualified personnel only shall give first aid and stabilize an individual needing assistance. Life support techniques such as CPR and treatment of life threatening problems such as airway obstruction, and shock will be given top priority. Professional medical assistance shall be obtained at the earliest possible opportunity.

To provide first-line assistance to field personnel in the case of sickness or injury, the following items will be immediately available:

- First Aid kit.
- Portable emergency eyewash.
- Supply of clean water.
- Blanket.
- The location of the above items will be established prior to beginning work and will be discussed in detail at the site safety orientation meeting.

SPILL RESPONSE PROCEDURES

CIWMB does not expect a risk of leaks or spills of contaminated liquids or hazardous liquids.

In the case of a spill of such contaminated or hazardous materials, the following procedures shall be followed:

- Determine a spill has occurred.
- Notify the SSHO
- Identify protective clothing or equipment required to respond.
- Contain the spill.
- Document incident.
- CIWMB staff should initiate clean-up!

EARTHQUAKE RESPONSE

If an earthquake should occur during the course of site activities, the following steps should be taken:

- Stop working.
- Remain calm and do not panic.
- If indoors, stay indoors away from windows and take cover under heavy furniture or door jam if possible.
- Do not use or do anything that might be a source of ignition, i.e., smoking, cutting, or welding.
- If outdoors, stay away from power lines, power poles, and windows.

SITE EVACUATION PLAN

In the general case of a large fire, explosion, or toxic vapor release, the site must be evacuated. Personnel must evaluate the situation and assess the upwind direction. Personnel must evacuate to an upwind location following these steps:

- All personnel will assemble in an upwind area when the situation permits; a head count will be taken.
- Determine the extent of the problem. Dispatch a response team in appropriate protective clothing to evacuate any missing personnel or to correct the problem.
- The above procedures will apply to all Team members and will be discussed with them prior to the commencement of work.

14. Emergency & Hospital Information

The nearest hospital to the job site is:

Kaiser Permanente Medical Center
6600 Bruceville Road,
Sacramento, CA 95823
(916) 688-2086

15. Training and Medical Surveillance Requirements

TRAINING

All CIWMB shall comply with the CIWMB's Health and Safety Field Policy training requirements.

All personnel are required to have current training in the following areas:

- 40 hour hazardous waste operations and emergency response (or equivalent)
- 8-hour refresher training, if applicable
- First Aid/CPR

MEDICAL SURVEILLANCE

All CIWMB shall comply with the CIWMB's Health and Safety Field Policy – medical surveillance requirements. CIWMB staff may view the Health and Safety policy at: http://Boardnet/HealthSafety/.

16. Site Specific Pre-Job Safety Orientation

All personnel entering the exclusion zone will be trained in the provisions of this SSHP and shall meet the requirements for the CIWMB's Health and Safety Policies, be required to sign the sign-in sheet and attend a site safety orientation meeting where the following topics will be covered:

- Key personnel and their responsibilities for site,
- CPR and first aid trained personnel,
- Site hazards,
- Personal protective equipment/required levels of protection,
- Location of safety equipment; such as fire extinguishers,
- Site standard operating procedures and safe work practices
- Work zones and site control measures
- Emergency and spill response and contingency plans.

Approvals

PREPARED BY:

____
Diane Vlach, Associate Industrial Hygienist

PEER REVIEWED BY:

____
Andy Marino, Associate Industrial Hygienist

The undersigned personnel certify that this health and safety plan will be utilized for the protection of the health and safety of workers during the field investigation of the Site.

Diane Kihara, CIH, CSP	Date
Dawn Owen, IWMS	Date
Glenn Young, PE	Date
Scott Walker, PE	Date

The undersigned personnel have been briefed about the contents of this health and safety plan, and intend to comply with its provisions:

Signature	Name	Date

Appendix H Notice of Availability

CalRecycle

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • WWW.CALRECYCLE.CA.GOV • (916) 322-4027
P.O. BOX 4025, SACRAMENTO, CALIFORNIA 95812

NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT WARING'S DUMP SOIL CAP PROJECT, SACRAMENTO, CALIFORNIA State Clearing House #2012122041

Project Location: Waring's Dump is located in the south portion of the city of Sacramento, California, and is bounded by Morrison Creek to the north; 63rd Street to the west; and parcels fronting Elder Creek Road to the south and 65th Street Expressway to the east. Waring's Dump is located on 5.04 acres comprising Assessor's Parcel Numbers (APNs) 38-182-005, 38-182-006, 38-182-007, 38-182-010, and 38-202-001.

Project Description: The proposed project would result in grading and compaction of the existing hummocky terrain and the importation of select fill soils for placement as a compacted soil cap over the existing waste footprint. Preliminary surface grading and compaction would be conducted to stabilize the project area into a uniform surface, graded to drain stormwater off of the waste mound. However, the depth to which preliminary grading would occur would be minimized so as to leave buried wastes undisturbed and in place to the extent possible. Any debris unearthed during the grading would be reburied such that no materials protrude from the graded surface. No debris or soil is intended to be exported offsite. However, if there are some bulky items, such as refrigerators, car bodies, etc., unearthed that cannot be graded within the proposed waste mound, they would be removed and either recycled or disposed of at a proper disposal site. The soil and debris would be graded and compacted to create a mound graded to drain to the edges of the waste footprint and ready to receive a uniform compacted soil cap.

Approximately 8,370 cubic yards (CY) of clean, imported select soil would be placed and compacted on top of the compacted, graded waste materials to create the finished grade. The proposed finished select soil capped waste mound would have side slopes varying between 1.0 percent and 3.0 percent, over the area containing waste, and have a maximum elevation of 34.5 feet above MSL. An erosion control mat and hydroseed mix would be then placed/applied to the compacted soil cap.

The proposed project would substantially improve existing drainage patterns onsite by diverting stormwater off of the waste materials, capping those materials with a 15-inch select-soil cap, and diverting the stormwater into a perimeter trapezoidal bioswale for drainage, storage and eventual groundwater infiltration and evaporation outside of the Waring's Dump debris footprint. The bottom of the retention swale would be one foot wide and side-slopes would be at a 2:1 ratio.

To avoid impacts to existing or future fences or levees, all earthwork would be conducted outside the creek right-of-way, and storm water would be retained on-site during most rain events.

CalRecycle

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • WWW.CALRECYCLE.CA.GOV • (916) 322-4027
P.O. BOX 4025, SACRAMENTO, CALIFORNIA 95812

Except for a culvert beneath the existing access driveway (described above), no structures are proposed for this proposed project.

The proposed project is expected to have an approximately one-month construction period, and would be implemented within four to six weeks after the project is approved.

The project site is not enumerated under Section 65962.5 of the Government Code ("Cortese List").

Significant Impacts: The Draft Environmental Impact Report (EIR) for the proposed project identified potentially significant impacts on biological resources, cultural resources, hydrology and water quality, noise, and transportation/traffic. However, with the implementation of mitigation measures incorporated into the project, all impacts would be lessened to less-than-significant levels. The Draft EIR did not identify any significant and unavoidable impacts for the proposed project.

Review Period: The public review period will start on April 8, 2013 and end on May 22, 2013, a period of 45 days. The Draft EIR may be reviewed for no charge at the following locations:

- Sacramento Public Library, Southgate Branch, 6132 66th Avenue, Sacramento
- CalRecycle Offices, 1001 I Street, Sacramento.

The Draft EIR is also available on the CalRecycle web site Public Notices homepage located at: http://www.calrecycle.ca.gov/Actions

Comments may be submitted in writing either by mail or email to:

Mr. Mustafe Botan
Waste Management Engineer
Department of Resources Recycling and Recovery (CalRecycle)
Waste Permitting, Compliance and Mitigation Division
P.O. Box 4025
Sacramento, CA 95812-4025

Email: Mustafe.Botan@CalRecycle.ca.gov

CalRecycle encourages public agencies, organizations, and all other interested persons to provide written comments on the Draft EIR prior to the end of the 45-day public review period. Comments on the Draft EIR must be received **no later than 4:00 p.m. on Friday, May 22, 2013**.

Mark de Bie, Deputy Director
Waste Permitting, Compliance, & Mitigation

Date of Notice: **April 8, 2013**

The Sacramento Bee

P.O. Box 15779 • 2100 Q Street • Sacramento, CA 95852

URS CORP
REEMA MAHAMOOD
100 W. SAN FERNANDO ST #200
SAN JOSE, CA 95113

DECLARATION OF PUBLICATION
(C.C.P. 2015.5)

COUNTY OF SACRAMENTO
STATE OF CALIFORNIA

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interest ed in the above entitled matter. I am the printer and principal clerk of the publisher of The Sacramento Bee, printed and published in the City of Sacramento, County of Sacramento, State of California, daily, for which said newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Sacramento, State of California, under the date of September 26, 1994, Action No. 379071; that the notice of which the annexed is a printed copy, has been published in each issue thereof and not in any supplement thereof on the following dates, to wit:

April 7, 2013

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration was executed at Sacramento, California, on **April 7, 2013**

(Signature)

NO 402 PUBLIC NOTICE

CalRecycle
Notice of Availability of a
Draft Environmental Impact Report

WARING'S DUMP SOIL CAP PROJECT

Pursuant to the California Environmental Quality Act (CEQA), CalRecycle has
published this legal notice to inform you of the availability of the Draft
Environmental Impact Report prepared for the Waring's Dump Soil Cap Project.
Waring's Dump is located in the south portion of the city of Sacramento, on
5.04 acres comprising APNs 38182005, 38182006, 38182007, 38182010,
and 38202001. CalRecycle proposes to properly cover the former dump site
with selected fill soils in accordance with state minimum standards, and to
limit exposure of the waste materials to the public and the environment.

The Draft EIR is available for public review and comment. Copies of the Draft
EIR are available at the Sacramento Public Library, Southgate Branch, 6132
66th Avenue, Sacramento, the CalRecycle Offices, 1001 I Street,
Sacramento, and at the CalRecycle web site Public Notices homepage located
at: http://www.calrecycle.ca.gov/Actions

The comment period runs from April 8, 2013 to May 22, 2013. Comments on
the Draft EIR must be received no later than 4:00 p.m. Friday, May 22, 2013.

Please submit written comments to Mustafe Botan, Waste Management
Engineer, Department of Resources Recycling and Recovery (CalRecycle),
Waste Permitting, Compliance and Mitigation Division, P.O. Box 4025,
Sacramento, CA 95812-4025. Comments can also be emailed to
Mustafe.Botan@CalRecycle.ca.gov.

Appendix I Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
Biological Resources			
Mitigation Measure 4.2-1a: Ground clearing or vegetation removal activities shall occur outside of the nesting season (September 1 through February 1), if feasible. However, if ground clearing or vegetation removal activities occur during the nesting season (February 15 through August 31), then pre-construction surveys for nesting birds shall be conducted in all area suitable for nesting that are located within 250 feet of the project area to be impacted. Surveys shall be conducted no more than 15 days prior to the beginning of ground disturbance. If an active nest is located, a 250-foot buffer shall be delineated and maintained around the nest until a qualified biologist has determined that fledging has occurred. Alternatively, CDFW may be consulted to determine if the protective buffer can be reduced based upon individual species responses to disturbance.	CalRecycle Construction contractor(s) Qualified biologist	Before the start of construction activities during the nesting season, no more than 15 days prior to ground disturbance.	CalRecycle and/or their construction contractor shall ensure that a qualified biologist conducts a survey for nesting birds as outlined in Mitigation Measure 4.2-1a, if construction activities are scheduled during the bird nesting period, February 15 through August 31. If an active nest is located, protective actions as outlined in the mitigation measure shall be implemented. If the construction contractor is to be responsible for implementing this measure, CalRecycle shall ensure that the measure is included in construction bid documents and construction contracts. CalRecycle shall also ensure that the construction contractor implements the measure.
Mitigation Measure 4.2-1b: No more than 30 days prior to the beginning of ground disturbance, a pre-construction survey for burrowing owls shall be conducted by a qualified biologist within the areas to be impacted in general accordance with the Burrowing Owl Survey Protocol and Mitigation Guidelines by the California Burrowing Owl Consortium. Should the surveys be scheduled to occur during the period extending from February 1 through May 1, then surveys shall be conducted no more than 15 days prior to the start of ground disturbance. Surveys shall be conducted from two hours before sunset to one hour after sunset, or from one hour before sunrise to two hours after sunrise,	CalRecycle Construction contractor(s) Qualified biologist	No more than 30 days prior to the beginning of ground disturbance. Should construction be scheduled to occur during the period extending from February 1 through May 1, then surveys shall be conducted no more than 15 days prior to the start of ground disturbance.	CalRecycle and/or their construction contractor shall ensure that a qualified biologist conducts a pre-construction survey for burrowing owls as outlined in Mitigation Measure 4.2-1b. If the construction contractor is to be responsible for implementing this measure, CalRecycle shall ensure that the measure is included in construction bid documents and construction

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
and shall be conducted during weather conducive to observing owls outside of their burrows. No surveys shall occur during heavy rain, high winds, or dense fog. If occupied burrows are found, mitigation for potential impacts shall follow the guidelines outlined by the Burrowing Owl Survey Protocol and Mitigation Guidelines, including passive relocation.			contracts. CalRecycle shall also ensure that the construction contractor implements the measure.
Mitigation Measure 4.2-4: For any activities that would remove one or more trees subject to City of Sacramento Ordinance 12.64.040, the applicant shall prepare and submit a tree removal and replacement plan to the City of Sacramento for review and approval including the removal fee which would go towards planting replacement tree(s) in the City.	CalRecycle Construction contractor(s)	Prior to removing any trees on the project site.	CalRecycle and/or its construction contractor shall prepare and submit a tree removal and replacement plan to the City of Sacramento for review and approval. If the construction contractor is to be responsible for implementing this measure, CalRecycle shall ensure that the measure is included in construction bid documents and construction contracts. CalRecycle shall also ensure that the construction contractor implements the measures by preparing the tree removal and replacement plan and obtaining approval from the City.
Cultural Resources			
Mitigation Measure 4.3-2: If potentially significant archaeological resources are encountered during subsurface excavation activities, all construction activities within a 50-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. CalRecycle shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate Department of Parks and	CalRecycle Construction contractor(s) Qualified archaeologist	Construction bid document preparation. Construction contract preparation. Implement during all ground-disturbing construction activities.	CalRecycle maintains a standard contract with its contractors that include compliance with all applicable laws and regulations. Any previously undiscovered resources unearthed shall be recorded and evaluated for significance by a qualified archaeologist in accordance with Mitigation Measure 4.3-2.

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
Recreation forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. If the resource is determined to be significant under CEQA, CalRecycle and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the North Central Information Center, and provide for the permanent curation of the recovered materials.			In the event of a find, CalRecycle shall be responsible for ensuring the implementation of Mitigation Measure 4.3-2.
Mitigation Measure 4.3-3: In the event that plant or animal fossils are discovered during subsurface excavation activities for the proposed project, all excavation within 50 feet of the fossil shall cease until a qualified paleontologist has determined the significance of the find and provides recommendations in accordance with Society of Vertebrate Paleontology standards. If the find is determined to be significant and CalRecycle determines that avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan shall be incorporated into the project.	CalRecycle Construction contractor(s) Qualified paleontologist	Construction bid document preparation. Construction contract preparation. During project construction activities, as appropriate.	CalRecycle shall include a standard inadvertent discovery clause in every construction contract. If plant or animal fossils are discovered during construction activities, the significance of the find shall be determined by a qualified Paleontologist as specified in Mitigation Measure 4.3-3. In the event of a find, CalRecycle shall be responsible for ensuring the implementation of Mitigation Measure 4.3-3.
Mitigation Measure 4.3-4: If human remains are encountered, work should halt in the vicinity of the remains and, as required by law, the Sacramento County Coroner should be notified immediately. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of that determination. Pursuant to California Public Resources Code 5097.98, the NAHC, in	CalRecycle Construction contractor(s)	Construction bid document preparation. Construction contract preparation. During project construction activities, as appropriate.	CalRecycle shall include a standard inadvertent discovery clause in every construction contract. If human remains are encountered during construction activities, CalRecycle or its contractor(s)

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
turn, will immediately contact an individual who is most likely descended from the remains (aka: a Most Likely Descendent, MLD). The MLD has 48 hours to inspect the site and recommend treatment of the remains. CalRecycle is obligated to work with the MLD in good faith to find a respectful resolution to the situation and entertain all reasonable options regarding the descendants' preferences for treatment.			shall proceed as specified in Mitigation Measure 4.3-4. In the event of a find, CalRecycle shall be responsible for ensuring the implementation of Mitigation Measure 4.3-4.
Hydrology and Water Quality			
Mitigation Measure 4.5-1: If applicable, CalRecycle shall prepare a Notice of Intent (NOI) to be submitted to the Central Valley Regional Water Quality Control Board, which indicates the intent to comply with the Statewide NPDES General Construction Permit (Order No. 2009-0009-DWQ) prior to construction being initiated. Prior to submittal of the NOI, CalRecycle shall prepare a Stormwater Pollution Prevention Plan (SWPPP) to comply with the Statewide NPDES General Construction Permit. The SWPPP shall include but will not be limited to the following elements: • Temporary erosion control measures shall be employed for disturbed areas. • No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months. • Sediment shall be retained onsite by a system of sediment basins, traps, or other appropriate measures. • The construction contractor shall prepare a plan for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains. • BMP performance and effectiveness shall be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as	CalRecycle Construction contractor(s)	Prior to the start of construction activities.	CalRecycle or its contractor(s) shall prepare a SWPPP and submit an NOI to the Central Valley Regional Water Quality Control Board (CCRWQCB), if determined to be applicable in consultation with the CCRWQCB. If the NOI and SWPPP are not applicable to the Project, CalRecycle will implement standard erosion control and water pollution control best management practices during construction, as specified in the measure. If the construction contractor is to be responsible for implementing this measure, CalRecycle shall ensure that the measure is included in construction bid documents and construction contracts. CalRecycle shall also ensure that the construction contractor implements the measures. CalRecycle shall be responsible for ensuring that the construction contractor implements the SWPPP or construction best management

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure. • In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover shall be established on the construction site as soon as possible after disturbance, as an interim erosion control measure throughout the wet season. If the NOI and SWPPP are not applicable to the Project, CalRecycle will implement standard erosion control and water pollution control best management practices during construction. Construction best management practices, will include those activities listed above under the SWPPP and will also include but will not be limited to the following types of measures: scheduling of activities, prohibitions of certain practices, general good housekeeping practices, pollution prevention and education practices, construction procedures, and other management practices to prevent or reduce to the maximum extent practicable the discharge of pollutants directly or indirectly to waters of the United States. Best management practices also include treatment requirements, operating procedures, and practices to control construction site runoff, spillage or leaks, sludge or waste disposal, and drainage from materials storage areas.			practices throughout construction by monitoring construction activities on a regular basis.
Noise			
Mitigation Measure 4.6-1: The Construction Contractor shall implement, to the satisfaction of the City of Sacramento and to the greatest extent feasible, the following measures to ensure that, during construction, construction noise would be reduced by the greatest extent feasible when within 100 feet of a residential use or sensitive receptor: • Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained	CalRecycle Construction contractor(s)	Construction bid document preparation. Construction contract preparation.	CalRecycle shall ensure that construction bid documents and contracts include the measures outlined in the mitigation measure. Noise suppression and reduction methods shall be approved by the City of Sacramento. CalRecycle or its contractor(s) shall ensure that all noise

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
mufflers and other State required noise attenuation devices. • All construction equipment shall use available noise suppression devices and properly maintained mufflers. All internal combustion engines used in the project area shall be equipped with the type of muffler recommended by the vehicle manufacturer. In addition, all equipment shall be maintained in good mechanical condition to minimize noise created by faulty or poorly maintained engine, drive-train, and other components. • Construction noise reduction methods (i.e., shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment) shall be employed where feasible. Staging of construction equipment and unnecessary idling of equipment shall be avoided whenever feasible. "Feasible," as used here, means that the implementation of this measure would not have a notable effect on construction operations or schedule. • Property owners and occupants located within 100 feet of the project construction site shall be sent a notice, at least 15 days prior to commencement of construction, regarding the construction schedule of the proposed project. A sign, legible at a distance of 25 feet shall also be posted at the project construction site. All notices and signs shall be reviewed and approved by the City, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints. • During construction, stationary construction equipment shall be placed such that emitted noise is directed		15 days prior to construction commencement.	suppression and noise reduction methods are implemented during construction activities. CalRecycle or its contractor(s) shall notify neighbors of the construction schedule. CalRecycle or its contractor(s) shall post a City-approved sign on the project site that is legible at a distance of 25 ft. CalRecycle shall be responsible for ensuring that the construction contractor implements this mitigation measure.

Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Party	Mitigation Timing	Implementation Procedures
away from sensitive noise receptors. • During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors.			
Transportation/Traffic			
Mitigation Measure 4.7-1: Prior to the commencement of construction activities, CalRecycle shall prepare a Traffic Control Plan that would need to be approved by the City of Sacramento Public Works Department. The Traffic Control Plan shall include the following: • Construction-related truck traffic shall be scheduled to travel during non-peak hours (8:30 a.m. to 4:00 p.m.) on surrounding roadways. • Proposed routing for all delivery and haul trucks shall be identified. To the extent feasible, truck routing shall avoid or minimize travel through residential areas. • Notification shall be sent to all neighboring property owners two working days in advance of beginning work. The notice shall describe the anticipated duration of construction, and the name and daytime telephone number of the person performing the work, as well as the CalRecycle project manager.	CalRecycle Construction contractor(s)	Prior to commencement of construction activities. At least 2 days in advance of commencement of construction activities.	CalRecycle or its contractor shall prepare a Traffic Control Plan as outlined in the mitigation measure, and have it approved by the City of Sacramento Public Works Department. CalRecycle or its contractor(s) shall notify neighbors of the construction schedule, duration of construction, name and daytime telephone number of the person performing the work, as well as the CalRecycle project manager. If the construction contractor is to be responsible for implementing this measure, CalRecycle shall ensure that the measure is included in construction bid documents and construction contracts. CalRecycle shall also ensure that the construction contractor implements the measures by preparing the Traffic Control Plan and getting it approved by the City. CalRecycle shall be responsible for ensuring that the construction contractor implements the Traffic Control Plan throughout the construction period.