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Barney Chan
Alameda County Health Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Subject: Comprehensive Site Characterization Report and Risk Management Plan for the former Nestlé facility located at 1310 14th Street, Oakland, California

Dear Mr. Chan:

Attached are copies of the Comprehensive Site Characterization Report (CSCR) and the Risk Management Plan (RMP) for the above-referenced site. The CSCR presents a summary of the results of the site investigations, remedial actions, and risk analysis that have been conducted at the site over the past 11 years. The RMP presents the decision framework and protocols for managing potential human health risks associated with the subsurface presence of chemicals during any future development of the site.

If you have any questions I can be reached at (925) 602-4710, ext. 22.

Sincerely,

Brent Searcy
Project Engineer

BS/dh *rmp1000*

Attachments

cc: Binayak Acharya, Nestlé USA, Inc.
Chuck Headlee, Regional Water Quality Control Board
Roger Brewer, Regional Water Quality Control Board

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ETIC
Engineering, Inc.

Risk Management Plan
for Deed Restricted Portion of Former Nestlé USA Facility

1310 14th Street
Oakland, California

Prepared for

Nestlé USA, Inc.
800 North Brand Boulevard
Glendale, California 91203

Prepared by

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, California 94523
(925) 602-4710

Brent Searcy — 01/24/01
Brent Searcy, Project Engineer — Date

24 Jan 2001
Douglas E. Oram, Ph.D., Project Manager — Date

REGISTERED GEOLOGIST
HEIDI L. DIEFFENBACH-CARLE
No. 6793
ex 03/31/02
STATE OF CALIFORNIA

Heidi Dieffenbach-Carle — January 24, 2001
Heidi Dieffenbach-Carle, R.G. #6793, Senior Geologist — Date

January 2001

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Risk Management Plan

Former Nestle Facility, 1310 14th Street, Oakland, California

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1. INTRODUCTION

ETIC Engineering, Inc. (ETIC) was contracted by Nestle USA, Inc. (Nestle) to prepare this Risk Management Plan (RMP) for the former Nestle property in Oakland, California. The property is located at 1310 14th Street, as shown in Figure 1. Figure 2 outlines the area for which a Deed Restriction has been recorded (Appendix A) and to which the restrictions and risk management protocols discussed in this document apply. This area will be referred to as the "subject facility" throughout this RMP. The RMP was prepared to fulfill property transfer requirements for the former Nestle property. The RMP presents the decision framework and the specific protocols for managing potential human health risks associated with the subsurface presence of chemicals and proposed future land use at the "subject facility". Potential health risks associated with daily occupants at the "subject facility" have been documented in a risk-based corrective action (RBCA) analysis for the "subject facility" (JCI 2000, as reported in ETIC 2001). This RBCA analysis was originally submitted to the Alameda County Health Agency (ACHA) and the California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) on 21 March 2000. Following discussions amongst ETIC, Nestle, ACHA, and RWQCB, comments on the RBCA analysis were addressed in a 27 June 2000 letter from ETIC to ACHA and RWQCB. A copy of the final RBCA analysis for the "subject facility" is included in ETIC Engineering's Comprehensive Site Characterization Report for the site dated January 2001. The risk to construction workers is evaluated in this RMP (see Appendix B).

The RMP delineates the specific risk management measures that will be implemented prior to, during, and after development of the "subject facility". It was prepared solely for use within the "subject facility" and is not intended for management of risks outside of this area. Although this RMP sets forth the requirements to appropriately manage the chemicals in soil and groundwater, the RMP is not intended to catalog all other legal requirements that may apply to the project or to activities conducted within the "subject facility" area.

Current and future owners and lessees, occupants and managers, or contractors delegated or authorized to perform property maintenance or construction are required to comply with the measures identified in the RMP when engaging in the relevant activities discussed. A Deed Restriction for the "subject facility" portion of the former Nestle property was recorded on 12 June 2000 at the Office of the Recorder of Alameda County (see Appendix A). Figure 2 shows the northwestern portion of the site, referred to as the "subject facility" in this RMP report, for which the deed restriction measures apply. The Deed Restriction requires Owner and/or Lessee compliance with the RMP measures. Specifically, the Deed Restriction places responsibility for compliance with the Owner and/or Lessee of the "subject facility" at the time the activity is conducted, even when such Owner or Lessee has contracted with another party to perform those measures. The term "Owner" or "Owners", as used in this RMP, shall mean those persons (whether individuals, corporations, or other legal entities) who, at such time when activities regulated by this RMP are conducted, hold title to the "subject facility". The term "Lessee" or 'Lessees" as used in this RMP shall mean those persons who are entitled by ownership, leasehold, license, permit, or other legal relationship with the Owner, to enter and exclusively occupy the "subject facility" and to engage in activities that are regulated by this RMP. A former Owner or former Lessee, licensee, permittee, or other former holder of a property or contract right who, at such time when activities regulated by this RMP are conducted, no longer holds an

interest in title to a parcel or no longer has a property or contract interest in a parcel will not be considered an Owner or Lessee for the purposes of this RMP.

The California Environmental Protection Agency (Cal/EPA) has designated the ACHA as the "Administering Agency" under Assembly Bill (AB) 2061, in December 1998. As the Administering Agency, the ACHA is responsible for overseeing completion of the comprehensive site characterization study, the RBCA analysis, and the closure requirements of the "subject facility". The comprehensive site characterization study and RBCA analysis included the following tasks:

closure will include entire site.

- Compilation and evaluation of historical soil and groundwater quality data;
- Field investigation (including collection of soil vapor, soil matrix, and groundwater quality data); and
- Preparation of comprehensive site characterization and RBCA reports.

The RBCA analysis concluded that the chemicals of potential concern (COPCs) observed at the "subject facility" do not pose a significant risk to daily site occupants following proposed redevelopment and commercial/industrial land use at the site. Accordingly, additional remediation at the site is not warranted, provided that future development will maintain a surface cap of the soil, exclusive of minor landscape areas, by buildings or paved surfaces. In addition, implementation of risk management practices, as described in this RMP, is recommended to address potential health risks associated with direct exposure of construction workers to chemicals beneath the site during redevelopment. To aid in development and implementation of risk management practices, the risk to construction workers was quantitatively evaluated and is summarized in Appendix B.

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2. SITE BACKGROUND

2.1 SITE LOCATION

The former Nestle property is located at 1310 14th Street, Oakland, California. The property covers two city blocks and is bounded by 14th Street, 16th Street, Poplar Street, and Mandela Parkway (Figure 1). The entire site is covered with buildings and concrete or asphalt paving. The "subject facility" area of the property to which the environmental restrictions discussed in this document apply is located in the northwest portion of the property (Figure 2). This "subject facility" portion of the site contains an "L" shaped building which formerly housed warehouse and service bay facilities. The Cypress Structure of Interstate 880 (I-880), a former elevated freeway structure, existed west of the "subject facility" until it sustained extensive damage during the October 1989 Loma Prieta earthquake. This portion of I-880 was subsequently demolished and redeveloped as Mandela Parkway.

The topography slopes gently to the west, toward San Francisco Bay. Land use in the immediate area is primarily light industrial, with some commercial property and residences located east and west of the property.

2.1.1 Climate

Climatic conditions in the region are moderate, with mild, wet winters and warm, dry summers. Representative mean high/low temperatures and wind conditions are presented below:

	January	April	July	October	Annual
1990 Average temperature (degrees F)	52.3	61.5	66.0	65.5	60.9
Average wind speed (mph, long term average)	7.4	9.7	9.7	7.3	8.6
Average wind direction (long term average)	SE	W	NW	W	W
1990 Rainfall (inches)	4.41	0.24	0.00	0.35	14.27

Temperature, rainfall from NOAA for Oakland Museum station (1990)
Wind data from California Air Resources Board for Oakland International Airport (1984)

2.2 SITE HISTORY

The former facility was used to manufacture ice cream and packaged milk. The facility was also used for the distribution of ice cream and packaged fresh milk by trucks. A maintenance yard for vehicles used in the distribution of dairy products operated at the facility and included underground fuel and waste oil storage tanks.

Facilities at the property were originally constructed by American Creamery in 1915. Carnation purchased the property in 1929 and made additions and improvements to the buildings between 1946 and 1973 for dairy product processing and distribution. Nestle USA, Inc. assumed

operation of the property following its purchase of Carnation in 1985. Nestle ceased operations at the property in 1991 (HLA 1991).

2.2.1 Adjacent Land Use

Land use surrounding the site is light industrial and residential. Facilities to the north and south of the site are primarily light industrial. Immediately east of the site are light industrial facilities, with residential land use extending from approximately one block east of the site to Interstate 980 (I-980). West of the site is a mixed light industrial and residential area.

ETIC has conducted database searches and door-to-door well surveys for areas surrounding the site. No active water supply wells were identified during these efforts. Documentation of the surrounding area well surveys and database searches is provided in the Comprehensive Site Characterization Report (ETIC 2001).

2.3 SUMMARY OF SITE INVESTIGATIONS AND CURRENT ENVIRONMENTAL CONDITIONS

Previous environmental investigations conducted at the former Nestle property are briefly summarized below. More complete and detailed documentation of previous investigations and remediation activities is provided in the Comprehensive Site Characterization Report (ETIC 2001).

Four fuel underground storage tanks (USTs) were removed from the site in 1989. During removal of the USTs, gasoline and diesel fuel was observed as floating product in the tank cavity. Approximately 1,200 cubic yards of soil was excavated from the tank cavity and stockpiled onsite. Nutrients were applied to the soil stockpile in an attempt to bioremediate the soil. No further information regarding soil removal or disposal was available at the time this report was written.

Anania Geological Engineering (AGE) was retained by Carnation in 1989 to conduct a preliminary site characterization and to implement several interim remedial measures designed to contain and eliminate the presence of petroleum hydrocarbons in the soil and groundwater. A number of interim remedial actions were implemented, including installation of product recovery wells and removal of floating product, installation and operation of groundwater extraction and vapor extraction systems, and ex-situ bioremediation of soil. Thirty-three groundwater monitoring wells and 103 product recovery wells were installed at the site. Approximately 1.5 million gallons of groundwater were pumped and treated by carbon adsorption, resulting in the removal of approximately 5,000 gallons of gasoline and diesel fuel from soil and groundwater (HLA 1991).

In December 1990, Harding Lawson Associates was retained to review the preliminary site characterization and remediation data and to conduct additional site investigations. Between April and August 1991, HLA oversaw the installation of 20 soil borings. A soil vapor extraction (SVE) system was operated from January 1994 to December 1995 and removed an estimated 5,200 gallons of hydrocarbon equivalent (Park 1994; EA 1996).

(free phase)

At the end of 1995 the SVE system had removed most of the hydrocarbons that this technology is capable of removing, but floating product, or liquid-phase hydrocarbons (LPH), was still present in a number of wells. A multi-phase extraction system was installed and operated from August 1997 through June 2000. The system was installed to remove LPH trapped in the soil and floating on the groundwater. A total of 10,875 pounds of hydrocarbons have been removed since August 1997. Product levels have decreased since August 1997, and the hydrocarbon recovery rate has reached an asymptotic level. Figure 3 shows the area beneath which groundwater has historically been impacted by hydrocarbons.

A RBCA analysis for the site is included in the January 2001 Comprehensive Site Characterization Report. The RBCA analysis (JCI 2000) concluded that the chemicals of potential concern (COPCs) observed at the "subject facility" do not pose a significant risk to daily site occupants following proposed redevelopment and commercial/industrial land use at the site. Accordingly, additional remediation at the site is not warranted, provided that future development will maintain a surface cap of the soil, exclusive of minor landscape areas, by buildings or paved surfaces. In order to protect the health and safety of construction workers that may come into direct contact with chemicals beneath the site during future property redevelopment, the implementation of risk management practices, as outlined in Section 5 of this RMP document, is recommended.

2.4 FUTURE SITE DEVELOPMENT

As of January 2001, specific future development and/or construction plans for this site have not been presented. This document, in conjunction with the January 2001 Comprehensive Site Characterization Report for the site, identifies and outlines the risk management procedures which must be followed during any future development of the "subject facility". This RMP provides the specific protocols to be followed in order to mitigate risks to human health and the environment that were identified in the risk assessment portion of the Comprehensive Site Characterization Report.

Sections 5 and 6 of this report provide the risk management protocols which must be followed during and after any future site development activities. Appendix B presents the results of risk analysis efforts performed specifically for the purposes of developing a health and safety plan for protection of construction workers who may be involved in any future development activities at the site.

2.5 DEED RESTRICTION

The entire property was sold by Nestle to Encinal 14th Street, LLC in July 2000. Prior to the sale of the property, Covenants and Environmental Restrictions were developed for the "subject facility" area (northwest portion) of the property. The restrictions were reviewed by the ACHA and the RWQCB, and were signed by the City of Oakland Fire Services (COFS) in June 2000. These restrictions were recorded against the deed for the former Nestle property on 12 June 2000. Figure 2 shows a map of the entire property; the "subject facility" area (northwest portion), to which the environmental restrictions apply, is outlined and identified. A complete copy of the environmental restrictions is included as Appendix A.

3. SUMMARY OF HEALTH RISKS

A RBCA analysis was performed in support of comprehensive site characterization and the low risk designation requirement for the "subject facility" (JCI 2000). The RBCA analysis focused on potential health risks to construction workers and future daily occupants at and in the vicinity of the "subject facility", accounting for potential future development and land use at the "subject facility".

A conceptual site model (CSM) of contaminant occurrence, fate, transport, and potential exposure was developed as the basis for the RBCA analysis. A graphical representation of the CSM is depicted in Figure 4. As indicated on Figure 4, complete exposure pathways associated with daily onsite and offsite occupants include:

- Ingestion, inhalation, and dermal contact with surface soils (onsite industrial/commercial workers);
- Inhalation of volatile emissions and/or particulates from subsurface soils and groundwater to indoor air (onsite industrial/commercial workers);
- Inhalation of volatile emissions and/or particulates from subsurface soils and groundwater to outdoor air (onsite industrial/commercial workers);
- Inhalation of volatile emissions and/or particulates from groundwater to indoor air (offsite residents); and
- Inhalation of volatile emissions and/or particulates from groundwater to outdoor air (offsite residents).

? construction workers ?

The RBCA analysis did not include an evaluation of health risks to potential intermittent receptors such as site visitors and/or trespassers; however, the risks to daily site occupants may be used as a conservative estimate of risks to intermittent receptors.

Details of the RBCA analysis are documented by JCI (2000), included as an appendix to the Comprehensive Site Characterization report for the property (ETIC 2001). Conclusions of the RBCA analysis for daily onsite and offsite receptors included:

- Risks/hazards associated with direct exposure of daily site (commercial/industrial) occupants to observed levels of chemicals in surface soils are protective of USEPA-defined target risk/hazard levels;
- Risks/hazards associated with onsite (commercial/industrial) indoor and outdoor air inhalation of volatiles detected in shallow soil vapor samples are protective of USEPA-defined target risk/hazard levels;
- Risks/hazards associated with offsite (residential) indoor and outdoor air inhalation of volatiles detected in groundwater at offsite locations are protective of USEPA-defined target risk/hazard levels; and
- An RMP outlining appropriate risk management practices, health and safety measures, and deed restrictions should be developed prior to initiation of construction activities and redevelopment at the "subject facility".

To aid in development of this RMP and a health and safety plan for protection of construction workers, risks to construction workers were also quantified, as summarized in Appendix B. The construction worker risk analysis indicates that without protective measures, the carcinogenic risk associated with exposure of construction workers to subsurface chemicals is within the target risk range adopted by the USEPA, while the non-carcinogenic hazard marginally exceeds the target hazard level. Therefore, to prevent construction workers from potentially hazardous exposure levels at the "subject facility", the recommendations in this RMP document should be implemented.

4. RISK MANAGEMENT MEASURES PRIOR TO SITE DEVELOPMENT

Potential exposure prior to development of the "subject facility" is limited to intermittent visitors or trespassers. As indicated in Section 3, the risk to intermittent receptors is considered insignificant. Moreover, due to the presence of a fence around the property and a paved surface throughout much of the property, additional risk management measures prior to development of the "subject facility" are not warranted.

5. RISK MANAGEMENT MEASURES DURING SITE DEVELOPMENT

The Deed Restriction for the "subject facility" indicates that no owners or occupants of the "subject facility" or any portion thereof shall conduct any excavation work on the "subject facility", unless expressly permitted in writing by the COFS. Should excavation be permitted as part of redevelopment, the primary exposure to chemicals at the "subject facility" will be limited to that associated with construction workers. As indicated in Section 3, risk management measures are recommended for protection of construction workers. To this end, risk management measures were developed to provide adequate protection to human health for onsite construction workers during development of the "subject facility".

Development activities at the facilities may include various site preparation activities such as, but not limited to, excavation, stockpiling, trenching, site grading, backfilling, and dewatering that may disturb the native soils and/or groundwater beneath the "subject facility". Specifically, potential events or activities associated with development of the "subject facility" that may result in potential health impacts to onsite construction workers during development include:

- Dust generation associated with soil excavation and trenching, grading, loading activities, backfilling, movement of construction and transportation equipment, and fugitive dust generation from winds traversing an exposed soil stockpile; and

- Potential contact with subsurface chemicals during trenching and excavation.

The risk management measures that will control potential impacts associated with each of these activities are described below. Management measures that are recommended to control potential impacts on construction workers, contractors, and short-term intrusive workers who may be engaged in limited excavation activities, such as utility repair, are also described below.

5.1 SITE-SPECIFIC HEALTH AND SAFETY REQUIREMENTS AND SAFETY PLAN

The construction contractor shall assume full responsibility and liability for the compliance with provisions of the Work Hours and Safety Standard Act (40 U.S.C. 327 et seq.). The construction contractor shall comply with all applicable safety regulations and other requirements, including, but not limited to, the following:

- Code of Federal Regulations (CFR), Title 29-Labor
- State of California, California Code of Regulations (CCR), Industrial Relations
- Medical Surveillance Programs (e.g., OSHA, 29 CFR 1200)
- Injury and Illness Prevention Programs (e.g., SB 198, 8 CCR, CAL/OSHA, GISO 3203, Section 5192 and 1509)
- Implementation of mitigation measures under California Environmental Quality Act (CEQA), if any
- The Construction Standard (29 CFR 1926)
- Workers' Right to Know (29 CFR 1910.120)
- Section 6360-99 of the California Labor Code (Hazard Communication)

During construction and site development activities, workers that may directly contact contaminated soil or groundwater at the "subject facility" must perform their activities in accordance with a hazardous operations site-specific health and safety plan (HASP). The construction contractor will be responsible for development and implementation of the HASP in compliance with all applicable federal, state, and local regulations and requirements. The HASP shall be prepared by a Certified Industrial Hygienist. If needed, the construction contractor will submit the HASP to the RWQCB or ACHA for review. Preparation of a HASP will be required for, but not limited to, site preparation work including grading, utility installation, foundation construction, service pit construction, and other activities where workers might directly contact impacted soil or groundwater beneath the "subject facility". The HASP shall include, but not be limited to, the following elements:

- Identification and description of the responsibility of those individuals who control each phase of operations and are responsible for employee and public safety. The plan shall set forth in writing the policies and procedures to be followed by all personnel. This shall include designation of an overall project site safety representative with authority to stop any construction/demolition activity or modify work practices if the site safety plan is being violated, or if such action is necessary to protect workers, property, and the surrounding community during the contract period. This requirement shall apply continuously and not be limited to normal working hours.

- Information identifying and delineating all workplace hazards that have been identified or are generally associated with the proposed work phases, and how this information is communicated to employees (e.g., tailgate safety meetings). Hazardous material communication standards can be found in 29 CFR 1910.120 and 8 OCR 5194. Hazardous waste information can be found in 29 CFR 1910.1200 and 8 CCR 5192.

- Engineering controls, specific work practices, and measures to be used to monitor and control worker and general public exposure to any identified hazard with special emphasis to demolition debris, dust, petroleum impacted soils, LPH, and other hazardous materials. The monitoring of site personnel for contaminant exposure shall be conducted so as to maintain the proper level of personal protection, including action level of protection.

- Level of training required for all specified contractor(s) or subcontractor personnel, possibly, but not limited to, asbestos, lead and hazardous materials awareness training; and the 40-hour Hazardous Waste Operations and Emergency Response Training Program and the associated 8-hour refresher training in accordance with Title 29, Code of Federal Regulations 1910.120, and 8 CCR 5192 for all personnel who will come in direct contact with surface and subsurface contaminated materials when performing their work. Contractors shall maintain and provide all training records to the Resident Engineer.

- Provision of sufficient personnel properly trained to handle, excavate, and dispose of hazardous waste and other contaminated waste that is expected in this project. The training shall be in accordance with 29 CFR 1910.120, 29 CFR 1910.134, 8 CCR 5144, and 8 CCR 5192.

- Requirements of contractors and subcontractors for any applicable medical surveillance programs and Injury and Illness Prevention Program (IIPP) (e.g., SB 198, 8 CCR and CAL/OSHA, GISO 3203, Sections 5192 and 1509); implementation of mitigation measures under CEQA (AB 3180); the Construction Standard (29 CFR 1926); Workers Right to Know (29 CFR 1910.120); Section 6360-99 of the California Labor Code (Hazard Communication); the San Francisco Health Code, Article 21 addressing Hazardous Materials, and the Americans with Disabilities Act (ADA).

- Methods to be used to decontaminate equipment.

- Sanitation facilities to be provided for personal hygiene. Portable toilets and discharge of their waste products into sanitary sewers shall comply with local codes.

- Contingency Plan for emergency including fire, spillage of hazardous/toxic wastes and liquids (with special emphasis to clean up spillage due to fuel/oil from contractors' equipment), traffic accident, personal accident, power failure, or any event that may require modification or abridgment of site control and decontamination procedures. This plan shall also include procedures to be followed in the event of a large-scale spill of contaminated material on a public roadway in accordance with the hazardous Substance Highway Spill Containment and Abatement Act (California Vehicle Code, Section 2450 et seq.), and the Emergency Service Act (California Government Code Section 8571.4 et seq.)

5.2 CONSTRUCTION IMPACT MITIGATION MEASURES

Measures must also be implemented to mitigate potential health impacts on construction workers, should they be exposed directly to chemicals in soil and groundwater underlying the "subject facility". Potential exposure pathways associated with onsite construction workers include inhalation, incidental ingestion, and dermal contact with chemicals in soils and groundwater.

Specifically, measures that must be implemented to mitigate potential impacts during construction include the following:

- Each contractor will prepare and implement a site-specific HASP to address the potential exposure to contaminated soils and groundwater during construction;

- Dust control through spraying of water and other techniques to minimize mobility of impacted soils toward offsite locations;

- Minimize soil and groundwater contact by onsite construction worker.

Details of these mitigation measures, except the site-specific health and safety plan, are described below.

5.2.1 Dust Control

Dust controls must be implemented to prevent offsite dispersion and accumulation of impacted soils and to comply with applicable regulations pertaining to air quality and nuisance control. Potential construction activities that could generate dust and warrant risk management measures include: (1) excavation and stockpile control; (2) onsite construction vehicle traffic, and (3) windblown soil.

Alameda County may require monitoring of dust generation during site construction at the "subject facility". Results of the monitoring will be used by the construction contractor for determining the needs and appropriate dust control practices in accordance with the regulations for excavating and restoring streets in Alameda County.

Dust generation will be minimized by all appropriate measures, which may include, but not be limited to, the following:

- Wetting of surface soils and spoil piles during excavation, trenching, compaction, and site grading and paving;
- Control of excavation techniques to minimize dust generation such as minimizing drop distances; and
- Covering of stockpiles, if present, with visqueen or other suitable membrane covers.

Additional measures, if required, may be utilized at the discretion of the construction contractor.

5.2.2 Minimizing Soil and Groundwater Contact by Construction Worker

Existing data indicate the subsurface presence of chemicals in both unsaturated soils, saturated soils, and groundwater beneath the "subject facility". Shallow groundwater beneath the site occurs at depths ranging from 5.0 to 10.0 feet below ground surface. Details of the hydrogeological characterization are presented in the Comprehensive Site Characterization Report (ETIC 2001).

Future construction work at the site may involve excavation and/or direct contact with chemicals above and below the water table. To mitigate risks associated with this exposure, the construction contractor shall develop and implement a site-specific HASP. Examples of health and safety measures are the use of protective clothing, protective gloves and boots, and suitable respirators with cartridges during construction activities.

6. RISK MANAGEMENT MEASURES AFTER SITE DEVELOPMENT

The post-construction portion of this RMP addresses the precautions that must be undertaken to mitigate the long-term health risks associated with the "subject facility" after all redevelopment activities are complete. Any future reuse of the "subject facility" involving disturbance of soil, pavements, or building foundations must be accomplished in a manner consistent with the objectives of this RMP.

Components of the post-construction portion of this RMP include the following:

- Prevention of the exposure of daily site occupants or visitors to impacted soil by maintaining cover materials in appropriate conditions;
- Establishment of protocols to protect onsite workers engaged in subsurface excavation activities such as buried utility repair, work on buried foundations, or pavement requiring exposure to soil and/or groundwater;
- Prevention of use of groundwater beneath the facility;
- Agency (COFS , ACHA, and RWQCB) notification on change in property use.

6.1 COVERING OF THE SITE

As indicated in the Deed Restriction for the former Nestle property, all uses and development of the "subject facility" shall maintain a surface cap of the soil, exclusive of minor landscape areas, by buildings or paved surfaces. The Maintenance and Operations Facility Manager or their designated representative must annually conduct a visual inspection of the cover to ensure that the cover materials remain in adequate shape. Damage to the integrity of the cover materials, such as major cracks, must be promptly repaired.

Upon completion of the inspection and any necessary repairs, the Maintenance and Operations Facility Manager or their designated representative will prepare a report documenting the inspection and repairs. The report will contain, at a minimum, the following information:

- Date of inspection
- Personnel conducting the inspection
- Results of the inspection
- Repairs completed to maintain the integrity of the cover

Reports must be signed by the Maintenance and Operations Facility Manager or their designated representative. Reports must be filed by the site occupant at the Maintenance and Operations Facility. The reports will be available for review by the COFS, ACHA, and RWQCB.

6.2 PROTOCOLS FOR FUTURE SUBSURFACE DEVELOPMENT

If excavation is permitted by the COFS, health and safety procedures must be followed, as previously described, for all individuals engaged in subsurface excavation activities in which covered soil and groundwater may be exposed. The likely scenarios are buried utility repairs, work on buried foundations, or repairs and alterations to pavements. At a minimum, a site-specific HASP must be prepared and employed in concert with any such work.

If minor soil disturbance is undertaken in the future, the work must follow the guidelines presented herein. Any impacted soil subject to excavation and brought to the surface by grading, excavation, trenching, or backfilling shall be managed in accordance with all applicable provisions of local, state, and federal laws. Excavated soil may be reused as backfill in the excavation area, provided that the excavation will be properly covered with asphalt, concrete, or clean material. Excess material must be disposed of offsite at an appropriate waste facility.

If future activities at the "subject facility" are planned involving a significant reduction in the extent or effectiveness of the cap over the soil, then an addendum to this RMP must be prepared and submitted to the ACHA and RWQCB.

6.3 USE OF GROUNDWATER

As indicated in the Deed Restriction for the former Nestle property, no owner or occupants of the "subject facility" shall drill, bore, otherwise construct, or use a well for the purpose of extracting groundwater for any use, including, but not limited to, domestic, potable, or industrial uses, unless expressly permitted in writing by the ACHA and RWQCB.

6.4 AGENCY NOTIFICATION ON CHANGE OF PROPERTY USE

As indicated in the Deed Restriction for the former Nestle property, land use at the "subject facility" will be restricted to industrial, commercial, or office space. Use of the "subject facility" as a residence for human habitation, hospital, school for persons under 21 years of age, and/or day care center is also prohibited by the Deed Restriction.

REFERENCES

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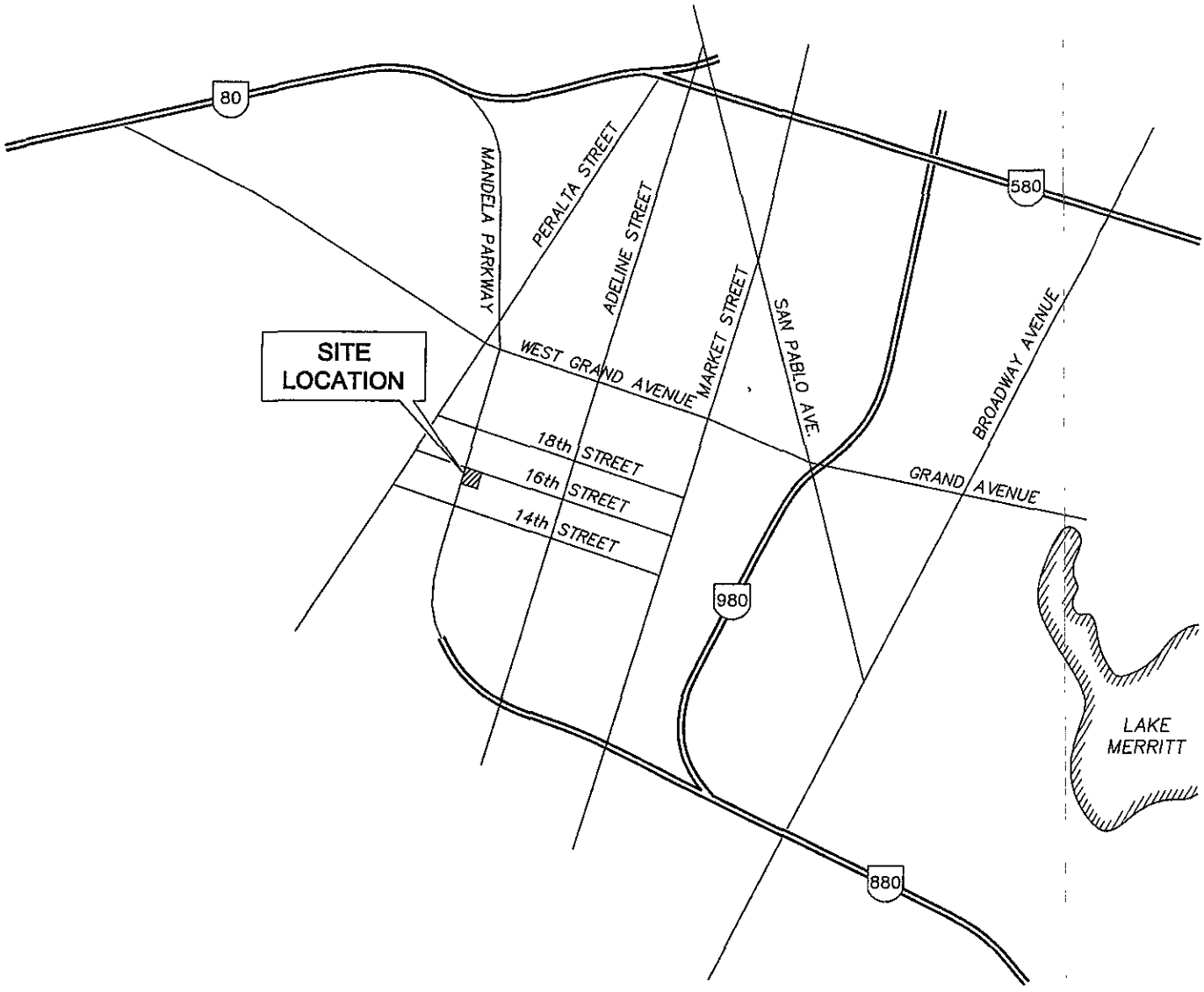
Figures



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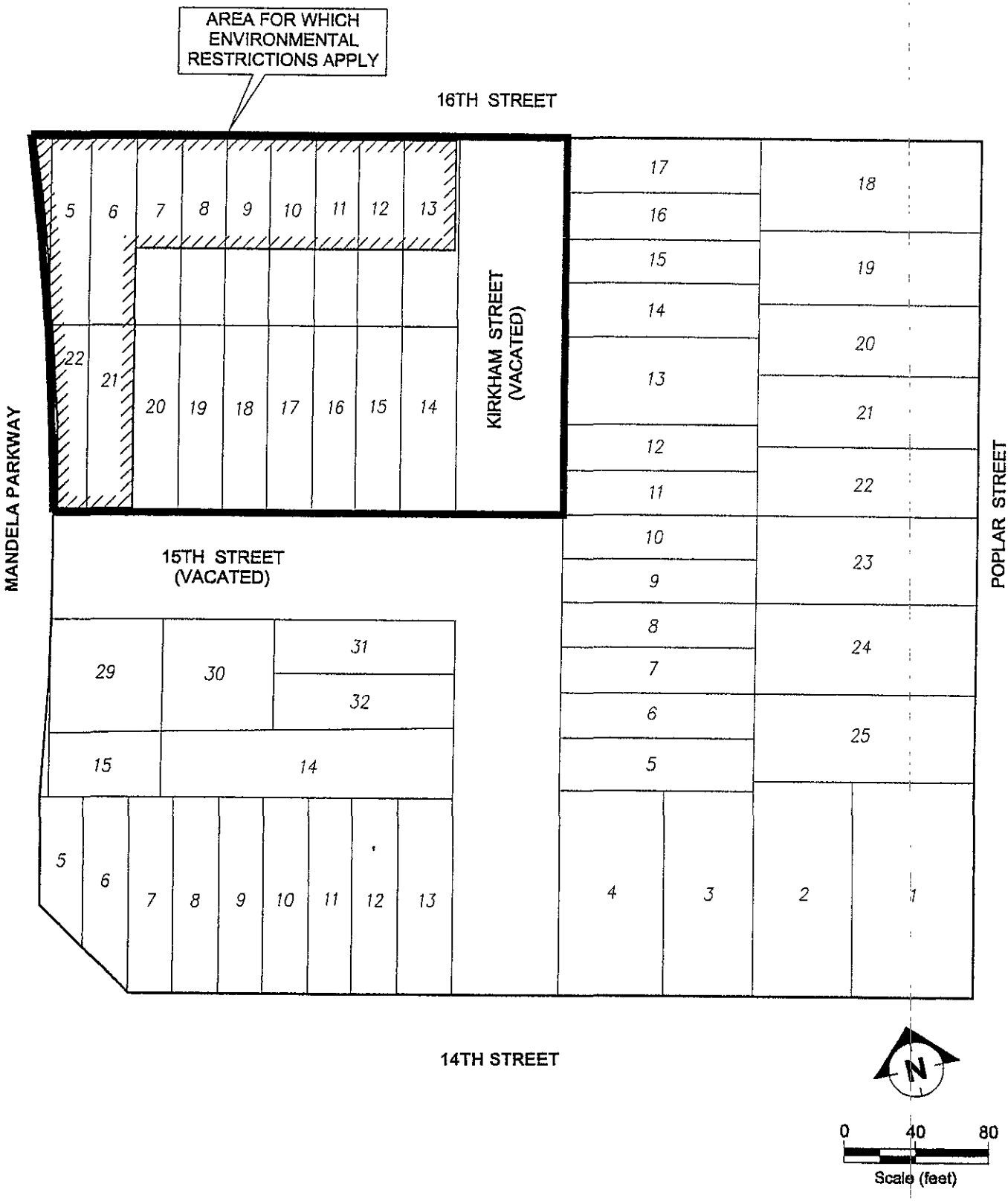
ETIC Engineering, Inc.

SITE LOCATION MAP
NESTLE OAKLAND FACILITY
1310 14th STREET, OAKLAND, CALIFORNIA

FIGURE: 1



ETIC Engineering, Inc.

FORMER NESTLE FACILITY (CARNATION DAIRY FACILITY) SHOWING NORTHWEST SECTION FOR WHICH ENVIRONMENTAL RESTRICTIONS APPLY, NESTLE OAKLAND FACILITY, 1310 14th STREET, OAKLAND, CALIFORNIA

FIGURE: 2

FILENAME: BLOCKPLN.DWG 10/13/00

LEGEND:

- GROUNDWATER MONITORING AND VAPOR EXTRACTION WELLS
- WELL OF UNKNOWN CONSTRUCTION
- REMEDIATION SYSTEM VACUUM PIPING

GW — Average Groundwater Flow Direction

AREA OF HYDROCARBON IMPACT TO GROUNDWATER

16TH STREET

MANDELA PARKWAY

REPAIR GARAGE

LUBE RACK

TIRE SHOP

METAL SHOP

MULTI-PHASE EXTRACTION SKID

VACUUM LINE #3

4" SCH 40 PVC

E64 4"PLUG

3/4" HOSE

WASTE OIL TANK EXCAVATION AREA

FUEL LINE EXCAVATION AREA

FUEL TANK EXCAVATION AREA

N

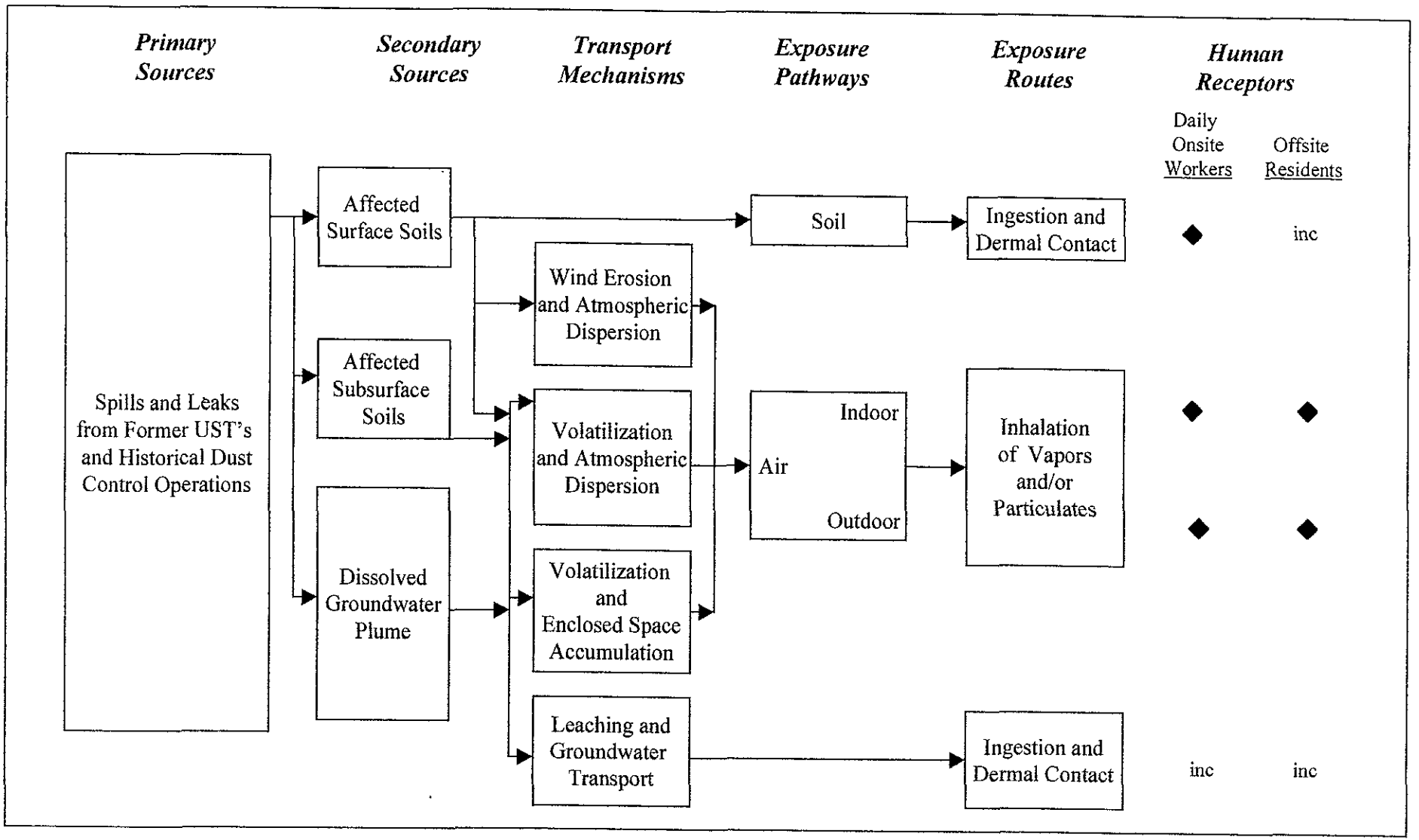
0 20 40

Scale (feet)

ETIC Engineering, Inc

SITE PLAN SHOWING AREA OF HYDROCARBON IMPACT TO GROUNDWATER
NESTLE OAKLAND FACILITY,
1310 14th STREET, OAKLAND, CALIFORNIA

FIGURE. 3



◆ Complete pathway

inc Incomplete pathway

Conceptual Site Model
Nestle Oakland Facility
1310 14th Street, Oakland, California

Figure
4
August 2000

Appendix A

Covenant and Environmental Restriction Document

RECORDING REQUESTED BY
FIRST AMERICAN TITLE
175658

Recording Requested By:

Nestle USA Inc.
800 North Brand Blvd.
Glendale, California 91203

When Recorded, Mail To:
Leroy Griffin
Hazardous Materials Program Supervisor
City of Oakland Fire Services
1605 Martin Luther King Jr. Way
Oakland, California 94612

This is to certify that this is a true and correct copy _____ recorded in the Office of the Recorder of Alameda County, California, as Instrument No. 2000 175664 on the 12th day of June, 2000
FIRST AMERICAN TITLE GUARANTY COMPANY
By: _____

COVENANT AND ENVIRONMENTAL RESTRICTION ON PROPERTY

Northeast Portion of the Former Carnation Dairy Facility which Occupies
1315-1372 14th Street and 1315-1385 16th Street

This Covenant and Environmental Restriction on Property (this "Covenant") is made as of the 8th day of June, 2000 by Nestle USA ("Covenantor") who is the Owner of record of that certain property situated at 1315-1372 14th Street and 1315-1385 16th Street, in the City of Oakland, County of Alameda, State of California, which contains a contaminated area which is more particularly described in Exhibit A attached hereto and incorporated herein by this reference (such contaminated area hereinafter referred to as the "Burdened Property"), for the benefit of the City of Oakland Fire Services (COFS), with reference to the following facts:

A. The Burdened Property and groundwater underlying the property contains hazardous materials.

B. Contamination of the Burdened Property. Soil at the Burdened Property was contaminated by releases from petroleum underground storage tanks. These releases resulted in contamination of soil and groundwater with organic chemicals including benzene, toluene, ethylbenzene, xylenes, and 1,2 –dichloroethane, which are hazardous materials as that term is defined in Health & Safety Code Section 25260. Removal of underground storage tanks and remediation of the petroleum hydrocarbons was initiated in January 1988 and is summarized below:

Tank, Line, and Dispenser Removal

Four (4) underground fuel storage tanks and associated piping were removed in December 1988. One (1) 1,000 gallon used-oil tank was removed in January 1989.

Remedial Actions

Soil Excavation: Between January and March 1989, 1,200 cubic yards of soil were removed in the area of the former underground storage tanks and associated piping. This soil was treated on-site and replaced back in the excavated area.

Liquid Petroleum Hydrocarbon Removal: Liquid petroleum hydrocarbons were removed using a product skimming system from the subsurface during January through March 1989. Approximately 1,800 gallons were removed during this time period.

Soil Vapor Extraction: A soil vapor extraction system operated from January 1994 to December 1995 and removed an estimated 5,200 gallons of hydrocarbon.

Multi-phase Extraction: A multi-phase extraction system has been operating at the site since August 1997. Approximately 10,500 pounds of hydrocarbons have been removed using this system. Thickness of petroleum hydrocarbons decreased since August 1997.

C. Exposure Pathways. The contaminants addressed in this Covenant are present in soil and groundwater on the Burdened Property. Without the mitigation measures which have been performed on the Burdened Property, exposure to these contaminants could take place via the following pathways (onsite workers only):

- Ingestion and dermal contact with surface soils;
- Inhalation of volatile emissions from subsurface soils and groundwater

The risk of public exposure to the contaminants has been substantially lessened by the remediation and controls described in part B.

D. Adjacent Land Uses and Population Potentially Affected. The Burdened Property is currently an unused industrial facility and is adjacent to industrial, commercial, and residential land uses.

E. Full and voluntary disclosure to the COFS of the presence of hazardous materials on the Burdened Property has been made and extensive sampling of the Burdened Property has been conducted.

F. Covenantor desires and intends that in order to benefit the COFS, and to protect the present and future public health and safety, the Burdened Property shall be used in such a manner as to avoid potential harm to persons or property that may result from hazardous materials that may have been deposited on portions of the Burdened Property.

ARTICLE I
GENERAL PROVISIONS

1.1 Provisions to Run with the Land. This Covenant sets forth protective provisions, covenants, conditions and restrictions (collectively referred to as "Restrictions") upon and subject to which the Burdened Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. The restrictions set forth in Article III are reasonably necessary to protect present and future human health and safety or the environment as a result of the presence of hazardous materials in the subsurface below the Burdened Property. Each and all of the Restrictions shall run with the land, and pass with each and every portion of the Burdened Property, and shall apply to, inure to the benefit of, and bind the respective successors in interest thereof, for the benefit of the COFS and all Owners and Occupants. Each and all of the Restrictions are imposed upon the entire Burdened Property. Each and all of the Restrictions run with the land pursuant to section 1471 of the Civil Code. Each and all of the Restrictions are enforceable by the California Regional Water Quality Control Board for the San Francisco Bay Region (the "Board").

1.2 Concurrence of Owners and Lessees Presumed. All purchasers, lessees, or possessors of any portion of the Burdened Property shall be deemed by their purchase, leasing, or possession of such Burdened Property, to be in accord with the foregoing and to agree for and among themselves, their heirs, successors, and assignees, and the agents, employees, and lessees of such owners, heirs, successors, and assignees, that the Restrictions as herein established must be adhered to for the benefit of the COFS and the Owners and Occupants of the Burdened Property and that the interest of the Owners and Occupants of the Burdened Property shall be subject to the Restrictions contained herein.

1.3 Apportionment of Burden Among Multiple Owners. Where ownership of the Burdened Property is held by multiple persons, holding by several titles, the burdens imposed by this Covenant shall be apportioned between them proportionate to the value of the property held by each owner, if such value can be ascertained, and if not, then according to their respective interests in point of quantity. (Cal. Civ. Code, § 1467.)

1.4 Incorporation into Deeds and Leases. Covenantor desires and covenants that the Restrictions set out herein shall be incorporated in and attached to each and all deeds and leases of any portion of the Burdened Property. Recordation of this Covenant shall be deemed binding on all successors, assigns, and lessees, regardless of whether a copy of this Covenant and Agreement has been attached to or incorporated into any given deed or lease.

1.5 Purpose. It is the purpose of this instrument to convey to the COFS real property rights, which will run with the land, to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

ARTICLE II
DEFINITIONS

2.1 COFS. "COFS" shall mean the City of Oakland Fire Services and shall include its successor agencies, if any.

2.2 Board. "Board" shall mean the California Regional Water Quality Control Board for the San Francisco Bay Region and shall include its successor agencies, if any.

2.3 Improvements. "Improvements" shall mean all buildings, roads, driveways, regradings, and paved parking areas, constructed or placed upon any portion of the Burdened Property.

2.4 Occupants. "Occupants" shall mean Owners and those persons entitled by ownership, leasehold, or other legal relationship to the exclusive right to use and/or occupy all or any portion of the Burdened Property.

2.5 Owner or Owners. "Owner" or "Owners" shall mean the Covenantor and/or its successors in interest, who hold title to all or any portion of the Burdened Property.

ARTICLE III
DEVELOPMENT, USE AND CONVEYANCE OF THE BURDENED PROPERTY

3.1 Restrictions on Development and Use. Covenantor promises to restrict the use of the Burdened Property as follows:

a. Development of the Burdened Property shall be restricted to industrial, commercial or office space;

b. No residence for human habitation shall be permitted on the Burdened Property;

c. No hospitals shall be permitted on the Burdened Property;

d. No schools for persons under 21 years of age shall be permitted on the Burdened Property;

e. No day care centers for children or day care centers for Senior Citizens shall be permitted on the Burdened Property;

f. No Owners or Occupants of the Burdened Property or any portion thereof shall conduct any excavation work on the Burdened Property, unless expressly permitted in writing by the COFS. Any contaminated soils brought to the surface by grading, excavation, trenching, or

backfilling shall be managed by Covenantor or his agent in accordance with all applicable provisions of local, state and federal law;

g. All uses and development of the Burdened Property shall be consistent with any applicable Board Order or Risk Management Plan, each of which is hereby incorporated by reference including future amendments thereto. All uses and development shall preserve the integrity of any cap, any remedial measures taken or remedial equipment installed, and any groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the COFS, unless otherwise expressly permitted in writing by the COFS. Any development of the Burdened Property will maintain a surface cap of the soil, exclusive of minor landscape areas, by buildings or paved surfaces.

h. No Owners or Occupants of the Property or any portion thereof shall drill, bore, otherwise construct, or use a well for the purpose of extracting water for any use, including but not limited to, domestic, potable, or industrial uses, unless expressly permitted in writing by the Board.

3.1.1 Notifications/Access/Non Aggravation

a. The Owner shall notify the COFS of each of the following: (1) The type, cause, location and date of any disturbance to any cap, any remedial measures taken or remedial equipment installed, and of the groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the COFS, which could affect the ability of such cap or remedial measures, remedial equipment, or monitoring system to perform their respective functions and (2) the type and date of repair of such disturbance. Notification to the COFS shall be made by registered mail within ten (10) working days of both the discovery of such disturbance and the completion of repairs;

b. The Covenantor agrees that the COFS, and/or any persons acting pursuant to COFS orders, shall have reasonable access to the Burdened Property for the purposes of inspection, surveillance, maintenance, or monitoring, as provided for in Division 7 of the Water Code.

c. No Owner or Occupant of the Burdened Property shall act in any manner that will aggravate or contribute to the existing environmental conditions of the Burdened Property. All use and development of the Burdened Property shall preserve the integrity of any capped areas.

3.2 Enforcement. Failure of an Owner or Occupant to comply with any of the restrictions, as set forth in paragraph 3.1, shall be grounds for the COFS, by reason of this Covenant, to have the authority to require that the Owner modify or remove any improvements constructed in violation of that paragraph. Violation of the Covenant shall be grounds for the COFS to file civil actions against the Owner as provided by law.

3.3 Notice in Agreements. After the date of recordation hereof, all Owners and Occupants shall execute a written instrument which shall accompany all purchase agreements or leases relating to the property. Any such instrument shall contain the following statement:

The land described herein contains hazardous materials in soils and in the ground water under the property, and is subject to a deed restriction dated as of June 8, 2000, and recorded on Concurrently herewith, in the Official Records of Alameda County, California, [redacted] which Covenant and Restriction imposes certain covenants, conditions, and restrictions on usage of the property described herein. This statement is not a declaration that a hazard exists.

ARTICLE IV
VARIANCE AND TERMINATION

4.1 Variance. Any Owner or, with the Owner's consent, any Occupant of the Burdened Property or any portion thereof may apply to the COFS for a written variance from the provisions of this Covenant.

4.2 Termination. Any Owner or, with the Owner's consent, any Occupant of the Burdened Property or a portion thereof may apply to the COFS for a termination of the Restrictions as they apply to all or any portion of the Burdened Property which consent to termination shall not be unreasonably withheld.

4.3 Term. Unless terminated in accordance with paragraph 4.2 above, by law or otherwise, this Covenant shall continue in effect in perpetuity.

ARTICLE V
MISCELLANEOUS

5.1 No Dedication Intended. Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Burdened Property or any portion thereof to the general public.

5.2 Notices. Whenever any person gives or serves any notice, demand, or other communication with respect to this Covenant, each such notice, demand, or other communication shall be in writing and shall be deemed effective (1) when delivered, if personally delivered to the person being served or official of a government agency being served, or (2) three (3) business days after deposit in the mail if mailed by United States mail, postage paid certified, return receipt requested:

If To: "Covenantor"
Nestlé USA, Inc.
Legal Department
800 North Brand Boulevard
Glendale, Ca. 91203

If To: "COFS"
City of Oakland Fire Services
Attention: Hazardous Materials Program Supervisor
1605 Martin Luther King Jr. Way
Oakland, California 94612

5.3 Partial Invalidity. If any portion of the Restrictions or terms set forth herein is determined to be invalid for any reason, the remaining portion shall remain in full force and effect as if such portion had not been included herein.

5.4 Article Headings. Headings at the beginning of each numbered article of this Covenant are solely for the convenience of the parties and are not a part of the Covenant.

5.5 Recordation. This instrument shall be executed by the Hazardous Materials Program Supervisor of the COFS. This instrument shall be recorded by the Covenantor in the County of Alameda within ten (10) days of the date of execution.

5.6 References. All references to Code sections include successor provisions.

5.7 Construction. Any general rule of construction to the contrary notwithstanding, this instrument shall be liberally construed in favor of the Covenant to effect the purpose of this instrument and the policy and purpose of the Water Code. If any provision of this instrument is found to be ambiguous, an interpretation consistent with the purpose of this instrument that would render the provision valid shall be favored over any interpretation that would render it invalid.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

Covenantor: NESTLE USA, Inc.

By: _____ Robert H. Sanders
Title: V.P.
Date: 6.8.00

Agency: City of Oakland Fire Services

By: _____ LeRoy Griffin
Title: Hazardous Materials Program Supervisor

APPENDIX A

LEGAL DESCRIPTION
DEED RESTRICTION AREA

ROBERT BEIN, WILLIAM FROST & ASSOCIATES
1981 N. Broadway, Suite 235
Walnut Creek, California 94596

LEGAL DESCRIPTION
DEED RESTRICTION AREA

That certain parcel of land situated in the City of Oakland, County of Alameda, State of California described as follows:

Being a portion of Lots 4 through 23 and a portion Kirkham Street of the Scotchler Tract and Vicinity, Oakland, as shown on a map thereof filed in Book 7 of Maps at Page 21 on December 10, 1874 in the Office of the County Recorder of Alameda County more particularly described as follows:

BEGINNING at the intersection of said Kirkam Street and the northwest corner of lot 17, in block 584, as shown on the map of "Re-division of Blocks 584, 585, 601, 153 and 580-A, City of Oakland, County of Alameda, California", filed May 1, 1885, in Book 4 of Maps, at Page 25, in said office of the County Recorder;

Thence, along the northerly line of said Kirkham Street and said lots 13, 12, 11, 10, 9, 8, 7, 6 and 5, North 72°53'28" West 292.25 feet to the northwest corner of said lot 5, said point also being the northeasterly corner of that certain parcel of land described in the deed to the State of California, recorded May 12, 1955 in Volume 7658, of Official Records at Page 299, in said office of the County Recorder;

Thence, continuing along said northerly line of Kirkham Street, North 72°53'28" West 8.64 feet;

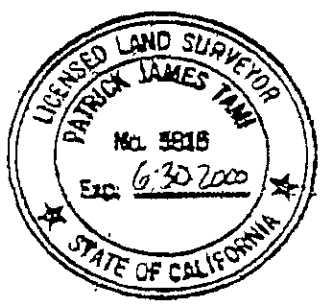
Thence, along said State of California parcel, along a non-tangent 1240 foot radius curve to the right, through a central angle of 2°59'04" to the easterly line of the parcel of land described in the deed to the State of California, recorded August 12, 1955 in Book 7749, of Official Records at Page 447, as Instrument Number AK-86901, in said office of the County Recorder;

Thence, along last said State of California parcel (7749 OR 447), along a non-tangent 1240 foot radius curve to the right from a tangent that bears South 10°54'36" West to the south line of said lot 22, said southerly line also being the north line of 15th Street, as shown on said map of the Scotchler Tract (7 M 21);

Thence, along said northerly line of 15th Street and the easterly prolongation of said north line, South 74°03'30" East 285.05 feet to the easterly line of said Kirkham Street;

Thence, along said easterly line, North 15°56'30" West 209.50 feet to the **POINT OF BEGINNING.**

EXHIBIT attached and by this reference made a part hereof.

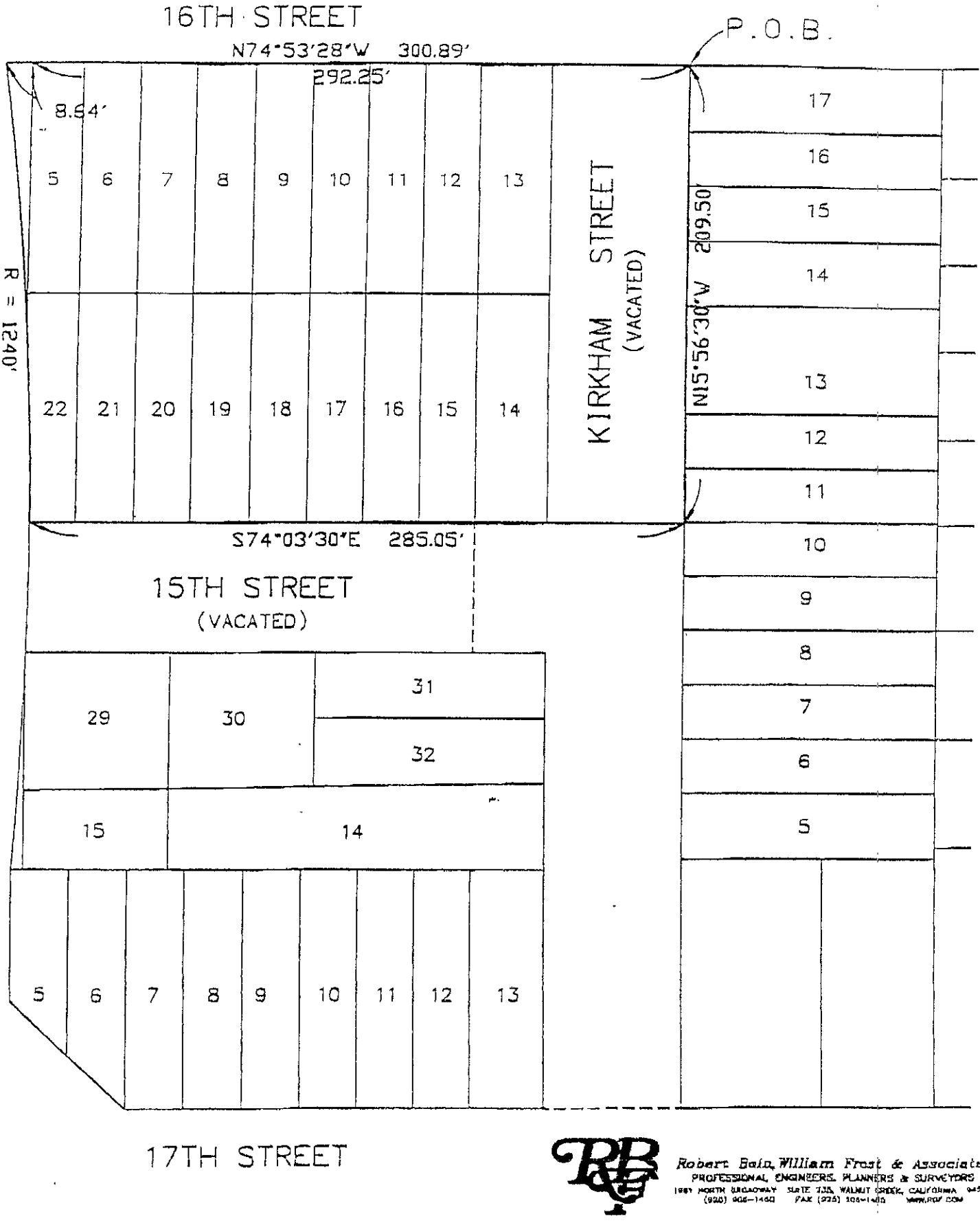


Patrick J. Tami, L.S. 5816

C:\MyFiles\Office\Wpwin\legal2.wpd

April 19, 2000 (4:28PM)

DEED RESTRICTION AREA



Robert Bein, William Frost & Associates
PROFESSIONAL ENGINEERS, PLANNERS & SURVEYORS
1981 NORTH BROADWAY SUITE 335, WALNUT CREEK, CALIFORNIA 94596
(925) 906-1460 FAX (925) 906-1461 WWW.RBF.COM

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Alameda

On 6-7-00 (Date) before me, Ellen N. Dolese (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared LeRay Griffin (Name(s) of Signer(s))

☒ personally known to me ←
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

ELLEN N. DOLESE
Commission # 1171028
Notary Public - California
Alameda County
My Comm. Expires Jan 28, 2002

WITNESS my hand and official seal.

Ellen N. Dolese
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Covenant + Environmental Restriction on Property

Document Date: 5-25-00 Number of Pages: 12

Signer(s) Other Than Named Above: —

Capacity(ies) Claimed by Signer(s)

Signer's Name: LeRay Griffin

☒ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing:

Signer's Name: _____

☐ Individual
☐ Corporate Officer
Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing:

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of LOS ANGELES } ss.

On JUNE 8, 2000 (Date), before me, MARIA HAZEL PERRI, NOTARY PUBLIC (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared ROBERT H. SANDERS (Name(s) of Signer(s))

☑ personally known to me
☐ ~~proved to me on the basis of satisfactory evidence~~

MARIA HAZEL PERRI
Commission # 1113713
Notary Public — California
Los Angeles County
My Comm. Expires Oct 13, 2000

to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(s), ~~or~~ the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Maria Hazel Perri
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: COVENANT & ENVIRONMENTAL RESTRICTION ON PROPERTY

Document Date: MAY 25, 2000 Number of Pages: TWELVE (12)

Signer(s) Other Than Named Above: LEROY GRIFFIN

Capacity(ies) Claimed by Signer

Signer's Name: ROBERT H. SANDERS

☑ Individual
☑ Corporate Officer — Title(s): VICE PRESIDENT
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer is Representing: NESTLE USA, INC.

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Appendix B

Construction Worker Risk/Hazard Calculation Summary

APPENDIX B
CONSTRUCTION WORKER RISK/HAZARD CALCULATION SUMMARY

This appendix summarizes estimates of carcinogenic risk and noncarcinogenic hazards associated with exposure of construction workers to chemicals underlying the deed restricted portion of the former Nestle property. This portion of the former Nestle property is referred to as the "subject facility" in this document. The approach to estimating risks to construction workers followed the methodology outlined by the California Environmental Protection Agency Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) guidelines for Application of Risk-Based Screening Levels to Sites with Impacted Soil and Groundwater (RWQCB 2000), wherein potential health risks to construction workers are assessed based on evaluation of direct exposure to chemicals of potential concern (COPCs) in soils. This methodology is similar to that adopted by the American Society for Testing and Materials ([ASTM] 1995 and 1998).

Details and assumptions behind RWQCB's approach to evaluation of risks to construction workers are documented in Appendix 1 of RWQCB (2000). A brief summary is provided below. Conservative exposure assumptions by RWQCB (2000) for evaluation of direct exposure of construction workers to COPCs are based on guidance presented in the USEPA Exposure Handbook (USEPA 1997), trench-worker risk-assessment guidance developed by the Massachusetts Department of Environmental Protection (MADEP 1994), and general direct-exposure assumptions included in the USEPA Region IX Preliminary Remediation Goals document (USEPA 1999), focusing on direct contact via ingestion, dermal, and inhalation routes of exposure. Key among these assumptions is the use of an exposure duration of 7 years, an exposure frequency of 20 days per year, a soil ingestion rate of 480 mg/day, and a particulate emission factor corresponding to a concentration of air-born dust of approximately 700 ug/m^3. Based on these conservative assumptions, risks to construction workers are generally lower than those to commercial/industrial receptors, which in turn are lower than those to residential receptors. This pattern is primarily due to the assumed shorter exposure duration and frequency associated with the construction worker exposure, in comparison with the other two exposure scenarios. Exceptions to this pattern may occur for chemicals with high oral toxicity such as various heavy metals, none of which are considered COPCs at the "subject facility". Direct exposure to COPCs in onsite soils for commercial/industrial receptors was previously evaluated in the risk-based corrective action (RBCA) analysis for the "subject facility" portion of the former Nestle site (JCI 2000, as reported in ETIC 2001).

To estimate potential health risks to future construction workers at the Nestle facility, all chemicals detected in recent sampling of surface (<3 ft below ground surface [bgs]) and subsurface (>3 ft bgs), including saturated soils, were included as COPCs (see Table B.1). For each COPC, construction/trench worker risk-based screening levels (RBSLs) corresponding to a target carcinogenic risk level of 1×10^{-6} and a target hazard level of 1.0 were identified from the RWQCB guidance (see Table K-3 of Appendix 1 to RWQCB 2000). Based on these RBSLs, individual and cumulative carcinogenic risks and noncarcinogenic hazards for the COPCs were back-calculated using the site maximum COPC concentrations and the following formula:

$$\text{CW Risk/Hazard} = \frac{\text{Cmax} * \text{Target R/H Level}}{\text{RBSL}}$$

Where:

CW Risk/Hazard = Carcinogenic risk or hazard to construction worker
Cmax = Site maximum soil concentration
Target R/H Level = Target risk (i.e., 1×10^{-6}) or target hazard (i.e., 1.0) level
RBSL = Construction worker RBSL (RWQCB 2000)

The results of this calculation for each COPC are summarized in Table B.1. As indicated in the table, the cumulative pathway risk associated with exposure of construction workers to COPCs in saturated and unsaturated soils approximates 4.76×10^{-6}, which is within the target risk range of 1×10^{-4} to 1×10^{-6} adopted by the USEPA. The risk associated with exposure to benzene corresponds to more than 99 percent of the total cumulative risk to construction workers.

As indicated in Table B.1, the cumulative pathway hazard associated with exposure of construction workers to the COPCs approximates 1.005, slightly exceeding the target hazard of 1.0 adopted by the USEPA. Approximately 63 percent of this hazard corresponds to exposure to TPH-g in soils.

The above estimates of carcinogenic risks and noncarcinogenic hazards should be used in support of developing a site-specific health and safety plan for future construction workers, as suggested by the risk management plan for the "subject facility" portion of the former Nestle site.

REFERENCES

ASTM (American Society for Testing and Materials). 1995. Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, E 1739-95.

ASTM (American Society for Testing and Materials). 1998. Standard Provisional Guide for Risk-Based Corrective Action, PS 104-98.

ETIC (ETIC Engineering, Inc.). 2001. Comprehensive Site Characterization Report, Support for the Site as a Low-Risk Soil and Groundwater Case, Former Nestle USA, Inc. Facility, 1310 14th Street, Oakland, California. ETIC, Pleasant Hill, California. January.

JCI (Javaherian Consulting, Inc.). 2000. Technical Memorandum: Risk-Based Corrective Action Analysis, Nestle USA, Inc. Facility, 1310 14th Street, Oakland, California. JCI, San Francisco, California. 22 August.

MADEP (Massachusetts Department of Environmental Protection). 1994. Interim Final Petroleum Report: Development of Health-Based Alternative to the Total Petroleum Hydrocarbon Parameter, August.

RWQCB (Regional Water Quality Control Board, San Francisco Bay Region). 2000. Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater, Interim Final, August.

USEPA (U.S. Environmental Protection Agency). 1997. Health Effects Assessment Summary Tables (HEAST).

USEPA (U.S. Environmental Protection Agency). 1999. Region 9 Preliminary Remediation Goals Chemical Toxicity Database, on-line @ www.epa.gov/region09/waste/sfund/prg/.

Table B.1. Construction Worker Risk/Hazard Calculation

COPC	Site Maximum Concentration mg/kg	RBSL Cancer Endpoint*	RBSL Non-Cancer Endpoint**	Carcinogenic Risk	Noncarcinogenic Hazard
benzene	76	16	290	4.75E-06	0.262
toluene	490	NA	2.40E+04	NA	0.020
ethylbenzene	170	NA	5.90E+04	NA	0.003
xylenes	990	NA	5.50E+04	NA	0.018
TPH-g	10100	NA	16000	NA	0.631
TPH-d	1100	NA	16000	NA	0.069
MTBE	0.084	8.60E+03	2.40E+04	9.77E-12	0.000004
chlorobenzene	0.0017	NA	6.00E+03	NA	0.00000028
1,2-dichlorobenzene	3.1	NA	3.60E+04	NA	0.000086
1,3-dichlorobenzezne	0.038	NA	520	NA	0.000073
1,4-dichlorobenzene	0.33	160	1.90E+04	2.06E-09	0.000017
1,2-dichloroethane	0.43	40	430	1.08E-08	0.001
		Cumulative Pathway Risk/Hazard:		**4.76E-06**	**1.005**

* Cancer endpoint based on target risk level of 1 x 10-6
** Non-cancer endpoint based on target hazard of 1.0

$$\text{CW Risk/Haz} = \frac{C_{max} \cdot \text{Target R/H Level}}{RBSL} = \frac{76 \times 10^{-6}}{16} \approx 5 \times 10^{-6}$$