

## 4.12 HAZARDS AND HAZARDOUS MATERIALS

This section addresses issues related to hazards, including the presence of hazardous materials contamination in soils and groundwater in the Specific Plan area. Information in this section is based on technical reports of field sampling conducted for the EIR, as well as the following environmental site assessments:

- < *Environmental Site Assessment Report, 2 Ward Street, Larkspur, California* (Geopacific Corporation 1996);
- < *Phase I Site Assessment and Initial Phase II Assessment, Niven Nursery, Larkspur, California* (Harza Engineering Company 1998b) (Appendix H-1);
- < *Soil and Groundwater Sampling and Analysis Report Niven Nursery, 2 Ward Street, Larkspur, California* (ENSR International 2001) (Appendix H-2);
- < *Health Based Risk Assessment for Niven Nursery, Larkspur, California* (ENVIRON 2002); and
- < *Draft Removal Action Workplan, Niven Nursery, 2 Ward Street, Larkspur, California* (ENSR International 2002).

The Geopacific Corporation 1996, ENVIRON 2002, and ENSR International 2002 report, as well as all figures in the Harza Engineering Company 1998b report, are available for review at the City Planning and Building Department, 400 Magnolia Avenue, in Larkspur, (415) 927-5110.

Personnel at the San Francisco Bay RWQCB also provided information relevant to the discussion of hazardous materials contamination in the Specific Plan area.

### 4.12.1 EXISTING SETTING

#### REGULATORY SETTING

In California, hazardous materials and hazardous wastes are regulated extensively under federal, state, and local laws and regulations. Laws and regulations pertaining to hazardous materials and wastes are designed to protect human health and the environment. Federal regulations set the minimum thresholds; state and local laws and regulations may be more stringent than federal standards. State and local agencies are responsible for implementing most of the requirements of these laws and regulations.

#### Federal

EPA is responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained primarily in Titles 29, 40, and 49 of the Code of Federal Regulations (CFR). Hazardous materials are defined as “materials that may pose an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). Such materials are listed in 49 CFR 172.101, Appendix A. Management of hazardous materials is governed by

the Resource Conservation and Recovery Act of 1976 (RCRA); the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); and the Superfund Amendments and Reauthorization Act (SARA). The federal Hazardous Waste Act regulates the transportation of hazardous materials. These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA provides oversight and supervision for federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards. OSHA is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety.

Hazardous substances are a subclass of hazardous materials. They are regulated under the federal CWA, CERCLA, and SARA. Hazardous wastes, although included in the definition of hazardous materials and hazardous substances, are regulated separately under the RCRA and Hazardous and Solid Waste Amendments of 1984 (amendments to RCRA). The statutory definition of hazardous waste is those wastes classified as ignitable, corrosive, reactive, or toxic. A material that has a pH value of less than 2 is considered corrosive. A material can be classified as a hazardous waste only after it is generated (i.e., after it has been designated as a waste by its owner). This means that any contaminated soils, water, or sediments in place in the Specific Plan area could not be classified as hazardous waste unless they are removed from the ground (once removed, they are considered to have been “generated”). RCRA regulates hazardous waste from the time that the waste is generated through its management, storage, transport, and treatment, until its final disposal. EPA is responsible for implementing this law and can delegate its responsibility under the law to the states.

According to RCRA, generators of hazardous waste are separated into three groups:

- < Large Quantity Generators are those that generate more than 2,200 pounds (1,000 kilograms) per calendar month (approximately five full 55-gallon drums). Examples include pharmaceutical companies and chemical manufacturers.
- < Small Quantity Generators are those that generate between 220 pounds (100 kilograms) and 2,200 pounds (1,000 kilograms) of hazardous waste per calendar month. Examples include laboratories, printers, and dry cleaners.
- < Conditionally Exempt Small Quantity Generators are those that generate less than 220 pounds (100 kilograms) of hazardous waste per calendar month. Examples include 1-hour photo labs and dental offices.

## **State**

State regulations applicable to hazardous substances are indexed in Guidelines Title 26. California law defines a hazardous material as any material that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a present or potential hazard to human health and safety or to the environment if released in the workplace or the environment (California Health and Safety Code §25501). A hazardous waste is defined

as a discarded material of any form (e.g., solid, liquid, gas) that may pose a present or potential hazard to human health and safety or to the environment when improperly treated, stored, transported, or disposed of, or otherwise managed (California Health and Safety Code §25117). Hazardous wastes are included in the definition of hazardous materials.

The California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) has been authorized by EPA to administer the RCRA program. California's RCRA program is more stringent than the federal program. DTSC has primary regulatory responsibility for the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Law. DTSC also acts as the lead agency for some soil and groundwater cleanup projects. DTSC provides cleanup and action levels for subsurface contamination; these levels are equal to, or more restrictive than, federal levels. DTSC has developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

Handling and storage of fuels, flammable materials, and common construction-related hazardous materials are governed by Cal/OSHA standards for storage and fire protection.

The SWRCB has primary responsibility to protect water quality and supply. The Specific Plan area is located within the jurisdiction of the San Francisco Bay RWQCB. As mentioned in Section 4.4, Hydrology and Water Quality, the RWQCB is authorized by the Porter-Cologne Water Quality Act to protect the waters of the state. The RWQCB provides oversight for sites where the quality of groundwater or surface water is threatened. Extraction and disposal of contaminated groundwater during investigation/remediation activities would require a permit from the RWQCB if the water were discharged to storm drains, surface water, or land.

### **Marin County**

On the local level, hazardous materials/waste laws and regulations are enforced through county health/hazardous materials departments, also known as certified unified program agencies (CUPAs). California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill (SB) 1082 (1993). The Unified Program consolidates, coordinates, and makes consistent portions of the following six existing programs:

- < hazardous waste generator and hazardous waste onsite treatment programs;
- < underground storage tank (UST) program;
- < hazardous materials release response plans and inventories;
- < California Accidental Release Prevention Program;
- < Aboveground Petroleum Storage Act requirements for spill prevention, control, and countermeasure plans; and
- < California Uniform Fire Code hazardous material management plans and inventories.

The Secretary has certified 82 CUPAs to date. These 82 CUPAs carry out the responsibilities previously handled by approximately 1,300 state and local agencies, providing a central permitting and regulatory agency for permits, reporting, and compliance enforcement. (Cal/EPA 2003) In Marin County, the CUPA, part of the Department of Public Works, regulates, inspects, and permits more than 500 Marin businesses (Marin County 2001).

The County Department of Public Works also administers Marin County's Hazardous Waste Management Plan (HWMP), which is responsible for managing hazardous wastes in accordance with legislated regulations. The HWMP focuses on regulating hazardous wastes through permitting, enforcement, and the Unified Program activities to assure the safe storage, treatment, transportation, and disposal of hazardous wastes. The HWMP also provides for the management of hazardous wastes through waste reduction, siting criteria, and policies and programs related to projected handling needs. (Marin County 2002)

### **LOCAL SETTING**

All three subareas of the Specific Plan have been used for various commercial enterprises in the past.

Subarea 1 includes the following five parcels:

- < Nazari property, which includes four buildings: a former railroad station (now a restaurant), railroad warming house (now an architect's office), and two one-story commercial buildings;
- < Doherty Park;
- < entrance driveway from Magnolia Avenue to the Larkspur Plaza shopping center;
- < City-owned public parking lot at the corner of Magnolia Avenue and East Ward Street; and
- < building that serves as the clubhouse for the local American Legion chapter and includes leased office space.

Subarea 2 comprises the Larkspur Plaza shopping center—which includes the Albertsons supermarket and other commercial enterprises including the Larkspur Cleaners—and the Larkspur Service Station. Subarea 3 is occupied by the former Niven Nursery and associated greenhouses and residential structures, as well as a small commercial nursery.

Use and storage of hazardous materials in the Specific Plan area is associated primarily with the Niven Nursery site, the Larkspur Service Station, and the Larkspur Cleaners and with former land use in the area, such as the former Chevron station at 532 Magnolia Avenue (on the Nazari property). The Niven Nursery site, which makes up approximately 75% of the Specific Plan area, currently has the most significant hazardous substance use and storage.

## **Hazardous Materials Storage and Use in the Specific Plan Area**

### ***Larkspur Service Station***

The Larkspur Service Station (600 Magnolia Avenue) is located in Subarea 2 at the corner of Magnolia Avenue and Doherty Drive. The site was developed as a gas station in 1988, and is operated in compliance with a Hazardous Waste and Hazardous Material Management Regulatory Program overseen by the County Office of Waste Management. The facility is permitted by the County's CUPA to generate hazardous waste, and has USTs on the premises (Certified Unified Program Agency 1995). In accordance with the Underground Storage Tank Operating Permit, tanks and pipelines are monitored for leaks every year. In 1999, significant concentrations of methyl tertiary butyl ether (MTBE) were encountered in groundwater samples taken at the facility.

### ***Niven Nursery***

The Niven family has owned and operated a nursery in Specific Plan Subarea 3 since 1920. The site is reported to have been undeveloped, vacant land before that time. Certain pesticides were used at the property in conjunction with the nursery operation. Pesticides were mixed in small quantities and were applied using pushcart and backpack sprayer type applicators. Lead-based paint was also used in the past to paint the greenhouses. Six USTs storing fuel were formerly present, but were removed. Other potentially hazardous materials at the site include asbestos, which has been identified in the greenhouses in boiler and pipe insulation, in mastic, and in exterior siding.

Because of the use of pesticides at the site, the Niven Nursery is currently listed as a Small Quantity Generator under RCRA standards. Six USTs storing fuel and two aboveground storage tanks (ASTs) at the Niven Nursery site were removed before formal permitting requirements were established; no leakage has been detected at the former locations of these underground tanks. There are currently two ASTs storing water at the site, each with a capacity of 40,000 gallons. One of these tanks (located on the northern portion of the Niven Nursery site) has never been used, and the other (located on the southern portion of the site) has been used only for water storage. According to the County Division of Environmental Health and the Larkspur Fire Department, there have been no reports of leaks or spills of hazardous materials within the Specific Plan area. There are also two above-grade transformers located in Subarea 3, but no polychlorinated biphenyls (PCBs) have been detected in the soil adjacent to the transformers.

In anticipation of approval of this Specific Plan, Larkspur Housing Partners, LLC, has proposed to develop the Niven Nursery site (Subarea 3) as a residential subdivision development. Larkspur Housing Partners has entered into a voluntary cleanup agreement (Docket N. HAS-A99/00-135) with DTSC, to remediate contaminated soils to a level acceptable for residential redevelopment of the site. This makes DTSC the lead agency for the environmental cleanup of Subarea 3. Previous studies undertaken by the developer identified

chemicals of potential concern at the site. Chemicals of potential concern are chemicals that are listed as hazardous or carcinogenic chemicals by EPA or Cal/EPA.

DTSC required that a Health Based Risk Assessment be prepared for Subarea 3 based on the list of chemicals of potential concern and contaminant levels identified for the property. The purpose of the Health Based Risk Assessment was to determine whether the chemical concentrations identified at the Niven Nursery site pose a risk to human health or the environment under a future scenario of residential land redevelopment. The Health Based Risk Assessment identified and evaluated each of the chemicals of potential concern identified for the site and addressed potential cancer risk for each of the site areas (ENVIRON 2002). According to EPA, there are four basic steps in the quantitative human health risk assessment process: data collection and analysis, exposure assessment, toxicity assessment, and risk characterization. All of these steps were followed in the Health Based Risk Assessment for the Niven Nursery site. DTSC reviewed the Health Based Risk Assessment, commented on all aspects of the document and its preparation, and required that comments be addressed and changes to the document be incorporated before final approval of the document by DTSC. Results of the Health Based Risk Assessment are used to determine the risk to human health and the environment from the identified chemicals of potential concern and their concentrations. The results are also used to determine the site areas that require remediation in order to reduce the risk to human health and the environment.

Based on the review of the Health Based Risk Assessment, DTSC required that portions of the Niven Nursery site be remediated by the removal of contaminated soil to reduce the health risk to an acceptable level. A Removal Action Workplan (RAW) was then developed for the site (ENSR International 2002) to specify the areas requiring soil remediation and the extent of soil removal necessary. A RAW is a remedy selection document that can be prepared for a hazardous substance release pursuant to California Health and Safety Code §25356. It is prepared when a nonemergency action or remedial action is projected to cost less than \$1 million. A draft of the RAW was submitted to DTSC for review and comment, and the document was updated with respect to the review. As part of the process of finalizing the RAW, DTSC must comply with CEQA, and intends to use this EIR for that purpose. A preliminary draft of this Revised Draft EIR was reviewed by DTSC, and their comments were incorporated into the document. The various steps taken in the investigation, evaluation, and proposed remediation of the Niven Nursery site (Subarea 3) are described below under Environmental Site Investigations and Assessments.

### ***Larkspur Cleaners***

Larkspur Cleaners (590 Magnolia Avenue) is a dry cleaning facility located in Subarea 2. The facility has been in operation since 1993. Like the Larkspur Service Station, Larkspur Cleaners is in compliance with a Hazardous Waste and Hazardous Material Management Regulatory Program with the County Office of Waste Management. The County CUPA has permitted the facility to generate and handle hazardous waste (Certified Unified Program Agency 1993). The dry cleaning facility is required to submit a biennial business plan review and annual

hazardous material inventory statement to the County Office of Waste Management. There is no history of hazardous material spills or releases from this facility. Therefore, it is unlikely that Larkspur Cleaners is a potential source of contamination to the Specific Plan area.

### ***Former Chevron Station***

A Chevron service station was formerly located on Magnolia Avenue on the Nazari property in Subarea 1. Appendix A of the *Phase I Site Assessment and Initial Phase II Assessment, Niven Nursery, Larkspur, California* (Harza Engineering Company 1998b) lists the site address as 532 Magnolia Avenue. This site is reported to have had a leaking UST storing waste oil. The San Francisco Bay RWQCB lists the site as having been remediated by enhanced biodegradation and the status is listed as case closed, cleanup complete (San Francisco Bay RWQCB 2002).

## **Environmental Site Investigations and Assessments**

### ***Larkspur Service Station***

Because MTBE was detected in significant concentrations in groundwater samples taken at the Larkspur Service Station, an environmental site investigation and remedial actions were conducted in accordance with orders given by the San Francisco Bay RWQCB. A final round of monitoring well sampling was conducted on April 11, 2002, and a report of the results was submitted to the RWQCB on May 22, 2002. (Reports and correspondence regarding this site may be reviewed by the public by appointment at the San Francisco Bay RWQCB office in Oakland, (510) 622-2430, or at the County Office of Waste Management in San Rafael, (415) 499-6647.)

Sampling was conducted at five monitoring wells; the results found that monitoring wells 1 through 5 had readings of 252 parts per billion (ppb), 2,150 ppb, 6,490 ppb, 71 ppb, and 774 ppb, respectively (Jang, pers. comm., 2003). In contrast, the State has established primary MCL standards for MTBE at 13 ppb. Monitoring wells 2 and 3, with the two highest readings, are the two closest wells to the USTs, while monitoring wells further downgradient contain much lower concentrations of MTBE. These results do not represent background concentrations; background concentration would be zero because MTBE is a humanmade chemical. However, the San Francisco Bay RWQCB issued a no-further-action letter for the site for the following stated reasons (Jang, pers. comm., 2003):

- < The site has been adequately investigated.
- < The groundwater plume is stable and not expanding (i.e., the concentration is not increasing over time).
- < The groundwater MTBE does not pose a threat to public health because the groundwater is not a potential source of drinking water because of the low yield associated with the underlying Franciscan Complex greywacke and shale bedrock.

- < The groundwater MTBE does not pose an ecological threat because the downgradient MTBE concentrations are below levels of concern even if the MTBE reaches a surface water body.

### *Niven Nursery*

A number of environmental site investigations and assessments have been performed for the Niven Nursery site (Geopacific Corporation 1996; Harza Engineering Company 1998b; ENSR International 2001, 2002; ENVIRON 2002). For purposes of evaluating the presence of hazardous materials, the site (Subarea 3) has been subdivided into several areas (see Exhibit 4.12-1).

The western nursery area, located at the southwestern corner of the property adjacent to Ward Street and Larkspur Creek;

- < the northern nursery area, which lies along the north edge of the property adjacent to Doherty Drive;
- < the southern nursery area, which lies at the southeastern portion of Subarea 3 adjacent to Larkspur Creek;
- < the Sloat Nursery area, located at the northeast corner of the subarea (adjacent to Doherty Drive), an entirely paved area that is leased to Sloat Nursery;
- < former UST and current AST areas; and
- < Larkspur Creek, southern drainage area, and northwest drainage area sediments (ENSR International 2002).

### Existing Structures and Building Materials

Existing structures in Subarea 3 include numerous greenhouses that are in various states of upkeep and dilapidation. The most decayed greenhouse structures are those in the northern nursery area; several have fallen-down walls, missing doors, and caved-in roofs. Roof glass in this area was removed by the property owner for safety reasons. Chips of white lead-based paint were observed on the ground throughout the area adjacent to the outsides of structures. Paint chips were also observed in the building interiors. Structures in the western nursery area appear to be in good condition, but chips of white paint were also present adjacent to building foundations. Chips of white paint and white window glazing were also observed in the southern nursery area. A preliminary lead paint assessment was performed as part of the preparation of this EIR. Lead-based paint and lead-based window glazing were found to be present in building materials from all of the nursery areas at concentration levels qualifying the materials as hazardous waste under California law (Pinnacle Environmental 2002). Friable (easily crumbled), peeling, and flaking lead-based paint would have to be removed before structures at the property could be demolished.

An asbestos survey and evaluation was performed at the Niven Nursery site, and results were presented in a report by ProTech Consulting and Engineering (1998). Building materials

Exhibit 4.12.-1

containing asbestos were present in several areas of the site, including boiler rooms, insulation on holding and storage tanks, thermal systems insulation (TSI), aboveground and underground pipe wrap, greenhouse siding panels, and roofing mastic.

All asbestos-containing materials that were in a friable condition were repaired (stabilized) or removed from the site by a certified asbestos remediation contractor, R.B. Construction, Inc., and disposed of at an appropriate landfill facility (R.B. Construction 1998). The nonfriable, stable asbestos-containing materials were left in place. The work was completed to remove an existing hazard from areas of the site that were still active. Building materials containing asbestos are still present at the site, and would have to be removed before the site facilities could be demolished. These materials include those listed above.

Building materials such as walls, plant platforms, and floors have also been exposed to chlorinated pesticides during treatment of plants. Residues of pesticides may be present in the building materials. Pesticides were also stored and mixed in areas of the northern, western, and southern nurseries. Building materials in these storage and mixing areas are likely sources of residual contamination.

#### Chemicals of Potential Concern in Soil and Groundwater

The various site investigations and assessments performed for the Niven Nursery site (Subarea 3) were conducted to assess the presence of chemicals of potential concern in soil and groundwater, delineate the extent of contamination, and identify geologic and hydrogeologic conditions at the site. The studies determined that a number of chemicals of potential concern were present in soil and groundwater at the site. The investigations included a review of historic property use, interviews with property owners and employees, and sampling of soils and groundwater for contamination. The extent of contamination at the site by chemicals of potential concern was determined and delineated. The contaminants, as identified at the Niven Nursery site, were evaluated by ENVIRON to determine the chemicals of potential concern that were included in the human health risk assessment it performed. The chemicals of potential concern that were included in this assessment are metals, pesticides, and petroleum hydrocarbons. The specific chemicals are: arsenic; lead; mercury; chlordane; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; dieldrin; total petroleum hydrocarbons (TPH) as gasoline, diesel, and residual; benzene; toluene; ethylbenzene; and xylenes (ENVIRON 2002).

The following are levels of chemical contamination for the various areas of the Niven Nursery site (Subarea 3) as identified in the investigations by Harza Engineering Company (1998b) and ENSR International (2001). This summary is derived from information presented in the *Draft Removal Action Workplan* (ENSR International 2002).

- < **Western Nursery Area:** The western nursery area contains a range of chemical contamination for the contaminants of concern. Metal concentrations are 6 to 26 milligrams per kilogram (mg/kg) arsenic (mg/kg is approximately equivalent to ppm) and 8.7 to 920 mg/kg lead; mercury was not detected. Pesticide concentrations are

0.017 to 0.31 mg/kg 4,4'-DDD; 0.013 to 0.9 mg/kg 4,4'-DDE; 0.017 to 10 mg/kg 4,4'-DDT; and 0.015 to 0.3 mg/kg dieldrin. Other chlorinated pesticides were not detected.

- < **Northern Nursery Area:** The northern nursery area contains a range of chemical contamination for the contaminants of concern. Metals concentrations are 14 mg/kg arsenic and 7.2 to 200 mg/kg lead. Mercury was not detected. Pesticide concentrations are 0.011 to 0.4 mg/kg 4,4'-DDD; 0.049 to 0.98 mg/kg 4,4'-DDE; 0.01 to 2.2 mg/kg 4,4'-DDT; and 0.01 to 0.28 mg/kg dieldrin. Other chlorinated pesticides were not detected.
- < **Southern Nursery Area:** The southern nursery area contains a range of chemical contamination for the contaminants of concern. Metals concentrations are 1.5 to 270 mg/kg lead; no arsenic and mercury were detected. Chlorinated pesticide concentrations are 0.02 to 0.29 mg/kg 4,4'-DDD; 0.02 to 1.5 mg/kg 4,4'-DDE; 0.014 to 7.1 mg/kg 4,4'-DDT; and 0.029 to 0.61 mg/kg dieldrin. No other chlorinated pesticides were detected.
- < **Sloat Nursery Area:** Lead was the only metal tested for in the Sloat Nursery area; it was present in concentrations ranging from 9.4 to 46 mg/kg. No pesticides were detected in the soil from the Sloat Nursery.
- < **Former Underground Fuel Storage Tank Sites:** Traces of TPH as gasoline, TPH as diesel, and toluene, ethylbenzene, and xylenes (gasoline constituents) were detected from the former locations of USTs that stored fuel. TPH as gasoline at 1.6 mg/kg, xylenes at 0.025 to 0.037 mg/kg (25 ppb), and toluene at 0.015 to 0.021 mg/kg were detected in the western nursery area adjacent to a storage room. Diesel at 6 mg/kg was detected at the former drum storage area at the southwest corner of the northern nursery area. Traces of toluene at 0.012 mg/kg (12 ppb) and xylenes at 0.029 mg/kg (29 ppb) were detected from the northern nursery area. Traces of toluene, ethylbenzene, and xylenes at concentrations ranging from 0.003 to 1.075 mg/kg (3 to 1,075 ppb) were detected in the southern nursery area adjacent to the boiler room and former location of an AST that stored diesel.
- < **Current Aboveground Water Storage Tank Sites:** No contaminants were detected in the vicinity of the existing ASTs that store water.
- < **Larkspur Creek Bank Sediments:** Several sediment samples were collected from the banks of Larkspur Creek on the southern property boundary in Subarea 3. Samples were analyzed to evaluate the potential impacts on the creek of water runoff from the site. Samples were tested for arsenic, lead, and chlorinated pesticides. Arsenic was detected in one sample at 2.4 kg/mg, and lead was present at 13 to 19 mg/kg. No chlorinated pesticides were detected.
- < **Southern Drainage Ditch Sediments:** The southern drainage ditch is located in the southern nursery area and discharges to Larkspur Creek. A single sediment sample collected from this ditch was tested for arsenic, lead, and 4,4'-DDT. Concentrations of 3.6 mg/kg arsenic, 3,800 mg/kg lead, and 0.041 mg/kg 4,4'-DDT were detected in the sample.

- < **Northwest Drainage Ditch Sediments:** The northwest drainage ditch is located along the southwestern margin of the northern nursery area and discharges into a City storm drain in the northwest portion of the northern nursery area. Five sediment samples were collected from this area and were analyzed for arsenic, lead, mercury, chlorinated pesticides, and PCBs. Concentrations detected were 4.1 to 13 mg/kg arsenic, 620 to 1,800 mg/kg lead, and 0.013 to 0.22 mg/kg 4,4'-DDT. No other compounds were detected.
- < **Groundwater:** A total of eleven boreholes were drilled for collection of groundwater samples (unfiltered). Ten of the boreholes contained groundwater, and were sampled. Two existing onsite wells from the southern portion of Subarea 3 near Larkspur Creek were also sampled. Groundwater sample analysis varied depending on the location of the sample and the potential nearby sources of contamination. Lead was detected at concentrations ranging from 0.23 to 5.9 milligrams per liter (mg/L) (230 to 5,900 ppb). Mercury was detected at concentrations of 0.0005 to 0.0022 mg/L (0.5 to 2.2 ppb). Benzene, toluene, and ethylbenzene and xylenes were detected at concentrations ranging from 0.00056 to 0.014 mg/L (0.56 to 14 ppb). TPH as gasoline was detected in only one sample at a concentration of 0.11 mg/L. TPH as diesel was detected in four samples, at concentrations ranging from 0.082 to 1.6 mg/L.

### Health-Based Risk Assessment

ENVIRON performed a human health risk assessment (ENVIRON 2002) (Appendix H-5) to determine whether the development of Subarea 3 would pose any risk to the health of people expected to be living and working at the site under a future residential land redevelopment scenario. Soils, sediment, and groundwater samples were analyzed; the risk assessment methods and assumptions used were developed or recommended by Cal/EPA and EPA for use when residential land use is anticipated.

ENVIRON found that while the pesticide residue levels varied somewhat, the presence of pesticides and metals in surface soils in Subarea 3 does not pose a human cancer health risk greater than the acceptable risk range of 1 in 1 million to 100 in 1 million (1 in 10,000) used by Cal/EPA and EPA. More specifically, calculated cancer risks associated with the western nursery area, northern nursery area, southern nursery area, and Sloat Nursery were calculated to be 50 in 1 million, 20 in 1 million, 10 in 1 million and 0.2 in 1 million, respectively, before any soil removal.

Cal EPA and EPA guidelines call for calculation of a Hazard Index (HI) to evaluate the potential for adverse health effects other than cancer. A HI of less than 1 indicates that no noncarcinogenic health effects are expected. The HIs calculated for each of the designated nursery areas were all below the target HI of 1 used by Cal/EPA and EPA. It should be noted that to comply with applicable codes and to improve surface drainage, imported fill soil would be added across Subarea 3 to raise the grade. The presence of clean fill would substantially decrease any potential exposure and risk to people who would be on the property in the future.

Lead residues detected in sediment samples collected from the bottom of two drainage ditches in Subarea 3 exceeded levels that would be considered safe across a residential lot. Planned removal of sediment from those ditches, and removal of surface soil with the highest lead and pesticide levels from the western nursery area by Larkspur Housing Partners under Cal/EPA supervision, would further reduce potential health risks to levels that are at the low end of health risks considered protective of future residents.

The low levels of hydrocarbons found in shallow groundwater near some of the old fuel tanks did not exceed the residential groundwater risk-based concentrations (RBCs) and, therefore, do not pose a health risk to future residents.

### Screening-Level Ecological Evaluation

A screening-level evaluation of potential ecological risks was conducted as part of the Subarea 3 risk assessment conducted by ENVIRON to determine whether the presence of contaminants onsite poses a potential threat to nonhuman receptors. The screening-level evaluation was performed in accordance with Cal/EPA Part B guidance for performing an ecological risk assessment scoping study (Cal/EPA 1996a). The results of this ecological evaluation indicated the absence of significant ecological concerns and, therefore, precluded the need to perform a full ecological risk assessment as described in Cal/EPA Part A guidance (Cal/EPA 1996b).

No terrestrial “Special Species” (which are defined by DTSC as either California species of special concern; state-listed and federally listed rare, threatened, or endangered species; or species that are proposed or recommended for state or federal listing) are present on Subarea 3. However, it is possible that Subarea 3 may provide foraging habitat for small common terrestrial mammals commonly found in urban and suburban environments (e.g., raccoon, skunk, squirrel, and small rodents). Although unlikely, it is possible that while foraging, these receptors could have direct contact with contaminants detected in Subarea 3.

Listed special-status species are not expected in the adjacent portion of Larkspur Creek. The reach of Larkspur Creek along Subarea 3 provides low-quality habitat for Coho salmon and steelhead. It is unlikely that either of these species enters Larkspur Creek except for possibly short durations. Tidewater goby is known in Corte Madera Creek, to which Larkspur Creek drains; however, tidewater goby is not expected in Larkspur Creek due to lack of suitable habitat. Two non-listed special-status species that may occur in the Specific Plan area, salt marsh common yellowthroat and San Pablo song sparrow, are generally restricted to the tidal marsh habitat in the adjacent Larkspur Creek for foraging and breeding. They are not expected in the drainage area at the northwestern portion of the Specific Plan area due to the absence of tidal marsh habitat in this area.

Comparisons to screening-level sediment and soil benchmarks established for ecological receptors indicate that the levels of lead and dieldrin may pose a risk to these species if they were exposed to the contamination in the limited areas of Subarea 3 where benchmark levels were exceeded. Although lead levels exceeded ecological sediment benchmarks in the drainage area in the northwestern portion of Subarea 3, it should be noted that there is little

indication that this drainage area support the fish or aquatic life for which the benchmarks were developed. Furthermore, laboratory analyses of sediments collected along Larkspur Creek did not reveal elevated concentrations of metals or pesticides that would cause significant ecological concerns, in accordance with the Cal/EPA (see Appendix H-1 and Section 4.5, Biological Resources). For soil, it should be noted that lead and dieldrin levels exceeded ecological soil benchmarks in individual areas (e.g., former underground storage tank areas) that represent a fraction of the overall area of Subarea 3, and an even smaller fraction of the total foraging areas for indigenous species. For this reason, these species would only be exposed to these chemicals for a small fraction of the total time they spend foraging. Lastly, as indicated above, surface soil would be added to Subarea 3 to raise the grade and improve drainage. The presence of clean fill would substantially decrease any potential exposure and risk to ecological receptors that would be in Subarea 3 in the future.

#### Conclusions of Health-Based Risk Assessment

ENVIRON concluded that while pesticide and metal residues in surface soils vary somewhat in concentrations across Subarea 3, they do not pose human health risks above the acceptable risk range recommended by Cal/EPA and EPA.

Lead residues detected in soils located in two drainage ditches exceeded levels that would be considered safe across a residential lot. Planned removal of soil from those ditches by Larkspur Housing Partners and removal, under Cal/EPA oversight, of the top foot of soil from the areas within the western nursery area shown in Exhibit 4.12-2 would further reduce health risks to levels that are at the low end of health risks considered protective of future residents.

The results of the screening-level ecological evaluation performed as part of this evaluation indicated the absence of significant ecological concerns; therefore, it was determined that a full ecological risk assessment is not required.

Lastly, it should be noted that to comply with applicable codes and to improve surface drainage, surface soil would be added across Subarea 3 to raise the grade. The presence of clean fill would substantially decrease any potential exposure and risk to people and wildlife that would be in Subarea 3 in the future.

#### Removal Action Workplan and Areas of the Site to be Remediated

DTSC (the oversight agency for contaminant cleanup of Subarea 3) requested that contaminated soil be removed from several areas of Subarea 3 to reduce the potential cancer risk at the property and to reduce lead levels. A Draft RAW was prepared by ENSR International for the Niven Nursery property (ENSR International 2002). The areas identified as requiring remediation include the northern drainage ditch in the northern nursery area and the southwestern drainage ditch in the southern nursery area and portions of the western nursery area (Exhibit 4.12-2). A total of 904 cubic yards of soil is planned to be removed during the Removal Action. Confirmation sampling of the excavations would be

Exhibit 4.12-2

performed during soil removal to verify that contaminants have been removed. Additional excavation and soil sampling would be performed, as necessary, to achieve the remedial goals.

A comment was received from Friends of Corte Madera Creek Watershed on the previous Draft EIR (Guldman, pers. comm., 2002) suggesting that aquatic invertebrates are exposed to contaminated soil in the ditches, and that these invertebrates may be eaten by birds. While this is an issue of concern, the State CEQA Guidelines (Guidelines §15126.2(a)) note that “[i]n assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published...” The potential for exposure to contamination noted in the comment was present at the time of the NOP for this EIR; therefore, as an existing condition, it is not assessed further in this document. However, it should be noted that the removal of contaminated soil from the drainage ditches and from Subarea 3 that are required prior to the development of Subarea 3 would improve, rather than exacerbate, the existing conditions related to aquatic invertebrates. Potential impacts and mitigation measures related to the removal process of contaminated soils are discussed below in 4.12.2, Environmental Impacts.

#### Human Health Risk Results for Postremediation Conditions

The remediation approved by DTSC for the Niven Nursery site is expected to reduce arsenic levels in the top foot of soil in the western nursery area to an average of 5 mg/kg, which includes a maximum residual concentration of 13 mg/kg. These average and maximum concentrations are typical of concentrations detected in soil in the western United States and, more specifically, in the Bay Area (see Shacklette and Boerngen 1984, Bradford et al. 1996, and Scott 1991).

EPA Region 9 has calculated a Preliminary Remediation Goal (PRG) of 0.39 mg/kg for arsenic as a concentration in soil that would correspond to the most conservative lifetime incremental cancer risk of 1 in 1 million under a residential exposure scenario; however, EPA acknowledges that such a level is unrealistic as being below background concentrations in many soils. In the documentation that describes the basis and application of the PRGs, EPA notes that “...EPA Region 9 has at times used the non-cancer PRG (22 mg/kg) to evaluate sites recognizing that this value tends to be above background levels yet still falls within the range of soil concentrations (0.39 to 39 mg/kg) that equates to EPA’s ‘acceptable’ risk range of 10E-6 to 10E-4.” The average and maximum levels of arsenic expected to be present in soil after remediation of the western nursery area are under the level of 22 ppm that EPA has recommended for other residential developments. These levels are well within the range identified above, 0.39 to 39 mg/kg, that correspond to the EPA “acceptable” risk level of 1 in 1 million to 100 in 1 million (i.e., 10E-6 to 10E-4).

Following the proposed remediation, DDT levels would be reduced to levels corresponding to a lifetime incremental cancer risk of slightly under 2 in 1 million. Such a risk level is at the low end of the EPA acceptable risk range of 1 in 1 million to 100 in 1 million. As noted in the risk assessment prepared for the site by ENVIRON (2002), the risk estimate is based on the

assumption that DDT would be biologically available to a person assumed to ingest soil from the site. In fact, the DDT is expected to remain tightly bound to the soil; the vast majority of the DDT would remain attached to the soil as it passes through a person's digestive tract and would not be absorbed by the digestive tract. Accordingly, the risk to a person would be substantially lower than the 2-in-1-million level and would almost certainly be less than 1 in 1 million the most conservative endpoint of EPA's acceptable risk range. The approved cleanup, would also reduce lead concentrations in the western nursery area to levels below Cal/EPA's target range of 250 to 400 mg/kg, which were developed by the agency to prevent adverse health effects from lead.

The sediments in the southern and northwestern drainages, in which lead, arsenic, and DDT had been detected, would be scraped out of the existing drainage ditches and taken to a licensed disposal site. Thus, there would be no exposure to these materials after the remediation approved by Cal/EPA has been carried out.

#### Sources of Contamination Beyond the Specific Plan Area

Contamination of the Specific Plan area from offsite sources could occur by the lateral migration of toxic gases and/or contaminated groundwater. One potential source of contamination beyond the Specific Plan area was evaluated in this analysis: The former Larkspur Disposal Site (Landfill), which was located approximately 1,500 feet to the northeast of Subarea 3.

This site, located to the north of Doherty Drive, was a municipal solid waste facility that was in operation from the early 1940s to the late 1960s. When the facility reached capacity, the City decided to redevelop the site and build the existing Piper Park (Kleinfelder, Inc., 2001). The potential for the migration of methane from the former landfill site (Piper Park) to Hall Middle School (200 Doherty Drive, located less than 1,000 feet west of the park) was evaluated by Kleinfelder, Inc. (2001). Part of the analysis involved one methane sampling survey at the proposed building location, in which the concentration of methane constituents was found at very low concentrations in two of 22 boreholes. According to the analysis, there is a low possibility of methane gas migration from the former landfill site to a proposed multipurpose building at the Middle School for four primary reasons:

- < Methane generation in landfills generally declines after 30 years of closure.
- < There is very little organic matter in the landfill material, and thus, this small volume of organic matter is not likely to generate significant amounts of methane.
- < The landfill is not capped, and therefore, any methane generated by organic matter is likely to escape upward through the topsoil.
- < There are no potential conduits of methane from the former landfill site to the proposed building site, although it is possible that methane could migrate to the south, east, and north toward the free surfaces of the sloughs (Kleinfelder, Inc., 2001).

The results of the Kleinfelder analysis indicate that there is a low potential for methane gas generated beneath Piper Park to migrate laterally to surrounding parcels. The analysis does not entirely rule out the possibility of gas migration to the Specific Plan area, which is located southwest of Piper Park. However, based on the age of the landfill, the lack of impermeable soil cover, and the generally low permeability of fill and native soils in the area, migration of methane to the Specific Plan area is unlikely.

#### **4.12.2 ENVIRONMENTAL IMPACTS**

##### **THRESHOLDS OF SIGNIFICANCE**

Implementation of the Specific Plan would have a significant impact if it were to result in:

- < the creation of a significant hazard to the public or the environment through the routine transportation, use, or disposal of hazardous materials;
- < the creation of 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;
- < hazardous emissions within 0.25 mile of an existing or proposed school;
- < the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- < development located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 (if such development would create a significant hazard to the public or the environment);
- < development located in an area covered by an airport land use plan (or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport), if it would result in a safety hazard for people residing or working in the project area;
- < development within the vicinity of a private airstrip, if it would result in a safety hazard for people residing or working in the project area;
- < impairment of or physical interference with the implementation of an adopted emergency response plan;
- < impairment of or physical interference with the implementation of an adopted emergency evacuation plan; or
- < exposure of people or structures to significant risk of loss, injury, or death involving wildland fires (including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands).

## PROJECT-LEVEL IMPACTS

Impact  
4.12-1

### **MTBE and Hydrocarbons in Groundwater at Larkspur Service Station Site.**

*Significant concentrations of MTBE were encountered in groundwater samples taken at the Larkspur Service Station, and an environmental site investigation and remedial actions were conducted. The San Francisco Bay RWQCB issued a no-further-action letter for the site, stating that groundwater MTBE does not pose a threat to public health or an ecological threat. However, construction involving excavation, fill, pilings, dewatering, etc., could occur in areas with a shallow groundwater table. Such work has the potential to expose construction workers to MTBE from contact with groundwater; to expose the public to MTBE if groundwater were pumped from dewatering sites; and to result in contamination of surface waters. This impact is considered **potentially significant**.*

Significant concentrations of MTBE were encountered in groundwater samples taken at the Larkspur Service Station (Subarea 2), and an environmental site investigation and remedial actions were conducted in accordance with orders given by the San Francisco Bay RWQCB. As described above, the RWQCB issued a no-further-action letter for the site, noting that the site had been adequately investigated; that concentrations of MTBE in the groundwater are not increasing over time; that groundwater MTBE does not pose a threat to public health because the groundwater is not a potential source of drinking water; and that groundwater MTBE does not pose an ecological threat because downgradient concentrations are below levels of concern even if the MTBE reaches a surface water body. However, construction in the Specific Plan area could pose a concern related to the presence of MTBE. The groundwater level at the Larkspur Service Station is not known; however, the groundwater level at the Niven Nursery site (Subarea 3) was found to be between 2 and 20 feet below ground surface (World Environmental Science & Technology 1999). Therefore, construction involving excavation, fill, pilings, dewatering, etc., could occur in areas with a shallow groundwater table. Given the shallowness of the groundwater table in Subarea 3 (and possibly elsewhere in the Specific Plan area), there is the potential for direct exposure of construction workers to groundwater containing MTBE. In addition, the public could potentially be exposed to MTBE if groundwater were pumped from dewatering sites and discharged to storm drains, and surface waters in the area could potentially become contaminated by MTBE, again from dewatering activities. This impact is considered potentially significant.

Impact  
4.12-2

### **Demolition-Related Release of Hazardous Materials, Including Materials**

**Containing Lead and Asbestos.** *During demolition of structures in Subarea 3, construction materials containing potentially hazardous lead-based paint and asbestos could be released to the environment through the air, water, or soil and may pose a risk to human health and the environment. Demolition of existing structures may also pose a physical hazard from demolished building materials such as broken glass. This impact is considered **potentially significant**.*

Development of Subarea 3 would involve demolition of structures containing chipping, peeling, and friable lead-based paint and window glazing. During the demolition of existing structures and the removal of contaminated soil and sediments from Subarea 3 in accordance with Draft RAW prepared at the request of DTSC, contaminated materials would be

transported from the Specific Plan area. Existing construction materials in Subarea 3 contain potentially hazardous materials such as lead-based paint and glazing, and asbestos, as well as residual contamination from pesticide use, storage, and mixing. During demolition of structures in Subarea 3, these materials could be released to the environment through the air, water, or soil, and may pose a risk to human health and the environment. Redwood High School property is adjacent to Subarea 3, and Hall Middle School is located to the north of Subarea 3 across Doherty Drive, within 0.25 mile, and San Andreas High School is within 0.25 mile to the southeast; these schools could be affected by the release of hazardous materials. Demolition of existing structures in Subarea 3 may also pose a significant physical hazard from demolished building materials such as broken glass. This impact is considered potentially significant.

Impact  
4.12-3

**Exposure to Hazardous Materials during Removal of Contaminated Soil.** *The cancer risk associated with metals, chlorinated pesticides, and petroleum hydrocarbons in soil in Subarea 3 is at a level acceptable to the Cal/EPA and EPA. However, during removal of contaminated soil from Subarea 3, hazardous materials could be released, and Redwood High School, San Andreas High School, and Hall Middle School, located within 0.25 mile, could be among the areas affected. This impact is considered **potentially significant**.*

The presence of soil contaminated with metals, chlorinated pesticides, and petroleum hydrocarbons in Subarea 3 presents a cancer risk in the range of 1 in 1 million to 1 in 10,000, a risk level considered acceptable by the Cal/EPA and EPA. The specific calculated cancer risk associated with the western nursery area was 50 in 1 million, the northern nursery area 20 in 1 million, the southern nursery area 10 in 1 million, and the Sloat Nursery 0.02 in 1 million. This cancer risk level could be reduced further by removal of contaminated soils from a few select areas. However, during removal of contaminated soil, hazardous materials could be released. As mentioned above, Redwood High School, San Andreas High School, and Hall Middle School are located within 0.25 mile of Subarea 3 and could be among the areas affected by the release of hazardous materials. This impact is considered potentially significant.

Impact  
4.12-4

**Development on Hazardous Materials Sites.** *Under the Specific Plan, development would occur on hazardous materials sites, posing a potential threat to human health. This impact is considered **potentially significant**.*

The Niven property (Subarea 3) qualifies as a site that should be included on a list of hazardous materials sites, but may it not be included because of the voluntary nature of the proposed cleanup. The former Chevron service station site at 532 Magnolia Avenue (Subarea 1) is listed on the Cortese hazardous materials site list, but it is listed as a closed site. Under the Specific Plan, therefore, development would occur on hazardous materials sites. This impact is considered potentially significant.

Impact  
4.12-5

**Release of Contaminated Groundwater.** *Groundwater containing metals, chlorinated pesticides, petroleum hydrocarbons, and other constituents could potentially be released into surface waters or clean fill soils as a result of dewatering. This impact is considered **potentially significant**.*

Shallow groundwater may be encountered in excavations for utilities and foundations during construction in Subarea 3, necessitating dewatering. Groundwater may contain low concentrations of contaminants such as metals (lead and mercury), chlorinated pesticides, petroleum hydrocarbons (gasoline and diesel), and the constituents benzene, toluene, and ethylbenzene. Groundwater containing significant levels of these constituents could potentially be released into surface waters or clean fill soils. This impact is considered potentially significant.

Impact  
4.12-6

**Potential Contamination of Soils Near Redwood High School, San Andreas High School, and Hall Middle School.** *Improper handling or an accidental spill could result in contamination of soils around Subarea 3, including the area around the schools. This impact is considered **potentially significant**.*

As mentioned above, Subarea 3 is located within 0.25 mile of Hall Middle School and San Andreas High School and is adjacent to Redwood High School property. Hazardous and potentially hazardous materials would be removed from Subarea 3 during the demolition and remediation process. If such materials were not handled properly or there were an accidental spill during offsite transport, areas around Subarea 3, including the area around the schools, could become contaminated. This impact is considered potentially significant.

Impact  
4.12-7

**Potential Interference with Airport Operations.** *The Specific Plan area is not located in the vicinity of an airport. This impact is considered **less than significant**.*

The Specific Plan area is not located in the vicinity of any private airport or within an area covered by an airport land use plan. The nearest airport is the San Rafael Airport, which is located more than 3 miles to the north of the Specific Plan area. Implementation of the Specific Plan would not entail any significant adverse effects related to airport operations. This impact is considered less than significant.

Impact  
4.12-8

**Interference with an Adopted Emergency Response or Emergency Evacuation Plan.** *The permitted land use types in the Specific Plan area have been considered in the Marin County Operational Area Emergency Operations Plan. Therefore, development would not interfere with emergency plans. This impact is considered **less than significant**.*

In 1999, Marin County adopted the Marin County Operational Area Emergency Operations Plan, which establishes the emergency organization, assigns tasks, specifies policies and general procedures, and provides for coordination of planning efforts of the various emergency staff and service elements utilizing the County's Standardized Emergency Management System. The Specific Plan would permit typical commercial and residential land uses that have already been considered and planned for in this emergency plan. As such, development of the Specific Plan area would not interfere with the implementation of any adopted emergency response or emergency evacuation plan. This impact is considered less than significant.

Impact  
4.12-9

**Exposure of People or Structures to Wildland Fires.** *The Specific Plan area is in a developed area not subject to wildland fires. This impact is considered **less than significant**.*

The Specific Plan area is located in downtown Larkspur, a developed area not subject to wildland fires. Implementation of the Specific Plan would not result in any significant increase in the number of people or structures exposed to the hazards associated with wildland fires. This impact is considered less than significant.

#### **CUMULATIVE IMPACTS**

Construction in the Specific Plan area would require the handling of hazardous materials (i.e., fuel, asphalt) other than those materials that could be found in soils and groundwater as described above. Other known development projects in the city may also involve the handling of hazardous materials. However, development of the area and of other projects in the city would occur in compliance with standard local, state, and federal laws pertaining to these substances. In addition, Larkspur and the surrounding area are predominantly built out, with little developable land remaining. There are currently no other development projects in the immediate vicinity of the Specific Plan area that would contribute to cumulative impacts related to hazards and hazardous materials. Therefore, there would be no cumulative impacts related to the presence of hazardous materials contamination as a result of implementation of the Specific Plan.

#### **4.12.3 MITIGATION MEASURES**

##### **PROJECT-LEVEL MITIGATION MEASURES**

**No mitigation measures are required for the following less-than-significant impacts.**

4.12-7: Potential Interference with Airport Operations

4.12-8: Interference with an Adopted Emergency Response or Emergency Evacuation Plan

4.12-9: Exposure of People or Structures to Wildland Fires

**The following mitigation measures are recommended for potentially significant impacts.**

Impact

4.12-1a, b  
mitigation

*MTBE and Hydrocarbons in Groundwater at Larkspur Service Station Site.*

(a) **Protect Construction Workers and Public Against Exposure to MTBE.**

The City shall include the following new policy in the Specific Plan.

**New Policy:** When any construction work is undertaken in the Specific Plan area, the following measures shall be incorporated into the project prior to the issuance of construction permits and implemented during construction activities

to prevent construction workers and the public from coming into contact with MTBE:

- < Construction personnel should wear appropriate construction clothing (i.e., long pants, hard hat, gloves) during construction to minimize potential contact with groundwater containing MTBE. This clothing shall be in compliance with the requirements for construction personnel issued by Cal/OSHA and OSHA.
- < Appropriate notices shall be posted at the project site to warn construction personnel and public of the presence of contaminated groundwater.
- < The City and the San Francisco Bay RWQCB shall be notified immediately if discolored or odorous groundwater is encountered during excavation activities.
- < When not under active construction or remediation, open trenches shall be covered where contaminated groundwater is present to prevent the public from coming in contact with contamination.

**(b) Prepare and Implement Dewatering Plan, and Install Impermeable Membrane Around Excavation Area if Necessary.**

The City shall include the following new policy in the Specific Plan.

**New Policy:** The contractor for any construction work undertaken in the Specific Plan area shall prepare a dewatering plan and submit the plan to the City and the San Francisco Bay RWQCB for approval prior to issuance of construction permits. Dewatering of the excavation areas shall be performed in compliance with the occupational safety and health guidelines of Cal/OSHA and OSHA, and in a manner that allows discharge to the sanitary sewer system. If dewatering is not required, groundwater shall be tested to determine the presence of MTBE or other hydrocarbons, and water shall be treated using appropriate methods approved by the City and the San Francisco Bay RWQCB. Any water removed during dewatering shall be stored and tested for residual contamination before disposal. Water shall also be tested after treatment to ensure that constituent levels meet requirements for surface or groundwater discharge before disposal or infiltration. If necessary, an impermeable membrane shall be installed around the excavation area to prevent contaminants from reaching Larkspur Creek.

Impact  
4.12-2  
mitigation

*Demolition-Related Release of Hazardous Materials, Including Materials Containing Lead and Asbestos.*

**Implement a Demolition Plan.**

The City shall include the following new policy in the Specific Plan.

**New Policy:** Site surveys for the presence of potentially hazardous building materials shall be reviewed/performed, and a demolition plan for safe demolition of existing structures in Subarea 3 shall be incorporated into the project prior to the issuance of construction permits and implemented during construction activities. The demolition plan shall address protection of both onsite workers, offsite residents, and occupants in nearby schools from chemical and physical hazards. The demolition plan shall be reviewed and approved by DTSC and by the City. All contaminated building materials shall be tested for contaminant concentrations and shall be disposed of at appropriate licensed landfill facilities. Before demolition, hazardous building materials such as peeling, chipping, and friable lead-based paint, window glazing, and building materials containing asbestos shall be removed in accordance with all applicable guidelines, laws, and ordinances. The Demolition Plan shall include a program of air monitoring for dust particulates and attached contaminants. Dust control and suspension of work during dry windy days shall be addressed in the Demolition Plan. Before a demolition permit is obtained from the BAAQMD, an asbestos demolition survey shall be conducted in accordance with the requirements of BAAQMD Regulation 11, Rule 2.

The California Division of Occupational Safety and Health (DOSH) and OSHA do not define threshold limit values for lead-containing paints and, therefore, paints or coatings containing any detectable amounts of lead are regulated by these agencies' standards, if construction activities covered in the scope of these standards emit lead. The DOSH standards prescribe procedures to be followed based on anticipated exposure resulting from construction activities performed. Demolition procedures may involve potential worker exposure above the DOSH action level for lead. Therefore, the requirements of Guidelines §1532.1 must be followed. These requirements include but are not limited to the following:

- < Loose and peeling lead-containing paint and window glazing should be removed before building demolition. Workers conducting removal of lead paint and window glazing must receive training in accordance with Guidelines §1532.1.
- < The lead paint and window glazing removal project should be designed by a lead project designer, project monitor, or supervisor certified by the DHS.
- < A written Lead Compliance Plan that meets the requirements of the lead construction standard must be prepared by any contractor whose actions would have an impact on lead coatings.
- < Workers conducting removal of lead paint and window glazing must be certified by DHS in accordance with Guidelines §1532.1.
- < Workers who may be exposed above the Action Level must have blood lead levels tested before commencement of lead work and at least quarterly

thereafter for the duration of the project. Workers who are terminated from the project should have their blood lead levels tested within 24 hours of termination.

- < A written exposure assessment must be prepared in accordance with Guidelines §1532.1.
- < Any amount of lead waste generated, including window glazing and painted building components, must be characterized for proper disposal in accordance with Title 22, §66261.24.
- < In addition, compliance with BAAQMD Regulation 11, Rule 1, Lead, which contains procedures that limit daily emissions of lead and ensures “a person shall not discharge an emission of lead, or compound of lead calculated as lead, that will result in ground level concentrations in excess of 1.0 µg/m<sup>3</sup> averaged over 24 hours.” This regulation required calculations of and monitoring of lead concentrations to ensure compliance.

Impact  
4.12-3  
mitigation

*Exposure to Hazardous Materials during Removal of Contaminated Soil.*

**Implement Removal Action Workplan and Health and Safety Plan.**

The City shall include the following new policy in the Specific Plan.

**New Policy:** The RAW developed for Subarea 3, under the oversight of DTSC, shall be incorporated into the project prior to the issuance of construction permits and implemented during construction activities. The workplan includes provisions for safe removal, transportation, and disposal of selected contaminated soil from Subarea 3. Removal of contaminated soils from the areas identified would reduce the cancer risk to less than 1 in 1 million. Clean fill shall also be placed over much of Subarea 3, further reducing the potential for exposure of people to residual soil contamination. A detailed Health and Safety Plan shall be prepared to address measures to protect workers and the community during remedial activities, and shall be reviewed and approved by DTSC.

Impact  
4.12-4  
mitigation

*Development on Hazardous Materials Sites.*

**Implement Mitigation Measure 4.12-3.**

The City shall implement Mitigation Measure 4.12-3, Implement Removal Action Workplan and Health and Safety Plan, described above.

Impact  
4.12-5  
mitigation

*Release of Contaminated Groundwater.*

**Implement Groundwater Testing, Storage, Treatment, and Disposal.**

The City shall include the following new policy in the Specific Plan.

**New Policy:** Any groundwater removed from excavations in Subarea 3 during construction shall be temporarily stored and tested to determine the appropriate method of treatment and/or disposal. Provisions for this measure shall be incorporated into the project prior to the issuance of construction permits.

Impact  
4.12-6  
mitigation

*Potential Contamination of Soils Near Redwood High School, San Andreas High School, and Hall Middle School.*

**Implement Demolition Plan and Removal Action Workplan.** The City shall include the following new policy in the Specific Plan.

**New Policy:** The proposed hazardous materials remediation plans and actions for Subarea 3 shall be implemented to reduce the overall risk to students at the nearby Redwood High School and Hall Middle School. During the demolition and remediation process, special measures shall be taken in accordance with an approved Demolition Plan and RAW to contain and remove potentially hazardous substances and wastes under controlled conditions. These plans, which must be approved by the City prior to the issuance of construction permits, shall address approved routes, truck cleaning and inspection, and contingencies for addressing spills and other accidents.

#### **CUMULATIVE MITIGATION MEASURES**

There would be no significant cumulative impacts related to hazardous materials as a result of implementation of the Specific Plan; therefore, no mitigation measures are required.

#### **4.12.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Following implementation of the above mitigation measures, no significant impacts, including cumulative impacts, related to hazardous materials would remain.