4.4 HAZARDS AND HAZARDOUS MATERIALS

Introduction

The Hazards and Hazardous Materials chapter of this Draft EIR describes existing and potentially occurring hazards and hazardous materials within the proposed project area. This chapter discusses potential impacts posed by these hazards to the environment, as well as to workers, visitors, and residents within and adjacent to the project area. The Hazards and Hazardous Materials chapter is primarily based on information drawn from the *Remedial Action Plan* prepared for the project site by Risk-Based Decisions, Inc. (See Appendix H),[1] the *Pittsburg General Plan 2020*,[2] and associated EIR.[3]

Existing Environmental Setting

The term hazardous substance refers to both hazardous materials and hazardous wastes. A material is defined as hazardous if the material appears on a list of hazardous materials prepared by a federal, State, or local regulatory agency or if the material has characteristics defined as hazardous by such an agency. The California Department of Toxic Substance Control (DTSC) defines hazardous waste, as found in the California Health and Safety Code, Section 25141(b), as follows:

> […] its quantity, concentration, or physical, chemical, or infectious characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

Regional Setting

According to the City of Pittsburg General Plan EIR, Contra Costa County is one of the largest generators of hazardous waste in the State; the majority of which comes from industries located along the Bay waterfronts. Approximately two-thirds of hazardous waste generated in the County is treated on-site, while one-third is transported to hazardous waste management facilities.

Many of the industrial operations in the City of Pittsburg involve the use or production of hazardous materials, most significantly the petroleum and chemical processing plants in the northeastern portion of the City. Potential hazards associated with the processing plants include the toxicity, flammability, and explosivity of petroleum and chemical materials. The proposed

project is located in the southeastern portion of the City, adjacent to the City of Antioch limits, over a mile from the majority of the intensive industrial operation sites in the City.

Project Site Conditions

The proposed project site is currently unincorporated land within Contra Costa County between the City of Pittsburg and the City of Antioch. As noted in the Introduction and Project Description chapters of this EIR, in 2011 the City of Pittsburg Urban Limit Line and General Plan were amended, via voter initiative, to reflect and accommodate the proposed project site in anticipation of future annexation and development. The proposed project includes the existing Chevron facility for sphere of influence boundary and annexation amendment purposes only, but the facility is not included as part of the proposed project improvements. Accordingly, the existing Chevron facility would be annexed with the project, but would remain in place and unchanged. The existing Chevron facility is currently utilized as a pumping facility and a field office.

The project site is located along Buchanan Road and Somersville Road in the southeastern portion of the City of Pittsburg Urban Limit Line, adjacent to the Antioch city limits. The Contra Costa Canal runs along the northern and northeastern borders of the project site. Another small drainage ditch exists southeast of the site. Two temporary drainage ditches exist in the southeastern portion of the project site.

Historically the project site was used as an above-ground crude oil tank farm, known as the Los Medanos Tank Farm, owned by Chevron USA, Inc. The tank farm contained 40 above-ground storage tanks, each with a capacity of approximately 35,000 barrels. However, the tanks and associated piping were removed from the site in 1981. Environmental investigations were performed at the site from the 1980s to 2005 that characterized the extent of chemical contamination. Soil contamination at the site consisted primarily of residual petroleum hydrocarbons derived from the breakdown of crude oil. Petroleum hydrocarbon affects in soil generally do not extend more than 15 feet below the ground surface. However, two former tank locations require excavation to a depth of 20 feet. Toxic constituents were generally not present. Soils containing elevated concentrations of lead were removed in the 1980s and current metal concentrations do not exceed local background levels.

Due to the soil contamination at the site, the Los Medanos Tank Farm is included as an active cleanup site on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 as part of a voluntary cleanup program.[4] As such, the undeveloped, vacant land on the site is currently undergoing soil remediation. The State Water Resources Control Board (SWRCB) is the overseeing agency for the remediation activities at the project site that delegates their authority to the San Francisco Bay Region of the California Regional Water Quality Control Board (RWQCB).

The Remedial Action Plan (RAP) prepared for the project site included the established site cleanup standards and criteria that are required to be achieved prior to redevelopment of the site. Due to the residential development planned for the site per the proposed project, the cleanup standards and criteria established for the site were developed to be stringent enough to protect

human health assuming unrestricted use. Soil remediation activities to be performed on the site are required to be in compliance with the RAP and Storm Water Pollution Prevention Plan (SWPPP) approved by the RWQCB for the site.

According to the most recent letter dated November 8, 2013 from the project applicant to the SWRCB, pursuant to the RAP, the site was over-excavated at the remaining former tank pads and other areas which had been identified to contain residual petroleum hydrocarbons which exceeded the cleanup levels specified in the RAP. The excavated areas were tested to confirm that remaining soils met the cleanup standards and were then backfilled with clean soil. The excavated material was stockpiled in bio-cells on site. Originally, the remediation approach was to bioremediate the bio-cell material to achieve the required cleanup standards for reuse. Between 2009 and 2012 the bio-cells were aerated, watered, and organic fertilizer was applied to them. However, sampling and testing during that period has shown little or no reduction in the level of total petroleum hydrocarbons (TPH's) which remain. Levels of TPH in the bio-cells were originally and continue to be in the range of 500 to 9,700 mg/kg for combined TPH-Oil and TPH-Diesel. Such levels meet the cleanup standard set forth in the RAP for Deep Soil (greater than 10 feet below grade) of 15,000 mg/kg, but do not meet the cleanup standard for Shallow Soil (less than 10 feet below grade) of 500 mg/kg. As a result, additional treatment of the bio-cells is not expected to achieve the cleanup standard for Shallow Soil. Consequently, in accordance with the RAP, the soils stockpiled in the bio-cells are intended to be buried under the future streets within the proposed project site at a minimum depth of 10 feet below finish street grade, and at least two feet below any future underground utilities. It should be noted that due to the ongoing remediation activities, the site is regularly disturbed, regraded, and disced; thus, vegetation does not exist on the project site.

The State must attest to and certify the completion of adequate soil remediation activities and containment prior to any development on the project site. Accordingly, for this analysis, the soil contamination on the project site is assumed to be properly contained in accordance with the approved RAP for the site prior to commencement of development of the proposed project.

Surrounding Hazardous Materials Sites

A search of federal, State, and local databases for the project site and surrounding area was conducted for the proposed project. As discussed above, the project site is included as an active cleanup site on the DTSC's data management system. It should be noted that the existing Chevron facility is included in the project description for sphere of influence boundary and annexation amendment purposes only, and is not included as part of the proposed project improvements. Accordingly, the existing Chevron facility would be annexed with the project, but would remain in place and unchanged. The Chevron facility is not listed on the DTSC's data management system and known environmental issues or concerns do not exist for the site; however, the site does involve use and storage of potentially hazardous materials such as petroleum products.

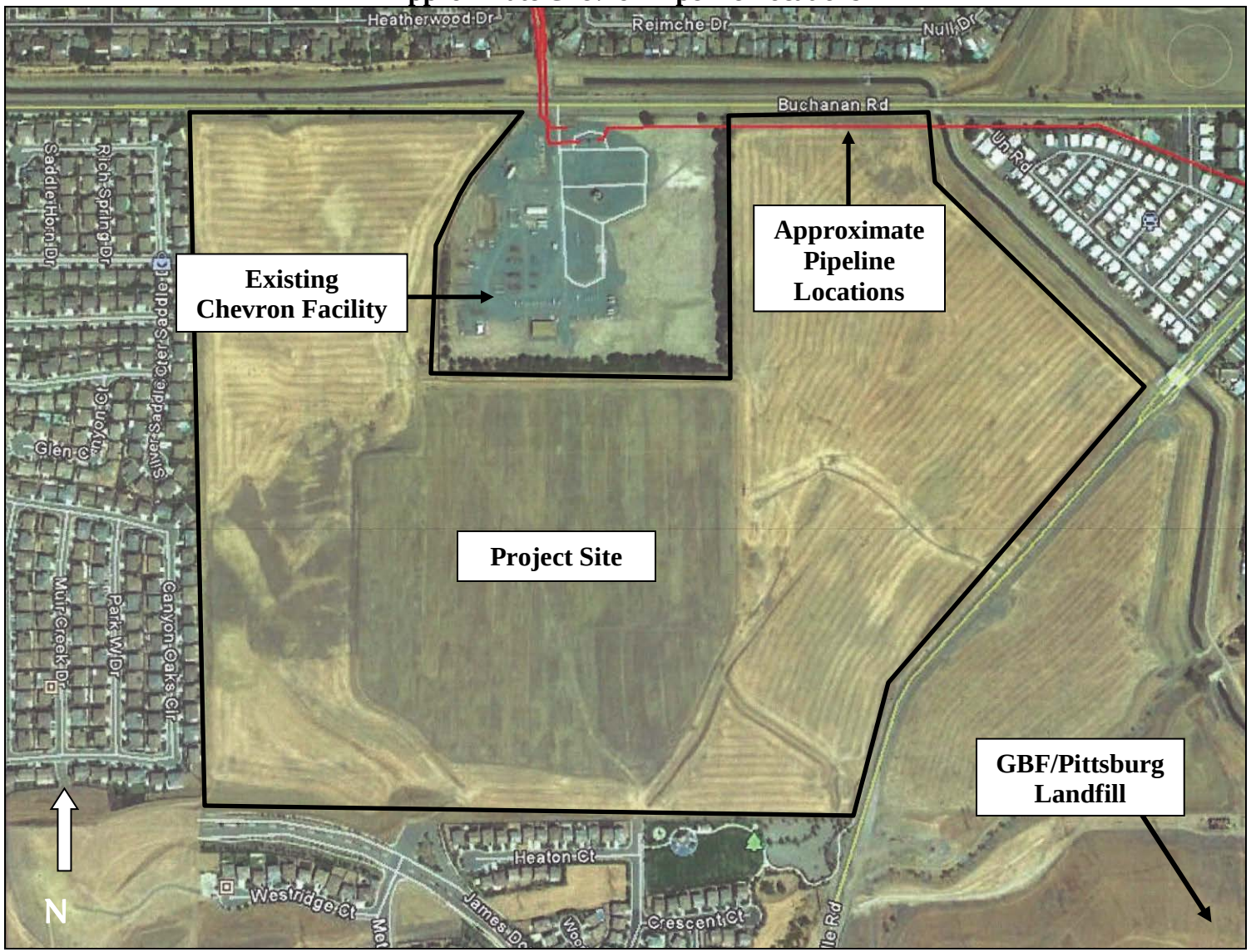
A closed landfill, the GBF/Pittsburg Landfill, exists to the southeast of the site across Somersville Road (see Figure 4.4-1). The GBF/Pittsburg Landfill consists of two contiguous landfills – the 25-acre Pittsburg Landfill to the west and the larger 63-acre GBF Landfill to the

east. The Pittsburg landfill operated as a municipal dumpsite beginning in 1946. The GBF landfill operated as a municipal dumpsite beginning in 1960. Both landfills were consolidated in 1987. Municipal waste was accepted until 1992. From 1960 to 1974, Industrial Tank, Inc. operated a Class I landfill and used 10 ponds for the evaporation and percolation of hazardous wastes on the GBF landfill site. Among the wastes known to be disposed at the site were beryllium metal, sulphinated tars, industrial solvents, waste oils, acids, and medical waste. The landfill site is under the jurisdictional boundaries of the Central Valley RWQCB, which has the authority to implement water quality protection standards at locations within their jurisdiction. In 1974, the Central Valley RWQCB ordered the site to cease operations of the Class I landfill and that all liquid hazardous wastes be removed from the site. The residues and sludges from the 10 ponds and the buried hazardous wastes still remain on the site. Chlorinated ethenes [tetrachloroethene (PCE), trichloroethene (TCE), and their daughter products], chlorinated methanes [carbon tetrachloride (CT), chloroform, and their daughter products], 1,2-dichloropropane (1,2-DCP), and benzene are the constituents of concern (COCs) that have been detected at elevated concentrations in groundwater emanating from the landfill. Acetone, phenol, heptachlor, and select metals are also present at elevated concentrations in wells just along the landfill's northern boundary, with little downgradient plume development. The soil vapor/groundwater plume generally exhibits bi-lobular geometry, with apparently separate plumes emanating from the former GBF Landfill (eastern plume) and the former Pittsburg Landfill (western plume). According to the semiannual soil vapor monitoring, the primary COCs present in off-site soil vapor are PCE and are located hydraulically downgradient of the landfill boundary and within the eastern groundwater plume footprint.[5] Groundwater in the region generally flows in a northerly direction.

A number of monitoring wells exist for soil vapor and groundwater monitoring associated with the groundwater and soil vapor migration zone in the vicinity of the GBF/Pittsburg Landfill. It should be noted that a groundwater extraction and treatment system, as well as a monitoring and reporting system, are currently in place associated with the landfill site. On February 2, 1992, U.S. Environmental Protection Agency (USEPA) proposed the site be added to the National Priority List. In January 2001, the site was purchased by GBF Holdings, LLC. On October 21, 2010 the USEPA decided to de-propose the site from the National Priority List due to confidence in both the past and ongoing oversight that DTSC has conducted at the site and DTSC's assurance that Superfund Program involvement is not necessary for the cleanup work to proceed. The decision was published in the October 21, 2010 Federal Register.[6]

It should be noted that Chevron operates two active pipelines in the vicinity of Buchanan Road along the north end of Parcel A and the proposed Tuscany Meadows Drive. Figure 4.4-1, delineates the approximate location of the pipelines. As illustrated in the figure, the 12-inch and 10-inch high pressure buried pipelines, which are used to transport crude oil and natural gas, cross Buchanan Road to the existing Chevron facility and then continue down Standard Oil Avenue.

Figure 4.4-1
Approximate Chevron Pipeline Locations



REGULATORY CONTEXT

Many agencies regulate hazardous substances. The following discussion contains a summary of the regulatory controls pertaining to hazardous substances, including federal, State, and local laws and ordinances.

Federal Regulations

Federal agencies that regulate hazardous materials include the USEPA, the Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT), and the National Institute of Health (NIH). The following federal laws and guidelines govern hazardous materials:

- Federal Water Pollution Control Act;
- Clean Air Act;
- Occupational Safety and Health Act;
- Federal Insecticide, Fungicide, and Rodenticide Act;
- Comprehensive Environmental Response, Compensation, and Liability Act;
- Guidelines for Carcinogens and Biohazards;
- Superfund Amendments and Reauthorization Act Title III;
- Resource Conservation and Recovery Act;
- Safe Drinking Water Act; and
- Toxic Substances Control Act.

Prior to August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the USEPA under the authority of the Resource Conservation and Recovery Act (RCRA). As of August 1, 1992, however, the DTSC was authorized to implement the State's hazardous waste management program for the USEPA. The USEPA continues to regulate hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

State Regulations

The California EPA (Cal-EPA) and the California SWRCB establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable State laws include the following:

- Public Safety/Fire Regulations/Building Codes;
- Hazardous Waste Control Law;
- Hazardous Substances Information and Training Act;
- Air Toxics Hot Spots and Emissions Inventory Law;
- Underground Storage of Hazardous Substances Act; and
- Porter-Cologne Water Quality Control Act.

Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of

hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL).

Local Regulations

City of Pittsburg General Plan

The City's General Plan includes the following goals and policies regarding hazards and hazardous materials.

Goal 10-G-9 Minimize the risk to life and property from the generation, storage, and transportation of hazardous materials and waste by complying with all applicable State regulations.

Goal 10-G-10 Encourage redevelopment of areas with potential hazardous materials issues. Pursue a leadership role in the remediation of brownfield sites throughout Pittsburg.

Policy 10-P-31 Cooperate with other public agencies in the formation of a hazardous materials team, consisting of specially-trained personnel from all East County public safety agencies, to address the reduction, safe transport, and clean-up of hazardous materials.

Contra Costa Water District is supportive of the formation of a hazardous materials team, particularly as it relates to the Contra Costa Canal system and Suisun Bay/Sacramento River Delta water quality.

Policy 10-P-32 Designate and map brownfield sites to educate future landowners about contamination from previous uses. Work directly with landowners in the clean-up of brownfield sites, particularly in areas with redevelopment potential.

Policy 10-P-33 Prevent the spread of hazardous leaks and spills from industrial facilities to residential neighborhoods and community focal points, such as Downtown.

Policy 10-P-34 Identify appropriate regional and local routes for transport of hazardous materials and wastes. Ensure that fire, police, and other emergency personnel are easily accessible for response to spill incidences on such routes.

Impacts and Mitigation Measures

This section describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential impacts related to hazards and hazardous materials. A discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

In accordance with CEQA, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. For the purposes of this EIR, an impact is considered significant if the proposed project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

It should be noted that, as presented in the Introduction to Analysis chapter of this EIR, the Initial Study prepared for the proposed project (see Appendix C) determined that development of the proposed project related to the following would result in either no impact or a less-than-significant impact:

- Emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- A project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, where safety hazards for people residing or working in the project area could occur;
- A project within the vicinity of a private airstrip, where a safety hazard for people residing or working in the project area could occur;
- Impairment of implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan; and
- Exposure of people or structures to the risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Accordingly, impacts related to the above are not further analyzed or discussed in this EIR chapter.

Method of Analysis

The project site is currently undergoing soil remediation. Remediation would be completed and certified by the State prior to any development on the project site. Thus, analysis in this chapter assumes that the soil contamination on the project site is properly contained in accordance with the approved RAP for the site prior to commencement of development of the proposed project.

Site conditions and impacts analysis for this chapter are based primarily on the RAP prepared for the project site, personal communications with the San Francisco Bay RWQCB, and the City of Pittsburg General Plan and associated EIR. In addition, the Cal-EPA's Cortese List Data Resources, which represent the non-confidential portions of reasonably obtainable and practically reviewable records retained by federal, State, and local agencies, were reviewed for potential environmental liability, including the SWRCB Geotracker and the DTSC Envirostor databases.[7]

A Soil Vapor Intrusion Evaluation was performed by TRC in September 2010 in order to evaluate the vapor exposure pathway to indoor air at the proposed project related to the off-site plume emanating from the former GBF/Pittsburg landfill.[8] The soil vapor investigation conducted included collection and analysis of samples within the western lobe of the contaminant plume, including on the proposed project site. Because the proposed project site is intended for residential uses, the concentrations of constituents of concern (COCs) in the soil vapor samples taken on the project site were compared to the residential California Human Health Screening Levels (CHHSLs) to evaluate the potential human health risk for vapor intrusion. Where concentrations of COCs in shallow soil vapor samples exceeded the residential CHHSLs, site-specific incremental risk from vapor intrusion was calculated using the California-specific USEPA advanced version (SG-Screen, Version 2.0, April 2003) of the Excel-based Johnson & Ettinger (J&E) model for predicting indoor air intrusion, and associated inhalation risk. The DTSC utilizes a hazard quotient for carcinogens of 10^{-6} and from vapor intrusion to indoor air for non-carcinogens of one.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance identified above.

4.4-1 Routine transport, use, or disposal of hazardous materials. Based on the analysis below, the impact is *less than significant.*

Projects that involve the routine transport, use, or disposal of hazardous materials are typically industrial in nature. The proposed project would not be industrial in nature, and would consist of the construction of a residential development. Residential land uses do not typically involve the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Construction activities would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. However, the project contractor would be required to comply with all California Health and Safety Codes and local ordinances regulating the

handling, storage, and transportation of hazardous and toxic materials, as overseen by the Cal-EPA and DTSC. Thus, the proposed project would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials, and impacts would be considered ***less than significant***.

Mitigation Measure(s)
None required.

4.4-2 An upset or accidental release of hazardous materials into the environment. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

As discussed above, the proposed project does not involve the routine transport, use, or disposal of hazardous materials, and, thus, would not result in any upset or accidental release of hazardous materials into the environment. Project construction activities will require the implementation of best management practices to eliminate track out of disturbed soil from the site. It should be noted, however, that the existing Chevron facility that would be annexed with the project would remain in place and unchanged. The Chevron facility is not listed on the DTSC's data management system, and known environmental issues or concerns such as leaks, spills, or soil contamination, do not exist for the site. However, the site does involve the routine transport and storage of petroleum products, which could be potentially hazardous. As noted above, any transport or storage of potentially hazardous materials is overseen by the Cal-EPA and DTSC.

According to the RAP prepared for the project site, groundwater was encountered at a minimum depth of 25 feet and earlier investigations showed groundwater levels to depths greater than 100 feet. Water within a well at the northern end of the project site was sampled as part of the RAP, which indicated that fuel hydrocarbons were not detected and that groundwater does not appear to be impacted at the project site. Thus, petroleum hydrocarbons are not expected to have migrated from the Chevron parcel. In addition, due to the depth to groundwater, any petroleum product leaks at the Chevron facility would have to travel a great distance down prior to any lateral migration. Furthermore, according to the San Francisco Bay RWQCB, groundwater in the project area generally flows to the north.[9] Thus, if any petroleum hydrocarbon leaks did occur associated with the Chevron parcel, the migration would flow away from the proposed project site. Consequently, the likelihood for petroleum hydrocarbons to migrate from the Chevron site to the proposed project site is very low.

Chevron operates two active pipelines in the vicinity of the proposed project, which are delineated in Figure 4.4-1. As shown in the figure, the pipelines cross Buchanan Road to the existing Chevron facility and then continue down Standard Oil Avenue. Extreme caution should be used when excavating, drilling, or grading around the pipelines, and the proposed project development must comply with all applicable standards and regulations associated with development near petroleum pipelines. For example, a minimum of 12 inches of clearance between petroleum pipelines and other cross-lines that intersect at a 90-degree angle, or a minimum of 24 inches for intersection angles less than 90 degrees,

must be maintained. Accurate depths and alignment of the pipelines could only be determined by field checking and potholing the pipeline, which is recommended to be accomplished prior to completion of construction plans in order to avoid conflicts between the proposed development and the existing pipelines.

As far as development restrictions in the vicinity of the pipelines, the pipeline easements do not restrict paving or landscaping, so long as encroachment clearances are maintained. An undisturbed encroachment clearance of a minimum of 24 inches must be maintained between the top of pipe and bottom of the sub-grade for paving and grass or shallow rooted plants on the easements. Deep-rooted trees and all structures are prohibited on the easements. All excavations within 24-inches of Chevron's facilities must be done by hand tools only, and the use of heavy vibratory equipment is prohibited over the pipelines.

If the proposed project does not comply with the above development restrictions and regulations associated with developing near petroleum pipelines, a reasonably foreseeable upset or accidental release of hazardous materials into the environment could occur. Therefore, impacts related to the existing petroleum pipelines could be considered ***potentially significant***.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

4.4-2(a) *Prior to issuance of a grading permit for the Tuscany Meadows subdivision, the project applicant shall provide proof to the City that the soil contamination on-site has been contained in accordance with the approved RAP and has been remediated to the satisfaction of the San Francisco Bay RWQCB.*

4.4-2(b) *Prior to approval of Grading and Improvement Plans, the project applicant shall coordinate with Chevron to determine the accurate depths and alignment of the pipelines by field checking and potholing the pipeline. Arrangements to potholing of the pipelines shall be made at least 48 hours in advance. The project applicant shall be responsible for providing a backhoe and operator, as well as a surveyor if needed. All construction plans that occur within Chevron's easement shall be submitted to Chevron to allow for review prior to commencing work within the easement.*

After determining the accurate depths and alignments of the pipelines, the project applicant shall further coordinate with Chevron regarding all work that could affect the pipelines in order to ensure compliance with applicable development restrictions and regulations, which would include, but would not be limited to, the following:

- *Maintain a minimum of 12 inches of clearance between the pipelines and other cross-lines that intersect at a 90-degree angle, or a minimum of 24 inches of clearance for intersection angles less than 90-degrees;*
- *Maintain a minimum of 24 inches of undisturbed clearance between the top of pipe and bottom of the sub grade for paving and grass or shallow rooted plants within the pipeline easements;*
- *Prohibit deep-rooted trees and structures within pipeline easements;*
- *All excavations within 24-inches of the pipelines shall be accomplished using hand tools only;*
- *Restrict use of heavy vibratory equipment over pipelines; and*
- *Notify Underground Service Alert (USA) at 800-227-2600 at least 48 hours prior to any excavation work.*

4.4-3 Located on a site included on a list of hazardous materials sites. Based on the analysis below, the impact is *less than significant.*

According to the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, the project site is an active cleanup site as part of a voluntary cleanup program. However, as discussed previously, a RAP was prepared for the site establishing site cleanup standards and criteria that are required to be achieved prior to redevelopment of the site. The State must attest to and certify the completion of soil remediation activities satisfactory to the cleanup standards and criteria prior to any development on the site. Accordingly, the soil contamination on the project site would be properly contained in accordance with the approved RAP for the site prior to commencement of development of the proposed project. Thus, the project site would no longer be included on a list of hazardous materials sites, and would not create a significant hazard to the public or the environment.

As mentioned above, a number of industrial operations currently occur in the City of Pittsburg, primarily involving petroleum and chemical processing plants located in the northeastern portion of the City. The proposed project is located in the southeastern portion of the City, adjacent to the City of Antioch limits, over a mile from most of the intensive industrial operation sites in the City. Due to the distance of the project from most industrial uses, the project is not expected to be affected by any such operations. The nearest identified hazardous site is the closed GBF/Pittsburg Landfill. As discussed previously, the nearby closed GBF/Pittsburg Landfill was proposed to be added onto the National Priority List on February 2, 1992; however, the USEPA decided to de-propose the site from the National Priority List on October 21, 2010, due to confidence in both the past and ongoing oversight that DTSC has conducted at the site and DTSC's assurance that Superfund Program involvement is not necessary for the cleanup work to proceed. Future infiltration and chemical leaching from the closed landfill site are mitigated by the landfill cap and engineered grading completed in 2002.[10] The landfill cap is maintained, and a landfill gas collection and treatment system is operational at the closed landfill site.

In addition, a groundwater extraction and treatment system has been operational full-time since November 2003.

As stated above, a Soil Vapor Intrusion Evaluation was performed in order to evaluate the vapor exposure pathway to indoor air at the proposed project related to the off-site plume emanating from the former GBF/Pittsburg landfill. According to the Soil Vapor Intrusion Evaluation, concentrations of carbon tetrachloride (CT) in soil vapor samples collected above the water table within the western plume generally exceeded the residential CHHSL (25.1 $\mu g/m^3$) in each soil vapor boring; however, most of the shallower soil vapor samples showed adequate attenuation at shallow depths, with the exception of one sample with a concentration of 43 $\mu g/m^3$ at five feet below grade located at the southeastern border of the proposed project site, along Somersville Road, south of the Contra Costa Canal. Thus, the soil vapor sample at this location was utilized for vapor intrusion modeling in order to analyze at worst-case assumptions.

The hazard quotient for carcinogens used by the DTSC for risk-based decision-making is 10^{-6}, and a hazard quotient from vapor intrusion to indoor air for non-carcinogens of one. The residential site-specific incremental risk from vapor intrusion to indoor air for carcinogens using CT concentrations from the five-foot-below-grade sample was calculated to be 5.82×10^{-7}, which is less than the DTSC hazard quotient for carcinogens of 10^{-6}. In addition, the hazard quotient from vapor intrusion to indoor air for non-carcinogens for all samples was on the order of 10^{-4} to 10^{-3}, which is below the DTSC hazard quotient of one. As such, the lifetime carcinogenic risk at the proposed project site associated with the closed landfill site was less than the risk range considered safe and protective of public health. It should be noted a monitoring and reporting system are currently in place associated with the landfill site, including preparing and submitting monitoring reports for the DTSC for review and approval.[11]

Therefore, the proposed project would not be located on or affected by a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment. Therefore, impacts would be ***less than significant***.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in combination with other proposed and pending projects in the region. Other proposed and pending projects in the region under the cumulative context would include buildout of the City of Pittsburg General Plan, as well as development of the most recent planned land uses within the vicinity of the project area, including the Black Diamond, Sky Ranch, and Montreux developments.

4.4-4 Cumulative increase in the number of people who could be exposed to potential hazards associated with potentially contaminated soil and groundwater and an increase in the transport, storage, and use of hazardous materials from development of the proposed project in combination with other reasonable foreseeable projects in the region. Based on the analysis below, the impact is *less than significant.*

Impacts associated with hazardous materials are site-specific and generally do not affect, or are not affected by, cumulative development. Cumulative effects could be considered if the project was, for example, part of a larger development in which industrial processes that would use hazardous materials are proposed, which would not be the case with the proposed project. In addition, as discussed above, project-specific impacts were found to be less than significant with the implementation of the recommended mitigation measures. Furthermore, any future proposed development projects would be subject to the same environmental review, as well as the same federal, State, and local hazardous materials management requirements as the proposed project, which would minimize potential risks associated with increased hazardous materials use in the community, including potential effects, if any, on the proposed project. Therefore, implementation of the proposed project would have a ***less-than-significant*** impact associated with cumulative hazardous materials use.

Mitigation Measure(s)
None required.

Endnotes

[1] Risk-Based Decisions, Inc. *Remedial Action Plan Highlands Ranch Phase II Pittsburg, CA*. August 4, 2006.
[2] City of Pittsburg. General Plan: "*Pittsburg 2020: A Vision for the 21st Century*." Adopted November 16, 2001.
[3] City of Pittsburg. *City of Pittsburg General Plan Draft Environmental Impact Report*. January 2001.
[4] California Department of Toxic Substances Control, EnviroStor. Available at: http://www.envirostor.dtsc.ca.gov. Accessed June 2014.
[5] TRC. *First 2014 Semiannual Soil Vapor Monitoring Report*. April 2014.
[6] California Department of Toxic Substances Control, EnviroStor. Available at: http://www.envirostor.dtsc.ca.gov. Accessed June 2014.
[7] California Environmental Protection Agency. Cortese List Data Resources. February 16, 2012. Available at: http://www.calepa.ca.gov/sitecleanup/corteselist/. Accessed June 2014.
[8] TRC. *Revised Soil Vapor Intrusion Evaluation GBF/Pittsburg Landfill Antioch, California*. September 2010.
[9] San Francisco Bay Regional Water Quality Control Board. Personal communication with Keith Robertson, Engineering Geologist and Project Manager for the Highlands Ranch Phase II site cleanup. June 2013.
[10] TRC. *Revised Soil Vapor Intrusion Evaluation GBF/Pittsburg Landfill Antioch, California*. September 2010.
[11] TRC. *Revised Phase II Pilot Study Workplan GBF/Pittsburg Landfill Antioch, California. September 2013.*