APPENDIX D
HAZARDOUS MATERIALS

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TABLES

HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

1.0 AFFECTED ENVIRONMENT

1.1 STUDY METHODS

Hazardous materials, pollution, and solid waste were identified and evaluated to address the potential for encountering hazardous materials or environmental contamination, a characterization of the types and potential quantities generated or impacted, and an assessment of these findings with respect to appropriate regulatory criteria. The first step was accomplished by identifying and mapping the locations of the sites and facilities that involve hazardous materials/wastes of known, or potential, environmental contamination in the vicinity of CEC.

1.2 EXISTING ENVIRONMENTAL CONDITIONS

1.2.1 Hazardous Materials Assessment Approach

An assessment was conducted to identify sites and facilities that are known, suspected, or are likely to contain/store hazardous substances, and to identify areas of known subsurface soil and/or groundwater contamination. The description and assessment of hazardous materials, pollution, and solid waste in the vicinity of CEC is based on the compilation and evaluation of information previously developed or disclosed from other sources, including:

• Collection and review of reports, maps, and other relevant documents relating to subsurface environmental conditions at CEC. These include site investigations and remedial action documents from files maintained at the North Coast Regional Water Quality Control Board (NCRWQCB).

• Communications with individuals having knowledge of and experience with hazardous materials and waste matters in the vicinity of CEC.

• An independent electronic database survey of federal, state, and local agency files pertaining to hazardous materials and environmental contamination in the vicinity of CEC.

It is important to note that no new studies were undertaken in support of the Draft EA, such as Level I/II Environmental Site Assessments; waste, wastewater, subsurface soil/groundwater sampling; underground storage tank (UST)/aboveground storage tank (AST) testing; or other similar investigations of human-made or environmental media such as asbestos-containing materials or lead-based paints.

For the purposes of this Draft EA, the term “hazardous materials” also includes the regulatory-defined terms of hazardous wastes, hazardous substances, and dangerous goods; contamination to soil, surface waters, and groundwater; as well as the assortment of similarly regulated substances such as fuel and other petroleum-based products.

The types, characteristics, and occurrences of hazardous materials and other similarly regulated substances at CEC are typical of most small-scale metropolitan airports that offer commercial and general aviation service. These include the fueling, servicing, and repair of aircraft; use of motor vehicles; the operation and maintenance of the airfield, terminal complex and parking facilities.

The largest quantities of substances used at CEC that are classifiable as hazardous include aircraft fuels. Other, smaller amounts of petroleum products (e.g., lubricants and solvents), and waste materials (e.g., used oils, filters, cleaning residues, and spent batteries) are stored in various locations throughout CEC. Additionally, de-icing rarely takes place at CEC and the airlines or operators of the aircraft are responsible for compliance with storage, disposal, and care of de-icing fluids or spills.

Former and existing sites of environmental contamination at CEC are mainly attributed to its use as an operating airfield. One former facility in the vicinity of CEC is a known hazardous waste release site. These sites/facilities are located near the Detailed Study Area. To assess these sites/facilities of potential concern, a computerized database containing federal, state, and local regulatory agency file information was generated to support this Draft EA (EDR, 2009). This database report is used as a screening tool to identify known hazardous materials release sites, generators of hazardous wastes, and UST/AST sites that are reported to be present in the vicinity of the CEC.

1.2.2 Hazardous Materials Assessment Findings

The main issues that have been identified, based on the review of documents pertaining to hazardous substances in the vicinity of CEC, are related to conditions associated with current and former operations at CEC. A chronological summary of the environmental work conducted at CEC is presented below. This information was obtained from a review of files located at the NCRWQCB and from information contained in the environmental database report prepared by Environmental Data Resources (EDR). The closest hazardous materials release sites at CEC are located near the existing terminal, 550 feet northeast of the proposed terminal replacement project site and would be not be disturbed. The locations of the previous environmental investigations can be referenced in Figure 5.8-1.

1.2.2.1 Document Review at North Coast Regional Water Quality Control Board

1988 and 1990 Underground Storage Tank Removals

In August 1988, one 550-gallon UST was removed from near the Vortex facility, and the tank site was closed in October 1988. One 515-gallon diesel tank was removed from the Flight Field Service Station (FSS) in August 1990. Six soil samples were collected when the tank was excavated. During four quarters of monitoring, contaminants were not detected in three groundwater monitoring wells.

August-October 1998 Tank Removals

Generator Site-1 UST

The generator tank, a 150-gallon steel UST that was used to store diesel fuel, was located on the north side of the generator shed. Tank and associated piping were removed sometime between August and October 1998; the condition of the tank was not reported. Two soil samples were collected 4 feet below ground surface (bgs), one from each end of the excavation pit. Total Petroleum Hydrocarbons as diesel (TPH-d), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl-tert butyl ether (MTBE) were the chemicals of concern; they were not detected in either soil sample.

Ex-Navy Site-1 UST

The Ex-Navy tank, a 25,000-gallon steel UST wrapped in paper and tar, that had not been used for several years, was located on the east side of the existing terminal building. The tank was in excellent condition and full of water. No visible hydrocarbon contamination was observed in the soil. Groundwater was encountered in the UST excavation at 12 feet bgs. Four soil samples were taken at 12 feet bgs, one from each corner of the excavation pit. The only analyte detected was lead at concentrations of 9 milligrams/kilogram (mg/kg) in one soil sample and 46 micrograms per liter (µg/L) in the groundwater sample.

Westlog Hangar Site-1 UST

The Westlog Hangar tank, a 250-gallon steel UST used to store gasoline, was located near the southeast corner of the Westlog Hangar. The dispenser was located near the north side of the tank. The tank had a hole under the fill pipe. Visible hydrocarbon contamination was observed in the soil. Two soil samples were collected at 5 feet bgs, one from each end of the excavation pit. Analyses results indicated high levels of petroleum hydrocarbon in the soil. Approximately 150 cubic yards of contaminated soil was

removed and stockpiled on site. Groundwater was encountered at approximately 8 feet bgs during the UST excavation.

Airport Fueling Site-4 USTs

Two 5,000-gallon steel USTs and two 4,000-gallon steel USTs were used to store aviation fuel. The tanks were northeast of the existing terminal building. Seven soil samples were collected during UST removal: four at 9 feet bgs and three at 10 feet bgs. Groundwater was encountered at 7 feet bgs and a sample was collected. TPH-d was detected in only one soil sample at a concentration of 41 mg/kg. Toluene was detected in two soil samples at 70 mg/kg and 25 mg/kg. Xylene and toluene were detected in one of the groundwater samples at concentrations of 21 µg/L and 7.0 µg/L, respectively.

March 2002 Soil Borings

Additional soil and groundwater investigations were conducted in the Westlog Hangar and former airport fueling areas in March 2002.

Soil and groundwater samples were collected from four soil borings (B-1 through B-4) within 50 feet of the former Westlog Hangar UST. A soil sample could not be collected from the boring within the former Westlog Hangar pit (B-5) because the gravel backfill collapsed into the borehole. No chemicals of concern (TPH-d, TPH as gasoline [TPH-g], BTEX and fuel oxygenates) were detected in the soil samples. Only TPH-d, at concentrations ranging from less than 50 µg/L to 3,800 µg/L, was detected in the five groundwater samples.

Soil and groundwater samples were collected from five soil borings (B-6 through B-10) within 50 feet of the former airport fueling USTs. Only TPH-d was detected, at a concentration of 2.2 mg/kg, in one of the five soil samples. Only TPH-d, ranging from less than 50 µg/L to 710 µg/L, was detected in the five groundwater samples collected from temporary well points in this area.

November 2002 Soil Borings and Monitor Well Installation

Followup on soil and groundwater investigations was conducted in the former Ex-Navy UST, Westlog Hangar and Former Airport Fueling areas in November 2002.

Soil and groundwater samples were collected from soil borings (B-101, B-102 and B-103) installed in the former Ex-Navy UST location. These soil and groundwater samples were analyzed for TPH-d and TPH-g, BTEX, MTBE, and lead. No chemicals of concern were detected in any of the soil or groundwater samples analyzed.

In November 2002, four monitoring wells (MW-1 through MW-4) were installed within 50 feet of the former West Log Hangar UST. In four quarterly sampling rounds from December 2002 to September 2003, no chemicals of concern were detected in the groundwater.

In November 2002, three monitoring wells (MW-5 through MW-7) were installed within 50 feet of the former Airport Fueling USTs. Only TPH-d (4.2 µ/g) was detected in the soil sample collected at 9 feet bgs from MW-5. During groundwater sampling over an entire hydrological cycle (one year), TPH-d was detected only once in one monitoring well. In March 2003, TPH-d was detected in MW-5 at a concentration of 58 µg/L, slightly above the method detection limit of 50 µg/L.

Soil Stockpile

In August 1998, approximately 150 cubic yards of soil excavated from the Westlog Hangar site was stockpiled on plastic sheeting at the south end of the access taxiway that runs along “hangar row.” In May 2003, two composite soil samples were collected from the stockpile. These samples were analyzed for TPH-d, TPH-g, BTEX, and MTBE. A low concentration of TPH-d (2.6 mg/kg) was detected in each sample. A California Assessment Manual (CAM) Waste Extraction Test (WET) was performed to determine whether TPH-d would leach from the stockpile. TPH-d was not detected in the leachate of the

WET. The stockpiled soil was spread across an area of service road from 41° 46' 27.44"N by 124° 13' 38.42" W to 41° 46' 27.93"N by 124° 13' 36.60" W.

Sensitive Receptor Survey

In March 2002, a sensitive receptor survey, including a door-to-door survey was performed for the area within a 1,500-foot radius of the former location of the USTs. Only the airport facility, including the runways and hangars, is within the search radius. The airport is served by municipal water supplies. One stream located at the western edge of the search radius flows into the Pacific Ocean. One storm drain is present approximately 30 feet west of the airport fueling site. The storm drain system is approximately 2.5 feet deep and collects runoff from the aircraft parking area and automobile parking lots and flows toward a wooded area south of the existing terminal building. No subsurface utilities are present in the immediate vicinity of the former airport fueling USTs. No water supply wells are located within the search radius. No surface waters or sensitive environmental habitats were observed within the search radius.

1.2.3 Hazardous Materials Assessment Conclusion

The primary sources of potential hazardous materials (nine USTs) have been removed from CEC. A secondary source, excavated contaminated soil, has been remediated. Only once in four consecutive sampling rounds was TPH-d detected in groundwater. In the March 2003 round, TPH-d was detected in MW-5 at a concentration of 58 µg/L, slightly above the method detected limit of 50 µg/L. In June 2004 the NCRWQCB issued formal closure for the open UST cases at CEC.

1.2.3.1 Federal, State, and Local Database Review

To assess the potential for soil and groundwater impacts from other on- and off-airport–related facilities and other operations being conducted in the vicinity of CEC, an environmental database report of federal, state, and local regulatory agency file information was generated by EDR in August 2009. As previously indicated, this database report was used as a screening tool to identify known hazardous materials release sites, generators of hazardous wastes, and UST/AST sites reported to be present within a prescribed search radius around CEC. Only four sites were identified in the environmental database report, one of which was CEC (referred to as Del Norte County Airport). The other three sites were the Del Norte County Department of Agriculture – Pesticide Container Storage located at 2650 Washington Boulevard (to the adjacent southeast of CEC), the Point St. George Medical Clinic located in Point St. George to the west of CEC, and an old city dump located at the intersection of Modoc Street and McNamara Avenue. The sites identified in the environmental database lists are summarized in **Table 1.2-1**.

CEC was listed on the Formerly Used Defense Sites (FUDS), Cortese, and Leaking Underground Storage Tanks (LUST) databases. The Point St. George Medical Clinic was listed in the LUST database. The Del Norte County Department of Agriculture – Pesticide Container Storage site is listed in all of the other databases identified in **Table 1.2-1**. The Del Norte County Department of Agriculture – Pesticide Container Storage Site is a former National Priority List (NPL) site.

In December 1969, Del Norte County notified the NCRWQCB of the County's intent to operate a pesticide container storage area. The designated site is 200 feet long and 100 feet wide, and is located at the southern border of the McNamara Field County Airport, three-quarters of a mile east of the Pacific Ocean. The County requested operating advice and approval from the NCRWQCB, and in January 1970, the NCRWQCB responded with suggested operating procedures and requested additional information about the site. In 1970, the site was designated by the NCRWQCB as a Class II-2 disposal site. It was to serve as a county-wide collection point for interim or emergency storage of pesticide containers generated by local agricultural and forestry-related industries. The NCRWQCB approved the site for this use, provided that all containers were triple rinsed and punctured prior to arrival at the site.

Table 1.2-1

Summary of Federal and State Regulatory Agency Records Review

Federal or State List	Does CEC Site Appear on List?	Surrounding Area Search Radius[1]	Sites Within Search Radius
National Priorities List (NPL) or Federal Superfund Listing)	No	1.0 mile	1
Delisted National Priorities List (DNPL)	No	1.0 mile	1
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	No	0.5 mile	1
Resource Conservation and Recovery Act (RCRA) Corrective Action Plan (CORRACTS)	No	1.0 mile	1
U.S. Engineering Controls	No	0.5 mile	1
U.S. Institutional Controls	No	0.5 mile	1
Formerly Used Defense Sites (FUDS)	Yes	1.0 mile	1
Major Legal Settlements that established responsibility and standards for cleanup at NPL sites (Consent)	No	1.0 mile	1
Record of Decision that mandates a permanent remedy at an NPL site (ROD)	No	1.0 mile	1
Historic Cal-Sites	No	1.0 mile	1
California Bond Expenditure Plan	No	1.0 mile	1
Toxic Pits Cleanup Act Sites (Toxic Pits)	No	1.0 mile	1
Hazardous Wastes & Substances Sites List (Cortese)	Yes	0.5 mile	2
Leaking Underground Storage Tanks (LUST)	Yes	0.5 mile	3
Envirostor	No	0.5 mile	1

Note: [1] Indicates the distance measured from the CEC site for this database record search.

The pesticide container storage area operated from 1970 to 1981. In the fall of 1981, the NCRWQCB and California Department of Health Services (DHS) discovered soil and groundwater contamination. This discovery indicated that the pesticide containers had been rinsed on site, and that the residues and rinseates were improperly disposed of in a bermed, unlined sump area. Preliminary investigations from 1981 to 1983, by NCRWQCB and DHS, identified soil and groundwater contamination with herbicides, pesticides and volatile and semi-volatile organic compounds. Del Norte County's inability to fund further site investigations initiated the process of listing the site on the NPL in the fall of 1983.

The U.S. Environmental Protection Agency (U.S EPA) completed Remedial Investigation/Feasibility Study activities in 1985. The results of those investigations indicated the contaminants of concern were 1,2-dichloropropane (1,2-DCP) and 2,4-dichlorophenoxyacetic acid (2,4-D). At the time, the contaminant plume was estimated to have extended approximately 170 feet to the southeast of the site. Investigations also indicated that elevated levels of chromium were also present in soils at the site. The 1985 Record of Decision (ROD) selected as the remedy excavation and offsite disposal of contaminated soils and extraction and treatment of the groundwater through pump and treat. In December 1987, U.S. EPA performed a Removal Action in which 290 cubic yards of contaminated soils were excavated and

disposed of off site at a licensed hazardous waste disposal facility. That action completed the source removal activities and soil remedy for the site.

Continued groundwater monitoring between 1985 and 1987, during the pump and treatment system design phase, indicated the levels of 2,4-D and 1,2-DCP were decreasing significantly in the groundwater. Between 1985 and 1989 (after the source removal but before installation of the pump and treatment system), the levels of 2,4-D in monitoring wells at the site decreased to less than 2 mg/L. These reductions were likely a result of the source removal and biodegradation and/or volatilization of the contaminants in the groundwater. Additional investigations to determine chromium levels in soils in the area were performed between 1985 and 1987. Those investigations determined that the chromium levels were naturally high due to the presence of chromium ore in the bedrock source rock in the area. Based on the findings, an Explanation of Significant Differences (ESD) was prepared in September 1989. The ESD documented that the chromium levels in the soil did not require remediation through removal. The selected groundwater remedy of carbon filtration, coagulation, and sand filtration was changed to aeration. Aeration had been considered in the original ROD alternatives, but was not chosen due to its ineffective removal of 2,4-D and chromium. The cleanup level for 1,2-DCP was not changed by the ESD.

The pump and treat system was installed in 1990 and began extracting groundwater from one extraction well at the rate of 15 gallons per minute (gpm). The treatment system operated continuously from April 1990 to December 1994. During that period it was observed that 1,2-DCP concentrations in the groundwater monitoring wells located within the plume had reached asymptotic levels; between approximately 40 mg/L and 15 mg/L. In 1994, U.S. EPA installed an air sparging system to determine whether the injection of air into the aquifer would enhance contaminant removal. Additional sparge points were added in 1995. No discernable changes in the levels of 1,2-DCP in groundwater were noted. In 1994, U.S. EPA also began a program of turning the groundwater treatment system off for extended periods of time to determine what effect it would have on contaminant concentrations. The system was turned off for approximately six months in 1995, and then restarted. It was turned off again for six months in 1996. No discernable differences were noted either time. The system has been off since October 1997 and semiannual monitoring reports show that contaminant concentrations continue to decline slowly, at the same rate as when the treatment system was operating.

1.2.4 Solid Waste

During 2007, CEC generated approximately 4.5 tons of solid waste from airport operations. Solid wastes at CEC are typical of commercial/general aviation airports and generally include unwanted or discarded paper, plastic, and food products; landscaping, construction debris, and other similar forms of garbage or trash that are not classifiable as hazardous. This waste material is collected in designated areas at the airport and hauled offsite to approved disposal facilities throughout the region. Del Norte Solid Waste Disposal, Inc provides solid waste removal at CEC. Once trash is removed from the airport, it is delivered to the Del Norte County Transfer Station where it is then exported out of the county to the Dry Creek Landfill in White City, Oregon. The Dry Creek Landfill opened in 1997 and has a capacity of nearly 48 million tons of trash or about 45 years.

2.0 REFERENCES

Environmental Data Resources Inc. (EDR), 2009. The EDR Radius Map with GeoCheck. Inquiry Number 2572329.2s. August 24, 2009.