

PROPERTY REVIEW
CHEVRON USA SITE NO. 4097 (CHIYODA PROPERTY)

1.0 Background Information

Facility Name and Address

Chevron USA Site No. 4097
4525 Diagonal Avenue South
Seattle, WA 98134

Facility Owner/Operator

Chevron U.S.A. Products Company
20500 Richmond Beach Drive N.W.
Seattle, WA 98177

Property Owner

Chevron U.S.A. Products Company
20500 Richmond Beach Drive N.W.
Seattle, WA 98177

Current Use of Site

The site is currently used as a leased, unpaved storage area for cranes and a leased, paved storage area for service station pumps. The only structure currently on the site is an office trailer and shed in the crane storage area. Most of the site is unpaved.

Past Use of Site

The site was occupied by a City of Seattle sewage treatment plant until the mid-1970s. During this time, sludge from the treatment plant's clarifiers and digesters was placed into ponds and drying beds in the north-central portion of the site. In the mid-1970s, all treatment plant structures except two below-ground clarifiers were demolished and the debris removed. The clarifiers were reportedly filled and left in place. Reportedly, not all sludge was removed at this time; the sludge in the drying beds was 5 feet thick (D&M 1981); the drying beds were subsequently covered with fill.

Chiyoda Corporation acquired the site in the mid-1970s. In 1975, the U.S. Army Corps of Engineers negotiated an agreement with Chiyoda to dispose of dredge spoils containing PCBs on the site. Dredge materials were pumped from the PCB spill location to the disposal area, a distance of approximately 2,400 feet (AGI 1992).

The PCB disposal pits were eventually backfilled with material stockpiled from the original excavation and additional sediment which Chiyoda dredged from along the Duwamish Waterway shoreline.

The site was purchased by Chevron in 1980 for development of a petroleum distribution terminal. The terminal, however, was not built and the site was left vacant.

Size of Site

The site covers approximately 11 acres.

Site Security

The site is bordered by a chain link fence (AGI 1992).

Adjacent Land Use

The site is northwest of the intersection of East Marginal Way South and Diagonal Avenue South (see Figure 1). It is bordered on the north by a Washington Liquor Control Board distribution center, on the east by a Metro pump station, on the south by Diagonal Avenue South and the LaFarge Company cement plant and Federal Center South, and on the west by Port of Seattle property. The Duwamish Waterway is located 300 to 500 feet west of the site (AGI 1992).

2.0 Site Map

The site location is shown on Figure 1.

3.0 Chemical/Waste Handling Information

Chemicals Used/Stored at the Site

No information on chemicals used/stored at the site was available.

Waste Products Generated or Stored at the Site

No information on waste products generated or stored at the site was available.

Volumes of Chemicals Used and Wastes Generated Per Year; Maximum On Site

No information on volumes of chemicals used or wastes generated was available.

Chemical or Waste Treatment Systems

No chemical or waste treatment systems are currently onsite. In 1989, about 1,400 cubic yards of soil containing petroleum hydrocarbons from other Chevron sites was stockpiled on the

property. Reportedly, this soil was placed over the PCB-contaminated dredge spoil disposal pit location (Thorne 1990). The soil was treated by solid phase methods on site to State of Washington cleanup levels of 200 mg/kg (PEG 1991).

Chemical/Waste Storage or Disposal Areas

No information on chemical/waste storage or disposal areas was available.

Wastes Removed From the Site

No information on wastes removed from the site was available.

Spills or Releases

PCB-containing dredge spoils were placed on the property in 1975, as described below.

Hazardous Substances Used, Stored, or Released by Prior Owners/Operators

In 1975, the U.S. Army Corps of Engineers negotiated an agreement with Chiyoda to dispose of dredge spoils containing PCBs on the site. The PCB-containing material was generated by cleanup activities after the release of approximately 250 gallons of Aroclor 1242 to the Duwamish Waterway during the loading of a transformer. The release occurred about 2,400 feet upstream of the Chevron site. Two 25,000 cubic yard pits were excavated in the sludge bed areas of the former sewage treatment plant. The pits were separated by a cross-dike with a weir that allowed decanted water to flow from the first pond to the second. Excavated material from the sludge beds was used to construct dikes around the pits. Dredge materials were pumped from the spill location to the disposal area, a distance of approximately 2,400 feet (AGI 1992).

The extreme western end of the west pit was located on adjacent Port of Seattle property. Dredge spoils containing PCBs were piped to the southwest corner of the waste disposal pit. Most solids settled in the west pit; liquid was decanted to the east pit and then pumped to a holding pond and a treatment unit for PCB removal. The holding pond and treatment unit locations are unknown (AGI 1992).

Approximately 10 million gallons of sediment slurry were pumped to the pits. A flocculating agent (Nalco #7134) was added to the influent slurry at a concentration of 20 ppm, resulting in efficient sedimentation. Water was treated prior to discharge to the Duwamish River; the treatment system consisted of particulate, sand, and charcoal filters operating at a rate of 600 gallons per minute. Sampling of the dredge spoils by EPA in 1977 resulted in an estimate that approximately 170 gallons of PCBs were deposited on the property (AGI 1992).

The PCB disposal pits were eventually backfilled with material stockpiled from the original excavation and additional sediment which Chiyoda dredged from along the Duwamish Waterway shoreline.

4.0 Permit Information

No permit information was available for this facility.

5.0 Sampling/Cleanup Information

Environmental investigations were conducted at the site by Dames & Moore (July 1981 and November 1981), Thorne Environmental (June 1990), Pacific Environmental Group Inc. (August 1990, January 1991), and Applied Geotechnology Inc. (November 1991 and January 1992); these are summarized in AGI 1992.

Dames & Moore collected 30 soil samples within and outside the known PCB contaminated dredge spoils disposal area. Results showed PCB concentrations from 0.4 to 5.9 mg/kg within the disposal area, and from non-detect to 0.7 mg/kg outside the known disposal area. All soil samples from within the known dredge spoils area contained PCBs, almost entirely Aroclors 1242 and 1254. PEG sampled surface soil over much of the site; results indicated PCB concentrations ranging from 0.02 to 9.3 mg/kg in fill soil over most of the site's northern half. Aroclor 1248 was detected at 9.3 mg/kg in one sample at a depth of one foot. Aroclors 1016/1242, 1254, and 1260 were reported at a cumulative concentration of 4.57 mg/kg in one sample at 8 feet below ground surface (bgs). All soil samples were below the MTCA Method A industrial soil cleanup level of 10 mg/kg PCBs.

Soil samples were also tested for PAHs (up to 4.77 mg/kg carcinogenic PAHs in boring MW-10); metals (1.5 to 19.0 mg/kg arsenic, 0.19 to 15.0 mg/kg cadmium, 3.9 to 380 mg/kg chromium, 2.0 to 350 mg/kg lead); petroleum hydrocarbons (to 170 mg/kg diesel), and low concentrations of ethylbenzene, toluene, and xylenes in four samples. All soil sampling results were below MTCA Method A soil cleanup levels, with the exception of isolated exceedances of cadmium and mercury in individual samples. In addition, TPH concentrations of greater than 200 mg/kg occurred at a few isolated locations on the site.

PCBs were detected in three groundwater samples (Aroclor 1242 at 0.9 ug/L in well B; Aroclor 1016 at 15 ug/L in well C-5; Aroclor 1016/1242 at 2.7 ug/L in well A); these detections were located near the west end of the dredge spoils disposal area. In January 1992, Aroclor 1248 was also detected at 0.3 ug/L from well C-5.

Other contaminants detected in groundwater include PAHs, arsenic (to 34 ug/L), cadmium, chromium, lead, selenium, petroleum hydrocarbons, and BETX compounds. Results from 10/91 sampling indicated that groundwater exceeded the MTCA Method A limits for PAHs in six wells; 1/92 sampling showed exceedances in three wells. Metal concentrations in groundwater exceeded MTCA cleanup levels for either cadmium, lead, or chromium in seven monitoring wells in 10/91 and again in 1/92.

No other information on sampling or remediation was available.

References

AGI (Applied Geotechnology Inc.). 1992. Site Assessment Summary, Site 64534097, 4525 Diagonal Avenue South, Seattle, Washington. Prepared by Applied Geotechnology Inc. for Chevron U.S.A. Products Company. August 6, 1992.

AGI. 1992b. Supplemental Site Investigation, Chevron U.S.A. Site 64534097, 4525 Diagonal Avenue South, Seattle, Washington. Prepared by Applied Geotechnology Inc. for Chevron U.S.A. Products Company. January 7, 1992. As cited in AGI 1992.

Dames & Moore. 1981a. Preliminary Report, Site Contamination Investigation, Chiyoda Property, for the Port of Seattle. July 20, 1981. As cited in AGI 1992.

Dames & Moore. 1981b. Report of Supplemental Investigation of Contamination, Chiyoda Property, for the Port of Seattle. November 29, 1981. As cited in AGI 1992.

Thorne Environmental. 1990. Quantitative Chemistry Results for Soils Stockpiled at the Chevron U.S.A. Inc. Chiyoda Site, Seattle, Washington. June 7, 1990. As cited in AGI 1992.

Pacific Environmental Group, Inc. 1990. Preliminary Soil and Groundwater Investigation, Chevron U.S.A. Site No. 4097, 4525 Diagonal Avenue South, Seattle, Washington. August 13, 1990. As cited in AGI 1992.

Pacific Environmental Group, Inc. 1991. Environmental Investigation, Chevron U.S.A. Site No. 4097, 4525 Diagonal Ave. south, Seattle, Washington. January 5, 1991. As cited in AGI 1992.