Responsiveness Summary
Seattle Art Museum
(Former Unocal Seattle Marketing Terminal)
Final Cleanup Action Plan

November 1999

Introduction

The Final Cleanup Action Plan (CAP) and Consent Decree for the Seattle Art Museum (SAM) were available for public review and comment from October 8, 1999 through November 6, 1999.

The Cleanup Action Plan is for a final environmental cleanup of the former Unocal Bulk Marketing Terminal site, located at Elliott Avenue and Broad Street near Pier 70 in Seattle, Washington. The CAP which is based on information presented in the Focused Supplemental Site Characterization and Supplemental Focused Feasibility Study Reports, and other supplemental cleanup work previously completed by Unocal, will be implemented under a legal agreement called a Prospective Purchaser Consent Decree (Decree) between Ecology and SAM. The Decree settles any liability, with some exceptions, SAM would have for environmental cleanup at the former Unocal site when SAM purchases the property from Unocal this year.

The Decree requires SAM to contribute substantial new resources to facilitate and expedite the cleanup of this site in accordance with the Cleanup Action Plan. SAM proposes to redevelop the site as an outdoor sculpture park. The Cleanup Action Plan describes the proposed cleanup actions and the work to be performed at the site under the Model Toxics Control Act, Washington's current hazardous waste cleanup law.

Background

Unocal operated a petroleum bulk storage and distribution facility at this location from 1910 to 1975. Cleanup work began at the site when Ecology and Unocal entered a formal legal agreement called an Order on Consent in late 1988. Since then, Ecology has been overseeing the study and cleanup of petroleum contamination at this site. Ecology and Unocal entered the Order on Consent prior to the passage of the Model Toxics Control Act (MTCA).

The Order on Consent identified four specific areas to be studied and cleaned up: The Upper Yard, Elliot Avenue, Lower Yard, and Off-Site Area. Please see Exhibit A of the Consent Decree.

Since work began, Unocal has treated and/or removed petroleum contaminated soil from both the Upper Yard and Lower Yard areas, extracted petroleum products from recovery wells, installed a soil vapor extraction system to treat soil and groundwater, and continued pumping and treating groundwater.

Current Conditions

Upper Yard: Unocal completed treatment in the Upper Yard by excavating and removing approximately 57,000 tons of petroleum contaminated soil. Approximately 110 cubic yards of inaccessible contaminated soil remain from 16 to 26 feet below ground along the northwest boundary with Elliott Avenue. Petroleum was also found floating on the groundwater in one monitoring well at this location.

Elliott Avenue: Petroleum hydrocarbons are present in the soil and groundwater beneath the roadway but are considered inaccessible. Interim remedial actions were performed within the northern portion of the Elliott Avenue area including pumping and treating groundwater and installing a soil vapor extraction system to treat soil and groundwater.

Lower Yard: Unocal excavated to an average depth of 15 to 20 feet below ground surface and removed approximately 60,000 tons of petroleum contaminated soil from the Lower Yard. After back-filling, the Yard was covered with a 2-foot-thick layer of clean soil to serve as an interim "cap" (cover).

Off-Site Area: Petroleum contaminated soils are present across much of the Offsite Area. Petroleum products are still being extracted beneath the area. So far Unocal has removed approximately 4,600 gallons. Last quarter extraction yielded only 8 gallons of product.

Summary Of The Proposed Cleanup

The following actions are proposed as part of the cleanup and redevelopment in order to eliminate direct contact and vapor exposure to hazardous substances at or from the site, enhance ongoing groundwater cleanup activities, and to protect human health and the environment:

- Cap (cover) the Lower Yard and the northwest portion of the Upper Yard with clean, low permeability material, maintain the existing pavement cap in the Off-Site Area or replace it with a low permeability cap.
- Conduct long-term monitoring of the surrounding or "ambient" air for petroleum vapors.
- Install a vapor extraction system if the ambient air monitoring shows emissions above cleanup levels.
- Perform soil vapor monitoring in proposed permanent building locations to determine if vapor control systems are needed to protect indoor air quality.
- Implement institutional controls/deed restrictions.

Although not part of the Decree, under its Order on Consent with Ecology, Unocal will continue to remove the floating petroleum by hand-bailing from monitoring wells in the area of Elliott Avenue; select a final cleanup action plan in the Off-Site Area; continue to operate the current groundwater collection and treatment system and perform long-term groundwater monitoring until Ecology determines that these activities are no longer required.

Redevelopment by SAM

In February, 1999, the Seattle Art Museum negotiated an agreement to purchase the former Marketing Terminal from Unocal for use as a future sculpture park. Under the museum's envisioned plan, the Upper and Lower Yards and a portion of the Off-Site Area would be redeveloped as permanent parkland and open space. A small exhibition building would be developed in conjunction with the park, and would also contain visitor services and educational facilities. In cooperation with the City of Seattle, the park would be redesigned under a master plan that also would address improvements to Myrtle Edwards Park and the Alaskan Way right-of-way.

Comments Received and Responses

A.1 Ms. Romany Hall – Marasco Newton Group - <u>Nature of Contamination on Site.</u> (*public comment - PC*)
#Q1.PC
"I have a question regarding a site I recently read about on a brownfields listserve. In regards to the Unocal-owned site in Seattle that the Seattle Art Museum is proposing to turn into a sculpture garden, is there any contamination OTHER than petroleum on the site or is it all petroleum?"

A.1 RESPONSE
#R1.PC
The Cleanup Action Plan which is based on information presented in the Focused Supplemental Site Characterization and Supplemental Focused Feasibility Study Reports, and other supplemental cleanup work previously completed by Unocal show that the Indicator Hazardous Substances of Concern at the site are petroleum in nature. Please see page 12 of the CAP, Section 5.2; Indicator Hazardous Substances identified for soil are TPH compounds and cPAHs; groundwater are BETX, cPAHs, free product, lead, and total petroleum hydrocarbons as oil, diesel, and gasoline. For lists of indicator hazardous substances identified for air, please see Table 2, page 35 of the CAP.

A.2 Mr. John C. Erickson -<u>Institutional Control</u>
#Q2.PC
"Who would be responsible for maintaining the grounds of the park site in the future? Are there any Integrated Pest Managements?"

A.2 RESPONSE
#R.2.PH
The Decree between Ecology and Seattle Art Museum (SAM), page 11, Task 1 (vii), requires SAM to implement institutional controls and a security system at the sculpture park. SAM would be responsible for maintaining the grounds of the park site in the future. SAM will use due diligence to address pest control should that become a concern in the future.

A.3 Ms. Calmar A. McCune c/o Ms. Peg McCune –<u>Sculpture Park and the CAP</u>
#Q.3PC
"If the comments sought regard whether to conduct the cleanup operation, I am in favor.
If the comments sought regard whether to allow the land to be used for a sculpture park, I am in favor, again, but wish to point out some considerations. In summary, the idea of a sculpture park is wonderful, so long as the creations are as worthwhile as the Seattle Center Fountain and the nearby bronze gray whales."

A.3 RESPONSE
#R3.PC
Comment noted.

A.4 Mr. Eric Espenhorst – Friends of the Earth – <u>Source Control, Groundwater/Air Monitoring and Contingency Plans and Protection of Human Health and the Environment</u>
#Q.4PC
"…The term clean-up is misleading, since, in many cases, the proposal is simply to cap contaminated sites and hope for the best. You should make removal and treatment the priority. In those cases where materials are left in place, you must require monitoring for as long as the contaminated materials remains. This is necessary to ensure that the containment is working, and you should have contingency plans in place should the monitoring show that the contaminants are moving beyond the containment area.

The public notice does not refer to any Area-Wide Biological Assessment, Area-Wide Habitat Assessment, or Mitigation Plan. In light of recent Endangered Species Act listings of bull trout and Puget Sound Chinook salmon, you must provide adequate mitigation for near-shore habitat consumed by the redevelopment projects.

Does the clean-up and mitigation pass ESA muster?"

A.4 RESPONSE
#R4.PC
Exhibit B, Cleanup Action Plan (CAP), to the Decree between Ecology and Seattle Art Museum (SAM), Section 3.0, page 3, shows successful source control implementations at the accessible areas of the site.

Upper Yard: 57,000 tons of accessible petroleum contaminated soil was excavated and properly disposed of.
Elliott Avenue Right of Way: Inaccessible petroleum contaminated soil beneath the public right of way was treated in place using re-infiltration galleries and about 4,700,000 gallons of petroleum contaminated ground water was removed and treated.
Lower Yard: About 60,000 tons of petroleum contaminated soil was excavated and properly disposed without undermining the integrity of the Bay Street and Elliott Avenue public right of ways.
Offsite Area: The seawall acts as a hanging wall by preventing direct discharge of free product and dissolved petroleum contaminated groundwater into Elliott Bay. The hanging wall enable the groundwater extraction system located behind the hanging wall in the Offsite Area to extract the product and contaminated groundwater collected at this location as a result of the seawall.

About 4,600 gallons of free product and over 76,000,000 gallons of contaminated groundwater has been recovered treated and recycled from the Offsite Area. Groundwater extraction, treatment, and long term groundwater monitoring is in progress in the Offsite Area. Ecology has not made a final decision at the Offsite Area. Based on the long term groundwater monitoring Ecology may require additional Supplemental Contingency Action in the Offsite Area to protect human health and the environment, if necessary.

In addition to source control issues addressed above, the Decree between Ecology and SAM, Section VII, Work To Be Performed, page 11, contains Tasks that SAM will perform at the Site in order to protect human health and the environment.

Some of these Tasks include: Capping of the residual petroleum contaminated soils left behind to eliminate direct contact pathways and minimize surface water infiltration.

Conduct short and long-term Air Monitoring to evaluate appropriate Contingency Response Actions to eliminate petroleum vapor emission for ambient and indoor air pathways through engineering controls, if needed.

Cooperate with Ecology and any PLPs in the continued remediation action in the Offsite Area; maintaining the existing cap in the Offsite Area and if the cap is altered during site development, replacing it with a low-permeability cap as described in the CAP and implementing institutional controls/deed restrictions and installing a security system at the site.

A SEPA Checklist was conducted for this site. The existing hanging seawall prevents free product from discharging directly into Elliott Bay. The ongoing groundwater extraction and treatment system in the Offsite Area is an added protection to the Bay by acting as a hydraulic barrier that enables contaminated groundwater behind the seawall to be collected and treated before proper disposal. Collected infiltration water in the Offsite Area will be discharged to the storm sewer. The Sculpture Park proposed by SAM will not interfere with the ongoing groundwater extraction system in the Offsite Area, therefore, it poses no threat to Elliott Bay and its ecosystem.

Ecology made a Determination of Nonsignificance for the site (DNS). Ecology believes that the remedial actions and the Contingency Plans contained in the CAP will be protective of the human health and the environment including the Elliott Bay and its ecosystem.

A.5 Mr. Barry G. Ziker, P.S. – Barrett Gilman & Ziker – <u>Ambient and Indoor Air</u>
#Q.5PC
“This letter will provide comments on the Draft Cleanup Action Plan (the "Plan") dated October 6, 1999 prepared by the Seattle Art Museum in connection with the former Unocal Bulk Marketing Terminal Site. Our firm represents The Fortune Group, the purchaser of the property south of the Lower Yard formerly occupied by Shakey's Pizza and referred to in the Plan as "the Shakey's property."

Among the issues addressed by the Plan are potential impacts from 1,3-butadiene on indoor ambient air quality, and the likely sources of this compound. <u>See</u> sections 4.2.3, 5.1.3 and 6.3. Regarding sources, the Plan states that the butadiene "may be the result of gasoline

contamination on the Shakey's property." It also suggests that the Unocal site is a less likely source because very light hydrocarbons such as butadiene would not likely be present in weathered gasoline such as that from the Unocal site. This analysis set forth in the Plan is flawed and the conclusion simply incorrect for a number of reasons:

> Operations at the gasoline station formerly located at the Shakey's property ceased in the 1940s, according to available information, and underground storage tanks were removed in 1975. The former Unocal site operated until 1975, and remedial activities did not begin until 1989. Thus, there is no basis whatsoever for the claim that light hydrocarbons are more likely to have come from the Shakey's property than the Unocal site. In fact, the opposite is true.
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> There is no reference in the Plan to any data, report or other information (or source of information) regarding conditions at the Shakey's property that purportedly supports the claim it is a potential source of butadiene. The Plan notes that portions of the former Unocal site were back-filled with soil containing residual TPH contamination in the range of 1,000 ppm, then covered with two feet of clean soil. The possibility that the TPH-contaminated soil is the source of butadiene vapors is not addressed in the Plan.
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> Hart Crowser (September 1999) reports that 1,3-butadiene was found at only one location, HC-SV-10, located in the southwestern comer of the Lower Yard. The detection limit for this sample was 7.2 uG/m3 and the amount detected was 48 uG/m3. Neither the report serving as the basis for the Plan, nor the Plan, explains that butadiene detection limits in other samples (*e.g.*, HV-SV-6) were approximately nine times higher (65 uG/m3). Thus, it is not possible to state that butadiene is present only in the sample near the Shakey's property boundary.
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> The Environmental Protection Agency's Office of Air Quality Planning & Standards reports that 1,3-butadiene is found not only in gasoline, but in exhaust gas from automobiles, near oil refineries and chemical manufacturing plants. It is unreasonable to conclude, based on a single vapor sample analysis that the source of the butadiene at the former Unocal site is from the Shakey's property.

We do not object to the remedial activities contemplated by the Plan, and applaud the use of the former Unocal site as a venue for public art. Rather, these comments are offered to rebut the suggestion that impacts to ambient air quality were more likely affected by operations at a downgradient gas station where operations ceased 50 years ago, than by a bulk oil distribution facility where 60,000 tons of TPH contaminated soil had to be removed. The results of the ambient air analysis suggest that the former Unocal site represents a potential source of butadiene on the Shakey's property, and not the other way around.

A.5 RESPONSE

#R5.PC

Comment noted for the record.

NM:nm