DRAFT
INTERIM ACTION REPORT

WORK PLAN FOR DETENTION BASIN NO. 1 AND SOUTHWEST LOWER YARD

UNOCAL EDMONDS TERMINAL

Prepared for

Unocal Corporation

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ACRONYMS AND ABBREVIATIONS

bcy	banked cubic yards
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylenes
cy	cubic yards
DRO	TPH as diesel range organics
FS	feasibility study
GRO	TPH as gas range organics
HO	TPH as heavy oil range organics
mg/kg	milligram per kilogram
MLLW	mean lower low water
MTCA	Model Toxics Control Act
MW	monitoring well
NPDES	National Pollutant Discharge Elimination System
PAHs	polycyclic aromatic hydrocarbons
RI	remedial investigation
SAP	sampling and analysis plan
SEPA	State Environmental Policy Act
TPH	total petroleum hydrocarbons
WAC	Washington Administrative Code

1 INTRODUCTION

Union Oil Company of California, dba Unocal, entered into Agreed Order No. DE 92TC-N328 with the Washington Department of Ecology (Ecology) to conduct environmental investigations at the UNOCAL Edmonds Terminal (Terminal) located at 11720 Unoco Road in Edmonds, Washington (Figure 1-1). The scope of the Agreed Order, issued pursuant to the Model Toxics Control Act (MTCA), included a facility background history review, a remedial investigation (RI) and feasibility study (FS), and an evaluation of an existing free product recovery system.

The facility background history review and product recovery system evaluation were completed in 1994 and reported to Ecology (EMCON, 1994a and 1994b). The RI was performed between October 1994 and August 1996 and reported to Ecology (EMCON, 1996a and 1998; MFA, 2001a). A preliminary FS was performed in 1996 and reported to Ecology (EMCON, 1996b). An updated and expanded FS is being performed and is scheduled to be reported to Ecology in 2003.

During the FS, Unocal proposes to perform interim actions at the Terminal to reduce potential threats to human health and the environment, to provide additional information for the FS and subsequent design of a cleanup action, and to improve portions of the site for redevelopment purposes. Specific to this proposed interim action, asphalt material and petroleum-contaminated soil will be removed from Detention Basin No. 1 and shipped off site for recycling, treatment and/or disposal, and petroleum-contaminated soil will be removed from the southwest section of the Terminal's lower yard and shipped off site for recycling, treatment and/or disposal. The non-basin area is identified as the "Southwest Lower Yard" (see Figure 2-1).

Ecology approval is required prior to initiating the interim action. If approval is received in May 2003, Unocal anticipates proceeding with the lower yard interim action in June 2003.

As required by WAC 173-340-430, Interim Actions, a report must be prepared before performing an interim action unless otherwise directed by Ecology. This work plan constitutes the report. It identifies and describes the interim action Unocal proposes to

perform at the Terminal, and is organized as follows:

- Section 2 provides a summary of the Terminal features and existing site conditions pertinent to the interim action;
- Section 3 describes the interim action and how it meets the criteria of WAC 173-340-430;
- Section 4 provides additional details on implementation of the interim action;
- Section 5 describes the construction documentation procedures;
- Section 6 notes the public participation activities;
- Section 7 describes the reporting procedures;
- Section 8 discusses pertinent requirements of the State Environmental Policy Act; and
- A preliminary schedule is provided in Section 9.

A list of state and local permits pertinent to the interim action is provided in Appendix A. Ecology intends to exempt these permits pursuant to WAC 173-340-710 while requiring implementation of their substantive requirements. The substantive requirements are noted in Section 4.

2 SITE CONDITIONS

2.1 Site Description

The Terminal comprises approximately 47 acres of land on and adjacent to the northern slope of a hillside and lies within approximately 1,000 feet of the Puget Sound shoreline. At its nearest point (southwest corner of lower yard) the Terminal boundary is approximately 160 feet from the Puget Sound shoreline. The Terminal has two distinct areas, the upper yard (former tank farm) area and the lower yard area (Figure 2-1).

The lower yard is approximately 22 acres, lying east of the Burlington Northern Santa Fe Railroad (BNSF RR) right-of-way, south of Edmonds Marsh, west of the Deer Creek Salmon Hatchery, and north of the upper yard. The lower yard elevation ranges from approximately 10 to 25 feet above the mean lower low water datum (MLLW). The lower yard consists of office buildings, two former truck loading racks, residual aboveground piping, two underground (former vapor recovery) tanks, two underground vaults, Detention Basin No. 1, Detention Basin No. 2, and an oil/water separator. Previous operations also included an air-blown asphalt plant, an asphalt packaging warehouse, and a railcar loading/unloading facility.

The upper yard is approximately 25 acres located immediately south of the lower yard. Upper yard elevations range from approximately 25 to 150 feet (MLLW). The upper yard was a former tank farm that contained 23 above-ground storage tanks. The tanks were removed in Summer 2000.

UNOCAL operated the Terminal from 1923 to 1991. Fuel was brought to the Terminal on ships, pumped to the storage tanks in the upper yard, and loaded from the tanks into rail cars and trucks for delivery to customers. An asphalt plant operated on the site from 1953 to the late 1970s. Detailed descriptions of the Terminal facilities and historical activities are presented in the Background History Report (EMCON, 1994a). The facility is currently used only for office purposes.

2.2 Detention Basin No. 1

2.2.1 Background

Detention Basin No. 1 is located in the northern-most corner of the lower yard, is roughly rectangular in shape, and is approximately 180 feet by 630 feet in size (Figure 2-1). The basin serves as a storm water detention basin during heavy rainfall events.

The basin was constructed in 1952 (GeoEngineers, 1988). The original configuration was L-shaped, with a footprint size of approximately 120,000 square feet (Figure 2-2). The area was originally occupied by a small pond, pasture and marshland. Dikes were constructed around the unlined impoundment area by dredging sediment from inside the contained area. A drainage channel was excavated around the northern and northwestern perimeters to carry the flow from Willow Creek.

In the late 1960s, the basin was modified by cutting off the southern "leg" to create an impoundment to contain refinery and asphalt plant sludges and runoff (GeoEngineers, 1988). The northern portion of the basin was retained for storm water management, and sized to provide sufficient retention capacity for 100 percent of the volume of petroleum product contained by Tanks 3716 and 3717 (formerly located in the eastern portion of the upper yard). This equates to a design capacity of 6.8 million gallons of storm water.

A number of discharges of petroleum products impacted the basin between 1954 and the late 1970s, including off-specification, emulsified asphalt from the on-site asphalt plant. Unocal ceased operation of the asphalt plant in the late 1970s. The waste asphalt material and petroleum-contaminated soil within Detention Basin No. 1 ("basin material") will be removed from the basin as an interim action.

2.2.2 TPH Constituents in Basin Material

The basin material was sampled during the RI. Of the 16 samples analyzed from Detention Basin No. 1, total petroleum hydrocarbons in the diesel range (TPH-D) were detected in 11 samples, TPH in the oil range (TPH-O) in 10 samples, and TPH in the gasoline range (TPH-G) in 5 samples (MFA, 2001a). *Maximum* concentrations of TPH-D, TPH-O, and TPH-G are provided in the table below. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in less than one third of the samples, with *maximum* (estimated) concentrations of 0.24, 2.1, 0.57, and 4.6 mg/kg, respectively. Figure 2-3 presents the TPH results for Detention Basin No. 1.

The highest concentrations of TPH and BTEX were found in the central portion of the basin, in the southeast corner of the basin, and in and near the northern submerged portion.

Carcinogenic PAHs (cPAHs) were generally detected in less than half of the Detention Basin No. 1 samples. Detected cPAH concentrations varied widely. The *maximum* cPAH concentrations ranged from 0.250 mg/kg (estimated) for indeno(1,2,3-cd)pyrene to 14 mg/kg for chrysene. The highest concentrations of cPAHs were generally found at locations with elevated concentrations of TPH.

nPAHs were generally detected in less than half of the Detention Basin No. 1 samples, fluoranthene and phenanthrene being the exceptions. Detected nPAH concentrations varied widely. The *maximum* nPAH concentrations ranged from 0.400 mg/kg (estimated) for acenaphthylene to 250 mg/kg for fluoranthene. The highest concentrations of nPAHs were generally found at locations with elevated concentrations of TPH.

2.2.3 Metals in Basin Material

Arsenic, chromium, copper, lead, and zinc were detected in all RI samples collected from Detention Basin No. 1 (MFA, 2001a). Cadmium was detected in most samples, mercury was detected in about half the samples, and antimony was only detected in one sample. Metals concentrations were typically low, in the range of Puget Sound background concentrations.

The *maximum* concentrations of TPH constituents and metals detected in Detention Basin No. 1 are provided in the following table.

Constituent	*Maximum* Detention Basin No. 1 Concentration (mg/kg)	Puget Sound Background Concentration[a] (mg/kg)
TPH-G	190 E	--
TPH-D	400,000	--
TPH-O	190,000	--
Benzene	0.24 E	--
Chrysene	14	--
Antimony	9.8 JE	--
Arsenic	30 J	7
Cadmium	1.0 J	1
Chromium	51	48
Copper	100	36
Lead	240	24
Mercury	3.7	0.07
Zinc	250 E	85

[a] Ecology, 1994.

E = Estimated quantity.

J = Estimated quantity; the reported value is between the method detection limit (MDL) and the practical quantitation limit (PQL).

2.2.4 Southwest Lower Yard

Background. Historical operations in this part of the lower yard included rail car unloading, limited bulk fuel oil storage, a boiler house, pump room and laboratory. The car unloading area consisted of two parallel railroad track spurs with an unloading rack lying between the two sets of tracks. Rail service to the facility was discontinued in the 1960s and the unloading area was dismantled and the area regraded in 1974 (EMCON, 1994).

In 1990, approximately 350 gallons of marine diesel fuel were spilled when a sump located in the southwest end of the lower yard overflowed (GeoEngineers, 1990a). Most of the spilled material was recovered the day of the spill. The horizontal extent of the residual fuel was estimated from the observed staining of the surface and the vertical extent of the spill area was estimated using additional field screening methods. Soil samples were also collected.

TPH Constituents in Southwest Lower Yard Soil. The soil in the Southwest Lower Yard was sampled in 1990 in the spill area noted above (GeoEngineers, 1990a) and more extensively during the RI (MFA, 2001a). Additionally, soil samples were collected from test pits excavated in 2001 along the western boundary of this area (MFA, 2003).

TPH concentrations in the Southwest Lower Yard ranged from non-detect to 13,600 mg/kg for TPH-D. Elevated TPH concentrations were detected at the surface and to depths of approximately 6 feet bgs. The *maximum* concentrations of TPH constituents detected in the Southwest Lower Yard are provided in the table below.

Constituent	***Maximum*** **Concentration, Southwest Lower Yard (mg/kg)**
TPH-G	3,600
TPH-D	13,600
TPH-O	9,900
Benzene	4.1
Chrysene	2.2
E= Estimated quantity. J = Estimated quantity; the reported value is between the method detection limit (MDL) and the practical quantitation limit (PQL).	

3 PROPOSED INTERIM ACTION

Assuming the interim action is approved, Unocal has scheduled the work to begin in Spring 2003. Removal of the basin material and petroleum-contaminated soil from the Southwest Lower Yard are proposed to reduce the potential threat to human health or the environment, to improve the basin for site redevelopment purposes, and to complete cleanup of the Southwest Lower Yard prior to development of the Terminal's Upper Yard.

3.1 Description

3.1.1 Detention Basin No. 1

The planned excavation area is shown in Figure 3-1. The basin material will be excavated, dewatered, and shipped off site for recycle, treatment and/or disposal. Depending on its quality, groundwater/storm water requiring removal from the basin during excavation activities will be discharged to Detention Basin No. 2, the oil/water separator, or to a holding tank for subsequent discharge pursuant to conditions of the Terminal's NPDES discharge permit. Provisions for temporary on-site treatment of this water (e.g., a filtration unit) will be evaluated during preparation of the construction specifications. A copy of the Terminal's NPDES permit is provided in Appendix B.

Based on the basin dimensions, 30,000 bcy of basin material may require removal. This volume is based on an areal extent of 180 feet by 630 feet (full extent of basin). The thickness of the basin material requiring removal is assumed to be 6 feet in those areas of the basin that are typically inundated with water, and 8 feet in those areas that are typically not inundated with water (Figure 3-1).

For the detention basin interim action, it is anticipated that Unocal-specified action levels will be used to guide excavation of TPH- and metals-contaminated material. The TPH action level will be based on protection of groundwater. The action level for an indicator metal will likely be based on the associated natural background concentration. The Unocal-specified action levels are not final MTCA cleanup levels or remediation levels for the lower yard. The Unocal-specified action levels have not been accepted by Ecology as protective of ground water or

acceptable as final cleanup levels or remediation levels. Unocal is taking this action with the understanding that further remediation may be required as part of final cleanup.

3.1.2 Southwest Lower Yard

Petroleum-contaminated soil will be excavated from the Southwest Lower Yard and shipped off site for recycling, treatment and/or disposal. Additionally, concrete containment walls, concrete slabs, a sump, and former tank pads will be demolished and the debris shipped off site for disposal.

The volume of soil that is anticipated to require removal in the Southwest Lower Yard is 10,000 bcy. This volume is based on an areal extent of approximately 42,000 square feet, extending from the toe of the upper yard slope out to the fence line, and extending from the trestle to monitoring well MW-120 (Figure 3-2). The assumed depth of soil requiring removal is 7.5 feet, based on the RI sampling results. The volume estimate further assumes that the surface 1-foot of soil is clean, based on surface soil data for the lower yard. The planned area of excavation is shown on Figure 3-2.

It is anticipated that a Unocal-specified, groundwater-protection-based action level will be used to guide excavation of TPH-contaminated soil in the Southwest Lower Yard. The Unocal-specified action levels are not final MTCA cleanup levels or remediation levels for the lower yard. The Unocal-specified action levels have not been accepted by Ecology as protective of ground water or acceptable as final cleanup levels or remediation levels. Unocal is taking this action with the understanding that further remediation may be required as part of final cleanup.

3.2 General Requirements

Consistent with WAC 173-340-430(2)(b), this interim action will clean up hazardous substances from a part of the site but is not intended to achieve cleanup standards for the lower yard.

3.3 Relationship to the Final Cleanup Action

Consistent with WAC 173-340-430(3)(b), this interim action does not foreclose reasonable alternatives for the final cleanup action in the lower yard.

3.4 Alternatives Considered

Consistent with WAC 173-340-430(7)(a)(ii), Unocal considered other interim actions for Detention Basin No. 1 and the Southwest Lower Yard. Alternatives considered included bioremediation of the basin material and containment of both the basin and Southwest Lower Yard by capping.

Capping was not selected as an interim action because it may not be consistent with the final cleanup action. Future redevelopment of the site is not known at this time; a cap would be difficult to install without risk of future damage. Additionally, the basin is used for storm water management. Bioremediation of the basin material was not selected as an interim action due to space requirements, predicted remediation timeframe, and the occurrence of metals in portions of the basin material.

3.5 Cleanup Standards

Cleanup standards consist of cleanup levels, a point of compliance (location) at which cleanup levels must be achieved, and other regulatory requirements that apply to the site because of the type of action and/or location of the site (WAC 173-340-700). As noted above, this interim action will clean up hazardous substances from a part of the site but is not intended to achieve cleanup standards for the lower yard. As such, cleanup levels and points of compliance have not been defined for this interim action.

"Other regulatory requirements" are requirements that apply to the site because of the type of action and/or location of the site ("applicable state and federal laws") (WAC 173-340-700(3)). Applicable state and federal laws are defined by MTCA regulation as legally applicable requirements, including those cleanup standards, standards of control, and other environmental protection requirements, criteria, or limitations adopted under state or federal law that specifically address a hazardous substance, cleanup action, location or other circumstances at the site (WAC 173-340-710(3)). Additionally, Ecology may determine that other "relevant and appropriate requirements" may be considered in establishing cleanup standards (WAC 173-340-710(4).

Specific to this interim action, these include State Environmental Policy Act requirements and National Pollutant Discharge Elimination System (NPDES) requirements for wastewater and storm water discharges. Potentially applicable are federal requirements pertaining to dredging a wetland.

The primary federal law that regulates activities in or near wetlands consists of Sections 401 and 404 of the Clean Water Act (CWA). Dredging, filling or alteration of wetlands is regulated by the US Army Corps of Engineers (Corps) under Section 404 of the CWA. Federal regulation

is limited to "jurisdictional" (regulated) wetlands. Artificially created wetlands, and those not associated with waters of the United States, may be nonjurisdictional wetlands. In particular, artificial wetlands intentionally created from non-wetland sites, including but not limited to detention facilities and wastewater treatment facilities and ponds, may be considered nonjurisdictional.

A Section 404 permit is potentially applicable to the detention basin interim action. A wetland evaluation and delineation of Detention Basin No. 1 was conducted in 1995. Detention Basin No. 1 was delineated as a disturbed, emergent wetland and would likely be classified a Category III wetland according to the City's Critical Areas Ordinance classification system (AAI, 1995).

Only the Corps can make a determination as to whether a wetland is jurisdictional. In evaluating permit requirements for Detention Basin No. 1 for the Federal Highway Administration, the Corps determined that the basin "may continue to be used for stormwater detention by the ferry terminal, and neither the basin's current cleanup nor future uses for stormwater detention will require DA [Department of Army] permits" (ACOE, 1995). A copy of this letter is provided in Appendix C. Based on this Corps determination, a Section 404 permit is not required for remediating the detention basin.

3.6 Contingency Considerations

This interim action is being taken to clean out a detention basin whose extent of contamination, based on the RI results, is expected to be within the boundaries of the constructed basin except along its southern boundary. Should contamination extend beyond the basin berms at the end of the interim action, the area in which it occurs will be delineated. The area will be evaluated for the appropriateness of excavation versus other cleanup methods. Along the southern basin boundary, contaminated soil is anticipated to extend to Detention Basin No. 2. The excavation will be halted prior to reaching the northern boundary of Detention Basin No. 2. Similarly, should contamination extend beyond the Southwest Lower Yard (e.g., beyond the fence line), the area in which it occurs will be delineated. The area will be evaluated for the appropriateness of continued, lateral excavation or left to be addressed with the balance of the lower yard.

3.7 Post-Excavation Monitoring

Post-excavation sampling will be performed to document the concentration and distribution of contaminants that may remain at the end of the interim action. Sampling will be performed following procedures to be specified in a prepared addendum to the

Terminal's Sampling and Analysis Plan (SAP) (MFA, 2001b). The addendum will be transmitted to Ecology for review.

Implementation details for the proposed interim action are provided in Section 4.

4 IMPLEMENTATION OF PROPOSED INTERIM CLEANUP ACTION

4.1 Mobilization

Prior to excavation, a private utility locating company will identify and mark the locations or underground utilities and structures within 50 feet of the planned excavation areas. In the Southwest Lower Yard, the electrical connection to an existing shed will be disconnected by a licensed electrician. All electrical components in the shed will be disconnected. Electrical modifications will be required to provide continued service to the dock.

Existing monitoring wells LM-2, LM-3, MW-108, and MW-109, which are located within the basin berms, are anticipated to be protected during excavation activities. In the Southwest Lower Yard, existing monitoring wells MW-11, MW-13, MW-120, MW-124, MW-125, MW-127, and MW-146 may require removal. Where necessary, a licensed well driller will abandon the groundwater monitoring wells pursuant to procedures described in *Minimum Standards for Construction and Maintenance of Wells* (WAC 173-160-310). If existing wells are abandoned, replacement wells will be installed as part of the restoration activities.

A traffic control plan will be prepared. The site health and safety plan will be updated. Air monitoring procedures will be established, for purposes of controlling dust and monitoring and controlling petroleum odors as necessary during the excavation work. Exclusion zones and associated site controls will be established in accordance with the health and safety plan. An erosion and sedimentation control (ESC) plan will also be prepared and submitted to the City of Edmonds for review. The ESC plan will specify control methods to be implemented during excavation as well as post-excavation restoration requirements. Storm drain inlets will be protected with filter fabric fences or straw bale barriers. Vegetation will be removed from the detention basin.

Waste profiles will be prepared for each material to be transported off site, as required by the treatment or disposal facility. Profiles will be submitted to prospective facilities identified by Unocal, and waste acceptance will be obtained.

4.2 Removal of Structures

Several unused structures remain in the Southwest Lower Yard. Most of these features are anticipated to require removal to allow soil excavation and include demolition and removal of concrete containment walls, slabs, tank pads, sump, and pipe supports; removal of a compressed air tank, air compressors, and compressor enclosures; and demolition of a cinder block electrical shed. Miscellaneous concrete debris will also be removed.

4.3 Excavation

Excavation oversight and monitoring for consistency with the interim action will be performed by a professional engineer registered in the state of Washington or a qualified technician under the direct supervision of a professional engineer registered in the state of Washington.

4.3.1 Excavation Extent

The volume of material in Detention Basin No. 1 that may require removal is 30,000 bcy. This volume was estimated using the basin dimensions and a 6-foot thickness of material in that area of the basin that is typically inundated with water, and an 8-foot thickness of material in that area of the basin that is typically not inundated with water (Figure 3-1). The areal extent of the material is assumed to cover the entire basin. Based on reported basin construction details, the maximum depth of excavation in the basin is anticipated to be 8 feet.

The volume of soil that is anticipated to require removal in the Southwest Lower Yard is 10,000 bcy. This volume is based on an areal extent of approximately 42,000 square feet, extending from the toe of the upper yard slope out to the fence line, and extending from the trestle to monitoring well MW-120 (Figure 3-2). The assumed depth of soil requiring removal is 7.5 feet, based on the RI sampling results. The volume estimate further assumes that the surface 1-foot of soil is clean, based on surface soil data for the lower yard.

4.3.2 Storm Water Management

During the construction period, storm water will be managed in the lower yard such that it does not discharge into Detention Basin No. 1. This will be achieved by maintaining the water in Detention Basin No. 2 at a level that will prevent spillover to Detention Basin No. 1. This is not anticipated to be a problem as spillover rarely occurs even in rainy winter months. Rain falling directly into the basin will be managed by trenches, pumps, and/or barriers to control and convey storm water away from the areas of active excavation.

Storm water runoff in the Southwest Lower Yard will be managed using the existing storm drain system. Sections of this system will likely require removal; the remaining line will continue to be used.

A sedimentation and erosion control plan will be prepared, and will address controls to be implemented to reduce erosion during the construction period.

4.3.3 Dewatering

Basin Dewatering. In-basin work will require control or removal of groundwater/storm water ponded in the basin. Depending on contaminant concentrations, water will be discharged to Detention Basin No. 2, the oil/water separator, or to a holding tank for subsequent discharge pursuant to conditions of the Terminal's NPDES discharge permit. Provisions for temporary on-site treatment (e.g., filtration unit) will be evaluated during preparation of the construction specifications.

Basin Material Dewatering. Dewatering of excavated basin material (to remove free-draining water) will be performed within the basin and/or in an established area outside the basin. In-basin techniques may include trenching to allow the water to drain by gravity to an adjacent location, or by pumping the water from a trench or dewatering well. Dewatering may be accomplished outside the basin, in a dedicated area established to allow gravity separation of water from the excavated material. The dedicated area will be lined and contained to control the separated water.

4.3.4 Soil Stockpiles

Temporary stockpiles may be used by the contractor prior to transferring basin material or soil to trucks for transportation off site. Stockpiles will be established in bcations approved by Unocal.

Stockpiles will be placed on impermeable liners, and covered and secured at the end of each work day. Before placing liners, the contractor will clear the existing ground surface of debris and sharp objects. Soil stockpile covers will be secured so that they cannot be blown off by wind, and will not allow precipitation to come in contact with excavated soils. Berms will be constructed around stockpiles to prevent run-on and run-off.

4.3.5 Truck Loading

Trucks will be loaded in a manner that prevents spilling or tracking of contaminated soil. Loose material that falls onto the truck exterior during loading will be removed before the truck leaves the loading area. No free draining liquid will be allowed.

Truck loading will be adjacent to stockpiles or excavations, just outside designated exclusion zones. Any material collected on the ground surface in the loading area will be placed back into the truck or respective excavation. The contractor will be responsible for ensuring that trucks loaded for off-site disposal are within acceptable weight limits. The trucks will be covered before they leave the loading area.

Off-site hauling will be performed consistent with the traffic control plan, which will set work hours and describe truck traffic control on Pine Street.

4.4 Sampling and Analysis

After excavation, samples will be collected to evaluate contaminant concentrations at the extent of the excavation. The samples will be submitted to North Creek Analytical, Inc., for analysis of TPH as gasoline range organics (GRO), diesel range organics (DRO), and heavy oil (HO); BTEX; and PAHs. Samples collected from the detention basin will also be analyzed for an indicator metal. Laboratory results and field observations will be used to determine if the final extent of excavation has been reached, or if additional removal is necessary.

Soil samples will be collected and analyzed using the procedures identified in the SAP. The associated analytical methods and method detection limits are described in the SAP.

4.5 Area Restoration

4.5.1 Detention Basin No. 1

The excavated basin will be left as-is following excavation, consistent with its continued use as a storm water detention basin for the Terminal. The berm surrounding Detention Basin No. 1 may require partial removal during excavation activities and will be repaired. Pursuant to the sedimentation and erosion control plan, the berms will be seeded or otherwise protected for erosion control. At this time any impacted storm drain catch basins in the areas adjacent the basin will be cleaned of accumulated material and storm drain inlets will be protected.

The extent of excavation will be surveyed. After the area is restored, a licensed well driller will drill and install any necessary replacement groundwater monitoring wells. The new wells will be

installed following procedures specified in the SAP. Groundwater monitoring at these wells may be performed more frequently than the current biannual monitoring schedule, to assess post-excavation groundwater quality.

4.5.2 Southwest Lower Yard

Prior to backfilling, the extent of excavation will be surveyed. The area will be backfilled with clean, imported fill material. Catch basins and drainage pipe will be reinstalled where necessary and the area will be graded to drain to the storm drain system. At this time, any impacted catch basins in the perimeter areas will be cleaned of accumulated material and storm drain inlets will be protected.

After the area is restored, a licensed well driller will drill and install replacement groundwater monitoring wells. The new wells will be installed following procedures specified in the SAP.

5 CONSTRUCTION DOCUMENTATION

As required by WAC 173-340-400(6)(b), the construction aspects of the interim action will be performed under the oversight of a professional engineer registered in the state of Washington or a qualified technician under the direct supervision of a professional engineer registered in the state of Washington.

During implementation, detailed records will be kept to document construction techniques, materials removed, and tests and measurements performed. The documentation procedures are discussed briefly below.

The contractor will complete records to document the work performed. These records will include, but are not limited to, the following:

- Daily Activity Log - A daily activity log will be completed by the contractor to describe general site activity and to identify personnel working on site. These records will be completed daily and will be provided to the Unocal construction supervisor weekly;

- On-Site Transfer Logs – The contractor will prepare a daily log of the soil generated and transferred within the site boundaries (e.g., from excavations to stockpiles). The source (e.g., "soil from excavation area A") and the approximate quantity of soil will be identified in this daily log. Copies will be provided to the Unocal construction supervisor weekly.

- Off-Site Tracking Log – A continuous log of all off-site shipments, which will be maintained by the contractor, will include the following information: type of material, source of material, day shipped, receiver and weight. Copies will be provided to the Unocal construction supervisor weekly.

- Health and Safety Log - A daily record will be maintained of the personnel who are on site and the levels of protection they worked in by task. Results of field health and safety monitoring will be documented in the health and safety log.

Unocal or their designated representative will complete the following:

- Manifests for Waste Shipment - Unocal will be responsible for reviewing and signing all manifests. The contractor will provide Unocal with waste quantity information.

- Compliance monitoring documentation – An electronic database of all samples collected and electronic and hard-copy calculations of all compliance monitoring statistics.

Once the interim action is completed, a registered surveyor will survey the boundaries of the excavation. The survey will be used to generate as-built drawings for the required as-built report (Section 7).

6 PUBLIC PARTICIPATION

The 1996 Public Participation Plan, prepared cooperatively by Unocal and Ecology, defines the public involvement activities to be accomplished as related to remedial actions at the Terminal. These required activities are relevant to the interim action.

The required public involvement activities are listed below. These activities will be led by Ecology with informational support from Unocal:

- This Interim Action Report will available for review during a 30-day public comment period.
- A notice will be placed in the MTCA Site Register.
- Ecology will prepare and distribute a Fact Sheet to describe the interim action.
- A display advertisement will be published in the local newspaper of highest circulation; the ad will announce the public comment period and public meeting.
- Copies of this report will be placed at designated repositories.

Additionally, a letter(s) will be prepared by Unocal and distributed to neighbors adjacent the Terminal, informing the neighbors of the interim action activities and schedule. Unocal contact information will be provided in the letter. Unocal may distribute letters at various times during the interim action schedule to ensure property owners are aware of imminent activities.

7 REPORTING

Technical requirements in contractor bid documents will be transmitted to Ecology for review and comment no later than the time they are transmitted to the contractor(s).

As required by WAC 173-340-400(6)(b)(ii), an as-built report will be completed by the engineer responsible for oversight during the interim action. The report will include as-built drawings and an opinion as to whether the interim action was completed in substantial compliance with this work plan. As-built drawings will be based on the surveyed excavation extents.

The report will include the following items:

- Descriptions of field activities, including unusual or unexpected conditions or events;
- Figures showing the final lateral and vertical extent of excavations;
- Figures showing post-excavation soil sampling locations;
- Tables presenting the soil sampling results;
- Figures, tables and text showing the estimated nature and extent of contamination remaining in the interim action areas at the conclusion of the interim action, in sufficient detail to allow evaluation of whether additional cleanup is necessary after cleanup levels have been developed;
- An estimate of the total in-place volume of soil and basin material removed;
- A summation of soil and basin material, in tons or yards, that was transferred off site;
- Copies of daily reports and other field documentation;
- Copies of laboratory reports and chain-of-custody documentation;
- Copies of all waste manifests and bills of lading;
- Electronic database including all sampling data.

The report will be transmitted to Ecology for review and approval.

8 SEPA

Per Chapter 43.21C RCW, State Environmental Policy Act (SEPA) requirements must be met for interim actions. The SEPA rules specify the requirements for SEPA/MTCA integration at cleanup sites. A threshold determination must be made for interim actions. In addition, SEPA considerations for interim actions must include considerations for the entire project.

For this action, a threshold decision to issue a Determination of Nonsignificance has been made by Ecology based upon review of the SEPA checklist submitted for the site (Appendix D).

9 SCHEDULE

Ecology approval is required prior to initiating the interim action. If approval is received, Unocal anticipates proceeding with the interim action in June 2003.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

ACOE. 1995. Letter from Thomas F. Mueller, Chief, Regulatory Branch, Seattle District Corps of Engineers, Department of the Army, to Gene Fong, Division Administrator, Federal Highway Administrator. Reference: Edmonds Ferry Terminal. May 25.

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GeoEngineers. 1990a. Results of Site Characterization, Marine Diesel Spill, Edmonds Washington. Prepared for Unocal. May 31.

GeoEngineers. 1990b. Remedial Alternatives Assessment, Edmonds Fuel Terminal, Lower Yard, Edmonds, Washington. Prepared for Unocal. November 27.

MFA. 2001a. Remedial Investigation Report, Unocal Edmonds Bulk Fuel Terminal, Edmonds, Washington. Prepared for Unocal Corporation. June.

MFA. 2001b. Sampling and Analysis Plan, Unocal Edmonds Terminal. Prepared for Unocal Corporation. Updated November 29.

MFA. 2003. Draft Supplemental Remedial Investigation Report, Unocal Edmonds Terminal. Prepared for Unocal Corporation. In progress.

FIGURES

APPENDIX A

LIST OF STATE AND LOCAL PERMITS

List of State and Local Permits

Provided below is a list of state and local permits pertinent to the interim action.

Pursuant to WAC 173-340-710(9), the remedial actions to be conducted are exempt from compliance with the procedural requirements of these permits; all substantive requirements must be complied with. In practice, this means that all substantive requirements of the permits are incorporated into the requirements of this work plan and the procedural requirements for the individual permits are replaced by the procedural requirements of MTCA for conducting the remedial actions.

- State NPDES Permit
- City of Edmonds Grading, Fill and Excavation Permit
- City of Edmonds Critical Areas Checklist

APPENDIX B

NPDES PERMIT

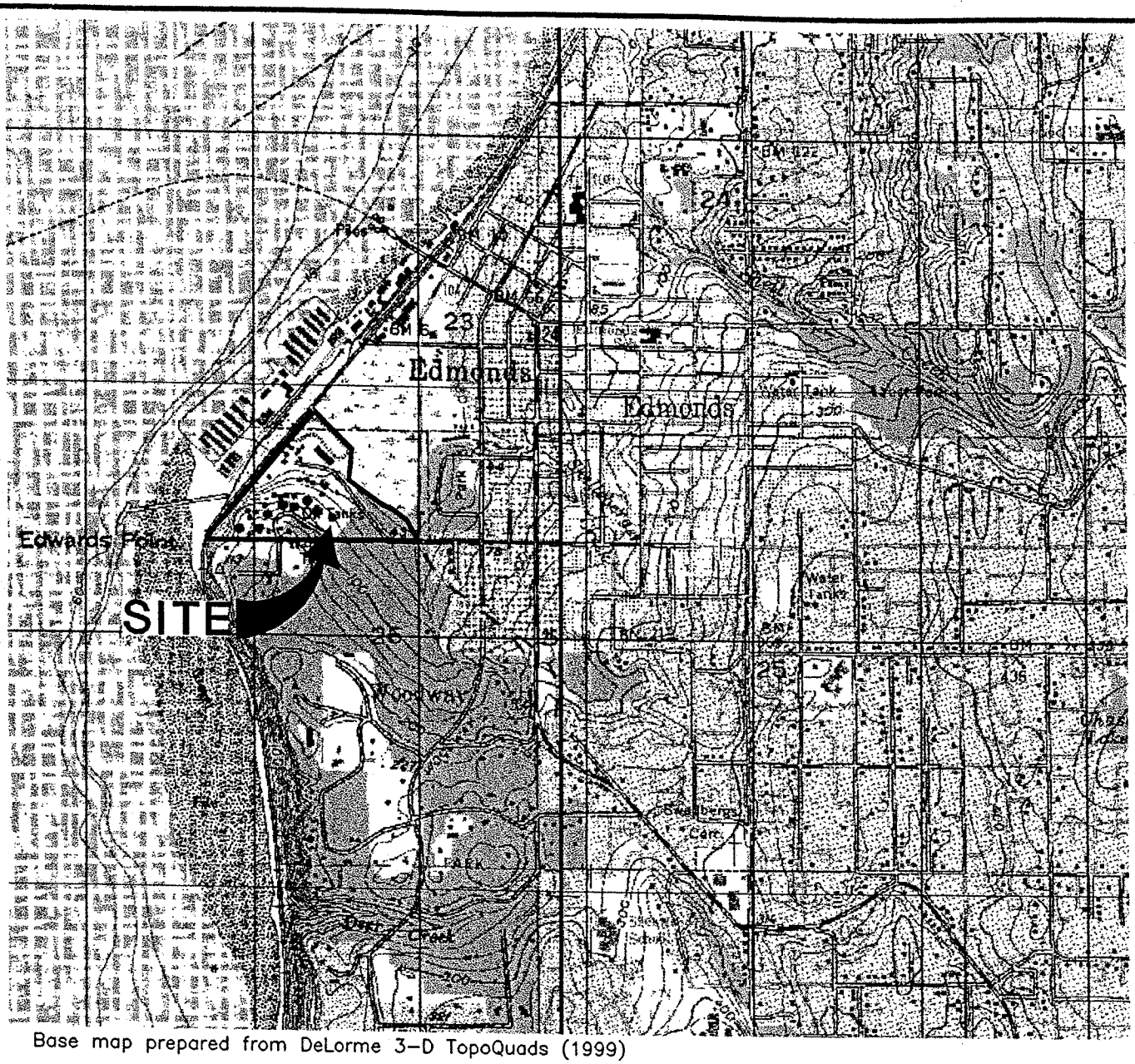
APPENDIX C

ARMY CORPS OF ENGINEERS' LETTER DATED MAY 25, 1995

APPENDIX D

DETERMINATION OF NONSIGNIFICANCE AND SEPA CHECKLIST

FIGURES



Base map prepared from DeLorme 3-D TopoQuads (1999)

0 2000 4000

SCALE IN FEET

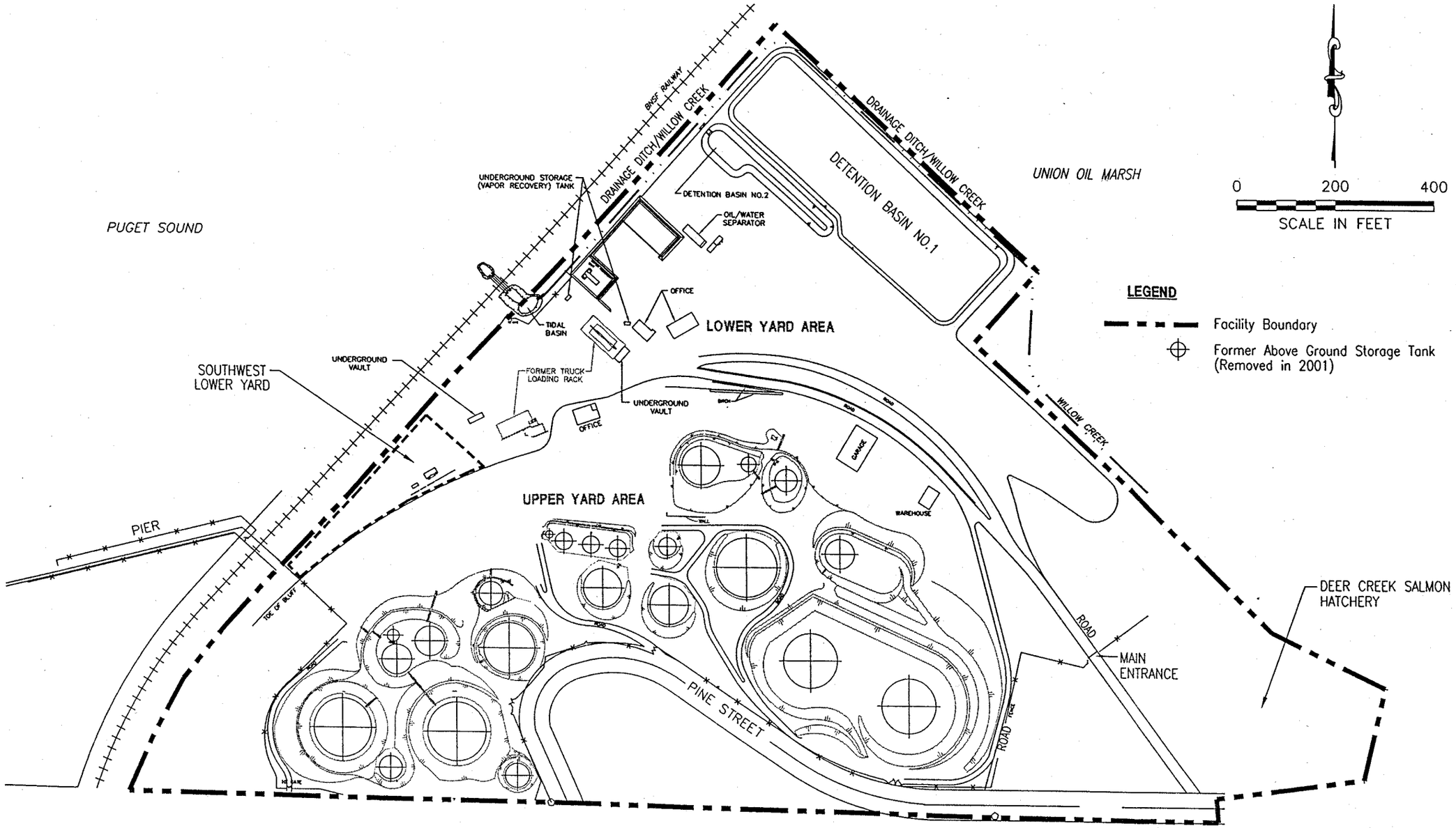
Maul Foster & Alongi, Inc.

DATE 03/00
DWN. AJY
APPR. ____
REVIS. ____
PROJECT NO.
9077.001.002

Figure 1-1
UNOCAL EDMONDS TERMINAL
EDMONDS, WASHINGTON

SITE LOCATION MAP

File: G:\9077-001_UNOCAL-EDMONDS\001\003-01.DWG Last edited: MAR. 28, 2000 @ 11:28 a.m. by: ayoung Xrefs: none black/white



Source: Union Oil Company of California – Los Angeles, California. Site area study General Arrangement Edmonds Terminal – Edmonds, Washington. 10/12/92

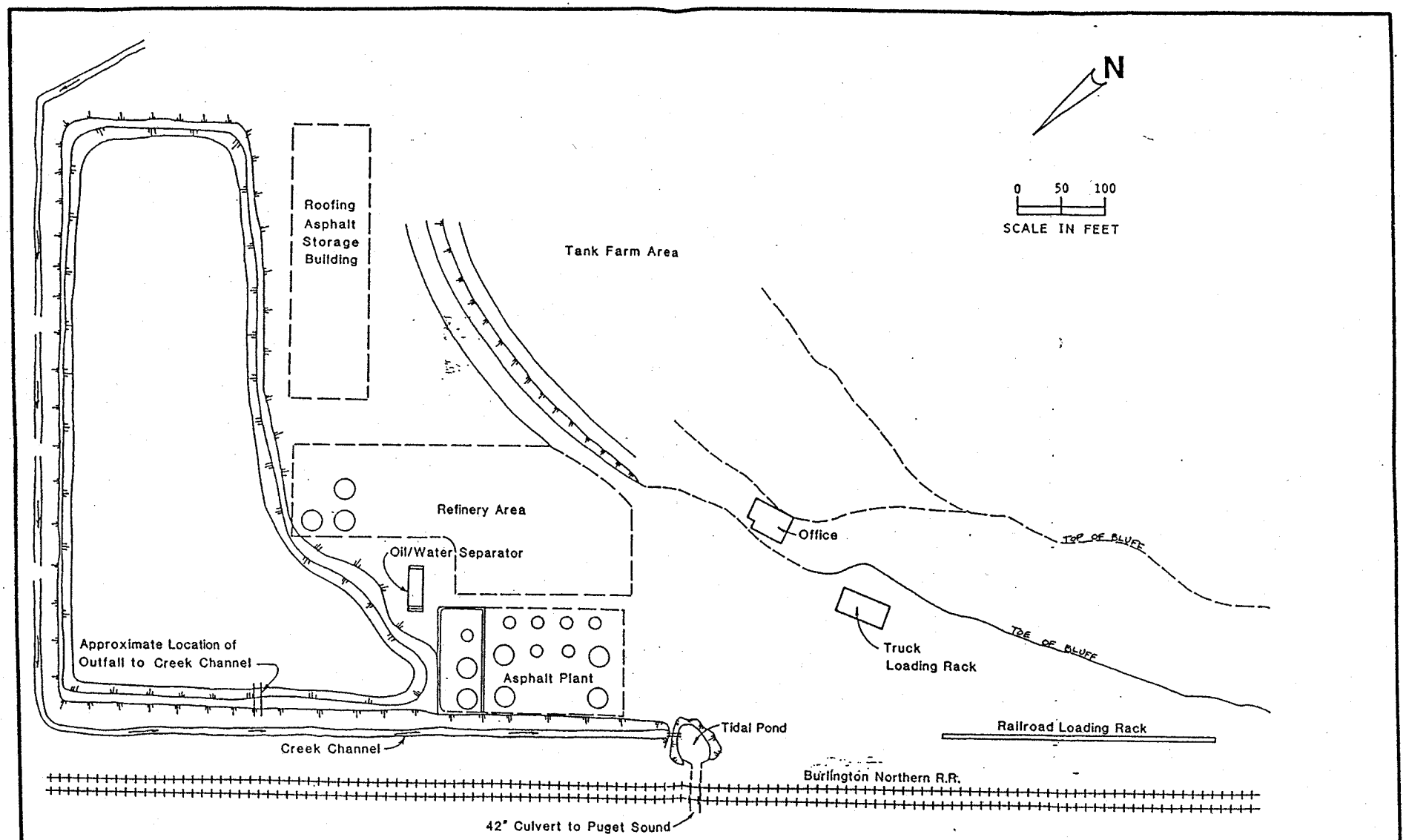
Vancouver: (360) 694-2691
Edmonds: (425) 744-1489
Portland: (971) 544-2139
MAUL FOSTER ALONGI

DATE 02/03
DWN. BDT
APPR. ____
REVIS. ____
PROJECT NO. 9077.01.05

FIGURE 2-1
UNOCAL EDMONDS TERMINAL
EDMONDS, WASHINGTON

SITE PLAN

File: \9077\01.05\004-02-1.DWG Last edited: FEB 10, 2003 by: blookey Xrefs: none black/white

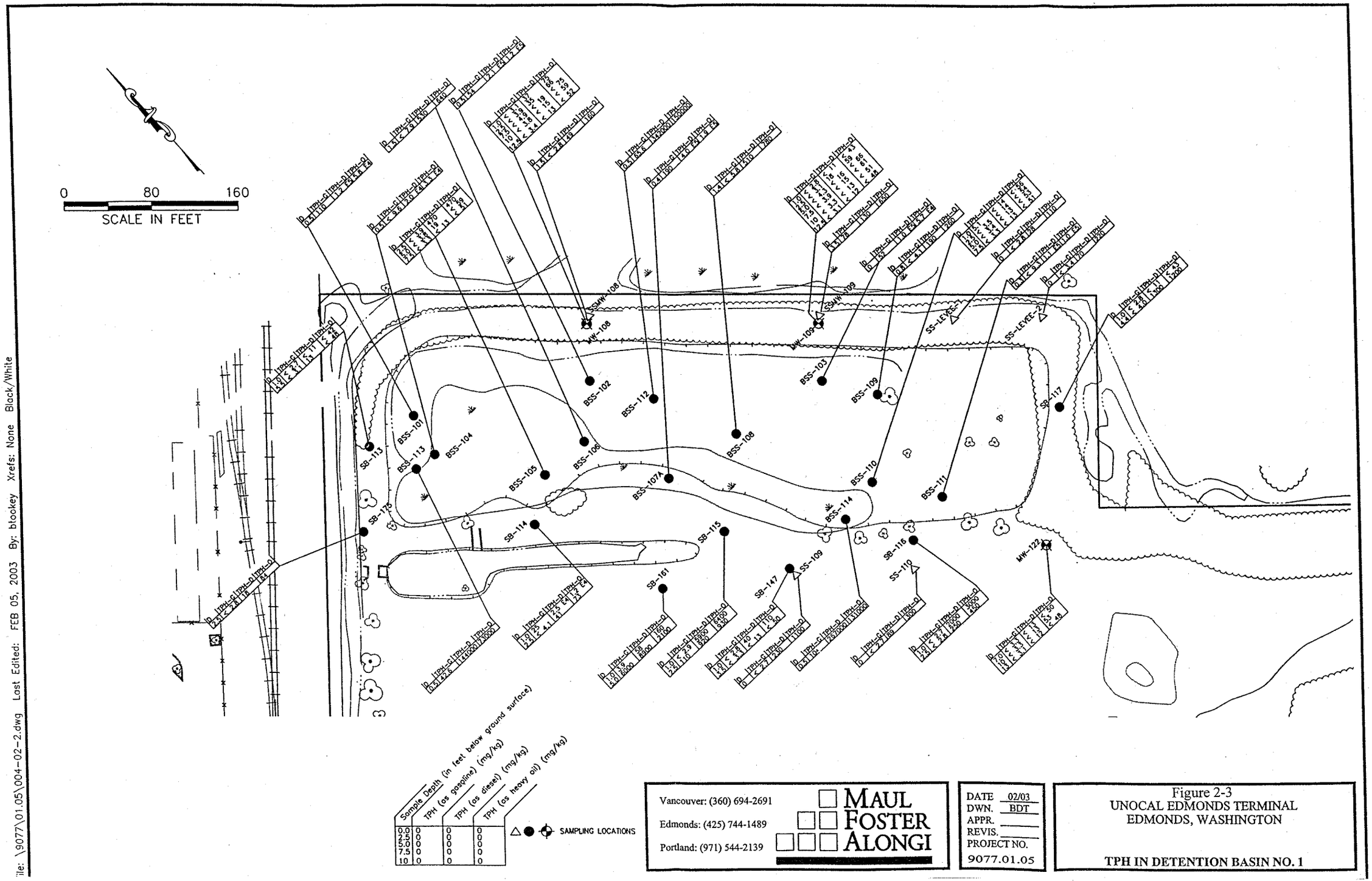


MAP SOURCE: AERIAL PHOTOGRAPH 5/12/56

GeoEngineers

SITE PLAN (1956)

Figure 2-2



Vancouver: (360) 694-2691
Edmonds: (425) 744-1489
Portland: (971) 544-2139
MAUL FOSTER ALONGI

DATE 02/03
DWN. BDT
APPR.
REVIS.
PROJECT NO. 9077.01.05

Figure 2-3
UNOCAL EDMONDS TERMINAL
EDMONDS, WASHINGTON

TPH IN DETENTION BASIN NO. 1

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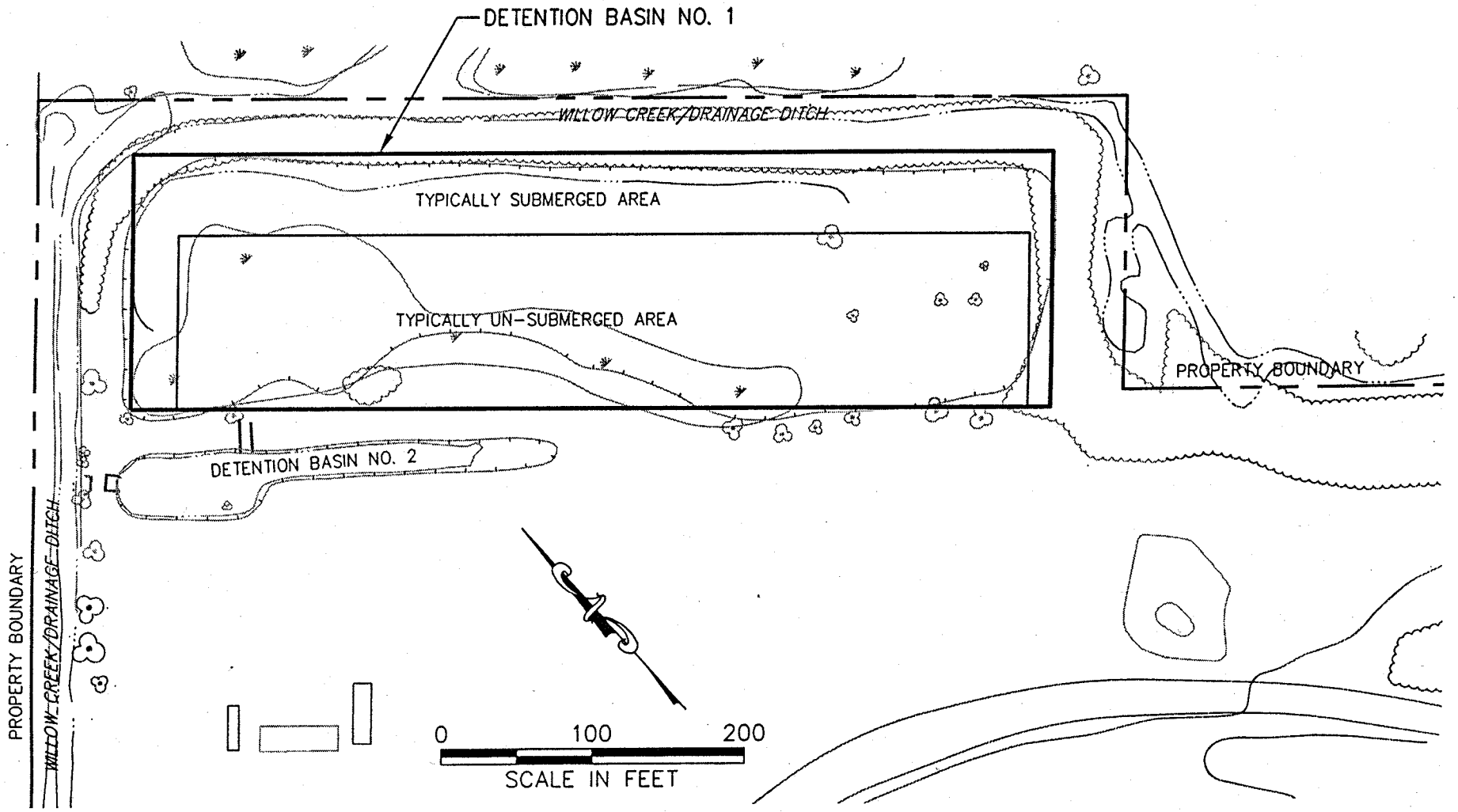
File: \9077\01.05\004-03-1.dwg Last Edited: FEB 03, 2003 By: btookey Xrefs: None Black/White

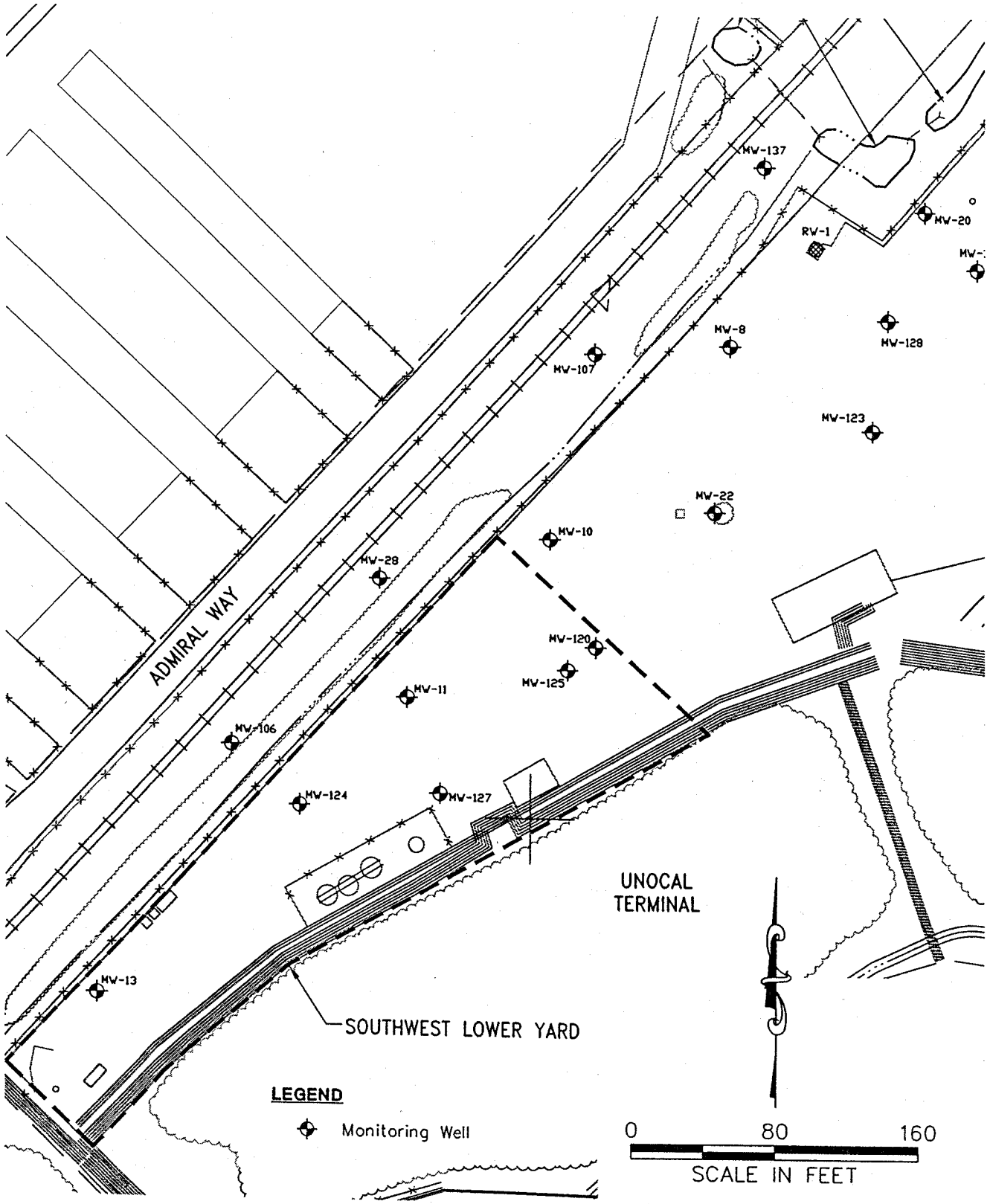


Vancouver: (360) 694-2691
Edmonds: (425) 744-1489
Portland: (971) 544-2139
MAUL FOSTER ALONGI

DATE	01/03
DWN.	BDT
APPR.	
REVIS.	
PROJECT NO.	9077.01.05

FIGURE 3-1
UNOCAL EDMONDS TERMINAL
EDMONDS, WASHINGTON

PLANNED EXCAVATION AREA, DETENTION BASIN NO. 1



17171 Bothell Way, #264
Seattle, WA 98155
P 425.744.1489
F 425.744.0919
MAUL FOSTER ALONGI

DATE	02/03
DWN.	BDT
APPR.	
REVIS.	
PROJECT NO.	9077.01.05

FIGURE 3-2
UNOCAL EDMONDS TERMINAL
EDMONDS, WASHINGTON

PLANNED EXCAVATION AREA
SOUTHWEST LOWER YARD

APPENDIX A

LIST OF STATE AND LOCAL PERMITS

List of State and Local Permits

Provided below is a list of state and local permits pertinent to the interim action.

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- City of Edmonds Critical Areas Checklist

APPENDIX B

NPDES PERMIT

APPENDIX B

State of Washington
DEPARTMENT OF ECOLOGY
(hereinafter referred to as the Department)
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

UNOCAL CORPORATION
P. O. Box 2004
Edmonds, WA 98020

Facility Location: Unocal Edmonds Terminal 11720 Unoco Road, Building C Edmonds, WA 98020 Snohomish County Cedar/Green WQMA	Receiving Water: Willow Creek Tributary to Puget Sound Discharge Location: Outfall 001 — Outfall 002 Latitude: 47° 48' 26" N — 47° 48' 25" N Longitude: 122° 23' 24" W — 122° 23' 24" W
Water Body I.D. No.: WA-PS-0040	Industry Type: Bulk Petroleum Terminal (closed)

is authorized to discharge in accordance with the special and general conditions which follow.

TABLE OF CONTENTS

GENERAL CONDITIONS

SUMMARY OF ORDER REPORT SUBMITTALS

Refer to the Special and General Conditions of this Order for additional submittal requirements.

Order Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report	Quarterly and when unanticipated discharges occur	July 15, 2001
S4.	Operation and Maintenance	1/Order cycle	January 1, 2002
S5.	Acute Toxicity	2/first year or thereafter as necessary	
S5.E.	Monitoring Where There is No Limit for Acute Toxicity	2/every fifth year	
S6.A.	Effluent Mixing Study Plan	If necessary	Thirty (30) days prior to initiation of the effluent mixing study
S6.B.	Effluent Mixing Study	If necessary	January 15, 2002
S7.	Proposed Modification to the Stormwater Pollution Prevention Plan	As necessary	December 1, 2004
S7.	Updated Stormwater Pollution Prevention Plan	Once	Within thirty (30) days prior to proposed modification
S10.	Study of Background Concentration for Lead and Arsenic	As necessary	Six (6) months after becoming aware of lead discharge concentration greater than 5 μg/L

SPECIAL CONDITIONS

S1. EFFLUENT LIMITATIONS

Beginning on the issuance date of this Order, Unocal is authorized to discharge treated storm water, ground water, and other unanticipated discharges to Willow Creek (a tributary to Puget Sound) at the discharge locations, Outfalls 001 and 002, subject to the following limitations:

EFFLUENT LIMITATIONS[a]

Parameter	Maximum Daily[b]
pH (s.u.)	Between 6.5 and 8.5 standard units
Benzene	5 µg/L
Naphthalenes	160 µg/L
Gasoline Range Organics (GRO), benzene present	800 µg/L
Gasoline Range Organics (GRO), no detectable benzene	1,000 µg/L
Diesel Range Organics (DRO)	500 µg/L
Heavy Oils[c]	500 µg/L
BTEX	100 µg/L
Oily Sheen	No visible sheen

[a] The point of compliance is at the Outfall 001 and Outfall 002, or at any point where a unanticipated discharge leaves a holding tank or treatment system prior to discharge to the storm water collection system, or surface water.

Outfall 001 is defined as the sump outlet downstream of the API separator.

Outfall 002 is defined as the outlet of Detention Basin #2 (also known as Midlake).

[b] The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day.

[c] Heavy oils means organic compounds measured using NWTPH-Dx. Examples are #6 fuel oil, bunker C oil, hydraulic oil, and waste oil. For further information, please see WAC173-340-900, table 720-1, footnote x.

S2. TESTING SCHEDULE

Unocal shall monitor the wastewater at Outfalls 001 and 002, as defined in S1, according to the following schedule:

Tests	Sample Point[1,2]	Sampling Frequency[2]	Sample Type
Flow	Final Effluent	Monthly	Estimated
pH	Final Effluent	Monthly	Grab
Benzene[3]	Final Effluent	Monthly	Grab
Ethylbenzene[3]	Final Effluent	Monthly	Grab
Naphthalenes[3]	Final Effluent	Monthly	Grab
Toluene[3]	Final Effluent	Monthly	Grab
Xylenes[3]	Final Effluent	Monthly	Grab
GRO[3]	Final Effluent	Monthly	Grab
DRO[3]	Final Effluent	Monthly	Grab
Heavy Oils[3]	Final Effluent	Monthly	Grab
Lead[4]	Final Effluent	Monthly	Grab
Arsenic[4]	Final Effluent	Monthly	Grab
Oily Sheen	Final Effluent	Weekly	Visual Inspection

[1] The final effluent sample point is defined as the nearest accessible point after the last holding containment and prior to entering Willow Creek.

[2] All unanticipated discharges shall be sampled to ensure compliance with the limitations that appear in S1 prior to discharge.

[3] These compounds shall be measured using analytical procedures specified in WAC 173-340-830. Refer also to WAC 173-340-900, Table 830-1 and footnotes.

[4] Total Recoverable Lead and Total Recoverable Arsenic shall be measured using EPA Method 239.2 or an equivalent EPA approved method which achieves a detection level below 5 ppb. If the monitoring data indicates concentrations exceeding 15 μg/L for lead or 5 μg/L for arsenic, the Department will require Unocal to investigate the vicinity's background concentration for lead and/or arsenic in ground water and rain water within six (6) months of becoming aware of such concentrations. If the monitoring data indicates exceedance of the background concentration for lead and/or arsenic, then the Department may use the available background information to set a water quality-based lead limit for the facility.

S3. MONITORING AND REPORTING

A. Reporting

Monitoring shall be started on the issuance date of the Order or whenever the first discharge occurs.

This facility is the subject of cleanup actions pursuant to the Model Toxics Control Act. Monitoring shall be done for any water produced during cleanup actions. Discharge of such water shall be considered an unanticipated discharge. This water shall be tested and treated to meet all discharge limits prior to discharge. A monitoring report shall be prepared as appropriate for each unanticipated discharge.

Monitoring results obtained during the previous three (3) months shall be summarized and reported on the Monthly Discharge Monitoring Report (DMR) Form (EPA 3320-1) and submitted no later than the 30th day of the month following the completed reporting period. **One discharge monitoring report shall be prepared for each month. Reports are due January 15, April 15, July 15, and October 15 of each year. The first report is due July 15, 2001. Discharge monitoring reports shall be prepared for each unanticipated discharge as directed by the Department.**

All data shall be kept in an electronic relational database suitable for import into Microsoft Access. The structure of the database shall be approved by Ecology. An updated copy of the database shall be furnished with each discharge monitoring report.

Reports shall be sent to the Department of Ecology, Northwest Regional Office, 3190 – 160th Avenue SE, Bellevue, Washington 98008-5452. One hard copy shall be sent to the attention of Ms. Jeanne Tran, Water Quality Program. Copies of the updated database shall also be sent to the attention of Mr. David South, Toxics Cleanup Program (DSOU461@ecy.wa.gov). Ecology will advise the applicant of any changes in personnel to whom these reports should be directed.

B. Records Retention

This facility is the subject of cleanup actions pursuant to the Model Toxics Control Act. In conformance with the provisions of Agreed Order No. DE 92TC N328, Unocal shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records of monitoring information. Should any portion of the work performed by undertaken through contractors or agents of Unocal, then Unocal agrees to include in their contract with such contractors or agents a record retention requirement meeting the terms of this paragraph.

Unocal shall retain all records of all monitoring information for a minimum of three (3) years. Such information shall include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copy of all reports required by this Order, and record of all data used to complete the application for this Order. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by Unocal or when requested by the Director.

C. Recording of Results

For each measurement or sample taken, Unocal shall record the following information: (1) the date, exact place and time of sampling; (2) the company and individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Representative Sampling

Samples and measurements taken to meet the requirements of this condition shall be representative of the volume and nature of the monitored discharge, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

E. Test Procedures

All sampling and analytical methods used to meet the monitoring requirements specified in this Order shall, unless approved otherwise by this Order or in writing by the Department, conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants, contained in 40 CFR Part 136.

F. Laboratory Accreditation

All monitoring data required by the Department shall be prepared by a laboratory registered or accredited under the provisions of, *Accreditation of Environmental Laboratories*, Chapter 173-50 WAC. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. Conductivity and pH shall be accredited if the laboratory must otherwise be registered or accredited. The Department exempts crops, soils, and hazardous waste data from this requirement pending accreditation of laboratories for analysis of these media.

G. Additional Monitoring by Unocal

If Unocal monitors any pollutant more frequently than required by this Order using test procedures specified by Condition S2. of this Order, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in Unocal's DMR.

H. Noncompliance Notification

In the event Unocal is unable to comply with any of the terms and conditions of this Order due to any cause, Unocal shall:

1. Immediately take action to stop, contain, and clean up unauthorized discharges or otherwise stop the noncompliance, correct the problem, and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to the Department within thirty (30) days after becoming aware of the violation.

2. Immediately notify the Department of the failure to comply.

3. Submit a detailed, written report to the Department within thirty (30) days (five [5] days for upsets and bypasses), unless requested earlier by the Department. The report shall contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

Compliance with these requirements does not relieve Unocal from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability for failure to comply.

S4. OPERATION AND MAINTENANCE

Unocal shall, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances) which are installed to achieve compliance with the terms and conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by Unocal only when the operation is necessary to achieve compliance with the conditions of this Order.

A. Operations and Maintenance Manual

An Operations and Maintenance (O&M) Manual shall be prepared by Unocal in accordance with WAC 173-240-150 and be submitted to the Department for approval by January 1, 2002. The O&M Manual shall be reviewed by Unocal at least annually and Unocal shall confirm this review by letter to the Department. Substantial changes or updates to the O&M Manual shall be submitted to the Department whenever they are incorporated into the manual.

The approved Operations and Maintenance Manual shall be kept available on-site and all operators shall follow the instructions and procedures of this manual.

The O&M Manual shall include:

1. Emergency procedures for plant shutdown and cleanup in event of wastewater system upset or failure.

2. Plant maintenance procedures.

The following information shall be summarized in the initial chapter of the O&M Manual. This chapter shall be entitled the "Treatment System Operating Plan." For the purposes of this Order, a Treatment System Operating Plan (TSOP) is a concise summary of specifically defined elements of the O&M Manual. The TSOP shall not conflict with the O&M Manual and shall include the following information:

1. A baseline operating condition, which describes the operating parameters and procedures, used to meet the effluent limitations of S1 at the production levels used in developing these limitations.

2. In the event of an upset, due to plant maintenance activities, severe stormwater events, startups or shutdowns or other causes, the plan shall describe the operating procedures and conditions employed to mitigate the upset. The monitoring and reporting shall be described in the plan.

3. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.) that will be discharged, and a plan for monitoring/controlling the discharge of maintenance-related materials.

B. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited, and the Department may take enforcement action against Unocal for bypass unless one of the following circumstances (1, 2, or 3) is applicable.

1. Bypass for Essential Maintenance without the Potential to Cause Violation of Order Limits or Conditions.

   Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this Order, or adversely impact public health as determined by the Department prior to the bypass. Unocal shall submit prior notice, if possible, at least ten (10) days before the date of the bypass.

2. Bypass Which is Unavoidable, Unanticipated, and Results in Noncompliance of this Order

   This bypass is ordered only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.

c. The Department is properly notified of the bypass as required in condition S3E of this Order.

3. Bypass which is Anticipated and has the Potential to Result in Noncompliance of this Order

Unocal shall notify the Department at least thirty (30) days before the planned date of bypass. The notice shall contain: (1) a description of the bypass and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of bypass under each alternative; (5) a recommendation as to the preferred alternative for conducting the bypass; (6) the projected date of bypass initiation; (7) a statement of compliance with SEPA; (8) a request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated; and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above shall be considered during preparation of the engineering report or facilities plan and plans and specifications and shall be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

The Department will consider the following prior to issuing an administrative order for this type bypass:

a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this Order.

b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.

c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, the Department will approve or deny the request. The public shall be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by the Department under RCW 90.48.120.

C. Duty to Mitigate

Unocal is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment.

S5. ACUTE TOXICITY

A. Effluent Characterization

Unocal shall conduct acute toxicity testing on the final effluent (Outfall 001 and Outfall 002) to determine the presence and amount of acute (lethal) toxicity. The two acute toxicity tests listed below shall be conducted on each sample taken for effluent characterization.

Effluent characterization for acute toxicity shall be conducted semiannually for one year. Acute toxicity testing shall follow protocols, monitoring requirements, and quality assurance/quality control procedures specified in this Section.

A dilution series consisting of a minimum of five concentrations (2%, 6.25%, 12.5%, 50%, and 100% effluent) and a control shall be used to estimate the concentration lethal to 50% of the organisms (LC_{50}). The percent survival in 100% effluent shall also be reported.

Testing shall begin no later than October 15, 2001. A written report shall be submitted to the Department within sixty (60) days after the sample date. The summary report shall include a tabulated summary of the individual test results and any information on sources of toxicity, toxicity source control, correlation with effluent data, and toxicity treatability which is developed during the period of testing.

Acute toxicity tests shall be conducted with the following species and protocols:

1) Fathead minnow, *Pimephales promelas* (96-hour static-renewal test, method: EPA/600/4-90/027F)

2) Daphnid, *Ceriodaphnia dubia*, *Daphnia pulex*, or *Daphnia magna* (48-hour static test, method: EPA/600/4-90/027F)

B. Effluent Limit for Acute Toxicity

Unocal has an effluent limit for acute toxicity if, after completing one year of effluent characterization, either:

1) The median survival of any species in 100% effluent is below 80%, or

2) Any one test of any species exhibits less than 65% survival in 100% effluent.

If an effluent limit for acute toxicity is required by subsection B at the end of one year of effluent characterization, Unocal shall immediately complete all applicable requirements in subsections C, D, and F.

If no effluent limit is required by subsection B at the end of one year of effluent characterization, then Unocal shall complete all applicable requirements in subsections E and F.

The effluent limit for acute toxicity is no acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).

In the event of failure to pass the test described in subsection C. of this section for compliance with the effluent limit for acute toxicity, Unocal is considered to be in compliance with all Order requirements for acute whole effluent toxicity as long as the requirements in subsection D. are being met to the satisfaction of the Department.

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the zone of acute criteria exceedance assigned pursuant to WAC 173-201A-100. The ACEC will be determined as a component of S6. Effluent Mixing of this Order.

If Unocal has an effluent limit for acute toxicity and the ACEC is not known, then effluent characterization for acute toxicity shall continue until the time an ACEC is known. Effluent characterization shall be continued until an ACEC has been determined and shall be performed using each one of the tests listed in subsection A on a rotating basis. When an ACEC has been determined, Unocal shall immediately complete all applicable requirements in subsections C, D, and F.

If no effluent limit is required by subsection B at the end of one year of effluent characterization, then Unocal shall stop effluent characterization and begin to conduct the activities in subsection E even if the ACEC is unknown.

C. Monitoring for Compliance With an Effluent Limit for Acute Toxicity

Monitoring to determine compliance with the effluent limit shall be conducted biannually for the remainder of the Order term using each of the species listed in subsection A above on a rotating basis and performed using at a minimum 100% effluent, the ACEC, and a control. Unocal shall schedule the toxicity tests in the order listed in the Order unless the Department notifies Unocal in writing of another species rotation schedule. The percent survival in 100% effluent shall be reported for all compliance monitoring.

Compliance with the effluent limit for acute toxicity means no statistically significant difference in survival between the control and the test concentration representing the ACEC. Unocal shall immediately implement subsection D. if any acute toxicity test conducted for compliance monitoring determines a statistically significant difference in survival between the control and the ACEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the hypothesis test shall be conducted at the 0.01 level of significance.

D. Response to Noncompliance With an Effluent Limit for Acute Toxicity

If a toxicity test conducted for compliance monitoring under subsection C determines a statistically significant difference in response between the ACEC and the control, Unocal shall begin additional compliance monitoring within one week from the time of receiving the test results. This additional monitoring shall be conducted weekly for four (4) consecutive weeks using the same test and species as the failed compliance test. Testing shall be conducted using a series of at least five effluent concentrations and a control in order to be able to determine appropriate point estimates. One of these effluent concentrations shall equal the ACEC and be compared statistically to the nontoxic control in order to determine compliance with the effluent limit for acute toxicity as described in subsection B. The discharger shall return to the original monitoring frequency in subsection C after completion of the additional compliance monitoring.

If Unocal believes that a test indicating noncompliance will be identified by the Department as an anomalous test result, Unocal may notify the Department that the compliance test result might be anomalous and that Unocal intends to take only one additional sample for toxicity testing and wait for notification from the Department before completing the additional monitoring required in this subsection. The notification to the Department shall accompany the report of the compliance test result and identify the reason for considering the compliance test

result to be anomalous. Unocal shall complete all of the additional monitoring required in this subsection as soon as possible after notification by the Department that the compliance test result was not anomalous. If the one additional sample fails to comply with the effluent limit for acute toxicity, then Unocal shall proceed without delay to complete all of the additional monitoring required in this subsection. The one additional test result shall replace the compliance test result upon determination by the Department that the compliance test result was anomalous.

If all of the additional compliance monitoring conducted in accordance with this subsection complies with the Order limit, Unocal shall search all pertinent and recent facility records (operating records, monitoring results, inspection records, spill reports, weather records, production records, raw material purchases, pretreatment records, etc.) and submit a report to the Department on possible causes and preventive measures for the transient toxicity event which triggered the additional compliance monitoring.

If toxicity occurs in violation of the acute toxicity limit during the additional compliance monitoring, Unocal shall submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to the Department within sixty (60) days after test results are final. The TI/RE plan shall be based on WAC 173-205-100(2) and shall be implemented in accordance with WAC 173-205-100(3).

E. Monitoring When There Is No Limit for Acute Toxicity

Unocal shall test final effluent once in the last summer and once in the last winter every five (5) years. All species used in the initial acute effluent characterization or substitutes approved by the Department shall be used and results submitted to the Department.

F. Sampling and Reporting Requirements

1. All reports for effluent characterization or compliance monitoring shall be submitted in accordance with the most recent version of Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports shall contain bench sheets and reference toxicant results for test methods. If the laboratory provides the toxicity test data on floppy disk or by other means of transmittal for electronic entry into the Department's database, then Unocal shall send the electronic file to the Department along with the test report, bench sheets, and reference toxicant results.

2. Testing shall be conducted on grab samples. Samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. The lab shall begin the toxicity testing as soon as possible but no later than thirty six (36) hours after sampling was ended.

3. All samples and test solutions for toxicity testing shall have water quality measurements as specified in Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.

4. All toxicity tests shall meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A. and the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by the Department, testing shall be repeated with freshly collected effluent.

5. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.

6. The whole effluent toxicity tests shall be run on an unmodified sample of final effluent.

7. Unocal may choose to conduct a full dilution series test during compliance monitoring in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC.

8. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing and do not comply with the acute statistical power standard of 29% as defined in WAC 173-205-020 must be repeated on a fresh sample with an increased number of replicates to increase the power.

S6. EFFLUENT MIXING STUDY

A. General Requirements

Should Unocal be unable to consistently comply with the discharge limits listed in this Order after AKART has been fully implemented, Unocal shall determine the degree of effluent and receiving water mixing which occurs within the mixing zone. The degree of mixing shall be determined during critical conditions, as defined in WAC 173-201A-020 Definitions-"Critical Condition," or as close to critical conditions as reasonably possible.

The critical condition scenarios shall be established in accordance with *Guidance for Conducting Mixing Zone Analysis* (Ecology, 1996). The dilution ratio shall be measured in the field with dye using study protocols specified in the *Guidance,* Section 5.0 "Conducting a Dye Study," as well as other protocols listed in subpart C. Protocols. The use of mixing models is an acceptable alternative or adjunct to a dye study if the critical ambient conditions necessary for model input are known or will be established with field studies; and if the diffuser is visually inspected for integrity or has been recently tested for performance by the use of tracers. The *Guidance* mentioned above shall be consulted when choosing the appropriate model. The use of models is also required if critical condition scenarios that need to be examined are quite different from the set of conditions present during the dye study.

Validation (and possibly calibration) of a model may be necessary and shall be done in accordance with the *Guidance* mentioned above - in particular, subsection 5.2 "Quantify Dilution." The resultant dilution ratios for acute and chronic boundaries shall be applied in accordance with directions found in Ecology's *Order Writer's Manual* (1994) - in particular Chapter VI.

A Plan of Study shall be submitted to the Department for review thirty (30) days prior to initiation of the effluent mixing study.

B. Reporting Requirements

If Unocal has information on the background physical conditions or background concentration of chemical substances (for which there are criteria in Chapter 173-201A WAC) in the receiving water, this information shall be submitted to the Department as part of the Effluent Mixing Report.

The results of the effluent mixing study shall be included in the Effluent Mixing Report, which shall be submitted to the Department for approval no later than January 15, 2002.

If the results of the mixing study, toxicity tests, and chemical analysis indicate that the concentration of any pollutant(s) exceeds or has a reasonable potential to exceed the State Water Quality Standards, Chapter 173-201A WAC, the Department may issue a regulatory order to require a reduction of pollutants or modify this Order to impose effluent limitations to meet the Water Quality Standards.

Unocal shall use some method of fixing and reporting the location of the outfall and mixing zone boundaries (i.e., triangulation off the shore, microwave navigation system, or using Loran or Global Positioning System (GPS) coordinates). The method of fixing station location and the actual station locations shall be identified in the report.

C. Protocols

Unocal shall determine the dilution ratio using protocols outlined in the following references, approved modifications thereof, or by another method approved by the Department:

- Akar, P.J. and G.H. Jirka. 1990. Cormix2: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Multiport Diffuser Discharges. USEPA Environmental Research Laboratory, Athens, GA. Draft, July 1990.

- Baumgartner, D.J., W.E. Frick, P.J.W. Roberts, and C.A. Bodeen, 1993. *Dilution Models for Effluent Discharges.* USEPA. Pacific Ecosystems Branch, Newport, OR.

- Doneker, R.L. and G.H. Jirka. 1990. *Cormix1: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Submerged Single Port Discharges.* USEPA, Environmental Research Laboratory, Athens, GA. EPA/600-3-90/012.

- Ecology, 1994. *Order Writer's Manual,* Water Quality Program, Department of Ecology, Olympia WA 98504, July, including addenda through October 1996.

- Ecology, 1996. *Guidance for Conducting Mixing Zone Analyses,* Order Writer's Manual, (Appendix 6.1), Water Quality Program, Department of Ecology, Olympia WA 98504, October.

- Kilpatrick, F.A., and E.D. Cobb. 1985. Measurement of Discharge Using Tracers. Chapter A16. *Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics.* USGS, U.S. Department of the Interior. Reston, VA.

- Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick. 1986. Fluorometric Procedures for Dye Tracing. Chapter A12. *Techniques of Water-Resources Investigations of the USGS, Book 3, Application of Hydraulics.* USGS, U.S. Department of the Interior. Reston, VA.

S7. UPDATED STORMWATER POLLUTION PREVENTION PLAN

Unocal shall submit to the Department an update to the existing Stormwater Pollution Prevention Plan (SWPPP) once every five (5) years.

Unocal shall modify the existing SWPPP whenever there is a change in design, construction, operation, or maintenance, which causes the SWPPP to be less effective in controlling pollutants. Whenever the description of potential pollutant sources or the pollution prevention measures and controls identified in the SWPPP are inadequate, the SWPPP shall be modified, as appropriate, within two (2) weeks of such determination. The proposed modifications to the SWPPP shall be submitted to the Department at least thirty (30) days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation. Unocal shall provide for implementation of any modifications to the SWPPP in a timely manner.

S8. STUDY OF BACKGROUND CONCENTRATION FOR LEAD AND ARSENIC

If monitoring data for lead indicates concentrations exceeding 15 µg/L for lead and/or 5 µg/L for arsenic (ppb total recoverable), Unocal shall conduct a study of the vicinity's background concentration for lead and/or arsenic in groundwater within six (6) months of discovering such background concentrations. Once the study is approved by the Department, the monitoring data for lead and/or arsenic will be used to compare with the background concentration, and subsequently, a lead and/or arsenic limit will be determined for the facility.

S9. MIXING ZONE

After AKART has been fully implemented, should Unocal still not be able to meet the effluent limits set forth in Special Condition S1 and S8, Unocal may apply for establishment of a mixing zone.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

All applications, reports, or information submitted to the Department shall be signed and certified.

A. All applications required by this Order shall be signed by either a responsible corporate officer of at least the level of vice president of a corporation, a general partner of a partnership, or the proprietor of a sole proprietorship.

B. All reports required by this Order and other information requested by the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Department.

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

C. Changes to authorization. If an authorization under paragraph B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2 above must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

G2. RIGHT OF INSPECTION AND ENTRY

Unocal shall allow an authorized representative of the Department, upon the presentation of credentials and such other documents as may be required by law:

A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this Order.

B. To have access to and copy - at reasonable times and at reasonable cost - any records required to be kept under the terms and conditions of this Order.

C. To inspect - at reasonable times - any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this Order.

D. To sample or monitor - at reasonable times - any substances or parameters at any location for purposes of assuring Order compliance or as otherwise authorized by the Clean Water Act.

G3. ORDER ACTIONS

This Order may be modified, revoked and reissued, or terminated either at the request of any interested person (including Unocal) or upon the Department's initiative. However, the Order may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

A. The following are causes for terminating this Order during its term, or for denying an Order renewal application:

1. Violation of any Order term or condition.
2. Obtaining an Order by misrepresentation or failure to disclose all relevant facts.
3. A material change in quantity or type of waste disposal.
4. A determination that the permitted activity endangers human health or the environment or contributes to water quality standards violations and can only be regulated to acceptable levels by Order modification or termination [40 CFR part 122.64(3)].
5. A change in any condition that requires either a temporary or permanent reduction or elimination of any discharge or sludge use or disposal practice controlled by the Order [40 CFR part 122.64(4)].
6. Nonpayment of fees assessed pursuant to RCW 90.48.465.
7. Failure or refusal of Unocal to allow entry as required in RCW 90.48.090.

B. The following are causes for modification but not revocation and reissuance except when Unocal requests or agrees:

1. A material change in the condition of the waters of the state.

2. New information not available at the time of Order issuance that would have justified the application of different Order conditions.

3. Material and substantial alterations or additions to the permitted facility or activities which occurred after this Order issuance.

4. Promulgation of new or amended standards or regulations having a direct bearing upon Order conditions, or requiring Order revision.

5. Unocal has requested a modification based on other rationale meeting the criteria of 40 CFR part 122.62.

6. The Department has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.

7. Incorporation of an approved local pretreatment program into a municipality's Order.

C. The following are causes for modification or alternatively revocation and reissuance:

1. Cause exists for termination for reasons listed in A1 through A7, of this section, and the Department determines that modification or revocation and reissuance is appropriate.

2. The Department has received notification of a proposed transfer of the Order. An Order may also be modified to reflect a transfer after the issuance date of an automatic transfer (General Condition G8) but will not be revoked and reissued after the issuance date of the transfer except upon the request of the new owner.

G4. REPORTING A CAUSE FOR MODIFICATION

Unocal shall submit a new application, or a supplement to the previous application, along with required engineering plans and reports whenever a material change to the facility or in the quantity or type of discharge is anticipated which is not specifically authorized by this Order. This application shall be submitted at least sixty (60) days prior to any proposed changes. The filing of a request by Unocal for an Order modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve Unocal of the duty to comply with the existing Order until it is modified or reissued.

G5. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications shall be submitted to the Department for approval in accordance with Chapter 173-240 WAC. Engineering reports, plans, and specifications shall be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities shall be constructed and operated in accordance with the approved plans.

G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this Order shall be construed as excusing Unocal from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. TRANSFER OF THIS ORDER

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, Unocal shall notify the succeeding owner or controller of the existence of this Order by letter, a copy of which shall be forwarded to the Department.

A. Transfers by Modification

Except as provided in paragraph B below, this Order may be transferred by Unocal to a new owner or operator only if this Order has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new owner and incorporate such other requirements as may be necessary under the Clean Water Act.

B. Automatic Transfers

This Order may be automatically transferred to a new owner if:

1. Unocal notifies the Department at least thirty (30) days in advance of the proposed transfer date.

2. The notice includes a written agreement between the existing and new owners containing a specific date transfer of Order responsibility, coverage, and liability between them.

3. The Department does not notify Unocal and the proposed new owner of its intent to modify or revoke and reissue this Order. A modification under the subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. REDUCED PRODUCTION FOR COMPLIANCE

Unocal, in order to maintain compliance with its Order, shall control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. DUTY TO PROVIDE INFORMATION

Unocal shall submit to the Department, within a reasonable time, all information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Unocal shall also submit to the Department upon request, copies of records required to be kept by this Order [40 CFR 122.41(h)].

G11. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this Order by reference.

G12. ADDITIONAL MONITORING

The Department may establish specific monitoring requirements in addition to those contained in this Order by administrative order or Order modification.

G13. PENALTIES FOR VIOLATING ORDER CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this Order shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of this Order shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G14. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based Order effluent limitations because of factors beyond the reasonable control of Unocal. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based Order effluent limitations if the requirements of the following paragraph are met.

Unocal who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
1) an upset occurred and that Unocal can identify the cause(s) of the upset;
2) the Ordered facility was being properly operated at the time of the upset;
3) Unocal submitted notice of the upset as required in condition S3.E; and
4) Unocal complied with any remedial measures required under S5 of this Order.

In any enforcement proceeding Unocal seeking to establish the occurrence of an upset has the burden of proof.

G15. PROPERTY RIGHTS

This Order does not convey any property rights of any sort, or any exclusive privilege.

G16. DUTY TO COMPLY

Unocal shall comply with all conditions of this Order. Any Order noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for Order termination, revocation and reissuance, or modification.

G17. TOXIC POLLUTANTS

Unocal shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement.

G18. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this Condition, punishment shall be a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G19. REPORTING PLANNED CHANGES

Unocal shall, as soon as possible, give notice to the Department of planned physical alterations or additions to the Ordered facility, production increases, or process modification which will result in: 1) the Ordered facility being determined to be a new source pursuant to 40 CFR 122.29(b); 2) a significant change in the nature or an increase in quantity of pollutants discharged; or 3) a significant change in Unocal's sludge use or disposal practices. Following such notice, this Order may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of limits listed in this Order or not specifically authorized by this Order constitutes a violation.

G20. REPORTING ANTICIPATED NONCOMPLIANCE

Unocal shall give advance notice to the Department by submission of a new application or supplement thereto at least one hundred and eighty (180) days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with this Order limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during non-critical water quality periods and carried out in a manner approved by the Department.

G21. REPORTING REQUIREMENTS APPLICABLE TO EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL DISCHARGERS

Unocal belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify the Department as soon as they know or have reason to believe:

A. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this Order, if that discharge will exceed the highest of the following "notification levels":

1. One hundred micrograms per liter (100 µg/l).
2. Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony.
3. Five (5) times the maximum concentration value reported for that pollutant in the Order application in accordance with 40 CFR 122.21(g)(7).
4. The level established by the Director in accordance with 40 CFR 122.44(f).

B. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this Order, if that discharge will exceed the highest of the following "notification levels":

1. Five hundred micrograms per liter (500µg/L).

2. One milligram per liter (1 mg/L) for antimony.

3. Ten (10) times the maximum concentration value reported for that pollutant in the Order application in accordance with 40 CFR 122.21(g)(7).

4. The level established by the Director in accordance with 40 CFR 122.44(f).

G22. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order shall be submitted no later than fourteen (14) days following each schedule date.

FACT SHEET
UNOCAL EDMONDS TERMINAL

SUMMARY

This fact sheet is a companion document to Appendix B of this Order. The Department of Ecology is proposing to issue this Order, which allows the discharge of treated stormwater to surface waters subject to certain restrictions.

This fact sheet explains the nature of the proposed discharge, the Department's decision on limiting pollutants in the wastewater, and the regulatory and technical basis for those decisions.

GENERAL INFORMATION	
Applicant:	Unocal Corporation P. O. Box 2004 Edmonds, WA 98020
Facility Name and Address:	Unocal Edmonds Terminal 11720 Unoco Road, Building C Edmonds, WA 98020
Type of Facility:	Bulk Petroleum Terminal (Closed)
Discharge Location:	Willow Creek Tributary to Puget Sound Outfall 001 Outfall 002 Latitude: 47° 48' 26" N 47° 48' 25" Longitude: 122° 23' 24" W 122° 23' 24"
Water Body ID Number:	WA-PS-0040
Prepared by:	Jeanne Tran, P.E. Permit Manager, Industrial Unit

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. The EPA has delegated responsibility to administer the NPDES Order program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge Order program.

The regulations adopted by the State include procedures for issuing Orders (Chapter 173-220 WAC), water quality criteria for surface and groundwaters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit or an Order be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in this Order. (see Appendix I--Public Involvement of the fact sheet for more detail on the public notice procedures). Site maps are enclosed in Appendix II.

The fact sheet and draft Order have been reviewed by Unocal and errors in fact have been corrected. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment.

BACKGROUND INFORMATION

HISTORY

The Unocal Edmonds Bulk Fuel Terminal comprises approximately 44 acres of land on and adjacent to the northern slope of a hillside and lies within approximately 1,000 feet of the Puget Sound Shoreline, see Figure 2.

The Terminal, which ceased operation in 1991, was used for the bulk storage and distribution of petroleum fuels. The 29-acre lower yard consists of office buildings, former truck loading racks, aboveground piping, aboveground storage tanks, underground storage tanks and vaults, detention basins, and an API oil water separator. Previous operations also included an air-blown asphalt plant, an asphalt-packaging warehouse, and a railcar loading/unloading facility. The 15-acre upper yard consists of 24 aboveground fuel storage tanks, above-grade piping, a garage, and warehouse. The tanks and piping located in the upper yard were emptied and steam cleaned to be rendered gasoline free vapor in 1993.

A remedial investigation was performed between October 1994 and August 1996 indicating that soil and groundwater within the Unocal property are contaminated with petroleum products. Unocal has entered an Agreed Order with Ecology's Toxic Cleanup Program (TCP) to conduct a Remedial Investigation/Feasibility Study to recover free product on the groundwater table, and to develop the remedial actions for the dissolved product in groundwater.

GROUNDWATER

The site is underlain by fill, alluvium, and a sequence of glacial and pre-glacial deposits. Groundwater is primarily found in one site-wide aquifer, at depths generally less than 8 feet below ground surface (bgs) in the lower yard, and 20 to 140 feet bgs in the upper yard. Groundwater flow is generally toward the north to Puget Sound.

STORMWATER DISCHARGE

The upper and lower yards at the Terminal are served by a stormdrain system which ultimately conveys stormwater to the site's API oil water separator for treatment. The system includes a series of catch basins connected by underground concrete pipes, a sump with a pump, the two detention basins, and the API oil water separator.

Petroleum-related chemicals were detected in on-site stormwater, primarily from the lower yard. Stormwater collected from the upper yard through individual catch basins connected in series by underground concrete pipes, is manually drained into one of the lower yard sumps. This water combined with the stormwater is collected from the lower yard, and routed to an API oil water separator prior to entering Detention Basin No. 2 (also known as Midlake). Detention Basin No. 2 is lined with plastic material. Its outfall is identified as Outfall 002 which discharges into Willow Creek, see Figure 3. Outfall 002 is manually controlled by a valve which is normally kept closed except during discharge when Detention Basin No. 2 reaches a certain level, or during heavy storm events.

Stormwater from Detention Basin No. 2 can be overflowed through a spillway into Detention Basin No. 1. Upper yard runoff can be routed directly into Detention Basin No.1 during heavy storm events, as necessary. Detention Basin No. 1 is partially paved with off-specification asphalt material. Detention Basin No. 1 has the appearance of a wetland due to vegetation growth within the pond. Due to shallow groundwater at the site, Detention Basin No. 1 also receives contaminated groundwater through cracks at the bottom of the Basin. Observation and measurements made during the RI study indicated that the water levels in the ditch were higher than water levels in Detention Basin No. 1. The highest water level recorded in Detention Basin No. 1 during the RI was about 3 feet below the top to the berm around the basin.

Occasionally, the treated stormwater from the API separator can be discharged directly into Willow Creek through a series of nonoperating hydrocleaner units, a filter unit, and a holding sump to Outfall 001.

PREVIOUS PERMIT

Unocal obtained a general stormwater permit No. SO03-002953 on July 12, 1999, which has an expiration date of November 18, 2000. Due to the fact that the stormwater discharge contains contaminated groundwater, this Order is necessary to address the discharge in replacement of the stormwater general permit. Unocal submitted a permit application for an individual permit on September 2, 1999. The application was accepted by the Department on September 1, 2000.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

A Companion Order No. DE 97WQ-N321 was issued along with the General Stormwater Permit No. S03-002953 on January 9, 1998. Unocal has been in compliance with the requirement as specified in the Order. The facility last received an inspection on August 31, 2000.

WASTEWATER CHARACTERIZATION

The Permittee reported the following concentrations for pollutant parameters on their permit application (Form 2C):

Parameter	Reported Concentration
Suspended Solids	57 mg/L
pH	between 6.6 and 7.39 standard units
Benzene	7.61 µg/L
Ethylbenzene	1.06 µg/L
Toluene	0.98 µg/L
Oil & grease	<5.0 mg/L
Arsenic (total)	<10 µg/L
Cadmium (total)	<10 µg/L
Chromium (total)	<10 µg/L
Copper (total)	<10 µg/L
Lead (total)	<10 µg/L
Zinc (total)	98.5 µg/L
Phenols (total)	22.6 µg/L

DESCRIPTION OF THE RECEIVING WATER

The Terminal is situated within 1,000 feet of Puget Sound. Tides in the Edmonds part of Puget Sound range from approximately -3 to 13 feet relative to mean low low water. The Terminal is bounded on the northwest and northeast by an open and uncontrolled drainage ditch (also known as Willow Creek), see Figure 3. The drainage ditch carries surface water into a tidal basin, where water is then conveyed beneath the Burlington Northern Railroad right-of-way via a 48-inch-diameter culvert and on to Puget Sound.

The drainage ditch and the marsh are directly connected to Puget Sound and are tidally influenced. During periods of high tide, flow reversal occurs in the ditch and the marsh partially fills with water. During periods of low tide, the marsh completely drains. Surface water elevations in the ditch around and downstream of Detention Basin No. 1 were higher than groundwater elevations adjacent to the ditch in these areas.

The Terminal discharges stormwater to the drainage ditch or Willow Creek (a tributary of Puget Sound) which is designated as a Class AA. Water quality for Class AA is considered to support characteristic uses such as water supply, stock watering, fish and shellfish rearing, spawning, and harvesting, fish migration, wildlife habitat, recreation, commerce, and navigation.

PROPOSED ORDER LIMITATIONS

The Clean Water Act 301(b) requires all point sources that discharge to the waters of the U.S. to meet technology-based effluent limitations and state water quality standards for the discharge of pollutants. Federal and State regulations require that effluent limitations set forth in an NPDES Order must be the most stringent of technology- or water quality-based limitations. Technology-based limitations are based upon the treatment methods available to treat specific wastewater. Technology-based limitations are set by regulation (40 CFR, and Chapter 173-220 WAC).

Water quality-based limitations are based upon maintaining the characteristic and beneficial uses of receiving waters (Chapter 173-201A WAC) and assuring that the discharge will comply with the numerical Water Quality Standards. The more stringent of these two limits must be chosen for each of the parameters of concern or an indicator for the parameters of concern.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Federal effluent guidelines have not been promulgated for wastewater discharges resulting from underground storage tank cleanups. Consequently, the technology-based effluent limits of this Order have been developed on a best professional judgment (BPJ) basis in accordance with 40 CFR 125.3. No water quality based-limit is set in this Order because the technology based-limits are more stringent than the water quality standards for Benzene, Ethylbenzene, Toluene, and Xylene (BTEX). The requirement that all wastewater permits issued by the state of Washington impose all known, available and reasonable methods of control and treatment of pollutants (AKART) is satisfied for this Order through the determination of BPJ limits.

The regulation which authorizes discharges to the waters of the state of Washington, Chapter 173-220 WAC, requires that all discharges from point sources apply AKART to reduce the concentrations of pollutants.

EFFLUENT LIMITATIONS

The following technology-based effluent limitations have been proposed for this Order:

Parameter	Maximum Daily Limitation
Benzene	5.0 µg/L
BTEX	100 µg/L
Naphthalenes	160 µg/L
Gasoline Range Organics (GRO), benzene present	800 µg/L
Gasoline Range Organics (GRO), no detectable benzene	1,000 µg/L
Diesel Range Organics (DRO)	500 µg/L
Heavy Oils	500 µg/L
Oily Sheen	No visible sheen

The above effluent limitations are based on the Method A cleanup levels for groundwater under the revised Model Toxics Control Act adopted in February 2001 and on the application of AKART.

No limitation is set for lead and arsenic at this time. Monitoring-only is required. However, if monitoring data indicates concentrations exceeding 15 µg/L and 5 µg/L (total recoverable for lead and arsenic, respectively), the Department will require Unocal to investigate the lead and arsenic background concentrations in the vicinity within a six-month period after becoming aware of such concentrations. If the monitoring data indicates exceedance of the background concentration for lead and arsenic, then the Department will use the available background information to set a lead limit for lead and arsenic for the facility.

The monitoring data for these parameters may be evaluated in order to develop performance-based effluent limits for the next Order.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge Orders shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state.

The Department will use the designated classification criteria or this waterbody in the proposed Order. This Order should not cause a degradation of existing water quality.

WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA

The water quality-based effluent limit set in this Order is as follows:

Outfalls	Parameter	Effluent Limit
001, 002	pH	between 6.5 and 8.5 standard units

The Water Quality criteria for pH in a Class "AA" fresh water environment (Willow Creek) is between 6.5 and 8.5 standard units.

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210) to verify the treatment process is functioning correctly and the effluent limitations are being achieved. The monitoring and testing schedule is detailed in the Order under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

HUMAN HEALTH

The water quality standards now include 91 numeric human health-based criteria. The effluent limits set in this Order for benzene, ethylbenzene, toluene are well below the numeric human health-based criteria.

WHOLE EFFLUENT TESTING

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

In accordance with WAC 173-205-040, Unocal 's effluent has been determined to have the potential to contain toxic chemicals. The proposed Order contains requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in chapter 173-205 WAC. The proposed Order requires Unocal to conduct toxicity testing for one (1) year in order to characterize the acute toxicity of the effluent.

If acute toxicity is measured during effluent characterization at levels that, in accordance with WAC 173-205-050(2)(a), have a reasonable potential to cause receiving water toxicity, then the proposed Order will set a limit on the acute toxicity. The proposed Order will then require Unocal to conduct WET testing in order to monitor for compliance with an acute toxicity limit. The proposed Order also specifies the procedures Unocal must use to come back into compliance if the limits are exceeded.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC_{50}, EC_{50}, etc. Ecology recommends that Unocal send a copy of the acute toxicity sections of their Orders to their laboratory of choice.

When the WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water toxicity, Unocal will not be given WET limits and will only be required to retest the effluent prior to the fifth (5^{th}) year of issuance of this Order in order to demonstrate that toxicity has not increased in the effluent.

If Unocal makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by Order modification, or in the Order renewal. Toxicity is assumed to have increased if WET testing conducted for submission with an Order application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard."

Unocal may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Unocal to evaluate the potential for the discharge to cause a violation of application standards (WAC 173-204-400).

The Department has determined that the discharge from this facility is not likely to contain toxic materials in concentrations which may cause violations of the sediment standards. Thus, sediment monitoring is not required in this Order. Should the characteristics of the discharge change such that violations of the sediment quality standards become more likely, sediment monitoring may be required through either a modification of the Order or through an administrative order.

SPILL CONTROL PLAN

Since no chemical products will be stored on-site and no solid waste is expected to be generated from the remediation operation, a spill and solid waste control plan will not be required in this Order.

TREATMENT SYSTEM OPERATING PLAN

The treatment system will be operated according to procedures and criteria described in an approved operating plan. This plan will be submitted to the Department for review. The plan will, at a minimum:

A. Define the baseline operating conditions and describe the operating parameters and procedures to be used under these conditions.

B. Describe the operating parameters and procedures needed to maintain Order compliance during foreseeable unusual operating conditions.

C. Describe any regularly scheduled maintenance or repair activities at the permitted facilities which would affect the volume or character of the wastes discharged; develop a list including quantities and chemical compositions of any maintenance-related substances (such as cleaners, degreasers, solvents, etc.) that will be used.

The plan may also include an evaluation of influent, intermediate, and final effluent testing results of the treatment system. The purpose of the evaluation would be to identify indicator parameters and monitoring points that would provide for effective compliance monitoring with reduced testing frequencies. If included in the plan, this evaluation should also include a proposed schedule for compliance and operations monitoring.

UPDATED STORMWATER BEST MANAGEMENT PRACTICES PLAN

A Stormwater Best Management Practices (BMP) plan update will be required to be submitted to the Department for review. The plan will address the following source control BMPs: containment and storage of contaminated soils during drilling and construction, provisions for roofs over storage and working areas, and provisions for drainage from the groundwater treatment system area.

WELL CONSTRUCTION DETAILS

All new wells must be constructed in accordance with Chapter 173-160 WAC, part 1 and 3. Figure 7 in Chapter 173-160 WAC illustrates the well construction.

STUDY OF BACKGROUND CONCENTRATION FOR LEAD

If the monitoring data indicates concentrations exceeding 5 µg/L (total recoverable), the Department will require Unocal to investigate the vicinity's background concentration for lead in groundwater. This data may be used to set a water quality-based lead limit for the facility.

EFFLUENT MIXING STUDY

The Department has estimated the amount of mixing of the discharge within the authorized mixing zone to determine the potential for violations of the Water Quality Standards for Surface Waters (Chapter 173-201A WAC). Condition S6 of this Order requires Unocal to more accurately determine the mixing characteristics of the discharge. Mixing will be measured or modeled under conditions specified in the Order to assess whether assumptions made about dilution will protect the receiving water quality outside the allotted dilution zone boundary.

OTHER SPECIAL CONDITIONS

The specific requirements listed in Order condition S3. are derived directly from federal regulations in 40 CFR 122.22, 122.41, 122.44, and 122.48.

HUMAN HEALTH

The Department has determined that the applicant's discharge does not contain chemicals of concern based on existing data or knowledge. The discharge will be re-evaluated for impacts to human health at the next Order issuance.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law regulations and have been standardized for all Orders issued by the Department.

ORDER MODIFICATIONS

The Department may modify this Order to impose numerical limitations, if necessary, to meet Water Quality Standards, or Groundwater Standards, based on new information obtained from sources such as inspections, effluent monitoring.

The Department may also modify this Order as a result of new or amended state or federal regulations.

REFERENCES

1. DMRs from LUST permit cleanup site (TPH, lead).

2. Environmental Protection Agency (EPA) 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

3. EPA 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Groundwater. EPA/600/6-85/002a.

4. METRO reports of monitoring of wastewater discharges at groundwater remediation sites.

5. Model NPDES Permit for Discharges Resulting From the Cleanup of Gasoline Released From Underground Storage Tanks. EPA Office of Water Enforcement and Permits and Office of Underground Storage Tanks. June 1989.

6. NPDES Permit Application submitted by Unocal on September 2, 1999.

APPENDIX I--PUBLIC INVOLVEMENT

The Department has tentatively determined to issue this Order to the applicant listed above. The Order contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public Notice of Application was published on September 4 and 11, 2000, in the *Everett Herald* to inform the public that an application had been submitted and to invite comment on the reissuance of this Order.

The Department will publish a Public Notice of Draft (PNOD) in the *Everett Herald* to inform the public that a draft Order and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft Order. The draft Order, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 4:30 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

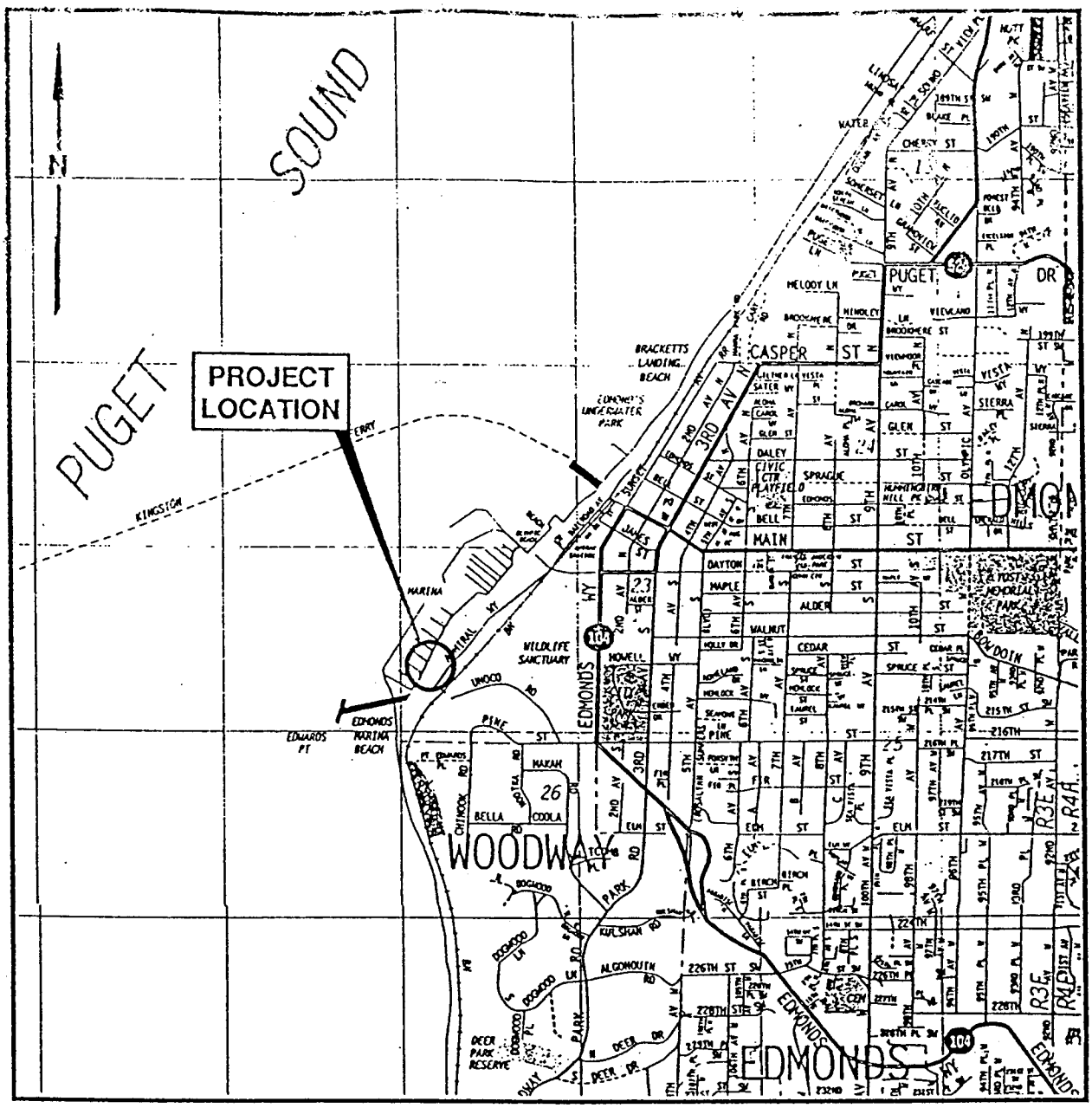
Water Quality Order Coordinator
Department of Ecology
Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, WA 98008

Any interested party may comment on the draft Order or request a public hearing on this draft Order within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft Order (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this Order will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the Order. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this Order.

Further information may be obtained from the Department by telephone, (425) 649-7201, or by writing to the address listed above.

APPENDIX II–SITE MAPS

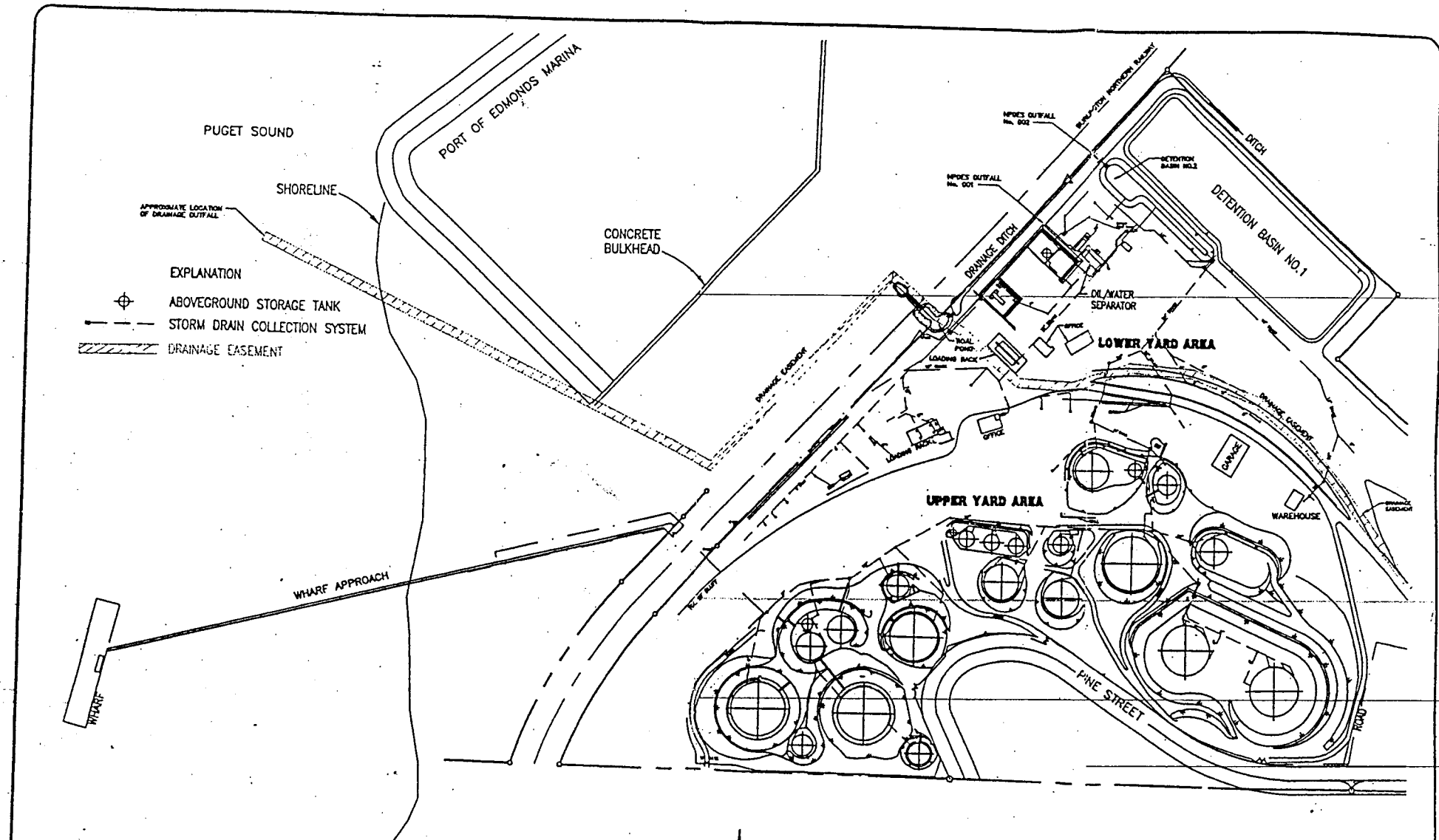


0 1/2 1

Scale in Miles

349001.10 P:\A\D\Port of Edmonds Dry Boat Storage\Geotech. Report (M) 3/96

	Vicinity Map	Figure 1



EMCON Northwest, Inc.

Source: Union Oil Company of California Los Angeles, California
Site Area Study General Arrangement Edmonds Terminal
Edmonds, Washington. 10/12/92

N

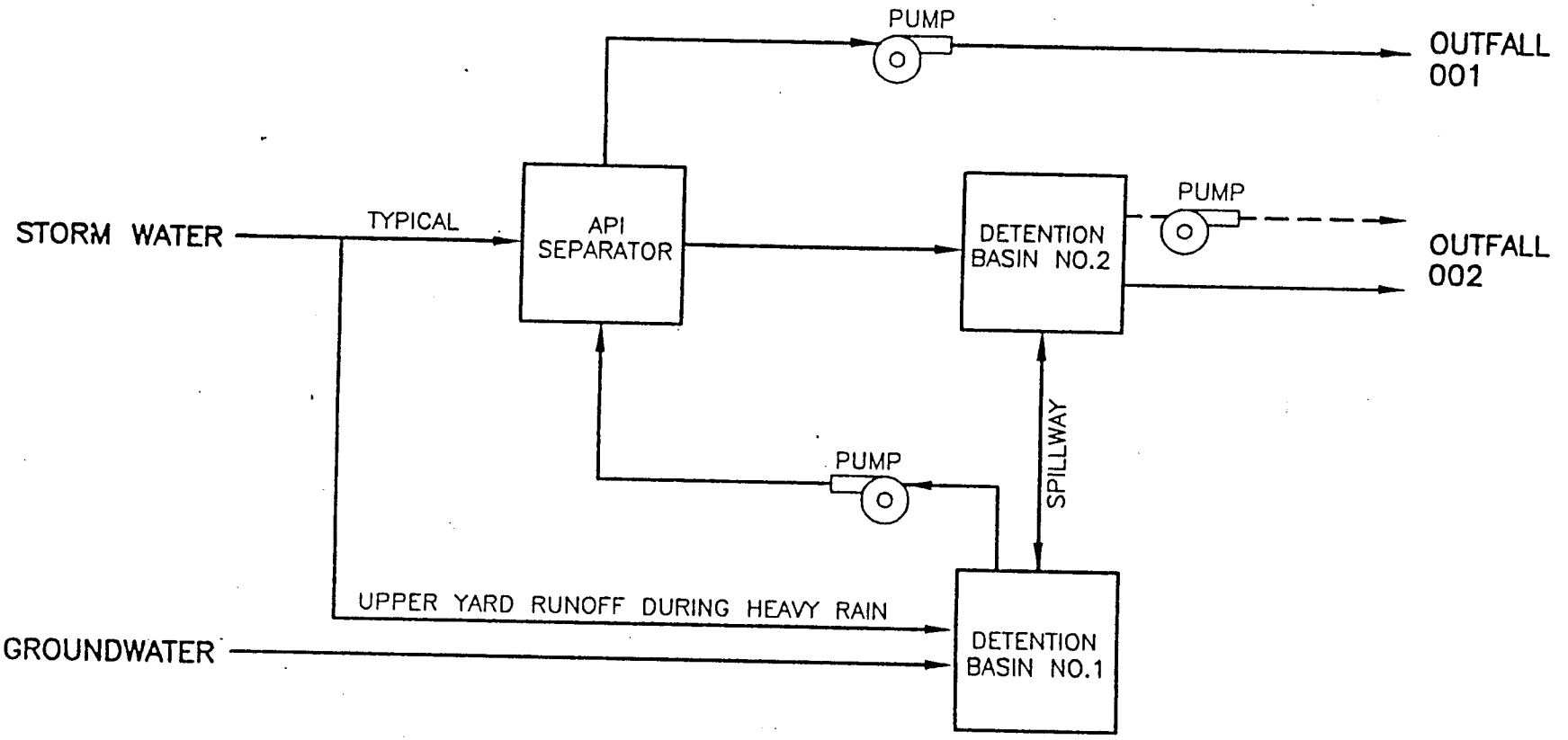
0 200 400

SCALE (ft)

DATE	11/92
DWN.	KLM
REV.	
APPR.	
PROJECT NO.	0324-035.01

Figure 2
UNOCAL CORPORATION
EDMONDS, WASHINGTON
BULK FUEL TERMINAL
STORM DRAIN COLLECTION SYSTEM

1= 200 11-22-93 0324\035\01C31



EXPLANATION

- - - - FLEXIBLE HOSE

NOTE: SCHEMATIC ONLY, NOT TO SCALE.

Maul Foster & Alongi, Inc.

DATE 8/99
DWN. JLN
APPR. ____
REVIS. ____
PROJECT NO.
9077-001.001

Form 2C, Item II
UNOCAL EDMONDS TERMINAL
EDMONDS, WASHINGTON

Figure 3

WATER FLOW

JLN\MFA\9077\001\001-FLO

PLOT AT 1 = 1P

APPENDIX C

ARMY CORPS OF ENGINEERS' LETTER DATED MAY 25, 1995

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-2255

REPLY TO ATTENTION OF:

Regulatory Branch

MAY 25 1995

RECEIVED
MAY 30 1995
ENVIRONMENTAL AFFAIRS

Gene Fong, Division Administrator
Federal Highway Administration
711 South Capitol Way, #501
Olympia, Washington 98501

Reference: Edmonds Ferry Terminal

Dear Mr. Fong:

Thank you for your letter of April 28, 1995, concerning the Environmental Impact Statement being prepared for the Edmonds Ferry Terminal project. One of my staff has since attended a scoping meeting for the project, and it appears that your currently preferred alternative would require a standard individual Department of the Army (DA) permit pursuant to Section 10 of the 1899 Rivers and Harbors Act. Accordingly, the Seattle District, US Army Corps of Engineers (Corps), agrees to be a cooperating agency in the further preparation of the Environmental Impact Statement.

We currently see no involvement under Section 404 of the Clean Water Act. A wetland, part of the former delta of Willow Creek, does exist adjacent to an area where the terminal could be built under the preferred alternative. That wetland is the subject of ongoing restoration efforts, and has been designated a wildlife sanctuary by the City of Edmonds. The Corps highly recommends that you avoid any impacts to the wetland. The sanctuary status of the wetland will make permitting extremely difficult, and the sequencing requirements of the "Section 404/NEPA/SEPA Merger Agreement" places a "high priority" on avoidance of impacts to wetlands and other waters of the U.S.

Just south of the wetland is a former stormwater detention basin, now being cleaned up under the State of Washington's Model Toxic Control Act. The basin may continue to be used for stormwater detention by the ferry terminal, and neither the basin's current cleanup nor future uses for stormwater detention will require DA permits.

As a cooperating agency, we will be most concerned about the project's need and purpose, alternative locations and designs, and impacts on the aquatic environment. From the scoping meeting, we learned that the preferred alternative places the ferry boats some 1,500 feet (nearly a third of a mile) from the terminal building, raising the need for some kind of high-capacity people mover. Given the installation and maintenance

costs of such a system, and the difficulties its breakdown or other non-operation modes would impose on foot commuters (e.g., the elderly, parents with toddlers, people with suitcases or packages, the disabled, passengers almost late for a ferry), we question the practicability of the design.

Mr. Jack Kennedy will be the Corps staff contact person for this project. If you have any questions on these comments, please contact him at telephone (206) 764-3495.

Sincerely,

Thomas F. Mueller
Chief, Regulatory Branch

Copy Furnished:

Sandra Stephens
Washington State Department of Transportation
Post Office Box 43700
Olympia, Washington 98504

APPENDIX D

DETERMINATION OF NONSIGNIFICANCE AND SEPA CHECKLIST

WAC 197-11-970 Determination of nonsignificance (DNS).

DETERMINATION OF NONSIGNIFICANCE

Description of proposal: Interim cleanup actions at Unocal Edmonds Terminal. Cleanup actions for Detention Basin No. 1 and Southwest Lower Yard as described in "Work Plan for Detention Basin No. 1 and Southwest Lower Yard, Unocal Edmonds Terminal" dated April 22, 2003.

Proponent: Unocal Corporation

Location of proposal, including street address, if any: 11720 Unoco Road, Edmonds, Washington 98020

Lead agency: Washington State Department of Ecology.

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

☐ There is no comment period for this DNS.

☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

☑ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 30 days from the date below. Comments must be submitted by May 30, 2003 to: David L. South, Washington State Department of Ecology, 3190 160th Avenue SE, Bellevue, WA 98008 or dsou461@ecy.wa.gov. Indicate Unocal Edmond Comment in the envelope address or in the email subject line. Telephone: 425-649-7200

Responsible official: Steven M. Alexander

Position/title: Section Manager, Northwest Regional Office Toxics Cleanup Program Phone: 425-649-7054

Address: 3190 160th Avenue SE, Bellevue, WA 98008

Date: May 1, 2003 Signature Steven M. Alexander

(OPTIONAL)

☐ You may appeal this determination to (name) _____
at (location) _____
no later than (date) _____
_____ by (method) .....

You should be prepared to make specific factual objections.
Contact _____ to read or ask about the procedures for SEPA appeals.

☑ There is no agency appeal.

WAC 197-11-960 Environmental checklist.

ENVIRONMENTAL CHECKLIST

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable: Model Toxics Control Act (MTCA) Interim Action at Unocal Edmonds Terminal

2. Name of applicant: Unocal Corporation

3. Address and phone number of applicant and contact person: Dr. Mark Brearley 425-640-7610
Unocal Corporation
PO Box 399, Edmonds, WA 98020

4. Date checklist prepared: March 18, 2003

5. Agency requesting checklist: WA Department of Ecology

6. Proposed timing or schedule (including phasing, if applicable):
Interim cleanup action for Detention Basin No. 1 and a portion of the "lower yard" of the Terminal is scheduled to begin June 2003.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No other interim actions planned at this time. Additional MTCA remedial actions will be performed at the site as part of final site cleanup.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Interim Action Report, Work Plan for Detention Basin No. 1 and Southwest Lower Yard, Unocal Edmonds Terminal. Prepared for Unocal Corporation by Maul Foster & Alongi, Inc. March 2003, in progress.

Remedial Investigation Report, Unocal Edmonds Bulk Fuel Terminal. Prepared for Unocal Corporation by Maul Foster & Alongi, Inc. June 2001.

Unocal Edmonds Bulk Fuel Terminal Wetland Study, Edmonds, Washington. Prepared for City of Edmonds Planning Division, February, 1995.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

City of Edmonds Grade and Fill Permit

City of Edmonds Critical Areas Checklist

WA Department of Ecology NPDES Permit

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Pursuant to chapter 173-340 WAC, Model Toxics Control Act (MTCA), Unocal proposes to perform an interim remedial action to reduce potential threats to human health and the environment and to provide additional information for a feasibility study and subsequent design of a cleanup action for the site. Specifically, asphalt material and petroleum-contaminated soil will be removed from Detention Basin No. 1 and shipped off site for recycling, treatment, and/or disposal. Petroleum-contaminated soil from the Southwest Lower Yard will also be excavated and shipped off site for recycling, treatment and/or disposal.

The Unocal Edmonds Terminal is approximately 47 acres: the upper yard (former tank farm) is approximately 25 acres and the lower yard approximately 22 acres. Storm water Detention Basin No. 1 encompasses approximately 2.7 acres in the northern-most corner of the Terminal's lower yard. Asphalt material and petroleum-contaminated soil will be removed from the approximately 180-foot by 630-foot storm water detention basin. Up to 30,000 cubic feet of material may require removal, at excavation depths ranging from 6 to 8 feet. Water (consisting of detained storm water and groundwater) removed from the basin during excavation activities will be transferred to adjacent Detention Basin No. 2, the Terminal's oil/water separator, or to a holding tank for subsequent discharge pursuant to conditions of the Terminal's NPDES discharge permit.

An estimate 10,000 cubic yards of petroleum-contaminated soil will be removed from the southern end of the lower yard (Southwest Lower Yard). The excavation will be backfilled with clean imported fill and graded into the surrounding contours.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Unocal Edmonds Terminal is located at 11720 Unoco Road in Edmonds, WA; Section 23, and the northwest quarter of the northeast quarter of Section 26, Township 27 North, Range 3 East, W.M., in Snohomish County, WA.

Site plan and vicinity map/topographic map are attached.

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other . . . . ..

Lower yard is relatively flat; Detention Basin No. 1 has sloped berms surrounding the basin.

b. What is the steepest slope on the site (approximate percent slope)?

< 2% in lower yard

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The site is underlain by fill, alluvium, and a sequence of glacial and pre-glacial deposits. In the lower yard, grade fill consists primarily of sand and gravel mixtures, with small amounts of silt. Finer grade fill is also present. It varies in composition, but generally consists of sand and silt mixtures with varying amounts of gravel, organic material and miscellaneous debris.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

See previous Item A. 11. project description for approximate quantities and areas involved. An estimated 10,000 cubic yards of clean, imported fill will be required to backfill the Southwest Lower Yard excavation. The surface will be roughly graded into surrounding contours. Source of fill is not yet identified.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Potential erosion during construction if work occurs during rainy periods. Erosion will be controlled per an erosion and sedimentation control plan.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Pavement and buildings currently cover approximately 8 % of the site. The interim action will not change this percentage; i.e., no additional imperious cover will be placed as part of the interim action.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Prepare and implement an erosion and sedimentation control plan. Measures will include use of filter fabric fences, straw bale barriers, and storm drain inlet protection.

i. **Air**

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

During construction, dust, truck emissions, petroleum hydrocarbon odors, and odors associated with decaying organic matter (detention basin material) may be emitted. No anticipated emissions after project completion.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Use of water spray as necessary to control dust during excavation, backfilling, and grading. Air monitoring to check petroleum hydrocarbon emissions.

3. **Water**

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Willow Creek runs along northeast, north and northwest property boundary (also the boundary of Detention Basin No. 1) and discharges into Puget Sound. Edmonds Marsh is located immediately to the northeast of the site and basin.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Excavation will occur adjacent to (but on the other side of the berm from) the Willow Creek drainage channel that runs along the northeast, north and northwest boundary of the detention basin.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

As noted above, up to 30,000 cubic feet of material may require removal from Detention Basin No. 1. This basin was delineated as a disturbed, emergent wetland in a 1995 wetland study.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Detention basin water (consisting of detained storm water and groundwater) will be removed from Detention Basin No. 1 when necessary to accommodate excavation activities. Approximate quantity is not known.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

Does not apply.

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

See previous Item A. 11. project description regarding incidental withdrawal of basin water (which includes groundwater) from excavation. No water will be discharged to groundwater.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Does not apply.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff is currently controlled and conveyed through the site via a system of catch basins, drain lines, pumps and two detention basins. Storm water runoff is ultimately discharged to Willow Creek pursuant to an NPDES permit. Upon completion of the Detention Basin No. 1 interim action, Detention Basin No. 1 will continue to be used as a storm water detention basin for use during heavy rainfall events that cannot be accommodated in the Terminal's Detention Basin No. 2.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Basin water may enter surface water: Basin water removed during excavation activities will be discharged to Detention Basin No. 2, the oil/water separator, or to a holding tank for subsequent discharge to Willow Creek pursuant to conditions of the Terminal's NPDES permit.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Impacts to storm water runoff will be controlled by timing of the construction activity (drier months), and use of the existing storm water collection system. An erosion and sedimentation control plan will be prepared and implemented. Should soil particulate still become entrained in storm water runoff, detention (settling) will be provided by Detention Basin No. 2 prior to discharge.

4. **Plants**

a. Check or circle types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other
X evergreen tree: fir, cedar, pine, other
X shrubs
____ grass
____ pasture
____ crop or grain
X wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____ water plants: water lily, eelgrass, milfoil, other
____ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Small-diameter trees, shrubs and plants that are growing in Detention Basin No. 1 will be removed during excavation of the basin material.

c. List threatened or endangered species known to be on or near the site.

No threatened or endangered species identified on the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None.

5. **Animals**

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other: otter.
fish: bass, salmon, trout, herring, shellfish, other: coho and chum salmon reported in Willow Creek; also cutthroat trout, sculpin and three-spined stickleback.

b. List any threatened or endangered species known to be on or near the site.

No threatened or endangered species identified on or near site, except bald eagle territory located primarily south of the site and extending into the south end of the site. Bald eagles are reported as nesting approximately 1 mile south of the Terminal.

c. Is the site part of a migration route? If so, explain.

Do not know.

d. Proposed measures to preserve or enhance wildlife, if any:

Removal of asphalt material and petroleum-contaminated soil from Detention Basin No. 1 is an enhancement.

6. **Energy and natural resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Does not apply.

7. **Environmental health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Risk of exposure to construction workers (dermal contact, ingestion, inhalation) by dust, petroleum hydrocarbons, or petroleum hydrocarbon-contaminated soil. Risks to be controlled by site-specific health and safety plan, including dust control and air monitoring.

1) Describe special emergency services that might be required.

Medical facility services as necessary in case of worker exposures noted above.

2) Proposed measures to reduce or control environmental health hazards, if any:

Workers will have received Hazardous Waste Operations and Emergency Response (HAZWOPER) training. Workers will follow a site-specific health and safety plan, including use of protective clothing as required. Air monitoring with field instruments and visual monitoring of fugitive dust will be performed during the interim action.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Does not apply.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short-term noise associated with operation of heavy equipment to excavate and load/unload soil, material, and fill, and with truck traffic onto, around, and from the site. Expected hours of construction: 7:30 a.m. to 5:00 p.m., Monday through Friday. No long-term noise associated with the project.

3) Proposed measures to reduce or control noise impacts, if any:

Limit hours of work to daytime/business hours. Noise mitigated by substantial, unoccupied buffer properties.

8. Land and shoreline use

a. What is the current use of the site and adjacent properties?

Site is a former bulk fuel terminal. Current use is for office purposes only. Use of property to the north/northeast is open space (Union Oil Marsh); wooded to the south, adjacent the Southwest Lower Yard excavation area; Deer Creek Salmon Hatchery at the southeast corner of the site; State Route 104 and residential use to the east; and BNSF railway/Port of Edmonds marina to the west.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

Lower yard: three buildings, two sheds, one garage, one warehouse, two former truck loading racks, two detention basins, one oil/water separator.

d. Will any structures be demolished? If so, what?

One cinder block shed (approx. 6 feet by 12 feet) may require removal from the Southwest Lower Yard.

e. What is the current zoning classification of the site?

The lower yard is zoned MP (Master Plan) 2; the upper yard is zoned MP1.

f. What is the current comprehensive plan designation of the site?

Comprehensive plan designation is Master Plan Development. Guidelines from the Downtown Waterfront Plan suggest the lower yard as Waterfront Transportation and the upper yard as Multiple Family Use.

g. If applicable, what is the current shoreline master program designation of the site?

Does not apply.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Detention Basin No. 1 was characterized in a 1995 study as a disturbed, emergent wetland. An eastern portion of the lower yard (along Willow Creek and part of the Edmonds Marsh was characterized as wetland. Portions of the upper yard were characterized as steep slope (>30%).

i. Approximately how many people would reside or work in the completed project?

Does not apply.

j. Approximately how many people would the completed project displace?

Does not apply.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Does not apply.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Project itself (interim remedial action) will increase compatibility with projected land uses.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Does not apply.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Does not apply.

c. Proposed measures to reduce or control housing impacts, if any:

Does not apply.

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

Does not apply.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Does not apply.

11. **Light and glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Does not apply.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Does not apply.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

Does not apply.

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?

Does not apply.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Does not apply.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Does not apply.

13. **Historic and cultural preservation**

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None known.

c. Proposed measures to reduce or control impacts, if any:

None.

14. **Transportation**

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Site is served by State 104 and Pine Street.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Does not apply.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Does not apply.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Does not apply.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Does not apply.

g. Proposed measures to reduce or control transportation impacts, if any:

Does not apply.

15. **Public services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Does not apply.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Does not apply.

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Does not apply.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: ..... FOR UNOCAL

Date Submitted: 4/22/03

TO BE COMPLETED BY APPLICANT

EVALUATION FOR
AGENCY USE ONLY

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Potential emissions of dust and petroleum hydrocarbon odors; production of noise from construction equipment, trucks. No increased discharge to water.

Proposed measures to avoid or reduce such increases are:

Air monitoring will be performed to monitor petroleum hydrocarbon emissions during the lower yard interim action. Visual monitoring of fugitive dust. Use of water spray as necessary to control dust during excavation, backfill and grading.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Will not affect fish or marine life. May affect (displace) birds, small mammals. Plants, shrubs and small-diameter trees will be removed from Detention Basin No. 1.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

None proposed.

3. How would the proposal be likely to deplete energy or natural resources?

Does not apply.

Proposed measures to protect or conserve energy and natural resources are:

Does not apply.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposal will result in removal of a disturbed, emergent wetland within Detention Basin No. 1.

Proposed measures to protect such resources or to avoid or reduce impacts are:

None. Removal necessary so as to excavate asphalt material and petroleum-contaminated soil from the detention basin.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Project itself (interim remedial action) will increase compatibility with projected land uses.

Proposed measures to avoid or reduce shoreline and land use impacts are:

Does not apply.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Does not apply.

Proposed measures to reduce or respond to such demand(s) are:

Does not apply.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

No conflicts known. Per Army Corps of Engineers letter dated May 25, 1995, cleanup of the detention basin will not require Department of Army permits.