Appendix J EIP Hydrology/Water Quality Technical Report

Draft

Hydrology and Water Quality Technical Report Newland Street Residential Project EIR

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NEWLAND STREET RESIDENTIAL PROJECT

Hydrology and Water Quality Technical Report

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HYDROLOGY AND WATER QUALITY TECHNICAL REPORT

INTRODUCTION

EIP Associates (EIP) has prepared this report to provide technical information on the hydrology and water quality associated with the Newland Street Residential Development project (project) located in the City of Huntington Beach, California. This report provides an evaluation of the Preliminary Hydrology Studies and Hydraulic Calculations prepared by Walden and Associates in July 2005. Project impacts to drainage, water quality, groundwater resources, and flooding are addressed. In addition this report provides a summary of relevant federal, state, and local regulations and ordinances and recommends mitigation measures to avoid or reduce project impacts.

Methods

This report was prepared based on a literature review from sources including, the City of Huntington Beach Urban Runoff Management Plan, California Stormwater Best Management Practices (BMPs) Handbook and the Preliminary Hydrology Studies and Hydraulic Calculations Report by Walden and Associates. Existing and potential water quality pollutants were evaluated based on current and future operational activities that may occur on site. Additionally, applicable federal and state regulations, ordinances and or policies that relate to the site are presented. In order to better evaluate potential impacts, EIP Associates made simple calculations to determine the Annual Runoff and Annual Pollutant Load from the site. Runoff coefficients were calculated using the methods provided in the Caltrans Stormwater Quality Handbook. Average annual rainfall for the site was characterized by the average of the past five water years at the Long Beach California Irrigation Information Management System weather station and is 11.5 inches per year. The Simple Method (Center for Watershed Protection, 2004) was used to characterize pollutant loads discussed in the impacts section. These general equations are presented below:

Annual Runoff	Annual Pollutant Load
$Q = P \times A \times C \times 0.9$	$L = Q \times C$
Q = Annual Runoff	L = Annual Pollutant Load
P = Average Annual Rainfall	Q = Annual Runoff
A = Area of Site	C = Average Concentration of Pollutant
C = Runoff coefficient	
0.9 = Fraction of rainfall likely to result in runoff	

ENVIRONMENTAL SETTING

Regional Hydrology

The City of Huntington Beach (City) is located within the Santa Ana River Basin (SARB), a 2,800-square-mile area located roughly between Los Angeles and San Diego. The SARB is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean. The SARB can be divided into an upper basin and a lower basin by the Prado flood control dam, which is located at the upper end of the Lower Santa Ana River Canyon. The dam is located on the Santa Ana River in Riverside County, approximately two miles west of the City of Corona. The project site is located within the lower basin drainage, which is generally considered Orange County. The Santa Ana Canyon, which separates Chino Hills from the Santa Ana Mountains, is the major drainage of Orange County. The lower Santa Ana River has been channelized and modified so that in most years flows do not reach the Pacific Ocean but are used to recharge groundwater.

The City is located within two watersheds, including: Westminster and Talbert watersheds. The proposed project is located in the Talbert Watershed, which covers 21.4 square miles straddling the mouth of the Santa Ana River (Figure 1). It includes portions of the cities of Costa Mesa, Fountain Valley, Huntington Beach, Newport Beach, and Santa Ana. Two main tributaries drain this watershed: on the western side, the Talbert and Huntington Beach Channels drain through the Talbert Marsh before emptying into the Pacific Ocean. On the eastern side, the Greenville-Banning Channel empties into the Santa Ana River.

Adjacent and Existing Land Use

The proposed project is located within the southeastern portion of the City of Huntington Beach in western Orange County, California. The project site is approximately 23.1 acres and located at 21471 Newland Street, south of Lomond Drive, west of Newland Street, and north of the terminus of Hamilton Avenue. In addition, the site is bordered to the west and south by wetlands and open space, as well as the Huntington Beach Channel.

The majority of the site is currently vacant with graded, bare soil surfaces. The southern boundary (as well as the rest of the project site) is denoted by 36-inch temporary construction fencing along a small earthen berm, which is situated approximately 10 feet north of existing chain link and masonry fencing. The northeast corner of the site (approximately 4.5 acres located at 21401 Newland Street) is currently used as a recreational vehicle and boat storage facility, consisting of a large paved surface parking area and a temporary trailer serving as an administration office. Photos 1 and 2 illustrate existing site conditions.

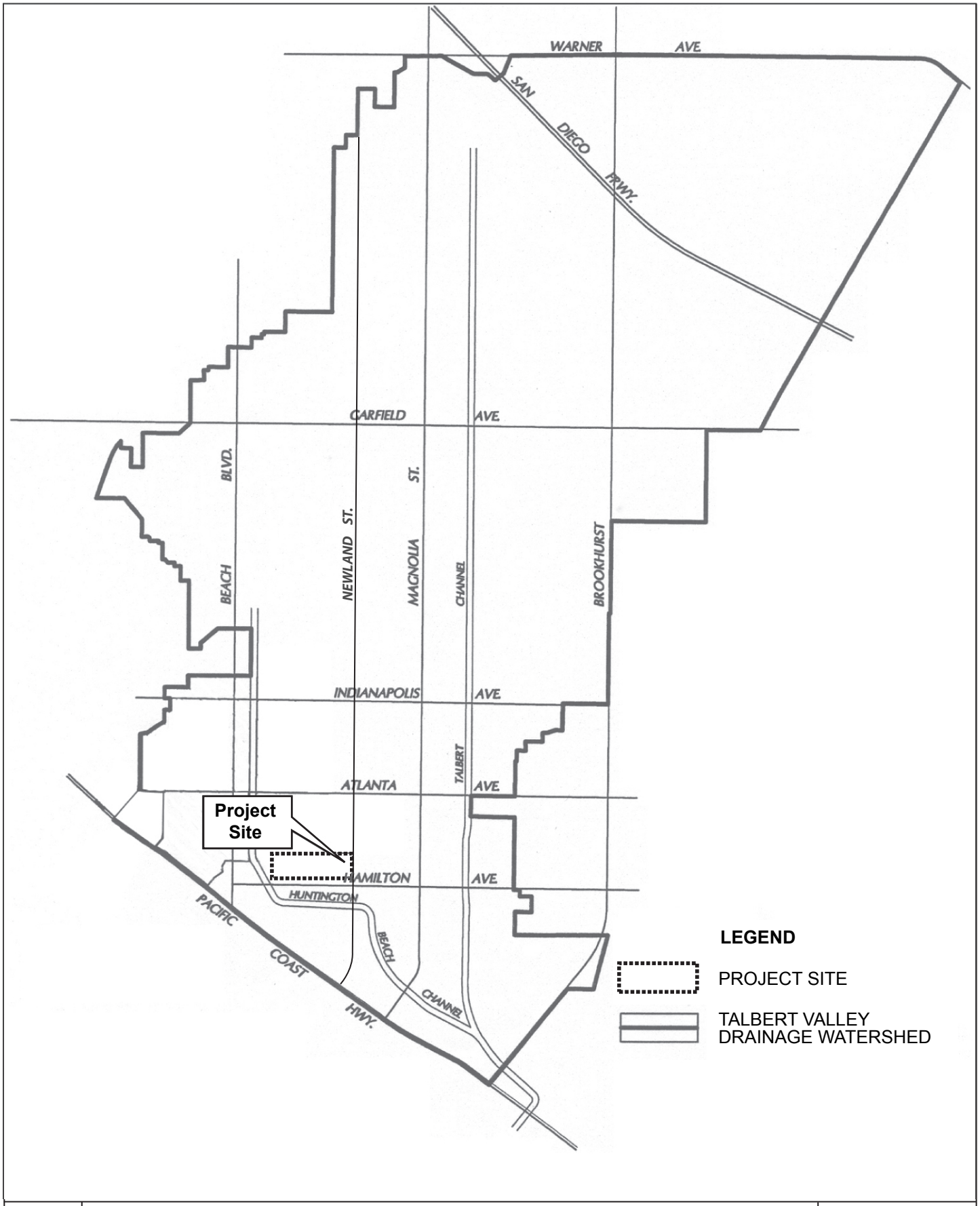

FIGURE **1**

Talbert Watershed

Not to Scale

***Source*:** EIP Associates, 2005

City of Huntington Beach

11034-00

EIP ASSOCIATES

Photo 1: Looking southeast across site

Photo 2: Looking west across site

Site Remediation Activities

The site is located on a former oil tank farm for which decommissioning and remediation were completed in June 2004. The primary constituents of concern for remediation activities were lead, polyaromatic hydrocarbons and fuel-related hydrocarbons such as, diesel, gasoline, and benzene. The area has been excavated and backfilled with clean soil. The backfilled areas were sampled to determine the extent of contamination remaining in the soil. The excavation and backfill process was conducted in several phases until representative samples met the remediation goals. Once remediation goals were met, the Santa Ana Regional Water Quality Control Board issued a No Further Action letter and Certificate of Completion verifying remediation for identified contaminates. The Certificate of Completion is in included in Appendix A.

Drainage

Drainage from within the City is conveyed through streets and gutters to the City storm drain system consisting of underground pipes, pump stations, and open channels as well as several Orange County channels.

Areawide Drainage Facilities

The Orange County Flood Control District (OCFCD) is responsible for the design, construction, operation, and maintenance of regional flood control facilities. The County flood channels are maintained annually, and maintenance includes debris and vegetation removal. The existing storm drainage channels were originally designed to accommodate 25-year flood events or less[1]. However, when the channels were constructed, they were built to accommodate 65 percent of the 25-year flood event. The channels were built with restrictive channel bottoms, which reduce the amount of water the channel could carry, but which slow the flow rate of runoff water while still enabling the system to remove runoff water. The County now uses 100-year flood event standards for new storm drain construction and drainage improvements, and portions of the channels have been improved to accommodate up to a 100-year storm event.

[1] Probabilistic assessments are given to define 10-year, 25-year, and 100-year flood events. For a 25-year flood, for example, this means a given flood event has a one-in-twenty-five (4 percent) of occurrence in any given year, or a "return period" of once every 25 years. Such assessments are based upon statistical frequency of collected data. In hydrology, there are actually three types of comparative assessments: (1) rainfall within a given time interval; (2) peak stream flow; or (3) volume of flow caused by a single storm event or sequence. Each of these attributes can be measured and counted as discrete data points to provide statistical comparison or frequency analysis. As a consequence, a location could experience a 25-year storm, a 25-year peak flow event, or a 25-year flood, all of which may or may not be independent of one another.

Local Drainage

The City is responsible for its own subregional and local drainage facilities. The City owns and operates 15 storm drainage channel pumping stations that are generally located near the principal Orange County drainage channels. Runoff water is collected at each pump station through the City's drainage facilities, and waters are then transferred to the nearest OCFCD channel, which ultimately conveys the water to the Pacific Ocean. The City's channels, originally designed to accommodate up to 25-year flood events, are constructed at ground level, or at-grade. The at-grade channels accelerate flooding potential because the amount of water that may be pumped into an at-grade channel is less than what can be pumped to a below-grade channel. As a result, those areas located adjacent to an at-grade channel can flood in a storm event because the pump stations are unable to pump a sufficient amount of water into the channels.

On-Site Drainage

Approximately 5 acres at the northeast portion of the site is paved and operating as an RV parking and storage area. As a condition of that use, grading and drainage improvements allow this area to drain to the southeast into a swale and then southerly along Newland Street to a 12-inch City-owned storm drain pipeline located in Hamilton Avenue. The remaining portion of the site drains via sheet flow northeasterly toward the intersection of Lomond Drive and Lochlea Lane, except for approximately two acres at the southeast portion of site, which drains easterly to Newland Street. Runoff from the site is ultimately conveyed to the Newland Pump Station, which is located on Hamilton Avenue. The runoff is then pumped into the Huntington Beach Channel, which is owned and maintained by the OCFCD (Todd Broussard, pers. comm.). The water is then discharged to the Pacific Ocean.

The Newland Pump Station was built in 1966 and has reached its design life of 30 to 40 years as well as having major capacity constraints. It currently operates with three pumps, which can only handle about 60% of the peak flow generated by a 25-year storm event. The 1993 Master Plan of Drainage recommends replacement of the existing pump station with a new pump station with four additional pumps. Due to site constraints, it is likely that additional property will need to be acquired for improvements. Currently, a 60" diameter pipe and a 96" diameter pipe convey stormwater runoff from Hamilton Avenue to the Newland Pump Station. The 1993 Master Plan of Drainage recommends the upsizing of these two pipes with a 90" and a 120" diameter pipe respectively to convey the required 100-year flow. These improvements are currently unprogrammed. (Southeast Area Committee Packet on Capital Improvements, June 2003).

Surface Water Quality

Urban runoff (both dry and wet weather) discharges into storm drains and, in most cases, flows directly to creeks, rivers, lakes, and the ocean. Polluted runoff can have harmful effects on drinking water, recreational water, and wildlife. The EPA *National Water Quality Inventory* has identified runoff from development as one of the leading sources of water quality impairment. Urban runoff was ranked as the sixth leading source of impairment in rivers, fourth leading source of impairment in lakes, and the second in estuaries.

Urban runoff pollutants include a wide array of environmental, chemical, and biological compounds from both point and nonpoint sources. In the urban environment, stormwater characteristics depend on site conditions (e.g., land use, perviousness, pollution prevention, types and amounts of Best Management Practices (BMPs), rain events (duration, amount of rainfall, intensity, and time between events), soil type and particle sizes, multiple chemical conditions, the amount of vehicular traffic, and atmospheric deposition (EPA 2000).

The quality of urban runoff in the City is typical of most urban areas and includes a variety of common contaminants (City Wide Urban Runoff Management Plan 2005). These pollutants consist primarily of suspended sediments, fertilizers and pesticides, animal waste, and contaminants that are commonly associated with automobiles (e.g., petroleum compounds such as oil, grease, and hydrocarbons). In addition, urban stormwater often contains high levels of soluble and particulate heavy metals generated from traffic, industrial facilities, and occasionally, residential sources.

Urban runoff can be divided into two categories:

- ***Dry weather urban runoff***, which occurs when there is no precipitation-generated runoff. Typical sources include landscape irrigation runoff; driveway and sidewalk washing; noncommercial vehicle washing; groundwater seepage; fire flow; potable water line operations and maintenance discharges; and permitted or illegal non-storm water discharges.
- ***Wet weather urban runoff*** refers collectively to non-point source discharges that result from precipitation events. Wet weather discharges include stormwater runoff. Stormwater discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality. Most urban stormwater discharges are considered non-point sources and are regulated by an NPDES Municipal General Permit or Construction General Permit.

The *City Wide Urban Runoff Management Plan* has projected the annual dry weather runoff for the City of Huntington Beach at 2,800 acre-feet and wet weather runoff to be 8,000 acre-feet. Based on these estimates, dry weather runoff, can contribute as much as one fourth of the total annual runoff. Minimizing dry weather runoff is crucial to protecting the quality of surface water resources. Occasionally, people knowingly or unknowingly may discharge hazardous waste or other non-storm related waste into the municipal storm drain system. Indicators of such discharges include unusual color or cloudiness, surface scum or foam and oil sheen (Stormwater Quality Management Committee). Excessive amounts of hazardous pollutants in these discharges can significantly impair surface waters.

Wet- and dry-weather runoff typically contain similar pollutants of concern. However, except for the first flush[2] concentrations following a long dry period between rainfall, the concentrations levels found in wet

[2] First flush is the initial amount of runoff, typically considered the first 0.5 inches of rainfall that can wash off and carry about 70-

weather flows are typically lower than levels found in dry weather flows because the larger wet weather flows dilute the amount of pollutants in runoff waters. The following are major types of pollutants in runoff:

- *Bacteria.* Members of two bacteria groups, coliforms and fecal streptococci, are often used as indicators of possible microbiological contamination. Sources of fecal contamination to surface waters include wastewater treatment plants, on-site septic systems, domestic and wild animal manure, and urban runoff.
- *Pesticides and petroleum hydrocarbons.* The intensity of activities, including vehicle traffic, and fueling activities, leaks and spills, and landscaping/gardening activities within an urban setting contribute heavily to the level of these pollutants present in adjacent surface waters. Elevated levels of oil and grease and petroleum hydrocarbons can be found in wet weather runoff, particularly from streets, roads, and other paved surfaces.
- *Metals*. Heavy metals such as copper, lead, zinc, arsenic, chromium and cadmium may be typically found in urban water runoff. Metals in stormwater may be toxic to some aquatic life and may accumulate in aquatic animals. Sources of metals in stormwater may include automobiles, paints, preservatives, motor oil, and various urban activities including atmospheric deposition from industrial plants and other operations.
- *Nutrients.* The nutrients most often identified in stormwater runoff are phosphorus and nitrogen. Nitrogen and phosphorus are present in runoff that originates, primarily from irrigation nuisance flows, on-site septic system leakage, and direct deposit of animal waste or other organic debris deposited on impervious surfaces.
- *Trash and debris.* Significant loads of trash, debris, and coarse solids can be found in wet weather urban runoff. Plant material can be a substantial component of coarse solids.
- *Suspended solids.* Sediment is often viewed as the largest pollutant load associated with stormwater runoff in an urban setting. This includes coarser to very fine sediments resulting from soil erosion and many other natural and human-activity based sources of sediment. Sediment loads have been shown to be exceptionally high in the case of construction activity.

Runoff from the project site is currently discharged as discussed under “drainage” above. There are no existing uses that would generate dry weather flows from the majority of the site, as it is vacant. Some dry weather flows may occur on the RV storage lot from washing vehicles and hosing off impervious areas, although this is believed to occur on a limited basis.

Groundwater

The Coastal Plain of Orange County Groundwater Basin (Basin) underlies the project site and the northern half of Orange County, beneath broad lowlands known as the Tustin and Downey plains. It covers an area of

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90 percent of pollutants on surfaces (Schueller 2000)

approximately 350 square miles, bordered by the Coyote and Chino hills to the north, the Santa Ana Mountains to the northeast, the Pacific Ocean to the southwest, and terminates at the Orange County line to the northwest, where the entire aquifer system is contiguous with the Central Basin of Los Angeles County (OCWD Groundwater Management Plan). Groundwater flow is unrestricted across the county line. The Newport-Inglewood fault zone forms the southwestern boundary of all but the shallow aquifers in the Basin. The major surface water drainages overlying this groundwater basin are the San Gabriel and Santa Ana Rivers, as well as San Diego and Santiago Creeks, all of which have headwaters outside the groundwater basin.

Historical groundwater flow was generally toward the ocean in the southwest, but pumping has altered the hydraulic gradient and caused water levels to drop below sea level inland of the Newport-Inglewood fault zone. The present hydraulic gradient is primarily from recharge areas toward withdrawal areas. Salt water intrusion has migrated inland along the coastal regions and some water supplies have been contaminated in this area. A salt-water intrusion barrier in the Alamitos and Talbert Gaps, created through injection of imported and reclaimed water to create a mound of water seaward of the overdraft areas to protect the basin from further seawater intrusion has been successful in blocking this intrusion. Overall, groundwater storage capacity in the Basin is estimated at 38,000,000 acre-feet (AF).

The City of Huntington Beach pumps groundwater from seven operating wells within this Basin that vary in depth from 250 feet to 1,020 feet. The production ranges from 450 gallons per minute (gpm) to 4,000 gpm (City Wide Urban Runoff Management Plan 2005). Groundwater was encountered between approximately three and nine feet below ground surface (bgs) during the subsurface investigation of the site (Lawson and Associates 2004). However, the City's groundwater wells are located a minimum of 1.5 miles inland from the site; moreover the City does not rely on groundwater resources underlying the site due to salt water intrusion.

Flooding

The site is located within the 100-year flood hazard area according to the Federal Emergency Management Agency (FEMA) flood maps. The Base Flood Elevations (BFEs) and displacement effect analysis were based on the existing U.S Army Corps of Engineers unsteady network hydraulic flow identified as the HEC-UNET model for the Huntington Beach Channel, Talbert Channel, and Fountain Valley Channel. Multiple runs of many HEC-UNET models over several months were required in order to determine the maximum water surface elevations in each of the storage areas, which were adopted by FEMA as the BFEs. The project site is located within Storage Area 46 of this model. This Storage Area is bounded on the north by Atlanta Avenue, on the east by Newland Street, and on the west and south by the Huntington Beach Channel. In order to accurately evaluate the potential impacts of flooding on the areas to the north and east of Newland Street, FEMA storage areas 3 (to the north) and 5 (to the east) need to be added to Storage Area 46 and treated as a

single ponding area. The flood elevations within each storage area are based on combinations of levee breaches that would result in the highest water surface elevations. FEMA mapped all three areas (3, 5, and 46) with a single ponding elevation of 5.56 ft NGVD 29 (National Geodetic Vertical Datum of 1929).[3]

Runoff Treatment and Best Management Practices

Runoff during storm events is part of the natural hydrologic cycle; however activities such as construction and development can impact stormwater runoff. In the past, the primary concerns for stormwater control focused on quantity (i.e. drainage and flood control). However, in recent years it has also been recognized that there is a need to also assess and control runoff water quality. Federal, state, and local regulatory and management agencies have begun to place emphasis on preventing pollution at the source and implementing treatment of polluted runoff to prevent degradation of water resources. Management strategies known as Best Management Practices (BMPs) are often implemented to provide treatment of runoff in order to eliminate or reduce the discharge of pollutants.

Construction Best Management Practices

Excessive erosion and sedimentation are perhaps the most visible water quality impacts because of construction activities. Erosion control is a source control practice that protects the soil surface and prevents soil particles from being detached by rainfall or flowing water; whereas, sediment control is a practice for trapping soil particles after they have been detached and moved by rain or flowing water (California Stormwater Quality Association 2003). Reduction in sediment transport is often the primary goal of BMPs because sediment can carry other pollutants that are attached to it to surface water resources, including nutrients, trace metals, and hydrocarbons. Therefore, a reduction in the amount of detached or transported sediment will also reduce the amount of other pollutants reaching surface waters. It is recognized that some BMPs provide both erosion and sediment control. Additionally, the City of Huntington Beach is a Co-permittee of the Orange County Drainage Area Master Plan (DAMP), which requires appropriate actions to reduce discharges of pollutants and runoff during each of the three major phases of urban development, planning, construction, and operation. Examples and descriptions of BMPs for erosion and sediment control are provided in the California Stormwater BMP Handbook and are listed below.

- **Erosion**
  - *Soil Binders:* These materials effectively stabilize loose particles and hold them together to prevent detachment and transport during a storm event.
  - *Straw Mulch:* Straw mulch is placed in a uniform layer and anchored to the soil with a studded roller or with a tackifier stabilizing emulsion. Straw mulch protects the soil surface from the impact of rain drops, preventing soil particles from becoming dislodged and available for transport in runoff water.

[3] Exponent, 2005. Displacement Analysis Additional Technical Information (Supplemental Water Displacement Analysis), 31 August.

- *Earth Dikes and Drainage Swales:* An earth dike is a temporary berm or ridge of compacted soil used to divert runoff or to channel water to a desired location. A drainage swale is a shaped, stabilized, and sloped depression in the soil surface used to convey runoff to a desired location. These BMPs are typically used to direct runoff into sediment basins or traps.
- *Velocity Dissipation Devices:* The velocities of stormwater discharged through constrictions, such as drainage outlets, can be highly erosive. Velocity Dissipation Devices are typically a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel to reduce the energy of constricted, high velocity flows and prevent scour of the soil.
- *Polyacrylamide:* In some situations, site soils are very fine, easily dispersed, and slow to settle out of the stormwater. Polyacrylamide (PAM) is a chemical that can be applied to these types of disturbed soils at construction sites to reduce erosion and improve settling of suspended sediment.

- **Sedimentation**
  - *Silt Fence:* A silt fence is made of a filter fabric that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.
  - *Sediment Basin:* A sediment basin is a temporary basin formed by excavation or by constructing an embankment so that sediment-laden runoff is temporarily held under quiescent conditions, allowing sediment to settle out before the water is discharged off-site.
  - *Sediment Trap:* A sediment trap is a smaller containment area than a sediment basin where sediment-laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out before the runoff is discharged.
  - *Fiber Rolls:* A fiber roll consists of straw, flax, or other similar materials bound into a tight tubular roll. When fiber rolls are placed at the toe and on the face of slopes, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff.
  - *Gravel Bag Berm:* A gravel bag berm is a series of gravel-filled bags placed on a level contour to intercept sheet flows. Gravel bags pond sheet flow runoff, allowing sediment to settle out, and release runoff slowly as sheet flow, preventing erosion by preventing gully and rill erosion and by reducing the energy of overland flow water.
  - *Sandbag Barrier:* Similar to a gravel bag berm, a sandbag barrier is a series of sand-filled bags placed on a level contour to intercept sheet flows. Sandbag barriers pond sheet flow runoff, allowing sediment to settle out.

Post-Construction Best Management Practices

Stormwater runoff in the natural environment can contain numerous constituents, however, urbanization and urban activities, including development of undeveloped lands, typically increase constituent concentrations to levels that can impact water quality. Development projects can create long term, post-construction impacts from stormwater runoff depending upon associated land use and other characteristics of the project. Impervious surfaces such as, streets, rooftops, and parking lots prevent infiltration and increase the rate and volume of stormwater runoff. Additionally, various urban activities such as gardening,

landscaping, and automobile maintenance activities, in conjunction with increased impervious surfaces, may increase the concentration and/or total load of various pollutants, as well as altering the types of constituents carried in stormwater. Post-construction measures under the Orange County DAMP require the Co-permittees to implement structural and nonstructural BMPs that would mimic pre-development quantity and quality runoff conditions from new development.

There are several management strategies that can be included into site planning and design that can significantly reduce pollutant concentrations in stormwater. A development project can achieve stormwater management goals by incorporating basic elements such as infiltration and biofilters. Infiltration is the process where water enters the ground and moves downward through the unsaturated soil zone. An infiltration based stormwater treatment system will infiltrate runoff into the soil by creating a slow flow over a permeable surface. This slow flow will allow pollutants to be filtered out by the soil, where they are often naturally mitigated (California Stormwater Quality Association 2003). Biofilters or vegetated swales are designed to transport shallow depths of runoff slowly over vegetation. This slow movement of the water through the vegetated area provides an opportunity for sediment and particulates to be filtered and degraded through biological activity (California Stormwater Quality Association 2003). In addition, the biofilter provides an area for infiltration of runoff. Sheet flow from impervious areas of developed sites can be diverted to the biofilter area for treatment. Driveways can also contribute a significant amount of impervious surfaces within a residential development. Strategies can be employed to reduce the amount of impervious area that driveways cover; for example, porous concrete or turf-block or unit pavers on sand create attractive, low maintenance, permeable driveways that filter stormwater (California Stormwater Quality Association [CASQA] 2003).

Several other post-construction water quality BMPs can be included and incorporated in site design and operations. These include disconnected roof drains, rain gardens, minimum required street widths, curb and gutter systems for street sweeping or no curbs and gutters for road-side swales, public education, installation of pet waste stations, proprietary structural devices, and others. Details on several of these can be found in the CASQA Handbooks and local and regional Water Quality Management Plans.

Applicable Regulations

The following subsection is a brief summary of the regulatory context under which surface and groundwater resources are managed at the Federal, State, and local level.

Federal Regulations

Clean Water Act (CWA)

The Clean Water Act was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The EPA has delegated responsibility for implementation of portions of the Clean Water Act to the State Water Resources Control Board (SWRCB)

and the Regional Water Quality Control Board (RWQCB) for water quality control planning and programs, such as the National Pollutant Discharge Elimination System (NPDES) program.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. The FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMS), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain.

Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR), which enables FEMA to require municipalities that participate in the National Flood Insurance Program (NFIP) to adopt certain flood hazard reduction standards for construction and development in 100-year flood plains.

State Regulations

Porter-Cologne Water Quality Act

The SWRCB was established through the California *Porter-Cologne Water Quality Act of 1969* and is the primary state agency responsible for water quality management issues in California. Specifically the *Porter-Cologne Water Quality Act* authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface water and groundwater) and directs the RWQCBs to develop regional Basin Plans.

National Pollutant Discharge Elimination System Permits

The State Water Resources Control Board (SWRCB) has adopted a statewide Construction General Permit (WQ Order 99-08-DWQ) for stormwater discharges associated with construction activity. These regulations prohibit the discharge of stormwater from construction projects that include one acre or more of soil disturbance. Construction activities subject to this permit include clearing, grading, and other disturbance to the ground, such as stockpiling, or excavation that results in soil disturbance of at least 5 acres of total land area. As required by NPDES, because construction on the project site would occur over an area greater than one acre, the developer would be required to submit a Notice of Intent (NOI) to the SWRCB for coverage under the permit and would be required to comply with all its requirements.

The NPDES Construction General Permit requires all dischargers to (1) develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies Best Management Practices (BMPs) used during construction of the project; (2) eliminate or reduce nonstormwater discharge to storm sewer systems; and (3) develop and implement a monitoring program of all BMPs specified. The two major objectives of the SWPPP are to (1) help identify the sources of sediment and other pollutants that affect the

water quality of stormwater discharges and (2) to describe and insure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges.

Local Regulations

Basin Plan

Existing water quality issues have been identified in the watershed planning process and are incorporated in the Water Quality Control Plan (WCQP) for the Santa Ana River Basin (Basin Plan). The Basin Plan designates beneficial uses of the waters of the region and specifies water quality objectives intended to protect those uses. The Basin Plan also specifies an implementation plan describing actions that are necessary to achieve and maintain water quality standards, and regulates waste discharges to minimize and control their effects. Dischargers must comply with the water quality standards contained in the Basin Plan.

Orange County Drainage Area Management Plan

The purpose of the DAMP was to satisfy NPDES permit conditions for creating and implementing an Urban Runoff Management Program (URMP) to reduce pollutant discharges to the maximum extent practicable (MEP) for protection of receiving waterbody water quality and support of designated beneficial uses. The DAMP contains guidances on both structural and nonstructural BMPs for meeting these goals. The DAMP identifies activities required to implement the following six minimum control measures required under the Municipal Permit: public outreach; public involvement; illicit discharge detection and elimination; construction site runoff; new development and redevelopment; and municipal operations.

In order to ensure that construction sites implement the appropriate pollution control measures, the 2003 DAMP details recommended BMPs to be applied to new development and significant redevelopment in Orange County. Projects are identified as either priority projects or non-priority projects. Priority projects include, but are not limited to, residential development of 10 units or more, commercial and industrial development greater than 100,000 square feet, including parking area, impervious surface of 2,500 square feet or more located within, directly adjacent to (within 200 feet), or discharging directly to receiving waters within Environmentally Sensitive Areas, and parking lots 5,000 square feet or more, with 15 parking spaces or more, and potentially exposed to urban stormwater runoff. The proposed project would be considered a priority project under the 2003 DAMP Model Water Quality Management Plan (WQMP). These regulations require that the project incorporate and implement all source control BMPs (routine structural and routine non-structural), unless not applicable to the project due to project characteristics, and document clearly why any applicable source control BMP was not included; incorporate and implement site design BMPs, as appropriate, and document the site design BMPs that are included; and either incorporate and implement treatment control BMPs, by including a selection of such BMPs into the project design; or participate in or contribute to an acceptable regional or watershed-based program. Projects participating in a regional or watershed program will also implement source control BMPs and site design BMPs consistent with the requirements of the approved regional or watershed-based plan. The combination of source control, site design, and treatment control BMPs or regional or watershed-based programs must adequately

address all identified pollutants and hydrologic conditions of concern. These regulations are designed to ensure that stormwater quality management is considered during a project's planning phase, implemented during construction, and maintained for the life of the project.

Routine structural BMPs may function either to minimize the introduction of pollutants into the drainage system or to remove pollutants from the drainage system. Appropriate residential nonstructural BMPs listed in the DAMP that may be used on site to control typical runoff pollutants include homeowner/tenant education, activity restrictions, common area landscape management, BMP maintenance, common area litter and animal waste control, catch basin inspection, employee training, and private street/lot sweeping. BMPs can serve to address bacterial contaminants in addition to other contaminants, although there are no water quality standards set for bacteria levels. Applicable structural and nonstructural BMPs implemented on the site for source control and pollution prevention to minimize the introduction of pollutants into the drainage system depend on the ultimate configuration of the proposed land use.

Orange County Water District Groundwater Management Plan

In 1974, the OCWD proposed a Basin-wide groundwater quality monitoring program, on behalf of Basin Producers, to satisfy the drinking water testing requirements specified in the federal Safe Drinking Water Act (SDWA). The OCWD Plan also addresses the requirements of Senate Bill 1938, passed in 2002, which includes a list of issues to be addressed to ensure compliance of groundwater management plans with the California Water Code.

The Plan does not commit the OCWD to a particular program or level of Basin production, but describes the factors to consider and key issues as the Board makes Basin management decisions on a regular basis each year. Potential projects that are conceptually described in the Plan are described in greater detail in the Long-Term Facilities Plan. Two major objectives drive the Plan: protecting and enhancing groundwater quality and cost-effectively protecting and increasing the Basin's sustainable yield.

PROJECT IMPACTS

During both the construction and post-construction phases, the proposed project may contribute sources of pollutants and sediment in stormwater runoff because of changes in land use and hydrology. Urban contaminants in runoff from the proposed project area could lower the quality of stormwater runoff both during and after construction.

Water Quality

Construction

Erosion and sedimentation would result from construction activities due to grading and site disturbance. Sediment directly impacts water quality through interference with photosynthesis, oxygen exchange, and respiration, growth, and reproduction of aquatic species. Additionally, other pollutants such as nutrients,

trace metals, and hydrocarbons can attach to sediment and be transported with the particulate fraction. The proposed project would include construction activities over the entire 23.1-acre site. Construction would include soil import and surcharge, such as excavation and trenching for foundations and utilities, grubbing and clearing, soil compaction and moving, cut and fill activities, and grading that would disturb soil and decrease permeability. These processes can contribute to increased erosion. Unprotected disturbed soil is susceptible to high rates of erosion from wind and rain, resulting in potential sediment transport off site. Sediment-laden runoff from construction operations at the site could adversely impact water quality.

The proposed project would disturb an area greater than one acre in size and, thus, is subject to the provisions of the General Construction Activity Stormwater Permit adopted by the State Water Resources Control Board (SWRCB). Preparation of a Storm Water Pollution Prevention Plan (SWPPP) is required for compliance with the NPDES General Construction Stormwater Activity Permit. Compliance with the permit would involve filing a Notice of Intent with the SWRCB and preparing and submitting a SWPPP prior to construction activities. The SWPPP must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures, maintenance responsibilities, and nonstormwater management controls. Inspection of construction sites before and after storms is required to identify stormwater discharge from the construction activity and to identify and implement controls where necessary. The Construction General Permit requirements would need to be satisfied prior to beginning construction.

During the installation of erosion and sediment transport control structures, an erosion control professional would be required to be on site to supervise the implementation of the designs and the maintenance of facilities throughout the site clearing, grading, and construction period. An Erosion and Sedimentation Control Plan would be required as part of the SWPPP. The plan could include, but would not be limited to, the following measures:

- Whenever feasible, confine grading and activities related to grading (excavation, construction, preparation and use of equipment and material storage) to the dry season (April through September).
- Discharge grading and construction runoff into small drainages at frequent intervals to avoid the buildup of large, potentially erosive flows.
- Stabilize disturbed areas as quickly as feasible, either by vegetative or mechanical methods.
- Trap sediment before it leaves the site with check dams, sediment ponds, or siltation fences.
- Limit application of fertilizers, herbicides, pesticides, or other hazardous substances to the minimum amount necessary. Provide instruction to all landscaping personnel on the construction team.

In addition, typical BMPs that could be incorporated into the SWPPP would include the following:

- Diversion of off-site runoff away from the construction site
- Vegetation of proposed landscaped/grassed swale areas as soon as feasible following grading activities
- Revegetation of exposed soil surfaces as soon as feasible following grading activities
- Perimeter straw wattles to prevent off-site transport of sediment

- Drop inlet protection (filters and sand bags or straw wattles), with sandbag check dams within paved roadways
- Regular watering of exposed soils to control dust during construction
- Specifications for construction waste handling and disposal
- Contained equipment wash-out and vehicle maintenance areas
- Erosion control measures maintained throughout the construction period
- Stabilized construction entrances to avoid trucks from imprinting debris on City roadways
- Training of subcontractors on general site housekeeping

The SWPPP is a "working" document and must be kept onsite and current by amending it as necessary by the person responsible for its implementation. Further, all construction activities must comply with the City's Grading Manual specifications and the City's ordinances. These include specifications designed to minimize the impacts of erosion during construction. For instance, the Municipal Code identifies, defines, and provides regulation for erosion control systems that are part of construction projects in order to ensure maximum effectiveness.

Operations

For water quality impacts, annual runoff for the site was calculated based on average annual rainfall, runoff coefficients, and the fraction of rainfall likely to result in runoff using the Simple Method (Center for Watershed Protection, 2004). Average rainfall for the project site was estimated from weather station data at Long Beach, California (California Irrigation Information Management System, 2005). Runoff coefficients were calculated using the methods provided in the Caltrans Stormwater Quality Handbook. The fraction of rainfall likely to contribute to runoff is generally assumed to be 0.9 (Center for Stormwater Protection, 2004). The project site has an estimated annual runoff of 10.7 acre feet and 13.4 acre feet for pre- and post-development conditions, respectively. Thus, development of the site would increase annual runoff by 2.7 acre-feet (*Note: this does not reflect the peak flows that would occur due to a 100-year flood, which are discussed under "Flooding," below.*)

In the post-construction phase of the project, the major source of pollution to runoff and infiltrating groundwater would be contaminants that have accumulated on the land surface over which stormwater passes. Between rainstorms, material would be deposited on the streets, paved areas, roof tops, and other surfaces from debris dropped or scattered by individuals, wastes and dirt from construction and renovation or demolition, fecal droppings from animals, oil and various residues contributed by vehicular traffic, and fallout of air-borne particles.

Table 1 and Table 2 list expected pre- and post-development pollutant concentrations and loads that could be expected in stormwater based on the annual runoff from the site. The information presented in this table represents post-development conditions prior to implementation of water quality management practices. Implementation of BMPs as part of the proposed project design, construction, and operation would reduce potential pollutant loads. Table 3 provides typical efficiencies in pollutant removal, depending on the treatment measure employed. As shown in this table, there is an extremely broad range in the effectiveness

of treatment measures, which are capable of reducing contaminants by anywhere from 5 to 95 percent. The City requires structural BMPs to infiltrate, filter, or treat the 85-percentile 24-hour storm event or the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch per hour.

Table 1 Pollutant Concentration and Annual Wet Weather Load: Pre-development

Pollutant	*Typical Pollutant Concentration (mg/L)*	*Annual Pollutant Load (kg)*
Total Nitrogen	1.29	17.03
Total Phosphorous	0.27	3.56
Total Suspended Solids	125	1650
Total Lead	0.01	0.13
Total Copper	0.01	0.13
Total Zinc	0.04	0.53
Fecal Coliforms	7,200 (MPN/100 mL)	950,000 (MPN)
Oil and Grease	1.3	17.2

SOURCE: National Stormwater Quality Database (NSQD version 1.1) Pitt et al. 2004

Table 2 Pollutant Concentration and Annual Wet Weather Load: Post-development

Pollutant	*Typical Pollutant Concentration (mg/L)*	*Annual Pollutant Load (kg)*
Total Nitrogen	2	33.0
Total Phosphorous	0.3	4.94
Total Suspended Solids	49	807
Total Lead	0.01	0.20
Total Copper	0.01	0.20
Total Zinc	0.07	1.20
Fecal Coliforms	8,350 (MPN/100 mL)	1,370,000 (MPN)
Oil and Grease	3.9	64.3

SOURCE: National Stormwater Quality Database (NSQD version 1.1) Pitt et al. 2004

Annual pollutant loads would increase under developed conditions compared to existing conditions, with the exception of total suspended solids. The approximate 50% decrease in total suspended solids is a result in the change of the site from primarily bare dirt to a developed site with impervious surfaces. Further, runoff from the site is currently not subject to any water quality control requirements, which would be implemented as a result of the proposed project. Post development total nitrogen and oil and grease concentrations would increase substantially. This is consistent with typical activities associated with residential development, which include use of nitrogen-based fertilizers and automobile use and care.

Table 3 BMP Removal Efficiencies (in percent)

Constituent of Concern	Treatment Measure										
	Hydrodynamic Device	*Swale/Biofilter*	*Basins*	*Sand Filter*	*Media Filter*	*Drop Inlet Filter*	*Street Sweep*	*Stormfiler™*	*Vortechs STS*	*Stormceptor*	*Nonstructural*
Total Nitrogen	5	10	30	20	NA	NA	60	30	65	-25	20
Total Phosphorous	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids	20	67	75	70	65	85	80	90	30	60	20
Total Lead	30	75	30	45	30	80	60	70	15	20	20
Total Copper	15	62	52	45	25	95	55	80	15	20	20
Total Zinc	-15	75	70	45	15	90	60	80	40	75	20
Oil and Grease	NA	15	NA	NA	30	65	NA	85	NA	35	20

Sources: NPDES National BMPs Database, California Sites, 2003 (basins, swale/biofilters, hydrodynamic Devices); U.S. Dept of Transportation, Federal Highway Administration; Washington State DOT, 2003; NFESC, 2004; Lu et al, 2003

NA: Not Available

Italicized numerals estimated based on removal of similar particles

The project would be required to comply with the conditions of the City's NPDES Stormwater MS4 permit (NPDES No. CAS618030) and the Drainage Area Management Plan (DAMP) adopted under the terms of the permit. The goal of the permit is to protect beneficial uses of receiving waters by reducing pollutant loading to surface waters from urban runoff to the maximum extent practicable (MEP). MEP, as defined in the permit, is the maximum extent feasible, taking into account considerations of synergistic, additive, and competing factors, including but not limited to gravity of the problem, technical feasibility, fiscal feasibility, public health risks, societal concerns, and social benefits. The Applicant would be bound by the City's Water Quality Ordinance, adopted to ensure compliance with the NPDES Stormwater Permit, applicable provisions of the DAMP, and the Statewide General Permit for Stormwater Discharge Associated with Construction Activity. A Water Quality Management Plan (WQMP) has not yet been prepared, although would be required. This WQMP would be reviewed and approved by the City in order to ensure compliance with the applicable regulations.

The WQMP would be specific to the expected pollutants that would be present in the stormwater flow from the site after completion of construction. The WQMP would incorporate the requirements of DAMP Section 7, including all feasible recommended BMPs. It would include site design, source control, and treatment control BMPs to address the specific pollutants anticipated from the project and project site, and would detail the specific operation and maintenance of each BMP. These BMPs would include a range of methods, including but not limited to those identified in Table 3 and described on page 9. The WQMP would outline a routine maintenance schedule for each BMP, in compliance with the DAMP and local regulations. The WQMP is established from industry and agency historical data and the best available information or initial concept and design.

Specific BMPs have not been identified for the proposed project dry weather flows. BMPs focus on collection and treatment of first flush flows. As discussed in the DAMP, Stormwater Treatment Control BMPs are designed to treat the more frequent, lower-flow storm events, or the first flush portions from larger storm events (typically referred to as the first flush events). Small, frequent storm events represent most of the total average annual rainfall for the area. The flow and volume from such small events is targeted for treatment, as the initial flow of each storm often contains the highest concentrations of pollutants. City Requirement A, identified below in the City Requirements and Mitigation Measures section, provides the performance standards that the WQMP must meet in order to ensure its effectiveness. As specified, all structural BMPs shall be sized to infiltrate, filter, or treat the 85-percentile 24-hour storm event or the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch per hour. Additional BMPs could include smart irrigation controllers, use of native drought tolerant landscaping, a designated car washing location, etc.

Adjacent Wetlands

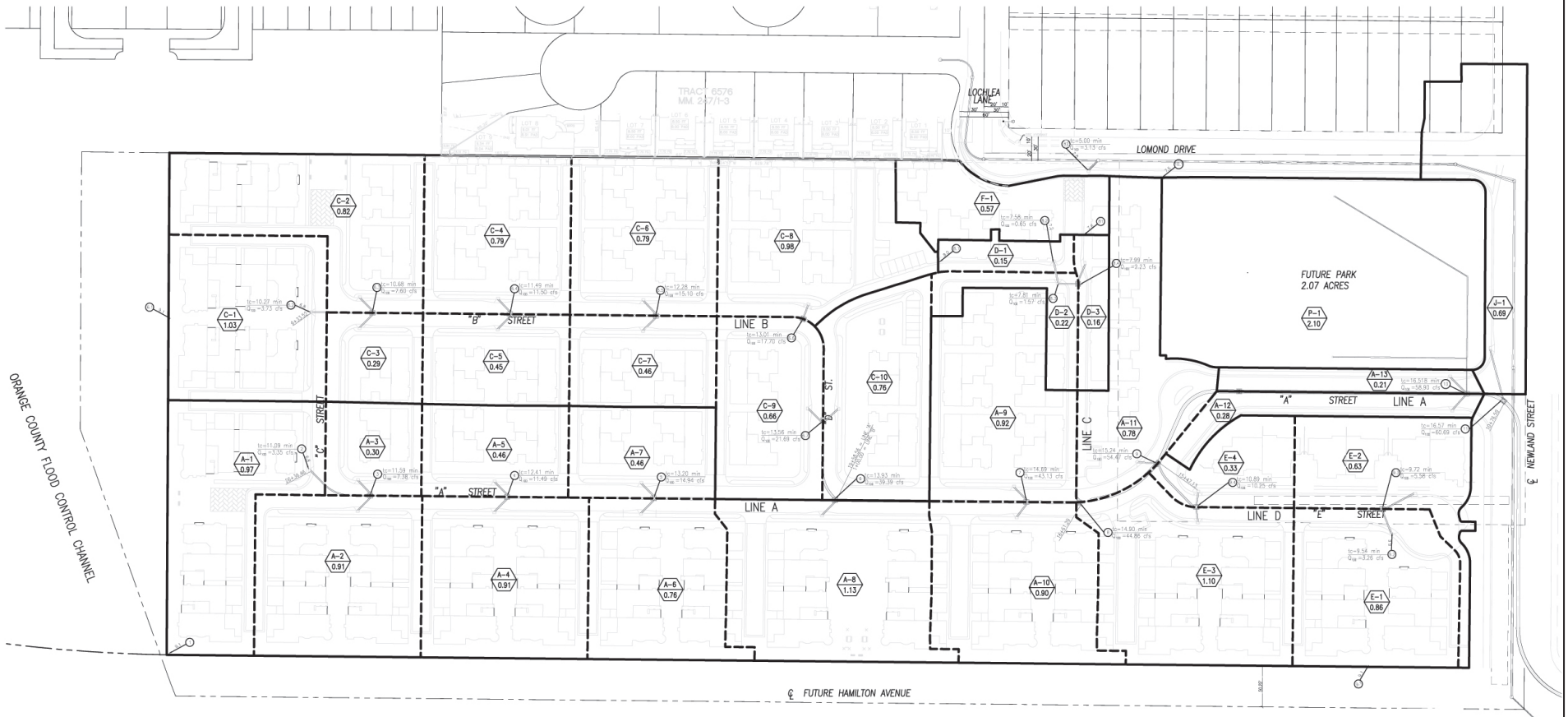
Sediment laden stormwater with contaminants could detrimentally alter the adjacent wetlands. Wetlands could potentially be affected during both construction and operation. As shown in Figure 2, stormwater flows would be directed east and towards the center of the site, away from wetlands. As such, the site would be graded to prevent discharge of stormwater runoff to the adjacent wetland area.

Construction activities could affect wetlands due to grading and offsite discharge, prior to development of a drainage pattern that directs flows away from wetland areas. Runoff produced during and after construction is subject to National Pollution Discharge Elimination System Regulations, as well as local water quality and runoff standards, as discussed above. However, due to the proximity and sensitivity of the adjacent habitats, additional measures would be necessary to minimize project effects on the adjacent wetlands during construction.

Drainage

Impacts on Peak Storm Event Flow

The 100-year peak storm runoff rate and amount was modeled for the project site by Walden and Associates using the Rational Method. CEQA requirements include comparison of project conditions compared to existing conditions. However, although remediation and modifications recently completed at the project site reflect existing conditions, the recent modifications do not provide as adequate baseline information as pre-existing conditions for water quantity analysis. In particular, current existing conditions have higher discharges to the Huntington Beach Channel compared to pre-existing (tank farm) conditions where only about 8.6 acres of the project site drained toward the channel. Consequently, hydrologic analysis of pre-existing conditions and project conditions would provide a more conservative (worst case) estimate of potential project impacts on peak flow rates and amounts.



LEGEND

A-1 / 0.11	INDICATES TRIBUTARY SUBAREA DESIGNATION INDICATES TRIBUTARY SUBAREA, ACRES
1	INDICATES HYDROLOGY STUDY NODE NUMBER
———	INDICATES DRAINAGE AREA BOUNDARY
- - - -	INDICATES TRIBUTARY SUBAREA BOUNDARY
Q_{100}=	INDICATES 100-YEAR STORM FREQUENCY FLOWRATE, (cfs)
tc	INDICATES 100-YEAR TIME OF CONCENTRATION, (min)
9.1	INDICATES ELEVATION, (ft)

50 25 0 50 100
SCALE IN FEET
1 inch =50 ft.

HYDROLOGIC DATA:

DEVELOPMENT = RESIDENTIAL
SOIL GROUP = D
DESIGN FREQUENCY = 100

11034-00

FIGURE **2**

Proposed Drainage and On-Site Storage

Source: Walden & Associates, 2005

City of Huntington Beach

Scale: 1' = 50"

EIP ASSOCIATES

Modeled 100-year peak storm flows were 21.4 cfs for the pre-existing condition and 59 cfs for the post-development condition; the project would almost triple peak runoff rates. The existing drainage system does not have the conveyance capacity to handle higher flows resulting from implementation of the project (or, current existing conditions); therefore, detention features have been included in the project design to prevent exceedance of the local and regional drainage system. An estimated volume of runoff within the system during peak flow is 1.9 acre-feet for existing conditions and 5.2 acre-feet for post-development conditions for the duration of peak flows (see Walden and Associates, 2005; Section 7, Storage Hydrograph). Consequently, the project site must be able to store and detain 3.3 acre-feet on-site during peak flow conditions.

Proposed site drainage is shown in Figure 2. As shown in this figure, flows would be directed east and toward the center of the site to internal roadways. Runoff would be discharged into the proposed park area for on-site detention when necessary. Runoff would then discharge into the storm drain system in Newland Street. In the future, possible improvements to the Newland Street pumping station would increase the drainage system conveyance capacity and reduce the amount of on-site storage necessary.

The increase of 3.3 AF would be detained onsite through sump storage, pipe storage, and park storage. Project design includes a total storm water storage capacity of 3.4 acre-ft, as provided in Table 4.

Table 4 Proposed On-Site Storage

Location	*Quantity (in AF)*
Onsite street sump	1.0
Pipe	0.5
Park	1.9
Total Storage	*3.4 AF*

On-site street sump storage would be provided in most of the project's internal roadways with the residential structures elevated approximately three to five feet above existing grade. Ponding on streets would occur up to a maximum elevation of 7.2 feet above mean sea level [**EIP confirming**], resulting in flows that would remain at least one foot from the lowest habitable structure finish floor elevation. Stormwater conveyance pipes beneath the site would be used for storage, and storage quantity was determined by using the difference in volume between pipe diameter requirements for existing flows, and those required for conducting the post-project flows of 59 cfs. Detention on the proposed park area would occur between elevations 4.0 and 6.0 feet, which is the maximum water surface estimated. Downstream piping would limit flows to 21.4 cfs, such that it would take approximately 1.13 hours for the park to drain following peak flow.

The proposed onsite detention eliminates potential impacts on drainage system capacity. Future upgrades to the Newland Pump Station and associated discharge pipes are anticipated but currently unprogrammed. Upon completion of these upgrades, the project site will include excess capacity for stormwater detention.

Flooding Impacts

The project site is located within the 100-year flood hazard area according to FEMA flood maps. Implementation of the proposed project would include raising the grade of the site three to five feet through import of 110,000 cy of fill, which elevates the site above the BFE by 0.13 feet. Thus, the site would be removed from the Special Flood Hazard Area (SFHA) zone and potential impacts related to flooding would be eliminated. Without submission of an amendment to FEMA, the structures would still be considered located within a SFHA and subject to these regulations for building within an SFHA. In order to be removed from the FEMA SFHA zone, the project proponent must submit an application for a Letter of Map Revision – based on Fill (LOMR-F).

A LOMR-F is submitted for properties on which fill has been placed to raise the structure or lot to or above the one percent annual chance flood elevation. NFIP regulations require that the lowest adjacent grade of the structure be at or above the one percent annual chance flood elevation for a LOMR F to be issued removing the structure from the SFHA. The participating community must also determine that the land and any existing or proposed structures to be removed from the SFHA are "reasonably safe from flooding." According to the City's Zoning Code (Chapter 222.14 A.3.a.—FP Floodplain Overlay District), new residential construction shall have the lowest floor including basement elevated one foot above the BFE. As discussed above, the proposed on-site storage would result in flows that would remain at least one foot from the lowest habitable structure finish floor elevation, and would be consistent with City Code. To remove the entire lot and structure, both the lowest point on the lot and the lowest floor of the structure must be at or above the one percent annual chance flood elevation, a criteria met by the project site. The addition of 110,000 cubic yards of fill material to Corp of Engineers Storage Area 46 required to raise the site would displace flood waters that would otherwise cover the project site. A water displacement analysis was conducted to investigate the effect of this fill on flooding depth for Storage Area 46, as well as for Storage Areas 3 and 5, which are located north and east of the project site, respectively. As discussed previously, FEMA determined that a single ponding elevation for all three storage areas was appropriate in order to accurately address the potential impacts to existing areas north and east of the project site. The Water Surface Elevation (WSE) for the site under the existing conditions is 5.56 feet (NGVD 29). The flooding WSE with fill would be 5.69 feet MSL NGVD 29, resulting in a displacement effect (the difference between post project and existing conditions WSE) of 0.13 feet. FEMA regulation 44 CFR 60.3 (c)(10) states that:

> … until a regulatory floodway is designated, …no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, *unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.*

The WSE of the flooded area is not increased more than one foot and the UNET model includes existing conditions for the entire system. Furthermore, the off-site portion of Storage Area 46 is primarily built-out and no other areas in Storage Area 46 are currently planned for additional fill material. Thus, flows would not be significantly displaced, and no amendment to the flood hazard zone map of Storage Area 46 is required.

Therefore, the project would not have any significant displacement impacts on the hydrology of Storage Areas 46, 3, or 5.

City Requirements and Mitigation Measures

The following measures would be required as part of the proposed project. "City Requirements" (CR) are standard Conditions of Approval, with which the City would require conformance. "Mitigation Measures" (MM) are additional measures that would be required in order to address potentially significant impacts.

CR HYD-A *Storm Drain, Stormwater Pollution Prevention Plans (SWPPP), and Water Quality Management Plans (WQMP) conforming to the current National Pollution Discharge Elimination System (NPDES) requirements, prepared by a Licensed Civil Engineer or Environmental Engineer, shall be submitted to the Department of Public Works for review and approval. Catch basins shall be grated and not have side openings.*

(a) A SWPPP shall be prepared and updated as needed during the course of construction to satisfy the requirements of each phase of the development. The plan shall incorporate all necessary Best Management Practices (BMPs) and other City requirements to eliminate polluted runoff until all construction work for the project is completed. The SWPPP shall include treatment and disposal of all dewatering operation flows, and for nuisance flows during construction.

(b) A WQMP shall be prepared, maintained, and updated as needed to satisfy the requirements of the adopted NPDES program. The plan shall incorporate water quality measures for all improved or unimproved phases of the project. All structural BMPs shall be sized to infiltrate, filter, or treat the 85-percentile 24-hour storm event or the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch per hour. Upon approval of the WQMP, three signed copies and an electronic copy on CD (.PDF or .doc format) shall be submitted to the Public Works Department.

(c) Location of the BMPs shall not be located within the public right-of-way.

CR HYD-B *Prior to recordation of the final tract map, a Final Hydrology and Hydraulic Study shall be submitted to the Public Works Department for review and approval.*

MM-1 *The applicant shall prepare an application for and obtain a LOMR-F from the FEMA based on the graded project site characteristics. The LOMR-F process shall be completed prior to issuance of first certificate of occupancy.*

MM-2 *Runoff from the project site shall be routed away from the adjacent wetlands during construction and post-construction phases. Drainage systems shall include urban water runoff reduction measures, and runoff prevention measures shall be incorporated into the landscape design along the western and southern perimeter. This could include, but not be limited to, landscaped berms and vegetated swales around the perimeter of the site. Berm landscaping shall consist of native grasses and other non-invasive vegetation deemed appropriate by a City qualified landscape architect. Use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California (1999, California Invasive Plant Council, as amended) shall be prohibited within the project area.*

The protection berm shall be monitored following each rain event during the construction period to ensure that runoff from the site does not flow into the adjacent wetland areas and that the berm is stabilized. Guidelines for the maintenance of the site shall be developed during the planting and establishment phase and included in a landscape management plan for the area. The maintenance program shall contain guidelines for the control of non-native plant species, maintenance of the system, and replacement of plant species.

REFERENCES

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APPENDIX A CERTIFICATE OF COMPLETION

MGB-FYI

CITY OF HUNTINGTON BEACH

2000 MAIN STREET FIRE DEPARTMENT CALIFORNIA 92648

July 27, 2004

RECEIVED
JUL 27 2004

David L. Bauer, President
Traghee, Inc.
110 Pine Avenue, Suite 925
Long Beach, CA 90802-4455

Dear Mr. Bauer,

SUBJECT: "NO FURTHER ACTION AT CENCO/GOLDENWEST REFINING COMPANY, HUNTINGTON BEACH PIPELINE TERMINAL, 12471 NEWLAND STREET, HUNTINGTON BEACH, CA 92646" Corrected - next page

Analytical data submitted in the June 24, 2004 notice of "No Further Action" by the California Regional Water Quality Control Board (attached) meets the City's cleanup criteria as outlined in City Specification #431-92. Mel Wright, a Fire Department consultant and Registered Environmental Assessor, and the Fire Department development staff reviewed the report and, hereby, approve it.

PLEASE NOTE:

- Site conditions described in the subject document have been approved. However, any new soil imported to the site or discovery of additional contamination requires additional testing, documentation and Fire Department approval.
- Conformance to City Specifications DOES NOT relieve the developer's responsibility to notify and/or obtain approval from other concerned agencies (SCRWQCB, SCAQMD, DTSC, ORCO HCA/EMA, etc.).
- Prior to any site activity, the Huntington Beach Public Works Department must be contacted and a grading permit obtained. Additionally, the designated Senior Public Works Inspector must be notified at (714) 375-5012.

Sincerely,

Eric G. Engberg
Fire Marshal/Division Chief

EE/cf

Attachment

c: Honorable Mayor and City Council Members
Penny Culbreth-Graft, City Administrator
Duane S. Olson, Fire Chief
John M. Fuji, Deputy City Attorney
Scott Hess, Planning Manager
Terri Elliott, Principal Civil Engineer
Maneck G. Chichgar, California Regional Water Control Board
Katherine Cross, Orange County Health Care Agency
Development File

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443
CENCO

CITY OF HUNTINGTON BEACH

2000 MAIN STREET
FIRE DEPARTMENT
CALIFORNIA 92648

June 4, 2004

Mr. Maneck G. Chichgar
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, CA 92501

Dear Mr. Chichgar:

SUBJECT: NO FURTHER ACTION AT CENCO / GOLDENWEST REFINING COMPANY, HUNTINGTON BEACH PIPEPLINE TERMINAL, 21471 NEWLAND STREET, HUNTINGTON BEACH, CA 92646

The Huntington Beach Fire Department has reviewed the above referenced document dated June 2, 2004, and we find the draft document acceptable to The City of Huntington Beach.

We also want to state that any future developer will be held to the standards outlined in City Specification #431-92 during development.

If you have any further questions, please contact me at (714) 536-5411.

Sincerely,

Eric G. Engberg
Division Chief/Fire Marshal

EGE/MM/sm

c: Terri Elliott, Principal Civil Engineer/Public Works
Development File

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California Regional Water Quality Control Board

Santa Ana Region

Terry Tamminen
Secretary for Environmental Protection

3737 Main Street, Suite 500, Riverside, California 92501-3348
(909) 782-4130 • Fax (909) 781-6288
http://www.swrcb.ca.gov/rwqcb8

Arnold Schwarzenegger
Governor

June 24, 2004

RECEIVED
JUN 2 5 2004
TARGHEE, INC.

Mr. Robert L. Moore
President & Chief Operating Officer
Mills Land and Water Company
P. O. Box 7108
Huntington Beach, CA 92615

NO FURTHER ACTION AT CENCO/GOLDEN WEST REFINING COMPANY, HUNTINGTON BEACH PIPELINE TERMINAL, 21471 NEWLAND STREET, HUNTINGTON BEACH, CA 92646

Dear Mr. Moore:

We have reviewed the Remedial Action Report and Request For Closure dated December 8, 2003, Corrective Action Report, Former Waste Oil Tank dated April 21, 2003, and the Groundwater Investigation Former Dry Well report dated March 8, 2004, submitted by your consultants, Targhee, Inc. (Targhee), for the above-mentioned facility.

The land at the address noted above is owned by Mills Land and Water Company (Mills) and was leased in 1956 to Wilshire Oil Company, and subsequently to Golden West Refining Company (Golden West) in 1988 for construction and operation of the Huntington Beach marine pipeline terminal (HBMPT). When Golden West developed the site as an oil pipeline terminal, it was improved with several buildings, aboveground storage tanks (ASTs), pumps, sumps, pipelines, and two underground storage tanks (USTs), including one waste-oil tank. In March 1998, Golden West initiated the process of decommissioning the terminal. Subsequent to partial decommissioning, Golden West assigned the Mills lease to CENCO Refining Company (CENCO) in May 1998. CENCO intended to continue operations at the marine pipeline terminal.

In October 1998, CENCO reached an agreement with the City of Huntington Beach and other parties to halt efforts to continue operation at the terminal. They also agreed to complete the decommissioning, initiated by Golden West Refining Company, by October 1999. CENCO actually resumed work on the site in January 2000 and agreed to perform assessment and remediation of the soil and groundwater according to a workplan approved by Board staff in December 2000.

On June 15, 2000, Versar, Inc. (Versar), on behalf of CENCO, submitted a workplan to Board staff for a Phase II Site Assessment for the entire site to determine whether soil and groundwater had been impacted by operations at the facility. Versar subsequently submitted a revised workplan for a Phase II Site Assessment dated March 29, 2001. In the fall of 2001, following the completion of the decommissioning and demolition of the structures at the site, a Phase II Environmental Assessment was conducted by TRC, consultant to CENCO, in general accordance with the revised workplan submitted by Versar.

During the period from November 2001 to January 2002, TRC excavated and backfilled areas of impacted soils. The excavated soil was stockpiled on site pending disposal at an approved facility.

Following backfilling activities, TRC collected confirmation samples from the former excavations in January 2002. Two of the excavations (AST 55001 and southwest corner pump) were open, but the remaining excavations had been backfilled prior to confirmation sampling. TRC identified the closed excavations using available survey data and excavated slot trenches across portions of them. Once the slot trenches were completed, TRC collected soil samples at areas within the trenches, which were estimated to represent the original sidewalls of the former excavations. TRC also collected samples from an excavation at the former waste-oil UST. This excavation was completed to a depth of about 6 feet below ground surface (bgs), and samples were collected from the sidewalls of the excavation. The results of these investigations were forwarded to Board staff on April 11, 2002, and TRC recommended that no further work was necessary at the site.

CENCO then terminated investigation and remediation activities, and on April 11, 2002 requested a no further action designation. However, the origin of the backfilled soil placed into these excavations and trenches was not known, and Board staff believed that the extent of the remaining contamination in these areas was not completely defined. Also, Targhee reported that significant contamination and debris was present in the excavation backfill. CENCO's request was denied on June 19, 2002.

Subsequent to the abandonment of the site by CENCO, Targhee, on behalf of Mills, initiated investigative and remedial work at the site as part of the decommissioning process. This work was completed under the guidelines outlined in a Remediation Action Plan (RAP) prepared by Targhee and with the oversight of Board staff. These remedial activities were focused on the restoration of the property to a condition as good as that which existed at the lease inception in 1956.

The lithology at the site consists of two fine-grained units and two sand units. The upper fine-grained unit consists of sandy-to-clayey silt and silty clay and is present within the upper 4 to 8 feet of the subsurface. The upper fine-grained unit overlies the upper sand unit. The upper sand unit consists of a section of sand, silty sand, and sandy silt, which is about 3 to 4 feet in thickness. The upper sand unit is underlain by gray sandy clayey silt, which is also on the order of 3 to 4 feet in thickness. The lowermost unit encountered during the investigative and remedial activities at the site is gray saturated sand, which occurs below a depth of 14 feet bgs. This sand is characterized by an abundance of marine shells.

Where impacted by petroleum hydrocarbons, the soil units were discolored to dark gray or black. Natural organic material was also found in the soil as black discolored areas. This material was distinguished from the oil-contamination in the soil in the field primarily on the basis of odor.

The depth to groundwater at the site ranges from two feet bgs to seven feet bgs. Groundwater levels tend to be deeper in the eastern portion of the site, and previous off-site measurements indicate that groundwater in the eastern part of the site is flowing in an east-northeasterly direction at a gradient of about 0.003 feet/foot.

Targhee identified the following Areas of Concern (AOCs): (1) pre-existing soil stockpiles; (2) lead-impacted soils; (3) former ASTs; (4) former pipelines; (5) former pump areas; (6) former waste-oil UST and (7) near-surface crude oil areas.

Pre-existing Soil Piles

Each of the soil stockpile samples was initially analyzed for total petroleum hydrocarbons (TPH) using EPA 8015 modified for volatile and extractable fuel hydrocarbons. Selected samples from each stockpile were also analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) using EPA Method 418.1. The TRPH analyses were performed to profile the stockpiles for disposal purposes. Each of the soil samples was also initially analyzed for Total Threshold Limit Concentration (TTLC) lead using EPA Method 6010B, and selected samples were analyzed for Soluble Threshold Limit Concentration (STLC) lead as defined by the California Code of Regulations (CCR), Title 22. All samples containing TTLC lead in concentrations exceeding 50 milligrams/kilogram (mg/kg) were also submitted for analysis for STLC lead using EPA Method 6010B.

The TPH results indicated that portions of the soil stockpiles contained TPH in excess of 1,000 mg/kg. Soil samples from strongly stained areas contained TPH (diesel-range organics [DRO]) as high as 11,800 mg/kg and TPH (gasoline-range organics [GRO]) as high as 4,026 mg/kg. All of the soil stockpiles contained TPH concentrations in excess of 100 mg/kg.

The lead results indicated that soil stockpiles contained TTLC lead concentrations in excess of 50 mg/kg. All of these samples were subsequently submitted for analysis for STLC lead. The STLC lead concentrations were less than 5 milligrams/liter (mg/l) in all of the soil stockpiles except ST4 where they ranged from 21.3 to 70.1 mg/l.

Soil stockpiles containing STLC lead in concentrations greater than 5 mg/l and TTLC lead in concentrations greater than 150 mg/kg were designated as hazardous waste for disposal purposes. All of the soil stockpiles were ultimately designated as waste and disposed off site.

Lead Impacted Soil

In February 2002, TRC undertook a soil-sampling program to determine the lateral and vertical extent of soluble lead concentrations in the area of the former ASTs. During the destruction of the former ASTs, lead-bearing paint chips from the former ASTs were scattered on the surface soils throughout the areas adjacent to the tanks. The area of lead-impacted soil was delineated on the basis of paint chips visible on the ground surface.

Detailed sampling along transects extending radially outward from the former ASTs to a depth of 0.5 feet bgs was completed at the site. TRC indicated in their report, dated March 28, 2002, that based on the results of this investigation, impacted soils in the vicinity of seven of the former ASTs would be removed. This plan was subsequently withdrawn and a health risk assessment report was submitted to Board staff with a request for no further action. This request was denied based on consultation with staff of the Department of Toxic Substances Control.

Targhee's remedial action consisted of scraping approximately 6 inches of surficial soil within the area delineated as lead-impacted soil, using either a motor grader or a backhoe fitted with an open loader blade. Following the initial scraping event, some areas still contained visible paint chips, and these areas were subject to additional scraping prior to the initial sampling event.

Analytical results indicated that several locations within the delineated area of lead-impacted soils required additional scraping. A second lead-scraping event was undertaken. Surficial soils in areas beneath several of the pre-existing soil stockpiles were also removed during the second lead-scraping event.

Analytical results from the second lead-scraping event indicated that further remedial work was necessary. A final scraping event was undertaken in the same area. As a result, soils remaining in place at the site contain less than 150 mg/kg TTLC lead and/or less than 5 mg/l STLC lead.

Former Pump Areas

Three areas of the site were designated for further investigation by minimally invasive means. The three areas included the sump and stormwater pump area, and the diesel fuel unloading pump area, east and south of the crude booster pump, respectively, as well as the north-central area of former AST 17007. A Geoprobe was used to collect samples at 4 feet and 8 feet bgs. Analytical results indicated that the highest concentration was 137 mg/kg TPH (59 mg/kg DRO and 78 mg/kg oil range organics [ORO]).

Other AOCs

The remaining AOCs were AST 55001 (TEX1), Skim Oil Pump (TEX2), Pipeline Excavation EX3 (TEX3), Pipeline Excavation EX1 (TEX4), Pipeline Excavation EX2 (TEX5), Northeast AST 17006 (TEX6), North Center Pump (TEX7), Pipe/Valve Vault AST 17007 (TEX8), Southwest Corner Pump (TEX9), Sump and Storm Water Pump (TEX10), Pipeline Extension Area (TEX11 & TEX12), and Near-Surface Excavation (NEX1). These were excavated to determine the extent of any existing contamination in these areas. These excavations were generally completed in two separate phases. The initial phase was completed based on visual examination of the soils remaining in the excavations. This was followed by a second excavation phase in which the remaining contamination, as defined by the analytical results from soil samples obtained from the excavation during the initial phase, was removed. Two of the excavation areas (TRC pipeline excavations EX2 and EX3) underwent additional excavation activities. The additional excavation of these areas was undertaken as contaminated soil was discovered along the sidewalls, which had been cut back prior to backfilling activities. The excavations completed by Targhee were designated as TEX1 - TEX12 and NEX1. Debris in the form of wood, wire, etc. and crude oil floating on groundwater was found in TEX3, TEX4, TEX9, and NEX1. These were excavated and disposed at appropriate landfills.

Each of the excavations was sampled to determine the extent of the contamination remaining in place. Soil samples were collected at 15-foot intervals along the bottom and sidewalls of the excavations. Samples from the bottom of the excavations were obtained using the backhoe or excavator bucket. Samples from the sidewalls were collected by Geoprobe direct-push drilling methods adjacent to the edge of the excavations or directly from the sidewall by use of the excavator or backhoe bucket. Groundwater levels in the excavations ranged from less than 2 feet bgs to more than 4 feet bgs depending upon the location of the excavation. As a result, many of the bottom samples and some of the sidewall samples were collected below the groundwater table. The excavations were conducted in several phases until confirmatory samples met the goals of TPH less than 100 mg/kg and lead less than 50 ppm.

Additional sampling was conducted in the following areas:

Brush Piles

In October 2002, the existing vegetation along the berms and in other parts of the site was cleared, and the brush was placed in 3 piles in the eastern part of the property. At Board staff's request, one sample was collected from the soil beneath each of the brush piles and analyzed for TTLC lead using EPA 6010B. Analytical results for the soils indicated a maximum value of TTLC lead at 16.2 mg/kg.

Berms

Soil samples were collected from 10 evenly spaced locations along the perimeter berm at the site. These samples were collected to determine if the soils in the berm were suitable for use as backfilling materials for the excavations.

Each of the soil samples collected from the berm was analyzed for TPH (GRO, DRO, and ORO) using EPA Method 8015, modified for volatile and extractable fuel hydrocarbons. The visibly impacted soils were removed from the site. Confirmatory samples indicated an average concentration of 53 mg/kg TPH (ORO).

Former Waste Oil UST

In January 2000, Environmental Engineering and Contracting, Inc. (EEC) removed two USTs under the oversight of the Orange County Health Care Agency (OCHCA). The results of the UST removal indicated that TRPH values, using EPA Method 418.1, ranged from less than 10 mg/kg to 3,400 mg/kg; TPH using EPA Method 8015 in the C6-C-10 range, ranged from less than 20 mg/kg to 342 mg/kg, in the C10-C22 range, less than 30 mg/kg to 2,180 mg/kg, and less than 50 mg/kg in the C22 and higher ranges. Analytical results using EPA Method 8260, isopropylbenzene, naphthalene and sec-butyl benzene were the only volatile organic compounds (VOCs) detected at ranges of less than 0.005 mg/kg to 0.724 mg/kg; less than 0.005 mg/kg to 21.1 mg/kg and less than 0.005 mg/kg to 0.335 mg/kg, respectively.

The area of the former waste-oil tank in the eastern part of the site was excavated, and the contamination was removed. The former waste-oil tank was removed under the oversight of the OCHCA, and this area was under separate consideration from the remainder of the excavations at the site.

Remedial work at the former waste oil UST was undertaken on January 27, 2003 and completed on February 20, 2003. Remedial work consisted of the removal, transportation, and off-site disposal of all contaminated soil related to the UST and associated piping in the area. This remedial work was completed under the oversight of both Board staff and the OCHCA. A separate report was prepared for the remedial action at the former waste oil UST. Confirmatory sampling indicated that TPH and VOCs were non-detectable. The OCHCA issued a No Further Action letter for the UST in March 2004.

Mr. Steven Sharp of the OCHCA raised a concern of a commingled plume at this location as the waste oil was initially collected in a dry well prior to the installation of the waste oil tank. Additional investigation was conducted in the dry well area and the waste oil tank area on March 18, 2004. The groundwater was sampled for VOCs using EPA Method 8260B and petroleum products using EPA Method 8015 Modified for GRO, DRO and ORO. Analytical data indicated that all analytes were non-detectable.

No Further Action

Considering the low concentrations of residual hydrocarbons and lead remaining in the soil or shallow groundwater and the high background total dissolved solids concentration in the groundwater (greater than 15,000 mg/l), we do not consider the residual, low concentrations of residual hydrocarbons and metals remaining at the site to be a threat to the beneficial uses of the Santa Ana Pressure Groundwater Subbasin. Therefore, no further action is necessary at the site. As with any real property, if previously unidentified contamination is discovered at these locations in the future, additional assessment, investigation and/or remediation may be required.

Sincerely,

Gerard J. Thibeault
Executive Officer

Attachments: Certificate of Completion
Resolution 99-03

cc w/o attachments:
Orange Co. Health Care Agency - Katherine Cross
City of Huntington Beach - Dep. City Atty., John M. Fuji, Esq.
City of Huntington Beach - Planning Dept., Scott Hess
City of Huntington Beach - Fire Dept., Eric G. Engberg
CENCO Refining Company - Michael Barranco
Targhee Inc. - Dave Bauer
Edison Pipeline and Terminal Co. - John Slayton

C:Data/Maneck/Mills Land/NFA Letter HBMT F

Number 99-03

CERTIFICATE OF COMPLETION

Unified Agency Review of Hazardous Materials Release Sites
California Health and Safety Code §§25260-25268

The Santa Ana Regional Water Quality Control Board was designated as the Administering Agency by the Site Designation Committee after a request by CENCO Refining Company (the Responsible Party) to oversee the Site Investigation and Remedial Action at Huntington Beach Marine Terminal, 21741 Newland Street, Huntington Beach, CA (the Hazardous Materials Release Site). *See* Resolution No. 99-03, attached to this Certificate.

In accordance with Health and Safety Code §25264, the Administering Agency, after appropriate consultation with other agencies, has determined and/or certifies that:

1. The Site Investigation and Remedial Action at the Site has been satisfactorily completed and a permanent remedy has been accomplished [§25264(b)]. Actions taken are described in the Administering Agency's June 23, 2004 letter, attached to this Certificate.
2. Applicable Remedial Action standards and objectives were achieved [§25264(b)].
3. The Responsible Party has complied with the requirements of all state and local laws, ordinances, regulations, and standards that are applicable to the Site Investigation and Remedial Action [§25264(c)].

No agency may take action against the Responsible Party with respect to the hazardous materials release at the site except as specified in Health and Safety Code §25264(c)(1) through (6).

Issued this 23 day of June, 2004 by the Administering Agency

Name Gerard J. Thibeault Signature: GJ Thibeault

Title Executive Officer

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
SITE DESIGNATION COMMITTEE
RESOLUTION NO. 99-03
FEBRUARY 25, 1999
HUNTINGTON BEACH MARINE TERMINAL, ORANGE COUNTY, CA

WHEREAS, Chapter 6.65 of the Health and Safety Code, commencing with Section 25260 establishes a Site Designation Committee; and

WHEREAS, the Site Designation Committee may designate an administering agency to oversee a site investigation and remedial action at a hazardous materials release site upon request of a responsible party; and

WHEREAS, CENCO Refining Co., a responsible party as defined in Health and Safety Code Section 25260(h), requested the Site Designation Committee to designate an administering agency to oversee site investigation and remedial action at the Huntington Beach Marine Terminal, 21741 Newland Street, Huntington Beach, Orange County, California (site), and agreed to carry out the site investigation and remedial action at the site; and

WHEREAS, this site is a hazardous materials release site as defined in Health and Safety Code Section 25260; and

WHEREAS, the Site Designation Committee held a meeting on February 25, 1999, and provided an opportunity at the meeting for public comment regarding the application; and

WHEREAS, the Site Designation Committee considered the application and furthermore, considered all factors and criteria set forth in Health and Safety Code Section 25262(c); and

WHEREAS, CENCO Refining Co. agrees to reimburse appropriate agencies for their appropriate oversight costs and/or costs of permit development, where those agencies' significant involvement and/or permit development is necessary for the furtherance of the project goals; and

WHEREAS, the Site Designation Committee has determined that, based on consideration of all of the factors listed in Health and Safety Code Section 25262(c), the Santa Ana Regional Water Quality Control Board is the appropriate agency to act as the administering agency; and

NOW, THEREFORE BE IT RESOLVED that the Site Designation Committee hereby designates the the Santa Ana Regional Water Quality Control Board as the administering agency for the site; and

BE IT FURTHER RESOLVED that this designation is subject to the following conditions:

1. The Santa Ana Regional Water Quality Control Board shall consult, on an ongoing basis, with all appropriate agencies who have expressed an interest in this site, including all agencies who would otherwise be issuing a permit or other form of authorization:

   a) in administering all state and local laws which are applicable;

   b) in determining the adequacy of site investigation and remedial action activities; and

   c) prior to issuing any permit or other form of authorization.

2. Such consultation will also include notification if information becomes available to the administering agency that the original application was inaccurate or was incomplete.

3. If an advisory team is convened by the Site Designation Committee, a representative of the administering agency shall attend all advisory team meetings.

4. The Santa Ana Regional Water Quality Control Board shall submit quarterly reports to the Site Designation Committee and to other appropriate agencies concerning the status of the investigation and/or remediation of the Site and shall comply with applicable public participation requirements.

CERTIFICATION

The undersigned Chair of the Site Designation Committee does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Site Designation Committee held in Sacramento, California on February 25, 1999.

DATED: 2/25/1999

KENNETH SELOVER, CHAIR
Site Designation Committee