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Standard Urban Stormwater Mitigation Plan

Sam's Club at 4901 Santa Anita Ave., El Monte, CA 91731

November 2007

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In Compliance with

City of El Monte Municipal Code
Chapter 13.20.150 - Post Construction Pollution Reduction

General Construction Activity Stormwater Permit (GCASP)
State Board Order 99-08-DWQ
Sam's Club, El Monte: WDID 419C349133

Los Angeles County Municipal Stormwater Permit
Regional Board Order 01-182

Developer:
Sam's Real Estate Business Trust
2001 Southeast 10th Street
Bentonville, AR 72716

Adams Engineering Project No. C02-018

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Other Project Specific Permit NOs.:
Los Angeles County Tract No. APN: 8535-001-013;-014;-015
City of El Monte, Design Review No. Resolution No. 3104

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1.0 Proposed Project and Conditions of Concern

1.1 Background

This report describes the design and technical investigation processes Adams Engineering incorporated in order to prepare the Standard Urban Stormwater Mitigation Plan (SUSMP) for the remodeling of the existing Sam's Club Store located in 4901 Santa Anita Ave., City of El Monte, California 91731. The SUSMP was prepared in compliance with the City of El Monte Municipal Code Chapter 13.20.150 – Post-Construction Pollution Reduction, General Construction Activity Stormwater Permit (GCASP, WDID 419C349133) State Board Order 99-08-DWQ, and the Los Angeles County Municipal Stormwater Permit (Regional Board Order 01-182).

The findings and recommendations in the SUSMP are incorporated in the project's grading and Site Development Plans and Specifications (Construction Documents), Maintenance Agreements, and the Sam's Club Store Operational Manual. Moreover, pursuant to Title 13, Chapter 13.20 of the City of El Monte Municipal Code, a SUSMP Maintenance Covenant shall be signed by the Owner (Sam's Real Estate Business Trust) and recorded by the County of Los Angeles upon approval of the final SUSMP.

The preparation and approval of the SUSMP is part of the project approval process prior to issuance of a grading and site development permit with the City of El Monte, California.

This report is divided into five sections: Section 1 describes the project, and provides background information pertaining to the pollutants and Hydrologic Conditions of Concern; Section 2 describes site design and source control Best Management Practices (BMPs); Section 3 describes the treatment control BMPs Design Criteria and Water Quality Volumes by sub-areas; Section 4 details Operation and Maintenance Responsibilities; and Section 5 discusses Funding Responsibilities

1.2 Project Description

The subject property (Sam's Club) is located at 4901 Santa Anita Avenue, in the City of El Monte, Los Angeles County, California (See Figure 1 - Vicinity Map).

The remodeling will increase the size of the Sam's Club building from 106,075 square feet up to 134,731 square feet, and will include the installation of a tire mounting area and a gasoline fueling station. The Sam's Club encompasses 14.54 acres, and the total area which will be affected by ground disturbing activities throughout the demolition and construction of this project is approximately 13.50 acres.

Ground disturbing activities will consist primarily of demolition, site grading, paving, installation of storm drain, storm water treatment BMPs, gas/electrical/telephone service, water supply, sewage collection, landscaping, site lighting, and off-site street improvements. Off-site work will consist of the construction of several lateral underground utility connections (for storm drainage, gas supply, electrical supply, water supply, sewage collection, and street lighting), improvements to the landscaped median in Santa Anita Avenue, and the modification and resurfacing of six driveways (three on Santa Anita Avenue and three on Lower Azusa Road), connecting traffic to the Sam's Club Store in El Monte, California.

Figure No 1: Vicinity Map

Planning Area/ Community Name:	City of El Monte
Thomas Bros. Map:	Page 597, Grid D-4 (2006 Edition)
Project Watershed:	Hydrologic Unit 40500000
	Los Angeles/San Gabriel River Hydrologic Unit
Sub-watershed:	Hydrologic Unit 40515010, Rio Hondo Channel
Project Site Size:	14.54 Acres

Standard Industrial Classification (SIC) Code: Groups 50 through 59

Formation of Home Owners' Association (HOA) or Property Owners Association (POA): NA

Availability of Soils Report:	A Soils Report has been included under Appendix K of this SUSMP report (please note that soils shall be amended for the bioretention BMPs)
Phase 1 Site Assessment:	A Phase 1 Environmental Site Assessment has been included under Appendix L of this SUSMP report.

The site occupies approximately 14.54 acres, and is bordered by the Lower Azusa Road along its southern perimeter, Santa Anita Ave. to the Northeast and the Rio Hondo Flood Control Channel to the northwest. The Developer of the property is Sam's Real Estate Business Trust. The site currently contains the Sam's Club building and parking areas, as well as vacant retail stores near the eastern perimeter of the property (see Appendix B-1 Aerial Map). There is also an existing McDonald's restaurant near the southeast corner of the property that will not be altered by this redevelopment.

1.3 Existing and Proposed Drainage Conditions

The existing curbing and grading of Sam's Club areas dictates that the site be broken into three separate drainage areas, all of which eventually discharge into the Rio Hondo Flood Control Channel, located along the northwestern perimeter of the site. Currently storm water runoff from the northern 5.40 acres of the site drains into a concrete-lined ribbon gutter, which carries the runoff in a northeastern direction until it connects with the City of El Monte Municipal separate storm sewer system (MS4), at Santa Anita Ave., near the northeast corner of the site, and eventually discharges into the Rio Hondo Channel.

Similarly, storm water runoff from the southwest 8.30 acres of the property is collected by a separate ribbon gutter, and drains towards the southwest corner of the property where it connects with the City of El Monte MS4 located at Lower Azusa Road before discharging into the Rio Hondo Channel. Additionally due to the fact that the Sam's Club property is located directly adjacent to the Rio Hondo Flood Control Channel, there are 0.84 acres that are located within the property line, where the steep topography results in a direct discharge into the Rio Hondo Channel (See Appendix B-2 Storm Water Management (SWM) Site Plan - Existing Site Runoff Pattern and Drainage). The existing McDonald's restaurant near the southeast corner of the property contributes runoff to the subject property.

In proposed conditions, the drainage patterns are maintained very closely. The area draining to the north (Area B) increases slightly from 5.40 acres to 5.51 acres, with a pervious percentage increment from 2.4% in current conditions to 13.6% in proposed conditions. The area draining to the SW (Lower Azusa Rd, Area A) increases a little from 8.30 acres in existing conditions to 8.47 acres in proposed conditions, with an increase in pervious areas from 3.2 % to 7.1%. Finally the area draining directly to the Rio Hondo Channel (Area C) reduces from 0.84 acres to 0.56 acres, with a significant increment in pervious areas from 0% to 22.5%. Obviously the total area is still 14.54 acres (see Appendices B-2 and B-3, SWM Site Plan – Existing Site Runoff Patter & Drainage and Proposed Development and Runoff Plan, respectively).

In the existing condition, only 2.75 percent of the site is permeable (landscaped islands), as 14.14 acres out 14.54 total acres are covered with impervious surfaces (mainly consisting of concrete and asphalt). In proposed conditions, the permeable percentage increases to 10.2% as more landscape is added in the design.

In summary, storm water runoff from the Sam's Club discharges into the City of El Monte MS4 at two locations (one along Lower Azusa Road and along Santa Anita Avenue). In turn the City of El Monte's MS4 discharges into the Rio Hondo engineered channel (and a small portion of the project (0.84 acres) discharges directly into the Rio Hondo Channel).

According to the SWRCB Water Quality Control Plan Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (February 1995), the Sam's Club site is located within the Rio Hondo Hydrologic Sub-Area (Watershed 40515010), within the Los Angeles Hydrologic Area (Watershed 40510000), and the Los Angeles-San Gabriel Hydrologic Unit (Watershed 40500000). Drainage from the Rio Hondo channel drains into the Los Angeles River, with ultimate discharge into the Pacific Ocean.

1.4 Hydrologic Area

Project Watershed:	Hydrologic Unit 40510000
	San Gabriel River – L.A. River Watershed
Sub-watershed:	Hydrologic Unit 40515010, Rio Hondo

1.5 Additional Permits / Approvals required for the Project

AGENCY	Permit required (yes or no)
State Dept of Fish and Game, 1601 Streambed Alteration Agreement	No
State Water Resources Control Board, Clean Water Act (CWA) section 401 Water Quality Certification	No
US Army Corps of Engineers, CWA section 404 permit	No
US Fish and Wildlife, End. Species Act section 7 biological opinion	No
Other: *a. State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 Waste Discharge Requirements (WDRS) for Discharges of Storm Water Associated with Construction Activity*	Yes
b. City of El Monte Grading Permit	Yes
c. City of El Monte Building Permit	Yes

1.6 Pollutants of Concern

The Pollutants of Concern (POC) for Sam's Club remodeling / redevelopment are Nutrients, Pathogens (Bacteria), Heavy Metals, Pesticides, Trash & Debris.

The POC were identified based on three sources: Technical Manual for Stormwater BMP in the County of Los Angeles, February, 2004 (LAC Stormwater BMP Manual), California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment, January, 2003 (CASQA Handbook), and the Clean Water Act 303(d) List.

Tables from these sources are:

- Table A-1: Land Use Category Symbols, Descriptions and POC Based on Land Use Category in the Draft LAC Stormwater BMP Manual;
- Table A-3: Observed Exceedances of Typical (Median) Concentrations of POC in Runoff Based on Land Use Category in the Draft LAC Stormwater BMP Manual;

- Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments, Los Angeles Regional Board, October, 2006;
- Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments being Addressed by USEPA Approved TMDLs, October, 2006; and
- Table 2-1 Anticipated and Potential Pollutants Generated by Land Use, CASQA Handbook.

1.7 Receiving Water Impairments

Land Use Designation or Zoning:	Commercial Zone
Current Property Use:	Commercial store, shopping center
Proposed Property Use:	Commercial shopping center and fueling station

The list of potential urban runoff pollutants identified for the project were compared with the pollutants identified as causing an impairment of receiving waters.

Receiving Waters	303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
City of El Monte MS4	None Listed	None Listed	Not Designated as Rare
Rio Hondo Reach 2 (CALWATER Watershed No. 40515010)	High Coliform Count,	MUN-P*, GWR-I, REC1-PM, REC2-E, WARM-P, WILD-I	Not Designated as Rare
Rio Hondo Reach 1 (CALWATER Watershed No. 40515010)	Copper, High Coliform Count, Lead, pH, Trash, Zinc	MUN-P*, GWR-I, REC1-IM, REC2-E, WARM-P, WILD-I	Not Designated as Rare
Los Angeles River Reach 1 (CALWATER Watershed No. 40512000)	Aluminum (Total), Ammonia, Cadmium (Dissolved), Copper (Dissolved), High Coliform Count, Lead, Nutrients (Algae), pH, Scum/Foam-unnatural, Zinc (Dissolved)	MUN-P*, IND-P, , GWR-E, REC1-Es, REC2-E, WARM-E, WILD-P,	Not Designated as Rare
Los Angeles River to Estuary (CALWATER Watershed No. 40512000)	Chlordane (sediment), DDT (sediment), Lead (sediment), PCBs (sediment), Zinc (sediment)	)MUN-P*, IND-P, PROC-P, GWR-E, REC1-Es, REC2-E, WARM-E, MAR-E, WILD-E, RARE-E, MIGR-P, SPWN-P, SHELL-P	RARE located approximately 28 Mi Southwest of the site
E: Existing beneficial use P: Potential beneficial use I: Intermittent beneficial use E, P, and I shall be protected as required	REC-1, REC-2: Water contact and non-contact water recreation, respectively WARM: Warm freshwater habitat. WILD: Wildlife habitat. GWR: Groundwater recharge IND: Industrial Service supply. PROC: Industrial Processes MUN: Municipal service supply MAR: Marine Habitat. SPWN: Spanning, reproduction and/or early development SHELL: Shellfish harvesting RARE: Rare, threatened, or endangered species		
* MUN designations with asterisk are designated under SN 88-63 and RB 89-03. Some designations may be considered for exemptions at a later date.			

1.8 Project Specific Runoff Pollutants

Although Oil and Grease are not listed as stressors in the receiving waterways, they have been included in the POC for Sam's Club due to the: (1) size of the parking areas, (2) the redevelopment shall include the installation of a Sam's Gas Station, and (3) City of El Monte requires it to be included for commercial projects of this size.

1.9 Hydrologic Conditions of Concern

There are no Hydrologic Conditions of Concern at the Sam's Club Redevelopment in El Monte, California due to the following reasons:

1. The proposed re-development approximately maintains the current drainage patterns (see Section 1.3) and the project's runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for any sub-area based on the numerical criteria (Part 4.D. of the Los Angeles County MS4 Permit). Details of runoff volume and peak-flows are shown in Appendix I.

2. This is a redevelopment project that is fully built-out and an operational commercial retail center and the proposed improvements will increase the amount of total permeable area onsite, improve onsite drainage, reduce the volume of stormwater runoff and reduce peak flow rates during extreme flow events.

3. The existing downstream storm drainage systems are fully improved to accommodate the total project runoff, in the existing conditions, with little to no impact to capacity or increased erosion.

The storm water management site plans for water quality treatment BMPs are acceptable to the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board).

1.10 Environmentally Sensitive Areas

The site is not located on or near any known environmentally sensitive areas, according to the Map of Environmentally Sensitive Areas in Los Angeles County, located in the LAC Stormwater BMP Manual (February, 2004). Likewise, the Significant Ecological Areas in Los Angeles County figure, which is also located in the LAC Stormwater BMP Manual (February, 2004), shows that the subject property is not located within any areas of ecological significance (for further information please refer to the documentation included under Appendix N in this SUSMP). Furthermore, according to the documentation provided to Adams Engineering by the U.S. Department of Interior Fish and Wildlife Service, there are not any federally listed species, or their proposed or designated critical habitat occur in the vicinity of the project site (for further details, please refer to the documentation included under Appendix M-1).

2.0 Best Management Practices: Site Design & Source Control Implementation

2.1 Site Design Concepts

Sam's Real Estate Business Trust thru its consultant Adams Engineering has implemented site design concepts that achieve each of the following:

- Minimize impacts from storm water and urban runoff on the biological integrity of natural drainage system and water bodies.
- Maximize the percentage of pervious surfaces to allow percolation of storm water into the ground.
- Minimize the quantity of storm water directed to impervious surfaces and the MS4.
- Minimize pollution emanating from parking lots.

Adams Engineering has identified the specific BMPs to achieve each site design concept and provided a brief explanation for those site design concepts that were not considered or applicable.

2.2 Site Design BMPs

Several site design BMPs were designed to be implemented together. For instance, the site's grading, curbing and gutters features were intentionally designed to drain storm water runoff to treatment control BMPs located within the landscaped areas. Draining to permeable areas or BMPs within the onsite landscaping allows for adherence to several site design concepts, including minimizing the quantity of storm water runoff (by promoting onsite infiltration), minimizing the project's impervious footprint (by directing storm water runoff from impermeable areas to onsite pervious areas), maximizing water conservation (utilizing storm water runoff as irrigation water for onsite landscaping), and separating directly connected impervious areas (strategically locating the Treatment Control BMPs within landscaped island to break up connected impervious areas).

Treatment control BMPs using permeable surfaces have been designed to infiltrate storm water runoff produced from the first 0.75-inch storm event onsite. This aids in promoting water conservation, and helps to reduce the quantity of storm water runoff.

Minimization of the impervious footprint has been further achieved through a redesign of the landscaped areas within the parking lot. Despite the fact that the expansion of the Sam's Club Store will add nearly 30,000 square feet to the building, permeable areas within the Sam's Club property shall increase from 0.40 acres (2.7 percent) in existing conditions up to 1.48 acres post-construction (10.2 percent).

Moreover, the landscaped islands (and the selected drought resistant vegetation) within the Sam's Club parking lot have been strategically located to maximize the vegetative canopy interception of storm water runoff and run-on. The impervious footprint has been further minimized by reducing the widths of the streets, sidewalks, parking spaces and parking lot aisles to the smallest area practical, while maintaining a safe and pedestrian friendly shopping complex.

Please refer to the Storm Water Management (SWM) Site Plan - Proposed Development and Runoff Pattern, which depicts the proposed Sam's Club post-expansion, including landscaping, drainage areas and the onsite storm drain system, located under Appendix B-3 of this SUSMP (the complete landscaping plans are included under Appendix F of this SUSMP).

The separation of the directly connected impervious areas is made evident by a comparison of the SWM Site Plan - Existing Site Runoff Pattern and Drainage (Appendix B-2), which consist of three large drainage areas that discharge directly to the City's MS4, with the SWM Site Plan - Proposed Development and Runoff Pattern (Appendix B-3), where there are 13 drainage areas onsite, and each one of them (including roof runoff) drains to at least one permeable treatment control BMP for onsite infiltration.

2.3 Source Control BMPs

Source control BMPs related to activity restrictions shall include the following;

• Access to the onsite storm drain systems (including the water quality treatment BMPs) shall be limited to: the Owners/Tenants of the Sam's Club, the City of El Monte, the Los Angeles County Flood Control and Water Conservation District, and any professionals that the Owners/Tenants may employ to inspect and maintain the storm drain systems.

• Insecticides and fertilizers shall be applied conservatively, according the manufacturers specifications, and never within 72 hours of a forecasted rain event. Pesticide application in common areas must be performed by an applicator certified by the California Department of Pesticide Regulation.

• Onsite vehicle washing and outdoor processing shall be prohibited.

• All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

Other source control BMPs shall be implemented, including: a spill contingency plan, employee training/education programs, sweeping of parking lot and drive aisles, inspection of catch basins, efficient irrigation and landscaping designs, storm drain signage and stenciling, inlet trash racks, and the proper design of outdoor material storage areas, trash enclosures, loading docks and fueling areas to minimize storm water run-on and pollutant introduction.

Spill Contingency Plan shall be maintained by the onsite Store Manager.

<u>Spill Contingency Plan</u>

Any hazardous or potentially hazardous materials that are delivered to, generated at, or disposed of, at the Sam's Club in El Monte, CA will be properly labeled, sealed, stored and disposed of according to all applicable Federal, State and Local regulations, and in such a manner that they may not come into contact with storm water, in order to reduce the potential for storm water contamination. All materials used on site will be properly stored, handled, dispensed and disposed of following all applicable label directions. Material Safety Data Sheets (MSDS), information will be kept on site for any and all applicable materials.

In the event of an accidental spill, immediate action will be undertaken by the Owner/Tenant to contain and remove the spilled material. All hazardous materials will be disposed of by the Owner/Tenant in the manner specified by Federal, State and/or Local regulations and by the manufacturer of such products. As soon as possible, the spill will be reported to the appropriate agencies. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States will be properly reported. The Owner/Tenant will prepare a written record of any spill of petroleum products or hazardous materials in excess of 1 gallon or reportable quantities, which ever is less, and will provide notice to the City of El Monte and the Los Angeles Regional Water Quality Control Board within 24-hours of the occurrence of the spill. In the event of an accidental spill the Owner/Tenant shall adhere to the California Governor's Office of Emergency Services *California Hazardous Material Spill/Release Notification Guidance* (April 2006), and if required shall file an *Emergency Release Follow-Up Notice Reporting Form*.

Any spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the state or local agency regulations, shall be immediately reported to the EPA National Response Center (1-800-424-8802), and the California Governor's Office of Emergency Services (for all significant releases or threatened releases of hazardous materials, first dial 9-1-1, then call the Governor's Office of Emergency Services, California State Warning Center at 1-800-852-7550). The reportable quantity for hazardous materials can be found in 40 CFR 302 and/or at the following websites:

Federal Reportable Quantities
http://www.epa.gov/superfund/resources/rq

State Regulations
http://www.leginfo.ca.gov/calaw.html
http://www.oes.ca.gov

Federal Regulations
http://www.gpoaccess.gov/fr/index.html

2.4 Site Design for Fueling Station

The proposed fueling areas (located within sub-area A1-1B on Sheet No.4 under Appendix B-4) have been designed in accordance with the Los Angeles County SUSMP requirements. The fueling has been designed with an overhanging canopy which shall be equal or greater in area than the underlying grade break. Drainage from the canopy shall not flow over the fueling area as run-on. The fueling area shall be paved with Portland cement concrete, which shall extend at least 6.5 feet from the corner of each fuel dispenser. The fuel dispensing area has been designed with a 2 percent slope to prevent ponding, and separated from the rest of the site by a grade break that prevents run-on of storm water to the maximum extent practicable. Furthermore two trench grate filters designed to remove hydrocarbons from storm water runoff shall be installed into the two trench drains located under the fueling area canopy. Please refer to Appendix C-1, SWM Site Plan - Fueling Station (pavement section or profile for grade break to prevent run-on) for further information.

2.5 Site Design for Outdoor Material Storage Areas

All of the outdoor material storage areas (located in sub-areas A1-1A, and B1-12) shall be covered with a roof or an awning to prevent direct contact with rainfall, and/or shall be protected

by the grading and curbs to avoid storm water run-on. All outdoor material storage areas shall also be paved and sufficiently impervious to contain leaks and spills. Moreover materials with the potential to contaminate storm water runoff shall either be kept sealed in a cabinet, shed or other water-tight container, or shall be protected by secondary containment structures (i.e. grading and curbs). For further information regarding the outdoor material storage areas, please refer to the details under Appendices D-1, D-2 and D-3, of this SUSMP.

2.6 Site Design for Trash Enclosure Areas

Similarly, the trash storage areas have been designed such that drainage from adjoining roofs and paved surfaces shall be diverted away from the refuse collection area. Trash storage areas shall also be protected by the grading and curbs to avoid storm water run-on, and shall be screened or walled to prevent off-site transport of refuse. Moreover, the trash compactor area (located in sub-area A1-1A) has been designed with a protective awning, and all of the trash dumpsters (containers) shall be leak proof and have attached covers or lids. For further information regarding the trash storage areas, please refer to the details included under Appendix E-1 of this SUSMP.

2.7 Site Design for Parking Areas

The parking areas at the Sam's Club in El Monte redevelopment have been designed in accordance with the Los Angeles County SUSMP requirements. Storm water runoff from the parking areas shall drain to treatment control BMPs prior to offsite discharge. For further information regarding the parking areas, please refer to exhibits B-3 and B-4 under Appendix B of this SUSMP.

3.0 Proposed Treatment Control BMPs

3.1 Post-Development BMPs

The storm water quality treatment control BMPs were chosen based on their removal efficiencies for the pollutants of concern (nutrients, bacteria, heavy metals, pesticides, trash, debris, oil and grease) at the site. Beyond the aforementioned Site Design and Source Control BMPs incorporated into the Sam's Club Redevelopment, several treatment control BMPs have been designed to minimize the quantity of pollutants in the storm water runoff from the subject property, including:

- Nine bioretention cells
- Two underground infiltration basins
- Five grate inlet skimmer boxes, and
- Three trench grate filters.

Appendices B-5, B-6, B-7, B-8 and B-9 show separate storm water management site plan sheets for each of the aforementioned treatment control BMPs. According to the *California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook -- New Development and Redevelopment* (January, 2003), and the *CALTRANS Treatment BMP Technology Report CTSW-RT-06-167.02.02* (April 2006), both the bioretention cells and the underground infiltration basins are capable of treating the pollutants of concern with at least a

medium removal efficiency. For further details regarding the location and contributing drainage areas of the treatment control BMPs, please refer to Appendix B-4.

3.2 Bioretention Cells

The goal was utilize bioretention cells to the maximum extent practicable, while maintaining compliance with the requirements of the City of El Monte, the developer's GCASP and the County of Los Angeles MS4 Permit.

Bioretention cells were selected due to their ability to treat the identified pollutants of concern. According to the Bioretention Fact Sheet (TC-32), in the CASQA Handbook bioretention have high removal effectiveness for five of the six identified pollutants of concern, including: Nutrients, Trash, Metals, Bacteria, and Oil and Grease. Likewise, according to the *CALTRANS Treatment BMP Technology Report CTSW-RT-06-167.02.02* (April 2006), bioretention cells have high removal efficiencies for Total Metals, Microbiology and Litter, and medium removal efficiencies for Nutrients, Pesticides and Dissolved Metals. Given these circumstances, bioretention cells can address all six of the identified POC with at least medium removal efficiency. It is important to note that in order to further minimize the potential for nutrients, bacteria and pesticides to contaminate storm water runoff, fertilizers and insecticides will be applied in the minimum quantities necessary according to the manufacturers' specifications, and their application will not occur within 72 hours of a forecasted storm event (source control BMP).

The bioretention cells were designed to treat the runoff from the first 0.75-inch storm event, as described in detail in Appendix A, Section A-2.1 and tabulated in Table 1 of this SUSMP. For further information regarding the bioretention cells, please refer to the details included under Appendices B-5, B-6, and B-7.

3.3 Underground Infiltration Basins

If the available space for a bioretention cell was not large enough to treat the runoff produced by the bioretention cells' contributing drainage area during the design storm (0.75" in LA County), then additional treatment is required. Underground Infiltration Basins (UIB) were selected for addressing any runoff which could not be fully treated by the bioretention cells, because of their ability to treat the identified pollutants of concern.

According to the Infiltration Basin Fact Sheet (TC-11) in the *CASQA Stormwater Best Management Practice Handbook -- New Development and Redevelopment* (January, 2003), Infiltration Basins have a high removal effectiveness for five of the six pollutants of concern, (including; Nutrients, Trash, Metals, Bacteria, Oil and Grease). Moreover, according to the *CALTRANS Treatment BMP Technology Report CTSW-RT-06-167.02.02* (April 2006), Infiltration – Below Grade Basins have a high removal efficiency for all six of the identified pollutants of concern, including Total Nitrogen, Total Phosphorus, Pesticides, Total Metals, Dissolved Metals, Microbiology and Litter.

The exhibit under Appendix B-7, SWM Site Plan - Underground Infiltration Basin details the plan and profile sections of the underground infiltration basins, and the exhibit under Appendix B-8 details a typical treatment train of a bioretention cell connected to an underground infiltration basin. The Sam's Club design has combined the nine bioretention cells and the two underground infiltration basins.

Five grate inlet skimmer boxes have also been planned for the Sam's Club redevelopment site in order to filter storm water draining into either one of the two underground infiltration basins. The grate inlet skimmer boxes will prolong the lifetime of the underground infiltration basins by acting as a pre-treatment BMP and filtering out sediment, trash, debris, oil and grease prior to discharge into the basins.

Three trench drain filter inserts will be installed to treat the runoff from localized areas where trash, debris, oil and grease are known to be problem pollutants. As described, one of the trench drain filter inserts will be installed in the proposed loading truck well and two trench drain filter inserts will be installed under the protective canopy at the Sam's Club Gas Station. Similar to the grate inlet skimmer boxes, the trench grate filters are designed with a hydrocarbon boom to actively absorb oils and grease.

Furthermore, the likelihood of groundwater contamination is very small because groundwater is more than 120 feet deep at the site, and because pre-treatment has been provided in the inlets prior to discharge to the underground infiltration system. Therefore, no limitation on use of infiltration has been anticipated

3.4 Post-Development BMP Water Quality Volume by Sub-Area

Table 1 below, details how each drainage area's runoff shall flow to specific treatment control BMPs after the expansion of the Sam's Club. These drainage areas are delineated in the SWM Site Plan B-5, Proposed Treatment Control BMPs and SWM Site Plan B-4, Proposed Development and Runoff Pattern.

Table 1 shows that a treatment train approach shall be implemented for each drainage area where a bioretention cell could not adequately treat the volume of water produced from its contributing area during an first flush 0.75-inch storm event. Column 11 shows that the runoff produced by the first flush 0.75-inch storm event shall be 100 percent treated by all but three of the proposed drainage areas.

The storm water runoff from these three drainage areas corresponds to boundary areas next to roadways or to the Rio Hondo Channel and it is infeasible to treat due to the physical constraints of the site. Therefore, these drainage areas directly discharge offsite without any treatment. It should be noted that some of this area, while technically contained within the Sam's Club property line, is currently occupied by landscaping, sidewalks and roadways which shall not be disturbed as apart of the subject redevelopment.

During the design of the Sam's Club in El Monte, Adams Engineering made every effort to maximize the amount of storm water runoff that could drain to treatment control BMPs in order to infiltrate storm water onsite, and minimize runoff.

For further clarity, please see Appendix SWM B-4.1 Treated and No-treated Drainage Areas Onsite, which depicts the delineation of all the drainage areas, including both the areas that are not treated at all due to physical constraints, and the areas that are 100 percent treated by the designed storm water quality BMPs.

Table 1: Post-Development BMPs Water Quality Volume by Sub-Area

Area Name (1)	Area, Acres	Runoff P=0.75", ft^3	First BMP	Treat. Cap 1st BMP, ft^3	% treated by 1st BMP	2nd BMP	Treat. Cap 2nd BMP, ft^3	% treated by 2nd BMP	Untreated Runoff, ft^3	% treated by BMPs
1	2	3	4	5	6	7	8	9	10	11
A1-1A	1.34	2,906	Bio-Cell 1	4,252	100%	No	N/A	N/A	0	100%
A1-1B	0.08	194	Gas Trench	0.5 cfs	spills	UIB(5)-1	199	100%	0	100%
A1-2	0.53	1,301	None	-	-	UIB(5)-1	1,333	100%	0	100%
A1-3	0.13	325	Trench 1(2)	0.6 cfs	100%	UIB-1	333	100%	0	100%
A1-4	0.68	1,576	Insert 1(2)	23 cfs	100%	UIB-1	1,615	100%	0	100%
A1-5	1.64	3,791	Bio-Cell 2(3)	645	17%	UIB-1	3,223	83%	0	100%
A1-6	0.98	2,248	Bio-Cell 3(3)	655	29%	UIB-1	1,633	71%	0	100%
A1-7	0.63	1,290	Bio-Cell 4(3)	1,446	100%	No	N/A	N/A	0	100%
A1-8	1.99	4,875	None	-	-	UIB-1	4,995	100%	0	100%
Total A1	*8.01*	*18,507*	*T, In, BC 1-4*	*6,999*	*30%*	*UIB-1*	*13,331*	*70%*	*0*	*100%*
A2 (4)	0.46	949	N/A (4)	-	-	N/A (4)	-	-	949	0%
Total A	8.47	19,456	T, In, BC 1-4	6,999	28%	UIB-1	13,331	67%	949	95%
B1-9	1.89	3,965	Bio-Cell 5	4,683	100%	No	N/A	N/A	0	100%
B1-10	0.52	1,097	Bio-Cell 6	2,620	100%	No	N/A	N/A	0	100%
B1-11	1.39	3,085	Bio-Cell 7(3)	1,251	41%	UIB-2	1,938	59%	0	100%
B1-12	0.77	1,698	Bio-Cell 8	2,321	100%	No	N/A	N/A	0	100%
B1-13	0.41	813	Bio-Cell 9	1,768	100%	No	N/A	N/A	0	100%
Total B1	*4.99*	*10,657*	*BC 5 to 9*	*12,642*	*83%*	*UIB-2*	*1,938*	*17%*	*0*	*100%*
B2 (4)	0.52	1,207	N/A (4)	-	-	N/A (4)	-	-	1,207	0%
Total B	5.51	11,865	BC 5 to 9	12,642	74%	UIB-2	1,938	15%	1,207	90%
C2 (4)	0.56	1,094	N/A (4)	-	-	N/A (4)	-	-	1,094	0%
Total	**14.54**	**32,415**	**-**	**19,641**	**44%**	**-**	**15,070**	**46%**	**3,250**	**90%**

Footnotes:

(1) The first letter of the name represents drainage destination (A: Lower Azusa Rd, B: Santa Anita Ave, C: Rio Hondo Channel). The first number represents the facility type (1: private drainage, 2: public drainage or draining to street). The last number represents the specific drainage area tied to a BMP (please refer to Proposed Conditions Map)

(2) Flow based BMP. The pre-treated volume is not counted in the percent of runoff volume treated

(3) Bio-cells 2, 3, 4, and 7 shall be equipped with inlet insert because their capacity is smaller than the 0.75" storm runoff. Additional runoff drains to UIB.

(4) Areas not treated due to physical constrains. Runoff sheet-flows to streets or channel.

(5) UIB: Underground Infiltration Basin

4.0 Operation and Maintenance Responsibility for Treatment Control BMPs

The SUSMP's CC&Rs, and other maintenance agreement and/or covenant that shall be signed by the Owner (Sam's Real Estate Business Trust) and recorded by the County of Los Angeles upon approval of the final SUSMP are included under Appendix G of this SUSMP.

Self-inspections and record-keeping requirements for BMPs must be met (review local specific requirements regarding self-inspections and/or annual reporting), as such, Sam's Real Estate Business Trust shall assume responsibility for inspections, operations, maintenance and record-keeping.

Descriptions of water quality monitoring plan is not required by the Co-Permittee.

5.0 Funding

Sam's Real Estate Business Trust shall assume responsibility for funding the inspections, operations, maintenance and record-keeping of all of the site design, source control and treatment control BMPs referred to in this SUSMP. Sam's Real Estate Business Trust has described in their cover letter to the Los Angeles Water Board that the funding responsibilities have been addressed and will be transferred to future owners.

APPENDICES

A. WATER QUALITY VOLUME CALCULATIONS

WATER QUALITY PEAK FLOW CALCULATIONS

B. LOCATION MAP AND STORM WATER MANAGEMENT SITE PLANS

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B.2 EXISTING SITE RUNOFF PATTERN & DRAINAGE

B.3 PROPOSED DEVELOPMENT AND RUNOFF PATTERN

B.4 PROPOSED TREATMENT CONTROL BMPS

B.5 – B-6 BIORETENTION DETAILS

B.7 UNDERGROUND INFILTRATION BASIN DETAILS

B.8 UNDERGROUND INFILTRATION BASIN AND BIORETENTION TREATMENT TRAIN

B-9 FILTER INSERT DETAILS

B-10 PROPOSED TREATMENT AREA MAP

C. C-1 FUELING STATION DETAILS

D. OUTDOOR MATERIAL STORAGE AREA DETAILS

D-1 LOADING AREA DETAILS

D-2 CRATE AND BAIL STORAGE AREA DETAILS

D-3 TIRE AND BATTERY STORAGE AREA DETAILS

E. E-1 TRASH ENCLOSURE DETAILS

F. F-1 LANDSCAPING PLANS AND RELATED STORM WATER MANAGEMENT DETAILS

G. G-1 – G-N AGREEMENTS, CC&RS, OPERATION, MAINTENANCE REQUIREMENTS, WAL–MART LETTERS TO LOS ANGELES WATER BOARD COVENANT

H. CONDITIONS OF APPROVAL

I. SUPPORTING DETAILS RELATED TO HYDROLOGIC CONDITIONS OF CONCERN

J. EDUCATIONAL MATERIALS

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L. PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

M. CORRESPONDENCE DOCUMENTATION WITH

M-1 U.S. FISH AND WILDLIFE SERVICE

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N. PROJECT LOCATION IN RELATION TO ENVIRONMENTALLY SENSITIVE AREAS