

Preliminary Post-Construction Storm Water Quality Plan

For:

QUICK QUACK CAR WASH #26-066

Town of Loomis

APN: 044-122-005

Portion of the Southwest Section 9, Township 11 North, Range 7 East, M. D. B. & M.,
included within the land shown and designated as Parcel 1 of Parcel Map No. 80-42

Prepared for:

Quick Quack Car Wash

Mr. Cameron Drennan - Construction Manager

Quick Quack Development, LLC

6020 West Oaks Blvd., Suite 300

Rocklin, CA 95765

(916) 472-8689

Prepared by:

ams associates, inc.

801 Ygnacio Valley Road, Suite 220

Walnut Creek, CA 94596

(925) 943-2777

Preparation Date: 11/20/23

Approval Date: _____

Section 1 General Project Information

The undersigned owner of the subject property, is responsible for the implementation of the provisions of this Storm Water Quality Plan (SWQP), including ongoing operations and maintenance (O&M), consistent with the requirements of the West Placer Storm Water Quality Design Manual and the State of California Phase II Small MS4 General Permit (Order No: 2013-0001-DWQ). If the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement the SWQP.

For all Regulated Projects (As identified in Form 1-2 below), the undersigned owner hereby grants access to all representatives of the Jurisdictional Agency for the sole purpose of performing O&M inspections of the installed treatment system(s) and hydromodification control(s) if any.

A copy of the final signed and fully approved SWQP shall be available on the subject site for the duration of construction and then stored with the project approval documentation and improvement plans in perpetuity.

Form 1-1 Project Identification and Owner's Certification		
Project Site Address:	Northwest Corner of Sierra College Boulevard & Brace Road, Loomis, CA 95650	
Owner Name:	Quick Quack Car Wash	
Title	Mr. Cameron Drennan - Construction Manager	
Company	Quick Quack Development, LLC	
Address	6020 West Oaks Blvd., Suite 300	
City, State, Zip Code	Rocklin, CA 95765	
Email	camerond@dontdrivedirty.com	
Telephone #	(916) 472-8689	
Signature	Date	
Engineer:*	Farhad Iranitalab	PE Stamp* (Required for all Regulated Projects)
Title	Civil Engineer	
Company	ams associates, inc.	
Address	801 Ygnacio Valley Road, Suite 220	
City, State, Zip Code	Walnut Creek, CA 94596	
Email	farhad@amsassociates.us	
Telephone #	(925) 943-2777	
Signature		
Brief Description of Project: (Attach additional sheets as necessary)	The Site is 3.96 +/- Acres of Vacant Land covered with Native Vegetation and Trees. We are developing 1.23 +/- Acres which will be a Quick Quack Car Wash with Parking Lot and Landscaping.	

* Not required for Small Projects as determined in Form 1-2 below. Project owners are responsible for ensuring that all storm water facilities are designed by an appropriately licensed and qualified professional.

Form 1-2 Project Category

Development Category (Select all that apply)

¹ Small Project – All projects, except LUPs, that create and/or replace between 2,500-5,000 ft ² of impervious surface or detached single family homes that create and/or replace 2,500 ft ² or more of impervious surface and are not part of a larger plan of development.	
² Enter total new and/or replaced impervious surface (ft ²)	
³ Regulated Project – All projects that create and/or replace 5,000 ft ² or more of impervious surface.	X
⁴ Regulated Redevelopment Project with equal to, or greater than 50 percent increase in impervious area	
⁵ Regulated Redevelopment Project with less than 50 percent increase in impervious area	
⁶ Enter total pre-project impervious surface (ft ²)	0
⁷ Enter total new and/or replaced impervious surface (ft ²)	41,973
⁸ Regulated Road or linear underground/overhead project (LUP) creating 5,000 ft ² or more of newly constructed contiguous impervious surface.	
⁹ Enter total new and/or replaced impervious surface (ft ²)	
¹⁰ Regulated Hydromodification Management Project – Regulated projects that create and/or replace 1 acre or more of impervious surface. A project that does not increase impervious surface area over the pre-project condition is not a hydromodification management project.	
¹¹ Enter total new and/or replaced impervious surface (ft ²)	

Section 3 Regulated Projects

Section 3 forms are to be completed for all Regulated Projects.

Form 3-1 Site Location and Hydrologic Features

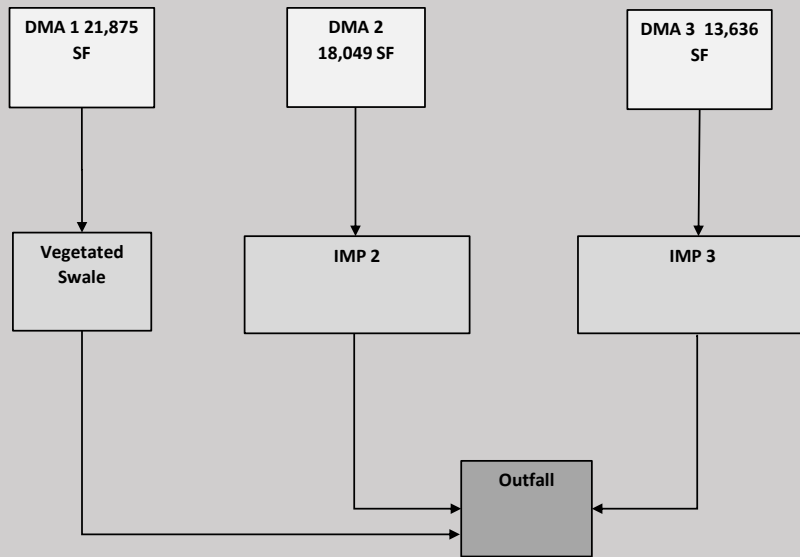
Site coordinates: <i>Take GPS measurement at approximate center of site</i>	¹ Latitude 38°48'39"n	² Longitude 121°12'23"w	³ Elevation (ft. above sea level) 300	⁴ 85th Percentile, 24 Hour Design Storm Depth (in): 0.9
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⁵ Receiving waters <i>Name of stream, lake or other downstream waterbody to which the site runoff eventually drains</i>	Folsom Lake
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⁶ 303(d) listed pollutants of concern <i>Refer to State Water Resources Control Board website www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired</i>	Mercury
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⁷ Is Project going to be phased? <i>If yes, ensure that the SWQP evaluates each phase with distinct DMAs, requiring LID BMPs to address runoff at time of completion.</i>	No
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⁸ Use this form to show a conceptual schematic depicting DMAs and conveyance features connecting DMAs to the site outlet(s). An example is provided below that can be modified for the proposed project or a drawing clearly showing DMAs and flow routing may be attached.



Form 3-2 Site Assessment and Layout Documentation

	Has this Item been considered in the Site Layout and depicted in the Site Plan?	
	Yes	Not Applicable (Include brief explanation)
Define the development envelope and protected areas, identifying areas that are most suitable for development and areas to be landscaped, or left undisturbed, and used for infiltration.	x	
Concentrate development on portions of the site with less permeable soils and preserve areas that can promote infiltration.	x	
Limit overall impervious coverage of the site with paving and roofs.	x	
Set back development from creeks, wetlands, and riparian habitats.		NA Existing Site is too close to provide 500 ft setback
Preserve significant trees.	x	
Conform site layout along natural landforms.	x	
Avoid excessive grading and disturbance of vegetation and soils.	x	
Replicate the site's natural drainage patterns.	x	
Detain and retain runoff throughout the site.	x	

Attach a Site Plan that incorporates the applicable considerations above. Ensure that the following items are included in the Site Plan:

- Site Boundary
- Soil types and areal extents, test pit and infiltration test locations
- Topographic data with 1 ft. contours
- Existing natural hydrologic features (depressions, watercourses, wetlands, riparian corridors)
- Environmentally sensitive areas and areas to be preserved.
- Proposed locations and footprints of improvements creating new, or replaced, impervious surfaces
- Potential pollutant sources and locations
- Entire site divided into separate DMAs with unique identifiers
- Existing and proposed site drainage network with flow directions and site run-on and discharge locations
- Proposed design features and surface treatments used to minimize imperviousness and reduce runoff
- Proposed locations and footprints of treatment and hydromodification management facilities
- Design features for managing authorized non-stormwater discharges
- Areas of soil and/or groundwater contamination
- Existing utilities and easements
- Maintenance areas

Form 3-3 Source Control Measures			
Potential Pollutant Generating Activity or Source	Check One		Describe the source control measures to be implemented for each potential pollutant generating activity or source present on the project as listed in Appendix C and in the CASQA Fact Sheets. Include any special features, materials, or methods of construction that will be used.
	Present	Not Applicable	
Accidental spills or leaks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	All material will be stored inside and property sealed
Interior floor drains	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Parking/storage areas and maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Parking lot to be swept monthly
Indoor and structural pest control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pools, spas, ponds, decorative fountains, and other water features	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Landscape/outdoor pesticide use	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Restaurants, grocery stores, and other food service operations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Refuse areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trash Bins to be closed and locked
Industrial Processes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Outdoor storage of equipment or materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Vehicle and equipment cleaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Use biodegradable phosphate free detergent
Vehicle and equipment repair and maintenance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fuel dispensing areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Loading docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fire sprinkler test water	<input checked="" type="checkbox"/>	<input type="checkbox"/>	To be disposed in sanitary sewer
Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Unauthorized non-storm water discharges	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Building and grounds maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Landscape maintenance to use minimal fertilizers

The source control measures identified in this table shall be designed consistent with recommendations from the CASQA Stormwater BMP Handbook for New Development and Redevelopment¹, or from another equivalent manual.

^[1] California Stormwater BMP Handbook New Development and Redevelopment. California Stormwater Quality Association (CASQA). January 2003.

Form 3-4 Runoff Reduction Calculator for Site Design Measures on Regulated Projects

		¹ DMA ID No.	1	2	3	4
Site Design Measure	Runoff Reduction Parameters		Runoff Reduction (ft ³)	Runoff Reduction (ft ³)	Runoff Reduction (ft ³)	Runoff Reduction (ft ³)
² Adjacent/On-Site Stream Setbacks and Buffers	A_{imp} (ft ²)	<i>impervious drainage area</i>	17,236	9,707	11,442	
	V_{85} (in)	<i>runoff volume from 85th percentile, 24-hour storm</i>	0.8	0.8	0.8	0
³ Soil Quality Improvement and Maintenance	A_{pond} (ft ²)	<i>ponding area</i>		962	1103	
	D_{pond} (ft)	<i>ponding depth</i>		0.5	0.5	
	A_{sa} (ft ²)	<i>soil amendment area</i>	0	962	1103	0
	D_{sa} (ft)	<i>depth of amended soil</i>		1.5	1.5	
	n	<i>porosity of amended soil</i>		0.3	0.3	
⁴ Tree Planting and Preservation	n_e	<i>number of new evergreen trees</i>				
	n_d	<i>number of new deciduous trees</i>				
	A_{tc} (ft ²)	<i>canopy area of existing trees to remain on the property</i>	0	0	0	0
	V_{85} (in)	<i>runoff volume from 85th percentile, 24-hour storm</i>	0.8	0.8	0.8	0.8
⁵ Rooftop and Impervious Area Disconnection	A_{imp} (ft ²)	<i>impervious drainage area</i>		3,588		
	V_{85} (in)	<i>runoff volume from 85th percentile, 24-hour storm</i>	0.8	0.8	0.8	0
⁶ Porous Pavement	A_{res} (ft ²)	<i>area of gravel storage layer</i>				
	D_{res} (ft)	<i>depth of gravel storage layer</i>	0	0	0	0
	n_{agg}	<i>porosity of aggregate</i>				
	C	<i>efficiency factor</i>				
⁷ Vegetated Swales	A_{imp} (ft ²)	<i>impervious drainage area</i>				
	V_{85} (in)	<i>runoff volume from 85th percentile, 24-hour storm</i>	0.8	0.8	0.8	0
⁸ Rain Barrels and Cisterns	N	<i>number of rain barrels and/or cisterns</i>	0	0	0	0
	V_a (ft ³)	<i>volume of each rain barrel and/or cistern</i>				
⁹ Do all Site Design Measures meet the design requirements outlined in the Fact Sheets?				Yes	X	No
¹⁰ Total Volume Reduction (ft ³)			1163	1811	1820	0
¹¹ Effective Treated Impervious Area (ft ²)			17236	26834	26966	0

Form 3-5 Computation of Water Quality Design Criteria for Stormwater Treatment and Baseline Hydromodification Measures

DMA ID No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
¹ Total impervious area requiring treatment	17,236	13,358	11,442																		
² Impervious area untreated by Site Design Measures (ft ²) <i>Item 1 – Form 3-4 Item 11</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
³ Additional pervious area draining to BMP (ft ²)	4639	3892	1091																		
⁴ Composite DMA Runoff Coefficient (Rc) <i>Enter area weighted composite runoff coefficient representing entire DMA</i>	0.90	0.90	0.90																		
⁵ Water Quality Volume (WQV) (ft ³) <i>WQV = 1/12 * [Item 2 + Item 3] * Item 4] * Unit WQV</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
⁶ Water Quality Flow (WQF) (cfs) <i>WQF = 1/43,200 * [0.2 * (Item 2 + Item 3) * Item 4]</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

^{5,6} Values will equal zero if all impervious area has been treated by Site Design Measures.

DMA ID No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
¹ Total impervious area requiring treatment																					
² Impervious area untreated by Site Design Measures (ft ²) <i>Item 1 – Form 3-4 Item 11</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
³ Additional pervious area draining to BMP (ft ²)																					
⁴ Composite DMA Runoff Coefficient (Rc) <i>Enter area weighted composite runoff coefficient representing entire DMA</i>																					
⁵ Water Quality Volume (WQV) (ft ³) <i>WQV = 1/12 * [Item 2 + Item 3] * Item 4] * Unit WQV</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
⁶ Water Quality Flow (WQF) (cfs) <i>WQF = 1/43,200 * [0.2 * (Item 2 + Item 3) * Item 4]</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

^{5,6} Values will equal zero if all impervious area has been treated by Site Design Measures.

Form 3-6 Volume-Based Infiltrating Bioretention Measures

	DMA 1	DMA 2	DMA 3	
¹ DMA ID No. <i>If combining multiple DMAs from Form 3-5, enter a new unique DMA ID No.</i>				
² WQV (ft ³) <i>Item 5 in Form 3-5</i> <i>If combining multiple DMAs from Form 3-5, enter the sum of their respective WQVs.</i>	0	0	0	
³ Surface Loading Rate <i>Maximum 5.0 in/hr</i>		5	5	
⁴ BMP Surface Area (ft ²) <i>Top of BMP</i>		962	1103	
⁵ Infiltration rate of underlying soils (in/hr)		0.30	0.30	
⁶ Maximum ponding depth (ft) <i>BMP specific, see BMP design details</i>		0.5	0.5	
⁷ Ponding Depth (ft) <i>d_{BMP} = Minimum of (1/12 * Item 5 * 48 hrs) or Item 6</i>	-	0.5	0.5	-
⁸ Infiltrating surface area, SA _{BMP} (ft ²) <i>Bottom of BMP</i>		962	1103	
⁹ Planting media depth, d _{media} (ft)	0.0	1.5	1.5	
¹⁰ Planting media porosity	0.00	0.30	0.30	
¹¹ Gravel depth, d _{media} (ft) <i>Only included in certain BMP types</i>	0.0	1.0	1.0	
¹² Gravel porosity	0.00	0.30	0.30	
¹³ Retention Volume (ft ³) <i>V_{retention} = Item 8 * [Item 7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (1.5 * (Item 5 / 12))]</i>	-	1,238.6	1,420.1	-
¹⁴ Untreated Volume (ft ³) <i>V_{untreated} = Item 2 – Item 13</i> <i>If greater than zero, adjust BMP sizing variables and re-compute retention volume</i>	0	0	0	0
¹⁵ Treated Flow Rate (ft ³ /s) <i>Q_{treated} = 1/43,200*(Item 3 * Item 4)</i>	0.0000	0.1113	0.1277	0.0000
¹⁶ Total Treated Flow Rate for Project (ft ³ /s) <i>Q_{total} = Sum of Item 15 for all DMAs</i>	0.3466			
¹⁷ Is WQV for each DMA treated on-site? <i>Check Yes if Item 14 equals 0 for all DMAs</i>	Yes	X	No	

Form 3-7 Flow-Through Planters, Tree Box and Media Filters

¹ DMA ID No. <i>If combining multiple DMAs from Form 3-5, enter a new unique DMA ID No.</i>	DMA 1	DMA 2	DMA 3	
² WQF (ft ³ /s) <i>Item 6 in Form 3-5</i> <i>If combining multiple DMAs from Form 3-5, enter the sum of their respective WQFs.</i>	0.0000	0.0000	0.0000	
³ Surface Loading Rate <i>Maximum 5.0 in/hr</i>		5.0	5.0	
⁴ Maximum Ponding Depth (ft) <i>BMP Specific, see BMP design details</i>	0.0	0.5	0.5	
⁵ Soil/Media Surface Area (ft ²) <i>Top of BMP</i>		962	1103	
⁶ Soil/Media Depth (ft)		1.50	1.50	
⁷ Soil/Media porosity	0.00	0.30	0.30	
⁸ Gravel Depth (ft)	0.00	1.00	1.00	
⁹ Gravel porosity	0.00	0.30	0.30	
¹⁰ Detention Volume (ft ³) $V_d = \text{Item 5} * [\text{Item 4} + (\text{Item 6} * \text{Item 7}) + (\text{Item 8} * \text{Item 9}) + (3 * (\text{Item 3} / 12))]$	0	2,405	2,758	0
¹¹ Manufacturers' specified flow rate for proprietary devices (ft ³ /s) <i>(attach a copy of the product specifications)</i>	0.0000	0.0000	0.0000	
¹² Treated Flow Rate (ft ³ /s) $Q_{\text{treated}} = 1/43,200 * (\text{Item 3} * \text{Item 5})$ or <i>Item 11</i>	0.0000	0.1113	0.1277	0.0000
¹³ Untreated Flow Rate (ft ³ /s) $Q_{\text{untreated}} = \text{Item 2} - \text{Item 12}$ <i>If greater than zero, adjust BMP sizing variables and re-compute treated flow</i>	0.0000	0.0000	0.0000	0.0000
¹⁴ Total Treated Flow Rate for Project (ft ³ /s) $Q_{\text{total}} = \text{Sum of Item 12 for all DMAs}$	0.3466			
¹⁵ Is WQF for each DMA treated on-site? <i>Check Yes if Item 13 equals 0 for all DMAs.</i>	Yes	X	No	

To be completed as part of the final report.

Form 5-1 BMP Inspection and Maintenance		
BMP	Inspection Point and Frequency	Maintenance Activity Required
	To be completed as part of final report.	

To be completed as part of the final report.

Form 6-1 Post-Construction Stormwater BMPs

Following is a summary of all BMPs included in the Project design. This checklist must be included on the cover sheet of the Improvement Plans for all Regulated Projects.

	BMP	Plan Sheet Number(s)
Structural Source Controls (list BMPs)		
Site Design Measures	Stream Setbacks and Buffers	
	Soil Quality Improvement and Maintenance	
	Tree Planting and Preservation	
	Rooftop and Impervious Area Disconnection	
	Porous Pavement	
	Vegetated Swales	
Stormwater Treatment and Baseline Hydromodification Measures	Bioretention with Infiltration	
	Flow-Through Planters, Tree Box Filters and Media Filters	
Hydromodification Management Measures	Supplemental Detention	