Priority Development Project (PDP) Storm Water Quality Management Plan (SWQMP) 63rd & MonteZuma

PTS 623199

[Insert Drawing Number (if applicable) and Internal Order Number (if applicable)]

Check if electing for offsite alternative compliance

Engineer of Work:



William Lundstrom Provide Wet Signature and Stamp Above Line

> Prepared For: Zuma West 2108 Bottlebrush Place Encintas, CA 92024 619–688–4917 Prepared By:

Lundstrom Engineering & Surveying, Inc. 5333 Mission Center Road, #115 San Diego, CA 92108 619-814-1220 Date: 7. 27.2020

Approved by: City of San Diego

Date



THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING



Table of Contents

- Acronyms
- Certification Page
- Submittal Record
- Project Vicinity Map
- FORM DS-560: Storm Water Applicability Checklist
- FORM I-1: Applicability of Permanent, Post-Construction Storm Water BMP Requirements
- HMP Exemption Exhibit (for all hydromodification management exempt projects)
- FORM I-3B: Site Information Checklist for PDPs
- FORM I-4B: Source Control BMP Checklist for PDPs
- FORM I-5B: Site Design BMP Checklist PDPs
- FORM I-6: Summary of PDP Structural BMPs
- Attachment 1: Backup for PDP Pollutant Control BMPs
 - o Attachment 1a: DMA Exhibit
 - Attachment 1b: Tabular Summary of DMAs (Worksheet B-1 from Appendix B) and Design Capture Volume Calculations
 - o Attachment 1c: FORM I-7 : Worksheet B.3-1 Harvest and Use Feasibility Screening
 - o Attachment 1d: Infiltration Feasibility Information(One or more of the following):
 - FORM I-8A: Worksheet C.4-1 Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions
 - Form I-8B: Worksheet C.4-2 Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions
 - Infiltration Feasibility Condition Letter
 - Worksheet C.4-3: Infiltration and Groundwater Protection for Full Infiltration BMPs
 - FORM I-9: Worksheet D.5-1 Factor of Safety and Design Infiltration Rate
 - o Attachment 1e: Pollutant Control BMP Design Worksheets / Calculations
- Attachment 2: Backup for PDP Hydromodification Control Measures
 - o Attachment 2a: Hydromodification Management Exhibit
 - o Attachment 2b: Management of Critical Coarse Sediment Yield Areas
 - o Attachment 2c: Geomorphic Assessment of Receiving Channels
 - o Attachment 2d: Flow Control Facility Design



- Attachment 3: Structural BMP Maintenance Plan
 - o Maintenance Agreement (Form DS-3247) (when applicable)
- Attachment 4: Copy of Plan Sheets Showing Permanent Storm Water BMPs
- Attachment 5: Project's Drainage Report
- Attachment 6: Project's Geotechnical and Groundwater Investigation Report



Acronyms

APN	Assessor's Parcel Number
ASBS	Area of Special Biological Significance
BMP	Best Management Practice
CEQA	California Environmental Quality Act
CGP	Construction General Permit
DCV	Design Capture Volume
DMA	Drainage Management Areas
ESA	Environmentally Sensitive Area
GLU	Geomorphic Landscape Unit
GW	Ground Water
HMP	Hvdromodification Management Plan
HSG	Hvdrologic Soil Group
HU	Harvest and Use
INF	Infiltration
LID	Low Impact Development
LUP	Linear Underground/Overhead Projects
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PDP	Priority Development Project
PE	Professional Engineer
POC	Pollutant of Concern
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Ouality Control Board
SIC	Standard Industrial Classification
SWPPP	Stormwater Pollutant Protection Plan
SWQMP	Storm Water Quality Management Plan
TMDL	Total Maximum Daily Load
WMAA	Watershed Management Area Analysis
WPCP	Water Pollution Control Program
WQIP	Water Ouality Improvement Plan



Certification Page

Project Name: Permit Application

I hereby declare that I am the Engineer in Responsible Charge of design of storm water BMPs for this project, and that I have exercised responsible charge over the design of the project as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the requirements of the Storm Water Standards, which is based on the requirements of SDRWQCB Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100 (MS4 Permit).

I have read and understand that the City Engineer has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Standards. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable source control and site design BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by the City Engineer is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer of Work's Signature

61630

6/30/2021

PE#

Expiration Date

William Lundstrom

Print Name

Lundstrom Engineering & Surveying, Inc.

Company

10-16-2018

Date





Submittal Record

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In last column indicate changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments.

Submittal Number	Date	Project Status	Changes
1	10-16-18	Preliminary Design/Planning/CEQA	Initial Submittal
		Final Design	
2	01-20-2020	Preliminary Design/Planning/CEQA	Resubmittal
		Final Design	
3		Preliminary Design/Planning/CEQA	
		Final Design	
4		Preliminary Design/Planning/CEQA	
		Final Design	

Project Vicinity Map

Project Name: Permit Application







City of San Diego Form DS-560 Storm Water Requirements Applicability Checklist

Attach DS-560 form.

7 The City of San Diego | Storm Water Standards PDP SWQMP Template | January 2018 Edition



THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING





City of San Diego Development Services 1222 First Ave., MS-302 San Diego, CA 92101 (619) 446-5000

	FORM
Storm Water Requirements	DS-560
Applicability Checklist	October 2016

Project Address: 6253, 6263 + 6273 Montezont Ro	Project Number (for City Use Only):
All construction sites are required to implement construction BMPs in accordan in the <u>Storm Water Standards Manual</u> . Some sites are additionally required to Construction General Permit (CGP) ¹ , which is administered by the State Water	ce with the performance standards o obtain coverage under the State Resources Control Board.
For all projects complete PART A: If project is required to submit a PART B.	SWPPP or WPCP, continue to
 Is the project subject to California's statewide General NPDES permit for Storn with Construction Activities, also known as the State Construction General Pe land disturbance greater than or equal to 1 acre.) 	• m Water Discharges Associated rmit (CGP)? (Typically projects with
Yes; SWPPP required, skip questions 2-4 INO; next question	
Does the project propose construction or demolition activity, including but no grubbing, excavation, or any other activity resulting in ground disturbance an	t limited to, clearing, grading, d contact with storm water runoff?
Yes; WPCP required, skip 3-4 🔲 No; next question	
3. Does the project propose routine maintenance to maintain original line and g nal purpose of the facility? (Projects such as pipeline/utility replacement)	rade, hydraulic capacity, or origi-
Yes; WPCP required, skip 4 I No; next question	
4. Does the project only include the following Permit types listed below?	
Electrical Permit, Fire Alarm Permit, Fire Sprinkler Permit, Plumbing Permit, Spa Permit.	Sign Permit, Mechanical Permit,
Individual Right of Way Permits that exclusively include only ONE of the follow sewer lateral, or utility service.	owing activities: water service,
 Right of Way Permits with a project footprint less than 150 linear feet that e the following activities: curb ramp, sidewalk and driveway apron replaceme replacement, and retaining wall encroachments. 	xclusively include only ONE of nt, pot holing, curb and gutter
Yes; no document required	-
Check one of the boxes below, and continue to PART B:	
If you checked "Yes" for question 1, a SWPPP is REQUIRED. Continue to PART B	
If you checked "No" for question 1, and checked "Yes" for question a WPCP is REQUIRED. If the project proposes less than 5,000 squa of ground disturbance AND has less than a 5-foot elevation change entire project area, a Minor WPCP may be required instead. Conti	2 or 3, are feet over the nue to PART B.
If you checked "No" for all questions 1-3, and checked "Yes" for que PART B does not apply and no document is required. Continue	estion 4 to Section 2.
 More information on the City's construction BMP requirements as well as CGP requirement www.sandiego.gov/stormwater/regulations/index.shtml 	s can be found at:
Printed on recycled paper. Visit our web site at <u>www.sandiego.gov/developr</u> Upon request, this information is available in alternative formats for person	ment-services.

Page 2 of 4 City of San Diego • Development Services • Storm Water Requirements Applicability Checklist

PART B: Determine Construction Site Priority

This prioritization must be completed within this form, noted on the plans, and included in the SWPPP or WPCP. The city reserves the right to adjust the priority of projects both before and after construction. Construction projects are assigned an inspection frequency based on if the project has a "high threat to water quality." The City has aligned the local definition of "high threat to water quality" to the risk determination approach of the State Construction General Permit (CGP). The CGP determines risk level based on project specific sediment risk and receiving water risk. Additional inspection is required for projects within the Areas of Special Biological Significance (ASBS) watershed. **NOTE:** The construction priority does **NOT** change construction BMP requirements that apply to projects; rather, it determines the frequency of inspections that will be conducted by city staff.

	ASBS		
	a. Projects located in the ASBS watershed.		
	High Priority		
	a. Projects 1 acre or more determined to be Risk Level 2 or Risk Level 3 per the Con General Permit and not located in the ASBS watershed.	struction	ł
	b. Projects 1 acre or more determined to be LUP Type 2 or LUP Type 3 per the Cons General Permit and not located in the ASBS watershed.	struction	
	Medium Priority		
	a. Projects 1 acre or more but not subject to an ASBS or high priority designation.		
	 b. Projects determined to be Risk Level 1 or LUP Type 1 per the Construction Gener not located in the ASBS watershed. 	al Permit	and
	Low Priority		
	a. Projects requiring a Water Pollution Control Plan but not subject to ASBS, high, or priority designation.	rmedium	1
TION 2.	Permanent Storm Water BMP Requirements.		
tional inf	ormation for determining the requirements is found in the <u>Storm Water Standards N</u>	<u>/anual</u> .	
T C: Det ects that a pment pro s.	ermine if Not Subject to Permanent Storm Water Requirements. are considered maintenance, or otherwise not categorized as "new development pro ojects" according to the <u>Storm Water Standards Manual</u> are not subject to Permaner	jects" or ht Storm V	"rede- Water
es" is ch t Storm	ecked for any number in Part C, proceed to Part F and check "Not Subje Water BMP Requirements".	ect to Pe	rma-
o" is che	ecked for all of the numbers in Part C continue to Part D.		
Does the existing e	project only include interior remodels and/or is the project entirely within an nclosed structure and does not have the potential to contact storm water?	Yes	I No
Does the creating n	project only include the construction of overhead or underground utilities without ew impervious surfaces?	🗌 Yes	No
Does the oof or ex ots or exi	project fall under routine maintenance? Examples include, but are not limited to: terior structure surface replacement, resurfacing or reconfiguring surface parking sting roadways without expanding the impervious footprint, and routine out of damaged payement (grinding, overlay, and pothole repair)	T Yes	TT NO
	TION 2. TION 2. Tional info TC: Det Cts that a ment pro- Storm of is che vissting en Does the reating n Does the poof or ex	 High Priority a. Projects 1 acre or more determined to be Risk Level 2 or Risk Level 3 per the Congeneral Permit and not located in the ASBS watershed. b. Projects 1 acre or more determined to be LUP Type 2 or LUP Type 3 per the Congeneral Permit and not located in the ASBS watershed. Medium Priority a. Projects 1 acre or more but not subject to an ASBS or high priority designation. b. Projects 1 acre or more but not subject to an ASBS or high priority designation. b. Projects determined to be Risk Level 1 or LUP Type 1 per the Construction Gener not located in the ASBS watershed. Low Priority a. Projects requiring a Water Pollution Control Plan but not subject to ASBS, high, or priority designation. TON 2. Permanent Storm Water BMP Requirements. ional information for determining the requirements is found in the <u>Storm Water Standards N</u> T C: Determine if Not Subject to Permanent Storm Water Requirements. cts that are considered maintenance, or otherwise not categorized as "new development proment projects" according to the <u>Storm Water Standards Manual</u> are not subject to Permaners. storm Water BMP Requirements". a" is checked for all of the numbers in Part C continue to Part D. boes the project only include interior remodels and/or is the project entirely within an existing enclosed structure and does not have the potential to contact storm water? boes the project only include the construction of overhead or underground utilities without reating new Impervious surfaces?	 High Priority a. Projects 1 acre or more determined to be Risk Level 2 or Risk Level 3 per the Construction General Permit and not located in the ASBS watershed. b. Projects 1 acre or more determined to be LUP Type 2 or LUP Type 3 per the Construction General Permit and not located in the ASBS watershed. Medium Priority a. Projects 1 acre or more but not subject to an ASBS or high priority designation. b. Projects determined to be Risk Level 1 or LUP Type 1 per the Construction General Permit not located in the ASBS watershed. Low Priority a. Projects requiring a Water Pollution Control Plan but not subject to ASBS, high, or medium priority designation. Ton 2. Permanent Storm Water BMP Requirements. ional information for determining the requirements is found in the <u>Storm Water Standards Manual</u>. T C: Determine if Not Subject to Permanent Storm Water Requirements. cts that are considered maintenance, or otherwise not categorized as "new development projects" or "ment projects" according to the <u>Storm Water Standards Manual</u> are not subject to Permanent Storm Vater BMP Requirements". s, "is checked for any number in Part C, proceed to Part F and check "Not Subject to Persist" is checked for all of the numbers in Part C continue to Part D. boes the project only include interior remodels and/or is the project entirely within an "xisting enclosed structure and does not have the potential to contact storm water?

City of San Diego • Development Services • Storm Water Requirements Applicability Checklist Pa	ge 3 of 4
PART D: PDP Exempt Requirements.	
PDP Exempt projects are required to implement site design and source control B	MPs.
If "yes" was checked for any questions in Part D, continue to Part F and check the "PDP Exempt."	e box labeled
If "no" was checked for all questions in Part D, continue to Part E.	
1. Does the project ONLY include new or retrofit sidewalks, bicycle lanes, or tralls that:	() () () () () () () () () () () () () (
 Are designed and constructed to direct storm water runoff to adjacent vegetated a non-erodible permeable areas? Or; 	reas, or other
 Are designed and constructed to be hydraulically disconnected from paved streets 	and roads? Or;
 Are designed and constructed with permeable pavements or surfaces in accordanc Green Streets guidance in the City's Storm Water Standards manual? 	e with the
Yes; PDP exempt requirements apply	
Does the project ONLY include retrofitting or redeveloping existing paved alleys, streets or r and constructed in accordance with the Green Streets guidance in the <u>City's Storm Water St.</u>	oads designed andards Manual?
Yes; PDP exempt requirements apply	
 If "no" is checked for every number in PART E, continue to PART F and check the b "Standard Development Project". New Development that creates 10,000 square feet or more of impervious surfaces collectively over the project site. This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. 	ox labeled
 Redevelopment project that creates and/or replaces 5,000 square feet or more of impervious surfaces on an existing site of 10,000 square feet or more of impervious surfaces. This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. 	
3. New development or redevelopment of a restaurant. Facilities that sell prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands sel prepared foods and drinks for immediate consumption (SIC 5812), and where the land development creates and/or replace 5,000 square feet or more of impervious surface.	ling Yes Mo
New development or redevelopment on a hillside. The project creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site) and where the development will grade on any natural slope that is twenty-five percent or greater.	
 New development or redevelopment of a parking lot that creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site). 	Dyes DNo
 New development or redevelopment of streets, roads, highways, freeways, and driveways. The project creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site). 	Yes MNO

Page 4 of 4 City of San Diego & Development Services - Sterm Water Developments Applicability Sh	
Tage 4 014 City of San Diego - Development Services - Storm water Requirements Applicability Cho	ecklist
7. New development of redevelopment discharging directly to an Environmentally Sensitive Area. The project creates and/or replaces 2,500 square feet of impervious surface (collectively over project site), and discharges directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).	TYes No
 New development or redevelopment projects of a retail gasoline outlet (RGO) that create and/or replaces 5,000 square feet of impervious surface. The development project meets the following criteria: (a) 5,000 square feet or more or (b) has a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. 	□Yes ☑No
 New development or redevelopment projects of an automotive repair shops that creates and/or replaces 5,000 square feet or more of impervious surfaces. Development projects categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, or 7536-7539. 	Yes No
0. Other Pollutant Generating Project. The project is not covered in the categories above, results in the disturbance of one or more acres of land and is expected to generate pollutants post construction, such as fertilizers and pesticides. This does not include projects creating less than 5,000 sf of impervious surface and where added landscaping does not require regula use of pesticides and fertilizers, such as slope stabilization using native plants. Calculation of the square footage of impervious surface need not include linear pathways that are for infrequivehicle use, such as emergency maintenance access or blcycle pedestrian use, if they are built with pervious surfaces of if they sheet flow to surrounding pervious surfaces.	r Ient DYes DNo
ART F: Select the appropriate category based on the outcomes of PART C through P	PART E.
The project is a STANDARD DEVELOPMENT PROJECT . Site design and source control BMP requirements apply. See the <u>Storm Water Standards Manual</u> for guidance.	
The project is PDP EXEMPT . Site design and source control BMP requirements apply. See the <u>Storm Water Standards Manual</u> for guidance.	
The project is a PRIORITY DEVELOPMENT PROJECT . Site design, source control, and structural pollutant control BMP requirements apply. See the <u>Storm Water Standards Manual</u> for guidance on determining if project requires a hydromodification plan management	U
Jin BH Ime of Owner or Agent (Please Print) Jo/12/18 Date	

Applicability of Perman	ent, Post-Con	struction Form L1
Storm Wat	er BMP Requ	irements
Project I	dentification	
Project Name: 63rd & Montezuma		
Permit Application Number:		Date:
Determination	n of Requireme	ents
The purpose of this form is to identify permanen	it, post-constru	iction requirements that apply to the
project. This form serves as a short <u>summary</u> of separate forms that will serve as the backup for	applicable requ the determinat	uirements, in some cases referencing tion of requirements.
Answer each step below, starting with Step 1 and	progressing t	hrough each step until reaching
Stop . Refer to the manual sections and/or Sepa	ate forms rele	Programien
Step	Answer	Progression
project"? See Section 1.3 of the manual	Vres	Go to Step 2.
(Part 1 of Storm Water Standards) for	No	Stop. Permanent BMP
guidance.		requirements do not apply. No
		SWQMP will be required. Provide
		discussion below.
Discussion / justification if the project is <u>not</u> a "de	evelopment pro	oject" (e.g., the project includes <i>only</i>
Step 2 Is the project a Standard Project, PDP, or	Standard	Stop. Standard Project
PDP Exempt?	Project	requirements apply
To answer this item, see Section 1.4 of the	✓ PDP	PDP requirements apply, including
complete Form DS-560 Storm Water		PDP SWQMP. Go to Step 3.
Requirements Applicability Checklist	PDP	Stop. Standard Project
requirements represently encourse	Exempt	requirements apply. Provide
		discussion and list any additional
		requirements below.
Discussion / justification, and additional requirem	ients for excep	otions to PDP definitions, if
applicable:		



Form I-1	I Page 2 of 2	
Step	Answer	Progression
Step 3. Is the project subject to earlier PDP	Yes	Consult the City Engineer to
requirements due to a prior lawful approval?		determine requirements.
See Section 1.10 of the manual (Part 1 of		Provide discussion and identify
Storm Water Standards) for guidance.		requirements below. Go to Step 4.
	√ No	BMP Design Manual PDP
		requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval lawful approval does not apply):	, and identify re	equirements (<u>not required if prior</u>
Step 4. Do hydromodification control requirements apply? See Section 1.6 of the manual (Part 1 of Storm Water Standards) for guidance.	Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification cor	ntrol requireme	nts do <u>not</u> apply:
Step 5. Does protection of critical coarse sediment yield areas apply? See Section 6.2 of the manual (Part 1 of Storm Water Standards) for guidance.	Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	мо	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.
Discussion / justification if protection of critical co	arse sediment	yield areas does <u>not</u> apply:
No sediment yield areas exist in site.		



HMP Exemption Exhibit

Attach a HMP Exemption Exhibit that shows direct storm water runoff discharge from the project site to HMP exempt area. Include project area, applicable underground storm drain line and/or concrete lined channels, outfall information and exempt waterbody. Reference applicable drawing number(s).

Exhibit must be provided on 11"x17" or larger paper.



.

THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING



Site Information Checklist For PDPs Form I-3B			
Project Su	mmary Information		
Project Name	63rd & Montezuma		
Project Address	6253, 6263 & 6273 Montezuma Road San Diego, CA		
Assessor's Parcel Number(s) (APN(s))	467-171-33, 467-171-34 & 467-171-35		
Permit Application Number			
Project Watershed	Select One: San Dieguito River Penasquitos Mission Bay San Diego River San Diego Bay Tijuana River		
Hydrologic subarea name with Numeric Identifier up to two decimal places (9XX.XX)	Mission San Diego, HSA# 907.11		
Project Area (total area of Assessor's Parcel(s) associated with the project or total area of the right-of- way)	<u>0.4305</u> Acres (<u>18,755</u> Square Feet)		
Area to be disturbed by the project (Project Footprint)	<u>0.4305</u> Acres (<u>18,755</u> Square Feet)		
Project Proposed Impervious Area (subset of Project Footprint)	0.3237 Acres (14,100 Square Feet)		
Project Proposed Pervious Area (subset of Project Footprint)	0.1033 Acres (4,500 Square Feet)		
Note: Proposed Impervious Area + Proposed Per This may be less than the Project Area.	ervious Area = Area to be Disturbed by the Project.		
The proposed increase or decrease in impervious area in the proposed condition as compared to the pre-project condition	<u>130</u> %		



Form I-3B Page 2 of 11
Description of Existing Site Condition and Drainage Patterns
Current Status of the Site (select all that apply):
Previously graded but not built out
Vacant, undeveloped/natural
Description / Additional Information:
Three residential lots with single family residential homes, detached garages, and
concrete driveways.
Existing Land Cover Includes (select all that apply):
☑ Vegetative Cover
Non-Vegetated Pervious Areas
Impervious Areas
Description / Additional Information:
Three residential lots with single family residential homes, detached garages, and concrete
driveways. Front and rear yards are landscape with turf, crushed rocks, and shrubs.
Underlying Soil belongs to Hydrologic Soil Group (select all that apply):
□NRCS Type A
NRCS Type B
NRCS Type C
NRCS Type D
Approximate Depth to Groundwater:
Groundwater Depth < 5 feet
5 feet < Groundwater Depth < 10 feet
10 feet < Groundwater Depth < 20 feet
☑Groundwater Depth > 20 feet
Existing Natural Hydrologic Features (select all that apply):
Watercourses
□ Seeps
Wetlands
☑ None
Description / Additional Information:



	Form I-3B Page 3 of 11
	Description of Existing Site Topography and Drainage
How is s	storm water runoff conveyed from the site? At a minimum, this description should answer:
1.	Whether existing drainage conveyance is natural or urban;
2.	If runoff from offsite is conveyed through the site? If yes, quantification of all offsite
	drainage areas, design flows, and locations where offsite flows enter the project site and
	summarize how such flows are conveyed through the site;
3.	Provide details regarding existing project site drainage conveyance network, including
	storm drains, concrete channels, swales, detention facilities, storm water treatment
	facilities, and natural and constructed channels;
4.	Identify all discharge locations from the existing project along with a summary of the
	conveyance system size and capacity for each of the discharge locations. Provide
	summary of the pre-project drainage areas and design flows to each of the existing runoff
	discharge locations.
	Descriptions/Additional Information
1. The e	existing on site drainage conveyance is urban overland flow.
2. No o	ff site runoff is conveyed through the site.
3. Existi	ing on site drainage conveyance is overland surface flow onto Montezuma
Road ar	nd 63rd Street



Form I-3B Page 4 of 11 Description of Proposed Site Development and Drainage Patterns Project Description / Proposed Land Use and/or Activities: The project proposes to demolish all existing structures and construct a new multi-unit apartment building on one consolidated lot.
List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features): One apartment building (13,300 sf roof area), concrete driveway, patio and walks (800sf).
List/describe proposed pervious features of the project (e.g., landscape areas): 4,250 square foot landscape planting and 425 square foot biofiltration basin.
Does the project include grading and changes to site topography? Yes No Description / Additional Information: Existing residential structures to be demolished.
ter rendenter building pad and anternay babgi dae to be gradear



Form I-3B Page 5 of 11

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

🖌 Yes

No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural and constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Description / Additional Information:

Private on site storm drain system collects and conveys storm water runoff to bioretention basin for treatment and stormwater vault for hydromodification flow. Storm drain cleanout proposed at northwest corner will be a sump with pump and curb outlet over flow.



Form I-3B Page 6 of 11

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply): Onsite storm drain inlets Interior floor drains and elevator shaft sump pumps □Interior parking garages Need for future indoor & structural pest control Landscape/outdoor pesticide use Pools, spas, ponds, decorative fountains, and other water features ☐Food service Refuse areas Industrial processes Outdoor storage of equipment or materials Vehicle and equipment cleaning Vehicle/equipment repair and maintenance Fuel dispensing areas Loading docks Fire sprinkler test water Miscellaneous drain or wash water

Plazas, sidewalks, and parking lots

Description/Additional Information:



Form I-3B Page 7 of 11

Identification and Narrative of Receiving Water

Narrative describing flow path from discharge location(s), through urban storm conveyance system, to receiving creeks, rivers, and lagoons and ultimate discharge location to Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable)

Project runoff outfalls onto Montezuma Road and travels approximately 500 feet east along the existing street gutter into an existing public curb inlet and storm drain. The existing public storm drain outfalls to Alvarado Creek which then confluences with the San Diego River and Pacific Ocean.

Provide a summary of all beneficial uses of receiving waters downstream of the project discharge locations

Pacific Ocean: AQUA, BIOL, COMM, IND, MAR, MIGR, NAV, RARE, REC1, REC2, SHELL, SPWN, WILD

Identify all ASBS (areas of special biological significance) receiving waters downstream of the project discharge locations

None,

Provide distance from project outfall location to impaired or sensitive receiving waters N/A

Summarize information regarding the proximity of the permanent, post-construction storm water BMPs to the City's Multi-Habitat Planning Area and environmentally sensitive lands N/A



Form I-3B Page 8 of 11 Identification of Receiving Water Pollutants of Concern List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies: TMDLs/WQIP Highest Priority Pollutant(s)/Stressor(s) (Refer to 303(d) Impaired Water Body Pollutant (Refer to Table 1-4 in (Refer to Appendix K) Appendix K) Chapter 1) Alvarado Creek Nitrogen, Selenium Fertilzers San Diego River Bacteria Bacteria, Nitrogen, TDS Pacific Ocean Bacteria Bacteria Identification of Project Site Pollutants*

*Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)

Identify pollutants anticipated from the project site based on all proposed use(s) of the site (see Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			



Former L DD Dome Conf 44
Form I-3B Page 9 of 11
Aydromodification management requirements apply (see Section 1.6)?
Wes hydromodification management flow sector structure DMPs required
Vires, nydromodification management now control structural BMPs required.
directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
No, the project will discharge runoff directly to conveyance channels whose bed and bank are
concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed
embayments, or the Pacific Ocean.
No, the project will discharge runoff directly to an area identified as appropriate for an exemption
Description / Additional Information (to be provided if a 'No! answer has been selected above):
Description / Additional mornation (to be provided if a 'No' answer has been selected above):
Note: If "No" answer has been selected the SWQMP must include an exhibit that shows the storm
water conveyance system from the project site to an exempt water body. The exhibit should include
details about the conveyance system and the outfall to the exempt water body.
Critical Coarse Sediment Yield Areas*
*This Section only required if hydromodification management requirements apply
Based on Section 6.2 and Appendix H does CCSYA exist on the project footprint or in the upstream
area draining through the project footprint?
Discussion / Additional Information:



Form I-3B Page 10 of 11
Flow Control for Post-Project Runoff*
*This Section only required if hydromodification management requirements apply
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.
POC#1 is located at the proposed curb outlet on Montezuma Road.
Has a geometrapic assessment been performed for the receiving chappel(s)?
∇ No the low flow threshold is 0.10. (default low flow threshold)
∇ No, the result is the low flow threshold is 0.10-
\Box Yes, the result is the low flow threshold is 0.1Q ₂
\Box Yes, the result is the low flow threshold is $0.5Q_2$
\Box Yes, the result is the low flow threshold is $0.5Q_2$
If a geomorphic assessment has been performed, provide title, date, and preparer:
Discussion / Additional Information: (optional)



Form I-3B Page 11 of 11
Uther Site Requirements and Constraints
management design, such as zoning requirements including setbacks and open space, or local
codes governing minimum street width, sidewalk construction, allowable pavement types, and
drainage requirements.
Optional Additional Information or Continuation of Previous Sections As Needed
This space provided for additional information or continuation of information from previous
sections as needed.



Source Control BMPs All development projects must implement source control BMPs where applicable and feasible. See Chapter 4 and Appendix E of the BMP Design Manual (Part 1 of the Storm Wate Standards) for information to implement source control BMPs shown in this checklist. Answer each category below pursuant to the following. "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the BMP Design Manual. Discussion / justification is not required. "No" means the BMP is applicable to the project but it is not feasible to implement Discussion / justification must be provided. "NA" means the BMP is not applicable at the project site because the project does nor include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided. Source Control Requirement Applied? 4.2.1 Prevention of Illicit Discharges into the MS4 Yes No N/A Discussion / justification if 4.2.1 not implemented:	Source Control BMP Checklist for PDPs	Form	I-4B
All development projects must implement source control BMPs where applicable and feasible. See Chapter 4 and Appendix E of the BMP Design Manual (Part 1 of the Storm Wate Standards) for information to implement source control BMPs shown in this checklist. Answer each category below pursuant to the following. • "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement Discussion / justification must be provided. • "No" means the BMP is not applicable at the project site because the project does no include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided. 4.2.1 Prevention of Illicit Discharges into the MS4 Yes No N/A Discussion / justification if 4.2.1 not implemented: 4.2.2 Storm Drain Stenciling or Signage Yes No N/A Discussion / justification if 4.2.3 not implemented: 4.2.4 Protect Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal No Y/A Discussion / justification if 4.2.4 not implemented: 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal No N/A Discussion / justification if 4.2.4 not implemented: Yes No N/A All care of the date aprotect of the date aprotect of the date application of the date ap	Source Control BMPs		
Answer each category below pursuant to the following. • "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does nor include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided. Source Control Requirement Applied? 4.2.1 Prevention of Illicit Discharges into the MS4 ✓ Yes No N/A Discussion / justification if 4.2.1 not implemented:	All development projects must implement source control feasible. See Chapter 4 and Appendix E of the BMP Design Manu Standards) for information to implement source control BMPs shown i	BMPs where a al (Part 1 of the in this checklist.	oplicable and Storm Water
Source Control Requirement Applied? 4.2.1 Prevention of Illicit Discharges into the MS4 ✓ Yes No N/A Discussion / justification if 4.2.1 not implemented: ✓ No N/A 4.2.2 Storm Drain Stenciling or Signage ✓ Yes No N/A Discussion / justification if 4.2.2 not implemented: ✓ No N/A 4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal ✓ No ✓ Discussion / justification if 4.2.3 not implemented: ✓ ✓ No ✓ N/A 4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal ✓ Yes No ✓ N/A Discussion / justification if 4.2.4 not implemented: ✓ ✓ ✓ ✓ ✓ ✓ ✓ 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and ✓ Yes No N/A Mind Dispersal ✓ ✓ ✓ ✓ ✓ ✓ Discussion / justification if 4.2.5 not implemented: ✓ ✓ ✓ ✓ ✓ Mind Dispersal ✓ ✓ ✓ ✓	 Answer each category below pursuant to the following. "Yes" means the project will implement the source control B and/or Appendix E of the BMP Design Manual. Discussion / just "No" means the BMP is applicable to the project but it in Discussion / justification must be provided. "N/A" means the BMP is not applicable at the project site include the feature that is addressed by the BMP (e.g., the prostorage areas). Discussion / justification may be provided. 	MP as described tification is not re s not feasible t because the pro oject has no outd	in Chapter 4 equired. o implement. ject does not oor materials
4.2.1 Prevention of Illicit Discharges into the MS4 Yes No N/A Discussion / justification if 4.2.1 not implemented:	Source Control Requirement	Appl	ied?
A.2.1 Protection of much biocharges into the more interview inter	4.2.1 Prevention of Illicit Discharges into the MS4		
4.2.2 Storm Drain Stenciling or Signage ✓ Yes No N/A Discussion / justification if 4.2.2 not implemented:	Discussion / justification if 4.2.1 not implemented:		
Discussion / justification if 4.2.2 not implemented: 4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run- On, Runoff, and Wind Dispersal Discussion / justification if 4.2.3 not implemented: 4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal Discussion / justification if 4.2.4 not implemented: 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal Discussion / justification if 4.2.5 not implemented:	4.2.2 Storm Drain Stenciling or Signage	I Yes N	0 🗌 N/A
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run- On, Runoff, and Wind Dispersal Yes No ✓ N/A Discussion / justification if 4.2.3 not implemented: Yes No ✓ N/A 4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal Yes No ✓ N/A Discussion / justification if 4.2.4 not implemented: Yes No ✓ N/A 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and ✓ Yes No N/A Wind Dispersal Discussion / justification if 4.2.5 not implemented: No N/A Discussion / justification if 4.2.5 not implemented: Yes No N/A	Discussion / justification if 4.2.2 not implemented:		
Discussion / justification if 4.2.3 not implemented: 4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal Discussion / justification if 4.2.4 not implemented: 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Image: Wind Dispersal Discussion / justification if 4.2.5 not implemented:	4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run- On, Runoff, and Wind Dispersal	Yes N	0 🔽 N/A
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal Yes No N/A Discussion / justification if 4.2.4 not implemented: 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Yes No N/A 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal Yes No N/A Discussion / Justification if 4.2.5 not implemented: Implemented: Implemented: Implemented:	Discussion / justification if 4.2.3 not implemented:		
Discussion / justification if 4.2.4 not implemented: 4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Yes No N/A Wind Dispersal Discussion / justification if 4.2.5 not implemented:	4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal		°
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Yes No N/A Wind Dispersal	Discussion / justification if 4.2.4 not implemented:		
Discussion / Justification if 4.2.5 not implemented:	4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	Yes N	
a second of the	Discussion / justification if 4.2.5 not implemented:		
Trash Bins Shall have lids and stored in garage.	Trash Bins Shall have lids and stored in garage.		



Form I-4B Page 2 of 2				
Source Control Requirement		Applied?		
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)				
On-site storm drain inlets	✓Yes	□ No □ N/A		
Interior floor drains and elevator shaft sump pumps	Yes	No ✔N/A		
Interior parking garages	Yes	□ No 🗹 N/A		
Need for future indoor & structural pest control	✓Yes	No N/A		
Landscape/Outdoor Pesticide Use	✓Yes	No N/A		
Pools, spas, ponds, decorative fountains, and other water features	Yes	No ✓ N/A		
Food service	Yes	No ✓ N/A		
Refuse areas	Yes	□No ✔N/A		
Industrial processes	Yes	No √N/A		
Outdoor storage of equipment or materials	Yes	□No ✔N/A		
Vehicle/Equipment Repair and Maintenance	Yes	No ✔N/A		
Fuel Dispensing Areas	Yes	No √N/A		
Loading Docks	Yes	No ✓ N/A		
Fire Sprinkler Test Water	Yes	No ✓ N/A		
Miscellaneous Drain or Wash Water	Yes	No ✔N/A		
Plazas, sidewalks, and parking lots	✓Yes	No N/A		
SC-6A: Large Trash Generating Facilities	Yes	No √N/A		
SC-6B: Animal Facilities	Yes	□No 🖌 N/A		
SC-6C: Plant Nurseries and Garden Centers	Yes	□No ✔N/A		
SC-6D: Automotive Facilities	Yes	No √N/A		

Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.



Site Design BMP Checklist for PDPs		Form I-5	5B	
Site Design BMPs				
All development projects must implement site design BMPs where applicable and feasible. See Chapter 4 and Appendix E of the BMP Design Manual (Part 1 of Storm Water Standards) for information to implement site design BMPs shown in this checklist.				
 "Yes" means the project will implement the site design BMP as Appendix E of the BMP Design Manual. Discussion / justification "No" means the BMP is applicable to the project but it is Discussion / justification must be provided. "N(A" means the BMP is not applicable at the project site b 	described n is not rec not feas	in Chapte quired. sible to in	er 4 and/or mplement.	
include the feature that is addressed by the BMP (e.g., the project areas to conserve). Discussion / justification may be provided.	ect site has	s no existi	ng natural	
A site map with implemented site design BMPs must be included at the	end of thi	s checklis	t.	
Site Design Requirement		Applied	?	
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	Yes	No	I N/A	
None existing on site.				
features mapped on the site map?	∐ Yes		I∕IN/A	
1-2 Are trees implemented? If yes, are they shown on the site map?	✓ Yes	□ No	□N/A	
1-3 Implemented trees meet the design criteria in 4.3.1 Fact Sheet (e.g. soil volume, maximum credit, etc.)?	Yes	√ No	□ N/A	
1-4 Is tree credit volume calculated using Appendix B.2.2.1 and SD-1 Fact Sheet in Appendix E?	Yes	√ No	□N/A	
4.3.2 Have natural areas, soils and vegetation been conserved?	✓ Yes	No No	□ N/A	
Discussion / justification if 4.3.2 not implemented: Conserve existing soils.				



	Form I-5B Page 2 of 4			
	Site Design Requirement		Applied	d?
4.3.3	Minimize Impervious Area	✓ Yes	No	N/A
Di	scussion / justification if 4.3.3 not implemented:			
		24		
4.3.4 N	Ainimize Soil Compaction	Yes	No	∐N/A
Di	scussion / justification if 4.3.4 not implemented:			
Minimi	ze soil compaction in landscape planting areas.			
	ж			
-				
4.3.5 lr	mpervious Area Dispersion	✓ Yes	No	N/A
Dis	scussion / justification if 4.3.5 not implemented:			
Roof ru	noff flows though landscape planting before entering private sto	orm drain	system.	
F 4			100.	
5-1	is the pervious area receiving runon from impervious area identified on the site map?	I ves		
5-2	Does the pervious area satisfy the design criteria in 4.3.5 Fact	Yes	√ No	□ N/A
	Sheet in Appendix E (e.g. maximum slope, minimum length,			
5_2	etc.)			
5-5	Appendix B.2.1.1 and 4.3.5 Fact Sheet in Appendix F?			



	Form I-5B Page 3 of 4			
	Site Design Requirement		Applied	1?
4.3.6 R	unoff Collection	√ Yes	No	N/A
Dise	cussion / justification if 4.3.6 not implemented:			
6a-1	Are green roofs implemented in accordance with design criteria in 4.3.6A Fact Sheet? If yes, are they shown on the site map?	Yes	√No	N/A
6a-2	Is the green roof credit volume calculated using Appendix B.2.1.2 and 4.3.6A Fact Sheet in Appendix E?	Yes	√ No	□N/A
6b-1	Are permeable pavements implemented in accordance with design criteria in 4.3.6B Fact Sheet? If yes, are they shown on the site map?	Yes	√ No	<u></u> N/A
6b-2	Is the permeable pavement credit volume calculated using Appendix B.2.1.3 and 4.3.6B Fact Sheet in Appendix	Yes	No	
4.3.7 Lai	nd Caping with Native or Drought Tolerant Species	✓ Yes	No	N/A
	assion / justification in 4.5.7 not implemented.			
4.3.8 Hai	rvest and Use Precipitation	Yes	V No	N/A
Disc	ussion / justification if 4.3.8 not implemented:			
8-1 / c	Are rain barrels implemented in accordance with design criteria in 4.3.8 Fact Sheet? If yes, are they shown on the site map?	Yes	√ No	N/A
8-2 I E	s the rain barrel credit volume calculated using Appendix 3.2.2.2 and 4.3.8 Fact Sheet in Appendix E?	Yes	√ No	□N/A



Insert Site Map with all site design B	Form I-5B Page 4 of MPs identified:	4	
ч.			


Summary of PDP Structural BMPs	Form I-6
PDP Structural BMPs	

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual, Part 1 of Storm Water Standards). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the City at the completion of construction. This includes requiring the project owner or project owner's representative to certify construction of the structural BMPs (complete Form DS-563). PDP structural BMPs must be maintained into perpetuity (see Chapter 7 of the BMP Design Manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

Biofiltration with no infiltration is proposed for structural BMP treatment of storm water runoff. Underground storm water detention vault is proposed for hydromodification flow control.

(Continue on page 2 as necessary.)



Form I-6 Page 2 of (Continued from page 1)



Structural BMP Summary Information Structural BMP ID No, 1 & 2 Construction Plan Sheet No. Type of Structural BMP: Retention by harvest and use (e.g. HU-1, cistern) Retention by infiltration basin (INF-1) Retention by biofiltration (INF-2) Retention by biofiltration with partial retention (PR-1) Plotterent control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Plow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Who will be the final owner of this BMP?	Form I-6 Page of (Copy as many as needed)										
Structural BMP ID No. 1 & 2 Construction Plan Sheet No. Type of Structural BMP: Retention by harvest and use (e.g. HU-1, cistern) Retention by bioretention (INF-2) Retention by bioretention (iNF-2) Partial retention by biofiltration with partial retention (PR-1) ØBiofiltration (GF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP its reves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe In discussion section below) Proteste In discussion section below) Portereatment/forebay for another structural BMP Other (describe In discussion section below) Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 <	Structural BMP Sun	nmary Information									
Construction Plan Sheet No. Type of Structural BMP: Retention by harvest and use (e.g. HU-1, cisterm) Retention by bioretention (INF-2) Retention by permeable pavement (INF-3) Partial retention by biofiltration with partial retention (PR-1) Biofiltration (BF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP its serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: PPollutant control only Hydromodification control only Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mha tis the funding mechanism for maintenance?	Structural BMP ID No. 1 & 2										
Type of Structural BMP: Retention by harvest and use (e.g. HU-1, cistern) Retention by infiltration basin (INF-2) Retention by bioretention (INF-2) Retention by biorfiltration with partial retention (PR-1) Øbiffration (BF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Obtention pond or valt for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only If combined pollutant control only Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mhat is the funding mechanism for maintenance?	Construction Plan Sheet No.										
Image: Instant Instex Instant Instant Instant Instant Instant I	Type of Structural BMP:										
Image: control of the service of th	Retention by harvest and use (e.g. HU-1, cistern)										
Retention by bioretention (INF-2) Retention by permeable pavement (INF-3) Partial retention by biofiltration with partial retention (PR-1) Biofiltration (BF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Show-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vall for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Octher (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will maintain this BMP into perpetuity? Mhat is the funding mechanism for naintenance?	Retention by infiltration basin (INF-1)										
Retention by permeable pavement (INF-3) Partial retention by biofiltration with partial retention (PR-1) Biofiltration (BF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP is serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Ploutant control only Ploutant control only Ploutant control only Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will maintain this BMP into perpetuity? Mhat is the funding mechanism for maintenance?	Retention by bioretention (INF-2)										
Partial retention by biofiltration with partial retention (PR-1) Pioiofiltration (BF-1) Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Ploutant control only Ploutant control only Problet (describe in discussion section below) Pretreatment/forebay for another structural BMP Other (describe in discussion section below) Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will maintain this BMP into perpetuity? Mhat is the funding mechanism for naintenance?	Retention by permeable pavement (INF-3)										
Weight and the server of th	Partial retention by biofiltration with partial retent	tion (PR-1)									
Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Plolutant control only Plolutant control only Hydromodification control only Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mhat is the funding mechanism for maintenance?	Biofiltration (BF-1)										
BMP type/description in discussion section below) Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Other (describe in discussion section below) Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mha is the funding mechanism for maintenance?	Flow-thru treatment control with prior lawful appr	oval to meet earlier PDP requirements (provide									
Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Jtypertreatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	BMP type/description in discussion section below)									
biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mho will maintain this BMP into perpetuity? Mhat is the funding mechanism for maintenance?	Flow-thru treatment control included as pre-treat	nent/forebay for an onsite retention or									
biofiltration BMP it serves in discussion section below) Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Nho will maintain this BMP into perpetuity? Nhat is the funding mechanism for maintenance?	biofiltration BMP (provide BMP type/description a	nd indicate which onsite retention or									
Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only QCombined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mho will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	biofiltration BMP it serves in discussion section be	low)									
discussion section below) Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Mho will be the final owner of this BMP? Mho will maintain this BMP into perpetuity? Mhat is the funding mechanism for maintenance?	Flow-thru treatment control with alternative comp	liance (provide BMP type/description in									
Detention pond or vault for hydromodification management Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	discussion section below)										
Other (describe in discussion section below) Purpose: Pollutant control only Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Detention pond or vault for hydromodification ma	nagement									
Purpose: Pollutant control only Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Other (describe in discussion section below)										
Pollutant control only Hydromodification control and hydromodification control Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? Mhat is the funding mechanism for maintenance?	Purpose:										
Hydromodification control only Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Pollutant control only										
Combined pollutant control and hydromodification control Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? Nhat is the funding mechanism for maintenance?	Hydromodification control only										
Pre-treatment/forebay for another structural BMP Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Combined pollutant control and hydromodification	n control									
Other (describe in discussion section below) Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Pre-treatment/forebay for another structural BMP										
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Other (describe in discussion section below)										
Provide name and contact information for the party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Who will certify construction of this BMP?										
party responsible to sign BMP verification form DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Provide name and contact information for the										
DS-563 Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? Nhat is the funding mechanism for maintenance?	party responsible to sign BMP verification form										
Who will be the final owner of this BMP? Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	DS-563										
Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?	Who will be the final owner of this BMP?										
Who will maintain this BMP into perpetuity? What is the funding mechanism for maintenance?											
Who will maintain this BMP into perpetuity?											
What is the funding mechanism for maintenance?	Who will maintain this BMP into perpetuity?										
What is the funding mechanism for naintenance?											
maintenance?	What is the funding mechanism for										
	maintenance?										



Form I-6 Page of (Copy as many as needed)
Structural BMP ID No. 1 & 2
Construction Plan Sheet No.
Discussion (as needed; must include worksheets showing BMP sizing calculations in the SWQMPs):



THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING



Attachment 1 Backup For PDP Pollutant Control BMPs

This is the cover sheet for Attachment 1.



THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING



Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist.	Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)*	Included on DMA Exhibit in Attachment 1a
	*Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	Included as Attachment 1b, separate from DMA Exhibit
	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs)	Included
Attachment 1c	Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	entire project will use infiltration BMPs
	Infiltration Feasibility Information. Contents of Attachment 1d depend on the infiltration condition:	
	 No Infiltration Condition: Infiltration Feasibility Condition Letter (Note: must be stamped and signed by licensed geotechnical engineer) 	
	 Form I-8A (optional) Form I-8B (optional) 	
Attachment 1d	 Partial Infitration Condition: Infiltration Feasibility Condition Letter (Note: must be stamped and signed by licensed geotechnical engineer) Form I-8A Form I-8B 	Not included because the entire project will use harvest and use BMPs
	 Full Infiltration Condition: Form I-8A Form I-8B Worksheet C.4-3 Form I-9 Refer to Appendices C and D of the BMP Design Manual for guidance. 	
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required)	Included
	Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines and site design credit calculations	





SITE DESIGN BMPs

	AINIMIZE EXIST. SOIL COMPACTION SONSERVE EX. SOIL	SOIL COMPACTION SHALL BE MINIMIZED IN IN LANDSCAPE AREAS AND IN THE PERMEABLE PAVEMENT AREA.
SD-3	MINIMIZE IMPERVIOUS AREA	MINIMUM DRIVEWAY WIDTH USED TO MINIMIZE IMPERVIOUS FOOTPRINT.
SD-4	MINIMIZE SOIL COMPACTION	SOIL COMPACTION SHALL BE MINIMIZED IN IN LANDSCAPE AREAS AND IN THE PERMEABLE PAVEMENT AREA.
SD-5	IMPERVIOUS AREA DISPERSION	RUNOFF FROM ROOFTOPS DISPERSE INTO LANDSCAPE AREA BEFORE ENTERING PRIVATE STORM DRAIN.
SD-6	RUNOFF COLLECTION	RUNOFF ROUTED TO BIOFILTRATION BASIN AND UNDERGROUND DETENTION.
\$D-7	Landscaping With Drought Tolerant Species	LANDSCAPE HAS BEEN DESIGNED PER CITY OF SAN SAN DIEGO LANDSCAPE STANDARDS TO MINIMIZE IRRIGATION AND RUNOFF, AND TO MINIMIZE THE USE OF FERTILIZERS AND PESTICIDES THAT CAN CONTRIBUTE TO STORMWATER POLLUTION. SEE APPLICABLE BMPS IN CASQA FACT SHEETS SC-41. "BUILDING AND GROUNDS MAINTENANCE."

SOURCE CONTROL BMPs

SOURCE CONTROL BMPS	PROJECT IMPLEMENTA
STORM DRAIN INLETS	MARK ALL INLETS WITH THE AND "NO CONTAMINE" IN SPA MARKINGS. SEE APPLICABLE OPERATIONA MAINTENANCE."
2 LANDSCAPE/OUTDOOR PESTICIDE USE	LANDSCAPE HAS BEEN DESIG TO MINIMIZE IRRIGATION AND PESTICIDES THAT CAN CONTR IN CASQA FACT SHEETS SC—
(3) TRASH ENCLOSURES	STORAGE AREA IS PAVED V FROM ADJOINING AREAS, WAL THE WORDS "DO NOT DUMP CITY. SEE CASQA FACT SHEE
(4) PLAZAS, SIDEWALKS, AND PARKING LOTS	PLAZAS, SIDEWALKS, AND PAI TO OCTOBER 1ST TO PREVEN FACT SHEET SC-41, "BUILDIN



12" LAYER OF GRAVEL (40% VOID) CLEAN, CRUSHED, ANGULAR STONE (ASTM C33 NO. 2 CRUSHED ROCK EQUAL)

TATION

WORDS "NO DUMPING! DRAINS TO WATERWAYS" IN ENGLISH PANISH. MAINTAIN AND PERIODICALLY REPLACE INLET

AL BMPS IN CASQA FACT SHEET SC-44, "DRAINAGE SYSTEM

GNED PER CITY OF SAN SAN DIEGO LANDSCAPE STANDARDS D RUNOFF, AND TO MINIMIZE THE USE OF FERTILIZERS AND TRIBUTE TO STORMWATER POLLUTION. SEE APPLICABLE BMPS -41, "BUILDING AND GROUNDS MAINTENANCE."

WITH CONCRETE AND DESIGN NOT TO ALLOW RUN-ON ALLED AND CONTAINS A ROOF. SIGNS ON DUMPSTER WITH HAZARDOUS MATERIAL HERE" OR SIMILAR APPROVED BY EET SC-34, "WASTE HANDLING AND DISPOSAL."

PARKING LOTS SHALL BE SWEPT REGULARLY AND ONCE PRIOR FENT THE ACCUMULATION OF LITTER AND DEBRIS. SEE CASQA DING AND GROUNDS MAINTENANCE."



TOTAL PROJECT AREA/DMA #1 = 18,755 S.F. TOTAL IMPERVIOUS AREA = 14,100 S.F. HYDROLOGIC SOIL GROUP D DEPTH TO GROUNDWATER > 20 FEET NO EXISTING NATURAL HYDROLOGIC FEATURES

NO CRITICAL COARSE SEDIMENT YIELD AREAS EXISTS ON SITE.

HYDROLOGY:

EXISTING: A=0.4310 ACRES A=0.4310 ACRES TC=5.0 MINUTES C=0.55 l(2)=2.4 IN/HR Q(2)=0.6 CFS l(50)=4.2 IN/HR Q(50)=1.0 CFS

<u>PROPOSED:</u> TC=5.0 MINUTES C=0.70 l(2)=2.4 IN/HR Q(2)=0.7 CFS l(50)=4.2 IN/HR Q(50)=1.3 CFS

WIDTH VARIES	4 ~ 12" PVC OVERELOW
	RISER GRATE 6" ABOVE (6" PONDING) FINISH GROUND W/2" FREEBOARD
	MA LIL
	3) Jule -
CKYXXXVXXXXXXXXXX	
<u>~~~~</u>	- 5" IN/HR MIN. SOIL MEDIA (20% VOID)
	SOIL, ±20% LEAF MULCH
-3" MULCH LAYER	AND $\pm 30\%$ TOP SOIL (TYP.)
an bhaile an an ta	
	LINER 30 MIL. HDPE LINER
	(SIDES AND BOTTOM)
809080808080808080	
	40 PVC
PERF. PIPE (V	MTHIN
OR BASIN ONLY)3	"VERT.
LINER	BOTTOM
BIOFILTRATION	
NOT TO SCALE	
NOT TO SURLE	

PRIVATE CONTRACT



63RD & MONTEZUMA DMA & HMP EXHIBIT												
CITY OF SAN DIEGO, CALIFORNIA I.O. NO. DEVELOPMENT SERVICES DEPARTMENT PROJECT NO. SHEET 1 OF 1 SHEETS PROJECT NO.												
FOR CITY	ENGINEE	R	DATE		V.T.M.							
DESCRIPTION	BY	APPROVED	DATE	FILMED								
ORIGINAL	LES											
					NAD83 COORDINATES							
AS-BUILTS					LAMBERT COORDINATES							
CONTRACTOR INSPECTOR												



Accutech Engineering Systems, Inc. 3435 Carleton St San Diego, CA 92106

- **DATE:** June 16, 2020
- TO: Keith Hendersen REMax Pacific 4114 Napier Street San Diego, CA 92110

RE: 6253-6265-6275 Montezuma Road, San Diego CA 92115

- **SUBJECT:** Infiltration Feasibility for Permanent Storm Water BMP, Proposed Multi-Unit Apartment Building, located at 6253-6265-6275 Montezuma Street, San Diego CA 92115
- REF: 1. "PRELIMINARY GEOTECHNICAL EVALUATION FOR A PROPOSED MULTI-UNIT APARTMENT BUILDING TO REPLACE THE EXSTING STRUCTURES LOCATED AT 6253-6265-6275 MONTEZUMA ROAD, CALIFORNIA 92115"by Accutech Engineering Systems, Inc. dated August 30, 2018, REVISED February 26, 2020.

Dear Mr. Hendersen,

In accordance with your request, Accutech Engineering Systems, Inc. performed percolation testing at the proposed BMP location for the proposed multi-unit apartment building as shown on the referenced Site Plan A000 dated 7/20/2018. To evaluate the feasibility of storm water infiltration onsite and provide preliminary design infiltration rates, two (2) open test pit percolation tests (IP-1 & IP-2) were performed at the project in general conformance with Appendix D, Section D.3 of the BMP Design Manual. The infiltration tests were located at each end of the BMP footprint, at the approximate depth of the BMP surface. At the bed elevation, the test pits exposed formational materials, generally consisting of silty, fine grained, medium dense to dense, Linda Vista formation. A log of the test pits (TP-1 & TP-2) are included herein.

The percolation test pits were pre-soaked overnight and falling head percolation testing was performed for several hours the following day. The percolation rates determined in the field were converted to infiltration rates based on the Porchet Method. Infiltration rates were determined to be 0.032 IP-1 and 0.039 IP-2 inches/hour. The on-site soils possess an average estimated reliable infiltration of 0.035. Test results are summarized in Table 1 below.

TABLE 1 SUMMARY OF INFILTRATION TEST RESULTS											
Test Hole No.	Depth of Test Hole	Approximate Test Elevation	Geologic Unit	Description	Tested Infiltration Rate (inches/hour)						
IP-1	IP-1 56" 99		Qvop	SC-CM w/Cobbles	0.032						
IP-2	IP-2 52"		Qvop	SC-CM w/Cobbles	0.039						
				Average Rate	0.035						

www.accutechengineering.com

Accutech Engineering Systems, Inc. 3435 Carleton St San Diego, CA 92106

It is our understanding that a factor of safety of 2 should be applied to the average tested infiltration rate to provide an estimated reliable infiltration rate. Utilizing a factor of safety of 2, the estimated reliable infiltration rate is **0.017** inches/hour.

Based on site specific testing, the formational soils/bedrock underlying the site are considered to have negligible capacity for vertical infiltration. The estimated reliable infiltration rate indicates a 'No Infiltration' condition; therefore, as such, infiltration of any volume is considered to be infeasible within the site.

If you have any questions regarding the content of this letter, please do not hesitate to call 619.261.2619.

Very truly yours,

ACCUTECH ENGINEERING SYSTEMS, INC.

Robert J. Randall, President RGE # 707

RJR:dm

Attachments:

- *1.* Site Plan A000 dated 7/20/2018
- 2. Percolation Test Data Results (IP-1 & IP-2)
- 3. Worksheet C.4-1: Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions (The City of San Diego Storm Water Standards October 2018 Edition) (9 Pages)
- 4. Figure 1 Schematic Site Plan/Location of Infiltration Test Pits
- 5. Figure B-4 Test Pit Log TP-1 & Figure B-5 Test Pit Log TP-2







SITE PLAN PROJECT: 63RD AND MONTEZUMA SC: 3/32" = 1'-0" A000 / JOB NO: 3391 / DATE: JULY 20 2018 MONTEZUMA RD, SAN DIEGO, CA

INFILTRATION RESULTS

Project Name: Montezuma Project #: 18423-1

Date: 6/16/20

68

Test Hole #: IP-1 Tested By: RJR Water Temp:

Depth of Test Hole:

56"

USCS SC-SM w/Cobbles Air Temp: 72

															Perc	
						Depth	Depth		Depth	Depth	Average			Perc Rate	Rate	
						то	OF		то	OF	Depth of		Delta	Inches	Inches	
Test	Length	Width	Depth		Start	Water	Water	End	Water	Water	Water	Delta	Depth	per	per	
#	inch	inch	inch	r *	Time	Inch	Inch	Time	Inch	Inch	Inch	Time	Inch	minute	Hour	lt**
1	26	16	56	11.507	12:30	18.000	38.00	13:00	18.500	37.500	37.750	30	0.500	0.017	1.00	0.132
2	26	16	56	11.507	13:00	18.500	37.50	13:30	19.000	37.000	37.250	30	0.500	0.017	1.00	0.134
3	26	16	56	11.507	13:30	19.000	37.00	14:00	19.250	36.750	36.875	30	0.250	0.008	0.50	0.067
4	26	16	56	11.507	14:00	19.250	36.75	14:30	19.750	36.250	36.500	30	0.500	0.017	1.00	0.136
5	26	16	56	11.507	14:30	22.750	33.25	15:00	23.000	33.000	33.125	30	0.250	0.008	0.50	0.074
6	26	16	56	11.507	15:15	23.000	33.00	15:45	23.250	32.750	32.875	30	0.250	0.008	0.50	0.074
7	26	16	56	11.507	15:45	16.000	40.00	16:15	16.250	39.750	39.875	30	0.250	0.008	0.50	0.063
8	26	16	56	11.507	16:15	16.250	39.75	16:45	16.250	39.750	39.750	30	0.000	0.000	0.00	0.000
9	26	16	56	11.507	16:45	16.250	39.75	17:15	16.500	39.500	39.625	30	0.250	0.008	0.50	0.063
10																
11																
12																
13																
14																
15																

*r = (w*d)/3.1416

0.032 **Infiltration Rate

INFILTRATION RESULTS

Project Name:	Montezuma \	Project #:	18423-1	Date: 6/16/20	
Test Hole #:	IP-2	Tested By:	RJR	Water Temp:	68

Depth of Test Hole: 52"

USCS SC-SM w/Cobbles Air Temp: 72

															Perc	
						Depth	Depth		Depth	Depth	Average			Perc Rate	Rate	
						ТО	OF		ТО	OF	Depth of		Delta	Inches	Inches	
Test	Length	Width	Depth		Start	Water	Water	End	Water	Water	Water	Delta	Depth	per	per	
#	inch	inch	inch	r *	Time	Inch	Inch	Time	Inch	Inch	Inch	Time	Inch	minute	Hour	lt**
1	24	14	52	10.342	12:30	24.500	27.50	13:00	25.500	26.500	27.000	30	1.000	0.033	2.00	0.321
2	24	14	52	10.342	13:00	25.500	26.50	13:30	26.500	25.500	26.000	30	1.000	0.033	2.00	0.332
3	24	14	52	10.342	13:30	26.500	25.50	14:00	27.250	24.750	25.125	30	0.750	0.025	1.50	0.256
4	24	14	52	10.342	14:00	26.500	25.50	14:30	27.000	25.000	25.250	30	0.500	0.017	1.00	0.170
5	24	14	52	10.342	14:30	27.000	25.00	15:00	27.500	24.500	24.750	30	0.500	0.017	1.00	0.173
6	24	14	52	10.342	15:15	23.000	29.00	15:45	23.250	28.750	28.875	30	0.250	0.008	0.50	0.076
7	24	14	52	10.342	15:45	23.250	28.75	16:15	23.750	28.250	28.500	30	0.500	0.017	1.00	0.154
8	24	14	52	10.342	16:15	23.500	28.50	16:45	23.750	28.250	28.375	30	0.250	0.008	0.50	0.077
9	24	14	52	10.342	16:45	23.750	28.25	17:15	23.750	28.250	28.250	30	0.000	0.000	0.00	0.000
10																
11																
12																
13																
14																
15																

*r = (w*d)/3.1416

**Infiltration Rate 0.039

Worksheet C.4-1: Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions⁹

Categoriz	zation of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I- 8A ¹⁰					
	Part 1 - Full Infiltration Feasibility Screening Criteria						
DMA(s) B	eing Analyzed:	Project Phase:					
1		Planning					
Criteria 1:	Infiltration Rate Screening						
	Is the mapped hydrologic soil group according to the NRC Web Mapper Type A or B and corroborated by available sit	S Web Soil Survey or UC Davis Soil a soil data"?					
	□ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing.						
1A	□ No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B).						
	🛛 No; the mapped soil types are C, D, or "urban/unclassified" and is corroborated by available site soil data. Answer "No" to Criteria 1 Result.						
	□ No; the mapped soil types are C, D, or "urban/unclassified" but is not corroborated by available site soil data (continue to Step 1B).						
_	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1? Yes; Continue to Step 1C.						
1B	□ No; Skip to Step 1D.						
	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour?						
1C	□ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result.						
	🖄 No; full infiltration is not required. Answer "No" to Criteria 1 Result.						
	Infiltration Testing Method. Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with						
1D	appropriate rationales and documentation.						
	□ No; select an appropriate infiltration testing method.						

⁹ Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.
¹⁰ This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.



¹¹ Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

C-16 The City of San Diego | Storm Water Standards | October 2018 Edition Part 1: BMP Design Manual

Categoriz	ation of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I- 8A ¹⁰			
1E	 Number of Percolation/Infiltration Tests. Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2? △ Yes; continue to Step 1F. □ No; conduct appropriate number of tests. 				
IF	 Factor of Safety. Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9). ☑ Yes; continue to Step 1G. □ No; select appropriate factor of safety. 				
1G	 Full Infiltration Feasibility. Is the average measured infilt of Safety greater than 0.5 inches per hour? □ Yes; answer "Yes" to Criteria 1 Result. ☑ No; answer "No" to Criteria 1 Result. 	tration rate divided by the Factor			
Criteria 1 Result	Pria 1 Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP? It Image: State of the DMA may feasibly support full infiltration. Continue to Criteria 2. Image: State of the DMA may feasibly support full infiltration. Continue to Criteria 2. Image: State of the DMA may feasibly support full infiltration. Continue to Criteria 2. Image: State of the DMA may feasible of the				
Summariz	e infiltration testing methods, testing locations, replicates,	and results and summarize			

Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.

Two (2) open test pit percolation tests (IP-1 & IP-2) were performed at the project. The pits were located at each end of the BMP footprint. The test pit locations are shown on the attached figure 1 Schematic Site Plan/Location of Infiltration Test Pits. The test pits encountered formational materials two feet (2') above the proposed elevation of the BMP surface, generally consisting of silty, fine grained, medium dense to dense, Linda Vista formation. A log of the test pits (TP-1, TP-2) are included herein.

The test pits were pre-soaked overnight and falling head percolation testing was performed for several hours the following day. The stabilized percolation rates determined in the field were converted to infiltration rates based on the Porchet Method. Infiltration rates were determined to be 0.032 in IP-1 and 0.039 in IP-2 inches/hour. Using a factor of safety of 2, the on-site soils possses an average estimated reliable infiltration of 0.017.



Categoriz	Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions					
Criteria 2:	Geologic/Geotechnical Screening NOT APPLIC	CABLE				
	If all questions in Step 2A are answered "Yes," continue to Step 2B.					
2A	For any "No" answer in Step 2A answer "No" to Criteria 2, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.					
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?					
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?			□ No		
2A-3	Can the proposed full infiltration BMP(s) avoid placement feet of a natural slope (>25%) or within a distance of 1.5H slopes where H is the height of the fill slope?	□ Yes	□ No			
	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1.					
2B	If all questions in Step 2B are answered "Yes," then answe If there are "No" answers continue to Step 2C.	er "Yes" to Cri	teria 2 Resul	t.		
2B-1	Hydroconsolidation. Analyze hydroconsolidation po approved ASTM standard due to a proposed full infiltratio Can full infiltration BMPs be proposed within the D increasing hydroconsolidation risks?	otential per n BMP. DMA without	□ Yes	□ No		
2B-2	Expansive Soils. Identify expansive soils (soils with an exp greater than 20) and the extent of such soils due to p infiltration BMPs. Can full infiltration BMPs be proposed within the D increasing expansive soil risks?	oansion index proposed full DMA without	□ Yes	□ No		



Categoriz	zation of Infiltration Feasibility Condition based on Geotechnical Conditions	Workshee	t C.4-1: For 8A ¹⁰	m I-
2B-3	Liquefaction . If applicable, identify mapped liquefaction are liquefaction hazards in accordance with Section 6.4.2 of the Diego's Guidelines for Geotechnical Reports (2011 or m edition). Liquefaction hazard assessment shall take into a increase in groundwater elevation or groundwater moundin occur as a result of proposed infiltration or percolation facil Can full infiltration BMPs be proposed within the DM increasing liquefaction risks?	□ Yes	□ No	
2B-4	 Slope Stability. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks? 			□ No
2B-5	Other Geotechnical Hazards. Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?		□ Yes	□ No
2B-6	Setbacks. Establish setbacks from underground utilities, and/or retaining walls. Reference applicable ASTM or other standard in the geotechnical report. Can full infiltration BMPs be proposed within the b established setbacks from underground utilities, structur retaining walls?	structures, recognized DMA using res, and/or	□ Yes	□ No



Categoriz	ation of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet	t C.4-1: For 8A ¹⁰	rm I-		
2C	Mitigation Measures.Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures.Image: Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered "Yes," then answer "Yes" to Criteria 2 Result.Image: Can secure of the two of two of the two of the two of the two of two of the two of the two of two of the two of two of two of two of two of two of the two of t					
Criteria 2 Result	teria 2 sult Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?					
Summarizo	e findings and basis; provide references to related reports o	or exhibits.				
NA						
Part 1 Res	ult – Full Infiltration Geotechnical Screening ¹²	I	Result			
If answers to both Criteria 1 and Criteria 2 are "Yes", a full infiltration design is potentially feasible based on Geotechnical conditions only. If either answer to Criteria 1 or Criteria 2 is "No", a full infiltration design is not required.		□ Full infiltra ⊠ Complete Pa	tion Conditio art 2	on		

¹² To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.



C-20 The City of San Diego | Storm Water Standards | October 2018 Edition Part 1: BMP Design Manual

Categoriz	ation of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I- 8A ¹⁰				
	Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria					
DMA(s) B	eing Analyzed:	Project Phase:				
		Planning				
Criteria 3	: Infiltration Rate Screening					
	NRCS Type C, D, or "urban/unclassified": Is the mapped the NRCS Web Soil Survey or UC Davis Soil Web Mapper is "urban/unclassified" and corroborated by available site so □ Yes; the site is mapped as C soils and a reliable infilt size partial infiltration BMPS. Answer "Yes" to Crite	hydrologic soil group according to 5 Type C, D, or oil data? ration rate of 0.15 in/hr. is used to eria 3 Result.				
3A	Yes; the site is mapped as D soils or "urban/unclassified" and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result.					
	⊠ No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.					
	Infiltration Testing Result: Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr?					
3B	□ Yes; the site may support partial infiltration. Answer "Yes" to Criteria 3 Result. ☑ No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer "No" to Criteria 3 Result.					
Criteria 3	Is the estimated reliable infiltration rate (i.e., average methan or equal to 0.05 inches/hour and less than or equal within each DMA where runoff can reasonably be routed	easured infiltration rate/2) greater to 0.5 inches/hour at any location to a BMP?				
Result	□ Yes; Continue to Criteria 4.					
	🛙 No: <mark>Skip to Part 2 Result.</mark>					
Summarize infiltratior	e infiltration testing and/or mapping results (i.e. soil maps 1 rate).	and series description used for				
Specifics of th of Safety = 2).	Specifics of the percolation testing are provided in Part I. The estimated reliable infiltration rate is less than 0.05 (with a Factor of Safety = 2). The on-site soils posses an average estimated reliable infiltration of 0.017.					



Categoriz	Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions 8A ¹⁰							
Criteria 4:	Criteria 4: Geologic/Geotechnical Screening NOT APPLICABLE							
4A	 If all questions in Step 4A are answered "Yes," continue to Step 2B. For any "No" answer in Step 4A answer "No" to Criteria 4 Result, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP. 							
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	□ Yes	□ No					
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	□ Yes	🗆 No					
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	□ Yes	□ No					
4B	 When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1 If all questions in Step 4B are answered "Yes," then answer "Yes" to Criteria 4 Result. If there are any "No" answers continue to Step 4C. 							
4B-1	4B-1Hydroconsolidation. Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?Image: Can partial proposed propo							
4B-2	Expansive Soils. Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	□ Yes	□ No					



Categoriz	zation of Infiltration Feasibility Condition based on Geotechnical Conditions	Workshe	eet C.4-1: For 8A ¹⁰	m I-
4B-3	Liquefaction . If applicable, identify mapped liquefaction Evaluate liquefaction hazards in accordance with Section 6 City of San Diego's Guidelines for Geotechnical Report Liquefaction hazard assessment shall take into account any in groundwater elevation or groundwater mounding that co as a result of proposed infiltration or percolation facilities. Can partial infiltration BMPs be proposed within the DMA increasing liquefaction risks?	□ Yes	□ No	
4B-4	Slope Stability. If applicable, perform a slope stability ar accordance with the ASCE and Southern California Earthqua (2002) Recommended Procedures for Implementation of DM Publication 117, Guidelines for Analyzing and Mitigating I Hazards in California to determine minimum slope setback infiltration BMPs. See the City of San Diego's Guide Geotechnical Reports (2011) to determine which type of slope analysis is required. Can partial infiltration BMPs be proposed within the DMA increasing slope stability risks?	□ Yes	□ No	
4B-5	Other Geotechnical Hazards. Identify site-specific geo hazards not already mentioned (refer to Appendix C.2.1). Can partial infiltration BMPs be proposed within the DMA increasing risk of geologic or geotechnical hazards no mentioned?	□ Yes	□ No	
4B-6	Setbacks. Establish setbacks from underground utilities, st and/or retaining walls. Reference applicable ASTM recognized standard in the geotechnical report. Can partial infiltration BMPs be proposed within the DM recommended setbacks from underground utilities, st and/or retaining walls?	□ Yes	□ No	
4C	Mitigation Measures. Propose mitigation measures geologic/geotechnical hazard identified in Step 4B. P discussion on geologic/geotechnical hazards that would partial infiltration BMPs that cannot be reasonably mitigat geotechnical report. See Appendix C.2.1.8 for a list of reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for partial in BMPs? If the question in Step 4C is answered "Yes," then an "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer Criteria 4 Result.	for each Provide a l prevent ted in the typically filtration nswer r "No" to	□ Yes	□ No



Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions			eet C.4-1: For 8A ¹⁰	m I-
Criteria 4 Result	Can infiltration of greater than or equal to 0.05 inches/ho than or equal to 0.5 inches/hour be allowed without inc risk of geologic or geotechnical hazards that cannot be mitigated to an acceptable level?	our and less reasing the reasonably	□ Yes	🗆 No

Summarize findings and basis; provide references to related reports or exhibits.

Two (2) open test pit percolation tests (IP-1 & IP-2) were performed at the project. The pits were located at each end of the BMP footprint. The test pit locations are shown on the attached figure 1 Schematic Site Plan/Location of Infiltration Test Pits. The test pits encountered formational materials two feet (2') above the proposed elevation of the BMP surface, generally consisting of silty, fine grained, medium dense to dense, Linda Vista formation. A log of the test pits (TP-1, TP-2) are included herein.

The test pits were pre-soaked overnight and falling head percolation testing was performed for several hours the following day. The stabilized percolation rates determined in the field were converted to infiltration rates based on the Porchet Method. Infiltration rates were determined to be 0.032 in IP-1 and 0.039 in IP-2 inches/hour using a factor of safety of 2.

The on-site soils possses an average estimated reliable infiltration of 0.017.

The test pit locations are shown on the attached figure 1 Schematic Site Plan/Location of Infiltration Test Pits.

Refer to References:

1. "PRELIMINARY GEOTECHNICAL EVALUATION FOR A PROPOSED MULTI- UNIT APARTMENT BUILDING TO REPLACE THE EXSTING STRUCTURES

LOCATED AT 6139-6147 MONTEZUMA ROAD, CALIFORNIA 92115" by Accutech Engineering Systems, Inc. dated August 30, 2017.

- 2. Grading Plan prepared by Lundstrom Engineering & Surveying, Rev. 1, dated 2/21/2019.
- 3. Percolation Test Data Results
- 5. Figure 1 Schematic Site Plan/Location of Infiltration Test Pits
- 6. Figure B-4 Test Pit Log TP-1 & B-5 Test Pit Log Test Pit 2

Part 2 – Partial Infiltration Geotechnical Screening Result ¹³	Result
If answers to both Criteria 3 and Criteria 4 are "Yes", a partial infiltration	□ Partial Infiltration
design is potentially feasible based on geotechnical conditions only.	Condition
If answers to either Criteria 3 or Criteria 4 is "No", then infiltration of any	Ž No Infiltration
volume is considered to be infeasible within the site.	Condition

¹³ To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.



C-24 The City of San Diego | Storm Water Standards | October 2018 Edition Part 1: BMP Design Manual



	63rd ST.
	TRUE SITE NORTH 0 5 10 20 SCALE: 1/16"=1'-0"
ATION of	NFILTRATION TEST PITS
6253-	REMAX Pacific -6265-6275 MONTEZUMA RD. SAN DIEGO, CA 92115
DATE: 06-02-2020	GLN 1 18423-1

TEST PIT LOG TP-1

Equipment: Backhoe w/ 18" BucketType: Test Pit Dimensions: 20" x 6"			" x 3'			Date Lo	gged: 7/27/18		
Hole Elevation: 103 Datum: Street = 100Groundwater Depth:		NA	L		Logged	By: RJR			
D e	^D _e Location: Northwest corner of lots				Field	Informati	on	on Laboratory	
p t h (ft)	USCS	Field Descripti	on and Classification	Sample Type	ΗP	Apparent Density (pcf)	Apparent Moisture (%)		
	CL OL	Brown, sandy cl Some roots and	ay and silt, dry other organics		10	125			
1- - - 2-	CS SC SP GP	Sand with clay to clay w sandier. Slightly moist. Cemented WEATHERI	rith sand and cobbles, becoming Dense, rust & olive color		7.5	125			
2 - - 3- - - - - - - - - - - - - - - - -	CS SC SP GP	Clay chunk lens Orange-brown, and cobble con Well-cemented Slightly moist, o Hard digging	ses, very moist clayey sand glomerate lense		10.0+	135		M.C. = 9.7 - 200 = 26.5	
- 5-		LINDA VIST	FA FORMATION						
- - - - - - - - - - - - - - - - - - -		Refusal in cobbles: Bottom of test pit (@ 5'-0"						
Pr	oject N	ame: 6253-6265	-6275 Montezuma Ro	ad			Project	#: 18423-1	
Pr	oject L	ocation: 6253-626	65-6275 Montezuma Ro	oad, Sai	n Diego	o, CA 92115	Figure #	#: B-4	

TEST PIT LOG TP-2

Equipment: Backhoe w/ 18" BucketType: Test Pit Dimensions: 20" x 6"				" x 5'			Date Logged: 7/27/18		
Hole Elevation: 103 Datum: Street = 100Groundwater Depth			: NA			Logged By: RJR			
D e	^D _e Location: Center of lots			Field Information			on	Laboratory	Misc.
t h (ft)	USCS	Field Descripti	ion and Classification	Sample Type	ΗP	Apparent Density (pcf)	Apparent Moisture (%)		
- - - 1-	CL OL	Brown, sandy c Some roots and	lay and silt, dry other organics TOPSOIL		8.5				
- - - 2- -	CS SC SP GP	Sand with clay t cobbles, become moist. Dense, ru Cemented WEATHER	to clay with sand and ing sandier. Slightly ust & olive color ED FORMATION						
- 3- - - 4- - - 5	CS SC SP GP	Note: Weathered for into Linda Vista for Clay chunk lense Orange-brown, cobble conglome Well-cemented Slightly moist, d Hard digging LINDA VIS	ormation transitioning rmation @ 2-3' es, very moist clayey sand and erate ense FA FORMATION		10.0+				
		Refusal in cobb	les: pit @ 5'-0"						
Project Name: 6253-6265-6275 Montezuma Road Project #: 18423-1									
Project Location: 6253-6265-6275 Montezuma Road, San Diego, CA 92115 Figure #: B-5									

THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING

1



	The City of	Project Name 6	3rd & Montezuma	
	SAN DIEGO	BMP ID	1	
Si	zing Method for Pollutant Remova	I Criteria	Vorksheet B 5-1	
1	Area draining to the BMP		18755	sa ft
2	Adjusted runoff factor for drainage are	a (Refer to Appendix B.1 and B.2)	0.75	
3	85 th percentile 24-hour rainfall depth		0.65	inches
4	Design capture volume [Line 1 x Line 2	762	cu. ft.	
BN	IP Parameters		and Bellevine	200
5	Surface ponding [6 inch minimum, 12 i	nch maximum]	6	inches
6	Media thickness [18 inches minimum] aggregate sand thickness to this line for	, also add mulch layer and washed ASTM 33 t or sizing calculations	fine 24	inches
7	Aggregate storage (also add ASTM typical) – use 0 inches if the aggregate	1es 18	inches	
8	Aggregate storage below underdrain aggregate is not over the entire bottom	the 3	inches	
9	Freely drained pore storage of the med	ia	0.2	in/in
10	Porosity of aggregate storage		0.4	in/in
11	Media filtration rate to be used for sizir control; if the filtration rate is controlled infiltration into the soil and flow rate thr in/hr.)	ng (maximum filtration rate of 5 in/hr. with no out by the outlet use the outlet controlled rate (includ ough the outlet structure) which will be less thar	les 1555	in/hr.
Bas	eline Calculations			
12	Allowable routing time for sizing		6	hours
13	Depth filtered during storm [Line 11 x L	ine 12]	30	inches
14	Depth of Detention Storage		19.2	inches
15	Total Dopth Treated Illing 10 + Line 141	ne 10) + (Line 8 x Line 10)]	1.200.000	
Onti	an 1 Righter 1 5 times the DOV		49.2	inches
16	Bequired biofiltered volume [1.5 x Line /	1	1	
17	Required Biomered Volume [1.5 x Line 2	10	1143	cu. ft.
Onti	on 2 - Store 0.75 of remaining DCV/		279	sq. ft.
10	Bequired Storage (surface - pares) Vel	pores and ponding		
10	Bequired Storage (surface + poles) Vol		571	cu. ft.
Foot	print of the BMP	12	357	sq. ft.
20	BMP Footprint Sizing Factor (Default 0.0 from Line 11 in Worksheet B.5-4)	3 or an alternative minimum footprint sizing facto	r 0.03	
21 1	Minimum BMP Footprint [Line 1 x Line 2	x Line 20]	422	sa ft
22 1	Footprint of the BMP = Maximum(Minimu	um(Line 17, Line 19), Line 21)	422	sa ft
23	Provided BMP Footprint		425	so ft
24	s Line 23 ≥ Line 22?	Yes, Performance Stan	dard is Met	<u></u>

The City of SAN DIEGO		Project Name	a me 63rd & Montez		
New Tools	Sizing Method for Volume R	etention Criteria	Works	heet B.5-2	
1	Area draining to the BMP			18755	sq. ft.
2	Adjusted runoff factor for drainage ar	ea (Refer to Appendix B.1 and B.2)		0.75	
3	85 th percentile 24-hour rainfall depth			0.65	inches
4	Design capture volume [Line 1 x Line	2 x (Line 3/12)]		762	cu. ft.
Volum	e Retention Requirement				te en anven en e
5	Note: When mapped hydrologic soil groups Type C soils enter 0.30 When in no infiltration condition and there are geotechnical and/or ground) soils and for NRCS unknown enter 0.0 if C or enter 0.05	0.1	in/hr.	
6	Factor of safety			2	
7	Reliable infiltration rate, for biofiltration	on BMP sizing [Line 5 / Line 6]		0.05	in/hr.
8	Average annual volume reduction ta When Line 7 > 0.01 in/hr. = Minimum When Line 7 ≤ 0.01 in/hr. = 3.5%	15.0	%		
9	Fraction of DCV to be retained (Figure When Line $8 > 8\% =$ 0.0000013 x Line $8^3 - 0.000057$ x Line When Line $8 \le 8\% = 0.023$	/ to be retained (Figure B.5-3) 8% = ne 8 ³ - 0.000057 x Line 8 ² + 0.0086 x Line 8 - 0.014 8% = 0.023			
10	Target volume retention [Line 9 x Lin	ne 4]		81	cu. ft.

The City of		Project Name	63rd & Montez	uma	and the	California Maria	Creeding La
SAN	DIEGO	BMP ID					
	Volume Retentio	n for No Infiltration Condition			W	orksheet B.5-6	
1	Area draining to the biofiltra	ation BMP		and de Lorenza and anna de la		18755	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)					0.75	
3	Effective impervious area d	Iraining to the BMP [Line 1 x Line 2]				14066	sq. ft.
4	Required area for Evapotra	inspiration [Line 3 x 0.03]				422	sq. ft.
5	Biofiltration BMP Footprint					425	sq. ft.
Landscape Are	a (must be identified on I	DS- 3247)					
		Identification	1	2	3	4	5
6	Landscape area that meet Fact Sheet (sq. ft.)	the requirements in SD-B and SD-F	4250			State States	Charles and
7	Impervious area draining to	o the landscape area (sq. ft.)	14100	國建設			
8	Impervious to Pervious Are [Line 7/Line 6]	ea ratio	3.32	0.00	0.00	0.00	0,00
9	Effective Credit Area		4250	0	0	0	0
	If (Line 8 >1.5, Line 6, Line	9 7/1.5]					**
10	Sum of Landscape area [sum of Line 9 Id's 1 to 5] 4250				sq. ft.		
11	Provided footprint for evap	otranspiration [Line 5 + Line 10]				4675	sq. ft.
Volume Reten	tion Performance Standar	rd					
12	Is Line 11 ≥ Line 4?			Volume Retenti	on Perform	nance Standard is Me	t
13	Fraction of the performance standard met through the BMP footprint and/or landscaping [Line 11/Line 11.08 4]						
14	Target Volume Retention	Line 10 from Worksheet B.5.2]			and the second	81	cu. ft.
15	Volume retention required [(1-Line 13) x Line 14]	from other site design BMPs				-816.48	cu. ft.
Site Design B	MP						
	Identification	Site Des	lgn Type			Credit	
	1				ASSIS Dire		cu. ft.
	2	the state of the s	The second states and the second	States and a states	局害 赵紫	Contraction of the Contraction	cu. ft.
	3		AD FRANCISCO MARK	C. C. A. S. S. S. S. S.			cu, ft.
10	4	2 - Martin Statistical Anna and an and		當是對於使是自然的		·····································	cu. ft.
16	5						cu. ft.
	Sum of volume retention b Line 16 Credits for Id's 1 t Provide documentation of	penefits from other site design BMPs (o 5] how the site design credit is calculated	e.g. trees; rain ba d in the PDP SW	urrels etc.). [sum QMP.	of	0	cu. ft.
17	Is Line 16 ≥ Line 15?		1	Volume Retent	on Perfor	mance Standard is Me	l

Harvest and Use Feasibility Checklist Worksheet B.3-1 : Form I-7 1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season? Toilet and urinal flushing Landscape irrigation Other: 2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2. [Provide a summary of calculations here] TOILET FLUSHING: 31 DEVELING UNITS @ 18.5 0 574 gal IRRIGHTION: LOW WHER USE = 390 50/4c = 46 gal TOTAL 620 gal. 3. Calculate the DCV using worksheet B-2.1. $DCV = ____7/2____(cubic feet)$ [Provide a summary of calculations here] 712 ct = 5,326 gal 3c. Is the 36-3a. Is the 36-hour 3b. Is the 36-hour demand greater than 0.25DCV but less than the full hour demand demand greater than or equal to the DCV? DCV? less than 0.25DCV? Yes VNO Yes V Yes IL Harvest and use appears to Harvest and use may be feasible. Conduct Harvest and be feasible. Conduct more more detailed evaluation and sizing use is detailed evaluation and considered to calculations to determine feasibility. sizing calculations to Harvest and use may only be able to be be infeasible. confirm that DCV can be used for a portion of the site, or used at an adequate rate to (optionally) the storage may need to be meet drawdown criteria. upsized to meet long term capture targets while draining in longer than 36 hours. Is harvest and use feasible based on further evaluation? Yes, refer to Appendix E to select and size harvest and use BMPs. No, select alternate BMPs.

The City of San Diego | Storm Water Standards Worksheet B.3-1 : Form I-7 | January 2018 Edition



Attachment 2 Backup for PDP Hydromodification Control Measures

This is the cover sheet for Attachment 2.

Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.



Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 2a	Hydromodification Management Exhibit (Required)	Included See Hydromodification Management Exhibit Checklist.
	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit	 Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination
Attachment 2b	See Section 6.2 of the BMP Design Manual.	 6.2.1 Verification of Geomorphic Landscape Units Onsite 6.2.2 Downstream Systems Sensitivity to Coarse Sediment 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional)	Not Performed Included
	See Section 6.3.4 of the BMP Design Manual.	Submitted as separate stand- alone document
Attachment 2d	Flow Control Facility Design and Structural BMP Drawdown Calculations (Required) Overflow Design Summary for each structural BMP	 Included Submitted as separate stand- alone document
	See Chapter 6 and Appendix G of the BMP Design Manual	



Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

Underlying hydrologic soil group

Approximate depth to groundwater

Existing natural hydrologic features (watercourses, seeps, springs, wetlands)

Critical coarse sediment yield areas to be protected OR provide a separate map

showing that the project site is outside of any critical coarse sediment yield areas Existing topography

Existing and proposed site drainage network and connections to drainage offsite Proposed grading

Proposed impervious features

Proposed design features and surface treatments used to minimize imperviousness

Point(s) of Compliance (POC) for Hydromodification Management

Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)

Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail).





SITE DESIGN BMPs

SD-2 SOIL COMPACTION CONSERVE EX. SOIL		SOIL COMPACTION SHALL BE MINIMIZED IN IN LANDSCAPE AREAS AND IN THE PERMEABLE PAVEMENT AREA.
SD-3	MINIMIZE IMPERVIOUS AREA	MINIMUM DRIVEWAY WIDTH USED TO MINIMIZE IMPERVIOUS FOOTPRINT.
SD-4	MINIMIZE SOIL COMPACTION	SOIL COMPACTION SHALL BE MINIMIZED IN IN LANDSCAPE AREAS AND IN THE PERMEABLE PAVEMENT AREA.
SD-5	IMPERVIOUS AREA DISPERSION	RUNOFF FROM ROOFTOPS DISPERSE INTO LANDSCAPE AREA BEFORE ENTERING PRIVATE STORM DRAIN.
SD-6	RUNOFF COLLECTION	RUNOFF ROUTED TO BIOFILTRATION BASIN AND UNDERGROUND DETENTION.
\$D-7	Landscaping With Drought Tolerant Species	LANDSCAPE HAS BEEN DESIGNED PER CITY OF SAN SAN DIEGO LANDSCAPE STANDARDS TO MINIMIZE IRRIGATION AND RUNOFF, AND TO MINIMIZE THE USE OF FERTILIZERS AND PESTICIDES THAT CAN CONTRIBUTE TO STORMWATER POLLUTION. SEE APPLICABLE BMPS IN CASQA FACT SHEETS SC-41. "BUILDING AND GROUNDS MAINTENANCE."

SOURCE CONTROL BMPs

SOURCE CONTROL BMPS	PROJECT IMPLEMENTA
STORM DRAIN INLETS	MARK ALL INLETS WITH THE AND "NO CONTAMINE" IN SPA MARKINGS. SEE APPLICABLE OPERATIONA MAINTENANCE."
2 LANDSCAPE/OUTDOOR PESTICIDE USE	LANDSCAPE HAS BEEN DESIG TO MINIMIZE IRRIGATION AND PESTICIDES THAT CAN CONTR IN CASQA FACT SHEETS SC—
(3) TRASH ENCLOSURES	STORAGE AREA IS PAVED V FROM ADJOINING AREAS, WAL THE WORDS "DO NOT DUMP CITY. SEE CASQA FACT SHEE
(4) PLAZAS, SIDEWALKS, AND PARKING LOTS	PLAZAS, SIDEWALKS, AND PAI TO OCTOBER 1ST TO PREVEN FACT SHEET SC-41, "BUILDIN



12" LAYER OF GRAVEL (40% VOID) CLEAN, CRUSHED, ANGULAR STONE (ASTM C33 NO. 2 CRUSHED ROCK EQUAL)

TATION

WORDS "NO DUMPING! DRAINS TO WATERWAYS" IN ENGLISH PANISH. MAINTAIN AND PERIODICALLY REPLACE INLET

AL BMPS IN CASQA FACT SHEET SC-44, "DRAINAGE SYSTEM

GNED PER CITY OF SAN SAN DIEGO LANDSCAPE STANDARDS D RUNOFF, AND TO MINIMIZE THE USE OF FERTILIZERS AND TRIBUTE TO STORMWATER POLLUTION. SEE APPLICABLE BMPS -41, "BUILDING AND GROUNDS MAINTENANCE."

WITH CONCRETE AND DESIGN NOT TO ALLOW RUN-ON ALLED AND CONTAINS A ROOF. SIGNS ON DUMPSTER WITH HAZARDOUS MATERIAL HERE" OR SIMILAR APPROVED BY EET SC-34, "WASTE HANDLING AND DISPOSAL."

PARKING LOTS SHALL BE SWEPT REGULARLY AND ONCE PRIOR FENT THE ACCUMULATION OF LITTER AND DEBRIS. SEE CASQA DING AND GROUNDS MAINTENANCE."



TOTAL PROJECT AREA/DMA #1 = 18,755 S.F. TOTAL IMPERVIOUS AREA = 14,100 S.F. HYDROLOGIC SOIL GROUP D DEPTH TO GROUNDWATER > 20 FEET NO EXISTING NATURAL HYDROLOGIC FEATURES

NO CRITICAL COARSE SEDIMENT YIELD AREAS EXISTS ON SITE.

HYDROLOGY:

EXISTING: A=0.4310 ACRES A=0.4310 ACRES TC=5.0 MINUTES C=0.55 l(2)=2.4 IN/HR Q(2)=0.6 CFS l(50)=4.2 IN/HR Q(50)=1.0 CFS

PROPOSED: TC=5.0 MINUTES C=0.70 l(2)=2.4 IN/HR Q(2)=0.7 CFS I(50)=4.2 IN/HR Q(50)=1.3 CFS

WIDTH VARIES	← ~ 12" PVC OVERELOW
	RISER GRATE 6" ABOVE (6" PONDING) FINISH GROUND W/2" FREEBOARD
	MATTIN.
	13) ALE
YKYXXXXXXXXXXXXXX	
	- 5" IN/HR MIN. SOIL MEDIA (20% VOID)
	SOIL, ±20% LEAF MULCH
-3" MULCH LAYER	AND $\pm 30\%$ TOP SOIL (TYP.)
an baile an	
	LINER 30 MIL. HDPE LINER
	(SIDES AND BOTTOM)
	10 PVC
PERF. PIPE (V	NTHIN
OR BASIN ONLY)3	" VERT.
LINER	BOTTOM
BIOFILTRATION	
NOT TO SCALE	

PRIVATE CONTRACT



	63RD & MONTEZUMA DMA & HMP EXHIBIT							
CI	TY OF DEVE	I.O. NO. PROJECT NO.						
FOR CITY I	ENGINEE	R	DATE		V.T.M.			
DESCRIPTION	BY	APPROVED	DATE	FILMED				
ORIGINAL	LES							
					NAD83 COORDINATES			
AS-BUILTS		LAMBERT COORDINATES						
CONTRACTOR DATE STARTED INSPECTOR DATE COMPLETED								

THIS PAGE INTENTIONALLY LEFT BLANK FOR DOUBLE-SIDED PRINTING




General Model Information

Project Name:	L262-01 10-31-2018
Site Name:	Zuma West
Site Address:	6139 Montezuma Road
City:	San Diego
Report Date:	10/31/2018
Gage:	BONITA
Data Start:	10/01/1971
Data End:	09/30/2004
Timestep:	Hourly
Precip Scale:	1.000
Version Date:	2018/01/19

POC Thresholds

Low Flow Threshold for POC1:	10 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

Landuse Basin Data Predeveloped Land Use

Basin 1 Bypass:	No
GroundWater:	No
Pervious Land Use D,NatVeg,Flat	acre 0.4305
Pervious Total	0.4305
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.4305

Element Flows To: Surface

Interflow

Groundwater

Mitigated Land Use

Basin 1 Bypass:	No
GroundWater:	No
Pervious Land Use D,Urban,Flat	acre 0.1069
Pervious Total	0.1069
Impervious Land Use IMPERVIOUS-FLAT	acre 0.3138
Impervious Total	0.3138
Basin Total	0.4207

Element Flows To:			
Surface Surface Biofilter 1	Interflow Surface Biofilter	1	Groundwater

Routing Elements Predeveloped Routing

Mitigated Routing

Biofilter 1 Bottom Length: Bottom Width: Material thickness of	first layer:	42.50 ft. 10.00 ft. 2
Material type for first	layer:	ESM
Material thickness of	second layer:	1.5
Material type for sec	ond layer:	GRAVEL
Material thickness of	third layer:	0
Material type for third	layer:	GRAVEL
Underdrain not used		
Discharge Structure		
Riser Height:	0.5 ft.	
Riser Diameter:	12 in.	
Element Flows To:		
Outlet 1	Outlet 2	
Vault 1		

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0098	0.0000	0.0000	0.0000
0.0495	0.0098	0.0001	0.0000	0.0000
0.0989	0.0098	0.0003	0.0000	0.0000
0.1484	0.0098	0.0004	0.0000	0.0000
0.1978	0.0098	0.0006	0.0000	0.0000
0.2473	0.0098	0.0007	0.0000	0.0000
0.2967	0.0098	0.0009	0.0000	0.0000
0.3462	0.0098	0.0010	0.0000	0.0000
0.3956	0.0098	0.0012	0.0000	0.0000
0.4451	0.0098	0.0013	0.0000	0.0000
0.4945	0.0098	0.0014	0.0000	0.0000
0.5440	0.0098	0.0016	0.0000	0.0000
0.5934	0.0098	0.0017	0.0000	0.0000
0.6429	0.0098	0.0019	0.0000	0.0000
0.6923	0.0098	0.0020	0.0000	0.0000
0.7418	0.0098	0.0022	0.0000	0.0000
0.7912	0.0098	0.0023	0.0000	0.0000
0.8407	0.0098	0.0025	0.0000	0.0000
0.8901	0.0098	0.0026	0.0000	0.0000
0.9396	0.0098	0.0028	0.0000	0.0000
0.9890	0.0098	0.0029	0.0000	0.0000
1.0385	0.0098	0.0030	0.0000	0.0000
1.0879	0.0098	0.0032	0.0000	0.0000
1.1374	0.0098	0.0033	0.0000	0.0000 .
1.1868	0.0098	0.0035	0.0000	0.0000
1.2363	0.0098	0.0030	0.0000	0.0000
1.2857	0.0098	0.0038	0.0000	0.0000
1.3352	0.0098	0.0039	0.0000	0.0000
1.3846	0.0098	0.0041	0.0000	0.0000
1.4341	0.0098	0.0042	0.0000	0.0000
1.4835	0.0098	0.0045	0.0000	0.0000
1.5330	0.0098	0.0045	0.0000	0.0000
1.5824	0.0098	0.0040	0.0000	0.0000
1.6319	0.0098	0.0048	0.0000	0.0000
1.6813	0.0098	0.0049	0.0000	0.0000

1.7308 1.7802 1.8297 1.9286 1.9780 2.0275 2.0769 2.1264 2.1758 2.2253 2.2747 2.3242 2.3736 2.4231 2.4725 2.5220 2.5714 2.6209 2.5714 2.6209 2.7692 2.8187 2.8681 2.9176 2.9670 3.0165 3.0659 3.1154 3.2637 3.3626 3.4121)98)98)98)98)98)98)98)98)98)98	0.0051 0.0052 0.0054 0.0055 0.0056 0.0058 0.0060 0.0062 0.0064 0.0068 0.0070 0.0072 0.0074 0.0076 0.0078 0.0078 0.0080 0.0082 0.0084 0.0084 0.0086 0.0088 0.0084 0.0086 0.0084 0.0088 0.0090 0.0092 0.0094 0.0094 0.0096 0.0098 0.0098 0.0098 0.0098 0.0094 0.0098 0.0094 0.0096 0.0098 0.0100 0.0102 0.0104 0.0106 0.0108 0.0110 0.0112 0.0114 0.0114 0.0114 0.0114	0.0000 0.0000	0.0000 0.00
3.4615 3.5000	0.00)98)98	0.0118	0.0000	0.0000
0.0000	Biofilter Hyd	draulic Tal	ole		
Stage(fe	et)Area(ac	.)Volume(ac-ft.)Discharg	je(cfs)To Amer	nded(cfs)Infilt(cfs)
3.5000 3.5495 3.5989 3.6484 3.6978 3.7473 3.7967 3.8462 3.8956 3.9451 3.9945 4.0440 4.0934 4.1429 4.1923 4.2418 4.2912 4.3407	0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098 0.0098	0.0120 0.0124 0.0129 0.0134 0.0139 0.0144 0.0153 0.0153 0.0158 0.0163 0.0163 0.0168 0.0173 0.0177 0.0182 0.0187 0.0192 0.0197 0.0202	$\begin{array}{c} 0.0000\\ 0.000\\ 0.0$	0.0504 0.0504 0.0516 0.0528 0.0541 0.0553 0.0565 0.0577 0.0589 0.0601 0.0614 0.0626 0.0638 0.0650 0.0650 0.0662 0.0674 0.0686 0.0699	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

4.3901	0.0098	0.0206	1.9255	0.0711	0.0000
4.4396	0.0098	0.0211	2.0761	0.0723	0.0000
4.4890	0.0098	0.0216	2.1826	0.0735	0.0000
4.5000	0.0098	0.0217	2.3112	0.0738	0.0000

Surface Biofilter1Element Flows To:0Outlet 10Vault 1Biofilter 1

Vault 1	
Width:	11.5 ft.
Length:	60 ft.
Depth:	6 ft.
Discharge Structure	
Riser Height:	5 ft.
Riser Diameter:	54 in.
Notch Type:	Rectangular
Notch Width:	0.026 ft.
Notch Height:	0.478 ft.
Orifice 1 Diameter:	0.231 in. Elevation:0 ft.
Element Flows To:	
Outlet 1	Outlet 2

Vault Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.015	0.000	0.000	0.000
0.0007	0.015	0.002	0.000	0.000
0.2000	0.015	0.003	0.000	0.000
0.2667	0.015	0.004	0.000	0.000
0.3333	0.015	0.005	0.000	0.000
0.4000	0.015	0.006	0.000	0.000
0 4667	0.015	0.007	0.001	0.000
0.5333	0.015	0.008	0.001	0.000
0.6000	0.015	0.009	0.001	0.000
0.6667	0.015	0.010	0.001	0.000
0.7333	0.015	0.011	0.001	0.000
0.8000	0.015	0.012	0.001	0.000
0.8667	0.015	0.013	0.001	0.000
0.9333	0.015	0.014	0.001	0.000
1.0000	0.015	0.015	0.001	0.000
1.0667	0.015	0.016	0.001	0.000
1.1333	0.015	0.018	0.001	0.000
1.2000	0.015	0.019	0.001	0.000
1.2667	0.015	0.020	0.001	0.000
1.3333	0.015	0.021	0.001	0.000
1.4000	0.015	0.022	0.001	0.000
1.4667	0.015	0.023	0.001	0.000
1.5333	0.015	0.024	0.001	0.000
1.6000	0.015	0.025	0.001	0.000
1.6667	0.015	0.026	0.001	0.000
1.7333	0.015	0.027	0.001	0.000
1.8000	0.015	0.028	0.001	0.000
1.8667	0.015	0.029	0.002	0.000
1.9333	0.015	0.030	0.002	0.000
2.0000	0.015	0.031	0.002	0.000
2.0667	0.015	0.032	0.002	0.000
2.1333	0.015	0.033	0.002	0.000
2.2000	0.015	0.034	0.002	0.000
2.2007	0.015	0.035	0.002	0.000
2.3333	0.015	0.037	0.002	0.000
2.4000	0.015	0.030	0.002	0.000
2.5333	0.015	0.040	0.002	0.000

2.6000 2.6667 2.7333 2.8000 2.8667	0.015 0.015 0.015 0.015 0.015	0.041 0.042 0.043 0.044 0.045	0.002 0.002 0.002 0.002 0.002	0.000 0.000 0.000 0.000 0.000
2.9333 3.0000 3.0667 3.1333 3.2000 3.2667	0.015 0.015 0.015 0.015 0.015 0.015	0.040 0.047 0.048 0.049 0.050 0.051	0.002 0.002 0.002 0.002 0.002 0.002	0.000 0.000 0.000 0.000 0.000
3.3333 3.4000 3.4667 3.5333 3.6000 2.6667	0.015 0.015 0.015 0.015 0.015 0.015	0.052 0.053 0.054 0.056 0.057 0.058	0.002 0.002 0.002 0.002 0.002 0.002	0.000 0.000 0.000 0.000 0.000 0.000
3.7333 3.8000 3.8667 3.9333 4.0000	0.015 0.015 0.015 0.015 0.015 0.015	0.059 0.060 0.061 0.062 0.063	0.002 0.002 0.002 0.002 0.002 0.002	0.000 0.000 0.000 0.000 0.000
4.0667 4.1333 4.2000 4.2667 4.3333 4.4000	0.015 0.015 0.015 0.015 0.015 0.015 0.015	0.064 0.065 0.066 0.067 0.068 0.069	0.002 0.003 0.003 0.003 0.003 0.003	0.000 0.000 0.000 0.000 0.000 0.000
4.4667 4.5333 4.6000 4.6667 4.7333	0.015 0.015 0.015 0.015 0.015 0.015	0.070 0.071 0.072 0.073 0.075 0.076	0.003 0.003 0.004 0.007 0.011 0.015	0.000 0.000 0.000 0.000 0.000 0.000
4.8667 4.9333 5.0000 5.0667 5.1333	0.015 0.015 0.015 0.015 0.015 0.015	0.077 0.078 0.079 0.080 0.081	0.019 0.023 0.028 0.850 2.352	0.000 0.000 0.000 0.000 0.000
5.2000 5.2667 5.3333 5.4000 5.4667 5.5333	0.015 0.015 0.015 0.015 0.015 0.015	0.082 0.083 0.084 0.085 0.086 0.087	4.295 6.592 9.191 12.05 15.15 18.44	0.000 0.000 0.000 0.000 0.000 0.000
5.6000 5.6667 5.7333 5.8000 5.8667	0.015 0.015 0.015 0.015 0.015 0.015	0.088 0.089 0.090 0.091 0.092	21.92 25.54 29.29 33.13 37.04	0.000 0.000 0.000 0.000 0.000
5.9333 6.0000 6.0667 6.1333	0.015 0.015 0.015 0.000	0.094 0.095 0.096 0.000	40.99 44.96 48.91 52.81	0.000 0.000 0.000

Analysis Results POC 1







Predeveloped Landuse Totals for POC #1 Total Pervious Area: 0.4305 Total Impervious Area: 0

Mitigated Landuse Totals for POC #1 Total Pervious Area: 0.1069 Total Impervious Area: 0.3138

Flow Frequency Method: Weibull

Flow Frequency Return Periods for Predeveloped. POC #1Return PeriodFlow(cfs)2 year0.04655 year0.08183510 year0.12030425 year0.143932

Flow Frequency Return Periods for Mitigated. POC #1Return PeriodFlow(cfs)2 year0.0025265 year0.04178510 year0.08064625 year0.094751

Duration Flows The Facility PASSED

Flow(cfs) 0.0047 0.0058 0.0070	Predev 351 305 262	Mit 293 240 199	Percentage 83 78 75	Pass/Fail Pass Pass Pass
0.0082	229	172	75	Pass
0.0093	209	148	70	Pass
0.0105	192	123	64	Pass
0.0117	173	100	57	Pass
0.0128	159	88	55	Pass
0.0140	15 1	72	47	Pass
0.0152	143	66	46	Pass
0.0163	134	57	42	Pass
0.0175	128	53	41	Pass
0.0187	118	48	40	Pass
0.0198	113	43	38	Pass
0.0210	108	41	37	Pass
0.0222	105	41	39	Pass
0.0233	101	39	38	Pass
0.0245	96	36	37	Pass
0.0257	93	35	37	Pass
0.0268	86	34	39	Pass
0.0280	81	34	41	Pass
0.0292	73	33	45	Pass
0.0304	71	32	45	Pass
0.0315	69	32	46	Pass
0.0327	65	31	47	Pass
0.0339	63	29	46	Pass
0.0350	59	28	47	Pass
0.0362	56	27	48	Pass
0.0374	54	26	48	Pass
0.0385	51	25	49	Pass
0.0397	48	24	00	Pass
0.0409	47	23	40	Pass
0.0420	44	21	47	Daes
0.0432	42	19	40	Dase
0.0444	40	19	47	Pass
0.0455	39	19	40 55	Pass
0.0407	34	19	55	Pass
0.0479	32	17	53	Pass
0.0490	31	16	51	Pass
0.0502	30	16	53	Pass
0.0514	27	15	55	Pass
0.0525	23	15	65	Pass
0.0549	22	15	68	Pass
0.0561	20	15	75	Pass
0.0572	18	14	77	Pass
0.0584	18	14	77	Pass
0.0596	18	14	77	Pass
0.0607	16	14	87	Pass
0.0619	16	13	81	Pass
0.0631	16	13	81	Pass
0.0642	16	13	81	Pass
0.0654	16	12	75	Pass

0.0666 0.0677 0.0689 0.0701 0.0712 0.0724 0.0736 0.0747 0.0759 0.0771 0.0782 0.0794 0.0806 0.0818 0.0829 0.0841 0.0853 0.0864 0.0876 0.0888 0.0899 0.0911 0.0923 0.0946 0.0934 0.0946 0.0958 0.0969 0.0981 0.0993 0.1004 0.1028 0.1028 0.1039 0.1051 0.1086 0.1098 0.10	16333211199998887777666666665555555555554444433	119999887775555444442222222111100000000000000000000	68 69 69 66 7 67 7 55 56 20 57 7 55 56 20 57 7 55 56 20 57 7 55 55 20 00 00 00 00 00 00 00 00 00 00 00 00	Pass Pass Pass Pass Pass Pass Pass Pass
0.1051 0.1063 0.1075 0.1086 0.1098 0.1110 0.1121 0.1121 0.1133 0.1145 0.1156 0.1168 0.1180 0.1191 0.1203	4 4 4 4 3 3 3 3 3 3 3 3 3 3 3		000000000000000000000000000000000000000	Pass Pass Pass Pass Pass Pass Pass Pass

Water Quality

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes No PERLND changes have been made.

IMPLND Changes No IMPLND changes have been made.

Appendix Predeveloped Schematic

7	Basin 0.43ac	1	
		н - Сарана - Сарана	

Mitigated Schematic



Predeveloped UCI File RUN GLOBAL WWHM4 model simulation END 2004 09 30 START 1971 10 01 RUN INTERP OUTPUT LEVEL 3 0 RESUME 0 RUN 1 UNIT SYSTEM 1 END GLOBAL FILES <File> <Un#> <-----File Name------****</pre> *** <-ID-> WDM 26 L262-01 10-31-2018.wdm MESSIT 25 PreL262-01 10-31-2018.MES 27 PreL262-01 10-31-2018.L61 28 PreL262-01 10-31-2018.L61 30 POCL262-01 10-31-20181.dat END FILES OPN SEQUENCE INGRP INDELT 00:60 28 PERLND COPY 501 DISPLY 1 END INGRP END OPN SEQUENCE DISPLY DISPLY-INFO1 # - #<-----Title----->***TRAN PIVL DIG1 FIL1 PYR DIG2 FIL2 YRND Basin 1 1 2 30 9 1 MAX END DISPLY-INFO1 END DISPLY COPY TIMESERIES # - # NPT NMN *** 1 1 1 501 END TIMESERIES END COPY GENER OPCODE # # OPCD *** END OPCODE PARM # # K *** END PARM END GENER PERLND GEN-INFO <PLS ><----Name---->NBLKS Unit-systems Printer *** # - # User t-series Engl Metr *** *** in out 28 D,NatVeg,Flat 1 1 27 0 1 1 END GEN-INFO *** Section PWATER*** ACTIVITY # - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *** 28 0 0 1 0 0 0 0 0 0 0 0 0 END ACTIVITY

Predeveloped UCI File

RUN

GLOBAL WWHM4 model simulation START 1971 10 01 END 2004 09 30 RUN INTERP OUTPUT LEVEL 3 0 RESUME 0 RUN 1 UNIT SYSTEM 1 END GLOBAL FILES <-ID-> +++ 26 L262-01 10-31-2018.wdm 25 PreL262-01 10-31-2018 WDM MESSU PreL262-01 10-31-2018.MES 27 PreL262-01 10-31-2018.L61 28 PreL262-01 10-31-2018.L62 30 POCL262-01 10-31-20181.dat END FILES OPN SEQUENCE INGRP INDELT 00:60 28 PERLND 501 COPY DISPLY 1 END INGRP END OPN SEQUENCE DISPLY DISPLY-INFO1 # - #<-----Title----->***TRAN PIVL DIG1 FIL1 PYR DIG2 FIL2 YRND Basin 1 1 MAX 1 2 30 9 END DISPLY-INFO1 END DISPLY COPY TIMESERIES # - # NPT NMN *** 501 1 1 END TIMESERIES END COPY GENER OPCODE # # OPCD *** END OPCODE PARM # K *** END PARM END GENER PERLND GEN-INFO <PLS ><-----Name----->NBLKS Unit-systems Printer *** # - # User t-series Engl Metr *** * * * in out 28 D,NatVeg,Flat 1 1 1 27 1 0 END GEN-INFO *** Section PWATER*** ACTIVITY
 # # ATMP SNOW PWAT
 SED
 PST
 PWG
 PQAL
 MSTL
 PEST
 NITR
 PHOS
 TRAC

 8
 0
 0
 1
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0
 0</t 28 END ACTIVITY PRINT-INFO
 # # ATMP SNOW PWAT SED
 PST
 PWG
 PQAL
 MSTL
 PEST
 NITR
 PHOS
 TRAC

 28
 0
 0
 4
 0
 0
 0
 0
 0
 1
 9
 END PRINT-INFO

PWAT-PARM1 <PLS > PWATER variable monthly parameter value flags *** # - # CSNO RTOP UZFGVCSVUZVNN VIFWVIRCVLE INFCHWT ***28011000110NDDWATDATADATADATADATADATADATA END PWAT-PARM1 PWAT-PARM2
 <PLS >
 PWATER input info: Part 2

 # - # ***FOREST
 LZSN
 INFILT
 LSUR
 SLSUR
 KVARY
 AGWRC

 28
 0
 3.3
 0.03
 100
 0.05
 2.5
 0.915
 28 END PWAT-PARM2 PWAT-PARM3 <PLS > PWATER input info: Part 3 *** # - # ***PETMAXPETMININFEXPINFILDDEEPFRBASETPAGWETP28002200.050.05 0 0 2 2 28 END PWAT-PARM3 PWAT-PARM4
 <PLS >
 PWATER input info: Part 4

 # - #
 CEPSC
 UZSN
 NSUR
 INTFW
 IRC
 LZETP ***

 28
 0
 0.6
 0.04
 1
 0.3
 0
 END PWAT-PARM4 MON-LZETPARM <PLS > PWATER input info: Part 3 *** # - # JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC *** 28 0.4 0.4 0.4 0.4 0.6 0.6 0.6 0.6 0.6 0.4 0.4 0.4 END MON-LZETPARM MON-INTERCEP END MON-INTERCEP PWAT-STATE1 <PLS > *** Initial conditions at start of simulation ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 *** # *** CEPS SURS UZS IFWS LZS AGWS GWVS 0 0 0.01 0 0.4 0.01 0 28 0 END PWAT-STATE1 END PERLND IMPLND GEN-INFO <PLS ><-----Name----> Unit-systems Printer *** User t-series Engl Metr *** # - # +++ in out END GEN-INFO *** Section IWATER*** ACTIVITY # - # ATMP SNOW IWAT SLD IWG IQAL *** END ACTIVITY PRINT-INFO <ILS > ******** Print-flags ******* PIVL PYR # - # ATMP SNOW IWAT SLD IWG IQAL ******** END PRINT-INFO IWAT-PARM1 <PLS > IWATER variable monthly parameter value flags *** # - # CSNO RTOP VRS VNN RTLI *** END IWAT-PARMI IWAT-PARM2 <PLS > IWATER input info: Part 2 *
- # *** LSUR SLSUR NSUR RETSC *** <PLS > END IWAT-PARM2

IWAT-PARM3 <PLS > IWATER input info: Part 3 *** # - # ***PETMAX PETMIN END IWAT-PARM3 IWAT-STATE1 <PLS > *** Initial conditions at start of simulation # - # *** RETS SURS END IWAT-STATE1 END IMPLND SCHEMATIC <--Area--> <-Target-> MBLK *** <-factor-> <Name> # Tbl# *** <-Source-> <Name> # Basin 1*** 0.4305 COPY 501 12 0.4305 COPY 501 13 PERLND 28 PERLND 28 *****Routing***** END SCHEMATIC NETWORK <-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> *** <Name> # <Name> # #<-factor->strg <Name> # # <Name> # # *** COPY 501 OUTPUT MEAN 1 1 12.1 DISPLY 1 INPUT TIMSER 1 <-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> *** <Name> # <Name> # #<-factor->strg <Name> # # <Name> # # *** END NETWORK RCHRES GEN-INFO RCHRES Name Nexits Unit Systems Printer *** # - #<----> User T-series Engl Metr LKFG *** in out *** END GEN-INFO *** Section RCHRES*** ACTIVITY # - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG *** END ACTIVITY PRINT-INFO # - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR ******** END PRINT-INFO HYDR-PARM1 RCHRES Flags for each HYDR Section *** END HYDR-PARM1 HYDR-PARM2 # - # FTABNO LEN DELTH STCOR KS DB50 *** <-----><-----><-----><-----> *** END HYDR-PARM2 HYDR-INIT RCHRES Initial conditions for each HYDR section *** # - # *** VOL Initial value of COLIND Initial value of OUTDGT
 *** ac-ft for each possible exit for each possible exit
 <---><---> *** <---><---> END HYDR-INIT END RCHRES

SPEC-ACTIONS END SPEC-ACTIONS FTABLES END FTABLES

EXT SOURCES <-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> *** <Name> # <Name> # tem strg<-factor->strg <Name> # # <Name> # # *** PREC 1 PERLND WDM 2 PREC ENGL 1 999 EXTNL 1 999 EXTNL PREC WDM 2 PREC ENGL 1 PERLND 1 999 EXTNL PETINP WDM 1 EVAP ENGL 1 IMPLND 1 999 EXTNL PETINP WDM 1 EVAP ENGL 1 END EXT SOURCES EXT TARGETS <-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd *** <Name> # <Name> # #<-factor->strg <Name> # <Name> tem strg strg*** COPY 501 OUTPUT MEAN 1 1 WDM 501 FLOW ENGL 12.1 REPL END EXT TARGETS MASS-LINK <Volume> <-Grp> <-Member-><--Mult--> MARSS-LINK 12 <Target> <-Grp> <-Member->*** <Name> <Name> # #*** <Name> PERLND PWATER SURO 0.083333 COPY INPUT MEAN END MASS-LINK 12 MASS-LINK 13 PWATER IFWO PERLND 0.083333 COPY INPUT MEAN END MASS-LINK 13

END MASS-LINK

END RUN

Mitigated UCI File RUN GLOBAL WWHM4 model simulation START 1971 10 01 END 2004 09 30 RUN INTERP OUTPUT LEVEL 3 0 RESUME 0 RUN UNIT SYSTEM 1 1 END GLOBAL FILES <File> <Un#> <-----File Name---->*** <-ID-> *** 26 L262-01 10-31-2018.wdm 25 MitL262-01 10-31-2018.MES WDM MESSU 27 MitL262-01 10-31-2018.L61 28 MitL262-01 10-31-2018.L62 30 POCL262-01 10-31-20181.dat END FILES OPN SEQUENCE INGRP INDELT 00:60 PERLND 46 1 IMPLND GENER 2 RCHRES 1 2 RCHRES 3 RCHRES . 1 COPY COPY 501 DISPLY 1 END INGRP END OPN SEQUENCE DISPLY DISPLY-INFO1 # - #<-----Title----->***TRAN PIVL DIG1 FIL1 PYR DIG2 FIL2 YRND 1 Vault 1 MAX 1 2 30 9 END DISPLY-INFO1 END DISPLY COPY TIMESERIES # - # NPT NMN *** 1 1 1 501 1 1 END TIMESERIES END COPY GENER OPCODE # # OPCD *** 2 24 END OPCODE PARM # # K *** 2 Ο. END PARM END GENER PERLND GEN-INFO <PLS ><-----Name----->NBLKS Unit-systems Printer *** # - # User t-series Engl Metr *** in out 1 1 1 1 27 *** out 1 27 0 46 D, Urban, Flat END GEN-INFO *** Section PWATER*** ACTIVITY # - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *** 46 0 0 1 0 0 0 0 0 0 0 0

PRINT-INFO # - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC********4600000019 END PRINT-INFO PWAT-PARM1 <PLS > PWATER variable monthly parameter value flags ***
- # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRC VLE INFC HWT ***
46 0 1 1 0 0 0 0 1 1 0 END PWAT-PARM1 PWAT-PARM2 END PWAT-PARM2 PWAT-PARM3 AT-PARM3 <PLS > PWATER input info: Part 3 *** # - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP .6 0 0 2 2 0 0.05 0.05 <PLS > 46 0 END PWAT-PARM3 PWAT-PARM4 <PLS > PWATER input info: Part 4 *** <PLS >PWATER input info: Part 4# - #CEPSCUZSNNSURINTFWIRCLZETP ***4600.60.0310.30 END PWAT-PARM4 MON-LZETPARM <PLS > PWATER input info: Part 3 *** # - # JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC *** 46 0.6 0.6 0.6 0.7 0.7 0.7 0.7 0.7 0.6 0.6 0.6 END MON-LZETPARM MON-INTERCEP END MON-INTERCEP PWAT-STATE1 <PLS > *** Initial conditions at start of simulation ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 *** # *** CEPS SURS UZS IFWS LZS AGWS 0 0 0.15 0 1 0.05 GWVS 46 0 END PWAT-STATE1 END PERLND IMPLND GEN-INFO <PLS ><----Name----> Unit-systems Printer *** # - # User t-series Engl Metr *** in out 1 1 1 27 0 *** 1 IMPERVIOUS-FLAT END GEN-INFO *** Section IWATER*** ACTIVITY # - # ATMP SNOW IWAT SLD IWG IQAL *** 1 0 0 1 0 0 0 END ACTIVITY PRINT-INFO <ILS > ******* Print-flags ******* PIVL PYR # - # ATMP SNOW IWAT SLD IWG IQAL ********* 1 0 0 4 0 0 0 1 9 END PRINT-INFO

END ACTIVITY

IWAT-PARM1 <PLS > IWATER variable monthly parameter value flags *** # - # CSNO RTOP VRS VNN RTLI *** 1 0 0 0 0 1 1 END IWAT-PARM1 IWAT-PARM2 IWATER input info: Part 2 *** <PLS > # - # *** LSUR SLSUR NSUR RETSC 1 100 0.05 0.011 0.1 1 END IWAT-PARM2 IWAT-PARM3 IWATER input info: Part 3 *** <PLS > # - # ***PETMAX PETMIN 0 1 0 END IWAT-PARM3 IWAT-STATE1 <PLS > *** Initial conditions at start of simulation # - # *** RETS SURS 0 0 T END IWAT-STATE1 END IMPLND SCHEMATIC <--Area--> <-Target-> MBLK *** <-factor-> <Name> # Tbl# *** <-Source-> <Name> # Basin 1*** 0.1069 RCHRES 1 0.1069 RCHRES 1 0.3138 RCHRES 1 PERLND 46 2 PERLND 46 3 IMPLND 1 0.3138 RCHRES 1 5 *****Routing*****
 RCHRES
 3
 6

 COPY
 1
 16

 RCHRES
 3
 7
 RCHRES 2 1 RCHRES 2 RCHRES 1 1 RCHRES 2 RCHRES 17 1 RCHRES 1 1 8 COPY 501 16 RCHRES 3 1 END SCHEMATIC NETWORK <-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> *** <Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 501 OUTPUT MEAN 1 1 12.1 DISPLY 1 INPUT TIMSER 1
GENER 2 OUTPUT TIMSER .0002778 RCHRES 1 EXTNL OUTDGT 1 <-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> *** <Name> # <Name> # #<-factor->strg <Name> # # <Name> # # *** END NETWORK RCHRES GEN-INFO Name Nexits Unit Systems Printer *** RCHRES # - #<----> User T-series Engl Metr LKFG *** *** in out

 Surface Biofilte-004
 3
 1
 1
 28
 0

 Biofilter 1
 1
 1
 1
 28
 0

 Vault 1
 1
 1
 1
 28
 0

 1 1 2 1 1 3 Vault 1 END GEN-INFO *** Section RCHRES*** ACTIVITY # - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***

0 1 1 0 0 0 0 0 0 0 0 0 1 0 3 0 0 0 0 0 0 0 0 END ACTIVITY PRINT-INFO # - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR * * * * * * * * * 2 3 END PRINT-INFO HYDR-PARM1

 RCHRES
 Flags for each HYDR Section

 # - #
 VC A1 A2 A3 ODFVFG for each *** ODGTFG for each
 FUNCT for each

 FG FG FG FG possible
 exit

 1
 0
 1
 0
 4
 5
 6
 0
 0
 1
 0
 0
 2
 1
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2
 2< END HYDR-PARM1 HYDR-PARM2 # - # FTABNO LEN DELTH STCOR KS *** DB50 <----><-----><-----><-----><-----><-----><-----><-----> ***
 1
 0.01
 0.0
 0.0
 0.5
 0.0

 2
 0.01
 0.0
 0.0
 0.5
 0.0

 3
 0.01
 0.0
 0.0
 0.5
 0.0
 1 2 3 END HYDR-PARM2 HYDR-INIT RCHRES Initial conditions for each HYDR section *** # - # *** VOL Initial value of COLIND Initial value of OUTDGT for each possible exit for each possible exit for each possible exit *** ac-ft <---->

 4.0
 5.0
 6.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

 4.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

 4.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

 4.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

 1 0 2 0 0 3 END HYDR-INIT END RCHRES SPEC-ACTIONS *** User-Defined Variable Quantity Lines *** addr *** <---> *** kwd varnam optyp opn vari s1 s2 s3 tp multiply lc ls ac as agfn *** <****> <----> <----> <-> <--> <-><-><-><-><-><-><-><-> <><-> <+** UVQUAN vol2RCHRES2 VOL4UVQUAN v2m2GLOBALWORKSP13UVQUAN vpo2GLOBALWORKSP23UVQUAN v2d2GENER2 K13 3 *** User-Defined Target Variable Names *** addr or addr or * * * <----> <----> *** kwd varnam ct vari s1 s2 s3 frac oper vari SI S2 S3 _____ <----><-><-> <---> <****><---><-><-><-><-><-><->UVNAMEv2m21WORKSP11.0QUANUVNAMEvpo21WORKSP21.0QUANUVNAMEv2d21K11.0QUAN *** opt foplop dedts yr mo dy hr mn d t vnam s1 s2 s3 ac quantity te ts rp GENER 2 v2m2= 487. *** Compute remaining available pore space GENER 2 $= v^{2}m^{2}$ vpo2 -= v2nc GENER 2 vpo2 *** Check to see if VPORA goes negative; if so set VPORA = 0.0 IF (vpo2 < 0.0) THEN GENER 2 vpo2 = 0.0 END IF *** Infiltration volume

GENER 2 END SPEC-AC	TIONS			v2d2	= vpo2
FTABLES FTABLE	2				
72 4					marriel Minott
Depth	Area	Volume	Outflowl	Velocity	Travel lime
(ft)	(acres)	(acre-ft)	(cfs)	(it/sec)	(Minutes)
0.00000	0.009757	0.000000	0.000000		
0.049451	0.009757	0.000145	0.000000		
0.098901	0.009757	0.000289	0.000000		
0.148352	0.009757	0.000434	0.000000		
0.197802	0.009757	0.000579	0.000000		
0.247253	0.009757	0.000724	0.000000		
0.296703	0.009757	0.000868	0.000000		
0.346154	0.009757	0.001013	0.000000		
0.395604	0.009757	0.001158	0.000000		
0.445055	0.009757	0.001303	0.000000		
0.494505	0.009757	0.001447	0.000000		
0.543956	0.009757	0.001592	0.000000		
0.593407	0.009757	0.001737	0.000000		
0 642857	0.009757	0.001882	0.000000		
0 692308	0.009757	0.002026	0.000000		
0 741758	0 009757	0.002171	0.000000		
0.791209	0 009757	0.002316	0.000000		
0.840659	0 009757	0.002461	0.000000		
0.040000	0 009757	0 002605	0.000000		
0.030560	0.009757	0.002750	0.000000		
0.939560	0.009757	0.002895	0.000000		
1 030462	0.009757	0.003040	0 000000		
1.038462	0.009757	0 003184	0.000000		
1.08/912	0.009757	0.003329	0.000000		
1.13/303	0.009757	0.003474	0.000000		
1.186813	0.009757	0.003414	0.000000		
1.236264	0.009757	0.003763	0.000000		
1.285/14	0.009757	0.003703	0.000000		
1.335165	0.009757	0.003908	0.000000		
1.384615	0.009757	0.004055	0.000000		
1.434066	0.009757	0.004198	0.000000		
1.483516	0.009757	0.004342	0.000000		
1.532967	0.009757	0.004407	0.000000		
1.582418	0.009757	0.004032	0.000000		
1.631868	0.009757	0.004778	0.000000		
1.681319	0.009757	0.004921	0.000000		
1.730769	0.009757	0.005066	0.000000		
1.780220	0.009757	0.005211	0.000000		
1.829670	0.009757	0.005355	0.000000		
1.879121	0.009757	0.005500	0.000000		
1.928571	0.009757	0.005645	0.000000		
1.978022	0.009757	0.005790	0.000000		
2.027473	0.009757	0.005990	0.000000		
2.076923	0.009757	0.006190	0.000000		
2.126374	0.009757	0.006390	0.000000		
2.175824	0.009757	0.006591	0.000000		
2.225275	0.009757	0.006791	0.000000		
2.274725	0.009757	0.006991	0.000000		
2.324176	0.009757	0.007191	0.000000		
2.373626	0.009757	0.007391	0.000000		
2.423077	0.009757	0.007592	0.000000		
2.472527	0.009757	0.007792	0.000000		
2.521978	0.009757	0.007992	0.000000		
2.571429	0.009757	0.008192	0.000000		
2.620879	0.009757	0.008393	0.000000		
2.670330	0.009757	0.008593	0.000000		
2.719780	0.009757	0.008793	0.000000		
2.769231	0.009757	0.008993	0.000000		
2.818681	0.009757	0.009194	0.000000		
2.868132	0.009757	0.009394	0.000000		
2.917582	0.009757	0.009594	0.000000		
2.967033	0.009757	0.009794	0.000000		
3.016484	0.009757	0.009994	0.000000		
3.065934	0.009757	0.010195	0.000000		

3.115385 3.164835 3.214286 3.263736 3.313187 3.362637 3.412088 3.461538 3.500000 END FTABL FTABLE	0.009757 0.009757 0.009757 0.009757 0.009757 0.009757 0.009757 0.009757 0.009757 0.009757 E 2 1	0.010395 0.010595 0.010795 0.010996 0.011196 0.011396 0.011596 0.011796 0.025100					
Depth	Area	Volume	Outflow1	Outflow2	outflow 3	Velocity	Travel
(ft)	(acres)	(acre-ft)	(cfs)	(cfs)	(cfs)	(ft/sec)	
(Minutes)** 0.000000 0.049451 0.098901 0.148352 0.247253 0.247253 0.247253 0.346154 0.395604 0.445055 0.494505 0.593407 0.642857 0.692308 0.741758 0.791209 0.840659 0.890110 0.939560 0.989011 1.000000 END FTABLE FTABLE	* 0.009757 0.0	0.000000 0.000482 0.001447 0.001447 0.002412 0.002412 0.003860 0.004342 0.004342 0.004825 0.005307 0.005790 0.006755 0.007237 0.00720 0.008684 0.009167 0.009757	0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1.000000 0.0000000 0.000000 0.000000 0.0000000 0.000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.0000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.0000000 0.000000 0.000000 0.0000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.0000000 0.00000 0.00000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.0000000 0.000000 0.000000 0.000000 0.0000000 0.0000000 0.0000000 0.0000000 0.00000000000 0.00000000 0.0000000	0.000000 0.050406 0.051622 0.052839 0.052839 0.055271 0.056487 0.057703 0.058920 0.060136 0.061352 0.062568 0.063785 0.065001 0.066217 0.066217 0.066217 0.067433 0.068650 0.069866 0.071082 0.072298 0.073515 0.073785			
Depth (ft) 0.000000 0.066667 0.133333 0.200000 0.266667 0.333333 0.400000 0.466667 0.533333 0.600000 0.666667 0.733333 0.800000 0.866667 0.93333 1.000000 1.066667 1.133333 1.200000 1.266667 1.33333 1.400000 1.466667 1.53333 1.600000 1.666667 1.73333	Area (acres) 0.015840	Volume (acre-ft) 0.00000 0.001056 0.002112 0.003168 0.004224 0.005280 0.006336 0.007392 0.008448 0.009504 0.010560 0.011616 0.012672 0.013728 0.014784 0.015840 0.016896 0.017952 0.019008 0.02064 0.022176 0.022176 0.022176 0.022322 0.024288 0.025344 0.026400 0.027456	Outflowl (cfs) 0.000000 0.000374 0.000529 0.000648 0.000916 0.000916 0.000989 0.001058 0.001122 0.001182 0.001240 0.001240 0.001295 0.001348 0.001399 0.001448 0.001542 0.001586 0.001542 0.001586 0.001630 0.001672 0.001713 0.001754 0.001793 0.001832 0.001869 0.001906	Velocity (ft/sec)	Travel Tim (Minutes	e***) ***	

÷

1.800000	0.015840	0.028512	0.001943
1.866667	0.015840 0.015840	0.030624	0.002013
2.000000	0.015840	0.031680	0.002048
2.066667	0.015840	0.032736	0.002082
2.133333	0.015840	0.033792	0.002115
2.200000	0.015840	0.034848	0.002148
2.333333	0.015840	0.036961	0.002212
2.400000	0.015840	0.038017	0.002243
2.466667	0.015840	0.039073	0.002274
2.533333	0.015840	0.040129	0.002305
2.600000	0.015840	0.042241	0.002365
2.733333	0.015840	0.043297	0.002394
2.800000	0.015840	0.044353	0.002423
2.866667	0.015840	0.045409	0.002452
2.933333	0.015840	0.046465	0.002480
3.066667	0.015840	0.048577	0.002536
3.133333	0.015840	0.049633	0.002563
3.200000	0.015840	0.050689	0.002590
3.266667	0.015840	0.051745	0.002617
3.3333333	0.015840	0.053857	0.002644
3.466667	0.015840	0.054913	0.002696
3.533333	0.015840	0.055969	0.002722
3.600000	0.015840	0.057025	0.002747
3.666667	0.015840	0.058081	0.002773
3,7333333	0.015840	0.060193	0.002823
3.866667	0.015840	0.061249	0.002847
3.933333	0.015840	0.062305	0.002872
4.000000	0.015840	0.063361	0.002896
4.066667	0.015840	0.064417 0.065473	0.002920
4.200000	0.015840	0.066529	0.002968
4.266667	0.015840	0.067585	0.002991
4.333333	0.015840	0.068641	0.003014
4.400000	0.015840	0.070753	0.003060
4.533333	0.015840	0.071809	0.003189
4.600000	0.015840	0.072865	0.004939
4.666667	0.015840	0.073921	0.007683
4.733333	0.015840	0.074977	0.014956
4.866667	0.015840	0.077089	0.019227
4.933333	0.015840	0.078145	0.023814
5.000000	0.015840	0.079201	0.028663
5.066667	0.015840	0.080257	2 352480
5,200000	0.015840	0.082369	4.295216
5.266667	0.015840	0.083425	6.592431
5.333333	0.015840	0.084481	9.191744
5.400000	0.015840	0.085537	12.05474
5.40000/	0.015840	0.087649	18.44784
5.600000	0.015840	0.088705	21.92228
5.666667	0.015840	0.089761	25.54632
5.733333	0.015840	0.090817	29.29326
5.800000	0.015840	0.092929	37.04722
5.933333	0.015840	0.093985	40.99891
6.000000	0.015840	0.095041	44.96300
6.066667	0.015840	0.096097	48.91133
END FTABL	Е 3		
THD LINDIG			

EXT SOURCES <-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***

<Name> # <Name> # tem strg<-factor->strg <Name> # # <Name>
WDM 2 PREC ENGL 1 PERLND 1 999 EXTNL PREC
WDM 2 PREC ENGL 1 IMPLND 1 999 EXTNL PREC
WDM 1 EVAP ENGL 1 PERLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 1 IMPLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 1 IMPLND 1 999 EXTNL PETINP <Name> # # *** # <Name># tem strg<-factor->strgName># #<Name>2 PRECENGL1PERLND1999EXTNLPREC2 PRECENGL1IMPLND1999EXTNLPREC1 EVAPENGL1PERLND1999EXTNLPETINI1 EVAPENGL1IMPLND1999EXTNLPETINI2 IRRGENGL0.7SAMEPERLND46EXTNLSURLI2 PRECENGL1RCHRES1EXTNLPREC1 EVAPENGL0.5RCHRES1EXTNLPOTEV1 EVAPENGL0.7RCHRES2EXTNLPOTEV WDM 22 IRRG 2 PREC WDM WDM WDM END EXT SOURCES EXT TARGETS <-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd *** <Name> # <Name> # #<-factor->strg <Name> # <Name> tem strg strg***
RCHRES 3 HYDR RO 1 1 1 WDM 1000 FLOW ENGL REPL
RCHRES 3 HYDR STAGE 1 1 1 WDM 1001 STAG ENGL REPL
COPY 1 OUTPUT MEAN 1 1 12.1 WDM 701 FLOW ENGL REPL
COPY 501 OUTPUT MEAN 1 1 12.1 WDM 801 FLOW ENGL REPL
COPY 501 OUTPUT MEAN 1 1 12.1 WDM 801 FLOW ENGL REPL END EXT TARGETS MASS-LINK

 <Volume>
 <-Grp>
 <-Member-><--Mult-->
 <Target>
 <-Grp>
 <-Member->***

 <Name>
 <Name> # #<-factor->
 <Name>
 <Name> # #***

 MASS-LINK
 2

 PERLND PWATER SURO 0.083333 RCHRES INFLOW IVOL END MASS-LINK 2 MASS-LINK 3 PERLND PWATER IFWO 0.083333 RCHRES INFLOW IVOL END MASS-LINK 3 MASS-LINK 5 IMPLND IWATER SURO 0.083333 RCHRES INFLOW IVOL END MASS-LINK 5 MASS-LINK 6 RCHRES ROFLOW RCHRES INFLOW END MASS-LINK 6 MASS-LINK 7 RCHRES OFLOW OVOL RCHRES 1 INFLOW IVOL END MASS-LINK 7 MASS-LINK R RCHRES OFLOW OVOL 2 RCHRES INFLOW IVOL END MASS-LINK 8 MASS-LINK 16 RCHRES ROFLOW COPY INPUT MEAN END MASS-LINK 16 MASS-LINK 17 RCHRES OFLOW OVOL COPY INPUT MEAN 1 END MASS-LINK 17

END MASS-LINK

END RUN

Predeveloped HSPF Message File

1

Mitigated HSPF Message File

ERROR/WARNING ID: 238 1 The continuity error reported below is greater than 1 part in 1000 and is therefore considered high. Did you specify any "special actions"? If so, they could account for it. Relevant data are: DATE/TIME: 1977/11/30 24: 0 RCHRES : 3 STORS STOR MATIN MATDIF RELERR 0.00000 0.0000E+00 0.00000 -4.932E-10 -9.525E-02 Where: RELERR is the relative error (ERROR/REFVAL). ERROR is (STOR-STORS) - MATDIF. REFVAL is the reference value (STORS+MATIN). STOR is the storage of material in the processing unit (land-segment or reach/reservior) at the end of the present interval. STORS is the storage of material in the pu at the start of the present printout reporting period. MATIN is the total inflow of material to the pu during the present printout reporting period. MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period. ERROR/WARNING ID: 238 1 The continuity error reported below is greater than 1 part in 1000 and is therefore considered high. Did you specify any "special actions"? If so, they could account for it. Relevant data are: DATE/TIME: 1982/ 5/31 24: 0 RCHRES : 3 MATDIF RELERR STORS STOR MATIN 0.00000 0.0000E+00 0.00000 -6.430E-09 -7.399E-03 Where: RELERR is the relative error (ERROR/REFVAL). ERROR is (STOR-STORS) - MATDIF. REFVAL is the reference value (STORS+MATIN). is the storage of material in the processing unit (land-segment or STOR reach/reservior) at the end of the present interval. STORS is the storage of material in the pu at the start of the present printout reporting period. MATIN is the total inflow of material to the pu during the present printout reporting period. MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period. ERROR/WARNING ID: 238 1 The continuity error reported below is greater than 1 part in 1000 and is therefore considered high.

Did you specify any "special actions"? If so, they could account for it.

Relevant data are:

L262-01 10-31-2018

DATE/TIME: 1986/ 5/31 24: 0 RCHRES : 3 RELERR MATIN MATDIF STORS STOR 0.00000 0.0000E+00 0.00000 -1.616E-09 -3.132E-02 Where . RELERR is the relative error (ERROR/REFVAL). ERROR is (STOR-STORS) - MATDIF. REFVAL is the reference value (STORS+MATIN). STOR is the storage of material in the processing unit (land-segment or reach/reservior) at the end of the present interval. STORS is the storage of material in the pu at the start of the present printout reporting period. MATIN is the total inflow of material to the pu during the present printout reporting period. MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period. ERROR/WARNING ID: 238 1 The continuity error reported below is greater than 1 part in 1000 and is therefore considered high. Did you specify any "special actions"? If so, they could account for it. Relevant data are: DATE/TIME: 1987/ 5/31 24: 0 RCHRES : 3 RELERR STORS STOR MATIN MATDIF 0.00000 0.0000E+00 -7.108E-02 0.00000 -6.827E-10 Where: RELERR is the relative error (ERROR/REFVAL). ERROR is (STOR-STORS) - MATDIF. REFVAL is the reference value (STORS+MATIN). STOR is the storage of material in the processing unit (land-segment or reach/reservior) at the end of the present interval. STORS is the storage of material in the pu at the start of the present printout reporting period. MATIN is the total inflow of material to the pu during the present printout reporting period. MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period. ERROR/WARNING ID: 238 1 The continuity error reported below is greater than 1 part in 1000 and is therefore considered high. Did you specify any "special actions"? If so, they could account for it. Relevant data are: DATE/TIME: 1997/ 3/31 24: 0 RCHRES : 3 RELERR STORS STOR MATIN MATOTE 0.00000 -4.719E-08 -1.185E-03 0.00000 0.0000E+00 Where: RELERR is the relative error (ERROR/REFVAL). ERROR is (STOR-STORS) - MATDIF.

REFVAL is the reference value (STORS+MATIN). STOR is the storage of material in the processing unit (land-segment or reach/reservior) at the end of the present interval. STORS is the storage of material in the pu at the start of the present printout reporting period. MATIN is the total inflow of material to the pu during the present printout reporting period. MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period.

The count for the WARNING printed above has reached its maximum.

If the condition is encountered again the message will not be repeated.

Disclaimer

Legal Notice

This program and accompanying documentation are provided 'as-is' without warranty of any kind. The entire risk regarding the performance and results of this program is assumed by End User. Clear Creek Solutions Inc. and the governmental licensee or sublicensees disclaim all warranties, either expressed or implied, including but not limited to implied warranties of program and accompanying documentation. In no event shall Clear Creek Solutions Inc. be liable for any damages whatsoever (including without limitation to damages for loss of business profits, loss of business information, business interruption, and the like) arising out of the use of, or inability to use this program even if Clear Creek Solutions Inc. or their authorized representatives have been advised of the possibility of such damages. Software Copyright © by : Clear Creek Solutions, Inc. 2005-2018; All Rights Reserved.

Clear Creek Solutions, Inc. 6200 Capitol Blvd. Ste F Olympia, WA. 98501 Toll Free 1(866)943-0304 Local (360)943-0304

www.clearcreeksolutions.com
Attachment 3 Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.





Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 3	Maintenance Agreement (Form DS-3247) (when applicable)	Included
		Not applicable

÷



Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3: For private entity operation and maintenance, Attachment 3 must include a Storm Water Management and Discharge Control Maintenance Agreement (Form DS-3247). The following information must be included in the exhibits attached to the maintenance agreement:

Vicinity map

Site design BMPs for which DCV reduction is claimed for meeting the pollutant control obligations.

BMP and HMP location and dimensions

BMP and HMP specifications/cross section/model

Maintenance recommendations and frequency

LID features such as (permeable paver and LS location, dim, SF).

Attachment 4 Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.



Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
Details and specifications for construction of structural BMP(s)
Signage indicating the location and boundary of structural BMP(s) as required by the City Engineer
How to access the structural BMP(s) to inspect and perform maintenance
Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
Manufacturer and part number for proprietary parts of structural BMP(s) when
applicable
 Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP) Recommended equipment to perform maintenance
When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
Include landscaping plan sheets showing vegetation requirements for vegetated
structural BMP(s)
All BMPs must be fully dimensioned on the plans
When proprietary BMPs are used, site specific cross section with outflow, inflow
and model number shall be provided. Broucher photocopies are not allowed.



Attachment 5 Drainage Report

Attach project's drainage report. Refer to Drainage Design Manual to determine the reporting requirements.





Attachment 6 Geotechnical and Groundwater Investigation Report

Attach project's geotechnical and groundwater investigation report. Refer to Appendix C.4 to determine the reporting requirements.



SD

Attachment 6 Geotechnical and Groundwater Investigation Report

Attach project's geotechnical and groundwater investigation report. Refer to Appendix C.4 to determine the reporting requirements.



