



# Stormwater Quality Worksheet

This worksheet is to be used in conjunction with the Connecticut Stormwater Quality Manual for any new land development. It is designed to help the regulated community and regulatory agencies work through the recommendations provided in the 2004 Connecticut Stormwater Quality Manual. It is not currently required to be submitted with any permit applications submitted to the Connecticut Department of Environmental Protection (DEP).

## Part I: General Information

1. List applicant information.

Name: **Ryan Cuevas**

Address: **2591 Dallas Parkway #405**

City/Town: **Dallas**

State: **TX**

Zip Code: **75034**

Phone: **817-291-4393**

ext.

Fax:

E-mail: **Ryan.Cuevas@Haskell.com**

Contact Person:

Title:

2. List site information.

Site Name: **Yellin Lot Trailer Parking**

Address: **1886 Upper Maple St.**

City/Town: **Dayville**

State: **CT**

Zip Code: **06241**

3. Proposed Stormwater Management Practices (STP) (check all that apply):

Site Planning and Design

Stormwater Treatment Practices

4. Critical Resources (check all that apply):

### On-site

Wells, aquifers

Wetlands, streams, ponds

Public drinking water supplies

Other: (please describe)

### Off-site

Neighboring land uses

Wells, aquifers

Wetlands, streams, ponds

Public drinking water supplies

Other: (please describe)

## Part I: General Information (continued)

5. List any plans and/or reports that may be referenced in this worksheet. In addition to the name of each plan or report, label each consecutively starting with the number 1 (e.g., Report 1: *name of report*, etc.) Use the plan or report identifier number where necessary in this worksheet.

**Plan #1; Civil Engineering Plans**

**Report #1; Stormwater Hydrology and Hydraulic Calculations**

**Report #2; Stormwater Pollution Prevention Plan**

**Report #3; Geotechnical Investigation**

6a. Provide the location of the following information. Use the identifier numbers provided in Part I: item 5 of this worksheet for consistency.	Plan #	Plan sheet #	Report #	Report page #
<b>Site Description</b>				
i. Natural and manmade features at the site	1	1C-100		
ii. Site topography, drainage patterns, flow paths, and ground cover	1	1C-100		
iii. Impervious area and runoff coefficient			1	24
iv. Site soils as defined by USDA			1	17
v. Stormwater discharge from site and known sources of pollutants and sediment loading	1	1C-140	2	4
vi. Critical areas, buffers, and setbacks established by authorities	1	1C-120		
vii. Water quality classification of on-site and adjacent water bodies			1	1C-170
viii. Identity of any on-site or adjacent waterbodies included on CT 303(d) list of impaired waters	1	1C-100		
<b>6b. Potential Stormwater Impacts</b>				
i. Potential pollutant sources	1	1C-160		
ii. Type of anticipated stormwater pollutants and relative/calculated load of each pollutant			N/A	
iii. Summary of calculated pre- and post-development peak flows			1	6
iv. Summary of calculated pre- and post-development groundwater recharge			N/A	

## Part II: Site Planning and Design

See Chapter 4 of the Stormwater Quality Manual for complete descriptions of concepts listed in this Part.

<b>A. Site Planning and Design Concepts</b>	
<i>Indicate Yes or No for each item listed below and provide a brief explanation in the space provided.</i>	
1. Has the development been designed to fit the terrain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Existing topographic information obtained for purposes of site grading.</b>	
2. Has the development been designed to limit land disturbance?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Areas outside of construction limits shall remain undisturbed.</b>	

**Part II: Site Planning and Design (continued)**

<p>3. Have impervious areas been reduced or disconnected where possible?     <input checked="" type="checkbox"/> Yes     <input type="checkbox"/> No  <i>(Where Alternative Site Design techniques have been utilized, describe in Part II. B of this worksheet)</i>  <b>Vehicle drive aisles and parking spaces limited to only what is needed.</b></p>										
<p>4. Has the development been designed to preserve and utilize natural drainage system?     <input checked="" type="checkbox"/> Yes     <input type="checkbox"/> No  <b>Existing overland flow patterns have been utilized in final site grading.</b></p>										
<p>5. Have setbacks and vegetated buffers been provided?     <input checked="" type="checkbox"/> Yes     <input type="checkbox"/> No  <b>100' riparian rights setback from Five Mile River provided.</b></p>										
<p>6. Has the creation of steep slopes been minimized?     <input checked="" type="checkbox"/> Yes     <input type="checkbox"/> No  <b>Pond slopes have been designed to 3H:1V maximum.</b></p>										
<p>7. Has pre-development vegetation been maintained?     <input checked="" type="checkbox"/> Yes     <input type="checkbox"/> No  <b>Areas outside of construction limits will remain in their natural condition.</b></p>										
<p>8. Briefly describe post-construction landscaping practices used including attention to native/non-invasive planting.  <b>Native evergreen trees to be planted on the west side of project development for screening and buffering.</b></p>										
<p><b>B. Alternative Site Design</b>  <i>Check all aspects included in the development design.</i></p>										
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input type="checkbox"/> Reduced street widths</td> <td style="width: 50%; border: none;"><input type="checkbox"/> Reduced street lengths</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Alternative cul-de-sac design</td> <td style="border: none;"><input checked="" type="checkbox"/> Reduced use of storm sewers</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Reduced parking lot size</td> <td style="border: none;"><input type="checkbox"/> Using permeable paving material</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Removal of curbing and addition of slotted curb stops</td> <td style="border: none;"><input type="checkbox"/> Incorporation of bioretention into parking lot islands</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Alternative lot development</td> <td style="border: none;"><input type="checkbox"/> Incorporation of rain gardens on house lots</td> </tr> </table>	<input type="checkbox"/> Reduced street widths	<input type="checkbox"/> Reduced street lengths	<input type="checkbox"/> Alternative cul-de-sac design	<input checked="" type="checkbox"/> Reduced use of storm sewers	<input type="checkbox"/> Reduced parking lot size	<input type="checkbox"/> Using permeable paving material	<input type="checkbox"/> Removal of curbing and addition of slotted curb stops	<input type="checkbox"/> Incorporation of bioretention into parking lot islands	<input type="checkbox"/> Alternative lot development	<input type="checkbox"/> Incorporation of rain gardens on house lots
<input type="checkbox"/> Reduced street widths	<input type="checkbox"/> Reduced street lengths									
<input type="checkbox"/> Alternative cul-de-sac design	<input checked="" type="checkbox"/> Reduced use of storm sewers									
<input type="checkbox"/> Reduced parking lot size	<input type="checkbox"/> Using permeable paving material									
<input type="checkbox"/> Removal of curbing and addition of slotted curb stops	<input type="checkbox"/> Incorporation of bioretention into parking lot islands									
<input type="checkbox"/> Alternative lot development	<input type="checkbox"/> Incorporation of rain gardens on house lots									
<p>For all aspects checked, provide a detailed explanation:  <b>Overland sheet flow paths have been maximized where possible to reduce the number of storm sewer inlets and pipes required.</b></p>										

### Part III: Stormwater Treatment Practices

Complete Sections A through E for all developments. Complete and include appropriate sheets from Part IV for each practice checked in this Part.

A. Practices Used	
<i>Check all practices used in development.</i>	
Primary Treatment Practices	Secondary Treatment Practices
<input checked="" type="checkbox"/> Stormwater Pond (P1)	<i>Conventional</i>
<input type="checkbox"/> micropool extended detention pond	<input checked="" type="checkbox"/> Dry detention pond (S1)
<input type="checkbox"/> wet pond	<input type="checkbox"/> Underground detention facilities (S2)
<input type="checkbox"/> wet extended detention pond	<input type="checkbox"/> Deep sump catch basins (S3)
<input checked="" type="checkbox"/> multiple pond system	<input type="checkbox"/> Oil/particle separators (S4)
<input type="checkbox"/> pocket pond	<input type="checkbox"/> Dry wells (S5)
<input type="checkbox"/> Stormwater Wetlands (P2)	<input type="checkbox"/> Permeable pavement (S6)
<input type="checkbox"/> shallow wetland	<input type="checkbox"/> Vegetated filter strips (S7)
<input type="checkbox"/> extended detention wetland	<input type="checkbox"/> Grass drainage channels (S8)
<input type="checkbox"/> pond/wetland system	<i>Innovative/ Emerging Technologies</i>
<input checked="" type="checkbox"/> Infiltration Practices (P3)	<input type="checkbox"/> Catch basin inserts (S9)
<input type="checkbox"/> infiltration Trench	<input checked="" type="checkbox"/> Hydrodynamic separators (S10)
<input checked="" type="checkbox"/> infiltration Basin	<input type="checkbox"/> Media filters (S11)
<input type="checkbox"/> Filtering Practices (P4)	<input type="checkbox"/> Underground infiltration systems (S12)
<input type="checkbox"/> surface sand filter	<input type="checkbox"/> Alum injections (S13)
<input type="checkbox"/> underground sand filter	
<input type="checkbox"/> perimeter sand filter	
<input type="checkbox"/> organic filter	
<input type="checkbox"/> bioretention	
<input type="checkbox"/> Water Quality Swales (P5)	
<input type="checkbox"/> dry swales	
<input type="checkbox"/> wet swales	
<p>1. If there is no primary treatment practice used, explain why.</p>	
<p>2. Are other innovative emerging technologies proposed that are not listed?    <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No            If yes, please describe technologies.</p>	
<p>3. Provide a diagram of the treatment train showing the practices used, their locations, and how they are connected. <b>Attach and label a separate sheet to this sheet. See page 76 of Report #1.</b></p>	

**Part III: Stormwater Treatment Practices (continued)**

<b>B. Stormwater Quality Management Objectives</b>	
<i>Check all that apply</i>	
<input type="checkbox"/> Groundwater Recharge	Pollutants expected from development
<input type="checkbox"/> Runoff Volume Reduction	<input checked="" type="checkbox"/> Sediment
<input checked="" type="checkbox"/> Stream Channel Protection	<input type="checkbox"/> Phosphorus
<input checked="" type="checkbox"/> Peak Flow Control	<input type="checkbox"/> Nitrogen
	<input type="checkbox"/> Metals
	<input type="checkbox"/> Hydro-Carbons
	<input type="checkbox"/> Bacteria

<b>C. Downstream Resources:</b> <i>List each stormwater treatment practice (STP) which may affect a downstream resource. Check each downstream resource affected for each STP listed. In the space below each listed practice describe how the STP is designed to reduce impacts to the affected downstream resources.</i>					
<i>See Section 8.4 of the Stormwater Quality Manual for additional guidance</i>					
<b>Stormwater Treatment Practice</b>	<b>Sensitive Watercourses</b>	<b>Water Supply Aquifers</b>	<b>Lakes and Ponds</b>	<b>Surface Water Drinking Supplies</b>	<b>Estuary/Coastal</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description:					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description:					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description:					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description:					

**Part III: Stormwater Treatment Practices (continued)**

D. Has the STP been designed to minimize the potential for nuisance insects and vectors?

*See Section 8.7 of the Stormwater Quality Manual for guidance*

Yes       No

Provide brief explanation: **The proposed dry detention pond is designed to recover stormwater within 5 days of the rainfall event. Also catch basins and inlets have been designed without sumps.**

E. Has the STP been designed to reduce the impact on natural wetlands and vernal pools?

*See Section 8.8 of the Stormwater Quality Manual for guidance*

Yes       No

Provide brief explanation: **No natural wetlands or vernal pools exist on the subject property.**



**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**B. Stormwater Wetlands (P2)** (See Chapter 11-P2 of the Stormwater Quality Manual for guidance)

1. Type: (check one) (Reproduce and complete this sheet for each type used.)		
<input type="checkbox"/> Shallow Wetland <input type="checkbox"/> Pond/Wetland System <input type="checkbox"/> Extended Detention Wetland		
2. Provide the location of the following information. Use the report and/or plan identifier numbers provided in Part I: item 5 of this worksheet for consistency.		
Parameter	Design Criteria	Provide report and/or plan page or sheet number showing aspect or calculation
<b>Setback</b>	50 feet from on-site sewage disposal systems	
	50 feet from private wells	
	10 feet from any property line	
	20 feet from any structure	
	50 feet from any steep slope	
	750 feet from any vernal pool	
<b>Preferred Shape</b>	Curvilinear	
<b>Side Slopes</b>	3:1 or maximum	
	Terminate at safety benches	
<b>Length to Width Ratio</b>	3:1 minimum along the flow path between the inlet and outlet at mid-depth	
<b>Pretreatment Volume</b>	10% of WQV	
	100% of WQV for higher pollutant loading (see Chapter 7)	
<b>Drainage Area</b>	Minimum contributing drainage area 25 acres	
	Surface area of wetland 1 to 1.5% of contributing drainage area	
<b>Underlying Soils</b>	Low permeability unless groundwater intercepted	
<b>Size</b>	Based on calculations on page 11-P2-7 and 8. Approximate guidelines: ratio of wetland to drainage area 0.2 for shallow marshes and 0.1 for extended detention shallow wetland systems	
<b>Depth</b>	Marsh/Wetland	0.5 to 1.5 feet
	Forebays/Micropools	4-6 feet
<b>Low Flow Orifice</b>	Protected from clogging	
<b>Wetland Drain</b>	Present	
<b>Principle Spillway</b>	Inaccessible to children	
<b>Warning Signs</b>	Posted against swimming/skating	
<b>Maintenance Access</b>	Extending to public road	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		



**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**C. Infiltration Practices (P3)** (See Chapter 11-P3 of the Stormwater Quality Manual for guidance)

<p>1. Type: (check one) (Reproduce and complete this sheet for each type used.)</p> <p><input type="checkbox"/> Trench <span style="margin-left: 200px;"><input checked="" type="checkbox"/> Basin</span></p>		
<p>2. Provide the location of the following information. Use the report and/or plan identifier numbers provided in Part I: item 5 of this worksheet for consistency.</p>		
Parameter	Design Criteria	Provide report and/or plan page or sheet number showing aspect or calculation
<b>Design Volume</b>	<i>Entire water quality volume (WQV)</i>	<b>Report #2; Page 78., Appendix 4</b>
<b>Pretreatment Volume</b>	<i>25% of WQV</i>	<b>Report #2; Page 78., Appendix 4</b>
<b>Maximum Draining Time</b>	<i>48 to 72 hours after storm event (entire WQV)</i>	<b>Report #2; Page 6</b>
<b>Minimum Draining Time</b>	<i>12 hours (for adequate pollutant removal)</i>	<b>Report #2; Page 6</b>
<b>Maximum Contributing Drainage</b>		
Trench	<i>5 acres</i>	<b>N/A</b>
Basin	<i>25 acres</i>	<b>Report #2; Page 32</b>
<b>Minimum Infiltration Rate</b>	<i>0.3 in/hr (as measured in field)</i>	<b>Report #2; Page 6</b>
<b>Maximum Infiltration Rate</b>	<i>5.0 in/hr (as measured in field)</i>	<b>N/A</b>
<b>Depth</b>		
Trench	<i>2 to 10 feet (trench depth)</i>	<b>N/A</b>
Basin	<i>3 feet (pondering depth) recommended</i>	<b>Report #2; Page 78., Appendix 4</b>
<b>Vegetated Buffers</b>	<i>Around Trench</i>	<b>N/A</b>
<b>Cross Sections</b>		<b>Report #2; Page 78., Appendix 4</b>
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**D. Filtering Practices (P4)** (See Chapter 11-P4 of the Stormwater Quality Manual for guidance)

<p>1. Type: (check one) (Reproduce and complete this sheet for each type used.)</p> <p style="text-align: center;"> <input type="checkbox"/> Surface Filters             <span style="margin-left: 200px;"><input type="checkbox"/> Underground Filters</span> </p>		
<p>2. Provide the location of the following information. Use the report and/or plan identifier numbers provided in Part I: item 5 of this worksheet for consistency.</p>		
Parameter	Design Criteria	Provide report and/or plan page or sheet number showing aspect or calculation
<b>Maximum Drainage Area</b>	<i>5 to 10 acres</i>	
Bio-retention	<i>Less than 5 acres</i>	
<b>Slope</b>	<i>6% or less</i>	
<b>Head Difference</b>	<i>5 to 7 feet</i>	
<b>Underlying Soils</b>	<i>Highly impervious</i>	
<b>Distance to Water Table</b>	<i>At least 3 feet separation</i>	
<b>Pretreatment Volume</b>	<i>at least 25% WQV</i>	
<b>Length to Width Ratio</b>	<i>1.5:1 to 3:1</i>	
<b>Design Volume</b>	<i>At least 75% WQV</i>	
<b>Draining Time</b>	<i>Designed to Drain within 24 hours</i>	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**E. Water Quality Swales (P5)** (See Chapter 11-P5 of the Stormwater Quality Manual for guidance)

<p>1. Type: (check one) (Reproduce and complete this sheet for each type used.)</p> <p><input type="checkbox"/> Dry Swale <span style="margin-left: 200px;"><input type="checkbox"/> Wet Swale</span></p>		
<p><b>2. Provide the location of the following information. Use the report and/or plan identifier numbers provided in Part I: item 5 of this worksheet for consistency.</b></p>		
Parameter	Design Criteria	Provide report and/or plan page or sheet number showing aspect or calculation
<b>Pretreatment Volume</b>	<i>25% of the water quality volume (WQV)</i>	
<b>Preferred Shape</b>	<i>Trapezoidal and parabolic</i>	
<b>Bottom Width</b>	<i>4 feet minimum recommended for maintenance, 8 feet maximum, widths up to 16 feet are allowable if a dividing berm or structure is used</i>	
<b>Side Slopes</b>	<i>3(h): 1(v) maximum, 4:1 or flatter recommended for maintenance (where space permits)</i>	
<b>Longitudinal Slope</b>	<i>1% to 2% without check dams, up to 5% with check dams</i>	
<b>Drainage Area</b>	<i>No more than 5 acres</i>	
<b>Sizing Criteria</b>	<i>Length, width, depth and slope needed to provide surface storage for the WQV.</i>	
Dry Swale	<i>Maximum ponding time of 24 hours</i>	
Wet Swale	<i>retains the WQV for 24 hours; ponding may continue longer (5 days recommended maximum duration to avoid potential for mosquito breeding)</i>	
<b>Underlying Soil Bed</b>	<i>Equal to Swale width</i>	
Dry Swale	<i>Moderately permeable soils ( USCS ML, SM, or SC), 30 inches deep with gravel/pipe underdrain system</i>	
Wet Swale	<i>Undisturbed soils, no underdrain system</i>	
<b>Depth and Capacity</b>	<i>Surface storage of WQV with maximum ponding depth of 18 inches for water quality treatment</i>	
	<i>Safely convey 2-year storm with non-erosive velocity</i>	
	<i>Adequate capacity for 10-year storm with 6 inches of freeboard</i>	
<b>Cross Sections</b>		
<b>Describe Cold Climate Design Features:</b>		
<b>Other Design Features:</b>		

**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**F. Secondary Treatment Practices (S1-S13)**

Provide location of explanatory narrative, computations and plan/detail for each numbered item consistent with "Design Consideration" for each measure. Use the report and/or plan identifier numbers provided in Part I: item 5 of this worksheet for consistency.	
<b>S1: Dry Detention Ponds</b>	
Explain why this practice is suitable for this site (see pp 11-S1-1 to 2): <b>Dry detention is a suitable design due to the presence of granular, non-plastic, non-expansive soils as well as the groundwater not being encountered during onsite geotechnical investigation. See Report #3, Geotechnical Investigation</b>	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Sediment Forebay with Deep Permanent Pool	Plan #1; Page 1C-140
2. Extended Detention Storage Design (no longer than 5 days)	Report #1; Page 6
3. Outlet Wet Pool	Report #1; Page 75.
4. Pond Configuration	Plan #1; Page 1C-140
5. Low Flow Channels	N/A
6. Dam Safety Section of CTDEP IWRD consulted regarding State jurisdiction?	
<b>S2: Underground Detention Facilities</b>	
Explain why this practice is suitable for this site (see pp 11-S2-1 to 3):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Siting	
2. Pretreatment	
3. Inlets, Outlets, and Overflows	
<b>S3: Deep Sump Catch Basins</b>	
Explain why this practice is suitable for this site (see pp 11-S3-1 to 3):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Drainage Area	
2. Design	
3. Maintenance	
4. Sediment Disposal	
<b>S4: Oil/Particle Separators</b>	
Explain why this practice is suitable for this site (see pp 11-S4-1 to 6):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Drainage Area	
2. Sizing/Design	
3. Maintenance	

**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**F. Secondary Treatment Practices (S1-S13)**

<b>S5: Dry Wells</b>	
Explain why this practice is suitable for this site (see pp 11-S5-1 to 4):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Soils	
2. Land Use	
3. Drainage Area	
4. Water Table/ Bedrock	
5. Size/Depth	
6. Miscellaneous	
7. Construction	
8. Operation and Maintenance	
<b>S6: Permeable Pavement</b>	
Explain why this practice is suitable for this site (see pp 11-S6-1 to 4):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Soils	
2. Land Use	
3. Slope	
4. Water Table/ Bedrock	
5. Construction (Site Preparation and Planting)	
6. Operation and Maintenance	
<b>S7: Vegetated Filter Strips and Level Spreaders</b>	
Explain why this practice is suitable for this site (see pp 11-S7-1 to 6):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Slope	
2. Soils	
3. Drainage Area	
4. Water Table/ Bedrock	
5. Size	
6. Vegetation	
7. Level Spreader	
8. Construction	
9. Operation and Maintenance	

**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**F. Secondary Treatment Practices (S1-S13)**

<b>S8: Grass Drainage Channels</b>	
Explain why this practice is suitable for this site (see pp 11-S8-1 to 3):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Provides sufficient channel length	
2. Provides non-erosive velocities	
3. Sufficient capacity and conveyance for 10-year frequency storm event.	
<b>S9: Catch Basin Inserts</b>	
Explain why this practice is suitable for this site (see pp 11-S9-1 to 3):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. High Flow Bypass	
2. Maintenance	
<b>S10: Hydrodynamic Separators</b>	
Explain why this practice is suitable for this site (see pp 11-S10-1 to 3): <b>To provide pre-treatment of stormwater runoff prior to entering proposed forebay.</b>	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Drainage Area	<b>Report #1; Page 79.</b>
2. Sizing/Design	<b>Report #1; Page 79.</b>
3. Performance	<b>Report #1; Page 80-81.</b>
4. Maintenance	<b>Report #1; Page 80-81.</b>
5. Sediment Disposal	<b>Report #1; Page 80-81.</b>
<b>S11: Media Filter</b>	
Explain why this practice is suitable for this site (see pp 11-S11-1 to 3):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Sizing/ Design	
2. Maintenance	
3. Sediment Disposal	

**Part IV: Stormwater Treatment Practice (STP) Design Worksheets (continued)**

**F. Secondary Treatment Practices (S1-S13)**

<b>S12: Underground Infiltration Systems</b>	
Explain why this practice is suitable for this site (see pp 11-S12-1 to 3):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Siting	
2. Pretreatment	
3. Design Volume	
4. Draining Time	
5. Infiltration Rate	
<b>S13: Alum Injection</b>	
Explain why this practice is suitable for this site (see pp 11-S13-1 to 2):	
<b>Item:</b>	<b>Provide report and/or plan page or sheet #:</b>
1. Design	
2. Operation and Maintenance	

## Part V: Calculations Worksheet

For each STP used, provide calculations for each item listed. Use separate sheet for each STP.

Name of STP for which the following calculations are provided: <ul style="list-style-type: none"> <li>• <b>Multiple Pond System</b></li> <li>• <b>Hydro Dynamic Separators 1 &amp; 2</b></li> </ul>			
1. Compute Water Quality Volume (WQV): <b>Total WQV was determined using 2004 CT. Stormwater Quality Manual, Chapter 7. WQV storage provided at pond stage elevation 252.95.</b>			
<b>WQV = 1.72 (ac-ft)</b>			
2. Compute Water Quality Flow (WQF): <b>To determine WQF for the Hydro Dynamic separators 1 &amp; 2, a routing analysis was performed using Adlcprr for 1" or rainfall. Hydro Dynamic units were sized based upon manufacturers technical information for the calculated WQF. Downstream Defender 1; 2.56 cfs. Downstream Defender 2; 3.65 cfs.</b>			
<b>WQF = 6.21 Total (cfs)</b>			
3. Compute Groundwater Recharge Volume (GRV): <b>N/A</b>			
<b>GRV = (ac-ft)</b>			
4. Compute Runoff Capture Volume (RCV):			
<b>RCV = (ac-ft)</b>			
<b>5. Provide Peak Discharge Rates for the following storm events:</b>			
Storm Event	Pre-Development (cfs)	Post-Development (cfs)	Change (+/- cfs)
24 hr			
2-year	4.69	4.24	-0.45
10-year	14.41	13.94	-0.47
25-year	19.40	15.31	-4.09
100-year	30.18	17.51	-12.67
500-year	N/A	N/A	N/A