



**Stormwater and Septic Solutions**  
Since 1986

1-800-4-CULTEC

Manufactured at  
ISO 9001:2000  
certified facilities

## CULTEC Stormwater Design Calculator v. IMP 2009-1

Enter information in blue boxes

### PREPARED FOR:

(NAME)
(COMPANY NAME)
(ADDRESS)
(CITY, STATE ZIP)
(PHONE)
(FAX)

### PROJECT INFORMATION:

(NAME)
(ADDRESS)
(CITY, STATE ZIP)

### ENGINEER:

(NAME)
(COMPANY NAME)
(ADDRESS)
(CITY, STATE ZIP)
(PHONE)
(FAX)

### GIVEN:

Workable / Effective Depth  
Required Storage Volume  
Desired Bed Width  
Stone Porosity (Industry Standard = 40%)  
Stone Foundation Depth  
Type of System

10	feet
10000	cubic feet
40	feet
40%	
6	inches
Detention	

### DATE:

00/00/00
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### CALCULATED BY:

(NAME)
(COMPANY NAME)
(ADDRESS)
(CITY, STATE ZIP)
(PHONE)
(FAX)

### System Output

Click on the desired model name to go to model specific webpages for more information such as CAD details, spec information, brochures, installation instructions and other design tools.

Model Name	Approx. Unit Count	Number of Rows Wide	Number of Chambers Long	Number of Chambers Required	Storage Provided	Bed Area Required	Bed Width	Bed Length	Minimum Bed Depth	Stone Required	Storage Volume Provided per Installed Chamber
		pieces	pieces	pieces	cubic feet	square feet	feet	feet	feet	tons	cubic feet
<a href="#">Recharger® V8HD</a>	102	7	15	105	10083.41	3966.31	36.50	108.67	4.83	443	97.70
<a href="#">Recharger® 330XLHD</a>	126	7	18	126	10476.49	4575.67	35.33	129.50	4.38	495	79.26
<a href="#">Recharger® 280HD</a>	155	8	19	152	10236.85	4930.00	36.25	136.00	3.88	482	64.46
<a href="#">Recharger® 180HD</a>	282	11	25	275	10171.65	6046.88	37.50	161.25	3.38	536	35.37
<a href="#">Recharger® 150HD</a>	272	11	24	264	10096.29	6816.75	37.25	183.00	3.21	625	36.71
<a href="#">Contactor® 100HD</a>	347	11	31	341	10226.34	9008.33	38.33	235.00	2.71	706	28.81

Other models are available if products above do not meet your requirements. Contact CULTEC for further design assistance.

### Assumptions

Model Name	Chamber Height	Design Unit Height	Chamber Width	Chamber Spacing	Design Unit Width	Chamber Volume per Linear Foot	Design Unit Volume	Installed Chamber Length	Chamber Length Adjustment	Min. Cover Required for Paved Traffic Application	Additional Stone Border Beyond Design Unit
	inches	feet	inches	inches	feet	cu. ft/ft	cubic feet	feet	feet	feet	feet
<a href="#">Recharger® V8HD</a>	34	3.833333333	54	6	5	8.933	13.02646667	7.5	-5.834	1	1.5
<a href="#">Recharger® 330XLHD</a>	30.5	3.541666667	52	6	4.833333333	7.459	11.32262222	7	1.5	0.833333333	1.5
<a href="#">Recharger® 280HD</a>	26.5	3.208333333	47	5	4.333333333	6.079	9.208511111	7	1	0.666666667	1.583333333
<a href="#">Recharger® 180HD</a>	20.5	2.708333333	36	3	3.25	3.445	5.587833333	6.33	1	0.666666667	1.75
<a href="#">Recharger® 150HD</a>	18.5	2.541666667	33	6	3.25	2.6502	4.894286667	7.5	1	0.666666667	1.5
<a href="#">Contactor® 100HD</a>	12.5	2.041666667	36	4	3.333333333	1.866	3.841822222	7.5	0.5	0.666666667	1.666666667

### Material List

For project: (NAME)

Click on the desired model name and other CULTEC accessory items to go to specific webpages for more information such as CAD details, spec information, brochures, installation instructions and other design tools.

Model Name	Number of Chambers Required	Starter Chambers	Intermediate Chambers	End Chambers	CULTEC No. 410™ Filter Fabric	1 1/2 - 2 Inch Dia. Broken Stone	HVLV Feed Connectors	CULTEC No. 20L Polyethylene Liner	Volume of Excavation
	pieces	pieces	pieces	pieces	sq. yards	tons	pieces	feet	CY
<a href="#">Recharger® V8HD</a>	105	7	91	7	1141	443	12	73	710
<a href="#">Recharger® 330XLHD</a>	126	7	112	7	1295	495	12	71	741
<a href="#">Recharger® 280HD</a>	152	8	136	8	1368	482	14	73	708
<a href="#">Recharger® 180HD</a>	275	11	253	11	1642	536	20	75	756
<a href="#">Recharger® 150HD</a>	264	11	242	11	1839	625	Must use Conventional Pipe Manifold	Must use Conventional Pipe Manifold	810
<a href="#">Contactor® 100HD</a>	341	11	0	330	2383	706	Must use Conventional Pipe Manifold	Must use Conventional Pipe Manifold	904

The Recharger V8 must use HVLV V8S Starters and HVLV V8E Ends (included in count above) to start and end the line of chambers.  
Model S Starter is available on Recharger® models only. Contactor® models use Model R Starters.  
The Recharger V8 must use the HVLV F110 Feed Connector. The Recharger 180, 280 and 330XL use the HVLV FC-24 Feed Connector.



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## Cost Estimate

For project: (NAME)

*Input estimated costs for each item into blue boxes:*

Recharger® V8HD Chamber	COST?	each	
Recharger® 330XLHD Chamber	COST?	each	
Recharger® 280HD Chamber	COST?	each	
Recharger® 180HD Chamber	COST?	each	
Recharger® 150HD Chamber	COST?	each	
Contacto® 100HD Chamber	COST?	each	
CULTEC HVLV V8HD Chamber	COST?	each	(for use with V8 systems only, must be used as starter & end units)
CULTEC HVLV F110 Feed Connector	COST?	each	(for use with V8 systems only)
CULTEC HVLV FC-24 Feed Connector	COST?	each	(for use with models 180, 280, 330XL only)
CULTEC No. 410 Filter Fabric	COST?	per sq. yd.	
CULTEC No. 20L Polyethylene Liner	COST?	per foot	
Stone	COST?	per ton	(A 1.4 multiplier has been used for conversion from CY to tons)
Excavation	COST?	per cu. yd.	

Model Name	Cost of Chambers	Cost of CULTEC No. 410™ Filter Fabric	Cost of 1 1/2 - 2 Inch Dia. Broken Stone	Cost of HVLV Feed Connectors	Cost of CULTEC No. 20L Polyethylene Liner	Cost of Excavation	TOTAL
Recharger® V8HD	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Recharger® 330XLHD	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Recharger® 280HD	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Recharger® 180HD	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Recharger® 150HD	#VALUE!	#VALUE!	#VALUE!	Must use Conventional Pipe Manifold	Must use Conventional Pipe Manifold	#VALUE!	#VALUE!
Contacto® 100HD	#VALUE!	#VALUE!	#VALUE!	Must use Conventional Pipe Manifold	Must use Conventional Pipe Manifold	#VALUE!	#VALUE!

This is not a quote. For budgetary purposes only. Please call CULTEC at 203-775-4416 for pricing information.

Based upon the above information, we propose the use of the following CULTEC model on this project:

**Recharger® V8HD**

Now that you have selected your proposed model, save this spreadsheet with a different filename. You may then go into AutoCAD and use the **CULTEC StormGenie Automated Drawing Program** to generate your project specific CAD drawing. If you do not have the CULTEC StormGenie program, contact us at 203-775-4416 or go to [www.cultec.com/stormgenie.html](http://www.cultec.com/stormgenie.html) to download.

[Click here to download CULTEC StormGenie Automated Drawing Program](#)

For design assistance, drawings and pricing send these calculations to:

Email to: [tech@cultec.com](mailto:tech@cultec.com)



[Click on graphic above or page headers to go to our website at www.cultec.com](http://www.cultec.com)



**CULTEC Recharger V8HD Stormwater System Designed for  
(NAME) (CITY, STATE ZIP)**

Required Storage Volume 10000 cubic feet

**Proposed Design**

Number of Rows Wide	7 pieces
Number of Chambers Long	15 pieces
Number of Chambers Required	105 pieces
Bed Width	36.5 feet
Bed Length	108,666 feet
Bed Area Required	3966.309 square feet
Volume of Excavation	710 cubic yards
Storage Volume Provided per Installed Chamber	97.70 cubic feet
Storage Provided	10083.41 cubic feet

**Assumptions**

Chamber Height	34 inches
Design Unit Height	3.833333333 feet
Chamber Width	54 inches
Chamber Spacing	6 inches
Design Unit Width	5 feet
Chamber Volume per Linear Foot	8.933 cubic feet / foot
Design Unit Volume	13.02646667 cubic feet / foot
Installed Chamber Length	7.5 feet
Chamber Length Adjustment	-5.834 feet

**Material List**

HVLV V8SHD Starter	7 pieces
Recharger V8IHD Intermediate	91 pieces
HVLV V8EHD End	7 pieces
HVLV F110x2 Feed Connectors	12 pieces
CULTEC No. 410 Filter Fabric	1141 square yards
CULTEC No. 20L Polyethylene Liner	73 lineal feet
1 1/2 - 2 inch Diameter Broken Stone	443 tons
Volume of Excavation	710 cubic yards
	Total

**Estimated Cost**

#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!
#VALUE!

*This is not a quote.*

**Input the system base elevation in the blue box to customize incremental storage output:**

Base Elevation (feet) =

Click on these links below to go to the product webpages:

- [CULTEC Recharger V8HD webpage.](#)
- [CULTEC HVLV V8HD webpage.](#)
- [CULTEC HVLV F110x4 Feed Connector webpage.](#)
- [CULTEC No. 410 Filter Fabric webpage.](#)
- [CULTEC No. 20L Polyethylene Liner webpage.](#)



The following information is based on a CULTEC Recharger V8 Stormwater System with these parameters:

- 40% stone void (%)
- 7 number of rows
- 3966.31 sq. ft. of area (including stone borders)
- 746.62 lineal feet of chambers

The system includes the following components:

- 7 pcs of HVLV V8SHD Starter Units
- 7 pcs of HVLV V8EHD End Units
- 91 pcs of Recharger V8IHD Intermediate Units

**INCREMENTAL STORAGE FOR SYSTEM WITH 6" STONE BASE**

	ELEVATION TOP OF SYSTEM			Chamber Volume per Inch	Stone Volume per Inch	Cummulative Storage per Inch	Total Cummulative Storage per Inch
	inches	inches	feet				
STONE ABOVE	46	6	3.833333	0.00	132.21	132.21	10083.41
	45	5	3.75	0.00	132.21	132.21	9951.20
	44	4	3.666667	0.00	132.21	132.21	9818.99
	43	3	3.583333	0.00	132.21	132.21	9686.78
	42	2	3.5	0.00	132.21	132.21	9554.57
	41	1	3.416667	0.00	132.21	132.21	9422.36
	40	0	3.333333	0.00	132.21	132.21	9290.15
CHAMBER HEIGHT	39	33	3.25	12.69	127.13	139.83	9153.90
	38	32	3.166667	45.54	113.99	159.54	9014.08
	37	31	3.083333	86.61	97.57	184.18	8854.54
	36	30	3	111.25	87.71	198.96	8670.37
	35	29	2.916667	129.17	80.54	209.71	8471.41
	34	28	2.833333	144.10	74.57	218.67	8261.70
	33	27	2.75	156.79	69.49	226.28	8043.03
	32	26	2.666667	167.99	65.01	233.00	7816.75
	31	25	2.583333	177.70	61.13	238.83	7583.74
	30	24	2.5	186.66	57.55	244.20	7344.91
	29	23	2.416667	194.12	54.56	248.68	7100.71
	28	22	2.333333	201.59	51.58	253.16	6852.03
	27	21	2.25	207.56	49.19	256.75	6598.86
	26	20	2.166667	212.79	47.10	259.88	6342.12
	25	19	2.083333	218.01	45.01	263.02	6082.24
	24	18	2	222.49	43.21	265.71	5819.22
	23	17	1.916667	226.23	41.72	267.95	5553.51
	22	16	1.833333	229.21	40.53	269.74	5285.57
	21	15	1.75	231.45	39.63	271.08	5015.83
	20	14	1.666667	233.69	38.73	272.43	4744.75
	19	13	1.583333	235.93	37.84	273.77	4472.32
	18	12	1.5	236.68	37.54	274.22	4198.55
	17	11	1.416667	238.17	36.94	275.11	3924.33
	16	10	1.333333	245.64	33.96	279.59	3649.22
	15	9	1.25	252.36	31.27	283.62	3369.63
	14	8	1.166667	253.10	30.97	284.07	3086.00
	13	7	1.083333	253.10	30.97	284.07	2801.93
	12	6	1	253.85	30.67	284.52	2517.86
	11	5	0.916667	254.60	30.37	284.97	2233.34
	10	4	0.833333	255.34	30.07	285.42	1948.37
	9	3	0.75	256.09	29.77	285.86	1662.95
	8	2	0.666667	259.82	28.28	288.10	1377.09
	7	1	0.583333	272.52	23.20	295.72	1088.98
STONE BASE	6	6	0.5	0.00	132.21	132.21	793.26
	5	5	0.416667	0.00	132.21	132.21	661.05
	4	4	0.333333	0.00	132.21	132.21	528.84
	3	3	0.25	0.00	132.21	132.21	396.63
	2	2	0.166667	0.00	132.21	132.21	264.42
	1	1	0.083333	0.00	132.21	132.21	132.21
	0	0	0	0.00	0.00	0.00	0.00
BOTTOM OF SYSTEM				<b>6669.56</b> cu. ft.	<b>3413.85</b> cu. ft.	<b>10083.41</b> cu. ft.	<b>10083.41</b> cu. ft.





## How to Use the Stormwater Design Calculator

Be sure to keep this initial version as a master copy without user input adjustments.  
Do a SAVE AS of this workbook with a filename which is a unique name to save the integrity of the master file copy e:  
For example: CULTEC Stormwater Design Calculator v. IMP 2009-1 for Legacy Place.xls  
Fill in the PREPARED FOR, PROJECT INFORMATION, ENGINEER, CALCULATED BY and DATE cells.  
If you choose not to enter all the cells, at least fill in the PROJECT INFORMATION NAME, this field is auto-filled in oth  
Fill in the GIVEN section of the worksheet. See "Software Disclaimer & Definitions" below for explanations of each field  
You may click VIEW, COMMENTS in order to see all the floating comments or to hide them.  
You may click on the page headers and stormwater graphic to go directly to our website at [www.cultec.com](http://www.cultec.com)  
You may click on the desired model name located in the light blue cells under the System Output, Assumptions, Mater  
The model specific webpages have more information such as CAD and PDF details, spec information, brochures, inst  
You may click on CULTEC No. 410 Filter Fabric and CULTEC no. 20L Polyethylene Liner to go to their product specifi  
Contact CULTEC, Inc. at 203-775-4416 or your local CULTEC chamber supplier to obtain unit costs to plug into the C  
Choose a proposed model from the pull down list. You may need to adjust your zoom setting to see the full list of prod  
Go to the workbook page for your desired model to obtain incremental storage volume calculations and product specif  
Make sure to do a final SAVE AS of the completed CULTEC Calculation Sheet if you haven't already done so with a uni  
When you have completed your workbook, you may email it to us by clicking: Email to: [tech@cultec.com](mailto:tech@cultec.com) on page 2 or  
Contact CULTEC, Inc. for design assistance and drawings.  
Call 203-775-4416 for questions regarding this Stormwater Design Calculator or email us at [custservice@cultec.com](mailto:custservice@cultec.com)

## Software Disclaimer & Definitions

Approx. Unit Count	This number does not include the storage provided with
Desired Bed Width	Input the desired or maximum bed width dimension of yo
Minimum Bed Depth	This is the minimum depth of the bed for a typical paved
Required Storage Volume	Input your required storage volume in cubic feet.
Workable / Effective Depth	Feet available in elevation to place system from final gre
Design Unit Width	ledge at 3 feet. This is calculated by: ((Chamber width + 1/2 the stone s width + Chamber spacing
Storage Provided Formula for Recharger 150, 180, 280, 330XL and Contactor 100	((Design Unit Width * Number of Rows Wide)+Addition: Wide * Design Unit Volume* Chamber Length Adjustme Height* Stone Porosity))+((Installed Chamber Length*(( Design Unit Height * Stone Porosity))*Number of Cham

Call CULTEC for cost estimates and system design.  
This calculator program is for estimation purposes only and should not take the place of a comprehensive engineering  
The output calculations only produce rectangular beds based on the stormwater chambers.  
System calculations do not include materials required by conventional pipe manifolds.  
Contact CULTEC for systems that are not rectangular.  
The successful application and use of this software product is dependent on the application of skilled engineering judg  
The user of this software must select input values suitable to describe their specific engineering situation.  
The information presented in the computer output is for review, interpretation, application, and approval by a qualified  
Any implied or expressed warranties covering this software program or user manual including warranties of merchanta  
CULTEC, Inc. and any of its affiliates shall not be held liable for any special, incidental, consequential, indirect or other  
Use of this program constitutes acceptance of this liability agreement by the user.  
Reconfiguring the bed layout may effect actual storage provided.  
Storage calculations include the storage provided by the 1' stone border surrounding the perimeter of the bed.  
Contact CULTEC Technical Assistance at 800-428-5832 or 203-775-4416 for further assistance.  
CULTEC Stormwater Design Calculator v. IMP 2009-1  
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## Some helpful lin

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