

SAND FILTERS AND ALTERNATE BMP'S

A CASE STUDY:

LAKE BREEZE
CONDOMINIUMS

5/16/2008

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Introduction



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LAKE BREEZE CONDOMINIUMS

- PROJECTS CONSISTS OF 26 SINGLE FAMILY HOMES.
- PROJECT TOPOGRAPHY CONSISTS OF TWO DRAINAGE AREAS.
- BMP'S HAD TO BE SELECTED FOR EACH DRAINAGE AREA.
- NORTH DRAINAGE AREA – 1.37 ACRES
- SOUTH DRAINAGE AREA – 2.11 ACRES

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AERIAL PHOTO



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NORTH DRAINAGE AREA

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PROJECT PLAN



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STANDARD BMP'S

- INFILTRATION
- VEGETATED SWALE AND FILTER STRIP
- EXTENDED DETENTION BASIN (DRY BASIN)
- RETENTION BASIN (WET BASIN)
- CONSTRUCTED WETLANDS
- MEDIA FILTRATION, BIORETENTION

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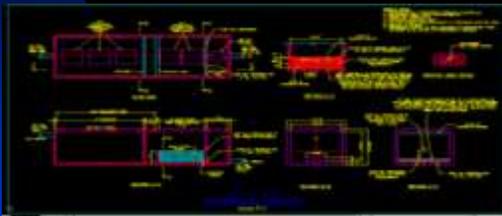
TYPES OF SAND FILTERS

- AUSTIN SAND FILTER
- DISTRICT OF COLUMBIA (DC) UNDERGROUND SAND FILTER
- DELAWARE SAND FILTER

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SAND FILTER



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SOURCES OF INFORMATION SAND FILTERS

- OHIO'S RAINWATER AND LAND DEVELOPMENT MANUAL
- GEORGIA STORMWATER DESIGN MANUAL
- MARYLAND STORMWATER MANAGEMENT MANUAL

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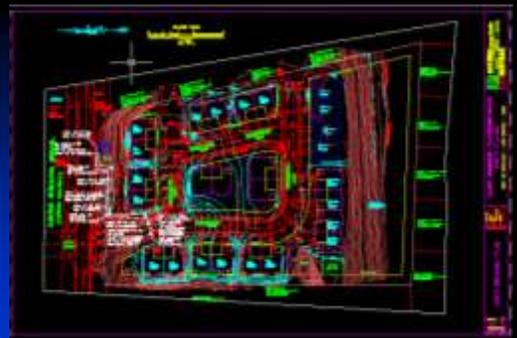
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SOUTH DRAINAGE AREA

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PROJECT PLAN



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ALTERNATE BMP PROCEDURE

- IN ORDER TO GET AN ALTERNATE BMP APPROVED, TWO QUESTIONS FROM THE OEPA QUESTION AND ANSWER SECTION ON THE THEIR WEBSITE MUST BE REVIEWED.
- QUESTIONS 11 AND 12.

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QUESTION 11

- THEY ARE PROPOSED FOR USE ON SMALL CONSTRUCTION SITES.
- THEY ARE PROPOSED FOR USE ON REDEVELOPED SITES WHERE JUSTIFICATION HAS BEEN PROVIDED THAT A BMP LISTED IN TABLE 2 IS INFEASIBLE DUE TO PHYSICAL RESTRAINTS; OR
- THEY ARE PROPOSED ON NEW CONSTRUCTION SITES WHERE HYDROLOGIC IMPACTS TO THE RECEIVING WATER ARE NRGLIGIBLE (SEE QUESTION 12).

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QUESTION 12

- THE ENTIRE WQV IS RECHARGED TO GROUNDWATER;
- SITES WHERE ONE ACRE OR LESS OF IMPERVIOUS AREA IS CREATED;
- SITE IS A REDEVELOPMENT PROJECT WITHIN AN ULTRA-URBAN SETTING (SUCH AS DOWNTOWN AREA AND STORM WATER DISCHARGES ARE DIRECTED INTO AN EXISTING STORM SEWER SYSTEM); OR

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QUESTION 12 (CONT.)

- SITES WHICH DISCHARGE DIRECTLY TO A LARGE RIVER (FOURTH ORDER OR GREATER) OR TO A LAKE AND WHERE THE THE DEVELOPMENT AREA IS LESS THAN 5 PERCENT OF THE WATERSHED AREA UPSTREAM OF THE DEVELOPMENT SITE, UNLESS KNOWN WATER QUALITY PROBLEMS EXIST IN THE RECEIVING WATERS.

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ALTERNATE BMP'S



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WE WERE APPROVED FOR AN ALTERNATE BMP

- SEVERAL TYPES OF ALTERNATE BMP DEVICES WERE REVIEWED AND A HYRDODYNAMIC SEPERATOR WAS CHOSEN AS THE BEST DEVICE FOR THIS PROJECT

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HYDRODYNAMIC DEVICES

STORMCEPTOR BY RINKER
www.rinkerstormceptor.com

AQUA SWIRL BY AQUA SHEILD
www.aquashieldinc.com

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