

COMMUNITY & ENVIRONMENTAL DEFENSE SERVICES

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September 26, 2008

Rick Bailey
Marrick Properties, Inc.
3150 West Ward Road
Suite 104
Dunkirk, Maryland 20754

Dear Mr. Bailey:

On behalf of the Apple Greene Civic Association I would like to thank Mr. Barrett and you for attending the September 15th community meeting to explain the changes to the Shoppes @ Apple Greene wastewater treatment system. In this letter I would also like to offer ideas for how the Shoppes @ Apple Greene could be further improved so that the project can proceed but in a way that enhances quality of life for the 161 Apple Greene families.

First, I would like to confirm that we correctly understand the changes you proposed at the September 15th meeting:

- The separation distance between the yards where Apple Greene children play and one drip-irrigation field (C) will go from 30-feet to 50-feet;
- The separation distance between Apple Greene yards and the sewage holding pond will be increased from 80 feet to 100 feet; and
- Earth berms will be constructed to direct the sewage surfacing from failing drip-irrigation fields away from our homes and the streams in which our children play.

Did I miss anything?

If not then these three steps are far short of what is needed to provide a reasonable degree of protection for the 161 families who reside in the Apple Greene community. In this letter I will explain why these steps are insufficient. But I offer this explanation in hopes of clarifying what an equitable solution may look like.

Enclosed with this letter is a document setting forth *Criteria To Protect Apple Greene Residents from the Marrick Properties Sewage Irrigation Fields, Treatment Plant & Sewage Holding Pond*. Based upon conversations with various scientific experts and a review of their studies, it appears that the proposed sewage fields, treatment facility, and the sewage pond must be at least 750 feet away to fully protect Apple Greene residents from disease causing organisms transmitted via aerosols and insect vectors (mosquitoes, etc.). This is why Apple Greene residents find it unacceptable to move the sewage facilities a mere 50- to 100-feet from areas where their children play. The earth berms could be part of a comprehensive equitable solution, but much more is needed. We also view the three changes you presented on September 15th as being inadequate to resolve other categories of potential impact: Stream Quality, Child Safety, Property Value, Visual Impact, and Odors. You will find a summary of these impacts in the enclosed document *Criteria To Protect Apple Greene Residents from the Marrick Properties Sewage Irrigation Fields, Treatment Plant & Sewage Holding Pond*.

We believe that a truly equitable solution would achieve the following objectives:

- A. Minimize the area of drip-irrigation fields needed by reducing the volume of wastewater that must be treated.
- B. Move the smaller drip-irrigation fields to areas where failure (surfacing sewage) would be quickly noticed leading to swift corrective action. An example of such an area would be to locate the fields in portions of the project with there will be lots of foot traffic (in front of stores), on building roof tops, etc.
- C. All other drip-irrigation fields should be a minimum of 750-feet from the nearest residential property line.
- D. Measures should be installed downslope of the drip-irrigation fields to prevent surfacing sewage from flowing into our streams. Earth berms are surely a part of these measures but something more is needed to contain the sewage so it can be collected before overflowing into the waters where our children play.
- E. Reduce the size of the sewage pond which should make it easier to locate it at least 750-feet from the nearest residential property line.
- F. The treatment plant, which has a very small footprint (1,063 square feet), should also be located away from our community, presumably near the sewage pond.
- G. Allow Marrick Properties to achieve their goals for the 44-acre Shoppes @ Apple Greene site.

Again, the preceding are objectives. Following are steps we've thought of for achieving these objectives. Some of these ideas may seem a bit far-fetched. Please take this as an indication of the amount of effort we've invested in finding a truly equitable solution. We hope

that Marrick Properties will join with us in being equally creative in the search for solutions which allow everyone to achieve their goals.

Reduce Holding Pond Storage Capacity

I understand that the sewage pond is presently planned to hold 60 days of wastewater flow. Of course this a requirement contained in the discharge permit issued by the Maryland Department of the Environment (MDE). I assume that anything which reduces the size of the pond will make it easier to move it away from Apple Greene.

During our August 4th meeting we requested that you consider asking if MDE would permit you to reduce the holding pond capacity from 60-days of wastewater flow to 30 days. In the letter attached to your September 1st response the Marrick Properties consultant said:

“I am waiting on information from our Hydrogeologist pertaining to the impact of the reduced storage on the nitrogen balance.”

“Capital Gateway has a 60 day holding capacity (per MDE).”

As you know Dr. Ching-Tzone Tien (410-537-3662) is in charge of the MDE Groundwater Discharge Permits Division. We asked Dr. Tien if the Department would consider allowing a reduction in the capacity of the Shoppes @ Apple Greene holding pond. In an e-mail dated September 9th Dr. Tien replied:

If the permittee requests the change and the Calvert County DPW has no objection to the change, MDE can modify the permit to allow 30 days storage.

From this message it appears that the possibility exists of cutting the sewage pond volume in half. In fact, in a letter dated January 11, 2005, MDE allowed a reduction in the Capital Gateway holding pond volume from 60 days to 30 days. Again, I assume that anything which reduces the size of the pond will make it easier to relocate it away from Apple Greene. Our preference would be to place the pond below ground well away from our community to reduce the health, safety and aesthetics impacts.

Reducing Wastewater Flow Volume Reduces Drip-Irrigation Field Area

The initial 3.55 acres of drip-irrigation fields are sized to handle a wastewater volume averaging 23,639 gallons per day from the Shoppes @ Apple Greene. Up to two-inches of wastewater can be applied to the drip-irrigation fields each week. From our communications with MDE it appears that Marrick Properties is not required to actually apply two-inches of wastewater to the entire 3.55 acres of fields each week. A smaller area could be installed provided that the smaller fields do not receive more than two-inches of wastewater per week.

Is this your understanding as well?

If yes, then obviously anything which reduces the volume of wastewater flow will allow a reduction in the area of drip-irrigation fields that must be put into use to serve the Shoppes @ Apple Greene. Of course we would prefer that the most distant areas be utilized first. Following are several ideas for reducing wastewater flow volume.

Water Conservation

Over the past couple of decades great advances have been made in water conservation technology, thanks in no small part to efforts such as Green Buildings, Leadership in Energy & Environmental Design (LEED), etc. I understand that a water use reduction of 20% to 30% can typically be achieved in commercial projects which adhere to LEED principles.

Earlier this month we asked Dr. Tien the following question:

If the applicant were to propose using effective, reliable water conservation methods that would reduce the flow to something less than 23,639 gpd then would the Department permit a reduction in the area of the drip-irrigation fields?

On September 8th Dr. Tien replied:

Yes. MDE can revise the permit to reflect a lower permitted flow upon a request from the applicant.

To us this says that the possibility certainly exists that aggressive water conservation could reduce permitted flows and thereby reduce the area of drip-irrigation fields and the holding pond volume. Both reductions should make it easier to locate the fields and the pond at a more reasonable (and responsible) distance from Apple Greene.

Return to Original Design

According to the *Soil-Hydrogeologic Evaluation* report prepared by the Marrick Properties consultants in 2001, the Shoppes @ Apple Greene was to have a floor area of 100,000 square foot. In the May, 2008, Marrick Properties report *Traffic Impact Analysis for Shoppes at Apple Greene* it is stated that the project will have a floor area of 130,000 square feet.

The Calvert County Health Department (CCHD) and MDE used a flow rate of 0.18 gallons per day (gpd) per square foot to yield a wastewater volume of 18,000 gpd for the 100,000 square foot Shoppes @ Apple Greene project. The wastewater volume for a 130,000 square foot project is 24,000 gpd.

We would like you to consider reducing the project area to something closer to 100,000 square feet which would reduce wastewater flow by up to 30%. This would also allow up to a 30% reduction in drip-irrigation field area and sewage pond volume.

Shift to Tenants with Lower Wastewater Flows

The CCHD and MDE rate of 0.18 gpd per square foot is the value used to estimate wastewater flow for shopping centers. Other uses have a much lower per square-foot flow rate:

Department store (w/o lunch counter)	0.04 gpd/sq ft
Drug store	0.13 gpd/sq ft
Bank	0.04 gpd/sq ft
Warehouse	0.03 gpd/sq ft
Office buildings	0.09 gpd/sq ft

We would like Marrick Properties to consider restricting tenants to those which generate lower wastewater volumes. Of course, the reduction in wastewater flow volume would allow a reduction in the size of drip-irrigation fields and the holding pond.

Locate Drip-Irrigation Fields in High Visibility Areas

According to the MDE inspector who investigated my complaint, the Marley Run drip-irrigation fields had been failing (releasing partially treated sewage to surface waters) for at least a year. I suspect that part of the reason why the failing fields at Marley Run and Gateway were not corrected sooner is that no one noticed the problem or felt compelled to act promptly. To prevent this from happening at the Shoppes we ask that you explore locating the drip-irrigation fields in areas where both tenants and their customers will quickly notice sewage surfacing from the fields. We assume that this will result in swift correction of the failure. Specifically, we ask that Marrick Properties explore the possibility of locating the drip-irrigation fields in high-visibility areas such as green spaces next to parking lots, next to sidewalks, and near building entrances.

On July 1st I wrote to Dr. Tien about a related matter. From Dr. Tien's response it appears that MDE may be open to allowing drip-irrigations fields in high-visibility green spaces. Following is my question followed by Dr. Tien's response.

My Question: *I assume that treated wastewater can only be applied to soil which has neither been filled or cut. Is this correct? If yes, then wouldn't the portion of Site D near the retaining wall become unavailable for future use as a drip-irrigation field since it would be a fill or a cut area? Also, I assume the retaining wall would be vertical. Would the 25-foot setback from steep slopes (>25%) apply to the retaining wall?*

Dr. Tien's Response: *In the cut and fill area, if the permeability (2"/wk) of the soil is not reduced and the vegetation can be established, it should be ok for drip irrigation. The permit does not prohibit cut and fill. There is no set back and slope requirements for the retaining wall.*

Green Roof & Wastewater Application

In response to the Stormwater Management Act of 2007, MDE included Green Roofs in their draft revisions to the *2000 Maryland Stormwater Design Manual*. The draft design calls for placing up to six inches of soil on specially engineered rooftops. The Green Roof must be designed to handle up to a two-year storm (3.4-inches of rain in 24-hr). From conversations with Green Roof consultants, I learned they are frequently designed with a pipe underdrain system which resembles the pipes used in a drip-irrigation system. I have also learned that it is possible to install a drip-irrigation system on the 100,000 to 130,000 square feet of roof area proposed for the Shoppes @ Apple Greene. While it would be great if all 2.3- to 3.0-acres of roof could handle two-inches of wastewater per week, applying even a fraction of the two-inch maximum would reduce the area of drip-irrigation fields needed elsewhere. We would deeply appreciate it if you could give serious consideration to this option.

Fail-Safe Measures Below Fields

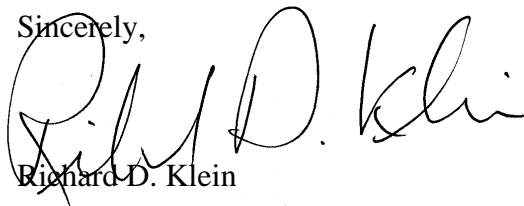
We are concerned that placing an earth berm below a drip-irrigation field will not prevent sewage from flowing onto Apple Greene properties or into the streams where Apple Greene children play. After all, the entire 44-acre site drains to the two streams flowing through the Apple Greene community. So there is no place the earth berms could end without discharging sewage into Apple Greene streams.

Instead, we ask for a more reliable preventive measure. For example, the earth berms could discharge into a holding tank or an infiltration pit. There would then need to be some mechanism for ensuring that lack of maintenance did not result in failure of these measures. We are anxious to hear your proposal on this.

Closing

I assume that some of the ideas proposed above will be practical and others will not, at least not completely. I also assume that Marrick Properties will come up with other ideas. It is the sincere hope of the 161 Apple Greene families that we find a combination of solutions which converts the Shoppes @ Apple Greene into a project which truly enhances their quality of life.

Sincerely,



Richard D. Klein

cc: Ms. Lisa Yankanich, President - Apple Greene Civic Association
 Honorable Wilson H. Parran, President - Board of Calvert County Commissioners
 Honorable Gerald W. Clark, Vice President - Board of Calvert County Commissioners
 Honorable Linda L. Kelley, Board of Calvert County Commissioners
 Honorable Susan Shaw, Board of Calvert County Commissioners
 Honorable Barbara A. Stinnett, Board of Calvert County Commissioners

Honorable Susan Kullen, Maryland House of Delegates
Honorable James Proctor, Maryland House of Delegates
Honorable Joseph Vallario, Maryland House of Delegates
Honorable Mike Miller, Maryland Senate
Mr. Gregory A. Bowen, Department of Planning & Zoning
Mr. David Humphreys, Calvert County Planning Commission Administrator
Mr. Maurice T. Lusby, Chair - Calvert County Planning Commission
Mr. Paul McFaden, Calvert County Office of Environmental Health
Ms. Sheri Wilson, Maryland Department of the Environment
Dr. Ching-Tzone Tien, Maryland Department of the Environment
Ms. Dru Schmidt-Perkins, 1000 Friends of Maryland
Mr. Fred Tutman, Patuxent RiverKeeper
Mr. J. Carroll Holzer, Holzer & Lee
Ms. Christy Goodman, Washington Post
Ms. Erica Mitrano, Calvert Recorder
Mr. Edward B. Howlin, Jr.

**CRITERIA TO PROTECT APPLE GREENE RESIDENTS FROM THE MARRICK PROPERTIES SEWAGE
IRRIGATION FIELDS, TREATMENT PLANT & SEWAGE HOLDING POND
September 24, 2008**

Risk of Disease

The sewage irrigation fields, the treatment plant, and the holding pond must be sufficiently far away so that there is little likelihood that wind-borne aerosols, mosquitos or other vectors could transmit disease to Apple Greene residents. The scientific studies and experts we've consulted indicate the minimum separation should be 750 feet.

Stream Quality

The irrigation fields must be designed so that partially-treated,, undisinfectd sewage will not flow down into the streams within and adjoining the Apple Greene community.

Child Safety

To protect the children of Apple Greene:

The sewage irrigation fields and the sewage pond must be located in areas where it is unlikely that our children will wander into them; and

Both the fields and the pond should be surrounded by a high fence or other barriers that prevent entry by children or pets.

Property Value

The sewage irrigation fields and the sewage pond must be located sufficiently far away that it is unlikely either will affect the value of Apple Greene homes.

Visual Impact

The sewage irrigation fields and the sewage pond must be not be visible from any Apple Greene home, Apple Way, or the proposed connector road.

Odors

The sewage irrigation fields and the sewage pond must be located sufficiently far away that it is unlikely odors emanating from either will be offensive to Apple Greene residents.

Compliance Status

The current Marrick Properties proposal and the most recent plans for the Shoppes @ Apple Greene fail to meet any of the criteria presented above.