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Environmental Impact Statement

Appendix 10A

Operational Phase Stormwater Quality Management Plan

WITH

Attachment 1 May 2003 Design Report

and

Attachment 2 April 2003 Stormwater Engineering Summary

The Belleayre Resort at Catskill Park

APPENDIX 10A

STORMWATER QUALITY MANAGEMENT

Summary

The Belleayre Resort at Catskill Park includes the Big Indian Plateau and Wildacres Resort on approximately 1,960± acres. The Big Indian Plateau is on a parcel of land including approximately 1,242± acres and the Wildacres Resort is on 718± acres. Big Indian Plateau is in the west Ashokan Reservoir Watershed and includes the proposed Belleayre Highlands and the Big Indian Resort and Spa and the Big Indian Country Club. Wildacres Resort, in the western portion of the project site, is in the Pepacton Reservoir Watershed and includes the Highmount Golf Club, Wilderness Activity Center and Highmount Estates.

The project will involve the limited conversion of wooded area to turfgrass, landscaping and small amounts of impervious surfaces. The total impervious surfaces (roofs, roads and parking) used for the stormwater quality analysis is 85± acres for the Belleayre Resort at Catskill Park or a total of 4.3% impervious.

The analysis includes use of both HydroCAD (see Appendix 9A) and WinSLAMM (Pitt and Vorhees 1998 with updates to 2002). The base year or predictive year was 1993, which was viewed as a typical season and was utilized in Phase I, Nutrient Loading Assessment.

The NYC DEP has established a phosphorus target concentration of 15 mg/l for the Pepacton and Ashokan Reservoirs. No adverse impacts to water quality will result if these target values are not exceeded. In order to preserve the water quality, the NYC DEP has established Total Maximum Daily Loads (TMDLs) for phosphorus. These management guidelines are intended to control phosphorus levels in the reservoirs below the target values. The TMDL, plus a 10% margin of safety, for the Ashokan and Pepacton reservoirs are 40,859 kg/yr and 53,437 kg/yr, respectively. The existing phosphorus loadings to the Ashokan and Pepacton reservoirs are 32,833 kg/yr and 37,327 kg/yr, respectively. Accordingly, 8,026 kg/yr and 16,110 kg/yr of phosphorus can be introduced to the Ashokan and Pepacton reservoirs, respectively, without adversely impacting water quality.

The Belleayre Resort at Catskill Park will not have a significant adverse impact on water quality. The stormwater quality analysis demonstrates that the Ashokan Reservoir phosphorus load will increase a maximum of 48 kg/yr for the test year of 1993. This represents only 0.6% of the phosphorus that can be introduced to the Ashokan Reservoir without adversely effecting water quality. The change in total phosphorus loading to the Pepacton Reservoir system is a 22 kg increase for the test year, 0.1% of the phosphorus that can be introduced to the Pepacton Reservoir without adversely effecting water quality.

Big Indian Plateau

Big Indian Plateau contains a 1,242±-acre parcel. The land to be developed is only 331 acres and 52.4 of those acres will be impervious surfaces. Fully 278.6 acres of the Big Indian Plateau will be revegetated with tree planting, turfgrass and landscaping. This leaves approximately 4.2%, i.e., 52.4 acres, of the site converted to impervious surfaces.

The pre-development runoff on an annual basis is 16,265 cu ft/ac/yr (1993) at the Big Indian Plateau site. Once the site is developed, the runoff volume is projected to increase by development to 17,187 cu ft/ac yr (1993) prior to control with the proposed stormwater management system. The post-development runoff volume following control will be 14,431 cu ft/ac/yr. (1993), a decrease of 11% after development.

Development of the Big Indian Plateau in the West Ashokan Reservoir watershed as proposed will result in a decrease in stormwater volume and a minimally increased total phosphorus loading. Under existing conditions, the total phosphorus load from the area to be developed is 149 kg/yr. Following development it will be 197kg/yr.

Wildacres

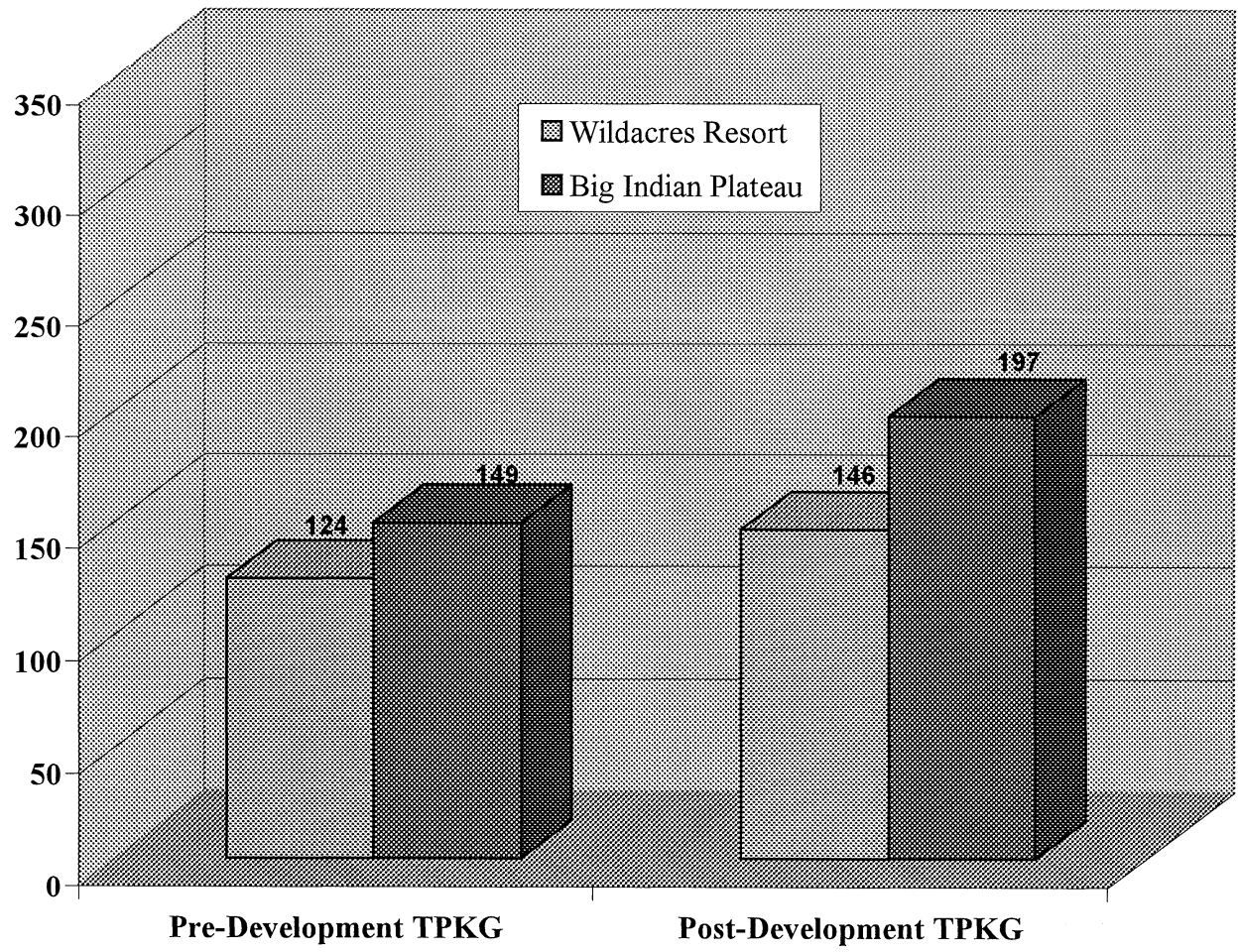
Wildacres Resort contains 718 acres. Only approximately 242 acres will be affected by development and of those acres, only 32.8 acres will be converted to impervious surfaces, i.e., 4.6% of the 718 acres. On the 718 acres that make up the entire Wildacres Resort, 23 stormwater detention areas are proposed to moderate stormwater flows. In the pre-development condition the average runoff is 23,211 cu ft/ac/yr. (1993). Runoff is projected to increase by development to 25,268 cu ft/ac/yr (1993) prior to stormwater controls. This small increase in stormwater flow reflects the overall small increase in impervious surfaces of the proposed project. Implementation of stormwater controls, using primarily detention basins, will reduce flows to 17,997 cu ft/ac/yr (1993). This represents a 29% reduction in stormwater flow.

Under existing conditions on the Wildacres Resort site, the estimated 1993 total phosphorus runoff from the undeveloped watershed is estimated as 124 kg/yr. The post-development condition for the base year of 1993 with the stormwater management systems in place will result in an annual phosphorus runoff load of 146 kg/yr. This represents a minimal increase in phosphorus loading to off-site receiving waters. Figure 1, "Annual Total Phosphorus Loading," illustrates the overall changes in total phosphorus loads at the Belleayre Resort Development.

Stormwater runoff can be managed at the Belleayre Resort at Catskill Park due to a number of factors that relate directly to the project site and to stormwater management in general:

- Low intensity of development, i.e., approximately 4.3% (85± acres) of the assemblage will be converted to impervious surfaces.
- Conversion of forest cover on a C Group hydrological soil to turf does not significantly increases runoff volume.

Figure 1
Annual Total Phosphorus Loading
kg/yr



- Comprehensive stormwater controls can moderate increases in runoff.
- Recharge of the stormwater into surface layers.

To increase nitrogen removal, longer detention and wetland-based treatment would be required. Wetland-based treatment would increase the potential for thermal loading and may reduce groundwater recharge. The proposed stormwater management system will consist of detention facilities to control velocity, volume, and quality of stormwater. The stormwater system is effective in controlling sediment load, total phosphorus, runoff volume and chemical oxygen demand. The levels of nitrogenous compounds as nitrate will not be significantly increased or decreased by the stormwater management system. A nominal reduction of total TKN is anticipated with the implementation of the stormwater management system.

Since the previous WinSLAMM analysis of the operational phase stormwater quality, a new version of WinSLAMM has been released and is used in this current analysis. The input parameter files, such as runoff coeff and pollutant probability distribution, have been further refined, calibrated, and verified. The vendor indicated that WinSLAMM Version 8.4 is expected to produce more accurate pollutant loading estimates.

The current WinSLAMM analysis of operational stormwater has yielded different results than previously anticipated. In most cases, as further discussed in subsequent chapters, initially estimated annual pollutant load reductions are now anticipated to minimally increase. Phosphorus export is anticipated to slightly increase between pre and post development. The overall loadings, as previously analyzed and currently assessed, do not differ in the anticipated net impacts to water quality in the Ashokan and Pepacton Reservoirs.

The current stormwater analysis has been further fitted to site-specific data by using "stormwater management basin-specific" infiltration rates, as discussed in Section 3 and Appendix 9A of this DEIS. The variable infiltration rates were utilized to assess the effects of the existing hard pan upon stormwater quality. Infiltration rates ranged from zero to the previously estimated 7.0 in/hr within this simulation and were specific to each basin location as determined by deep perc tests in September 2002. Such refinements of the stormwater analysis resulted in variations to the previous stormwater analysis. Slight increases in phosphorus load are anticipated between pre- and post-development. However, the reduced infiltration rate has not only decreased the removal of filterable phosphorus, but also reduced stormwater capture to minimize the volume-retained onsite and to more closely match pre-development flows leaving the property. This resulted in a smaller TKN removal than previously anticipated.

It is important to note that in some cases, the "developed areas" put forth in this analysis are larger than the proposed development. This approach lends to the conservative nature of the stormwater modeling estimates. Within the context of this discussion, some of the "undeveloped areas" are a combination of forest and developed areas. The undisturbed forests are included in this assessment since the subcatchments were delineated based upon topography and natural drainage boundaries rather than the boundaries of "developed" areas.

1. Introduction

This Appendix of the DEIS provides an assessment of the expected water quality impacts of the Belleayre Resort at Catskill Park in the Towns of Shandanken and Middletown. This Appendix focuses on water quality of the stormwater runoff while Appendix 9A, "Operational Phase Stormwater Management Quantity Plan," examines the volumes and means to control velocity and release rates of the stormwater runoff.

In order to develop this report, a computer model simulation of runoff water quality was completed using WinSLAMM (Windows Source Loading and Management Model, Pitt and Voorhees 2000 Version 8.4). Section 2 of this Appendix describes the model, including the conceptual framework of WinSLAMM's method of stormwater runoff water quality estimation, background data, and assumptions utilized for this report.

The potential water quality impacts have been assessed for both the site in the pre-development condition and for the property at full buildout, which provides the data to assess potential changes in water quality associated with development of the Resort. The Belleayre Resort assemblage is in both the Pepacton and Ashokan Reservoir system Watersheds.

The goal of the project's stormwater management program is to manage runoff water quality to minimize nutrient or contaminant export or closely match pre-development stormwater quality. This has been accomplished by locating stormwater management facilities throughout the project site and by maintaining a low density of development that converts only 8.4% of the site to impervious surfaces.

1.1 Selection of Stormwater Model

There are a limited number of methods to assess stormwater quality on a site-specific basis. Two methods were available and discussed as part of the scoping process for preparation of this DEIS. Currently, the NYSDEC has included the Simplified Method (Schuler 1987) with improved instructions in the various drafts of the NYSDEC guidance document (NYSDEC 2001). This model can be completed with a calculator or adapted to a spreadsheet. This method focuses on the area of impervious surfaces as a predictor of stormwater quality. Contaminate estimates are determined based on loading values measured primarily on the Chesapeake Bay watershed and a few select National Urban Runoff Program (NURP) studies. The Simplified Method has a watershed limit of 500 acres. To estimate stormwater management system effectiveness the Simplified Method includes rating of stormwater management systems (detention, long-term detention, wetlands, etc.) and gives estimates of pollutant removal for each system.

Halstead Method produces a separate subroutine to its stormwater flow model that predicts sediment load only, therefore, it would not provide adequate data for assessment of nutrient contamination.

Two other off the shelf regional water quality models, Eutromod (Reckhow 1990 and updates) and Bathtub (Walker 1987), are available to assess changes in land use and

evaluate potential impacts on lake or reservoirs water quality. These models provide a user with the ability to select from a menu of land uses (forest, agriculture, suburban, urban) and a range of loading values for each land use. These models predict land use nutrient loadings and do not predict stormwater specific loadings. These models are more generalized and would not adequately account for the small land use changes associated with this project.

The WinSLAMM Model used in this report is described below and is a fully computerized method that does not have a watershed size limit. WinSLAMM was developed to evaluate non-point source pollutant loadings using small storm hydrology. The model determines the runoff from a series of normal rainfall events and calculates the pollutant loadings. WinSLAMM also examines the site on a subcatchment-by-subcatchment basis, which provides opportunity during the design to fine tune the removal of stormwater pollutants by charging the sizes of the stormwater devices in each subcatchment. These attributes provide a more complete evaluation than can be achieved by use of the other models.

2. Background Assumptions and Analysis Methodologies

2.1. Land Use

The Belleayre Resort assemblage for the Big Indian Plateau and Wildacres Resort totals approximately 1,960± acres. The Big Indian Plateau is on a parcel of 1,242± acres in the West Ashokan Watershed while the Wildacres Resort area is on 718± acres in the Pepacton Watershed.

This report examines both the site-specific impacts on stormwater quality for the individual components and the consequences, if any, to the reservoirs downstream of the components. Overall the intensity or conversion of land resources associated with this project is very small. This low intensity of development is critical to the management of stormwater quantity and quality. A summary table has been developed to show the amount of changes in land use or land cover occurring at the various Resort sites and resulting changes in the watersheds.

Table 1, "Summary of Land Use," identifies both the existing conditions and proposed conditions at the Belleayre Resort sites under development and any corresponding changes in the watershed.

At Big Indian Plateau on a 1,242±-acre property, the proposed project is converting approximately 331± acres of forest to landscaping, turf, or other pervious cover and will add 52± acres of impervious surfaces.

Within the Ashokan Reservoir Watershed under existing conditions there is a total of 180 acres of urban land development. Development of Big Indian Plateau will increase urban land use (impervious surfaces) by roughly 52.4± acres for a total of 232± acres, or a change in land use allocation from 0.11% urban to 0.14% urban.

Table 1
Summary of Land Use

	Predevelopment		Post Development	
Land Use Acres	**Ashokan**	**Pepacton**	**Ashokan**	**Pepacton**
Urban Land	180	163	232	196
Grass Shrub	0	16,327	450	16,503
Agriculture*	5,980	32,525	5,980	32,525
Deciduous Forest	129,378	146,817	128,976	146,657
Coniferous Forest and Mix Forest	19,568	35,172	19,506	35,122
Water	8,759	6,173	8,759	6,173
Total	163,865	237,177	163,865	237,177

*Note: Agriculture = grassland and bare soil, + corn + alfalfa + barnyard.
March 1999 NYCDEP. Hectare x 2.47 = acres.

The development will also results in the conversion of forestland into a mixture of grassland and shrubs. This results in a decrease of deciduous cover in the Ashokan Reservoir Watershed from 129,378 to 128,979 acres, or a 0.3% change.

At the Wildacres Resort, comprising ±718 acres, approximately 242± acres will be developed or re-landscaped with only 32.8± acres being converted to impervious surfaces. Wildacres Resort is in the Pepacton Reservoir Watershed system that has a watershed of 237,177 acres. Currently urban land uses occupy 163 acres. The proposed development will increase the impervious surfaces to 195.8±, which is a percentage change from 0.069% to 0.080%.

At Wildacres Resort in the Pepacton Reservoir, the development will convert ±210 acres of woodlands into a mixture of grasslands and landscaped property of deciduous woodland and 50 acres of mixed forest. This results in a decrease of deciduous cover in the Pepacton Reservoir Watershed from 146,817 acres to 146,657 acres or a 0.11% change.

2.2. Total Maximum Daily Load (TMDL)

The potential impact of the Belleayre Resort on stormwater quality is analyzed in terms of the stormwater quality alteration as a result of project development. This evaluation includes both the site-specific changes and changes if any, in the overall phosphorus loading at the reservoirs. The establishment of permissible loading values based on Total Maximum Daily Loads (TMDL) has regulated phosphorus loading at the reservoirs. The TMDL was established by the New York City Department of Environmental Protection (NYCDEP) in consultation with the New York State Department of Environmental Conservation (NYSDEC), United States Environmental Protection Agency (USEPA) and other groups.

The TMDL, after extensive negotiations between the NYSDEC, USEPA, and NYCDEP has been set based on the city's desire to operate the reservoir system without filtration.

The TMDL goal is to limit the total phosphorus (TP) level in any particular reservoir to stay at or below 20 ug/l or ppb (parts per billion). The 20 ug/l is the guidance value for the TMDL. The NYCDEP also presents a TMDL based on a 15 ug/l guidance value in various reports. If the total phosphorus levels in a reservoir is at 20 ug/l or greater the likelihood of use impairment increases. Use impairments include nuisance algae blooms, odor, and/or discoloration of the water (NYCDEP March 1999). The Phase II TMDLs are based on a reservoir target value of 15 ug/l.

Total Maximum Daily Load is a management guideline that examines all inputs including both point and non-point sources of contaminants or nutrients. The Total Maximum Daily Load/Margin of Safety (TMDL/MOS) was determined for each reservoir based on work completed by NYCDEP (March 99, November 99). The TMDL is expressed as an annual loading. The MOS is the calculated TMDL minus a 10% safety factor so that the TMDL/MOS is 10% lower than the calculated permissible loading (NYCDEP, March and November 1999).

Annual loads were selected since water quality models examine an entire year. The term TMDL is applicable to the annual loading estimate since it is still the management guideline that will avoid water quality degradation (NYCDEP, March 1999).

Two sets of analysis have been prepared to evaluate the potential impacts of the proposed development. These include:

1. A large-scale precipitation event that would result in 6.5 inches of rainfall during a 12-hour period.
   (Double the rate of rainfall for the 25-year storm.)

2. The total annual rainfall from 1993. The year of 1993 was selected by NYCDEP as a year with typical amounts of rainfall and was utilized for the Phase I, TMDL estimation (NYCDEP March 1999). It is necessary to use a single season of rainfall data since WinSLAMM is a non-frozen precipitation model.

The Phase I TMDL have been replaced by Phase II TMDL for each reservoir system. The Phase II TMDL are utilized in this report. The Phase II TMDL was developed by use of General Watershed Loading Function (GWLF) and multiple years of data. The WinSLAMM Model cannot use multiple years of data, therefore, the model year used in Phase I TMDL was selected (March 1999 NYCDEP Kane). This DEIS uses the TMDL based on the 15 ug/l guidance value unless otherwise specified.

2.3. WinSLAMM Model and Model Inputs

In order to predict the amounts of nutrients that will be released in stormwater runoff from the Belleayre Resort site, a computer program that models loading of pollutants in urban runoff was used. This program, WinSLAMM (Windows-based Source Loading and Management Model, Version 8.4, Pitt and Voorhees 2000), was developed over the past 20 years as a means of understanding the relationships between sources of urban runoff pollutants and runoff quality.

WinSLAMM is a windows based model developed from SLAMM (Pitt and Voorhees 2000). The original model was developed starting in the mid-1970s and utilized stormwater data collected in the United States and Canada. The model is empirically based on the actual results of stormwater studies including those assessments under the USEPA National Urban Runoff Program (NURP). The simulation incorporates a number of predefined input files to complete the appropriate algorithms and yield numerical results. These files include pollutant probability distribution, Particulate Solids Concentration and Particulate Residue Delivery files. Each of these files have been verified and calibrated to runoff occurrences in other areas in the Northern Temperate Climate. WinSLAMM is a predictive model for source loading and provides for the simulation of pollution abatement by changing stormwater management techniques including detention basins, wetland-based treatment, and use of grass swales, to name a few possible methods that can be evaluated by the model. This document utilizes WinSLAMM for examination of pre-development condition and post-development stormwater loading for the subcatchments on the project sites. Stormwater management devices were determined by the use of HydroCADD as a separate operation (see Appendix 9A, "Operational Phase Stormwater Quantity management Plan"). Based on the HydroCADD analysis, the detention basins were sized to adequately abated stormwater peaks were designed. Once stormwater volume control was obtained, then additional detention was added to improve stormwater quality, if required. In order to obtain the final size of stormwater facility it was necessary to size basins that would adequately reduce stormwater runoff volumes and improve quality to levels that closely match undeveloped conditions.

To predict runoff volume, the model utilizes the rainfall depth that has occurred during a rain event. The model operates with the actual hourly rainfall data collected at Tannersville in 1993. As indicated by the NYCDEP, 1993 is considered an "average" precipitation year.

The WinSLAMM model uses the ratio of runoff volume to rain depth to establish the volumetric runoff coefficients (Rv). Small rain depth results in runoff that has small Rv values. The Rv value is a more reliable relationship as a predictor for water quality (Pitt and Voorhees 2000). The Rv value can accurately assess low volume runoff that is not accurately predicted by the Natural Resource Conservation Service (NRCS) curve number (CN) method (Pitt and Voorhees 2000 Chapters 1&2).

The model requires a description of the watershed under consideration, including the acreage of various surfaces such as streets, driveways, roofs, landscaped areas, and undeveloped areas. The stormwater quality analysis was completed by either analyzing the entire site as in the case of Wildacres Resort or by evaluating the development area alone as in the case of the Big Indian Plateau.

At Wildacres Resort, the entire site from the highest evaluation to the lowest elevation is involved in the stormwater quality modeling. Stormwater management occurs throughout the whole parcel. At Wildacres Resort, the site is ±718 acres. 34% of the site is being developed by converting forest to limited amounts of impervious surfaces and landscaping.

At Big Indian Plateau, development occurs on the top of the plateau and within a confined area. The remaining portion of the site is forested and will not be disturbed as a result of development. The Big Indian Plateau parcel includes 1,242± acres of land with development occurring on ±331 acres. The forested area of 91± acres is undisturbed. Much of the undisturbed forest is on steep slopes of 20% or greater making it impractical to locate long-term detention basins without disturbing significant amounts of forest lands. Also, only a limited number of surface drainages are found within the wooded acres reducing the potential sites for stormwater detention basins.

In addition, WinSLAMM makes use of data files that describe parameters such as rainfall amounts and timing runoff coefficients for each surface type, relative concentrations of pollutants, and distribution of particle sizes in runoff. Since data on these parameters are not available for the Belleayre Resort site, it was necessary to use data obtained in other locations, which were judged to be reasonably similar. Runoff volume in WinSLAMM is calculated by determining the depth of runoff versus the amount of rainfall. The runoff estimate is calibrated to a large number of studies conducted during the National Urban Runoff Program (NURP) of the early 1980's. In general, both the WinSLAMM and HydroCAD estimates are similar even though calculation methods are different. Detailed descriptions of pollution control devices, such as detention basins, are also included in the data file. For the Belleayre Resort modeling, the watershed data came from the subcatchment descriptions that were used in the HydroCAD modeling for planning of the stormwater management systems that were utilized for the WinSLAMM model. Following are descriptions of the parameter files used in this modeling:

1. Rain data files list rainfall depths, durations, and interval time periods from actual or stochastically generated rainfall data. The files used were based on hourly rainfall data from Tannersville, in Greene County since it is the closest monitoring location available. To model pollutant loading over the course of a year with normal precipitation, during the frost-free seasons, Tannersville data was used from March 15, 1993 through November 30, 1993.

2. Runoff Coefficient Data files contain the data needed to calculate runoff from specific developed source areas. The file used, RUNOFF.RSV, is the general runoff coefficient description file provided with WinSLAMM, which is set up as a table of varying volumetric runoff coefficients for different rainfall events and source areas. The runoff coefficients were calculated using general impervious and pervious area models. These models were then calibrated based on extensive data from Toronto, Ontario, and were then verified using additional independent Toronto data, along with numerous data from Milwaukee and Madison, Wisconsin, for a wide variety of land development and rain conditions in temperate zones with similar landscape materials, i.e., mixed deciduous containing oaks and maples.

3. Street Delivery files, as defined by WINSLAMM V8.4, describe the particle size distribution of sediment in urban runoff entering detention basins. The file used is WISCONSIN.STD, which summarizes the upper Midwest outfall particle size data.

4. Particulate Solids Concentration Data files contain the particulate solids concentration data needed by WinSLAMM to predict particulate solids loadings in developed source areas and land uses. The file used is MADISON.PSC, which contains the summary of the calibrated and verified runoff particle solids concentration conditions found during Madison and Milwaukee urban runoff research.

5. Pollutant Probability Distribution Data files describes pollutant (*e.g.* phosphorus, nitrogen, lead, zinc, etc.) concentrations from WinSLAMM source areas and land uses. The file used, BHAM.PPD, also came from urban runoff research in Madison, Toronto, Birmingham and Milwaukee. However, this file contains information on particulate phosphorus, but not on dissolved phosphorus. Therefore, the file POLLGEO.PPD, which does include dissolved phosphorus data collected by the US Geological Survey at a variety of sites was also used. It should be noted that the particulate phosphorus concentrations calculated using POLLGEO.PPD tend to be lower than those calculated using BHAM.PPD.

6. Particulate Residue Delivery Data files account for deposition of particulate pollutants in the storm drainage system, before the outfall or outfall controls. The file used is DELIVERY.PRR, which is calibrated for swales, cub and gutters, undeveloped roadsides, or combinations of drainage conditions.

The WinSLAMM modeling was run for each of the four development areas within the project site: Highmount Estates, Wildacres Resort (with the Highmount Golf Club), Belleayre Highlands, and Big Indian Plateau (with the Big Indian Country Club and the Big Indian Resort and Spa). Both pre-development (existing) and post-development (proposed) conditions were modeled for each subcatchment. Spreadsheets summarizing the subcatchment results were created, and various calculations were made to estimate total yields and average concentrations of pollutants.

The model output for the post-development condition can be considered to be conservative in the amount of pollutant reduction it shows. This is because the proposed detention basins in some cases will occur in series, which is a situation that the WinSLAMM model cannot simulate. Basins must also be at least three feet deep in order to be included in the simulation completed by WinSLAMM. Therefore, a number of detention basins were left out of the calculations, or in some cases, input to one basin from another upstream was not included, since basins in series are not simulated. Approximately a third of the pavement will be porous, reducing stormwater flow and increasing groundwater recharge. This potential benefit has not taken into account the WinSLAMM runoff model. WinSLAMM does have the capability to model porous pavement.

The following critical parameters were considered:

Phosphorus is the plant nutrient that is the focus of most management activities as it relates to water quality of surface water in temperate climates.

Total phosphorus includes all phosphorus compounds including both biological and inorganic (mineral related) phosphorus. Total phosphorus is subjected to an acid

digestion prior to analysis for phosphate, representing the maximum amount of phosphate that may become available in the environment due to decomposition of living material, or erosion. The total load is the expected amount of total phosphorus predicted to leave the site during the study period. In this case, the study period is from March-November, since the model examines the frost-free season.

Particulate solids are the inert soil particles retained by a filter. The filter is pre-weighed and dried prior to use. Following passage of a measured volume of water, the filter is dried and re-weighed to determine the amount of solids in the water.

Total solids measure all solids materials in a measured volume of water that evaporated to dryness and then the mass of material is then weighed. Total solids include all sediment size particles including clay, which may pass through a filter.

Nitrates are the other major plant nutrient, which are important in the terrestrial environment for promoting plant growth. Most temperate lakes have sufficient concentrations of nitrate to promote the growth of plant life including algae. Plant life growth is limited to the amounts of phosphorus.

Total kjedahl nitrogen includes nitrate, ammonia, and nitrite compounds; therefore, it represents the maximum amount of nitrogen available in the environment.

3. Pepacton Reservoir Watershed

The western segment of the Belleayre Resort project is in the Pepacton Reservoir Watershed and is composed of the Wildacres Resort and Highmount Estates.

Total phosphorus annual loading is reduced as a result of the proposed stormwater management facilities. The pre-development total phosphorus load is ±124 kg/yr. The proposed site development results in an increased loading of total phosphorus to ±600 kg/yr. This is reduced to ±146 kg/yr by the proposed stormwater management system. In some subcatchments very little total phosphorus removal will occur due to the lack of a sufficiently sized detention area. In some areas, specific housing lot-detention systems have not been designed since it is necessary to have the actual size, shape and rooflines of the house to finalize the on lot stormwater control. Such systems will be designed and will be included in future subdivision plans. A stormwater basin to be recognized by WinSLAMM must have a depth of 3 ft or greater; therefore, smaller basins that are effective for moderation of stormwater flows are not considered to improve water quality in the simulation.

Section 10.7 of this report includes data sheets from the WinSLAMM simulation. The proposed Wildacres Resort is on a 496.79-acre parcel of land with ±131 acres of golf course. The total amount of impervious surfaces is ±34.8 acres. The Pepacton Reservoir Watershed is 77% forest and 15% agriculture (includes grasslands, forage crops and barnyards), 7% grassland and shrubs and 1% urban. The TMDL is 59,375 kg/yr of phosphorus while the TMDL-MOS is 53,437 kg/yr. The current loading is 37,327 kg/yr with the difference between TMDL-MOS and current loading being 16,110 kg/yr. The 16,110 kg/yr may be allocated for future loading of both point and non-point phosphorus.

Table 3, "Estimated Stormwater Quality Summary for Annual Loads," and Table 4, "Estimated Stormwater Quality Summary for a 6.5 Inch Rainfall," includes the results of the WinSLAMM computer simulation. The existing conditions total phosphorus load is 124 kg/yr, which is 0.38% of the existing LA-TMDL-MOS. Figure 2, "Pepacton Reservoir Annual Phosphorus Loading Pre- and Post-Development," illustrates the relationship of the various TMDL levels under the pre-development conditions. The annual loading from the full buildout will be 146 kg/yr. The project development will result in a net increased phosphorus load of 22 kg/yr. Since the project site exports 124 kg/yr of phosphorus, this load is a constituent of the LA TMDL-MOS. Hence, the net loading will constitute 0.14% of the 16,110 kg unallocated annual load to the Pepacton Watershed. Since the phosphorus loading already exists from this site and is a portion of the current loading of 37,327 kg/yr, the project will not result in a significant change of the phosphorus loading to the reservoir. Project implementation will not change the loading rate of total phosphorus to the Pepacton Reservoir since the levels of total phosphorus runoff will not significantly consume unallocated loadings.

The NYSDEP utilized an export coefficient of 0.7 kg/ha/yr (0.2834 kg/acre) to establish the TMDL for the Pepacton Reservoir (Kane, 1999). Accordingly, approximately 56,845 of urban development could take place without consuming the entire unallocated load to the Pepacton Reservoir. The Wildacres Resort (±32.8 impervious acres) represents only 0.06% of the possible urban development that may take place in the watershed.

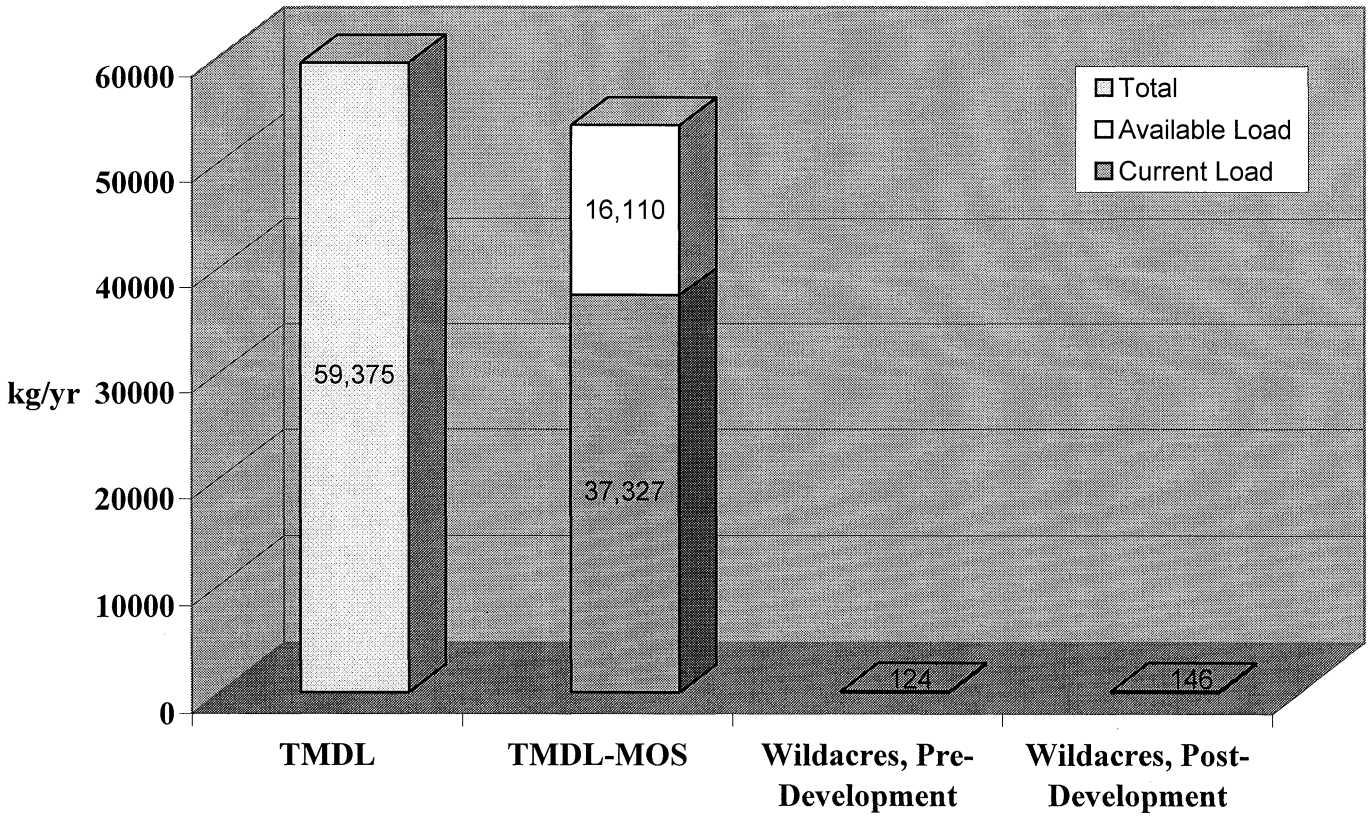
Highmount Estates will be developed into 21 lots for private single-family residence. Highmount Estates is located on ±131 acres. Highmount is a portion of the Wildacres Resort described above.

The estimate of runoff water is contained in Table 3, Estimated Stormwater Quality Summary for Annual Loading." The total phosphorus annual load for the pre- and post-runoff condition is nearly equal at Wildacres. The post-development condition results in a 22 kg/yr increase in total phosphorus load leaving the project site. The average total phosphorus concentration of the runoff water does increase slightly during the pre-and post-development condition on the site. The pre-development total phosphorus concentration is 0.27 mg/l while post-development is estimated to be 0.29 mg/l. This increase is due to the reduction in runoff volume, which causes the total phosphorus to become more concentrated.

Small decreases in particulate solids and total solids will occur as a result of the development and the installation of stormwater basins. The Highmount Estates currently planned stormwater basins are in the public road right-of-way areas since precise home site plans have not been developed. Lot-specific stormwater controls that will accompany individual building lot development will certainly further improve stormwater quality at the Highmount Estates.

Various nitrogen compounds were examined by the use of the WinSLAMM simulations. Both changes in TKN and nitrate were simulated. In all cases the variation in nitrogen compounds was very small between pre-development and post-development conditions (see Tables 3 and 4). WinSLAMM predicts a nominal removal of TKN yield ranging from 10 to 20 percent. The annual TKN loading is anticipated to decrease by 20% and no

Figure 2
Pepacton Watershed, Wildacres: Annual Phosphorus Loading Pre and Post Development



TMDL-MOS 71,250
Current 37,327

change in nitrate yield is anticipated. The removal of TKN is most likely associated with detention basins that recharge the groundwater, hence preventing the dissolved nutrients from reaching the overland outfall.

4. Ashokan Reservoir

Big Indian Plateau is in the Ashokan Reservoir West Basin Watershed. The Ashokan Reservoir is split into two basins each with a TMDL Management Guideline for each basin. The WinSLAMM model predicts that the existing condition total phosphorous load is 149 kg/yr and will be increased to 197 kg/yr by the post-development stormwater control. The TMDL for the West Ashokan Reservoir is 45,399 kg/yr. The TMDL/MOS is 40,859 kg/yr (based on the 15 ug/l guidance value) and current loading is 32,833 kg/yr, leaving 8,026 kg/yr as the unallocated load that may be introduced to the watershed without causing any adverse impacts or exceeding the reservoir guidance value.

The existing loading of 149 kg/yr. is accounted for in the LA-TMDL-MOS of 32,833. Thus, a net increased phosphorus load of 48 kg will be designated to the unallocated load in the Ashokan watershed of 8,026 kg. Project implementation will not significantly change the loading rate of total phosphorus to the Ashokan Reservoir since the levels of total phosphorus will only consume 0.6% of the unallocated phosphorus load, an increase that will not effect stream or reservoir ecology.

The NYSDEP utilized an export coefficient of 0.7 kg/ha/yr (0.2834 kg/acre) to establish the TMDL for the Ashokan Reservoir (Kane, 1999). Accordingly, approximately 28,320 of urban development could take place without consuming the entire unallocated load to the West Ashokan Reservoir. Development on the Big Indian Plateau (±52.4 impervious acres) constitutes only 0.2% of the possible urban development that may take place in the watershed.

Figure 3, "Ashokan West Watershed, Big Indian Plateau: Annual Phosphorus Loading," illustrate the changes in annual loading of total phosphorus that is expected to occur as a result of development.

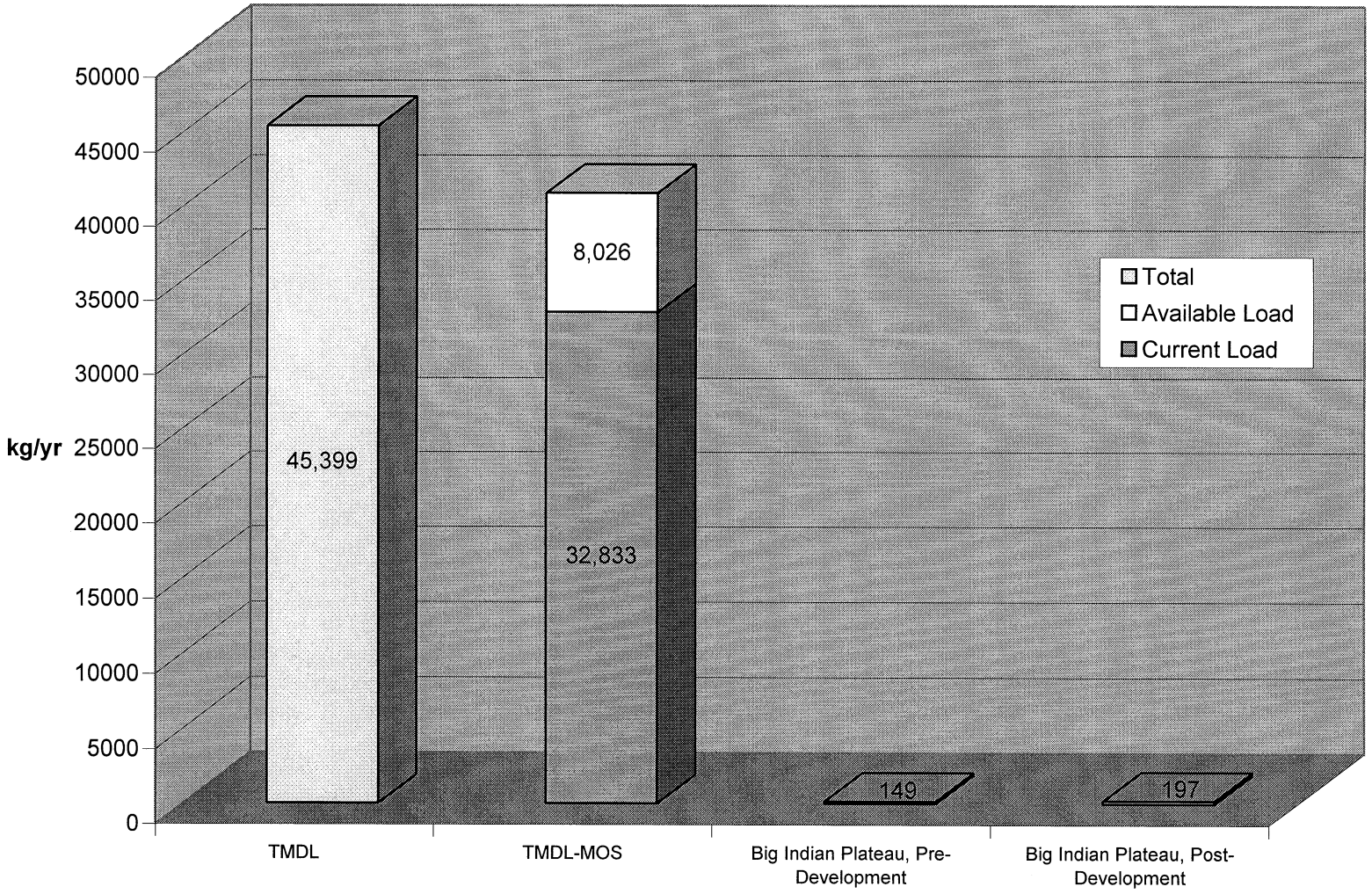
The total phosphorus concentration in the post-development condition increases slightly due to the change from forested area to developed area. Runoff volume is decreased by 1834 ft^3 on an annual basis. The total phosphorus in the pre-development condition is estimated as 0.23 mg/l while post-development condition will be 0.28 mg/l (see Table 3).

The levels of pre- and post-development of nitrate are equal while total kjedahl nitrogen is decreased. The pre-development TKN is 1.74 mg/l while post-development is 1.89 mg/l.

The yield of total chemical oxygen demand is reduced from 68 kg/acre to 49 kg/acre with the implementation of the stormwater controls, a 28% reduction.

Sediment loading is also reduced due to the long-term detention (see Table 3).

Figure 3
Ashokan West Watershed, Big Indian Plateau:
Annual Phosphorus Loading



5. Winter Stormwater Management

The WinSLAMM model evaluates water quality for the portion of the year when non-frozen precipitation is occurring. As a general rule of thumb, New York State DEC suggests that stormwater controls should be oversized when the average snowfall depth is greater than or equal to annual precipitation depth. Spring snowmelt, rain-on-snow and rain-on-frozen ground may necessitate the need to over size stormwater controls to accommodate these unique occurrences. Stormwater associated with these events are often significant with regards to flow rather than pollutant concentrations since pollutant concentrations are often less in these events.

To assess the potential impacts from frozen precipitation, information on the impacts were assembled from the NYSDEC Final Design Manual and a review of the proposed stormwater management system. The stormwater management facilities are sized for the 100-year storm. The stormwater control sizes have been verified to accommodate snow-runoff events. The proposed sizing has been compared to a determination of the sizing as suggested by the NYSDEC. The sizing criteria used to verify the capacity of the stormwater controls was based on 4 assumptions; 1) The stormwater management practice should be sized to treat the spring snowmelt event 2) Snowmelt runoff is influenced by the moisture content of the spring snowpack and soil moisture 3) No more than 5% of the annual runoff volume should bypass treatment during the spring snowmelt event and 4) Stormwater management practices can treat snowmelt volume greater than their size. The stormwater management practices proposed for Wildacres and Big Indian Plateau exceed the volume estimate through the snowmelt sizing criteria as shown in Table 2 "Proposed and Snowmelt Storage".

Table 2
Proposed and Snowmelt Storage

Location	Proposed Storage (acre-ft)	Required Storage [Snowmelt Sizing (acre-ft)]
Wildacres	30.62	24.3
Big Indian Plateau	47.39	33.0
Total	78.01	57.3

The snowmelt sizing was determined with an average annual snowfall in the amount of 80 inches and the average daily maximum January temperature less than 25 degrees Fahrenheit. A conservative average annual precipitation of 38.5" was also used in the snowmelt sizing criteria. The sizing proposed accommodates a worse than average precipitation year. The currently proposed stormwater management practices exceed the snowmelt suggested sizing by 20.71 acre-ft.

At the construction drawing phase the precise nature of the outfalls and setting of the outfall elevations will be determined to optimize winter stormwater controls. Stormwater runoff as a result of snowmelt is frequently characterized by low flow events during the winter months. The small events will be completely accommodated by the proposed stormwater system. Larger spring thaw events produce significant runoff volume, however the runoff tends to be very dilute. (NYSDEC, October 2001, New York Stormwater Design Manual).

6. Conclusion

The stormwater management system of detention and recharge is effective in moderating the level of contaminants in the runoff. The use of small basins that will have minimal exposure to sunlight is recommended to reduce the potential for thermal loading and heating of the stormwater prior to discharge. This reduces the risk of thermal loading to surface waters. The precise release rates, basin shape, release structures and recharge facilities are all subject to final design when construction drawings are prepared. At that point, further system refinements can be incorporated. Stormwater management is a field in which new materials and techniques are being introduced constantly and these innovations as they become available, will be incorporated into the project.

In order to optimize the effectiveness of the proposed system, constant maintenance, water quality testing and upgrades to the system will be performed.

TABLE 3
ESTIMATED STORMWATER QUALITY SUMMARY FOR ANNUAL LOADING

Annual Runoff-1993		Runoff cu. ft. /ac		Total Phosphorus mg/l		Total Phosphorus Kg/yr.		Particulate Solids mg/l		Total Solids mg/l		Nitrates mg/l		TKN mg/l	
	Developed Acres	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Belleayre Highlands	59.6		16,070		0.27		59		355		801		1.3		2.09
Big Indian Resort and Spa	228.9		13,688		0.29		137		242		799		1.39		1.79
Total Big Indian Plateau	288.5	16,265	14,431	0.23		149	197	430		837		1.27		1.74	
Wildacres Resort	496.9	25,313	19,757	0.25	0.31	102	129	821	712	821	742	1.2	2.3	1.8	1.5
Highmount Estates	169.3	16,336	12,832	0.28	0.26	22	17	704	358	821	803	1.3	1.2	2.3	1.7
Total Wildacres Resort	666.2					124	146								
02017Annual loading chart.xls															

TABLE 4
ESTIMATED STORMWATER QUALITY SUMMARY FOR A 6.3 INCH RAINFALL

				TABLE 4, ESTIMATED STORMWATER QUALITY SUMMARY FOR A 6.5 INCH RAINFALL											
25 Year Storm Loading		**Runoff cu. ft./ac**		**Total Phosphorus mg/l**		**Total Phosphorus Kg**		**Particulate Solids mg/l**		**Total Solids mg/l**		**Nitrates mg/l**		**TKN mg/l**	
6.5 Inches of Rainfall	**Developed Acres**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
Belleayre Highlands	59.6	*	*		0.3		72.2		141.3		750.6		1.77		1.51
Big Indian Country Club	228.9	*	*		0.47		181.1		77.82		778.92		1.54		1.47
Big Indian Plateau	288.5	*	*	0.23		209.6	253.3	495		843		1.28		1.98	
Wildacres Resort	496.9	*	*	0.33	0.85	50	53	469	96	1,291	1086	1.25	1.52	2	1.7
Highmount Estates	169.3	*	*	0.23	0.26	9	9	584	183	827	637	1.25	0.97	2.1	1.5
Total Wildacres Resort	666.2	*	*			59	62								
*WinSLAMM indicated the calulation of the pullutant loads relative to a 6.5" rainfall however there was difficulty in displaying the total runoff volumes. The model demonstrated that 6.3" rainfall															
was used to calculate the pullutant loads an indicated on each output screen. The product vendor has been noticied of this and is currently addressing the problem for future applications of the software.															
0052/25 yr storm loading chart.xls															
0052/25 yr storm loading chart.xls															

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2017/WP/APPENDIX10.NOIA.DOC

APPENDIX 10 A

BIG INDIAN RESORT AND SPA
1993 RUNOFF

Big Indian Plateau - WinSLAMM Modeling

Conditions: Rainfall for the period of 03/15/93 through 11/30/93, as measured at Tannersville, NY; detention ponds have variable infiltration rates

NOTE: The pre-development conditions summarized on these tables represent those conditions of the entire Big Indian Plateau (Big Indian Resort and Spa + Belleayre Highlands)

Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)

Subcatchment	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Avg. Rv	Total Losses (in) *	Average Calculated CN	Avg. Peak Reduction Factor	Avg. Flushing Ratio	Area of Sub-catchment (acres)
PRE-DEVELOPMENT CONDITION										
BigIndian1-2pre	32.0	3,367,000	3,367,000	3,367,000	0.14	27.37	92.3	0	0	197.60
BigIndian3pre	32.0	7,181,000	7,181,000	7,181,000	27.58	92.10	92.1	0	0	447.40
BigIndian4-5-6pre	32.0	7,214,000	7,214,000	7,214,000	0.14	27.56	92.1			447.80
BigIndian30pre	32.0	5,148,000	5,148,000	5,148,000	0.14	27.53	92.2	0	0	315.72
totals		22,910,000	22,910,000	22,910,000						1,408.52
Average runoff (cu ft/acre)		16,265	16,265	16,265						

Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)										
Subcatchment	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Avg. Rv	Total Losses (in) *	Average Calculated CN	Avg. Peak Reduction Factor	Avg. Flushing Ratio	Area of Sub-catchment (acres)
POST-DEVELOPMENT CONDITION										
BigIndian1-29-34post	32.0	388,754	388,754	388,754	0.19	25.78	93.4	0.80	0.03	17.42
BigIndian2post	32.0	70,276	70,276	70,276	0.28	22.82	94.9	0.26	0.03	2.13
BigIndian3post	32.0	177,656	177,656	177,656	0.23	24.38	94.2	0.20	0.06	6.47
BigIndian4post	32.0	52,856	52,856	52,856	0.29	22.34	95.2	0.37	0.03	1.52
BigIndian5-22-32post	32.0	4,723,000	4,723,000	3,634,000	0.11	28.43	91.4	0.33	-	280.29
BigIndian6post	32.0	99,035	99,035	99,035	0.32	21.66	95.5	0.16	0.13	2.62
BigIndian7post	32.0	93,314	93,314	93,314	0.25	24.04	94.4	0.35	0.04	3.21
BigIndian8post	32.0	186,284	186,284	13,249	0.02	31.42	86.6	0.65	0.06	5.97
BigIndian9post	32.0	170,962	170,962	170,962	0.15	27.24	92.5	0.06	0.23	9.64
BigIndian10post	32.0	237,670	237,670	57,818	0.04	30.70	88.3	0.54	0.44	12.09
BigIndian11post	32.0	74,721	74,721	74,721	0.26	23.75	94.6	0.24	0.05	2.46
BigIndian12post	32.0	189,765	189,765	189,765	0.15	27.06	92.6	0.25	0.07	10.42
BigIndian13post	32.0	116,168	116,168	6,840	0.01	31.60	86.0	0.01	0.05	4.55
BigIndian14post	32.0	39,931	39,931	39,931	0.21	25.13	93.8	0.99	0.01	1.61
BigIndian15post	32.0	257,721	257,721	725	-	32.00	83.2	0.54	0.09	14.07
BigIndian16post	32.0	59,341	59,341	3,144	0.01	31.54	86.2	0.66	0.01	1.79
BigIndian17-33post	32.0	153,336	153,336	12,855	0.01	31.59	85.9	0.51	0.03	8.71
BigIndian18post	32.0	82,268	82,268	82,268	0.15	27.29	92.4	0.22	0.04	4.73
BigIndian19post	32.0	82,616	82,616	82,616	-	27.63	92.1	0.62	0.04	5.20
BigIndian20post	32.0	54,653	54,653	54,653	0.13	27.63	92.1	0.70	0.03	3.44
BigIndian21post	32.0	157,472	157,472	157,472	0.26	23.75	94.6	0.08	0.20	5.16
BigIndian23-24post	32.0	561,219	561,216	166,290	0.05	30.47	88.7	0.50	0.42	29.83
BigIndian25post	32.0	375,509	375,509	25,506	0.01	31.68	85.6	0.49	0.13	21.08
BigIndian26post	32.0	248,155	248,155	31,992	0.02	31.40	86.7	0.47	0.08	14.23
BigIndian27post	32.0	67,342	67,342	67,342	0.15	27.29	92.4	0.60	0.03	3.88
BigIndian28post	32.0	65,474	65,474	166	-	32.00	83.3	0.62	0.36	2.64
BigIndian30post	32.0	4,660,000	4,660,000	4,660,000	0.13	27.63	92.1	-	-	293.36
BigIndian31post	32.0	346,838	346,838	14,165	0.01	31.85	84.9	0.19	0.05	20.89
BigIndian35post	32.0	2,481,000	2,481,000	2,481,000	0.14	27.50	92.2	-	-	150.23
BigIndian36post	32.0	150,610	150,610	150,610	-	27.63	92.1	0.49	0.09	9.48
BigIndian37post	32.0	105,649	105,649	105,649	-	27.63	92.1	0.79	0.05	6.65
BigIndian38post	32.0	95,321	95,321	95,321	0.13	27.63	62.1	0.54	0.05	6.00
BigIndian40-42post	32.0	134,033	134,033	6,145	-	31.78	85.1	0.54	0.04	7.45
totals		16,758,949	16,758,946	13,267,095						969.22
Average runoff (cu ft/acre)		17,291	17,291	13,688						

BigIndian Resort and Spa - WinSLAMM Modeling							
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)							
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Flow-wtd Min. Part. Size Controlled (microns)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION-TOTAL BIG INDIAN							
BigIndian1-2pre	32.0	467.7	409.5	409.5		3,367,000	60.2
BigIndian3pre	32.0	495.0	436.2	436.2		7,181,000	136.7
BigIndian4-5-6pre	32.0	492.2	434.0	434.0		7,214,000	136.7
BigIndian30pre	32.0	427.5	427.5	427.5		5,148,000	96.1
					Total volume (cu ft)	22,910,000	
					Runoff-weighted average concentration at outfall (mg/L)		429.6
POST-DEVELOPMENT CONDITION							
BigIndian1-29-34post	32.0	140.2	123.7	3.0	1.1	388,754	0.1
BigIndian2post	32.0	333.4	292.8	13.7	2.1	70,276	0.1
BigIndian3post	32.0	72.5	60.9	4.7	3.3	177,656	0.1
BigIndian4post	32.0	99.1	81.9	3.2	1.8	52,856	0.0
BigIndian5-22-32post	32.0	321.2	294.5	154.6	-	3,634,000	39.5
BigIndian6post	32.0	82.1	66.1	6.7	4.5	99,035	0.0
BigIndian7post	32.0	89.1	78.0	4.0	2.3	93,314	0.0
BigIndian8post	32.0	80.2	66.1	-	-	13,249	-
BigIndian9post	32.0	94.5	83.8	11.6	6.0	170,962	0.1
BigIndian10post	32.0	88.9	76.1	73.8	11.4	57,818	0.3
BigIndian11post	32.0	324.2	286.8	21.9	3.2	74,721	0.1
BigIndian12post	32.0	89.2	78.1	7.0	4.0	189,765	0.1
BigIndian13post	32.0	76.1	68.7	-	-	6,840	-
BigIndian14post	32.0	432.0	271.3	-	-	39,931	-
BigIndian15post	32.0	103.1	90.9	-	-	725	-
BigIndian16post	32.0	82.9	72.9	-	-	3,144	-
BigIndian17-33post	32.0	84.5	74.7	-	-	12,855	-
BigIndian18post	32.0	94.1	84.0	4.4	2.5	82,268	0.0
BigIndian19post	32.0	469.1	309.0	13.6	2.1	82,616	0.1
BigIndian20post	32.0	151.2	99.6	5.1	2.2	54,653	0.0
BigIndian21post	32.0	59.1	48.5	6.1	-	157,472	0.1
BigIndian23-24post	32.0	79.6	70.3	25.1	16.3	166,290	0.3
BigIndian25post	32.0	101.9	90.5	15.6	7.3	25,506	0.0
BigIndian26post	32.0	331.2	302.6	26.3	26.3	31,992	0.1
BigIndian27post	32.0	290.0	264.5	10.1	2.3	67,342	0.0
BigIndian28post	32.0	629.5	395.2	5.8	-	166	0.0
BigIndian30post	32.0	668.2	363.1	363.1	-	4,660,000	119.0
BigIndian31post	32.0	94.6	85.9	-	-	14,165	-
BigIndian35post	32.0	461.5	461.5	461.5	-	2,481,000	80.5
BigIndian36post	32.0	420.1	276.7	21.6	3.5	150,610	0.2
BigIndian37post	32.0	420.0	276.7	7.6	1.8	1,055,649	0.6
BigIndian38post	32.0	421.1	277.4	19.4	3.1	95,321	0.1
BigIndian40-42post	32.0	194.3	174.9	-	-	6,145	-
					Total volume (cu ft)	14,217,096	
					Runoff-weighted average concentration at outfall (mg/L)		241.5

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)							
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.	
PRE-DEVELOPMENT CONDITION							
BigIndian1-2pre	32.0	801.1	801.1	801.1	3,367,000	117.7	
BigIndian3pre	32.0	841.3	841.3	841.3	7,181,000	263.7	
BigIndian4-5-6pre	32.0	842.9	842.9	842.9	7,214,000	265.4	
BigIndian30pre	32.0	845.9	845.9	8,459.0	5,148,000	1,900.8	
				Total volume (cu ft)	22,910,000		
				Runoff-weighted average concentration at outfall (mg/L)		2,547.6	
POST-DEVELOPMENT CONDITION							
BigIndian1-29-34post	32.0	636.3	636.3	636.3	388,754	18.6	
BigIndian2post	32.0	607.7	607.7	607.7	70,276	3.2	
BigIndian3post	32.0	469.6	469.6	469.6	177,656	6.3	
BigIndian4post	32.0	570.3	570.3	570.3	52,856	2.3	
BigIndian5-22-32post	32.0	795.0	795.0	795.0	3,634,000	217.8	
BigIndian6post	32.0	506.2	506.2	506.2	99,035	3.8	
BigIndian7post	32.0	701.5	701.5	701.5	93,314	4.9	
BigIndian8post	32.0	650.8	650.8	650.8	13,249	0.6	
BigIndian9post	32.0	742.1	742.1	742.1	170,962	9.6	
BigIndian10post	32.0	675.7	675.7	675.7	57,818	2.9	
BigIndian11post	32.0	673.8	673.8	673.8	74,721	3.8	
BigIndian12post	32.0	701.3	701.3	701.3	189,765	10.0	
BigIndian13post	32.0	828.6	828.6	828.6	6,840	0.4	
BigIndian14post	32.0	861.0	861.0	861.0	39,931	2.6	
BigIndian15post	32.0	734.2	734.2	734.2	725	0.0	
BigIndian16post	32.0	559.3	559.3	559.3	3,144	0.1	
BigIndian17-33post	32.0	726.6	726.6	726.6	12,855	0.7	
BigIndian18post	32.0	782.9	782.9	782.9	82,268	4.9	
BigIndian19post	32.0	858.4	858.4	858.4	82,616	5.3	
BigIndian20post	32.0	861.0	861.0	861.0	54,653	3.5	
BigIndian21post	32.0	662.0	662.0	662.0	157,472	7.9	
BigIndian23-24post	32.0	715.0	715.0	715.0	166,290	9.0	
BigIndian25post	32.0	763.6	763.6	763.6	25,506	1.5	
BigIndian26post	32.0	779.8	779.8	779.8	31,992	1.9	
BigIndian27post	32.0	786.8	786.8	786.8	67,342	4.0	
BigIndian28post	32.0	850.7	850.7	850.7	166	0.0	
BigIndian30post	32.0	846.7	846.7	846.7	4,660,000	297.4	
BigIndian31post	32.0	791.7	791.7	791.7	14,165	0.8	
BigIndian35post	32.0	814.9	814.9	814.9	2,481,000	152.4	
BigIndian36post	32.0	861.0	861.0	861.0	150,610	9.8	
BigIndian37post	32.0	861.0	861.0	861.0	105,649	6.9	
BigIndian38post	32.0	854.7	854.7	854.8	95,321	6.1	
BigIndian40-42post	32.0	750.1	750.1	750.1	6,145	0.3	
				Total volume (cu ft)	13,267,096		
				Runoff-weighted average concentration at outfall (mg/L)		799.4	

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)							
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.	
PRE-DEVELOPMENT CONDITION							
BigIndian1-2pre	32.0	1,269	801	801	3,367,000	117.7	
BigIndian3pre	32.0	1,336	841	841	7,181,000	263.7	
BigIndian4-5-6pre	32.0	1,335	843	843	7,214,000	265.4	
BigIndian30pre	32.0	1,331	846	846	5,148,000	190.1	
				Total volume (cu ft)	22,910,000		
				Runoff-weighted average concentration at outfall (mg/L)		836.9	
POST-DEVELOPMENT CONDITION							
BigIndian1-29-34post	32.0	776	636	636	388,754	18.6	
BigIndian2post	32.0	941	608	608	70,276	3.2	
BigIndian3post	32.0	542	470	470	177,656	6.3	
BigIndian4post	32.0	669	570	570	52,856	2.3	
BigIndian5-22-32post	32.0	1,116	795	795	3,634,000	217.6	
BigIndian6post	32.0	588	506	506	99,035	3.8	
BigIndian7post	32.0	791	702	702	99,314	5.2	
BigIndian8post	32.0	731	651	651	13,249	0.6	
BigIndian9post	32.0	837	742	742	170,962	9.6	
BigIndian10post	32.0	765	676	676	57,818	2.9	
BigIndian11post	32.0	998	674	674	74,721	3.8	
BigIndian12post	32.0	791	701	701	189,765	10.0	
BigIndian13post	32.0	905	829	829	6,840	0.4	
BigIndian14post	32.0	1,161	861	861	39,931	2.6	
BigIndian15post	32.0	837	734	734	725	0.0	
BigIndian16post	32.0	642	559	559	3,144	0.1	
BigIndian17-33post	32.0	811	727	727	12,855	0.7	
BigIndian18post	32.0	877	783	783	82,268	4.9	
BigIndian19post	32.0	1,193	858	858	82,616	5.3	
BigIndian20post	32.0	969	861	861	54,653	3.5	
BigIndian21post	32.0	721	662	662	157,427	7.9	
BigIndian23-24post	32.0	795	715	715	166,270	9.0	
BigIndian25post	32.0	865	764	764	25,506	1.5	
BigIndian26post	32.0	1,111	780	780	32,992	1.9	
BigIndian27post	32.0	1,077	787	787	67,342	4.0	
BigIndian28post	32.0	1,288	851	851	166	0.0	
BigIndian30post	32.0	1,324	847	847	4,660,000	297.2	
BigIndian31post	32.0	886	792	792	14,165	0.8	
BigIndian35post	32.0	1,276	815	815	2,481,000	152.3	
BigIndian36post	32.0	1,161	861	861	150,610	9.8	
BigIndian37post	32.0	1,161	861	861	105,649	6.9	
BigIndian38post	32.0	1,156	855	855	95,321	6.1	
BigIndian40-42post	32.0	944	750	750	6,145	0.3	
				Total volume (cu ft)	13,274,031		
				Runoff-weighted average concentration at outfall (mg/L)		799.4	

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	0.34	0.30	0.30	3,367,000	0.03
BigIndian3pre	32.0	0.35	0.31	0.31	7,181,000	0.05
BigIndian4-5-6pre	32.0	0.36	0.32	0.32	7,214,000	0.06
BigIndian30pre	32.0	0.38	0.33	0.33	5,148,000	0.08
				Total volume (cu ft)	22,910,000	
				Runoff-weighted average concentration at outfall (mg/L)		0.22
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	0.53	0.48	0.01	388,754	0.00
BigIndian2post	32.0	0.26	0.23	0.01	70,276	0.00
BigIndian3post	32.0	0.35	0.32	0.03	177,656	0.00
BigIndian4post	32.0	0.47	0.42	0.02	52,856	0.00
BigIndian5-22-32post	32.0	0.28	0.26	0.14	3,634,000	0.04
BigIndian6post	32.0	0.32	0.28	0.03	99,035	0.00
BigIndian7post	32.0	0.59	0.53	0.03	93,314	0.00
BigIndian8post	32.0	0.37	0.32	-	13,249	-
BigIndian9post	32.0	0.60	0.55	0.08	170,962	0.00
BigIndian10post	32.0	0.47	0.43	0.05	57,818	0.00
BigIndian11post	32.0	0.48	0.43	0.03	74,721	0.00
BigIndian12post	32.0	0.52	0.48	0.05	189,765	0.00
BigIndian13post	32.0	0.58	0.52	-	6,840	-
BigIndian14post	32.0	0.84	0.76	-	39,931	-
BigIndian15post	32.0	0.65	0.60	-	725	-
BigIndian16post	32.0	0.53	0.48	-	3,144	-
BigIndian17-33post	32.0	0.52	0.48	-	12,855	-
BigIndian18post	32.0	0.63	0.58	0.03	82,268	0.00
BigIndian19post	32.0	0.75	0.70	0.03	82,616	0.00
BigIndian20post	32.0	0.84	0.78	0.04	54,653	0.00
BigIndian21post	32.0	0.25	0.22	0.03	157,472	0.00
BigIndian23-24post	32.0	0.52	0.47	0.18	166,270	0.00
BigIndian25post	32.0	0.67	0.62	0.12	25,506	0.00
BigIndian26post	32.0	0.64	0.58	0.05	31,992	0.00
BigIndian27post	32.0	0.75	0.69	0.03	67,342	0.00
BigIndian28post	32.0	0.50	0.45	0.01	166,270	0.00
BigIndian30post	32.0	0.35	0.26	0.26	4,660,000	0.09
BigIndian31post	32.0	0.67	0.61	-	14,165	-
BigIndian35post	32.0	0.39	0.35	0.35	2,481,000	0.07
BigIndian36post	32.0	0.84	0.77	0.06	150,610	0.00
BigIndian37post	32.0	0.84	0.77	0.44	105,649	0.00
BigIndian38post	32.0	0.83	0.76	0.05	95,321	0.00
BigIndian40-42post	32.0	0.58	0.53	-	6,145	-
				Total volume (cu ft)	13,433,180	
				Runoff-weighted average concentration at outfall (mg/L)		0.20

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	72.8	63.7	63.7	197.60	12%
BigIndian3pre	32.0	159.3	140.3	140.3	447.40	12%
BigIndian4-5-6pre	32.0	163.8	144.2	144.2	447.80	12%
BigIndian30pre	32.0	124.2	109.1	109.1	315.72	12%
TOTALS		520.1	457.3	457.3	1,408.52	12%
Average yield (lb/acre)		0.4	0.3	0.3		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	13.1	11.9	0.3	17.42	98%
BigIndian2post	32.0	1.2	1.0	0.0	2.13	96%
BigIndian3post	32.0	4.0	3.6	0.1	6.47	98%
BigIndian4post	32.0	1.6	1.4	0.1	6.47	96%
BigIndian5-22-32post	32.0	84.8	77.9	31.3	280.29	63%
BigIndian6post	32.0	2.0	1.7	0.2	2.62	90%
BigIndian7post	32.0	3.5	3.1	0.2	3.21	95%
BigIndian8post	32.0	4.3	3.8	-	5.97	100%
BigIndian9post	32.0	6.5	6.0	0.9	9.64	87%
BigIndian10post	32.0	7.1	6.5	1.8	12.09	75%
BigIndian11post	32.0	2.3	2.1	0.2	2.46	93%
BigIndian12post	32.0	6.3	5.8	0.5	10.42	91%
BigIndian13post	32.0	4.3	3.9	-	4.55	100%
BigIndian14post	32.0	2.1	1.9	-	1.61	100%
BigIndian15post	32.0	10.7	9.8	-	14.07	100%
BigIndian16post	32.0	2.0	1.8	-	3,144.00	100%
BigIndian17-33post	32.0	5.0	4.6	-	8.71	100%
BigIndian18post	32.0	3.3	3.0	0.2	4.73	95%
BigIndian19post	32.0	3.9	3.6	0.2	1.79	96%
BigIndian20post	32.0	2.9	2.7	0.1	3.44	95%
BigIndian21post	32.0	2.5	2.2	0.3	5.16	88%
BigIndian23-24post	32.0	18.4	16.3	1.9	29.83	90%
BigIndian25post	32.0	15.9	14.6	0.2	21.08	99%
BigIndian26post	32.0	10.0	9.2	0.1	14.23	99%
BigIndian27post	32.0	3.2	2.9	0.1	3.88	96%
BigIndian28post	32.0	2.1	1.9	-	2.64	100%
BigIndian30post	32.0	103.7	78.9	78.9	293.36	24%
BigIndian31post	32.0	14.7	13.5	-	20.89	100%
BigIndian35post	32.0	60.4	55.6	55.6	150.23	8%
BigIndian36post	32.0	8.0	7.4	0.6	9.48	93%
BigIndian37post	32.0	5.6	5.2	2.9	9.48	48%
BigIndian38post	32.0	3.1	2.9	0.3	6.00	90%
BigIndian40-42post	32.0	4.9	4.5	-	7.45	100%
TOTALS		15.3	14.0	0.2	4,115.80	99%
Average yield (lb/acre)		0.0	0.0	0.0		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	0.23	0.19	0.19	3,367,000	0.03
BigIndian3pre	32.0	0.20	0.18	0.18	7,181,000	0.05
BigIndian4-5-6pre	32.0	0.22	0.19	0.19	7,214,000	0.06
BigIndian30pre	32.0	0.27	0.05	0.05	5,148,000	0.01
				Total volume (cu ft)	22,910,000	
				Runoff-weighted average concentration at outfall (mg/L)		0.15
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	0.54	0.48	0.01	388,754	0.00
BigIndian2post	32.0	0.46	0.40	0.02	70,276	0.00
BigIndian3post	32.0	0.25	0.21	0.02	177,656	0.00
BigIndian4post	32.0	0.35	0.29	0.01	52,856	0.00
BigIndian5-22-32post	32.0	0.19	0.17	0.09	3,634,000	0.02
BigIndian6post	32.0	0.25	0.21	0.02	99,035	0.00
BigIndian7post	32.0	0.36	0.32	0.02	93,314	0.00
BigIndian8post	32.0	0.26	0.22	-	13,249	-
BigIndian9post	32.0	0.37	0.43	0.43	170,962	0.01
BigIndian10post	32.0	0.32	0.28	0.03	57,818	0.00
BigIndian11post	32.0	0.70	0.62	0.05	74,721	0.00
BigIndian12post	32.0	0.33	0.30	0.03	189,765	0.00
BigIndian13post	32.0	0.32	0.29	-	6,840	-
BigIndian14post	32.0	1.35	1.22	-	39,931	-
BigIndian15post	32.0	0.41	0.37	-	725	-
BigIndian16post	32.0	0.33	0.29	-	3,144	-
BigIndian17-33post	32.0	0.32	0.28	-	12,855	-
BigIndian18post	32.0	0.38	0.35	0.02	82,268	0.00
BigIndian19post	32.0	1.15	1.06	0.05	82,616	0.00
BigIndian20post	32.0	0.49	0.45	0.02	54,653	0.00
BigIndian21post	32.0	0.17	0.14	0.02	157,472	0.00
BigIndian23-24post	32.0	0.31	0.28	0.10	166,270	0.00
BigIndian25post	32.0	0.41	0.37	0.07	25,506	0.00
BigIndian26post	32.0	0.95	0.87	0.08	31,992	0.00
BigIndian27post	32.0	1.21	1.11	0.04	67,342	0.00
BigIndian28post	32.0	0.55	0.50	0.01	166	0.00
BigIndian30post	32.0	0.27	0.21	0.21	4,660,000	0.07
BigIndian31post	32.0	0.39	0.36	-	14,165	-
BigIndian35post	32.0	0.31	0.28	0.28	2,481,000	0.05
BigIndian36post	32.0	1.35	1.25	0.10	150,610	0.00
BigIndian37post	32.0	1.35	1.25	0.70	105,649	0.01
BigIndian38post	32.0	1.32	1.22	0.09	95,321	0.00
BigIndian40-42post	32.0	0.73	0.67	0.08	6,145	0.00
				Total volume (cu ft)	13,267,076	
				Runoff-weighted average concentration at outfall (mg/L)		0.17

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	0.03	0.03	0.03	3,367,000	0.01
BigIndian3pre	32.0	0.02	0.02	0.02	7,181,000	0.01
BigIndian4-5-6pre	32.0	0.03	0.03	0.03	7,214,000	0.01
BigIndian30pre	32.0	0.05	0.05	0.05	5,148,000	0.01
				Total volume (cu ft)	22,910,000	
			Runoff-weighted average concentration at outfall (mg/L)			0.03
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	0.41	0.41	0.41	388,754	0.01
BigIndian2post	32.0	0.17	0.17	0.17	70,276	0.00
BigIndian3post	32.0	0.24	0.24	0.24	177,656	0.00
BigIndian4post	32.0	0.34	0.34	0.34	52,856	0.00
BigIndian5-22-32post	32.0	0.05	0.05	0.05	3,634,000	0.01
BigIndian6post	32.0	0.22	0.22	0.22	99,035	0.00
BigIndian7post	32.0	0.41	0.41	0.41	93,314	0.00
BigIndian8post	32.0	0.26	0.26	0.26	13,249	0.00
BigIndian9post	32.0	0.43	0.43	0.43	170,962	0.01
BigIndian10post	32.0	0.34	0.33	0.33	57,818	0.00
BigIndian11post	32.0	0.28	0.28	0.28	74,721	0.00
BigIndian12post	32.0	0.37	0.37	0.37	189,765	0.01
BigIndian13post	32.0	0.40	0.40	0.40	6,840	0.00
BigIndian14post	32.0	0.61	0.61	0.61	39,931	0.00
BigIndian15post	32.0	0.47	0.47	0.47	725	0.00
BigIndian16post	32.0	0.36	0.36	0.36	3,144	0.00
BigIndian17-33post	32.0	0.36	0.36	0.36	12,855	0.00
BigIndian18post	32.0	0.45	0.45	0.45	82,268	0.00
BigIndian19post	32.0	0.50	0.50	0.50	82,616	0.00
BigIndian20post	32.0	0.61	0.61	0.61	54,653	0.00
BigIndian21post	32.0	0.16	0.16	0.16	157,472	0.00
BigIndian23-24post	32.0	0.36	0.36	0.36	166,270	0.00
BigIndian25post	32.0	0.48	0.48	0.48	25,516	0.00
BigIndian26post	32.0	0.41	0.41	0.41	31,992	0.00
BigIndian27post	32.0	0.54	0.54	0.54	67,342	0.00
BigIndian28post	32.0	0.20	0.20	0.20	166	0.00
BigIndian30post	32.0	0.06	0.06	0.06	4,660,000	0.02
BigIndian31post	32.0	0.47	0.47	0.11	14,165	0.00
BigIndian35post	32.0	0.08	0.08	0.08	2,481,000	0.01
BigIndian36post	32.0	0.61	0.61	0.61	150,610	0.01
BigIndian37post	32.0	0.61	0.61	0.61	105,649	0.00
BigIndian38post	32.0	0.59	0.59	0.59	95,321	0.00
BigIndian40-42post	32.0	0.40	0.40	0.40	6,145	0.00
				Total volume (cu ft)	13,267,086	
			Runoff-weighted average concentration at outfall (mg/L)			0.06

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	0.26	0.23	0.23	3,367,000	0.03
BigIndian3pre	32.0	0.22	0.19	0.19	7,181,000	0.06
BigIndian4-5-6pre	32.0	0.24	0.22	0.22	7,214,000	0.07
BigIndian30pre	32.0	0.32	0.29	0.29	5,148,000	0.06
				Total volume (cu ft)	22,910,000	
				Runoff-weighted average concentration at outfall (mg/L)		0.23
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	0.95	0.90	0.42	388,754	0.01
BigIndian2post	32.0	0.63	0.57	0.19	70,276	0.00
BigIndian3post	32.0	0.48	0.45	0.25	177,656	0.00
BigIndian4post	32.0	0.69	0.64	0.36	52,856	0.00
BigIndian5-22-32post	32.0	0.24	0.22	0.16	3,634,000	0.04
BigIndian6post	32.0	0.47	0.43	0.24	99,035	0.00
BigIndian7post	32.0	0.77	0.73	0.43	93,314	0.00
BigIndian8post	32.0	0.52	0.48	0.35	13,249	0.00
BigIndian9post	32.0	0.80	0.76	0.48	170,962	0.01
BigIndian10post	32.0	0.66	0.62	0.61	57,818	0.00
BigIndian11post	32.0	0.98	0.90	0.33	74,721	0.00
BigIndian12post	32.0	0.70	0.66	0.39	189,765	0.01
BigIndian13post	32.0	0.72	0.69	0.67	6,840	0.00
BigIndian14post	32.0	1.96	1.83	0.61	39,931	0.00
BigIndian15post	32.0	0.89	0.84	0.17	725	0.00
BigIndian16post	32.0	0.68	0.65	0.65	3,144	0.00
BigIndian17-33post	32.0	0.68	0.65	0.39	12,855	0.00
BigIndian18post	32.0	0.83	0.80	0.47	82,268	0.00
BigIndian19post	32.0	1.65	1.56	0.55	82,616	0.00
BigIndian20post	32.0	1.10	1.06	0.63	54,653	0.00
BigIndian21post	32.0	0.33	0.30	0.18	157,472	0.00
BigIndian23-24post	32.0	0.67	0.64	0.13	166,270	0.00
BigIndian25post	32.0	0.90	0.86	0.71	25,516	0.00
BigIndian26post	32.0	1.36	1.28	0.03	31,992	0.00
BigIndian27post	32.0	1.75	1.65	0.58	67,342	0.00
BigIndian28post	32.0	0.75	0.70	0.28	166	0.00
BigIndian30post	32.0	0.34	0.27	0.27	4,660,000	0.09
BigIndian31post	32.0	0.87	0.83	0.11	14,165	0.00
BigIndian35post	32.0	0.39	0.59	0.36	2,481,000	0.07
BigIndian36post	32.0	1.96	1.86	0.71	150,610	0.01
BigIndian37post	32.0	1.96	1.86	0.64	105,649	0.01
BigIndian38post	32.0	1.09	1.82	0.68	95,321	0.00
BigIndian40-42post	32.0	1.14	1.07	8.72	6,145	0.00
				Total volume (cu ft)	13,267,086	
				Runoff-weighted average concentration at outfall (mg/L)		0.29

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	55.8	48.5	48.5	197.60	13%
BigIndian3pre	32.0	99.0	87.8	87.8	447.40	11%
BigIndian4-5-6pre	32.0	111.2	99.1	99.1	447.80	11%
BigIndian30pre	32.0	104.3	93.3	93.3	315.72	11%
TOTALS		370.4	328.7	328.7	1,408.52	11%
Average yield (lb/acre)		0.26	0.23	0.23		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	23.4	22.1	10.4	17.42	56%
BigIndian2post	32.0	2.8	2.5	0.8	2.13	71%
BigIndian3post	32.0	5.4	5.1	2.8	6.47	48%
BigIndian4post	32.0	2.3	2.1	1.2	1.52	48%
BigIndian5-22-32post	32.0	72.7	67.1	36.2	280.29	50%
BigIndian6post	32.0	3.0	2.7	1.5	2.62	49%
BigIndian7post	32.0	4.6	4.3	2.5	3.21	44%
BigIndian8post	32.0	6.1	5.7	3.0	5.97	50%
BigIndian9post	32.0	8.7	8.3	5.1	9.64	41%
BigIndian10post	32.0	9.9	9.3	6.1	12.09	38%
BigIndian11post	32.0	4.7	4.3	1.6	2.46	66%
BigIndian12post	32.0	8.4	8.0	4.7	10.42	44%
BigIndian13post	32.0	5.3	5.1	3.0	4.55	45%
BigIndian14post	32.0	5.0	4.6	1.5	1.61	69%
BigIndian15post	32.0	14.5	13.8	7.7	14.07	47%
BigIndian16post	32.0	2.6	2.4	1.3	1.79	48%
BigIndian17-33post	32.0	6.6	6.3	3.5	8.71	47%
BigIndian18post	32.0	4.3	4.1	2.4	4.73	44%
BigIndian19post	32.0	8.6	8.2	2.9	5.20	67%
BigIndian20post	32.0	3.8	3.7	2.2	3.44	42%
BigIndian21post	32.0	3.3	3.0	1.8	5.16	46%
BigIndian23-24post	32.0	23.9	22.8	13.9	29.83	42%
BigIndian25post	32.0	21.4	20.2	11.6	21.08	46%
BigIndian26post	32.0	21.4	20.1	6.5	14.23	69%
BigIndian27post	32.0	7.5	7.0	2.5	3.88	67%
BigIndian28post	32.0	3.1	2.9	0.8	2.64	74%
BigIndian30post	32.0	98.8	79.8	79.8	293.36	19%
BigIndian31post	32.0	19.0	18.3	10.4	20.89	45%
BigIndian35post	32.0	60.5	56.4	56.4	150.23	7%
BigIndian36post	32.0	18.7	17.7	6.7	9.48	64%
BigIndian37post	32.0	13.1	12.4	4.3	6.65	67%
BigIndian38post	32.0	11.6	11.0	4.1	6.00	65%
BigIndian40-42post	32.0	9.6	9.1	3.4	7.45	64%
TOTALS		514.5	470.2	302.8	969.22	41%
Average yield (lb/acre)		0.53	0.49	0.31		

Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	1.22	1.22	1.22	3,367,000	0.18
BigIndian3pre	32.0	1.27	1.27	1.27	7,181,000	0.40
BigIndian4-5-6pre	32.0	1.28	1.28	1.28	7,214,000	0.40
BigIndian30pre	32.0	1.28	1.28	1.28	5,148,000	0.29
				Total volume (cu ft)	22,910,000	
			Runoff-weighted average concentration at outfall (mg/L)			1.27
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	1.02	1.02	1.02	388,754	0.03
BigIndian2post	32.0	0.96	0.96	0.96	70,276	0.01
BigIndian3post	32.0	6.46	6.46	6.46	177,656	0.09
BigIndian4post	32.0	2.37	2.37	2.37	52,856	0.01
BigIndian5-22-32post	32.0	1.24	1.24	1.24	3,634,000	0.34
BigIndian6post	32.0	3.57	3.57	3.57	99,035	0.03
BigIndian7post	32.0	2.95	2.95	2.95	93,314	0.02
BigIndian8post	32.0	1.43	1.43	1.43	13,249	0.00
BigIndian9post	32.0	1.46	1.46	1.46	170,962	0.02
BigIndian10post	32.0	1.29	1.29	1.29	57,818	0.01
BigIndian11post	32.0	1.04	1.04	1.04	74,721	0.01
BigIndian12post	32.0	1.58	1.58	1.58	189,765	0.02
BigIndian13post	32.0	1.91	1.91	1.91	6,840	0.00
BigIndian14post	32.0	1.28	1.28	1.28	39,931	0.00
BigIndian15post	32.0	1.29	1.29	1.29	725	0.00
BigIndian16post	32.0	5.79	5.79	5.79	3,144	0.00
BigIndian17-33post	32.0	1.78	1.78	1.78	12,855	0.00
BigIndian18post	32.0	1.18	1.18	1.18	82,268	0.01
BigIndian19post	32.0	1.28	1.28	1.28	82,616	0.01
BigIndian20post	32.0	1.28	1.28	1.28	54,653	0.01
BigIndian21post	32.0	1.89	1.89	1.89	157,472	0.02
BigIndian23-24post	32.0	2.87	2.87	2.87	166,270	0.04
BigIndian25post	32.0	1.18	1.18	1.18	25,506	0.00
BigIndian26post	32.0	1.18	1.18	1.18	31,992	0.00
BigIndian27post	32.0	1.83	1.83	1.83	67,342	0.01
BigIndian28post	32.0	1.28	1.28	1.28	166	0.00
BigIndian30post	32.0	1.28	1.28	1.28	4,660,000	0.45
BigIndian31post	32.0	1.41	1.41	1.41	14,165	0.00
BigIndian35post	32.0	1.24	1.24	1.24	2,481,000	0.23
BigIndian36post	32.0	1.28	1.28	1.28	150,610	0.01
BigIndian37post	32.0	1.28	1.28	1.28	105,649	0.01
BigIndian38post	32.0	1.27	1.27	1.27	95,321	0.01
BigIndian40-42post	32.0	1.22	1.22	1.22	6,145	0.00
				Total volume (cu ft)	13,267,076	
			Runoff-weighted average concentration at outfall (mg/L)			1.39

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	1.95	1.85	1.85	3,367,000	0.27
BigIndian3pre	32.0	1.98	1.88	1.88	7,181,000	0.59
BigIndian4-5-6pre	32.0	1.98	1.88	1.88	7,214,000	0.59
BigIndian30pre	32.0	2.00	1.28	1.28	5,148,000	0.29
					22,910,000	
				Runoff-weighted average concentration at outfall (mg/L)		1.74
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	1.79	1.77	1.02	388,754	0.03
BigIndian2post	32.0	1.87	1.82	1.36	71,276	0.01
BigIndian3post	32.0	1.37	1.35	1.25	177,656	0.02
BigIndian4post	32.0	1.58	1.56	1.46	52,856	0.01
BigIndian5-22-32post	32.0	1.72	1.67	1.67	3,634,000	0.46
BigIndian6post	32.0	1.43	1.41	1.33	99,035	0.01
BigIndian7post	32.0	1.61	1.59	1.44	93,314	0.01
BigIndian8post	32.0	1.50	1.48	1.40	13,249	0.00
BigIndian9post	32.0	1.66	1.65	1.51	170,962	0.02
BigIndian10post	32.0	1.59	1.58	1.58	57,818	0.01
BigIndian11post	32.0	1.99	1.93	1.45	74,721	0.01
BigIndian12post	32.0	1.60	1.59	1.46	189,765	0.02
BigIndian13post	32.0	1.58	1.58	1.23	6,840	0.00
BigIndian14post	32.0	2.26	2.20	1.60	39,931	0.00
BigIndian15post	32.0	1.73	1.71	1.54	725	0.00
BigIndian16post	32.0	1.50	1.48	1.24	3,144	0.00
BigIndian17-33post	32.0	1.58	1.57	1.53	12,855	0.00
BigIndian18post	32.0	1.68	1.68	1.51	82,268	0.01
BigIndian19post	32.0	2.21	2.22	1.54	82,616	0.01
BigIndian20post	32.0	1.84	1.82	1.61	54,653	0.01
BigIndian21post	32.0	1.36	1.35	1.29	157,472	0.02
BigIndian23-24post	32.0	1.54	1.55	1.47	166,270	0.02
BigIndian25post	32.0	1.73	1.72	1.22	25,506	0.00
BigIndian26post	32.0	2.12	2.06	1.16	31,992	0.00
BigIndian27post	32.0	2.18	2.13	1.60	67,342	0.01
BigIndian28post	32.0	2.07	1.99	0.50	166	0.00
BigIndian30post	32.0	1.99	1.79	1.79	4,660,000	0.63
BigIndian31post	32.0	1.70	1.69	1.34	14,165	0.00
BigIndian35post	32.0	1.99	1.92	1.92	2,481,000	0.36
BigIndian36post	32.0	2.26	2.21	2.12	150,610	0.02
BigIndian37post	32.0	2.26	2.21	1.94	105,649	0.02
BigIndian38post	32.0	2.25	2.19	1.63	95,321	0.01
BigIndian40-42post	32.0	1.86	1.83	1.83	6,145	0.00
				Total volume (cu ft)	13,268,076	
				Runoff-weighted average concentration at outfall (mg/L)		1.71

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	258.9	258.9	258.9	197.6	0%
BigIndian3pre	32.0	578.3	578.3	578.3	447.4	0%
BigIndian4-5-6pre	32.0	582.6	582.6	582.6	447.8	0%
BigIndian30pre	32.0	416.6	416.6	416.6	315.7	0%
TOTALS		1,836.4	1,836.4	1,836.4	1,408.5	0%
Average yield (lb/acre)		1.3	1.3	1.3		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	25.1	25.1	25.1	17.42	0%
BigIndian2post	32.0	4.3	4.3	4.3	2.13	0%
BigIndian3post	32.0	72.8	72.8	72.8	6.47	0%
BigIndian4post	32.0	8.0	8.0	8.0	1.52	0%
BigIndian5-22-32post	32.0	371.8	371.8	371.8	280.29	0%
BigIndian6post	32.0	22.4	22.4	22.4	2.62	0%
BigIndian7post	32.0	17.5	17.5	17.5	3.21	0%
BigIndian8post	32.0	16.9	16.9	16.9	5.97	0%
BigIndian9post	32.0	15.8	15.8	15.8	9.64	0%
BigIndian10post	32.0	19.5	19.5	19.5	12.09	0%
BigIndian11post	32.0	4.9	4.9	4.9	2.46	0%
BigIndian12post	32.0	19.0	19.0	19.0	10.42	0%
BigIndian13post	32.0	14.1	14.1	14.1	4.55	0%
BigIndian14post	32.0	3.2	3.2	3.2	1.61	0%
BigIndian15post	32.0	21.1	21.1	21.1	14.07	0%
BigIndian16post	32.0	21.8	21.8	21.8	1.79	0%
BigIndian17-33post	32.0	17.3	17.3	17.3	8.71	0%
BigIndian18post	32.0	6.1	6.1	6.1	4.73	0%
BigIndian19post	32.0	6.7	6.7	6.7	5.20	0%
BigIndian20post	32.0	4.4	4.4	4.4	3.44	0%
BigIndian21post	32.0	18.9	18.9	18.9	5.16	0%
BigIndian23-24post	32.0	101.8	101.8	101.8	29.83	0%
BigIndian25post	32.0	28.2	28.2	28.2	21.08	0%
BigIndian26post	32.0	18.5	18.5	18.5	14.23	0%
BigIndian27post	32.0	5.0	5.0	5.0	3.88	0%
BigIndian28post	32.0	5.3	5.3	5.3	2.64	0%
BigIndian30post	32.0	377.1	377.1	377.1	293.36	0%
BigIndian31post	32.0	30.9	30.9	30.9	20.89	0%
BigIndian35post	32.0	194.3	194.3	194.3	150.23	0%
BigIndian36post	32.0	12.2	12.2	12.2	9.48	0%
BigIndian37post	32.0	8.6	8.6	8.6	6.65	0%
BigIndian38post	32.0	7.7	7.7	7.7	6.00	0%
BigIndian40-42post	32.0	10.4	10.4	10.4	7.45	0%
TOTALS		1,511.5	1,511.5	1,511.5	969.22	0%
Average yield (lb/acre)		1.6	1.6	1.6		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	415.7	394.4	394.4	197.6	5%
BigIndian3pre	32.0	899.0	852.1	852.1	447.4	5%
BigIndian4-5-6pre	32.0	904.3	857.3	857.3	447.8	5%
BigIndian30pre	32.0	650.6	617.1	617.1	315.7	5%
TOTALS		2,869.6	2,720.9	2,720.9	1,408.5	5%
Average yield (lb/acre)		2.0	1.9	1.9		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	44.1	43.5	37.9	17.42	14%
BigIndian2post	32.0	8.4	8.1	6.1	2.13	27%
BigIndian3post	32.0	15.4	15.2	14.1	6.47	8%
BigIndian4post	32.0	5.3	5.2	4.9	1.52	8%
BigIndian5-22-32post	32.0	512.9	499.5	499.5	280.29	3%
BigIndian6post	32.0	9.0	8.9	8.4	2.62	6%
BigIndian7post	32.0	9.5	9.4	8.5	3.21	11%
BigIndian8post	32.0	17.7	17.5	16.3	5.97	8%
BigIndian9post	32.0	18.0	17.8	16.3	9.64	9%
BigIndian10post	32.0	23.9	23.7	22.2	12.09	7%
BigIndian11post	32.0	9.5	9.2	6.9	2.46	27%
BigIndian12post	32.0	19.2	19.1	17.5	10.42	9%
BigIndian13post	32.0	11.7	11.5	10.4	4.55	10%
BigIndian14post	32.0	5.7	5.6	4.1	1.61	29%
BigIndian15post	32.0	42.5	42.0	37.6	14.07	11%
BigIndian16post	32.0	5.6	5.6	5.0	1.79	11%
BigIndian17-33post	32.0	15.3	15.2	13.8	8.71	10%
BigIndian18post	32.0	8.8	8.7	7.9	4.73	10%
BigIndian19post	32.0	11.6	11.3	8.1	5.20	30%
BigIndian20post	32.0	6.4	6.3	5.6	3.44	12%
BigIndian21post	32.0	13.6	13.5	12.8	5.16	6%
BigIndian23-24post	32.0	54.8	54.8	54.8	29.83	0%
BigIndian25post	32.0	41.2	40.8	36.6	21.08	11%
BigIndian26post	32.0	33.3	32.4	23.1	14.23	30%
BigIndian27post	32.0	9.3	9.1	6.8	3.88	27%
BigIndian28post	32.0	8.6	8.3	5.2	2.64	39%
BigIndian30post	32.0	586.6	527.1	527.1	293.36	10%
BigIndian31post	32.0	37.3	37.0	33.1	20.89	11%
BigIndian35post	32.0	311.8	301.7	301.7	150.23	3%
BigIndian36post	32.0	21.5	21.0	20.2	9.48	6%
BigIndian37post	32.0	15.1	14.8	13.0	6.65	14%
BigIndian38post	32.0	13.5	13.2	9.8	6.00	27%
BigIndian40-42post	32.0	15.8	15.5	12.5	7.45	21%
TOTALS		1,962.7	1,872.3	1,807.9	969.22	8%
Average yield (lb/acre)		2.0	1.9	1.9		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	158.2	140.3	140.3	3,367,000	20.6
BigIndian3pre	32.0	159.5	142.8	142.8	7,181,000	44.8
BigIndian4-5-6pre	32.0	162.5	145.5	145.5	7,214,000	45.8
BigIndian30pre	32.0	171.3	152.8	152.8	5,148,000	34.3
				Total volume (cu ft)	22,910,000	
			Runoff-weighted average concentration at outfall (mg/L)			145.5
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	140.7	128.9	23.0	388,754	0.7
BigIndian2post	32.0	133.6	120.7	30.8	70,276	0.2
BigIndian3post	32.0	79.1	72.4	27.8	177,656	0.4
BigIndian4post	32.0	67.4	60.9	26.5	52,856	0.1
BigIndian5-22-32post	32.0	120.8	112.5	112.5	3,634,000	30.8
BigIndian6post	32.0	59.7	53.7	28.8	99,035	0.2
BigIndian7post	32.0	105.8	96.7	24.2	93,314	0.2
BigIndian8post	32.0	24.2	24.2	13.3	13,249	0.0
BigIndian9post	32.0	108.7	100.9	32.1	170,962	0.4
BigIndian10post	32.0	94.6	87.3	16.3	57,818	0.1
BigIndian11post	32.0	217.9	197.3	37.3	74,721	0.2
BigIndian12post	32.0	98.8	91.5	28.2	189,765	0.4
BigIndian13post	32.0	98.9	91.0	30.4	6,840	0.0
BigIndian14post	32.0	351.4	319.4	17.0	39,931	0.1
BigIndian15post	32.0	117.8	109.0	73.7	725	0.0
BigIndian16post	32.0	98.9	90.3	37.3	3,144	0.0
BigIndian17-33post	32.0	96.6	89.7	22.3	12,855	0.0
BigIndian18post	32.0	111.2	103.3	24.5	82,268	0.2
BigIndian19post	32.0	317.5	294.0	29.7	82,616	0.2
BigIndian20post	32.0	137.4	128.0	22.7	54,653	0.1
BigIndian21post	32.0	60.6	55.5	27.9	157,427	0.3
BigIndian23-24post	32.0	93.0	86.4	92.4	166,270	1.2
BigIndian25post	32.0	118.6	109.9	37.5	25,506	0.1
BigIndian26post	32.0	274.0	253.4	179.9	31,992	0.4
BigIndian27post	32.0	317.7	293.6	30.1	67,342	0.2
BigIndian28post	32.0	218.8	199.6	75.5	166	0.0
BigIndian30post	32.0	162.3	128.2	128.2	4,660,000	45.0
BigIndian31post	32.0	115.1	107.2	41.9	14,165	0.0
BigIndian35post	32.0	173.8	161.6	161.6	2,481,000	30.2
BigIndian36post	32.0	351.4	325.4	280.6	150,610	3.2
BigIndian37post	32.0	351.4	325.4	190.9	105,649	1.5
BigIndian38post	32.0	345.9	320.3	38.3	95,321	0.3
BigIndian40-42post	32.0	201.1	186.0	44.6	6,145	0.0
				Total volume (cu ft)	13,267,031	
			Runoff-weighted average concentration at outfall (mg/L)			116.6

Total Area, with Drainage and Outfall Controls - Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	32.0	33,716	29,888	29,888	197.6	11%
BigIndian3pre	32.0	72,468	64,875	64,875	447.4	10%
BigIndian4-5-6pre	32.0	74,170	66,390	66,390	447.8	10%
BigIndian30pre	32.0	55,796	49,785	49,785	315.7	11%
TOTALS		236,150	210,938	210,938	1,408.5	11%
Average yield (lb/acre)		168	150	150		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	32.0	3,464	3,173	566	17.42	84%
BigIndian2post	32.0	596	538	137	2.13	77%
BigIndian3post	32.0	891	816	313	6.47	65%
BigIndian4post	32.0	226	204	89	1.52	61%
BigIndian5-22-32post	32.0	36,085	33,616	17,279	280.29	52%
BigIndian6post	32.0	375	338	181	2.62	52%
BigIndian7post	32.0	627	573	144	3.21	77%
BigIndian8post	32.0	286	286	286	5.97	0%
BigIndian9post	32.0	1,176	1,091	348	9.64	70%
BigIndian10post	32.0	1,424	1,313	606	12.09	57%
BigIndian11post	32.0	1,033	936	177	2.46	83%
BigIndian12post	32.0	1,186	1,099	338	10.42	71%
BigIndian13post	32.0	729	671	134	4.55	82%
BigIndian14post	32.0	890	809	43	1.61	95%
BigIndian15post	32.0	1,921	1,778	344	14.07	82%
BigIndian16post	32.0	373	340	77	1.79	79%
BigIndian17-33post	32.0	937	871	203	8.71	78%
BigIndian18post	32.0	579	538	127	4.73	78%
BigIndian19post	32.0	1,659	1,538	155	5.20	91%
BigIndian20post	32.0	475	443	79	3.44	83%
BigIndian21post	32.0	606	554	279	5.16	54%
BigIndian23-24post	32.0	3,305	3,069	980	29.83	70%
BigIndian25post	32.0	2,818	2,611	510	21.08	82%
BigIndian26post	32.0	4,304	3,980	359	14.23	92%
BigIndian27post	32.0	1,354	1,251	128	3.88	91%
BigIndian28post	32.0	909	829	79	2.64	91%
BigIndian30post	32.0	47,845	37,803	37,803	293.36	21%
BigIndian31post	32.0	2,525	2,352	414	20.89	84%
BigIndian35post	32.0	27,279	25,360	25,360	150.23	7%
BigIndian36post	32.0	3,348	3,100	2,673	9.48	20%
BigIndian37post	32.0	2,348	2,175	1,276	6.65	46%
BigIndian38post	32.0	2,086	1,932	231	6.00	89%
BigIndian40-42post	32.0	1,706	1,578	178	7.45	90%
TOTALS		155,364	137,564	91,896	969.22	41%
Average yield (lb/acre)		160	142	95		

APPENDIX 10 A

BELLEAYRE HIGHLANDS
1993 RUNOFF

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling							
	Rainfall period: 3/15/93 - 11/30/93						
	Detention ponds have variable infiltration						
Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)							
Subcatchment	Rain Total (inches)	Total Before Drainage System (cu ft)	Total After Drainage System (cu ft)	Total After Outfall Controls (cu ft)	Total Losses (in) *	Average Calculated CN	Area of sub-catchment (acres)
POST-DEVELOPMENT CONDITION							
Belleayre Highlands1and2post	32.0	2,372,000	2,372,000	2,372,000	27.49	92.2	143.28
Belleayre Highlands3and7post	32.0	319,807	319,807	319,807	27.63	92.1	20.13
Belleayre Highlands4and5post	32.0	174,750	174,750	174,750	26.18	93.2	8.13
Belleayre Highlands6and23post	32.0	177,618	177,618	177,618	27.63	92.1	11.18
Belleayre Highlands8-13-14post	32.0	474,426	474,426	83,859	31.07	87.5	24.84
Belleayre Highlands9and11post	32.0	124,280	124,280	124,280	26.17	93.2	5.76
Belleayre Highlands10and12post	32.0	169,002	169,002	169,002	25.39	93.6	7.23
Belleayre Highlands16post	32.0	46,511	46,511	46,511	26.46	93.0	2.30
Belleayre Highlands17post	32.0	76,371	76,371	76,371	26.87	92.8	4.00
Belleayre Highlands18post	32.0	109,625	109,625	109,625	25.13	93.8	4.42
Belleayre Highlands21post	32.0	3,151,000	3,151,000	3,151,000	27.53	92.2	193.07
Belleayre Highlands22post	32.0	254,766	254,766	254,766	27.37	92.3	14.96
TOTALS		7,450,156	7,450,156	7,059,589			439.30
Average runoff (cu ft/acre)		16,959	16,959	16,070			
Changes to file:							
11-15-02, Old 2 subcatchment = new catchment 18, New subcatchment 2 added to pond 3							

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	478.4	438.5	438.5	2,372,000	147.3
Belleayre Highlands3and7post	32.0	588.3	387.5	64.8	319,807	2.9
Belleayre Highlands4and5post	32.0	264.7	222.0	33.1	174,750	0.8
Belleayre Highlands6and23post	32.0	587.0	386.6	50.3	177,618	1.3
Belleayre Highlands8-13-14post	32.0	228.0	205.2	232.9	83,859	2.8
Belleayre Highlands9and11post	32.0	102.4	86.3	7.7	124,280	0.1
Belleayre Highlands10and12post	32.0	111.8	92.8	91.7	169,002	2.2
Belleayre Highlands16post	32.0	108.7	93.4	6.3	46,511	0.0
Belleayre Highlands17post	32.0	105.8	92.3	6.6	76,371	0.1
Belleayre Highlands18post	32.0	707.0	443.9	17.5	109,625	0.3
Belleayre Highlands21post	32.0	478.6	440.7	440.7	3,151,000	196.7
Belleayre Highlands22post	32.0	43.1	37.6	2.9	254,766	0.1
				Total volume (cu ft)	7,059,589	
			Runoff-weighted average concentration at outfall (mg/L)			354.6

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	832.2	832.2	832.2	2,372,000	279.6
Belleayre Highlands3and7post	32.0	831.0	831.0	831.0	319,807	37.6
Belleayre Highlands4and5post	32.0	609.5	609.5	609.5	174,750	15.1
Belleayre Highlands6and23post	32.0	833.8	833.8	833.8	177,618	21.0
Belleayre Highlands8-13-14post	32.0	686.8	686.8	686.8	83,859	8.2
Belleayre Highlands9and11post	32.0	572.2	572.2	572.2	124,280	10.1
Belleayre Highlands10and12post	32.0	574.5	574.5	574.5	169,002	13.8
Belleayre Highlands16post	32.0	570.9	570.9	570.9	46,511	3.8
Belleayre Highlands17post	32.0	646.5	646.5	646.5	76,371	7.0
Belleayre Highlands18post	32.0	846.7	846.7	846.7	109,625	13.1
Belleayre Highlands21post	32.0	824.0	824.0	824.0	3,151,000	367.8
Belleayre Highlands22post	32.0	758.1	758.1	758.1	254,766	27.4
				Total volume (cu ft)	7,059,589	
			Runoff-weighted average concentration at outfall (mg/L)			804.4

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	1,301	823	823	2,372,000	277
Belleayre Highlands3and7post	32.0	1,251	831	831	319,807	38
Belleayre Highlands4and5post	32.0	874	610	610	174,750	15
Belleayre Highlands6and23post	32.0	1,253	834	834	177,618	21
Belleayre Highlands8-13-14post	32.0	915	687	687	83,859	8
Belleayre Highlands9and11post	32.0	675	572	572	124,280	10
Belleayre Highlands10and12post	32.0	686	575	575	169,002	14
Belleayre Highlands16post	32.0	680	571	571	46,511	4
Belleayre Highlands17post	32.0	752	647	647	76,371	7
Belleayre Highlands18post	32.0	1,337	847	847	109,625	13
Belleayre Highlands21post	32.0	1,302	824	824	3,151,000	368
Belleayre Highlands22post	32.0	801	758	758	254,766	27
				Total volume (cu ft)	7,059,589	
			Runoff-weighted average concentration at outfall (mg/L)			801

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling							
Pollution file: BHAM.ppd							
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)							
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.	
POST-DEVELOPMENT CONDITION							
Belleayre Highlands1and2post	32.0	0.36	0.33	0.33	2,372,000	0.11	
Belleayre Highlands3and7post	32.0	0.41	0.38	0.06	319,807	0.00	
Belleayre Highlands4and5post	32.0	0.32	0.27	0.04	174,750	0.00	
Belleayre Highlands6and23post	32.0	0.39	0.36	0.05	177,618	0.00	
Belleayre Highlands8-13-14post	32.0	0.51	0.47	0.43	83,859	0.01	
Belleayre Highlands9and11post	32.0	0.49	0.45	0.05	124,280	0.00	
Belleayre Highlands10and12post	32.0	0.51	0.46	0.46	169,002	0.01	
Belleayre Highlands16post	32.0	0.56	0.51	0.04	46,511	0.00	
Belleayre Highlands17post	32.0	0.60	0.55	0.04	76,371	0.00	
Belleayre Highlands18post	32.0	0.35	0.32	0.01	109,625	0.00	
Belleayre Highlands21post	32.0	0.36	0.33	0.20	3,151,000	0.09	
Belleayre Highlands22post	32.0	0.22	0.20	0.02	254,766	0.00	
				Total volume (cu ft)	7,059,589		
				Runoff-weighted average concentration at outfall (mg/L)		0.22	
Pollution file: BHAM.ppd							
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)							
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields	
POST-DEVELOPMENT CONDITION							
Belleayre Highlands1and2post	32.0	54.2	49.7	49.8	143.28	8%	
Belleayre Highlands3and7post	32.0	8.3	7.7	1.7	20.13	80%	
Belleayre Highlands4and5post	32.0	3.5	3.0	0.5	8.13	87%	
Belleayre Highlands6and23post	32.0	4.4	4.1	0.5	11.18	88%	
Belleayre Highlands8-13-14post	32.0	14.1	12.9	2.6	24.84	81%	
Belleayre Highlands9and11post	32.0	3.9	3.5	0.3	5.76	91%	
Belleayre Highlands10and12post	32.0	5.5	4.9	4.9	7.23	11%	
Belleayre Highlands16post	32.0	1.7	1.5	0.1	2.30	93%	
Belleayre Highlands17post	32.0	2.9	2.6	0.2	4.00	93%	
Belleayre Highlands18post	32.0	2.4	2.2	0.1	4.23	96%	
Belleayre Highlands21post	32.0	71.9	66.3	66.3	193.07	8%	
Belleayre Highlands22post	32.0	3.6	3.3	0.3	14.96	92%	
Totals		176.3	161.6	127.2	439	28%	
Average yield (lb/acre)		0.4	0.4	0.3			

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling
Pollution file: Pollgeo.ppd

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	0.28	0.25	0.25	2,372,000	0.08
Belleayre Highlands3and7post	32.0	0.29	0.27	0.05	319,807	0.00
Belleayre Highlands4and5post	32.0	0.29	0.24	0.03	174,750	0.00
Belleayre Highlands6and23post	32.0	0.29	0.27	0.03	177,618	0.00
Belleayre Highlands8-13-14post	32.0	0.42	0.42	0.37	83,859	0.00
Belleayre Highlands9and11post	32.0	0.36	0.31	0.02	124,280	0.00
Belleayre Highlands10and12post	32.0	0.39	0.35	0.02	46,511	0.00
Belleayre Highlands16post	32.0	0.33	0.28	0.28	96,312	0.00
Belleayre Highlands17post	32.0	0.39	0.35	0.03	76,371	0.00
Belleayre Highlands18post	32.0	0.24	0.22	0.01	109,625	0.00
Belleayre Highlands21post	32.0	0.24	0.22	0.22	3,151,000	0.10
Belleayre Highlands22post	32.0	0.12	0.11	0.01	254,766	0.00
				Total volume (cu ft)	6,986,899	
				Runoff-weighted average concentration at outfall (mg/L)		0.20

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling
Pollution file: Pollgeo.ppd

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	0.046	0.046	0.046	2,372,000	0.015
Belleayre Highlands3and7post	32.0	0.108	0.107	0.107	319,807	0.005
Belleayre Highlands4and5post	32.0	0.164	0.164	0.164	174,750	0.004
Belleayre Highlands6and23post	32.0	0.116	0.116	0.116	177,618	0.003
Belleayre Highlands8-13-14post	32.0	0.278	0.278	0.278	83,859	0.003
Belleayre Highlands9and11post	32.0	0.355	0.355	0.355	124,280	0.006
Belleayre Highlands10and12post	32.0	0.380	0.380	0.380	169,002	0.009
Belleayre Highlands16post	32.0	0.400	0.400	0.400	46,511	0.003
Belleayre Highlands17post	32.0	0.428	0.428	0.428	76,371	0.005
Belleayre Highlands18post	32.0	0.038	0.038	0.038	109,625	0.001
Belleayre Highlands21post	32.0	0.040	0.040	0.040	3,151,000	0.018
Belleayre Highlands22post	32.0	0.129	0.129	0.129	254,766	0.005
				Total volume (cu ft)	7,059,589	
				Runoff-weighted average concentration at outfall (mg/L)		0.076

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling							
Pollution file: Pollgeo.ppd							
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)							
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.	
POST-DEVELOPMENT CONDITION							
Belleayre Highlands1and2post	32.0	0.33	0.30	0.30	2,372,000	0.10	
Belleayre Highlands3and7post	32.0	0.40	0.38	0.15	319,807	0.01	
Belleayre Highlands4and5post	32.0	0.46	0.40	0.20	174,750	0.00	
Belleayre Highlands6and23post	32.0	0.41	0.38	0.15	177,618	0.00	
Belleayre Highlands8-13-14post	32.0	0.69	0.65	0.20	83,859	0.00	
Belleayre Highlands9and11post	32.0	0.71	0.66	0.38	124,280	0.01	
Belleayre Highlands10and12post	32.0	0.77	0.71	0.71	169,002	0.02	
Belleayre Highlands16post	32.0	0.79	0.75	0.42	46,511	0.00	
Belleayre Highlands17post	32.0	0.82	0.78	0.45	76,371	0.00	
Belleayre Highlands18post	32.0	0.28	0.25	0.05	109,625	0.00	
Belleayre Highlands21post	32.0	0.28	0.26	0.26	3,151,000	0.12	
Belleayre Highlands22post	32.0	0.25	0.24	0.14	254,766	0.00	
				Total volume (cu ft)	7,059,589		
				Runoff-weighted average concentration at outfall (mg/L)		0.27	
Pollution file: Pollgeo.ppd							
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)							
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Yield per acre after drainage system (lbs)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION							
Belleayre Highlands1and2post	32.0	48.8	44.6	44.6	143.28	0.3	9%
Belleayre Highlands3and7post	32.0	8.1	7.6	3.1	20.13	0.2	62%
Belleayre Highlands4and5post	32.0	5.1	4.4	2.2	8.13	0.3	57%
Belleayre Highlands6and23post	32.0	4.6	4.3	1.7	11.18	0.2	63%
Belleayre Highlands8-13-14post	32.0	20.9	19.5	10.5	24.84	0.4	50%
Belleayre Highlands9and11post	32.0	5.6	5.2	3.0	5.76	0.5	46%
Belleayre Highlands10and12post	32.0	8.2	7.6	7.6	7.23	1.1	8%
Belleayre Highlands16post	32.0	2.3	2.2	1.3	2.30	0.5	46%
Belleayre Highlands17post	32.0	4.0	3.8	2.2	4.00	0.5	45%
Belleayre Highlands18post	32.0	1.9	1.8	0.3	4.42	0.1	83%
Belleayre Highlands21post	32.0	56.4	52.3	52.3	193.07	0.3	7%
Belleayre Highlands22post	32.0	4.1	3.8	2.2	14.96	0.1	45%
Totals		170.0	157.3	131.0	439.3	0.3	23%
Average yield (lb/acre)		0.39	0.36	0.30			

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling						
Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/l)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	1.33	1.33	1.33	2,372,000	0.45
Belleayre Highlands3and7post	32.0	1.36	1.36	1.36	319,807	0.06
Belleayre Highlands4and5post	32.0	1.38	1.38	1.38	174,750	0.03
Belleayre Highlands6and23post	32.0	1.40	1.40	1.40	177,618	0.04
Belleayre Highlands8-13-14post	32.0	1.43	1.43	1.43	83,859	0.02
Belleayre Highlands9and11post	32.0	1.75	1.75	1.75	124,280	0.03
Belleayre Highlands10and12post	32.0	1.07	1.07	1.07	169,002	0.03
Belleayre Highlands16post	32.0	2.18	2.18	2.18	46,511	0.01
Belleayre Highlands17post	32.0	1.28	1.28	1.28	76,371	0.01
Belleayre Highlands18post	32.0	1.28	1.28	1.28	109,625	0.02
Belleayre Highlands21post	32.0	1.25	1.25	1.25	3,151,000	0.56
Belleayre Highlands22post	32.0	1.74	1.74	1.74	254,766	0.06
				Total volume (cu ft)	7,059,589	
				Runoff-weighted average concentration at outfall (mg/L)		1.32
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	1.98	1.91	1.91	2,372,000	0.64
Belleayre Highlands3and7post	32.0	1.93	1.87	1.79	319,807	0.08
Belleayre Highlands4and5post	32.0	1.75	1.69	1.38	174,750	0.03
Belleayre Highlands6and23post	32.0	1.93	1.87	1.28	177,618	0.03
Belleayre Highlands8-13-14post	32.0	1.78	1.75	1.75	83,859	0.02
Belleayre Highlands9and11post	32.0	1.63	1.62	1.49	124,280	0.03
Belleayre Highlands10and12post	32.0	1.68	1.66	1.66	169,002	0.04
Belleayre Highlands16post	32.0	1.67	1.66	1.51	46,511	0.01
Belleayre Highlands17post	32.0	1.71	1.70	1.55	76,371	0.02
Belleayre Highlands18post	32.0	1.99	1.90	1.15	109,625	0.02
Belleayre Highlands21post	32.0	1.98	1.91	1.91	3,151,000	0.85
Belleayre Highlands22post	32.0	1.28	1.28	1.21	254,766	0.04
				Total volume (cu ft)	7,059,589	
				Runoff-weighted average concentration at outfall (mg/L)		1.82

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	199.5	199.5	199.5	143.28	0%
Belleayre Highlands3and7post	32.0	27.4	27.4	27.4	20.13	0%
Belleayre Highlands4and5post	32.0	15.3	15.3	15.3	8.13	0%
Belleayre Highlands6and23post	32.0	15.8	15.8	15.8	11.18	0%
Belleayre Highlands8-13-14post	32.0	42.8	42.8	42.8	24.84	0%
Belleayre Highlands9and11post	32.0	13.8	13.8	13.8	5.76	0%
Belleayre Highlands10and12post	32.0	11.5	11.5	11.5	7.23	0%
Belleayre Highlands16post	32.0	6.4	6.4	6.4	2.30	0%
Belleayre Highlands17post	32.0	6.2	6.2	6.2	4.00	0%
Belleayre Highlands18post	32.0	8.9	8.9	8.9	4.42	0%
Belleayre Highlands21post	32.0	249.2	249.2	249.2	193.07	0%
Belleayre Highlands22post	32.0	28.1	28.1	28.1	14.96	0%
Total yield (lbs)	32.0	624.9	624.9	624.9	439.30	0%
Average yield (lb/acre)	32.0	1.4	1.4	1.4		
Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	297.2	287.3	287.3	143.28	3%
Belleayre Highlands3and7post	32.0	39.1	37.9	37.9	20.13	3%
Belleayre Highlands4and5post	32.0	19.4	18.7	15.2	8.13	21%
Belleayre Highlands6and23post	32.0	21.7	21.0	14.4	11.18	34%
Belleayre Highlands8-13-14post	32.0	53.5	52.5	43.8	24.84	18%
Belleayre Highlands9and11post	32.0	12.9	12.7	11.8	5.76	9%
Belleayre Highlands10and12post	32.0	18.0	17.8	17.8	7.23	1%
Belleayre Highlands16post	32.0	8.3	8.2	7.5	2.30	10%
Belleayre Highlands17post	32.0	12.4	12.3	11.2	4.00	10%
Belleayre Highlands18post	32.0	13.8	13.2	8.0	4.42	42%
Belleayre Highlands21post	32.0	394.5	381.3	381.3	193.07	3%
Belleayre Highlands22post	32.0	20.8	20.7	19.7	14.96	5%
Total yield (lbs)		911.4	883.6	855.8	439.3	6%
Average yield (lb/acre)		2.1	2.0	1.9		

Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Area-weighted proportion of concentration at outfall
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	172.2	159.5	159.5	2,372,000	53.6
Belleayre Highlands3and7post	32.0	162.8	151.6	151.6	319,807	6.9
Belleayre Highlands4and5post	32.0	117.3	102.9	37.4	174,750	0.9
Belleayre Highlands6and23post	32.0	149.9	139.8	35.2	177,618	0.9
Belleayre Highlands8-13-14post	32.0	137.2	126.8	25.3	83,859	0.3
Belleayre Highlands9and11post	32.0	98.2	90.1	31.3	124,280	0.6
Belleayre Highlands10and12post	32.0	94.2	85.7	85.0	169,002	2.0
Belleayre Highlands16post	32.0	111.2	102.4	29.6	46,511	0.2
Belleayre Highlands17post	32.0	106.1	98.3	28.1	76,371	0.3
Belleayre Highlands18post	32.0	158.5	145.2	24.8	109,625	0.4
Belleayre Highlands21post	32.0	164.0	152.7	152.7	3,151,000	68.2
Belleayre Highlands22post	32.0	50.6	47.6	23.4	254,766	0.8
				Total volume (cu ft)	7,059,589	
			Runoff-weighted average concentration at outfall (mg/L)			135.0

Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	32.0	25,913	23,934	23,934	143.28	8%
Belleayre Highlands3and7post	32.0	3,293	3,068	3,068	20.13	7%
Belleayre Highlands4and5post	32.0	1,298	1,139	414	8.13	68%
Belleayre Highlands6and23post	32.0	1,684	1,571	395	11.18	77%
Belleayre Highlands8-13-14post	32.0	4,122	3,809	1,322	24.84	68%
Belleayre Highlands9and11post	32.0	773	709	247	5.76	68%
Belleayre Highlands10and12post	32.0	1,008	918	910	7.23	10%
Belleayre Highlands16post	32.0	328	302	87	2.30	73%
Belleayre Highlands17post	32.0	513	474	136	4.00	74%
Belleayre Highlands18post	32.0	1,102	1,010	172	4.42	84%
Belleayre Highlands21post	32.0	32,701	30,431	30,431	193.07	7%
Belleayre Highlands22post	32.0	815	768	377	14.96	54%
Total yield (lbs)		73,550	68,132	61,494	439.30	16%
Average yield (lb/acre)		167	155	140		

APPENDIX 10 A

WILDACRES RESORT
1993 RUNOFF

Conditions: rainfall for 1993, as measured at Tannersville; detention ponds have an infiltration rate of 4.97 inches per hour.
Pollutant Relative Concentration File is BHAM.PPD, unless indicated otherwise.

Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)

Subcatchment	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Rv	Total Losses (in) *	Calculated CN	Area of Sub-catchment (acres)
PRE-DEVELOPMENT CONDITION								
Wildacres1pre	32.0	1,133,000	1,133,000	1,133,000		25.05	93.9	44.70
Wildacres2pre	32.0	2,863,000	2,863,000	2,863,000		25.00	94.0	111.80
Wildacres3pre	32.0	1,204,000	1,204,000	1,204,000		25.05	93.9	47.53
Wildacres4pre	32.0	2,211,000	2,211,000	2,211,000		25.02	94.0	86.90
Wildacres5pre	32.0	586,540	586,540	586,540		25.01	94.0	22.96
Wildacres6pre	32.0	1,058,000	1,058,000	1,058,000		24.78	94.1	39.80
Wildacres200.300pre	32.0	4,960,000	4,960,000	4,960,000		25.13	93.8	200.00
totals		14,015,540	14,015,540	14,015,540				553.69
Average runoff (cu ft/acre)		25,313	25,313	25,313				
POST-DEVELOPMENT CONDITION								
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	1,857,000	1,857,000	1,857,000		24.63	94.2	68.10
Wildacres5-8-9-10-11-12-55-88post	32.0	1,308,000	1,308,000	118,340		31.23	87.1	41.25
Wildacres6-101post	32.0	885,734	885,734	885,734		24.94	94.0	34.08
Wildacres13-23post	32.0	340,530	340,530	118,564		29.34	90.4	12.27
Wildacres14post	32.0	146,825	146,825	146,825		25.13	93.8	5.92
Wildacres15post	32.0	268,459	268,459	49,423		30.65	88.4	9.92
Wildacres16post	32.0	173,613	173,613	173,613		25.13	93.8	7.00
Wildacres20post	32.0	470,914	470,914	2,008		31.99	83.6	14.80
Wildacres21post	32.0	506,060	506,060	86,252		30.81	88.1	19.50
Wildacres22post	32.0	371,795	371,795	53,056		30.87	88.0	12.70
Wildacres24post	32.0	182,289	182,289	27,801		30.98	87.8	7.35
Wildacres25-200post	32.0	2,997,000	2,997,000	2,997,000		25.07	93.8	118.54
Wildacres40-41-42post	32.0	1,045,000	1,045,000	1,045,000		22.18	95.2	29.42
Wildacres102-105post	32.0	718,997	718,997	718,997		23.40	94.7	23.26
Wildacres103-104-106post	32.0	693,024	693,024	3,992		31.97	83.8	19.27
Wildacres107post	32.0	143,847	143,847	370		32.00	83.3	5.80
Wildacres108post	32.0	471,644	471,644	471,644		24.60	94.2	17.25
Wildacres109post	32.0	137,154	137,154	137,154		25.13	93.8	5.53
Wildacres110post	32.0	164,434	164,434	13,769		31.45	86.5	6.63
Wildacres111post	32.0	345,680	345,680	345,680		24.95	94.0	13.31
Wildacres112post	32.0	178,075	178,075	484		32.00	83.3	7.18
Wildacres121post	32.0	564,145	564,145	564,145		23.12	94.8	17.81
totals		13,970,219	13,970,219	9,816,851				496.89
Average runoff (cu ft/acre)		28,115	28,115	19,757				

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	485.0	414.5	414.5	1,133,000	33.5
Wildacres2pre	32.0	458.9	378.3	378.3	2,863,000	77.3
Wildacres3pre	32.0	458.1	412.7	412.7	1,204,000	35.5
Wildacres4pre	32.0	462.3	371.9	371.9	2,211,000	58.7
Wildacres5pre	32.0	470.3	381.0	381.0	586,540	15.9
Wildacres6pre	32.0	431.7	380.7	380.7	1,058,000	28.7
Wildacres200.300pre	32.0	720.1	357.4	357.4	4,960,000	126.5
					Total volume (cu ft)	14,015,540
					Runoff-weighted average concentration at outfall (mg/L)	
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	44.4	39.0	10.4	1,857,000	-
Wildacres5-8-9-10-11-12-55-88post	32.0	78.6	68.7	15.0	1,308,000	-
Wildacres6-101post	32.0	376.1	338.6	237.9	885,734	-
Wildacres13-23post	32.0	165.3	145.3	52.7	118,564	-
Wildacres14post	32.0	497.7	312.5	25.9	146,825	-
Wildacres15post	32.0	99.8	87.6	19.0	49,423	-
Wildacres16post	32.0	138.5	87.0	7.7	173,613	-
Wildacres20post	32.0	81.3	70.9	-	2,008	-
Wildacres21post	32.0	390.9	352.1	93.8	86,252	-
Wildacres22post	32.0	95.7	84.6		53,056	-
Wildacres24post	32.0	700.5	479.2	439.8	27,801	-
Wildacres25-200post	32.0	425.8	384.8	384.8	2,997,000	-
Wildacres40-41-42post	32.0	106.2	90.3	90.3	1,045,000	-
Wildacres102-105post	32.0	89.7	78.4	1.5	718,997	-
Wildacres103-104-106post	32.0	196.2	170.9	1.6	3,992	-
Wildacres107post	32.0	533.3	334.9	-	370	-
Wildacres108post	32.0	75.2	65.6	8.1	471,644	-
Wildacres109post	32.0	506.0	317.7	42.8	137,154	-
Wildacres110post	32.0	498.5	313.0	63.1	13,769	-
Wildacres111post	32.0	61.6	54.6	6.0	345,680	-
Wildacres112post	32.0	448.9	281.8	-	484	-
Wildacres121post	32.0	62.1	53.6	14.3	564,145	-
totals					Total volume (cu ft)	11,006,511
					Runoff-weighted average concentration at outfall (mg/L)	

Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	825.2	825.2	825.2	1,133,000	66.7
Wildacres2pre	32.0	807.9	807.9	807.9	2,863,000	165.0
Wildacres3pre	32.0	807.1	807.1	807.1	1,204,000	69.3
Wildacres4pre	32.0	812.1	812.1	812.1	2,211,000	128.1
Wildacres5pre	32.0	813.6	813.6	813.6	586,540	34.0
Wildacres6pre	32.0	777.8	777.8	777.8	1,058,000	58.7
Wildacres200.300pre	32.0	846.0	846.0	846.0	4,960,000	299.4
				Total volume (cu ft)	14,015,540	
			Runoff-weighted average concentration at outfall (mg/L)			821.3
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	759.6	759.6	759.6	1,857,000	128.2
Wildacres5-8-9-10-11-12-55-88post	32.0	618.0	618.0	618.0	1,308,000	73.4
Wildacres6-101post	32.0	791.4	791.4	791.4	885,734	63.7
Wildacres13-23post	32.0	754.1	754.1	164.1	118,564	1.8
Wildacres14post	32.0	857.6	857.6	-	146,825	-
Wildacres15post	32.0	752.1	752.1	95.6	49,423	0.4
Wildacres16post	32.0	828.0	828.0	828.0	173,613	13.1
Wildacres20post	32.0	651.7	651.7	651.7	2,008	0.1
Wildacres21post	32.0	809.3	809.3	117.6	86,252	0.9
Wildacres22post	32.0	733.1	733.1	87.0	53,056	0.4
Wildacres24post	32.0	847.0	847.0	824.7	27,801	2.1
Wildacres25-200post	32.0	835.1	835.1	835.1	2,997,000	227.4
Wildacres40-41-42post	32.0	568.1	568.1	568.1	1,045,000	53.9
Wildacres102-105post	32.0	671.0	671.0	671.0	718,997	43.8
Wildacres103-104-106post	32.0	551.1	551.1	551.1	3,992	0.2
Wildacres107post	32.0	855.7	855.7	855.7	370	0.0
Wildacres108post	32.0	763.9	763.9	763.9	471,644	32.7
Wildacres109post	32.0	857.1	857.1	857.1	137,154	10.7
Wildacres110post	32.0	857.5	857.5	857.5	13,769	1.1
Wildacres111post	32.0	809.2	809.2	809.2	345,680	25.4
Wildacres112post	32.0	860.1	860.1	860.1	484	0.0
Wildacres121post	32.0	647.7	647.7	647.7	564,145	33.2
totals				Total volume (cu ft)	11,006,511	
			Runoff-weighted average concentration at outfall (mg/L)			712.6

Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	1,310	825	825	1,133,000	66.7
Wildacres2pre	32.0	1,267	808	808	2,863,000	165.0
Wildacres3pre	32.0	1,265	807	807	1,204,000	69.3
Wildacres4pre	32.0	1,274	812	812	2,211,000	128.1
Wildacres5pre	32.0	1,284	814	814	586,540	34.0
Wildacres6pre	32.0	1,209	778	778	1,058,000	58.7
Wildacres200.300pre	32.0	1,346	846	846	4,960,000	299.4
				Total volume (cu ft)	14,015,540	
			Runoff-weighted average concentration at outfall (mg/L)			821.3
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	804	760	760	1,857,000	120.6
Wildacres5-8-9-10-11-12-55-88post	32.0	697	618	618	1,308,000	69.1
Wildacres6-101post	32.0	1,167	791	791	885,734	59.9
Wildacres13-23post	32.0	919	754	754	118,564	7.6
Wildacres14post	32.0	1,203	858	858	146,825	10.8
Wildacres15post	32.0	852	752	752	49,423	3.2
Wildacres16post	32.0	924	828	828	173,613	12.3
Wildacres20post	32.0	733	652	652	2,008	0.1
Wildacres21post	32.0	1,200	809	809	86,252	6.0
Wildacres22post	32.0	829	733	733	53,056	3.3
Wildacres24post	32.0	1,333	847	847	27,801	2.0
Wildacres25-200post	32.0	1,261	835	835	2,997,000	214.0
Wildacres40-41-42post	32.0	674	568	568	1,045,000	50.8
Wildacres102-105post	32.0	760	671	671	718,997	41.3
Wildacres103-104-106post	32.0	747	551	551	693,024	32.6
Wildacres107post	32.0	1,226	856	856	370	0.0
Wildacres108post	32.0	839	764	764	471,644	30.8
Wildacres109post	32.0	1,208	857	857	137,154	10.1
Wildacres110post	32.0	1,204	858	858	13,769	1.0
Wildacres111post	32.0	871	809	809	345,680	23.9
Wildacres112post	32.0	1,172	860	860	484	0.0
Wildacres121post	32.0	710	648	648	564,145	31.2
totals				Total volume (cu ft)	11,695,543	
			Runoff-weighted average concentration at outfall (mg/L)			730.7

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	0.345	0.295	0.295	1,133,000	0.037
Wildacres2pre	32.0	0.373	0.308	0.308	2,863,000	0.097
Wildacres3pre	32.0	0.372	0.336	0.336	1,204,000	0.045
Wildacres4pre	32.0	0.372	0.300	0.300	2,211,000	0.073
Wildacres5pre	32.0	0.334	0.271	0.271	586,540	0.018
Wildacres6pre	32.0	0.419	0.371	0.371	1,058,000	0.043
Wildacres200.300pre	32.0	0.347	0.248	0.248	4,960,000	0.136
				Total volume (cu ft)	9,055,540	
				Runoff-weighted average concentration at outfall (mg/L)		0.449
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	0.278	0.250	0.067	1,857,000	0.011
Wildacres5-8-9-10-11-12-55-88post	32.0	0.509	0.455	0.106	1,308,000	0.012
Wildacres6-101post	32.0	0.431	0.388	0.273	885,734	0.020
Wildacres13-23post	32.0	0.289	0.257	0.094	118,564	0.001
Wildacres14post	32.0	0.727	0.658	0.054	146,825	0.001
Wildacres15post	32.0	0.670	0.604	0.140	49,423	0.001
Wildacres16post	32.0	0.739	0.668	0.059	173,613	0.001
Wildacres20post	32.0	0.509	0.451	-	2,008	-
Wildacres21post	32.0	0.541	0.488	0.131	862,521	0.010
Wildacres22post	32.0	0.674	0.607	0.132	53,056	0.001
Wildacres24post	32.0	0.349	0.344	0.316	27,801	0.001
Wildacres25-200post	32.0	0.317	0.296	0.286	2,997,000	0.073
Wildacres40-41-42post	32.0	0.431	0.380	0.380	1,045,000	0.034
Wildacres102-105post	32.0	0.606	0.542	0.011	718,997	0.001
Wildacres103-104-106post	32.0	0.486	0.433	0.004	3,992	0.000
Wildacres107post	32.0	0.666	0.171	-	370	-
Wildacres108post	32.0	0.482	0.434	0.055	471,644	0.002
Wildacres109post	32.0	0.713	0.645	0.087	137,154	0.001
Wildacres110post	32.0	0.726	0.657	0.132	13,769	0.000
Wildacres111post	32.0	0.422	0.380	0.043	345,680	0.001
Wildacres112post	32.0	1.280	1.280	0.456	484	0.000
Wildacres121post	32.0	0.370	0.328	0.089	564,145	0.004
totals				Total volume (cu ft)	11,782,780	
				Runoff-weighted average concentration at outfall (mg/L)		0.173

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	24.76	21.17	21.17	44.70	14%
Wildacres2pre	32.0	67.85	55.98	55.98	111.80	17%
Wildacres3pre	32.0	28.44	25.65	25.65	47.53	10%
Wildacres4pre	32.0	52.19	42.03	42.03	86.90	19%
Wildacres5pre	32.0	12.44	10.09	10.09	22.96	19%
Wildacres6pre	32.0	28.11	24.93	24.93	39.80	11%
Wildacres200.300pre	32.0	109.30	78.15	78.15	200.00	28%
TOTALS		323.09	258.00	258.00	553.69	20%
Average yield (lb/acre)		0.58	0.47	0.47		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	32.80	29.43	7.93	68.10	76%
Wildacres5-8-9-10-11-12-55-88post	32.0	42.25	37.82	0.78	41.25	98%
Wildacres6-101post	32.0	24.20	21.83	15.32	34.08	37%
Wildacres13-23post	32.0	6.23	5.56	0.70	12.27	89%
Wildacres14post	32.0	6.78	6.13	0.51	5.92	93%
Wildacres15post	32.0	11.41	10.28	0.43	9.92	96%
Wildacres16post	32.0	8.14	7.36	0.65	7.00	92%
Wildacres20post	32.0	15.20	13.47	-	14.80	100%
Wildacres21post	32.0	17.37	15.68	0.70	19.50	96%
Wildacres22post	32.0	15.65	14.07	0.44	12.70	97%
Wildacres24post	32.0	4.04	3.65	0.60	7.35	85%
Wildacres25-200post	32.0	59.89	54.03	54.03	118.54	10%
Wildacres40-41-42post	32.0	28.56	25.17	25.17	29.42	12%
Wildacres102-105post	32.0	27.65	24.71	0.50	23.26	98%
Wildacres103-104-106post	32.0	21.39	19.06	0.00	19.27	100%
Wildacres107post	32.0	6.08	5.50	-	5.80	100%
Wildacres108post	32.0	14.43	12.98	1.64	17.25	89%
Wildacres109post	32.0	6.21	5.61	0.76	5.53	88%
Wildacres110post	32.0	7.57	6.85	0.11	6.63	98%
Wildacres111post	32.0	9.25	8.34	0.93	13.31	90%
Wildacres112post	32.0	9.16	8.28	-	7.18	100%
Wildacres121post	32.0	13.25	11.74	3.19	17.81	76%
totals		387.51	347.54	114.38	496.89	70%
Average yield (lb/acre)		0.78	0.70	0.23		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	0.20	0.17	0.17	1,133,000	0.014
Wildacres2pre	32.0	0.30	0.24	0.24	2,863,000	0.049
Wildacres3pre	32.0	0.29	0.26	0.26	1,204,000	0.022
Wildacres4pre	32.0	0.29	0.23	0.23	2,211,000	0.036
Wildacres5pre	32.0	0.25	0.20	0.20	586,540	0.008
Wildacres6pre	32.0	0.44	0.38	0.38	1,058,000	0.028
Wildacres200.300pre	32.0	0.19	0.13	0.13	4,960,000	0.047
				Total volume (cu ft)	14,015,540	
			Runoff-weighted average concentration at outfall (mg/L)			0.205
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	0.15	0.13	0.03	1,857,000	0.006
Wildacres5-8-9-10-11-12-55-88post	32.0	0.31	0.27	0.06	1,308,000	0.007
Wildacres6-101post	32.0	0.42	0.38	0.27	885,734	0.021
Wildacres13-23post	32.0	0.34	0.30	0.11	118,564	0.001
Wildacres14post	32.0	1.09	0.98	0.08	146,825	0.001
Wildacres15post	32.0	0.41	0.36	0.08	49,423	0.000
Wildacres16post	32.0	0.42	0.38	0.03	173,613	0.001
Wildacres20post	32.0	0.30	0.26	-	2,008	-
Wildacres21post	32.0	0.69	0.62	0.16	86,252	0.001
Wildacres22post	32.0	0.40	0.36	0.08	53,056	0.000
Wildacres24post	32.0	0.27	0.26	0.24	27,801	0.001
Wildacres25-200post	32.0	0.17	0.15	0.15	2,997,000	0.041
Wildacres40-41-42post	32.0	0.30	0.26	0.26	1,045,000	0.025
Wildacres102-105post	32.0	0.36	0.32	0.01	718,997	0.000
Wildacres103-104-106post	32.0	0.70	0.61	0.01	3,992	0.000
Wildacres107post	32.0	0.94	0.85	-	370	-
Wildacres108post	32.0	0.29	0.26	0.03	471,644	0.001
Wildacres109post	32.0	1.05	0.95	0.13	137,154	0.002
Wildacres110post	32.0	1.08	0.98	0.20	13,769	0.000
Wildacres111post	32.0	0.23	0.21	0.02	345,680	0.001
Wildacres112post	32.0	1.29	1.16	-	484	-
Wildacres121post	32.0	0.22	0.19	0.05	564,145	0.003
				Total volume (cu ft)	11,006,511	
			Runoff-weighted average concentration at outfall (mg/L)			0.113

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	0.022	0.022	0.022	1,133,000	0.002
Wildacres2pre	32.0	0.070	0.070	0.070	2,863,000	0.014
Wildacres3pre	32.0	0.069	0.069	0.069	1,204,000	0.006
Wildacres4pre	32.0	0.065	0.065	0.065	2,211,000	0.010
Wildacres5pre	32.0	0.047	0.047	0.047	586,540	0.002
Wildacres6pre	32.0	0.135	0.135	0.135	1,058,000	0.010
Wildacres200.300pre	32.0	0.011	0.011	0.011	4,960,000	0.004
				Total volume (cu ft)	14,015,540	
			Runoff-weighted average concentration at outfall (mg/L)			0.048
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	0.171	0.171	0.171	1,857,000	0.029
Wildacres5-8-9-10-11-12-55-88post	32.0	0.349	0.349	0.349	1,308,000	0.041
Wildacres6-101post	32.0	0.169	0.169	0.169	885,734	0.014
Wildacres13-23post	32.0	0.198	0.198	0.198	118,564	0.002
Wildacres14post	32.0	0.472	0.472	0.472	146,825	0.006
Wildacres15post	32.0	0.481	0.481	0.481	49,423	0.002
Wildacres16post	32.0	0.524	0.524	0.524	173,613	0.008
Wildacres20post	32.0	0.316	0.316	-	2,008	-
Wildacres21post	32.0	0.273	0.273	0.039	86,252	0.000
Wildacres22post	32.0	0.477	0.477	0.057	53,056	0.000
Wildacres24post	32.0	0.052	0.052	0.050	27,801	0.000
Wildacres25-200post	32.0	0.019	0.019	0.019	2,997,000	0.005
Wildacres40-41-42post	32.0	0.277	0.277	0.277	1,045,000	0.026
Wildacres102-105post	32.0	0.410	0.410	0.410	718,997	0.027
Wildacres103-104-106post	32.0	0.344	0.344	0.344	3,992	0.000
Wildacres107post	32.0	0.398	0.398	0.398	370	0.000
Wildacres108post	32.0	0.336	0.336	0.336	471,644	0.014
Wildacres109post	32.0	0.455	0.455	0.455	137,154	0.006
Wildacres110post	32.0	0.470	0.470	0.470	13,769	0.001
Wildacres111post	32.0	0.283	0.283	0.283	345,680	0.009
Wildacres112post	32.0	0.573	0.573	0.573	484	0.000
Wildacres121post	32.0	0.229	0.229	0.229	564,145	0.012
totals				Total volume (cu ft)	11,006,511	
			Runoff-weighted average concentration at outfall (mg/L)			0.203

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	0.227	0.195	0.195	1,133,000	0.016
Wildacres2pre	32.0	0.365	0.310	0.310	2,863,000	0.063
Wildacres3pre	32.0	0.362	0.331	0.331	1,204,000	0.028
Wildacres4pre	32.0	0.352	0.293	0.293	2,211,000	0.046
Wildacres5pre	32.0	0.300	0.248	0.248	586,540	0.010
Wildacres6pre	32.0	0.570	0.512	0.512	1,058,000	0.039
Wildacres200.300pre	32.0	0.197	0.144	0.144	4,960,000	0.051
				Total volume (cu ft)	14,015,540	
				Runoff-weighted average concentration at outfall (mg/L)		0.254
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	0.318	0.301	0.206	1,857,000	0.035
Wildacres5-8-9-10-11-12-55-88post	32.0	0.657	0.622	0.357	1,308,000	0.042
Wildacres6-101post	32.0	0.591	0.547	0.435	885,734	0.035
Wildacres13-23post	32.0	0.664	0.540	0.500	118,564	0.005
Wildacres14post	32.0	1.559	1.454	0.553	146,825	0.007
Wildacres15post	32.0	2.668	0.891	0.846	49,423	0.004
Wildacres16post	32.0	0.947	0.906	0.557	173,613	0.009
Wildacres20post	32.0	0.613	0.578	0.578	2,008	0.000
Wildacres21post	32.0	0.963	0.894	0.225	86,252	0.002
Wildacres22post	32.0	0.875	0.833	0.310	53,056	0.001
Wildacres24post	32.0	0.601	0.317	0.292	27,801	0.001
Wildacres25-200post	32.0	0.185	0.169	0.169	2,997,000	0.046
Wildacres40-41-42post	32.0	0.579	0.537	0.537	1,045,000	0.051
Wildacres102-105post	32.0	0.770	0.730	0.417	718,997	0.027
Wildacres103-104-106post	32.0	1.039	0.957	0.957	3,992	0.000
Wildacres107post	32.0	1.340	1.250	1.250	307	0.000
Wildacres108post	32.0	0.624	0.591	0.368	471,644	0.016
Wildacres109post	32.0	1.508	1.407	0.583	137,154	0.007
Wildacres110post	32.0	1.554	1.450	0.573	13,769	0.001
Wildacres111post	32.0	0.518	0.493	0.307	345,680	0.010
Wildacres112post	32.0	1.858	1.735	-	484	-
Wildacres121post	32.0	0.445	0.418	0.280	564,145	0.014
				Total volume (cu ft)	11,006,448	
				Runoff-weighted average concentration at outfall (mg/L)		0.314

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% reduction in yield due to outfall controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	16.29	13.99	13.99	44.70	14%
Wildacres2pre	32.0	66.36	56.29	56.29	111.80	15%
Wildacres3pre	32.0	27.68	25.27	25.27	47.53	9%
Wildacres4pre	32.0	49.31	41.05	41.05	86.90	17%
Wildacres5pre	32.0	11.15	9.24	9.24	22.96	17%
Wildacres6pre	32.0	38.28	34.40	34.40	39.80	10%
Wildacres200.300pre	32.0	61.97	45.29	45.29	200.00	27%
TOTALS		271.04	225.53	225.53	553.69	17%
Average yield (lb/acre)		0.49	0.41	0.41		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	37.50	35.50	24.25	68.10	35%
Wildacres5-8-9-10-11-12-55-88post	32.0	54.60	51.66	29.44	41.25	46%
Wildacres6-101post	32.0	33.18	30.72	24.45	34.08	26%
Wildacres13-23post	32.0	11.60	10.80	5.09	12.27	56%
Wildacres14post	32.0	14.52	13.55	5.15	5.92	65%
Wildacres15post	32.0	15.18	14.41	8.45	9.92	44%
Wildacres16post	32.0	10.43	9.98	6.14	7.00	41%
Wildacres20post	32.0	18.32	17.27	9.43	14.80	49%
Wildacres21post	32.0	30.92	28.69	9.64	19.50	69%
Wildacres22post	32.0	20.30	19.30	11.31	12.70	44%
Wildacres24post	32.0	3.67	3.37	1.05	7.35	71%
Wildacres25-200post	32.0	35.00	31.90	31.90	118.54	9%
Wildacres40-41-42post	32.0	38.42	35.59	35.59	29.42	7%
Wildacres102-105post	32.0	35.12	33.30	19.01	23.26	46%
Wildacres103-104-106post	32.0	45.71	42.09	15.13	19.27	67%
Wildacres107post	32.0	12.23	11.41	3.63	5.80	70%
Wildacres108post	32.0	18.69	17.69	11.00	17.25	41%
Wildacres109post	32.0	13.12	12.24	5.07	5.53	61%
Wildacres110post	32.0	16.21	15.13	5.08	6.63	69%
Wildacres111post	32.0	11.36	10.82	6.73	13.31	41%
Wildacres112post	32.0	20.99	19.60	6.47	7.18	69%
Wildacres121post	32.0	15.94	14.97	10.03	17.81	37%
totals		513.01	479.99	284.05	496.89	45%
Average yield (lb/acre)		1.03	0.97	0.57		

Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	1.250	1.250	1.250	1,133,000	0.101
Wildacres2pre	32.0	1.223	1.223	1.223	2,863,000	0.250
Wildacres3pre	32.0	1.222	1.222	1.222	1,204,000	0.105
Wildacres4pre	32.0	1.231	1.231	1.231	2,211,000	0.194
Wildacres5pre	32.0	1.230	1.230	1.230	586,540	0.051
Wildacres6pre	32.0	1.187	1.187	1.187	1,058,000	0.090
Wildacres200.300pre	32.0	1.280	1.280	1.280	4,960,000	0.453
				Total volume (cu ft)	14,015,540	
			Runoff-weighted average concentration at outfall (mg/L)			1.244
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	2.604	2.604	2.604	1,857,000	0.439
Wildacres5-8-9-10-11-12-55-88post	32.0	4.861	4.861	4.861	1,308,000	0.577
Wildacres6-101post	32.0	1.202	1.202	1.202	885,734	0.097
Wildacres13-23post	32.0	1.673	1.673	1.673	118,564	0.018
Wildacres14post	32.0	1.280	1.280	1.280	146,825	0.017
Wildacres15post	32.0	1.620	1.620	0.206	49,423	0.001
Wildacres16post	32.0	1.778	1.778	1.778	173,613	0.028
Wildacres20post	32.0	2.728	2.728	-	2,008	-
Wildacres21post	32.0	1.222	1.222	0.177	86,252	0.001
Wildacres22post	32.0	2.454	2.454	0.215	53,056	0.001
Wildacres24post	32.0	1.280	1.280	1.246	27,801	0.003
Wildacres25-200post	32.0	1.283	1.283	1.283	2,997,000	0.349
Wildacres40-41-42post	32.0	2.600	2.600	2.600	1,063,000	0.251
Wildacres102-105post	32.0	3.567	3.567	3.567	718,997	0.233
Wildacres103-104-106post	32.0	2.772	2.772	0.093	3,992	0.000
Wildacres107post	32.0	1.280	1.280	1.280	370	0.000
Wildacres108post	32.0	1.572	1.572	1.572	471,644	0.067
Wildacres109post	32.0	1.280	1.280	1.280	137,154	0.016
Wildacres110post	32.0	1.280	1.280	1.280	13,769	0.002
Wildacres111post	32.0	1.559	1.559	1.559	345,680	0.049
Wildacres112post	32.0	1.280	1.280	1.280	484	0.000
Wildacres121post	32.0	3.792	3.792	3.792	564,145	0.194
totals				Total volume (cu ft)	11,024,511	
			Runoff-weighted average concentration at outfall (mg/L)			2.341

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	1.97	1.84	1.84	1,133,000	0.149
Wildacres2pre	32.0	1.97	1.83	1.83	2,863,000	0.374
Wildacres3pre	32.0	1.97	1.89	1.89	1,204,000	0.162
Wildacres4pre	32.0	1.97	1.81	1.81	2,211,000	0.286
Wildacres5pre	32.0	1.96	1.81	1.81	586,540	0.076
Wildacres6pre	32.0	1.99	1.91	1.91	1,058,000	0.144
Wildacres200.300pre	32.0	1.98	1.73	1.73	4,960,000	0.612
				Total volume (cu ft)	14,015,540	
			Runoff-weighted average concentration at outfall (mg/L)			1.803
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	1.31	1.30	1.24	1,857,000	0.209
Wildacres5-8-9-10-11-12-55-88post	32.0	1.50	1.48	1.35	1,308,000	0.160
Wildacres6-101post	32.0	1.93	1.87	1.68	885,734	0.136
Wildacres13-23post	32.0	1.55	1.52	0.47	118,564	0.005
Wildacres14post	32.0	2.20	2.13	1.54	146,825	0.021
Wildacres15post	32.0	1.72	1.70	1.70	49,423	0.008
Wildacres16post	32.0	1.73	1.71	1.54	173,613	0.024
Wildacres20post	32.0	1.51	1.50	-	2,008	-
Wildacres21post	32.0	2.07	2.00	0.35	86,252	0.003
Wildacres22post	32.0	1.70	1.67	0.30	53,056	0.001
Wildacres24post	32.0	1.99	1.91	0.83	27,801	0.002
Wildacres25-200post	32.0	1.86	1.79	1.79	2,997,000	0.486
Wildacres40-41-42post	32.0	1.54	1.52	1.52	1,045,000	0.144
Wildacres102-105post	32.0	1.59	1.57	1.42	718,997	0.093
Wildacres103-104-106post	32.0	1.76	1.72	1.72	3,992	0.001
Wildacres107post	32.0	2.16	2.09	2.09	370	0.000
Wildacres108post	32.0	1.54	1.53	1.41	471,644	0.061
Wildacres109post	32.0	2.19	2.12	1.56	137,154	0.019
Wildacres110post	32.0	2.20	2.13	1.76	13,769	0.002
Wildacres111post	32.0	1.46	1.45	1.35	345,680	0.042
Wildacres112post	32.0	2.24	2.18	0.56	484	0.000
Wildacres121post	32.0	1.38	1.36	1.29	564,145	0.066
totals				Total volume (cu ft)	11,006,511	
			Runoff-weighted average concentration at outfall (mg/L)			1.483

Total Area, with Drainage and Outfall Controls - Yield of TOTAL Nitrate (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% reduction in yield due to outfall controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	89.83	89.83	89.83	44.70	0%
Wildacres2pre	32.0	222.10	222.10	222.10	111.80	0%
Wildacres3pre	32.0	93.37	93.37	93.37	47.53	0%
Wildacres4pre	32.0	172.60	172.60	172.60	86.90	0%
Wildacres5pre	32.0	45.79	45.79	45.79	22.96	0%
Wildacres6pre	32.0	79.70	79.70	79.70	39.80	0%
Wildacres200.300pre	32.0	402.90	402.90	402.90	200.00	0%
TOTALS		1,106.29	1,106.29	1,106.29	553.69	0%
Average yield (lb/acre)		2.00	2.00	2.00		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	306.90	306.90	306.90	68.10	0%
Wildacres5-8-9-10-11-12-55-88post	32.0	403.70	403.70	403.70	41.25	0%
Wildacres6-101post	32.0	67.55	67.55	67.55	34.08	0%
Wildacres13-23post	32.0	36.15	36.15	36.15	12.27	0%
Wildacres14post	32.0	11.92	11.92	11.92	5.92	0%
Wildacres15post	32.0	27.60	27.60	27.60	9.92	0%
Wildacres16post	32.0	19.58	19.58	19.58	7.00	0%
Wildacres20post	32.0	81.52	81.52	81.52	14.80	0%
Wildacres21post	32.0	39.24	39.24	39.24	19.50	0%
Wildacres22post	32.0	56.92	56.92	56.92	12.70	0%
Wildacres24post	32.0	14.80	14.80	14.80	7.35	0%
Wildacres25-200post	32.0	242.40	242.40	242.40	118.54	0%
Wildacres40-41-42post	32.0	172.40	172.40	172.40	29.42	0%
Wildacres102-105post	32.0	162.80	162.80	162.80	23.26	0%
Wildacres103-104-106post	32.0	122.00	122.00	122.00	19.27	0%
Wildacres107post	32.0	11.68	11.68	11.68	5.80	0%
Wildacres108post	32.0	47.03	47.03	47.03	17.25	0%
Wildacres109post	32.0	11.14	11.14	11.14	5.53	0%
Wildacres110post	32.0	13.35	13.35	13.35	6.63	0%
Wildacres111post	32.0	34.20	34.20	34.20	13.31	0%
Wildacres112post	32.0	14.46	14.46	14.46	7.18	0%
Wildacres121post	32.0	135.80	135.80	135.80	17.81	0%
totals		2,033.14	2,033.14	2,033.14	496.89	0%
Average yield (lb/acre)		4.09	4.09	4.09		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% reduction in yield due to outfall controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	141.30	132.50	132.50	44.70	6%
Wildacres2pre	32.0	358.30	332.70	332.70	111.80	7%
Wildacres3pre	32.0	150.50	144.40	144.40	47.53	4%
Wildacres4pre	32.0	276.50	254.20	254.20	86.90	8%
Wildacres5pre	32.0	73.04	67.30	67.30	22.96	8%
Wildacres6pre	32.0	133.70	128.10	128.10	39.80	4%
Wildacres200.300pre	32.0	623.10	544.10	544.10	200.00	13%
TOTALS		1,756.44	1,603.30	1,603.30	553.69	9%
Average yield (lb/acre)		3.17	2.90	2.90		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	154.10	152.90	146.20	68.10	5%
Wildacres5-8-9-10-11-12-55-88post	32.0	124.70	123.20	111.80	41.25	10%
Wildacres6-101post	32.0	108.60	104.90	94.63	34.08	13%
Wildacres13-23post	32.0	33.47	32.81	28.13	12.27	16%
Wildacres14post	32.0	20.45	19.82	14.34	5.92	30%
Wildacres15post	32.0	29.26	28.92	26.06	9.92	11%
Wildacres16post	32.0	19.07	18.85	16.95	7.00	11%
Wildacres20post	32.0	45.22	44.71	40.18	14.80	11%
Wildacres21post	32.0	66.60	64.31	43.94	19.50	34%
Wildacres22post	32.0	39.32	38.83	34.87	12.70	11%
Wildacres24post	32.0	23.01	22.06	14.58	7.35	37%
Wildacres25-200post	32.0	350.60	337.10	337.10	118.54	4%
Wildacres40-41-42post	32.0	102.20	100.80	100.80	29.42	1%
Wildacres102-105post	32.0	72.60	71.71	64.73	23.26	11%
Wildacres103-104-106post	32.0	77.47	75.66	61.18	19.27	21%
Wildacres107post	32.0	19.72	19.08	13.00	5.80	34%
Wildacres108post	32.0	46.10	45.64	42.29	17.25	8%
Wildacres109post	32.0	19.04	18.44	13.56	5.53	29%
Wildacres110post	32.0	22.90	22.19	15.60	6.63	32%
Wildacres111post	32.0	32.00	31.72	29.55	13.31	8%
Wildacres112post	32.0	25.34	24.62	17.75	7.18	30%
Wildacres121post	32.0	49.32	48.82	46.12	17.81	6%
totals		1,481.09	1,447.09	1,313.36	496.89	11%
Average yield (lb/acre)		2.98	2.91	2.64		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft) (mg/L)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	158.0	137.7	137.7	1,133,000	11.1
Wildacres2pre	32.0	170.3	143.5	143.5	2,863,000	29.3
Wildacres3pre	32.0	169.8	154.7	154.7	1,204,000	13.3
Wildacres4pre	32.0	169.5	139.9	139.9	2,211,000	22.1
Wildacres5pre	32.0	154.8	128.9	128.9	586,540	5.4
Wildacres6pre	32.0	188.7	169.5	169.5	1,058,000	12.8
Wildacres200.300pre	32.0	158.0	118.6	118.6	4,960,000	42.0
				Total volume (cu ft)	14,015,540	
				Runoff-weighted average concentration at outfall (mg/L)		136.0
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	32.0	57.5	53.2	29.1	1,857,000	3.9
Wildacres5-8-9-10-11-12-55-88post	32.0	95.5	87.3	22.0	1,308,000	2.1
Wildacres6-101post	32.0	178.5	162.9	120.5	885,734	7.6
Wildacres13-23post	32.0	82.9	75.8	74.9	118,564	0.6
Wildacres14post	32.0	307.3	279.5	39.3	146,825	0.4
Wildacres15post	32.0	117.9	107.7	127.3	49,423	0.4
Wildacres16post	32.0	122.3	112.3	26.0	173,613	0.3
Wildacres20post	32.0	91.4	83.1	-	2,008	-
Wildacres21post	32.0	235.6	214.5	167.8	86,252	1.0
Wildacres22post	32.0	141.8	117.2	106.9	53,056	0.4
Wildacres24post	32.0	267.0	158.7	145.4	38,238	0.4
Wildacres25-200post	32.0	138.2	126.8	126.8	2,997,000	27.1
Wildacres40-41-42post	32.0	86.7	78.4	78.4	1,063,000	5.9
Wildacres102-105post	32.0	102.4	93.3	20.8	718,997	1.1
Wildacres103-104-106post	32.0	187.3	168.9	35.4	3,992	0.0
Wildacres107post	32.0	283.4	257.9	257.9	370	0.0
Wildacres108post	32.0	89.5	82.2	28.3	471,644	1.0
Wildacres109post	32.0	301.7	274.5	52.4	137,154	0.5
Wildacres110post	32.0	306.7	279.1	260.9	13,769	0.3
Wildacres111post	32.0	77.5	71.6	25.4	345,680	0.6
Wildacres112post	32.0	340.1	309.1	61.2	484	0.0
Wildacres121post	32.0	72.9	66.6	33.0	564,145	1.3
totals				Total volume (cu ft)	11,034,948	
				Runoff-weighted average concentration at outfall (mg/L)		55.0

Total Area, with Drainage and Outfall Controls - Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	32.0	11,355	9,895	9,895	44.70	
Wildacres2pre	32.0	30,945	26,076	26,076	111.80	
Wildacres3pre	32.0	12,970	11,817	11,817	47.53	
Wildacres4pre	32.0	23,768	19,622	19,622	86.90	
Wildacres5pre	32.0	5,763	4,796	4,796	22.96	
Wildacres6pre	32.0	12,672	11,383	11,383	39.80	
Wildacres200.300pre	32.0	49,710	37,329	37,329	200.00	
TOTALS		147,183	120,918	120,918	553.69	
Average yield (lb/acre)		266	218	218		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-7	32.0	6,742	6,268	3,430	68.10	
Wildacres5-8-9-10-11-12-55-88	32.0	7,932	7,247	1,821	41.25	
Wildacres6-101post	32.0	10,034	9,157	6,774	34.08	
Wildacres13-23post	32.0	1,792	1,619	582	12.27	
Wildacres14post	32.0	2,862	2,604	367	5.92	
Wildacres15post	32.0	2,008	1,835	405	9.92	
Wildacres16post	32.0	1,347	1,237	286	7.00	
Wildacres20post	32.0	2,731	2,482	577	14.80	
Wildacres21post	32.0	7,563	6,887	921	19.50	
Wildacres22post	32.0	2,720	2,481	501	12.70	
Wildacres24post	32.0	1,835	1,682	466	7.35	
Wildacres25-200post	32.0	26,100	23,944	23,944	118.54	
Wildacres40-41-42post	32.0	5,750	5,196	5,196	29.42	
Wildacres102-105post	32.0	4,673	4,259	949	23.26	
Wildacres103-104-106post	32.0	8,239	7,431	1,002	19.27	
Wildacres107post	32.0	2,586	2,354	165	5.80	
Wildacres108post	32.0	2,679	2,459	848	17.25	
Wildacres109post	32.0	2,625	2,389	456	5.53	
Wildacres110post	32.0	3,200	2,911	230	6.63	
Wildacres111post	32.0	1,701	1,571	556	13.31	
Wildacres112post	32.0	3,842	3,493	194	7.18	
Wildacres121post	32.0	2,609	2,385	1,183	17.81	
totals		111,570	101,891	50,853	496.89	
Average yield (lb/acre)		225	205	102		

APPENDIX 10 A

HIGHMOUNT ESTATES
1993 RUNOFF

Highmount Estates - WinSLAMM Modeling									
Conditions: rainfall from 03/15/93 through 11/30/93, as recorded at Tannersville, NY									
Total Area, with Drainage and Outfall Controls - Runoff Volume (cu. ft)									
Subcatchment	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Total Losses (in) *	Calculated CN	Peak Reduction Factor	Flushing Ratio	Area of Sub-catchment (acres)
PRE-DEVELOPMENT CONDITION									
Highmount1pre	32.0	491,098	491,098	491,098	27.50	92.2			29.84
Highmount2pre	32.0	606,796	606,796	606,796	27.37	92.3			35.72
Highmount3pre	32.0	1,668,000	1,668,000	1,668,000	27.56	92.1			103.75
totals		2,765,894	2,765,894	2,765,894					169.31
Average runoff (cu ft/acre)		16,336	16,336	16,336					
POST-DEVELOPMENT CONDITION									
Highmount1post	32.0	431,692	431,692	115,633	30.81	88.1	0.09	0.10	26.10
Highmount2post	32.0	507,193	507,193	187,560	30.26	89.1	0.49	0.11	29.45
Highmount3post	32.0	1,567,000	1,567,000	1,567,000	27.58	92.1	-	-	97.65
Highmount4and6post	32.0	302,449	302,449	302,449	26.46	93.0	0.11	0.20	14.97
Highmount5post	32.0	35,255	35,255	15	32.00	82.9	0.37	0.01	1.14
totals		2,843,589	2,843,589	2,172,657					169.31
Average runoff (cu ft/acre)		16,795	16,795	12,832					

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	693.8	693.8	693.8	491,098	123.2
Highmount2pre	32.0	675.0	675.0	675.0	606,796	148.1
Highmount3pre	32.0	717.3	717.3	717.3	1,668,000	432.6
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			703.8
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	678.7	678.7	52.21	115,633	2.8
Highmount2post	32.0	653.2	653.2	79.6	187,560	6.9
Highmount3post	32.0	495.7	456.7	456.7	1,567,000	329.4
Highmount4and6post	32.0	338.6	301.7	135.4	302,449	18.8
Highmount5post	32.0	237.6	195.3	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			357.9
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	810.2	810.2	810.2	491,098	143.9
Highmount2pre	32.0	798.9	789.9	789.9	606,796	173.3
Highmount3pre	32.0	834.8	834.8	834.8	1,668,000	503.4
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			820.6
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	2,937.0	797.9	797.9	115,633	42.5
Highmount2post	32.0	2,048.0	2,048.0	768.3	187,560	66.3
Highmount3post	32.0	836.6	836.6	836.6	1,567,000	603.4
Hiughmount4and6post	32.0	655.0	655.0	655.0	302,449	91.2
Highmount5post	32.0	432.0	432.0	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			803.4

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	1,504	810	810	491,098	143.9
Highmount2pre	32.0	1,465	790	790	606,796	173.3
Highmount3pre	32.0	1,552	835	835	1,668,000	503.4
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			820.6
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	2,937	1,476	798	115,633	42.5
Highmount2post	32.0	2,048	1,421	768	187,560	66.3
Highmount3post	32.0	1,332	837	837	1,567,000	603.4
Highmount4and6	32.0	994	994	655	302,449	91.2
Highmount5post	32.0	670	432	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			803.4

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	0.482	0.482	0.482	491,098	0.086
Highmount2pre	32.0	0.469	0.469	0.469	606,796	0.103
Highmount3pre	32.0	0.498	0.498	0.498	1,668,000	0.300
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			0.489
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	0.551	0.551	0.042	115,633	0.002
Highmount2post	32.0	0.489	0.489	0.059	187,560	0.005
Highmount3post	32.0	0.344	0.344	0.317	1,567,000	0.229
Highmount4and6post	32.0	0.294	0.264	0.117	302,449	0.016
Highmount5post	32.0	0.226	0.226	0.193	15	0.000
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			0.252

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	14.97	14.97	14.97	29.84	
Highmount2pre	32.0	18.00	18.00	18.00	35.72	
Highmount3pre	32.0	52.58	52.58	52.58	103.75	
TOTALS		85.55	85.55	85.55	169.31	
Average yield (lb/acre)		0.51	0.51	0.51		
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	15.06	15.06	0.31	26.10	
Highmount2post	32.0	15.69	15.69	0.70	29.45	
Highmount3post	32.0	34.12	31.44	31.44	97.65	
Highmount4and6post	32.0	5.63	5.06	2.24	14.97	
Highmount5post	32.0	0.50	0.50	0.43	1.14	
TOTALS	160.00	71.00	67.75	35.11	169.31	
Average yield (lb/acre)		0.42	0.40	0.21		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	0.266	0.266	0.266	491,098	0.05
Highmount2pre	32.0	0.263	0.263	0.263	606,796	0.06
Highmount3pre	32.0	0.269	0.269	0.269	1,668,000	0.16
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			0.27
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	0.859	0.859	0.066	115,633	0.00
Highmount2post	32.0	0.524	0.524	0.063	187,560	0.01
Highmount3post	32.0	0.189	0.173	0.173	1,567,000	0.12
Highmount4and6post	32.0	0.684	0.610	0.274	302,449	0.04
Highmount5post	32.0	0.809	0.692	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			0.17

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	0.020	0.020	0.020	491,098	0.00
Highmount2pre	32.0	0.019	0.019	0.019	606,796	0.00
Highmount3pre	32.0	0.013	0.013	0.013	1,668,000	0.01
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			0.02
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	0.500	0.500	0.136	115,633	0.01
Highmount2post	32.0	0.197	0.197	0.075	187,560	0.01
Highmount3post	32.0	0.012	0.012	0.012	1,567,000	0.01
Highmount4and6post	32.0	0.259	0.259	0.259	302,449	0.04
Highmount5post	32.0	0.311	0.311	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			0.06

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	0.28	0.28	0.28	491,098	0.05
Highmount2pre	32.0	0.28	0.28	0.28	606,796	0.06
Highmount3pre	32.0	0.28	0.28	0.28	1,668,000	0.17
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			0.28
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	1.00	1.00	0.57	115,633	0.03
Highmount2post	32.0	0.60	0.60	0.26	187,560	0.02
Highmount3post	32.0	0.20	0.19	0.19	1,567,000	0.13
Highmount4and6post	32.0	0.94	0.86	0.53	302,449	0.07
Highmount5post	32.0	1.21	1.00	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			0.26

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	8.29	8.29	8.29	29.84	0%
Highmount2pre	32.0	10.08	10.08	10.08	35.72	0%
Highmount3pre	32.0	28.39	28.39	28.39	103.75	0%
TOTALS		46.8	46.8	46.8	169.31	0%
Average yield (lb/acre)		0.28	0.28	0.28		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	23.46	23.46	0.48	26.10	98%
Highmount2post	32.0	16.81	16.81	0.73	29.45	96%
Highmount3post	32.0	18.73	17.17	17.17	97.65	8%
Highmount4and6post	32.0	13.09	11.60	5.24	14.97	60%
Highmount5post	32.0	1.81	1.55	-	1.14	100%
TOTALS		73.9	70.6	23.6	169.31	68%
Average yield (lb/acre)		0.44	0.42	0.14		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of FILTERABLE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	0.51	0.51	0.51	29.84	0%
Highmount2pre	32.0	0.75	0.75	0.75	35.72	0%
Highmount3pre	32.0	1.33	1.33	1.33	103.75	0%
TOTALS		2.59	2.59	2.59	169.31	0%
Average yield (lb/acre)		0.02	0.02	0.02		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	3.72	3.72	3.72	26.10	0%
Highmount2post	32.0	2.40	2.40	2.40	29.45	0%
Highmount3post	32.0	1.22	1.22	1.22	97.65	0%
Highmount4and6post	32.0	4.96	4.96	4.96	14.97	0%
Highmount5post	32.0	0.70	0.70	0.70	1.14	0%
TOTALS		12.99	12.99	12.99	169.31	0%
Average yield (lb/acre)		0.08	0.08	0.08		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	8.76	8.76	8.76	29.84	0%
Highmount2pre	32.0	10.83	10.83	10.83	35.72	0%
Highmount3pre	32.0	29.72	29.72	29.72	103.75	0%
TOTALS		49.3	49.3	49.3	169.31	0%
Average yield (lb/acre)		0.29	0.29	0.29		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	27.18	27.18	4.20	26.10	85%
Highmount2post	32.0	19.20	19.20	3.13	29.45	84%
Highmount3post	32.0	19.95	18.39	18.39	97.65	8%
Highmount4and6post	32.0	18.04	16.56	10.20	14.97	43%
Highmount5post	32.0	2.50	2.24	0.70	1.14	72%
TOTALS		86.9	83.6	36.6	169.31	58%
Average yield (lb/acre)		0.51	0.49	0.22		

Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	1.23	1.23	1.23	491,098	0.219
Highmount2pre	32.0	1.25	1.25	1.25	606,796	0.274
Highmount3pre	32.0	1.26	1.26	1.26	1,668,000	0.760
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			1.253
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	4.47	4.47	1.22	115,633	0.065
Highmount2post	32.0	3.14	3.14	1.18	187,560	0.102
Highmount3post	32.0	1.27	1.27	1.27	1,567,000	0.915
Highmount4and6post	32.0	1.02	1.02	1.02	302,449	0.142
Highmount5post	32.0	0.72	0.72	-	15	-
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			1.223

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	2.34	2.34	2.34	491,098	0.415
Highmount2pre	32.0	2.31	2.31	2.31	606,796	0.507
Highmount3pre	32.0	2.36	2.36	2.36	1,668,000	1.423
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			2.345
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	4.56	2.41	2.41	115,633	0.128
Highmount2post	32.0	1.14	1.14	0.14	187,560	0.012
Highmount3post	32.0	1.97	1.91	1.91	1,567,000	1.375
Highmount4and6post	32.0	1.92	1.88	1.60	302,449	0.223
Highmount5post	32.0	1.82	1.82	1.79	15	0.000
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			1.737

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	38.29	38.29	38.29	29.84	0%
Highmount2pre	32.0	46.60	46.60	46.60	35.72	0%
Highmount3pre	32.0	133.50	133.50	133.50	103.75	0%
TOTALS		218.39	218.39	218.39	169.31	0%
Average yield (lb/acre)		1.29	1.29	1.29		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	33.18	33.18	33.18	26.10	0%
Highmount2post	32.0	37.79	37.79	37.79	29.45	0%
Highmount3post	32.0	125.60	125.60	125.60	97.65	0%
Highmount4and6post	32.0	19.53	19.53	19.53	14.97	0%
Highmount5post	32.0	1.60	1.60	1.60	1.14	0%
TOTALS		217.70	217.70	217.70	169.31	0%
Average yield (lb/acre)		1.29	1.29	1.29		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	72.5	72.5	72.5	29.84	0%
Highmount2pre	32.0	88.8	88.8	88.8	35.72	0%
Highmount3pre	32.0	249.7	249.7	249.7	103.75	0%
TOTALS		411.0	411.0	411.0	169.31	0%
Average yield (lb/acre)		2.4	2.4	2.4		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	65.7	65.7	39.9	26.10	39%
Highmount2post	32.0	74.5	74.5	39.5	29.45	47%
Highmount3post	32.0	195.6	188.9	188.9	97.65	3%
Highmount4and6post	32.0	36.8	35.9	30.6	14.97	17%
Highmount5post	32.0	4.1	4.0	4.0	1.14	2%
TOTALS		376.7	369.0	302.9	169.31	20%
Average yield (lb/acre)		2.2	2.2	1.8		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	Runoff Volume After Outfall Controls (cu ft)	Proportion of concentration at outfall, weighted by runoff vol.
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	212.5	212.5	212.5	491,098	37.7
Highmount2pre	32.0	208.0	208.0	208.0	606,796	45.6
Highmount3pre	32.0	218.2	218.2	218.2	1,668,000	131.6
				Total volume (cu ft)	2,765,894	
			Runoff-weighted average concentration at outfall (mg/L)			215.0
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	241.4	241.4	91.9	115,633	4.9
Highmount2post	32.0	217.1	217.1	81.1	187,560	7.0
Highmount3post	32.0	157.1	146.3	146.3	1,567,000	105.5
Highmount4and6post	32.0	144.7	132.1	72.3	302,449	10.1
Highmount5post	32.0	127.2	127.2	112.5	15	6.0
				Total volume (cu ft)	2,172,657	
			Runoff-weighted average concentration at outfall (mg/L)			133.5

Total Area, with Drainage and Outfall Controls - Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	32.0	6,602	6,602	6,602	29.84	0%
Highmount2pre	32.0	7,986	7,986	7,986	35.72	0%
Highmount3pre	32.0	23,027	23,027	23,027	103.75	0%
TOTALS		37,615	37,615	37,615	169.31	0%
Average yield (lb/acre)		222	222	222		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	32.0	6,593	6,593	681	26.10	90%
Highmount2post	32.0	6,966	6,966	976	29.45	86%
Highmount3post	32.0	15,566	14,499	14,499	97.65	7%
Highmount4and6post	32.0	2,771	2,530	1,384	14.97	50%
Highmount5post	32.0	284	251	69	1.14	76%
TOTALS		32,180	30,839	17,609	169.31	45%
Average yield (lb/acre)		190	182	104		

APPENDIX 10 A

BIG INDIAN RESORT AND SPA
6.5-INCH RAINFALL

Big Indian Plateau - WinSLAMM Modeling

Conditions: 6.5-inch rainfall in a 12-hr period; detention ponds have variable infiltration rates.

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
BigIndian1-2pre	6.5	479.6	479.6	479.6
BigIndian3pre	6.5	496.6	496.6	496.6
BigIndian4-5-6pre	6.5	494.6	494.6	494.6
BigIndian30pre	6.5	487.7	487.7	487.7
POST-DEVELOPMENT CONDITION				
BigIndian1-29-34post	6.5	145.3	145.3	-
BigIndian2post	6.5	336.6	336.6	-
BigIndian3post	6.5	63.0	63.0	11.1
BigIndian4post	6.5	72.5	72.5	-
BigIndian5-22-32post	6.5	324.8	324.8	216.1
BigIndian6post	6.5	52.0	52.0	13.3
BigIndian7post	6.5	84.0	84.0	8.8
BigIndian8post	6.5	54.1	54.1	7.9
BigIndian9post	6.5	84.9	84.9	26.7
BigIndian10post	6.5	69.3	69.3	64.3
BigIndian11post	6.5	325.5	325.5	-
BigIndian12post	6.5	76.0	76.0	17.9
BigIndian13post	6.5	77.1	77.1	5.3
BigIndian14post	6.5	300.0	300.0	-
BigIndian15post	6.5	91.2	91.2	16.3
BigIndian16post	6.5	86.9	86.9	-
BigIndian17-33post	6.5	73.9	73.9	-
BigIndian18post	6.5	85.5	85.5	12.3
BigIndian19post	6.5	335.0	335.0	37.2
BigIndian20post	6.5	108.0	108.0	17.9
BigIndian21post	6.5	38.2	38.2	11.7
BigIndian23-24post	6.5	74.9	74.9	32.4
BigIndian25post	6.5	91.8	91.8	26.5
BigIndian26post	6.5	336.2	336.2	78.5
BigIndian27post	6.5	294.6	294.6	34.8
BigIndian28post	6.5	437.1	437.1	437.1
BigIndian30post	6.5	477.1	477.1	477.1
BigIndian31post	6.5	90.4	90.4	13.5
BigIndian35post	6.5	467.7	467.4	467.7
BigIndian36post	6.5	300.0	300.0	60.6
BigIndian37post	6.5	300.0	300.0	300.0
BigIndian38post	6.5	300.1	300.1	52.73
BigIndian40-42post	6.5	190.3	190.3	120.6

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)					
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	
PRE-DEVELOPMENT CONDITION					
BigIndian1-2pre	6.5	822.5	822.5	822.5	
BigIndian3pre	6.5	843.6	843.6	843.6	
BigIndian4-5-6pre	6.5	844.9	844.9	844.9	
BigIndian30pre	6.5	845.9	845.9	845.9	
POST-DEVELOPMENT CONDITION					
BigIndian1-29-34post	6.5	739.8	739.8	739.8	
BigIndian2post	6.5	681.2	681.2	681.2	
BigIndian3post	6.5	602.3	602.3	602.3	
BigIndian4post	6.5	655.1	655.1	655.1	
BigIndian5-22-32post	6.5	819.3	819.3	819.3	
BigIndian6post	6.5	599.5	599.5	599.5	
BigIndian7post	6.5	757.2	757.2	757.2	
BigIndian8post	6.5	716.9	716.9	716.9	
BigIndian9post	6.5	783.0	783.0	783.0	
BigIndian10post	6.5	746.7	746.7	746.7	
BigIndian11post	6.5	733.5	733.5	733.5	
BigIndian12post	6.5	748.7	748.7	748.7	
BigIndian13post	6.5	842.1	842.1	842.1	
BigIndian14post	6.5	861.0	861.0	861.0	
BigIndian15post	6.5	786.6	786.6	786.6	
BigIndian16post	6.5	641.9	641.9	641.9	
BigIndian17-33post	6.5	763.7	763.7	763.7	
BigIndian18post	6.5	818.9	818.9	818.9	
BigIndian19post	6.5	858.4	858.4	858.4	
BigIndian20post	6.5	861.0	861.0	861.0	
BigIndian21post	6.5	724.7	724.7	724.7	
BigIndian23-24post	6.5	781.3	781.3	781.3	
BigIndian25post	6.5	807.7	807.7	807.7	
BigIndian26post	6.5	816.6	816.6	816.6	
BigIndian27post	6.5	830.3	830.3	830.3	
BigIndian28post	6.5	850.7	850.7	850.7	
BigIndian30post	6.5	846.7	846.7	846.7	
BigIndian31post	6.5	809.4	809.4	809.4	
BigIndian35post	6.5	831.2	831.2	831.2	
BigIndian36post	6.5	861.0	861.0	861.0	
BigIndian37post	6.5	861.0	861.0	861.0	
BigIndian38post	6.5	854.7	854.7	854.7	
BigIndian40-42post	6.5	797.1	797.1	797.1	

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)					
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	
PRE-DEVELOPMENT CONDITION					
BigIndian1-2pre	6.5	1,302	823	823	
BigIndian3pre	6.5	1,340	844	844	
BigIndian4-5-6pre	6.5	1,339	845	845	
BigIndian30pre	6.5	1,333	846	846	
POST-DEVELOPMENT CONDITION					
BigIndian1-29-34post	6.5	885	740	740	
BigIndian2post	6.5	1,018	681	681	
BigIndian3post	6.5	665	602	602	
BigIndian4post	6.5	728	655	655	
BigIndian5-22-32post	6.5	1,144	819	835	
BigIndian6post	6.5	652	600	600	
BigIndian7post	6.5	841	757	757	
BigIndian8post	6.5	771	717	717	
BigIndian9post	6.5	867	783	783	
BigIndian10post	6.5	816	747	747	
BigIndian11post	6.5	1,059	734	734	
BigIndian12post	6.5	825	749	749	
BigIndian13post	6.5	919	842	842	
BigIndian14post	6.5	1,161	861	861	
BigIndian15post	6.5	878	787	787	
BigIndian16post	6.5	729	642	642	
BigIndian17-33post	6.5	838	764	764	
BigIndian18post	6.5	904	819	819	
BigIndian19post	6.5	1,193	858	858	
BigIndian20post	6.5	969	861	861	
BigIndian21post	6.5	763	725	725	
BigIndian23-24post	6.5	856	781	781	
BigIndian25post	6.5	900	808	808	
BigIndian26post	6.5	1,153	817	817	
BigIndian27post	6.5	1,125	830	830	
BigIndian28post	6.5	1,288	851	851	
BigIndian30post	6.5	1,324	847	847	
BigIndian31post	6.5	900	809	809	
BigIndian35post	6.5	1,299	831	831	
BigIndian36post	6.5	1,161	861	861	
BigIndian37post	6.5	1,161	861	861	
BigIndian38post	6.5	1155	854.7	854.7	
BigIndian40-42post	6.5	987.3	797.1	797.1	

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	0.35	0.35	0.35		
BigIndian3pre	6.5	0.35	0.35	0.35		
BigIndian4-5-6pre	6.5	0.36	0.36	0.36		
BigIndian30pre	6.5	0.38	0.38	0.38		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	0.62	0.62	-		
BigIndian2post	6.5	0.27	0.27	-		
BigIndian3post	6.5	0.43	0.43	0.08		
BigIndian4post	6.5	0.53	0.53	-		
BigIndian5-22-32post	6.5	0.29	0.29	0.19		
BigIndian6post	6.5	0.35	0.35	0.09		
BigIndian7post	6.5	0.63	0.63	0.07		
BigIndian8post	6.5	0.38	0.38	0.06		
BigIndian9post	6.5	0.63	0.63	0.20		
BigIndian10post	6.5	0.51	0.51	0.47		
BigIndian11post	6.5	0.52	0.52	-		
BigIndian12post	6.5	0.55	0.55	0.13		
BigIndian13post	6.5	0.59	0.59	0.04		
BigIndian14post	6.5	0.84	0.84	-		
BigIndian15post	6.5	0.70	0.70	0.12		
BigIndian16post	6.5	0.61	0.61	-		
BigIndian17-33post	6.5	0.54	0.54	-		
BigIndian18post	6.5	0.65	0.65	0.09		
BigIndian19post	6.5	0.75	0.75	0.08		
BigIndian20post	6.5	0.84	0.84	0.14		
BigIndian21post	6.5	0.25	0.25	0.08		
BigIndian23-24post	6.5	0.56	0.56	0.24		
BigIndian25post	6.5	0.70	0.70	0.20		
BigIndian26post	6.5	0.66	0.66	0.15		
BigIndian27post	6.5	0.79	0.79	0.09		
BigIndian28post	6.5	0.50	0.50	0.50		
BigIndian30post	6.5	0.35	0.35	0.35		
BigIndian31post	6.5	0.68	0.68	0.10		
BigIndian35post	6.5	0.39	0.39	0.39		
BigIndian36post	6.5	0.84	0.84	0.17		
BigIndian37post	6.5	0.84	0.84	0.17		
BigIndian38post	6.5	0.8255	0.8255	0.1448		
BigIndian40-42post	6.5	0.6076	0.6076	0.03852		

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	36.5	36.5	36.5	197.60	0%
BigIndian3pre	6.5	81.2	81.2	81.2	447.40	0%
BigIndian4-5-6pre	6.5	83.1	83.1	83.1	447.80	0%
BigIndian30pre	6.5	61.9	61.9	61.9	55.47	0%
TOTALS		262.7	262.7	262.7	1,148.27	0%
Average yield (lb/acre)		0.2	0.2	0.2		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	6.3	6.3	-	17.42	100%
BigIndian2post	6.5	0.4	0.4	-	2.13	100%
BigIndian3post	6.5	1.8	1.8	0.3	6.47	82%
BigIndian4post	6.5	0.6	0.6	-	1.52	100%
BigIndian5-22-32post	6.5	42.6	42.6	27.8	280.29	35%
BigIndian6post	6.5	0.7	0.7	0.2	2.62	74%
BigIndian7post	6.5	1.4	1.4	0.1	3.21	89%
BigIndian8post	6.5	1.7	1.7	0.1	5.97	96%
BigIndian9post	6.5	3.3	3.3	1.0	9.64	68%
BigIndian10post	6.5	3.5	3.5	2.5	12.09	27%
BigIndian11post	6.5	0.9	0.9	-	2.46	100%
BigIndian12post	6.5	3.1	3.1	0.7	10.42	76%
BigIndian13post	6.5	1.8	1.8	0.0	4.55	99%
BigIndian14post	6.5	0.9	0.9	-	1.61	100%
BigIndian15post	6.5	5.3	5.3	0.2	14.07	97%
BigIndian16post	6.5	0.8	0.8	-	1.79	100%
BigIndian17-33post	6.5	2.6	2.6	-	8.71	100%
BigIndian18post	6.5	1.7	1.7	0.2	4.73	86%
BigIndian19post	6.5	2.0	2.0	0.2	5.20	89%
BigIndian20post	6.5	1.9	1.9	0.3	3.44	83%
BigIndian21post	6.5	0.9	0.9	0.3	5.16	69%
BigIndian23-24post	6.5	9.2	9.2	3.4	29.83	63%
BigIndian25post	6.5	8.0	8.0	1.1	21.08	86%
BigIndian26post	6.5	5.0	5.0	0.6	14.23	88%
BigIndian27post	6.5	2.1	2.1	0.2	3.88	88%
BigIndian28post	6.5	0.9	0.9	0.2	2.64	80%
BigIndian30post	6.5	53.2	53.2	53.2	293.36	0%
BigIndian31post	6.5	7.5	7.5	0.3	20.89	96%
BigIndian35post	6.5	30.7	30.7	30.7	150.23	0%
BigIndian36post	6.5	4.1	4.1	0.8	9.48	80%
BigIndian37post	6.5	2.9	2.9	2.9	6.65	0%
BigIndian38post	6.5	2.6	2.6	0.4	6.00	82%
BigIndian40-42post	6.5	2.5	2.5	0.0	7.45	100%
TOTALS		212.8	212.8	128.0	969.22	40%
Average yield (lb/acre)		0.2	0.2	0.1		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	0.21	0.21	0.21		
BigIndian3pre	6.5	0.20	0.20	0.20		
BigIndian4-5-6pre	6.5	0.21	0.21	0.21		
BigIndian30pre	6.5	0.23	0.23	0.23		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	0.62	0.62	-		
BigIndian2post	6.5	0.42	0.42	-		
BigIndian3post	6.5	0.25	0.25	0.04		
BigIndian4post	6.5	0.31	0.31	-		
BigIndian5-22-32post	6.5	0.18	0.18	0.12		
BigIndian6post	6.5	0.20	0.20	0.05		
BigIndian7post	6.5	0.36	0.36	0.04		
BigIndian8post	6.5	0.21	0.21	0.03		
BigIndian9post	6.5	0.36	0.36	0.12		
BigIndian10post	6.5	0.29	0.29	0.27		
BigIndian11post	6.5	0.70	0.70	-		
BigIndian12post	6.5	0.31	0.31	0.07		
BigIndian13post	6.5	0.33	0.33	0.02		
BigIndian14post	6.5	1.35	1.35	-		
BigIndian15post	6.5	0.40	0.40	0.07		
BigIndian16post	6.5	0.36	0.36	-		
BigIndian17-33post	6.5	0.31	0.31	-		
BigIndian18post	6.5	0.37	0.37	0.05		
BigIndian19post	6.5	1.15	1.15	0.13		
BigIndian20post	6.5	0.49	0.49	0.08		
BigIndian21post	6.5	0.13	0.13	0.04		
BigIndian23-24post	6.5	0.31	0.31	0.14		
BigIndian25post	6.5	0.40	0.40	0.12		
BigIndian26post	6.5	0.97	0.97	0.23		
BigIndian27post	6.5	1.26	1.26	0.15		
BigIndian28post	6.5	0.55	0.55	0.55		
BigIndian30post	6.5	0.27	0.27	0.27		
BigIndian31post	6.5	0.39	0.39	0.06		
BigIndian35post	6.5	0.30	0.30	0.30		
BigIndian36post	6.5	1.35	1.35	0.27		
BigIndian37post	6.5	1.35	1.35	1.35		
BigIndian38post	6.5	1.32	1.32	0.23		
BigIndian40-42post	6.5	0.74	0.74	0.05		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	0.03	0.03	0.03		
BigIndian3pre	6.5	0.02	0.02	0.02		
BigIndian4-5-6pre	6.5	0.02	0.02	0.02		
BigIndian30pre	6.5	0.03	0.03	0.03		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	0.49	0.49	0.49		
BigIndian2post	6.5	0.18	0.18	0.18		
BigIndian3post	6.5	0.30	0.30	0.30		
BigIndian4post	6.5	0.39	0.39	0.39		
BigIndian5-22-32post	6.5	0.05	0.05	0.05		
BigIndian6post	6.5	0.25	0.25	0.25		
BigIndian7post	6.5	0.44	0.44	0.44		
BigIndian8post	6.5	0.28	0.28	0.28		
BigIndian9post	6.5	0.45	0.45	0.45		
BigIndian10post	6.5	0.37	0.37	0.37		
BigIndian11post	6.5	0.30	0.30	0.30		
BigIndian12post	6.5	0.39	0.39	0.39		
BigIndian13post	6.5	0.41	0.41	0.41		
BigIndian14post	6.5	0.61	0.61	0.61		
BigIndian15post	6.5	0.51	0.51	0.51		
BigIndian16post	6.5	0.41	0.41	0.41		
BigIndian17-33post	6.5	0.38	0.38	0.38		
BigIndian18post	6.5	0.47	0.47	0.47		
BigIndian19post	6.5	0.50	0.50	0.50		
BigIndian20post	6.5	0.61	0.61	0.61		
BigIndian21post	6.5	0.17	0.17	0.17		
BigIndian23-24post	6.5	0.39	0.39	0.39		
BigIndian25post	6.5	0.51	0.51	0.51		
BigIndian26post	6.5	0.42	0.42	0.42		
BigIndian27post	6.5	0.57	0.57	0.57		
BigIndian28post	6.5	0.20	0.20	0.20		
BigIndian30post	6.5	0.06	0.06	0.06		
BigIndian31post	6.5	0.48	0.48	0.48		
BigIndian35post	6.5	0.08	0.08	0.08		
BigIndian36post	6.5	0.61	0.61	0.61		
BigIndian37post	6.5	0.61	0.61	0.61		
BigIndian38post	6.5	0.59	0.59	0.59		
BigIndian40-42post	6.5	0.43	0.43	0.43		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	0.24	0.24	0.24		
BigIndian3pre	6.5	0.21	0.21	0.21		
BigIndian4-5-6pre	6.5	0.24	0.24	0.24		
BigIndian30pre	6.5	0.26	0.26	0.26		
				0.95		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	1.11	1.11	0.50		
BigIndian2post	6.5	0.60	0.60	0.18		
BigIndian3post	6.5	0.55	0.55	0.35		
BigIndian4post	6.5	0.70	0.70	0.39		
BigIndian5-22-32post	6.5	0.23	0.23	0.17		
BigIndian6post	6.5	0.45	0.45	0.30		
BigIndian7post	6.5	0.80	0.80	0.48		
BigIndian8post	6.5	0.49	0.49	0.30		
BigIndian9post	6.5	0.81	0.81	0.56		
BigIndian10post	6.5	0.66	0.66	0.37		
BigIndian11post	6.5	0.99	0.99	0.30		
BigIndian12post	6.5	0.70	0.70	0.46		
BigIndian13post	6.5	0.74	0.74	0.43		
BigIndian14post	6.5	1.96	1.96	0.61		
BigIndian15post	6.5	0.91	0.91	0.28		
BigIndian16post	6.5	0.77	0.77	0.22		
BigIndian17-33post	6.5	0.68	0.68	0.18		
BigIndian18post	6.5	0.84	0.84	0.52		
BigIndian19post	6.5	1.65	1.65	0.63		
BigIndian20post	6.5	1.10	1.10	0.69		
BigIndian21post	6.5	0.29	0.29	0.17		
BigIndian23-24post	6.5	0.71	0.71	0.60		
BigIndian25post	6.5	0.91	0.91	0.12		
BigIndian26post	6.5	1.40	1.40	1.08		
BigIndian27post	6.5	1.83	1.83	0.72		
BigIndian28post	6.5	0.75	0.75	0.75		
BigIndian30post	6.5	0.34	0.34	0.34		
BigIndian31post	6.5	0.87	0.87	0.20		
BigIndian35post	6.5	0.38	0.38	0.38		
BigIndian36post	6.5	1.96	1.96	0.88		
BigIndian37post	6.5	1.96	1.96	0.88		
BigIndian38post	6.5	1.92	1.92	0.83		
BigIndian40-42post	6.5	1.17	1.17	0.78		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	25.6	25.6	25.6	197.60	0%
BigIndian3pre	6.5	49.4	49.4	49.4	447.40	0%
BigIndian4-5-6pre	6.5	54.8	54.8	54.8	447.80	0%
BigIndian30pre	6.5	53.9	53.9	53.9	315.72	0%
TOTALS		183.7	183.7	183.7	1,408.52	0%
Average yield (lb/acre)		0.1	0.1	0.1		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	11.3	11.3	5.0	17.42	56%
BigIndian2post	6.5	1.0	1.0	0.3	2.13	71%
BigIndian3post	6.5	2.3	2.3	1.4	6.47	37%
BigIndian4post	6.5	0.8	0.8	0.5	1.52	44%
BigIndian5-22-32post	6.5	33.8	33.8	24.7	280.29	27%
BigIndian6post	6.5	1.0	1.0	0.6	2.62	33%
BigIndian7post	6.5	1.8	1.8	1.1	3.21	40%
BigIndian8post	6.5	2.1	2.1	1.3	5.97	42%
BigIndian9post	6.5	4.2	4.2	2.9	9.64	30%
BigIndian10post	6.5	4.5	4.5	3.9	12.09	12%
BigIndian11post	6.5	1.8	1.8	0.5	2.46	70%
BigIndian12post	6.5	4.0	4.0	2.6	10.42	34%
BigIndian13post	6.5	2.2	2.2	1.3	4.55	44%
BigIndian14post	6.5	2.1	2.1	0.6	1.61	69%
BigIndian15post	6.5	7.0	7.0	4.0	14.07	43%
BigIndian16post	6.5	1.0	1.0	0.6	1.79	46%
BigIndian17-33post	6.5	3.2	3.2	1.8	8.71	45%
BigIndian18post	6.5	2.1	2.1	1.3	4.73	38%
BigIndian19post	6.5	4.4	4.4	1.7	5.20	62%
BigIndian20post	6.5	2.5	2.5	1.6	3.44	37%
BigIndian21post	6.5	1.1	1.1	0.8	5.16	30%
BigIndian23-24post	6.5	11.6	11.6	8.3	29.83	28%
BigIndian25post	6.5	10.4	10.4	6.4	21.08	38%
BigIndian26post	6.5	10.6	10.6	4.1	14.23	62%
BigIndian27post	6.5	4.8	4.8	1.9	3.88	61%
BigIndian28post	6.5	1.3	1.3	0.5	2.64	59%
BigIndian30post	6.5	50.7	50.7	50.7	293.36	0%
BigIndian31post	6.5	9.5	9.5	5.4	20.89	43%
BigIndian35post	6.5	29.9	29.9	29.9	150.23	0%
BigIndian36post	6.5	9.6	9.6	4.3	9.48	55%
BigIndian37post	6.5	6.7	6.7	6.7	6.65	0%
BigIndian38post	6.5	5.9	5.9	2.6	6.00	57%
BigIndian40-42post	6.5	4.7	4.7	1.7	7.45	63%
TOTALS		250.0	250.0	181.1	969.22	28%
Average yield (lb/acre)		0.3	0.3	0.2		

Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	1.25	1.25	1.25		
BigIndian3pre	6.5	1.28	1.28	1.28		
BigIndian4-5-6pre	6.5	1.28	1.28	1.28		
BigIndian30pre	6.5	1.28	1.28	1.28		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	1.14	1.14	1.14		
BigIndian2post	6.5	1.05	1.05	1.05		
BigIndian3post	6.5	4.22	4.22	4.22		
BigIndian4post	6.5	1.90	1.90	1.90		
BigIndian5-22-32post	6.5	1.26	1.26	1.26		
BigIndian6post	6.5	0.27	0.27	0.27		
BigIndian7post	6.5	2.18	2.18	2.18		
BigIndian8post	6.5	1.34	1.34	1.34		
BigIndian9post	6.5	1.54	1.54	1.54		
BigIndian10post	6.5	1.42	1.42	1.42		
BigIndian11post	6.5	1.12	1.12	1.12		
BigIndian12post	6.5	1.69	1.69	1.69		
BigIndian13post	6.5	1.61	1.61	1.61		
BigIndian14post	6.5	1.28	1.28	1.28		
BigIndian15post	6.5	1.38	1.38	1.38		
BigIndian16post	6.5	3.93	3.93	3.93		
BigIndian17-33post	6.5	1.87	1.87	1.87		
BigIndian18post	6.5	1.23	1.23	1.23		
BigIndian19post	6.5	1.28	1.28	1.28		
BigIndian20post	6.5	1.28	1.28	1.28		
BigIndian21post	6.5	1.60	1.60	1.60		
BigIndian23-24post	6.5	1.99	1.99	1.99		
BigIndian25post	6.5	1.25	1.25	1.25		
BigIndian26post	6.5	1.23	1.23	1.23		
BigIndian27post	6.5	1.24	1.24	1.24		
BigIndian28post	6.5	1.28	1.28	1.28		
BigIndian30post	6.5	1.28	1.28	1.28		
BigIndian31post	6.5	1.44	1.44	1.44		
BigIndian35post	6.5	1.26	1.26	1.26		
BigIndian36post	6.5	1.28	1.28	1.28		
BigIndian37post	6.5	1.28	1.28	1.28		
BigIndian38post	6.5	1.27	1.27	1.27		
BigIndian40-42post	6.5	1.29	1.29	1.29		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	1.97	1.97	1.97		
BigIndian3pre	6.5	1.98	1.98	1.98		
BigIndian4-5-6pre	6.5	1.98	1.98	1.98		
BigIndian30pre	6.5	2.00	2.00	2.00		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	1.85	1.85	1.56		
BigIndian2post	6.5	1.90	1.90	1.31		
BigIndian3post	6.5	1.46	1.46	1.35		
BigIndian4post	6.5	1.60	1.60	1.48		
BigIndian5-22-32post	6.5	1.72	1.72	1.55		
BigIndian6post	6.5	1.44	1.44	1.37		
BigIndian7post	6.5	1.65	1.65	1.49		
BigIndian8post	6.5	1.49	1.49	1.48		
BigIndian9post	6.5	1.67	1.67	1.54		
BigIndian10post	6.5	1.58	1.58	1.50		
BigIndian11post	6.5	2.03	2.03	1.44		
BigIndian12post	6.5	1.60	1.60	1.48		
BigIndian13post	6.5	1.59	1.59	1.50		
BigIndian14post	6.5	2.26	2.26	1.60		
BigIndian15post	6.5	1.74	1.74	0.84		
BigIndian16post	6.5	1.59	1.55	0.75		
BigIndian17-33post	6.5	1.57	1.57	0.67		
BigIndian18post	6.5	1.69	1.69	1.53		
BigIndian19post	6.5	2.21	2.21	1.59		
BigIndian20post	6.5	1.84	1.84	1.64		
BigIndian21post	6.5	1.34	1.34	1.29		
BigIndian23-24post	6.5	1.58	1.58	1.47		
BigIndian25post	6.5	1.74	1.74	1.32		
BigIndian26post	6.5	2.14	2.14	1.31		
BigIndian27post	6.5	2.22	2.22	1.66		
BigIndian28post	6.5	2.07	2.07	1.71		
BigIndian30post	6.5	1.99	1.99	1.99		
BigIndian31post	6.5	1.70	1.70	1.61		
BigIndian35post	6.5	2.00	2.00	2.00		
BigIndian36post	6.5	2.26	2.26	1.73		
BigIndian37post	6.5	2.26	2.26	1.73		
BigIndian38post	6.5	2.25	2.25	1.7		
BigIndian40-42post	6.5	1.876	1.876	1.27		

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)

Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	130.6	130.6	130.6	197.6	0%
BigIndian3pre	6.5	295.6	295.6	295.6	447.4	0%
BigIndian4-5-6pre	6.5	296.9	296.9	296.9	447.8	0%
BigIndian30pre	6.5	210.9	210.9	210.9	315.7	0%
TOTALS		934.0	934.0	934.0	1,408.5	0%
Average yield (lb/acre)		0.7	0.7	0.7		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	11.6	11.6	11.6	17.42	0%
BigIndian2post	6.5	1.7	1.7	1.7	2.13	0%
BigIndian3post	6.5	17.6	17.6	17.6	6.47	0%
BigIndian4post	6.5	2.2	2.2	2.2	1.52	0%
BigIndian5-22-32post	6.5	185.7	185.7	185.7	280.29	0%
BigIndian6post	6.5	3.0	3.0	3.0	2.62	0%
BigIndian7post	6.5	5.0	5.0	5.0	3.21	0%
BigIndian8post	6.5	5.9	5.9	5.9	5.97	0%
BigIndian9post	6.5	8.0	8.0	8.0	9.64	0%
BigIndian10post	6.5	9.7	9.7	9.7	12.09	0%
BigIndian11post	6.5	2.0	2.0	2.0	2.46	0%
BigIndian12post	6.5	9.6	9.6	9.6	10.42	0%
BigIndian13post	6.5	4.9	4.9	4.9	4.55	0%
BigIndian14post	6.5	1.4	1.4	1.4	1.61	0%
BigIndian15post	6.5	10.6	10.6	10.6	14.07	0%
BigIndian16post	6.5	5.3	5.3	5.3	1.79	0%
BigIndian17-33post	6.5	8.7	8.7	8.7	8.71	0%
BigIndian18post	6.5	3.1	3.1	3.1	4.73	0%
BigIndian19post	6.5	3.4	3.4	3.4	5.20	0%
BigIndian20post	6.5	2.9	2.9	2.9	3.44	0%
BigIndian21post	6.5	6.0	6.0	6.0	5.16	0%
BigIndian23-24post	6.5	32.7	32.7	32.7	29.83	0%
BigIndian25post	6.5	14.2	14.2	14.2	21.08	0%
BigIndian26post	6.5	9.3	9.3	9.3	14.23	0%
BigIndian27post	6.5	3.3	3.3	3.3	3.88	0%
BigIndian28post	6.5	2.2	2.2	2.2	2.64	0%
BigIndian30post	6.5	193.3	193.3	193.3	293.36	0%
BigIndian31post	6.5	15.8	15.8	15.8	20.89	0%
BigIndian35post	6.5	98.9	98.9	98.9	150.23	0%
BigIndian36post	6.5	6.3	6.3	6.3	9.48	0%
BigIndian37post	6.5	4.4	4.4	4.4	6.65	0%
BigIndian38post	6.5	3.9	3.9	3.9	6.00	0%
BigIndian40-42post	6.5	5.2	5.2	5.2	7.45	0%
TOTALS		697.6	697.6	697.6	969.22	0%
Average yield (lb/acre)		0.7	0.7	0.7		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	206.1	206.1	206.1	197.6	0%
BigIndian3pre	6.5	458.6	458.6	458.6	447.4	0%
BigIndian4-5-6pre	6.5	460.6	460.6	460.6	447.8	0%
BigIndian30pre	6.5	328.8	328.8	328.8	315.7	0%
TOTALS		1,454.1	1,454.1	1,454.1	1,408.5	0%
Average yield (lb/acre)		1.0	1.0	1.0		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	18.8	18.8	15.9	17.42	16%
BigIndian2post	6.5	3.1	3.1	2.1	2.13	31%
BigIndian3post	6.5	6.1	6.1	5.6	6.47	7%
BigIndian4post	6.5	1.9	1.9	1.7	1.52	8%
BigIndian5-22-32post	6.5	254.3	254.3	254.3	280.29	0%
BigIndian6post	6.5	3.0	3.0	2.9	2.62	5%
BigIndian7post	6.5	3.7	3.7	3.4	3.21	10%
BigIndian8post	6.5	8.6	8.6	8.0	5.97	7%
BigIndian9post	6.5	10.8	10.8	10.5	9.64	2%
BigIndian10post	6.5	3.4	3.4	2.5	12.09	25%
BigIndian11post	6.5	9.1	9.1	8.4	2.46	8%
BigIndian12post	6.5	4.6	4.9	4.3	10.42	5%
BigIndian13post	6.5	8.3	8.3	7.2	4.55	13%
BigIndian14post	6.5	2.4	2.4	1.7	1.61	29%
BigIndian15post	6.5	13.3	13.3	11.9	14.07	11%
BigIndian16post	6.5	2.1	2.1	1.9	1.79	11%
BigIndian17-33post	6.5	7.4	7.4	7.4	8.71	0%
BigIndian18post	6.5	4.3	4.3	3.9	4.73	9%
BigIndian19post	6.5	5.9	5.9	4.3	5.20	28%
BigIndian20post	6.5	4.2	4.2	3.7	3.44	11%
BigIndian21post	6.5	5.0	5.0	4.8	5.16	4%
BigIndian23-24post	6.5	25.9	25.9	24.2	29.83	6%
BigIndian25post	6.5	19.8	19.8	17.8	21.08	10%
BigIndian26post	6.5	16.3	16.3	11.7	14.23	28%
BigIndian27post	6.5	5.8	5.8	4.4	3.88	25%
BigIndian28post	6.5	3.6	3.6	2.5	2.64	31%
BigIndian30post	6.5	300.8	301.0	301.0	293.36	0%
BigIndian31post	6.5	18.6	18.6	16.6	20.89	11%
BigIndian35post	6.5	156.9	156.9	156.9	150.23	0%
BigIndian36post	6.5	11.0	11.0	8.5	9.48	23%
BigIndian37post	6.5	7.7	7.7	7.7	6.65	0%
BigIndian38post	6.5	6.9	6.9	5.3	6.00	24%
BigIndian40-42post	6.5	7.6	7.6	5.9	7.45	21%
TOTALS		961.3	961.7	928.9	969.22	3%
Average yield (lb/acre)		1.0	1.0	1.0		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	159.1	159.1	159.1		
BigIndian3pre	6.5	159.3	159.3	159.3		
BigIndian4-5-6pre	6.5	162.0	162.0	162.0		
BigIndian30pre	6.5	169.1	169.1	169.1		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	156.2	156.2	18.8		
BigIndian2post	6.5	133.3	133.3	24.1		
BigIndian3post	6.5	83.7	83.7	32.7		
BigIndian4post	6.5	58.9	58.9	22.9		
BigIndian5-22-32post	6.5	121.3	121.3	87.9		
BigIndian6post	6.5	49.5	49.5	30.6		
BigIndian7post	6.5	108.2	108.2	28.7		
BigIndian8post	6.5	74.9	74.9	74.9		
BigIndian9post	6.5	108.3	108.3	47.6		
BigIndian10post	6.5	92.4	92.4	92.4		
BigIndian11post	6.5	227.3	227.3	69.7		
BigIndian12post	6.5	97.5	97.5	38.3		
BigIndian13post	6.5	99.9	99.9	19.6		
BigIndian14post	6.5	351.4	351.4	17.0		
BigIndian15post	6.5	107.0	107.0	10.4		
BigIndian16post	6.5	517.1	517.1	52.4		
BigIndian17-33post	6.5	95.3	95.3	93.0		
BigIndian18post	6.5	111.0	111.0	32.1		
BigIndian19post	6.5	317.5	317.5	50.8		
BigIndian20post	6.5	137.4	137.4	36.9		
BigIndian21post	6.5	54.7	54.7	32.1		
BigIndian23-24post	6.5	95.1	95.1	55.4		
BigIndian25post	6.5	118.9	118.9	67.7		
BigIndian26post	6.5	283.4	283.4	100.0		
BigIndian27post	6.5	332.0	332.0	55.2		
BigIndian28post	6.5	218.8	218.8	194.6		
BigIndian30post	6.5	162.3	162.3	162.3		
BigIndian31post	6.5	115.1	115.1	88.1		
BigIndian35post	6.5	175.6	175.6	175.6		
BigIndian36post	6.5	351.4	351.4	84.6		
BigIndian37post	6.5	351.4	351.4	84.6		
BigIndian38post	6.5	345.9	345.9	74.8		
BigIndian40-42post	6.5	208.1	208.1	164.7		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
BigIndian1-2pre	6.5	16,679	16,679	16,679	197.6	0%
BigIndian3pre	6.5	36,899	36,899	36,899	447.4	0%
BigIndian4-5-6pre	6.5	37,617	37,617	37,617	447.8	0%
BigIndian30pre	6.5	27,874	27,874	27,874	315.7	0%
TOTALS		119,069	119,069	119,069	1,408.5	0%
Average yield (lb/acre)		85	85	85		
POST-DEVELOPMENT CONDITION						
BigIndian1-29-34post	6.5	1,589	1,589	192	17.42	88%
BigIndian2post	6.5	216	216	39	2.13	82%
BigIndian3post	6.5	348	348	136	6.47	61%
BigIndian4post	6.5	69	69	27	1.52	61%
BigIndian5-22-32post	6.5	17,915	17,915	12,748	280.29	29%
BigIndian6post	6.5	105	105	65	2.62	38%
BigIndian7post	6.5	246	246	65	3.21	74%
BigIndian8post	6.5	330	330	108	5.97	67%
BigIndian9post	6.5	562	562	247	9.64	56%
BigIndian10post	6.5	628	628	499	12.09	21%
BigIndian11post	6.5	407	407	40	2.46	90%
BigIndian12post	6.5	553	553	217	10.42	61%
BigIndian13post	6.5	304	304	57	4.55	81%
BigIndian14post	6.5	375	375	18	1.61	95%
BigIndian15post	6.5	118	118	62	14.07	47%
BigIndian16post	6.5	143	143	26	1.79	82%
BigIndian17-33post	6.5	446	446	92	8.71	79%
BigIndian18post	6.5	280	280	81	4.73	71%
BigIndian19post	6.5	851	851	136	5.20	84%
BigIndian20post	6.5	313	313	84	3.44	73%
BigIndian21post	6.5	205	205	121	5.16	41%
BigIndian23-24post	6.5	1,555	1,555	771	29.83	50%
BigIndian25post	6.5	1,352	1,352	375	21.08	72%
BigIndian26post	6.5	2,155	2,155	379	14.23	82%
BigIndian27post	6.5	873	873	145	3.88	83%
BigIndian28post	6.5	383	383	104	2.64	73%
BigIndian30post	6.5	24,531	24,531	24,531	293.36	0%
BigIndian31post	6.5	1,260	1,260	240	20.89	81%
BigIndian35post	6.5	13,793	13,793	13,793	150.23	0%
BigIndian36post	6.5	1,717	1,717	413	9.48	76%
BigIndian37post	6.5	1,204	1,204	1,204	6.65	0%
BigIndian38post	6.5	1,069	1,069	231	6.00	78%
BigIndian40-42post	6.5	839	839	81	7.45	90%
TOTALS		76,734	76,733	57,326	969.22	25%
Average yield (lb/acre)		79	79	59		

APPENDIX 10 A

BELLEAYRE HIGHLANDS
6.5-INCH RAINFALL

	Rainfall period: 12 Hour Rain			
	Detention ponds have variable infiltration rates			
Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling				
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)				
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
POST-DEVELOPMENT CONDITION				
Belleayre Highlands1and2post	6.5	480.3	480.3	480.3
Belleayre Highlands3and7post	6.5	420.1	420.1	147.4
Belleayre Highlands4and5post	6.5	275.9	275.9	94.5
Belleayre Highlands6and23post	6.5	419.2	419.2	126.9
Belleayre Highlands8-13-14post	6.5	228.2	228.2	228.2
Belleayre Highlands9and11post	6.5	76.9	76.9	18.4
Belleayre Highlands10and12post	6.5	79.3	79.3	26.2
Belleayre Highlands16post	6.5	87.6	87.6	20.5
Belleayre Highlands17post	6.5	90.5	90.5	17.1
Belleayre Highlands18post	6.5	491.0	491.0	44.9
Belleayre Highlands21post	6.5	482.9	482.9	482.9
Belleayre Highlands22post	6.5	34.2	34.2	8.6

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)				
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
POST-DEVELOPMENT CONDITION				
Belleayre Highlands1and2post	6.5	836.5	836.5	836.5
Belleayre Highlands3and7post	6.5	831.0	831.0	831.0
Belleayre Highlands4and5post	6.5	701.4	701.4	701.4
Belleayre Highlands6and23post	6.5	833.8	833.8	833.8
Belleayre Highlands8-13-14post	6.5	749.3	749.3	749.3
Belleayre Highlands9and11post	6.5	654.7	654.7	654.7
Belleayre Highlands10and12post	6.5	679.7	679.7	679.7
Belleayre Highlands16post	6.5	570.7	570.7	570.7
Belleayre Highlands17post	6.5	704.2	704.2	704.2
Belleayre Highlands18post	6.5	846.7	846.7	846.7
Belleayre Highlands21post	6.5	835.4	835.4	835.4
Belleayre Highlands22post	6.5	764.0	764.0	764.0
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)				
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)
POST-DEVELOPMENT CONDITION				
Belleayre Highlands1and2post	6.5	1,317	837	837
Belleayre Highlands3and7post	6.5	1,251	831	831
Belleayre Highlands4and5post	6.5	977	701	701
Belleayre Highlands6and23post	6.5	1,253	834	834
Belleayre Highlands8-13-14post	6.5	978	749	749
Belleayre Highlands9and11post	6.5	732	655	655
Belleayre Highlands10and12post	6.5	759	680	680
Belleayre Highlands16post	6.5	658	571	571
Belleayre Highlands17post	6.5	795	704	704
Belleayre Highlands18post	6.5	1,337	847	847
Belleayre Highlands21post	6.5	1,318	835	835
Belleayre Highlands22post	6.5	798	764	764

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling

Pollution file: BHAM.ppd

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	0.36	0.36	0.36		
Belleayre Highlands3and7post	6.5	0.42	0.42	0.14		
Belleayre Highlands4and5post	6.5	0.36	0.36	0.12		
Belleayre Highlands6and23post	6.5	0.39	0.39	0.12		
Belleayre Highlands8-13-14post	6.5	0.50	0.50	0.50		
Belleayre Highlands9and11post	6.5	0.55	0.55	0.13		
Belleayre Highlands10and12post	6.5	0.59	0.59	0.19		
Belleayre Highlands16post	6.5	0.58	0.58	0.14		
Belleayre Highlands17post	6.5	0.64	0.64	0.12		
Belleayre Highlands18post	6.5	0.35	0.35	0.03		
Belleayre Highlands21post	6.5	0.36	0.36	0.36		
Belleayre Highlands22post	6.5	0.22	0.22	0.06		

Pollution file: BHAM.ppd

Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)

Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	27.3	27.3	27.3	143.28	0%
Belleayre Highlands3and7post	6.5	4.3	4.3	1.5	20.13	65%
Belleayre Highlands4and5post	6.5	2.2	2.2	0.7	8.13	66%
Belleayre Highlands6and23post	6.5	2.3	2.3	0.7	11.18	70%
Belleayre Highlands8-13-14post	6.5	6.9	6.9	5.3	24.84	23%
Belleayre Highlands9and11post	6.5	1.9	1.9	0.4	5.76	76%
Belleayre Highlands10and12post	6.5	2.6	2.6	0.9	7.23	67%
Belleayre Highlands16post	6.5	1.1	1.1	0.3	2.30	77%
Belleayre Highlands17post	6.5	1.4	1.4	0.3	4.00	81%
Belleayre Highlands18post	6.5	1.0	1.0	0.1	4.23	91%
Belleayre Highlands21post	6.5	36.4	36.4	36.4	193.07	0%
Belleayre Highlands22post	6.5	2.3	2.3	0.6	14.96	75%
Totals		89.7	89.7	74.4	439	17%
Average yield (lb/acre)		0.2	0.2	0.2		

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling
Pollution file: Pollgeo.ppd

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)
POST-DEVELOPMENT CONDITION				
Belleayre Highlands1and2post	6.5	0.26	0.26	0.00
Belleayre Highlands3and7post	6.5	0.29	0.29	0.10
Belleayre Highlands4and5post	6.5	0.26	0.26	0.09
Belleayre Highlands6and23post	6.5	0.29	0.29	0.09
Belleayre Highlands8-13-14post	6.5	0.40	0.40	0.40
Belleayre Highlands9and11post	6.5	0.32	0.32	0.08
Belleayre Highlands10and12post	6.5	0.34	0.34	0.11
Belleayre Highlands16post	6.5	0.35	0.35	0.08
Belleayre Highlands17post	6.5	0.38	0.38	0.07
Belleayre Highlands18post	6.5	0.24	0.24	0.04
Belleayre Highlands21post	6.5	0.24	0.24	0.24
Belleayre Highlands22post	6.5	0.10	0.10	0.03

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling
Pollution file: Pollgeo.ppd

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)
POST-DEVELOPMENT CONDITION				
Belleayre Highlands1and2post	6.5	0.045	0.045	0.000
Belleayre Highlands3and7post	6.5	0.108	0.108	0.108
Belleayre Highlands4and5post	6.5	0.171	0.171	0.171
Belleayre Highlands6and23post	6.5	0.116	0.116	0.116
Belleayre Highlands8-13-14post	6.5	0.297	0.297	0.297
Belleayre Highlands9and11post	6.5	0.401	0.401	0.401
Belleayre Highlands10and12post	6.5	0.446	0.446	0.446
Belleayre Highlands16post	6.5	0.392	0.392	0.392
Belleayre Highlands17post	6.5	0.465	0.465	0.465
Belleayre Highlands18post	6.5	0.038	0.038	0.038
Belleayre Highlands21post	6.5	0.040	0.040	0.040
Belleayre Highlands22post	6.5	0.126	0.126	0.126

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling
Pollution file: Pollgeo.ppd

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	0.31	0.31	0.00		
Belleayre Highlands3and7post	6.5	0.40	0.40	0.21		
Belleayre Highlands4and5post	6.5	0.43	0.43	0.26		
Belleayre Highlands6and23post	6.5	0.41	0.41	0.20		
Belleayre Highlands8-13-14post	6.5	0.70	0.70	0.39		
Belleayre Highlands9and11post	6.5	0.72	0.72	0.48		
Belleayre Highlands10and12post	6.5	0.79	0.79	0.56		
Belleayre Highlands16post	6.5	0.74	0.74	0.47		
Belleayre Highlands17post	6.5	0.84	0.84	0.54		
Belleayre Highlands18post	6.5	0.28	0.28	0.06		
Belleayre Highlands21post	6.5	0.28	0.28	0.28		
Belleayre Highlands22post	6.5	0.23	0.23	0.15		

Pollution file: Pollgeo.ppd

Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)

Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	23.0	23.0	23.0	143.28	0%
Belleayre Highlands3and7post	6.5	4.1	4.1	2.2	20.13	47%
Belleayre Highlands4and5post	6.5	2.6	2.6	1.6	8.13	40%
Belleayre Highlands6and23post	6.5	2.3	2.3	1.2	11.18	50%
Belleayre Highlands8-13-14post	6.5	9.7	9.7	8.4	24.84	13%
Belleayre Highlands9and11post	6.5	2.4	2.4	1.6	5.76	34%
Belleayre Highlands10and12post	6.5	3.5	3.5	2.5	7.23	29%
Belleayre Highlands16post	6.5	1.4	1.4	0.9	2.30	36%
Belleayre Highlands17post	6.5	1.9	1.9	1.2	4.00	36%
Belleayre Highlands18post	6.5	0.8	0.8	0.2	4.42	78%
Belleayre Highlands21post	6.5	27.9	27.9	27.9	193.07	0%
Belleayre Highlands22post	6.5	2.4	2.4	1.6	14.96	34%
Totals		82.1	82.1	72.2	439.3	12%
Average yield (lb/acre)		0.2	0.2	0.2		

Belleayre Highlands (Turner Mansion Area) WinSLAMM Modeling						
Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/l)		
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	1.33	1.33	1.33		
Belleayre Highlands3and7post	6.5	1.36	1.36	1.36		
Belleayre Highlands4and5post	6.5	2.21	2.21	2.21		
Belleayre Highlands6and23post	6.5	1.40	1.40	1.40		
Belleayre Highlands8-13-14post	6.5	1.55	1.55	1.55		
Belleayre Highlands9and11post	6.5	2.03	2.03	2.03		
Belleayre Highlands10and12post	6.5	1.25	1.25	1.25		
Belleayre Highlands16post	6.5	3.70	3.70	3.70		
Belleayre Highlands17post	6.5	1.38	1.38	1.38		
Belleayre Highlands18post	6.5	1.28	1.28	1.28		
Belleayre Highlands21post	6.5	1.27	1.27	1.27		
Belleayre Highlands22post	6.5	2.46	2.46	2.46		
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	1.99	1.99	1.99		
Belleayre Highlands3and7post	6.5	1.93	1.93	1.44		
Belleayre Highlands4and5post	6.5	1.75	1.75	1.43		
Belleayre Highlands6and23post	6.5	1.93	1.93	1.41		
Belleayre Highlands8-13-14post	6.5	1.80	1.80	1.22		
Belleayre Highlands9and11post	6.5	1.63	1.63	1.51		
Belleayre Highlands10and12post	6.5	1.69	1.59	1.69		
Belleayre Highlands16post	6.5	1.60	1.60	1.47		
Belleayre Highlands17post	6.5	1.72	1.72	1.57		
Belleayre Highlands18post	6.5	1.99	1.99	1.20		
Belleayre Highlands21post	6.5	1.99	1.99	1.99		
Belleayre Highlands22post	6.5	1.25	1.25	1.20		

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)

Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	100.1	100.1	100.1	143.28	0%
Belleayre Highlands3and7post	6.5	14.1	14.1	14.1	20.13	0%
Belleayre Highlands4and5post	6.5	13.4	13.4	13.4	8.13	0%
Belleayre Highlands6and23post	6.5	8.1	8.1	8.1	11.18	0%
Belleayre Highlands8-13-14post	6.5	21.4	21.4	21.4	24.84	0%
Belleayre Highlands9and11post	6.5	6.8	6.8	6.8	5.76	0%
Belleayre Highlands10and12post	6.5	5.5	5.5	5.5	7.23	0%
Belleayre Highlands16post	6.5	7.2	7.2	7.2	2.30	0%
Belleayre Highlands17post	6.5	3.1	3.1	3.1	4.00	0%
Belleayre Highlands18post	6.5	3.7	3.7	3.7	4.42	0%
Belleayre Highlands21post	6.5	127.2	127.2	127.2	193.07	0%
Belleayre Highlands22post	6.5	25.9	25.9	25.9	14.96	0%
Total yield (lbs)	6.5	336.5	336.5	336.5	439.30	0%
Average yield (lb/acre)	6.5	0.8	0.8	0.8		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)

Subcatchment	Rain Total (inches)	Total Before Drainage System	Total After Drainage System	Total After Outfall Controls	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	149.1	149.1	149.1	143.28	0%
Belleayre Highlands3and7post	6.5	20.0	20.0	15.0	20.13	25%
Belleayre Highlands4and5post	6.5	10.6	10.6	8.7	8.13	19%
Belleayre Highlands6and23post	6.5	11.1	11.1	8.1	11.18	27%
Belleayre Highlands8-13-14post	6.5	24.8	24.8	23.4	24.84	6%
Belleayre Highlands9and11post	6.5	5.5	5.5	5.1	5.76	7%
Belleayre Highlands10and12post	6.5	7.4	7.4	7.0	7.23	6%
Belleayre Highlands16post	6.5	3.1	3.1	2.9	2.30	8%
Belleayre Highlands17post	6.5	3.8	3.8	3.5	4.00	9%
Belleayre Highlands18post	6.5	5.8	5.8	3.5	4.42	40%
Belleayre Highlands21post	6.5	199.5	199.5	199.5	193.07	0%
Belleayre Highlands22post	6.5	13.2	13.2	12.6	14.96	4%
Total yield (lbs)		454.0	454.0	438.4	439.3	3%
Average yield (lb/acre)		1.0	1.0	1.0		

Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	170.8	170.8	0.1		
Belleayre Highlands3and7post	6.5	162.8	162.8	69.8		
Belleayre Highlands4and5post	6.5	119.9	119.9	55.8		
Belleayre Highlands6and23post	6.5	149.9	149.9	59.0		
Belleayre Highlands8-13-14post	6.5	95.8	95.8	39.9		
Belleayre Highlands9and11post	6.5	89.3	89.3	44.7		
Belleayre Highlands10and12post	6.5	104.9	104.9	40.7		
Belleayre Highlands16post	6.5	105.8	105.8	39.3		
Belleayre Highlands17post	6.5	105.4	105.4	36.4		
Belleayre Highlands18post	6.5	158.5	145.2	24.8		
Belleayre Highlands21post	6.5	165.0	165.0	165.0		
Belleayre Highlands22post	6.5	49.1	45.7	23.4		
Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of sub-catchment (acres)	Percent reduction between initial and final yields
POST-DEVELOPMENT CONDITION						
Belleayre Highlands1and2post	6.5	12,817	12,817	12,817	143.28	0%
Belleayre Highlands3and7post	6.5	1,688	1,688	724	20.13	57%
Belleayre Highlands4and5post	6.5	727	727	338	8.13	53%
Belleayre Highlands6and23post	6.5	864	864	340	11.18	61%
Belleayre Highlands8-13-14post	6.5	323	323	135	24.84	58%
Belleayre Highlands9and11post	6.5	393	393	197	5.76	50%
Belleayre Highlands10and12post	6.5	495	495	240	7.23	51%
Belleayre Highlands16post	6.5	205	205	80	2.30	61%
Belleayre Highlands17post	6.5	234	234	81	4.00	65%
Belleayre Highlands18post	6.5	464	464	95	4.42	79%
Belleayre Highlands21post	6.5	16,586	16,586	16,586	193.07	0%
Belleayre Highlands22post	6.5	501	501	286	14.96	43%
Total yield (lbs)		35,296	35,296	31,918	439.30	10%
Average yield (lb/acre)		80	80	73		

APPENDIX 10 A

HIGHMOUNT ESTATES
6.5-INCH RAINFALL

Highmount Estates - WinSLAMM Modeling

Conditions: rainfall one 24-hr, 6 inch rainfall event

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
Highmount1pre	6.0	581.6	581.6	581.6
Highmount2pre	6.0	574.4	574.4	574.4
Highmount3pre	6.0	594.7	594.7	594.7
POST-DEVELOPMENT CONDITION				
Highmount1post	6.0	570.3	570.3	137.43
Highmount2post	6.0	558.9	558.9	177.3
Highmount3post	6.0	496.3	496.3	496.3
Highmount4and6post	6.0	332.2	332.2	101.8
Highmount5post	6.0	179.0	179.0	-

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
Highmount1pre	6.0	824.3	824.3	824.3
Highmount2pre	6.0	815.8	815.8	815.8
Highmount3pre	6.0	836.7	839.7	839.7
POST-DEVELOPMENT CONDITION				
Highmount1post	6.0	1,221.0	1,221.0	813.7
Highmount2post	6.0	979.4	979.4	798.5
Highmount3post	6.0	840.6	840.6	840.6
Hiughmount4and6post	6.0	729.8	729.8	729.8
Highmount5post	6.0	548.7	548.7	-

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)	
PRE-DEVELOPMENT CONDITION					
Highmount1pre	6.0	1,406	824	824	
Highmount2pre	6.0	1,390	816	816	
Highmount3pre	6.0	1,434	840	840	
POST-DEVELOPMENT CONDITION					
Highmount1post	6.0	1,384	1,221	814	
Highmount2post	6.0	1,357	979	799	
Highmount3post	6.0	1,337	841	841	
Highmount4and6	6.0	1,062	796	730	
Highmount5post	6.0	728	549	-	

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	0.404	0.404	0.404		
Highmount2pre	6.0	0.399	0.399	0.399		
Highmount3pre	6.0	0.413	0.413	0.413		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	0.464	2.000	0.111		
Highmount2post	6.0	0.419	0.419	0.133		
Highmount3post	6.0	0.345	0.345	0.345		
Highmount4and6post	6.0	0.301	0.301	0.092		
Highmount5post	6.0	0.217	0.217	-		

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	6.30	6.30	6.30	29.84	
Highmount2pre	6.0	7.55	7.55	7.55	35.72	
Highmount3pre	6.0	22.20	22.20	22.20	103.75	
TOTALS		36.05	36.05	36.05	169.31	
Average yield (lb/acre)		0.21	0.21	0.21		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	6.34	6.34	1.02	26.10	
Highmount2post	6.0	6.57	6.57	1.70	29.45	
Highmount3post	6.0	17.42	17.42	17.42	97.65	
Highmount4and6post	6.0	2.57	2.57	0.79	14.97	
Highmount5post	6.0	0.18	0.18	-	1.14	
TOTALS	30.00	33.08	33.08	20.93	169.31	
Average yield (lb/acre)		0.20	0.20	0.12		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	0.218	0.218	0.218		
Highmount2pre	6.0	0.215	0.215	0.215		
Highmount3pre	6.0	0.221	0.221	0.221		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	0.719	0.719	0.173		
Highmount2post	6.0	0.439	0.439	0.140		
Highmount3post	6.0	0.185	0.185	0.185		
Highmount4and6post	6.0	0.654	0.654	0.201		
Highmount5post	6.0	0.783	0.783	-		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	0.014	0.014	0.014		
Highmount2pre	6.0	0.016	0.016	0.016		
Highmount3pre	6.0	0.012	0.012	0.012		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	0.205	0.205	0.137		
Highmount2post	6.0	0.089	0.089	0.073		
Highmount3post	6.0	0.012	0.012	0.012		
Highmount4and6post	6.0	0.280	0.280	0.280		
Highmount5post	6.0	0.392	0.392	-		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	0.23	0.23	0.23		
Highmount2pre	6.0	0.23	0.23	0.23		
Highmount3pre	6.0	0.23	0.23	0.23		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	0.86	0.86	0.38		
Highmount2post	6.0	0.51	0.51	0.23		
Highmount3post	6.0	0.20	0.20	0.20		
Highmount4and6post	6.0	0.93	0.93	0.48		
Highmount5post	6.0	1.18	1.18	-		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	3.39	3.39	3.39	29.84	0%
Highmount2pre	6.0	4.06	4.06	4.06	35.72	0%
Highmount3pre	6.0	11.89	11.89	11.89	103.75	0%
TOTALS		19.3	19.3	19.3	169.31	0%
Average yield (lb/acre)		0.11	0.11	0.11		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	9.82	9.82	1.58	26.10	84%
Highmount2post	6.0	6.89	6.89	1.78	29.45	74%
Highmount3post	6.0	9.34	9.34	9.34	97.65	0%
Highmount4and6post	6.0	5.60	5.60	1.72	14.97	69%
Highmount5post	6.0	0.63	0.63	-	1.14	100%
TOTALS		32.3	32.3	14.4	169.31	55%
Average yield (lb/acre)		0.19	0.19	0.09		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of FILTERABLE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	0.22	0.22	0.22	29.84	0%
Highmount2pre	6.0	0.30	0.30	0.30	35.72	0%
Highmount3pre	6.0	0.64	0.64	0.64	103.75	0%
TOTALS		1.15	1.15	1.15	169.31	0%
Average yield (lb/acre)		0.01	0.01	0.01		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	1.87	1.87	1.87	26.10	0%
Highmount2post	6.0	1.14	1.14	1.14	29.45	0%
Highmount3post	6.0	0.59	0.59	0.59	97.65	0%
Highmount4and6post	6.0	2.39	2.39	2.39	14.97	0%
Highmount5post	6.0	0.32	0.32	0.32	1.14	0%
TOTALS		6.31	6.31	6.31	169.31	0%
Average yield (lb/acre)		0.04	0.04	0.04		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	3.62	3.62	3.62	29.84	0%
Highmount2pre	6.0	4.35	4.35	4.35	35.72	0%
Highmount3pre	6.0	12.53	12.53	12.53	103.75	0%
TOTALS		20.5	20.5	20.5	169.31	0%
Average yield (lb/acre)		0.12	0.12	0.12		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	11.69	11.69	3.45	26.10	71%
Highmount2post	6.0	8.03	8.03	2.92	29.45	64%
Highmount3post	6.0	9.32	9.32	9.32	97.65	0%
Highmount4and6post	6.0	7.99	7.99	4.11	14.97	49%
Highmount5post	6.0	0.95	0.95	0.32	1.14	67%
TOTALS		38.0	38.0	20.1	169.31	47%
Average yield (lb/acre)		0.22	0.22	0.12		

Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	1.25	1.25	1.25		
Highmount2pre	6.0	1.24	1.24	1.24		
Highmount3pre	6.0	1.27	1.27	1.27		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	1.85	1.85	1.24		
Highmount2post	6.0	1.49	1.49	1.22		
Highmount3post	6.0	1.27	1.27	1.27		
Highmount4and6post	6.0	1.12	1.12	1.12		
Highmount5post	6.0	0.87	0.87	-		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	2.13	2.13	2.13		
Highmount2pre	6.0	2.13	2.13	2.13		
Highmount3pre	6.0	2.15	2.15	2.15		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	2.21	2.21	2.06		
Highmount2post	6.0	2.15	2.15	1.74		
Highmount3post	6.0	1.98	1.98	1.98		
Highmount4and6post	6.0	1.95	1.95	1.55		
Highmount5post	6.0	1.86	1.86	-		

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	19.52	19.52	19.52	29.84	0%
Highmount2pre	6.0	23.45	23.45	23.45	35.72	0%
Highmount3pre	6.0	68.33	68.33	68.33	103.75	0%
TOTALS		111.30	111.30	111.30	169.31	0%
Average yield (lb/acre)		0.66	0.66	0.66		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	16.90	16.90	16.90	26.10	0%
Highmount2post	6.0	19.11	19.11	19.11	29.45	0%
Highmount3post	6.0	64.32	64.32	64.32	97.65	0%
Highmount4and6post	6.0	9.57	9.57	9.57	14.97	0%
Highmount5post	6.0	0.70	0.70	0.70	1.14	0%
TOTALS		110.61	110.61	110.61	169.31	0%
Average yield (lb/acre)		0.65	0.65	0.65		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	33.3	33.3	33.3	29.84	0%
Highmount2pre	6.0	40.3	40.3	40.3	35.72	0%
Highmount3pre	6.0	115.4	115.4	115.4	103.75	0%
TOTALS		188.9	188.9	188.9	169.31	0%
Average yield (lb/acre)		1.1	1.1	1.1		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	30.3	30.3	18.8	26.10	38%
Highmount2post	6.0	33.7	33.7	22.3	29.45	34%
Highmount3post	6.0	99.8	99.8	99.8	97.65	0%
Highmount4and6post	6.0	16.7	16.7	13.2	14.97	21%
Highmount5post	6.0	1.5	1.5	1.3	1.14	16%
TOTALS		181.9	181.9	155.3	169.31	15%
Average yield (lb/acre)		1.1	1.1	0.9		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	181.0	181.0	181.0		
Highmount2pre	6.0	179.4	179.4	179.4		
Highmount3pre	6.0	184.2	184.2	184.2		
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	205.7	205.7	74.7		
Highmount2post	6.0	187.9	187.9	78.5		
Highmount3post	6.0	157.1	157.1	157.1		
Highmount4and6post	6.0	143.0	143.0	59.0		
Highmount5post	6.0	115.6	115.6	-		

Total Area, with Drainage and Outfall Controls - Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction After Drainage Control
PRE-DEVELOPMENT CONDITION						
Highmount1pre	6.0	2,824	2,824	2,824	29.84	0%
Highmount2pre	6.0	3,394	3,394	3,394	35.72	0%
Highmount3pre	6.0	9,898	9,898	9,898	103.75	0%
TOTALS		16,116	16,116	16,116	169.31	0%
Average yield (lb/acre)		95	95	95		0%
POST-DEVELOPMENT CONDITION						
Highmount1post	6.0	2,812	2,812	681	26.10	76%
Highmount2post	6.0	2,948	2,948	1,005	29.45	66%
Highmount3post	6.0	7,935	7,935	7,935	97.65	0%
Highmount4and6post	6.0	1,223	1,223	505	14.97	59%
Highmount5post	6.0	94	94	22	1.14	77%
TOTALS		15,012	15,012	10,148	169.31	32%
Average yield (lb/acre)		89	89	60		

APPENDIX 10 A

WILDACRES RESORT
6.5-INCH RAINFALL

Wildacres summary for 6.5 in rain.new

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE SOLIDS (mg/L)				
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
Wildacres1pre	6.5	488.4	488.4	488.4
Wildacres2pre	6.5	462.9	462.9	462.9
Wildacres3pre	6.5	460.3	460.3	460.3
Wildacres4pre	6.5	465.5	465.5	465.5
Wildacres5pre	6.5	474.1	474.1	474.1
Wildacres6pre	6.5	429.2	429.2	429.2
Wildacres200.300pre	6.5	500.0	500.0	500.0
POST-DEVELOPMENT CONDITION				
Wildacres1-2-3-4-7-17-18-66-77-300p	6.5	41.2	41.2	19.3
Wildacres5-8-9-10-11-12-55-88post	6.5	78.1	78.1	23.4
Wildacres6-101post	6.5	378.8	378.8	152.2
Wildacres13-23post	6.5	164.7	164.7	74.5
Wildacres14post	6.5	345.6	345.6	71.5
Wildacres15post	6.5	90.7	90.7	30.4
Wildacres16post	6.5	96.2	96.2	22.1
Wildacres20post	6.5	81.0	81.0	-
Wildacres21post	6.5	393.9	393.9	134.9
Wildacres22post	6.5	95.8	95.8	30.5
Wildacres24post	6.5	486.4	486.4	486.4
Wildacres25-200post	6.5	472.9	472.9	427.9
Wildacres40-41-42post	6.5	95.4	95.4	95.4
Wildacres102-105post	6.5	90.2	90.2	-
Wildacres103-104-106post	6.5	207.7	207.7	46.4
Wildacres107post	6.5	370.3	370.3	166.2
Wildacres108post	6.5	66.7	66.7	19.4
Wildacres109post	6.5	351.4	351.4	108.1
Wildacres110post	6.5	346.2	346.2	105.1
Wildacres111post	6.5	57.9	57.9	15.7
Wildacres112post	6.5	311.7	311.7	45.1
Wildacres121post	6.5	58.3	58.3	27.1
totals				

Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE SOLIDS (mg/L)				
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
Wildacres1pre	6.5	832.5	832.5	832.5
Wildacres2pre	6.5	818.0	818.0	818.0
Wildacres3pre	6.5	813.7	813.7	813.7
Wildacres4pre	6.5	820.1	820.1	820.1
Wildacres5pre	6.5	823.0	823.0	823.0
Wildacres6pre	6.5	802.2	802.2	802.2
Wildacres200.300pre	6.5	846.0	846.0	846.0
POST-DEVELOPMENT CONDITION				
Wildacres1-2-3-4-7-17-18-66-77-300p	6.5	797.1	797.1	797.1
Wildacres5-8-9-10-11-12-55-88post	6.5	695.9	695.9	695.9
Wildacres6-101post	6.5	808.2	808.2	808.2
Wildacres13-23post	6.5	794.5	794.5	794.5
Wildacres14post	6.5	857.6	857.6	857.6
Wildacres15post	6.5	781.5	781.5	781.5
Wildacres16post	6.5	828.0	828.0	828.0
Wildacres20post	6.5	719.5	719.5	719.5
Wildacres21post	6.5	826.0	826.0	826.0
Wildacres22post	6.5	787.7	787.7	787.7
Wildacres24post	6.5	847.0	847.0	847.0
Wildacres25-200post	6.5	839.3	839.3	839.3
Wildacres40-41-42post	6.5	652.3	652.3	652.3
Wildacres102-105post	6.5	740.6	740.6	740.6
Wildacres103-104-106post	6.5	643.0	643.0	643.0
Wildacres107post	6.5	855.7	855.7	855.7
Wildacres108post	6.5	798.9	798.9	798.9
Wildacres109post	6.5	857.1	857.1	857.1
Wildacres110post	6.5	857.5	857.5	857.5
Wildacres111post	6.5	827.4	827.4	827.4
Wildacres112post	6.5	860.1	860.1	860.1
Wildacres121post	6.5	722.2	722.2	722.2
totals				

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL SOLIDS (mg/L)				
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
Wildacres1pre	6.5	1,321	1,321	1,321
Wildacres2pre	6.5	1,281	1,281	1,281
Wildacres3pre	6.5	1,274	1,274	1,274
Wildacres4pre	6.5	1,285	1,285	1,285
Wildacres5pre	6.5	1,297	1,297	1,297
Wildacres6pre	6.5	1,231	1,231	1,231
Wildacres200.300pre	6.5	1,346	1,346	1,346
POST-DEVELOPMENT CONDITION				
Wildacres1-2-3-4-7-17-18-66-77-300p	6.5	838	798	797.0
Wildacres5-8-9-10-11-12-55-88post	6.5	774	696	695.0
Wildacres6-101post	6.5	1,187	808	808.0
Wildacres13-23post	6.5	959	896	794.5
Wildacres14post	6.5	1,203	858	857.6
Wildacres15post	6.5	1,111	872	781.5
Wildacres16post	6.5	924	828	828.0
Wildacres20post	6.5	800	720	719.5
Wildacres21post	6.5	1,220	1,167	826.0
Wildacres22post	6.5	1,227	884	787.7
Wildacres24post	6.5	1,333	1,206	847.0
Wildacres25-200post	6.5	1,267	1,267	839.3
Wildacres40-41-42post	6.5	748	748	652.3
Wildacres102-105post	6.5	831	831	740.6
Wildacres103-104-106post	6.5	1,925	851	643.0
Wildacres107post	6.5	2,537	1,226	855.7
Wildacres108post	6.5	866	866	798.9
Wildacres109post	6.5	1,208	1,208	857.1
Wildacres110post	6.5	1,587	1,204	857.5
Wildacres111post	6.5	885	885	827.4
Wildacres112post	6.5	1,172	1,172	860.1
Wildacres121post	6.5	780.5	780.5	7222.2

Pollutant Relative Concentration File: BHAM.PPD

Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)

Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)
PRE-DEVELOPMENT CONDITION				
Wildacres1pre	6.5	0.347	0.347	0.347
Wildacres2pre	6.5	0.377	0.377	0.377
Wildacres3pre	6.5	0.375	0.375	0.375
Wildacres4pre	6.5	0.375	0.375	0.375
Wildacres5pre	6.5	0.337	0.337	0.337
Wildacres6pre	6.5	0.423	0.423	0.423
Wildacres200.300pre	6.5	0.347	0.347	0.347
POST-DEVELOPMENT CONDITION				
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	0.2856	0.2856	0.1336
Wildacres5-8-9-10-11-12-55-88post	6.5	0.566	0.566	0.169
Wildacres6-101post	6.5	0.437	0.437	0.176
Wildacres13-23post	6.5	0.295	0.295	0.134
Wildacres14post	6.5	0.727	0.727	0.150
Wildacres15post	6.5	0.691	0.691	0.232
Wildacres16post	6.5	0.739	0.739	0.169
Wildacres20post	6.5	0.539	0.539	-
Wildacres21post	6.5	0.550	0.550	0.188
Wildacres22post	6.5	0.725	0.725	0.231
Wildacres24post	6.5	0.349	0.349	0.349
Wildacres25-200post	6.5	0.317	0.317	0.317
Wildacres40-41-42post	6.5	0.468	0.468	0.468
Wildacres102-105post	6.5	0.658	0.658	-
Wildacres103-104-106post	6.5	0.563	0.563	0.126
Wildacres107post	6.5	0.667	0.667	0.299
Wildacres108post	6.5	0.498	0.498	0.145
Wildacres109post	6.5	0.713	0.713	0.219
Wildacres110post	6.5	0.726	0.726	0.220
Wildacres111post	6.5	0.428	0.428	0.116
Wildacres112post	6.5	0.811	0.811	0.117
Wildacres121post	6.5	0.393	0.393	0.183
totals				

Pollutant Relative Concentration File: BHAM.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction after Drainage Controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	10.39	10.39	10.39	44.70	0%
Wildacres2pre	6.5	28.38	28.38	28.38	111.80	0%
Wildacres3pre	6.5	11.92	11.92	11.92	47.53	0%
Wildacres4pre	6.5	21.87	21.87	21.87	86.90	0%
Wildacres5pre	6.5	5.21	5.21	5.21	22.96	0%
Wildacres6pre	6.5	11.50	11.50	11.50	39.80	0%
Wildacres200.300pre	6.5	46.03	46.03	46.03	200.00	0%
TOTALS		135.30	135.30	135.30	553.69	0%
Average yield (lb/acre)		0.24	0.24	0.24		0%
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	13.38	13.38	6.26	68.10	53%
Wildacres5-8-9-10-11-12-55-88post	6.5	17.09	17.09	3.01	41.25	82%
Wildacres6-101post	6.5	10.08	10.08	4.05	34.08	60%
Wildacres13-23post	6.5	2.51	2.51	1.01	12.27	60%
Wildacres14post	6.5	2.85	2.85	0.59	5.92	79%
Wildacres15post	6.5	4.73	4.73	1.11	9.92	77%
Wildacres16post	6.5	3.43	3.43	0.79	7.00	77%
Wildacres20post	6.5	5.93	5.93	-	14.80	100%
Wildacres21post	6.5	7.26	7.26	1.76	19.50	76%
Wildacres22post	6.5	6.46	6.46	1.32	12.70	80%
Wildacres24post	6.5	1.70	1.70	1.20	7.35	30%
Wildacres25-200post	6.5	25.01	25.01	25.01	118.54	0%
Wildacres40-41-42post	6.5	10.81	10.81	10.81	29.42	0%
Wildacres102-105post	6.5	11.14	11.14	-	23.26	100%
Wildacres103-104-106post	6.5	8.51	8.51	0.63	19.27	93%
Wildacres107post	6.5	2.65	2.65	0.39	5.80	85%
Wildacres108post	6.5	5.94	5.94	1.73	17.25	71%
Wildacres109post	6.5	2.61	2.61	0.80	5.53	69%
Wildacres110post	6.5	3.11	3.11	0.52	6.63	83%
Wildacres111post	6.5	3.85	3.85	1.05	13.31	73%
Wildacres112post	6.5	3.86	3.86	0.06	7.18	98%
Wildacres121post	6.5	5.16	5.16	2.40	17.81	54%
totals		158.05	158.05	64.49	496.89	59%
Average yield (lb/acre)		0.32	0.32	0.13		59%

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of PARTICULATE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	0.202	0.202	0.202		
Wildacres2pre	6.5	0.291	0.291	0.291		
Wildacres3pre	6.5	0.289	0.289	0.289		
Wildacres4pre	6.5	0.283	0.283	0.283		
Wildacres5pre	6.5	0.248	0.248	0.248		
Wildacres6pre	6.5	0.409	0.409	0.409		
Wildacres200.300pre	6.5	0.186	0.186	0.186		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	0.1413	0.1413	0.066		
Wildacres5-8-9-10-11-12-55-88post	6.5	0.325	0.325	0.098		
Wildacres6-101post	6.5	0.416	0.416	0.167		
Wildacres13-23post	6.5	0.342	0.342	0.155		
Wildacres14post	6.5	1.087	1.087	0.225		
Wildacres15post	6.5	0.398	0.398	0.133		
Wildacres16post	6.5	0.423	0.423	0.097		
Wildacres20post	6.5	0.310	0.310	-		
Wildacres21post	6.5	0.692	0.692	0.237		
Wildacres22post	6.5	0.418	0.418	0.133		
Wildacres24post	6.5	0.265	0.265	0.265		
Wildacres25-200post	6.5	0.166	0.166	0.166		
Wildacres40-41-42post	6.5	0.288	0.288	0.288		
Wildacres102-105post	6.5	0.380	0.380	-		
Wildacres103-104-106post	6.5	0.774	0.774	0.173		
Wildacres107post	6.5	0.942	0.942	0.423		
Wildacres108post	6.5	0.275	0.275	0.080		
Wildacres109post	6.5	1.053	1.053	0.324		
Wildacres110post	6.5	1.084	1.084	0.329		
Wildacres111post	6.5	0.2285	0.2285	0.0612		
Wildacres112post	6.5	1.285	1.285	0.186		
Wildacres121post	6.5	0.216	0.216	0.100		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of FILTERABLE PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	0.021	0.021	0.021		
Wildacres2pre	6.5	0.069	0.069	0.069		
Wildacres3pre	6.5	0.069	0.069	0.069		
Wildacres4pre	6.5	0.064	0.064	0.064		
Wildacres5pre	6.5	0.046	0.046	0.046		
Wildacres6pre	6.5	0.135	0.135	0.135		
Wildacres200.300pre	6.5	0.011	0.011	0.011		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	0.1774	0.1774	0.1774		
Wildacres5-8-9-10-11-12-55-88post	6.5	0.3949	0.3949	0.3949		
Wildacres6-101post	6.5	0.170	0.170	0.170		
Wildacres13-23post	6.5	0.207	0.207	0.207		
Wildacres14post	6.5	0.472	0.472	0.472		
Wildacres15post	6.5	0.499	0.499	0.499		
Wildacres16post	6.5	0.524	0.524	0.524		
Wildacres20post	6.5	0.348	0.348	0.348		
Wildacres21post	6.5	0.277	0.277	0.277		
Wildacres22post	6.5	0.517	0.517	0.517		
Wildacres24post	6.5	0.052	0.052	0.052		
Wildacres25-200post	6.5	0.018	0.018	0.018		
Wildacres40-41-42post	6.5	0.314	0.314	0.314		
Wildacres102-105post	6.5	0.456	0.456	0.456		
Wildacres103-104-106post	6.5	0.403	0.403	0.403		
Wildacres107post	6.5	0.398	0.398	0.398		
Wildacres108post	6.5	0.349	0.349	0.349		
Wildacres109post	6.5	0.455	0.455	0.455		
Wildacres110post	6.5	0.470	0.470	0.470		
Wildacres111post	6.5	0.2886	0.2886	0.2886		
Wildacres112post	6.5	0.573	0.573	0.573		
Wildacres121post	6.5	0.252	0.252	0.252		
totals						

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Concentration of TOTAL PHOSPHORUS (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average, Before Drainage System (mg/L)	Flow-weighted Average, After Drainage System (mg/L)	Flow-weighted Average, After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	0.222	0.222	0.222		
Wildacres2pre	6.5	0.360	0.360	0.360		
Wildacres3pre	6.5	0.358	0.358	0.358		
Wildacres4pre	6.5	0.347	0.347	0.347		
Wildacres5pre	6.5	0.294	0.294	0.294		
Wildacres6pre	6.5	0.544	0.544	0.544		
Wildacres200.300pre	6.5	0.197	0.197	0.197		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	0.3188	0.3188	0.2436		
Wildacres5-8-9-10-11-12-55-88post	6.5	0.7675	0.7675	0.7195		
Wildacres6-101post	6.5	0.586	0.586	0.337		
Wildacres13-23post	6.5	0.549	0.549	0.388		
Wildacres14post	6.5	1.559	1.559	0.697		
Wildacres15post	6.5	0.897	0.897	0.843		
Wildacres16post	6.5	0.947	0.947	0.621		
Wildacres20post	6.5	0.658	0.658	0.658		
Wildacres21post	6.5	0.968	0.968	0.628		
Wildacres22post	6.5	0.939	0.939	0.935		
Wildacres24post	6.5	0.339	0.339	0.317		
Wildacres25-200post	6.5	0.184	0.184	0.184		
Wildacres40-41-42post	6.5	0.602	0.602	0.602		
Wildacres102-105post	6.5	0.836	0.836	0.456		
Wildacres103-104-106post	6.5	1.380	1.380	1.178		
Wildacres107post	6.5	1.603	1.603	1.340		
Wildacres108post	6.5	0.624	0.624	0.429		
Wildacres109post	6.5	1.508	1.508	0.779		
Wildacres110post	6.5	1.554	1.554	1.199		
Wildacres111post	6.5	0.5171	0.5171	0.3507		
Wildacres112post	6.5	1.858	1.858	5.473		
Wildacres121post	6.5	0.468	0.468	0.353		

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of PARTICULATE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction after Drainage Controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	6.03	6.03	6.03	44.70	0%
Wildacres2pre	6.5	21.87	21.87	21.87	111.80	0%
Wildacres3pre	6.5	9.20	9.20	9.20	47.53	0%
Wildacres4pre	6.5	16.47	16.47	16.47	86.90	0%
Wildacres5pre	6.5	3.82	3.82	3.82	22.96	0%
Wildacres6pre	6.5	11.12	11.12	11.12	39.80	0%
Wildacres200.300pre	6.5	24.64	24.64	24.64	200.00	0%
TOTALS		93.14	93.14	93.14	553.69	0%
Average yield (lb/acre)		0.17	0.17	0.17		0%
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	6.621	6.621	3.098	68.10	53%
Wildacres5-8-9-10-11-12-55-88post	6.5	9.806	9.806	1.729	41.25	82%
Wildacres6-101post	6.5	9.60	9.60	3.86	34.08	60%
Wildacres13-23post	6.5	2.91	2.91	1.17	12.27	60%
Wildacres14post	6.5	4.26	4.26	0.88	5.92	79%
Wildacres15post	6.5	2.72	2.72	0.64	9.92	76%
Wildacres16post	6.5	1.96	1.96	0.45	7.00	77%
Wildacres20post	6.5	3.41	3.41	-	14.80	100%
Wildacres21post	6.5	9.12	9.12	2.21	19.50	76%
Wildacres22post	6.5	3.72	3.72	0.76	12.70	80%
Wildacres24post	6.5	1.29	1.29	0.91	7.35	30%
Wildacres25-200post	6.5	13.11	13.11	13.11	118.54	0%
Wildacres40-41-42post	6.5	6.65	6.65	6.65	29.42	0%
Wildacres102-105post	6.5	6.44	6.44	-	23.26	100%
Wildacres103-104-106post	6.5	11.70	11.70	0.87	19.27	93%
Wildacres107post	6.5	3.62	3.62	0.55	5.80	85%
Wildacres108post	6.5	3.28	3.28	0.96	17.25	71%
Wildacres109post	6.5	3.86	3.86	1.19	5.53	69%
Wildacres110post	6.5	4.76	4.76	0.78	6.63	84%
Wildacres111post	6.5	2.055	2.055	0.5584	13.31	73%
Wildacres112post	6.5	6.11	6.11	0.10	7.18	98%
Wildacres121post	6.5	2.83	2.83	1.32	17.81	54%
totals		113.22	113.22	38.68	496.89	66%
Average yield (lb/acre)		0.23	0.23	0.08		66%

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of FILTERABLE PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction after Drainage Controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	0.63	0.63	0.63	44.70	0%
Wildacres2pre	6.5	5.19	5.19	5.19	111.80	0%
Wildacres3pre	6.5	2.19	2.19	2.19	47.53	0%
Wildacres4pre	6.5	3.76	3.76	3.76	86.90	0%
Wildacres5pre	6.5	0.71	0.71	0.71	22.96	0%
Wildacres6pre	6.5	3.68	3.68	3.68	39.80	0%
Wildacres200.300pre	6.5	1.46	1.46	1.46	200.00	0%
TOTALS		17.61	17.61	17.61	553.69	0%
Average yield (lb/acre)		0.03	0.03	0.03		0%
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	8.313	8.313	8.313	68.10	0%
Wildacres5-8-9-10-11-12-55-88post	6.5	11.93	11.93	11.93	41.25	0%
Wildacres6-101post	6.5	3.92	3.92	3.92	34.08	0%
Wildacres13-23post	6.5	1.76	1.76	1.76	12.27	0%
Wildacres14post	6.5	1.85	1.85	1.85	5.92	0%
Wildacres15post	6.5	3.41	3.41	3.41	9.92	0%
Wildacres16post	6.5	2.43	2.43	2.43	7.00	0%
Wildacres20post	6.5	3.83	3.83	3.83	14.80	0%
Wildacres21post	6.5	3.65	3.65	3.65	19.50	0%
Wildacres22post	6.5	4.61	4.61	4.61	12.70	0%
Wildacres24post	6.5	0.25	0.25	0.25	7.35	0%
Wildacres25-200post	6.5	1.42	1.42	1.42	118.54	0%
Wildacres40-41-42post	6.5	7.25	7.25	7.25	29.42	0%
Wildacres102-105post	6.5	7.72	7.72	7.72	23.26	0%
Wildacres103-104-106post	6.5	6.10	6.10	6.10	19.27	0%
Wildacres107post	6.5	1.53	1.53	1.53	5.80	0%
Wildacres108post	6.5	4.16	4.16	4.16	17.25	0%
Wildacres109post	6.5	1.67	1.67	1.67	5.53	0%
Wildacres110post	6.5	2.07	2.07	2.07	6.63	0%
Wildacres111post	6.5	2.595	2.595	2.595	13.31	0%
Wildacres112post	6.5	2.73	2.73	2.73	7.18	0%
Wildacres121post	6.5	3.31	3.31	3.31	17.81	0%
totals		78.18	78.18	78.19	496.89	0%
Average yield (lb/acre)		0.16	0.16	0.16		0%

Pollutant Relative Concentration File: POLLGEO.PPD						
Total Area, with Drainage and Outfall Controls - Yield of TOTAL PHOSPHORUS (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction after Drainage Controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	6.65	6.65	6.65	44.70	0%
Wildacres2pre	6.5	27.06	27.06	27.06	111.80	0%
Wildacres3pre	6.5	11.39	11.39	11.39	47.53	0%
Wildacres4pre	6.5	20.22	20.22	20.22	86.90	0%
Wildacres5pre	6.5	4.53	4.53	4.53	22.96	0%
Wildacres6pre	6.5	14.80	14.80	14.80	39.80	0%
Wildacres200.300pre	6.5	26.10	26.10	26.10	200.00	0%
TOTALS		110.75	110.75	110.75	553.69	0%
Average yield (lb/acre)		0.20	0.20	0.20		0%
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	14.93	14.93	11.41	68.10	24%
Wildacres5-8-9-10-11-12-55-88post	6.5	21.74	21.74	13.66	41.25	37%
Wildacres6-101post	6.5	13.25	13.52	7.78	34.08	41%
Wildacres13-23post	6.5	4.67	4.67	2.93	12.27	37%
Wildacres14post	6.5	6.11	6.11	2.73	5.92	55%
Wildacres15post	6.5	6.13	6.13	4.05	9.92	34%
Wildacres16post	6.5	4.39	4.39	2.88	7.00	34%
Wildacres20post	6.5	7.24	7.24	3.83	14.80	47%
Wildacres21post	6.5	12.77	12.77	5.86	19.50	54%
Wildacres22post	6.5	8.33	8.33	5.37	12.70	36%
Wildacres24post	6.5	1.54	1.54	1.16	7.35	25%
Wildacres25-200post	6.5	14.53	14.53	14.53	118.54	0%
Wildacres40-41-42post	6.5	13.90	13.90	13.90	29.42	0%
Wildacres102-105post	6.5	14.16	14.16	7.72	23.26	46%
Wildacres103-104-106post	6.5	17.80	17.80	6.97	19.27	61%
Wildacres107post	6.5	5.15	5.15	2.08	5.80	60%
Wildacres108post	6.5	7.45	7.45	5.12	17.25	31%
Wildacres109post	6.5	5.53	5.53	2.85	5.53	48%
Wildacres110post	6.5	6.83	6.83	2.85	6.63	58%
Wildacres111post	6.5	4.65	4.65	3.15	13.31	32%
Wildacres112post	6.5	8.84	8.84	2.82	7.18	68%
Wildacres121post	6.5	6.14	6.14	4.63	17.81	25%
totals		191.14	191.41	116.85	496.89	39%
Average yield (lb/acre)		0.38	0.39	0.24		39%

Total Area, with Drainage and Outfall Controls - Concentration of NITRATES (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	1.260	1.260	1.260		
Wildacres2pre	6.5	1.238	1.238	1.238		
Wildacres3pre	6.5	1.232	1.232	1.232		
Wildacres4pre	6.5	1.243	1.243	1.243		
Wildacres5pre	6.5	1.244	1.244	1.244		
Wildacres6pre	6.5	1.220	1.220	1.220		
Wildacres200.300pre	6.5	1.280	1.280	1.280		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-3	6.5	1.982	1.982	1.982		
Wildacres5-8-9-10-11-12-55-88pc	6.5	3.347	3.347	0.568		
Wildacres6-101post	6.5	1.224	1.224	1.224		
Wildacres13-23post	6.5	1.676	1.676	1.486		
Wildacres14post	6.5	1.280	1.280	1.280		
Wildacres15post	6.5	2.392	1.683	1.683		
Wildacres16post	6.5	1.778	1.778	1.778		
Wildacres20post	6.5	2.090	2.090	2.090		
Wildacres21post	6.5	1.244	1.244	1.244		
Wildacres22post	6.5	1.927	1.927	1.927		
Wildacres24post	6.5	1.280	1.280	1.280		
Wildacres25-200post	6.5	1.280	1.280	1.280		
Wildacres40-41-42post	6.5	0.174	0.174	0.174		
Wildacres102-105post	6.5	2.574	2.574	2.574		
Wildacres103-104-106post	6.5	2.170	2.170	2.170		
Wildacres107post	6.5	1.280	1.280	1.280		
Wildacres108post	6.5	1.426	1.426	1.426		
Wildacres109post	6.5	1.280	1.280	1.280		
Wildacres110post	6.5	1.280	1.280	1.280		
Wildacres111post	6.5	1.421	1.421	1.421		
Wildacres112post	6.5	1.280	1.280	1.280		
Wildacres121post	6.5	2.721	2.721	2.721		

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL TKN (mg/L)						
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System (mg/L)	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)		
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	1.920	1.920	1.920		
Wildacres2pre	6.5	1.979	1.979	1.979		
Wildacres3pre	6.5	1.974	1.974	1.974		
Wildacres4pre	6.5	1.977	1.977	1.977		
Wildacres5pre	6.5	1.986	1.986	1.986		
Wildacres6pre	6.5	1.998	1.998	1.998		
Wildacres200.300pre	6.5	1.980	1.980	1.980		
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-3	6.5	1.320	1.320	1.274		
Wildacres5-8-9-10-11-12-55-88pc	6.5	2.440	2.440	1.575		
Wildacres6.101post	6.5	1.940	1.940	1.525		
Wildacres13.23post	6.5	1.566	1.566	1.560		
Wildacres14post	6.5	2.196	2.196	1.633		
Wildacres15post	6.5	2.232	2.232	1.720		
Wildacres16post	6.5	1.731	1.731	1.570		
Wildacres20post	6.5	1.549	1.549	1.549		
Wildacres21post	6.5	2.141	2.141	2.084		
Wildacres22post	6.5	2.449	2.449	1.736		
Wildacres24post	6.5	2.470	2.470	1.990		
Wildacres25.200post	6.5	1.860	1.860	1.860		
Wildacres40.41.42post	6.5	1.570	1.570	1.570		
Wildacres102-105post	6.5	1.651	1.651	1.465		
Wildacres103.104.106post	6.5	4.426	4.426	1.874		
Wildacres107post	6.5	4.553	4.553	2.161		
Wildacres108post	6.5	1.543	1.543	1.441		
Wildacres109post	6.5	2.188	2.188	1.692		
Wildacres110post	6.5	2.964	2.964	2.195		
Wildacres111post	6.5	1.461	1.461	1.371		
Wildacres112post	6.5	2.243	2.243	1.459		
Wildacres121post	6.5	1.412	1.412	1.349		
totals						

Total Area, with Drainage and Outfall Controls - Yield of NITRATES (lbs)						
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction after Drainage Controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	37.69	37.69	37.69	44.70	0%
Wildacres2pre	6.5	93.07	93.07	93.07	111.80	0%
Wildacres3pre	6.5	39.19	39.19	39.19	47.53	0%
Wildacres4pre	6.5	72.40	72.40	72.40	86.90	0%
Wildacres5pre	6.5	19.19	19.19	19.19	22.96	0%
Wildacres6pre	6.5	33.19	33.19	33.19	39.80	0%
Wildacres200.300pre	6.5	169.60	169.60	169.60	200.00	0%
TOTALS		464.33	464.33	464.33	553.69	0%
Average yield (lb/acre)		0.84	0.84	0.84		0%
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-3	6.5	92.85	92.85	92.85	102.12	0%
Wildacres5-8-9-10-11-12-55-88pc	6.5	101.10	101.10	101.10	34.08	0%
Wildacres6.101post	6.5	28.23	28.23	28.23	34.08	0%
Wildacres13.23post	6.5	12.64	12.64	12.64	12.27	0%
Wildacres14post	6.5	5.02	5.02	5.02	5.92	0%
Wildacres15post	6.5	11.50	11.50	11.50	9.92	0%
Wildacres16post	6.5	8.24	8.24	8.24	7.00	0%
Wildacres20post	6.5	22.98	22.98	22.98	14.80	0%
Wildacres21post	6.5	16.41	16.41	16.41	19.50	0%
Wildacres22post	6.5	17.17	17.17	17.17	12.70	0%
Wildacres24post	6.5	6.23	6.23	6.23	7.35	0%
Wildacres25.200post	6.5	101.10	101.10	101.10	118.54	0%
Wildacres40.41.42post	6.5	47.30	47.30	47.30	29.42	0%
Wildacres102-105post	6.5	43.62	43.62	43.62	23.26	0%
Wildacres103.104.106post	6.5	32.80	32.80	32.80	19.27	0%
Wildacres107post	6.5	4.92	4.92	4.92	5.80	0%
Wildacres108post	6.5	17.01	17.01	17.01	17.25	0%
Wildacres109post	6.5	4.69	4.69	4.69	5.53	0%
Wildacres110post	6.5	5.62	5.62	5.62	6.63	0%
Wildacres111post	6.5	12.78	12.78	12.78	13.31	0%
Wildacres112post	6.5	6.09	6.09	6.09	7.18	0%
Wildacres121post	6.5	35.69	35.69	35.69	17.81	0%
totals		634.00	634.00	633.99	523.74	0%
Average yield (lb/acre)		1.21	1.21	1.21		0%

Total Area, with Drainage and Outfall Controls - Yield of TOTAL TKN (lbs)

Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)	% Reduction after Drainage Controls
PRE-DEVELOPMENT CONDITION						
Wildacres1pre	6.5	58.96	58.96	58.96	44.70	0%
Wildacres2pre	6.5	148.80	148.80	148.80	111.80	0%
Wildacres3pre	6.5	62.77	62.77	62.77	47.53	0%
Wildacres4pre	6.5	115.20	115.20	115.20	86.90	0%
Wildacres5pre	6.5	30.36	30.36	30.36	22.96	0%
Wildacres6pre	6.5	54.37	54.37	54.37	39.80	0%
Wildacres200.300pre	6.5	262.30	262.30	262.30	200.00	0%
TOTALS		732.76	732.76	732.76	553.69	0%
Average yield (lb/acre)		1.32	1.32	1.32		0%
POST-DEVELOPMENT CONDITION						
Wildacres1-2-3-4-7-17-18-66-77-3	6.5	61.84	61.84	59.70	102.12	3%
Wildacres5-8-9-10-11-12-55-88pc	6.5	47.59	47.59	43.44	34.08	9%
Wildacres6.101post	6.5	44.73	44.73	35.17	34.08	21%
Wildacres13.23post	6.5	13.28	13.28	11.81	12.27	11%
Wildacres14post	6.5	8.61	8.61	6.40	5.92	26%
Wildacres15post	6.5	11.76	11.76	10.73	9.92	9%
Wildacres16post	6.5	8.03	8.03	7.28	7.00	9%
Wildacres20post	6.5	17.03	17.03	15.33	14.80	10%
Wildacres21post	6.5	27.48	27.48	19.99	19.50	27%
Wildacres22post	6.5	15.47	15.47	14.01	12.70	9%
Wildacres24post	6.5	9.69	9.69	8.45	7.35	13%
Wildacres25.200post	6.5	146.90	146.90	146.90	118.54	0%
Wildacres40.41.42post	6.5	36.28	36.28	36.28	29.42	0%
Wildacres102-105post	6.5	27.98	27.98	24.82	23.26	11%
Wildacres103.104.106post	6.5	28.32	28.32	22.35	19.27	21%
Wildacres107post	6.5	8.31	8.31	5.90	5.80	29%
Wildacres108post	6.5	18.40	18.40	17.19	17.25	7%
Wildacres109post	6.5	8.02	8.02	6.20	5.53	23%
Wildacres110post	6.5	9.64	9.64	7.03	6.63	27%
Wildacres111post	6.5	13.14	13.14	12.33	13.31	6%
Wildacres112post	6.5	10.67	10.67	7.52	7.18	30%
Wildacres121post	6.5	1.53	1.53	0.71	17.81	54%
totals		574.70	574.70	519.55	523.74	10%
Average yield (lb/acre)		1.10	1.10	0.99		10%

Wildacres summary for 6.5 in rain.new

Total Area, with Drainage and Outfall Controls - Concentration of TOTAL CHEMICAL OXYGEN DEMAND (mg/L)					
Subcatchment	Rain Total (inches)	Flow-weighted Average Before Drainage System	Flow-weighted Average After Drainage System (mg/L)	Flow-weighted Average After Outfall Controls (mg/L)	
PRE-DEVELOPMENT CONDITION					
Wildacres1pre	6.5	158.4	158.4	158.4	
Wildacres2pre	6.5	170.9	170.9	170.9	
Wildacres3pre	6.5	170.0	170.0	170.0	
Wildacres4pre	6.5	170.0	170.0	170.0	
Wildacres5pre	6.5	155.1	155.1	155.1	
Wildacres6pre	6.5	188.8	188.8	188.8	
Wildacres200.300pre	6.5	158.0	158.0	158.0	
POST-DEVELOPMENT CONDITION					
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	56.6	56.6	37.0	
Wildacres5-8-9-10-11-12-55-88post	6.5	100.7	100.7	57.6	
Wildacres6-101post	6.5	179.9	179.9	84.3	
Wildacres13-23post	6.5	81.5	81.5	50.2	
Wildacres14post	6.5	307.3	307.3	77.6	
Wildacres15post	6.5	117.4	117.4	60.2	
Wildacres16post	6.5	122.3	122.3	41.6	
Wildacres20post	6.5	94.7	94.7	41.1	
Wildacres21post	6.5	238.4	238.4	102.4	
Wildacres22post	6.5	122.0	122.0	61.5	
Wildacres24post	6.5	167.1	167.7	158.7	
Wildacres25-200post	6.5	138.6	138.6	138.6	
Wildacres40-41-42post	6.5	86.1	86.1	86.1	
Wildacres102-105post	6.5	107.4	107.4	18.6	
Wildacres103-104-106post	6.5	210.7	210.7	105.9	
Wildacres107post	6.5	283.4	283.4	172.6	
Wildacres108post	6.5	88.5	88.5	39.8	
Wildacres109post	6.5	301.7	301.7	105.1	
Wildacres110post	6.5	306.7	306.7	120.5	
Wildacres111post	6.5	77.0	77.0	34.9	
Wildacres112post	6.5	340.1	340.1	205.2	
Wildacres121post	6.5	73.8	73.8	44.9	

Wildacres summary for 6.5 in rain.new

Total Area, with Drainage and Outfall Controls - Yield of TOTAL CHEMICAL OXYGEN DEMAND (lbs)					
Subcatchment	Rain Total (inches)	Total Before Drainage System (lbs)	Total After Drainage System (lbs)	Total After Outfall Controls (lbs)	Area of Sub-catchment (acres)
PRE-DEVELOPMENT CONDITION					
Wildacres1pre	6.5	4,739	4,739	4,739	44.70
Wildacres2pre	6.5	12,850	12,850	12,850	111.80
Wildacres3pre	6.5	5,406	5,406	5,406	47.53
Wildacres4pre	6.5	9,898	9,898	9,898	86.90
Wildacres5pre	6.5	2,392	2,392	2,392	22.96
Wildacres6pre	6.5	5,136	5,136	5,136	39.80
Wildacres200.300pre	6.5	20,930	20,930	20,930	200.00
TOTALS		61,351	61,351	61,351	553.69
Average yield (lb/acre)		111	111	111	
POST-DEVELOPMENT CONDITION					
Wildacres1-2-3-4-7-17-18-66-77-300post	6.5	2,650	2,650	1,734	102.12
Wildacres5-8-9-10-11-12-55-88post	6.5	3,043	3,043	1,025	34.08
Wildacres6-101post	6.5	4,149	4,149	1,943	12.27
Wildacres13-23post	6.5	694	694	379	5.92
Wildacres14post	6.5	1,205	1,205	304	9.92
Wildacres15post	6.5	803	803	289	7.00
Wildacres16post	6.5	567	567	193	14.80
Wildacres20post	6.5	1,041	1,041	207	19.50
Wildacres21post	6.5	3,143	3,143	956	12.70
Wildacres22post	6.5	1,088	1,088	352	7.35
Wildacres24post	6.5	773	773	572	118.54
Wildacres25-200post	6.5	10,947	10,947	10,947	29.42
Wildacres40-41-42post	6.5	1,990	1,990	1,990	23.26
Wildacres102-105post	6.5	1,820	1,820	316	19.27
Wildacres103-104-106post	6.5	3,185	3,185	535	21.06
Wildacres107post	6.5	1,089	1,089	224	17.25
Wildacres108post	6.5	1,055	1,055	474	5.53
Wildacres109post	6.5	1,105	1,105	385	6.63
Wildacres110post	6.5	1,347	1,347	286	13.31
Wildacres111post	6.5	692	692	314	7.18
Wildacres112post	6.5	1,618	1,618	106	17.81
Wildacres121post	6.5	968	968	589	504.92
Average yield (lb/acre)		2	2	1	

the LA group
Landscape Architecture
and Engineering, P.C.

40 Long Alley
Saratoga Springs
New York 12866
518/587-8100
Telefax 518/587-0180

May 15, 2003

VIA OVERNIGHT DELIVERY
Mr. Patrick Ferracane
NYSDEC Region 3
200 White Plains Road – 5th Floor
Tarrytown, NY 10591-5805

Re: Belleayre Resort At Catskill Park
Operational Phase Stormwater Management Plan

Dear Mr. Ferracane;

Attached are additional materials we have prepared for the Belleayre Resort project stormwater management plan. These additional materials were prepared in response to conversations you had with Dean Long of our office.

Enclosed is a Design Report for the project stormwater management plan. The Design Report provides details on the rationale for selecting the proposed micropool extended detention pond (P-1) practice (Chapter 7 of the October 2001 Design Manual) and how design details comply with the required elements and design guidance in Chapter 6 of the Design Manual.

Also enclosed are some edited drawings including the site grading (SG) plans, the site drainage (SD) plans and the detail sheets (CP-12 and new CP-13). Modifications made to these drawings since they were last submitted to you for review include the following;

1. Percolation rates and the 10% WQv (forebay) and 20% WQv (permanent pool) values for each pond/basin have been added to the SG sheets.

2. Stormwater travel paths between ponds/basins via stone swales, grass swales and culverts and also via overland flow are more clearly indicated on the SG plans.

3. Additional information has been added to the pond engineering detail (#1 on CP-13) including information on the forebay, micropool, inlet, outlet, drain pipe, etc.

4. A new detail (#2 on CP-13) illustrating a typical pond planting plan, safety and aquatic benches, length to width ratio, water surface to drainage area ratio, sediment removal requirements etc. has been added.

5. Other details that have been added to the set on CP-13 include a trash rack detail, a level spreader detail, and rock check dams.

6. The HydroCAD schematic routing designs shown on the SD sheets now also include the SD sheet outlines on them.

If you have any questions regarding this additional information please contact me or Dean Long.

Sincerely,

Kevin J. Franke
For
The LA Group, P.C.

Enc.

Cc (no Enc.) Alec Ciesluk, NYSDEC New Paltz
Ken Graham
Terresa Bakner

Design Report – Belleayre Resort at Catskill Park Operational Phase Stormwater Management Plan

1. Introduction

The stormwater management plan for the Belleayre Resort at Catskill Park project was developed in accordance with the guidelines established in the New York State Stormwater Management Design Manual (NYSSMDM) (Center for Watershed Protection, October 2001). The primary design goal achieved by the project stormwater management plan is to meet water quality objectives such as capturing and treating the full water quality volume, reducing total suspended solids (TSS) by 80% and reducing total phosphorus (TP) by 40% (NYSMSDM, page 5-1).

In order to achieve this primary design goal of meeting water quality objectives, while at the same time mitigating potential impacts associated with increased stormwater volumes, the design of the project stormwater management plan integrated two analysis methodologies. These two methodologies were combined in an iterative manner to design the stormwater management plan for the project. DEIS Appendix 9A, "Operational Phase Stormwater Quantity Management Plan," and Appendix 10A, " Operational Phase Stormwater Quality Management Plan", describe the two analysis methodologies. The design of the stormwater management plan derived from the two analysis methodologies is illustrated on the plans that accompany the DEIS, including the Site Drainage (SD) plans and the Site Grading (SG) plans.

2. Proposed Stormwater Management Plan Practice

Using the stormwater management practices selection matrices contained in Chapter 7 of the NYSSMDM, it was determined that stormwater ponds were the most suitable practice to be implemented for the Belleayre Resort project. More specifically, the Micropool Extended Detention Pond (P-1) was selected as the practice to be implemented. The P-1 practice was selected based on the following factors;

- The project density makes it a "rural" project (NYSSMDM Table 7.1),
- Soils (mostly groups C&D), groundwater (non-aquifer), and drainage area sizes (most >10 acres) are suitable (NYSSMDM Table 7.2),
- The presence of local sensitive coldwater trout streams (NYSSMDM Table 7.3a),
- The need for sediment and phosphorus removal for trout water and NYC water supply reservoir protection (NYSSMDM Table 7.3b),
- Other pollutant controls and channel protection and flood control in this region with "flashy" storm hydrology (NYSSMDM Table 7.4), and
- Ease of maintenance and public safety (NYSSMDM Table 7.5).

(Note: For purposes of discussion of the project stormwater management plan the terms "pond", "P-1 pond", "P-1" and "basin" are synonymous.)

Stormwater ponds as a whole, including the P-1 Micropool Extended Detention Pond practice proposed for this project, provide the highest levels of stormwater control from both quality and quantity standpoints of all of the acceptable practices in the

NYSSMDM, and are easy to maintain. The fact sheet summary description of stormwater ponds contained in the NYSSMDM (pages 6-20 and 6-21) rates pollutant removal for phosphorus, nitrogen, metals and pathogens as "good", the highest ranking available. Additionally, ponds are listed as suitable for WQv, Cpv, Qp, and Qf protection, while having a low maintenance burden. Other practices in the NYSSMDM have lower pollutant removal capabilities and/or are unable to treat higher volume storm events.

3. Design Details

The project plan sheets that illustrate the project stormwater management plan are on base mapping with a 5-foot contour interval. Because of this, it was not possible to illustrate the details of the proposed micropool extended detention ponds directly on the SD and SG plans. An engineering detail of a cross section through a typical pond is illustrated on Detail 1 on Sheet CP-13. This detail schematically illustrates how the ponds will include a sediment forebay on the upper end and a micropool on the lower end. Details 1 and 2 on Sheet CP-13 provides additional information showing how the pond design is consistent with the design guidance for P-1 contained in the NYSSMDM, including benches, plantings and outlet structures. Like the rest of the detailed construction phasing and construction stormwater control construction-level drawings, after a permit is issued for the project and as a condition of the permit, more detailed drawings will be prepared and submitted for each of the proposed P-1 ponds using more detailed (i.e. 2-foot contour) topography.

4. Required Elements and Design Guidance

The following is a discussion of how the proposed stormwater management plan meets the required elements and design guidance specified for practice P-1 in Chapter 6 of the NYSSMDM.

Section 6.1.1 Feasibility

- Forty-nine (49) of the 71 proposed P-1 ponds have direct contributing drainage areas greater than 10 acres. For the 22 ponds that do not have 10 acres of direct contributing drainage area, 11 of these P-1 ponds are in series or sequence with a downstream P-1 pond that does have a 10 acre drainage area. Having these 11 ponds with less than 10 acres of direct contributing drainage area located upstream and in series/sequence with downstream ponds with more than 10 acres of contributing areas is consistent with the NYSSMDM recommendation of providing multiple pathways by providing multiple cells and redundant treatment methods (NYSSMDM page 6-12) and still meets the 10 acre drainage area required design for practice P-1.

  This leaves 11 P-1 ponds that do not have 10 acres of direct contributing areas and are not located upstream of a downstream P-1 pond with more than 10 acres of contributing area. The sizes of the contributing drainage areas for these 11 ponds range from 2.13 to 9.48 acres. The NYSSMDM allows for the use of the P-1 practice where drainage areas are less than the 10 acre minimum when there is an adequate water balance and an anti-clogging outlet device in installed

(NYSSMDM Table 7.2, footnote #1). All P-1 ponds have been individually sized based upon the size of their respective contributing drainage areas and the land use covertypes within these drainage areas. As per the typical detail for these ponds (Detail 1, Sheet CP-13), outlet orifices will be set at an elevation that will produce surface water areas of at least 20% of the water quality volume to be in the permanent pool of all P-1 ponds (NYSSDM Table 6.1). These design elements will produce the desired water balance for the 11 P-1 ponds with contributing areas of less than 10 acres. All of the 71 proposed P-1 ponds will have anti-clogging trash racks installed at their outlets in accordance with the anti-clogging details contained in Appendix K of the NYSSMDM (See Detail 3, Sheet CP-13).

- As shown on the SD and SG sheets, no ponds are proposed in jurisdictional waters, stream channels or wetlands.

- As shown on the SG sheets, ponds are dug ponds, not impoundments requiring dam permits.

- The ponds are not located in a sole source aquifer recharge area (NYSSMDM Figure 7.1).

Section 6.1.2 Conveyance

- Inlet Protection – stabilized forebays 4 to 5 feet deep are provided in all pond inflows and all inlets will be suitably stabilized with riprap to ensure non-erosive conditions for at least the 2-year storm (See Detail 1, Sheet CP-13). Because the site is in a cold region of the State, pond inlets will be stone lined swales, rather than a partially full inlet pipe that is subject to freezing.

- Outfall Protection – The site grading (SG) plans indicate which ponds will outfall to swales and which ponds will outfall to overland flow and how outfalls have been designed to prevent erosion. Swale outfalls will contain riprap over geotextile fabric (See Detail 1, Sheet CP-13) or suitable alternative such as a three dimensional grid materials such as the Pyramat® shown on Detail 10 on Sheet CP-12. Overland flow outfalls will have a similar riprap outfall, but will also be equipped with a level spreader below the stabilized outfall as per NYSSMDM Appendix K, Figure K-9 (See Detail 5, Sheet CP-13).

- Pond Liners – Percolation rates for all ponds are provided on the site grading (SG) plans. All but 7 of the proposed ponds essentially have no percolation at their proposed 5-foot bottom depth. The seven ponds that have percolation at the 5-foot bottom depth are ponds 15, 20, 23 and 110 on Sheet SG-1, ponds 12 and 16 on Sheet SG-2 and pond 27 on Sheet SG-6. The bottoms of these ponds will be covered with 6 to 12 inches of clay soils available on-site (See DEIS Appendix 12, Soil Test Results, where sieve analysis show suitable on-site soils with 31-

60% passing the #200 sieve). Amended pond soils will be percolation tested to confirm minimum permeability of $1x10^{-5}$ cm/sec.

Section 6.1.3 Pretreatment

- As per Details 1 and 2 on Sheet CP-13, all ponds will include a forebay separated from the rest of the pond by an earthen berm barrier and forebays will be four to five feet deep and sized to contain at least 10% of the WQv. The 10% of WQv volume for each pond is listed on the SG plans. The riprap non-erosive forebay outlet is also shown on these details, as is a sediment depth marker. As shown on the SG and SD plans, all basins and their forebays are readily accessible for maintenance.

Section 6.1.4 Treatment

- The 10% of WQv for the forebay and the 20% of WQv for the permanent pool for each pond is indicated on the site grading (SG) plans. As per Detail 1 on Sheet CP-13 a minimum of 20% of the WQv will be contained in the permanent pool and a maximum of 80% of the WQv will be treated by extended detention (NYSSMDM Table 6.1). Topography constraints and the desire to minimize land disturbance dictate that water quality treatment be provided in-line rather than offline. As stated previously, and as illustrated on the HydroCAD stormwater routing schematics included on the site drainage (SD) plans, multiple ponds in series provides for the recommended multiple cells and redundant treatment. Ponds have purposefully been designed to be long and narrow (>1.5 L:W ratio) in an effort to increase shading. As discussed above, future detailed construction plans for each of the ponds will provide a water surface area of a minimum of 1% of the drainage area.

Section 6.1.5 Landscaping

- Pond Benches and Landscaping Plan - Detail 2 on Sheet CP-13 shows a typical pond landscaping plan with a planting palette for aquatic and terrestrial areas, including the safety bench and the aquatic bench. Safety benches are 10 feet wide minimum and 6% maximum slope, while aquatic benches are 10 feet wide and set at an elevation to provide a maximum depth of 18" below the normal water elevation (see Detail 2 on Sheet CP-13). All plant species are suitable for the climate of the site and the hydrologic regimes in which they are proposed.

- Buffers and Setbacks - Ponds are not proposed in proximity to any structures, roads or property lines. There are no other state-regulated buffers on the project site. The planting plan referenced above (Detail 2, Sheet CP-13) does not propose woody vegetation within 15 feet of the toe of the embankment or 25 feet from the principal spillway. These areas will be maintained free of woody vegetation.

Section 6.1.6 Maintenance

- Maintenance Responsibility - The ponds will not become the responsibility of any municipality. Maintenance will be the responsibility of the project sponsor (landowner) and no maintenance right-of-way or easement will be required. In the event the project sponsor transfers the project, the new owner will be required to sign a maintenance agreement to clearly transfer this obligation to the new entity.

- Trash Racks (non-clogging orifices) - Pond risers and the low flow orifices will be equipped with accessible and removable trash racks to prevent clogging (See Detail 3 on Sheet CP-13).

- Sediment Removal - As indicated on a note with Detail 1 on Sheet CP-13, forebay sediment removal will occur when the forebay is 50% full.

- Accessibility - As illustrated on the SD and SG site plan sheets, all ponds and their components are readily accessible by equipment that would be used to maintain the ponds. Details 1 and 2 on Sheet CP-13 show how risers will also be accessible when they are placed within pond embankments.

- Pond Drain and Gate Valve - A drain pipe will be installed for the micropool of each pond as per Detail 1 on Sheet CP-13. Pipes will be sized to drain the entire pond volume within 24 hours and will be equipped with a gate valve. Because of slopes and topography, installing an additional drain pipe in pond forebays is not practical. Whenever it is necessary to dewater the forebay or the entire pond for maintenance, the micropool drain pipe will be opened and water will be pumped from the forebay to the micropool using a portable pump. If requested, notification will be provided to the Department ("the approving jurisdiction" NYSSMDM page 6-16) prior to draining a pond.

- Safety Features - As per Details 1 and 2 on Sheet CP-13, side slopes of the pond will be between 3:1 and 5:1 and safety benches are provided. The ponds will be located on private resort property in a low density rural area, and as such, access to spillways by small children is not a concern as it might be on public property in a more urban area.

Section 6.1.7 Cold Climate Pond Design Considerations

- As per DEIS Appendix 10A (page 14) "The stormwater control sizes have been verified to accommodate snow-runoff events".

- The following note has been added to Detail 1 on Sheet CP-13 that shows a typical micropool pond drain: "Unless absolutely necessary for emergency pond repair, do not drain roadside ponds prior to May 1."

- Rock lined swales are proposed in lieu of inlet pipes, and outflow pipes are located below frost line as shown on Detail 1 on Sheet CP-13.

the LA group
Landscape Architecture
and Engineering, P.C.

40 Long Alley
Saratoga Springs
New York 12866
518/587-8100
Telefax 518/587-0180

April 22, 2003

Mr. Alec Ciesluk
NYSDEC Region 3
21 South Putt Corners Road
New Paltz, NY 12561

Re: Stormwater Engineering Summary

Dear Mr. Ciesluk,

This is a summary that compiles various portions of the DEIS and supporting appendices as a single document that identifies the stormwater analysis and stormwater management plan for the Belleayre Resort at Catskill Park. This document includes both existing data from the appendices and presents new information to clarify the stormwater management plan. This summary also examines topic areas contained in Chapter 7 of the October 2002 NYS Stormwater Management Design Manual. In a separate report, the design criteria for the construction stormwater disposal is covered.

Soils

The soil information was presented in Appendix 12 and was the result of field investigations in 2001 and 2002. The first series of test pits resulted in the site specific soils map based on the actual soils on the site and the county soils surveys. The second series of test pits were completed at or near the proposed location of the stormwater facilities. The soil characteristics of the most common soils under development at the site are found in Table 1, Soil Characteristic Summary. This is a general compilation of the soil data for the site to provide an overview of the soils under development.

The soils at the site are glacial tills with some soils having a fragipan layer. The fragipan layer is a boundary zone that reduces the percolation rate of soils below fragipan or confining layer. The upper soils layer (Horizon A and B) most often have different characteristics and were found to transmit water at very different rates then did the soils below the fragipan. The upper soils frequently had percolation rates of between 2 to 8+ minutes per inch depending on the soils (see Table 1), while the soil below the fragipan has rates of or less than an inch in an hour (1"/60 minutes).

Bedrock was most commonly encountered at a shallow depth in the Halcott soil. In the Vly soils bedrock is typically found at a depth of 20". The Lewbeach and Willowmoc have a fragipan layer at a depth of 26"-39" below grade. The Elka soil did not have a fragipan layer.

Table 1, Soil Characteristic Summary is a chart compiled of the soils information. In all cases of siting a facility, the on-the-ground information was utilized.

TABLE 1
SOIL CHARACTERISTIC SUMMARY

	Topsoil Percolation	Depth to Fragipan	Depth to Bedrock*
Elka (E_k)	2 min./inch at 60" 2 min/inch at 60" 4 min./inch at 60" 4 min./inch at 60" 4:40 min./inch at 60" 4 min./inch at 72" 8 min./inch at 60"	None	72" Flagstone Boulders 72" Flagstone 60" Flagstone Boulders
Halcott (H_v)	Not Applicable	None	12"-24"
Lewbeach (L_e)	0.5 inch/120 min. at 60" 15-20 min./inch at 18" 14 min./inch at 18"	30" 33" 26" 29" 29"	72" Boulders Flagstone
Vly (V_e)	38 min./inch at 20" 7 min./inch at 20" 5 min./inch at 18" 14 min./inch at 18"		65" 60" 22" 24" 65" 35" 24"
Willowmoc	5 min./inch at 20" 24 min./inch at 16"	33" 28" 30"	61" Flagstone

* Termination of excavation at bedrock or deepest excavation and type of stone found.

The above table is based on the field investigation completed during the Fall of 2002 and work in 2001. The objective was to dig test pits at the site of future stormwater facilities. In some cases, it was not feasible to reach the location of each stormwater facility due to forest cover or intervening slopes between logging roads and the stormwater basin sites. When site specific data was not available then soil information from the same soils at the same elevation was substituted. By using the data from similar elevation, the depth to bedrock or fragipan will be similar. When one or more soil test pit data set were available the most conservative estimate was selected.

In all cases the recharge rates for the soil were based on the field percolation rates. To maximize the soil recharge and dispersion of the stormwater, some basins are kept shallow and will be built above the fragipan restrictive layer. The data utilized for each stormwater basin is shown on the grading plans, Sheets SG1-10 and CP2, 7-11 that illustrate the operational and construction phase of the resort development. The data includes the identifying pond number, soil type, depth of soil, depth of the basin and characteristic of the outlet structure. To show the relationship of the various stormwater facilities the routing schematics from HydroCAD have been included on each sheet.

Selection of Treatment

This evaluation is based on the guidance contained in Chapter 7 of the October 2002 New York State Stormwater Management Design Manual. This evaluation also presents the design assumptions utilized in the development of the overall stormwater management plan.

The Belleayre Resort is a rural development since the overall project site has an impervious coverage percentage of 4.3%. The project site unit density of <0.1 is well within the guidelines of 0.5 dwelling unit per acre. The project is a rural development which can be served by the stormwater management practice groups within the categories of pond or wetland design (Matrix Table 7.1).

The Stormwater Management Practice (SMP) that will be utilized at Belleayre Resort falls within the Pond Group. Typical Section Through Stormwater Management Area, illustrates the arrangement of the pond as a schematic (attached to this letter and on Sheet CP-12). The NYSDEC Stormwater Management Design Manual sets forth design criteria that is specifically related to protection of trout streams. The following guidance was considered in the design:

"Extended Detention for Water Quality Volume: The water quality requirement can be met by providing 24 hours of the WQ_v (provided a micro pool is specified) extended detention. A local jurisdiction may reduce this requirement to as little as 12 hours in trout waters to prevent stream warming (NYS SMDM, Page 4-4)."

"Stream Channel Protection Volume Requirements (Cp_v) are designed to protect stream channels from erosion. In New York State this goal is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event. Trout waters may be exempted from the 24-hour ED requirement, with only 12 hours of extended detention required to meet this criterion (Page 4-5 NYSSMDM)."

The selection matrix in Chapter 7 (Table 7.3a) directs designers to minimize the permanent pool. All these criteria reflect the overall concern for avoiding sun exposure at the basins that would elevate the temperature resulting in a thermal discharges. The need to avoid residue stormwater in the basins is necessary in order to prevent discharge of super heated water if the basin should be exposed to sunlight. Avoiding sun exposures has pushed the basin to the clearing edges in order to maximize the shading potential of the adjacent forest and limiting the width of the basin has also been implemented in the design as a means to reduce sun exposure of the stormwater basins.

Once the stormwater quantity assessment and treatment analysis was completed by use of the HydroCAD model (see Appendix 9 and 9A), water quality impacts were assessed. To estimate operational phase water quality, the WinSLAMM model was utilized. Results from the model indicated that the extended detention ponds will meet the 80% removal for total suspended sediments and total phosphorus reduction of 40%. Therefore, extended detention based treatment will provide sufficient stormwater quality improvement to meet the objectives in the DEC Stormwater Guidelines.

Further, the project will implement a comprehensive strategy of nutrient management at the golf facilities to control pollutant loadings. The source control phase (limited fertilizer use at the golf course) has not been assessed in the WinSLAMM models, therefore, this source control provides a margin of safety. The extended detention basins have been sized to meet the stream channel protection volume and the overbank flooding criteria.

The basins have been located at the edge of the development or in areas that will have minimal visual impacts. The basins themselves will most often be grass-lined with rip-rap inlet or outlets along with reinforced turf berms or edges. None of these elements should prevent the basins from blending with the resort environment.

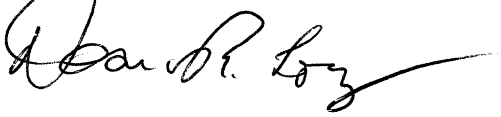
Other treatment methods were considered during the design of the project.

The stormwater treatment methods that rely upon wetlands were determined to create the potential for excessive thermal loadings. To avoid thermal loading wetlands would have to be narrow and heavily shaded which would retard the development of the wetland community, resulting in potentially inadequate stormwater management or, in any case, treatment that is similar to extended detention.

Bio retention filtration was considered, however, based on the level of water quality control gained by extended detention, it was determined that bio-retention would provide no further benefit sufficient to outway the additional clearing and grading required to accommodate an additional series of large basins. The shaded edge areas of the project site are not well suited to bio-retention since the shrub cover in the basins would be slow to become established.

The Belleayre Resort at Catskill Park is a low density development. As a low density development, stormwater discharges have been minimized and will be appropriately treated by use of conventional methods, i.e., extended detention.

Sincerely,



Dean R. Long
for
The LA Group, P.C.

cc: Pat Ferracane
Peter Freehofer

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