

## Project Description

File Name ..... 323 - Att Pond 3 East PIPES ONLY.SPF

## Project Options

Flow Units ..... CMS  
 Elevation Type ..... Elevation  
 Hydrology Method ..... EPA SWMM  
 EPA SWMM Infiltration Method ..... SCS Curve Number  
 Link Routing Method ..... Hydrodynamic  
 Enable Overflow Ponding at Nodes ..... YES  
 Skip Steady State Analysis Time Periods ... NO

## Analysis Options

Start Analysis On ..... Apr 25, 2016 00:00:00  
 End Analysis On ..... Apr 26, 2016 00:00:00  
 Start Reporting On ..... Apr 25, 2016 00:00:00  
 Antecedent Dry Days ..... 0 days  
 Runoff (Dry Weather) Time Step ..... 0 00:00:10 days hh:mm:ss  
 Runoff (Wet Weather) Time Step ..... 0 00:00:10 days hh:mm:ss  
 Reporting Time Step ..... 0 00:00:10 days hh:mm:ss  
 Routing Time Step ..... 0.5 seconds

## Rainfall Details

| SN | Rain Gage ID | Data Source | Data Source ID | Rainfall Type | Rain Units | State | County | Return Period (years) | Rainfall Depth (mm) | Rainfall Distribution      |
|----|--------------|-------------|----------------|---------------|------------|-------|--------|-----------------------|---------------------|----------------------------|
| 1  |              | Time Series | 100yr RI       | Cumulative    | mm         | None  | None   | 100                   | 91.10               | South Africa 24-hr, Type 2 |

**Subbasin Hydrology****Subbasin : Post-Attenuation****Input Data**

Area (ha) ..... 20.27  
 Impervious Area (%) ..... 85.00  
 Weighted Curve Number ..... 86.79  
 Conductivity (mm/hr) ..... 4.0000  
 Drying Time (days) ..... 7.00  
 Average Slope (%) ..... 1.0000  
 Equivalent Width (m) ..... 150.00  
 Impervious Area  
     *Manning's Roughness* ..... 0.0150  
 Pervious Area  
     *Manning's Roughness* ..... 0.1500  
 Curb & Gutter Length (m) ..... 0.00  
 Rain Gage ID ..... 323-Wellington

**Composite Curve Number**

| Soil/Surface Description        | Area<br>(ha) | Soil<br>Group | Curve<br>Number |
|---------------------------------|--------------|---------------|-----------------|
| Paved roads with curbs & sewers | 3.06         | C             | 98.00           |
| 50 - 75% grass cover, Fair      | 10.56        | C             | 79.00           |
| Urban commercial, 85% imp       | 6.65         | C             | 94.00           |
| Composite Area & Weighted CN    | 20.27        |               | 86.79           |

**Subbasin Runoff Results**

Total Rainfall (mm) ..... 91.01  
 Total Runon (mm) ..... 0.00  
 Total Evaporation (mm) ..... 0.0000  
 Total Infiltration (mm) ..... 5.4410  
 Total Runoff (mm) ..... 80.56  
 Peak Runoff (cms) ..... 1.94  
 Weighted Curve Number ..... 86.79  
 Time of Concentration (days hh:mm:ss) ..... 0 03:36:56

**Subbasin : Post-Development****Input Data**

Area (ha) ..... 20.27  
 Impervious Area (%) ..... 85.00  
 Weighted Curve Number ..... 86.79  
 Conductivity (mm/hr) ..... 4.0000  
 Drying Time (days) ..... 7.00  
 Average Slope (%) ..... 1.0000  
 Equivalent Width (m) ..... 150.00  
 Impervious Area  
     *Manning's Roughness* ..... 0.0150  
 Pervious Area  
     *Manning's Roughness* ..... 0.1500  
 Curb & Gutter Length (m) ..... 0.00  
 Rain Gage ID ..... 323-Wellington

**Composite Curve Number**

| Soil/Surface Description        | Area<br>(ha) | Soil<br>Group | Curve<br>Number |
|---------------------------------|--------------|---------------|-----------------|
| Urban commercial, 85% imp       | 6.65         | C             | 94.00           |
| Paved roads with curbs & sewers | 3.06         | C             | 98.00           |
| 50 - 75% grass cover, Fair      | 10.56        | C             | 79.00           |
| Composite Area & Weighted CN    | 20.27        |               | 86.79           |

**Subbasin Runoff Results**

Total Rainfall (mm) ..... 91.01  
 Total Runon (mm) ..... 0.00  
 Total Evaporation (mm) ..... 0.0000  
 Total Infiltration (mm) ..... 5.4410  
 Total Runoff (mm) ..... 80.56  
 Peak Runoff (cms) ..... 1.94  
 Weighted Curve Number ..... 86.79  
 Time of Concentration (days hh:mm:ss) ..... 0 03:36:56

**Subbasin : Pre-Development****Input Data**

Area (ha) ..... 20.27  
 Impervious Area (%) ..... 25.00  
 Weighted Curve Number ..... 79.00  
 Conductivity (mm/hr) ..... 4.0000  
 Drying Time (days) ..... 7.00  
 Average Slope (%) ..... 1.0000  
 Equivalent Width (m) ..... 150.00  
 Impervious Area  
     *Manning's Roughness* ..... 0.0150  
 Pervious Area  
     *Manning's Roughness* ..... 0.1500  
 Curb & Gutter Length (m) ..... 0.00  
 Rain Gage ID ..... 323-Wellington

**Composite Curve Number**

| Soil/Surface Description     | Area<br>(ha) | Soil<br>Group | Curve<br>Number |
|------------------------------|--------------|---------------|-----------------|
| 50 - 75% grass cover, Fair   | 20.27        | C             | 79.00           |
| Composite Area & Weighted CN | 20.27        |               | 79.00           |

**Subbasin Runoff Results**

Total Rainfall (mm) ..... 91.01  
 Total Runon (mm) ..... 0.00  
 Total Evaporation (mm) ..... 0.0000  
 Total Infiltration (mm) ..... 32.4760  
 Total Runoff (mm) ..... 45.68  
 Peak Runoff (cms) ..... 0.45  
 Weighted Curve Number ..... 79.00  
 Time of Concentration (days hh:mm:ss) ..... 0 06:16:15

## Storage Nodes

### Storage Node : Attenuation Chamber

#### Input Data

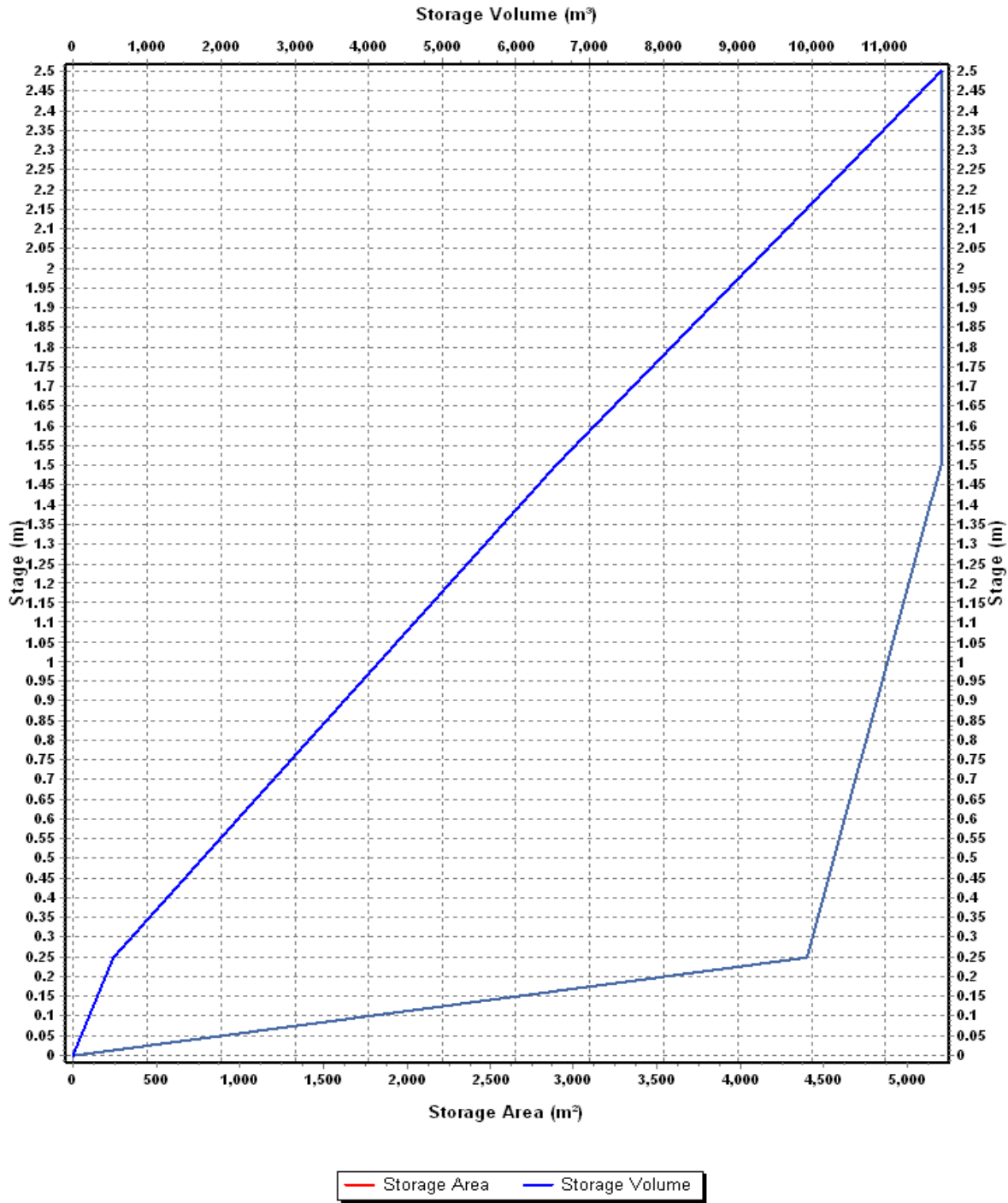
Invert Elevation (m) ..... 1001.00  
 Max (Rim) Elevation (m) ..... 1003.10  
 Max (Rim) Offset (m) ..... 2.10  
 Initial Water Elevation (m) ..... 1001.00  
 Initial Water Depth (m) ..... 0.00  
 Ponded Area (m<sup>2</sup>) ..... 5200.00  
 Evaporation Loss ..... 0.00

#### Storage Area Volume Curves

Storage Curve : POND

| Stage<br>(m) | Storage<br>Area<br>(m <sup>2</sup> ) | Storage<br>Volume<br>(m <sup>3</sup> ) |
|--------------|--------------------------------------|--|
| 0            | 0                                    | 0.000                                  |
| 0.25         | 4400                                 | 550.00                                 |
| 1.5          | 5200                                 | 6550.00                                |
| 2.5          | 5200                                 | 11750.00                               |

### Storage Area Volume Curves



**Storage Node : Attenuation Chamber (continued)****Outflow Weirs**

| SN Element ID | Weir Type     | Flap Gate   | Crest Elevation (m) | Crest Offset (m) | Length (m) | Weir Total Height (m) | Discharge Coefficient |
|---------------|---------------|-------------|---------------------|------------------|------------|-----------------------|-----------------------|
| 1             | Overflow Weir | Rectangular | No                  | 1002.81          | 1.81       | 1.00                  | 0.10                  |

**Outflow Orifices**

| SN Element ID | Orifice Type | Orifice Shape | Flap Gate   | Circular Orifice Diameter (mm) | Rectangular Orifice Height (mm) | Rectangular Orifice Width (mm) | Orifice Invert Elevation (m) | Orifice Coefficient |
|---------------|--------------|---------------|-------------|--------------------------------|---------------------------------|--------------------------------|------------------------------|---------------------|
| 1             | 25yr Orifice | Bottom        | Rectangular | No                             |                                 | 1000.00                        | 1002.70                      | 0.63                |
| 2             | 5yr Orifice  | Side          | CIRCULAR    | No                             | 250.00                          |                                | 1001.00                      | 0.61                |

**Output Summary Results**

|  |         |
|--|---------|
| Peak Inflow (cms) .....                                | 1.94    |
| Peak Lateral Inflow (cms) .....                        | 1.94    |
| Peak Outflow (cms) .....                               | 0.57    |
| Peak Exfiltration Flow Rate (cmm) .....                | 0.00    |
| Max HGL Elevation Attained (m) .....                   | 1002.84 |
| Max HGL Depth Attained (m) .....                       | 1.84    |
| Average HGL Elevation Attained (m) .....               | 1001.86 |
| Average HGL Depth Attained (m) .....                   | 0.86    |
| Time of Max HGL Occurrence (days hh:mm) .....          | 0 13:53 |
| Total Exfiltration Volume (1000-m <sup>3</sup> ) ..... | 0.000   |
| Total Flooded Volume (ha-mm) .....                     | 0       |
| Total Time Flooded (min) .....                         | 0       |
| Total Retention Time (sec) .....                       | 0.00    |